



BOND MANAGEMENT OFFICE
COLLEGE OF THE DESERT

ADDENDUM NO. 01R-01

Date: February 6, 2024
Project Name: Desert Community College District
SCIENCE BUILDING RENOVATION
Bid #43-98P-0500-SBR

To all Contractors submitting a bid for the above captioned project, this addendum is hereby included in the contract documents to the same extent as though it were originally included therein. The following items modify, add to, delete from, or explain the drawings, specifications and/or contract documents.

General:

Revisions to the drawing sheets are clouded with delta #1. There is no change to the dates or deadlines as advertised in the Desert Sun and Press Enterprise publications. **The bid due date remains unchanged, Tuesday, March 19, 2024 @ 2:00pm.**

Item #A-01:

Sheet C2.0:

- Hatch representing landscape scope of work clarified as no landscape modifications.
Connection to existing water line clarified.

Item #A-02:

Sheet C4.0:

- Detail modified/removed for no landscape scope of work occurring.

Item #A-03:

Sheet A0.201:

- Note 7 switched to Note 8 between gridline C/D along gridline 2 to match graphic representation in elevation.

Item #A-04:

Sheet A1.202:

- Note 5 clarified for roof condition shown in detail.

Item #A-05:

Sheet A1.202:

- Ceiling type for Room 101 clarified to match graphical representation.

Item #A-06:

Sheet A1.501:

- Note 6 clarified to detail reference for roller shades.

Item #A-07:

Sheet A3.700:



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- Ceiling height clarified to match detail section.

Item #A-08:

Sheet A8.401:

- Roller shade detail clarified.

Item #A-09:

Sheet FA0.01:

- Incorrect note for scope of work was detected. Correct note for scope of work provided.

Item #A-10

Sheet FP1.01:

- Incorrect note for scope of work was detected. Correct note for scope of work provided.

Item #A-11

Sheet FP1.101:

- Hatch representation clarified.

Item # A-12

Sheet T0.01:

- Incorrect note for scope of work was detected. Correct Note for scope of work provided.

Addendum narrative number of pages: 2 pages

Attachment number of pages: 14 pages

Attachments:

1. Sheet C2.0
2. Sheet C4.0
3. Sheet A0.201
4. Sheet A1.202
5. Sheet A1.202
6. Sheet A1.501
7. Sheet A3.700
8. Sheet A8.401
9. Sheet FA0.01
10. Sheet FP1.01
11. Sheet FP1.101
12. Sheet T0.01

END OF ADDENDUM NO. 01R-01



BOND MANAGEMENT OFFICE
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ADDENDUM NO. 01R-02

Date: February 14, 2024
Project Name: Desert Community College District
SCIENCE BUILDING RENOVATION
Bid #43-98P-0500-SBR

To all Contractors submitting a bid for the above captioned project, this addendum is hereby included in the contract documents to the same extent as though it were originally included therein. The following items modify, add to, delete from, or explain the drawings, specifications and/or contract documents.

General:

Release of all soils and geotechnical reports for the project. The release of the attached information does not change the bid due date of Thursday, March 19, 2024 @ 2:00pm.

Item #1:

- Geological Engineering Report dated February 14, 2022– 103 pages

Item #2:

- Geotechnical Site Data Report Summary letter dated May 3, 2022

Item #3:

- California Geological Survey – Application for assessment of geological hazard reports dated June 30, 2022 – 4 pages

Item #4:

- Geotechnical CGS Approval dated November 16, 2022 – 3 pages

Attachments:

13. Geological Engineering Report
14. Geological Site Data Report Summary Letter
15. California Geological Survey Application for Assessment
16. Geotechnical CGS Approval

END OF ADDENDUM NO. 01R-02



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ADDENDUM NO. 01R-03

Date: February 14, 2024
Project Name: Desert Community College District
SCIENCE BUILDING RENOVATION
Bid #43-98P-0500-SBR

To all Contractors submitting a bid for the above captioned project, this addendum is hereby included in the contract documents to the same extent as though it were originally included therein. The following items modify, add to, delete from, or explain the drawings, specifications and/or contract documents.

General:

The Notice Calling for Bids did not include specific due dates in the document as listed in the Advertisement for Bids, publicized in the Press Enterprise and Desert Sun publications on February 2, 2024 and February 9, 2024. The release of the attached information does not change the bid due date of Thursday, March 19, 2024 @ 2:00pm.

Item #1:

- Updated Notice Calling for Bids Document – 4 pages

Attachments:

17. Updated Notice Calling for Bids

END OF ADDENDUM NO. 01R-03



BOND MANAGEMENT OFFICE
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ADDENDUM NO. 01R-04

Date: February 26, 2024
Project Name: Desert Community College District
Science Building Renovation
Bid #43-98P-0500-SBR

To all Contractors submitting a bid for the above captioned project, this addendum is hereby included in the contract documents to the same extent as though it were originally included therein. The following items modify, add to, delete from, or explain the drawings, specifications and/or contract documents.

General:

Revision to the drawing sheet is clouded with delta #2.
All Pre-Bid RFIs are listed as Questions and Answer per item.

Item #1:

Sheet A1.202 Construction Roof Plan and Referencing Pre-Bid RFI #06

- Roof Walk Pads locations

Item #2:

Pre-Bid RFI 01

- Question
Please confirm the RFI deadline. It's noted as TBD in the Notice Calling for Bids.
- Answer
Pre-bid RFI Deadline is 4:00pm, Friday, March 8, 2024, as indicated in the revised Notice to Bidders that was released to everyone in Addendum No. 03.

Item #3:

Pre-Bid RFI #02

- Question
Please confirm the project duration
- Answer
Project duration is 350 working days.

Item #4:

Pre-Bid RFI #03

- Question
Are there any composite unit costs to be provided? Nothing is noted in Attachment A
- Answer
No Unit costs. Unless otherwise noted this is not applicable.



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Item #5:

Pre-Bid RFI 04

- Question
Based on the documents how can the contractor quantify the concrete repairs on sheet S0.045? For bidding purposes should contractors include an allowance for this work? If so, what amount?
- Answer
Refer to bidding assumption provided in details 1 and 2/S0.045 for quantity of exterior concrete wall and column repairs. Note the following clarification: this is to be a baseline assumption, not an allowance so all bidders have the same quantity to then multiply a cost to. The intent of this assumption indicated in details 1 and 2 is not intended to cover all exterior concrete wall and column repairs.
Tim Hall/ Gensler 2/22/2024

Item #6:

Pre-Bid RFI #05

- Question
Please confirm a roof access hatch and ladder will be required for the project. If so, please provide desired type, location and details.
- Answer
There is no roof hatch in the scope of work.

Item #7:

Pre-Bid RFI #06

- Question
Please confirm if roof walk pads will be required for the project. If so, please provide a desired layout.
- Answer
Yes, roof walk pads will be required for access to service rooftop equipment, refer to spec section 07 54 19 - 9, 2.8. See attached A1.202 Roof Plan for walk pad locations.

Item #8:

Pre-Bid RFI #08

- Question Please confirm which DVBE attachments A-F are to be submitted if the contractor reaches the DVBE goal and which attachments are to be submitted if the contractor performs a good faith effort.
- Answer
Refer to Spec Section 00 45 28 in the Project Manual and the DVBE Attachment Worksheets, Attachment A Bidder's DVBE Statement, Item 4. Submittal of Documentation. J. Dawson-Garcia, Project Manager
02.21.2024



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Item #9:

Pre-Bid RFI #14

- Question
 1. There are no substitutions considered for pre-bid RFIs. The purpose of bid RFIs is to clarify the scope and not change it. Any Structural, Life Safety, or disabled access changes to the DSA approved drawings and specs will require a DSA CCD and delay bidding, and substitutions may not be accepted by DSA.
 2. It is not acceptable to drywall walls 6" above ceiling height, partition types to be per A1.201. There are no fire rated walls in the project.
 3. Yes, provide backing per 1G/S0.041 at Unistrut locations at wall.
Tim Hall/ Gensler 2/22/2024
- Answer
 1. There are no substitutions considered for pre-bid RFIs. The purpose of bid RFIs is to clarify the scope and not change it. Any Structural, Life Safety, or disabled access changes to the DSA approved drawings and specs will require a DSA CCD and delay bidding, and substitutions may not be accepted by DSA.
 2. It is not acceptable to drywall walls 6" above ceiling height, partition types to be per A1.201. There are no fire rated walls in the project.
 3. Yes, provide backing per 1G/S0.041 at Unistrut locations at wall.
Tim Hall/ Gensler 2/22/2024

Attachments:

18. Sheet A1.202
19. Pre-Bid RFI(s) 1, 2, 3, 4, 5, 6, 8, 14

END of ADDENDUM # 01R-04



BOND MANAGEMENT OFFICE
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ADDENDUM NO. 01R-05

Date: March 6, 2024
Project Name: Desert Community College District
Science Building Renovation
Bid #43-98P-0500-SBR

To all Contractors submitting a bid for the above captioned project, this addendum is hereby included in the contract documents to the same extent as though it were originally included therein. The following items modify, add to, delete from, or explain the drawings, specifications and/or contract documents.

The Bid Due date remains unchanged and is Tuesday, March 19, 2024 @ 2:00pm.

General:

All Pre-Bid RFIs responded to and revised information in the specifications are shown in bold font and deleted items are shown with strike-through lines and are crossed out.

Item #1:

Pre-Bid RFI 07:

- Question
Please confirm if room identification signage will be required for each room. If so, please provide specs, details, room names, numbers and desired finishes.
- Answer
Refer to Sheet G3.101 Life safety Plan that includes signage locations and sheet notes 01-10 that reference signage details. Signage specification 10 14 00 will be included in an Addendum.

Item #2:

Pre-Bid RFI 09:

- Question
274116 - T5.02A - document camera is shown on T5.02. Please confirm model number if document camera is contractor furnished.
- Answer
Please include the Aver F50+ Document Camera which will be contractor furnished, contractor installed. See Spec section 27 41 16 for BOLDED model number.

Item #3:

Pre-Bid RFI 10:

- Question
274116 - 1.1E1a - Project summary notes that each classroom is to have both a wall mounted flat panel and projector. Please confirm Wall mounted flat panel model, provide mount and mounting detail, and flat panel locations.
- Answer
Please reference Addendum 05 revised specification section 27 41 16 - 11, 2.3, C5e for updated interactive projection whiteboard "Da-Lite IDEA Screen" that is contractor furnished and installed. Da-Lite IDEA Screen to be 16:9 HDTV Format w/Viewing Area of

46" H x 81 3/4" W. Former projection whiteboard make/model has been struck-through and new make/model **BOLDED**. refer also to AV drawings T1.111 for interactive projection whiteboard locations. There are no flat panel displays to be provided for this building. Tim Hall/Gensler 2/28/2024

Item #4:

Pre-Bid RFI 11:

- Question
274116 - T5.02 - Please confirm locations for Extron Cable Cubby and Extron Touch panel for each classroom.
- Answer
The referenced devices are to be located on each of the instruction workstations which is the same workstation that the AV equipment will be in.

Item #5:

Pre-Bid RFI 12:

- Question
274116 - 2.3C5e - Mooreco whiteboard listed in 274116 spec, but model and dimensions not specified. Please confirm model if whiteboards to be 274116 contractor furnished.
- Answer
Please reference Addendum 05 revised specification section 27 41 16 - 11, 2.3, C5e for updated interactive projection whiteboard "Da-Lite IDEA Screen" that is contractor furnished and installed. Da-Lite IDEA Screen to be 16:9 HDTV Format w/Viewing Area of 46" H x 81 3/4" W. Former projection whiteboard make/model has been struck-through and new make/model **BOLDED**. refer also to AV drawings T1.111 for interactive projection whiteboard locations. There are no flat panel displays to be provided for this building. Tim Hall/Gensler 2/28/2024

Item #6:

Pre-Bid RFI 13:

- Question
275126 - 2.2 B. Portable Assistive Listening system - T5.02 and T3.xx drawings show wall mounted stationary Assistive Listening transmitters. 275126 2.2B calls out a portable transmitter on a cart. Please confirm if ALS transmitter is to be 1 installed per room, or 1 portable transmitter shared between all rooms.
- Answer
There is to be (1) fixed wall mounted ALS transmitter per room. The portable system kit shall be utilized for the ALS receivers as needed.

Item #7:

Pre-Bid RFI 15:

- Question
Project summary notes on sheet E1.1a show that each classroom is to have both a wall mounted flat panel and projector. Please confirm wall mounted flat panel model, provide mount and mounting detail, and flat panel locations.
- Answer
Please reference Addendum 05 revised specification section 27 41 16 - 11, 2.3, C5e for updated interactive projection whiteboard "Da-Lite IDEA Screen" that is contractor

furnished and installed. Da-Lite IDEA Screen to be 16:9 HDTV Format w/Viewing Area of 46" H x 81 3/4" W. Former projection whiteboard make/model has been struck-through and new make/model BOLDED. refer also to AV drawings T1.111 for interactive projection whiteboard locations. There are no flat panel displays to be provided for this building. Tim Hall/Gensler 2/28/2024

Item #8:

Pre-Bid RFI 16:

- Question
A document camera is shown on T5.02. Please confirm model number if document camera is contractor furnished.
- Answer
Please include the Aver F50+ Document Camera which will be contractor furnished, contractor installed. See Spec section 27 41 16 for BOLDED model number.

Item #9:

Pre-Bid RFI 17:

- Question
Please confirm locations for Extron Cable Cubby and Extron Touch Panel for each classroom per sheet T5.02.
- Answer
The referenced devices are to be located on each of the instruction workstations which is the same workstation that the AV equipment will be in.

Item #10:

Pre-Bid RFI 18:

- Question
Mooreco whiteboard listed in spec 27 41 16 but model and dimensions not specified. Please confirm model if whiteboards to be 27 41 16 contractor furnished.
- Answer
Please reference Addendum 05 revised specification section 27 41 16 - 11, 2.3, C5e for updated interactive projection whiteboard "Da-Lite IDEA Screen" that is contractor furnished and installed. Da-Lite IDEA Screen to be 16:9 HDTV Format w/Viewing Area of 46" H x 81 3/4" W. Former projection whiteboard make/model has been struck-through and new make/model BOLDED. refer also to AV drawings T1.111 for interactive projection whiteboard locations. There are no flat panel displays to be provided for this building. Tim Hall/Gensler 2/28/2024

Item #11:

Pre-Bid RFI 19:

- Question
T5.02 and T3.xx drawings show wall mounted stationary Assistive Listening transmitters. 27 51 26 2.2B calls out a portable transmitter on a cart. Please confirm if ALS transmitter to be 1 installed per room or 1 portable transmitter shared between all rooms.
- Answer
There is to be (1) fixed wall mounted ALS transmitter per room. The portable system kit shall be utilized for the ALS receivers as needed.



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Item #12:

Pre-Bid RFI 20:

- Question
Please confirm the required certification for the remediation company's workers on site that are abating the PCB caulking.
- Answer
The most important worker and supervisor certification will be the HAZWOPER certification required by 8 CCR 5192 and 29 CFR 1910.120. In addition, it would be beneficial, but is not required, if workers have asbestos and/or lead-based paint certificates, since they will provide knowledge of several of the processes involve, such as enclosure construction. One of the requirements of the HAZWOPER standard is an otherwise non-descript day of on-site training. Vista will provide this the first day the remediation contractor is on site, which will be PCB-specific. 02.26.2024 Vista Environmental.

Item #13:

Pre-Bid RFI 21:

- Question
Please confirm the liquidated damages dollar amount per day.
- Answer
See Special Conditions Section 00 73 00 6. Liquidated Damages for amount per diem of substantial completion, delayed submission of submittals an delayed punch list for exact amounts indicated. J. Dawson-Garcia PM 02.26.202

Item #14:

Specification Section 00 72 00:

- Revised Specification Section 00 72 00 General Conditions

Item #15:

Specification Section 10 14 16:

- Revised Specification Section 10 14 16 Plaques

Item #16:

Specification Section 27 41 16:

- Revised Specification Section 27 41 16 Integrated Av Systems and Equipment



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Attachments:

20. Pre-Bid RFI 07
21. Pre-Bid RFI 09
22. Pre-Bid RFI 10
23. Pre-Bid RFI 11
24. Pre-Bid RFI 12
25. Pre-Bid RFI 13
26. Pre-Bid RFI 15
27. Pre-Bid RFI 16
28. Pre-Bid RFI 17
29. Pre-Bid RFI 18
30. Pre-Bid RFI 19
31. Pre-Bid RFI 20
32. Pre-Bid RFI 21
33. Revised Specification Section 00 72 00 General Conditions
34. Revised Specification Section 10 14 16 Plaques
35. Section 27 41 16 Integrated Av Systems and Equipment

Total Page Count: 144 pages

END OF ADDENDUM NO. 01R-05



BOND MANAGEMENT OFFICE
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ADDENDUM NO. 01R-06

Date: March 7, 2024
Project Name: Desert Community College District
SCIENCE BUILDING RENOVATION
Bid #43-98P-0500-SBR

To all Contractors submitting a bid for the above captioned project, this addendum is hereby included in the contract documents to the same extent as though it were originally included therein. The following items modify, add to, delete from, or explain the drawings, specifications and/or contract documents.

The Bid Due date remains unchanged and is Tuesday, March 19, 2024 @ 2:00pm.

General:

Revisions to the drawing sheets are clouded with delta #6.

All new or revised information in specifications are shown in bold font and deleted items are shown in red and crossed out.

RFI(s) response(s) on RFI document.

Item #1:

Pre-Bid RFI #22: Substitution Request

- **Question**

Please review the attached request and confirm it is acceptable. The proposed substitution will have no effect on the Contract sum, Contract schedule or Contract details.

- **Answer**

Proposed 4'H x 8'W markerboard Nelson Adams NACO Series 1000 BLT with porcelain enamel is acceptable for use in Lab Services 107 per interior elevation 04/A3.701 sheet note 20.

Proposed 4'H x 8'W tackboard Nelson Adams NACO Series 1000 with standard vinyl on 1/2" fiberboard is acceptable for use in Lab Services 107 per interior elevation 04/A3.701 sheet note 21.

Proposed Nelson Adams NACO Series Teaching Wall (TW) is not acceptable as a substitution since it does not meet design intent per detail 03/A8.804 and use for interactive projection whiteboard at teaching wall in classrooms.

Item #2:

Mechanical Drawings:

- Sheet M0.01: Revised Sheet index to include new sheet M5.03.



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- Sheet M0.02: Revised Control Valves Schedule to clarify Mechanical Room 111 Ahu Control valves. Note the control valves are already indicated in Detail 4/M6.02 and have been added to the schedule for additional information.

Item #3:

New Specification Section

- Section 23 09 00 – Instrumentation and Controls for HVAC
 - Clarification of controls in specification to align with drawings, campus controls standard Distech, and specify “Or Equal”.
 - Clarifies submittal requirements.
 - There is no new scope or added cost involved with this new spec section.

Total Sheets 52 Pages

Attachments:

36. Pre-Bid RFI #22 Markerboard and Tackboard Substitution
37. Mechanical Drawings Sheets – M0.01, M0.02, M5.03
38. Specification section 23 09 00

END OF ADDENDUM 01R-06



BOND MANAGEMENT OFFICE
COLLEGE OF THE DESERT

ADDENDUM NO. 01R-07

Date: March 13, 2024
Project Name: Desert Community College District
SCIENCE BUILDING RENOVATION
Bid #43-98P-0500-SBR

To all Contractors submitting a bid for the above captioned project, this addendum is hereby included in the contract documents to the same extent as though it were originally included therein. The following items modify, add to, delete from, or explain the drawings, specifications and/or contract documents.

The Bid Due date remains unchanged and is Tuesday, March 19, 2024 @ 2:00pm.

General:

Below are the Final Pre-Bid RFI responses for your review and use.

Please note: The Bid Due date remains unchanged and all **Bids are due** in to the Bond Office drop box or electronically through IB Reprographics **by 2:00pm on Tuesday, March 19, 2024.**

Item #1:

Pre-Bid RFI # 23:

- **Question**
Provide attachment detail for notched track backing at 1-5/8" studs at perimeter walls per S0.041.
- **Answer**
Trim the backing flange of unpunched track 600T200-54 to accommodate 1 5/8" stud as required; refer to backing detail 1G/S0.041. Tim Hall/ Gensler 3/12/2024

Item #2:

Pre-Bid RFI # 24:

- **Question**
What is the extent of the exterior plaster skim coating per A4.000 and 9/A8.000? The elevation appears to show infills only but also notes typical. The 9/A8.000 detail appears to show skim coating beyond the infills on existing walls.
- **Answer**
All existing building perimeter exterior walls (below precast concrete arched beams) are to receive 1/4" thick cement plaster skim coat, except exterior wall infill locations that will receive fill 7/8" thick exterior cement plaster. Repair all building perimeter exterior walls, and precast concrete columns and arched beams per S0.045. After repair of precast concrete columns and arched beams, finish surface of joints or cracks per note 11 on detail 2/S0.045. Tim Hall/ Gensler 3/12/2024



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Item #3:

Pre-Bid RFI # 25:

- **Question**
If the entire building is being re-skimmed per 9/A8.000. Please confirm perimeter columns are to remain as is. Also please confirm the height of this re-skimming. Confirm the re-skimming is up to the arch.
- **Answer**
All existing building perimeter exterior walls (below precast concrete arched beams) are to receive 1/4" thick cement plaster skim coat, except exterior wall infill locations that will receive fill 7/8" thick exterior cement plaster. Repair all building perimeter exterior walls, and precast concrete columns and arched beams per S0.045. After repair of precast concrete columns and arched beams, finish surface of joints or cracks per note 11 on detail 2/S0.045.
Tim Hall/ Gensler 3/12/2024

Item #4:

Pre-Bid RFI # 26:

- **Question**
9/A8.401 Please confirm we are only required to frame a roller shade soffit at perimeter drywall and not at all exterior doors with ACT.
- **Answer**
For roller shade locations, refer to sheet A1.501 Finish Plan General Note #6 and as indicated on plan that was issued as part of Addendum dated 2/5/2024. Tim Hall/
Gensler 3/12/2024

Item #5:

Pre-Bid RFI # 27:

- **Question**
Please provide specifications for Lab Controls or will Bacnet Lab Controllers that have the ability to be integrated be acceptable?
- **Answer**
Per Spec Section 23 09 00 Instrumentation and Control for HVAC, which was issued in Addendum #6 on 3/05/24, lab controllers shall be BACnet. Joy Ernacio, P2S Inc., 3/11/24

Item #6:

Pre-Bid RFI # 28:

- **Question**
Is it acceptable to use native soils for backfill materials at underground piping?
- **Answer**
Refer to Utility Trenches on page 18 of geotechnical report dated 2/14/2022 issued as part of Addendum 2 dated 2/6/2024.
Tim Hall/ Gensler 3/12/2024

Item #7:

Pre-Bid RFI # 29:

- **Question**
Please confirm that Distech Control is the only type of DDC Controls approved by the College. Also please provide a DDC Controls Spec.
- **Answer**
Per Spec Section 23 09 00 Instrumentation and Control for HVAC, which was issued in Addendum #6 on 3/05/24, the control system shall be Distech or other manufacturers listed in Paragraph 2.1 A may be provided with equal or better performance.
Joy Ernacio, P2S Inc., 3/11/24

Item #8:

Pre-Bid RFI # 30:

- **Question**
Please confirm if shoring will be required when undermining footings per the excerpt from the soils report and also confirm slurry can be used to backfill around the footings rather than engineered fill.
- **Answer**
(1) Based on section detail S3.002, the undermined footings will generate load surcharges within the excavation sidewalls. Such conditions require shoring. The type/selection of shoring is the responsibility of the contractor's competent person. (2) Geocon takes no exception to the use of slurry as a replacement for the engineered fill. A minimum 2-sack slurry should be used, but should be confirmed as acceptable by the governing jurisdiction in case 3-sack is required. Geocon, Inc. 03.12.2024

Item #9:

Pre-Bid RFI # 31:

- **Question**
Please review the attached proposed Substitution. This will have no effect on the Contract sum, Contract schedule or Contract Details.
- **Answer**
Proposed Nelson Adams NACO Series Horizontal Sliding (HS) whiteboard is acceptable as a substitution to Claridge HS per detail 03/A8.804. The interactive projection whiteboard is to be located at back panel of NACO HS at teaching wall in classrooms. Refer to bid RFI 10 for additional information regarding interactive projection whiteboard issued as part of Addendum 5 dated 2/28/2024.
Refer to page 10 of this PDF for NACO Series HS cut sheet.
Tim Hall/ Gensler 3/12/2024

Item #10:

Pre-Bid RFI # 32:

- **Question**
Is it possible to setup a voluntary site visit/job walk for subcontractors?
- **Answer**
It is not possible to schedule a voluntary site visit/job walk for subcontractors. It is the General Contractor's responsibility to disseminate the information to their subcontractors.
J. Dawson-Garcia 03.08.2024

Item #11:

Pre-Bid RFI # 33:

- **Question**
Sections 013100 and 013300 refer to Building Information model. Will there be a Model for this project? If so, who is responsible for establishing, maintaining and updating the model?
- **Answer**
Refer to spec sections 01 31 00 - 1, Part 1.2A, 01 31 00 - 3, Part 1.5, and 01 33 00 - 7, Part 2.1 D4. This is the contractor's responsibility.
Tim Hall/ Gensler 3/12/2024

Item #12:

Pre-Bid RFI # 34:

- **Question**
Section 075419.2.6 calls out for a 1-1/2" Roof Insulation Base Layer. However, the insulation noted on the plans achieves R-30. Is the base layer still required?
- **Answer**
Install roof insulation per spec section 07 54 19 - 10, Part 3.5C to achieve R-30 per sheet note 01 on sheet A1.202 Roof Plan.
Tim Hall/ Gensler 3/12/2024

Item #13:

Pre-Bid RFI # 35:

- **Question**
Section 23 31 13 calls for out to clean all new duct systems. This adds unnecessary cost and leakage points for the added access doors required to perform the duct cleaning. The ductwork will be protected during transportation and installation as identified in SMACNA's Duct Cleanliness Standards.
- **Answer**
No exceptions taken - new duct systems are not required to be cleaned out if ductwork is protected during transportation and installation per SMACNA's Duct Cleanliness Standards. Joy Ernacio, P2S Inc., 3/11/24

Item #14:

Pre-Bid RFI # 36:

- **Question**
Is all exhaust ductwork to be stainless steel? Or only the lab exhaust ductwork per 23 31 13?
- **Answer**
Per duct schedule in Spec Section 233113 3.11 C 3, lab exhaust ductwork shall be Type 316L, stainless steel. Refer to duct schedule for other duct systems.
Joy Ernacio, P2S Inc., 3/11/24



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Attachments:

39. Pre-Bid RFI #23 Clarify backing Track
40. Pre-Bid RFI #24 Clarify extent of cement plaster skim coat
41. Pre-Bid RFI #25 Clarify extent of cement plaster skim coat
42. Pre-Bid RFI #26 Clarify roller shade locations
43. Pre-Bid RFI #27 Clarify controls for HVAC
44. Pre-Bid RFI #28 Refer to utility trench backfill requirements per geotechnical report
45. Pre-Bid RFI #29 Clarify controls for HVAC
46. Pre-Bid RFI #30 Clarify shoring requirements
47. Pre-Bid RFI #31 Horizontal sliding whiteboard substitution request accepted
48. Pre-Bid RFI #32 Site visit not allowed
49. Pre-Bid RFI #33 BIM Model contractor responsibilities clarified
50. Pre-Bid RFI #34 Roof insulation clarified
51. Pre-Bid RFI #35 Duct cleaning clarified
52. Pre-Bid RFI #36 Ductwork clarified

Total Pages Count:
31 Pages

END OF ADDENDUM 01R-07

Addendum Number 1

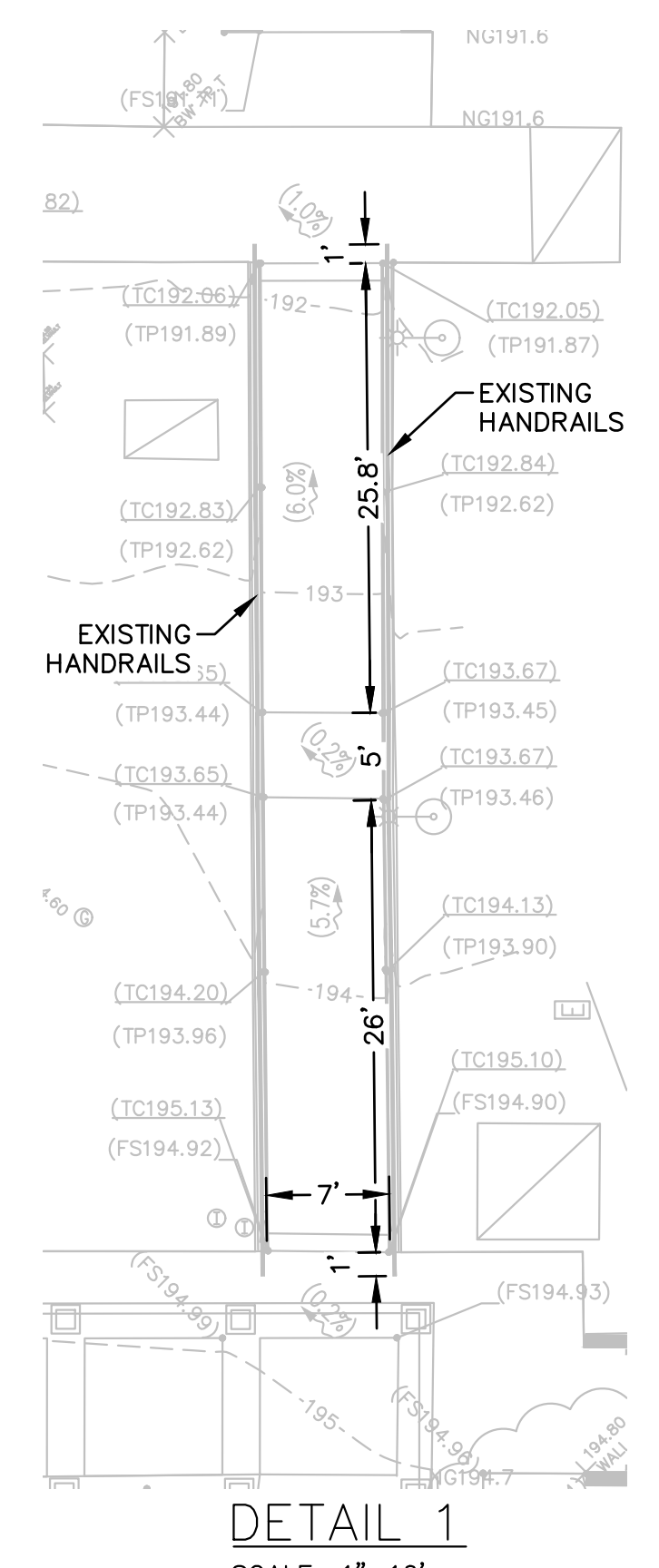
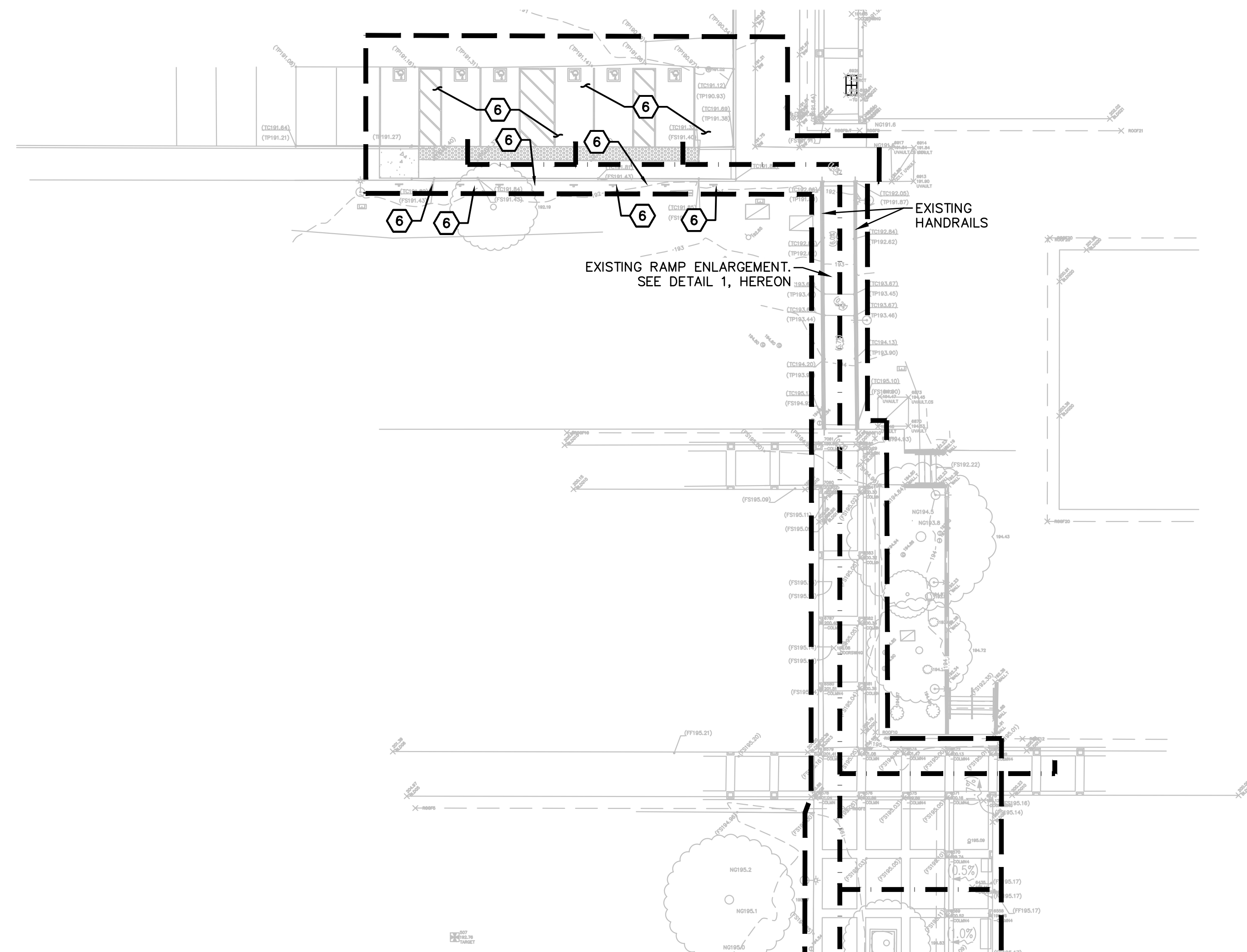
Gensler

Project	College of the Desert – Palm Desert Campus – Science Building Renovation	Date	2/5/2024
Project Location	43-500 Monterey Avenue Palm Desert, CA	Architect's Project Number	007.3766.00
Owner / Client	College of the Desert	File	6A This is page 1 of 1
To	California Community Chancellor's Office	Attention	Chay Yang
Address	1102 Q. Street		
City	Sacramento	State	CA Zip Code 95811
Delivered via:	<input type="checkbox"/> Messenger <input type="checkbox"/> Hand carried <input type="checkbox"/> Facsimile <input type="checkbox"/> Express <input type="checkbox"/> Pick-up <input checked="" type="checkbox"/> E-mail Address cyang@cccco.edu <input type="checkbox"/> Mail <input type="checkbox"/> UPS <input type="checkbox"/> Website Address		
<p>This Addendum will become part of the Contract Documents. The Contractor shall promptly inform subcontractors and all others performing or supplying any of the Work of all relevant contents of this Addendum. In case of conflicting provisions with previous addenda or communications, provisions in this Addendum supersede only those conflicting issues. It is the responsibility of the Contractor to notify all subcontractors from whom it accepts bids of all changes in the drawings and specifications covering this project. Receipt shall be acknowledged by inserting the addendum number and its date in the bid form.</p>			
Distribution	jdawson@bond.collegeofthedesert.edu		
Prepared by Gensler by	Nick Acevedo	Date Signed	1/25/2024
Instructions / Description / References / Dates			

Addendum number of attachments:
 12 Pages
 1 Attachments

Addendum Item	Reference Item	Description
A-01	Sheet C2.0	Hatch representing landscape scope of work clarified as no landscape modifications. Connection to existing water line clarified.
A-02	Sheet C4.0	Detail modified / removed for no landscape scope of work occurring.
A-03	Sheet A0.201	Note 7 switched to Note 8 between gridline C/D along gridline 2 to match graphic representation in elevation.
A-04	Sheet A1.202	Note 5 clarified for roof condition shown in detail.
A-05	Sheet A1.401	Ceiling type for Room 101 clarified to match graphical representation.
A-06	Sheet A1.501	Note 6 clarified to detail reference for roller shades
A-07	Sheet A3.700	Ceiling height clarified to match section detail.
A-08	Sheet A8.401	Roller shade detail clarified.
A-09	Sheet FA0.01	Incorrect note for scope of work was deleted. Correct note for scope of work provided.
A-10	Sheet FP1.01	Incorrect note for scope of work was deleted. Correct note for scope of work provided.
A-11	Sheet FP1.101	Hatch representation clarified.
A-12	Sheet T0.01	Incorrect note for scope of work was deleted. Correct note for scope of work provided.

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GRADING GENERAL NOTES:

1. TC ELEVATION SHOWN IS FOR 6" CURB HEIGHT UNLESS OTHERWISE NOTED ON PLAN.
2. ALL EXISTING UTILITY COVERS AND LIDS WITHIN LIMIT OF WORK ARE TO BE ADJUSTED TO GRADES SHOWN ON PLAN. FINISHED SURFACE AROUND EXISTING UTILITY COVERS AND LIDS SHALL BE FLUSH AT NEW PAVING.
3. REESTABLISH EXISTING LANDSCAPING FOR ALL GRADING IN LANDSCAPE AREAS.
4. FOR WALKS IN ACCESSIBLE AREAS CROSS SLOPES SHOULD NOT EXCEED 1.8% GRADE.
5. CONTRACTOR SHALL SAWCUT AND REMOVE PORTION OF EXISTING CONCRETE TO CREATE STRAIGHT AND SMOOTH EDGE WHERE NEW CONCRETE JOINS TO EXISTING.
6. CONTRACTOR TO MATCH EXISTING EXPANSION JOINTS LAYOUTS. NEW EXPANSION JOINT SEE DETAIL A, SHEET C2.0.

UTILITY GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY LOCATION OF DOMESTIC WATER SERVICE AND CONNECT UPSTREAM OF (E) BFP.
2. PROTECT IN PLACE ALL IRRIGATION LINES.
3. CONTRACTOR TO CONTACT THE COLLEGE AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION, UTILITY REMOVAL AND RELOCATION.
4. PROPOSED UTILITY LIES SHALL BE INSTALLED PER DETAIL.
5. INSTALL GRAVITY FLOW UTILITIES FROM DOWNSTREAM CONNECTION POINT TO UPSTREAM TERMINUS.
6. ADJUST EXISTING MANHOLE AND GRATE ELEVATIONS AS NOTES ON GRADING PLANS.
7. PROPOSED UTILITY POINT OF CONNECTION 5' OUTSIDE THE BUILDING. SEE MEP PLANS FOR CONTINUATION.

GRADING LEGEND:

-X%	PROPOSED FLOW DIRECTION
106	ELEVATION CONTOUR
---	LIMIT OF WORK
---	PATH OF TRAVEL
---	GRADE BREAK
(X)X	EXISTING FLOW DIRECTION
106	EXISTING CONTOUR
---	EXISTING PARKING SIGN
BOS	BOTTOM OF STAIR
BW	BOTTOM OF WALL
BOT	BOTTOM
CB	CATCH BASIN
CF	CURB FACE
EX	EXISTING
FF	FINISHED FLOOR
FG	FINISHED GRADE (EARTH)
FS	FINISHED SURFACE (AC OR PCC)
GB	GRADE BREAK
GR	GRATE
INV	INVERT
MA	MATCH
MAX	MAXIMUM
(N)	NEW
SD	STORM DRAIN
SDCO	STORM DRAIN CLEANOUT
SDDI	STORM DRAIN DROP INLET
SS	SANITARY SEWER
TC	TOP OF CURB
TF	TOP OF FOOTING
TG	TOP OF GRATE
TP	TOP OF PAVEMENT
TW	TOP OF WALL

UTILITY LEGEND:

---	LIMIT OF WORK
---	SAWCUT
SD	SDR 35 PVC STORM DRAIN PIPE (UNLESS OTHERWISE NOTED)
SS	PVC SANITARY SEWER
FW	C900 PVC FIRE WATER
FW	EXISTING FIRE WATER MAINLINE (SHOWN AS REFERENCE)
CO	SD/SS CLEANOUT
CO	ATRIUM AREA DRAIN
AD	AREA DRAIN W/ SQUARE GRATE
FDC	FIRE DEPARTMENT CONNECTION (FDC)
PIV	POST INDICATOR VALVE (PIV)
FH	FIRE HYDRANT
DDCV	DOUBLE DETECTOR CHECK VALVE (DDCV)
▲	CONCRETE THRUST BLOCK
AD	AREA DRAIN
ATD	ATRIUM AREA DRAIN
COMM	COMMUNICATION
EX	EXISTING
FH	FIRE HYDRANT
INV	INVERT
POC	POINT OF CONNECTION
S	SLOPE
SS	SANITARY SEWER
SD	STORM DRAIN
TG	TOP OF GRATE
WM	WATER METER
WV	WATER VALVE

HORIZONTAL CONTROL GENERAL NOTES:

1. CONTRACTOR SHALL LAYOUT THE CONTROL FOR THE SITE AS SPECIFIED ON THIS SHEET.
2. ALL DIMENSIONS ON THE PLANS ARE IN FEET OR DECIMALS THEREOF UNLESS SPECIFICALLY CALLED OUT AS FEET AND INCHES.
3. CONTRACTOR TO FIELD VERIFY EDGE OF PAVEMENT.
4. CONTRACTOR SHALL REMOVE EXISTING PAVING TO NEAREST EXPANSION JOINT FOR TRANSITION.

PAVEMENT LEGEND:

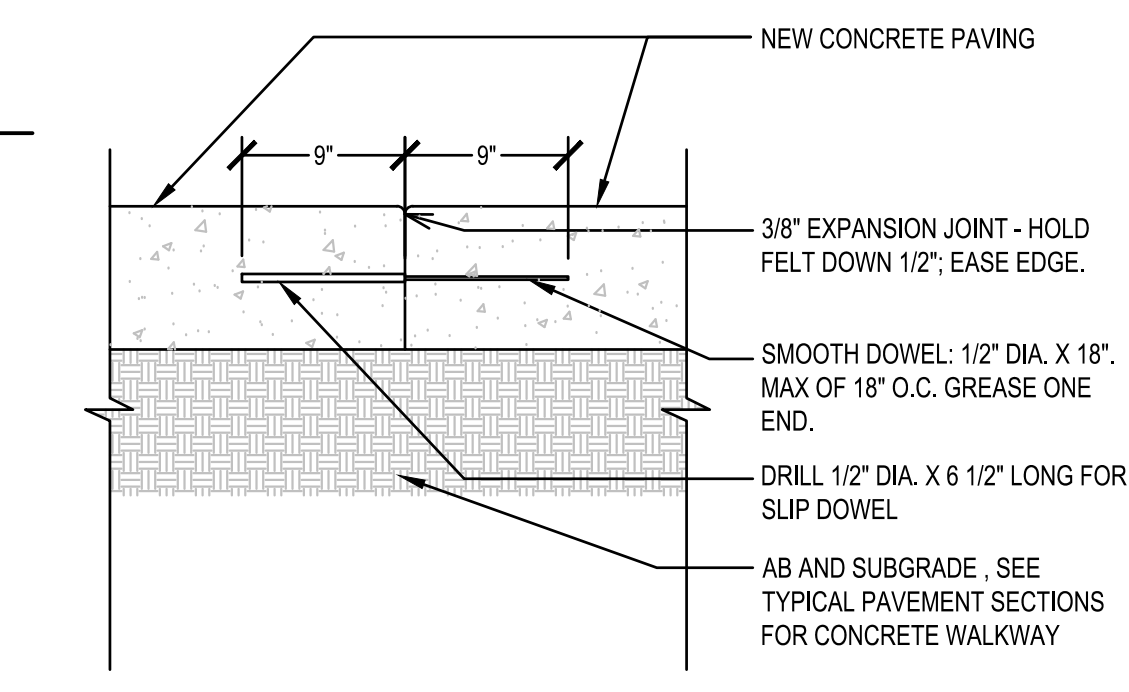
CONSTRUCT 4" CONCRETE OVER 4" AB. SEE PAVEMENT GENERAL NOTES

PAVEMENT GENERAL NOTES:

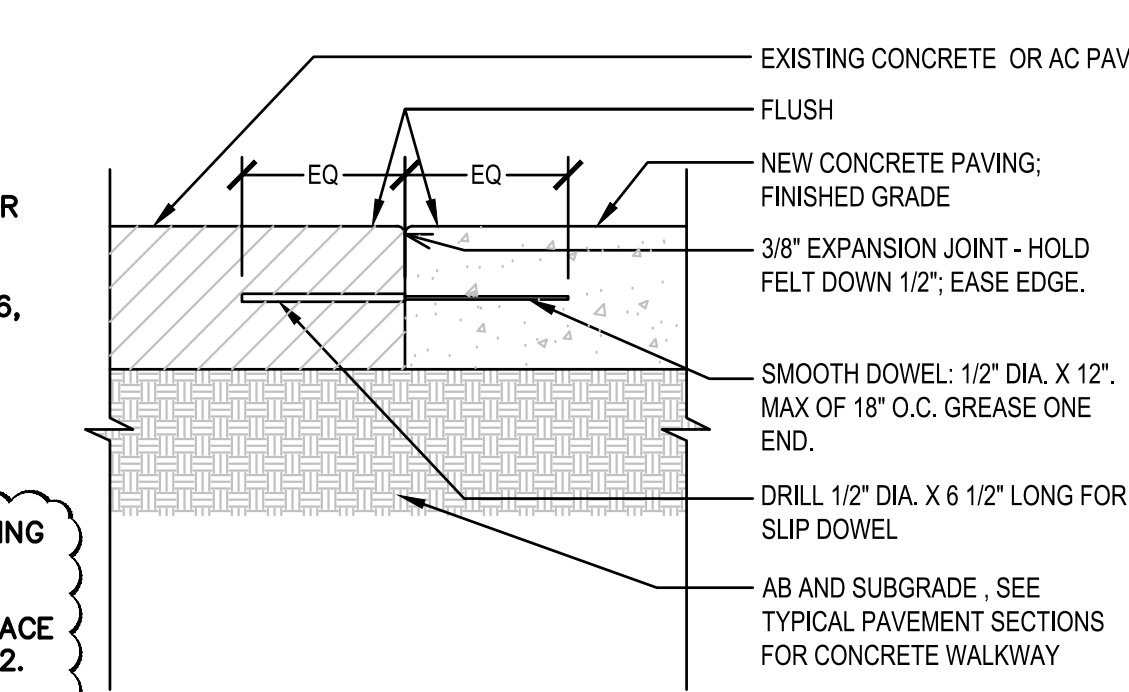
1. CONCRETE AND AC PAVEMENT SECTIONS TO BE APPROVED BY GEOTECHNICAL ENGINEER.
2. COLOR, PATTERN, AND FINISH OF CONCRETE TO MATCH EXISTING, UNLESS OTHERWISE SPECIFIED BY ARCHITECT. CONTRACTOR TO PREPARE AN IN PLACE MOCK UP FOR APPROVAL BY COLLEGE.
3. CONTRACTOR TO MATCH EXISTING JOINT LAYOUT, WHICH OCCURS AT EACH COLUMN.
4. PRIOR TO CONCRETE PAVEMENT PLACEMENT, A MINIMUM OF 12 INCHES OF SUBGRADE SOIL SHALL BE COMPACTED TO AT LEAST 95% RELATIVE COMPACTION. ALL SUBGRADE SHALL BE PREPARED PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

CONSTRUCTION KEYNOTES:

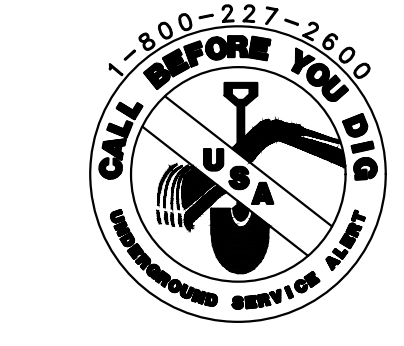
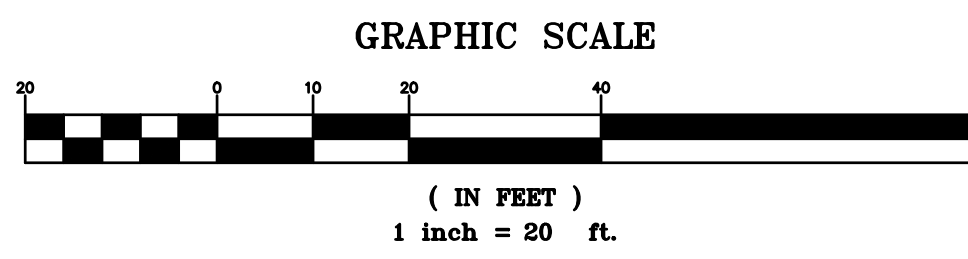
- 1 JOIN TO EX PAVEMENT PER DETAIL B, SHEET C2.0
- 2 INSTALL 6" DR14 C900 PVC PIPE AND FITTINGS. TRENCHING PER DETAIL 5, SHEET C4.0
- 3 INSTALL DOUBLE DETECTOR CHECK VALVE (DDCV) PER DETAIL 6, SHEET C4.0
- 4 INSTALL FDC PER DETAIL 7, SHEET C4.0
- 5 INSTALL CONCRETE THRUST BLOCK PER DETAIL 8, SHEET C4.0
- 6 EXISTING ACCESSIBLE PARKING SIGNAGE, MARKINGS, AND STRIPING PER A#04-121994, TO REMAIN
- 7 REMOVE EXISTING CONCRETE TOPPING IN UTILITY LID AND REPLACE WITH NEW CONCRETE TOPPING. SEE PAVEMENT GENERAL NOTE 2. ADJUST LID TO GRADE.



A CONCRETE PAVING EXPANSION JOINT SCALE: NO SCALE



B CONCRETE DOWEL BETWEEN EXISTING AND NEW PAVING SCALE: NO SCALE



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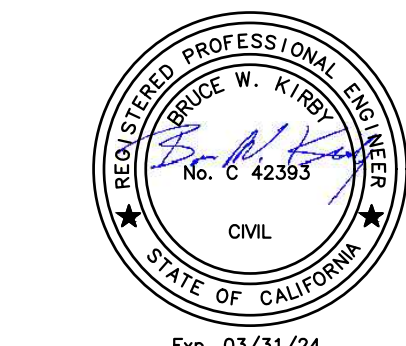
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10/02/2023	DSA BACK CHECK 02
1 2/5/2024	ADDENDUM 1

Seal / Signature



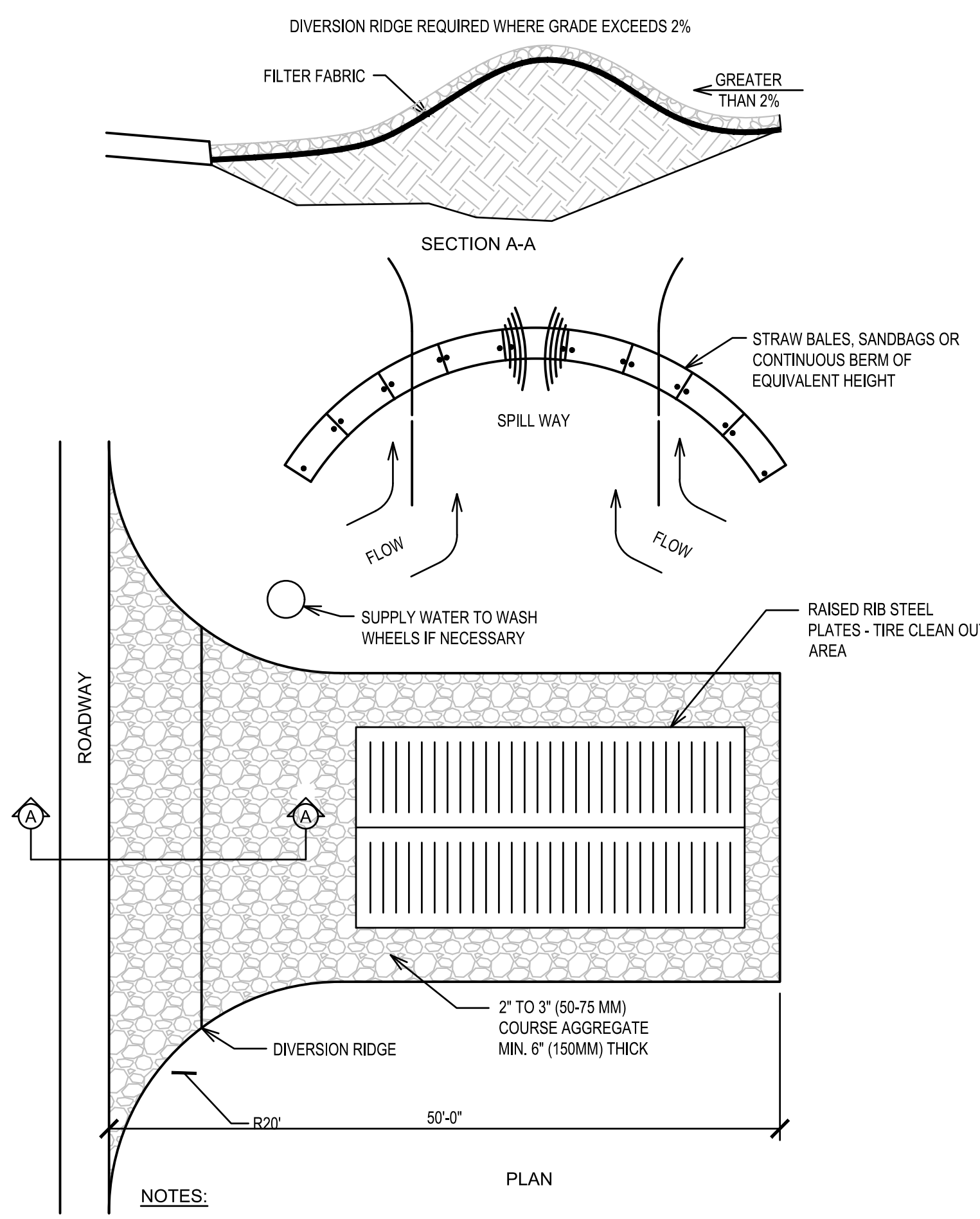
Project Name
Science Building Renovation
DSA# 04-121828

Project Number
007.3766.000

Description
HORIZONTAL CONTROL, GRADING,
DRAINAGE, PAVING, AND UTILITY
PLAN

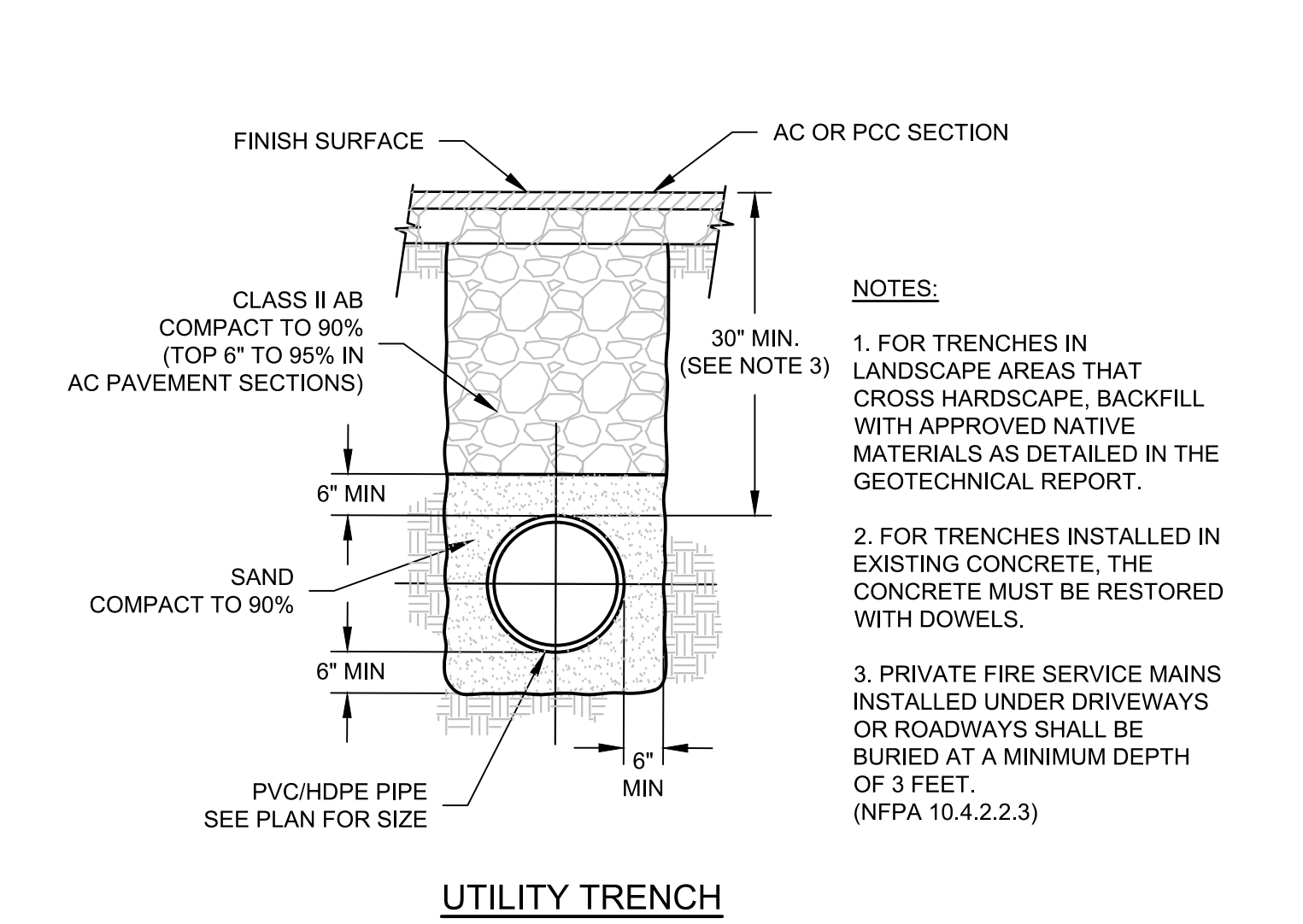
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C2.0

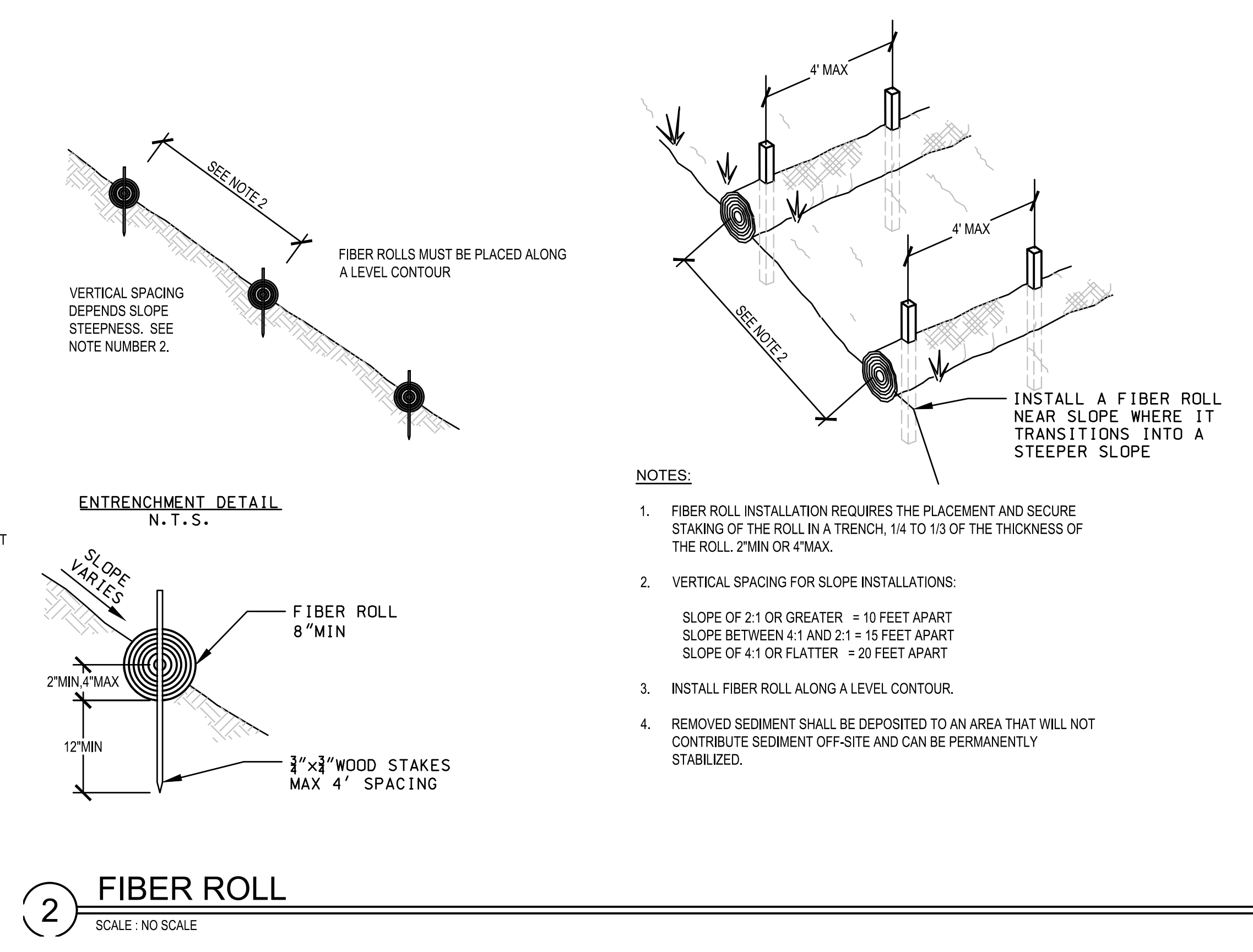


- NOTES:**
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT OF WAYS. THIS MAY REQUIRED TOP DRESSING, REPAIR AND/ OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
 2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY.
 3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ONTO AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

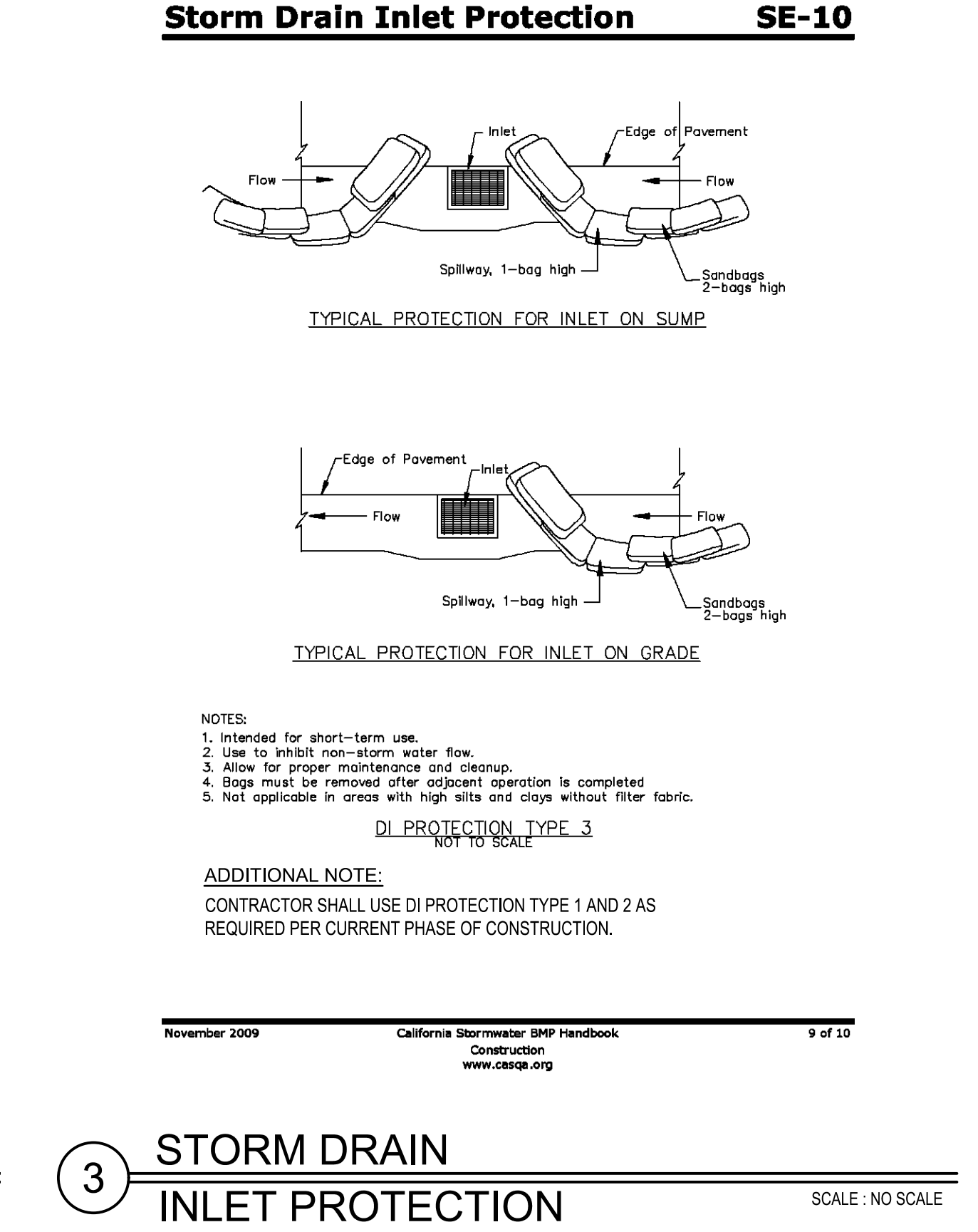
1 STABILIZED CONSTRUCTION ENTRANCE
SCALE: NO SCALE



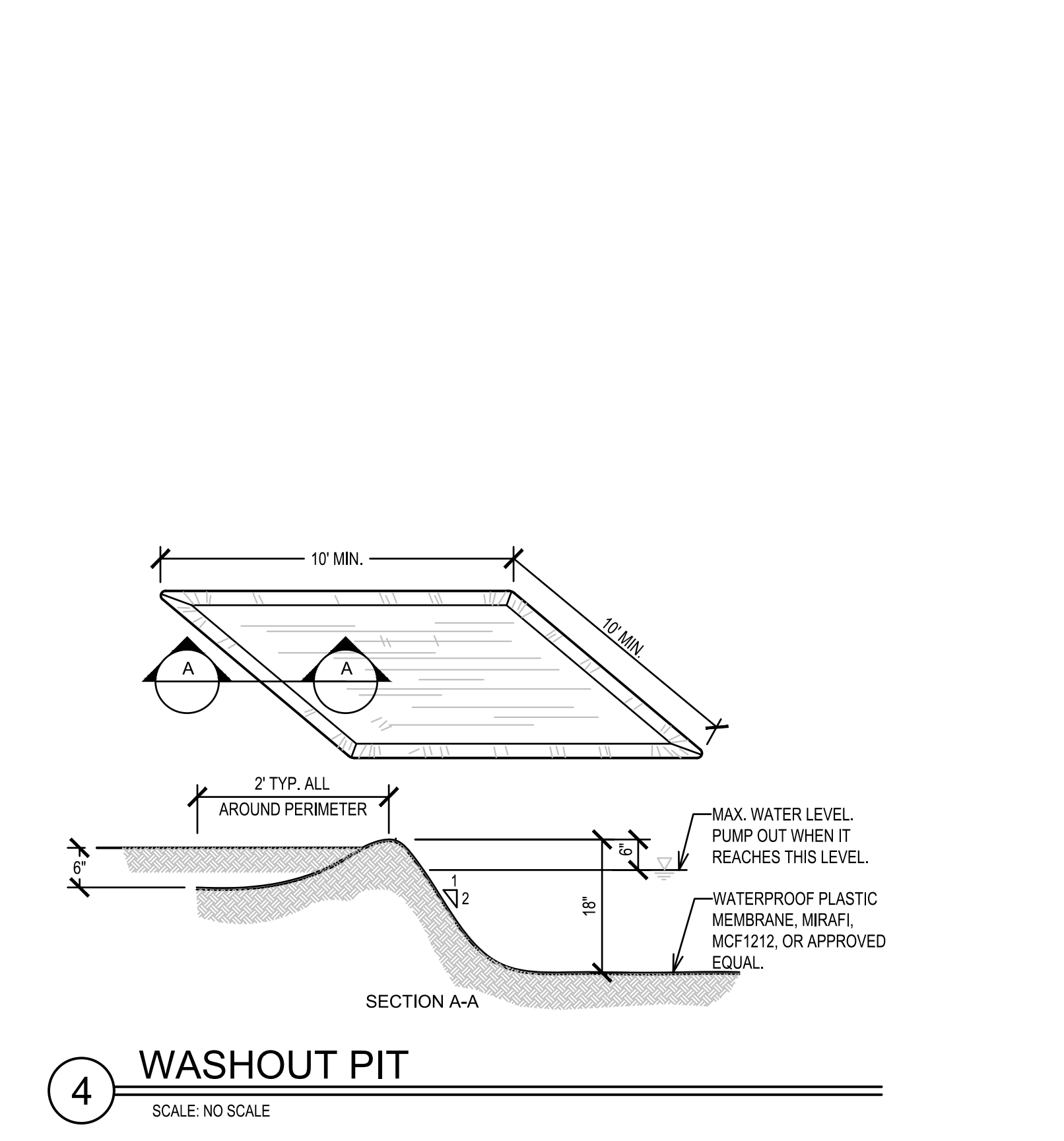
5 TYPICAL UTILITY TRENCH
SCALE: NO SCALE



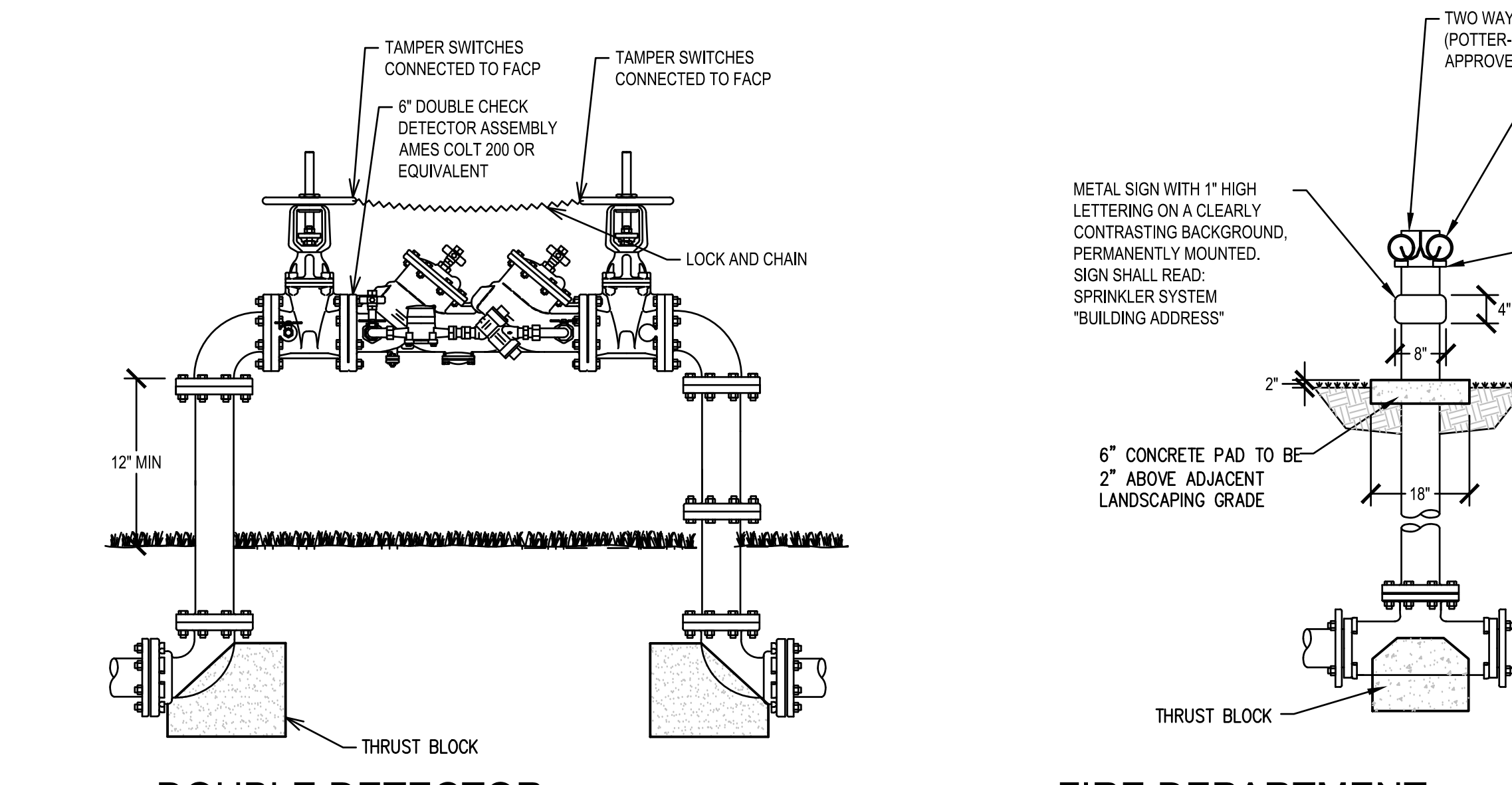
2 FIBER ROLL
SCALE: NO SCALE



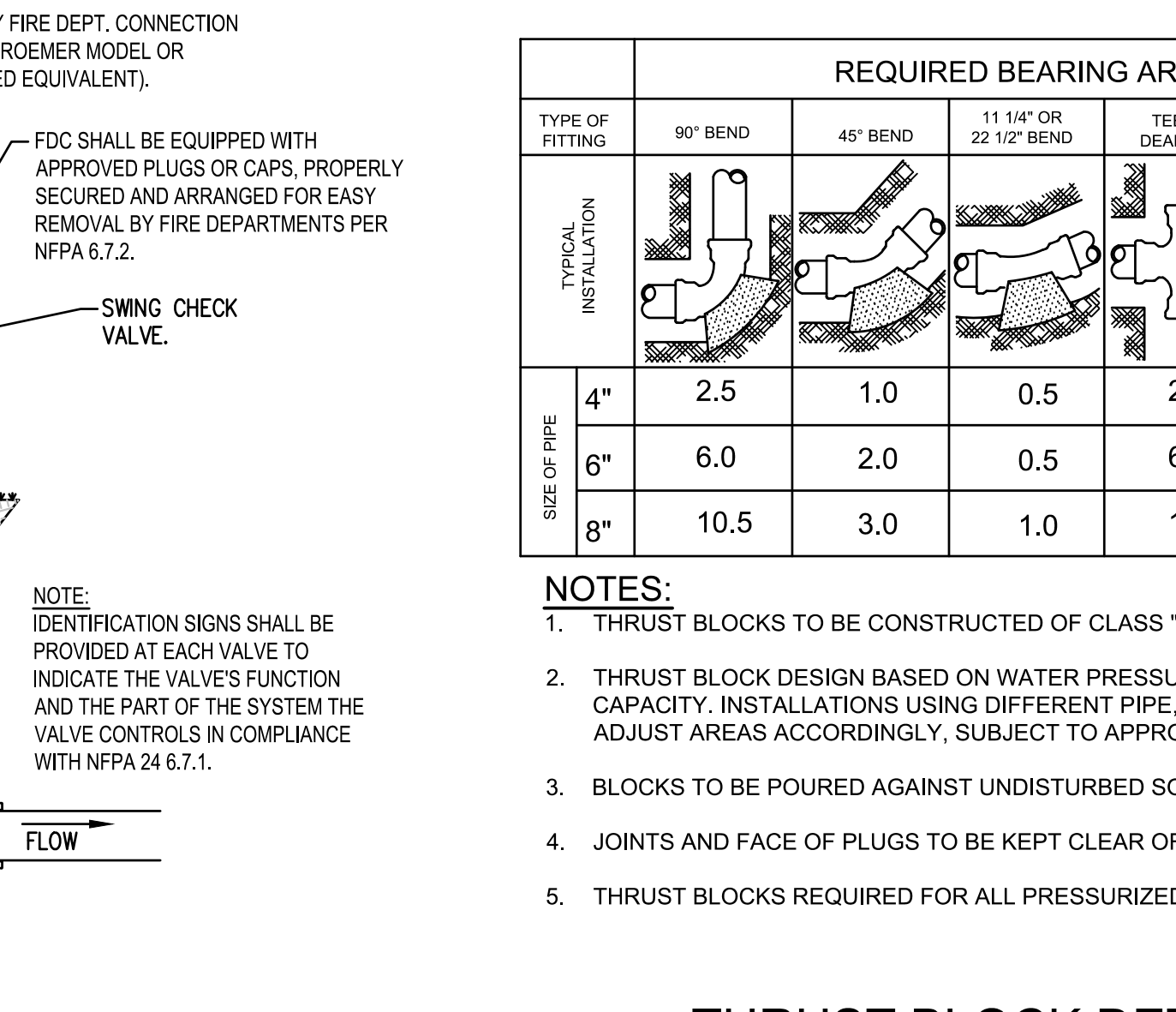
3 STORM DRAIN INLET PROTECTION
SCALE: NO SCALE



4 WASHOUT PIT
SCALE: NO SCALE



6 DOUBLE DETECTOR CHECK VALVE
SCALE: NO SCALE



7 FIRE DEPARTMENT CONNECTION
SCALE: NO SCALE

REQUIRED BEARING AREA - TOTAL SQUARE FEET							
TYPE OF FITTING	90° BEND	45° BEND	11 1/4" OR 22 1/2" BEND	TEE OR DEAD END	TEE W/PLUG	CROSS W/PLUG	CROSS W/PLUGS
4"	2.5	1.0	0.5	2.5	2.5	2.5	2.5
6"	6.0	2.0	0.5	6.0	6.0	6.0	6.0
8"	10.5	3.0	1.0	10.5	10.5	10.5	10.5

NOTES:

1. THRUST BLOCKS TO BE CONSTRUCTED OF CLASS "B" CONCRETE
2. THRUST BLOCK DESIGN BASED ON WATER PRESSURE OF 200 P.S.I. IN SOIL WITH 1,500 P.S.F. BEARING CAPACITY. INSTALLATIONS USING DIFFERENT PIPE, TEST PRESSURES, AND/OR SOIL TYPES SHOULD ADJUST AREAS ACCORDINGLY. SUBJECT TO APPROVAL OF ENGINEER.
3. BLOCKS TO BE POURED AGAINST UNDISTURBED SOIL.
4. JOINTS AND FACE OF PLUGS TO BE KEPT CLEAR OF CONCRETE.
5. THRUST BLOCKS REQUIRED FOR ALL PRESSURIZED PIPES AT ALL BEND LOCATIONS

8 THRUST BLOCK DETAILS
SCALE: NO SCALE

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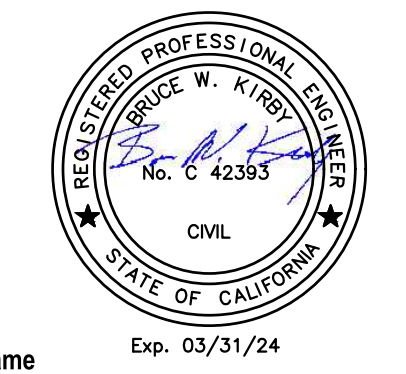
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Date	Description
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8/3/2023	DSA BACK CHECK 01
10/02/2023	DSA BACK CHECK 02
1 2/5/2024	ADDENDUM 1

Seal / Signature

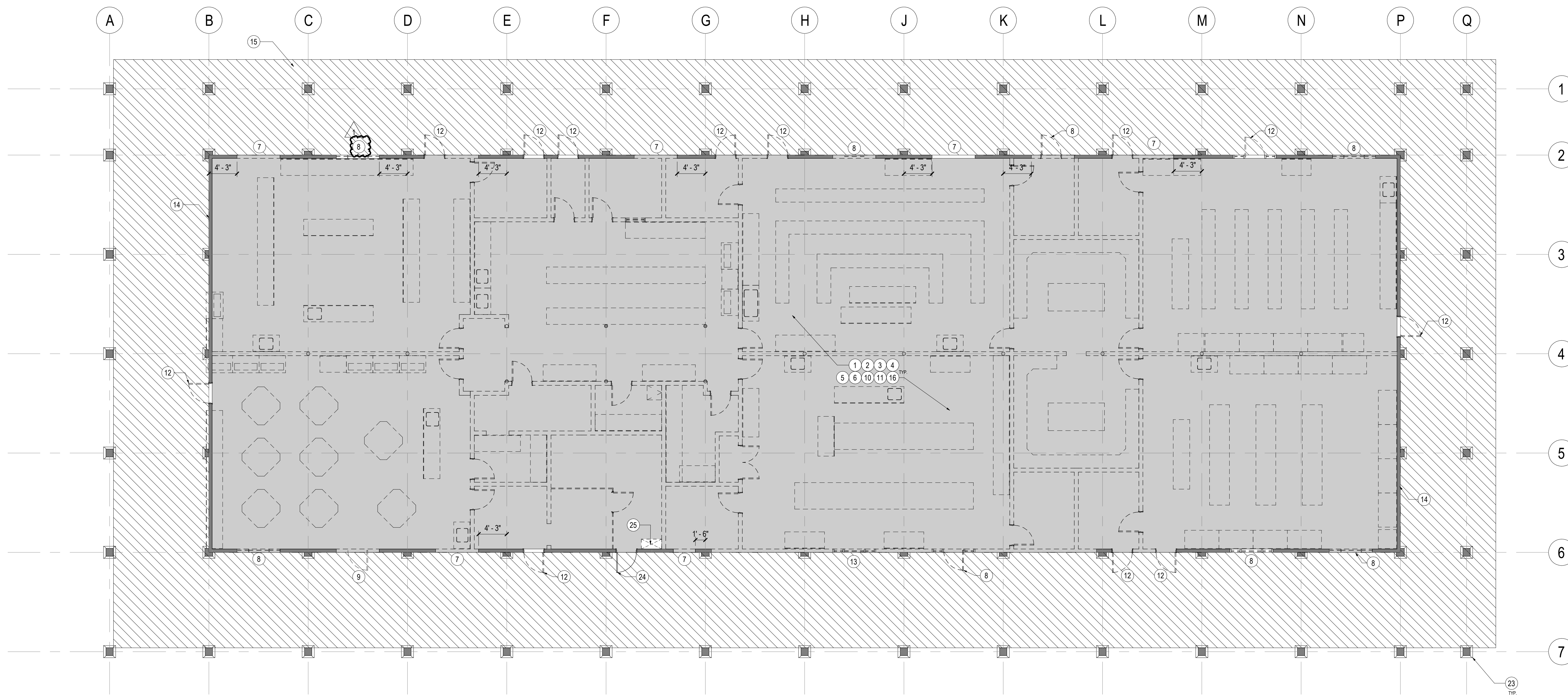


Project Name
Science Building Renovation
DSA# 04-121828
Project Number
007.3766.000
Description
CONSTRUCTION DETAILS

Scale

C4.0

12/14/2024 4:23:50 PM BIM 360://007.3766.000 - College of the Desert Science Building/007.3766.002 - COO - Science Building_121.rvt



1 DEMOLITION FLOOR PLAN

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

SHEET NOTES

- 1 REMOVE EXISTING INTERIOR WALLS/PARTITIONS, WALL BASE, SIGNAGE, AND INSULATION IN ITS ENTIRETY.
- 2 REMOVE EXISTING INTERIOR DOORS, HARDWARE, THRESHOLDS, AND FRAMES.
- 3 REMOVE EXISTING LIGHT FIXTURES AND ACOUSTICAL CEILING TILE IN ITS ENTIRETY.
- 4 REMOVE EXISTING MILLWORK, ACCESSORIES, FIXTURES, AND EQUIPMENT, INCLUDING COUNTERTOPS, SHELVING, SOLID SURFACE, PLASTIC LAMINATE, PLEXIGLASS, TACKBOARDS, WHITEBOARDS, AND ASSOCIATED ACCESSORIES AND HARDWARE.
- 5 REMOVE EXISTING WINDOW SHADES.
- 6 REMOVE EXISTING FLOOR FINISHES IN ITS ENTIRETY.
- 7 REMOVE PORTION OF EXISTING 8" THICK CONCRETE WALL AS REQUIRED FOR NEW OPENING.
- 8 REMOVE EXISTING WINDOW AND PREPARE TO RECEIVE NEW STOREFRONT AND DOOR (WHERE OCCURS - SEE CONSTRUCTION FLOOR PLAN).
- 9 REMOVE EXISTING DOOR, TO BE REPLACED WITH WINDOW.
- 10 SEE CIVIL, MECHANICAL, ELECTRICAL, PLUMBING, FIRE ALARMS/FIRE PROTECTION, TECHNOLOGY, STRUCTURAL DRAWINGS FOR ADDITIONAL DEMOLITION.
- 11 COORDINATE WITH DISTRICT/ COLLEGE FOR ANY ITEMS TO BE SALVAGED PRIOR TO DEMOLITION. SALVAGE/ REMOVE AS REQUIRED PER COLLEGE/ DISTRICT.
- 12 REMOVE EXISTING EXTERIOR DOOR, HARDWARE, AND FRAME. PREPARE EXISTING OPENING FOR INFILL WALL TO MATCH EXISTING THICKNESS AND FINISH.
- 13 REMOVE EXISTING STOREFRONT SYSTEM. PREPARE EXISTING OPENING FOR INFILL WALL TO MATCH EXISTING THICKNESS AND FINISH.
- 14 SALVAGE AND REMOVE ALL EXISTING BUILDING SIGNAGE.
- 15 SALVAGE AND REMOVE ALL MISC EXTERIOR BENCHES, FURNITURE AND DONOR SIGNAGE.
- 16 PREPARE FOR NEW FOOTINGS PER STRUCTURAL DRAWINGS. REFER TO SHEET S2.001. CONTRACTOR TO COORDINATE EXTENT AND SLAB REMOVAL WORK PRIOR TO DEMOLITION PER STRUCTURAL REQUIREMENTS. REFER TO STRUCTURAL DRAWINGS. CONTRACTOR TO MAINTAIN ALL EXISTING STRUCTURE PER STRUCTURAL.
- 23 PREPARE (E) ARCADE PRE-CAST COLUMNS TO BE REPAIRED AROUND SCIENCE BUILDING. REFER TO STRUCTURAL.
- 24 EXISTING DOOR TO REMAIN. SALVAGE FOR RE-USE IN EXISTING OPENING.
- 25 PROTECT IN PLACE EXISTING SLAB OPENING TO BELOW GRADE EXISTING UTILITY TUNNEL TO REMAIN. REFER TO STRUCTURAL DETAIL 7/S3.001. EXISTING METAL GRATE TO BE SALVAGED FOR REUSE.

GENERAL NOTES

1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS. REFER TO STRUCTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION SCOPE.
2. FIRE PROTECTION DURING DEMOLITION AND CONSTRUCTION SHALL COMPLY WITH C.F.C. CHAPTER 33.
3. AT AREAS OF ALL CONCRETE SLAB DEMOLITION, ALL SAW CUTS SHALL BE PERPENDICULAR TO ADJACENT WALLS. REMOVE CONCRETE TO EXISTING JOINTS WHEN POSSIBLE. COORDINATE PER STRUCTURAL SLAB FOOTINGS/PRECAST CONCRETE DEMOLITION REQUIREMENTS. SEE STRUCTURAL DRAWINGS.
4. IF, DURING THE COURSE OF CONSTRUCTION FOR THIS PROJECT, MOLD OR INSECT INFESTATION IS DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND OWNER IMMEDIATELY.
5. CONTRACTOR TO COORDINATE WITH COLLEGE FOR REMOVAL OF ALL PCB CONTAMINANTS AT ALL EXTERIOR WINDOWS. THIS INCLUDES REMOVAL OF ALL CONTAMINATED SOURCES AND ENCAPSULATED SEALANT AT WINDOWS. CONTRACTOR TO COORDINATE ALL APPROVALS WITH EPA AND OTHER AUTHORITIES HAVING JURISDICTION REQUIREMENTS PRIOR TO REMOVAL OF ALL PCB SEALANT AT EXISTING EXTERIOR STOREFRONT.
6. TURNOVER (E) WIRELESS ACCESS POINTS (WAPS) TO DISTRICT.
7. PROTECT IN PLACE (E) BELOW GRADE CONCRETE UTILITY TUNNEL ALONG THE EXTERIOR SOUTH AND WEST SIDES OF THE SCIENCE BUILDING BELOW THE SIDEWALK. PROTECT EXISTING UTILITIES IN TUNNEL. REMOVE AND REPLACE EXISTING UTILITY TUNNEL ACCESS LIDS. REFER TO CIVIL C2.0 FOR LOCATIONS.

DEMOLITION LEGEND

- - - - - DEMOLISH EXISTING ELEMENT
- - - - - PROTECT IN PLACE EXISTING WALL AND COLUMNS
- - - - - REMOVE (E) DOOR AND FRAME IN ITS ENTIRETY
- - - - - REMOVE (E) WINDOW
- - - - - DEMOLISH (E) CONCRETE SLAB IN ITS ENTIRETY
- - - - - DEMOLISH (E) SIDEWALK. REFER TO CIVIL C1.0 & C2.0

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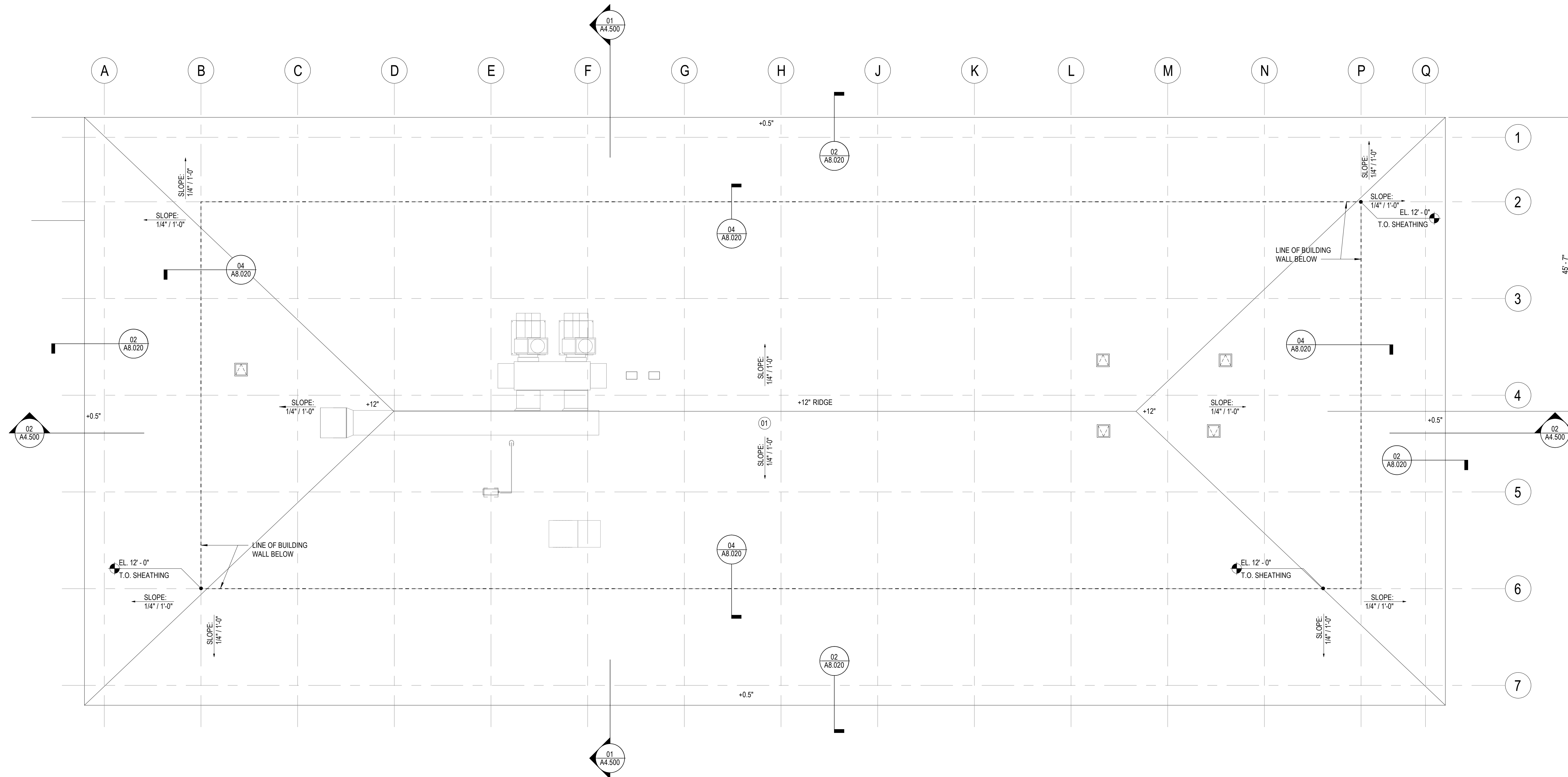
Date	Description
3/2/2023	DSA RESUBMITTAL
8/16/2023	DSA BACK CHECK 01
10/2/2023	DSA BACK CHECK 02
1/29/2024	ADDENDUM 1

Seal / Signature

Project Name
Science Building Renovation
DSA # 04-121828
Project Number
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Description
DEMOLITION FLOOR PLAN

Scale
1/8" = 1'-0"

A0.201



SHEET NOTES

- 01 PROVIDE PVC SINGLE PLY MEMBRANE ROOFING OR R-30 RIGID INSULATION ON ROOF SHEATHING. RIGID INSULATION IS TAPERED FROM 12\"/>

GENERAL NOTES

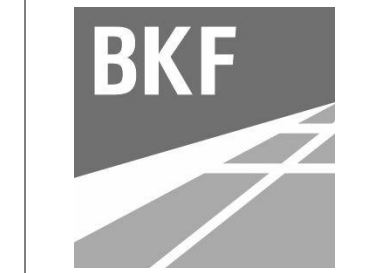
- 1. ALL ROOFING TO BE CLASS A.
- 2. PROVIDE 1/4 INCH PER FOOT MINIMUM SLOPE FOR POSITIVE DRAINAGE, UNLESS NOTED OTHERWISE.
- 3. PROVIDE FLASHING AT DRAINS, CURBS, VENTS, PENETRATIONS, AND STACKS PER MANUFACTURER'S RECOMMENDATIONS TO ACHIEVE WARRANTY REQUIREMENTS.
- 4. ROOF CURBS TO BE A MINIMUM OF 8\"/>

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1 2/5/2024	ADDENDUM 1

Seal / Signature

Project Name
**Science Building Renovation
DSA # 04-121828**

Project Number
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Description
CONSTRUCTION ROOF PLAN

Scale
1/8" = 1'-0"

A1.202

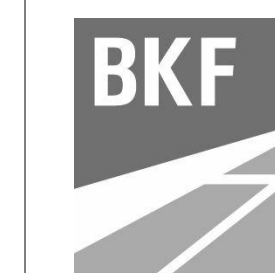
SHEET NOTES

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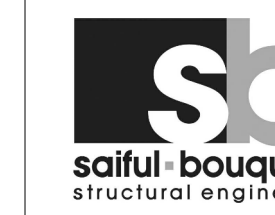
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San Diego, CA 92101
United States
Tel 619.630.9199

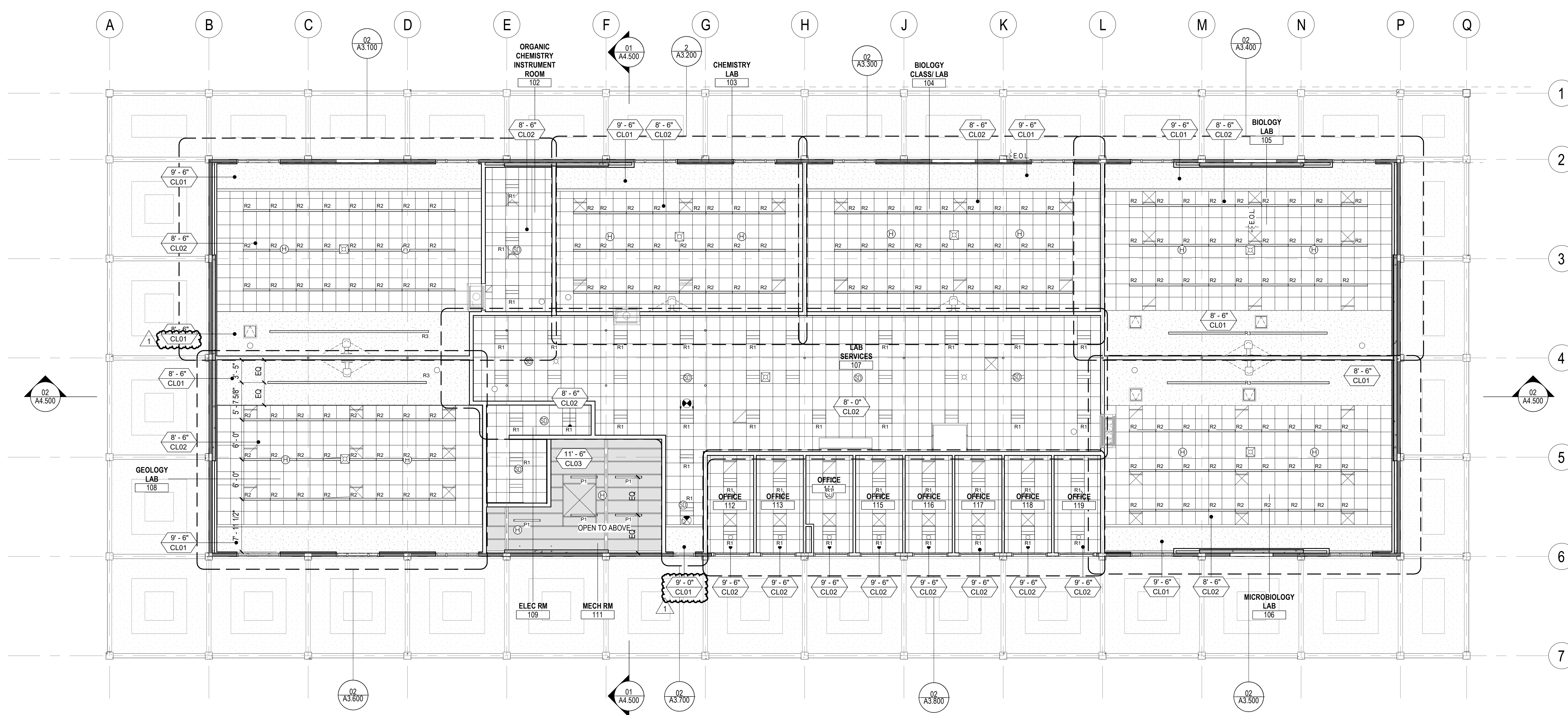
Date	Description
3/2/2023	DSA RESUBMITTAL
8/16/2023	DSA BACK CHECK 01
10/2/2023	DSA BACK CHECK 02
1/29/2024	ADDENDUM 1

Seal / Signature

Project Name
Science Building Renovation
DSA # 04-121828
Project Number
007.3766.000
Description
REFLECTED CEILING PLAN

Scale
1/8" = 1'-0"

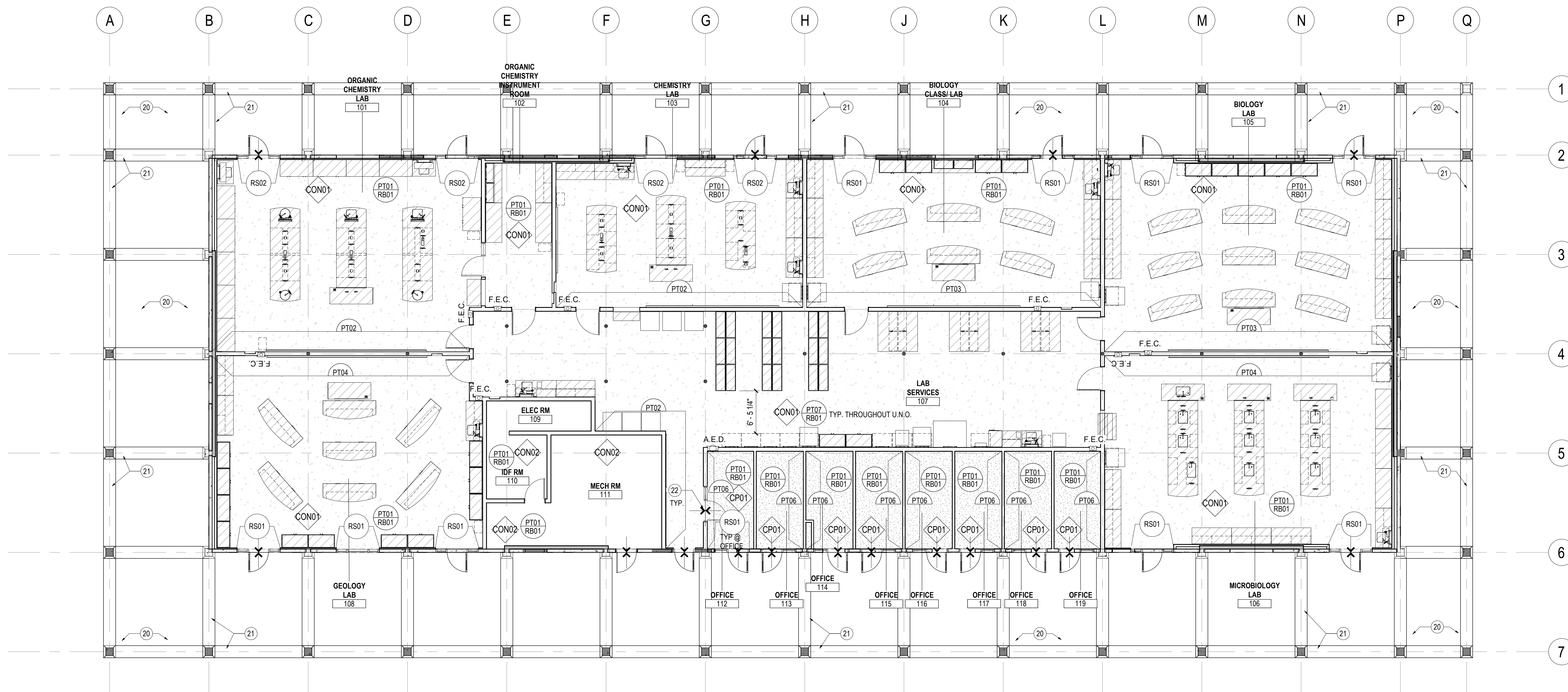
A1.401



GENERAL NOTES

- REFER TO G0.200 FOR GRAPHIC SYMBOLS, NOTES & ABBREVIATIONS.
- REFER TO ENLARGED PLANS FOR DIMENSIONS, ACOUSTICAL CEILING TILE LAYOUT, ETC.
- REFER TO ELECTRICAL PLANS FOR MORE INFORMATION ON LIGHT FIXTURES. PROVIDE CONCEALED, WHITE SPRINKLER HEADS IN ALL GYP BOARD AND GRID CEILINGS U.N.O.
- COORDINATE ALL SWITCH LOCATIONS WITH FURNITURE PLACEMENT.
- COORDINATE ALL SWITCH LOCATIONS WITH FURNITURE PLACEMENT.
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SHEET NOTES

- 20 PROVIDE FOR CONCRETE FIELD FINISH TO MATCH ADJACENT CAMPUS STANDARD. REFER TO CIVIL FOR FINISH ELEVATIONS. TYPICAL TO ALL SURROUND
- 21 PROVIDE FOR CONCRETE COLOR FINISH BETWEEN CONTROL JOINTS TO MATCH CAMPUS STANDARD. REFER TO CIVIL FOR FINISH ELEVATIONS. TYPICAL BETWEEN ALL COLUMNS. REFER TO DETAIL A C2.0 FOR JOINT TYPICAL FLOOR FINISH TRANSITION. REFER TO A0.101 DOOR SCHEDULE FOR DOOR SILL DETAILS.
- 22

GENERAL NOTES

- 1. REFER TO SHEET G0.200 FOR GRAPHICS AND SYMBOLS INFORMATION.
- 2. REFER TO SHEET G0.300 FOR ACCESSIBLE MOUNTING LOCATIONS AND CONFIGURATIONS.
- 3. REFER TO SHEET A0.102 FOR FINISH SCHEDULE.
- 4. PROVIDE CONCEALED IN-WALL BACKING AS REQUIRED FOR MOUNTING. G.C. TO COORDINATE SIZE, TYPE, AND LOCATION OF REQUIRED BACKING.
- 5. ALL SURFACE-MOUNTED ELECTRICAL CONDUIT TO MATCH ADJACENT FINISH. COORDINATE RUNS TO AVOID CONFLICTS WITH WALL-MOUNTED WRITING SURFACES, AV SCREENS, GLAZING, OR ANY ADDITIONAL WALL-MOUNTED EQUIPMENT OR FEEE ITEMS.
- 6. PROVIDE WINDOW ROLLER SHADES AT ALL EXTERIOR STOREFRONT, RS01 AND RS02 TYPICAL. REFER TO DETAIL 08A.401. PROVIDE FOR COLOR FINISH ON ALL EXTERIOR WALLS.

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Seal / Signature

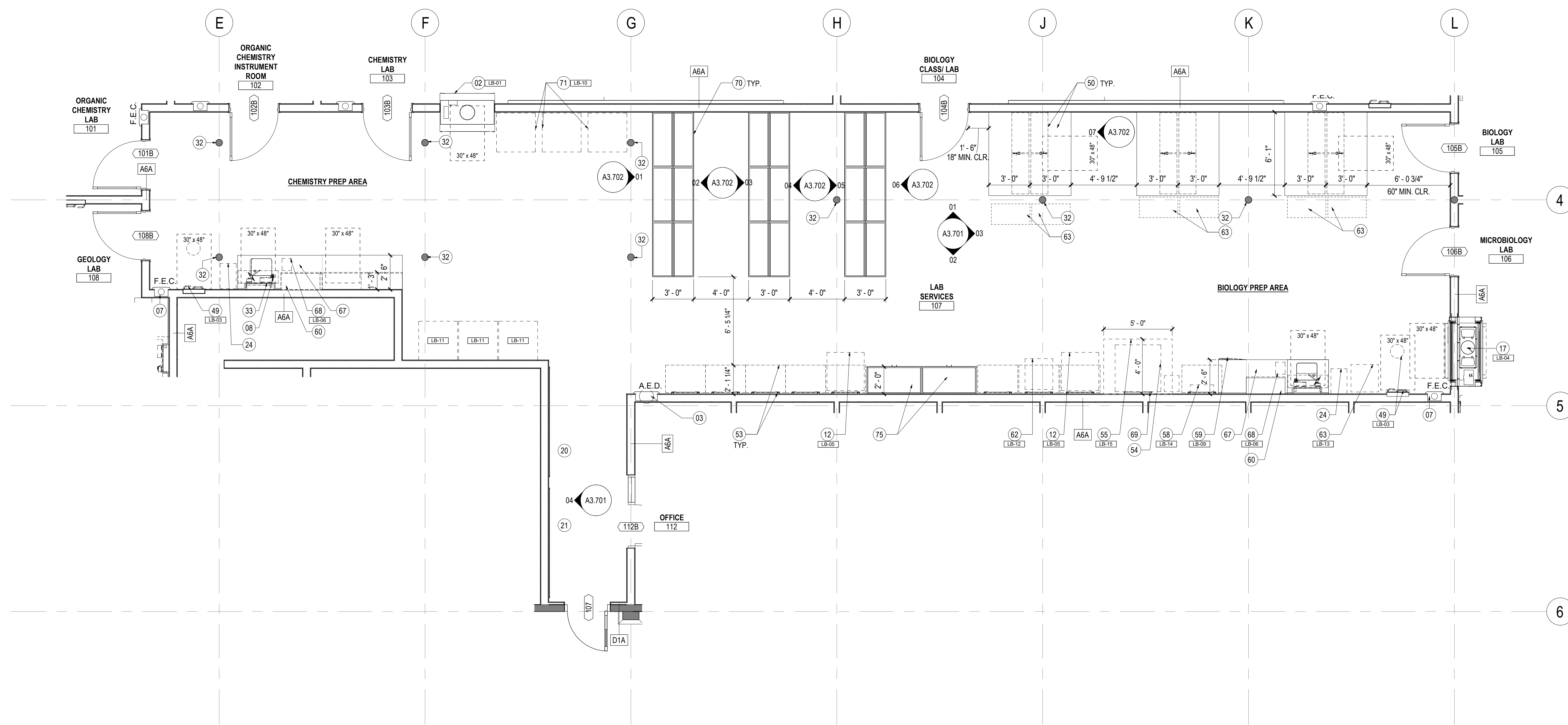
Project Name
**Science Building Renovation
DSA # 04-121828**

Project Number
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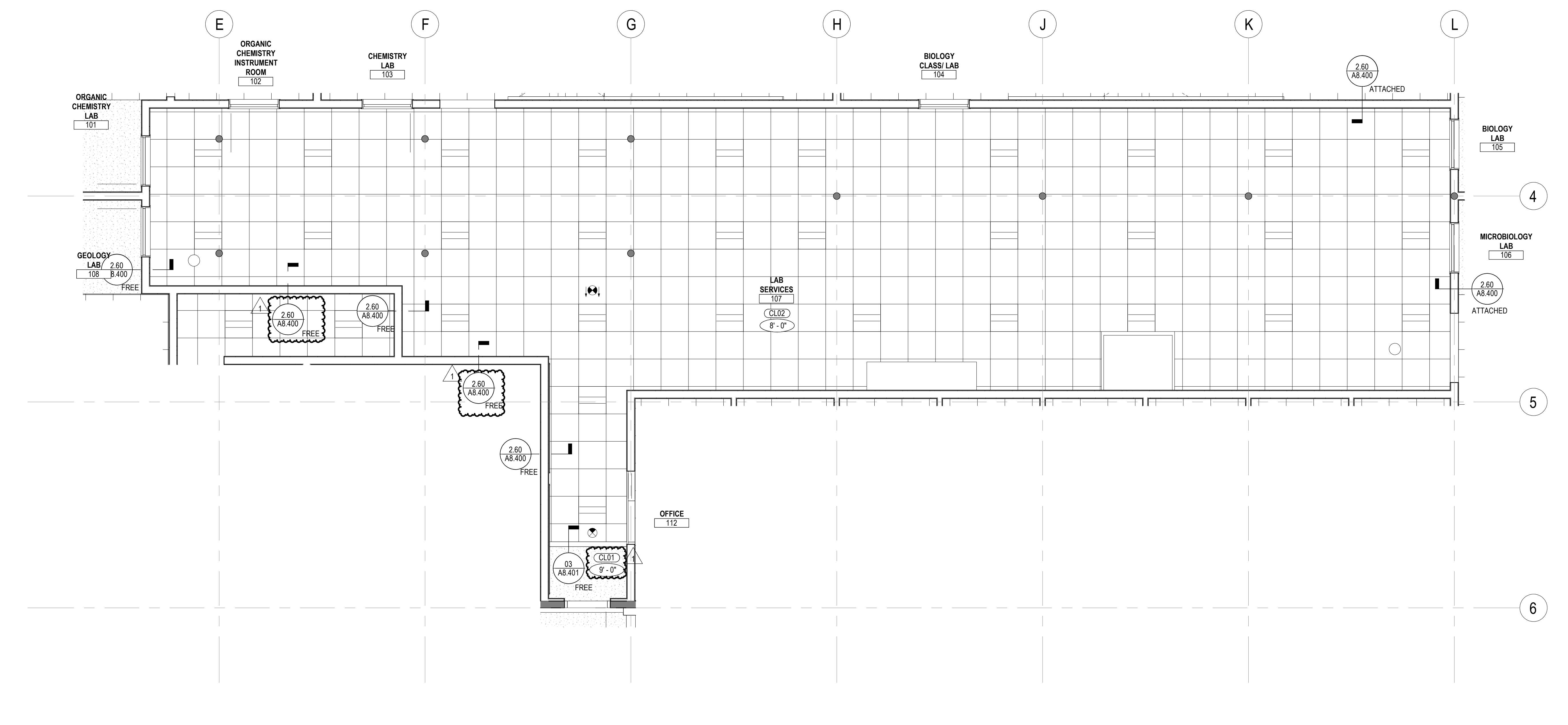
Description
FINISH PLAN

Scale
1/8" = 1'-0"

A1.501



01 ENLARGED PLAN - LAB SERVICES
SCALE: 1/4" = 1'-0"



02 ENLARGED REFLECTED CEILING PLAN - LAB SERVICES
SCALE: 1/4" = 1'-0"

SHEET NOTES

- 02 4-FT DOUBLE SIDED CHEMICAL HOOD.
- 03 RECESSED AED CABINET. REFER TO DETAIL 08A8.000. SEE INTERIOR ELEVATIONS FOR MOUNTING HEIGHTS. PROVIDE FOR SIGNAGE ABOVE CABINET PER 13G3.102
- 07 RECESSED FIRE EXTINGUISHER CABINET. REFER TO DETAIL 08A8.000. SEE INTERIOR ELEVATIONS FOR MOUNTING HEIGHTS.
- 08 FIXED PERIMETER BASE CABINET WITH COUNTER, SINK, DRYING RACK, AND UPPER CABINETS. SEE INTERIOR ELEVATIONS, PLUMBING SCHEDULE, AND P-SERIES DRAWINGS.
- 12 REFRIGERATOR. SEE PLUMBING FIXTURE SCHEDULE P0.02 AND PLUMBING FLOOR PLAN P1.101 FOR COLD WATER OUTLET BOX TO SERVE REFRIGERATOR ICE MAKER.
- 17 4-FT DOUBLE SIDED BIOLOGICAL SAFETY CABINET.
- 20 8-FT MARKER BOARD.
- 21 8-FT TACK BOARD.
- 24 TRASH CAN.
- 32 EXISTING STEEL COLUMNS TO REMAIN, PAINT PT01.
- 33 ACCESSIBLE SINK BASE CABINET W/ DRYING RACK
- 49 EMERGENCY SHOWER / EYEWASH STATION. REFER TO DETAIL 04A9.803.
- 50 FIXED ISLAND LAB BENCH W/ OPEN SHELF UNISTRUT STRUT SYSTEM ABOVE COUNTERTOP.
- 53 PROTAN EQUIPMENT SPACE & SHELF. REFER TO DETAIL 04A9.803.
- 54 EXISTING AUTOCLAVE. REFER TO SPEC SECTION 11.23.58.
- 55 AUTOCLAVE STEAM HOOD
- 58 RO UNIT
- 59 WASHER. LOCATE UNDER COUNTERTOP
- 60 PURE WATER POLISHER PURIFICATION UNIT. LOCATE INSIDE BASE CABINET. PROVIDE 3" GROMMET AT BACK OF COUNTERTOP TO RUN HOSE FROM PURE WATER POLISHER UNIT IN BASE CABINET UP TO PURE WATER DISPENSER UNIT SET ON COUNTERTOP.
- 62 ICE MACHINE
- 63 METRO SHELF CART
- 67 PURE WATER POLISHER STORAGE TANK. LOCATE INSIDE BASE CABINET.
- 68 PURE WATER POLISHER DISPENSER UNIT SET ON COUNTERTOP.
- 69 PROTAN EQUIPMENT SPACE
- 70 FULL HEIGHT CABINET W/ OPEN SHELVES
- 71 CORROSIVE CABINETS. REFER TO MECHANICAL FOR EXHAUST
- 75 FULL HEIGHT CABINETS

GENERAL NOTES

- 1. REFER TO SHEET G0.200 FOR REFLECTED CEILING GRAPHIC SYMBOLS INFORMATION. REFER TO SHEET G0.300 FOR ACCESSIBLE MOUNTING LOCATIONS AND CONFIGURATIONS.
- 2. REFER TO SHEET A0.102 FOR FINISH SCHEDULE AND LAB EQUIPMENT SCHEDULE. REFER TO SHEET A1.401 FOR NOTES REGARDING REFLECTED CEILING PLAN. PROVIDE CONCEALED IN-WALL BACKING ATTACHED TO METAL STUDS PER 13G3.041 AS REQUIRED FOR MOUNTING LAB CASEWORK, ACCESSORIES, AND EQUIPMENT. G.C. TO COORDINATE SIZE, TYPE, AND LOCATION OF REQUIRED BACKING.
- 3. PROVIDE BLOCKING BETWEEN WALL FINISH AND BACK PANEL OF CABINET PER DETAIL 01A8.800. TYPICAL.
- 4. ALL SURFACE-MOUNTED ELECTRICAL CONDUIT TO MATCH ADJACENT FINISH. COORDINATE RUNS TO AVOID CONFLICTS WITH WALL-MOUNTED WRITING SURFACES, AV SCREENS, GLAZING, OR ANY ADDITIONAL WALL-MOUNTED EQUIPMENT OR FREE ITEMS. PROVIDE WINDOW ROLLER SHADES AT ALL EXTERIOR STOREFRONT, TYP.
- 5. REFER TO SPEC SECTION 11.23.58 FOR ADDITIONAL INFO REGARDING LAB CASEWORK AND EQUIPMENT.

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8/16/2023	DSA BACK CHECK 01
1 2/9/2024	ADDENDUM 1

Seal / Signature

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DSA # 04-121828**

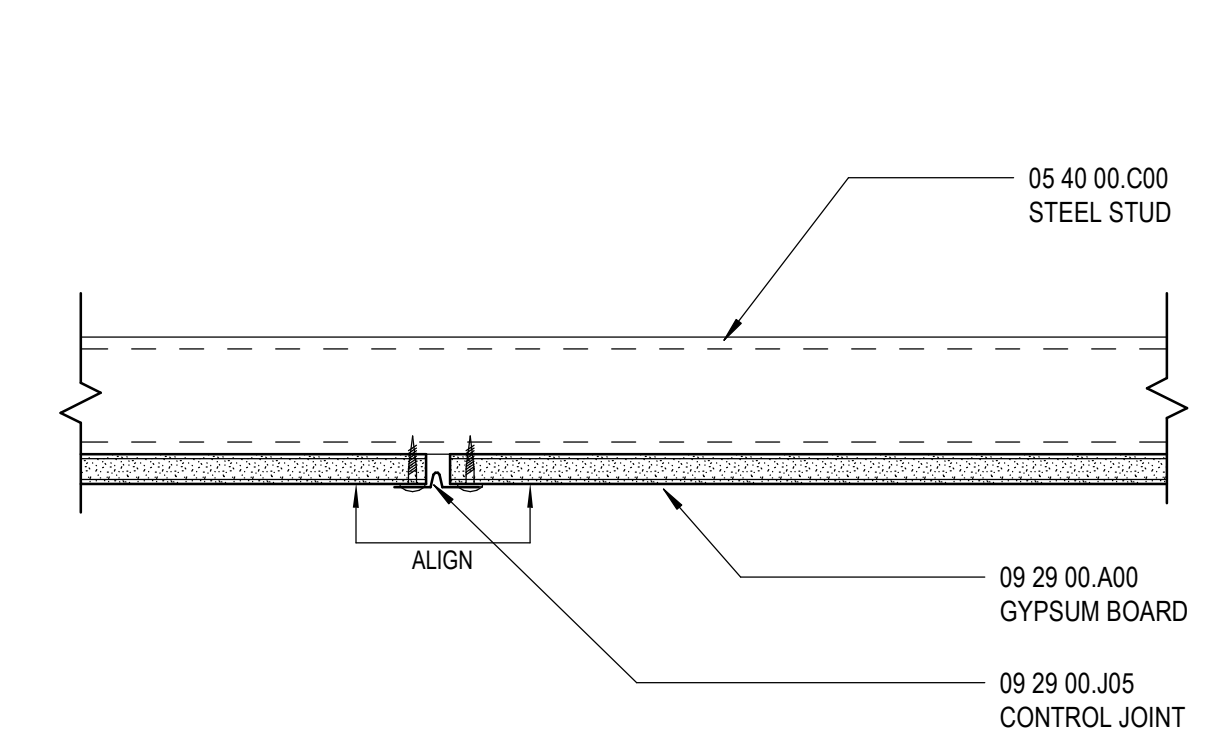
Project Number
007.3766.000

Description
**ENLARGED PLANS & ELEVATIONS -
LAB SERVICES**

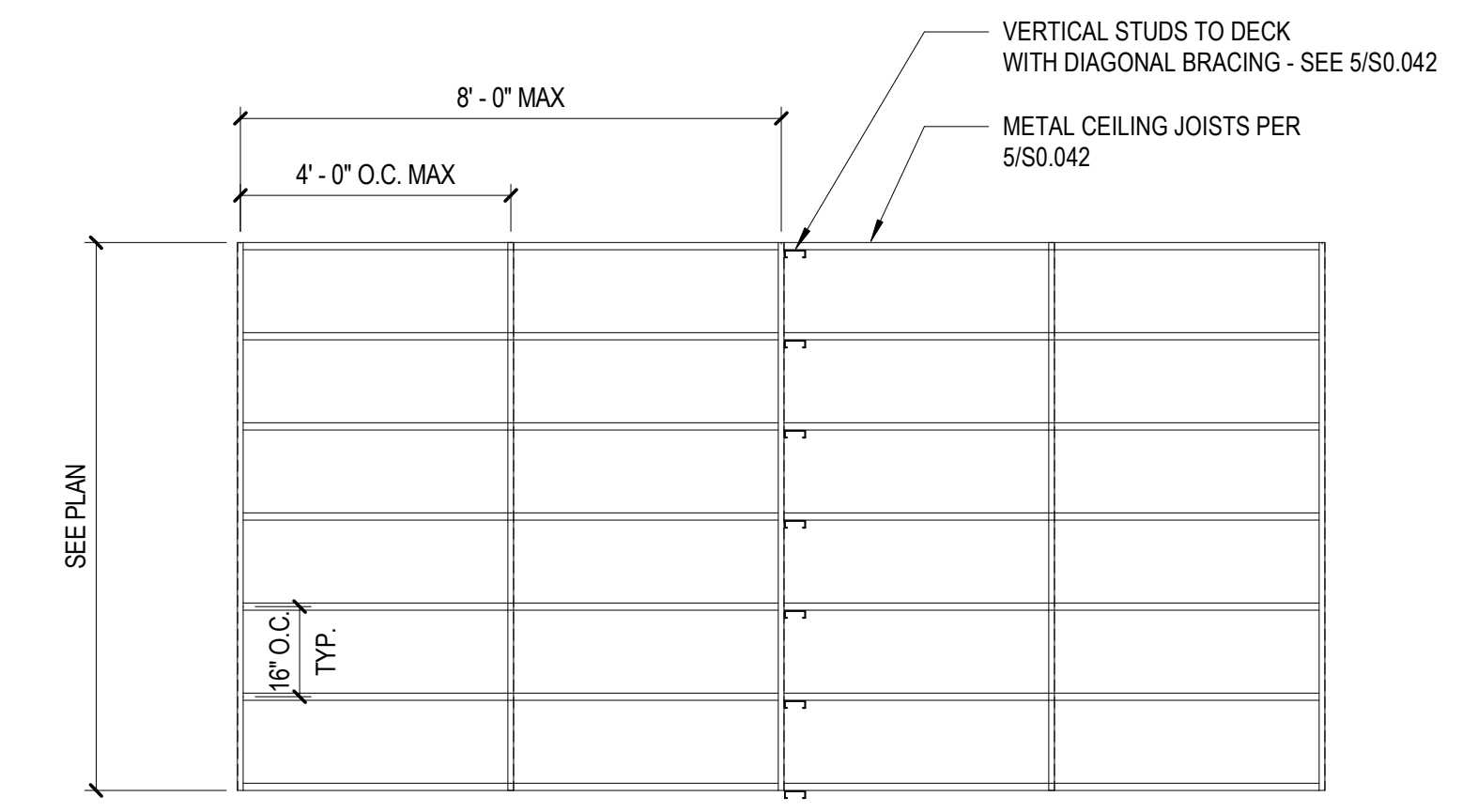
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A3.700

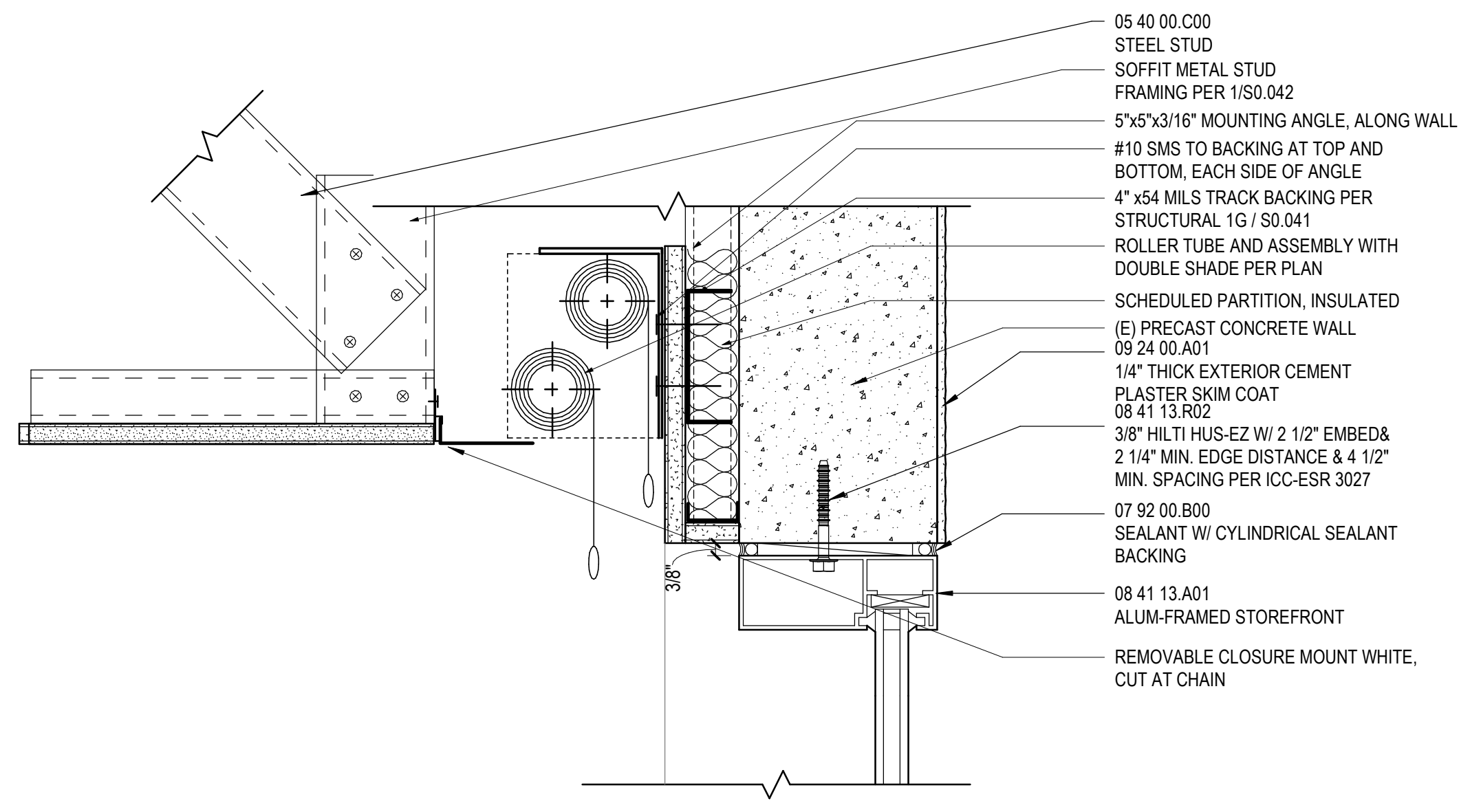
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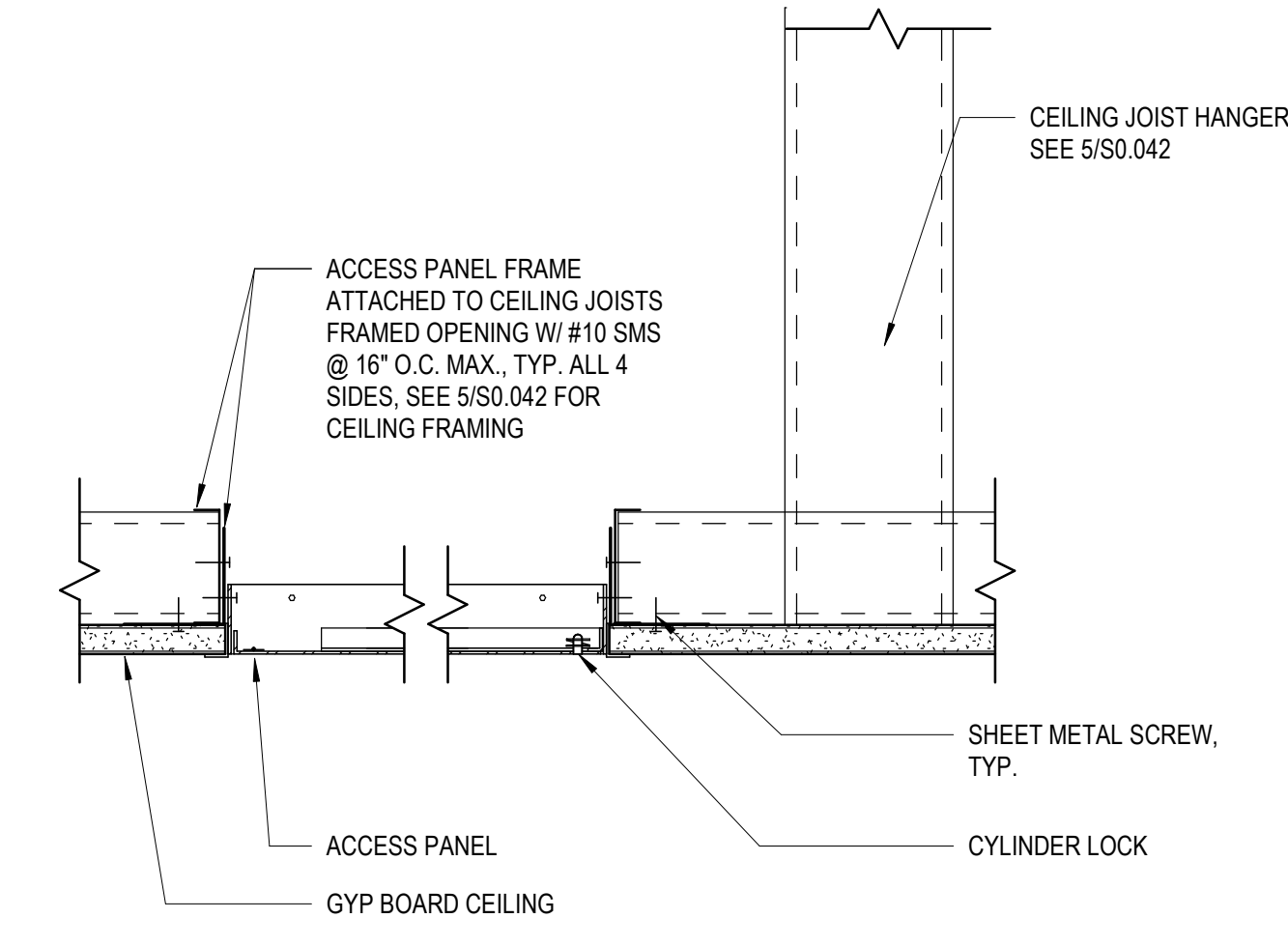
04 FRAMED GYP CEILING @ CONTROL JOINT
SCALE: 3" = 1'-0"



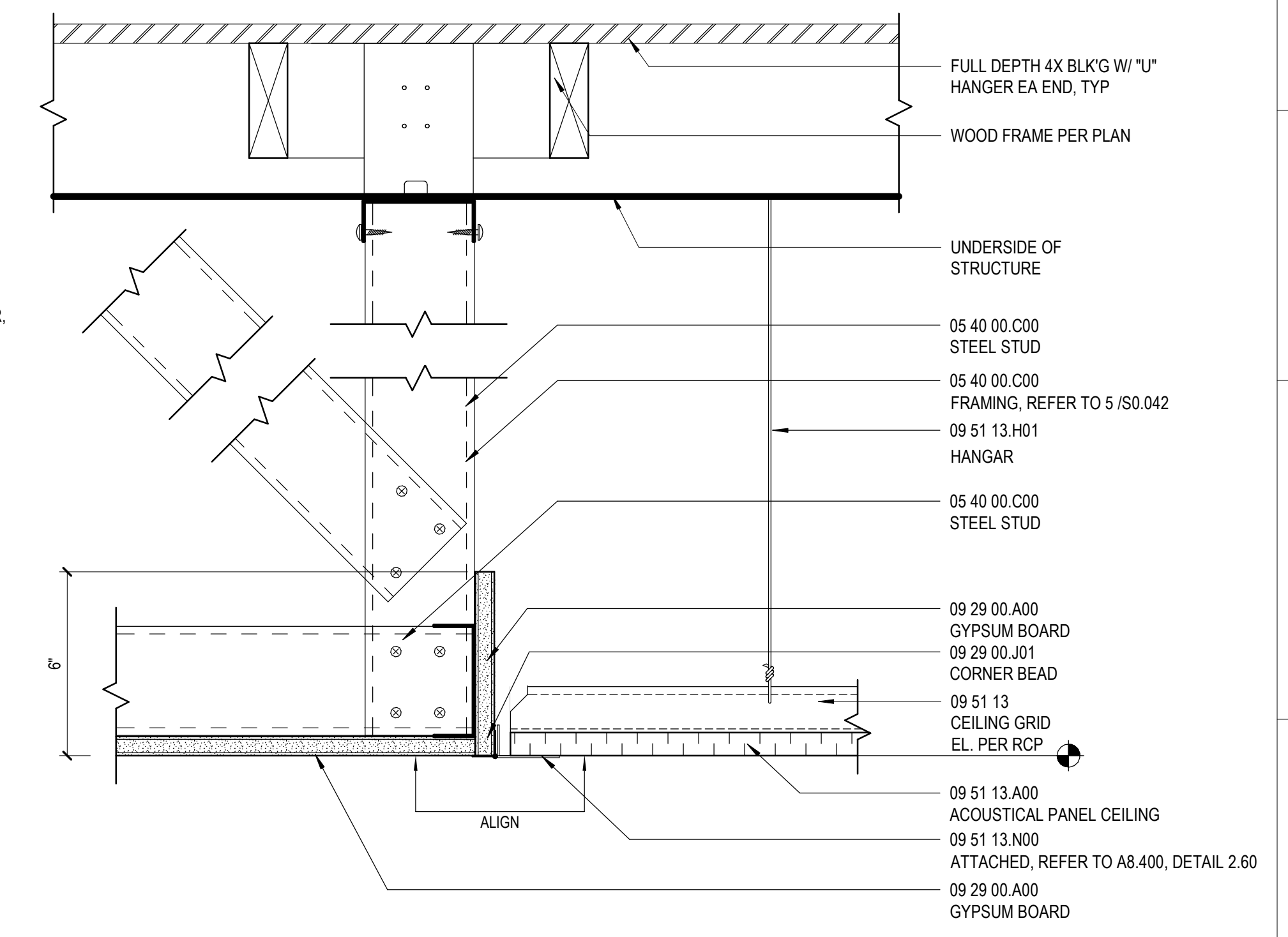
01 CEILING FRAMING PLAN
SCALE: 3/8" = 1'-0"



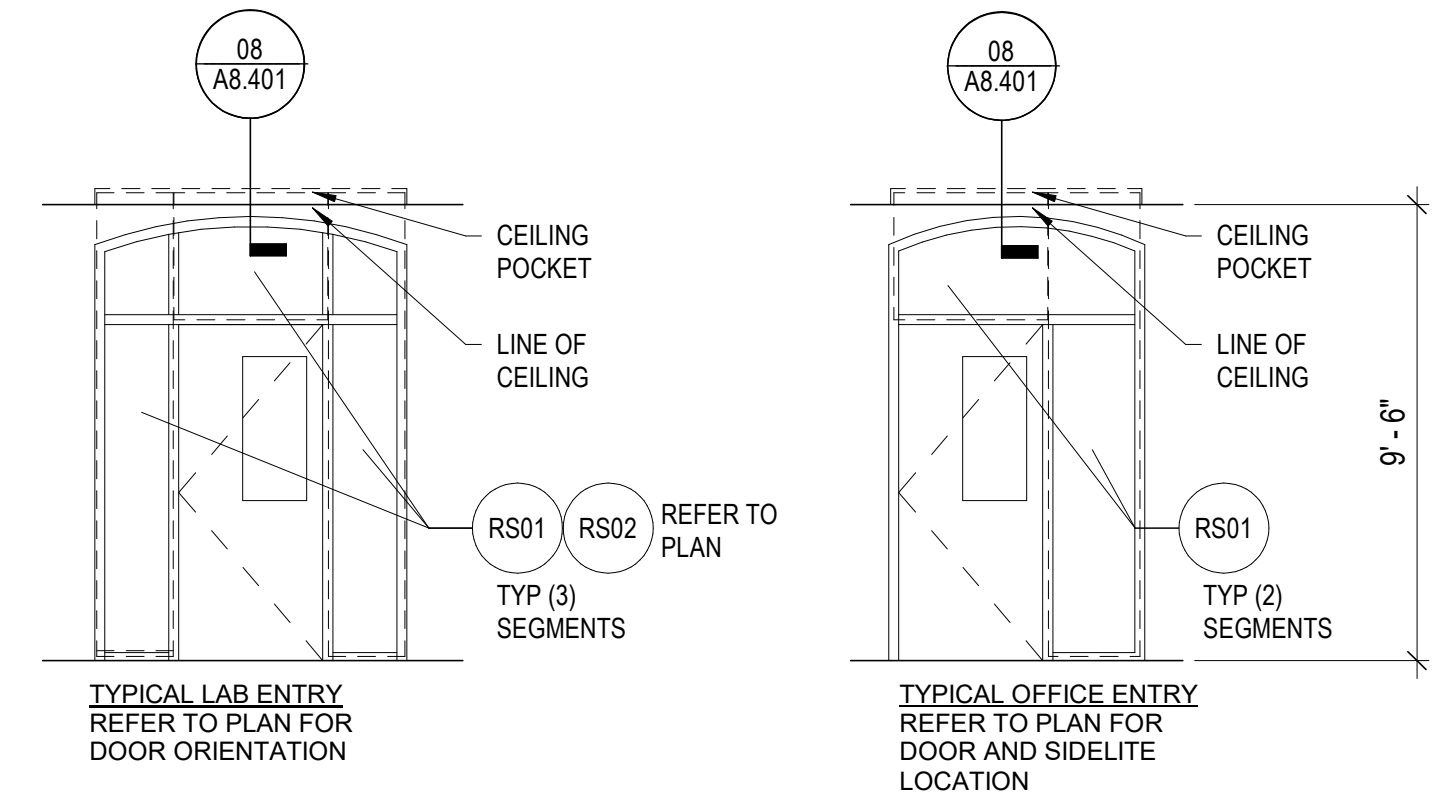
08 GYP - SOFFIT ROLLER SHADE
SCALE: 3" = 1'-0"



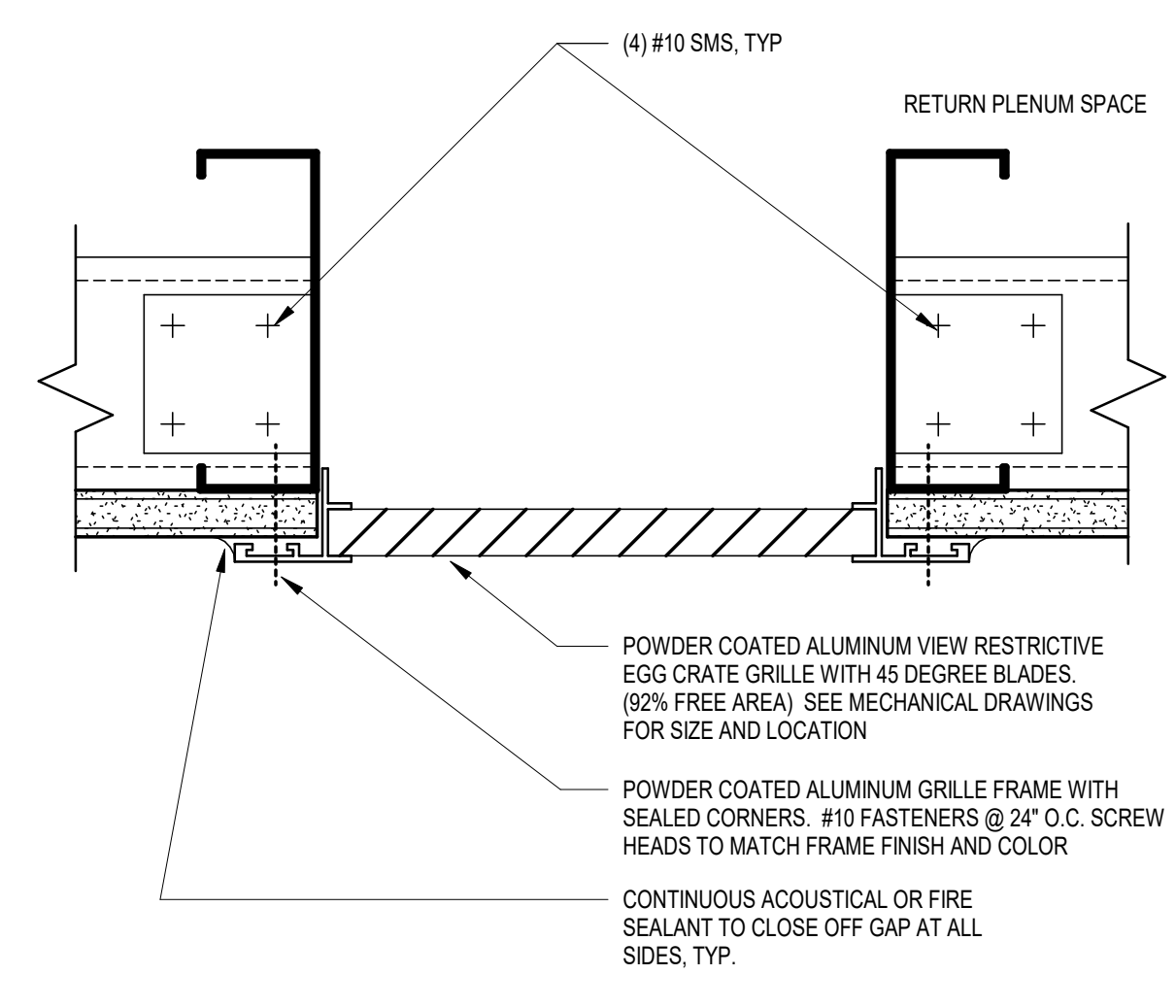
05 GYP BD CEILING ACCESS PANEL
SCALE: 3" = 1'-0"



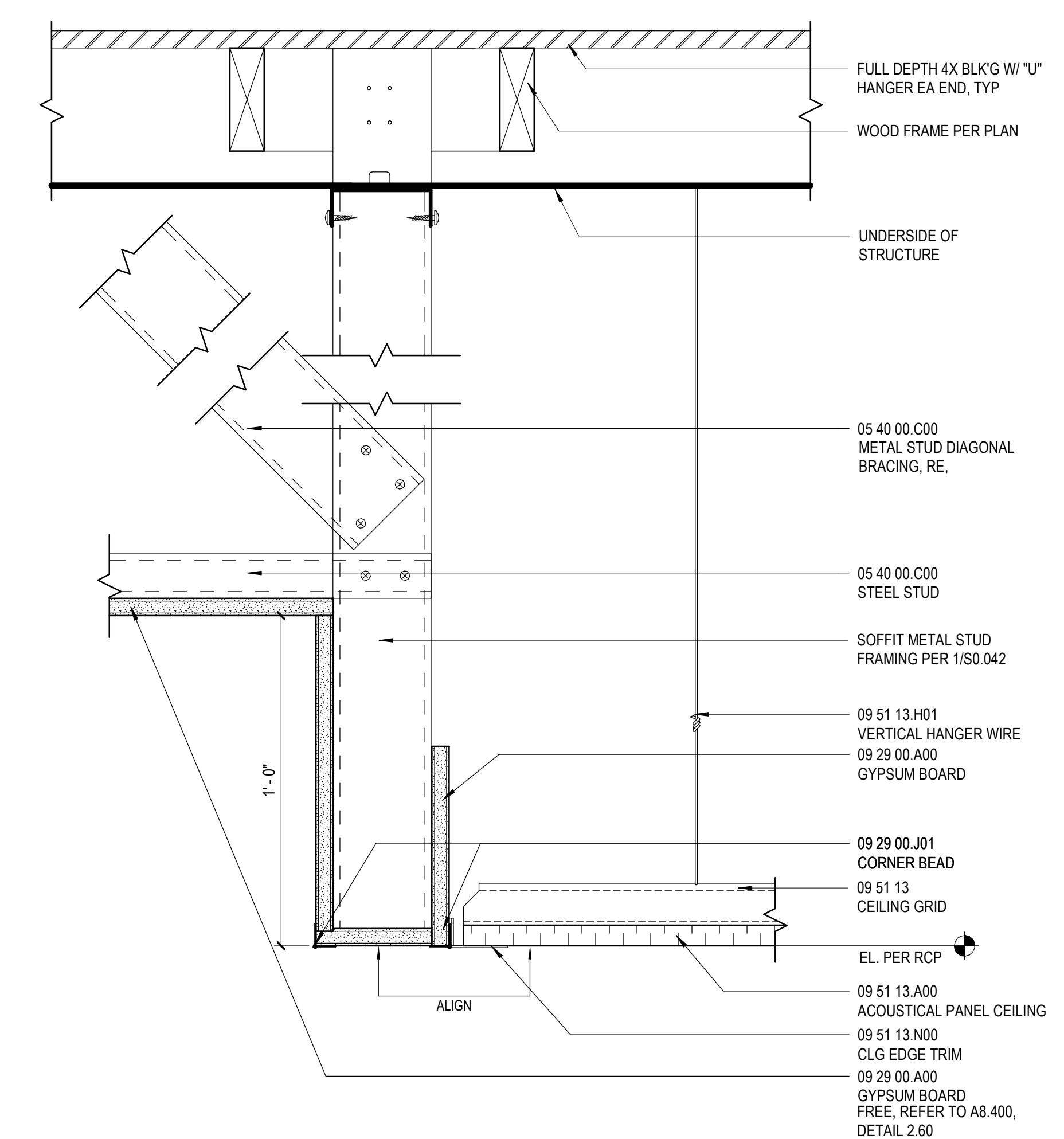
02 GYP TO ACT TRANSITION CONDITION
SCALE: 3" = 1'-0"



09 DOOR-ELEV-ROLLER SHADES
SCALE: 1/4" = 1'-0"



06 RETURN GRILLE @ GYP BD CEILING
SCALE: 6" = 1'-0"



03 GYP TO ACT - SOFFIT CONDITION
SCALE: 3" = 1'-0"

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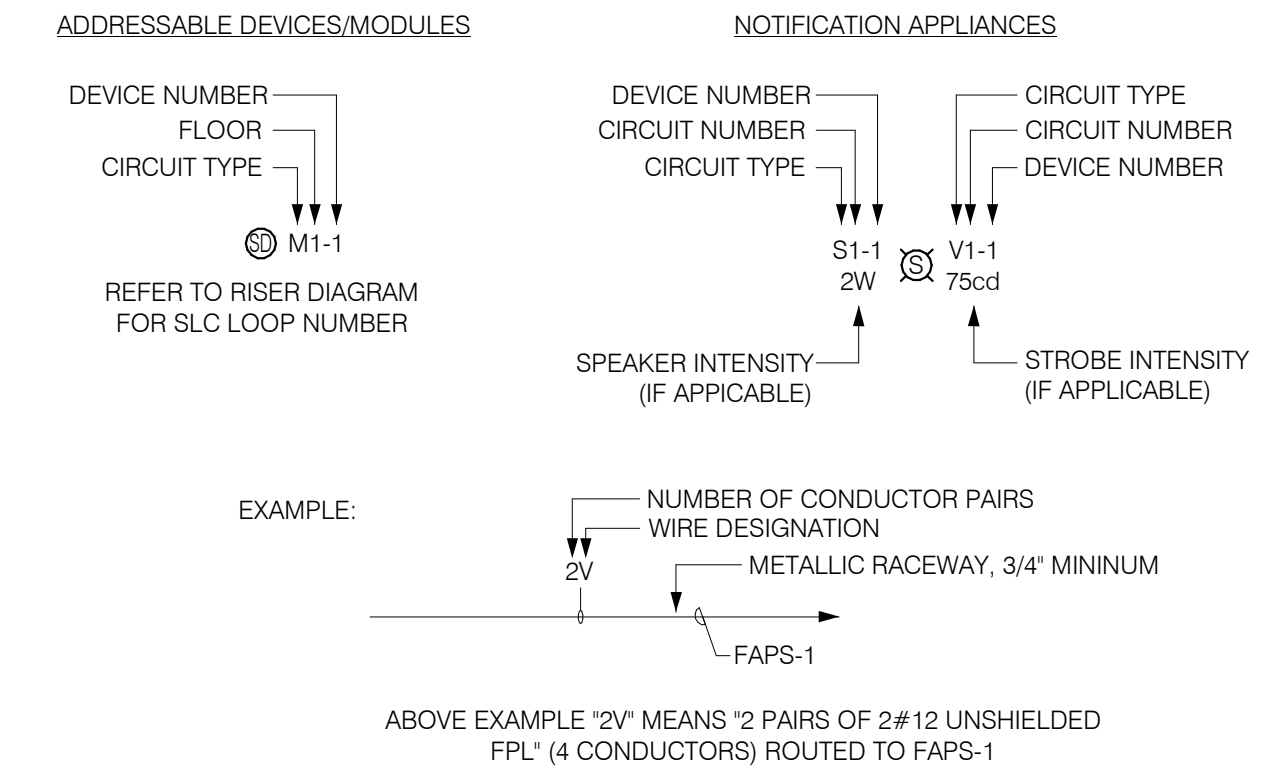
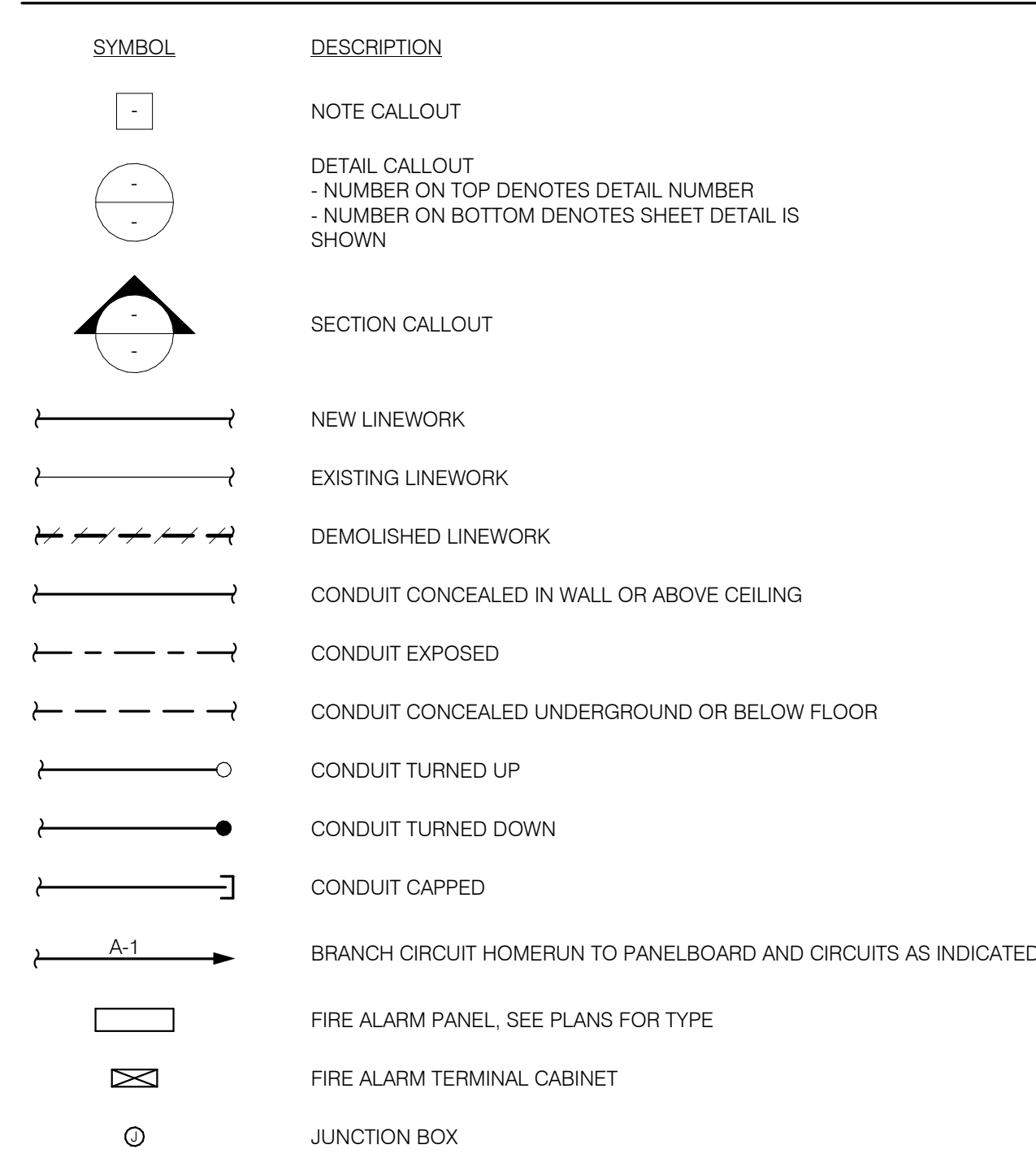
Description
CEILING DETAILS

Scale
As indicated

A8.401

DEVICE SCHEDULE				
SYMBOL	MODEL	MANUFACTURER	DESCRIPTION	C.S.F.M.
PANELS/CABINETS				
FACP	SIMPLEX	4100ES (WITH EPS)	FIRE ALARM CONTROL PANEL WITH ENHANCED POWER SUPPLY DSA A#: A04-112320	-
FATC	-	-	FIRE ALARM TERMINAL CABINET	-
ADDRESSABLE INITIATING DEVICES				
Ⓢ	SIMPLEX	4098-9602	ADDRESSABLE SMOKE DETECTOR AND BASE	7270-0026-0218, 7300-0026-0217
ⓓ	SIMPLEX	4098-9733, 4098-9792	ADDRESSABLE HEAT DETECTOR AND BASE	7270-0026-0216, 7300-0026-0217
F	SIMPLEX	4099-9021	ADDRESSABLE MANUAL PULL STATION	7150-0026-0224
ADDRESSABLE MODULES				
M	SIMPLEX	4090-9001	ADDRESSABLE MONITOR MODULE	-
R	SIMPLEX	4090-9008	ADDRESSABLE RELAY MODULE	-
NOTIFICATION APPLIANCES				
Ⓜ	SIMPLEX	4906-9110	MULTI-CANDELA CEILING HORN STROBE	7125-0026-0371
ⓂWP	SIMPLEX	59AO SERIES	WEATHERPROOF WALL HORN	7125-0026-0383
Ⓜ	SIMPLEX	4906-9110	MULTI-CANDELA CEILING STROBE	7125-0026-0371
AUXILIARY ACCESSORIES				
E.O.L.	-	-	END OF LINE RESISTOR	-

LEGEND



SCOPE OF WORK

- PROVIDE A COMPLETE MANUAL AND AUTOMATIC ADDRESSABLE FIRE ALARM SYSTEM FOR SCIENCE BUILDING COLLEGE OF THE DESERT CAMPUS. PROVIDE DEVICES AS SHOWN IN THE DEVICE SCHEDULE, THE FLOOR PLANS, AND THE SPECIFICATIONS IN THIS CONSTRUCTION DOCUMENT SET.
- WORK SHALL INCLUDE BUT NOT BE LIMITED TO: THE INSTALLATION AND TESTING OF THE CAMPUS FIRE ALARM SYSTEM AND REMOVAL OF THE EXISTING FIRE ALARM SYSTEM.
- WHERE AN EXISTING REQUIRED FIRE PROTECTION SYSTEM IS TAKEN OUT OF SERVICE, THE FIRE DEPARTMENT AND FIRE CODE OFFICIAL SHALL BE NOTIFIED. THE OCCUPIED AREA(S) OF A BUILDING LEFT UNPROTECTED WHERE IMPAIRMENTS ARE MADE TO THE FIRE PROTECTION SYSTEM SHALL BE EVACUATED OR PROVIDED WITH A FIRE WATCH FOR ALL OCCUPANTS UNTIL THE FIRE PROTECTION SYSTEM HAS BEEN RETURNED TO NORMAL SERVICE.
- UPON COMPLETION A COMPLETE PRETEST SHALL BE PERFORMED TO VERIFY FUNCTIONALITY. IF THE FUNCTIONALITY IS COMPLETE THEN THE PROPER DOCUMENTATION SHALL BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION PRIOR TO SCHEDULING A FINAL INSPECTION.
- THE FOLLOWING DOCUMENTATION SHALL BE PROVIDED TO THE OWNER UPON FINAL ACCEPTANCE OF THE SYSTEM:
 - OWNER'S MANUAL AND INSTALLATION INSTRUCTION COVERING ALL SYSTEMS EQUIPMENT AND REQUIREMENTS.
 - RECORD SHOP DRAWINGS IN AUTOCAD FORMAT.
 - RECORD COPY OF SITE SPECIFIC SOFTWARE (FOR SOFTWARE BASED).
 - NFPA 72 RECORD OF COMPLETION DOCUMENTATION.

ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
@	AT	LOTO	LOCK-OUT & TAG-OUT
A OR AMP	AMPERES	LTG	LIGHTING
ABV	ABOVE	LV	LOW VOLTAGE
AF	AMPERE FUSE RATING	M	METER
AF	AMPERE FUSE RATING	MAX	MAXIMUM
AFF	ABOVE FINISHED FLOOR	MCC	MOTOR CONTROL CENTER
AFG	ABOVE FINISH GRADE	MFG, MFR	MANUFACTURER
AMP	AMPLIFIER	MH	MANHOLE
ANN	ANNUNCIATOR	MIN	MINIMUM
APPROX.	APPROXIMATE	MTD	MOUNTED
ARCH.	ARCHITECT; ARCHITECTURAL	MTG	MOUNTING
AUTO	AUTOMATIC	MTR	MOTOR
AUX	AUXILIARY	MTTB	MAIN TELEPHONE TERMINAL BOARD
AWG	AMERICAN WIRE GAUGE	MV	MULTI-VOLTAGE
BAT	BATTERY	N	NORTH
BEL	BELOW	NAC	NOTIFICATION APPLIANCE CIRCUIT
BKBD	BACKBOARD	NC	NORMALLY CLOSED
BLDG	BUILDING	NEC	NATIONAL ELECTRICAL CODE
C	CONDUIT	NF	NON-FUSED
C.O.	CONDUIT ONLY WITH PULL WIRE	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CKT	CIRCUIT	NIC	NOT IN CONTRACT
CL	CENTER LINE	NO	NUMBER
CLG	CEILING	OC	ON CENTER
CMU	CONCRETE MASONRY UNIT	OD	OUTSIDE DIAMETER
CCL	COLUMN	OH	OVERHEAD
CSFD	COMBINATION SMOKE FIRE DAMPER	P	POLE
CU	COPPER	PB	PULL BOX
DD	DUCT DETECTOR	PIV	POST INDICATING VALVE
DH	DOOR HOLDER	PL	PLATE
DIAG	DIAGRAM	PNL	PANEL
DIS	DISCONNECT	POC	POINT OF CONNECTION
DIST	DISTANCE	PREF.	PREFERRED
DWG	DRAWING	PRI	PRIMARY
DWP	DEPARTMENT OF WATER & POWER	PVC	POLY-VINYL CHLORIDE
EACH	EACH	PWR	POWER
ELEC.	ELECTRICAL	REC/RECEPT	RECEPTACLE
EM	EMERGENCY	REQD	REQUIRED
EMH	ELECTRICAL MANHOLE	RGS	RIGID GALVANIZED STEEL
EMT	ELECTRICAL METALLIC TUBING	RM	ROOM
EOL	END OF LINE	RMC	RIGID METAL CONDUIT
EPO	EMERGENCY POWER OFF	RFP	REDUCED PRESSURE BACK FLOW PREVENTER
EQUIP	EQUIPMENT	SCE	SOUTHERN CALIFORNIA EDISON
EXIST(E)	EXISTING	SF	SQUARE FEET
EXP	EXPLOSION PROOF	SHT	SHEET
FA	FIRE ALARM	SIG	SIGNAL
FACP	FIRE ALARM CONTROL PANEL	SLC	SIGNALING LINE CIRCUIT
FAPS	FIRE ALARM POWER SUPPLY	SP	SPARE
FATC	FIRE ALARM TERMINAL CABINET	SPCS	SPECIFICATIONS
FFE	FINISHED FLOOR ELEVATION	ST	STREET
FIN	FINISH	STD	STANDARD
FIXT	FIXTURE	STP	SHIELDED TWISTED PAIR
FLR	FLOOR	SW	SWITCH
FMC	FLEXIBLE METAL CONDUIT	SWBD	SWITCHBOARD
FO	FIBER OPTIC	SWGR	SWITCHGEAR
FP	FIRE PUMP	T.O.D.	TOP OF DUCTBANK
FT	FEET	T.O.M.	TOP OF MANHOLE
FTG	FOOTING	TBL	TERMINAL BLOCK
GEN	GENERATOR	TEL/TELE	TELEPHONE
GFI	GROUND FAULT INTERRUPTER	TMH	TELEPHONE MANHOLE
GND	GROUND	TPS	TWISTED SHIELDED PAIR
HCA	HAND-OFF-AUTOMATIC	TRANSF.XFMR	TRANSFORMER
HCP	HORSEPOWER	TS	TAMPER SWITCH
HT	HEIGHT	TYP	TYPICAL
HTR	HEATER	UG	UNDERGROUND
HZ	HERTZ	UNON	UNLESS OTHERWISE NOTED
IDC	INITIATION DEVICE CIRCUIT	V	VOLTS
IMC	INTERMEDIATE METAL CONDUIT	VA	VOLT-AMPERES
J, JB, J-BOX	JUNCTION BOX	VAC	VOLTS, ALTERNATING CURRENT
KV	KILOVOLT	VDC	VOLTS, DIRECT CURRENT
KVA	KILOVOLT-AMPERES	VECP	VOICE/EVACUATION CONTROL PANEL
KW	KILOWATT	W	WATTS
LF	LINEAR FEET	W/	WITH
LPMC	LIGHTNING PROOF FLEXIBLE METAL CONDUIT	W/O	WITHOUT
LGST	LARGEST	WP	WEATHERPROOF
LOC.	LOCATION		

IN THE EVENT ABBREVIATIONS NOT MENTIONED HEREIN ARE USED, REFERENCE WILL BE MADE TO ANSI Y1.1, MILITARY STANDARD ABBREVIATIONS, AND OTHER STANDARD INDUSTRY CONVENTIONS.

APPLICABLE CODES

- CALIFORNIA BUILDINGS STANDARDS CODE (CALIFORNIA CODE OF REGULATIONS, TITLE 24):
- PART 1 2022 CALIFORNIA ADMINISTRATIVE CODE (CAC), TITLE 24 CCR
 - PART 2 2019 CALIFORNIA BUILDING CODE (CBC), TITLE 24 COR
 - PART 3 2019 CALIFORNIA ELECTRICAL CODE (CEC), TITLE 24 CCR
 - PART 4 2019 CALIFORNIA MECHANICAL CODE (CMC), TITLE 24 CCR
 - PART 5 2019 CALIFORNIA PLUMBING CODE (CPC), TITLE 24 CCR
 - PART 6 2019 CALIFORNIA ENERGY CODE, TITLE 24 C.C.R.
 - PART 7 CURRENTLY VACANT
 - PART 8 CURRENTLY VACANT
 - PART 9 2019 CALIFORNIA FIRE CODE (CFC), TITLE 24 C.C.R.
 - PART 10 2019 CALIFORNIA EXISTING BUILDING CODE (CEBC), TITLE 24 C.C.R.
 - PART 11 2019 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), TITLE 24 C.C.R.
 - PART 12 2019 CALIFORNIA REFERENCED STANDARDS CODE, TITLE 24 C.C.R.
- TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

APPLICABLE STANDARDS:
FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPTER 80.

TRADE SIZE	INTERNAL DIAMETER INCHES	TOTAL 100%	AREA - SQUARE INCHES								
			PERCENT REDUCTION OVER 2 COND. 40%	PER NUMBER OF 18AWG TWISTED SHIELDED PAIRS							
				1	2	3	4	5	6	7	8
1/2	0.622	0.30	0.12	33%	66%	99%	X	X	X	X	X
3/4	0.824	0.53	0.21	19%	38%	57%	76%	95%	X	X	X
1	1.049	0.86	0.34	12%	24%	36%	48%	60%	72%	84%	96%
1 1/4	1.380	1.50	0.60	7%	14%	21%	28%	35%	42%	49%	56%
1 1/2	1.610	2.04	0.82	5%	10%	15%	20%	25	30%	35%	40%
2	2.067	3.36	1.34	3.00%	6%	9%	12%	15%	18%	21%	24%

GENERAL NOTES

- CONTROL CIRCUITS ARE NON POWER LIMITED. MINIMUM RECOMMENDED WIRE SIZE TO BE DETERMINED BY CIRCUIT LOAD.
- WIRING SHALL NOT BE LOOPED THROUGH DEVICES UPON TERMINATION. WIRE MUST BE CUT FOR IN AND OUT RUNS PRIOR TO DEVICE TERMINATION.
- WHERE SHIELDED CABLE IS USED, THE SHIELD SHALL BE CONTINUOUS AND GROUNDED ONLY AT THE RESPECTIVE CONTROL PANEL.
- T-TAPPING OR PARALLEL BRANCHING OF NOTIFICATION APPLIANCE DEVICE CIRCUITS IS PROHIBITED ON CLASS A CIRCUITS.
- ELECTRICAL CONTRACTOR IS REQUIRED TO USE COLOR CODE, WIRE NUMBERS, OR AS SPECIFIED IN THE PROJECT SPECIFICATIONS ON ALL CIRCUITS AND SHALL BE CONTINUOUS, OTHERWISE, NO FINAL CONNECTIONS OR TESTING SHALL BE PERFORMED. IF WIRE COLOR CODING IS USED, GREEN WILL BE USED FOR GROUND BONDING ONLY.
- POINT AND COMMON ANNUNCIATION AND T-TAPPING PROHIBITED.
- ALL WIRING, INITIATING DEVICES AND ANNUNCIATOR PANELS SHALL BE SUPERVISED TO THE PRINCIPAL POINT OF ANNUNCIATION. (FIRE ALARM CONTROL PANEL(S) TO SUPERVISE ANNUNCIATOR PANEL(S), SUB-PANEL(S), ALL CIRCUITS AND INITIATING DEVICES).
- FIRE ALARM SIGNAL SHALL MEET ANSI S3.41, AUDIBLE EMERGENCY EVACUATION SIGNAL (TEMPORAL PATTERN).
- AUDIABILITY OF ALARM SHALL BE NOT LESS THAN 15DB ABOVE AMBIENT SOUND THROUGHOUT THE AREA OF ALARM.
- ALL STROBE APPLIANCES SHALL BE SYNCHRONIZED IN ACCORDANCE WITH NATIONAL FIRE ALARM CODE (NFPA 72), REFERENCE APPLICABLE EDITIONS UNDER "APPLICABLE CODES & REGULATIONS".
- STROBE APPLIANCE LOCATIONS ARE BASED ON 10 FOOT CEILING HEIGHTS AND ARE INSTALLED IN ACCORDANCE WITH NATIONAL FIRE ALARM CODE (NFPA 72) UNLESS OTHERWISE NOTED. REFERENCE APPLICABLE EDITIONS UNDER "APPLICABLE CODES & REGULATIONS".
- WALL-MOUNTED STROBE AND HORN/STROBE APPLIANCES SHALL BE MOUNTED A MINIMUM OF 80 INCHES ABOVE FINISHED FLOOR OR 6 INCHES MINIMUM BELOW THE CEILING, (WHICH EVER IS LOWER). MEASUREMENT ARE TO BE TAKEN FROM BOTTOM OF STROBE.
- PHOTOELECTRIC DETECTORS SHALL NOT BE IN DIRECT AIR STREAM SUPPLY AIR OUTLETS.
- REFER TO RESPECTIVE CATALOG CUT SHEETS FOR ELECTRICAL MOUNTING HARDWARE.
- ALL DEVICES OF THE FIRE ALARM SYSTEM SHALL BE APPROVED AND LISTED BY THE CALIFORNIA STATE FIRE MARSHAL.
- AUDIABILITY WILL BE DETERMINED BY THE FIELD FIRE MARSHAL.
- ALL FIRE ALARM CIRCUITS SHALL BE LABELED AT CONNECTIONS AND AT JUNCTION BOXES.
- DUCT SMOKE DETECTORS SHALL BE TESTED FOR DUCT VELOCITY AND PRESSURE DIFFERENTIAL IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
- DIFFERENTIAL PRESSURE SWITCHES SHALL BE SUPPLIED AND INSTALLED BY A LICENSED MECHANICAL CONTRACTOR. THE ELECTRICAL CONNECTION TO THE DIFFERENTIAL PRESSURE SWITCH SHALL BE MADE BY THE FIRE ALARM CONTRACTOR.
- UNLESS OTHERWISE NOTED ALL WIRING AND INSTALLATION METHODS SHALL CONFORM TO CALIFORNIA ELECTRICAL CODE (CEC), ARTICLE 760. SEE APPLICABLE EDITION UNDER "APPLICABLE CODES & REGULATIONS".
- ALL WIRE CONDUCTORS SHALL BE POWER LIMITED COPPER WIRING AND INSTALLED WITHIN A METALLIC RACEWAY.
- PER SPECIFICATION CONDUIT RISERS SHALL BE INSTALLED INSIDE A TWO HOUR FIRE RATED ENCLOSURE PROVIDED BY OTHERS. HORIZONTAL OFFSET CONDUITS AND JUNCTION BOXES SHALL BE PROTECTED BY TWO HOUR FIRE RATED ENCLOSURES PROVIDED BY OTHERS.
- ALL RACEWAY RUNS INDICATED WITHIN THIS DRAWING PACKAGE ARE SHOWN DIAGMAMMICALLY AND ARE FOR CIRCUITING PURPOSES ONLY. ALL RUNS SHOWN SHOULD NOT SERVE IN ANY WAY AS AN ACTUAL ROUTING GUIDE FOR INSTALLATION OF RACEWAYS. EXACT INSTALL LOCATION SHALL BE FIELD DETERMINED.
- ADDITIONAL JUNCTION BOXES NOT SHOWN MAY BE REQUIRED TO ACCOMMODATE PROPER RACEWAY INSTALLATIONS. IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO DETERMINE THE NECESSARY AMOUNT OF JUNCTION BOXES REQUIRED.
- SUBMITTED DRAWING PACKAGE MUST BE REVIEWED BY UNIVERSITY REPRESENTATIVE AND ONE COPY OF THE REVIEWED DRAWING AND SUBMITTAL MUST BE RETURNED TO SIEMENS BEFORE ANY EQUIPMENT IS SHIPPED OR INSTALLED. CUSTOM ANNUNCIATORS WILL NOT BE FABRICATED UNTIL WRITTEN APPROVAL OF LAYOUT AND/OR ARTWORK IS RECEIVED.
- FOR INSPECTION AND OR TESTING THE FIRE MARSHAL SHALL BE NOTIFIED FOR SCHEDULING AN APPOINTMENT.
- A CERTIFICATE OF COMPLIANCE SHALL BE PREPARED BY THE INSTALLER AND GIVEN TO THE FIRE MARSHAL UPON COMPLETION OF THE INSTALLATION.
- ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF THE INSPECTOR OF RECORD. THE STRICTER REQUIREMENT WILL PREVAIL.
- A STAMPED SET OF APPROVED FIRE ALARM PLANS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION. ANY DEVIATION FROM APPROVED PLANS, INCLUDING THE SUBSTITUTION OF DEVICES SHALL BE APPROVED BY THE FIRE MARSHAL.
- UPON COMPLETION OF THE FIRE ALARM SYSTEM, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE FIRE MARSHAL.
- UNLESS SPECIFICALLY SHOWN ON THESE PLANS NO STRUCTURAL MEMBERS SHALL BE CUT, DRILLED NOR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER AND THE DISTRICT STRUCTURAL ENGINEER FROM THE DIVISION OF THE STATE ARCHITECT.
- REFER TO THE SPECIFICATIONS BOOK FOR ADDITIONAL REQUIREMENTS.

SEQUENCE OF OPERATION

SYSTEM INPUTS	SYSTEM OUTPUTS																
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1 MANUAL FIRE ALARM BOXES	•	•								•	•	•			•	•	•
2 SMOKE DETECTORS	•	•															
3 HEAT DETECTORS	•	•															
4 WATERFLOW	•	•															
5 SPRINKLER CONTROL VALVE					•	•											
6 FIRE ALARM AC POWER FAILURE					•	•											
7 FIRE ALARM SYSTEM LOW BATTERY																	
8 OPEN CIRCUIT																	
9 GROUND FAULT																	
10 NOTIFICATION APPLIANCE CIRCUIT SHORT																	

College of the Desert

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43500 Monterey Avenue
Palm Desert, CA 92250
United States

Gensler

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P2S ENG

MEPTFA ENGINEER
5000 East Spring Street
Suite 800
Long Beach, CA 90815
United States



STRUCTURAL ENGINEER
2020 Camino Del Rio North
Suite 395
San Diego, CA 92108
United States

Date	Description
3/22/2023	DSA RESUBMITTAL
8/16/2023	DSA BACKCHECK 01
10/2/2023	DSA BACKCHECK 02
1 2/5/2024	ADDENDUM 1

Seal / Signature



Project Name
**Science Building Renovation
DSA # 04-121828**

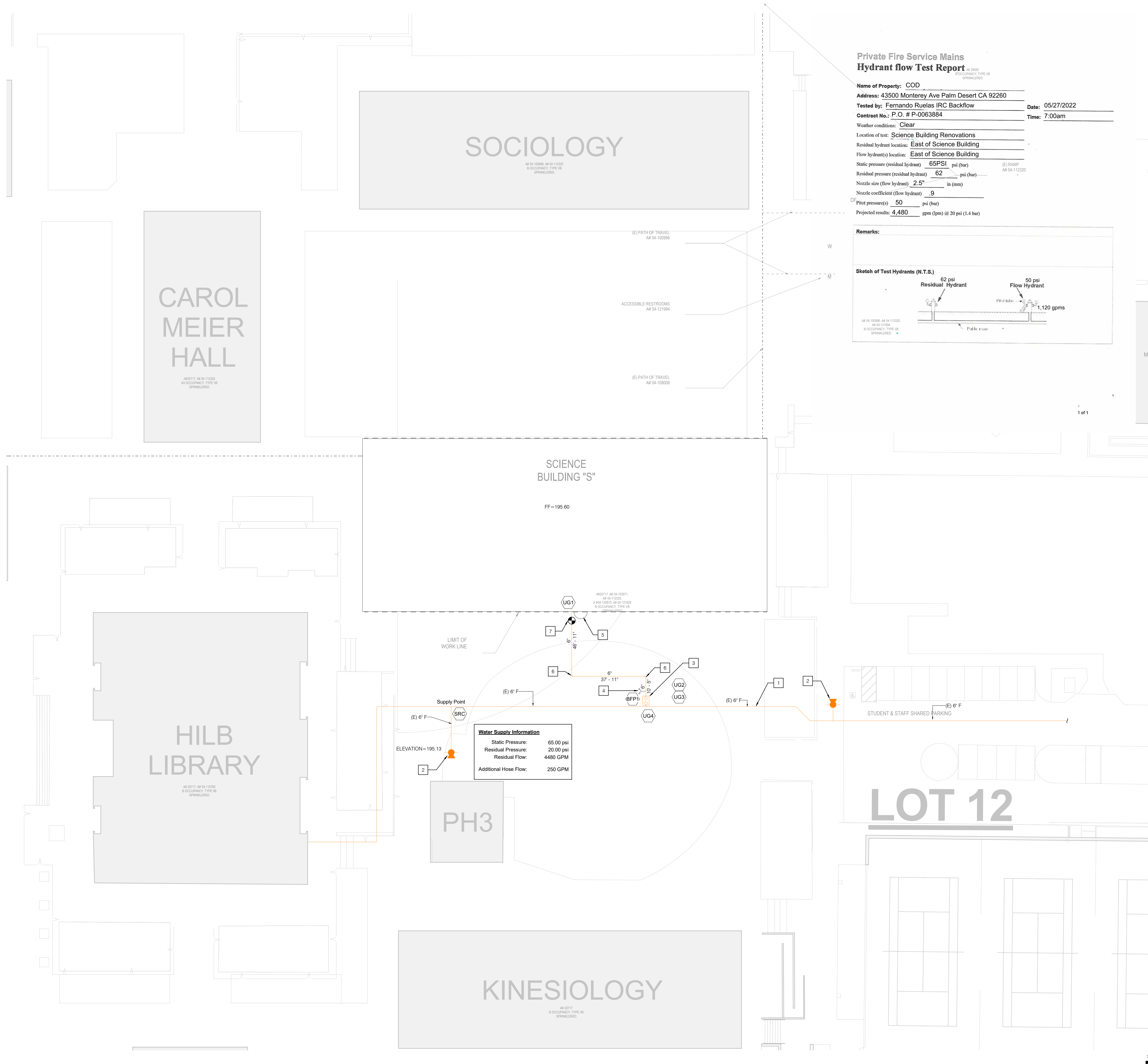
Project Number
007.3766.000

Description
GENERAL NOTES, LEGEND,
ABBREVIATIONS AND SHEET INDEX

Scale
NOT TO SCALE

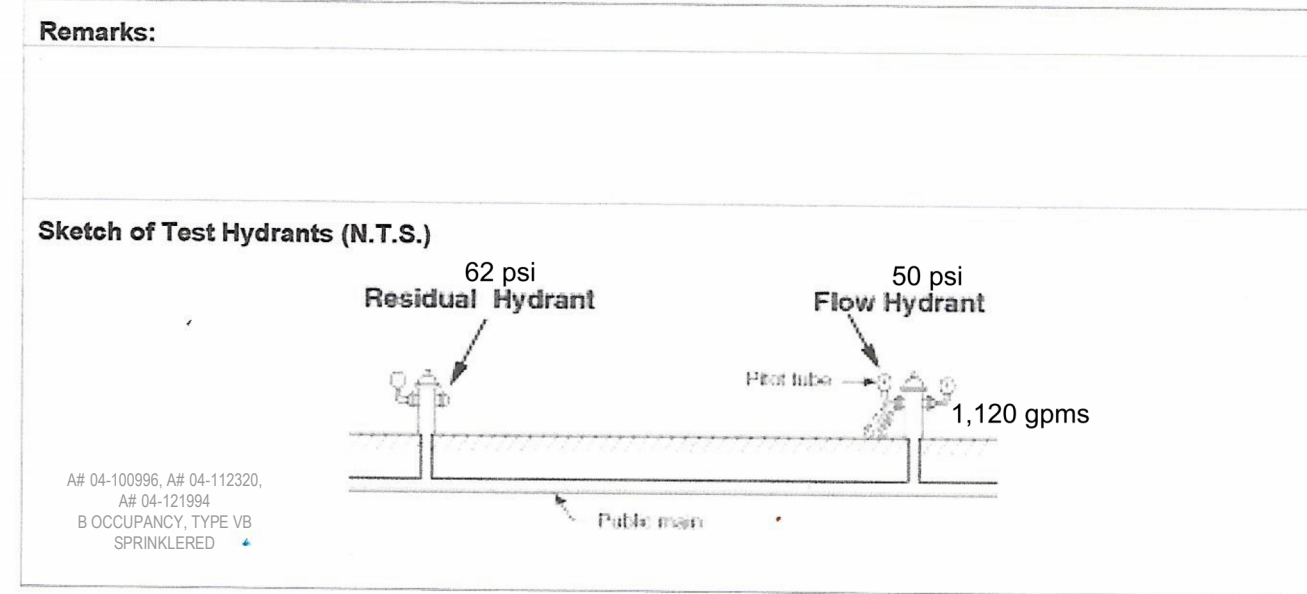
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12/19/2023 5:01:34 PM BIM 360://007.3766.000 - College of the Desert Science Building/21-0487_021_MEP/FPF_CENTRAL.rvt



**Private Fire Service Mains
Hydrant flow Test Report**

Name of Property: COD
 Address: 43500 Monterey Ave Palm Desert CA 92260
 Tested by: Fernando Ruelas IRC Backflow Date: 05/27/2022
 Contract No.: P.O. # P-0063884 Time: 7:00am
 Weather conditions: Clear
 Location of test: Science Building Renovations
 Residual hydrant location: East of Science Building
 Flow hydrant(s) location: East of Science Building
 Static pressure (residual hydrant) 65PSI psi (bar) (E) RAMP AF 04-112320
 Residual pressure (residual hydrant) 62 psi (bar)
 Nozzle size (flow hydrant) 2.5" in (mm)
 Nozzle coefficient (flow hydrant) .9
 Pist pressure(s) 50 psi (bar)
 Projected results: 4,480 gpm (lpm) @ 20 psi (1.4 bar)



SHEET NOTES

- 1 UNDERGROUND WATER MAIN. REFER TO CIVIL SHEET C-0 FOR ROUTING
- 2 EXISTING FIRE HYDRANT
- 3 BACKFLOW PREVENTER PER CIVIL CONTRACTOR, MODEL AMES COLT 200
- 4 FIRE DEPARTMENT CONNECTION, PER CIVIL CONTRACTOR.
- 5 PROVIDE 10' FIRE ALARM BELL, COORDINATE CONNECTION TO THE FIRE ALARM SYSTEM WITH THE FIRE ALARM CONTRACTOR.
- 6 THRUST BLOCK BY CIVIL CONTRACTOR.
- 7 POINT OF CONNECTION

College of the Desert

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 United States

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p2s ENG

MEPTFA ENGINEER
 5000 East Spring Street
 Suite 800
 Long Beach, CA 90815
 United States
 Tel 562.497.2999

GENERAL NOTES

- A. A SITE UNDERGROUND PIPE AND APPURTENANCES AS SHOWN ON SITE PLAN ARE FOR REFERENCE AND CONTINUITY OF HYDRAULIC CALCULATION ONLY. WORK WITHIN THIS CONTRACT TO START AT 5 FEET FROM BUILDING PERIMETER.
- B. REFER TO CIVIL DRAWINGS FOR UNDERGROUND UTILITY ROUTING, THRUST BLOCK LOCATIONS, AND ADDITIONAL SITE INFORMATION.
- C. THE FULLY AUTOMATIC FIRE SPRINKLER SYSTEM WILL BE MONITORED AND SUPERVISED THROUGH THE FIRE ALARM SYSTEM.



STRUCTURAL ENGINEER
 2020 Camino Del Rio North
 Suite 305
 San Diego, CA 92108
 United States
 Tel 619.630.9199

Date	Description
3/2/2023	DSA RESUBMITTAL
8/16/2023	DSA BACKCHECK 01
10/2/2023	DSA BACKCHECK 02
1 2/5/2024	ADDENDUM 1

Seal / Signature



Project Name
**Science Building Renovation
 DSA # 04-121828**
 Project Number
007.3766.000
 Description
SITE PLAN

Scale
1" = 20'-0"

FP1.01

12/19/2023 5:01:37 PM BIN:300.0007.3766.000 - College of the Desert Science Building(2)-0407_021_MEPTFP_CENTRAL.rvt

- ### SHEET NOTES
- 1 4" FIRE RISER, PROVIDE FLOW SWITCH PER DIV 21 SPECIFICATIONS.
 - 2 SPRINKLERS OMITED UNDER EXTERIOR NON-COMBUSTIBLE ROOFS PER NFPA 13 SEC. 8.15.7.2. CONCRETE EXTERIOR WALLS.
 - 3 PROVIDE 10" FIRE ALARM BELL, COORDINATE CONNECTION TO THE FIRE ALARM SYSTEM WITH THE FIRE ALARM CONTRACTOR.
 - 4 THIS HATCH REPRESENTS HYDRAULIC REMOTE AREA.
 - 5 THIS HATCH REPRESENTS SEISMIC ZONE OF INFLUENCE.

College of the Desert

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GENERAL NOTES

- A. INSTALL CONCEALED SPRINKLER HEADS ON CENTER OF THE CEILING TILE UNLESS OTHERWISE NOTED.

Date	Description
3/2/2023	DSA RESUBMITTAL
8/16/2023	DSA BACKCHECK 01
10/2/2023	DSA BACKCHECK 02
1 2/5/2024	ADDENDUM 1

Seal / Signature

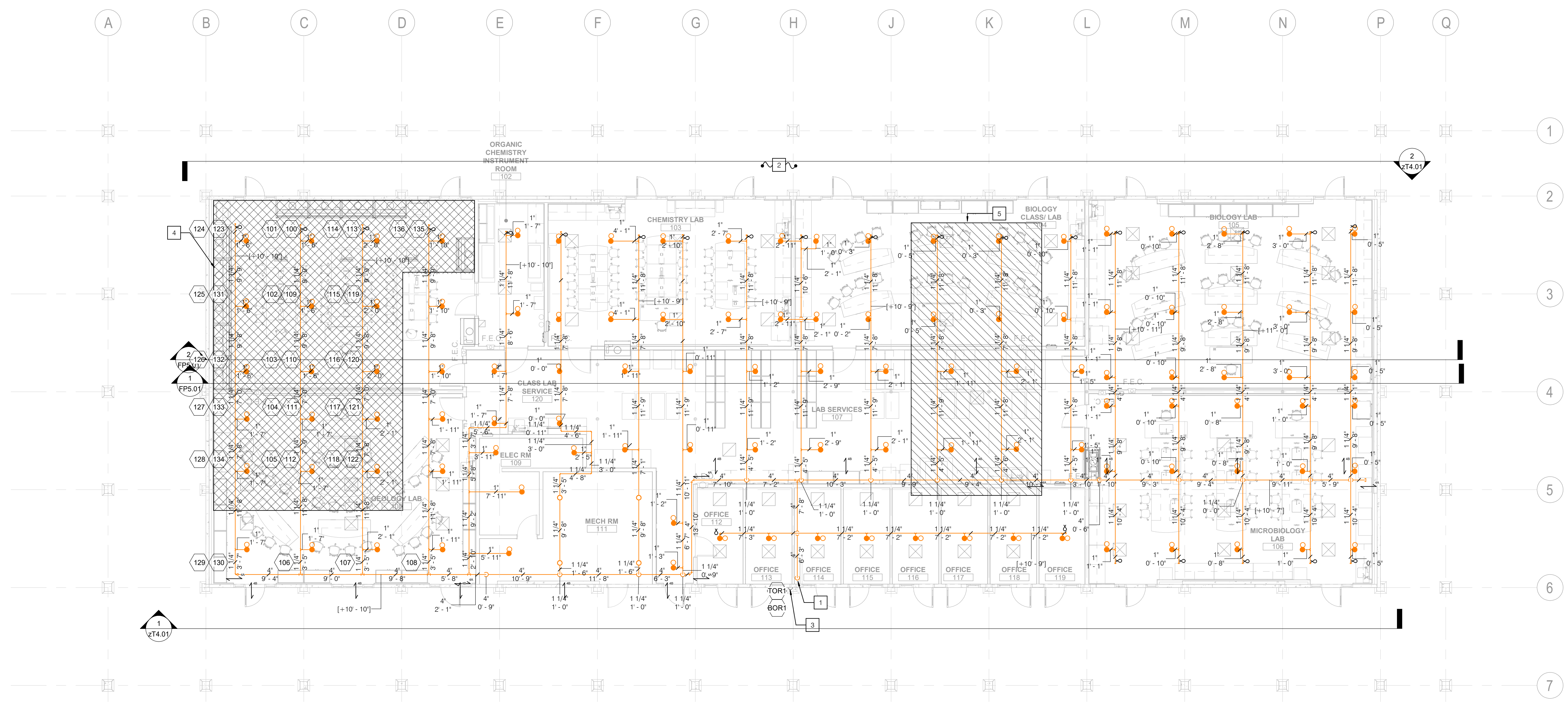


Project Name
Science Building Renovation
DSA # 04-121828
Project Number
007.3766.000
Description
FLOOR PLAN - LEVEL 01

Scale
1/8" = 1'-0"

FP1.101

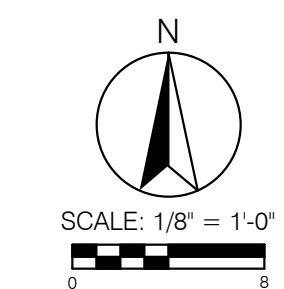
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Fire Protection System Demand:
 Remote area number: 1
 Occupancy classification: OH11
 Density: Gpm/SqFt
 Area of application: 1500 SqFt
 No. of sprinklers calculated: 16
 Inside Hose Streams: 0 GPM
 Outside Hose: 250 GPM
 Streams:
 Total Water required (including hose streams): 538.434 GPM
 @ a required system pressure 41.7644 Psi

SPRINKLER HEAD SCHEDULE AND LEGEND

SYMBOL	LOCATION	MANUFACTURER	SIN	K-FACTOR	SR/OR	TYPE	TEMP.	FINISH	THREAD SIZE	COMMENTS
●	RGYP. BOARD/ ACOUST. TILES	VIKING	VK4261	5.6	QR	SSP	155°F	WHITE	1/2"	NEW CONCEALED SPRINKLER, 136°F COVER PLATE.
○	OPEN STRUCTURE	VIKING	VK3001	5.6	QR	SSU	200°F	BRASS	1/2"	NEW UPRIGHT SPRINKLER



Addendum Number 2

Gensler

Project	College of the Desert – Palm Desert Campus – Science Building Renovation	Date	2/6/2024
Project Location	43-500 Monterey Avenue Palm Desert, CA	Architect's Project Number	007.3766.00
Owner / Client	College of the Desert	File	6A This is page 1 of 1
To	California Community Chancellor's Office	Attention	Chay Yang
Address	1102 Q. Street		
City	Sacramento	State	CA Zip Code 95811
Delivered via:	<input type="checkbox"/> Messenger	<input type="checkbox"/> Hand carried	<input type="checkbox"/> Facsimile
	<input type="checkbox"/> Express	<input type="checkbox"/> Pick-up	<input checked="" type="checkbox"/> E-mail Address cyang@cccco.edu
	<input type="checkbox"/> Mail	<input type="checkbox"/> UPS	<input type="checkbox"/> Website Address
This Addendum will become part of the Contract Documents. The Contractor shall promptly inform subcontractors and all others performing or supplying any of the Work of all relevant contents of this Addendum. In case of conflicting provisions with previous addenda or communications, provisions in this Addendum supersede only those conflicting issues. It is the responsibility of the Contractor to notify all subcontractors from whom it accepts bids of all changes in the drawings and specifications covering this project. Receipt shall be acknowledged by inserting the addendum number and its date in the bid form.			
Distribution	jdawson@bond.collegeofthedesert.edu		
Prepared by Gensler by	Nick Acevedo	Date Signed	2/6/2024

Instructions / Description / References / Dates

Addendum number of attachments:
111 Pages
4 Attachments

Addendum Item	Reference Item	Description
A-01	Geotechnical Report_V1	Geotechnical Engineering Report dated February 14, 2022
A-02	Geotechnical SiteDataReport_V1	Description for Site Data Report to California Geological Survey dated May 3, 2022
A-03	Geotechnical CGS Application_V1	Application to California Geological Survey dated June 30, 2022
A-04	Geotechnical CGS Approval_V1	Letter of approval from California Geological Survey dated November 16, 2022.

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Geotechnical Engineering Report

**Desert Community College District - Science Building Renovation
Project**

Palm Desert, California

February 14, 2022

Terracon Project No. CB215187

Prepared for:

College of the Desert
Palm Desert, California

Prepared by:

Terracon Consultants, Inc.
Colton, California

terracon.com

The Terracon logo, consisting of the word "Terracon" in a white, bold, sans-serif font, set against a dark red rectangular background.

Environmental



Facilities



Geotechnical



Materials

February 14, 2022

College of the Desert
43-500 Monterey Avenue
Palm Desert, California 92260



Attn: Mr. Mac McGinnis – Vice President
P: (760) 776-7219
E: mmcginnis@collegeofthedesert.edu

Re: Geotechnical Engineering Report
Desert Community College District - Science Building Renovation Project
College of the Desert Campus
Palm Desert, California
Terracon Project No. CB215187

Dear Mr. McGinnis:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PCB215187 dated December 21, 2021. This report has been prepared under the jurisdiction of 2019 California Building Code (CBC) and is intended to satisfy the requirements of the Division of State Architect (DSA) and California Geological Survey (CGS) Note 48. This report presents the findings of the subsurface exploration and surface geophysical shear wave survey and provides geotechnical recommendations and geologic hazards evaluation for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

John S. McKeown, E.G.
Senior Geologist

Keith P. Askew, G.E.
Department Manager

Reviewed by: Jay J. Martin, E.G.

Terracon Consultants, Inc. 1355 E. Cooley Dr. Colton, California 92324
P (909) 824 7311 F (909) 301 6016 terracon.com

Environmental

Facilities

Geotechnical

Materials

REPORT TOPICS

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PROJECT DESCRIPTION	2
SITE CONDITIONS.....	3
GEOTECHNICAL CHARACTERIZATION.....	4
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Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the **GeoReport** logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

SITE LOCATION AND EXPLORATION PLANS
EXPLORATION AND TESTING PROCEDURES
EXPLORATION RESULTS (Boring Logs and Laboratory Data)
SUPPLEMENTAL MAPS
GEOTECHNICAL CALCULATIONS
SUPPORTING INFORMATION

Geotechnical Engineering Report
Desert Community College District - Science Building Renovation
Project
Palm Desert Campus
Palm Desert, California
Terracon Project No. CB215187
February 14, 2022

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the Science Building Rehabilitation project located on the Palm Desert Campus of the Desert Community College District at 43-500 Monterey Avenue in Palm Desert, California. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions and historic high groundwater
- Site geology and regional seismicity
- Liquefaction potential
- Seismic settlement
- Recommendations for foundation design and concrete slab-on-grade
- Lateral earth pressures
- Seismic parameters per ASCE 41 and ASCE 7/CBC 2019 as specified in the Geotechnical Scope of Work
- Subgrade preparation/earthwork recommendations including over-excavation and re-compaction requirements
- Recommendations for controlled low-strength material (CLSM) per CBC 2019 section 1803A.5.9
- Corrosion soil mitigation (if applicable)

The geotechnical engineering scope of services for this project included the advancement of three (3) Cone Penetration Test (CPT) soundings to depths of approximately 50 feet below existing site grades (bgs), and subsurface and laboratory data from prior investigations (by Terracon) including a test boring completed to a depth of 61½ feet bgs in August 2015 adjacent to the subject building. Based on the relatively uniform subsurface conditions encountered in prior explorations throughout the campus core area, the prior field and laboratory test results can be considered applicable to the current project.

Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the prior field explorations and current CPT testing are included on the boring and CPT logs in the **Exploration Results** section of this report.

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed in the project planning stage. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Item	Description
Information Provided	Email from COD received on November 18, 2021 included Architect's Schematic Design package with drawings and Basis of Design Report. The information package also included an annotated DSA IR EB-3 document, Geotechnical Scope of Work, and Structural Rehabilitation Slide (timeline document). The scope of services proposed herein is intended to satisfy the Geotechnical Scope of Work and CGS requirements.
Project Description	The project includes renovation/construction of six Classroom Laboratory spaces, three Classroom Laboratory Services rooms, Faculty Office/Meeting Space, DP/Computer Services room, and MEP rooms as required. The project will involve the renovation of an existing science classroom building, with the structure within the footprint remaining. This project is a rehabilitation of existing structures and will be subject to review of geotechnical and geologic conditions by the California Geological Survey (CGS) under the requirements of Note 48.
Existing Structure	The existing building is a 1960s era single-story structure - approximately 15,025 gross square feet. An exterior colonnade supports a roof structure overhang on all four sides of the building.
Building Construction	Wood, concrete and steel as described in Appendix A of the Structural Basis of Design document prepared by Saiful-Bouquet. Foundation is described as reinforced concrete slab-on-grade with concrete spread footings at interior steel column locations and perimeter concrete columns. Exterior columns are on isolated concrete footings.
Finished Floor Elevation	Within ±1 foot from existing ground surface
Maximum Loads	<ul style="list-style-type: none"> ■ Columns: 30 to 100 kips ■ Walls: 1 to 5 kips per linear foot (klf) ■ Slabs: 100 to 150 pounds per square foot (psf)
Grading/Slopes	None anticipated for the renovation.
Below Grade Structures	A utility tunnel adjoins the building footprint beneath the canopy area along the south side of the existing building. Additional footings may be constructed as part of the renovation to meet seismic requirements.

Item	Description
Free-Standing Retaining Walls	None expected.
Estimated Start of Construction	Unknown

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	<p>The project is located at the College of the Desert Campus in Palm Desert, California.</p> <p>The proposed renovation is within the existing Science Building in the central campus area.</p> <p>The project is located at Latitude 33.7327° N/Longitude 116.3870° W (approximate) (See Site Location)</p>
Existing Improvements	The site is an existing single-story building. A below grade utility tunnel abuts the south side of the building beneath a covered walkway. Portland cement and asphalt concrete pavements and landscape turf adjoin the building area.
Existing Topography	Relatively planar adjacent to the building. A turf covered slope is east of the building.
Seismic Conditions	<ul style="list-style-type: none"> ■ Not in Alquist-Priolo Earthquake Fault zone (AP) ■ Approximately 7.2 miles from the San Andreas fault zone, Coachella section ■ Seismic settlement potential
Geology	Interlayered sandy silt and silty sand in a generally loose condition to 40+ feet below ground surface, followed by medium dense soils. Shallow fills are expected.

Aerial Photograph Examination

Based on our review of historic aerial photographs, the campus area was formerly developed with two small residential structures surrounded by agricultural and undeveloped lands visible in imagery dated 1959. Prior to 1959 the campus area appears as undeveloped desert land in a dune field (1939). The college campus, including the existing Science Building, was developed prior to the time of the 1972 photographs. The areas surrounding the existing buildings appear to have been developed for agricultural use. Sand dune fields are visible north and west of the campus in 1974 images. Subsequent images show the campus and site in a similar configuration to that observed during our field investigation. Evidence of flooding or other geologic hazards such as faulting were not observed in the aerial images reviewed. No other surface features pertinent to this investigation were noted.

GEOTECHNICAL CHARACTERIZATION

Subsurface Profile

The project will involve the renovation of an existing science classroom building, with the structure within the footprint remaining. As such, geotechnical explorations were not performed within the footprint of the building, but rather immediately outside. Three CPT soundings were performed to depths of approximately 50 feet bgs. Additionally, various geotechnical investigations previously performed by CHJ, Inc. and CHJ Consultants (now Terracon) on the Palm Desert campus, including this site, were reviewed during this investigation. Subsurface and laboratory test data from these reports were utilized for this study as applicable. The pertinent geotechnical data from the prior reports are attached to this report (CHJ, 2011, 2013 & 2015).

We have developed a general characterization of the subsurface soil and groundwater conditions based upon our review of the data, including data from on-site and nearby geotechnical investigations, and our understanding of the geologic setting and planned construction. The site is generally underlain with layers of loose to very dense sand with varying amounts of silt and clay, and medium stiff sandy silt. Section A-A' illustrates the general soil profile underlying the existing building.

Conditions encountered at each exploration location are indicated on the individual exploration logs shown in the **Exploration Results** section and are attached to this report. Stratification boundaries on the exploration logs represent the approximate location of changes in native soil types; in situ, the transition between materials may be gradual.

The geotechnical characterization forms the basis of our geotechnical calculations and evaluation of site preparation, foundation options. As noted in **General Comments**, the characterization is based upon widely spaced exploration points across the site, and variations are likely.

Groundwater Conditions

In the previous borings, the boreholes were observed while drilling and after completion for the presence and level of groundwater. Groundwater was not observed in the borings while drilling or for the short duration the borings could remain open. In the CPT soundings conducted to a depth of 50½ feet, pore pressure values did not indicate groundwater.

Groundwater-level fluctuations may occur due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring logs.

Historic Groundwater Conditions

The site is located in Section 17 of Township 5 North, Range 6 East in the Indio Sub-basin of the Coachella Valley Groundwater Basin at approximate elevation 193 feet. Available groundwater data were reviewed in order to estimate the historic groundwater conditions for the site. Groundwater data for State wells and wells monitored by the Coachella Valley Water District (CVWD) are summarized in the following table.

Summary of Groundwater Data					
Well/Data Source	Date Measured	Measuring Point Elevation (feet)	Depth to Water (feet) well	Distance from Site (miles)	Source
05S06E16M01	1971	175	115.9	1 mile E	Coachella Valley Water District (CVWD)
05S06E18L02	1972	200	135	¾ mile WNW	
05S06E18R01	1961	195	113.6	0.2 mile W	
05S06E18R01	9-22-2009	195	224	0.35 mile W	DWR, 2021
	3-2-2011		214.5		
	3-14-2013		218		
	5-18-2016		210		
	2-22-2017		206		
	2-20-2018		206.5		
	8-25-2021		202.1		
DWR, 1964	1961 contours	--	103	site	DWR Bulletin 108
CVWD 5S6E17L	2006 average	190	208	0.23 mile NE	CVWD
CVWD 5S6E18R	2-20-2008	195	211	0.35 mile W	CVWD
	4-1-2008		217		
	12-2-2008		218		
	3-4-2009		214		

Groundwater was not encountered in explorations within the college campus during the current field work, or within explorations for prior projects within the campus area.

Based on groundwater level contour mapping for the year 1961 the historic-high groundwater level in the area is approximately 100 feet bgs (DWR, 1964).

Hydroconsolidation

To evaluate the potential deformation that may be caused by the addition of water to subsurface soils, hydroconsolidation testing was performed on a selected, representative relatively undisturbed sample during the 2013 study. The test result indicates a collapse potential of 1.1% (B-6, CHJ Job No.11270-3 at 12 feet). The soil sample was saturated under an axial pressure of 2,000 psf.

Expansive Soils

Based on the Expansion Index test results of CHJ Consultants (2013), silty soil materials exhibited a "very low" potential for expansion (expansion index of 0) in accordance with ASTM D4829. Based on this result, it is the opinion of this firm that special structural design and/or construction procedures to specifically mitigate the effects of expansive soil movements are not necessary. Requirements for reinforcing steel to satisfy structural criteria are not affected by this recommendation.

SITE GEOLOGY

The site is located in the northwestern Coachella Valley in the Colorado Desert geomorphic province. The Coachella Valley extends southeastward from the San Gorgonio Pass to the Salton Sea region and is traversed by segments of the San Andreas fault. The lowland of the Coachella Valley accumulates sediments from surrounding highlands in the form of alluvial and æolian (wind-deposited) materials. The valley in the area of the site is bounded on the southwest by the San Jacinto Mountains located approximately 1-1/4 miles southwest of the site. According to geologic mapping by Dibblee and Minch (2008, see **Supplemental Maps**), the site is underlain by young, alluvial sand and clay deposits.

Regional Faulting

The tectonics of the Southern California area are dominated by the interaction of the North American and Pacific tectonic plates, which are sliding past each other in transform motion. Although some of the motion may be accommodated by rotation of crustal blocks such as the western Transverse Ranges (Dickinson, 1996), the San Andreas fault zone is thought to represent the major surface expression of the tectonic boundary and to accommodate significant slip between the Pacific and North American plates. Some of the slip is accommodated by other northwest-trending strike-slip faults that are related to the San Andreas system, such as the San Jacinto and Elsinore faults. Local compressional or extensional strain resulting from the transform motion along this boundary is accommodated by left-lateral, normal and reverse faults such as faults of the San Gorgonia Pass area. A Regional Fault Map is presented in **Supplemental Maps**.

Fault Rupture Potential: The site is not located within an Alquist-Priolo Earthquake Fault Zone (APZ) designated by the State of California for active faults (Hart, 1999). The closest APZ

boundary, designated for the San Andreas fault zone, is located approximately 7 miles northeast of the site. Known faults or fault-related features are not located within the site; therefore, the potential for fault rupture within the site is considered low.

San Andreas Fault Zone: The San Andreas fault zone (SAFZ), a prominent geologic feature of California, traverses the eastern side of the Coachella Valley along the southwest flank of the Indio Hills located to the northeast of the site. The San Andreas fault is characterized by youthful fault scarps, vegetational lineaments, springs, and offset drainage. The SAFZ begins a "bend" in the northwest portion of the Coachella Valley where it assumes a more westerly trend as it bounds the southern flank of the San Bernardino Mountains region. This bend results in a complex interaction of faults in the region northwest of the site, with compressional, translational, and extensional styles of faulting of varying age.

The Banning-Garnet Hill segment of the San Andreas fault is located approximately 7½ (12 kilometers) northeast of the site. The Mission Creek, Banning, and Garnet Hill segments of the San Andreas fault zone branch from the Coachella Valley segment at a point located approximately 7 kilometers (9 miles) north of the site. Multiple fault strands distributed across a zone approximately 500 meters wide with concentrated faulting in a 200-meter-wide zone are interpreted for the Mission Creek fault in the Desert Hot Springs area based on seismic imaging studies (Catchings, et al., 2009). Near surface strands of the Mission Creek fault form a groundwater barrier and converge at depth into a vertical to southwest-dipping fault zone (Catchings et al., 2009). The Banning fault dips toward the Mission Creek fault located to the northeast, forming a single fault zone at depth (Catchings et al., 2009).

Burnt Mountain and Eureka Peak Faults: The Eureka Peak and Burnt Mountain faults were revealed as a result of surface rupture along the southern portion of the Landers earthquake rupture system. The faults are located approximately 14 miles (22 kilometers) northeast of the site and are thought to be significant in transferring slip from the SAFZ into the Eastern California Shear Zone. Geologic investigations suggest that the last pre-Landers earthquake to occur on the Eureka Peak fault was more than 11,000 years before the present (Yucca Valley, 1995).

San Jacinto Fault Zone: The San Jacinto fault zone is a system of northwest-trending, right-lateral, strike-slip faults. The Anza/Clark segments of the San Jacinto fault zone are located approximately 18 miles (29 kilometers) southwest of the site; the Clark is associated with the magnitude 6.4 San Jacinto earthquake of 1954. The most recent surface rupture along the San Jacinto fault zone occurred in 1968 along the Coyote Creek segment during a magnitude 6.5 earthquake. Larger historic earthquakes have occurred on the San Jacinto fault than any other fault in Southern California (Working Group on California Earthquake Probabilities, 1988).

San Gorgonio Pass Fault Zone: The active San Gorgonio Pass fault zone (SGPFZ), located in the San Gorgonio Pass area approximately 18 miles (29 kilometers) northwest of the site, is a youthful, east-west trending system of thrust and reverse faults which has been overprinting, and

lies south of, the Banning fault. This fault system forms a portion of the southern boundary of the Transverse Ranges and is also associated with the San Andreas fault zone. The SGPFZ is characterized by several discontinuous, northwest-trending, en echelon faults extending from the Cabazon outlet center northward to Verdugo Road. These faults form a zone approximately 1 mile wide in early- to mid-Holocene age alluvial fan deposits and are evidence of an active system of strike-slip/thrust faults that roughly parallel Interstate Highway 10 and bound the mountain front between Banning and Whitewater River (Yule and Sieh, 2003).

Pinto Mountain Fault: The Pinto Mountain fault is a left lateral, strike-slip fault system trending eastward approximately 45 miles (28 kilometers) from the eastern San Bernardino mountains to the Twentynine Palms area (Jennings, 2010). The closest portion of the fault to the site is located approximately 26 miles (42 kilometers) northwest of the site. This fault exhibits Holocene-age activity and experienced triggered slip during the 1992 Landers earthquake event. Portions of the Pinto Mountain fault are included within Alquist Priolo Earthquake Fault Zones designated by the State of California.

Landers Earthquake Rupture Zone: The southern terminus of the Landers earthquake rupture zone is located on the Eureka Peak fault, approximately 20 miles (32 kilometers) north of the site. The magnitude 7.3, right-slip Landers earthquake produced ground surface rupture for a distance of approximately 50 miles along several fault segments, including the Johnson Valley, Landers, Homestead Valley, Emerson and Camp Rock faults. The occurrence of the Landers earthquake indicates the potential for large earthquakes to occur along the Eastern California Shear Zone involving faults that previously exhibited only pre-Holocene activity.

Historical Earthquakes

A map of earthquake epicenters compiled from a search of the USGS Earthquake catalogue is including in **Supplemental Maps**. The following table summarizes historic seismic events in the site region based on a search of the USGS Earthquake catalogue for events of magnitude 4.5 to 9 within a 150-kilometer radius of the site. The search returned 365 results including 231 events of magnitude 4.5 to 4.99, 105 events of magnitude 5 to 5.96, 25 events of magnitude 6 to 6.9, and 4 events of magnitude 7.1 or greater.

Table 1: Summary of Historic Seismicity

Event ID	Date	Magnitude	Distance from Site (miles)	Direction from Site
Near San Bernardino	12/16/1858	6.0	67	NW
Northeastern San Diego region	2/9/1890	6.8	23	S
Laguna Salada EQ	2/24/1892	7.3	91	SSE
Borrego Springs	5/28/1892	6.5	38	S
Near San Jacinto	12/25/1899	6.7	36	W
Hemet area	4/21/1918	6.8	35	W
WSW of Oasis	3/25/1937	6	24	S
Desert Hot Springs area	12/4/1948	6	18	NNE
Salton City	3/19/1954	6.4	35	SE
North Palm Springs EQ	7/8/1986	6	22	NW
Thousand Palms	4/23/1992	6.1	16	NNE
Landers EQ	6/28/1992	7.3	32	N
Big Bear EQ	6/28/1992	6.4	41	NW
Hector Mine	10/16/1999	7.1	60	N

The Coachella Valley segment of the San Andreas fault was the locus for the 1948 magnitude 6 earthquake in the Desert Hot Springs area and for the 1986 magnitude 6 earthquake in the North Palm Springs area. Surface rupture occurred on the Mojave segment of the San Andreas fault in the great 1857 Fort Tejon earthquake. Using dendrochronological evidence, Jacoby and others (1987) inferred that a great earthquake on December 8, 1812, ruptured the northern reaches of the San Bernardino Mountains segment. Recent trenching studies have revealed evidence of rupture on the San Andreas fault at Wrightwood within this time frame (Fumal and others, 1993). Comparison of rupture events at the Wrightwood site and Pallett Creek, and analysis of reported intensities at the coastal missions, led Fumal and others (1993) to conclude that the December 8, 1812, event ruptured the San Bernardino Mountains segment of the San Andreas fault largely to the southeast of Wrightwood, possibly extending into the San Bernardino Valley.

Surface slip/rupture occurred on the Burnt Mountain and Eureka Peak faults during the Landers earthquake sequence in 1992. These relatively short faults are postulated to produce moderate magnitude earthquakes Mw 6.4 - 6.7 during independent earthquake events.

Significant historic earthquakes have not been specifically attributed to the Pinto Mountain fault or San Geronio Pass fault zone. The magnitude 6.4 Big Bear earthquake (an aftershock of the Landers earthquake) occurred June 28, 1992, approximately 41 miles (66 kilometers) northwest of the site. The magnitude 7.1 Hector Mine earthquake occurred on October 16, 1999, approximately 60 miles (97 kilometers) north of the site.

Tsunamis, Inundation, and Seiche and Flooding Potential

Evidence of recent flooding of the site and surrounding area was not observed during the geologic field reconnaissance or on the aerial photographs reviewed. Significant drainages are not located on or adjacent to the site. The site is not located within a 100-year flood zone, as designated by the Federal Emergency Management Agency. However, the site is located within a 500-year flood zone, as designated by the Federal Emergency Management Agency (2017). This zone is an area of 'reduced risk due to levee' as noted on the flood map panel; therefore, the hazard of significant flooding of the site appears to be low.

The site is not located within a potential inundation zone for seismically-induced dam/reservoir failure from dams/reservoirs. The site is not located in a coastal area. No large water storage facilities are known to exist within the area of the site. Therefore, the potential for seismically-induced flooding due to dam failure, seiche, or tsunami to affect the site is considered very low.

Subsidence Potential

The site is located within an area identified as being susceptible to subsidence (County of Riverside Land Information System, 2022). Subsidence is documented for portions of the Coachella Valley including the Palm Desert area (Sneed and others, 2020). Data indicate slowing or reversal of prior subsidence trends and groundwater level declines in the Coachella Valley region. A small-magnitude subsidence feature is documented in the Palm Desert area with a maximum subsidence of about 0.2 feet and includes periods of uplift and subsidence. Subsidence rates have slowed according to latest data evaluated for 2014 to 2017. The attached **Subsidence Zone Figure** illustrating subsidence data for the site region. Groundwater in the Coachella region is managed by Coachella Valley Water District in part to mitigate future subsidence. While subsidence is potentially damaging to extensive structures such as irrigation ditches or large water lines, damage to the subject structure (having a relatively small footprint area) is not anticipated due to the distributed nature of the subsidence area. Organic-rich soils with significant collapse potential were not encountered during this investigation and are not anticipated to be present in the general area of the site. Therefore, the potential for regional subsidence effects at the site is considered low.

Erosion Potential

The subject site is covered with structures and flatwork. Erosion by wind and water is not considered to be a hazard at the site.

Slope Stability and Landslide Potential

The site is not located in an area identified as having a potential for landslides or lateral spreading. The site is relatively flat and level, and steep slopes are not located within the project boundaries; therefore, the potential for landsliding or lateral spreading is considered very low.

Based on the relatively flat-lying site surface and planned development, significant temporary cut slopes are not expected during the proposed construction. For purposes of construction, the soils encountered in our explorations are considered type "C" materials. Accordingly, temporary slopes in near surface native soil should conform to applicable standards as outlined by Cal/OSHA for construction excavations.

SEISMIC CONSIDERATIONS

Seismic Design information is presented for several levels of ground motion hazard as specified in the project geotechnical scope of work and include CBC 2019 and ASCE 41-17 BSE-1E, BSE-1N, BSE-2E and BSE-2N.

Seismic Design Parameters - CBC 2019/ASCE 7-16

The seismic design parameters according to the 2019 CBC are provided in the following section based on the site-specific method of ASCE 7-16. The Site Classification (soil profile type) is based on the upper 100 feet of the site profile defined by measurement of shear wave velocity in accordance with Section 20.4 of ASCE 7. The shear wave survey was conducted adjacent to the building. The methodology and results are included in the **Exploration Results**. We determined a characteristic shear wave velocity $V_{s100} = 912$ feet per second [V_{s30} of 278 meters per second] for the site soil profile. This shear wave value is consistent with the range for ASCE 7-16 Seismic **Site Classification 'D'**. The site-specific V_{s30} value was used in deterministic models and the 'D' condition was used for determining probabilistic spectral values using the USGS Hazard Tool.

The seismic design parameters are summarized in the following table according to site-specific method of ASCE 7-16, Chapter 21.

Geotechnical Engineering Report

Desert Community College District - Science Building Renovation Project ■ Indio, California
February 14, 2022 ■ Terracon Project No. CB215187



Description	Value
2019 CBC Site Classification ¹	D
Site Latitude	33.7327
Site Longitude	-116.3870
Mapped Spectral Acceleration Parameters ²	$S_s = 1.5$ and $S_1 = 0.6$
Site Coefficients	$F_a = 1.0^2$ and $F_v = 1.7^3$
Site-specific Spectral Response Acceleration Parameters ⁴	$SM_s = 1.788$ and $SM_1 = 1.797$
Design Spectral Acceleration Parameters ⁴	$SD_s = 1.192$ and $SD_1 = 1.198$
Peak Ground Acceleration ⁴	0.64g
De-aggregated Magnitude ⁵	8.09

1. Seismic site classification in general accordance with the 2019 California Building Code, which refers to ASCE 7-16. Site class D used for determination of mapped values.
2. These values were obtained using online seismic design maps and tools provided by the 'ATC Hazards by Location' web-based application of Applied Technology Council.
3. ASCE 7-16 11.4.4
4. Site-specific values based on ASCE 7-16, 21.4 and 21.5
5. USGS Unified Hazard Tool <https://earthquake.usgs.gov/hazards/interactive>.

Site-Specific Ground Motions - CBC 2019/ASCE 7-16

Based on the mapped value $S_1 = 0.6$ for the project site and requirements specified in ASCE 7-16, Section 11.4.8, we performed a ground motion hazard analysis per ASCE 7-21, Section 21.2.

The procedures outlined in ASCE 7-16 Chapters 11, 20 and 21 were utilized for preparation of site-specific spectra for the proposed project. The site is approximately 11.7 kilometers southwest of the mapped trace of the San Andreas fault zone and 27.9 kilometers northeast of the San Jacinto fault zone. A Class D soil profile condition was utilized in the analysis. We prepared deterministic and probabilistic spectra and associated limiting spectra where required. The site-specific response spectra in tabular and graphic forms and a discussion of methodology are included in this report.

Deterministic Spectrum

Deterministic MCE spectra based on scenario events on nearby faults and consistent with the Next Generation West 2 (NGA-West 2) attenuation relations (GMPEs) used for the 2014 USGS seismic source models were calculated. The fault properties used are summarized in the following table.

Fault	Magnitude	Distance (km)	Direction	Type
San Jacinto	7.88	27.9	SW	Strike slip
San Andreas	8.2	11.7	NE	Strike slip

We used $V_{S30} = 278$ meters/second. Basin factors Z1.0 and Z2.5 were adapted from Southern California Earthquake Center (SCEC) Community Velocity Models (CVM S4 and H11) as compiled by Graves (2011) and Ajala and other, 2019. The resulting deterministic spectrum is controlled by the San Andreas fault at all site periods.

The equally-weighted spectral values from the attenuation relations of Abrahamson and others (ASK 2014), Boore and others (BSSA 2014), Campbell and Borzognia (CB 2014) and Chiou and Youngs (CY 2014) were used for the deterministic MCE spectra. The MCE spectrum represents 84th-percentile, 5-percent-damped spectral response acceleration in the direction of maximum horizontal response (maximum rotated) for each period. Maximum rotated values were obtained using the scaling factors of Shahi and Baker (2014). The deterministic MCE_R spectrum and associated spectra are attached in tabular and graphic forms.

Probabilistic MCER Spectrum

An MCE_R spectrum was developed as a probabilistic spectrum using site class D values obtained with the USGS Hazard Tool (<https://earthquake.usgs.gov/hazards/interactive/>) web-based software application consistent with the Next Generation West 2 (NGA-West 2) attenuation relations (GMPEs). The equally-weighted spectral values from the attenuation relations of Abrahamson and others (ASK 2014), Boore and others (BSSA 2014), Campbell and Borzognia (CB 2014) and Chiou and Youngs (CY 2014) were used for the probabilistic spectrum. The values so obtained were scaled from geomean to maximum rotated values using the factors of Shahi and Baker (2014). Gridded seismic sources are included in the probabilistic model. The probabilistic MCE spectrum was converted to a risk-targeted spectrum (MCE_R) using the USGS Risk Targeted Ground Motion Calculator tool (<https://code.usgs.gov/ghsc/hazdev/earthquake-rtgm-calculator>).

Site-Specific MCER Spectrum

The lesser of the values at any period from the deterministic MCE_R and probabilistic MCE_R spectra form the site-specific MCE_R spectrum per ASCE 7-16 21.2.3. For the subject site, the deterministic spectrum controls the design spectrum at periods from PGA to 2 seconds and the probabilistic spectrum controls the design spectrum at periods from 3 to 5 seconds.

Design Spectrum

A design response spectrum was determined according to the procedure outlined in ASCE 7-16, Section 21.3, and is equal to two-thirds of the response spectral accelerations of the site-specific MCE_R . The design spectrum is limited by a 'floor' at 80 percent of spectral acceleration determined according to ASCE 7-16, Section 11.4.6. For this site, the 'floor' condition was not applied. The recommended site-specific design response spectrum is attached in tabular and graphic forms.

Peak Ground Acceleration (PGA)

According to ASCE 7-16, Section 11.4.8, the site-specific geometric mean (MCE_G) PGA used for evaluation of soil effects is based on the lesser of the site-specific deterministic and probabilistic PGA values with an adjustment to 80% of the code value, if needed. The following table summarizes the PGA values considered for the project.

Site-Specific PGA Values	
Code-Based Geometric Mean PGA	0.656
80 Percent of Code-Based PGA	0.525g
Probabilistic Geometric Mean PGA	0.798g
Deterministic Geometric Mean PGA	0.642g
Recommended Site-Specific PGA	0.642g

For the site-specific (MCE_G) PGA, the deterministic value is the lesser of the probabilistic and deterministic values and is greater than 80 percent of the code-based geometric mean PGA value. Therefore, we recommended a site-specific PGA value of 0.642g for evaluation of soil effects such as liquefaction or seismic settlement.

Design Parameters - ASCE 41-17

Seismic design parameters according to ASCE 41-17, Section 2.4 are summarized in the following table.

Summary of Design Parameters – ASCE 41-17				
Design Level	S_s	S_1	S_{xs}	S_{x1}
BSE-2N	1.5	0.6	1.5	1.02
BSE-1N	--	--	1	0.68
BSE-2E	1.342	0.502	1.342	0.903
BSE-1E	0.69	0.234	0.861	0.499

LIQUEFACTION AND SEISMIC SETTLEMENT

Liquefaction Potential

According to the City of Palm Desert General Plan - Geotechnical Element (2004), the site is not located within an area identified as having a potential for liquefaction. According to the Riverside County Land Information System (2022), the site is within an area identified as having a ‘moderate’ potential for liquefaction. A historic-high groundwater level at 100 feet bgs is estimated for the project. Based on the data from the project and prior borings and available well measurement data, groundwater is not anticipated to occur within 100 feet bgs beneath the site during the project lifetime. The potential for liquefaction should be considered low; however, dry sand seismic settlement potential exists.

Seismic Settlement

To determine the amount of seismic settlement, we utilized the software “LiquefyPro” by CivilTech Software; seismic settlement was estimated using the data from the CPT soundings. The recommended site-specific peak ground acceleration (PGA) of 0.642g and the de-aggregated magnitude of 8.09 were utilized as input into the liquefaction analysis program. Settlement analysis used the Ishihara / Yoshimine method and CPT calculation used the Modified Robertson method. Historically, groundwater has been approximately 100 feet bgs; we used a high ground water of 100 feet bgs for analysis.

Our analysis indicates that seismic settlement (dry sand settlement) using data from soundings CPT-1, CPT-2 and CPT-3 is estimated to be 0.64, 1.41 and 0.72 inches, respectively. The maximum differential seismic settlement could be on the order of half of total seismic settlement over a distance of 40 feet.

EARTHWORK

The following recommendations include site preparation, excavation, subgrade preparation and placement of engineered fills on the project. The recommendations presented for design and construction of earth supported elements including foundations, slabs, and pavements are contingent upon following the recommendations outlined in this section.

Earthwork on the project should be observed and evaluated by Terracon. The evaluation of earthwork should include observation and testing of engineered fill, subgrade preparation, foundation bearing soils, and other geotechnical conditions exposed during the construction of the project.

Site Preparation

This project is rehabilitation and retrofit of an existing structure, If demolition of the existing slab is required, the existing slab should be demolished and any deleterious materials such as construction debris and organics, including demolished fragments, should be removed and properly wasted from the project site.

Evidence of underground utilities along the south side of the structure was found. No evidence of other underground facilities such as septic tanks, cesspools, and basements was not observed during the reconnaissance, such features could be encountered during construction. If unexpected fills, utilities, or underground facilities are encountered, such features should be removed and the excavation thoroughly cleaned prior to backfill placement and/or construction.

Subgrade Preparation

We recommend that the proposed new retrofit footings be supported on engineered fill extending to a minimum depth of 1 foot below the bottom of foundations, or 3 feet below existing grades, whichever is greater

After clearing, any required subgrade cuts should be made. Once any required subgrade cuts are made, and prior to placing fill, the surfaces of all areas to receive fill should be scarified to a minimum depth of 10 inches. The scarified soils should be brought to near optimum moisture content and compacted per the compaction requirements in this report.

If sufficient compaction cannot be achieved in-place, the loose soils should be removed and replaced as engineered fill. The excavation should be widened laterally at least 8 inches for each 12 inches of fill placed below footing base elevations.

The moisture content and compaction of subgrade soils should be maintained until slab/pavement construction. Care should be taken to prevent wetting or drying of the bearing materials during construction.

Excavation

We anticipate that excavations for the proposed construction can be accomplished with conventional earthmoving equipment. The bottom of excavations should be thoroughly cleaned of loose soils and disturbed materials prior to backfill placement and/or construction.

Individual contractors are responsible for designing and constructing stable, temporary excavations. Excavations should be sloped or shored in the interest of safety following local, and federal regulations, including current OSHA excavation and trench safety standards.

Fill Material Types

All fill materials should be inorganic soils free of vegetation, debris, and fragments larger than three inches in size. Pea gravel or other similar non-cementitious, poorly-graded materials should not be used as fill or backfill without the prior approval of the geotechnical engineer.

Clean on-site soils or approved imported materials may be used as fill material for the following:

■ general site grading	■ foundation backfill
■ foundation areas	■ exterior slab areas
■ interior floor slab areas	

If imported soils are used as fill materials to raise grades, these soils should conform to low volume change materials and should conform to the following requirements:

<u>Gradation</u>	<u>Percent Finer by Weight (ASTM C 136)</u>
3"	100
No. 4 Sieve	50 - 100
No. 200 Sieve	20 - 50
■ Liquid Limit	30 (max)
■ Plasticity Index	15 (max)
■ Maximum Expansive Index*	20 (max)

*ASTM D 4829

The contractor shall notify the Geotechnical Engineer of import sources sufficiently ahead of their use so that the sources can be observed and approved as to the physical characteristic of the import material. For all import material, the contractor shall also submit current verified reports from a recognized analytical laboratory indicating that the import has a "not applicable" (Class S0) potential for sulfate attack based upon current ACI criteria and is "mildly corrosive" to ferrous

metal and copper. The reports shall be accompanied by a written statement from the contractor that the laboratory test results are representative of all import material that will be brought to the job.

Engineered fill should be placed and compacted in horizontal lifts, using equipment and procedures that will produce recommended moisture contents and densities throughout the lift. Fill lifts should not exceed 10 inches loose thickness.

Compaction Requirements

Material Type and Location	Per the Modified Proctor Test (ASTM D 1557)		
	Minimum Compaction Requirement (%)	Range of Moisture Contents for Compaction Above Optimum	
		Minimum	Maximum
On-site soils and/or low volume change imported fill:			
Beneath foundations:	90	0%	+3%
Beneath interior slabs:	90	0%	+3%
Miscellaneous backfill:	90	0%	+3%
Utility Trenches:	90	0%	+3%
Bottom of excavation receiving fill:	90	0%	+3%

Utility Trenches

We anticipate that the on-site soils will provide suitable support for underground utilities and piping that may be installed. Any soft and/or unsuitable material encountered at the bottom of excavations should be removed and be replaced with an adequate bedding material. A non-expansive granular material with a sand equivalent greater than 30 is recommended for bedding and shading of utilities, unless otherwise allowed by the utility manufacturer.

On-site materials are considered suitable for backfill of utility and pipe trenches from one foot above the top of the pipe to the final ground surface, provided the material is free of organic matter and deleterious substances.

Trench backfill should be mechanically placed and compacted as discussed earlier in this report. Compaction of initial lifts should be accomplished with hand-operated tampers or other lightweight compactors. Where trenches are placed beneath slabs or footings, the backfill should satisfy the gradation and expansion index requirements of engineered fill discussed in this report. Flooding or jetting for placement and compaction of backfill is not recommended.

Grading and Drainage

Positive drainage should be provided during construction and maintained throughout the life of the development. Infiltration of water into utility trenches or foundation excavations should be prevented during construction. Planters and other surface features which could retain water in areas adjacent to the building or pavements should be sealed or eliminated. In areas where sidewalks or paving do not immediately adjoin the structure, we recommend that protective slopes be provided with a minimum grade of approximately 5 percent for at least 10 feet from perimeter walls. Backfill against footings, exterior walls, and in utility and sprinkler line trenches should be well compacted and free of all construction debris to reduce the possibility of moisture infiltration. We recommend a minimum horizontal setback distance of 10 feet from the perimeter of any building and the high-water elevation of the nearest storm-water retention basin.

Roof drainage should discharge into splash blocks or extensions when the ground surface beneath such features is not protected by exterior slabs or paving. Sprinkler systems and landscaped irrigation should not be installed within 5 feet of foundation walls.

Construction Considerations

Upon completion of filling and grading, care should be taken to maintain the subgrade moisture content prior to construction of floor slabs and pavements. Construction traffic over the completed subgrade should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. If the subgrade should become desiccated, saturated, or disturbed, the affected material should be removed, or these materials should be scarified, moisture conditioned, and recompacted prior to floor slab and pavement construction.

Onsite soils contain zones of cohesionless sandy soils. Such soils have the tendency to cave and slough during excavations. Therefore, formwork may be needed for foundation excavations.

We recommend that the earthwork portion of this project be completed during extended periods of dry weather if possible. If earthwork is completed during the wet season (typically November through April) it may be necessary to take extra precautionary measures to protect subgrade soils. Wet season earthwork operations may require additional mitigative measures beyond that which would be expected during the drier summer and fall months. This could include diversion of surface runoff around exposed soils and draining of ponded water on the site. Once subgrades are established, it may be necessary to protect the exposed subgrade soils from construction traffic.

Construction Observation and Testing

The geotechnical engineer should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during subgrade preparation,

proof-rolling, placement and compaction of controlled compacted fills, backfilling of excavations to the completed subgrade.

The exposed subgrade and each lift of compacted fill should be tested, evaluated, and reworked as necessary until approved by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the building areas and 5,000 square feet in pavement areas. One density and water content test for every 50 linear feet of compacted utility trench backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated under the direction of the Geotechnical Engineer. In the event that unanticipated conditions are encountered, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

SHALLOW FOUNDATIONS

Provided the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for shallow foundations.

Design Parameters – Compressive Loads

Item	Description
Net Allowable Bearing pressure ^{1, 2}	3,000 psf
Required Bearing Stratum ³	12" compacted fill
Minimum Foundation Width	Columns: 24 inches Continuous: 18 inches
Minimum Footing Depth ⁶	18" below finish grade
Increments of Net Allowable Bearing Pressure	300 psf for each additional foot of width 800 psf for each additional foot of depth
Maximum Net Allowable Bearing Pressure ²	4,500 psf
Ultimate Passive Resistance ⁴ (equivalent fluid pressures)	360 psf/ft
Ultimate Coefficient of Sliding Friction ⁵	0.35 (on-site material)

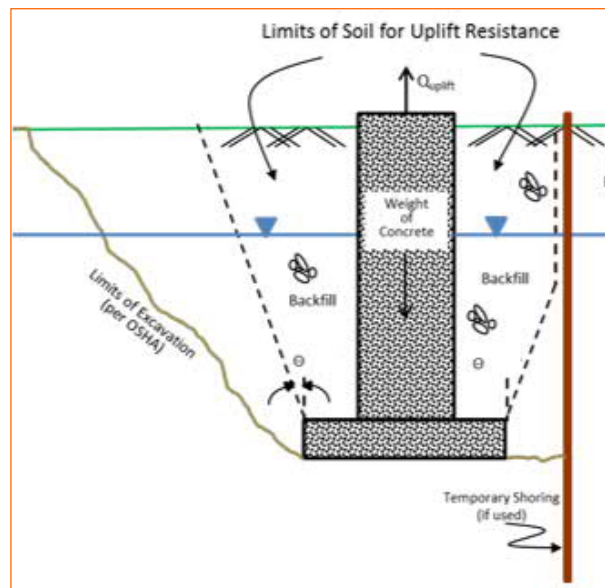
Item	Description
Estimated Total Static Settlement from Structural Loads ²	about 1 inch
Estimated Static Differential Settlement ⁷	about 1/2 of total static settlement

1. The net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation and the pressure for the minimum footing size and embedded depth. An appropriate factor of safety has been applied. These bearing pressures can be increased by 1/3 for transient loads unless those loads have been factored to account for transient conditions. Values assume that exterior grades are no steeper than 20% within 10 feet of structure.
2. The maximum net allowable bearing pressure is the pressure for maximum loads noted in Project Description. A factor of safety of 3 could be used to obtain ultimate bearing pressure.
3. Unsuitable or loose soils should be over-excavated and replaced according to the recommendations presented in the Earthwork.
4. Use of passive earth pressures require the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed and compacted structural fill be placed against the vertical footing face. A factor of safety of 2.0 is recommended.
5. Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Should be neglected for foundations subject to net uplift conditions. A factor of safety of 1.5 is recommended.
6. Embedment necessary to minimize the effects of seasonal water content variations. For sloping ground, maintain depth below the lowest adjacent exterior grade within 5 horizontal feet of the structure.
7. Differential settlements are as measured over a span of 40 feet.

The passive resistance provided can be combined with sliding friction. A factor of safety of 2.0 is recommended to be applied to the ultimate passive resistance and 1.5 to the ultimate coefficient of sliding friction to obtain allowable values.

Design Parameters - Uplift Loads

Uplift resistance of spread footings can be developed from the effective weight of the footing and the overlying soils. As illustrated on the subsequent figure, the effective weight of the soil prism defined by diagonal planes extending up from the top of the perimeter of the foundation to the ground surface at an angle, θ , of 20 degrees from the vertical can be included in uplift resistance. The maximum allowable uplift capacity should be taken as a sum of the effective weight of soil plus the dead weight of the foundation, divided by an appropriate factor of safety. A maximum total unit weight of 105 pcf should be used for the backfill. This unit weight should be reduced to 40 pcf for portions of the backfill or natural soils below the groundwater elevation.



Foundation Construction Considerations

The footing excavations should be evaluated under the direction of the Geotechnical Engineer. The base of all foundation excavations should be free of water and loose soil, prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Excessively wet or dry material or any loose/disturbed material in the bottom of the footing excavations should be removed/reconditioned before foundation concrete is placed.

To ensure foundations have adequate support, special care should be taken when footings are located adjacent to open trenches. The bottom of such footings should be at least 1 foot below an imaginary plane with an inclination of 1.5 horizontal to 1.0 vertical extending upward from the nearest edge of adjacent open trenches.

FLOOR SLABS

If it is planned to demolish and reconstruct the floor slab at some areas, the resulting soil surface after slab demolition should be scarified to a minimum depth of 12 inches, moisture conditioned and compacted to 90 percent relative compaction. The final pad surfaces should be rolled to provide smooth, dense surfaces.

Slabs to receive moisture-sensitive coverings should be provided with a moisture vapor retarder/barrier. We recommend that a vapor retarder be designed and constructed according to the American Concrete Institute (ACI) 302.1R, Concrete Floor and Slab Construction, which addresses moisture vapor retarder construction. At a minimum, the vapor retarder should comply with ASTM E

1745 and have a nominal thickness of at least 10 mils. The vapor retarder should be properly sealed, per the manufacturer's recommendations, and protected from punctures and other damage. Per the Portland Cement Association, for slabs with vapor-sensitive coverings, a layer of dry, granular material (sand), a minimum of 4 inches thick, should be placed under the vapor retarder. For slabs in humidity-controlled areas, a layer of dry, granular material (sand), a minimum of 4 inches thick, should be placed above the vapor retarder.

A modulus of vertical subgrade reaction of 150 pounds per square inch per inch (psi/in) can be utilized in the design of slabs-on-grade for the proposed structure. The modulus was obtained based on prepared subgrade beneath floor slabs, and estimates obtained from NAVFAC 7.1 design charts. This value is for a small loaded area, such as for forklift wheel loads or point loads and should be adjusted for larger loaded areas.

CORROSIVITY

The following table lists the laboratory electrical resistivity (standard and as-received), chlorides, soluble sulfates, and pH testing results from the 2013 CHJ investigation. These values may be used to estimate potential corrosive characteristics of the on-site soils with respect to contact with the various underground materials which will be used for project construction.

Boring (13259-3)	Depth (feet)	Soluble Sulfate (mg/kg)	Soluble Chloride (mg/kg)	pH	Resistivity (as-received) (Ohm-cm)	Resistivity (saturated) (Ohm-cm)
B-1B, B-2B B-3B and B-4B	0 to 5	50	29	8.0	10,800	4,000

Results of soluble sulfate testing indicate samples of the on-site soils tested possess negligible sulfate concentrations when classified in accordance with Table 4.3.1 of the ACI Design Manual. Concrete should be designed in accordance with the provisions of the ACI Design Manual, Section 318, Chapter 4.

For protection against corrosion to buried metals, Terracon recommends that an experienced corrosion engineer be retained to design a suitable corrosion protection system for underground metal structures or components.

If corrosion of buried metal is critical, it should be protected using a non-corrosive backfill, wrapping, coating, sacrificial anodes, or a combination of these methods, as designed by a qualified corrosion engineer.

GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, the data obtained from our site exploration, and the exploration results of others. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted Geotechnical Engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client, and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety and cost estimating, including excavation support and dewatering requirements/design, are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

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ATTACHMENTS

Geotechnical Engineering Report

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SITE LOCATION AND EXPLORATION PLANS

Contents:

Site Location Plan

Exploration Plan

Section A-A'

Note: All attachments are one page unless noted above.

SITE LOCATION

Desert Community College District - Science Building Renovation Project ■ Palm Desert, California
43-500 Monterey Avenue ■ Terracon Project No. CB215187

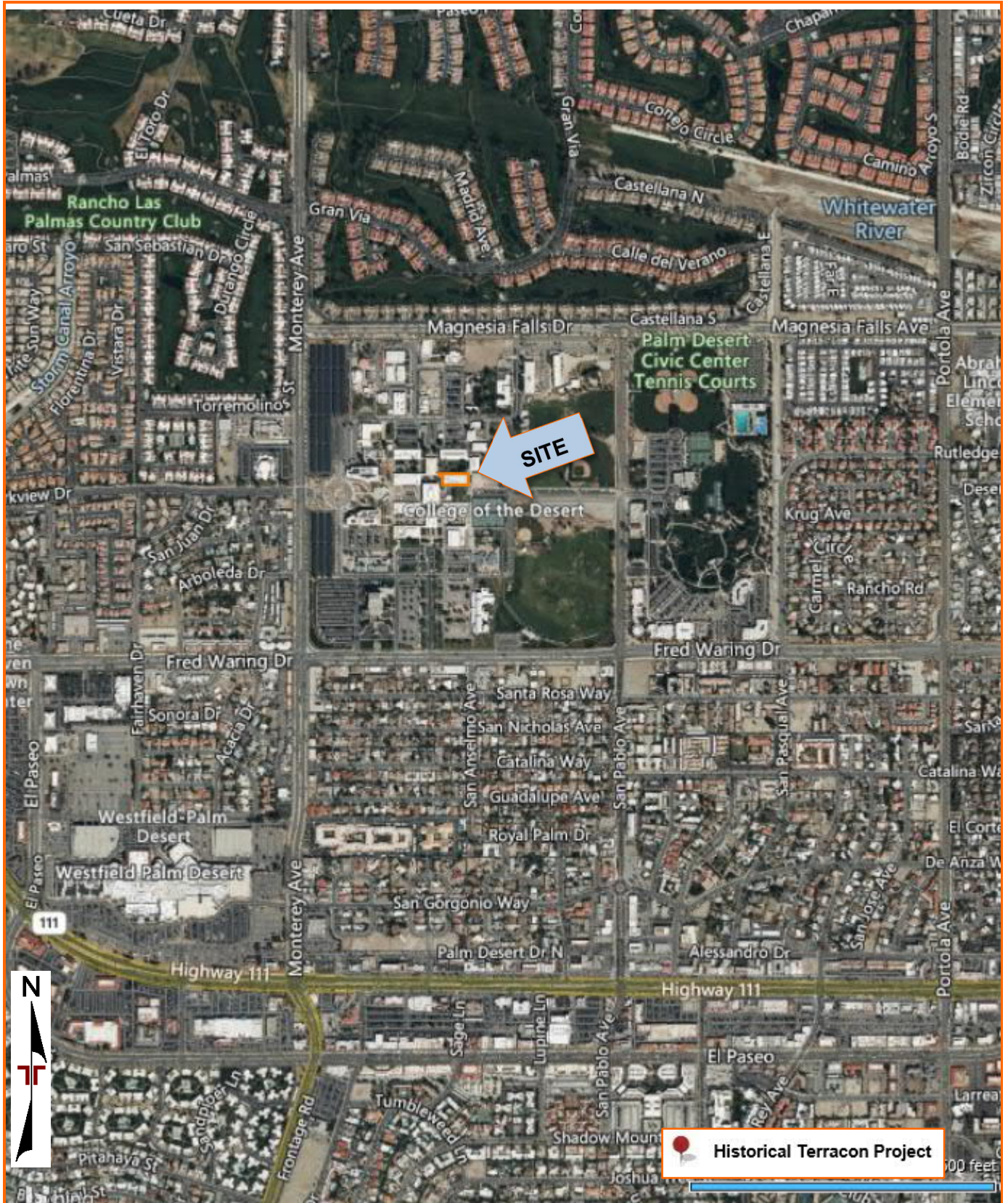
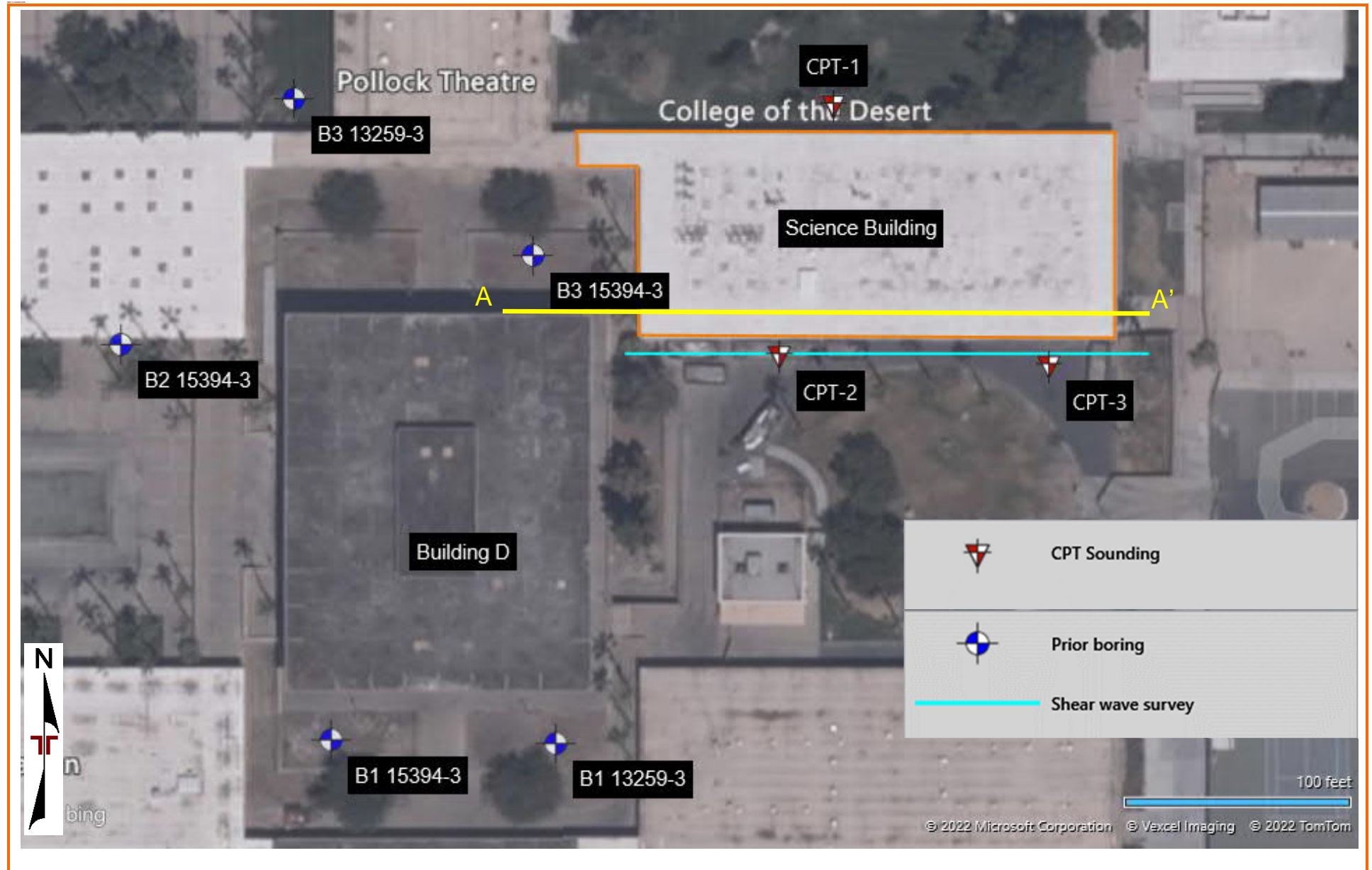


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

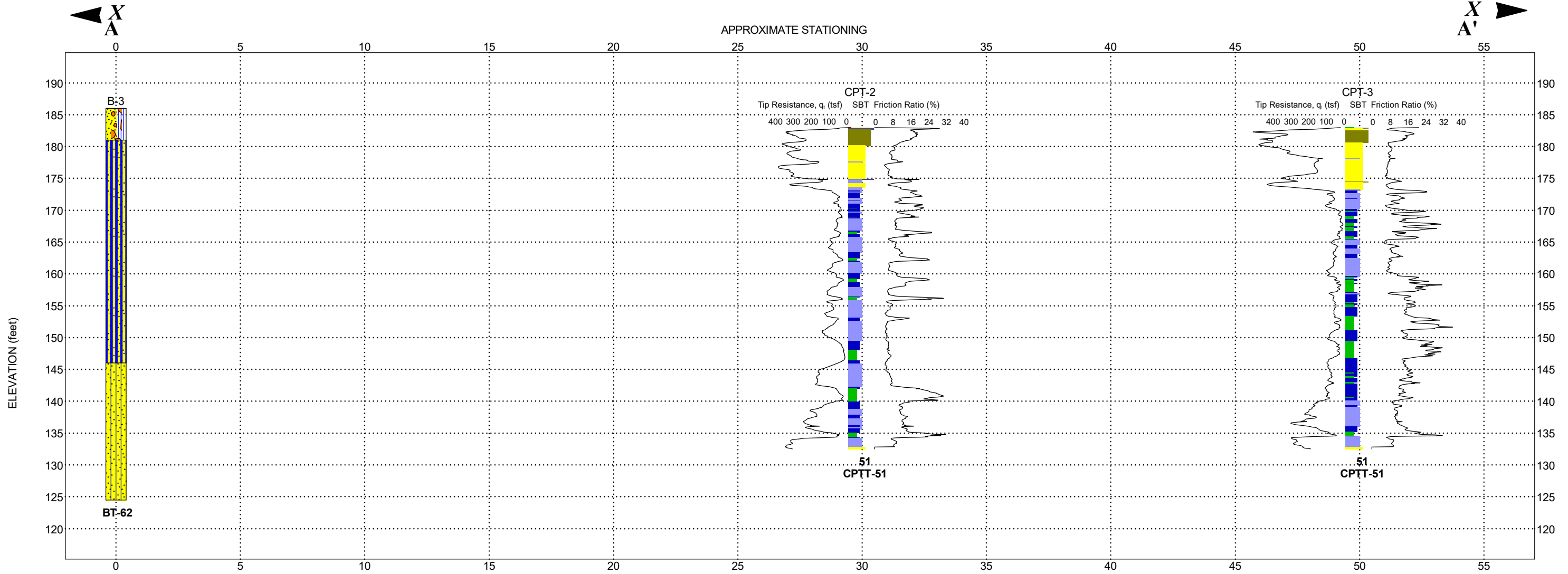
MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN

Desert Community College District - Science Building Renovation Project ■ Palm Desert, California
43-500 Monterey Avenue ■ Terracon Project No. CB215187



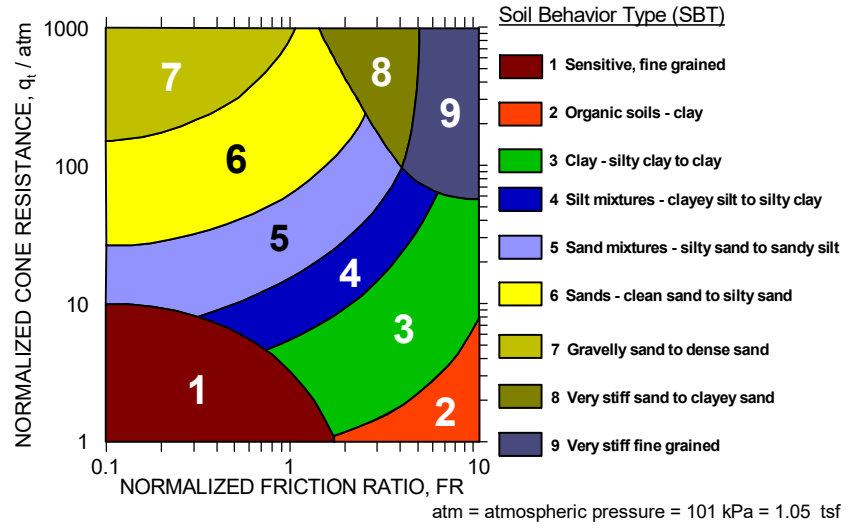
THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT FENCE W/COMPANION BORING CB215187 COD SCIENCE BUILD.GPJ TERRACON_DATATEMPLATE.GDT 2/11/22



Legend for USCS Classification Graphic Symbols



CPT Soil Classification Graphic Symbols



NOTES:
 See Exhibit for orientation of soil profile.
 See General Notes in Appendix C for symbols and soil classifications.
 Soils profile provided for illustration purposes only.
 Soils between borings may differ.
 For presentation purposes, some locations are offset to allow display of both borings and CPTs.
 BT - Boring Termination (Ft)
 CPTT - CPT Termination (Ft)

▽ Water Level Reading at time of drilling.
 ▼ Water Level Reading after drilling.

Project Manager:
 Drawn by: AT
 Approved by: KA
 Date: 2/11/2022

Project No.: CB215187
 Scale: N.T.S.
 File Name: TESTFENCE

Terracon
 1355 E Cooley Dr, Ste C
 Colton, CA
 PH. 909-824-7311 FAX.

SUBSURFACE PROFILE
 A-A'
 COD SCIENCE BUILDING RENOVATION
 43500 MONTEREY AVENUE
 PALM DESERT, CA

EXHIBIT

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Three cone penetration test (CPT) soundings were performed for this study. Additionally, subsurface borings and laboratory tests performed on the campus for nearby previous projects were considered for this study. A summary of the subsurface explorations used for this study and the associated reports they were submitted with is provided below. .

Quantity of Borings/CPTs	Boring/CPT Depth (feet) ¹	Study
CPT-1, CPT-2, CPT-3	50 ½	This report
B-1	76 ½	13259-3
B-3	76 ½	
B-1	61 ½	15394-3
B-2	51 ½	
B-3	61 ½	

1. Below ground surface

Boring Layout and Elevations: Unless otherwise noted, Terracon personnel provide the boring layout. Coordinates are obtained with a handheld GPS unit (estimated horizontal accuracy of about ±20 feet) and approximate elevations are obtained by interpolation from using google earth. If elevations and a more precise boring layout are desired, we recommend borings be surveyed following completion of fieldwork.

Cone Penetrometer Testing: Specifically for this study, we performed three (3) cone penetrometer tests (CPTs) to a depth of 50 ½ feet. Refusal was not encountered. The digital data recorded include tip resistance, friction resistance, and probe inclination angle recorded about every 2 centimeters while advancing through the ground at a rate between 1½ and 2½ centimeters per second. No soil samples are gathered through the CPT subsurface investigation technique. CPT testing is conducted in general accordance with ASTM D5778 “Standard Test Method for Performing Electronic Friction Cone and Piezocone Penetration Testing of Soils.”

Property Disturbance: We backfill explorations with grout upon completion. Pavements were patched with cold-mix asphalt and/or ready mixed concrete, as appropriate. Turf areas were smoothed with hand tools to match existing grades. Our services do not include repair of the site or restoration of turf grass beyond backfilling our explorations and cold patching existing pavements.

Geotechnical Engineering Report

Desert Community College District - Science Building Renovation Project ■ Palm Desert, California

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Geophysical Survey: A seismic geophysical survey using the multi-channel analysis of surface waves (MASW) and microtremor array measurements (MAM) methods was performed adjacent to the existing building. A one-dimensional (1D) shear-wave model was developed through the analysis of passive and active surface wave signals. The data were processed using MASW and/or ReMi (refraction microtremor) software. A Geode 24-channel digital seismograph and twenty-four (24) 4.5-Hz geophones spaced approximately 10 feet apart are used in order to allow sufficient depth of exploration (100 feet plus). The Seismic Shear-Wave Survey report is attached.

The purpose of this survey is to collect non-invasive subsurface data regarding the soil conditions and develop a shear wave velocity profile within the upper 100 feet beneath the surface for use in determining Site Class for seismic design.

Geotechnical Engineering Report

Desert Community College District - Science Building Renovation Project ■ Palm Desert, California

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EXPLORATION RESULTS

Contents:

Shear Wave Survey Report

CPT Logs (CPT-1 through CPT-3)

Boring Logs (19)

Prior Laboratory Tests (13)

Note: All attachments are one page unless noted above.



**SEISMIC SHEAR-WAVE SURVEY
SCIENCE BUILDING REHAB PROJECT
COLLEGE OF THE DESERT
43-500 MONTEREY AVENUE
PALM DESERT, CALIFORNIA**

Project No. 183116-5

January 7, 2022

Prepared for:

Terracon
1355 E. Cooley Drive
Colton, CA 92324

Consulting Engineering Geology & Geophysics

P.O. Box 1090, Loma Linda, CA 92354 • 909 796-4667

Terracon
1355 E. Cooley Drive
Colton, CA 92324

Attention Mr. John McKeown

Regarding: Seismic Shear-Wave Survey
Science Building Rehab Project
College of the Desert
43-500 Monterey Avenue
Palm Desert, California
Terracon Project No. CB215187

INTRODUCTION

As requested, this firm has performed a seismic shear-wave survey using the multi-channel analysis of surface waves (MASW) and microtremor array measurements (MAM) methods for the above-referenced site. The purpose of this survey was to assess the one-dimensional average shear-wave velocity structure beneath the subject survey area to a depth of at least 100 feet. Locally as mapped by Dibblee (2008), the subject site is shown to be surficially mantled by Holocene age alluvial sand and clay deposits of valley areas, in turn underlain presumably by progressively older alluvial deposits at depth.

The location of the seismic traverse has been approximated on a captured Google™ Earth image (Google™ Earth, 2022), which is presented as the Seismic Line Location Map, Plate 1, for reference. Additionally, photographic views of the survey line are presented on Plate 2 for visual and reference purposes. As authorized by you, the following services were performed during this study:

- **Review of available pertinent published and unpublished geologic and geophysical data in our files pertaining to the site.**
- **Performing a seismic surface-wave survey by a licensed State of California Professional Geophysicist that included one traverse for shear-wave velocity analysis purposes.**
- **Preparation of this report, presenting the results of our findings with respect to the shear-wave velocities of the subsurface earth materials.**

Accompanying Map, Illustrations, and Appendices

- Plate 1 - Seismic Line Location Map
- Plate 2 - Site Photographs
- Appendix A - Shear-Wave Model and Data
- Appendix B - References

SUMMARY OF SHEAR-WAVE SURVEY

Methodology

The fundamental premise of this survey uses the fact that the Earth is always in motion at various seismic frequencies. These relatively constant vibrations of the Earth's surface are called microtremors, which are very small with respect to amplitude and are generally referred to as background "noise" that contain abundant surface waves. These microtremors are caused by both human activity (i.e., cultural noise, traffic, factories, etc.) and natural phenomenon (i.e., wind, wave motion, rain, atmospheric pressure, etc.) which have now become regarded as useful signal information. Although these signals are generally very weak, the recording, amplification, and processing of these surface waves has greatly improved by the use of technologically improved seismic recording instrumentation and recently developed computer software. For this application, we are mainly concerned with the Rayleigh wave portion of the seismic signals, which is also referred to as "ground roll" since the Rayleigh wave is the dominant component of ground roll.

For the purposes of this study, there are two ways that the surface waves were recorded, one being "active" and the other being "passive." Active means that seismic energy is intentionally generated at a specific location relative to the survey spread and recording begins when the source energy is imparted into the ground (i.e., MASW survey technique). Passive surveying, also called "microtremor surveying," is where the seismograph records ambient background vibrations (i.e., MAM survey technique), with the ideal vibration sources being at a constant level. Longer wavelength surface waves (longer-period and lower-frequency) travel deeper and thus contain more information about deeper velocity structure and are generally obtained with passive survey information. Shorter wavelength (shorter-period and higher-frequency) surface waves travel shallower and thus contain more information about shallower velocity structure and are generally collected with the use of active sources. For the most part, higher frequency active source surface waves will resolve the shallower velocity structure and lower frequency passive source surface waves will better resolve the deeper velocity structure. Therefore, the combination of both of these surveying techniques provides a more accurate depiction of the subsurface velocity structure.

The assemblage of the data that is gathered from these surface wave surveys results in development of a dispersion curve. Dispersion, or the change in phase velocity of the seismic waves with frequency, is the fundamental property utilized in the analysis of surface wave methods. The fundamental assumption of these survey methods is that the signal wavefront is planar, stable, and isotropic (coming from all directions) making it independent of source locations and for analytical purposes uses the spatial autocorrelation method (SPAC). The SPAC method is based on theories that are able to detect "signals" from background "noise" (Okada, 2003). The shear wave velocity (V_s) can then be calculated by mathematical inversion of the dispersive phase velocity of the surface waves which can be significant in the presence of velocity layering, which is common in the near-surface environment.

Field Procedures

One seismic shear-wave survey traverse (Seismic Line SW-1) was performed, which has been approximated on the Seismic Line Location Map, Plate 1. The traverse was located in the field by use of Google™ Earth imagery (2021), GPS coordinates, and physical landmarks. For data collection, the field survey employed a twenty-four channel Geometrics StrataVisor™ NZXP model signal-enhancement refraction seismograph. This survey employed both active (MASW) and passive (MAM) source methods to ensure that both quality shallow and deeper shear-wave velocity information was recorded (Park et al., 2005).

Both the MASW and MAM surveys used the same linear geometry array that consisted of a 161-foot-long spread using a series of twenty-four 4.5-Hz geophones that were spaced at regular seven-foot intervals. For the MASW survey, the ground vibrations were recorded using a one second record length at a sampling rate of 0.5-milliseconds. Two seismic records were obtained using a 30-foot offset from the beginning and end of the survey line, utilizing a 16-pound sledge-hammer as the energy source to produce the seismic waves. Each of these shot points used multiple hammer impacts (stacking) to improve the signal to noise ratio of the data.

The MAM survey did not require the introduction of any artificial seismic sources and only background ambient noise was recorded. The ambient ground vibrations were recorded using a thirty-two second record length at a two-millisecond sampling rate with 20 separate seismic records being obtained for quality control purposes. The seismic-wave forms and associated frequency spectrum that were displayed on the seismograph screen were used to assess the recorded seismic wave data for quality control purposes in the field. The acceptable records were digitally recorded on the in-board seismograph computer and subsequently transferred to a flash drive so that they could be subsequently transferred to our office computer for analysis.

Data Reduction

For analysis and presentation of the shear-wave profile and supportive illustrations, this study used the SeisImager/SW™ computer software program developed by Geometrics, Inc. (2004-2021). Both the active (MASW) and passive (MAM) survey results were combined for this analysis (Park et al., 2005). The combined results maximize the resolution and overall depth range in order to obtain one high resolution V_s curve over the entire sampled depth range. These methods economically and efficiently estimate one-dimensional subsurface shear-wave velocities using data collected from standard primary-wave (P-wave) refraction surveys, however, it should be noted that surface waves by their physical nature cannot resolve relatively abrupt or small-scale velocity anomalies. Processing of the data proceeded by calculating the dispersion curve from the input data which subsequently created an initial shear-wave model based on the observed data. This initial model was then inverted in order to converge on the best fit of the initial model and the observed data, creating the final shear-wave model (Seismic Line SW-1) as presented within Appendix A.

Summary of Data Analysis

Data acquisition went very smoothly and the quality was considered to be very good. Analysis revealed that the average shear-wave velocity (“weighted average”) in the upper 100 feet (V_{100}) of the subject site is **912.4** feet per second as shown on the Shear-Wave Model SW-1, as presented within Appendix A. This average velocity classifies the underlying soils to that of Site Class “D” (“Stiff Soil”), which has a velocity range from 600 to 1,200 ft/sec (ASCE, 2017; Table 20.3-1).

The “weighted average” velocity is computed from a formula that is used by the ASCE (2017; Section 20.4, Equation 20.4-1) to determine the average shear-wave velocity for the upper 100 feet of the subsurface (V_{100}). This formula is as follows:

$$V_{100}' = 100 / [(T_1/V_1) + (T_2/V_2) + \dots + (T_N/V_N)]$$

Where $t_1, t_2, t_3, \dots, t_n$, are the thicknesses for layers 1, 2, 3, ..., n , up to 100 feet, and $v_1, v_2, v_3, \dots, v_n$, are the seismic velocities (feet/second) for layers 1, 2, 3, ..., n .

The shear-wave model displays these calculated layers and associated velocities (feet/second) to the maximum obtained depth of 167 feet, where locally sampled (dark gray shaded area on shear-wave model represents the constrained data). The associated Dispersion Curves (for both the active and passive methods) which show the data quality and picks, along with the resultant combined dispersion curve model, are also included within Appendix A for visual and reference purposes.

CLOSURE

The field survey was performed by the undersigned on January 6, 2022, using "state of the art" geophysical equipment and techniques along the selected portion of the subject site. It is important to note that the fundamental limitation for seismic surveys is known as nonuniqueness, wherein a specific seismic data set does not provide sufficient information to determine a single “true” earth model. Therefore, the interpretation of any seismic data set uses “best-fit” approximations along with the geologic models that appear to be most reasonable for the local area being surveyed.

Client should also understand that when using the theoretical geophysical principles and techniques discussed in this report, sources of error are possible in both the data obtained and, in the interpretation, and that the results of this survey may not represent actual subsurface conditions.

It should be noted that when compared with traditional borehole shear-wave surveys, which use vertical body waves, the sources of error (if present) using horizontal surface waves for this project are not believed to be greater than 15 percent.

These are all factors beyond **Terra Geosciences** control and no guarantees as to the results of this survey can be made. We make no warranty, either expressed or implied. If the client does not understand the limitations of this geophysical survey, additional input should be sought from the consultant.

Respectfully submitted,
TERRA GEOSCIENCES



Donn C. Schwartzkopf
Principal Geophysicist
PGP 1002



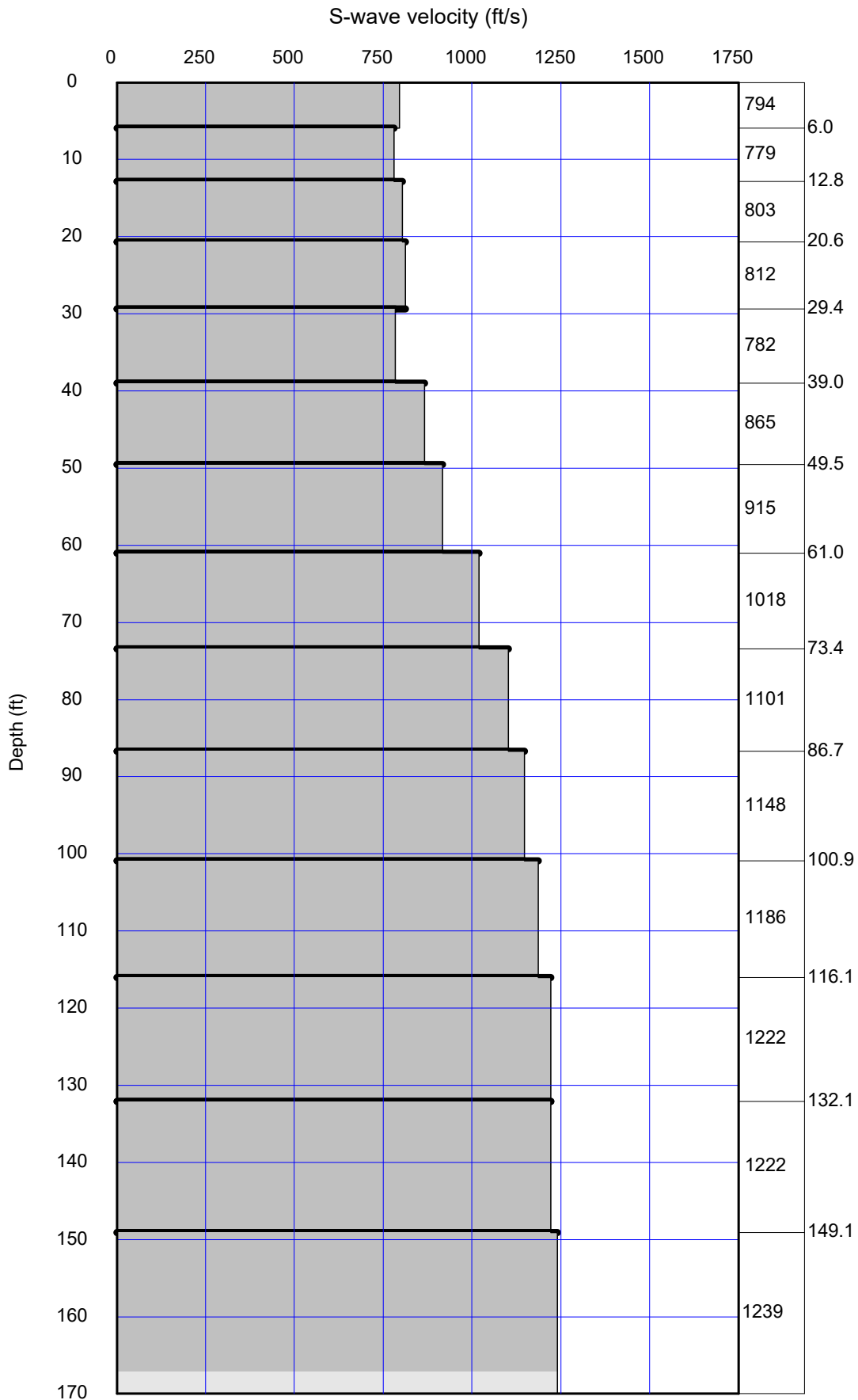
APPENDIX A

SHEAR-WAVE MODEL AND DATA



SEISMIC LINE SW-1

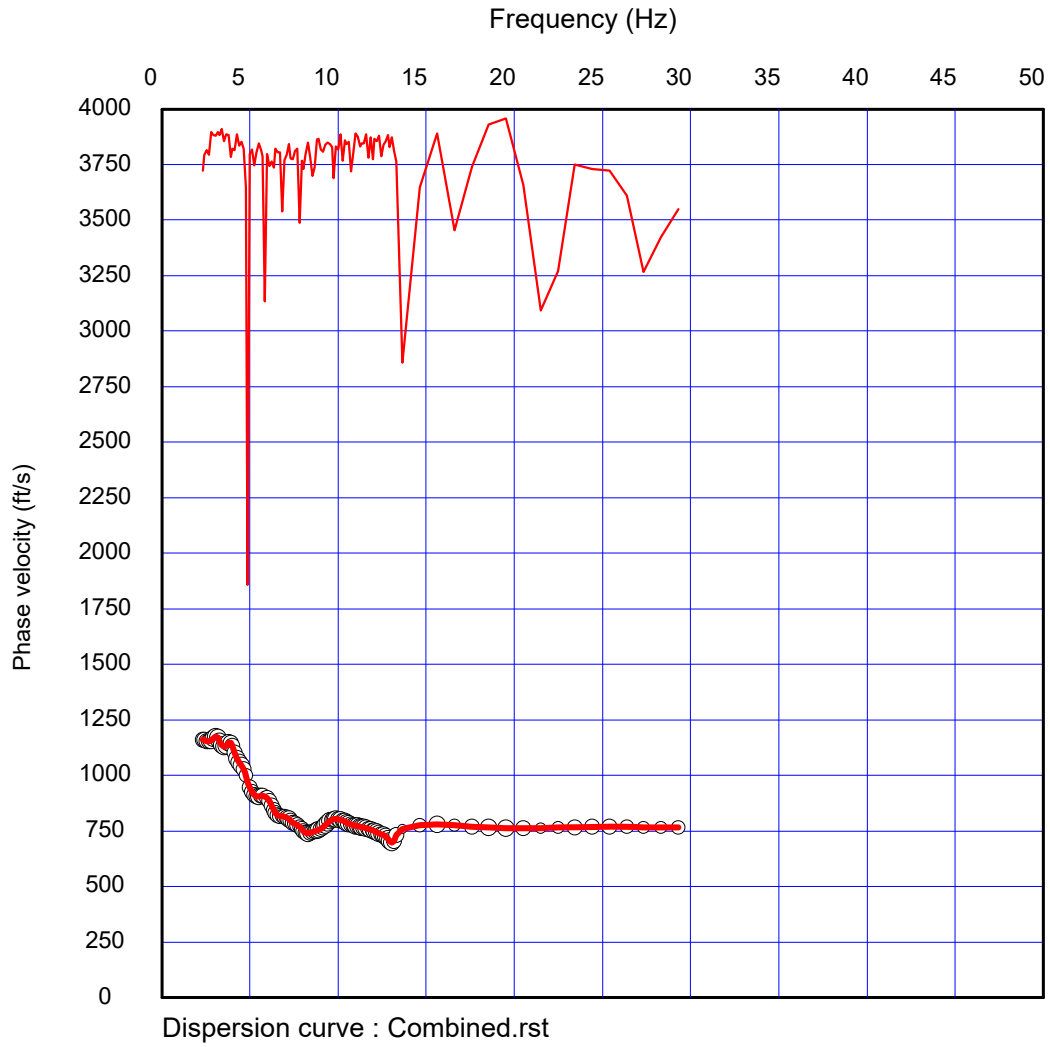
SHEAR-WAVE MODEL



S-wave velocity model (inverted) : Final.rst

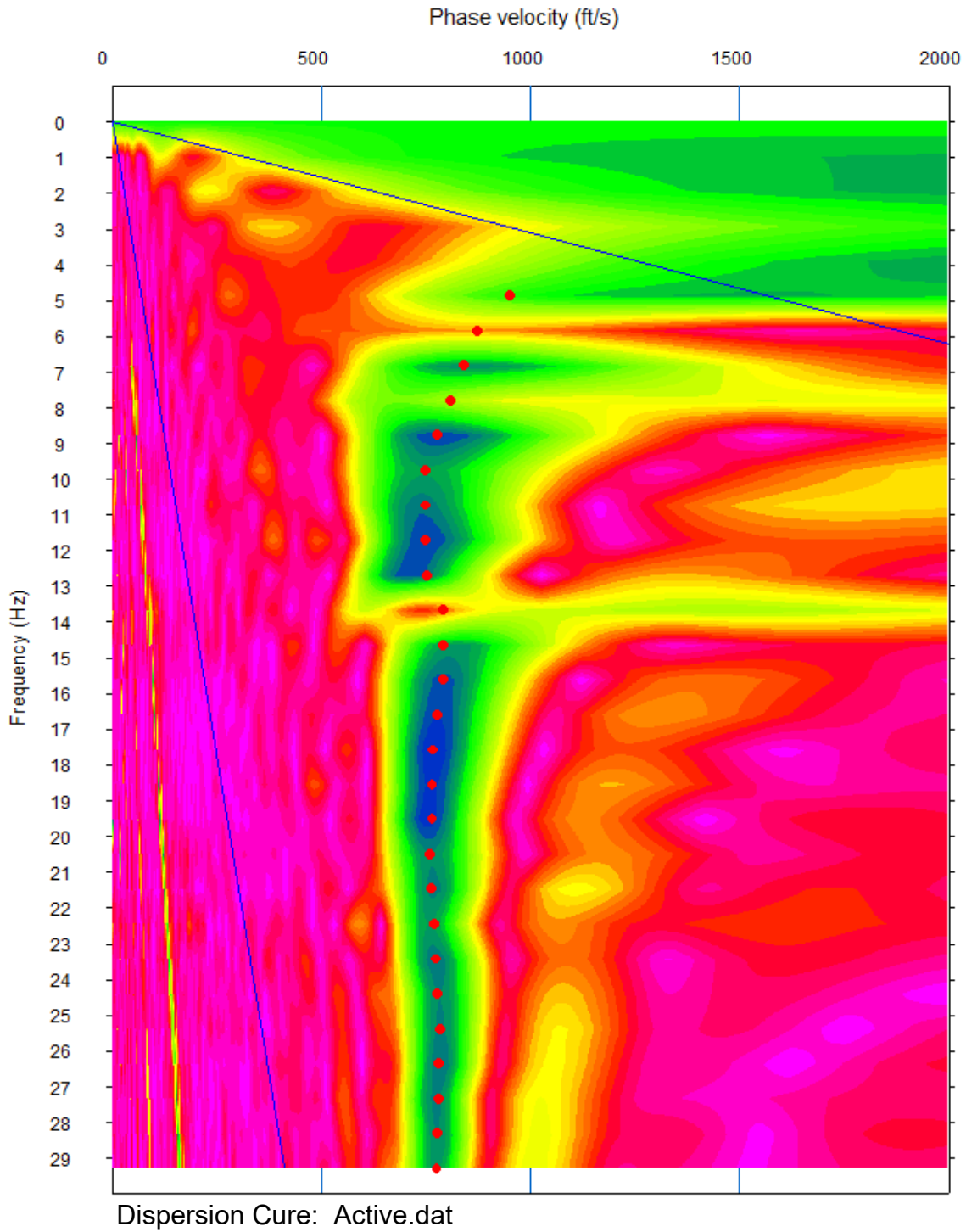
Average Vs 100ft = 912.4 ft/sec

SHEAR-WAVE MODEL SW-1



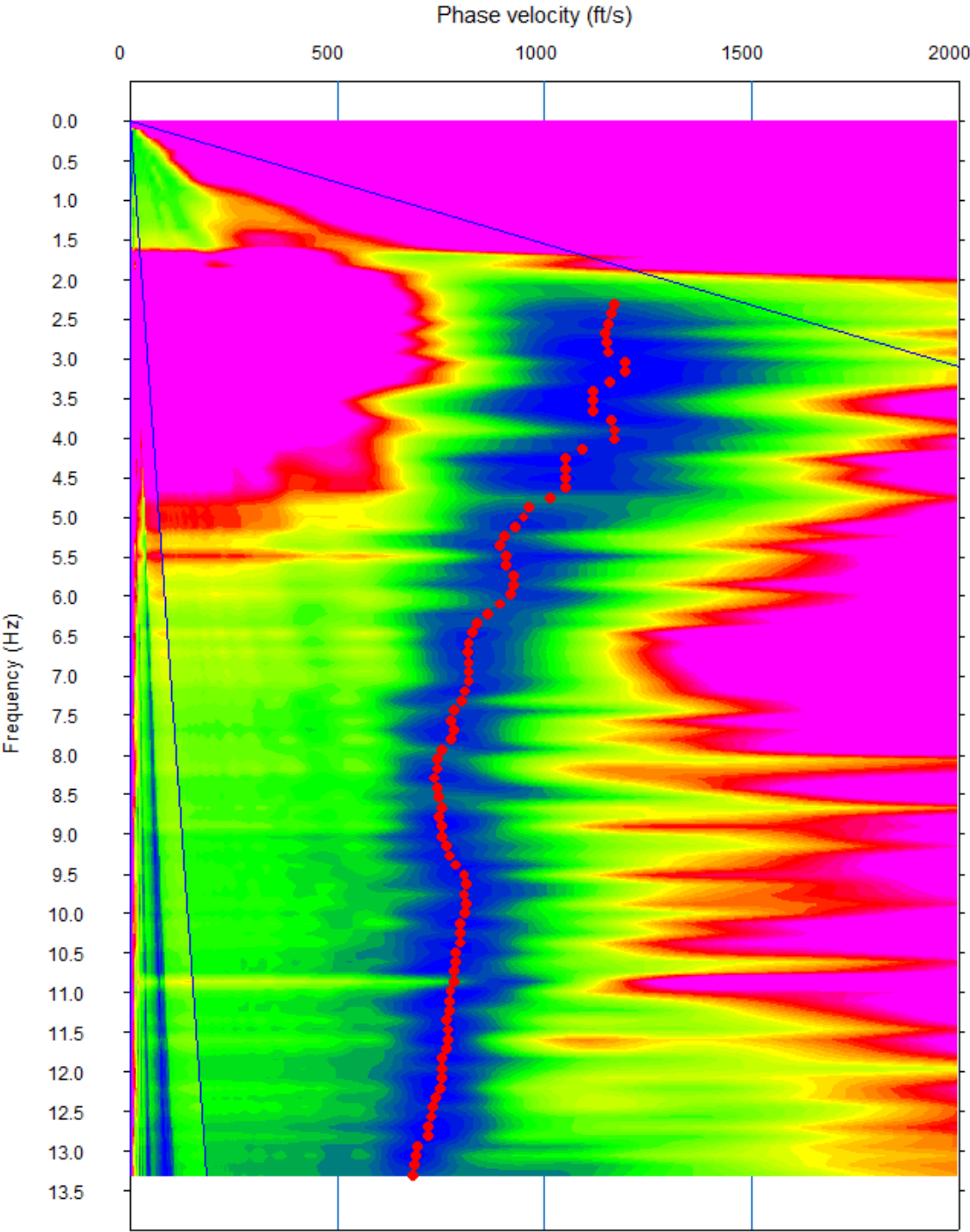
COMBINED DISPERSION CURVE

SEISMIC LINE SW-1



ACTIVE DISPERSION CURVE

SEISMIC LINE SW-1



Dispersion Curve: Passive.dat

PASSIVE DISPERSION CURVE

APPENDIX B

REFERENCES



SEISMIC LINE LOCATION MAP



Base Map: Google™ Earth (2022); Seismic shear-wave traverse SW-1 shown as red/yellow line.

SITE PHOTOGRAPHS



View looking east along Seismic Line SW-1.



View looking west along Seismic Line SW-1.

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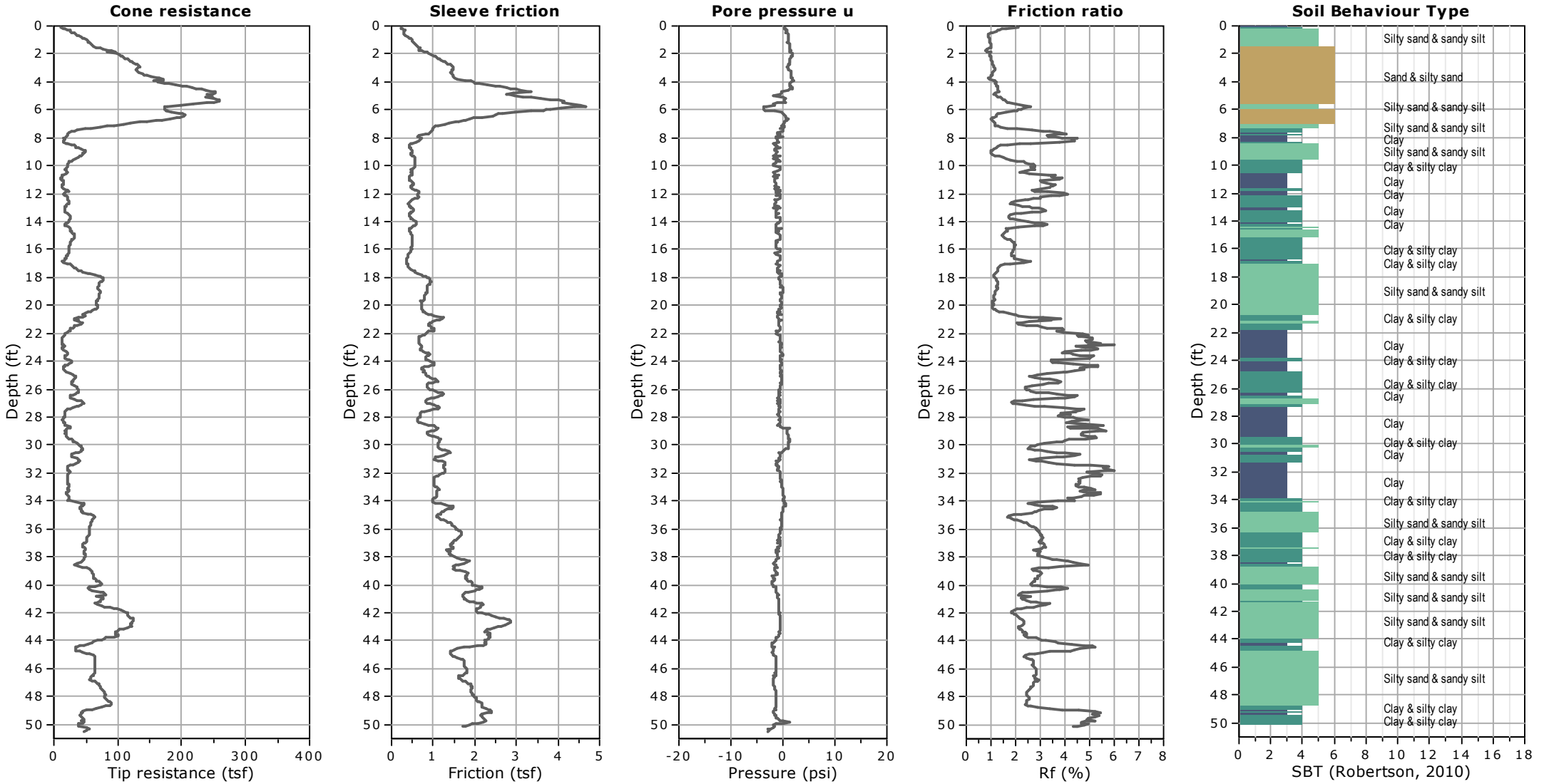
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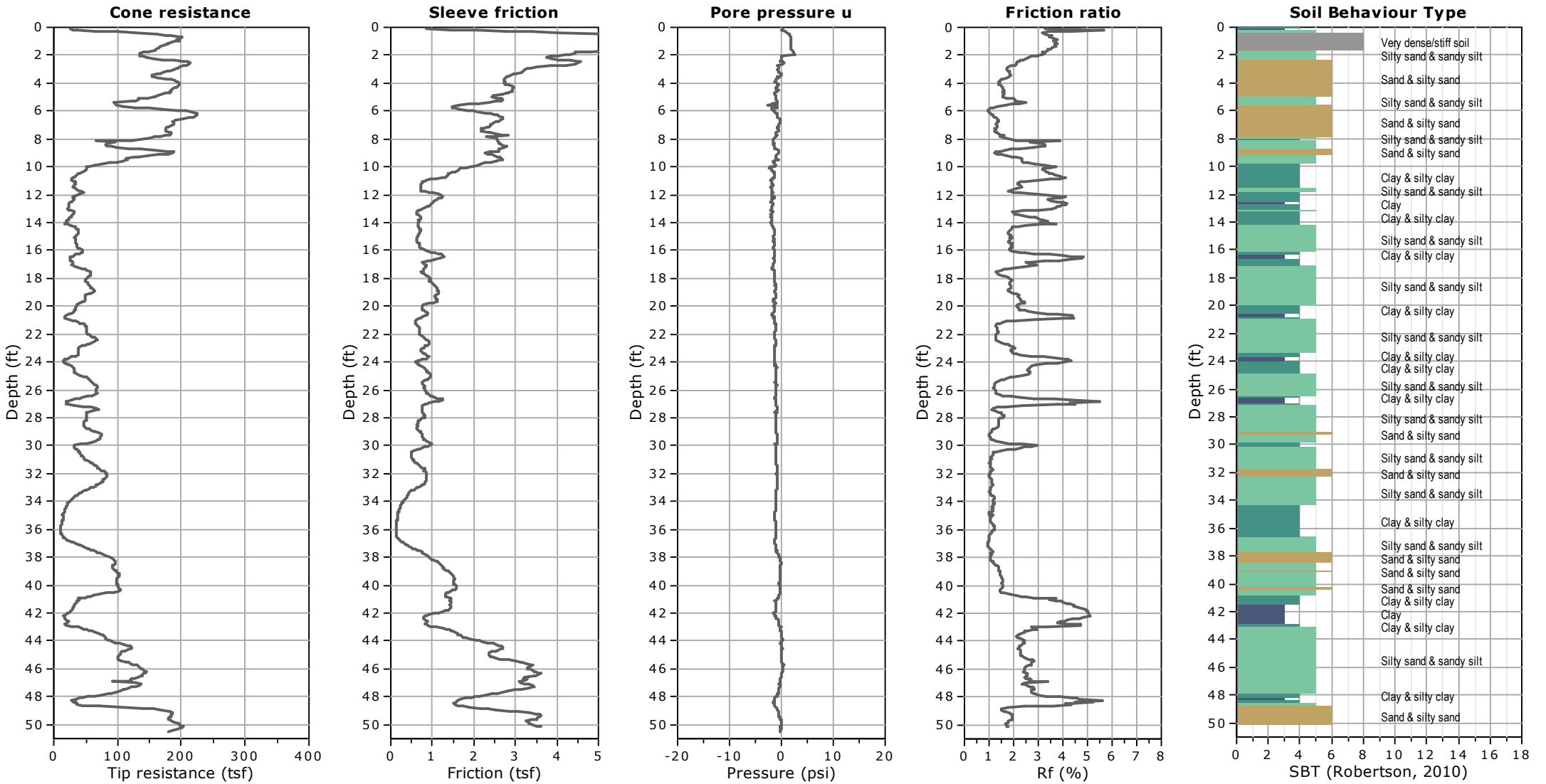
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EXPLORATORY BORING NO. 1

Date Drilled: 8/7/15

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
5	[Dotted Pattern]	(SM) Silty Sand, fine light olive brown	Fill	X	[Cross-hatch Pattern]	1 1 1			Pass #200 SPT
10	[Vertical Lines]	(ML) Sandy Silt, fine, light olive brown	Native	X	[Cross-hatch Pattern]	1 2 2			Pass #200, SPT
15	[Vertical Lines]		Iron Oxide Staining	X		2 2 1			Pass #200, SPT
20	[Dotted Pattern]	(SM) Silty Sand, fine, light olive brown		X		3 4 4			Pass #200, SPT
25	[Vertical Lines]	(ML) Silt, light olive brown	Iron Oxide Staining	X		1 1 2			Pass #200, SPT
30	[Vertical Lines]		Iron Oxide Staining	X		3 2 2			Pass #200, SPT

10331-3 15394-3.GPJ CHJ.GDT 8/20/15



CENTRAL CAMPUS REDEVELOPMENT PROJECT HILB BLDG
PALM DESERT, CALIFORNIA

Job No. 15394-3
Enclosure B-1a

EXPLORATORY BORING NO. 1

Date Drilled: 8/7/15

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
35		(ML) Silt, light olive brown		X		2			Pass #200, SPT
		(ML) Sandy Silt, fine, light olive brown		X		3 4			
40			Iron Oxide Staining	X		3			Pass #200, SPT
				X		3 4			
45				X		4			Pass #200, SPT
				X		8 10			
50	[Dotted Pattern]	(SM) Silty Sand, fine, light olive brown		X		7			Pass #200, SPT
				X		10 11			
55		(ML) Silt, light olive brown	Auger Chatter	X		6			Pass #200, SPT
				X		5 7			
60				X		6			Pass #200, SPT
				X		5 10			
65		END OF BORING							
		NO REFUSAL, NO BEDROCK NO GROUNDWATER NO CAVING, FILL TO 7'							

10331-3 15394-3.GPJ CHJ.GDT 8/20/15



EXPLORATORY BORING NO. 2

Date Drilled: 8/7/15

Client: College of the Desert

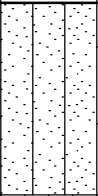







Equipment: CME 75 Track Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
5		(SM) Silty Sand, fine, light brownish gray	Fill						Pass #200
		(ML) Sandy Silt, fine, light olive brown	Native			10 14 18			Pass #200, SPT
10						2 3 3			Pass #200, SPT
15						3 3 2			Pass #200, SPT
20						3 2 3			Pass #200, SPT
25		(ML) Silt, light olive brown				2 2 3			Pass #200, SPT
30		(ML) Sandy Silt, fine, light olive brown				3 4 5			Pass #200, SPT

10331-3 15394-3.GPJ CHJ.GDT 8/20/15



EXPLORATORY BORING NO. 2

Date Drilled: 8/7/15

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS	
				DRIVE	BULK					
40		(ML) Sandy Silt, fine, light olive brown	Iron Oxide Staining	X		3 4 6			Pass #200, SPT	
45			Iron Oxide Staining	X		4 4 4			Pass #200, SPT	
50			Auger Chatter							
55			Carbonate Staining	X		5 7 7			Pass #200, SPT	
60		END OF BORING				6 8 7			Pass #200, SPT	
65		NO REFUSAL, NO BEDROCK NO GROUNDWATER NO CAVING, FILL TO 5'								

10331-3 15394-3.GPJ CHJ.GDT 8/20/15



EXPLORATORY BORING NO. 3

Date Drilled: 8/7/15

Client: College of the Desert

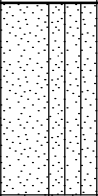








Equipment: CME 75 Track Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
		(SP-SM) Sand, fine to coarse, with silt and few gravel to 2", olive brown	Fill						Pass #200
5		(ML) Sandy Silt, fine, olive brown	Native			8 9 9			Pass #200, SPT
10						2 2 4			Pass #200, SPT
15						2 1 2			Pass #200, SPT
20						3 3 3			Pass #200, SPT
25						3 3 5			Pass #200, SPT
30						3 4 5			Pass #200, SPT

10331-3 15394-3.GPJ CHJ.GDT 8/20/15



CENTRAL CAMPUS REDEVELOPMENT PROJECT HILB BLDG
PALM DESERT, CALIFORNIA

Job No. 15394-3
Enclosure B-3a

EXPLORATORY BORING NO. 3

Date Drilled: 8/7/15

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop / Sampler Size: 140lbs./30in./2.0" O.D.

Surface Elevation(ft): N/A

Logged by: GA

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
40	(ML) Sandy Silt, fine, olive brown			X		4 4 4			Pass #200, SPT
45	(SM) Silty Sand, fine, olive brown			X		4 6 6			Pass #200, SPT
50				X		5 5 10			Pass #200, SPT
55			Auger Chatter	X		4 3 9			Pass #200, SPT
60				X		5 6 6			Pass #200, SPT
65		END OF BORING		X		6 9 11			Pass #200, SPT
		NO REFUSAL, NO BEDROCK NO GROUNDWATER NO CAVING, FILL TO 5'							

10331-3 15394-3.GPJ CHJ.GDT 8/20/15



CENTRAL CAMPUS REDEVELOPMENT PROJECT HILB BLDG
PALM DESERT, CALIFORNIA

Job No. 15394-3
Enclosure B-3b

EXPLORATORY BORING NO. 1

Date Drilled: 5/3/13

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop: 140 lbs./30"

Surface Elevation(ft):

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
5		(SP-SM) Sand, fine to medium with coarse, with silt, gray brown	Fill - concrete debris to 4.5'		XXXX		7.8		Cor., DS, Exp., MDC, SA
				X		14 22 33	4.5	107	Ring
10				X		17 28 30	4.7	107	Ring
15				X		4 5 4	13.8	84	Ring
		(SM) Silty Sand, fine, gray, with interbedded SP and ML lenses	Native		XXXX		13.8		MDC, SA
20				X		4 3 7	34.2	85	Consol., DS, Pass #200, Ring
25		(ML) Sandy Silt, fine, few clay, brown		X	XXXX	2 4 4	38.7 39.3	83	Pass #200, Ring
30				X		4 6 8	15.0	83	Pass #200, Ring

BORING LOG - NO EQUIV & BLOW PER 6 IN 13259-3.GPJ CHJ.GDT 57/13



EXPLORATORY BORING NO. 1

Date Drilled: 5/3/13

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop: 140 lbs./30"

Surface Elevation(ft):

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
40	[Dotted pattern]	(SM) Silty Sand, fine, few clay, brown		X	X	5 7 11	12.7 11.6	104	Ring
45	[Vertical lines]	(ML) Sandy Silt, fine, brown		X	X	7 14 14	4.5	99	Ring
50	[Dotted pattern]	(SM) Silty Sand, fine with medium, brown, with interbedded SP and ML lenses		X	X	6 10 11	34.0 33.1	87	Pass #200, Ring
55	[Vertical lines]	(ML) Sandy Silt, fine, brown		X	X	8 10 20	18.9 14.5	101	Ring
60	[Dotted pattern]	(ML) Sandy Silt, fine, brown		X	X	6 12 15	17.4	98	Ring
65	[Vertical lines]	(ML) Sandy Silt, fine, brown		X	X	6 10 20	25.3 21.9	90	Ring
65	[Vertical lines]			X	X	6 11 17	23.1	100	Ring

BORING LOG - NO EQUIV & BLOW PER 6 IN 13259-3.GPJ CHJ.GDT 57/13



EXPLORATORY BORING NO. 1

Date Drilled: 5/3/13

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop: 140 lbs./30"

Surface Elevation(ft):

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
75		(SM) Silty Sand, fine, brown				7 12 18	22.8	102	Ring
80		END OF BORING				11 20 28	15.5 14.8	98	Ring
85		NO REFUSAL, NO BEDROCK FILL TO 15', NO CAVING NO GROUNDWATER ENCOUNTERED							
90									
95									
100									

BORING LOG - NO EQUIV & BLOW PER 6 IN 13259-3.GPJ CHJ.GDT 5/7/13



EXPLORATORY BORING NO. 2

Date Drilled: 5/3/13

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop: 140 lbs./30"

Surface Elevation(ft):

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
5		(SM) Silty Sand, fine, gray brown	Fill - rebar encountered at 3'				13.5		Cor., DS, Exp., MDC, SA
8						8	10.7	99	Consol., DS, Pass #200, Ring
9						9			
10									
15		(ML) Sandy Silt, fine, few clay, brown	Native			4	29.7	83	Ring
16						6			
17							13.2		MDC, SA
20		(SP-SM) Sand, fine, with silt, gray brown				4	6.0	86	Pass #200, Ring
21						5	3.8		
22						7			
25						6	7.2	94	Pass #200, Ring
26						9			
27						11			
30		(SM) Silty Sand, fine, brown				6	15.6	91	Pass #200, Ring
31						12	20.0		
32						17			
35						5	15.7	93	Pass #200, Ring
36						9			
37						17			

BORING LOG - NO EQUIV & BLOW PER 6 IN 13259-3.GPJ CHJ.GDT 5/7/13



EXPLORATORY BORING NO. 2

Date Drilled: 5/3/13

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop: 140 lbs./30"

Surface Elevation(ft):

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
40				X		6 10 17	12.1	96	Pass #200, Ring
45				X		6 12 19	5.7	95	Pass #200, Ring
50		(SM) Silty Sand, fine, brown with interbedded SP and ML lenses		X		7 8 12	24.3	90	Pass #200, Ring
55				X		6 10 17	12.5	97	Pass #200, Ring
60				X		8 12 19	10.7	100	Pass #200, Ring
65		(ML) Sandy Silt, fine, brown		X	X	5 10 17	27.1 28.0	97	Ring
		(SM) Silty Sand, fine to medium, brown		X	X	11 19 25	12.8 12.8	121	Ring

BORING LOG - NO EQUIV & BLOW PER 6 IN 13259-3.GPJ CHJ.GDT 5/7/13



EXPLORATORY BORING NO. 2

Date Drilled: 5/3/13

Client: College of the Desert

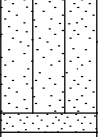

Equipment: CME 75 Track Rig

Driving Weight / Drop: 140 lbs./30"

Surface Elevation(ft):

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
75		<p>(SP) Sand, fine with medium, few silt, gray brown</p> <p style="text-align: center;">END OF BORING</p> <p>NO REFUSAL, NO BEDROCK FILL TO 12', NO CAVING NO GROUNDWATER ENCOUNTERED</p>				11 26 50	7.2	103	Pass #200, Ring
80									
85									
90									
95									
100									

BORING LOG - NO EQUIV & BLOW PER 6 IN 13259-3.GPJ CHJ.GDT 5/7/13



EXPLORATORY BORING NO. 3

Date Drilled: 5/3/13

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop: 140 lbs./30"

Surface Elevation(ft):

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
5		(SP-SM) Sand, fine with medium, with silt, gray brown	Fill	X	X	6 7 8	10.7		Cor., DS, Exp., MDC, SA Pass #200, SPT
10		(SM) Silty Sand, fine, gray brown, with interbedded SP and ML lenses	Native	X	X	2 3 5	13.8		Pass #200, SPT MDC, SA
15				X	X	2 4 3			Pass #200, SPT
20			Fewer ML lenses	X	X	3 3 3			Pass #200, SPT
25		(ML) Sandy Silt, fine, few clay, brown		X	X	2 2 4			Pass #200, SPT
30				X	X	3 3 4			Pass #200, SPT

BORING LOG - NO EQUIV & BLOW PER 6 IN 13259-3.GPJ CHJ.GDT 5/7/13



EXPLORATORY BORING NO. 3

Date Drilled: 5/3/13

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop: 140 lbs./30"

Surface Elevation(ft):

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
40	[Graphic Log Symbols]	(SM) Silty Sand, fine, few clay, brown		X		2 5 5			Pass #200, SPT
45	[Graphic Log Symbols]	(SM) Silty Sand, fine, few clay, brown		X		4 6 7			Pass #200, SPT
50	[Graphic Log Symbols]	(SP-SM) Sand, fine with medium, with silt, gray brown, few interbedded ML lenses		X		4 7 7			Pass #200, SPT
55	[Graphic Log Symbols]	(SP-SM) Sand, fine with medium, with silt, gray brown, few interbedded ML lenses		X		5 9 9			Pass #200, SPT
60	[Graphic Log Symbols]	(SM) Silty Sand, fine with medium, brown		X		3 8 8			Pass #200, SPT
65	[Graphic Log Symbols]	(SM) Silty Sand, fine with medium, brown		X		8 8 10			Pass #200, SPT
70	[Graphic Log Symbols]	(SM) Silty Sand, fine with medium, brown		X		7 7 10			Pass #200, SPT

BORING LOG - NO EQUIV & BLOW PER 6 IN 13259-3.GPJ CHJ.GDT 5/7/13



EXPLORATORY BORING NO. 3

Date Drilled: 5/3/13

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop: 140 lbs./30"

Surface Elevation(ft):

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
75	(SP) Sand, fine to medium, with coarse, few silt, gray brown			X		13 19 21			Pass #200, SPT
80	END OF BORING	NO REFUSAL, NO BEDROCK FILL TO 10', NO CAVING NO GROUNDWATER ENCOUNTERED		X		15 30 35			Pass #200, SPT
85									
90									
95									
100									

BORING LOG - NO EQUIV & BLOW PER 6 IN 13259-3.GPJ CHJ.GDT 5/7/13



EXPLORATORY BORING NO. 4

Date Drilled: 5/3/13

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop: 140 lbs./30"

Surface Elevation(ft):

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
5		(SM) Silty Sand, fine, gray brown	Fill	X	X	3 5 7	4.4		Cor., DS, Exp., MDC, SA
10				X	X	3 5 7			Pass #200, SPT
15		(SM) Silty Sand, fine with medium, gray brown, with interbedded SP and ML lenses	Native	X	X	2 3 2			Pass #200, SPT
20				X	X	2 4 5	18.8		MDC, SA
25		(ML) Sandy Silt, fine, brown		X	X	2 2 3			Pass #200, SPT
30		(SM) Silty Sand, fine, brown		X	X	2 3 4			Pass #200, SPT
35				X	X	3 4 4			Pass #200, SPT

BORING LOG - NO EQUIV & BLOW PER 6 IN 13259-3.GPJ.CHJ.GDT 5/7/13



EXPLORATORY BORING NO. 4

Date Drilled: 5/3/13

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop: 140 lbs./30"

Surface Elevation(ft):

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
40				X		3 3 6			Pass #200, SPT
45				X		3 4 7			Pass #200, SPT
50		(SM) Silty Sand, fine with medium, brown, with interbedded SP lenses		X		8 8 8			Pass #200, SPT
55				X		4 7 9			Pass #200, SPT
60				X		4 7 9			Pass #200, SPT
65				X		4 4 8			Pass #200, SPT
				X		5 7 9			Pass #200, SPT

BORING LOG - NO EQUIV & BLOW PER 6 IN 13259-3.GPJ CHJ.GDT 5/7/13



EXPLORATORY BORING NO. 4

Date Drilled: 5/3/13

Client: College of the Desert

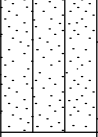

Equipment: CME 75 Track Rig

Driving Weight / Drop: 140 lbs./30"

Surface Elevation(ft):

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		UNCORRECTED BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
75		END OF BORING NO REFUSAL, NO BEDROCK FILL TO 12', NO CAVING NO GROUNDWATER ENCOUNTERED				7 13 14			Pass #200, SPT
80									
85									
90									
95									
100									

BORING LOG - NO EQUIV & BLOW PER 6 IN 13259-3.GPJ CHJ.GDT 5/7/13



EXPLORATORY BORING NO. 6

Date Drilled: 5/20/11

Client: College of the Desert

Equipment: CME 75 Track Rig

Driving Weight / Drop: 140 lbs./30 in.

Surface Elevation(ft): N/A

Logged by: VJR

Measured Depth to Water(ft): N/A

DEPTH (ft)	GRAPHIC LOG	VISUAL CLASSIFICATION	REMARKS	SAMPLES		BLOWS/6 IN.	FIELD MOISTURE (%)	DRY UNIT WT. (pcf)	LAB/FIELD TESTS
				DRIVE	BULK				
5	[Stippled Pattern]	(SM) Silty Sand, fine with medium and silt, brown	Fill		[Cross-hatched]		9.2		SA, MDC, DS, Cor.
10	[Stippled Pattern]	(ML) Sandy Silt, fine with clay, brown	Native	[X]	[Cross-hatched]	10 20 20	8.0 10.4	103	Ring
15	[Stippled Pattern]	(ML) Silt, fine with clay and sand, brown		[X]	[Cross-hatched]	4 6 4	17.6 5.3 5.1	86	Ring, Consol.
20	[Stippled Pattern]			[X]	[Cross-hatched]	2 4 3	38.6 36.6	83	Ring
25	[Stippled Pattern]			[X]	[Cross-hatched]	3 4 4	30.6 43.9	77	Ring
30	[Stippled Pattern]		[X]	[Cross-hatched]	2 6 5	22.9	91	Ring	
33.5	[Stippled Pattern]	BORING TERMINATED AT 33.5' NO REFUSAL, NO BEDROCK, FILL TO 10.0' SLIGHT CAVING, NO FREE GROUNDWATER		[X]	[Cross-hatched]	6 8 12	22.9	91	Ring
		END OF BORING							

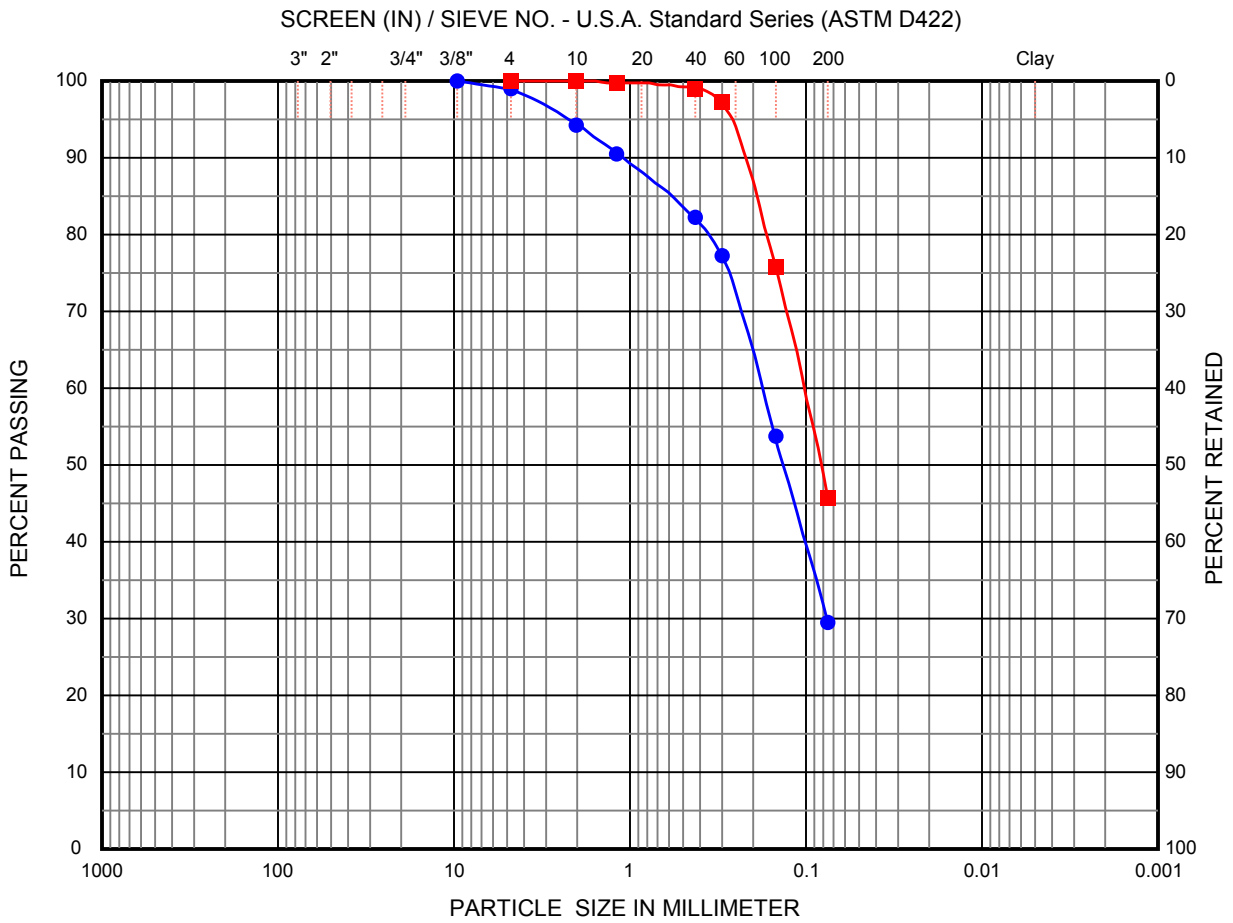
BORING LOG - NO EQUIV & BLOW PER 6 IN 11270-3.GPJ CHJ.GDT 6/3/11



C.H.J.

ADMINISTRATION BUILDING REPLACEMENT
PALM DESERT, CALIFORNIA

Job No. Enclosure
11270-3 B-6



Cobbles & Boulders	Gravel		Sand			Silt	Clay
	Coarse	Fine	Coarse	Medium	Fine		

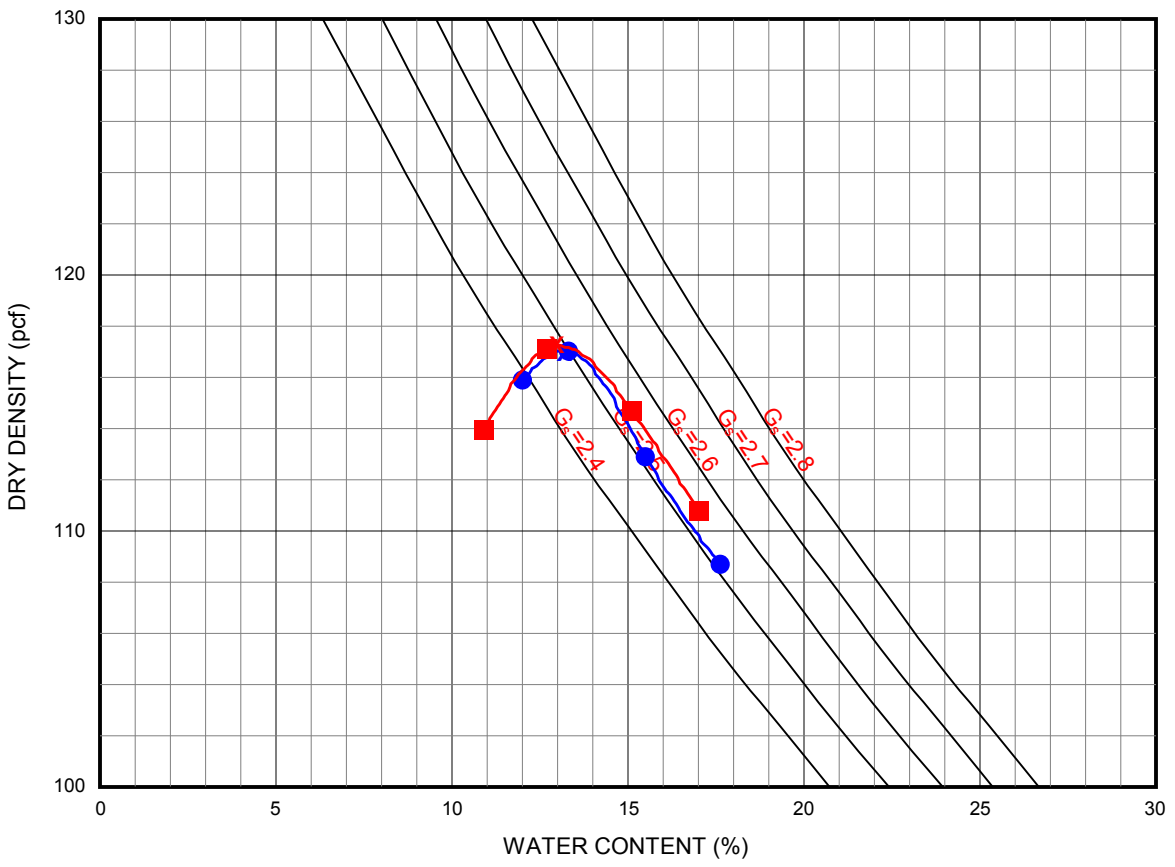
	Sample No.	Depth	Gravel	Sand	Fines	Clay	D ₁₀	D ₃₀	D ₅₀	D ₆₀	C _u	C _c
●	1A+2A+3A+4A	1 - 2	1.1	69.5	29.4			0.076	0.13	0.18		
	(SM) Silty sand, fine to medium											
■	1B+2B+3B+4B	12 - 17		54.3	45.7				0.08	0.10		
	(SM) Silty sand, fine											

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PARTICLE SIZE DISTRIBUTION (ASTM D422)

Project:	Proposed Central Campus Redevelopment Project					
Location:	College of the Desert, Palm Desert, California					
Job Number:	13259-3	Engineer:	FY	Enclosure:	C-1	



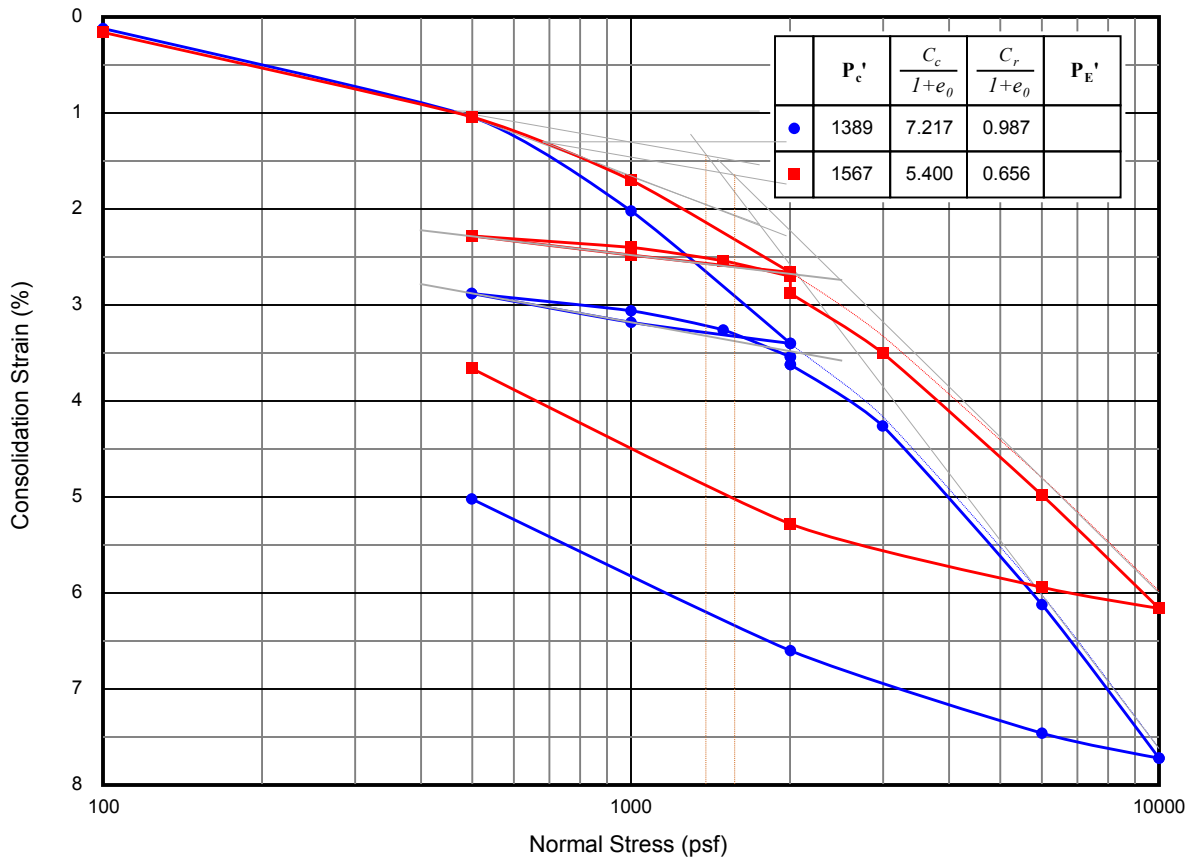
	Sample No.	Depth (ft)	USCS Classification	γ_{dmax} (pcf)	w_o (%)
●	1A+2A+3A+4A	1 - 2	(SM) Silty sand, fine to medium	117.0	13.2
■	1B+2B+3B+4B	12 - 17	(SM) Silty sand, fine	117.2	13.0

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COMPACTION CURVES (ASTM D1557)

Project:	Proposed Central Campus Redevelopment Project				
Location:	College of the Desert, Palm Desert, California				
Job Number:	13259-3	Engineer:	FY	Enclosure:	C-2



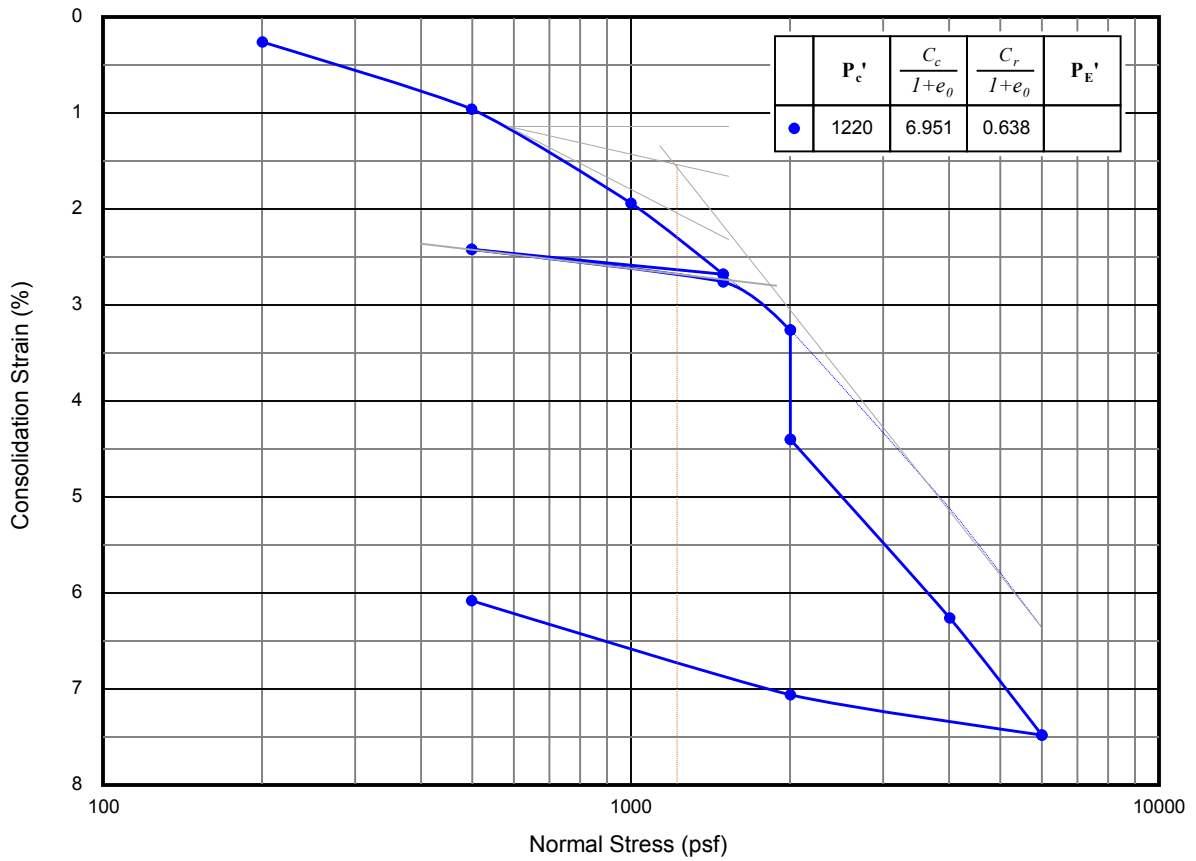
	Boring No.	Depth (ft)	USCS Classification	γ_d (pcf)	w (%)	HCS (%)
●	1	20	(SM) Silty sand, fine	83.9	30.4	0.1
■	2	7	(SM) Silty sand	90.0	10.3	0.2

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CONSOLIDATION TESTS (ASTM D2435)

Project:	Proposed Central Campus Redevelopment Project				
Location:	College of the Desert, Palm Desert, California				
Job Number:	13259-3	Engineer:	FY	Enclosure:	C-3



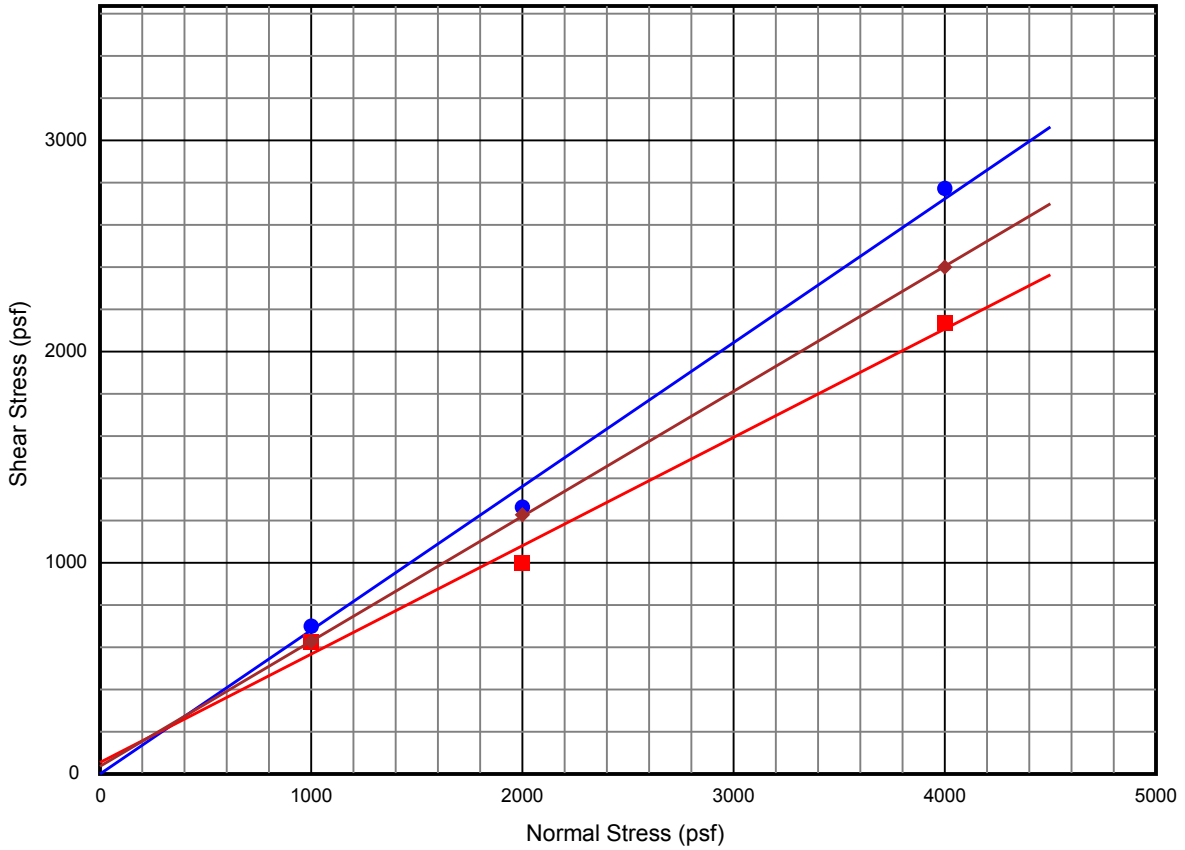
	Boring No.	Depth (ft)	USCS Classification	γ_d (pcf)	w (%)	HCS (%)
●	6 (11270-3)	12	(ML) Silt, fine with clay and sand	83.9	5.6	1.1

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CONSOLIDATION TESTS (ASTM D2435)

Project:	Proposed Central Campus Redevelopment Project				
Location:	College of the Desert, Palm Desert, California				
Job Number:	13259-3	Engineer:	FY	Enclosure:	C-4



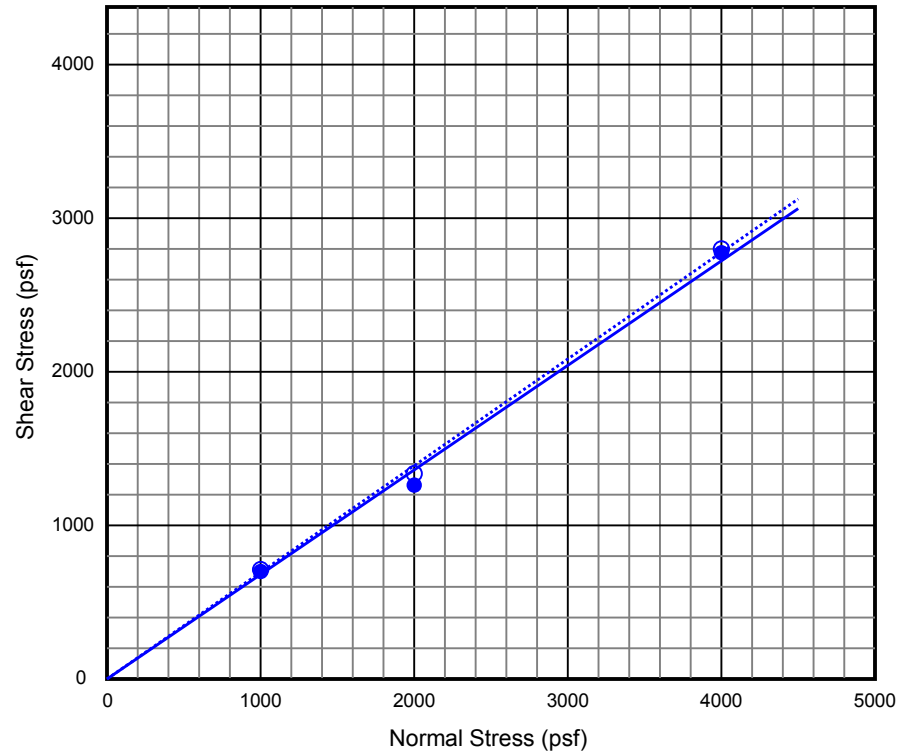
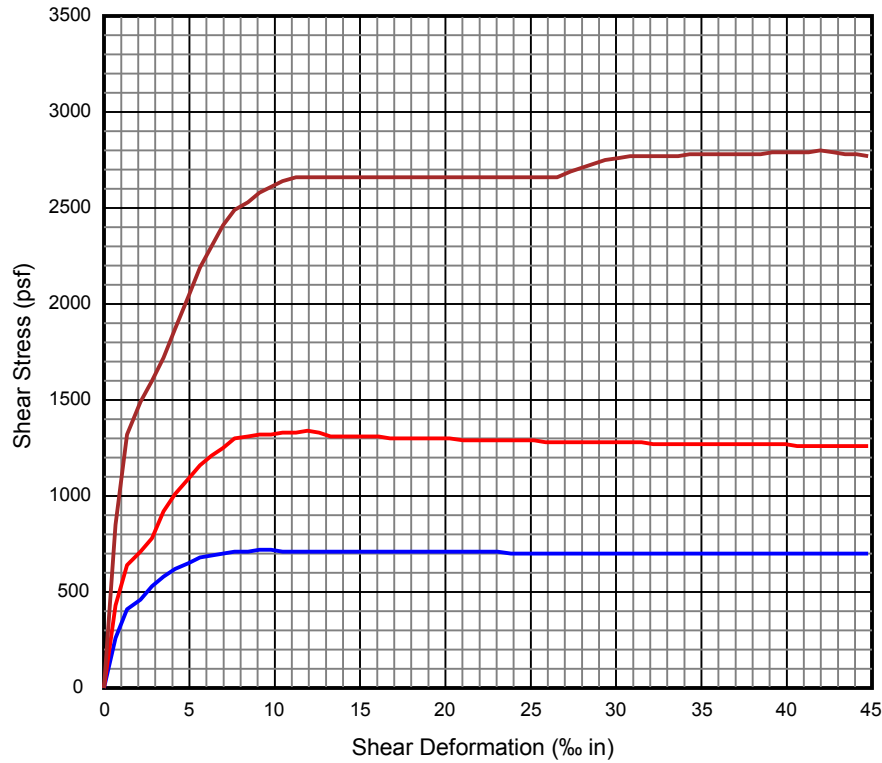
	Boring No.	Depth (ft)	γ_d (pcf)	w (%)	C_{pk} (psf)	ϕ_{pk} (°)	C_{rs} (psf)	ϕ_{rs} (°)
●	1A+2A+3A+4A	1 - 2	105.3	13.2	0.0	34.8	0.0	34.2
	(SM) Silty sand, fine to medium / Remolded (RC=90%)							
■	1	20	85.0	34.2	67.5	29.2	54.3	27.2
	(SM) Silty sand, fine							
◆	2	7	99.0	10.7	163.3	30.6	36.2	30.6
	(SM) Silty sand							

G:\2013\13259-3 COD, Central Campus Redevelopment - Project\lab\LabSuite_13259-3.csv



DIRECT SHEAR TESTS (ASTM D3080)

Project:	Proposed Central Campus Redevelopment Project			
Location:	College of the Desert, Palm Desert, California			
Job Number:	13259-3	Engineer:	FY	Enclosure: C-5



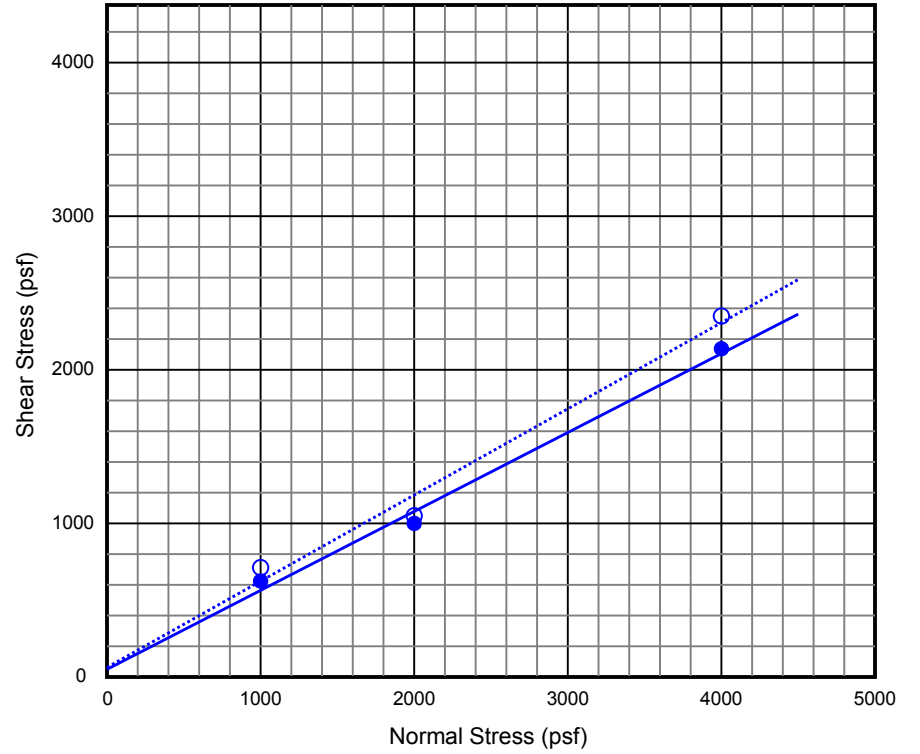
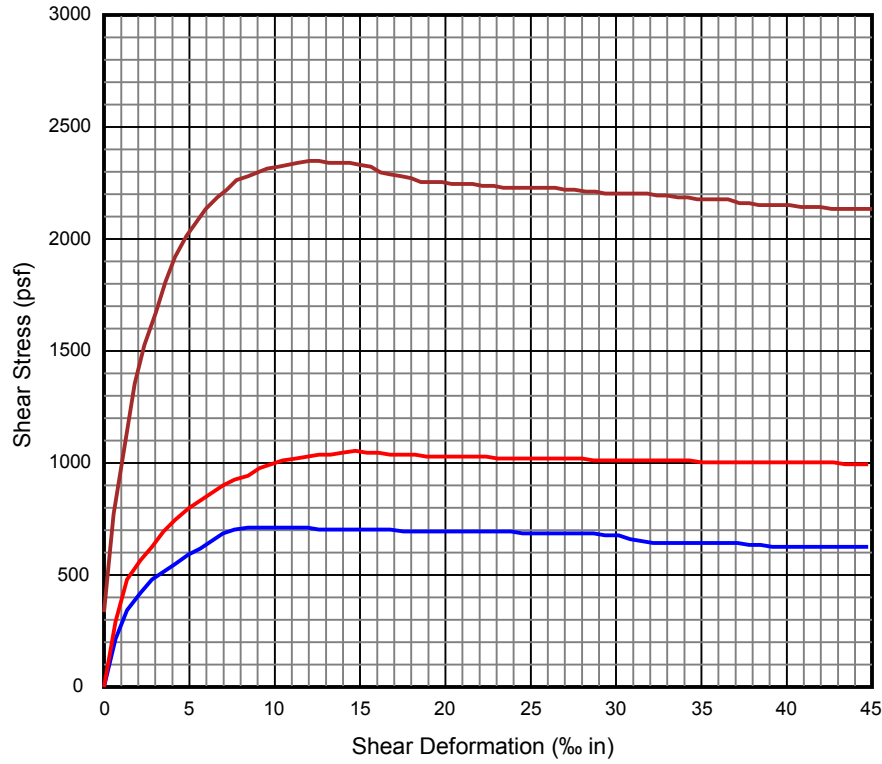
	Boring No.	Depth (ft)	USCS	γ_d (pcf)	w (%)	C_{pk} (psf)	ϕ_{pk} (°)	C_{rs} (psf)	ϕ_{rs} (°)
●	1A+2A+3A+4A	1 - 2	(SM) Silty sand, fine to medium / Remolded (RC=90%)	105.3	13.2	0.0	34.8	0.0	34.2



CHJ Consultants

DIRECT SHEAR TESTS (ASTM D3080)

Project:	Proposed Central Campus Redevelopment Project				
Location:	College of the Desert, Palm Desert, California				
Job Number:	13259-3	Engineer:	FY	Enclosure:	C-6



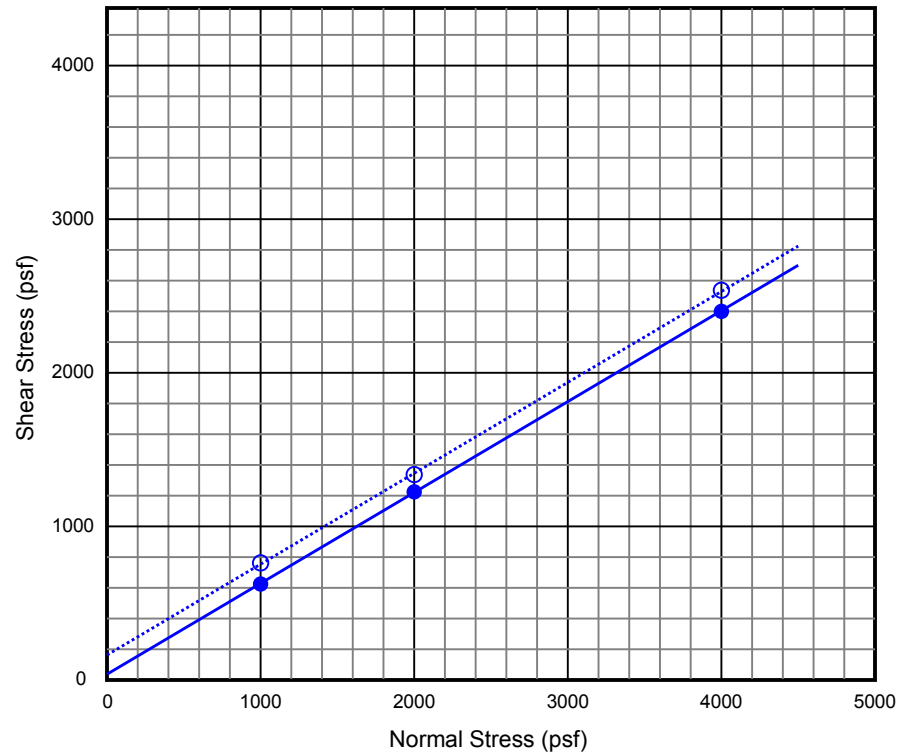
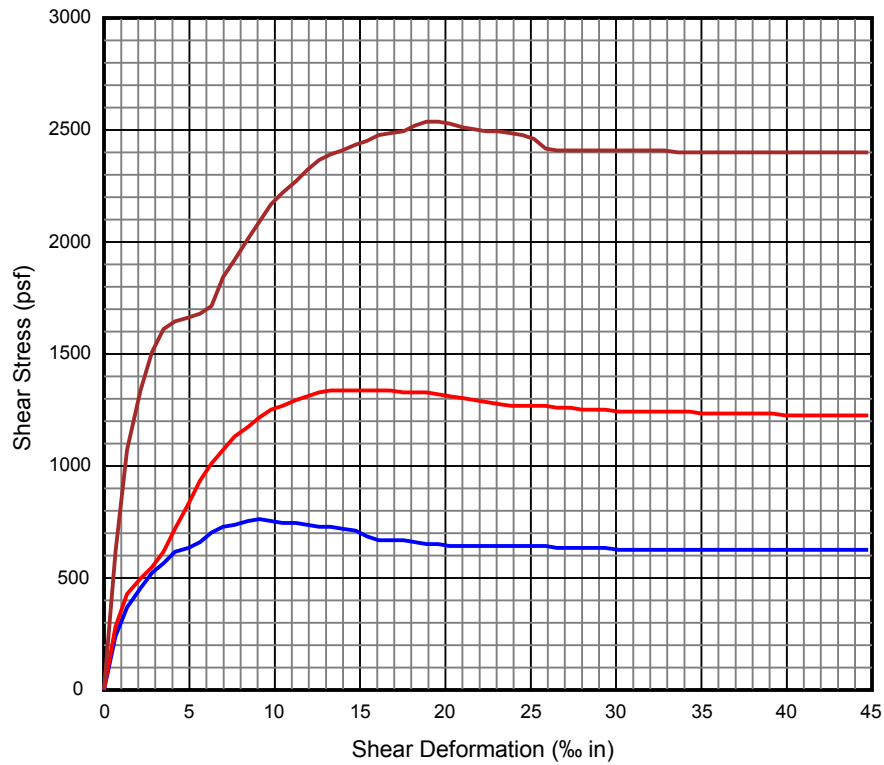
	Boring No.	Depth (ft)	USCS	γ_d (pcf)	w (%)	C_{pk} (psf)	ϕ_{pk} (°)	C_{rs} (psf)	ϕ_{rs} (°)
●	1	20	(SM) Silty sand, fine	85.0	34.2	67.5	29.2	54.3	27.2



CHJ Consultants

DIRECT SHEAR TESTS (ASTM D3080)

Project:	Proposed Central Campus Redevelopment Project				
Location:	College of the Desert, Palm Desert, California				
Job Number:	13259-3	Engineer:	FY	Enclosure:	C-7



	Boring No.	Depth (ft)	USCS	γ_d (pcf)	w (%)	C_{pk} (psf)	ϕ_{pk} (°)	C_{rs} (psf)	ϕ_{rs} (°)
●	2	7	(SM) Silty sand	99.0	10.7	163.3	30.6	36.2	30.6



CHJ Consultants

DIRECT SHEAR TESTS (ASTM D3080)

Project:	Proposed Central Campus Redevelopment Project			
Location:	College of the Desert, Palm Desert, California			
Job Number:	13259-3	Engineer:	FY	Enclosure: C-8

DIRECT SHEAR TESTS (ASTM D3080)

Boring No.	Depth (ft)	USCS	γ_d (pcf)	w (%)	C_{pk} (psf)	ϕ_{pk} (°)	C_{rs} (psf)	ϕ_{rs} (°)
1A+2A+3A+4A	1 - 2	SM	105.3	13.2		34.8		34.2
1	20	SM	85.0	34.2	67.5	29.2	54.3	27.2
2	7	SM	99.0	10.7	163.3	30.6	36.2	30.6

EXPANSION INDEX (ASTM D 4829)

Sample No.	1A+2A+3A+4A
Depth (ft)	1 - 2
Initial Moisture (%)	11.7
Final Moisture (%)	19.2
Degree of Saturation (%)	50
Expansion Index	0
Expansion Potential	Very low

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TEST DATA SUMMARY

Project:	Proposed Central Campus Redevelopment Project				
Location:	College of the Desert, Palm Desert, California				
Job Number:	13259-3	Engineer:	FY	Enclosure:	C-10

FINES CONTENT (ASTM C117)

Boring No.	1	1	1	2	2	2
Depth (ft)	20	25 - 35	45 - 50	7 - 12	17 - 27	27 - 62
Fine Contents (%)	34	83	97	51	24	85
Classification	SM	ML	ML	ML	SM	ML
Boring No.	2	3	3	3	3	3
Depth (ft)	72	10 - 25	25 - 40	40 - 50	50 - 60	60 - 70
Fine Contents (%)	27	67	95	91	61	72
Classification	SM	ML	ML	ML	ML	ML
Boring No.	3	4	4	4	4	
Depth (ft)	70 - 76.5	12 - 22	22 - 27	27 - 47	47 - 73.5	
Fine Contents (%)	7.1	51	85	87	71	
Classification	SP-SM	ML	ML	ML	ML	

COMPACTION CURVES (ASTM D1557)

Sample No.	Depth (ft)	USCS	γ_{dmax} (pcf)	w_o (%)
1A+2A+3A+4A	1 - 2	SM	117.0	13.2
1B+2B+3B+4B	12 - 17	SM	117.2	13.0

G:\2013\13259-3 COD, Central Campus Redevelopment - Project\lab\LabSuite_13259-3.csv



TEST DATA SUMMARY

Project:	Proposed Central Campus Redevelopment Project				
Location:	College of the Desert, Palm Desert, California				
Job Number:	13259-3	Engineer:	FY	Enclosure:	C-9

Table 1 - Laboratory Tests on Soil Samples

C.H.J. Consultants
COD, Central Campus Redevelopment
Your #13259-3, HDR/Schiff #13-0378LAB
7-May-13

Sample ID			1A+2A+3A+4	1B+2B+3B+4
			A	B
Resistivity	Units			
as-received		ohm-cm	29,200	10,800
saturated		ohm-cm	6,000	4,000
pH			7.7	8.0
Electrical				
Conductivity		mS/cm	0.09	0.12
Chemical Analyses				
Cations				
calcium	Ca ²⁺	mg/kg	76	86
magnesium	Mg ²⁺	mg/kg	5.0	5.0
sodium	Na ¹⁺	mg/kg	21	39
potassium	K ¹⁺	mg/kg	12	31
Anions				
carbonate	CO ₃ ²⁻	mg/kg	ND	ND
bicarbonate	HCO ₃ ¹⁻	mg/kg	174	229
fluoride	F ¹⁻	mg/kg	3.8	3.2
chloride	Cl ¹⁻	mg/kg	21	29
sulfate	SO ₄ ²⁻	mg/kg	20	50
phosphate	PO ₄ ³⁻	mg/kg	ND	1.4
Other Tests				
ammonium	NH ₄ ¹⁺	mg/kg	0.9	0.6
nitrate	NO ₃ ¹⁻	mg/kg	2.7	2.8
sulfide	S ²⁻	qual	na	na
Redox		mV	na	na

Electrical conductivity in millisiemens/cm and chemical analysis were made on a 1:5 soil-to-water extract.

mg/kg = milligrams per kilogram (parts per million) of dry soil.

Redox = oxidation-reduction potential in millivolts

ND = not detected

na = not analyzed

FINES CONTENT (ASTM C117)

Boring No.	1	1	1	1	1	1	1	2
Depth (ft)	0 - 7	7 - 20	20 - 25	25 - 35	35 - 50	50 - 55	55 - 65	0 - 5
Fine Contents (%)	12.2	62.4	33.5	95.9	61.6	17.0	76.9	13.1
Classification	SM	ML	SM	ML	ML	SM	ML	SM
Boring No.	2	2	2	3	3	3	3	
Depth (ft)	5 - 25	25 - 30	30 - 55	0 - 5	5 - 25	25 - 40	40 - 65	
Fine Contents (%)	51.7	96.3	70.7	9.9	61.9	68.0	61.9	
Classification	ML	ML	ML	SP-SM	ML	ML	ML	

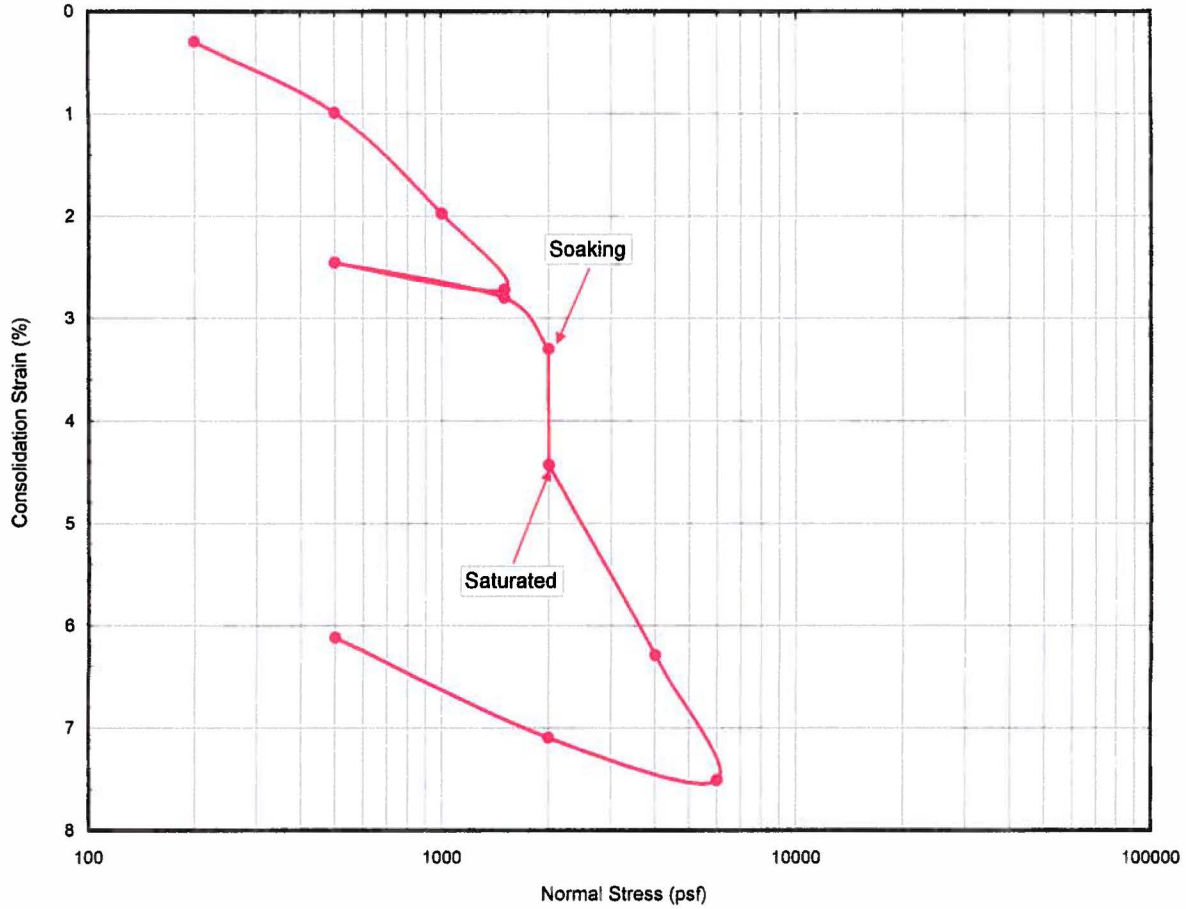
G:\2015\15394-3 COD, Bldg C&D\In\LabSuite_15394-3.csv



TEST DATA SUMMARY

Project:	Proposed Central Campus Redevelopment Project, Hilb Building				
Location:	College of the Desert, Palm Desert, California				
Job Number:	15394-3	Engineer:	fy	Enclosure:	C-12

Consolidation Test (ASTM D 2435)



Boring #	Depth (ft)	Soil/Sample Type	γ_d (pcf)	MC(%)	HCS(%)
• 6-3	12	(ML) Silt, fine with clay and sand, brown	83.9	5.6	1.1

* HCS - Hydroconsolidation strain in percent.



C.H.J. Incorporated

CONSOLIDATION TEST

Project:	Proposed Administration Building Replacement		
Location:	College of the Desert, Palm Desert, California		
Job No.:	11270-3	Enclosure:	C-5

Geotechnical Engineering Report

Desert Community College District - Science Building Renovation Project ■ Palm Desert, California

February 14, 2022 ■ Terracon Project No. CB215187



SUPPLEMENTAL MAPS

Contents:

Subsidence Zone Figure

Geologic Map

Regional Fault Map

Regional Seismicity Map

Subsurface Profile Cross Section A-A'

Subsidence Zone Figure

Desert Community District - Science Building Renovation Project ■ Palm Desert, California
 43-500 Monterey Avenue ■ Terracon Project No. CB215187

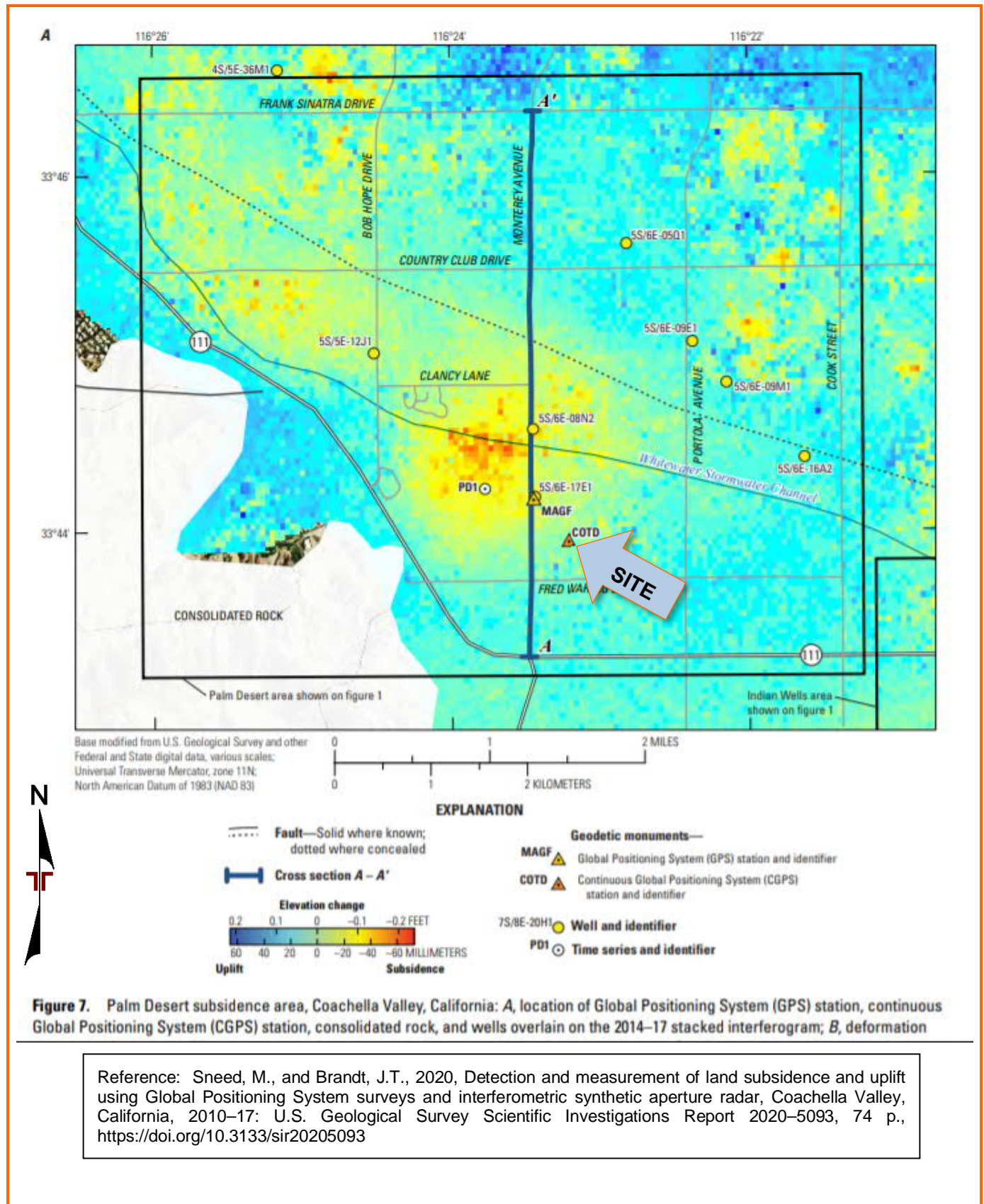
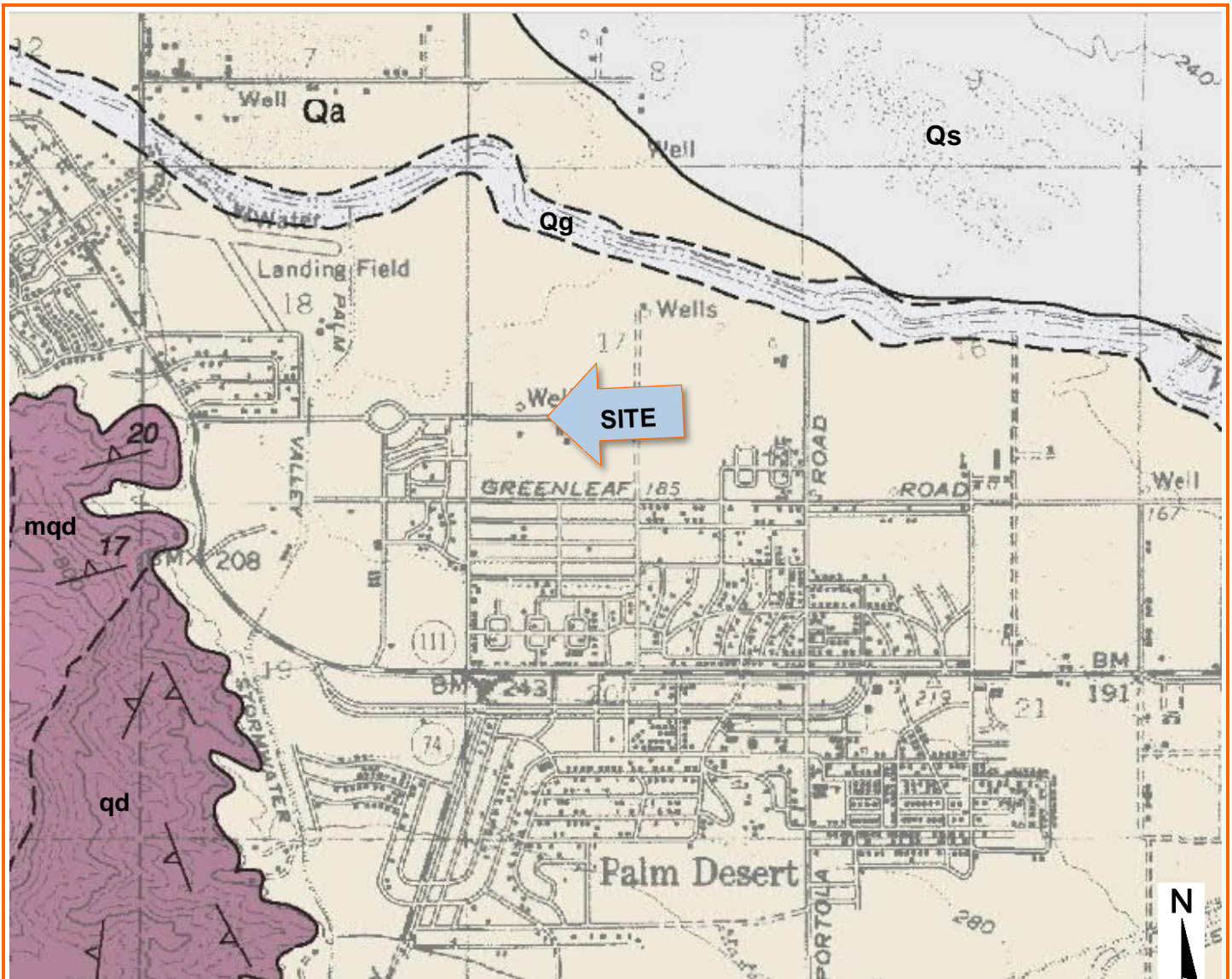


Figure 7. Palm Desert subsidence area, Coachella Valley, California: A, location of Global Positioning System (GPS) station, continuous Global Positioning System (CGPS) station, consolidated rock, and wells overlain on the 2014–17 stacked interferogram; B, deformation

Reference: Sneed, M., and Brandt, J.T., 2020, Detection and measurement of land subsidence and uplift using Global Positioning System surveys and interferometric synthetic aperture radar, Coachella Valley, California, 2010–17: U.S. Geological Survey Scientific Investigations Report 2020–5093, 74 p., <https://doi.org/10.3133/sir20205093>

GEOLOGIC MAP

Desert Community College District - Science Building Renovation Project ■ Palm Desert, California
43-500 Monterey Avenue ■ Terracon Project No. CB215187



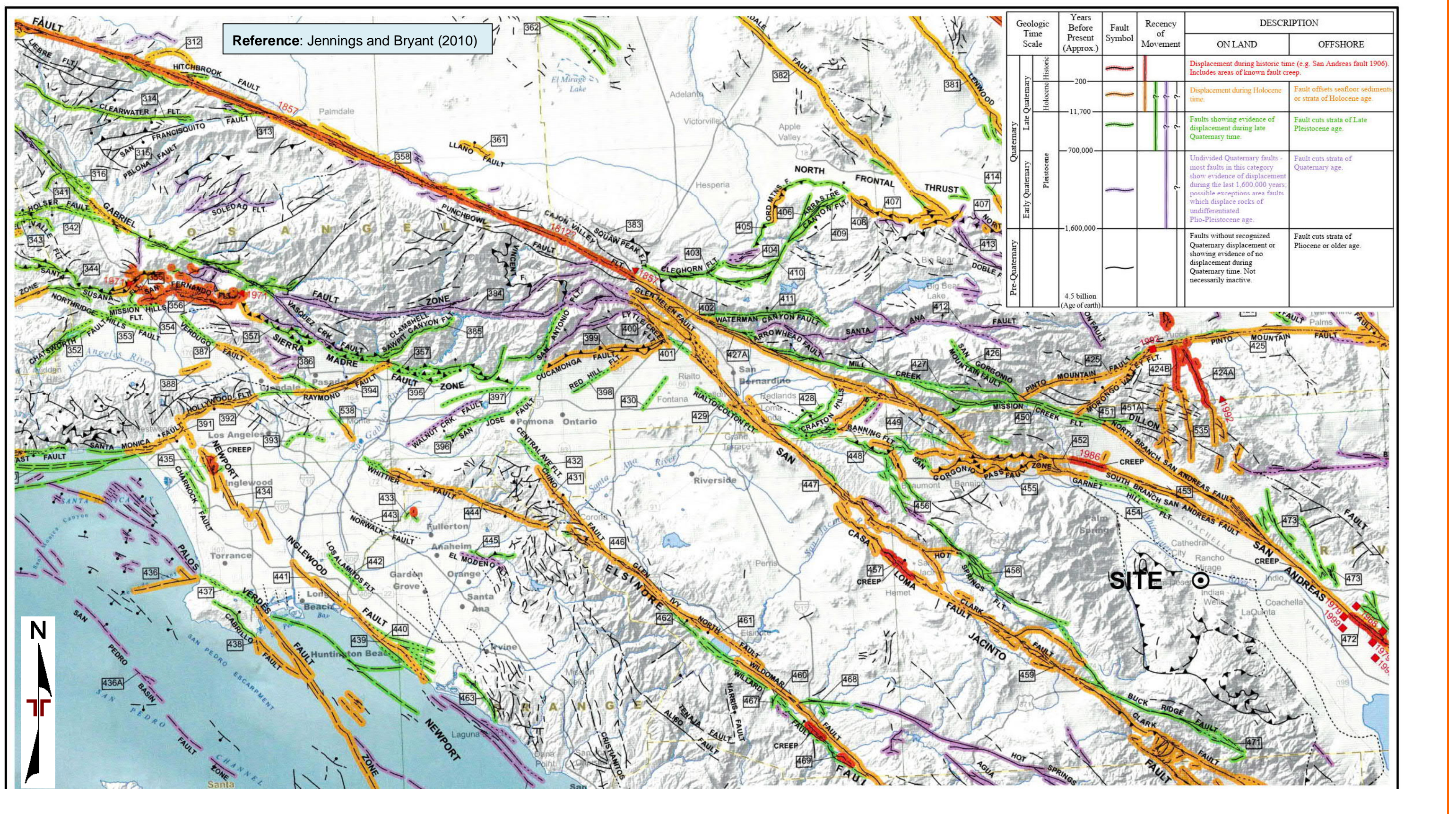
Geologic Units:

Qs	wind-laid dune sand
Qa	alluvial sand and clay
Qg	alluvial sand and gravel
qd	quartz diorite
mqd	qd sheared to mylonite

Reference: Dibblee, T.W. and Minch, J.A., 2008, **Geologic map of the Palm Desert & Coachella 15 minute quadrangles, Riverside County, California**, Dibblee Geological Foundation, Dibblee Foundation Map DF-373, 1:62,500.

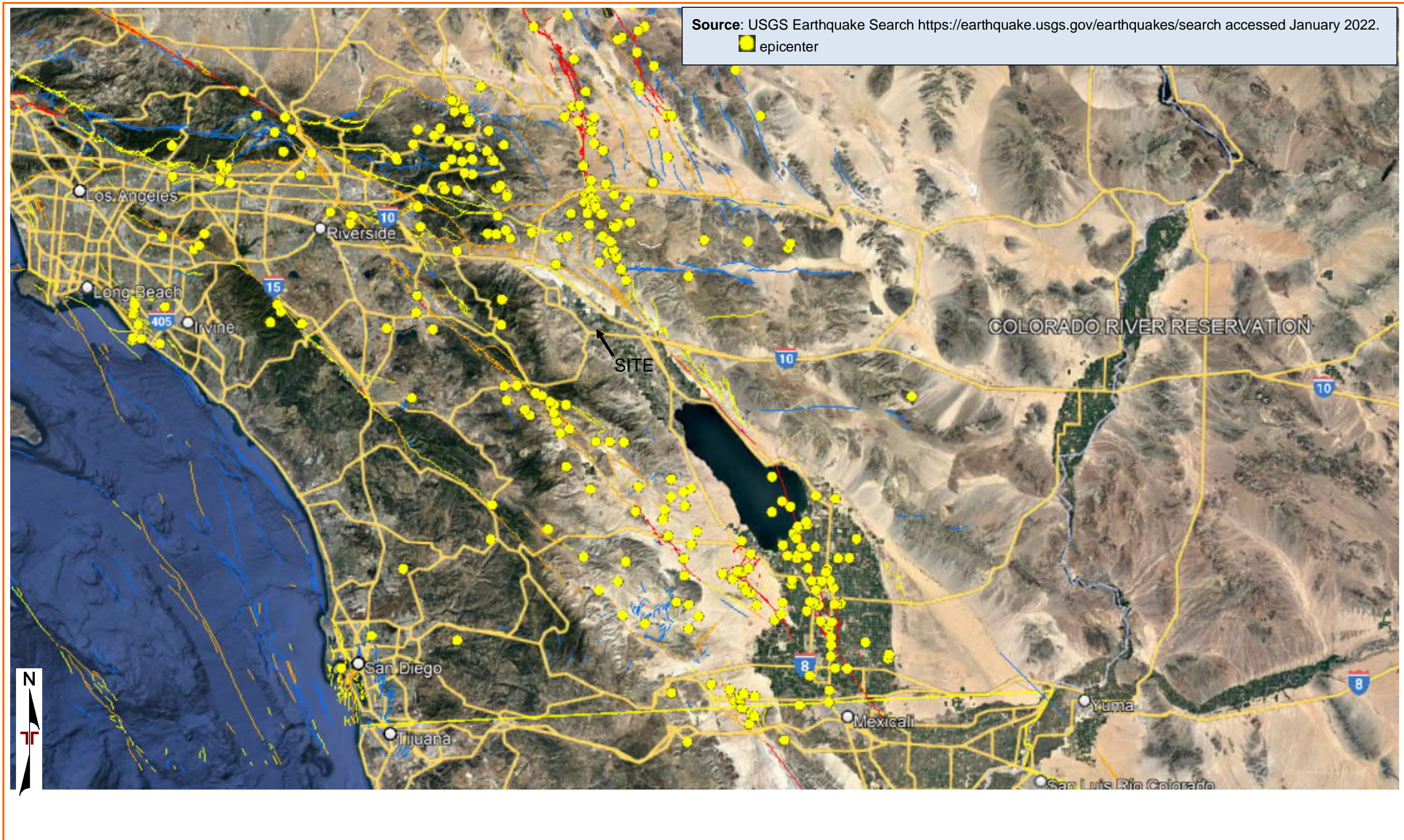
REGIONAL FAULT MAP

Desert Community College District - Science Building Renovation Project ■ Palm Desert, California
 43-500 Monterey Avenue ■ Terracon Project No. CB215187



REGIONAL SEISMICITY MAP

Desert Community College District - Science Building Renovation Project ■ Palm Desert, California
43-500 Monterey Avenue ■ Terracon Project No. CB215187



Geotechnical Engineering Report

Desert Community College District - Science Building Renovation Project ■ Palm Des
43-500 Monterey Avenue ■ Terracon Project No. CB215187



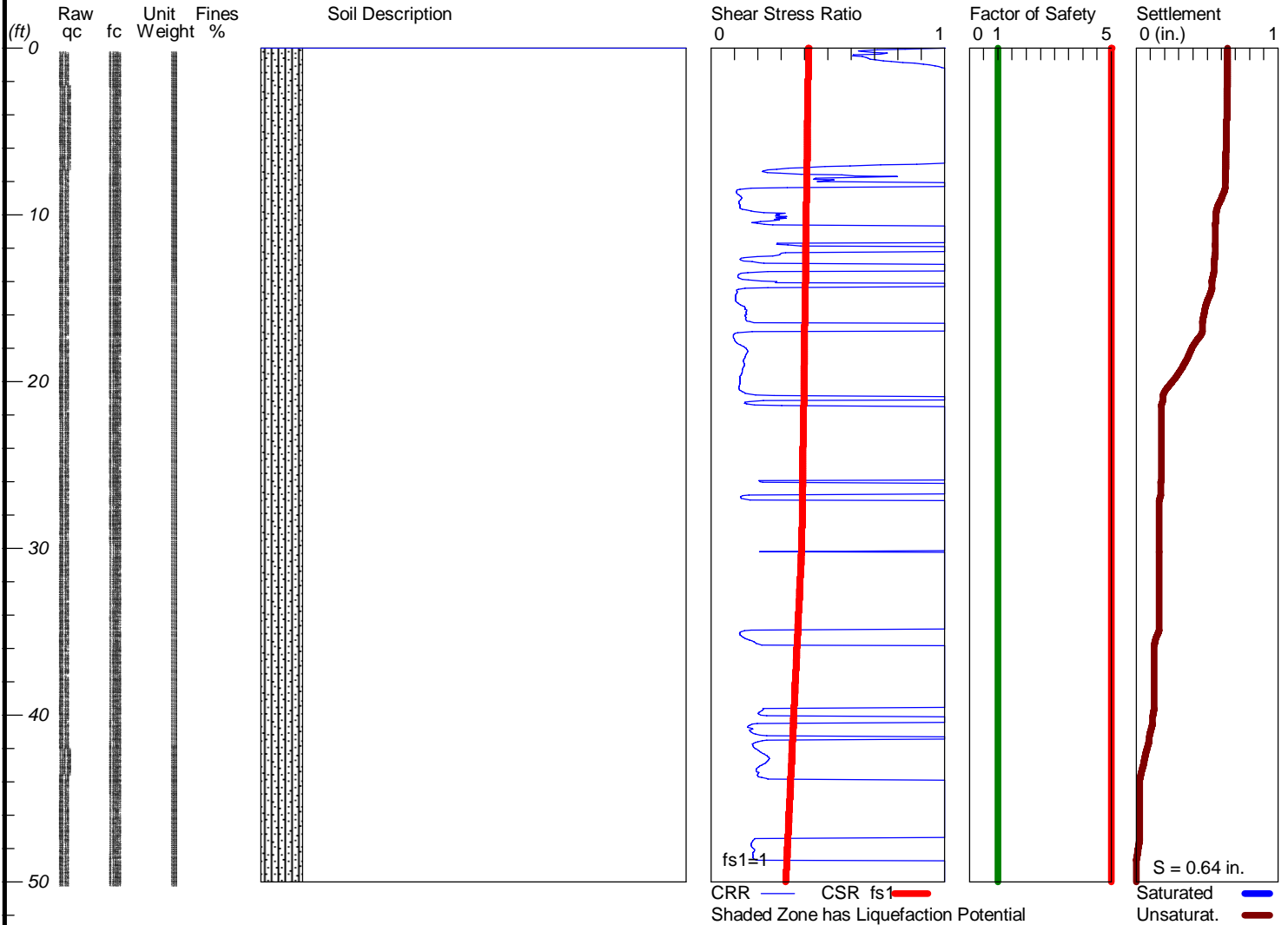
GEOTECHNICAL CALCULATIONS

LIQUEFACTION ANALYSIS

COD Science Building Renovation

Hole No.=CPT-1 Water Depth=100 ft

Magnitude=8.09
Acceleration=0.642g



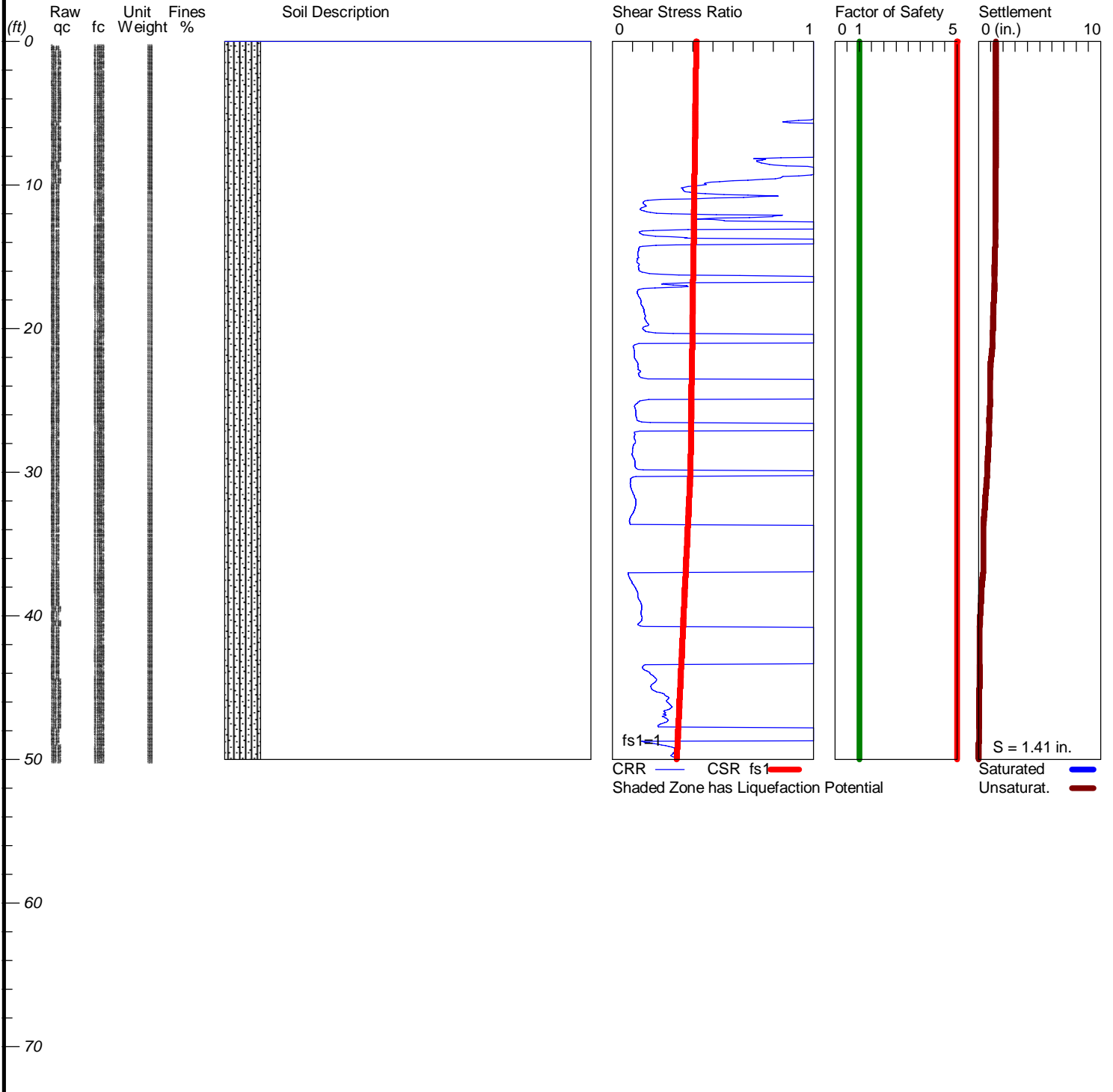
LiquefyPro CivilTech Software USA www.civiltech.com

LIQUEFACTION ANALYSIS

COD Science Building Renovation

Hole No.=CPT-2 Water Depth=100 ft

Magnitude=8.09
Acceleration=0.642g



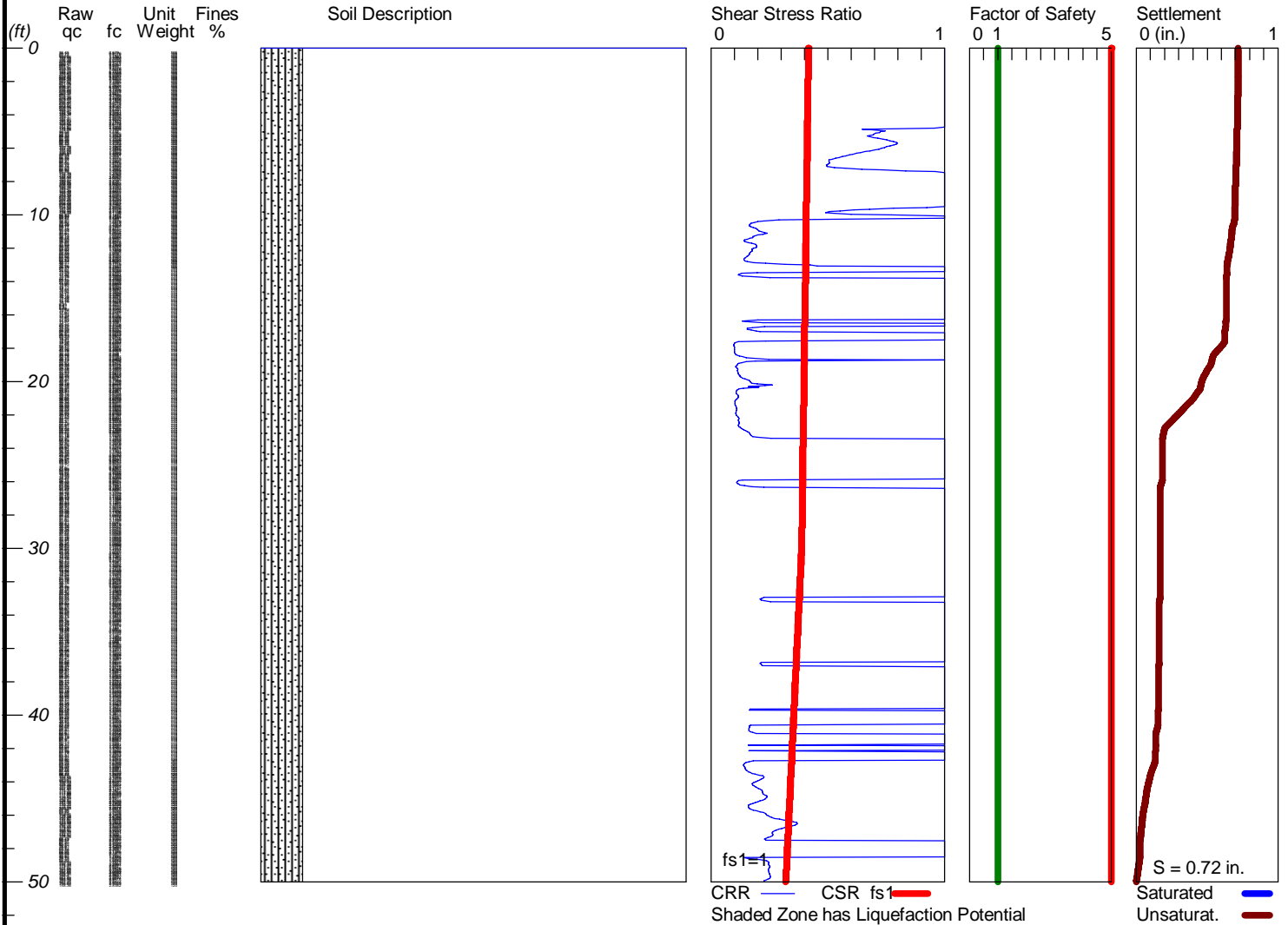
LiquefyPro CivilTech Software USA www.civiltech.com

LIQUEFACTION ANALYSIS

COD Science Building Renovation

Hole No.=CPT-3 Water Depth=100 ft

Magnitude=8.09
Acceleration=0.642g



LiquefyPro CivilTech Software USA www.civilttech.com

Geotechnical Engineering Report

Desert Community College District - Science Building Renovation Project ■ Palm Desert
43-500 Monterey Avenue ■ Terracon Project No. CB215187



SUPPORTING INFORMATION

Contents:

General Notes

Unified Soil Classification System

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING				WATER LEVEL		Water Initially Encountered	FIELD TESTS	(HP) Hand Penetrometer	
						Water Level After a Specified Period of Time		(T) Torvane	
						Water Level After a Specified Period of Time		(b/f) Standard Penetration Test (blows per foot)	N N value

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS	RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance Includes gravels, sands and silts.			CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance			
	Descriptive Term (Density)	Standard Penetration or N-Value Blows/Ft.	Ring Sampler Blows/Ft.	Descriptive Term (Consistency)	Unconfined Compressive Strength, Qu, psf	Standard Penetration or N-Value Blows/Ft.	Ring Sampler Blows/Ft.
Very Loose	0 - 3	0 - 6	Very Soft	less than 500	0 - 1	< 3	
Loose	4 - 9	7 - 18	Soft	500 to 1,000	2 - 4	3 - 4	
Medium Dense	10 - 29	19 - 58	Medium-Stiff	1,000 to 2,000	4 - 8	5 - 9	
Dense	30 - 50	59 - 98	Stiff	2,000 to 4,000	8 - 15	10 - 18	
Very Dense	> 50	≥ 99	Very Stiff	4,000 to 8,000	15 - 30	19 - 42	
			Hard	> 8,000	> 30	> 42	

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A				Soil Classification			
				Group Symbol	Group Name ^B		
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	$Cu \geq 4$ and $1 \leq Cc \leq 3$ ^E	GW	Well-graded gravel ^F		
			$Cu < 4$ and/or $[Cc < 1$ or $Cc > 3.0]$ ^E	GP	Poorly graded gravel ^F		
		Gravels with Fines: More than 12% fines ^C	Fines classify as ML or MH	GM	Silty gravel ^{F, G, H}		
			Fines classify as CL or CH	GC	Clayey gravel ^{F, G, H}		
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	$Cu \geq 6$ and $1 \leq Cc \leq 3$ ^E	SW	Well-graded sand ^I		
			$Cu < 6$ and/or $[Cc < 1$ or $Cc > 3.0]$ ^E	SP	Poorly graded sand ^I		
		Sands with Fines: More than 12% fines ^D	Fines classify as ML or MH	SM	Silty sand ^{G, H, I}		
			Fines classify as CL or CH	SC	Clayey sand ^{G, H, I}		
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	$PI > 7$ and plots on or above "A" line	CL	Lean clay ^{K, L, M}		
			$PI < 4$ or plots below "A" line ^J	ML	Silt ^{K, L, M}		
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay ^{K, L, M, N}	
			Liquid limit - not dried			Organic silt ^{K, L, M, O}	
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above "A" line	CH	Fat clay ^{K, L, M}		
			PI plots below "A" line	MH	Elastic Silt ^{K, L, M}		
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay ^{K, L, M, P}	
			Liquid limit - not dried			Organic silt ^{K, L, M, Q}	
		Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat

^A Based on the material passing the 3-inch (75-mm) sieve.

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

$$E \quad Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

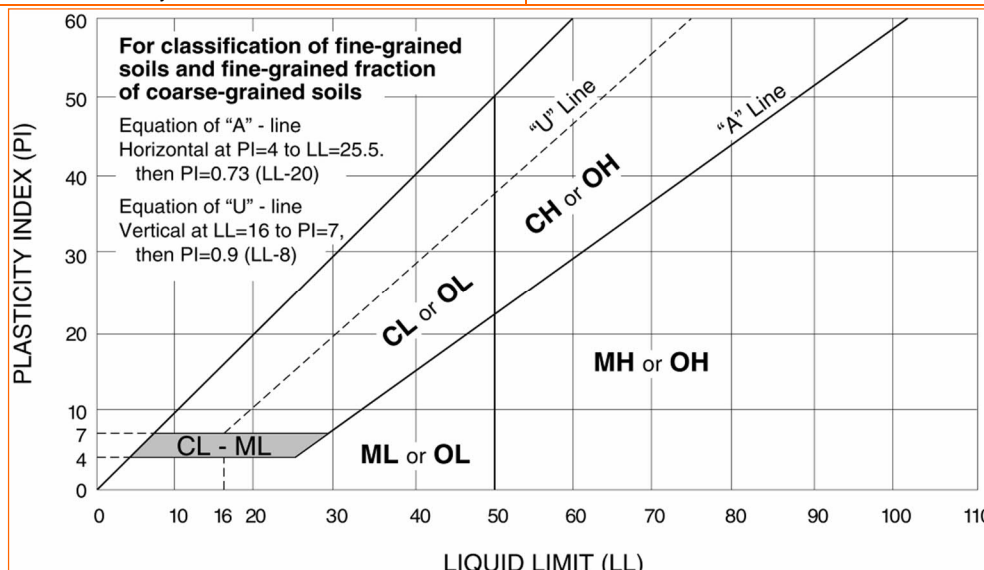
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N $PI \geq 4$ and plots on or above "A" line.

^O $PI < 4$ or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



4675 MacArthur Court
Suite 100
Newport Beach CA 92660
USA

Tel 949.863.9434
Fax 949.553.1676



May 3, 2022

California Geological Survey
School Review Unit
801 K Street, MS 12-31
Sacramento, CA 95814-3531

Subject: College of the Desert – Science Building Renovation
Site Data Report
Project Number: 007.3766.000
File Code: 3RA

To California Geological Survey:

As required per CBC 1603A.2, the following project description for the College of the Desert Science Building Seismic Upgrade and Renovation is provided to accompany the Geotechnical Report submitted to CGS for review:

1. The type of service is a community college Science Building that will contain Science labs, lab support spaces, and offices.
2. Construction materials include slab-on-grade, structural steel pipe columns, tilt up concrete exterior walls, precast concrete arcades, plywood sheathing over wood joists spanning between steel beams, and metal stud non-bearing walls.
3. Design for the retrofit will be in accordance with Method A as described in Section 320 of CBC 2019, Part 10.
4. The project does include structural modifications to the existing building.
5. The seismic force resisting system will be by flexible roof diaphragms that transfer lateral seismic and wind forces to the perimeter concrete tilt-up, shear walls. Classified as Building Structure Type PC1 per Table 3-1 of ASCE41-17.
6. The foundation will be concrete slab on grade on a project site that is basically "flat".
7. Structural design analysis and retrofit will use the Linear Static Procedure of Chapter 7, ASCE 41-17.
8. The project includes a single story, 10,800 SF building.

Sincerely,

Nicholas Acevedo
Architect
Gensler



CALIFORNIA GEOLOGICAL SURVEY
DEPARTMENT OF CONSERVATION

APPLICATION
FOR ASSESSMENT OF GEOLOGIC HAZARD REPORTS

CGS Form 1A (1/2019)

For CGS use only

CGS project number 04-CGS5499Date received 6-30-2022

In order for CGS to review geologic hazard reports for a proposed school project, as described on Division of the State Architect (DSA) Interpretation of Regulations IR-4 (see <http://www.dgs.ca.gov/dsa/Resources/IRManual.aspx>), the following material must be submitted to CGS.

RECEIVED**JUN 30 2022**1. Upload to Box (<https://www.conservation.ca.gov/cgs/upload-school>):

- this form; and site plan; and site data report
- Geologic Hazard Report(s) and Geotechnical Report(s) to be reviewed

2. Mail to CGS:

- this form, which will help CGS and the DSA coordinate reviews;
- **TWO WET-SIGNED COPIES** of the Work Order (below), signed by an authorized representative of the District;
- **a check for \$3600** to cover the time and materials needed for CGS review

California Geological Survey

Address: California Geological Survey
School Review Unit
801 K Street, MS 12-31
Sacramento, CA 95814-3531

Name of School: College of the Desert, Science Building Renovation	
School District or State Agency: Desert Community College District	
Mailing Address (street, city, zip): 43500 Monterey Avenue, Palm Desert, CA 92260	
District Superintendent: Martha Garcia	
Telephone Number: (760) 773-2500	E-mail Address: mgarcia@collegeofthedesert.edu
District Director of Facilities: Brandon Toepfer	
Telephone Number: (760) 776-7268	E-mail Address: btoepfer@collegeofthedesert.edu

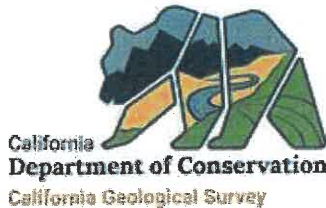
Scope of Work:		
Seismic rehabilitation and renovation of a single story 10,800 SF building built in 1962-63, and renovated in 2002.		
Applicable Building Code (year): 2019	Community College Project per: <input type="checkbox"/> DSA-SS, or <input checked="" type="checkbox"/> DSA-SS/CC amendments	
This project includes a site-specific ground motion analysis in accordance with: <input type="checkbox"/> none <input type="checkbox"/> ASCE 7 <input checked="" type="checkbox"/> ASCE 41		
Project location (Street Address): 43500 Monterey Avenue, CA		
City and Zip Code: Palm Desert 92260	County: Riverside	APN:
OPSC Project Tracking Number:	DSA Application Number (if assigned):	

APPLICATION FOR ASSESSMENT OF GEOLOGIC HAZARDS REPORTS (p. 2 of 2)

Plans, specifications, and related work were prepared by, and observation of construction will be performed by: (per Title 24, Part 1, Section 4-316, of the California Code of Regulations)	
Architect or Engineer in General Responsible Charge: Nicholas Acevedo	
Printed Name: Nicholas Acevedo	
Firm Name: Gensler	
Address: 4675 MacArthur Court, Suite 100, Newport Beach, CA 92660	
Telephone Number: (949) 863-9434	Fax Number:
California Registration Number: C32405	E-mail Address: nick_acevedo@gensler.com
The following individual is authorized to act as Alternate to the Architect or Engineer named above:	
Printed Name:	
Firm Name:	
Address:	
Telephone Number:	Fax Number:
California Registration Number:	E-mail Address:

Geologic hazards reports must be prepared by a Certified Engineering Geologist and a Geotechnical Engineer: (per Title 24, Part 2, Section 1803A, of the California Code of Regulations)	
Engineering Geologist Name: John S. McKeown	Geotechnical Engineer Name: Keith P. Askew
Firm Name: Terracon Consultants, Inc.	Firm Name: Terracon Consultants, Inc.
Address: 1355 E. Cooley Dr., Colton, California 92324	Address: 1355 E. Cooley Dr., Colton, California 92324
Telephone Number: (909) 824 7311	Telephone Number: (909) 824 7311
Fax Number: (909) 301-6016	Fax Number: (909) 301-6016
E-mail Address: john.mckeown@terracon.com	E-mail Address: keith.askew@terracon.com
California Registration Number: EG2396	California Registration Number: GE2946

For Information regarding review of Geologic Hazard Reports for school projects:	
Technical (geology) questions:	Submittal and tracking of reports:
Jennifer Thornburg, PG, CEG, CHG	Margaret Hyland
California Geological Survey	California Geological Survey
801 K Street, MS 12-32, Sacramento, CA 95814-3531	801 K Street, MS 12-32, Sacramento, CA 95814-3531
916.445.5488	916.324.7324
Jennifer.Thornburg@conservation.ca.gov	Margaret.Hyland@conservation.ca.gov



CALIFORNIA GEOLOGICAL SURVEY
DEPARTMENT OF CONSERVATION

04-CGS5499

WORK ORDER
FOR ASSESSMENT OF GEOLOGIC HAZARD REPORTS

CGS Form 1B (1/2019)

The parties to this Work Order are the State of California, Department of Conservation, California Geological Survey (CGS) and Desert Community College District (District).
The Parties agree to the following terms and conditions:

1. CGS agrees to conduct an independent assessment of District-provided geologic hazard report(s) associated with the District's proposed school construction project to determine whether the reports are technically adequate.
2. The State of California, Department of General Services, Division of the State Architect (DSA) will rely upon the CGS technical assessment in reviewing plans for construction of the District's proposed construction project and permitting the project. Information regarding CGS assessment of district geologic hazard reports and the DSA's instructions to K-12 and community college districts regarding the CGS assessment can be found in DSA Interpretation of Regulation (IR A-4) at <http://www.dgs.ca.gov/dsa/Resources/IRManual.aspx>
3. The District shall list the specific reports to be reviewed by CGS in the Application (above). The District shall provide copies of the reports to CGS when submitting the signed Work Order and payment, as described below.
4. The District shall provide any additional information determined by CGS to be needed to complete its assessment.
5. The term of this Work Order shall begin upon full execution of the Work Order by both parties and shall end in 365 days or 12 months, whichever occurs first. "Full execution" as used herein means approval by authorized representatives of both Parties and payment to CGS of three thousand, six hundred dollars (\$3600) in consideration of the promise by CGS to perform the technical assessment. Payment in full shall accompany two copies of this Work Order, each containing an original signature of a District representative authorized to sign the Work Order. CGS will return a copy of the Work Order containing an original signature of its authorized representative upon execution of the Work Order.
6. Failure of the District to submit the necessary documents or the \$3,600 payment will result in termination of this Work Order.
7. No amendment or variation of the terms of this Work Order shall be valid unless made in writing and signed by both Parties. No oral understanding not incorporated into this Work Order is binding on either Party.
8. Either Party, in writing, may terminate this Work Order at any time with 30 days written notice; however, should the District terminate this Work Order after work has been commenced by CGS, CGS will retain the \$3,600 payment for any work completed by CGS prior to the notice of termination.

RECEIVED

JUN 30 2022

California Geological Survey

WORK ORDER FOR ASSESSMENT OF GEOLOGIC HAZARDS REPORTS (p. 2 of 2)

9. Contact information for each party:

<u>California Geological Survey</u>	<u>District</u>
Name: Jennifer Thornburg, PG, CEG, HG	Name: John Ramont, Ed.D.
Mailing Address: California Geological Survey 801 K Street, MS 12-32 Sacramento, CA 95814	Mailing Address: 43-500 Monterey Avenue Palm Desert, CA 92260
Phone Number: 916-324-7324	Phone Number: (760) 776-7452

10. The Parties agree that the agents and employees of the Parties are independent of the other and shall not act as officers or employees or agents of the other Party to this Work Order.

11. During the performance of this Agreement, the Parties shall not discriminate, harass, or allow harassment against any employee or applicant for employment on account of the employee's or applicant's race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or military and veteran status. (Gov. Code, §§ 12900, 12940, 12990.) The Parties shall ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. The Parties shall comply with all provisions of the Fair Employment and Housing Act (Gov. Code §12900 et seq.) and the applicable regulations promulgated thereunder (Cal. Code Regs., tit. 2, §§ 11000, 11105, 11122, et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code section 12990, set forth in Chapter 5 of Division 4.1 of Title 2 of the California Code of Regulations, are incorporated into the Agreement by reference and made a part hereof as if set forth in full.

DISTRICT

DocuSigned by:

 1035608ED363469...
 (Signature) 6/2/2022 | 2:08 PM PDT
 (Date)

Name: John Ramont, Ed.D.
Title: VP of Administrative Services

CALIFORNIA GEOLOGICAL SURVEY

DocuSigned by:

 BAAE88E0BF1949C...
 (Signature) 6/30/2022
 (Date)

Name: Jeff Newton
Title: Chief Deputy, Operations

Gensler

February 14, 2024

California Community Chancellor's Office
Chay Yang
1102 Q. Street
Sacramento, CA 95811

Subject: College of the Desert – Palm Desert Campus
– Science Building Renovation
Project #220023
Contract #C0001573
Addendum 3 Executive Summary
Project Number: 007.3766.000
File Code: 6A

Dear Ms. Yang,

Please see attached a summary of the items proposed to be included in Addendum 3 for the College of the Desert Science Building Renovation Project at the Palm Desert Campus. The items do not affect the approved budget, program, scope or to the best of our knowledge the cost. Rather they provide clarification or confirmation of items already included in the bid documents.

Please let me know if there are any further clarification or documentation required for this addendum.

Sincerely,



Nick Acevedo
Principal
Gensler
4675 MacArthur Court, Suite 100
Newport Beach, CA 92660

cc: Jennefer Dawson-Garcia / MAAS
Deborah Shepley / Gensler
Eric Mittlestead

Addendum Number 3

Gensler

Project	College of the Desert – Palm Desert Campus – Science Building Renovation	Date	2/14/2024
Project Location	43-500 Monterey Avenue Palm Desert, CA	Architect's Project Number	007.3766.00
Owner / Client	College of the Desert	File	6A This is page 1 of 1
To	California Community Chancellor's Office	Attention	Chay Yang
Address	1102 Q. Street		
City	Sacramento	State	CA Zip Code 95811
Delivered via:	<input type="checkbox"/> Messenger	<input type="checkbox"/> Hand carried	<input type="checkbox"/> Facsimile
	<input type="checkbox"/> Express	<input type="checkbox"/> Pick-up	<input checked="" type="checkbox"/> E-mail Address cyang@cccco.edu
	<input type="checkbox"/> Mail	<input type="checkbox"/> UPS	<input type="checkbox"/> Website Address
This Addendum will become part of the Contract Documents. The Contractor shall promptly inform subcontractors and all others performing or supplying any of the Work of all relevant contents of this Addendum. In case of conflicting provisions with previous addenda or communications, provisions in this Addendum supersede only those conflicting issues. It is the responsibility of the Contractor to notify all subcontractors from whom it accepts bids of all changes in the drawings and specifications covering this project. Receipt shall be acknowledged by inserting the addendum number and its date in the bid form.			
Distribution	jdawson@bond.collegeofthedesert.edu		
Prepared by Gensler by	Nick Acevedo	Date Signed	2/14/2024

Instructions / Description / References / Dates

Addendum number of attachments:
5 Pages
1 Attachments

Addendum Item	Reference Item	Description
A-01	Notice For Bid Lette	Updated notice for bid letter from College dated 2.14.2024 updating the bid notice.

Addendum Number 04

Project	College of the Desert – Palm Desert Campus – Science Building Renovation	Date	2/23/2024
Project Location	43-500 Monterey Avenue Palm Desert, CA	Architect's Project Number	007.3766.00
Owner / Client	College of the Desert	File	6A This is page 1 of 1
To	California Community Chancellor's Office	Attention	Chay Yang
Address	1102 Q. Street		
City	Sacramento	State	CA Zip Code 95811
Delivered via:	<input type="checkbox"/> Messenger <input type="checkbox"/> Hand carried <input type="checkbox"/> Facsimile <input type="checkbox"/> Express <input type="checkbox"/> Pick-up <input checked="" type="checkbox"/> E-mail Address cyang@cccco.edu <input type="checkbox"/> Mail <input type="checkbox"/> UPS <input type="checkbox"/> Website Address		
<p>This Addendum will become part of the Contract Documents. The Contractor shall promptly inform subcontractors and all others performing or supplying any of the Work of all relevant contents of this Addendum. In case of conflicting provisions with previous addenda or communications, provisions in this Addendum supersede only those conflicting issues. It is the responsibility of the Contractor to notify all subcontractors from whom it accepts bids of all changes in the drawings and specifications covering this project. Receipt shall be acknowledged by inserting the addendum number and its date in the bid form.</p>			
Distribution	jdawson@bond.collegeofthedesert.edu		
Prepared by Gensler by	Tim Hall	Date Signed	2/23/2024
Instructions / Description / References / Dates			

Addendum number of attachments:
 8 Attachments
 10 Pages

Addendum Item	Reference Item	Description
A4-01	Bid RFI 01	Pre-Bid RFI deadline date confirmation.
A4-02	Bid RFI 02	Project duration confirmation.
A4-03	Bid RFI 03	Unit costs are not applicable to project.
A4-04	Bid RFI 04	Allowances are not applicable to project. Baseline assumption for quantity of exterior concrete wall and column repairs clarified.
A4-05	Bid RFI 05	There is no roof hatch in the scope of work.
A4-06	Bid RFI 06	Roof walk pads are required per spec 07 54 19.
A4-07	Bid RFI 08	Disabled Veteran Business Enterprise (DVBE) clarification.
A4-08	Bid RFI 14	No substitutions accepted during bidding. Backing clarification.

4675 MacArthur Court
 Suite 100
 Newport Beach CA 92660
 Tel: +1 949.863.9434
 Fax: +1 949.553.1676

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 2/16/24
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
2H Construction

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Please confirm the RFI deadline. It's noted as TBD in the Notice Calling for Bids.

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

Pre-Bid RFI deadline is Friday, March 8, 2024 @ 4:00pm, as listed in Addendum No. 03 released this week.
J. Dawson-Garcia, PM
02.16.2024

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction

(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 2/16/24

Bidder Contact Information:
Ryan Shotwell

(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com

(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 2/16/24
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
2H Construction

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Please confirm the Project Contract Duration

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

~~The project duration is 350 working days.~~
~~J Dawson-Garcia, PM~~
~~02.16.2024~~

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction

(Bidder Name)


(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 2/16/24

Bidder Contact Information:
Ryan Shotwell

(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com

(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 2/16/24
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR
Bidder Name: 2H Construction

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Based on the documents how can the contractor quantify the concrete repairs on sheet S0.045? For bidding purposes should contractors include an allowance for this work? If so, what amount?

Additional pages attached by Bidder: Yes x No
Number of additional pages attached by Bidder:

Response to Bidder's Pre-Bid Request for Information

- Refer to bidding assumption provided in details 1 and 2/S0.045 for quantity of exterior concrete wall and column repairs. Note the following clarification: this is to be a baseline assumption, not an allowance so all bidders have the same quantity to then multiply a cost to. The intent of this assumption indicated in details 1 and 2 is not intended to cover all exterior concrete wall and column repairs.
Tim Hall/ Gensler 2/22/2024

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached:

Date of RFI Response:

Submitted By: 2H Construction
(Bidder Name)
(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 2/16/24

Bidder Contact Information: Ryan Shotwell
(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com
(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 02/19/2024
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
Nielsen Construction Ca., Inc.

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Please confirm a roof access hatch and ladder will be required for the project. If so, please provide desired type, location and details.

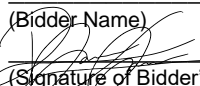
Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: 0

Response to Bidder's Pre-Bid Request for Information

There is no roof hatch in the scope of work. _____
 Tim Hall/ Gensler 2/22/2024 _____

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
Rick Cesena
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

(Phone and Fax)
rcesena@nielsencc.com
(Email Address)

Submittal Date: 02/19/2024

Bidder Contact Information:
Rick Cesena
(Bidder Contact Name)
(760) 234-2112

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 02/19/2024
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
Nielsen Construction Ca., Inc.

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Please confirm if roof walk pads will be required for the project. If so, please provide a desired layout.

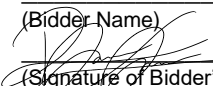
Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: 0

Response to Bidder's Pre-Bid Request for Information

Yes, roof walk pads will be required for access to service rooftop equipment, refer to spec section 07 54 19 - 9,
 2.8. See attached A1.202 Roof Plan for walk pad locations.
 Tim Hall/ Gensler 2/23/2024

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

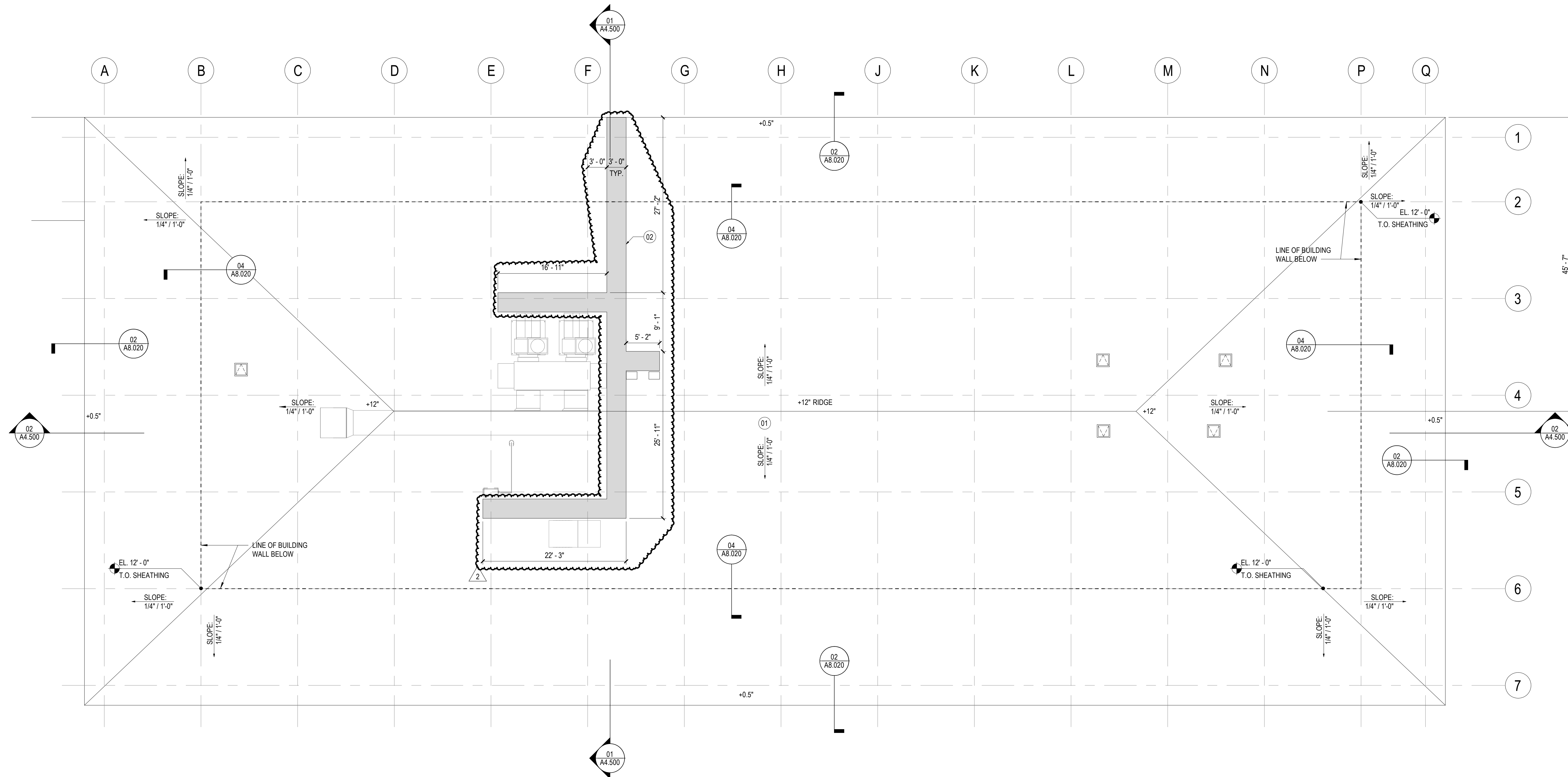
Submitted By:
Rick Cesena
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

(Phone and Fax)
rcesena@nielsencc.com
(Email Address)

Submittal Date: 02/19/2024

Bidder Contact Information:
Rick Cesena
(Bidder Contact Name)
(760) 234-2112

2/23/2024 10:52:03 AM B:\360\007.3766.000 - College of the Desert Science Building\07.3766.002 - LOD - Science Building_121.rvt



SHEET NOTES

- 01 PROVIDE PVC SINGLE PLY MEMBRANE ROOFING OR R-30 RIGID INSULATION ON ROOF SHEATHING. RIGID INSULATION IS TAPERED FROM 12\"/>
- 02 PROVIDE ROOF WALK PAD, REFER TO SPEC SECTION 07 54 19.

College of the Desert

BUILDING OWNER
43500 Monterey Avenue
Palm Desert, CA 92260
United States

Gensler

ARCHITECT OF RECORD
4675 MacArthur Court
Suite 100
Newport Beach, CA 92660
United States
Tel 949.863.9434
Fax 949.553.1676



CIVIL ENGINEER
4675 MacArthur Court
Suite 400
Newport Beach, CA 92660
United States
Tel 949.526.8499



MEPTFA ENGINEER
5000 East Spring Street
Suite 800
Long Beach, CA 90815
United States
Tel 562.497.2999



STRUCTURAL ENGINEER
225 Broadway
Suite 1300
San Diego, CA 92101
United States
Tel 619.630.9199

GENERAL NOTES

- 1. ALL ROOFING TO BE CLASS A.
- 2. PROVIDE 1/4 INCH PER FOOT MINIMUM SLOPE FOR POSITIVE DRAINAGE, UNLESS NOTED OTHERWISE.
- 3. PROVIDE FLASHING AT DRAINS, CURBS, VENTS, PENETRATIONS, AND STACKS PER MANUFACTURER'S RECOMMENDATIONS TO ACHIEVE WARRANTY REQUIREMENTS.
- 4. ROOF CURBS TO BE A MINIMUM OF 8\"/>
- 5. PROVIDE ROOF SADDLE AT HIGH SIDE OF ROOF CURB FOR POSITIVE DRAINAGE TO EDGE OF ROOF OVERHANG, TYPICAL.
- 6. FOR ROOF MOUNTED PIPE AND CONDUIT, PROVIDE DURABLOCK (OR APPROVED EQUAL) SLEEPERS TYPICAL.

Date	Description
3/2/2023	DSA RESUBMITTAL
8/16/2023	DSA BACK CHECK 01
10/2/2023	DSA BACK CHECK 02
1 2/5/2024	ADDENDUM 1
2 2/23/2024	ADDENDUM 4

Seal / Signature

Project Name
**Science Building Renovation
DSA # 04-121828**

Project Number
007.3766.000

Description
CONSTRUCTION ROOF PLAN

Scale
1/8" = 1'-0"

A1.202

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 2/20/24
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
2H Construction

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Please confirm which DVBE attachments A-F are to be submitted if the contractor reaches the DVBE goal and which attachments are to be submitted if the contractor performs a good faith effort

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder:

Response to Bidder's Pre-Bid Request for Information
Refer to Spec Section 00 45 28 in the Project Manual and the DVBE Attachment Worksheets, Attachment A Bidder's DVBE Statement, Item 4. Submittal of Documentation. J. Dawson-Garcia, Project Manager 02.21.2024

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached:

Date of RFI Response:

Submitted By:
2H Construction

(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 2/20/24

Bidder Contact Information:
Ryan Shotwell

(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com

(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: <u>02/21/2024</u> Project Name: Science Building Renovation Bid No: 43-98P-0500-SBR	Bidder Name: <u>Nielsen Construction Ca., Inc.</u>
--	---

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

1. Is it acceptable to use Det.3/S0.044 pro XTC header for all interior and exterior door and window openings with (stud width-300-54)?

2. Is it acceptable to drywall walls 6" above ceiling height on non-fire rated walls?

3. Det. 8/A8.802 shows Unistrut against the wall. Does it require backing?

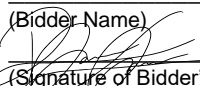
Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: 0

Response to Bidder's Pre-Bid Request for Information

- 1. There are no substitutions considered for pre-bid RFIs. The purpose of bid RFIs is to clarify the scope and not change it. Any Structural, Life Safety, or disabled access changes to the DSA approved drawings and specs will require a DSA CCD and delay bidding, and substitutions may not be accepted by DSA. _____
- 2. It is not acceptable to drywall walls 6" above ceiling height, partition types to be per A1.201. There are no fire rated walls in the project. _____
- 3. Yes, provide backing per 1G/S0.041 at unistrut locations at wall. _____
- Tim Hall/ Gensler 2/22/2024 _____

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
Rick Cesena
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

(Phone and Fax)
rcesena@nielsencc.com
(Email Address)

Submittal Date: 02/21/2024

Bidder Contact Information:
Rick Cesena
(Bidder Contact Name)
(760) 234-2112

Addendum Number 05

Project	College of the Desert – Palm Desert Campus – Science Building Renovation	Date	2/28/2024
Project Location	43-500 Monterey Avenue Palm Desert, CA	Architect's Project Number	007.3766.00
Owner / Client	College of the Desert	File	6A This is page 1 of 1
To	California Community Chancellor's Office	Attention	Chay Yang
Address	1102 Q. Street		
City	Sacramento	State	CA Zip Code 95811
Delivered via:	<input type="checkbox"/> Messenger <input type="checkbox"/> Hand carried <input type="checkbox"/> Facsimile <input type="checkbox"/> Express <input type="checkbox"/> Pick-up <input checked="" type="checkbox"/> E-mail Address cyang@cccco.edu <input type="checkbox"/> Mail <input type="checkbox"/> UPS <input type="checkbox"/> Website Address		
<p>This Addendum will become part of the Contract Documents. The Contractor shall promptly inform subcontractors and all others performing or supplying any of the Work of all relevant contents of this Addendum. In case of conflicting provisions with previous addenda or communications, provisions in this Addendum supersede only those conflicting issues. It is the responsibility of the Contractor to notify all subcontractors from whom it accepts bids of all changes in the drawings and specifications covering this project. Receipt shall be acknowledged by inserting the addendum number and its date in the bid form.</p>			
Distribution	jdawson@bond.collegeofthedesert.edu		
Prepared by Gensler by	Tim Hall	Date Signed	2/28/2024

Instructions / Description / References / Dates

Addendum number of attachments:
 16 Attachments
 137 Pages

Addendum Item	Reference Item	Description
A5-01	Bid RFI 07	Signage locations in drawings clarified and signage spec revised to align with drawings.
A5-02	Bid RFI 09	AV camera specification clarification.
A5-03	Bid RFI 10	AV Interactive Projection Whiteboard specification and drawing location clarification.
A5-04	Bid RFI 11	AV device location in drawings clarification.
A5-05	Bid RFI 12	AV Interactive Projection Whiteboard specification and drawing location clarification.
A5-06	Bid RFI 13	AV Assisted Listening Device location in drawings clarification.
A5-07	Bid RFI 15	AV Interactive Projection Whiteboard specification and drawing location clarification.
A5-08	Bid RFI 16	AV camera specification clarification.
A5-09	Bid RFI 17	AV device location in drawings clarification.
A5-10	Bid RFI 18	AV Interactive Projection Whiteboard specification and drawing location clarification.
A5-11	Bid RFI 19	AV Assisted Listening Device location in drawings clarification.
A5-12	Bid RFI 20	Abatement Certification requirement clarification.
A5-13	Bid RFI 21	Liquidated damages clarification.

4675 MacArthur Court
 Suite 100
 Newport Beach CA 92660
 Tel: +1 949.863.9434
 Fax: +1 949.553.1676

Addendum Number 05 continued

Project College of the Desert – Palm Desert Campus – Science Building Renovation **Date** 2/28/2024

Project Location 43-500 Monterey Avenue Palm Desert, CA **This is page** 2 of 1

A5-14	Revised Spec Section - 00 72 00 General Conditions	Formatting revised only, note there is no new information added or revised.
A5-15	Revised Spec Section 10 14 16 - Plaques	Signage spec revised to align with drawings.
A5-16	Revised Spec Section 27 41 16 Integrated AV Systems and Equipment	AV camera and interactive projection whiteboard devices clarified in specification.

Received
02.19.2024 JDG

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: <u>02/19/2024</u> Project Name: Science Building Renovation Bid No: 43-98P-0500-SBR	Bidder Name: <u>Nielsen Construction Ca., Inc.</u>
--	---

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Please confirm if room identification signage will be required for each room. If so, please provide specs, details, room names, numbers and desired finishes.

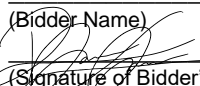
Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: 0

Response to Bidder's Pre-Bid Request for Information

- Refer to sheet G3.101 Life Safety Plan that includes signage locations and sheet notes 01 - 10 that reference signage details. _____
- Signage specification 10 14 00 is included in Addendum 05. _____
- Tim Hall/ Gensler 2/28/2024 _____

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
Rick Cesena
 (Bidder Name)

 (Signature of Bidder's Authorized Employee, Officer or Representative)

(Phone and Fax)
rcesena@nielsencc.com
 (Email Address)

Submittal Date: 02/19/2024

Bidder Contact Information:
Rick Cesena
 (Bidder Contact Name)
(760) 234-2112

PRE-Bid RFI #09
Received 02.21.2024

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: _____ Project Name: Science Building Renovation Bid No: 43-98P-0500-SBR	Bidder Name: Avidex _____ _____
--	---

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

274116 - T5.02A - document camera is shown on T5.02. Please confirm model number if document camera is contractor furnished.

Additional pages attached by Bidder: ___ Yes ___ No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

Please include the AVer F50+ Document Camera which will be contractor furnished, contractor installed. See specification section 274116 for BOLDED model number.

Additional pages of RFI Response attached: ___ Yes X No
Number of additional RFI Response pages attached: _____

Date of RFI Response: 02/23/2024

Submitted By: _____

(Bidder Name) _____

(Signature of Bidder's Authorized Employee, Officer or Representative) _____

Submittal Date: _____

Bidder Contact Information: _____

(Bidder Contact Name) _____

(Phone and Fax) _____

(Email Address) _____

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: _____
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
Avidex

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

274116 - 1.1E1a - Project summary notes that each classroom is to have both a wall mounted flat panel and projector. Please confirm Wall mounted flat panel model, provide mount and mounting detail, and flat panel locations.

Additional pages attached by Bidder: ___ Yes ___ No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

___ Please reference Addendum 05 revised specification section 27 41 16 - 11, 2.3, C5e for updated interactive projection whiteboard "Da-Lite IDEA Screen" that is contractor furnished and installed. Da-Lite IDEA Screen to be 16:9 HDTV Format w/ Viewing Area of 46"H x 81 3/4"W. Former projection whiteboard make/model has been struck-through and new make/model **BOLDED**. _____

___ Refer also to AV drawings T1.111 for interactive projection whiteboard locations. There are no flat panel displays to be provided for this building. _____

___ Tim Hall/ Gensler 2/28/2024 _____

Additional pages of RFI Response attached: ___ Yes ___ No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By: _____

(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: _____

Bidder Contact Information: _____

(Bidder Contact Name)

(Phone and Fax) _____

(Email Address) _____

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: _____ Project Name: Science Building Renovation Bid No: 43-98P-0500-SBR	Bidder Name: Avidex _____ _____
--	---

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

274116 - T5.02 - Please confirm locations for Extron CableCubby and Extron Touch panel for each classroom.

Additional pages attached by Bidder: ___ Yes ___ No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

The referenced devices are to be located on each of the instruction workstations which is the same workstation that the AV equipment will be in.

Additional pages of RFI Response attached: ___ Yes ___ No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By: _____
 (Bidder Name)

 (Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: _____

Bidder Contact Information:

 (Bidder Contact Name)

(Phone and Fax) _____
 (Email Address) _____

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: _____
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
Avidex

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

274116 - 2.3C5e - Mooreco whiteboard listed in 274116 spec, but model and dimensions not specified. Please confirm model if whiteboards to be 274116 contractor furnished.

Additional pages attached by Bidder: ___ Yes ___ No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

___ Please reference Addendum 05 revised specification section 27 41 16 - 11, 2.3, C5e for updated interactive projection whiteboard "Da-Lite IDEA Screen" that is contractor furnished and installed. Da-Lite IDEA Screen to be 16:9 HDTV Format w/ Viewing Area of 46"H x 81 3/4"W. Former projection whiteboard make/model has been struck-through and new make/model **BOLDED**. _____

___ Refer also to AV drawings T1.111 for interactive projection whiteboard locations. There are no flat panel displays to be provided for this building. _____

___ Tim Hall/ Gensler 2/28/2024 _____

Additional pages of RFI Response attached: ___ Yes ___ No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By: _____
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: _____

Bidder Contact Information:

(Bidder Contact Name)

(Phone and Fax) _____
(Email Address) _____

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: _____
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
Avidex

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

275126 - 2.2 B. Portable Assistive Listening system - T5.02 and T3.xx drawings show wall mounted stationary Assistive Listening transmitters. 275126 2.2B calls out a portable transmitter on a cart.
Please confirm if ALS transmitter is to be 1 installed per room, or 1 portable transmitter shared between all rooms.

Additional pages attached by Bidder: ___ Yes ___ No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

There is to be (1) fixed wall mounted ALS transmitter per room. The portable system kit shall be utilized for the ALS receivers as needed.

Additional pages of RFI Response attached: ___ Yes ___ No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By: _____
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: _____

Bidder Contact Information:

(Bidder Contact Name)

(Phone and Fax) _____
(Email Address) _____

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: <u>2/22/24</u> Project Name: Science Building Renovation Bid No: 43-98P-0500-SBR	Bidder Name: <u>2H Construction</u>
---	--

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Project summary notes on Sheet 1.1E1a show that each classroom is to have both a wall mounted flat panel and projector. Please confirm Wall mounted flat panel model, provide mount and mounting detail, and flat panel locations.

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

Please reference Addendum 05 revised specification section 27 41 16 - 11, 2.3, C5e for updated interactive projection whiteboard "Da-Lite IDEA Screen" that is contractor furnished and installed. Da-Lite IDEA Screen to be 16:9 HDTV Format w/ Viewing Area of 46"H x 81 3/4"W. Former projection whiteboard make/model has been struck-through and new make/model **BOLDED**.

Refer also to AV drawings T1.111 for interactive projection whiteboard locations. There are no flat panel displays to be provided for this building.

Tim Hall/ Gensler 2/28/2024

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 2/22/24

Bidder Contact Information:
Ryan Shotwell
(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com

(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 2/22/24
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
2H Construction

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

A document camera is shown on T5.02. Please confirm model number if document camera is contractor furnished.

Additional pages attached by Bidder: ___ Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

Please include the AVer F50+ Document Camera which will be contractor furnished, contractor installed.
See specification section 274116 for BOLDED model number.

Additional pages of RFI Response attached: ___ Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: 02/23/2024

Submitted By:
2H Construction

(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 2/22/24

Bidder Contact Information:
Ryan Shotwell

(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com

(Email Address)

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PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 2/22/24
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
2H Construction

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Please confirm locations for Extron CableCubby and Extron Touch panel for each classroom per sheet T5.02

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

The referenced devices are to be located on each of the instruction workstations which is the same workstation that the AV equipment will be in.

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction

(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 2/22/24

Bidder Contact Information:
Ryan Shotwell

(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com

(Email Address)

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DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 2/22/24
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
2H Construction

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Mooreco whiteboard listed in 274116 spec, but model and dimensions not specified.
Please confirm model if whiteboards to be 274116 contractor furnished.

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

___ Please reference Addendum 05 revised specification section 27 41 16 - 11, 2.3, C5e for updated interactive projection whiteboard "Da-Lite IDEA Screen" that is contractor furnished and installed. Da-Lite IDEA Screen to be 16:9 HDTV Format w/ Viewing Area of 46"H x 81 3/4"W. Former projection whiteboard make/model has been ~~striked-through~~ and new make/model **BOLDED**.

___ Refer also to AV drawings T1.111 for interactive projection whiteboard locations. There are no flat panel displays to be provided for this building.

___ Tim Hall/ Gensler 2/28/2024

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction

(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 2/22/24

Bidder Contact Information:
Ryan Shotwell

(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com

(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 2/22/24
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
2H Construction

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

T5.02 and T3.xx drawings show wall mounted stationary Assistive Listening transmitters. 275126 2.2B calls out a portable transmitter on a cart.

Please confirm if ALS transmitter is to be 1 installed per room, or 1 portable transmitter shared between all rooms.

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder:

Response to Bidder's Pre-Bid Request for Information

There is to be (1) fixed wall mounted ALS transmitter per room. The portable system kit shall be utilized for the ALS receivers as needed.

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached:

Date of RFI Response:

Submitted By:
2H Construction

(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 2/22/24

Bidder Contact Information:
Ryan Shotwell

(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com

(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 02/23/2024
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
Nielsen Construction Ca., Inc.

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

1. Please confirm the required certification for the remediation company's workers on site that are abating the PCB caulking.

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: 0

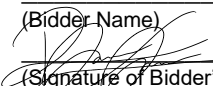
Response to Bidder's Pre-Bid Request for Information

The most important worker and supervisor certification will be the HAZWOPER certification required by 8 CCR 5192 and 29 CFR 1910.120. In addition, it would be beneficial, but is not required, if workers have asbestos and/or lead-based paint certificates, since they will prove knowledge of several of the processes involved, such as enclosure construction.

One of the requirements of the HAZWOPER standard is an otherwise non-descript day of on-site training. Vista will provide this on the first day the remediation contractor is on site, which will be PCB-specific.

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: 26 February 2024

Submitted By:
Rick Cesena
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

(Phone and Fax)
rcesena@nielsencc.com
(Email Address)

Submittal Date: 02/23/2024

Bidder Contact Information:
Rick Cesena
(Bidder Contact Name)
(760) 234-2112

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: <u>02/26/2024</u> Project Name: Science Building Renovation Bid No: 43-98P-0500-SBR	Bidder Name: <u>Nielsen Construction Ca., Inc.</u>
--	---

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

1. Please confirm the liquidated damages dollar amount per day.

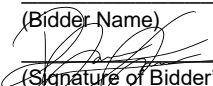
Additional pages attached by Bidder: ___ Yes No
Number of additional pages attached by Bidder: 0

Response to Bidder's Pre-Bid Request for Information

[See Special Conditions Section 00 73 00, 6. Liquidated Damages for amount per diem of substantial completion, delayed submission of submittals and delayed punch list for exact amounts indicated.](#)
J. Dawson-Garcia, PM 02.26.2024

Additional pages of RFI Response attached: ___ Yes ___ No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
Rick Cesena
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

(Phone and Fax)
rcesena@nielsencc.com
(Email Address)

Submittal Date: 02/26/2024

Bidder Contact Information:
Rick Cesena
(Bidder Contact Name)
(760) 234-2112

GENERAL CONDITIONS

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GENERAL CONDITIONS

ARTICLE 1: DEFINITIONS

1.1 District. "District" refers to **DESERT COMMUNITY COLLEGE DISTRICT** and unless otherwise stated, includes the District's authorized representatives, including the Bond Program Manager, Project Manager, if a Project Manager is designated, the District's Board of Trustees and the District's officers, employees, agents and representatives.

1.2 Contractor. The Contractor is the person or entity identified as such in the Agreement; references to "Contractor" include the Contractor's authorized representative.

1.3 Architect. The Architect is the person or entity identified as such in the Agreement; references to the "Architect" include, as required by context of usage, the Architect's employees and authorized representative(s) and the Architect's Consultants and their employees and authorized representative(s).

1.4 The Work. The Work is the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment or services provided or to be provided by the Contractor to fulfill the Contractor's obligations under the Contract Documents. The Work may constitute the whole or a part of the Project.

1.5 The Project. The Project is the total construction of which the Work performed by the Contractor under the Contract Documents may be the whole or a part of the Project and which may include construction by the District or by separate contractors.

1.6 Surety. The Surety is the person or entity that executes, as surety, the Contractor's Labor and Material Payment Bond and/or Performance Bond.

1.7 Subcontractors; Sub-Subcontractors. A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work. "Subcontractor" does not include a separate contractor to the District or subcontractors of any separate contractor. A Sub-Subcontractor is a person or entity of any tier, who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the Site. References to "Subcontractor" shall include Sub-Subcontractors.

1.8 Material Supplier. A Material Supplier is any person or entity who only furnishes materials, equipment or supplies for the Work without fabricating, installing or consuming them in the Work.

1.9 Drawings and Specifications. The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing generally, the design, location and dimensions of the Work and may include without limitation, plans, elevations, sections, details, schedules or diagrams. The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards, criteria and workmanship for the Work and related services. The Drawings and Specifications are intended to delineate and describe the Work and its component parts so as to permit skilled and competent contractors to bid upon the Work and prosecute the same to completion. Large scale Drawings shall take

precedence over smaller scale Drawings as to shape and details of construction. Figured dimensions on Drawings shall govern, but Work which is not dimensioned shall be as directed or required by field conditions. Specifications shall govern as to materials, workmanship and installation procedures.

1.10 Special Conditions; Supplemental Conditions. Special Conditions and/or Supplemental Conditions, if any, are special or supplemental provisions, not otherwise provided for in the Agreement or the General Conditions.

1.11 Contract Documents. The Contract Documents consist of the Agreement between the District and the Contractor, Conditions of the Contract (whether General, Special, Supplemental or otherwise), Drawings, Specifications, including addenda thereto issued prior to execution of the Agreement and any other documents listed in the Agreement. The Contract Documents shall include modifications issued after execution of the Agreement. The Contract Documents form the Contract for Construction.

1.12 Intent and Correlation of Contract Documents.

1.12.1 Work of the Contract Documents. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable therefrom as being necessary to produce the intended results. Organization of the Specifications into divisions, sections or articles, and the arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade. Where any portion of the Contract Documents is silent and information appears elsewhere in the Contract Documents, such other portions of the Contract Documents shall control.

1.12.2 Technical Terms. Unless otherwise stated in the Contract Documents, words or terms which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.12.3 Conflict in Contract Documents. Conflicts, inconsistencies or ambiguities in the Contract Documents shall be resolved by the Architect in accordance with Article 3.1.10 of the General Conditions; where conflicts or inconsistencies arise between the Drawings and the Specifications, in resolving such conflicts or inconsistencies, the Architect will be governed generally by the following standards: the Drawings are intended to describe matters relating to placement, type, quantity and the like; the Specifications are intended to describe matters relating to quality, materials, compositions, manufacturers and the like. If conflicts exist between portions of the Contract Documents regarding the quality of any item, product, equipment or materials, unless otherwise directed or authorized by the District, the Contractor shall provide the item, product, equipment or material of the highest or more stringent quality.

1.13 Shop Drawings; Samples; Product Data (“Submittals”). Shop Drawings are diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Material Supplier, or others to illustrate some portion of the Work. Samples are physical examples of materials, equipment or workmanship forming a part

of, or to be incorporated into the Work. Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work. Shop Drawings, Samples and Product Data prepared or furnished by the Contractor, Subcontractors or Material Suppliers are collectively referred to as "Submittals".

1.14 Division of State Architect ("DSA"). DSA is the California Division of the State Architect including without limitation the DSA's Office of Construction Services, Office of Design Services and the Office of Regulatory Services; references to the DSA in the Contract Documents shall mean the DSA, its offices and its authorized employees and agents. The authority of the DSA over the Work and the performance thereof shall be as set forth in the Contract Documents and Title 24 of the California Code of Regulations.

1.15 Project Inspector. The Project Inspector is the individual designated and employed by the District in accordance with the requirements of Title 24 of the California Code of Regulations. The Project Inspector shall be authorized to act on behalf of the District as provided for in the Contract Documents and in Title 24 of the California Code of Regulations, as the same may be amended from time to time.

1.16 Contract Document Terms. The term "provide" means "provide complete in place" or to "furnish and install" such item. Unless otherwise provided in the Contract Documents, the terms "approved;" "directed;" "satisfactory;" "accepted;" "acceptable;" "proper;" "required;" "necessary" and "equal" shall mean as approved, directed, satisfactory, accepted, acceptable, proper, required, necessary and equal, in the opinion of the Architect. The term "typical" as used in the Drawings shall require the installation or furnishing of such item(s) of the Work designated as "typical" in all other areas similarly marked as "typical"; Work in such other areas shall conform to that shown as "typical" or as reasonably inferable therefrom.

1.17 Contractor's Superintendent. The Contractor's Superintendent is the individual employed by the Contractor whose principal responsibility shall be the supervision and coordination of the Work; the Contractor's Superintendent shall not perform routine construction labor.

1.18 Record Drawings. The Record Drawings are a set of the Drawings marked by the Contractor during the performance of the Work to indicate completely and accurately the actual as-built condition of the Work. The Record Drawings shall be sufficient for a capable and qualified draftsman to modify the Drawings to reflect and indicate the Work actually in place at Final Completion of the Work.

1.19 Project Manager. The Project Manager, if any, is the individual or entity designated as such in the Special Conditions. The Project Manager is an independent contractor retained by the District and shall be authorized and empowered to act on behalf of the District. In the event that a Project Manager is not designated in the Special Conditions, the District reserves the right to designate a Project Manager at any time during Contractor's performance of the Work. The District reserves the right to remove or replace the Project Manager during Contractor's performance of the Work. The designation of a Project Manager, if one has not been designated in the Special Conditions, or the removal or replacement of the designated Project Manager shall not result in adjustment of the Contract Price or the Contract Time or otherwise affect, limit or restrict Contractor's

obligations hereunder.

1.20 Construction Equipment. Construction Equipment is equipment utilized for the performance of any portion of the Work, but which is not incorporated into the Work.

1.21 Site. The Site is the physical area designated in the Contract Documents for Contractor's performance, construction and installation of the Work.

1.22 Field Clarifications. A written or graphic document consisting of supplementary details, instructions or information issued on behalf of the District which clarifies or supplements the Contract Documents and which becomes a part of the Contract Documents upon issuance. Field Clarifications do not constitute an adjustment of the Contract Time or the Contract Price, unless a Change Order relating to a Field Clarification is authorized and issued under the Contract Documents.

1.23 Defective or Non-Conforming Work. Defective or Non-Conforming Work is any Work which is unsatisfactory, faulty or deficient by: (i) not conforming to the requirements of the Contract Documents; (ii) not conforming to the standards of workmanship of the applicable trade or industry; (iii) not being in compliance with the requirements of any inspection, reference, standard, test, or approval required by the Contract Documents; or (iv) damage occurring prior to Final Completion of all of the Work.

1.24 Delivery. Delivery used in conjunction with any equipment, materials or other items to be incorporated into the Work shall mean the unloading and storage in a protected condition at the Site pending incorporation into the Work.

1.25 Notice to Proceed. The Notice to Proceed is the written notice issued by or on behalf of the District to the Contractor authorizing the Contractor to proceed with commencement of the Work and which establishes the date for commencement of the Contract Time.

1.26 Progress Reports; Verified Reports. Progress Reports, if required, are written reports prepared by the Contractor and periodically submitted to the District in the form and content as required by the Contract Documents. Verified Reports are periodic written reports prepared by the Contractor and submitted to the DSA; Verified Reports shall be in such form and content as required by the applicable provisions of Title 24 of the California Code of Regulations. A material obligation of the Contractor is the preparation of complete and accurate Progress Reports, if required, and Verified Reports as well as the timely submission of the same. Copies of Verified Reports submitted by the Contractor to DSA relating to the Work shall be transmitted by the Contractor to the District, Architect, Project Inspector and Project Manager concurrently with the Contractor's transmittal thereof to DSA.

1.27 Substantial Completion. "Substantial Completion" means the state in the progress of the Work, as determined by the Architect, when all of the Work is complete and in accordance with the Contract Documents except only for correction of minor items which do not impair the District's ability to occupy and fully utilize the Work for its intended purposes.

1.28 Final Completion. The term "Final Completion" means the Work has been fully completed in accordance with the requirements of the Contract Documents.

1.29 Days. Unless otherwise expressly stated, references to “days” in the Contract documents shall be deemed to be calendar days.

1.30 Laws. Laws refer to all laws, ordinances, codes, rules and/or regulations promulgated by any governmental or quasi-governmental agency with jurisdiction over any portion of the Work, including but not limited to District policies and procedures, and which apply to any portion of the Work, including those in effect as of the execution of the Agreement, amendments thereto and subsequently enacted Laws that take effect during the performance of the Work. No adjustment of the Contract Time or the Contract Price shall be allowed for the Contractor’s compliance with the Laws.

1.31 Construction Change Directive. A Construction Change Directive is a written instrument issued by or on behalf of the District to the Contractor directing a Change to the Work prior to the Contractor and District reaching full agreement on an adjustment of the Contract Time and/or Contract Price on account of such Change. A material obligation of the Contractor is timely performance of Work noted in a Construction Change Directive.

ARTICLE 2: DISTRICT

2.1 Information Required of District.

2.1.1 Surveys; Site Information. Information, if any, concerning physical characteristics of the Site, including without limitation, surveys, soils reports, and utility locations, to be provided by the District are set forth in the Contract Documents. Information not provided by the District or necessary information in addition to that provided by the District concerning physical characteristics of the Site which is required shall be obtained by Contractor without adjustment to the Contract Price or the Contract Time.

2.1.2 Permits, Approvals. Except as otherwise provided in the Contract Documents, the District shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities which relate to the Work. If permits, licenses, approvals or similar approvals relating to the Work, or the installation/construction thereof are designated as the responsibility of the Contractor under the Contract Documents, the Contractor shall obtain the same without adjustment of the Contract Price or the Contract Time.

2.1.3 Drawings and Specifications. Except as otherwise provided for in the Contract Documents, the District shall furnish the Contractor, free of charge, the number of copies of the Drawings and the Specifications as set forth in the Special Conditions. All of the Drawings and the Specifications provided by the District to the Contractor remain the property of the District; the Contractor shall not use the Drawings or the Specifications in connection with any other work of improvement other than the Work.

2.1.4 Furnishing of Information. Information or services to be provided by the District under the Contract Documents shall be furnished by the District with reasonable promptness to avoid delay in the orderly progress of the Work. Information about existing conditions furnished by the District under the Contract Documents is obtained from sources believed to be reliable, but the District neither guarantees nor warrants that such information is complete and accurate. The Contractor shall verify all information provided by the District. If the Contract Documents depict existing conditions on or about the Site, or the Work involves the renovation, removal or remodeling of existing improvements or the Work

involves any tie-in or other connection with existing improvements, the conditions and/or existing improvements depicted in the Contract Documents are as they are believed to exist. The Contractor shall bear the risk of any variations between conditions or existing improvements depicted in the Contract Documents and those conditions or existing improvements actually encountered in the performance of the Work. The existence of any variations between conditions or existing improvements depicted in the Contract Documents and those actually encountered in the performance of the Work shall not result in any District liability therefor, nor shall any such variations result in an adjustment of the Contract Time or the Contract Price.

2.2 District's Right to Stop the Work. In addition to the District's right to suspend the Work or terminate the Contract pursuant to the Contract Documents, the District, may, by written order, direct the Contractor to stop the Work, or any portion thereof, until the cause for such stop work order has been eliminated if the Contractor: (i) fails to correct Work which is not in conformity and in accordance with the requirements of the Contract Documents, or (ii) otherwise fails to carry out the Work in conformity and accordance with the Contract Documents. The right of the District to stop the Work hereunder shall not be deemed a duty on the part of the District to exercise such right for the benefit of the Contractor or any other person or entity, nor shall the District's exercise of such right: (i) waive or limit the exercise of any other right or remedy of the District under the Contract Documents or the Laws; or (ii) result in adjustment of the Contract Time or Contract Price.

2.3 Partial Occupancy or Use.

2.3.1 District's Right to Partial Occupancy. The District may occupy or use any completed or partially completed portion of the Work, provided that: (i) the District has obtained the consent of, or is otherwise authorized by, public authorities with jurisdiction thereof, to so occupy or use such portion of the Work and (ii) the District and the Contractor have accepted, in writing, the responsibilities assigned to each of them for security, maintenance, utilities, damage to the Work, insurance, the period for correction of the Work and commencement of warranties required by the Contract Documents for such portion of the Work partially used or occupied by the District. If the Contractor and the District are unable to agree upon the matters set forth in (ii) above, the District may nevertheless use or occupy any portion of the Work, with the responsibility for such matters subject to resolution in accordance with the Contract Documents. Immediately prior to such partial occupancy or use of the Work, or portions thereof, the District, the Project Inspector, the Project Manager, the Contractor and the Architect shall jointly inspect the portions of the Work to be occupied or to be used to determine and record the condition of the Work. Repairs, replacements or other corrective action noted in such inspection shall be promptly performed and completed by the Contractor so that the portion of the Work to be occupied or used by the District is in conformity with the requirements of the Contract Documents and the District's occupancy or use thereof is not impaired. The District's use or occupancy of the Work or portions thereof pursuant to the preceding shall not be deemed "completion" of the Work as that term is used in Public Contract Code § 7107.

2.3.2 No Acceptance of Defective or Nonconforming Work. The District's partial occupancy or use of the Work, or any portion thereof, shall not constitute the District's acceptance of the Work which is defective or non-conforming.

2.4 The Project Inspector.

2.4.1 Authority of Project Inspector. In addition to the authority and rights of the Project Inspector as provided for elsewhere in the Contract Documents and/or the Laws, all of the Work shall be performed under the observation of the Project Inspector. The foregoing notwithstanding, the Contractor shall not perform any Work deviating from the Contract Documents solely on the basis of direction by the Project Inspector; such deviations shall be deemed defective or non-conforming Work subject to correction or replacement at the sole cost of the Contractor and without adjustment of the Contract Time. The performance of the duties of the Project Inspector shall not relieve or limit the Contractor's performance of its obligations under the Contract Documents.

2.4.2 Limitations on Project Inspector. The Project Inspector does not have authority to interpret the Contract Documents or to modify the Work depicted in the Contract Documents. The Project Inspector has no authority relative to the content or scope of the Contractor's safety plan/program. The Contractor shall not perform any Work deviating from the Contract Documents solely on the basis of direction by the Project Inspector; such deviations shall be deemed Defective or Non-Conforming Work subject to correction or replacement at the sole cost of the Contractor and without adjustment of the Contract Time.

2.4.3 Contractor Access for Project Inspector. The Contractor shall provide the Project Inspector with access to all parts of the Work at any time, wherever located and whether partially or completely fabricated, manufactured, furnished or installed.

2.4.4 Contractor and District Responsibilities for Costs and Fees of Project Inspector. The District is responsible only for payment of the fees of the Project Inspector for standard eight (8) hour work day, Mondays through Fridays, excepting holiday days ("Project Inspector Standard Workdays"). All services provided by the Project Inspector exceeding an eight (8) hour workday Mondays through Fridays and/or the first eight (8) hours on Saturday shall be at 1½ times the Project Inspector's basic hourly rate. All hours of service provided by the Project Inspector in excess of eight (8) hours on Saturdays, and all hours of service provided by the Project Inspector on holiday days or on Sundays are at two (2) times the Project Inspector's basic hourly rate. Fees for services provided by the Project Inspector beyond the Project Inspector Standard Workdays set forth above are the sole responsibility of the Contractor; the District may deduct fees for the Project Inspector which exceeds the Project Inspector Standard Workdays from the Contract Price.

ARTICLE 3: ARCHITECT; PROJECT MANAGER

3.1 Architect's Administration of the Contract.

3.1.1 Role of the Architect and Project Manager. The Architect and the Project Manager will provide administration of the Contract as described in the Contract Documents, and will be the District's representatives during construction until the time that Final Payment is due to the Contractor under the Contract Documents. The Architect and Project Manager will advise and consult with the District and the Project Inspector with respect to the administration of the Contract and the Work. The Architect is authorized to act on behalf of the District to the extent provided for in the Contract Documents and shall have the responsibilities and powers established by the Laws, including Title 24 of the California Code of Regulations. The Architect and Project Manager are authorized to stop the Work,

direct/authorize takeover of the Contractor's Work or supplement the Contractor's labor, materials or equipment whenever deemed necessary in the sole discretion of the Architect or the Project Manager to ensure that the Work is completed in accordance with the Contract Documents for the Contract Price and within the Contract Time. All fees, costs or expenses arising out of or associated in any manner with the take-over of the Work or to supplement the Contractor's labor, materials or equipment shall be at the sole cost and expense of the Contractor; the District may deduct such costs, fees or expenses from any portion of the Contract Price then or thereafter due the Contractor.

3.1.2 Periodic Site Inspections. The Architect will visit the Site at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the completed Work and to determine, in general, if the Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents. The Architect is not required to make exhaustive or continuous Site inspections to check quality or quantity of the Work. On the basis of Site observations as an architect, the Architect will keep the District informed of the progress of the Work, and will endeavor to guard the District against defects and deficiencies in the Work.

3.1.3 Contractor Responsibility for Construction Means, Methods and Sequences. Neither the District, Project Inspector, Architect nor the Project Manager will have control over or charge of and be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, these being solely the Contractor's responsibility. Neither the District, Project Inspector, Architect nor Project Manager will have control over or charge of and be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or of any other persons performing portions of the Work. The Contractor shall be solely responsible for: (i) construction means, methods and sequences to perform and complete the Work; (ii) safety of persons and property at the Site; and (iii) the acts, omissions or other conduct of Subcontractors and the personnel of the Contractor and Subcontractors.

3.1.4 Review of Applications for Payment. Pursuant to Article 8 hereof, the Architect will review the Contractor's Payment Applications and for Application For Final Payment, evaluate the extent of Work performed and verify to the District the amount properly due the Contractor.

3.1.5 Rejection of Work. The Architect is authorized to reject Work which is defective or does not conform to the requirements of the Contract Documents. Whenever the Architect considers it necessary or advisable, for implementation of the intent of the Contract Documents, the Architect is authorized to require additional inspections or testing of the Work, whether or not such Work is fabricated, installed or completed. Neither this authority of the Architect nor a decision made in good faith by the Architect to exercise or not to exercise such authority shall modify requirements of the Contract Documents or any obligation of the Contractor under the Contract Documents.

3.1.6 Submittals.

3.1.6.1 Processing of Submittals. Submittals required by the Contract Documents shall be prepared by or on behalf of the Contractor in accordance with the requirements of the Contract Documents. If the District retains a Project Manager for the Work, Submittals shall be transmitted by the Contractor to the Project Manager for distribution by the

Project Manager to the Architect and the District. Upon completion of the Architect's review of a Submittal, the Project Manager shall transmit the reviewed Submittal to the Contractor for the Contractor's distribution to its Subcontractor(s) and other affected parties. If the District does not retain a Project Manager for the Work, Submittals shall be submitted by the Contractor to the Architect or such other party designated in the Contract Documents or by the Architect for review and processing.

3.1.6.2 Architect's Review. The Architect will review and approve or take other appropriate action upon the Contractor's Submittals, but only for the limited purpose of checking for general conformance with information given and the design concept expressed in the Contract Documents. Review of Submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's Submittals shall not relieve the Contractor of its obligations under the Contract Documents. The Architect's review of Submittals shall not constitute approval of safety measures, programs or precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item in a Submittal shall not indicate approval of an assembly of which the item is a component with the Submittal(s) required and relating to such assembly have been reviewed by the Architect.

3.1.6.3 Time for Architect's Review. The Architect's review of Submittals will be conducted promptly so as not to delay or hinder the progress of the Work or the activities of the Contractor, the District or the District's separate contractors while allowing sufficient time, in the Architect's reasonable professional judgment, to permit adequate review of Submittals. The foregoing notwithstanding, the Architect's review and return of Submittals will conform with the time limits and other conditions, if any, set forth in the Specifications or the Submittal Schedule if the Submittal Schedule is required by other provisions of the Contract Documents, but shall, under no circumstance, be less than fifteen (15) days.

3.1.7 Issuance of Construction Change Directive. The Architect is authorized to issue Construction Change Directives.

3.1.8 Changes to the Work; Change Orders. The Architect and Project Manager will prepare Change Orders, and may authorize minor Changes in the Work which do not result in adjustment of the Contract Time or the Contract Price.

3.1.9 Completion. In conjunction with the District, Project Inspector, Project Manager, if any, and the Contractor, the Architect will conduct observations of the Work to determine the date(s) of Substantial Completion and Final Completion. If the District does not designate a Project Manager for the Work, the Architect shall: (i) be authorized to enforce the Contractor's close-out obligations; and (ii) receive from the Contractor and the records, written warranties and related close-out materials assembled by the Contractor in accordance with the Contract Documents. The Architect, Project Inspector and Project Manager will verify that the Contractor has complied with all requirements of the Contract Documents and

is entitled to receipt of Final Payment.

3.1.10 Interpretation of Contract Documents. The Architect will interpret and decide matters concerning the requirements of the Contract Documents on written request of either the District or the Contractor. The Architect's response to such requests will be made with reasonable promptness and within the time limits agreed upon, if any. If no agreement is reached establishing the time for the Architect's review and response to requests under this Article 3.1.10, the Architect shall be afforded a fifteen (15) day period after receipt of such request to review and respond thereto. Interpretations and decisions of the Architect will: (i) be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions; (ii) endeavor to secure faithful performance by both the District and the Contractor; (iii) not show partiality to either the District or Contractor; and (iv) not result in liability for results of interpretations or decisions so rendered in good faith. The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

3.1.11 Request for Information. If the Contractor encounters any condition which the Contractor believes, in good faith and with reasonable basis, is the result of an ambiguity, conflict, error or omission in the Contract Documents (collectively "the Conditions"), Contractor shall timely notify the Architect, in writing, of the Conditions encountered and to request information from the Architect necessary to address and resolve any such Conditions before proceeding with any portion of the Work affected or which may be affected by such Conditions. If the Contractor fails to timely notify the Architect in writing of any Conditions encountered and the Contractor proceeds to perform any portion of the Work containing or affected by such Conditions, the Contractor shall bear all costs associated with or required to correct, remove, or otherwise remedy any portion of the Work affected thereby without adjustment of the Contract Time or the Contract Price. In requesting information of the Architect to address and resolve any Conditions the Contractor shall act with promptness in submitting any such written request so as to allow the Architect a reasonable period of time to review, evaluate and respond to any such request, taking into account the then current status of the progress and completion of the Work and the actual or potential impact of any such Conditions upon the completion of the Work within the Contract Time. The Contract Time shall not be subject to adjustment in the event that the Contractor shall fail to timely request information from the Architect. The Architect's responses to any such Contractor request for information shall conform to the standards and time frame set forth in Article 3.1.10 of these General Conditions. The foregoing provisions notwithstanding, if the Architect reasonably determines that any of Contractor's request(s) for information: (i) does not reflect adequate or competent supervision or coordination by the Contractor or any Subcontractor; (ii) does not reflect the Contractor's adequate or competent knowledge of the requirements of the Work or the Contract Documents; or (iii) is not justified for any other reason, Contractor shall be liable to the District for all costs incurred by the District associated with the processing, reviewing, evaluating and responding to any such request for information, including without limitation, fees of the Architect. In responding to any of Contractor's request(s) for information, the Architect shall, in the response, indicate if the Architect has made the determination pursuant to the preceding sentence and, if so, the costs to be borne by the Contractor for the processing, review, evaluation and response to the request for information. Thereafter, the

District is authorized to deduct such costs from any portion of the Contract Price then or thereafter due the Contractor.

3.2 Communications: Role of Project Manager and Architect's Role. All communications regarding the Work, the performance thereof or the Contract Documents shall be in writing; verbal communications shall be reduced to writing. Communications between the Contractor and the District or the Architect shall be through the Project Manager. Communications between separate contractors, if any, shall be through the Project Manager. All written communications between the Contractor and any Subcontractor, Material Supplier or others directly or indirectly engaged by the Contractor to perform or provide any portion of the Work shall be available to the District, the Project Manager and the Architect for review, inspection and reproduction as may be requested from time to time. Failure or refusal of the Contractor to permit the District, the Project Manager or Architect to review, inspect or reproduce such written communications may be deemed a default of Contractor hereunder.

3.3 Termination of Architect or Project Manager; Substitute Architect or Project Manager. In case of termination of employment of the Architect or the Project Manager, the District shall appoint a substitute architect or substitute Project Manager whose status under the Contract Documents shall be that of the Architect or the Project Manager, as applicable.

3.4 Project Manager. If a Project Manager is designated for the Work, the Project Manager shall be a representative of the District until Final Completion is achieved and Final Payment is due to the Contractor. The Project Manager is authorized to act on behalf of the District and in connection with the Work as set forth in the Contract Documents, including without limitation: (i) review of the Contractor's Construction Schedule and updates thereto; (ii) review of the Contractor's Applications for Payment and verification of the amount due the Contractor under an Application for Payment; (iii) conducting the Pre-Construction Meeting, Progress Meetings and/or Special Meetings and maintaining minutes thereof; and (iv) enforcement of the Contractor's obligations under the Contract Documents, including the Contractor's close-out obligations.

ARTICLE 4: THE CONTRACTOR

4.1 Contractor Review of Contract Documents.

4.1.1 Examination of Contract Documents. The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the District pursuant to the Contract Documents and shall at once report to the Architect any errors, inconsistencies or omissions discovered. If the Contractor performs any Work knowing, or with reasonable diligence should have known that, it involves an error, inconsistency or omission in the Contract Documents without prior notice to the Architect of the same, the Contractor shall assume full responsibility for such performance and shall bear all costs for correction of the same without adjustment of the Contract Price.

4.1.2 Field Measurements. Prior to commencement of the Work, or portions thereof, the Contractor shall take field measurements and verify field conditions at the Site and shall carefully compare such field measurements and conditions with information provided in the Contract Documents. Errors, inconsistencies or omissions discovered shall be immediately reported to the Architect along with request for clarification or direction.

4.1.3 Dimensions; Layouts and Field Engineering. Unless otherwise expressly provided, dimensions indicated in the Drawings are intended for reference only. The Drawings are intended to be diagrammatic and schematic in nature; the Contractor is solely responsible for dimensioning and coordinating the Work of the Contract Documents. All field engineering required for laying out the Work and establishing grades for earthwork operations shall be by the Contractor at its expense. Any field engineering or other engineering to be provided or performed by the Contractor under the Contract Documents and required or necessary for the proper execution or installation of the Work shall be provided and performed by an engineer duly registered under the laws of the State of California in the engineering discipline for such portion of the Work.

4.1.4 Work in Accordance With Contract Documents. The Contractor shall perform all of the Work in strict conformity with the Contract Documents, the Laws and Architect accepted Submittals.

4.2 Site Investigation; Subsurface Conditions.

4.2.1 Contractor Investigation. The Contractor is responsible for, and by executing the Agreement acknowledges, that it has carefully examined the Site and has taken all steps it deems reasonably necessary to ascertain all conditions which may affect the Work, or the cost thereof, including, without limitation, conditions bearing upon transportation, disposal, handling or storage of materials; availability of labor or utilities; access to the Site; and the physical conditions and the character of equipment, materials, labor and services necessary to perform the Work. Any failure of the Contractor to do so will not relieve it from the responsibility for fully and completely performing all Work without adjustment to the Contract Price or the Contract Time. The District assumes no responsibility to the Contractor for any understandings or representations concerning conditions or characteristics of the Site, or the Work, made by any of its officers, employees or agents prior to the execution of the Agreement, unless such understandings or representations are expressly set forth in the Contract Documents.

4.2.2 Subsurface Data. By executing the Agreement, the Contractor acknowledges that it has examined the boring data and other subsurface data available and satisfied itself as to the character, quality and quantity of surface and subsurface materials, including without limitation, obstacles which may be encountered in performance of the Work, insofar as this information is reasonably ascertainable from an inspection of the Site, review of available subsurface data and analysis of information furnished by the District under the Contract Documents. Subsurface data or other soils investigation report provided by the District hereunder are not a part of the Contract Documents. Information contained in such data or report regarding subsurface conditions, elevations of existing grades or below grade elevations are approximate only and are neither guaranteed or warranted by the District to be complete and accurate. The Contractor shall examine all boring and other subsurface data to make its own independent interpretation of the subsurface conditions and acknowledges that its bid is based upon its own opinion of the conditions which may be encountered. The District assumes no responsibility for any conclusions or interpretations made by Contractor on the basis of available subsurface data or other information furnished by District under the Contract Documents.

4.2.3 Subsurface Conditions. If the Work involves digging trenches or other excavations that extend deeper than four feet below the surface, the Contractor

shall promptly and before the following conditions are disturbed, notify the Project Inspector, in writing, of any: (i) material that the Contractor believes may be material that is hazardous waste, as defined in California Health and Safety Code § 25117, that is required to be removed to a Class I or Class II or Class III disposal site in accordance with provisions of existing law; (ii) subsurface or latent physical conditions at the site differing from those indicated; or (iii) unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in the Work or the character provided for in the Contract Documents. If upon notice to the District of the conditions described above and upon the District's investigation thereof, the District determines that the conditions so materially differ or involve such hazardous materials which require an adjustment to the Contract Price or the Contract Time, the District shall issue a Change Order in accordance with Article 9 hereof. In accordance with California Public Contract Code § 7104, any dispute arising between the Contractor and the District as to any of the conditions listed in (i), (ii) or (iii) above, shall not excuse the Contractor from the completion of the Work within the Contract Time and the Contractor shall proceed with all Work to be performed under the Contract Documents. The District reserves the right to terminate the Contract pursuant to Article 15.2 hereof should the District determine not to proceed because of any condition described in (i), (ii) or (iii) above.

4.3 Supervision and Construction Procedures.

4.3.1 Supervision of the Work. The Contractor shall supervise and direct performance of the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract Documents, unless Contract Documents give other specific instructions concerning these matters. The Contractor shall be responsible for inspection of completed or partially completed portions of Work to determine that such portions are in proper condition to receive subsequent Work.

4.3.2 Responsibility for the Work. The Contractor is responsible to the District for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and all other persons performing any portion of the Work under a contract with the Contractor. The Contractor is not relieved from its obligation to perform the Work in accordance with the Contract Documents either by activities or duties of the Project Manager, Project Inspector or the Architect, or by tests, inspections or approvals required or performed by persons other than the Contractor.

4.3.3 Surveys. The Contractor shall prepare or cause to be prepared all detailed surveys necessary for performance of the Work, including without limitation, slope stakes, points, lines and elevations. The Contractor is responsible for the establishment, location, maintenance and preservation of benchmarks, reference points and stakes for the Work without adjustment of the Contract Price. The Contractor is solely responsible for all loss or costs resulting from the loss, destruction, disturbance or damage of benchmarks, reference points or stakes.

4.3.4 Construction Utilities. The District will furnish and pay the costs of utility services for the Work as set forth in the Special Conditions; all other utilities necessary to complete the Work and the Contractor's obligations hereunder shall be obtained by the Contractor without adjustment of the Contract Price or the Contract Time. The Contractor shall furnish and install necessary or appropriate

temporary distributions of utilities, including utilities furnished by the District. Any such temporary distributions shall be removed by the Contractor upon completion of the Work. The costs of all such utility services, including the installation, relocations and removal of temporary distributions thereof, shall be borne by the Contractor and included in the Contract Price.

4.3.5 Existing Utilities; Removal, Relocation and Protection.

4.3.5.1 Contractor Responsibility for Locating Utilities. The Contractor is responsible for locating all below grade drainage lines, storm drains, sewers, domestic water, gas, electrical, hot water and irrigation utility services, vaults, duct banks and other similar items or utilities services (collectively "Underground Facilities") which are shown in the Drawings or other portions of the Contract Documents; or (ii) which are identified in information relating to Underground Facilities maintained by the regional notification center, "Underground Service Alert" ("USA"). Contractor shall locate and mark locations of the Underground Facilities shown in the Contract Documents and information relating to Underground Facilities maintained by USA before proceeding with Work that may: (i) damage, destroy or impair Underground Facilities; or (ii) limit, disrupt or interrupt utility services provided through Underground Facilities. Prior to commencing Work in the proximity of Underground Facilities or other underground structures that can be readily inferred from adjacent surface improvements, Contractor shall further locate, by carefully excavating with small equipment, potholing and principally by hand, such utilities or installations that are to remain and that are subject to damage, destruction or disruption.

4.3.5.2 Contractor Responsibility for Damage to Underground Facilities. Without adjustment of the Contract Time or the Contract Price, the Contractor shall repair or replace all damage to or destruction of Underground Facilities occurring during performance of the Work. All such repairs or replacements shall be with materials, equipment and other items consistent with those in place prior to commencement of the Work and when the repair or replacement is completed, the Underground Facilities shall be in the same functional and operational condition as prior to the damage or destruction.

4.3.5.3 Contractor Responsibility for Maintaining Utility Services. The Contractor shall maintain in service all utility services provided through the Underground Facilities unless the Contractor has notified the District and Project Manager in writing of utility service disruptions at least three (3) working days in advance of the anticipated disruption of utility services. Notwithstanding the Contractor's notice pursuant to the foregoing, the District may, in the sole discretion of the District, direct alternative times/days for the anticipated utility service disruption as necessary for conduct of on-going activities or operations of the District at and about the Site. The Contractor shall be liable for all costs, fees or charges incurred by the District to provide utility services if there is disruption, interruption or limitation of any utility services for which the Contractor has not provided the advance written notice of utility disruption pursuant to the foregoing. The District may deduct such costs, fees or charges from the Contract Price then or thereafter due the Contractor.

4.3.5.4 Unmarked; Unknown Utilities. Additional Underground Facilities

not shown in the Contract Documents or USA data may exist on or about the Site. The Contractor shall be alert to their existence; if they are encountered, Contractor shall immediately report such Underground Facilities to the Project Inspector, Project Manager and District for disposition of the same prior to disturbing any existing condition. In accordance with California Government Code § 4215, the District is responsible for the timely removal, relocation, or protection of existing main or trunk line utility facilities located on the Site which are not identified in the Contract Documents. Contractor shall be compensated for the costs of locating, repairing damage not due to the Contractor's failure to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Contract Documents with reasonable accuracy, and for equipment on the Site necessarily idled during such work. Contractor shall not be assessed Liquidated Damages for delay in completion of the Work when such delay is caused by the failure of the District or the District of the utility to provide for removal or relocation of such utility facilities. Nothing in this Article 4.3.5 shall be deemed to require the District to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the Site can be inferred from the presence of other visible facilities, such as buildings, meters and junction boxes, on or adjacent to the Site. If such utility facilities are owned by a public utility, the public utility shall have the sole discretion to perform repairs or relocation work or permit the Contractor to do such repairs or relocation work at a reasonable price.

4.3.6 Conferences and Meetings. A material obligation of the Contractor under the Contract Documents is the attendance at meetings and conferences relating to the Work by the Contractor's supervisory personnel for the Work and the Contractor's management personnel as required by the Contract Documents or as requested by the District. The Contractor's personnel participating in conferences and meetings relating to the Work shall be authorized to act on behalf of the Contractor and to bind the Contractor. The Contractor is solely responsible for arranging for the attendance by Subcontractors, Material Suppliers at meetings and conferences relating to the Work as necessary, appropriate or as requested by the District.

4.3.6.1 Pre-Construction Conference. The Contractor's representatives (and representatives of Subcontractors as requested by the District) shall attend a Pre-Construction Conference at such time and place as designated by the District. The Pre-Construction Conference will generally address the requirements of the Work and Contract Documents, and to establish construction procedures. Subject matters of the Pre-Construction Conference will include as appropriate: (i) administrative matters, including an overview of the respective responsibilities of the District, Architect, Project Manager, Contractor, Subcontractors, Project Inspector and others performing any part of the Work or services relating to the Work; (ii) Submittals; (iii) Changes and Change Order processing; (iv) employment practices, including Certified Payroll preparation and submission, prevailing wage rate responsibilities of the Contractor and Subcontractors, compliance with apprenticeship standards and Division of Labor Standards Enforcement ("DLSE") monitoring and enforcement of prevailing wage rate requirements; (v) Progress Schedule development and maintenance; (vi)

development of Schedule of Values and payment procedures; (vii) communications procedures, including the handling of Requests for Interpretation; (viii) conduct of pre-installation meetings to plan and coordinate work of new contractors, separate contractors and to plan for utility outages; (ix) emergency and safety procedures; (x) Site visitor policies; (xi) conduct of Contractor/Subcontractor personnel at the Site; (xii) punch list/close-out procedures; and (xiii) Contractor and Subcontractor DIR Contractor Registration.

4.3.6.2 Progress Meetings. Progress meetings will be conducted on regular intervals (weekly unless otherwise expressly indicated elsewhere in the Contract Documents). The Contractor's representatives and representatives of Subcontractors (as requested by the District) shall attend Progress Meetings. Progress Meetings will be chaired by the Architect or the Project Manager and will generally include as agenda items: Site safety, field issues, coordination of Work, construction progress and impacts to timely completion, if any. The purposes of the Progress Meetings include without limitation: a formal and regular forum for discussion of the status and progress of the Work by all Project participants, a review of progress or resolution of previously raised issues and action items assigned to the Project participants, and reviews of the Construction Schedule and Submittals.

4.3.6.3 Pre-Installation Conference. The Contractor's representatives (and representatives of Subcontractors as requested by the District or the Project Manager) shall attend a Pre-Installation Conference prior to the initiation of a new phase of Work or in connection with the delivery and installation of major items of equipment incorporated into the Work. Pre-Installation Conferences will generally address the requirements of the new phase of Work and Contract Documents, and/or to coordinate delivery and installation of major equipment items.

4.3.6.4 Special Meetings. As deemed necessary or appropriate by the District, Special Meetings will be conducted with the participation of the Contractor, Subcontractors and other Project participants as requested by the District.

4.3.6.5 Minutes of Meetings. Following conclusion of the Pre-Construction Conference, Progress Meetings and Special Meetings, the Architect or the Project Manager will prepare and distribute minutes reflecting the items addressed and actions taken at a meeting or conference. Unless the Contractor notifies the Architect or the Project Manager in writing of objections or corrections to minutes prepared hereunder within five (5) days of the date of distribution of the minutes, the minutes as distributed shall constitute the official record of the meeting or conference. No objections or corrections of any Subcontractor or Material Supplier shall be submitted directly to the Architect or the Project Manager; such objections or corrections shall be submitted to the Architect and the Project Manager through the Contractor. If the Contractor timely interposes objections or notes corrections, the resolution of such matters shall be addressed at the next scheduled Progress Meeting.

4.3.7 Temporary Sanitary Facilities. At all times during Work at the Site, the Contractor shall obtain and maintain temporary sanitary facilities in conformity with applicable law, rule or regulation. The Contractor shall maintain temporary

sanitary facilities in a neat and clean manner with sufficient toilet room supplies. Personnel engaged in the Work are not permitted to use toilet facilities at or about the Site.

4.3.8 Noise and Dust Control.

4.3.8.1 Noise Control. The Contractor shall install noise reducing devices on construction equipment. Contractor shall comply with the requirements of the city and county having jurisdiction with regard to noise ordinances governing construction sites and activities. Construction Equipment noise at the Site shall be limited and only as permitted by applicable law, rule or regulation. If classes are in session at any point during the progress of the Work, and, in the District's reasonable discretion, the noise from any Work disrupts or disturbs the students or faculty or the normal operation of the college, at the District's request, the Contractor shall schedule the performance of all such Work around normal college hours or make other arrangements so that the Work does not cause such disruption or disturbance. In no event shall such arrangements result in adjustment of the Contract Price or the Contract Time.

4.3.8.2 Dust Control. The Contractor shall be fully and solely responsible for maintaining and up keeping all areas of the Site and adjoining areas, outdoors and indoors, free from flying debris, grinding powder, sawdust, dirt and dust as well as any other product, product waste or work waste, that by becoming airborne may cause respiratory inconveniences to persons, particularly to students and District personnel. Additionally, the Contractor shall take specific care to avoid deposits of airborne dust or airborne elements. Such protection devices, systems or methods shall be in accordance with the Laws, including, without limitation, the EPA, OSHA and Cal-OSHA. Additionally, the Contractor shall be the sole party responsible to regularly and routinely clean up and remove any and all deposits of dust and other elements. Damage and/or any liability derived from the Contractor's failure to comply with these requirements shall be exclusively at the cost of the Contractor, including, without limitation, any and all penalties that may be incurred for violations of applicable law, rule or regulation, and any amounts expended by the District to pay such damages shall be due and payable to the District on demand. Contractor shall replace any damaged property or part thereof and professionally clean any and all items that become covered or partially covered to any degree by dust or other airborne elements. If classes are in session at any point during the progress of Work, and, in the District's reasonable discretion, flying debris, grinding powder, sawdust, dirt or dust from any Work disrupts or disturbs the students or faculty or the normal operation of the college, at the District's request, the Contractor shall schedule the performance of all such Work around normal college hours and make other arrangements so that the Work does not cause such disruption or disturbance. In no event shall such arrangements result in adjustment of the Contract Price or the Contract Time.

4.3.8.3 Air Pollution. The Contractor shall comply with all applicable air pollution control rules, regulations, ordinances, or statutes. Neither the Contract Time nor the Contract Price shall be subject to adjustment for measures of the Contractor to comply with air pollution control requirements. The Contractor shall be solely responsible for implementing

measures required by any governmental or quasi-governmental agency with jurisdiction and/or authority to enforce air pollution control measures without adjustment of the Contract Time or the Contract Price. If in performance of the Work, the Contractor violates applicable air pollution control requirements, the Contractor shall be solely responsible for discharging and satisfying any fine, penalty or remedial measure imposed by a governmental or quasi-governmental agency with authority or jurisdiction to enforce air pollution control measures. The scope of the Contractor's indemnity obligations under the Contract Documents shall include, without limitation, the defense, indemnity and hold harmless of the Indemnified Parties from any fine, penalty or remedial measure imposed by a governmental or quasi-governmental agency with authority or jurisdiction to enforce air pollution control measures as a result of the Contractor's failure or refusal to comply with its obligations hereunder.

4.3.8.4 Contractor Failure to Comply. If the Contractor fails to comply with the requirements for dust control, noise control, or any other maintenance or clean up requirement of the Contract Documents, the District, Architect, District Inspector or Project Manager are each authorized to notify the Contractor in writing of such failure and the Contractor shall take immediate action. Should the Contractor fail to respond with immediate and responsive action and not later than twenty-four (24) hours from such notification, the District shall have the absolute right to proceed as it may deem necessary to remedy such matter. Any and all costs incurred by the District in connection with such actions shall be the sole responsibility of, and be borne by, the Contractor; the District may deduct such amounts from the Contract Price then or thereafter due the Contractor.

4.4 Labor and Materials.

4.4.1 Payment for Labor, Materials and Services. Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, Construction Equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated in the Work.

4.4.2 Employee Discipline. The Contractor shall enforce strict discipline and good order among the Contractor's employees, the employees of any Subcontractor or Sub-subcontractor, and all other persons performing any part of the Work at the Site. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them. The Contractor shall dismiss from its employ, and direct any Subcontractor or Sub-subcontractor to dismiss from their employment, any person deemed by the District to be unfit or incompetent to perform Work and thereafter, the Contractor shall not employ nor permit the employment of such person for performance of any part of the Work without the prior written consent of the District, which consent may be withheld in the reasonable discretion of the District.

4.4.3 Intentionally Left Blank.

4.4.4 Contractor's Project Manager and Superintendent.

4.4.4.1 Qualifications of Contractor Superintendent and Contractor Project Manager. Prior to start of Work at the Site, the Contractor shall

submit in writing to the District and Project Manager, the qualifications of the Contractor's proposed superintendent ("Contractor Superintendent") and the Contractor's proposed Project Manager ("Contractor PM") for acceptance by the Project Manager and District. The Contractor's proposed Contractor Superintendent and proposed Contractor PM shall each have recent experience in similar types of construction to the Work. The Contractor's proposed Contractor Superintendent and Contractor PM shall be satisfactory to the District and Project Manager and shall not be changed during the Work unless the Contractor's employment of the Contractor Superintendent or Contractor PM is terminated by the Contractor for cause or the Contractor Superintendent or Contractor PM voluntarily ceases employment by the Contractor. The Contractor shall dismiss the Contractor Superintendent or the Contractor PM if they are deemed, in the sole reasonable judgment of the District, to be unfit, incompetent or incapable of performing the functions assigned to them. In such event, the District shall have the right to approve of the replacement Contractor Superintendent or Contractor Project Manager, as applicable.

4.4.4.2 Contractor Superintendent. Competency of the Contractor Superintendent shall include, without limitation, a minimum of three (3) years prior experience as a superintendent for a general contractor on projects similar in size, scope and complexity to the Work. The Contractor's communications relating to the Work or the Contract Documents shall be through the Contractor Superintendent. The Contractor Superintendent shall represent the Contractor and communications given to the Contractor Superintendent shall be binding as if given to the Contractor.

4.4.4.3 Contractor Project Manager. The Contractor shall employ a Contractor PM who shall be a senior management employee of the Contractor. The Contractor PM shall be at the Site periodically to observe the progress and quality of the Work in progress and in place. The Contractor PM shall be responsible for directing and coordinating human and material resources of the Contractor and Subcontractors throughout the course of the Work using management techniques so that the Work is completed for the Contract Price and within the Contract Time.

4.4.5 Prohibition on Harassment.

4.4.5.1 District's Policy Prohibiting Harassment. The District is committed to providing a campus and workplace free of sexual harassment and harassment based on factors such as race, color religion, national origin, ancestry, age, medical condition, marital status, disability, veteran status or other legally protected classification. Harassment includes without limitation, verbal, physical or visual conduct which creates an intimidating, offensive or hostile environment such as racial slurs; ethnic jokes; posting of offensive statements, posters or cartoons or similar conduct. Sexual harassment includes without limitation the solicitation of sexual favors, unwelcome sexual advances, or other verbal, visual or physical conduct of a sexual nature.

4.4.5.2 Contractor's Adoption of Anti-Harassment Policy. Contractor shall adopt and implement all appropriate and necessary policies prohibiting any form of discrimination in the workplace, including without limitation harassment on the basis of any classification protected under

local, state or federal law, regulation or policy. Contractor shall take all reasonable steps to prevent harassment from occurring, including without limitation affirmatively raising the subject of harassment among its employees, expressing strong disapproval of any form of harassment, developing appropriate sanctions, informing employees of their right to raise and how to raise the issue of harassment and informing complainants of the outcome of an investigation into a harassment claim. Contractor shall require that any Subcontractor or Sub-subcontractor performing any portion of the Work to adopt and implement policies in conformity with this Article 4.4.5.

4.4.5.3 Prohibition on Harassment at the Site. Contractor shall not permit any person, whether employed by Contractor, a Subcontractor, or any other person or entity, performing any Work at or about the Site to engage in any prohibited form of harassment. Any such person engaging in a prohibited form of harassment directed to any individual performing or providing any portion of the Work at or about the Site shall be subject to appropriate sanctions in accordance with the anti-harassment policy adopted and implemented pursuant to this Article 4.4.5. Any person, performing or providing Work on or about the Site engaging in a prohibited form of harassment directed to any student, faculty member or staff of the District or directed to any other person on or about the Site shall be subject to immediate removal and shall be prohibited thereafter from providing or performing any portion of the Work. Upon the District's receipt of any notice or complaint that any person employed directly or indirectly by Contractor in performing or providing the Work has engaged in a prohibited form of harassment, the District will promptly undertake an investigation of such notice or complaint. If the District, after such investigation, reasonably determines that a prohibited form of harassment has occurred, the District shall promptly notify the Contractor of the same and direct that the person engaging in such conduct be immediately removed from the Site. Unless the District's determination that a prohibited form of harassment has occurred is grossly negligent or without reasonable cause, District shall have no liability for directing the removal of any person determined to have engaged in a prohibited form of harassment nor shall the Contract Price or the Contract Time be adjusted on account thereof. Contractor, and the Surety shall defend, indemnify and hold harmless the District and its employees, officers, Board of Trustees, agents, and representatives from any and all claims, liabilities, judgments, awards, actions or causes of actions, including without limitation, attorneys' fees, which arise out of, or pertain in any manner to: (i) the assertion by any person dismissed from performing or providing work at the direction of the District pursuant to this Article 4.4.5.3; or (ii) the assertion by any person that any person directly or indirectly under the employment or direction of the Contractor has engaged in a prohibited form of harassment directed to or affecting such person. The obligations of the Contractor and the Surety under the preceding sentence are in addition to, and not in lieu of, any other obligation of defense, indemnity and hold harmless whether arising under the Contract Documents, at law or otherwise; these obligations survive completion of the Work or the termination of the Contract.

4.5 Taxes. The Contractor shall pay, without adjustment of the Contract Price, all sales, consumer, use and other taxes for the Work or portions thereof provided by the Contractor under the Contract Documents.

4.6 Permits, Fees and Notices: Compliance With Laws.

4.6.1 Payment of Permits, Fees. The Contractor shall secure and pay for permits, approvals, governmental fees, licenses and inspections necessary or required for the proper execution and completion of the Work which are designated in the Contract Documents as the responsibility of the Contractor.

4.6.2 Compliance With Laws. The Contractor shall comply with and give notices required by the Laws and other orders of public authorities bearing on performance of the Work, including but not limited to any and all federal, state, local and District regulations, guidelines, policies and/or procedures related to COVID-19 or any other pandemic or epidemic.

4.6.3 Notice of Variation From Laws. If the Contractor knows, or has reason to believe, that any portion of the Contract Documents are at variance with the Laws, the Contractor shall promptly notify the Architect, Project Manager and the Project Inspector, in writing, of the same. If the Contractor performs Work knowing, or with reasonable diligence should have known, it to be contrary to the Laws without such notice to the Architect, Project Manager and the Project Inspector, the Contractor shall assume full responsibility for such Work and shall bear the attributable costs arising or associated therefrom, including without limitation, the removal, replacement or correction of the same.

4.7 Submittals.

4.7.1 Purpose of Submittals. Submittals are not Contract Documents. Submittals are for the purpose of demonstrating, for those portions of the Work for which Submittals are required, the manner in which the Contractor proposes to provide or incorporate such item of the Work in conformity with the information given and the design concept expressed in the Contract Documents.

4.7.2 Contractor's Submittals.

4.7.2.1 Prompt Submittals. The Contractor shall review, approve and submit to the Architect or such other person or entity designated by the District or the Contract Documents, the number of copies of Submittals required by the Contract Documents. All Submittals required by the Contract Documents shall be prepared, assembled and submitted by the Contractor within the time frames set forth in the Submittal Schedule incorporated and made a part of the Approved Construction Schedule. Contractor's submission of Submittals in conformity with the Submittal Schedule is a material obligation of the Contractor. If the Contractor fails or refuses to deliver Submittals in accordance with the Submittal Schedule, the Contractor shall be subject to per diem assessments in the amount set forth in the Special Conditions for each day of delayed submission for any Submittal beyond the date set forth in the Submittal Schedule for Contractor's submission of such Submittal. Contractor and the District acknowledge and agree that the per diem assessment for delayed submission of Submittals set forth in the Special Conditions represents a reasonable estimate of costs and expenses the District will incur as a result of delayed submission of Submittals and that the same is not a penalty. Notwithstanding Contractor's submission of all required Submittals in

accordance with the Submittal Schedule, in the event that the District or the Architect reasonably determines that all or any portion of such Submittals fail to comply with the requirements of Articles 4.7.2.2, 4.7.2.3 and 4.7.2.4 of these General Conditions and/or such Submittals are not otherwise complete and accurate so as to require re-submission, Contractor shall bear all costs associated with the review and approval of resubmitted Submittals, including without limitation Architect's fees incurred in connection therewith; provided that such costs are in addition to, and not in lieu of, Liquidated Damages imposed under this Article 4.7.2.1 for Contractor's delayed submission of Submittals. If Liquidated Damages are assessed for the Contractor's delayed submission of Submittals or if the Contractor is assessed Architect fees to review incomplete or inaccurate Submittals, the District may deduct the same from any portion the Contract Price then or thereafter due the Contractor. Submittals not required by the Contract Documents or which do not otherwise conform to the requirements of the Contract Documents may be returned without action. No adjustment to the Contract Time or the Contract Price shall be granted to the Contractor on account of its failure to timely submit any Submittal.

4.7.2.2 Approval of Subcontractor Submittals. All Submittals prepared by Subcontractors, Material Suppliers, manufacturers or distributors shall bear the written approval of the Contractor thereto prior to submission to the Architect for review. Any Submittal not bearing the Contractor's written approval shall be subject to return to the Contractor for re-submittal in conformity herewith, with the same being deemed to not have been submitted. Any delay, impact or cost associated therewith shall be the sole and exclusive responsibility of the Contractor without adjustment to the Contract Time or the Contract Price.

4.7.2.3 Verification of Submittal Information. By approving and submission of Submittals, the Contractor represents to the District and Architect that the Contractor has determined and verified materials, field measurements, field construction criteria, catalog numbers and similar data related thereto and has checked and coordinated the information contained within such Submittals with the requirements of the Work and of the Contract Documents. The Contractor has also verified that the Submittal includes notations of any portion of the Work depicted in the Submittal which is not in strict conformity to the Contract Documents.

4.7.2.4 Information Included in Submittals. All Submittals shall be accompanied by a written transmittal or other writing by the Contractor providing an identification of the portion of the Drawings or the Specifications pertaining to the Submittal, with each Submittal numbered consecutively for ease of reference along with the following information: (i) date of submission; (ii) project name; (iii) name of submitting Subcontractor; and (iv) if applicable, the revision number. The foregoing information is in addition to, and not in lieu of, any other information required by the Contract Documents for the Architect's review, evaluation and acceptance of the Contractor's Submittals.

4.7.2.5 Contractor Responsibility for Deviations. The Contractor shall not be relieved of responsibility for correcting deviations from the requirements of the Contract Documents by the Architect's review of Submittals unless the Contractor has specifically informed the Architect in

writing of such deviation at the time of submission of the Submittal and the Architect has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Submittals by the Architect's review thereof.

4.7.2.6 No Performance of Work Without Architect Review. The Contractor shall perform no portion of the Work requiring the Architect's review of Submittals until the Architect has completed its review and returned the Submittal to the Contractor indicating "No Exception Taken" to such Submittal. The Contractor shall not perform any portion of the Work forming a part of a Submittal or which is affected by a related Submittal until the entirety of the Submittal or other related Submittal has been fully processed. Such Work shall be in accordance with the final action taken by the Architect in review of Submittals and other applicable portions of the Contract Documents.

4.7.3 Architect Review of Submittals. The purpose of the Architect's review of Submittals and the time for the Architect's return of Submittals to the Contractor shall be as set forth elsewhere in the Contract Documents. If the Architect returns a Submittal as rejected or requiring correction(s) with re-submission, the Contractor, so as not to delay the progress of the Work, shall promptly thereafter resubmit a Submittal conforming to the requirements of the Contract Documents; the resubmitted Submittal shall indicate the portions thereof modified in accordance with the Architect's direction. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the Architect shall be entitled to rely upon the accuracy and completeness of such calculations and certifications accompanying Submittals. The Architect's review of the Submittals is for the limited purposes described in the Contract Documents. The following notations or notations of a similar nature noted on a reviewed Submittal will require the Contractor action noted below.

Notation	Action Required
No Exceptions Taken	No formal revision required
Make Corrections Noted	Make revision noted; re-submission of revised Submittal not required
Revise and Re-Submit	Revise Submittal in accordance with notations and re-submit for revision
Rejected Re-Submit	Prepare new alternative Submittal and re-submit for review

4.7.4 Deferred Approval Items. If any portion of the Work is designated in the Contract Documents as a "Deferred Approval" item, Contractor shall be solely and exclusively responsible for: (i) the design, engineering and specifying the materials/equipment forming any part of the Deferred Approval Item; (ii) integrating and/or coordinating the Deferred Approval Item with other portions of the Work; (iii) preparation of Submittals for such item(s) in a timely manner so as not to delay or hinder the completion of the Work within the Contract Time; and (iv) timely obtaining DSA approval thereof.

4.8 Materials and Equipment.

4.8.1 Specified Materials, Equipment. References in the Contract Documents to any specific article, device, equipment, product, material, fixture, patented

process, form, method or type of construction, by name, make, trade name, or catalog number, with or without the words "or equal" shall be deemed to establish a minimum standard of quality or performance, and shall not be construed as limiting competition. Whenever a product, material or other item is specified with reference to a Federal Specification, an ASTM Standard, an American National Standards Institute Specification, or other trade association standard (collectively, "the Standards"), the Contractor shall present an affidavit from the manufacturer when requested by the Architect or required in the Specifications, certifying the product, material or other item to be furnished and installed complies with the Standards. When requested by the Architect or required by the Contract Document, support test data shall be submitted to substantiate compliance with the Standards.

4.8.2 Approval of Substitutions or Alternatives. The Contractor may propose to furnish alternatives or substitutes for a particular item specified in the Contract Documents, provided that: (i) such proposed substitution or alternative complies with the requirements of the Specifications relating to substitutions of specified items; (ii) the Contractor certifies to the Architect and District that the quality, performance capability and functionality (including visual and/or aesthetic effect) of the proposed alternative or substitute meets or exceeds the quality, performance capability and functionality of the item or process specified; and (iii) demonstrate to the reasonable satisfaction of the Architect and District that the use of the substitution or alternative is appropriate and will not delay completion of the Work or result in an increase to the Contract Price. The Contractor shall submit calculations, engineering, construction, dimension, visual, aesthetic and performance data to the Architect to permit its proper evaluation of the proposed substitution or alternative. If requested by the Architect, Contractor shall promptly furnish any additional information or data regarding a proposed substitution or alternative which the Architect deems reasonably necessary for the evaluation of the proposed substitution or alternative. The Contractor shall not provide, furnish or install any substitution or alternative without the Architect's review and final action on the proposed substitution or alternative; any alternative or substitution installed or incorporated into the Work without first obtaining the Architect's review and final action of the same shall be subject to removal pursuant to Article 12 hereof. The Architect's decision evaluating the Contractor's proposed substitutions or alternatives shall be final. Neither the Contract Time nor the Contract Price shall be increased on account of any substitution or alternative proposed by the Contractor and which is accepted by the Architect; provided, however, that in the event a substitution or alternative accepted by the Architect and purchase, fabrication and/or installation or such accepted substitution or alternative shall be less expensive than the originally specified item, the Contract Price shall be reduced by the actual cost savings realized by the Contractor's furnishing and/or installation of such approved substitution or alternative. The Contractor shall be solely responsible for all costs and fees incurred by the District to review a proposed substitution or alternative, including without limitation fees of the Architect, and/or governmental agencies to review and/or approve any proposed substitution or alternative. The Contractor shall be solely responsible for any increase in the cost of any accepted substitution or alternative or any Work affected by such alternative or substitution. The foregoing notwithstanding, unless modified in writing elsewhere in the Contract Documents, including without limitation, the Specifications, Addenda or Bid Documents, all requests for the

Architect's review and approval of any proposed substitution or alternative and all engineering, construction, dimension and performance data substantiating the equivalency of the proposed substitution or alternative shall be submitted by Contractor not later than thirty-five (35) days following the date of the District's award of the Contract to Contractor by action of the District's Board of Trustees; any request for approval of proposed alternatives or substitutions submitted thereafter may be rejected summarily. The foregoing process and time limits shall apply to any proposed substitution or alternative regardless of whether the substitute or alternate item is to be provided, furnished or installed by Contractor, any Subcontractor, any Sub-Subcontractor, Material Supplier or Manufacturer.

4.8.3 District Standards; "Sole Source" Products. If any material, equipment, product or other item is designated in the Contract Documents as a "District Standard" or similar words/terms, the District shall be deemed to have made a finding that such material, equipment, product or other item is designated and specified to match other materials, equipment, products, or other item in use in a completed or to be completed work of improvement and not subject to substitution. If any material, equipment, or other item is identified in the Contract Documents as being the only source of the material, equipment or other item necessary to accomplish the intended result(s), such material, equipment or other item shall be deemed a "sole source" and shall not be subject to substitution.

4.8.4 Placement of Material and Equipment Orders. Contractor shall, after award of the Contract, promptly and timely place all orders for materials and/or equipment necessary for completion of the Work so that delivery of the same shall be made without delay or interruption to the timely completion of the Work. Contractor shall require that any Subcontractor similarly place orders for all materials and/or equipment to be furnished by any such Subcontractor in a prompt and timely manner so that delivery of the same shall be made without delay or interruption to the timely completion of the Work. Upon request of the District, Project Manager or the Architect, the Contractor shall furnish reasonably satisfactory written evidence of the placement of orders for materials and/or equipment necessary for completion of the Work, including without limitation, orders for materials and/or equipment to be provided, furnished or installed by any Subcontractor.

4.8.5 District's Right to Place Orders for Materials and/or Equipment. Notwithstanding any other provision of the Contract Documents, if the Contractor shall, upon request of the District, Project Manager or the Architect, fail or refuse, for any reason, to provide reasonably satisfactory written evidence of the placement of orders for materials and/or equipment necessary for completion of the Work, or should the District determine, in its sole and reasonable discretion, that any orders for materials and/or equipment have not been placed in a manner so that such materials and/or equipment will be delivered to the Site so the Work can be completed without delay or interruption, the District shall have the right, but not the obligation, to place such orders on behalf of the Contractor. If the District exercises the right to place orders for materials and/or equipment pursuant to the foregoing, the District's conduct shall not be deemed to be an exercise, by the District, of any control over the means, methods, techniques, sequences or procedures for completion of the Work, all of which remain the responsibility and obligation of the Contractor. Notwithstanding the right of the District to place orders for materials and/or equipment pursuant to the foregoing, the election of the District to exercise, or not to exercise, such right shall not relieve the Contractor from any of Contractor's obligations under the Contract Documents, including without

limitation, completion of the Work within the Contract Time and for the Contract Price. If the District exercises the right hereunder to place orders for materials and/or equipment on behalf of Contractor pursuant to the foregoing, Contractor shall reimburse the District for all costs and fees incurred by the District in placing such orders; such costs and fees may be deducted by the District from the Contract Price then or thereafter due to the Contractor.

4.8.6 Contractor and Subcontractor Communication. All written communications between the Contractor and any Subcontractor, Material Supplier or others directly or indirectly engaged by the Contractor to perform or provide any portion of the Work shall be available to the District, the Project Manager and the Architect for review, inspection and reproduction as may be requested from time to time. The foregoing is a material obligation of the Contractor hereunder.

4.9 Safety.

4.9.1 Safety Programs. The Contractor shall be solely responsible for initiating, maintaining and supervising all safety programs required by the Laws required by the type or nature of the Work. The foregoing include, without limitation: (i) workplace safety programs mandated by the Laws; and without limiting or relieving the Contractor of its obligations hereunder, the Contractor shall require that its Subcontractors similarly initiate and maintain all appropriate or required safety programs.

4.9.2 COVID Safety Guidelines. The Contractor and all its Subcontractors, employees and related personnel shall also be required to comply with any local, state, or federal policy, rule, law, regulation, or ordinance related to COVID-19 or any other pandemic or epidemic, including but not limited to wearing a mask and maintaining social distancing. All persons will be required to follow all federal, state and local guidelines and regulations. Further, all persons will be required to follow the District's specific rules and policies related to such measures, even if the District's rule or policy is stricter than some other city, county, state, federal, or other governmental body rule or policy. Violation of these rules may result in immediate expulsion from the facility and may result in that worker or company not being permitted to return to the facility.

4.9.3 Contractor Safety Plan. Prior to commencement of Work at the Site, the Contractor shall submit to the District Project Manager, the Contractor's Safety Plan for the Work for review and acceptance by the District. Acceptance by the District is subject to the Safety Plan conforming to requirements of the Laws, conditions at or near the Site and the nature of the Work. The Contractor shall modify its Safety Plan as necessary to obtain the District's acceptance thereof. Notwithstanding the District's acceptance of the Contractor's Safety Plan, the Contractor shall remain solely responsible for implementing the Safety Plan and implementing measures as necessary to maintain safety of persons and property at and about the Site. The District's acceptance of the Contractor's Safety Plan shall not limit, restrict or otherwise modify the Contractor's obligations relating to safety at or about the Site in accordance with the Contract Documents and the Laws.

4.9.4 Safety Precautions. The Contractor shall be solely responsible for initiating and maintaining reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to: (i) employees on the Work and other persons who may be affected thereby; (ii) the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site, under

care, custody or control of the Contractor or Subcontractors; and (iii) other property or items at the Site, or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement.

4.9.5 Safety Signs, Barricades. The Contractor shall erect and maintain, as required by existing conditions and conditions resulting from performance of the Contract, reasonable safeguards for safety and protection of property and persons, including, without limitation, posting danger signs and other warnings against hazards, barricades, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

4.9.6 Safety Notices. The Contractor shall give or post all safety notices required by the Laws and comply with the Laws bearing on safety of persons or property or their protection from damage, injury or loss.

4.9.7 Safety Coordinator. The Contractor shall designate a responsible member of the Contractor's organization at the Site whose duty shall be the prevention of accidents and the implementation and maintenance of safety precautions and programs. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Project Manager, Project Inspector and the Architect.

4.9.8 Emergencies. In an emergency affecting safety of persons or property, the Contractor shall act, to prevent threatened damage, injury or loss.

4.9.9 Hazardous Materials.

4.9.9.1 General. If the Contractor, any Subcontractor or anyone employed directly or indirectly by them shall use, at the Site, or incorporate into the Work, any material or substance deemed to be hazardous or toxic under any law, rule, ordinance, regulation or interpretation thereof (collectively "Hazardous Materials"), the Contractor shall comply with all Laws applicable thereto and shall exercise all necessary safety precautions relating to the use, storage or disposal thereof.

4.9.9.2 Prohibition on Use of Asbestos Construction Building Materials ("ACBMs"). Notwithstanding any provision of the Drawings or the Specifications to the contrary, it is the intent of the District that ACBMs not be used or incorporated into any portion of the Work. In the event that any portion of the Work depicted in the Drawings or the Specifications shall require materials or products which the Contractor knows, or should have known with reasonably diligent investigation, to contain ACBMs, Contractor shall promptly notify the Architect and the Project Inspector of the same so that an appropriate alternative can be made in a timely manner so as not to delay the progress of the Work. Contractor warrants to the District that there are no materials or products used or incorporated into the Work which contain ACBMs. Whether before or after completion of the Work, if it is discovered that any product or material forming a part of the Work or incorporated into the Work contains ACBMs, the Contractor shall at its sole cost and expense remove such product or material in accordance with any laws, rules, procedures and regulations applicable to the handling, removal and disposal of ACBMs and to replace such product or material with non-ACBM products or materials and to return the affected portion(s) of the Work to the finish condition depicted in the Drawings and Specifications relating to such portion(s) of the Work. Contractor's obligations under the preceding sentence shall survive the termination of the Contract, the

warranty period provided under the Contract Documents, the Contractor's completion of the Work or the District's acceptance of the Work. If the Contractor fails or refuses, for any reason, to commence the removal and replacement of any material or product containing ACBMs forming a part of, or incorporated into the Work, within ten (10) days of the date of the District's written notice to the Contractor of the existence of ACBM materials or products in the Work, the District may thereafter proceed to cause the removal and replacement of such materials or products in any manner which the District determines to be reasonably necessary and appropriate; all costs, expenses and fees, including without limitation fees and costs of consultants and attorneys, incurred by the District in connection with such removal and replacement shall be the responsibility of the Contractor and the Surety.

4.9.9.3 Disposal of Hazardous Materials. Contractor shall be solely and exclusively responsible for the disposal of any Hazardous Materials on or about the Site. The Contractor's obligations hereunder shall include without limitation, the transportation and disposal of any Hazardous Materials in strict conformity with the Laws.

4.10 Maintenance of Documents.

4.10.1 Documents at Site. The Contractor shall maintain at the Site: (i) one record copy of the Drawings, Specifications and all addenda thereto; (ii) Change Orders approved by the District and all other modifications to the Contract Documents; (iii) Submittals reviewed by the Architect; (iv) Record Drawings; (v) Material Safety Data Sheets ("SDS") accompanying any materials, equipment or products delivered or stored at the Site or incorporated into the Work; and (vi) all building and other codes or regulations applicable to the Work, including without limitation, Title 24, Part 2 of the California Code of Regulations. During performance of the Work, all documents maintained by Contractor at the Site shall be available to the District, the Project Manager, the Architect, the Project Inspector and DSA for review, inspection or reproduction. Upon completion of the Work, all documents maintained at the Site by the Contractor pursuant to the foregoing shall be assembled and transmitted to the Architect for delivery to the District.

4.10.2 Maintenance of Record Drawings. During its performance of the Work, the Contractor shall maintain Record Drawings consisting of a set of the Drawings which are marked to indicate all field changes made to adapt the Work depicted in the Drawings to field conditions, changes resulting from Change Orders and all concealed or buried installations, including without limitation, piping, conduit and utility services. All buried or concealed items of Work shall be completely and accurately marked and located on the Record Drawings. The Record Drawings shall be clean and all changes, corrections and dimensions shall be marked in a neat and legible manner in a contrasting color. Record Drawings relating to the Structural, Mechanical, Electrical and Plumbing portions of the Work shall indicate without limitation, circuiting, wiring sizes, equipment/member sizing and shall depict the entirety of the as built conditions of such portions of the Work. The Record Drawings shall be continuously maintained by the Contractor during the performance of the Work. At any time during the Contractor's performance of the Work, upon the request of the District, the Project Inspector or the Architect, the Contractor shall make the Record Drawings maintained here under available for the District's review and inspection. The District's review and inspection of the

Record Drawings during the Contractor's performance of the Work shall be only for the purpose of generally verifying that Contractor is continuously maintaining the Record Drawings in a complete and accurate manner; any such inspection or review shall not be deemed to be the District's approval or verification of the completeness or accuracy thereof. The failure or refusal of the Contractor to continuously maintain complete and accurate Record Drawings or to make available the Record Drawings for inspection and review by the District may be deemed by the District to be Contractor's default of a material obligation hereunder. Without waiving, restricting or limiting any other right or remedy of the District for the Contractor's failure or refusal to continuously maintain the Record Drawings, the District may, upon reasonably determining that the Contractor has not, or is not, continuously maintaining the Record Drawings in a complete and accurate manner, take appropriate action to cause the continuous maintenance of complete and accurate Record Drawings, in which event all fees and costs incurred or associated with such action shall be charged to the Contractor and the District may deduct the amount of such fees and costs from any portion of the Contract Price then or thereafter due the Contractor. In accordance with Article 8.4.2 of these General Conditions, prior to receipt of the Final Payment, Contractor shall deliver the Record Drawings to the Architect.

4.10.3 Daily Reports By Contractor. At the end of each work day, the Contractor shall submit a daily report to the Project Manager and the Project Inspector for document control listing all labor, materials, and equipment involved with the Work for that day, including but not limited to: (i) Labor, number of classifications of work by contractor/subcontractors, (ii) Materials used, by contractor/subcontractor, (iii) Equipment used, by contractor/subcontractors, (iv) Any inspections or testing performed, (v) Any other authorized services or expenditures.

4.11 Site.

4.11.1 Contractor's Use of Site. The Contractor shall confine operations at the Site to areas permitted by the Laws or permits relating to the Work, subject to any restrictions or limitations set forth in the Contract Documents. The Contractor shall not unreasonably encumber the Site or adjoining areas with materials or equipment. The Contractor is solely responsible for providing security at the Site with all such costs included in the Contract Price. The District shall at all times have access to the Site.

4.11.2 Limitations Upon Site Activities. Except in the circumstances of an emergency, no construction activities shall be permitted at or about the Site except during the District's hours and days set forth in the Special Conditions. Work performed outside of the hours and days noted in the Special Conditions will not result in adjustment of the Contract Time or the Contract Price; unless Work outside of the hours and days noted in the Special Conditions is expressly authorized by the District. Additional or premium costs incurred by the District for Work performed outside the hours and days of Work permitted at the Site shall be borne solely and exclusively by the Contractor. The District may deduct such additional or premium costs from the Contract Price then or thereafter due the Contractor.

4.12 Clean-Up. The Contractor shall at all times keep the Site and all adjoining areas free from the accumulation of any waste material or rubbish caused or generated by performance of the Work. Without limiting the generality of the foregoing, Contractor shall

maintain the Site in a “rake-clean” standard on a daily basis. If the Work includes painting and/or the installation of floor covering, before any painting operations or the installation of any flooring covering, the area and adjoining areas of the Site where paint is to be applied or floor covering is to be installed shall be in a “broom-clean” condition. Prior to completion of the Work, Contractor shall remove from the Site all rubbish, waste materials, excess excavated materials, tools, Construction Equipment, machinery, surplus materials and any other items which are not the property of the District under the Contract Documents. Upon completion of the Work, the Site and all adjoining areas shall be left by the Contractor in a neat and broom clean condition satisfactory to District. The Project Inspector or Project Manager shall be authorized to direct the Contractor’s clean-up obligations hereunder. If the Contractor fails to clean up as provided for in the Contract Documents, the District may do so, and all costs incurred in connection therewith shall be charged to the Contractor; the District may deduct such costs from any portion of the Contract Price then or thereafter due the Contractor.

4.13 Access to the Work. The Contractor shall provide DSA, the District, the Project Manager, the Project Inspector and the Architect access to the Work, whether in place, preparation and progress and wherever located.

4.14 Facilities and Information for the Project Inspector.

4.14.1 Information to Project Inspector. The Contractor shall furnish the Project Inspector access to the Work for obtaining such information as may be necessary to keep the Project Inspector fully informed respecting the progress, quality and character of the Work and materials, equipment or other items incorporated therein.

4.14.2 Facilities for Project Inspector. Facilities, services or other items to be provided by the Contractor for use by the Project Inspector, if any, shall be as set forth in the Special Conditions. If any such facilities, services or other items are designated in the Special Conditions and the Contractor fails or refuses to provide the same, the District may furnish such facilities, services or other items, with the costs, fees or expenses incurred to furnish the same being deducted from the Contract Price.

4.15 Patents and Royalties. The Contractor and the Surety shall defend, indemnify and hold harmless the District and its agents, employees and officers from any claim, demand or legal proceeding arising out of or pertaining, in any manner, to any actual or claimed infringement of patent rights in connection with performance of the Work.

4.16 Cutting and Patching. The Contractor is responsible for cutting, fitting or patching required to complete the Work or to make the component parts thereof fit together properly. The Contractor shall not damage or endanger any portion of the Work, or the fully or partially completed construction of the District or separate contractors by cutting, patching, excavation or other alteration. The Contractor shall not cut, patch or otherwise alter the construction by the District or separate contractor without the prior written consent of the District or separate contractor thereto, which consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold consent to the request of the District or separate contractor to cut, patch or otherwise alter the Work.

4.17 Encountering of Hazardous Materials. If the Contractor encounters Hazardous Materials at the Site which have not been rendered harmless, or for which there is no

provision in the Contract Documents for containment, removal, abatement or handling of such Hazardous Materials, the Contractor shall immediately stop the Work in the affected area, but shall diligently proceed with the Work in all other unaffected areas. Upon encountering such Hazardous Materials, the Contractor shall immediately notify the Project Manager, Project Inspector and the Architect, in writing, of such condition. The Contractor shall proceed with the Work in such affected area only after such Hazardous Materials have been rendered harmless, contained, removed or abated. If such Hazardous Materials are encountered, the Contractor shall be entitled to an adjustment of the Contract Time to the extent that the Work is stopped and Substantial Completion of the Work is affected thereby. In no event shall there be an adjustment to the Contract Price solely on account of the Contractor encountering such Hazardous Materials.

4.18 Wage Rates; Employment of Labor.

4.18.1 Prevailing Wage Rates.

4.18.1.1 Prevailing Wage Rate Schedules. Pursuant to the provisions of Division 2, Part 7, Chapter 1, Article 2 of the California Labor Code at §§ 1770 *et seq.*, the District has obtained from the Director of the Department of Industrial Relations the general prevailing rate of per diem wages and the prevailing rate for holiday and overtime work in the locality in which the Work is to be performed. Holidays shall be as defined in the collective bargaining agreement applicable to each particular craft, classification or type of worker employed under the Contract. Per diem wages include employer payments for health and welfare, pensions, vacation, travel time and subsistence pay as provided in California Labor Code § 1773.1, apprenticeship or other training programs authorized by California Labor Code § 3093, and similar purposes when the term “per diem wages” is used herein. Holiday and overtime work, when permitted by law, shall be paid for at the rate of at least one and one-half (1½) times the above specified rate of per diem wages, unless otherwise specified. The Contractor shall post, at appropriate and conspicuous locations on the Site, a schedule showing all determined general prevailing wage rates.

4.18.1.2 Payment of Prevailing Rates. There shall be paid each worker of the Contractor and Subcontractors, of any tier, engaged in the Work, not less than the general prevailing wage rate, regardless of any contractual relationship which may be alleged to exist between the Contractor or any Subcontractor, of any tier, and such worker. The Contractor is solely responsible for obtaining and complying with prevailing wage rate determinations and modifications thereto during performance of the Work. Any such modification shall not result in an adjustment to Contract Price.

4.18.1.3 Prevailing Rate Penalty. The Contractor shall, as a penalty, forfeit not more than Two Hundred Dollars (\$200.00) to the District for each calendar day or portion thereof, for each worker paid less than the prevailing rates for such work or craft in which such worker is employed for the Work by the Contractor or by any Subcontractor, of any tier, in connection with the Work. The amount of the penalty for failure to pay applicable prevailing wage rates shall be determined and assessed in accordance with the standards established pursuant to Labor Code § 1775(a)(2). The amount of the penalty shall be determined based on consideration of both of the following: (i) whether the failure of the Contractor or Subcontractor to pay the correct rate of per diem wages was

a good faith mistake and, if so, the error was promptly and voluntarily corrected when brought to the attention of the Contractor or Subcontractor; and (ii) whether the Contractor or Subcontractor has a prior record of failing to meet its prevailing wage obligations. The penalty may not be less than forty dollars (\$40) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, unless the failure of the Contractor or Subcontractor to pay the correct rate of per diem wages was a good faith mistake and, if so, the error was promptly and voluntarily corrected when brought to the attention of the contractor or subcontractor. The penalty may not be less than eighty dollars (\$80) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, if the Contractor or Subcontractor has been assessed penalties within the previous three years for failing to meet its prevailing wage obligations on a separate contract, unless those penalties were subsequently withdrawn or overturned. The penalty may not be less than one hundred twenty dollars (\$120) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, if the Labor Commissioner determines that the violation was willful, as defined in subdivision (c) of Section 1777.1. When the penalty amount due hereunder is collected from the Contractor or Subcontractor, any outstanding wage claim under Chapter 1 (commencing with Section 1720) of Part 7 of Division 2 against that Contractor or Subcontractor shall be satisfied before applying that amount to the penalty imposed on that Contractor or Subcontractor hereunder. The difference between prevailing wage rates and the amount paid to each worker each calendar day, or portion thereof, for which each worker paid less than the prevailing wage rate, shall be paid to each worker by the Contractor.

4.18.1.4 Prevailing Wage Rate Monitoring and Enforcement. During the Work and pursuant to Labor Code § 1771.4, the Department of Industrial Relations shall monitor and enforce the obligation of the Contractor and Subcontractors of every tier to pay laborers performing any portion of the Work the Prevailing Wage Rate established for the classification of work/labor performed.

4.18.2 Payroll Records.

4.18.2.1 Certified Payroll Records. Pursuant to California Labor Code § 1776, the Contractor and each Subcontractor, of any tier, shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each person employed for the Work.

4.18.2.2 Certified Payroll Records Submittal to Labor Commissioner. The Contractor and all Subcontractors shall prepare and submit Certified Payroll Records to the Labor Commissioner in compliance with requirements established in Labor Code § 1771.4. The form and content of Certified Payroll Records shall be as established by the Labor Commissioner and the frequency of Certified Payroll Records submittal to the Labor Commissioner shall be pursuant to Labor Code § 1771.4.

4.18.2.3 Inspection and Copies of Certified Payroll Records. The payroll records shall be certified and available for inspection at all reasonable hours at the principal office of the Contractor on the following basis: (i) a

certified copy of an employee's payroll record shall be made available for inspection or furnished to such employee or his/her authorized representative on request; (ii) a certified copy of all payroll records shall be made available for inspection or furnished upon request to the District, the Division of Labor Standards Enforcement ("DLSE") and the Division of Apprenticeship Standards of the Department of Industrial Relations ("Apprenticeship Council"); (iii) a certified copy of payroll records shall be made available upon request to the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through either the District, DLSE and the Apprenticeship Council. If the requested payroll records have not been provided, the requesting party shall, prior to being provided the records, reimburse the cost of preparation by the Contractor, Subcontractors and the entity through which the request was made; the public shall not be given access to such records at the principal office of the Contractor; (iv) the Contractor shall file a certified copy of the payroll records with the entity that requested such records within ten (10) days after receipt of a written request; (v) any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the District, the Apprenticeship Council or DLSE shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address and social security number. The name and address of the Contractor or any Subcontractor, of any tier, performing a part of the Work shall not be marked or obliterated. The Contractor shall inform the District of the location of payroll records, including the street address, city and county and shall, within five (5) working days, provide a notice of a change or location and address. In the event of noncompliance with the foregoing requirements, the Contractor shall have ten (10) days in which to comply, subsequent to receipt of written notice specifying in what respects the Contractor must comply herewith. Should noncompliance still be evident after such ten (10) day period, the Contractor shall, as a penalty to the District, forfeit One Hundred Dollars (\$100.00) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Apprenticeship Council or DLSE, such penalties shall be withheld from any portion of the Contract Price then or thereafter due the Contractor. The Contractor is solely responsible for compliance with the foregoing provisions.

4.18.3 Hours of Work.

4.18.3.1 Limits on Hours of Work. Pursuant to California Labor Code § 1810, eight (8) hours of labor shall constitute a legal day's work. Pursuant to California Labor Code § 1811, the time of service of any worker employed at any time by the Contractor or by a Subcontractor, of any tier, upon the Work or upon any part of the Work, is limited and restricted to eight (8) hours during any one calendar day and forty (40) hours during any one calendar week, except as hereafter provided. Notwithstanding the foregoing provisions, Work performed by employees of Contractor or any Subcontractor, of any tier, in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1½) times the basic rate of pay.

4.18.3.2 Penalty for Excess Hours. The Contractor shall pay to the District a penalty of Twenty-five Dollars (\$25.00) for each worker employed on the Work by the Contractor or any Subcontractor, of any tier, for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any calendar day and forty (40) hours in any one calendar week, in violation of the provisions of the California Labor Code, unless compensation to the worker so employed by the Contractor is not less than one and one-half (1½) times the basic rate of pay for all hours worked in excess of eight (8) hours per day.

4.18.3.3 Contractor Responsibility. Any Work performed by workers necessary to be performed after regular working hours or on Saturdays, Sundays or other holidays shall be performed without adjustment to the Contract Price or any other additional expense to the District. The Contractor shall be responsible for costs incurred by the District which arise out of Work performed by the Contractor at times other than regular working hours and regular working days. Upon determination of such costs, the District may deduct such costs from the Contract Price then or thereafter due the Contractor.

4.18.4 Apprentices.

4.18.4.1 Employment of Apprentices. Any apprentices employed to perform any of the Work shall be paid the standard wage paid to apprentices under the regulations of the craft or trade for which such apprentice is employed, and such individual shall be employed only for the work of the craft or trade to which such individual is registered. Only apprentices, as defined in California Labor Code § 3077 who are in training under apprenticeship standards and written apprenticeship agreements under California Labor Code §§ 3070 *et seq.* are eligible to be employed for the Work. The employment and training of each apprentice shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which such apprentice is training.

4.18.4.2 Apprenticeship Certificate. When the Contractor or any Subcontractor, of any tier, in performing any of the Work employs workers in any Apprenticeable Craft or Trade, the Contractor and such Subcontractor shall apply to the Joint Apprenticeship Committee administering the apprenticeship standards of the craft or trade in the area of the site of the Work for a certificate approving the Contractor or such Subcontractor under the apprenticeship standards for the employment and

training of apprentices in the area or industry affected, provided, however, that the approval as established by the Joint Apprenticeship Committee or Committees shall be subject to the approval of the Administrator of Apprenticeship. The Joint Apprenticeship Committee or Committees, subsequent to approving the Contractor or Subcontractor, shall arrange for the dispatch of apprentices to the Contractor or such Subcontractor in order to comply with California Labor Code § 1777.5. Prior to the commencement of the Work, the Contractor and Subcontractors shall submit contract award information (on Form DAS-140) to the applicable Joint Apprenticeship Committee which shall include an estimate of journeyman hours to be performed under the Contract, the number of apprentices to be employed, and the approximate dates the apprentices will be employed. Concurrently with submission of contract information on Form DAS-140 to the Apprenticeship Council, the Contractor shall deliver a copy of its completed DAS-140 to the District and the Project Manager. There shall be an affirmative duty upon the Joint Apprenticeship Committee or Committees, administering the apprenticeship standards of the crafts or trades in the area of the site of the Work, to ensure equal employment and affirmative action and apprenticeship for women and minorities. Contractors or Subcontractors shall not be required to submit individual applications for approval to local Joint Apprenticeship Committees provided they are already covered by the local apprenticeship standards.

4.18.4.3 Ratio of Apprentices to Journeymen. The ratio of Work performed by apprentices to journeymen, who shall be employed in the Work, may be the ratio stipulated in the apprenticeship standards under which the Joint Apprenticeship Committee operates, but in no case shall the ratio be less than one hour of apprentice work for each five hours of labor performed by a journeyman, except as otherwise provided in California Labor Code § 1777.5. The minimum ratio for the land surveyor classification shall not be less than one apprentice for each five journeymen. Any ratio shall apply during any day or portion of a day when any journeyman, or the higher standard stipulated by the Joint Apprenticeship Committee, is employed at the site of the Work and shall be computed on the basis of the hours worked during the day by journeymen so employed, except for the land surveyor classification. The Contractor shall employ apprentices for the number of hours computed as above before the completion of the Work. The Contractor shall, however, endeavor, to the greatest extent possible, to employ apprentices during the same time period that the journeymen in the same craft or trade are employed at the site of the Work. Where an hourly apprenticeship ratio is not feasible for a particular craft or trade, the Division of Apprenticeship Standards, upon application of a Joint Apprenticeship Committee, may order a minimum ratio of not less than one apprentice for each five journeymen in a craft or trade classification. The Contractor or any Subcontractor covered by this Article and California Labor Code § 1777.5, upon the issuance of the approval certificate, or if it has been previously approved in such craft or trade, shall employ the number of apprentices or the ratio of apprentices to journeymen stipulated in the apprenticeship standards. Upon proper showing by the Contractor that it employs apprentices in such craft or trade in the State of California on all of its

contracts on an annual average of not less than one apprentice to each five journeymen, the Division of Apprenticeship Standards may grant a certificate exempting the Contractor from the 1-to-5 ratio as set forth in this Article and California Labor Code § 1777.5. This Article shall not apply to contracts of general contractors, or to contracts of specialty contractors not bidding for work through a general or prime contractor, involving less than Thirty Thousand Dollars (\$30,000.00) or twenty (20) working days. The term "Apprenticeable Craft or Trade," as used herein shall mean a craft or trade determined as an Apprenticeable occupation in accordance with rules and regulations prescribed by the Apprenticeship Council.

4.18.4.4 Exemption From Ratios. The Joint Apprenticeship Committee shall have the discretion to grant a certificate, which shall be subject to the approval of the Administrator of Apprenticeship, exempting the Contractor from the 1-to-5 ratio set forth in this Article when it finds that any one of the following conditions are met: (i) unemployment for the previous three-month period in such area exceeds an average of fifteen percent (15%) or; (ii) the number of apprentices in training in such area exceeds a ratio of 1-to-5 in relation to journeymen, or; (iii) the Apprenticeable Craft or Trade is replacing at least one-thirtieth (1/30) of its journeymen annually through apprenticeship training, either on a statewide basis or on a local basis, or; (iv) if assignment of an apprentice to any Work performed under the Contract Documents would create a condition which would jeopardize such apprentice's life or the life, safety or property of fellow employees or the public at large, or if the specific task to which the apprentice is to be assigned is of such a nature that training cannot be provided by a journeyman. When such exemptions from the 1-to-5 ratio between apprentices and journeymen are granted to an organization which represents contractors in a specific trade on a local or statewide basis, the member contractors will not be required to submit individual applications for approval to local Joint Apprenticeship Committees, provided they are already covered by the local apprenticeship standards.

4.18.4.5 Contributions to Trust Funds. The Contractor or any Subcontractor, of any tier, who, performs any of the Work by employment of journeymen or apprentices in any Apprenticeable Craft or Trade and who is not contributing to a fund or funds to administer and conduct the apprenticeship program in any such craft or trade in the area of the site of the Work, to which fund or funds other contractors in the area of the site of the Work are contributing, shall contribute to the fund or funds in each craft or trade in which it employs journeymen or apprentices in the same amount or upon the same basis and in the same manner as the other contractors do, but where the trust fund administrators are unable to accept such funds, contractors not signatory to the trust agreement shall, using California Apprenticeship Council Training Fund Contributions Form CAC-2, pay a like amount to the California Apprenticeship Council. The Division of Labor Standards Enforcement is authorized to enforce the payment of such contributions to such fund(s) as set forth in California Labor Code § 227. Such contributions shall not result in an increase in the Contract Price.

4.18.4.6 Contractor's Compliance. The responsibility of compliance with this Article for all Apprenticeable Trades or Crafts is solely and exclusively that of the Contractor. All decisions of the Joint Apprenticeship

Committee(s) under this Article are subject to the provisions of California Labor Code § 3081. If the Contractor willfully fails to comply with the provisions of this Article and California Labor Code § 1777.5, pursuant to California Labor Code § 1777.7, the Contractor shall: (i) be denied the right to bid on any public works contract for a period of one (1) year from the date the determination of non-compliance is made by the Administrator of Apprenticeship; and (ii) forfeit, as a civil penalty, Fifty Dollars (\$50.00) for each calendar day of noncompliance. Notwithstanding the provisions of California Labor Code § 1727, upon receipt of such determination, the District shall withhold such amount from the Contract Price then due or to become due. Any such determination shall be issued after a full investigation, a fair and impartial hearing, and reasonable notice thereof in accordance with reasonable rules and procedures prescribed by the California Apprenticeship Council. Any funds withheld by the District pursuant to this Article shall be deposited in the General Fund or other similar fund of the District. The interpretation and enforcement of California Labor Code §§ 1777.5 and 1777.7 shall be in accordance with the rules and procedures of the California Apprenticeship Council.

4.18.5 Employment of Independent Contractors. Pursuant to California Labor Code § 1021.5, Contractor shall not willingly and knowingly enter into any agreement with any person, as an independent contractor, to provide any services in connection with the Work where the services provided or to be provided requires that such person hold a valid contractors' license issued pursuant to California Business and Professions Code §§ 7000 *et seq.* and such person does not meet the burden of proof of his/her independent contractor status pursuant to California Labor Code § 2750.5. If the Contractor employs any person in violation of the foregoing, Contractor shall be subject to the civil penalties under California Labor Code § 1021.5 and any other penalty provided by law. In addition to the penalties provided under California Labor Code § 1021.5, Contractor's violation of this Article 4.18.5 or the provisions of California Labor Code § 1021.5 shall be deemed an event of Contractor's default under Article 15.1 of these General Conditions. The Contractor shall require any Subcontractor or Sub-Subcontractor performing or providing any portion of the Work to adhere to and comply with the foregoing provisions.

4.19 Assignment of Antitrust Claims. Pursuant to California Government Code § 4552, the Contractor and its Subcontractor(s), of any tier, hereby offers and agrees to assign to the District all rights, title and interest in and to all causes of action they may have under Section 4 of the Clayton Act, (15 U.S.C. § 15) or under the Cartwright Act (California Business and Professions Code §§ 16700 *et seq.*), arising from purchases of goods, services or materials hereunder or any Subcontract. This assignment shall be made and become effective at the time the District tenders Final Payment to the Contractor, without further acknowledgment by the parties. If the District receives, either through judgment or settlement, a monetary recovery in connection with a cause of action assigned under California Government Code §§ 4550 *et seq.*, the assignor thereof shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the District any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the District as part of the Contract Price, less the expenses incurred by the District in obtaining that portion of the recovery. Upon demand in writing by the assignor, the District shall, within one year from

such demand, reassign the cause of action assigned pursuant to this Article if the assignor has been or may have been injured by the violation of law for which the cause of action arose: and (i) the District has not been injured thereby; or (ii) the District declines to file a court action for the cause of action.

4.20 DSA Construction Oversight. All of the Work is subject to DSA Construction Oversight processes and procedures; a material obligation of the Contractor hereunder is the Contractor's compliance with the processes and procedures established by DSA for the Work. As applicable, the foregoing shall include without limitation, the processes and procedures established under DSA PR 13-01 in effect at the time of performing the Work hereunder. The foregoing shall include:

4.20.1 DSA Approved Documents. The Contractor shall carefully study the DSA approved documents and shall plan a schedule of operations well ahead of time.

4.20.2 Correction of Non-Conforming Work. If at any time it is discovered that Work is not in accordance with the DSA approved construction documents, the Contractor shall correct the Work immediately.

4.20.3 Verification of DSA 152 Forms. The Contractor shall verify that DSA 152 Project Inspection Card forms were issued prior to the commencement of construction.

4.20.4 Test/Inspection Communications. The Contractor shall meet with the Architect, Project Manager, the Laboratory of Record retained by the District for special tests/inspections and the Project Inspector to mutually communicate and understand the testing and inspection program, and the methods of communication appropriate for the Work.

4.20.5 DSA Form 156 Notifications to Project Inspector. The Contractor shall notify the Project Inspector, in writing, of the commencement of construction of each and every aspect of the Work at least 48 hours in advance by submitting Commencement/Completion of Work Notification (form DSA 156), or other agreed upon written documents, to the Project Inspector. The Contractor shall notify the Project Inspector of the completion of construction of each and every aspect of the Work by submitting form DSA 156 (or other agreed upon written documents) to the Project Inspector.

4.20.6 Limitations on Contractor Work. Until the Project Inspector has signed off applicable blocks and sections of the form DSA 152, the Contractor may be prohibited from proceeding with subsequent construction activities that cover up the unapproved Work. Any subsequent construction activities, that cover up the unapproved Work, will be subject to a "Stop Work Order" from DSA or the District, and are subject to removal and remediation if found to be in non-compliance with the DSA approved construction documents.

4.20.7 Final Verified Report. The Contractor shall submit the final Contractor Verified Report (form DSA 6-C) to DSA and the Project Inspector. The DSA 6-C reports are required to be submitted by the Contractor upon occurrence of any of the following events: (i) the Work is substantially complete (DSA considers the Work to be complete when the construction is sufficiently complete in accordance with the DSA approved construction documents so that the owner can occupy or utilize the Work); (ii) Work is suspended for a period of more than one (1) month; (iii) services of the Contractor are terminated for any reason prior to the completion of the Work; or (iv) DSA requests a verified report.

4.20.8 Failure to Submit Final Verified Report. Should Contractor fail or refuse to submit the final Contractor Verified Report (form DSA 6-C) to DSA and the Project

Inspector, the Final Payment due the Contractor shall be reduced by Twenty-Five Thousand Dollars (\$25,000.00) until such time as the Contractor submits the final Contractor Verified Report (form DSA 6-C) to DSA and the Project Inspector.

4.21 DSA Verified Reports

4.21.1 Contractor Actions. The Contractor acknowledges and agrees that a material obligation of the Contractor under the Contract Documents is the completion by the Contractor of all actions and activities which by the Contract Documents or by the Laws are the responsibility of the Contractor relating to DSA reporting requirements pursuant to Education Code § 81141 (including amendments thereto) and issuance of DSA's Certificate of Compliance for the Project pursuant to Education Code § 81147 (including amendments thereto) upon completion of the Work. The foregoing shall include without limitation, the timely preparation, completion and filing of Verified Reports during Project construction and the filing of the Final Verified Report with DSA within thirty (30) days of the determination of Final Completion. The Contractor shall provide the District, the Project Inspector, Architect, and Project Manager with copies of all Verified Reports completed by the Contractor and submitted to DSA; such copies shall be provided to the Project Inspector, Architect, the Project Manager and the District concurrently with the Contractor's submission thereof to DSA.

4.21.2 District Withholdings From Final Payment. Notwithstanding any provision of the Contract Documents to the contrary, the completion and filing of the Final Verified Report with DSA by the Contractor is an express condition precedent to the District's disbursement of the Final Payment. If the Contractor fails to prepare and file the Final Verified Report with DSA within thirty (30) days of the determination of Final Completion, the District may in the sole and exclusive discretion of the District retain and withhold ten percent (10%) of the Final Payment from disbursement to the Contractor as damages for the failure of the Contractor to have timely and completely discharged its obligations hereunder. The Contractor acknowledges and agrees that the foregoing withholdings by the District is a reasonable estimate of the damages and other losses the District will sustain due to the failure of the Contractor to have timely and fully discharged its obligations hereunder.

ARTICLE 5: SUBCONTRACTORS

5.1 Subcontracts. Any Work performed for the Contractor by a Subcontractor shall be pursuant to a written agreement between the Contractor and such Subcontractor which specifically incorporates by reference the Contract Documents and which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents, including without limitation, the policies of insurance required under Article 6 of these General Conditions and obligates the Subcontractor to assume toward the Contractor all the obligations and responsibilities of the Contractor which by the Contract Documents the Contractor assumes toward the District and the Architect. The foregoing notwithstanding, no contractual relationship shall exist, or be deemed to exist, between any Subcontractor and the District, unless the Contract is terminated and District, in writing, elects to assume the Subcontract. Each Subcontract for a portion of the Work shall provide that such Subcontract may be assigned to the District if the Contract is terminated by the District pursuant to Article 15 hereof, subject to the prior rights of the Surety if the District terminates the Contract for the Contractor's default. The Contractor shall provide to the District copies of all executed Subcontracts and Purchase Orders to which Contractor is

a party within thirty (30) days after Contractor's execution of the Agreement. During performance of the Work, the Contractor shall, from time to time, as and when requested by the District, the Architect or the Project Manager provide the District with copies of any and all Subcontracts or Purchase Orders relating to the Work and all modifications thereto. The Contractor's failure or refusal, for any reason, to provide copies of such Subcontracts or Purchase Orders in accordance with the two preceding sentences is Contractor's default of a material term of the Contract Documents.

5.2 Subcontractor DIR Contractor Registration.

5.2.1 No Subcontractor Performance of Work Without DIR Registration. No portion of the Work is permitted to be performed by a Subcontractor unless the Subcontractor is a DIR Registered contractor. The foregoing DIR contractor registration requirement is applicable for all Subcontractors, including without limitation, lower tier Subcontractors and Subcontractors who are not identified in the Contractor's Subcontractors List.

5.2.2 Contractor Obligation to Verify Subcontractor DIR Registration Status. An affirmative and on-going obligation of the Contractor under the Contract Documents is the Contractor's verification that all Subcontractors are at all times during performance of the Work in full and strict compliance with DIR contractor registration requirements. The Contractor shall not permit or allow any Subcontractor to perform any Work without the Contractor's verification that the Subcontractor is in full and strict compliance with DIR contractor registration requirements.

5.2.3 Contractor Obligation to Request Substitution of Listed Subcontractor Who Is Not DIR Registered Contractor. If Contractor inadvertently identified a Subcontractor in the Contractor's Subcontractors List submitted with the Contractor's proposal for the Work whose DIR contractor registration lapses prior to or during a Subcontractor's performance of Work, the Contractor shall request the District's consent to substitute the Subcontractor who is not a DIR registered contractor pursuant to Labor Code § 1771.1(c)(3) and/or Labor Code § 1771.1(d).

5.2.4 Contractor/Subcontractor Penalties pursuant to Labor Code § 1771.1(g). "If the Labor Commissioner or his or her designee determines that a contractor or subcontractor engaged in the performance of any public work contract without having been registered in accordance with this section, the contractor or subcontractor shall forfeit, as a civil penalty to the state, one hundred dollars (\$100) for each day of work performed in violation of the registration requirement, not to exceed an aggregate penalty of eight thousand dollars (\$8,000) in addition to any penalty registration fee assessed pursuant to clause (ii) of subparagraph (E) of paragraph (2) of subdivision (a) of Section 1725.5."

5.2.5 Subcontractor Penalties pursuant to Labor Code § 1771.1 (h)(1). "In addition to, or in lieu of, any other penalty or sanction authorized pursuant to this chapter, a higher tiered public works contractor or subcontractor who is found to have entered into a subcontract with an unregistered lower tier subcontractor to perform any public work in violation of the requirements of Section 1725.5 or this section shall be subject to forfeiture, as a civil penalty to the state, of one hundred dollars (\$100) for each day the unregistered lower tier subcontractor performs work in violation of the registration requirement, not to exceed an aggregate penalty of ten thousand dollars (\$10,000)."

5.3 Substitution of Listed Subcontractor.

5.3.1 Substitution Process. Request of the Contractor to substitute a listed Subcontractor will be considered only if in strict conformity with this Article 5.3 and California Public Contract Code § 4107. All costs incurred by the District, including without limitation, costs of the Project Inspector, the Architect, the Project Manager or attorney's fees in the review and evaluation of a request to substitute a listed Subcontractor shall be borne by the Contractor; such costs may be deducted by the District from the Contract Price then or thereafter due to the Contractor.

5.3.2 Responsibilities of Contractor Upon Substitution of Subcontractor. The District's consent to Contractor's substitution of a listed Subcontractor shall not relieve Contractor from its obligation to complete the Work within the Contract Time and for the Contract Price. The substitution of a listed Subcontractor shall not, under any circumstance, result in, or give rise to any to any increase of the Contract Price or the Contract Time on account of such substitution. If the District consents to substitution of a listed Subcontractor, the Project Manager and the Architect shall determine the extent to which, if any, revised or additional Submittals will be required of the newly substituted Subcontractor ("Substituted Subcontractor"). If the Architect determines that revised or additional Submittals are required of a Substituted Subcontractor, the Architect shall promptly notify the Project Manager and the Contractor, in writing, of such requirement. In such event, revised or additional Submittals shall be submitted to Project Manager, and forwarded to the Architect not later than thirty (30) days following the date of the Architect's written notice to the Contractor pursuant to the foregoing sentence; provided that if in the reasonable and good faith judgment of the Architect, the progress of the Work or completion of the Work requires submission of additional or revised Submittals by a Substituted Subcontractor in less than thirty (30) days, the Architect shall so state in its written notice to the Contractor. If the revised or additional Submittals are not submitted by Contractor within thirty (30) days, or such earlier time as determined by the Architect pursuant to the preceding sentence, following the Architect's written notice of the requirement for revised or additional Submittals, Contractor shall be subject to the per diem assessments for late Submittals as set forth in Article 4.7.2.1 of these General Conditions. Any revised or additional Submittals required pursuant to this Article 5.3.2 shall conform to the requirements of Article 4.7 of these General Conditions. Contractor shall reimburse the District for all fees and costs, including without limitation fees of the Architect, the District's administrative costs and DSA fees, incurred or associated with the processing, review and evaluation of any revised or additional Submittals required pursuant to this Article 5.3.2; the District may deduct such fees and costs from any portion of the Contract Price then or thereafter due the Contractor. In the event that additional or revised Submittals are required pursuant to this Article 5.3.2, such requirement shall not result in an increase to the Contract Time or the Contract Price.

5.4 Subcontractors' Work. Whenever the Work of a Subcontractor is dependent upon the Work of the Contractor or another Subcontractor, the Contractor shall require the Subcontractor to: (i) coordinate its Work with the dependent Work; (ii) provide necessary dependent data and requirements; (iii) supply and/or install items to build into the dependent Work of others; (iv) make appropriate provisions for dependent Work of others; (v) carefully examine and understand the portions of the Contract Documents (including Drawings, Specifications and Field Clarifications) and Submittals relating to the dependent Work; and (vi) examine the existing dependent Work and verify that the dependent Work

is in proper condition for the Subcontractor's Work. If the dependent Work is not in a proper condition, the Subcontractor shall notify the Contractor in writing and not proceed with the Subcontractor's Work until the dependent Work has been corrected or replaced and is in a proper condition for the Subcontractor's Work.

ARTICLE 6: INSURANCE; INDEMNITY; BONDS

6.1 Workers' Compensation Insurance; Employer's Liability Insurance. The Contractor shall purchase and maintain Workers' Compensation Insurance as will protect the Contractor from claims under workers' or workmen's compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. Contractor shall purchase and maintain Employer's Liability Insurance covering bodily injury (including death) by accident or disease to any employee which arises out of the employee's employment by Contractor. The Employer's Liability Insurance required of Contractor hereunder may be obtained by Contractor as a separate policy of insurance or as an additional coverage under the Workers' Compensation Insurance required to be obtained and maintained by Contractor hereunder. The limits of liability for the Employer's Liability Insurance required hereunder shall be as set forth in the Special Conditions.

6.2 Commercial General Liability and Property Insurance. The Contractor shall purchase and maintain Commercial General Liability and Property Insurance covering the types of claims set forth below which may arise out of or result from Contractor's operations under the Contract Documents and for which the Contractor may be legally responsible: (i) claims for damages because of bodily injury, sickness or disease or death of any person other than the Contractor's employees; (ii) claims for damages insured by usual personal injury liability coverage which are sustained (a) by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor, or (b) by another person; (iii) claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom; (iv) claims for damages because of bodily injury, death of a person or property damages arising out of ownership, maintenance or use of a motor vehicle; (v) contractual liability insurance applicable to the Contractor's obligations under the Contract Documents; (vi) Completed Operations; and (vii) pollution liability.

6.3 Builder's Risk "All-Risk" Insurance. The Contractor, during the progress of the Work and until Final Acceptance of all Work by the District, shall maintain Builder's Risk "All-Risk" Completed Value Insurance Coverage on all insurable Work included under the Contract Documents which coverage is to provide extended coverage and insurance against vandalism and malicious mischief, perils of fire, sprinkler leakage, civil authority, sonic boom, collapse and flood upon the entire Work which is the subject of the Contract Documents, and including completed Work and Work in progress to the full insurable value thereof. Contractor's Builders Risk Insurance shall include coverage and insurance against the perils of earthquake if so indicated in the Special Conditions. Such insurance shall include the District as an additional named insured, and any other person with an insurable interest designated by the District as an additional named insured. The risk of damage to the Work due to the perils covered by the Builder's Risk "All Risk" Insurance, as well as any other hazard which might result in damage to the Work, is that of the Contractor and the Surety, and no claims for such loss or damage shall be recognized by

the District, nor will such loss or damage excuse the complete and satisfactory performance of the Contract by the Contractor.

6.4 Coverage Amounts. The insurance required of the Contractor hereunder shall be written for not less than any limits of liability specified in the Contract Documents, or required by law, whichever is greater. In the event of any loss or damage covered by a policy of insurance required to be obtained and maintained by the Contractor hereunder, the Contractor shall be solely and exclusively responsible for the payment of the deductible, if any, under such policy of insurance, without adjustment to the Contract Price on account thereof.

6.5 Required Qualifications of Insurers. The Contractor and Subcontractors' policies of Commercial General Liability and Property/Casualty insurance and the Contractor's Builders Risk insurance will be accepted by the District only if the insurer(s) are: (a) A.M. Best rated A- or better; (b) A.M. Best Financial Size Category VII or higher; and (c) authorized under California law to transact business in the State of California and authorized to issue insurance policies in the State of California. If at any time during performance of the Work, the insurer(s) issuing a policy of insurance covering Commercial General Liability or Property/Casualty is/are not A.M. Best rated A- or better and is/are not A.M. Best Financial Size Category VII or higher, the Contractor or Subcontractor, as applicable shall within thirty (30) days of the District's written notice of the insufficiency of an insurer to the Contractor, obtain insurance coverage(s) from alternative insurer(s) who is/are then A.M. Best rated A- or better and who is/are A.M. Best Financial Size Category VII or higher. If the Contractor fails to deliver Certificate(s) of Insurance from an alternative insurer(s) meeting or exceeding the A.M. Best rating and A.M. Best Financial Size Category set forth above, within thirty (30) days of the date of the District's issuance of a written notice pursuant to the preceding sentence, in addition to any other right or remedy of the District under the Contract Documents or arising by operation of law, the District may withhold disbursement of any Progress Payment otherwise due hereunder until the Contractor has delivered such Certificate(s) of Insurance from an alternative insurer(s).

6.6 Evidence of Insurance; Subcontractor's Insurance.

6.6.1 Certificates of Insurance. Prior to commencing the Work, Contractor shall deliver to the District Certificates of Insurance evidencing the insurance coverages required by the Contract Documents. Failure or refusal of the Contractor to so deliver Certificates of Insurance may be deemed by the District to be a default of a material obligation of the Contractor under the Contract Documents, and thereupon the District may proceed to exercise any right or remedy provided for under the Contract Documents or at law. The Certificates of Insurance and the insurance policies required by the Contract Documents shall contain a provision that coverages afforded under such policies will not be canceled or allowed to expire until at least thirty (30) days prior written notice has been given to the District. The insurance policies required of Contractor hereunder shall also name the District as an additional insured as its interests may appear. The additional Insured acknowledgement shall be submitted as a separate declaration from the Contractor's insurance provider (ACCORD form modifications are not acceptable). Should any policy of insurance be canceled before Final Acceptance of the Work by the District and the Contractor fails to immediately procure replacement insurance as required, the District reserves the right to procure such insurance and to deduct the premium cost thereof and other costs incurred by the District in

connection therewith from any sum then or thereafter due the Contractor under the Contract Documents. The Contractor shall, from time to time, furnish the District, when requested, with satisfactory proof of coverage of each type of insurance required by the Contract Documents; failure of the Contractor to comply with the District's request may be deemed by the District to be a default of a material obligation of the Contractor under the Contract Documents.

6.6.2 Subcontractors' Insurance. Contractor shall require that every Subcontractor, to obtain and maintain the policies of insurance set forth in Articles 6.1 and 6.2 of these General Conditions; the coverages and limits of liability of such policies of insurance to be obtained and maintained by Subcontractors shall be as set forth in the Special Conditions. The policies of insurance to be obtained and maintained by Subcontractors hereunder are in addition to, and not in lieu of, Contractor obtaining and maintaining such policies of insurance. Each of the policies of insurance obtained and maintained by a Subcontractor hereunder shall conform to the requirements of this Article 6. Upon request of the District, Contractor shall promptly deliver to the District Certificates of Insurance evidencing that the Subcontractors have obtained and maintained policies of insurance in conformity with the requirements of this Article 6. Failure or refusal of the Contractor to provide the District with Subcontractors' Certificates of Insurance evidencing the insurance coverages required hereunder is a material default of Contractor hereunder.

6.7 Maintenance of Insurance. Any insurance bearing on the adequacy of performance of Work shall be maintained after the District's Final Acceptance of all of the Work for the full one year correction of Work period and any longer specific guarantee or warranty periods set forth in the Contract Documents. Should such insurance be canceled before the end of any such periods and the Contractor fails to immediately procure replacement insurance as specified, the District reserves the right to procure such insurance and to charge the cost thereof to the Contractor. Nothing contained in these insurance requirements is to be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from its operations or performance of the Work under the Contract Documents, including without limitation the Contractor's obligation to pay Liquidated Damages. In no instance will the District's exercise of its option to occupy and use completed portions of the Work relieve the Contractor of its obligation to maintain insurance required under this Article until the date of Final Acceptance of the Work by the District, or such time thereafter as required by the Contract Documents. The insurer providing any insurance coverage required hereunder shall be to the reasonable satisfaction of the District.

6.8 Contractor's Insurance Primary. All insurance and the coverages thereunder required to be obtained and maintained by Contractor hereunder, if overlapping with any policy of insurance maintained by the District, shall be deemed to be primary and non-contributing with any policy maintained by the District and any policy or coverage thereunder maintained by District shall be deemed excess insurance. To the extent that the District maintains a policy of insurance covering property damage arising out of the perils of fire or other casualty covered by the Contractor's Builder's Risk Insurance or the Comprehensive General Liability Insurance of the Contractor or any Subcontractor, the District, Contractor and all Subcontractors waive rights of subrogation against the others. The costs for obtaining and maintaining the insurance coverages required herein shall be included in the Contract Price.

6.9 Indemnity. Unless arising solely out of the active negligence, gross negligence or willful misconduct the District or the Architect, the Contractor shall indemnify, defend and hold harmless the Indemnified Parties who are: (i) the District and its Board of Trustees, officers, employees, agents and representatives (including the District's Inspector); (ii) the Architect its respective agents and employees; and (iii) if one is designated by the District for the Work, the Project Manager and its agents and employees. The Contractor's obligations hereunder includes indemnity, defense and hold harmless of the Indemnified Parties from and against any and all damages, losses, claims, demands or liabilities whether for damages, losses or other relief, including, without limitation attorney's fees and costs which arise, in whole or in part, from the Work, the Contract Documents or the negligent, grossly negligent or willful acts, omissions or other conduct of the Contractor, any Subcontractor or any person or entity engaged by them for the Work. The Contractor's obligations under the foregoing include without limitation: (i) injuries to or death of persons; (ii) damage to property; or (iii) theft or loss of property; (iv) Stop Payment Notice claims asserted by any person or entity in connection with the Work; and (v) other losses, liabilities, damages or costs resulting from, in whole or part, any acts, omissions or other conduct of Contractor, any of Contractor's Subcontractors, of any tier, or any other person or entity employed directly or indirectly by Contractor in connection with the Work and their respective agents, officers or employees. If any action or proceeding, whether judicial, administrative, arbitration or otherwise, shall be commenced on account of any claim, demand or liability subject to Contractor's obligations hereunder, and such action or proceeding names any of the Indemnified Parties as a party thereto, the Contractor shall, at its sole cost and expense, defend the named Indemnified Parties in such action or proceeding with counsel reasonably satisfactory to the named Indemnified Parties. In the event that there shall be any judgment, award, ruling, settlement, or other relief arising out of any such action or proceeding to which any of the Indemnified Parties are bound by, Contractor shall pay, satisfy or otherwise discharge any such judgment, award, ruling, settlement or relief; Contractor shall indemnify and hold harmless the Indemnified Parties from any and all liability or responsibility arising out of any such judgment, award, ruling, settlement or relief. The Contractor's obligations hereunder are binding upon Contractor's Performance Bond Surety and these obligations shall survive notwithstanding Contractor's completion of the Work or the termination of the Contract.

6.10 Payment Bond; Performance Bond. Prior to commencement of the Work, the Contractor shall furnish a Performance Bond as security for Contractor's faithful performance of the Contract and a Labor and Material Payment Bond as security for payment of persons or entities performing work, labor or furnishing materials in connection with Contractor's performance of the Work under the Contract Documents. The penal sum of the Performance Bond and the Payment Bond shall each be one hundred percent (100%) of the Contract Price. Said Labor and Material Payment Bond and Performance Bond shall be in the form and content set forth in the Contract Documents. The failure or refusal of the Contractor to furnish either the Performance Bond or the Labor and Material Payment Bond in strict conformity with this Article 6.10 may be deemed by the District as a default by the Contractor of a material obligation hereunder. Upon request of the Contractor, the District may consider and accept, but is not obligated to do so, multiple sureties on such bonds. The Surety on any bond required under the Contract Documents shall be an Admitted Surety Insurer as that term is defined in California Code of Civil Procedure §995.120.

ARTICLE 7: CONTRACT TIME

7.1 Substantial Completion of the Work Within Contract Time. Unless otherwise expressly provided in the Contract Documents, the Contract Time is the period of time, including authorized adjustments thereto, allotted in the Contract Documents for achieving Substantial Completion of the Work. The date for commencement of the Work is the date established by the Notice to Proceed issued by the District pursuant to the Agreement, which shall not be postponed by the failure to act of the Contractor or of persons or entities for whom the Contractor is responsible. The date of Substantial Completion is the date certified by the Architect and the Project Inspector as such in accordance with the Contract Documents. References in the Contract Documents to the Contract Time shall be deemed references to the Contract Time for the Contractor to achieve Substantial Completion of the Work of the Project, as set forth in the Special Conditions.

7.2 Progress and Completion of the Work.

7.2.1 Time of Essence. Time limits stated in the Contract Documents are of the essence. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing and achieving Substantial Completion of the Work. The Contractor shall employ and supply a sufficient force of workers, material and equipment, and prosecute the Work with diligence so as to maintain progress, to prevent Work stoppage and to achieve Substantial Completion of the Work within the Contract Time. The Work may require Contractor to perform in different areas of the Site simultaneously in order to achieve Substantial Completion of the Work within the Contract Time. As each area becomes available, Contractor shall begin work in those respective areas with additional crews, if necessary, to avoid a reduction of effort in other areas already under construction. The Contract Price shall not be subject to adjustment on account of any action or activity of the Contractor to perform Work simultaneously in different areas of the Site.

7.2.2 Substantial Completion. Substantial Completion is that stage in the progress of the Work when the Work or any designated portion thereof (whether described as milestones, phases, segments or other similar terms) is complete in accordance with the Contract Documents so the District can occupy or use the Work or designated portion thereof for its intended purpose. Substantial Completion shall be determined by the Architect, Project Manager, if any, and the Project Inspector upon request by the Contractor in accordance with the Contract Documents. The good faith and reasonable determination of Substantial Completion by the Project Inspector, Project Manager and the Architect shall be controlling and final.

7.2.3 Correction or Completion of the Work After Substantial Completion.

7.2.3.1 Punch list. Upon achieving Substantial Completion of the Work, the District, the Project Inspector, the Project Manager, the Architect and the Contractor shall jointly inspect the Work and prepare a comprehensive list of items of the Work to be corrected or completed by the Contractor ("the Punch list"). The exclusion of, or failure to include, any item on the Punch list shall not alter or limit the obligation of the Contractor to complete or correct any portion of the Work in accordance with the Contract Documents.

7.2.3.2 Time for Completing Punch list Items. In addition to establishing the Punch list items pursuant to Article 7.2.3.1, the Project Manager, Contractor and Architect shall, after the joint inspection, establish a

reasonable time for Contractor's completion of all Punch list items. If mutual agreement is not reached to establish the time for the Contractor's completion of Punch list items, the Project Manager shall determine such time, and in such event, the time determined by the Project Manager shall be final and binding upon the District and Contractor so long as the Project Manager's determination is made in good faith. The Contractor shall promptly and diligently proceed to complete all Punch list items within the time established. If the Contractor fails or refuses, for any reason, to complete all Punch list items within the time established, Contractor shall be subject to assessment of Liquidated Damages in accordance with Article 7.5 hereof. The foregoing notwithstanding, if the Contractor fails or refuses to complete all Punch list items, the District may in its sole and exclusive discretion and without further notice to Contractor, elect to cause the completion of all remaining Punch list items provided, however that such election by the District is in addition to and not in lieu of any other right or remedy of the District under the Contract Documents or at law. If the District elects to complete Punch list items of the Work, pursuant to the foregoing, Contractor shall be responsible for all costs incurred by the District in connection herewith, and the District may deduct such costs from the Contract Price then or thereafter due to the Contractor, if these costs exceed the remaining Contract Price due to the Contractor, the Contractor and the Performance Bond Surety are jointly and severally liable to District for any such excess costs.

7.2.4 Final Completion. Final Completion is that stage of the Work when all Work has been completed in accordance with the Contract Documents, including without limitation, all Punch list items noted upon Substantial Completion, and the Contract has been otherwise fully performed by the Contractor. Final Completion shall be determined by the Architect, Project Manager, if any and the Project Inspector upon request of the Contractor. The good faith and reasonable determination of Final Completion by the Project Inspector, Project Manager and the Architect shall be controlling and final.

7.2.5 Contractor Responsibility for Multiple Inspections. If the Contractor requests determination of Substantial Completion or Final Completion by the Project Inspector, Project Manager, if any, and the Architect and it is determined by the Project Inspector, Project Manager, if any, or the Architect that the Work does not then justify certification of Substantial Completion or Final Completion and re-inspection is required at a subsequent time to make such determination, the Contractor shall be responsible for all costs of such re-inspection, including without limitation, the fees of the Architect, Project Manager, if any, and the Project Inspector. The District may deduct such costs from the Contract Price then due or thereafter due to the Contractor.

7.2.6 Final Acceptance. Final Acceptance of the Work shall occur upon approval of the Work by the District's Board of Trustees; such approval shall be submitted for adoption at the next regularly scheduled meeting of the District's Board of Trustees after the determination of Final Completion. The commencement of any warranty or guarantee period under the Contract Documents is the date upon which the District's Board of Trustees approves of the Final Acceptance of the Work.

7.3 Construction Schedule.

7.3.1 Construction Schedule Terms Defined.

7.3.1.1 Bid Schedule. The term “Bid Schedule” refers to the Construction Schedule issued with the Bid Documents, which shall be used by Bidders and their respective Subcontractors for preparation of Bidders’ Bid Proposals.

7.3.1.2 Preliminary Baseline Construction Schedule. The term “Preliminary Baseline Construction Schedule” refers to the Construction Schedule issued by the Project Manager, within ten (10) days after the Notice to Proceed is issued by or on behalf of the District to a Contractor. The Preliminary Baseline Construction Schedule may incorporate modifications to the Bid Schedule, which do not affect critical path activity durations, but may adjust the date(s) for achieving Substantial Completion and Final Completion of the Work if the date of the issuance of the Notice to Proceed has varied from that indicated in the Bid Schedule.

7.3.1.3 Baseline Construction Schedule. The term “Baseline Construction Schedule” refers to the Construction Schedule developed and prepared by the Project Manager based upon the proposed modifications or other comments of the Contractor to the Preliminary Baseline Construction Schedule. The Baseline Construction Schedule, upon issuance by the Project Manager, shall be used to manage and coordinate the Work of the Contractor and to monitor the progress of construction activities until an Updated Construction Schedule is issued.

7.3.1.4 Updated Construction Schedule. The term “Updated Construction Schedule” refers to all Construction Schedules prepared and issued by the Project Manager after issuance of the Baseline Construction Schedule. Work of the Contractor shall conform to the then most recent Updated Construction Schedule. Actions of the Contractor necessary to conform the progress of the Contractor’s Work with the then current Updated Construction Schedule shall be undertaken and completed as directed by the Project Manager without adjustment of the Contract Price or the Contract Time.

7.3.1.5 Recovery Schedule. The term “Recovery Schedule” refers to a Construction Schedule for the Work to identify and establish the activities and other actions necessary for the Contractor to recover lost time due to delays to the progress of the Contractor’s Work, ability to meet Milestones and/or Project completion dates/requirements. A material obligation of the Contractor is its preparation of a Recovery Schedule as directed by the Project Manager including, without limitation, the incorporation of requirements therein as directed by the Project Manager. If directed by the Project Manager to prepare a Recovery Schedule, the Contractor’s submittal of the Recovery Schedule for review and acceptance by the Project Manager within the time established by the Project Manager is a material obligation of the Contractor under the Contract Documents. If a Contractor is directed by the Project Manager to prepare a Recovery Schedule, the Contractor shall modify the Recovery Schedule as necessary to obtain the Project Manager’s acceptance of the entirety thereof. If a Contractor fails or refuses to prepare a Recovery Schedule as directed by the Project Manager, the Project Manager may, at the cost and expense of the Contractor, develop a Recovery Schedule on behalf of the Contractor. In such event, a material obligation of the Contractor shall be

its implementation of all measures necessary to conform to the rate of progress to that indicated in the Recovery Schedule prepared by the Project Manager; and the Contractor's reimbursement to the District of the costs and expenses incurred to prepare such Recovery Schedule, provided that in lieu of such reimbursement and at the sole election and discretion of the District such costs and expenses may be deducted from any portion of the Contract Price then or thereafter due the Contractor. Neither the preparation of Recovery Schedules nor the actions of the Contractor necessary to comply and conform to the progress indicated in a Recovery Schedule accepted by the Project Manager (or prepared by the Project Manager upon failure or refusal of the Contractor to prepare a Recovery Schedule) shall result in adjustment of the Contract Time or the Contract Price.

7.3.1.6 Construction Schedule(s). The term "Construction Schedule(s)" as used in the Contract Documents refers collectively to the Bid Schedule, Preliminary Baseline Construction Schedule, Baseline Construction Schedule, and Updated Construction Schedule.

7.3.1.7 Three (3) Week Look Ahead Schedules. The term "Three Week Look Ahead Schedules" refers to the detailed schedule of construction activities prepared by the Contractor for the ensuing three (3) week period; construction activities indicated in each Contractor's Three Week Look Ahead Schedules shall conform to the then current Updated Construction Schedule.

7.3.2 Bid Schedule. The Bid Schedule is for bidding purposes to establish preliminary contract durations of various activities necessary to complete the Work of the Project. The scheduling and coordination of the Work shall be by the Project Manager. Without adjustment of the Contract Price or the Contract Time, the Contractor shall comply with the Project Manager's directives regarding the scheduling, sequencing and coordination of the Work. The District expressly reserves the right to modify the Bid Schedule based upon input from the Contractor or other Project requirements. The Contractor acknowledges and agrees that modifications to the Bid Schedule after award of the Contract shall not be a basis for adjustment of the Contract Time or the Contract Price.

7.3.3 Preliminary Schedules. Within fourteen (14) days following issuance of the Notice to Proceed, the Project Manager shall arrange a Project Schedule meeting with the Contractor to review a Preliminary Baseline Schedule. This Preliminary Baseline Schedule shall include any modifications incorporated since development of the Bid Schedule. Within seven (7) days after the Project Schedule meeting, the Contractor shall prepare and submit to the Project Manager all revisions and recommendations to the Preliminary Baseline Schedule and Submittal Schedule indicating, in graphic form, the estimated rate of progress, manpower required (estimated men per day) and sequence of all Work as required under the Contract Documents. The Contractor acknowledges and agrees that its proposed modifications to the Preliminary Baseline Schedule and/or Submittal Schedule are subject to acceptance by the District and the Project Manager in the sole and exclusive discretion of the District and the Project Manager. The Contractor may submit proposed revisions to the Preliminary Baseline Schedule depicting completion of the Work of the Contractor in a duration shorter than the Contract Time established; provided that if such proposed modifications to the Preliminary Baseline Schedule are accepted, such acceptance shall not be a basis for

adjustment to the Contract Price in the event that completion of the Work shall occur after the time depicted therein, nor shall revisions to the Preliminary Baseline Schedule be the basis for any extension of the Contract Time. The Contractor may not submit proposed revisions which shorten the Architect's review time for submittals. If the Contractor does not propose modifications or other recommendations relating to the Preliminary Baseline Schedule and Submittal Schedule within seven (7) days after the Project Schedule meeting, the Preliminary Baseline Schedule and Submittal Schedule shall be deemed to be accepted by the Contractor. The Project Manager shall review, incorporate, or reject the proposed modifications to the Preliminary Baseline Schedules and Submittal Schedule and issue the Baseline Construction Schedule within fourteen (14) days of receipt of Contractor's information stated herein.

7.3.4 Baseline Construction Schedule. Based upon the approved input to the Preliminary Baseline Schedule for the entirety of the Project, the Project Manager will ~~develop~~ and issue the Baseline Construction Schedule. **The Baseline Construction Schedule shall control and govern over the sequencing and scheduling noted in the Bid Schedule.** The Work shall conform to the Baseline Construction Schedule, including updates and/or revisions thereto. The Baseline Construction Schedule shall be reviewed and updated on a monthly basis at Project meeting(s) held periodically during the progress of the Work. If the Work appears to be delayed such that the Work will not comply with required milestone dates, the Substantial Completion date and/or the Project completion date set forth in the Baseline Construction Schedule(s), the Contractor shall be liable and assessed Liquidated Damages in accordance with the terms and provisions of the Agreement and these General Conditions. The District shall not be liable nor obligated to the Contractor for the payment of any costs, charges, fees, or expenses arising out of or related in any manner to extended overhead, general conditions, impact costs, home-office costs, out-of-sequence Work, money or any other type of compensation, by any name or characterization, for any delay to any activity not designated as a critical path item on the latest approved Construction Schedule(s). If any delay occurs to any critical path item, compensation to the Contractor, if any, impacted by delays to a critical path item shall only be in strict conformity with applicable provisions of the Contract Documents.

7.3.5 Updated Construction Schedules. In the event that the progress of the Work or the sequencing of the activities of the Work shall materially differ from that indicated in the Baseline Construction Schedule, the Project Manager may direct the Contractor to propose revisions to update the approved Baseline Construction Schedule. The Contractor shall prepare and submit, within two (2) days of the Project Manager's directive, to the Project Manager revised input, in graphic form, to the Baseline Construction Schedule. The Contractor may request consent of the Project Manager to revise the approved Baseline Construction Schedule. Any such request shall be considered by the Project Manager and District only if in writing setting forth the Contractor's proposed revision(s) to the Baseline Construction Schedule and the reason(s) therefore. The Project Manager and District may consent to, or deny, any such request of the Contractor to revise the Baseline Construction Schedule in its reasonable discretion. Also, the Project Manager may incorporate elements of the Three (3) Week Look Ahead Schedules, as described below, into the Updated Construction Schedule. The Project Manager will incorporate accepted revisions to the Baseline Construction Schedule and issue an Updated Construction Schedule.

7.3.6 Recovery Schedules. The Contractor working on critical path items or whose progress of Work is behind the progress indicated in the current Updated Construction Schedule shall monitor and update the most recently approved Updated Construction Schedule on a monthly basis, (or more frequently as required) by the conditions or progress of the Work, or as may be requested by the Project Manager. The Contractor shall provide the Project Manager with updated Recovery Schedules indicating utilized and projected manpower, progress achieved and activities commenced or completed within the prior Updated Construction Schedule. The Contractor must also provide a written and/or graphic plan to the Project Manager, within 48 hours of request, that recovers lost time to achieve the milestone dates and sequencing of activities established in the most recent Updated Construction Schedule. The Project Manager may direct the sequence for performance of various portions of Work and may adjust the Construction Schedule(s) at any time the Project Manager considers the completion date to be in jeopardy because of “activities behind schedule”. Without adjustment of the Contract Time or the Contract Price, the Contractor shall comply and perform in accordance with revisions to the Construction Schedule(s) issued by the Project Manager hereunder, and if directed by the Project Manager, shall take all necessary measures to recover the lost time including, without limitation, increasing its labor force, its supervision force, the number of work shifts, overtime, work on weekends and holidays, increasing the equipment on the Project, revising or modifying its construction procedures and sequences, and/or any other measures which the Project Manager considers necessary. If requested by the Project Manager, the Contractor shall also submit, with its updates, a narrative statement including a description of current and anticipated problem areas of the Work, delaying factors and their impact, and an explanation of corrective action taken or proposed by the Contractor. The District may, from time to time, and in the District’s sole and exclusive discretion, transmit to the Contractor’s Performance Bond Surety the Construction Schedule, any updates thereof and the narrative statement described hereinabove. The District’s election to transmit, or not to transmit such information, to the Contractor’s Performance Bond Surety shall not limit the Contractor’s obligations under the Contract Documents.

7.3.7 Three (3) Week Look Ahead Schedules. The Contractor shall prepare and submit at each Weekly Construction Meeting, a Three (3) Week Look Ahead Schedule for the Work. The Three (3) Week Look Ahead Schedule shall provide additional definition of manpower, activities and sequencing to that identified on the then current updated Construction Schedule. The form, content and extent of detail in the Contractor’s Three (3) Week Look Ahead Schedules shall be in accordance with the directives and instructions of the Project Manager. Failure of the Contractor to provide a Three (3) Week Look Ahead Schedule may be deemed by the District as the Contractor’s default in the performance of a material obligation of the Contractor under Contract Documents.

7.3.8 Cost of Scheduling. Any and all costs or expenses required or incurred to prepare, submit, maintain, and update the Construction, Recovery or Three (3) Week Look Ahead Schedules shall be solely at the expense of the Contractor without adjustment to the Contract Price. The Contract Price shall not be subject to adjustment on account of costs, fees or expenses incurred or associated with the Contractor’s preparation, submittal, and maintenance or updating of the Construction Schedules. If the Contractor does not comply with the District’s request for an Updated Construction Schedule, the District may have the update

completed by others at the Contractor's expense. In such event, the updated Construction Schedule shall be deemed binding upon the Contractor and the District may deduct all costs, fees or expenses in preparing such updated Construction Schedule(s) from any portion of the Contract Price then or thereafter due to the Contractor.

7.3.9 Scheduling Software & Requirements. Unless otherwise provided in the Special Conditions, the Construction Schedules required under this Article 7 shall; (i) be prepared with a commercially available computer software program in a critical path format; (ii) indicate the date(s) for commencement and completion of various portions of the Work including without limitation, procurement, fabrication and delivery of major items, materials or equipment; (iii) indicate manpower (estimated men per day) and other resources required for completion of each scheduled activity; (iv) indicate costs for completion of each scheduled activity; and (v) identify each Submittal required by the Contract Documents, the date for the Contractor's submission of each Submittal and the date for the return of the reviewed Submittal to the Contractor.

7.3.10 Float. As used herein, "float time" shall be deemed to refer to the time between earliest finish date and the latest finish date of each activity shown on the Construction Schedule. If the Construction Schedules required under this Article 7 incorporate therein any "float" time, such float shall be deemed to jointly belong to and be owned by the District and the Contractor. If the construction progress is ahead of schedule based on the Construction Schedule(s) and a delay is encountered (even if such delay is a District caused delay), no compensation of any type will be due to the Contractor, and the District may claim float days equal to the delay until such float days are exhausted and the delay extends the overall project substantial completion date.

7.4 Adjustment of Contract Time. If Substantial Completion is delayed, adjustment, if any, to the Contract Time on account of such delay shall be in accordance with this Article 7.4.

7.4.1 Excusable Delays. If Substantial Completion of the Work is delayed by Excusable Delays, the Contract Time shall be subject to adjustment for such reasonable period of time as determined by the Project Manager and the Architect; Excusable Delays shall not result in any increase in the Contract Price. Excusable Delays refer to unforeseeable and unavoidable casualties or other unforeseen causes beyond the control, and without fault or neglect, of the Contractor, any Subcontractor, Material Supplier or other person directly or indirectly engaged by the Contractor in performance of any portion of the Work. Excusable Delays include unanticipated and unavoidable labor disputes, unusual and unanticipated delays in transportation of equipment, materials or Construction Equipment reasonably necessary for completion and proper execution of the Work, unanticipated unusually severe weather conditions, DSA directive to stop the Work or a pandemic or epidemic, including but not limited to COVID-19. Neither the financial resources of the Contractor or any person or entity directly or indirectly engaged by the Contractor in performance of any portion of the Work shall be deemed conditions beyond the control of the Contractor. If an event of Excusable Delay occurs, the Contract Time shall be subject to adjustment hereunder only if the Contractor establishes: (i) full compliance with all applicable provisions of the Contract Documents relative to the method, manner and time for Contractor's notice and request for adjustment of the Contract Time; (ii) that the event(s)

forming the basis for Contractor's request to adjust the Contract Time are outside the reasonable control and without any fault or neglect of the Contractor or any person or entity directly or indirectly engaged by Contractor in performance of any portion of the Work; and (iii) that the event(s) forming the basis for Contractor's request to adjust the Contract Time directly and adversely impacted the progress of the Work as indicated in the Approved Construction Schedule or the most recent updated Approved Construction Schedule relative to the date(s) of the claimed event(s) of Excusable Delay. The foregoing provisions notwithstanding, if the Special Conditions set forth a number of "Rain Days" to be anticipated during performance of the Work, the Contract Time shall not be adjusted for rain related unusually severe weather conditions until and unless the actual number of Rain Days during performance of the Work exceeds those noted in the Special Conditions and such additional Rain Days directly and adversely impact the critical path progress of the Work as depicted in the Approved Construction Schedule or the most recent updated Approved Construction Schedule relative to the date(s) of such additional Rain Days. Any and all District approved COVID-19 or other pandemic or epidemic delays shall be excusable, non-compensable delays.

7.4.2 Compensable Delays. If Substantial Completion of the Work is delayed and such delay is caused by the acts or omissions of the District, the Architect, or separate contractor employed by the District (collectively "Compensable Delays"), upon Contractor's request and notice, in strict conformity with Articles 7 and 9 of these General Conditions, the Contract Time will be adjusted by Change Order for such reasonable period of time as determined by the Architect and the District. In accordance with California Public Contract Code § 7102, if the Contractor's progress is delayed by any of the events described in the preceding sentence, Contractor shall not be precluded from the recovery of damages directly and proximately resulting therefrom, provided that the District is liable for the delay, the delay is unreasonable under the circumstances involved and the delay was not within the reasonable contemplation of the District and the Contractor at the time of execution of the Agreement. In such event, Contractor's damages, if any, shall be limited to direct, actual and unavoidable additional costs of labor, materials or Construction Equipment directly resulting from such delay, and shall exclude indirect or other consequential damages, including without limitation, home office expenses, bond capacity impairment or loss of prospective economic advantage. Except as expressly provided for herein, Contractor shall not have any other claim, demand or right to adjustment of the Contract Price arising out of delay, interruption, hindrance or disruption to the progress of the Work. Adjustments to the Contract Price and the Contract Time, if any, on account of Changes to the Work or Suspension of the Work shall be governed by the applicable provisions of the Contract Documents, including without limitation, Articles 9 and 14 of these General Conditions.

7.4.3 Inexcusable Delays. Inexcusable Delays refer to any delay to the progress of the Work caused by events or factors other than those specifically identified in Articles 7.4.1 and 7.4.2 above. Neither the Contract Price nor the Contract Time shall be adjusted on account of Inexcusable Delays.

7.4.4 Procedure for Adjustment of Contract Time. The Contract Time shall be subject to adjustment only in strict conformity with applicable provisions of the Contract Documents. Failure of Contractor to request adjustment(s) of the Contract Time in strict conformity with applicable provisions of the Contract Documents shall be deemed Contractor's waiver of the same.

7.4.5 Limitations Upon Adjustment of Contract Time on Account of Delays. Any adjustment of the Contract Time on account of an Excusable Delay or a Compensable Delay shall be limited as set forth herein. If an Excusable Delay and a Compensable Delay occur concurrently, the maximum extension of the Contract Time shall be the number of days from the commencement of the first delay to the cessation of the delay which ends last. If an Inexcusable Delay occurs concurrently with either an Excusable Delay or a Compensable Delay, the maximum extension of the Contract Time shall be the number of days, if any, which the Excusable Delay or the Compensable Delay exceeds the period of time of the Inexcusable Delay. In addition to the foregoing limitations upon extension of the Contract Time, no adjustment of the Contract Time shall be made on account of any Excusable Delays or Compensable Delays unless such delay(s) actually and directly impact Work or Work activities on the critical path of the then current and updated Approved Construction Schedule as of the date on which such delay first occurs. The District shall not be deemed in breach of, or otherwise in default of any obligation hereunder, if the District shall deny any request by the Contractor for an adjustment of the Contract Time for any delay which does not actually and directly impact Work or Work activities on the critical path of the then current and updated Approved Construction Schedule.

7.5 Liquidated Damages. Should the Contractor neglect, fail or refuse to: (i) submit Submittals in accordance with the Approved Construction Schedule; (ii) achieve Substantial Completion of the Work or designated portions thereof within the Contract Time, (subject to adjustments authorized under the Contract Documents); (iii) or to complete Punch list items within the time established pursuant to the Contract Documents, the Contractor agrees to pay to the District the amount of per diem Liquidated Damages set forth in the Special Conditions, not as a penalty but as Liquidated Damages, for every day beyond the Contract Time, as adjusted, until Submittals are submitted, Substantial Completion or completion of the Punch list items are achieved. The Liquidated Damages amounts set forth in the Special Conditions are agreed upon by and between the Contractor and the District because of the difficulty of fixing the District's actual damages in the event of delayed submission of Submittals, Substantial Completion or completion of Punch list items. The Contractor and the District specifically agree that said amounts are reasonable estimates of the District's loss of use damages in such event, and that such amounts do not constitute a penalty. Liquidated Damages may be deducted from the Contract Price then or thereafter due to the Contractor. The Contractor and the Surety shall be liable to the District for any Liquidated Damages exceeding any amount of the Contract Price then held or retained by the District. In the event that the Contractor shall fail or refuse to complete Punch list items and the District elects to exercise its right to cause completion or correction of such items pursuant to Article 7.2.3.2 hereof, the District's assessment of Liquidated Damages pursuant to the foregoing shall be in addition, and not in lieu of, the District's right to charge Contractor with the cost of completing or correcting such items of the Work, as provided for under Article 7.2.3.2. The Contractor and the District acknowledge and agree that the provisions of this Article 7.5 are reasonable under the circumstances existing at the time of the Contractor's execution of the Agreement. The Contractor acknowledges and agrees that if the Work of the Contractor is not completed in accordance with the Baseline Construction Schedule or Updated Construction Schedules, as applicable, the Contractor shall be liable for costs, fees, expenses or losses to the extent that the acts or omissions of the Contractor cause or contribute to such costs, fees, expenses or losses. The Liquidated Damages liability of

the Contractor to the District shall not operate to limit the Contractor's liability for the District's actual damages incurred, including but not limited to extended inspection, architect and Project Manager costs resulting from the acts or omissions of the Contractor. The Liquidated Damages liability of the Contractor to the District shall not operate to limit the Contractor's liability for any and all costs, fees, expenses or losses sustained resulting from the acts or omissions of the Contractor.

7.6 District Right to Take-Over Work.

7.6.1 Progress of Work. Unless caused by the District, Architect, Project Manager or the Project Inspector, if the Contractor fails or refuses, for any reason and at any time, to furnish adequate materials, labor, equipment or services to maintain progress of the Work in accordance with the then current Construction Schedule after seventy-two (72) hour advance written notice from the Project Manager to the Contractor of its failure or refusal, the District may, without terminating the Contract or waiving, limiting or conditioning any right or remedy of the District, thereafter furnish or cause to be furnished such materials, labor, equipment or services necessary to maintain progress of the Work in accordance with the then current Construction Schedule. All costs, expenses or other charges (whether direct, indirect and administrative) incurred by the District in furnishing such materials, labor, equipment or services shall be at the sole cost of the Contractor, and the District may deduct the same from the Contract Price then or thereafter due to the Contractor. The District's exercise of rights pursuant to the foregoing shall not be deemed a waiver or limitation of any other right or remedy of the District under the Contract Documents.

7.6.2 Non-exclusive Remedy. The District's exercise of rights pursuant to the foregoing shall not be deemed a waiver or limitation of any other right or remedy of the District under the Contract Documents or the Laws.

ARTICLE 8: CONTRACT PRICE

8.1 Contract Price. The Contract Price is the amount stated in the Agreement, and, subject to adjustments thereto in accordance with the Contract Documents, is the total amount payable by the District to the Contractor for completion of the Work and other obligations of the Contractor under the Contract Documents. The District's payment of the Contract Price to the Contractor shall be in accordance with the Contract Documents.

8.2 Cost Breakdown. Within fifteen (15) days of the execution of the Agreement by Contractor, Contractor shall furnish, in a form acceptable to the District, a detailed estimate and complete Cost Breakdown of the Contract Price. The Cost Breakdown is subject to the District's review and approval of the form and content thereof. If the District objects to any portion of the Cost Breakdown, within ten (10) days of the District's receipt of the Cost Breakdown, the District shall notify the Contractor, in writing of the District's objection(s) to the Cost Breakdown. Within five (5) days of the date of the District's written objection(s), Contractor shall submit a revised Cost Breakdown to the District for review and approval. The foregoing procedure for the preparation, review and approval of the Cost Breakdown shall continue until the District has approved of the entirety of the Cost Breakdown. Upon the District's approval of the Cost Breakdown, the Cost Breakdown shall not be thereafter modified or amended by the Contractor without the prior consent and approval of the District, which may be granted, conditioned or withheld in the sole discretion of the District. Notwithstanding any provision of the Contract Documents to the contrary, payment of the

Contractor's overhead, supervision and general conditions costs and profit, as such items are reflected in the Cost Breakdown, shall be made by the District in equal installments with its disbursements of Progress Payments and the Final Payment with the amount of each such installment equal to the aggregate amount of such items as reflected in the Cost Breakdown divided by the number of months of the Contract Time.

8.3 Progress Payments.

8.3.1 Applications for Progress Payments. During the Contractor's performance of the Work, the Contractor shall submit monthly, on the first working day of each month, to the District, Project Inspector, Project Manager and the Architect, Applications for Progress Payments ("Payment Applications"), on forms approved by the District, setting forth an itemized estimate of Work completed in the preceding month for the purpose of the District's making of Progress Payments thereon. Values utilized in the Payment Applications shall be based upon the District approved Cost Breakdown pursuant to Article 8.2 above provided that such values are only for determining the basis of Progress Payments to Contractor, and shall not be considered as fixing a basis for adjustments, whether additive or deductive, to the Contract Price, or for determining the extent of Work actually completed.

8.3.2 Payment Application Review for Determination of Proper Payment Application. In accordance with Public Contract Code § 20104.50, upon receipt of an Application for Progress Payment, the District shall cause the same to be reviewed by the Project Inspector, the Project Manager, and the Architect, as soon as is practicable after receipt of such Application for Progress Payment. Such review shall be for the purpose of determining that the Application for Progress Payment is a proper Progress Payment request. For purposes of this Article 8.3.2, an Application for Progress Payment shall be deemed "proper" only if it is submitted on the form approved by the District, with all of the requested information of such form of Application for Progress Payment completely and accurately provided by the Contractor and such completed Application for Progress Payment is accompanied by: (i) the form of Verification of Certified Payroll Records Submittal to Labor Commissioner, executed under penalty of perjury by the Contractor's Superintendent and/or the Contractor PM; which verifies that all Certified Payroll Records for the Contractor and all Subcontractors for the period of time covered by the Application for Progress Payment have been completed and submitted in strict conformity with Labor Code § 1771.4; (ii) Certified Payrolls of the Contractor and all Subcontractors for laborers performing any portion of the Work for which the Progress Payment is requested; (iii) duly completed and executed forms of Conditional Waiver and Release of Rights Upon Progress Payment in accordance with California Civil Code § 8132 of the Contractor, all Subcontractors of any tier, and Material Suppliers covering the Progress Payment requested; (iv) duly completed and executed forms of Unconditional Waiver and Release of Rights upon Progress Payment in accordance with California Civil Code § 8134 of the Contractor, all Subcontractors of any tier, and Material Suppliers covering the Progress Payment received by the Contractor under the prior Application for Progress Payment; (v) if applicable, a current union statement reflecting that the Contractor and any Subcontractor of any tier, are current in the payment of any supplemental fringe benefits required pursuant to any collective bargaining agreement to which the Contractor or any such Subcontractor is a party to or is otherwise bound by; (vi) a certification by the Contractor that it has

continuously maintained, or caused to maintained, the Record Drawings reflecting the actual as-built conditions of the Work performed be for which the Progress Payment is requested, it being understood that such certification is subject to verification by the District, Architect or the Project Manager prior to disbursement of the Progress Payment; and (vii) an updated Construction Schedule, reflecting Work actually completed and in progress. In accordance with Public Contract Code § 20104.50, an Application for Progress Payment determined by the District not to be a proper Application for Progress Payment shall be returned by the District to the Contractor as soon as is practicable after receipt of the same from the Contractor, but in no event not more than seven (7) days after the District's receipt thereof. The District's return of any Application for Progress Payment pursuant to the preceding sentence shall be accompanied by a written document setting forth the reason(s) why the Application for Progress Payment is not proper.

8.3.3 Verification of Work Completed. Upon receipt of a Payment Application, the Architect, Project Manager, if any, and the Project Inspector shall inspect and verify the Work to determine whether it has been performed in accordance with requirements of the Contract Documents and to determine the portion of the Payment Application which is properly due to the Contractor under the terms of the Contract Documents.

8.3.4 District's Disbursement of Progress Payments.

8.3.4.1 Timely Disbursement of Progress Payments. Pursuant to Public Contract Code § 20104.50, within thirty (30) days after the District's receipt of a proper Payment Application, there shall be paid, by District, to Contractor a sum equal to ninety-five percent (95%) of the value of the Work indicated in the Payment Application which is actually in place as of the date of the Payment Application, as verified by the Project Inspector, Project Manager, if any, and the Architect and the pro rata portion of the Contractor's overhead, supervision and general conditions costs and profit for that month; provided, however, that the District's obligation to disburse any Progress Payment shall be subject to the District's receipt of all documents set forth in Article 8.3.2 above, each and all of which are conditions precedent to the District's obligation to disburse Progress Payments. If a Payment Application is determined not to be proper due to the failure or refusal of the Contractor to submit documents with the Payment Application, as required by Article 8.3.2, or incompleteness or inaccuracies in any such documents submitted or if it is reasonably determined that the Record Drawings have not been continuously maintained to reflect the actual as built conditions of the Work completed in the period for which the Progress Payment is requested, the thirty (30) day period hereunder for the District's timely disbursement of a Progress Payment is deemed to commence on the date that the District is actually in receipt of documents not submitted with the Payment Application, or corrections to documents with the Payment Application so as to render them complete and accurate, or the date upon which the Contractor accurately and fully completes preparation of the Record Drawings relating to the Work for which the Progress Payment is requested.

8.3.4.2 Untimely Disbursement of Progress Payments. Pursuant to Public Contract Code § 20104.50, if the District fails to make a Progress Payment within thirty (30) days after receipt of an undisputed and proper Payment Application, the District shall pay the Contractor interest on the

undisputed amount of such Payment Application at the legal rate of interest set forth in California Code of Civil Procedure § 685.010(a). The foregoing notwithstanding, if the District determines that any Payment Application is not proper, pursuant to Article 8.3.2 above, and the District does not return such Payment Application within the seven (7) day period provided for in Article 8.3.2, the period of time for the District's disbursement of the Progress Payment on such Payment Application without incurring interest liability shall be reduced by the number of days exceeding the seven (7) day return period.

8.3.4.3 District's Right to Disburse Payments by Joint Checks. Provided that the District is in receipt of the applicable Subcontract or Purchase Order, the District, may, in its sole discretion, issue joint checks to the Contractor and Subcontractors/Material Suppliers in satisfaction of its obligation to make Progress Payments or the Final Payment due hereunder.

8.3.4.4 No Waiver of Defective or Non-Conforming Work. The approval of any Payment Application or the disbursement of any Progress Payment to the Contractor shall not be deemed nor constitute acceptance of defective or non-conforming Work. Notwithstanding approval or disbursement of a Progress Payment for Work deemed to be defective or non-conforming, the Contractor shall remain obligated under the Contract Documents to repair, replace or otherwise correct such defective or non-conforming Work

8.3.5 Progress Payments for Changed Work. The Contractor's Payment Applications may include requests for payment on account of Changes in the Work which have been properly authorized and approved by the Project Inspector, the Architect and all other governmental agencies with jurisdiction over such Change in accordance with the terms of the Contract Documents and for which a Change Order has been issued. Except as provided for herein, no other payment shall be made by the District for Changes in the Work.

8.3.6 Materials or Equipment Not Incorporated Into the Work.

8.3.6.1 Limitations Upon Payment. Except as expressly provided for herein, no payments shall be made by the District on account of any item of the Work, including without limitation, materials or equipment which, at the time of the Contractor's submittal of a Payment Application, has/have not been incorporated into and made a part of the Work.

8.3.6.2 Materials or Equipment Delivered and Stored at the Site. The District may, in its sole and exclusive discretion, make payment for materials or equipment not yet incorporated into the Work if, at or prior to the time of the Contractor's submittal of a Payment Application requesting payment for such materials or equipment if all of the following are complied with: (i) the materials or equipment have been delivered to the Site; (ii) adequate arrangements, reasonably satisfactory to the District, have been made by the Contractor to store and protect such materials or equipment at the Site including without limitation, insurance reasonably satisfactory to the District, covering and protecting against the risk of loss, destruction, theft or other damage to such materials or equipment while in storage; and (iii) the establishment of procedures reasonably satisfactory to the District by which title to such materials or equipment will be vested in the District upon the District's payment therefor. The Contractor acknowledges that

the discretion to make, or not to make, payment for materials or equipment delivered or stored at the Site pursuant to the preceding sentence shall be exercised exclusively by the District; the District's exercise of discretion not to make payment shall not be deemed the District's default hereunder. If the District elects to make payment for materials or equipment delivered and stored at the Site, the costs and expenses incurred to comply with the requirements of (ii) and (iii) of this Article 8.3.6.2 shall be borne solely and exclusively by the Contractor and no payment shall be made by the District on account of such costs and expenses.

8.3.6.3 Materials or Equipment Not Delivered or Stored at the Site. No payments shall be made by the District for materials or equipment to be incorporated into the Work where such materials or equipment have not been delivered or stored at the Site or which are in the process of fabrication or transportation to the Site.

8.3.6.4 Materials or Equipment in Fabrication or Transit. The provisions of this Article 8.3.6 notwithstanding, the District shall not make any payment on account of any materials or equipment which are in the process of being fabricated or which are in transit to the Site or other storage location.

8.3.7 Exclusions From Progress Payments. In addition to the District's right to withhold disbursement of any Progress Payment provided for in the Contract Documents, neither the Contractor's Payment Application shall include, nor shall the District be obligated to disburse any portion of the Contract Price for amounts which the Contractor does not intend to pay any Subcontractor or Material Supplier because of a dispute or any other reason.

8.3.8 Title to Work. The Contractor warrants that title to all Work covered by a Payment Application will pass to the District no later than the time of payment. The Contractor further warrants that upon submittal of a Payment Application, all Work for which a Progress Payment has been previously disbursed and the Contractor has received payment from the District therefor shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, stop payment notices, security interests or encumbrances in favor of the Contractor, Subcontractors, Material Suppliers or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

8.3.9 Substitute Security for Retention. Pursuant to California Public Contract Code § 22300, eligible and equivalent securities may be substituted for any monies withheld by the District to ensure the Contractor's performance under the Contract Documents at the request and expense of the Contractor and in conformity with the provisions of California Public Contract Code § 22300. The foregoing and the provisions of California Public Contract Code § 22300 notwithstanding, failure of the Contractor to request the substitution of eligible and equivalent securities for monies to be withheld by the District within ten (10) days following the date of award of the Contract to Contractor shall be deemed a waiver of such right.

8.4 Final Payment.

8.4.1 Application for Final Payment. When the Contractor has achieved Final Completion of the Work and has otherwise fully performed its obligations under the Contract Documents, the Contractor shall submit an Application for Final Payment on such form as approved by the District. Thereupon, the Architect, Project Manager, and the Project Inspector will promptly make a final inspection of the Work and when the Architect, Project Manager, and the Project Inspector find the

Work acceptable under the Contract Documents and that the Contract has been fully performed by the Contractor, the Architect, Project Manager, and the Project Inspector will thereupon promptly approve the Application for Final Payment, stating that to the best of their knowledge, information and belief, the Work has been completed in accordance with the terms of the Contract Documents. The Final Payment shall include the remaining balance of the Contract Price and any retention from Progress Payments previously withheld by the District.

8.4.2 Conditions Precedent to Disbursement of Final Payment. Neither Final Payment nor any remaining Contract Price shall become due until the Contractor submits to the District each and all of the following, the submittal of which are conditions precedent to the District's obligation to disburse the Final Payment: (i) an affidavit or certification by the Contractor that payrolls, bills for materials and other indebtedness incurred in connection with the Work for which the District or the District's property may or might be responsible or encumbered have been paid or otherwise satisfied; (ii) a certificate evidencing that insurance required by the Contract Documents to remain in force after the Contractor's receipt of Final Payment is currently in effect; (iii) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover any period following Final Payment as required by the Contract Documents; (iv) consent of the Surety on the Labor and Material Payment Bond and Performance Bond, to Final Payment if required; (v) duly completed and executed forms of Conditional or Unconditional Waivers and Releases of rights upon Final Payment of the Contractor, Subcontractors/Material Suppliers in accordance with California Civil Code §§ 8136 and 8138, with each of the same stating that there are, or will be, no claims for additional compensation after disbursement of the Final Payment; (vi) Operations and Maintenance manuals and separate warranties provided by any manufacturer or distributor of any materials or equipment incorporated into the Work; (vii) the Record Drawings; (viii) the form of Guarantee included in the Contract Documents duly executed by an authorized representative of the Contractor; (ix) any and all other items or documents required by the Contract Documents, including DSA Form 6-C, to be delivered to the District upon completion of the Work; (x) the completion and submittal of all reports required by the Contract Documents, including without limitation, verified reports required by applicable provisions of the California Code of Regulations; and (xi) if required by the District, such other data establishing payment or satisfaction of obligations such as receipts, releases and waivers of liens, stop payment notices, claims, security interest or encumbrances arising out of the Contract to the extent and in such form as may be required by the District.

8.4.3 Disbursement of Final Payment. Provided that the District is then in receipt of all documents and other items in Article 8.4.2 above as conditions precedent to the District's obligation to disburse Final Payment, not later than sixty (60) days following Final Acceptance the District shall disburse the Final Payment to the Contractor. Pursuant to California Public Contract Code § 7107, if there is any dispute between the District and the Contractor at the time that disbursement of the Final Payment is due, the District may withhold from disbursement of the Final Payment an amount not to exceed one hundred fifty percent (150%) of the amount in dispute. If the Contractor fails to timely submit completed DSA Reports in accordance with Article 4.20.7 above, the Final Payment due the Contractor shall be reduced in accordance with Article 4.20.8, above.

8.4.4 Waiver of Claims. The Contractor's acceptance of the Final Payment is a

waiver and release by the Contractor of any and all claims against the District for compensation or otherwise in connection with the Contractor's performance of the Contract.

8.4.5 Claims Asserted After Final Payment. Any lien, stop payment notice or other claim filed or asserted after the Contractor's acceptance of the Final Payment by any Subcontractor, laborer, Material Supplier or others in connection with or for Work performed under the Contract Documents shall be the sole and exclusive responsibility of the Contractor and the Surety. The Contractor and Surety shall indemnify, defend and hold harmless the District and its officers, agents, representatives and employees from and against any claims, demands or judgments arising or associated therewith, including without limitation attorney's fees incurred by the District in connection therewith.

8.5 Withholding of Payments. The District may withhold any Progress Payment or the Final Payment, in whole or in part, or back charge the Contractor to the extent it may deem advisable to protect the District on account of: (i) defective Work or Work not in conformity with the requirements of the Contract Documents which is not remedied; (ii) failure of the Contractor to make payments when due to Subcontractors/Material Suppliers; (iii) claims filed or reasonable evidence of the probable filing of claims by Subcontractors, laborers, Material Suppliers, or others performing any portion of the Work under the Contract Documents for which the District may be liable or responsible including, without limitation, Stop Payment Notice Claims filed with the District pursuant to California Civil Code § 9350 *et seq.*; (iv) a reasonable doubt that the Contract can be completed for the then unpaid balance of the Contract Price; (v) tax demands filed in accordance with California Government Code § 12419.4; (vi) other claims, penalties and/or forfeitures for which the District is required or authorized to retain funds otherwise due the Contractor; (vii) any amounts due from the Contractor to the District under the terms of the Contract Documents; or (viii) the Contractor's failure to perform any of its obligations under the Contract Documents, its default under the Contract Documents or its failure to maintain adequate progress of the Work. In addition to the foregoing, the District shall not be obligated to process any Payment Application or Application for Final Payment, nor shall Contractor be entitled to any Progress Payment or Final Payment so long as any lawful or proper direction concerning the Work or the performance thereof or any portion thereof, given by the District, the Project Inspector, the Architect or any public authority having jurisdiction over the Work, or any portion thereof, shall not be fully and completely complied with by the Contractor. When the District is reasonably satisfied that the Contractor has remedied any such deficiency, payment shall be made of the amount withheld.

8.6 Payments to Subcontractors. The Contractor shall pay all Subcontractors for and on account of Work of the Contract performed by such Subcontractors in accordance with the terms of their respective subcontracts and as provided for pursuant to California Public Contract Code § 10262, the provisions of which are deemed incorporated herein by this reference. If the Contractor fails to make payment to Subcontractors in conformity with California Public Contract Code § 10262, the provisions of California Public Contract Code § 10253 shall apply; by this reference, the provisions of California Public Contract Code § 10253 are incorporated herein in its entirety, except that the references in said Section 10253 to "the director" shall be deemed to refer to the District. The Contractor shall timely make payment of retention due Subcontractors in accordance with Public Contract Code § 7107.

8.7 Computerized Job Cost Reporting System.

8.7.1 Job Cost Reporting. The Contractor and each Subcontractor with a Subcontract valued at One Million Five Hundred Thousand Dollars (\$1.5M) or greater shall maintain a computerized job cost reporting system conforming to the requirements set forth herein. The computer program(s) utilized by the Contractor and applicable Subcontractors shall be subject to the review and acceptance by the District. The job cost reporting systems for the Work shall be updated in regular intervals of not more than one (1) calendar month.

8.7.2 Job Cost Reporting System Requirements. The computerized job cost programs utilized by the Contractor and applicable Subcontractors shall conform and comply with generally accepted accounting principles applied in a consistent manner and with recognized and generally accepted construction industry accounting standards, guidelines and procedures. The job cost reporting system format and configuration shall follow the general format of the District approved Cost Breakdown and budgets established for each line item shall be traceable to a bid estimate of costs. The job cost reporting systems utilized by the Contractor and applicable Subcontractors shall be capable of: (i) providing overall cost status on a monthly and cumulative basis; (ii) providing comparative analysis of the original budgeted costs, actual costs, remaining budget, and projected cost of completion; the job cost reporting system shall be capable of providing comparative analysis for individual line items and the totality of the Work reflected in the job cost report; and (ii) tracking adjustments to original budget amounts for Changes to the Work (including, without limitation, issued, pending and potential Change Orders).

8.7.3 Job Cost System Information. Upon request of the District, the Contractor and applicable Subcontractors shall make available written job cost reports and/or provide the District with the electronic files of the then current or requested job cost report. The Contractor's obligations hereunder are material.

ARTICLE 9: CHANGES

9.1 Changes in the Work. The District, at any time, by written order, may make Changes within the general scope of the Work under the Contract Documents or issue additional instructions, require additional Work or direct deletion of Work. The Contractor shall not proceed with any Change involving an increase or decrease in the Contract Price or the Contract Time without prior written authorization from the District. The foregoing notwithstanding, the Contractor shall promptly commence and diligently complete any Change to the Work subject to the District's written authorization issued pursuant to the preceding sentence; the Contractor is not relieved or excused from its obligation to promptly commence and diligently complete any Change subject to the District's written authorization by virtue of the absence or inability of the Contractor and the District to agree upon the extent of any adjustment to the Contract Time or the Contract Price on account of such Change. The issuance of a Change Order pursuant to this Article 9 in connection with any Change authorized by the District under this Article 9.1 is not a condition precedent to Contractor's obligation to promptly commence and diligently complete any such Change authorized by the District hereunder. The District's right to make Changes shall not invalidate the Contract nor relieve the Contractor of any liability or other obligations under the Contract Documents. Any requirement of notice of Changes in the scope of Work to the Surety shall be the responsibility of the Contractor. Changes to the Work depicted or described in the Drawings or the Specifications shall be subject to

approval by the DSA. The District may make Changes to bring the Work or the Project into compliance with environmental requirements or standards established by Laws enacted after award of the Contract.

9.2 Construction Change Directive. A Construction Change Directive is a written instrument issued by or on behalf of the District directing a Change to the Work prior to the Contractor and District reaching full agreement on an adjustment of the Contract Time and/or Contract Price on account of such Change. The Contractor shall promptly commence and diligently complete any Change to the Work subject to a Construction Change Directive issued hereunder. The issuance of a Change Order pursuant to this Article 9 in connection with any Construction Change Directive authorized by the District is not a condition precedent to Contractor's obligation to promptly commence and diligently complete any such Construction Change Directive. Upon completion of the Work subject to a Construction Change Directive, if the Contractor and District have not agreed on the adjustment of Contract Time and/or Contract Price for such Change, District shall issue a Unilateral Change Order pursuant to this Article 9.

9.3 Contractor Notice of Oral Order of Change in the Work. Any oral order, direction, instruction, interpretation, or determination from the District or the Architect which in the opinion of the Contractor constitutes a Change to the Work, or otherwise requires an adjustment to the Contract Price or the Contract Time, shall be treated as a Change only if the Contractor gives the Architect, Project Manager, if any and the Project Inspector written notice within ten (10) days of the order, directions, instructions, interpretation or determination and prior to acting in accordance therewith. Time is of the essence in Contractor's written notice pursuant to the preceding sentence. Accordingly, Contractor acknowledges that its failure, for any reason, to give written notice within ten (10) days of such order, direction, instruction, interpretation or determination is the Contractor's waiver of any right to assert or claim any entitlement to an adjustment of the Contract Time or the Contract Price on account of such order, direction, instruction, interpretation or determination. The written notice shall state the date, circumstances, extent of adjustment to the Contract Price or the Contract Time, if any, requested, and the source of the order, directions, instructions, interpretation or determination that the Contractor regards as a Change. Unless the Contractor acts in strict accordance with this procedure, any such order, direction, instruction, interpretation or determination shall not be treated as a Change and the Contractor waives any claim for any adjustment to the Contract Price or the Contract Time on account thereof.

9.4 Contractor Submittal of Data. Within thirty (30) days after receipt of a written order directing a Change in the Work or furnishing the written notice regarding any oral order directing a Change in the Work, the Contractor shall submit to the Architect, Project Manager, if any, the Project Inspector and the District a detailed written statement setting forth the general nature of the Change, the amount of any adjustment to the Contract Price on account thereof, properly itemized and supported by sufficient substantiating data to permit evaluation of the same, and the extent of adjustment of the Contract Time, if any, required by such Change. No claim or adjustment to the Contract Price or the Contract Time shall be allowed if not asserted by the Contractor in strict conformity herewith or if asserted after Final Payment is made under the Contract Documents.

9.5 Adjustment to Contract Price and Contract Time on Account of Changes to the Work.

9.5.1 Adjustment to Contract Price. Adjustments to the Contract Price due to Changes in the Work shall be determined by application of one of the following methods, in the following order of priority. Costs computed to any of the following methods shall exclude: (i) fees, salaries or other compensation for: field/office supervisory personnel, project engineers, scheduler, estimator, drafting/detailing; (ii) vehicles not directly engaged in performance of a Change; (iii) field/home office expenses, including personnel, materials, supplies, etc.; (iv) on-Site or off-Site trailer, storage costs (whether rented, leased or owned); and (v) except as incorporated into an applicable Prevailing Wage Rate for labor required to complete a Change, insurance (including without limitation, general liability, automobile liability, employer's liability and workers compensation).

9.5.1.1 Mutual Agreement. By negotiation and mutual agreement, on a lump sum basis, between the District and the Contractor on the basis of the estimate of the actual and direct increase or decrease in costs on account of the Change. Upon request of the District, Project Manager, if any, or the Architect, the Contractor shall provide a detailed estimate of increase or decrease in costs directly associated with performance of the Change along with cost breakdowns of the components of the Change and supporting data and documentation. The Contractor's estimate of increase or decrease in costs pursuant to the foregoing, if requested, shall be in sufficient detail and in such form as to allow the District, the Project Manager, Project Inspector and the Architect to review and assess the completeness and accuracy thereof. The Contractor shall be solely responsible for any additional costs or additional time arising out of, or related in any manner to, its failure to provide the estimate of costs within the time specified in the request of the District or the Architect for such estimate.

9.5.1.2 Determination by the District. By the District, whether or not negotiations are initiated pursuant to Article 9.5.1.1 above, based upon actual and necessary costs incurred by the Contractor as determined by the District on the basis of the Contractor's records. In the event that the procedure set forth in this Article 9.5.1.2 is utilized to determine the extent of adjustment to the Contract Price on account of Changes to the Work, promptly upon determining the extent of adjustment to the Contract Price, the District shall notify the Contractor in writing of the same; the Contractor is deemed to have accepted the District's determination of the amount of adjustment to the Contract Price on account of a Change to the Work unless Contractor notifies the District, the Architect, Project Manager, and the Project Inspector, in writing, not more than fifteen (15) days from the date of the District's written notice, of any objection to the District's determination. Failure of the Contractor to timely notify the District, the Project Manager, the Architect and the Project Inspector of Contractor's objections to the District's determination of the extent of adjustment to the Contract Price shall be deemed Contractor's acceptance of the District's determination and a waiver of any right or basis of the Contractor to thereafter protest or otherwise object to the District's determination. Notwithstanding any objection of the Contractor to the District's determination of the extent of any adjustment to the Contract Price pursuant to this Article 9.5.1.2, Contractor shall, pursuant to Article 9.9 below, diligently proceed to perform and complete any such Change.

9.5.2 Basis for Adjustment of Contract Price. If Changes in the Work require an adjustment of the Contract Price pursuant to Articles 9.5.1.1 or 9.5.1.2 above, the basis for adjustment of the Contract Price shall be as follows:

9.5.2.1 Allowable Labor Costs. Except in the event adjustment of the Contract Price for a District authorized Change is computed by unit prices, the labor costs allowable for incorporation into a Contract Price adjustment for a Change shall be limited as set forth herein.

9.5.2.1.1 Limitation to Field Labor and Prevailing Wage Rates. The Contract Price adjustment for labor necessary to complete a Change shall be limited to the laborers of the Contractor or Subcontractors actually and necessarily engaged in the performance of the Change and for which there is a prevailing wage rate classification. Wage rates for laborers shall not exceed the applicable prevailing wage rate in the locality of the Site for the classification(s) of labor necessary to complete a Change. Use of a prevailing wage rate classification which increases the costs of a Change shall not be allowed. Overtime labor charges for performing any part of the Change shall only be allowed if authorized in writing by the Architect, Project Manager and the District prior to Contractor's performance of the overtime labor. Use of a labor classification which would increase labor costs associated with any Change shall not be permitted.

9.5.2.1.2 Fringe Benefits, Payroll Taxes and Labor Burden. The Contractor or Subcontractor may adjust the prevailing wage rate for allowable labor costs to reflect fringe benefits, payroll taxes and labor burdens actually incurred by Contractor and provided to such labor directly engaged in performing a Change. The allowable adjustment for fringe benefit payments, payroll taxes and labor burdens shall not, however, exceed fifteen percent (15%) of the applicable prevailing wage rate and shall not be subject to the additional mark-up set forth herein.

9.5.2.1.3 Excluded Labor Costs. The Contract Price adjustment for labor costs on account of a Change shall exclude costs: (i) for preparing estimate(s) of the costs of the Change; (ii) to maintain records relating to the costs of the Change; (iii) for coordination and assembly of materials and information relating to the Change or performance thereof; (iv) to supervise, coordinate or manage the Work of a Change; or (v) any other general administrative overhead or general conditions costs associated with the Change or performance thereof as such costs are incorporated into the overhead and general conditions mark-up costs set forth herein.

9.5.2.2 Materials and Equipment. Contractor shall be compensated for the costs of materials and equipment necessarily and actually used or consumed in connection with the performance of Changes. Costs of materials and equipment may include reasonable costs of transportation from a source closest to the site of the Work and delivery to the Site. If discounts by Material Suppliers are available for materials necessarily used in the performance of Changes, they shall be credited to the District. If materials and/or equipment necessarily used in the performance of

Changes are obtained from a supplier or source owned in whole or in part by the Contractor, compensation therefor shall not exceed the current wholesale price for such materials or equipment. If, in the reasonable opinion of the District, the costs asserted by the Contractor for materials and/or equipment in connection with any Change is excessive, or if the Contractor fails to provide satisfactory evidence of the actual costs of such materials and/or equipment from its supplier or vendor of the same, the costs of such materials and/or equipment and the District's obligation for payment of the same shall be limited to the then lowest wholesale price at which similar materials and/or equipment are available in the quantities required to perform the Change. The District may elect to furnish materials and/or equipment for Changes to the Work, in which event the Contractor shall not be compensated for the costs of furnishing such materials and/or equipment or any mark-up thereon.

9.5.2.3 Construction Equipment. Contractor shall be compensated for the actual cost of the necessary and direct use of Construction Equipment in the performance of Changes to the Work. Use of such Construction Equipment in the performance of Changes to the Work shall be compensated in increments of fifteen (15) minutes. Rental time for Construction Equipment moved by its own power shall include time required to move such Construction Equipment to the site of the Work from the nearest available rental source of the same. If Construction Equipment is not moved to the Site by its own power, Contractor will be compensated for the loading and transportation costs in lieu of rental time. The foregoing notwithstanding, neither moving time or loading and transportation time shall be allowed if the Construction Equipment is used for performance of any portion of the Work other than Changes to the Work. Unless prior approval in writing is obtained by the Contractor from the Architect, Project Manager, the Project Inspector and the District, no costs or compensation shall be allowed for time while Construction Equipment is inoperative, idle or on standby, for any reason. The Contractor shall not be entitled to an allowance or any other compensation for Construction Equipment or tools used in the performance of Changes to the Work where such Construction Equipment or tools have a replacement value of \$500.00 or less. Construction Equipment costs claimed by the Contractor in connection with the performance of any Change to the Work shall not exceed rental rates established by distributors or construction equipment rental agencies in the locality of the Site; any costs asserted which exceed such rental rates shall not be allowed or paid. Unless otherwise specifically approved in writing by the Architect, Project Manager, the Project Inspector and the District, the allowable rate for the use of Construction Equipment in connection with Changes to the Work shall constitute full compensation to the Contractor for the cost of rental, fuel, power, oil, lubrication, supplies, necessary attachments, repairs or maintenance of any kind, depreciation, storage, insurance, labor (exclusive of labor costs of the Construction Equipment operator), and any all other costs incurred by the Contractor incidental to the use of such Construction Equipment.

9.5.2.3.1 Mark-up on Costs of Changes to the Work. In determining the cost to the District and the extent of increase to the Contract Price resulting from a Change adding to the Work, the

allowance for mark-ups on the costs of the Change for all overhead (including home office and field overhead), general conditions costs and profit associated with the Change shall not exceed the percentage set forth in the Special Conditions, regardless of the number of Subcontractors, of any tier, performing any portion of any Change to the Work. If a Change to the Work reduces the Contract Price, no profit, general conditions or overhead costs shall be paid by the District to the Contractor for the reduced or deleted Work. In such event, the adjustment to the Contract Price shall be the actual cost reduction realized by the reduced or deleted Work multiplied by the percentage set forth in the Special Conditions for mark-ups on the cost of a Change adding to the scope of the Work.

9.5.2.4 Contractor Maintenance of Records. If the Contractor is directed to perform any Changes to the Work pursuant to Article 9.1, 9.2 or 9.3, or should the Contractor encounter conditions which the Contractor believes to obligate the District to adjust the Contract Price and/or the Contract Time, Contractor shall maintain detailed records on a daily basis. Such records shall include without limitation hourly records for labor and Construction Equipment and itemized records of materials and equipment used that day in connection with the performance of any Change to the Work. If more than one Change to the Work is performed by the Contractor in a calendar day, Contractor shall maintain separate records of labor, Construction Equipment, materials and equipment for each such Change. If any Subcontractor provides or performs any portion of a Change to the Work, Contractor shall require that each such Subcontractor maintain records in accordance with this Article. Each daily record maintained hereunder shall be signed by Contractor's Superintendent or Contractor's authorized representative which shall constitute the Contractor's representation and warranty to the District that all information contained therein is true, accurate, complete and relates only to the Change referenced therein. All records maintained by a Subcontractor relating to the costs of a Change to the Work shall be signed by such Subcontractor's authorized representative or Superintendent. All records maintained hereunder shall be subject to inspection, review and/or reproduction by the District, the Architect, Project Manager, or the Project Inspector upon request. If the Contractor fails or refuses, for any reason, to maintain or make available for inspection, review and/or reproduction such records and the adjustment to the Contract Price on account of any Change to the Work, the District's reasonable good faith determination of the extent of adjustment to the Contract Price on account of such Change shall be final, conclusive, dispositive and binding upon Contractor. Contractor's obligation to maintain records hereunder is in addition to, and not in lieu of, any other Contractor obligation under the Contract Documents with respect to Changes to the Work.

9.5.3 Adjustment to Contract Time. In the event of any Change to the Work authorized pursuant to this Article 9, the Contract Time affects the critical path of the Work, the Contract Time shall be extended or reduced by Change Order for a period of time commensurate with the time reasonably necessary to perform such Change. The Contractor is solely responsible for timely submitting scheduling data, analysis and other materials necessary or required by the District to

substantiate the Contract Time adjustment requested by the Contractor for a Change. The District is not obligated to consider any adjustment to the Contract Time on account of a Change until the Contractor has submitted such scheduling data, analysis and other materials.

9.5.4 Addition or Deletion of Alternate Bid Item(s). If the Bid Proposal for the Work includes proposal(s) for Alternate Bid Item(s), during Contractor's performance of the Work, the District may elect, pursuant to this Article to add any such Alternate Bid Item(s) if the same did not form a basis for award of the Contract or delete any such Alternate Bid Item(s) if the same formed a basis for award of the Contract. If the District elects to add or delete any such Alternate Bid Item(s) pursuant to the foregoing, the cost or credit for such Alternate Bid Item(s) shall be as set forth in the Contractor's Bid. If any Alternate Bid Item is added or deleted from the Work pursuant to the foregoing, the Contract Time shall be adjusted by the number of days allocated for the added or deleted Alternate Bid Item in the Contract Documents; if days are not allocated for any Alternate Bid Item added or deleted pursuant to the foregoing, the Contract Time shall be equitably adjusted to the extent that the addition or deletion of an Alternate Bid Item actually affects Work on the critical path of the Construction Schedule as of the date upon which an Alternate Bid Item is added to or deleted from the Work.

9.6 Change Orders. If the District approves of a Change, a written Change Order prepared by the Architect on behalf of the District shall be forwarded to the Contractor describing the Change and setting forth the adjustment to the Contract Time and the Contract Price, if any, on account of such Change. All Change Orders shall be in full payment and final settlement of all claims for direct, indirect and consequential costs, costs of delays or impacts related to, or arising out of, items covered and affected by the Change Order, including without limitation: impacts of any kind; preparation and processing of any and all related RFIs, ASIs, Bulletins, FCDs, Quotes, and/or CCDs; inefficiencies; productivity losses; delay; acceleration; field and home office overhead; and any and all other incidental costs for all of the work described in the Change Order, as well as any and all adjustments to the Contract Time necessitated thereby. Any claim or item relating to any Change incorporated into a Change Order not presented by the Contractor for inclusion in the Change Order shall be deemed waived. The Contractor shall execute the Change Order prepared pursuant to the foregoing; once the Change Order has been prepared and forwarded to the Contractor for execution, without the prior approval of the District which may be granted or withheld in the sole and exclusive discretion of the District, the Contractor shall not modify or amend the form or content of such Change Order, or any portion thereof. The Contractor's attempted or purported modification or amendment of any such Change Order, without the prior approval of the District, shall not be binding upon the District; any such unapproved modification or amendment to such Change Order shall be null, void and unenforceable. Unless otherwise expressly provided for in the Contract Documents or in the Change Order, any Change Order issued hereunder shall be binding upon the District only upon action of the District's Board of Trustees approving and ratifying such Change Order. In the event of any amendment or modification made by the Contractor to a Change Order for which there is no prior approval by the District, in accordance with the provisions of this Article 9.6, unless otherwise expressly stated in its approval and ratification of such Change Order, any action of the Board of Trustees to approve and ratify such Change Order shall be deemed to be limited to the Change Order as prepared by the Architect; such approval and ratification of such Change Order shall not be deemed the District's approval and ratification of any

unapproved amendment or modification by the Contractor to such Change Order.

9.7 Unilateral Change Orders. A Unilateral Change Order is a Change Order issued by the District, in the sole and exclusive discretion of the District, before the Contractor and District have agreed on the extent of adjustment of the Contract Time or the Contract Price relating to a Change. The District may, in its sole reasonable discretion, issue a Unilateral Change Order for any Change to the Work authorized by the District when the Contractor and the District have been unable to reach mutual agreement as to the extent of any adjustment to the Contract Price or Contract Time on account of such Change. If the District elects to issue a Unilateral Change Order, the District shall forward to the Contractor a copy of the proposed Unilateral Change Order (for the Contractor's information) at least ten (10) days prior to the date of the Board of Trustees' meeting to review and consider approval of the Unilateral Change Order. Any Unilateral Change Order issued hereunder shall be binding upon the District and Contractor only if the District's Board of Trustees' takes action to approve or ratify the Unilateral Change Order. Any and all claims by the Contractor arising out of such Unilateral Change Order, and/or the Change giving rise to such Unilateral Change Order, shall accrue as of the date of the Board of Trustees' action approving or ratifying a Unilateral Change Order and shall be subject to the claim provisions set forth in Article 16.11. Notwithstanding any provision of the Contract Documents to the contrary, an express condition precedent to the Contractor's exercise of rights and remedies under Article 16.11 relating to a Unilateral Change Order, is the Contractor notification to the District, Architect and Project Manager, in writing of the Contractor's objections to all or any portion of a Unilateral Change Order within ten (10) days after the date of the Board of Trustees meeting ratifying or approving a Unilateral Change Order; failure of the Contractor to do so is deemed the Contractor's acceptance of the entirety of a Unilateral Change Order, as approved or ratified by the District's Board of Trustees and an express unequivocal waiver by the Contractor of any right or remedy of the Contractor, under the Contract Documents or the Laws to: (i) object to the Unilateral Change Order or any portion thereof; or (ii) further adjustment of the Contract Time or the Contract Price on account of the Change(s) incorporated into a Unilateral Change Order.

9.8 Contractor Notice of Changes. If the Contractor claims that any instruction, RFI, FCD, ASI, Bulletin, request, the Drawings, the Specifications, action, condition, omission, default, or other situation obligates the District to increase the Contract Price or to extend the Contract Time, the Contractor shall notify the Project Manager, the Project Inspector and the Architect, in writing, of such claim within ten (10) days from the date of its actual or constructive notice of the factual basis supporting the same. The District shall consider any such claim of the Contractor only if sufficient supporting documentation is submitted with the Contractor's notice to the Project Inspector and the Architect. Time is of the essence in Contractor's written notice pursuant to the preceding sentence so that the District can promptly investigate and consider alternative measures to the address such instruction, request, Drawings, Specifications, action, condition, omission, default or other situation. Accordingly, Contractor acknowledges that its failure, for any reason, to give written notice (with sufficient supporting documentation to permit the District's review and evaluation) within ten (10) days of its actual or constructive knowledge of any instruction, request, Drawings, Specifications, action, condition, omission, default or other situation for which the Contractor believes there should an adjustment of the Contract Time or the Contract Price shall be deemed Contractor's waiver, release, discharge and relinquishment of any right to assert or claim any entitlement to an adjustment of the

Contract Time or the Contract Price on account of any such instruction, request, Drawings, Specifications, action, condition, omission, default or other situation. In the event that the District determines that the Contract Price or the Contract Time is subject to adjustment based upon the events, circumstances and supporting documentation submitted with the Contractor's written notice under this Article 9.8, any such adjustment shall be determined in accordance with the provisions of Articles 9.5.1 and 9.5.2.

9.9 Disputed Changes. If there is any dispute or disagreement between the Contractor and the District regarding the characterization of any item as a Change to the Work or as to the appropriate adjustment of the Contract Price or the Contract Time on account thereof, the Contractor shall promptly proceed with the performance and completion of such item of the Work, subject to a subsequent resolution of such dispute or disagreement in accordance with the terms of the Contract Documents. The Contractor's failure or refusal to so proceed with such Work is the Contractor's default of a material obligation of the Contractor under the Contract Documents.

9.10 Emergencies. In an emergency affecting or threatening the safety of persons, or which affects or threatens the Work, or property, the Contractor, without special instruction or prior authorization from the District, Project Manager or the Architect, is permitted to act at its discretion to prevent such threatened loss or injury. Any compensation claimed by the Contractor on account of such emergency work shall be submitted and determined in accordance with this Article 9.

9.11 Minor Changes in the Work. The Architect may order minor Changes in the Work not involving an adjustment in the Contract Price or the Contract Time and not inconsistent with the intent of the Contract Documents. Such Changes shall be effected by written order and shall be binding on the District and the Contractor. The Contractor shall carry out such orders promptly.

9.12 Unauthorized Changes. Any Work beyond the lines and grades shown on the Contract Documents, or any extra Work performed or provided by the Contractor without notice to the Architect, Project Manager and the Project Inspector in the manner and within the time set forth in Articles 9.2 or 9.7 shall be considered unauthorized and at the sole expense of the Contractor. Work so done will not be measured or paid for, no extension to the Contract Time will be granted on account thereof and any such Work may be ordered removed at the Contractor's sole cost and expense. The failure of the District to direct or order removal of such Work shall not constitute acceptance or approval of such Work nor relieve the Contractor from any liability on account thereof.

ARTICLE 10: SEPARATE CONTRACTORS

10.1 District's Right to Award Separate Contracts. The District reserves the right to perform construction or operations related to the Project with the District's own forces or to award separate contracts in connection with other portions of the Project or other construction or operations at or about the Site. If the Contractor claims that delay or additional cost is involved because of such action by the District, the Contractor shall seek an adjustment to the Contract Price or the Contract Time as provided for in the Contract Documents. Failure of the Contractor to request such an adjustment of the Contract Time or the Contract Price in strict conformity with the provisions of the Contract Documents applicable thereto shall be deemed a waiver of the same.

10.2 District's Coordination of Separate Contractors. The District shall provide for coordination of the activities of the District's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the District in reviewing their respective Construction Schedules when directed to do so. The Contractor shall make any revisions to the Approved Construction Schedule for the Work hereunder deemed necessary after a joint review and mutual agreement. The Construction Schedules shall then constitute the Construction Schedules to be used by the Contractor, separate contractors and the District until subsequently revised.

10.3 Mutual Responsibility. The Contractor shall afford the District and separate contractors of the District reasonable opportunity for storage of their materials and equipment and performance of their activities at the Site and shall connect and coordinate the Contractor's Work, construction and operations with theirs as required by the Contract Documents.

10.4 Discrepancies or Defects. If part of the Contractor's Work depends for proper execution or results upon construction or operations by the District or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect, Project Manager, and the Project Inspector any discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results of the Contractor's Work. Failure of the Contractor to so report shall constitute an acknowledgment that the District's or separate contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then discoverable by the Contractor's reasonable diligence.

10.5 District's Right to Withhold for Delay to Separate Contractors.

10.5.1 Progress of Work. Unless caused by the District, Architect, Project Manager, Project Inspector, or separate contractor, if the Contractor fails or refuses, for any reason and at any time, to furnish adequate materials, labor, equipment, tools and/or services to maintain progress of the Work in accordance with the then current Construction Schedule thereby delaying the Work of separate contractor(s), the District may, after forty-eight (48) hours advance written notice from the District to the Contractor of its failure or refusal, direct, instruct and authorize the separate contractor(s) to furnish or cause to be furnished such materials, labor, equipment, tools and/or services necessary to maintain progress of the Work in accordance with the then current Construction Schedule.

10.5.2 District's Right to Withhold. If the work of a separate contractor to the District on the Project is delayed by the acts or omissions of the Contractor, any and all costs, expenses, and/or other charges incurred by the District for the work of such separate contractor(s) resulting from such acts or omissions of the Contractor shall be the sole responsibility of, and be borne by, the Contractor, and the District may deduct the amount of any and all such costs, expenses, and/or other charges from the Contract Price then or thereafter due the Contractor. If the Contract Price then or thereafter due the Contractor is insufficient to cover such amounts, the Contractor and the Performance Bond Surety shall be jointly and severally liable to the District for such amounts in excess of the Contract Price, provided that the liability of the Performance Bond Surety shall be limited to the penal sum of the Performance Bond. The assessment and/or withholding of the amount of such costs, expenses, and/or other charges shall be in addition to, and not in lieu of, any liquidated damages assessed and/or withheld from Contractor

under Article 7.5 hereof.

10.5.3 Non-exclusive Remedy. The District's exercise of rights pursuant to the foregoing shall not be deemed a waiver or limitation of any other right or remedy of the District under the Contract Documents, or arising by operation of the Laws.

ARTICLE 11: TESTS AND INSPECTIONS

11.1 Tests; Inspections; Observations.

11.1.1 Contractor's Notice. If the Contract Documents, the Laws or any public authority with jurisdiction over the Work requires the Work, or any portion thereof, to be specially tested, inspected or approved, the Contractor shall give the Architect, the Project Manager and the Project Inspector written notice of the readiness of such Work for observation, testing or inspection at least two (2) working days prior to the time for the conducting of such test, inspection or observation. The Contractor shall not cover up any portion of the Work subject to tests, inspections or observations prior to the completion and satisfaction of the requirements of such test, inspection or observation. If any portion of the Work subject to tests, inspection or approval is covered up by Contractor prior to completion and satisfaction of the requirements of such tests, inspection or approval, Contractor shall be responsible for the uncovering of such portion of the Work as is necessary for performing such tests, inspection or approval without adjustment of the Contract Price or the Contract Time on account thereof.

11.1.2 Cost of Tests and Inspections. The District will pay for fees, costs and expenses for the initial tests/inspections of materials/equipment which are conducted at the Site or locations within a one hundred (100) mile radius of the Site. All fees, costs or expenses for subsequent tests/inspections or for tests/inspections conducted at a location more than a one hundred (100) mile radius from the Site (including without limitation, travel and travel-related expenses) shall be borne solely and exclusively by the Contractor. The foregoing notwithstanding, if the portion(s) of the Work subject to tests/inspections is/are not ready for such test/inspection at the time indicated in the Contractor's notice under Article 11.1.1 or if upon completion of such test/inspection, the portion(s) of the Work subject to such test/inspection do not meet or exceed the minimum requirements of such test/inspection, the Contractor shall be solely responsible for the payment of all fees, costs or expenses arising out of or related in any manner to subsequent tests/inspections of such portion(s) of the Work, and resulting delays, disruptions or other impacts to completion of the Project. Further, notwithstanding the District's payment of fees, costs or expenses for conducting initial tests/inspections, if any actions or failures to act of the Contractor or person or entity providing or performing Work under the direction or control of the Contractor require tests/inspections to be conducted over a period of more than eight (8) hours per day by any single person or on weekends/holidays, the Contractor shall be solely responsible for the payment of fees, costs or expenses which result from test/inspection services which exceed eight (8) hours per day by any single person or on weekends/holidays.

11.1.3 Testing/Inspection Laboratory. The District shall select duly qualified person(s) or testing laboratory(ies) to conduct the tests and inspections to be paid for by the District and required by the Contract Documents. All such tests and inspections shall be in conformity with the Laws, including without limitation, Title 24 of the California Code of Regulations. Where inspection or testing is to be conducted by an independent laboratory or testing agency, materials or samples

thereof shall be selected by the laboratory, testing agency, the Project Inspector, the Project Manager or the Architect and not by the Contractor.

11.1.4 Additional Tests, Inspections and Approvals. If the Architect, the Project Manager, the Project Inspector or public authorities having jurisdiction over the Work determine that portions of the Work require additional testing, inspection or approval, the Architect or Project Manager will upon written authorization from the District, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the District, and the Contractor shall give timely notice to the Architect, the Project Manager and the Project Inspector of when and where tests and inspections are to be made so the Project Inspector and the Architect may observe such procedures. The District shall bear the costs of such additional tests, inspections or approvals, except to the extent that such additional tests, inspections or approvals reveal any failure of the Work to comply with the requirements of the Contract Documents, in which case the Contractor shall bear all costs made necessary by such failures, including without limitation, the costs of corrections, repeat tests, inspections or approvals and the fees of the Architect, Project Manager, and the Project Inspector in connection therewith.

11.2 Delivery of Certificates. Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

11.3 Timeliness of Tests, Inspections and Approvals. Tests or inspections required and conducted pursuant to the Contract Documents shall be made or arranged by Contractor to avoid delay in the progress of the Work.

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.1 Inspection of the Work.

12.1.1 Access to the Work. All Work and all materials and equipment forming a part of the Work or incorporated into the Work are subject to inspection by the District, the Project Manager, the Architect and the Project Inspector for conformity with the Contract Documents. The Contractor shall, at its cost and without adjustment to the Contract Price or the Contract Time, furnish any facilities necessary for sufficient and safe access to the Work for purposes of inspection by the District, the Project Manager, the Architect, the Project Inspector, DSA or any other public or quasi-public authority with jurisdiction over the Work or any portion thereof.

12.1.2 Limitations Upon Inspections. Inspections, tests, measurements, or other acts of the Architect and the Project Inspector hereunder are for the sole purpose of assisting them in determining that the Work, materials, equipment, progress of the Work, and quantities generally comply and conform to the requirements of the Contract Documents. These acts or functions shall not relieve the Contractor from performing the Work in full compliance with the Contract Documents. No inspection by the Architect or the Project Inspector shall constitute or imply acceptance of Work inspected. Inspection of the Work hereunder is in addition to, and not in lieu of, any other testing, inspections or approvals of the Work required under the Contract Documents.

12.2 Uncovering of Work. If any portion of the Work is covered contrary to the request

of the Architect, the Project Inspector or the requirements of the Contract Documents, it must, if required by the Architect or the Project Inspector, be uncovered for observation by the Architect and the Project Inspector and be replaced at the Contractor's expense without adjustment of the Contract Time or the Contract Price.

12.3 Rejection of Work. Prior to the District's Final Acceptance of the Work, any Work or materials or equipment forming a part of the Work or incorporated into the Work which constitutes Defective or Non-Conforming Work may be rejected by the District, the Project Manager, the Architect or the Project Inspector and the Contractor shall correct such rejected Work without any adjustment to the Contract Price or the Contract Time, even if the Work, materials or equipment have been previously inspected by the Architect or the Project Inspector or even if they failed to observe the Defective or Non-Conforming nature of the Work, materials or equipment.

12.4 Correction of Work. The Contractor shall promptly correct any Defective or Non-Conforming Work whether observed before or after Substantial Completion and whether or not fabricated, installed or completed. The Contractor shall bear all costs of correcting Defective or Non-Conforming Work, including additional testing and inspections and compensation for the Architect's services and expenses made necessary thereby. The Contractor shall bear all costs of correcting destroyed or damaged construction, whether completed or partially completed, of the District or separate contractors, caused by the Contractor's correction or removal of Defective or Non-Conforming Work.

12.5 Removal of Non-Conforming or Defective Work. The Contractor shall, at its sole cost and expense, remove from the Site all Defective or Non-Conforming Work which are neither corrected by the Contractor nor accepted by the District.

12.6 Failure of Contractor to Correct Work. If the Contractor fails to commence to correct Defective or Non-Conforming Work within three (3) days of notice of such condition and promptly thereafter complete the same within a reasonable time, the District may correct it in accordance with the Contract Documents. If the Contractor does not proceed with correction of such Defective or Non-Conforming Work within the time fixed herein, the District may remove it and store the salvable materials or equipment at the Contractor's expense. If the Contractor does not pay costs of such removal and storage after written notice, the District may sell such materials or equipment at auction or at private sale and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the Contractor, including without limitation compensation for the Architect's services, attorney's fees and other expenses made necessary thereby. If such proceeds of sale do not cover costs which the Contractor should have borne, the Contract Price shall be reduced by the deficiency. If payments of the Contract Price then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor and the Surety shall be jointly and severally liable to the District for any such excess amount.

12.7 Acceptance of Defective or Non-Conforming Work. The District may, in its sole and exclusive discretion, elect to accept Defective or Non-Conforming Work in lieu of requiring its removal and correction, in which case the Contract Price shall be reduced as appropriate and equitable. The District's determination of the extent of reduction of the Contract Price on account of Defective or Non-Conforming Work accepted by the District shall be binding, conclusive, dispositive and not subject to appeal or other dispute resolution procedures, unless such determination is manifestly unreasonable.

ARTICLE 13: WARRANTIES

13.1 Workmanship and Materials. The Contractor warrants to the District that: (i) the Work and all materials and equipment incorporated therein conform to requirements of the Contract Documents; (ii) all materials and equipment incorporated into the Work are new, of good quality and of the most suitable grade and quality for the purpose intended, unless otherwise specified in the Contract Documents; and (iii) all Work and workmanship is of good quality, free from faults and defects and in conformity with the requirements of the Contract Documents. If required by the Architect, Project Inspector, Project Manager or the District, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment incorporated into the Work. Any Work or portion thereof not conforming to these requirements, including substitutions or alternatives not properly approved in accordance with the Contract Documents may be deemed Defective or Non-Conforming. Where there is an approved substitution of, or alternative to, material or equipment specified in the Contract Documents, the Contractor warrants to the District that such installation, construction, material, or equipment will equally perform the function and have the quality of the originally specified material or equipment. The Contractor expressly warrants the merchantability, the fitness for use, and quality of all substitute or alternative items in addition to any warranty given by the manufacturer or supplier of such item. The obligations of the Contractor hereunder are in addition to, and not in lieu of, any other obligations imposed by any special guarantee or warranty required by the Contract Documents, guarantees or warranties provided by any manufacturer of any item or equipment forming a part of, or incorporated into the Work, or otherwise recognized, prescribed or imposed by the Laws.

13.2 Warranty Work. If, within two (2) years after the date of Final Acceptance, or such other time frame set forth elsewhere in the Contract Documents, any of the Work is found to be defective or not in accordance with the requirements of the Contract Documents, or otherwise contrary to the warranties contained in the Contract Documents, the Contractor shall commence all necessary corrective action not more than seven (7) days after receipt of a written notice from the District to do so, and to thereafter diligently complete the same. If the Contractor fails or refuses to commence correction of any such item within said seven (7) day period or to diligently prosecute such corrective actions to completion, the District may, without further notice to Contractor, cause such corrective Work to be performed and completed. In such event, Contractor and Contractor's Performance Bond Surety shall be responsible for all costs in connection with such corrective Work, including without limitation, general administrative overhead costs of the District in securing and overseeing such corrective Work. Nothing contained herein shall be construed to establish a period of limitation with respect to any obligation of the Contractor under the Contract Documents. Neither the District's Final Acceptance, the making of Final Payment, any provision in Contract Documents, nor the use or occupancy of the Work, in whole or in part, by District shall constitute acceptance of Work not in accordance with the Contract Documents nor relieve the Contractor or the Contractor's Performance Bond Surety from liability with respect to any warranties or responsibility for faulty or defective Work or materials, equipment and workmanship incorporated therein.

13.3 Guarantee. Upon completion of the Work, Contractor shall execute and deliver to the District the form of Guarantee included herein as Document No. 00 65 36. The Contractor's execution and delivery of the form of Guarantee is an express condition precedent to any obligation of the District to disburse the Final Payment to the Contractor

and any right of the Contractor to Final Payment.

13.4 Survival of Warranties; Surety Obligations. The Contractor's warranty obligations hereunder shall survive the Contractor's completion of Work under the Contract Documents, the District's Final Acceptance or the termination of the Contract. The obligations of the Surety issuing the Performance Bond shall include assumption and discharge of the Contractor's warranty obligations if the Contractor fails or refuses to perform its warranty obligations hereunder in strict conformity herewith.

ARTICLE 14: SUSPENSION OF WORK

14.1 District's Right to Suspend Work. The District may, without cause, and without invalidating or terminating the Contract, order the Contractor, in writing, to suspend, delay or interrupt the Work in whole or in part for such period of time as the District may determine. The Contractor shall resume and complete the Work suspended by the District in accordance with the District's directive, whether issued at the time of the directive suspending the Work or subsequent thereto.

14.2 Adjustments to Contract Price and Contract Time. In the event the District shall order suspension of the Work, an adjustment shall be made to the Contract Price for increases in the direct cost of performance of the Work of the Contract Documents, actually caused by suspension, delay or interruption ordered by the District; provided however that no adjustment of the Contract Price shall be made to the extent: (i) that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible under the Contract Documents; or (ii) that an equitable adjustment is made or denied under another provision of the Contract Documents. The foregoing notwithstanding, any such adjustment of the Contract Price shall not include any adjustment to increase the Contractor's overhead, general administrative costs or profit, all of which will remain as reflected in the Cost Breakdown submitted by the Contractor pursuant to the Contract Documents. In the event of the District's suspension of the Work, the Contract Time shall be equitably adjusted.

ARTICLE 15: TERMINATION

15.1 Termination for Cause.

15.1.1 District's Right to Terminate. The District may terminate the Contract upon the occurrence of any one or more of the following events of the Contractor's default: (i) if the Contractor refuses or fails to prosecute the Work with diligence as will ensure Substantial Completion of the Work within the Contract Time, or if the Contractor fails to substantially Complete the Work within the Contract Time; (ii) if the Contractor becomes bankrupt or insolvent, or makes a general assignment for the benefit of creditors, or if the Contractor or a third party files a petition to reorganize or for protection under any bankruptcy or similar laws, or if a trustee or receiver is appointed for the Contractor or for any of the Contractor's property on account of the Contractor's insolvency, and the Contractor or its successor in interest does not provide adequate assurance of future performance in accordance with the Contract Documents within ten (10) days of receipt of a request for such assurance from the District; (iii) if the Contractor repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment; (iv) if the Contractor repeatedly fails to make prompt payments to any Subcontractor, of any tier, or Material Suppliers or others for labor, materials or equipment; (v) if the Contractor disregards the Laws or requirements of any public entity having

jurisdiction over any portion of the Work; (iv) if the Contractor disregards proper directives of the Architect, the Project Manager, the Project Inspector or District; (vii) Defective/Non-Conforming Work which the Contractor neglects or refuses to correct; or (viii) if the Contractor otherwise violates any provisions or requirements of the Contract Documents. Once the District determines that sufficient cause exists to justify the action, the District may terminate the Contract without prejudice to any other right or remedy the District may have, after giving the Contractor and the Surety at least seven (7) days advance written notice of the effective date of termination. The District shall have the sole discretion to permit the Contractor to remedy the cause for the termination without waiving the District's right to terminate the Contract, or otherwise waiving, restricting or limiting any other right or remedy of the District under the Contract Documents or the Laws.

15.1.2 District's Rights Upon Termination. If the Contract is terminated pursuant to this Article 15.1, the District may take over the Work and prosecute it to completion, by contract or otherwise, and may exclude the Contractor from the site. The District may take possession of the Work and of all of the Contractor's tools, appliances, construction equipment, machinery, materials, and plant which may be on or about the Site, and use the same to the full extent they could be used by the Contractor without liability to the Contractor. In exercising the District's right to prosecute the completion of the Work, the District may also take possession of all materials and equipment at or about the Site or for which the District has paid the Contractor but which are stored elsewhere, and finish the Work as the District deems expedient. In exercising the District's right to prosecute the completion of the Work, the District shall have the right to exercise its sole discretion as to the manner, methods, and reasonableness of the costs of completing the Work and the District shall not be required to obtain the lowest price for completion of the Work. If the District takes bids for remedial Work or completion of the Work, the Contractor shall not be eligible for the award of such contract(s).

15.1.3 Completion by the Surety. If the Contract is terminated pursuant to this Article 15.1, the District may demand that the Surety take over and complete the Work. The District may require that in so doing, the Surety not utilize the Contractor in performing and completing the Work. Upon the failure or refusal of the Surety to take over and begin completion of the Work within twenty (20) days after demand therefor, the District may take over the Work and prosecute it to completion as provided for above.

15.1.4 Assignment and Assumption of Subcontracts. The District shall, in its sole and exclusive discretion, have the option of requiring any Subcontractor or Material Supplier to perform in accordance with its Subcontract or Purchase Order with the Contractor and assign the Subcontract or Purchase Order to the District or such other person or entity selected by the District to complete the Work.

15.1.5 Costs of Completion. In the event of termination under this Article 15.1, the Contractor shall not be entitled to receive any further payment of the Contract Price until the Work is completed. If the unpaid balance of the Contract Price as of the date of termination exceeds the District's direct and indirect costs and expenses for completing the Work, including without limitation, attorneys' fees, fees for additional professional and consultant services, and the District's administrative costs, such excess shall be used to pay the Contractor for the cost of the Work performed prior to the effective date of termination with a reasonable allowance for overhead and profit. If the District's costs and expenses to complete the Work exceed the unpaid Contract Price, the Contractor and Surety shall be jointly and

severally liable for payment of such difference to the District.

15.1.6 Contractor Responsibility for Damages. The Contractor and the Surety shall be jointly and severally liable for all damage sustained by the District resulting from, in any manner, the termination of Contract under this Article 15.1, including without limitation, attorneys' fees, and for all costs necessary for repair and completion of the Work exceeding the Contract Price.

15.1.7 Conversion to Termination for Convenience. In the event the Contract is terminated under this Article 15.1, and it is determined, for any reason, that the Contractor was not in default under the provisions hereof, the termination shall be deemed a Termination for Convenience of the District and thereupon, the rights and obligations of the District and the Contractor shall be determined in accordance with Article 15.2 hereof.

15.1.8 District's Rights Cumulative. In the event the Contract is terminated pursuant to this Article 15.1, the termination shall not affect or limit any rights or remedies of the District against the Contractor or the Surety. The rights and remedies of the District under this Article 15.1 are in addition to, and not in lieu of, any other rights and remedies provided by the Laws or under the Contract Documents. Any retention or payment of monies to the Contractor by the District shall not be deemed to release the Contractor or the Surety from any liability hereunder.

15.2 Termination for Convenience. The District may at any time, in its sole and exclusive discretion, by written notice to the Contractor, terminate the Contract in whole or in part when it is in the interest of, or for the convenience of, the District. In such case, the Contractor shall be entitled to payment for: (i) Work actually performed and in place as of the effective date of such termination for convenience of the District, with a reasonable allowance for profit and overhead on such Work, and (ii) reasonable termination expenses for reasonable protection of Work in place and suitable storage and protection of materials and equipment delivered to the site of the Work but not yet incorporated into the Work, provided that such payments exclusive of termination expenses shall not exceed the total Contract Price as reduced by payments previously made to the Contractor and as further reduced by the value of the Work as not yet completed. The Contractor shall not be entitled to profit and overhead on Work which was not performed as of the effective date of a termination for convenience. Should the District proceed with a termination for convenience as set forth herein, the Contractor's damages shall be limited to those set forth in this Article 15.2. The District may, in its sole discretion, elect to have Subcontracts assigned pursuant to Article 15.1.4 above after exercising the right hereunder to terminate for the District's convenience.

ARTICLE 16: MISCELLANEOUS

16.1 Governing Law. This Contract shall be governed by and interpreted in accordance with the laws of the State of California.

16.2 Marginal Headings; Interpretation. The titles of the various Articles of these General Conditions and elsewhere in the Contract Documents are used for convenience of reference only and are not intended to, and shall in no way, enlarge or diminish the rights or obligations of the District or the Contractor and shall have no effect upon the construction or interpretation of the Contract Documents. The Contract Documents shall be construed as a whole in accordance with their fair meaning and not strictly for or against the District or the Contractor.

16.3 Successors and Assigns. Except as otherwise expressly provided in the Contract Documents, all terms, conditions and covenants of the Contract Documents shall be binding upon, and shall inure to the benefit of the District and the Contractor and their respective heirs, representatives, successors-in-interest and assigns.

16.4 Cumulative Rights and Remedies; No Waiver. Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not in lieu of or otherwise a limitation or restriction of duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the District shall constitute a waiver of a right or remedy afforded it under the Contract Documents or at law nor shall such an action or failure to act constitute approval of or acquiescence in a breach hereunder, except as may be specifically agreed in writing.

16.5 Severability. If any provision of the Contract Documents is deemed illegal, invalid, unenforceable and/or void, by a court or any other governmental agency of competent jurisdiction, such provision shall be deemed to be severed and deleted from the Contract Documents, but all remaining provisions hereof, shall in all other respects, continue in full force and effect.

16.6 No Assignment by Contractor. The Contractor shall not sublet or assign the Contract, or any portion thereof, or any monies due thereunder, without the express prior written consent and approval of the District, which approval may be withheld in the sole and exclusive discretion of the District. The District's approval to such assignment shall be upon such terms and conditions as determined by the District in its sole and exclusive discretion.

16.7 Gender and Number. Whenever the context of the Contract Documents so require, the neuter gender shall include the feminine and masculine, the masculine gender shall include the feminine and neuter, the singular number shall include the plural and the plural number shall include the singular.

16.8 Independent Contractor Status. In performing its obligations under the Contract Documents, the Contractor is an independent contractor to the District and not an agent or employee of the District.

16.9 Notices. Except as otherwise expressly provided for in the Contract Documents, all notices which the District or the Contractor may be required, or may desire, to serve on the other, shall be effective only if delivered by personal delivery or by postage prepaid, First Class Certified Return Receipt Requested United States Mail, addressed to the District or the Contractor at their respective address set forth in the Contract Documents, or such other address(es) as either the District or the Contractor may designate from time to time by written notice to the other in conformity with the provisions hereof. In the event of personal delivery, such notices shall be deemed effective upon delivery, provided that such personal delivery requires a signed receipt by the recipient acknowledging delivery of the same. In the event of mailed notices, such notice shall be deemed effective on the third working day after deposit in the mail.

16.10 Disputes; Continuation of Work. Notwithstanding any claim, dispute or other disagreement between the District and the Contractor regarding performance under the

Contract Documents, the scope of Work thereunder, or any other matter arising out of or related to, in any manner, the Contract Documents, the Contractor shall proceed diligently with performance of the Work in accordance with the District's written direction, pending any final determination or decision regarding any such claim, dispute or disagreement.

16.11 Dispute/Claims Resolution.

16.11.1 Contractor Continuation of Work. Notwithstanding any claim, dispute, disagreement or other matter in controversy between the District and the Contractor relating to the Contract Documents and/or the Work, the Contractor shall continue to diligently prosecute and perform the Work in accordance with requirements of the Contract Documents, pending any final determination or decision regarding any such claim, dispute, disagreement or matter in controversy.

16.11.2 Public Contract Code § 9204 Claims Resolution Procedures. Claims of the Contractor are subject to the non-binding dispute resolution procedures set forth in Public Contract Code § 9204 ("Section 9204") provided, however, that the Contractor's initiation of Section 9204 procedures is expressly subject to the Contractor's prior full and timely compliance with requirements and procedures of the Contract Documents relating to procedures for resolution of claims, change orders, disputes and other matters in controversy under the Contract Documents.

16.11.2.1 Claim Defined. The term "Claim" shall be as defined in Section 9204.

16.11.2.2 Claim Documentation. The Contractor shall furnish reasonable documentation to support each Claim. "Reasonable documentation" includes, without limitation: (i) contractual and legal basis establishing Claim entitlement or merit; (ii) factual basis establishing District liability for the Claim; (iii) detailed breakdown of labor, materials, equipment and other costs included in the Claim; and (iv) detailed basis, including Construction Schedule analysis and fragments supporting any Contract Time adjustment or Liquidated Damages relief included in the scope of a Claim.

16.11.2.3 District Claim Review Statement. Within forty five (45) days (or such other time mutually agreed to by the District and the Contractor) after receipt of a properly submitted and properly documented Claim, the District will conduct a reasonable review of the Claim and provide the Contractor with a written statement identifying the disputed and undisputed portions of the Claim ("Claim Review Statement"). If the District does not provide the Contractor with the Claim Review Statement for any Claim within forty five (45) days (or other time mutually agreed to by the District and the Contractor) after receipt of a properly submitted and properly documented Claim, the Claim is deemed rejected in its entirety and thereupon, the Contractor may initiate the Meet and Confer process described below. A Claim deemed rejected pursuant to the foregoing does not constitute an adverse finding of Claim merit or the Contractor's responsibility or qualifications. If the Claim Review Statement identifies any undisputed portion of a Claim ("Undisputed Claim") and payment is due from the District on the Undisputed Claim, the District shall process and make payment

on the Undisputed Claim within sixty (60) days after the issuance date of the Claim Review Statement.

16.11.2.4 Meet and Confer.

16.11.2.4.1 Meet and Confer Demand. If the Contractor disputes any portion of the Claim Review Statement, or if a Claim is deemed rejected by the District not providing the Contractor with the Claim Review Statement within the time permitted under Section 9204, the Contractor may demand an informal conference to meet and confer with the District for settlement of the issues in dispute (“Meet and Confer”). The Contractor’s Meet and Confer request must be submitted to the District: (i) in writing; (ii) by registered mail or certified mail, return receipt requested; and (iii) within ten (10) days after the Claim Review Statement is submitted to the Contractor or within ten (10) days after the date the Claim is deemed rejected, as applicable. Failure of the Contractor to strictly comply with the foregoing is deemed a waiver of the Contractor’s right to request the Meet and Confer and the Non-Binding Mediation procedures under Section 9204. If the Contractor strictly complies with the foregoing, the District will schedule the Meet and Confer conference within thirty (30) days of the Contractor’s Meet and Confer request for settlement of disputed portions of the Claim Review Statement.

16.11.2.4.2 Meet and Confer Statement. Within ten (10) business days after conclusion of the Meet and Confer conference, if any portion of a Claim remains disputed, the District shall provide the Contractor a written statement identifying the disputed and undisputed portions of the Claim (“Meet and Confer Statement”). If the Meet and Confer Statement identifies any Undisputed Claim and payment is due from the District on the Undisputed Claim, the District shall process and make payment on the Undisputed Claim within sixty (60) days after date the Meet and Confer Statement is issued.

16.11.2.5 Non-Binding Mediation.

16.11.2.5.1 Contractor Initiation. The Contractor may request nonbinding mediation (“Mediation”) of disputed portions of a Claim identified in the Meet and Confer Statement. The Contractor’s Mediation demand must be submitted to the District: (i) in writing; (ii) by registered mail or certified mail, return receipt requested; (iii) within ten (10) days after the Meet and Confer Statement is submitted to the Contractor; and (iv) with specific identification of the disputed Claims issues subject to Mediation. Failure of the Contractor to strictly comply with the foregoing is deemed a waiver of the Contractor’s right to demand Mediation procedures under Section 9204.

16.11.2.5.2 Mediator Selection. The District and Contractor shall mutually agree to a mediator within ten (10) business

days after the date of the Contractor's demand for Mediation. If the District and Contractor do not mutually agree to a mediator, the District and Contractor shall each select a mediator and the District/Contractor selected mediators shall select a qualified neutral third party to mediate the disputed portion of the Claim.

16.11.2.5.3 Mediation Procedures. Mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the District and Contractor in dispute resolution through negotiation or by issuance of an evaluation.

16.11.2.5.4 Mediation Costs. All costs, fees and expenses of the mediator(s) and mediation administration shall be shared equally by the District and Contractor. The foregoing notwithstanding, the Contractor and District shall each bear the costs, fees and expenses of their own attorneys, experts and consultants.

16.11.2.5.5 Post-Mediation Disputed Claims. Any Claims or issues in dispute after Mediation shall be resolved in accordance with the applicable provisions of the Contract Documents.

16.11.2.5.6 Waiver. The District and Contractor may mutually agree to waive, in writing, Mediation under Section 9204 and, subject to the Contractor's compliance with Government Code Claim requirements pursuant to Article 16.11.3 hereof, proceed directly to commencement of a civil action or binding arbitration.

16.11.2.6 Payments of Undisputed Claims. If a payment due from the District for Undisputed Claims identified in the Claim Review Statement or the Meet and Confer Statement issued for a Claim is not made within the time established under Section 9204 the overdue portion of such payment shall bear interest at the rate of seven percent (7%) per annum from the date due. The District's credit application of any amount due for an Undisputed Claim against amounts due from the Contractor under the Contract Documents shall be deemed payment of the Undisputed Claim.

16.11.2.7 Subcontractor Claims.

16.11.2.7.1 Subcontractor Claim Submittal. If a Subcontractor, of any tier (collectively "Subcontractor") lacks legal standing to assert a Claim against the District because privity of contract does not exist, the Contractor may present the District a Claim on behalf of the Subcontractor ("Subcontractor Claim"). Each Subcontractor requesting submittal of a Subcontractor Claim to the District shall furnish reasonable documentation to support the Subcontractor Claim. Within forty-five (45) days of receipt of a Subcontractor's written request to submit a Subcontractor Claim, the Contractor shall notify the Subcontractor in writing as to whether the Contractor

presented the Subcontractor Claim to the District. If the Contractor did not present the Subcontractor Claim, the Contractor shall provide the Subcontractor with a statement of the reasons for not having done so.

16.11.2.7.2 Contractor Certification of Subcontractor Claim. The District's review of Subcontractor Claims is expressly subject to the Contractor's submittal of a duly completed and executed form of Contractor Certification of Subcontractor Claim certifying that the Contractor has thoroughly reviewed the Subcontractor Claim and based on the Contractor's review, certify that: (i) the Subcontractor Claim is made by the Subcontractor in good faith; (ii) the Subcontractor Claim is supported by reasonable documentation establishing entitlement to the relief requested and District liability therefor; and (iii) the Subcontractor Claim does not incorporate any request constituting a False Claim under applicable law, including the California False Claim Act (Government Code § 12650 *et seq*). The form of Contractor Certification of Subcontractor Claim is included in the Contract Documents.

16.11.2.7.3 District Review of Subcontractor Claim. Subcontractor Claims presented by the Contractor to the District are subject to the Section 9204 non-binding dispute resolution procedures set forth above, as modified herein. Requests for the District to conduct Meet and Confer and/or non-binding mediation procedures must be submitted jointly by the Contractor and the Subcontractor submitting the Subcontractor Claim. If Mediation proceedings are initiated in connection with a Subcontractor Claim, mediator and mediation administration fees and costs shall be borne equally by the District, Contractor and Subcontractor.

16.11.2.7.4 Disputed Subcontractor Claims. Subcontractor Claims which are not fully resolved by the Section 9204 non-binding dispute resolution procedures shall be resolved by Section 20104.4 Dispute Resolution Procedures or binding arbitration, as applicable. Commencement of Section 20104.4 Dispute Resolution Procedures or binding arbitration proceedings in connection with any Subcontractor Claim is subject to compliance with Government Code Claims requirements pursuant to Article 16.11.3 hereof.

16.11.3 Government Code Claim Requirements. Pursuant to Government Code § 930.6, any claim, demand, dispute, disagreement or other matter in controversy asserted by the Contractor, whether on behalf of itself or a Subcontractor, against the District for money or damages, including without limitation Claims or portions thereof remaining in dispute after completion of the Section 9204 non-binding dispute resolution procedures described above are deemed a "suit for money or damages" and shall be subject to the provisions of Government Code §§ 945.4, 945.6 and 946 ("Government Code Claims Process"). An express condition precedent to the

Contractor's initiation of Section 20104.4 Dispute Resolution Procedures or binding arbitration proceedings pursuant to the following is the Contractor's compliance with the Government Code Claims Process, including without limitation, presentation of the claim, demand, dispute, disagreement or other matter in controversy between the Contractor and the District seeking money or damages to the District and acted upon or deemed rejected by the District in accordance with Government Code § 900, *et seq.*

16.11.4 Intentionally Omitted.

16.11.5 Binding Arbitration of Claims.

16.11.5.1 JAMS Arbitration. Any Claim, or portion thereof in dispute after completion of the Section 9204 procedures and the Government Code Claims Process and any other claims, disputes, disagreements or other matters in controversy between the District and the Contractor arising out of, or related, in any manner, to the Contract Documents, or the interpretation, clarification or enforcement thereof shall be resolved by binding arbitration conducted before one (1) retired judge in accordance with the Construction Arbitration Rules and Procedures of Judicial Arbitration Mediation Services ("JAMS") in effect as of the date that a Demand for Arbitration is filed, except as expressly modified herein. The locale for any arbitration commenced hereunder shall be the regional office of the JAMS closest to the Site.

16.11.5.2 Demand for Arbitration. A Demand for Arbitration shall be filed and served within a reasonable time after the occurrence of the claim, dispute or other disagreement giving rise to the Demand for Arbitration, but in no event shall a Demand for Arbitration be filed or served after the date when the institution of legal or equitable proceedings based upon such claim, dispute or other disagreement would be barred by the applicable statute of limitations. If more than one Demand for Arbitration is filed by either the District or the Contractor relating to the Work or the Contract Documents, all Demands for Arbitration shall be consolidated into a single arbitration proceeding, unless otherwise agreed to by the District and the Contractor. The Contractor's Surety, a Subcontractor or Material Supplier to the Contractor and other third parties may be permitted to join in and be bound by an arbitration commenced hereunder if required by the terms of their respective agreements with the Contractor, except to the extent that such joinder would unduly delay or complicate the expeditious resolution of the claim, dispute or other disagreement between the District and the Contractor, in which case an appropriate severance order shall be issued by the Arbitrator.

16.11.5.3 Discovery. In connection with any arbitration proceeding commenced hereunder, the discovery rights and procedures provided for in California Code of Civil Procedure § 1283.05 shall be applicable, and the same shall be deemed incorporated herein by this reference.

16.11.5.4 Arbitration Award. The award rendered by the Arbitrator ("Arbitration Award") shall be final and binding upon the District and

the Contractor only if the Arbitration Award is: (i) supported by substantial evidence; (ii) based on applicable legal standards in effect that the time the Arbitration Award is issued; and (iii) supported by written findings of fact and conclusions of law in conformity with California Code of Civil Procedure § 1296. Any Arbitration Award that does not conform to the foregoing is invalid and unenforceable. The District and Contractor hereby expressly agree that the Court shall, subject to California Code of Civil Procedure §§ 1286.4 and 1296, vacate the Arbitration Award if, after review, the Court determines that the Arbitration Award does not fully conform to the foregoing. The confirmation, enforcement, vacation or correction of an arbitration award rendered hereunder shall be made by the Superior Court of the State of California for the county in which the Site is situated. The substantive and procedural rules for such post-award proceedings shall be as set forth in California Code of Civil Procedure § 1285 *et seq.*

16.11.5.5 Arbitration Fees and Expenses. The expenses and fees of the Arbitrator shall be divided equally among all of the parties to the arbitration. Each party to any arbitration commenced hereunder shall be responsible for and shall bear its own attorneys' fees, witness fees and other costs or expenses incurred in connection with such arbitration. The foregoing notwithstanding, the Arbitrator may award arbitration costs, including Arbitrator's fees but excluding attorneys' fees, to the prevailing party. By this arbitration provision, the District and the Contractor acknowledge and agree that neither shall recover from the other any attorney's fees associated with or arising out of any legal, administrative or other proceedings filed or instituted in connection with or arising out of the Contract Documents or the performance of either the District or the Contractor thereunder. The limited exceptions in the Contract Documents that provide attorney's fees for specific issues shall neither be construed as applying to this arbitration provision under California Civil Code § 1717(a) nor be deemed to be "authorized by the Laws."

16.11.6 Inapplicability to Bid Bond. The arbitration proceedings described above are not applicable to disputes, disagreements or enforcement of rights or obligations under the Bid Bond. All claims, disputes and actions to enforce rights or obligations under the Bid Bond shall be adjudicated only by judicial proceedings commenced in a court of competent jurisdiction.

16.12 Limitation on Special/Consequential Damages. In the event of the District's breach or default of its obligations under the Contract Documents, the damages, if any, recoverable by the Contractor shall be limited to general damages which are directly caused by the breach or default of the District and shall exclude any and all special or consequential damages, if any. The Contractor expressly acknowledges the foregoing limitation to recovery of only general damages from the District if the District is in breach or default of its obligations under the Contract Documents; the Contractor expressly waives and relinquishes any recovery of special or consequential damages from the District.

16.13 Capitalized Terms. Except as otherwise expressly provided, capitalized terms used in the Contract Documents shall have the meaning and definition for such term as set forth in the Contract Documents.

16.14 Attorney's Fees. Except as expressly provided for in the Contract Documents, or authorized by the Laws, neither the District nor the Contractor shall recover from the other any attorney's fees or other costs associated with or arising out of any legal, administrative or other proceedings filed or instituted in connection with or arising out of the Contract Documents or the performance of either the District or the Contractor thereunder.

16.15 Provisions Required by Law Deemed Inserted. Each and every provision of law and clause required by law to be inserted in the Contract Documents is deemed to be inserted herein and the Contract Documents shall be read and enforced as though such provision or clause are included herein, and if through mistake, or otherwise, any such provision or clause is not inserted or if not correctly inserted, then upon application of either party, the Contract Documents shall forthwith be physically amended to make such insertion or correction.

16.16 Prohibited Interests. No employee of the District, who is authorized in such capacity on behalf of the District to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving any architectural, engineering, inspection, construction or material supply contract or subcontract in connection with the Work shall become directly or indirectly financially interested in the Work or any part thereof.

16.17 Days. Unless otherwise expressly stated, references to "days" in the Contract Documents shall be deemed to be calendar days.

16.18 Entire Agreement. The Contract Documents contain the entire agreement and understanding between the District and the Contractor concerning the subject matter hereof, and supersedes and replaces all prior negotiations, proposed agreements or amendments, whether written or oral. No amendment or modification to any provision of the Contract Documents shall be effective or enforceable except by an agreement in writing executed by the District and the Contractor.

[END OF SECTION]

SECTION 10 14 16 - PLAQUES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal plaques.
2. *Room and space identification.*
3. *Exit path identification.*
4. *California Proposition 65 warning.*
5. *Other miscellaneous identification signs as indicated on Drawings.*

1.2 DEFINITIONS

- A. Accessible: In accordance with the accessibility standard.

1.3 ACTION SUBMITTALS

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

- B. Shop Drawings: For *all signage elements.*

1. Include fabrication and installation details and attachments to other work.
2. Show *sign* mounting heights, locations of supplementary supports to be provided by other installers, and accessories.
3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each plaque at least half size.

- C. Samples for Verification: For each type of plaque showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows:

1. *Signs*: Full-size Sample.
2. Exposed Accessories: Full-size Sample of each accessory type.
3. Full-size Samples, if approved, will be returned to Contractor for use in the Project.

- D. Product Schedule: For *signs*. Use same designations indicated on Drawings or specified.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For signs to include in maintenance manuals.**

1.6 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of plaques that fail in materials or workmanship within specified warranty period.**

- 1. Failures include, but are not limited to, the following:**
 - a. Deterioration of finishes beyond normal weathering.**
 - b. Deterioration of embedded graphic image.**
 - c. Separation or delamination of sheet materials and components**
- 2. Warranty Period: Five years from date of Substantial Completion.**

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Accessibility Standard: Comply with applicable provisions in California Building Code (CBC) 2019, Chapter 11B.**

2.2 ROOM IDENTIFICATION SIGNAGE

- A. Room Identification Signs: Signs with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:**

- 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:**
 - a. ACE Sign Systems, Inc.**
 - b. Advance Corporation.**
 - c. Allen Industries Architectural Signage.**
 - d. APCO Graphics, Inc.**
 - e. ASE, Inc.**
 - f. ASI Sign Systems, Inc.**
 - g. Best Sign Systems, Inc.**
 - h. Clarke Systems.**

- i. *Cosco.*
 - j. *Diskey Architectural Signage Inc.*
 - k. *InPro Corporation (IPC).*
 - l. *Mohawk Sign Systems.*
 - m. *Nelson-Harkins Industries.*
 - n. *Poblocki Sign Company, LLC.*
 - o. *Seton Identification Products.*
 - p. *Signature Signs, Inc.*
 - q. *Signs & Decal Corp.*
 - r. *Stamprite Supersine; a division of Stamp Rite Inc.*
 - s. *Vista System.*
 - t. *Vomar Products, Inc*
- 2. *Types: As indicated on Drawings.*
 - 3. *Mounting: Manufacturer's standard method for substrates indicated.*
 - 4. *Text and Typeface: Accessible raised characters and Braille matching Architect's sample; content as scheduled. Finish raised characters to contrast with background color, and finish Braille to match background color.*

2.3 METAL **SIGNS**

- A. Etched Plaque: Chemically etched or photochemically engraved metal sheet or plate with texture, border, and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ACE Sign Systems, Inc.
 - b. Nelson-Harkins Industries.
 - c. Southwell Company (The).
 - 2. Plaque Material: Sheet or plate aluminum.
 - 3. Plaque Thickness: 0.125 inch.
 - 4. Finishes:

- a. Baked-Enamel or Powder-Coat Finish: Manufacturer's standard, in color as selected by Architect from manufacturer's full range, **to match the campus standard** of the project.
5. Mounting: Concealed studs.
6. Text and Typeface: Accessible raised characters and Braille. Finish raised characters to contrast with background color, and finish Braille to match background color.

2.4 MATERIALS

- A. Aluminum Castings: ASTM B26/B26M, alloy and temper recommended by plaque manufacturer for casting process used and for type of use and finish indicated.
- B. Aluminum Sheet and Plate: ASTM B209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.
- C. Aluminum Extrusions: ASTM B221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.
- D. **Acrylic Sheet: ASTM D 4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).**
- E. **Vinyl Film: UV-resistant vinyl film with pressure-sensitive, permanent adhesive; die cut to form characters or images as indicated on Drawings and suitable for exterior applications.**
- F. **Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.**

2.5 ACCESSORIES

- A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of plaques, noncorrosive and compatible with each material joined, and complying with the following:
 1. Use concealed fasteners and anchors unless indicated to be exposed.
 2. For exterior exposure, furnish stainless steel devices unless otherwise indicated.
 3. Exposed Metal-Fastener Components, General:
 - a. Fastener Heads: For nonstructural connections, use oval countersunk screws and bolts with tamper-resistant Allen-head slots unless otherwise indicated.
 4. Plaque Mounting Fasteners:

- a. Concealed Studs: Concealed (blind), threaded studs welded or brazed to back of plaque, screwed into back of plaque, or screwed into tapped lugs cast integrally into back of plaque unless otherwise indicated.
- B. Adhesive: As recommended by plaque manufacturer.
 - 1. Adhesives shall have a VOC content of 70 g/L or less.
 - 2. Adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- C. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.

2.6 FABRICATION

- A. General: Provide manufacturer's standard plaques according to requirements indicated.
 - 1. Preassemble plaques in the shop to greatest extent possible. Disassemble plaques only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
 - 2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
 - 3. Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.
 - 4. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
 - 5. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match plaque finish.
 - 6. Castings: Fabricate castings free of warp, cracks, blowholes, pits, scale, sand holes, and other defects that impair appearance or strength. Grind, wire brush, sandblast, and buff castings to remove seams, gate marks, casting flash, and other casting marks before finishing.
- B. Surface-Engraved Graphics: Machine-engrave characters and other graphic devices into indicated plaque surface to produce precisely formed copy, incised to uniform depth.
 - 1. Engraved Metal: Fill engraved graphics with manufacturer's standard baked enamel.
- C. Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted plaques to suit plaque construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.

1. Aluminum Brackets: Factory finish brackets with baked-enamel or powder-coat finish to match plaque-background color unless otherwise indicated.
2. Stainless Steel Brackets: Factory finish brackets with No. 4 finish unless otherwise indicated.

2.7 GENERAL FINISH REQUIREMENTS

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. Directional Finishes: Run grain with long dimension of each piece and perpendicular to long dimension of finished trim or border surface unless otherwise indicated.
- D. Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

2.8 ALUMINUM FINISHES

- A. Clear Anodic Finish: AAMA 611, Class II, 0.010 mm or thicker.
- B. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

2.9 STAINLESS STEEL FINISHES

- A. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.
 1. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.
 2. Dull Satin Finish: No. 6.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

- B. Verify that plaque-support surfaces are within tolerances to accommodate plaques without gaps or irregularities between backs of plaques and support surfaces unless otherwise indicated.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install ***signage*** using mounting methods indicated and according to manufacturer's written instructions.
 - 1. Install ***signage*** level, plumb, true to line, and at locations and heights indicated, with plaque surfaces free of distortion and other defects in appearance.
 - 2. Install plaques so they do not protrude or obstruct according to the accessibility standard.
 - 3. Before installation, verify that plaque surfaces are clean and free of materials or debris that would impair installation.
 - 4. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
- B. Plaques Used for Room Identification and Other Accessible Plaques: Install in locations on walls as indicated on Drawings.
- C. Mounting Methods:
 - 1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of plaque. Remove loose debris from hole and substrate surface.
 - a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place plaque in position and push until flush to surface, embedding studs in holes. Temporarily support plaque in position until adhesive fully sets.
 - b. Thin or Hollow Surfaces: Place plaque in position and flush to surface, install washers and nuts on studs projecting through opposite side of surface, and tighten.
 - 2. Brackets: Remove loose debris from substrate surface and install bracket supports in position, so that plaque is correctly located and aligned.
 - 3. Adhesive: Clean bond-breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of plaque and of suitable quantity to support weight of plaque after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as plaque is applied and to prevent visibility of cured adhesive at plaque edges. Place plaque in position and push to engage adhesive. Temporarily support plaque in position until adhesive fully sets.
 - 4. Shim-Plate Mounting: Provide 1/8-inch- thick, concealed aluminum shim plates with predrilled and countersunk holes, at locations indicated, and where other direct mounting methods are impractical. Attach plate with fasteners and anchors suitable for secure attachment to substrate. Attach plaques to plate using method specified above.

3.3 ADJUSTING AND CLEANING

- A. Remove and replace damaged or deformed plaques and plaques that do not comply with specified requirements. Replace plaques with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.
- B. Remove temporary protective coverings and strippable films as plaques are installed.
- C. On completion of installation, clean exposed surfaces of plaques according to manufacturer's written instructions and touch up minor nicks and abrasions in finish. Maintain plaques in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION

SECTION 27 41 16 - INTEGRATED AUDIO-VIDEO SYSTEMS AND EQUIPMENT

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The work under this section includes all final design, all labor, material, equipment, supplies, control and audio system programming, Speaker Alignment, testing, transportation and accessories required to furnish and install a complete-seamless, integrated Audiovisual Systems (AVS) as indicated on the drawings and as specified herein. The AVS shall be defined as all cables, equipment, products, etc., as indicated on the drawings, and mentioned in these specifications.
- B. It is the intent of the Drawings and Specifications for the AVS Contractor to design, provide and install a complete, fully operational, and tested AVS.
- C. All miscellaneous AVS components including, but not limited to, plenum cables, speakers, signal converters, interface panels and components, termination equipment, patch panels, backboards, converters, matrix switchers, digital video extenders, controllers, digital signal processors, amplifiers, pre-amps, custom faceplates, mounting hardware, fasteners, racks, cabinets, and any other related items shall be furnished and installed completely under this section, such that the AVS shall perform all functions listed herein in compliance with all of the specified requirements.
- D. The schedule is paramount to the Project's success. With this, the AVS Contractor will have to be a team player, continually working with the team to facilitate expeditious design, procurement, and construction processes.
- E. Project Summary –
 - 1. Class Lab, 101, 103, 104, 105 and 106, Typical
 - a. Each Class Lab shall have a multimedia presentation system. The display system shall have a wall mounted commercial flat panel display and a wall mounted ultra-short-throw interactive projector with use a projection whiteboard as the projection surface. Sources to the displays shall be from local small form computer, source/media input panel, a wireless presentation system and routed through a digital media switcher to the projector. For voice pick-up, there shall be a wireless microphone system. Sound shall be heard through surface mounted speakers and an ADA-compliant connection to a portable ALS system. The System shall be controlled through a tabletop touch panel interface. System equipment shall be housed in the instructor's workstation within an audio-video rack enclosure.
 - 2. Classroom 108
 - a. Classroom 108 shall have a multimedia presentation system. The display system shall have a wall mounted ultra-short-throw interactive projector with use a projection whiteboard as the projection surface. Sources to the displays shall be from

local small form computer, source/media input panel, a wireless presentation system and routed through a digital media switcher to the projector. For voice pick-up, there shall be a wireless microphone system. Sound shall be heard through surface mounted speakers and an ADA-compliant connection to a portable ALS system. The System shall be controlled through a tabletop touch panel interface. System equipment shall be housed in a northwest cabinet within an audio-video rack enclosure.

1.2 RELATED WORK, STANDARDS, DOCUMENTS, AND PUBLICATIONS

- A. Documents affecting the work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and sections of all Divisions of these specifications.
- B. All applicable portions shall apply to this section as though written herein entirely.
- C. The AVS Contractor is responsible for referencing all Architectural, Mechanical, Electrical, and Structural Drawings for additional information about pathways and or obstructions.

1.3 GENERAL REQUIREMENTS

- A. Manufacturer: The term "manufacturer" shall be defined as the company, or group of companies, that produces the products meeting the requirements of Section 2 of this document. The Manufacturer shall have a minimum of ten (10) years of experience in manufacturing products of this type and shall be ISO 9001 Certified.
- B. Contractor: The term "contractor" shall be defined as the company, or group of companies, that installs the products per Section 3 of this document. The AVS Contractor selected to provide the installation of this System shall be certified by the Manufacturer in all aspects of design, installation, and testing of the products described herein.
 - 1. The AVS Contractor shall hold a valid State of California C-7 Low-Voltage license, shall have completed at least five (5) projects of equal scope, shall have been in the business of furnishing and installing systems of this scope and magnitude for at least five (5) years, and capable of being bonded to assure the Owner's Project Manager of performance and satisfactory service during the guarantee period.
 - 2. The AVS Contractor shall hold all other licenses required by the legally constituted authorities having Jurisdiction over the work.
 - 3. All work shall be performed under the supervision of a company accredited by the Manufacturer and such accreditation must be presented.
 - 4. The AVS Contractor shall be a manufacturer's authorized distributor and warranty station for the equipment offered and shall maintain a fully equipped service organization capable of furnishing adequate repair service to the equipment. The AVS Contractor must be certified by the Manufacturer a minimum of 180 days prior to bid opening.
 - 5. The AVS Contractor selected for this Project must adhere to the engineering, installation, and testing procedures and utilize the authorized manufacturer components and distribution channels in provisioning this Project.

6. Personnel: Use adequate numbers of skilled workers who are thoroughly trained and experienced with the specified requirements and the methods needed for the proper performance of the AVS installation work specified herein.
7. Designated Project Engineer: Provide a designated Project Engineer in responsible charge of the Design, CAD, In-House testing, and on-site commissioning of the Project during all phases of the work of this specification. This Project Engineer shall hold a current AVIXA (InfoComm) CTS-D, Extron XTP-Engineer, Biamp TesiraForte certifications minimum at the time of the bid, and shall be the same individual through the execution of the work unless illness, loss of personnel, or other circumstances reasonably beyond the control of the AVS Contractor intervene.
8. Technicians: shall have at least three (3) years of direct experience in similar work. The AVS technicians assigned to this Project shall be fully trained, qualified, and carry valid and current industry certifications regarding the installation, operation, and testing of audiovisual systems. At least one AVIXA (InfoComm) CTS-I, Extron XTP Technician certifications at time of the bid, and shall be assigned as Lead Technician to the Project.
9. Custom Control System Programmer: Provide at least one (1) full-time programmer on staff, capable of on-site custom programming of the custom remote-control system specified herein. Control System Programmer to hold the following certifications: AVIXA (InfoComm) CTS, Extron Certified Professional Programmer certifications at time of the bid. A programming Sub-Contractor may be used as long as the Programmer has the certifications as listed above at the time of the bid.
10. Designated Project Manager: Provide a designated Project Manager in responsible charge of the fabrication shop and on the Project Site during all phases of installation and testing of the work of this specification. The Project Manager shall hold current AVIXA (InfoComm) CTS at the time of the bid and shall be the same individual through the execution of the work unless illness, loss of personnel, or other circumstances reasonably beyond the control of the AVS Contractor intervene.

1.4 QUALITY ASSURANCE

- A. To maintain a high degree of quality assurance, the AVS Contractor shall, without exception, use the parts and supplies as specified on the drawings and in this specification.
- B. For any proposed product substitution or when the AVS Contractor intends to include an "or equal" product in the bid pricing, provide a substitution request submittal to the Owner's Project Manager for review no later than fifteen (15) calendar days before the bid submittal. This report shall include:
 1. Description of how the proposed product(s) will impact meeting the project completion date, indicated item(s) with lead times, and expected delivery date(s).
 2. Itemized cost comparisons between the proposed product(s) and the listed product(s).
 3. Detailed technical analysis of the electrical and mechanical specification differences between the proposed product(s) and the listed product(s).
 4. ETL "Verified" or UL "Verified" test lab documentation for the proposed product(s), component(s), and assemblies.
 5. Proposed product identification, manufacturer literature (specifications and cut sheets).
 6. Name, address and contact information of several similar projects where the proposed product(s) have been used.

7. Name, address and contact information of the proposed product(s) manufacturer's local representative.
 8. Sample proposed product(s) manufacturer's warranty.
- C. The Owner's Design Team/Project Manager must approve any proposed product(s) substitution item in writing. The Owner's Design Team/Project Manager reserves the right to require a complete sample of any proposed product(s) and may request a sample tested by an independent testing consultant to prove equality. The decision of the Owner's Design Team/Project Manager regarding equality of proposed product(s) items will be final.
- D. If a proposed product(s) is given final acceptance by the Owner's Project Manager, the AVS Contractor shall reimburse the Owner's Design Team/Project Manager for the costs to review the proposed product(s) substitution(s), and for any additional engineering charges, and shall pay all charges of other trades resulting from this product(s) use, at no cost to the Owner.
- E. It is a mandatory requirement that a single Contractor perform the work described in this specification.

1.5 BID SUBMITTAL REQUIREMENTS

- A. Pre-Qualification Certificates: Provide current training certificates for design, engineering, installation, and testing of the proposed products.
- B. Manufacturer Tests: AVS Contractor shall submit all manufacturer test information prior to installation. If the equivalent product(s) are substituted, the equivalent product(s) must show demonstrated and documented equivalence to the product(s) specified.
- C. Bid Forms: AVS Contractor shall submit completed the detailed bid forms provided with this specification. Lump-sum bids will not be accepted.
- D. Project Narrative: The AVS Contractor shall submit a summary of the scope of work, in AVS Contractor's own words, illustrating a complete and thorough understanding of the Project. The narrative shall include but not be limited to the room by room scope of work, project staffing and duration, quality assurance procedures and methodology, problem escalation procedures, and project schedule.
- E. Proposed Solution: The AVS Contractor shall provide manufacturers cut-sheets for all the proposed materials that meet the requirements listed/described in Section 2 of this specification. On each cut sheet, provide an indicating arrow next to each part number of the proposed material.
- F. A resume of qualification shall be submitted with the AVS Contractor's bid indicating the following:
 1. The AVS Contractor shall hold a valid State of California C-7 Low-Voltage license, shall have completed at least ten (10) projects of equal scope, shall have been in the business of furnishing and installing systems of this scope and magnitude for at least five (5) years, and capable of being bonded to assure the Owner's Project Manager of performance and satisfactory service during the guarantee period.

2. The AVS Contractor shall hold all other licenses required by the legally constituted authorities having Jurisdiction over the work.
 3. A technical resume of experience for the AVS Contractor's Project Manager, who will be assigned to this Project. This individual will remain as Project Manager for the duration of the Project. The AVS Contractor may change Project Managers only with the Owner's Project Manager's written approval.
 4. All personnel performing work on this Project must have successfully completed the Manufacturer's installation training course prior to the performance of any work on this Project. Accreditation will consist of individual employee certifications issued by the Manufacturer. Copies of certifications of such training must be presented prior to any work performed on this Project. A list of technical product installation training attended by the AVS Contractor's personnel within the past two (2) years that will install the AVS Contractor is the Authorized Distributor and that the equipment shall be installed according to Manufacturer intended practices. The AVS Contractor shall also furnish a written guarantee from the Manufacturer that they will have a service representative assigned to this area for the life of the equipment.
- G. The AVS Contractor shall submit a detailed Bill of Materials developed for the Project. The Bill of Materials shall contain a complete list of every component, part, or device by part description, Manufacturer and Manufacturer's part number, quantity, and unit of measure. See the example format below. The product cut sheets shall be organized to match the order listed in the bill of materials. All cut sheets shall be numbered sequentially with matching page numbers indicated on the Bill of Materials. If more than one part number appears on a cut sheet, AVS Contractor shall identify the proposed part with a RED arrow or RED circle.

<u>Description</u>	<u>MFG & Part #</u>	<u>Quantity</u>	<u>Unit of Measure</u>	<u>Price</u>
Speaker	JBL Audio	1	Each	\$

- H. This information may be used by the Owner to evaluate the AVS Contractor's general understanding of the project scope during the bid evaluation. Errors/Omissions from this bill of material do not relieve the AVS contractor from providing all material, components, labor, etc., as outlined in this specification and on the drawings to provide a complete and useable AVS system.
- I. Provide 3 copies of the above information at bid time.

1.6 POST AWARD SUBMITTALS: SUBMIT WITHIN THIRTY (30) DAYS OF AWARD.

- A. Submittals shall be in three (3) deliverables, and the first submittal shall be equipment cut sheets and equipment index in PDF format. The second submittal shall be electronic reproducible shop drawings, including single line block drawings, equipment rack elevations, equipment locations, and mounting details (as pdf). The third submittal shall be control panel layouts; see below in paragraph G:
1. A statement of sub-contractors, franchises, distributorship, dealerships, arrangements and agreements with manufacturers of equipment to be used for this work.
 2. Complete bill of quantities, including all material, components, devices, and equipment required for this work. The bill of quantities shall be tabulated respective of every System

as specified, in the order of the specification section 2 below. It shall contain the following information for each item listed:

- a. Quantity
 - b. Description
 - c. Manufacturer's name and model number
 - d. Manufacturer's specification sheet
- B. Samples approved by the architect of all finishes/materials will be visible to the public. Including at least receptacles and controls with associates' trim plate and each type of loudspeaker baffle and/or grille.
- C. Functional Diagrams: single-line block diagram showing the interconnection of all components, receptacles, terminal blocks, controls, transformers, and loudspeakers in addition to the active elements. Include terminal and cable numbers, all System and component labels. Show detailed system component information, including but not limited to the Manufacturer's name, model number, any specialized part number option, and all input and output connection information for each piece of equipment. No drawing codes shall be permitted. Provide one (1) full-scale original or photograph (not blueprint) copy for each System. All shop drawings shall follow The AVIXA (InfoComm) standard ANSI-J-STD-710 for audio, video, and control.
- D. Equipment rack elevation drawings scaled (1-1/2" = 1'-0" or larger):
1. Front Elevations: include equipment designation, Manufacturer's name, model number, rack location, and rack designation.
 2. Rear Elevations: include AC power wire-ways and route of wiring harnesses.
- E. Samples for approval by the architect of all finishes/materials that will be visible to the public, including at least receptacles and controls with associated trim plate and each type of loudspeaker baffle and/or grille.
- F. AVS Contractor fabricated items, detailed drawings showing all components, devices, and equipment, including dimensions, component values, terminal designations, types, locations, Manufacturer's name, and model number.
- G. The third submittal shall be Control Panel Layouts: Developed drawings of all control system panel layouts after meeting with the Owner to review the system functionality they are expecting.
1. Prior to programming the remote-control System, the AVS Contractor shall submit shop drawings per the project standards showing all control screen layouts, graphical user interfaces (GUI), and control descriptions of all remote-control system functions to the PM for review and comment prior to the actual programming of the System. Submit in native file format and hard copy form. Shop drawings shall include control screen layouts of the touch panel pages for each venue, web page layouts (as required in Part 2 below). Submit electronic versions for PM review. The AVS Contractor shall incorporate all PM comments into the programming of the systems.
 2. Prior to delivering the systems to the job site, the AVS Contractor shall demonstrate fully functioning systems in the AVS Contractor's facilities that include remote-control programming. This demonstration shall coincide with the PM's Representative observation of completed sub-assemblies. The PM will review and comment on the remote-control

programming submittal, and the AVS Contractor shall incorporate all PM comments into the programming of the systems.

1.7 GENERAL SYSTEM PRODUCT, INSTALLATION, AND OVERALL SYSTEM WARRANTY

- A. Prior to Owner acceptance, the AVS Contractor shall provide to the Owner's Project Manager a manufacturer's product and performance warranty. This will require the submittal of the necessary pre-job certification registration forms as well as the required Project closing information. The Owner will only acknowledge acceptance upon submittal of a valid manufacturer's warranty.
- B. Manufacturer's Site Certifications will not be accepted.
- C. The warranty shall commence from the date of the Owner's final written acceptance of the completed Project.
- D. All conditions for obtaining the Manufacturer's warranty shall be the sole responsibility of the AVS Contractor.
- E. The AVS Contractor shall maintain a competent service organization and shall if requested, submit a service maintenance agreement to the Owner after the end of the guarantee period.
- F. A typewritten notice shall be posted at the equipment rack that shall indicate the firm, address, and telephone number to call when service is necessary. The notice shall be mounted in a neatly finished metal frame with a clear plastic window and securely attached to the inside of the door.

1.8 SPECIFIC SYSTEM PRODUCT, INSTALLATION, AND OVERALL SYSTEM WARRANTY

- A. Prior to Owner acceptance, the AVS Contractor shall provide the Owner's Project Manager a manufacturer's product and performance warranty. This will require the submittal of the necessary pre-job certification registration forms as well as the required Project closing information. The Owner will only acknowledge acceptance upon submittal of a valid manufacturer's warranty.
- B. The warranty shall commence from the date of the Owner's final written acceptance of the completed Project.
- C. All conditions for obtaining the Manufacturer's warranty shall be the sole responsibility of the AVS Contractor.
- D. The AVS Contractor shall maintain a competent service organization and shall if requested, submit a service maintenance agreement to the Owner after the end of the guarantee period.
- E. A typewritten notice shall be posted at the equipment rack that shall indicate the firm, address, and telephone number to call when service is necessary. The notice shall be mounted in a neatly finished metal frame with a clear plastic window and securely attached to the inside of the door.

PART 2 - PRODUCTS AND AUDIOVISUAL SYSTEM SCOPE OF WORK

2.1 ACCEPTABLE MANUFACTURERS

- A. It is the responsibility of the bidder to ensure that the proposed product meets or exceeds every standard outlined in these specifications and the equipment's technical datasheets.
- B. The functions and features specified are vital to the operation of this facility. Therefore, the inclusion of a component's Manufacturer in the list of acceptable manufacturers does not release the AVS Contractor from strict compliance with the requirements of this specification.

2.2 SYSTEM FUNCTIONS AND CAPABILITIES:

- A. The Audiovisual Systems (AVS) equipment will be housed in the AVS rack. The AVS shall be controlled by a control system for the System's functionality.
- B. The AVS shall comply with AVIXA A102.01:2017 Audio Coverage Uniformity in Listener Area.
- C. The AVS shall provide clear, natural sound uniformly distributed throughout the designated areas. The System shall utilize speakers as shown on the plans. These quantities shall be considered as the minimum quantity required. If additional speakers are needed to meet the requirements of section 2.02, sections C thru G below, the AVS Contractor shall include all costs for added speakers in the base bid.
- D. The System shall have adequate dynamic range without audible clipping or distortion to accommodate all types of program material. Audio, Digital Signal Processing shall be employed in the designated rooms to ensure smooth frequency response, high acoustical gain before feedback. When at maximum level, the System shall operate without audible distortion, rattles, and buzzes. All switching shall be silent and without pops and or transients.
- E. The system frequency response shall be within +/- 2dB from a curve which is flat from 80Hz to 4kHz and decreasing 3dB per octave from a relative level of 0 dB from 4kHz to 10kHz. There shall be a minimum 12dB roll-off above 10 kHz and below 63 Hz. Uniformity of coverage of the System at seated ear height (42") shall be within +/- 3dB in the 4kHz 1/3 octave band at any seat location using pink noise as a test signal.
- F. System noise shall not exceed an equivalent input noise of -120dB based on a 20KHz-noise bandwidth. The predominant noise component in the system output under any operating condition shall be that of the input stage.
- G. The sound level capability of program material levels produced in all seats shall be at least 105dB when measured with a scaled filter. There shall be at least 6dB of amplifier headroom.
- H. The System shall provide clear audio to all areas covered by the System. Each speaker zone shall be wired discretely to the correct zone on the amplifier. See AVS drawings for exact location.
- I. The AVS Contractor will review and assess the appropriate Lens Throw length between the video projectors and the projection screens to ensure optimum picture sizing and focus. Make all

adjustments necessary, including projector keystone correction (if the projector cannot be placed in the optimum location) and lens shift to achieve the image size and shape required.

- J. Provide full video projector calibration and adjustments for optimal picture quality for all used inputs. Provide proper aspect ratio configuration for 16:9 and 16:10 sources. Set all projector configuration presets required for control system recall coordination and provides final system documentation.
- K. Verify image Contrast to perform to AVIXA (INFOCOMM) 3M-2011, Projected Image System Contrast Ratio.
- L. Provide full flat panel monitor display calibration and adjustments for optimal picture quality for a single HDMI, DisplayPort (DP), or DVI-D input. Provide proper aspect ratio configuration for 16:9 and 16:10 sources. Use a test generator (I. E. Extron VTG Series, Hall Research PGA-VHD, or Teledyne 780): for all setup verification, and verify proper image configuration with all inputs. (Contract the Owner's Technical Representative prior to the final adjustment to coordinate).
- M. Controls: Adjust all controls to achieve the specified performance. Provide covers for all level controls, as appropriate to prevent unauthorized gain changes. The AVS Contractor will confirm that all control system operations are properly programmed and repeatable.
- N. Testing Report: Provide a letter/report documenting the results of these preliminary tests, including amplifier gain/level settings, DSP Gain & EQ filter settings, and AV equalization curves for review by the AVS Design Consultant.
- O. See the wiring device section of this specification for wiring device plate cover labeling requirements.
- P. See drawings for panel board schedule directory installation requirements.
- Q. See the conduit installation section of this specification for conduit labeling requirements.
- R. Software Programming
 - 1. General
 - a. Except when otherwise agreed in writing, the client shall retain legal and beneficial ownership of all Intellectual Property, including source code, created by the AVS Contractor, their employees, and sub-Contractors.
 - b. The AVS Contractor must allow sufficient time for the programming of all configurable software audio, video, and control systems. Contractors must evaluate the systems functional requirements and user interface and then allow time in their bid accordingly. The system description as well as the end-user interview, will provide the AVS Contractor with the necessary information needed to proceed with the programming. Any questions as to the systems functional requirements must be sent in written RFI form to the Owner and Consultant. All programming schemes must be submitted to the Owner and Consultant for approval before programming starts. This includes the appearance of all user interfaces, touch panel layouts, preset and sub-preset information (acquired through client interviews), and speaker control schemes. The AVS Contractor will also submit a narrative for the control system

concept to the Consultant for approval. The AVS Contractor is to interview the Owner and their representatives to acquire the necessary information needed to allow for the proper programming of this System. After interviewing the Owner, the AVS Contractor will then submit a written report stating his interpretation of the Owner's requirements for approval by AVS Consultant. Only after the Owner and Consultant have approved the programming report may the AVS Contractor proceed with the programming of this System.

- c. All equipment that is connected to the Owner's local area network and is configurable via the local area network must have its equipment software installed onto Owner furnished dedicated computers by the Owners Information Technology Staff unless otherwise indicated. The AVS Contractor is to allot time to test equipment software loaded on the Owner's computers which are to be identified by the Owner and/or Consultant. The computers will be programmed to emulate user interfaces throughout the facility. The AVS Contractor shall coordinate all software deployment over IP with the Owner's Information technology department.
- d. Control system minimum programming outlined below:
 - 1.) The AVS Contractor shall allot time, as needed, for on-site control system programming with the Owner representative.
 - 2.) All serial controlled devices must have bi-directional communication with the control system. All control functions locally available on each device must be accessible via the remote-control System. All locally gestured control functions must mirror the control system user interface. In other words, if the volume control is adjusted on a DSP interface, that adjustment must register on the control interface.
 - 3.) The Control system shall be used to power up and down connected equipment where indicated. The control system shall control the volume levels for the program audio, wireless microphones if applicable, select video sources and media input panel (MIP) in the floor boxes and wall plates, transport and control functionality for playback equipment from the wall-mounted and a tabletop LCD control panel in the room. The control panel may require a POE injector located in the AV rack or behind the display.

2.3 AUDIOVISUAL SYSTEM PRODUCTS

- A. The System shall utilize AV products as shown on the Plans and listed below. These products shall be considered to be the minimum quantity, performance, functionality, and quality levels. If additional and/or upgraded components are needed to meet the performance requirements of this specification, the AVS Contractor shall include all costs for such added and/or upgraded components in the base bid.
- B. Note: All Audiovisual equipment listed in the specifications and in drawings shall be Owner Furnished and Owner's Contractor Installed.
- C. Class Lab 101, 103, 104, 105, 106 and 108, Typical
 1. Display System:
 - a. PROJ1-1, 1-Each, Epson BrightLink 735Fi 1080p 3LCD Interactive Laser Display.

- b. 1-Each, Epson BrightLink Projector Wall Mount.
2. Digital Video System:
 - a. DTPSWT1-1, 1-Each, Extron DTP CrossPoint 82 4K IPCP Q SA, 82 4K, 8x2 Seamless 4K Scaling Presentation Matrix Switcher with 2 x 50 Watt Stereo Amp, Controller and AV LAN
 - b. DTPRX1-1, 1-each, Extron DTP HDMI 4K 230 Rx, DTP Receiver for HDMI.
 - c. DTPTX1-1, 1-Each, Extron.
 - d. WIPS1-1, 1-Each, Extron ShareLink Pro 500 42-297-01, Wireless Presentation Gateway.
 - e. PC1-1, Owner Furnished PC Computer with wireless keyboard and mouse.
 - f. USBEXT1-1, 1-Each, Extron USB Extender Plus T, USB Extender Transmitter.
 - g. USBEXT1-2, 1-Each, Extron USB Extender Plus R, USB Extender Receiver.
 - h. **1-Each, AVer F50+, Document Camera.**
 3. Audio System:
 - a. SPKR1-1 to SPKR1-2, 2-Each, EXTRON SM 26, SpeedMount Two-Way Surface Mount Speakers with 6.5" Woofer
 - b. AMPLIFIER, Built into the Extron Switcher
 - c. DSP, Built into the Extron Switcher
 - d. WMRX1-1, 1-Each, Shure QLXD124/85, Handheld and Lavalier Combo Wireless Microphone System.
 4. Control System:
 - a. TP1-1, 1-Each, Extron TLP Pro 525T, 5" Tabletop TouchLink Pro Touchpanel.
 - b. POEINJ1-1, 1-Each, Extron XTP PI 100, PoE Injector.
 - c. Controller, Built into the Extron Switcher
 - d. 1-Each, Extron RSB 129, Basic Rack Shelf for 9.5" Deep Products
 5. Misc.:
 - a. 1-Each, Middle Atlantic SRSR-4-14, Slide Out Rotating Rail System Rack.
 - b. 1-Each, Panamax M4315-PRO, BlueBOLT-Controllable Power Conditioner – 8 Outlets.
 - c. 1-Each, Shelf for PC Computer.
 - d. 1-Each, Yamaha SWR2100P-5G, 5-Port PoE Network Switch.
 - e. 1-Each, **DA-LITE IDEA Screen, Dry Erase Projection Screen for use with Interactive Projectors** ~~Mooreco Interactive Projector Whiteboard 2G5Kx xx,~~ Exact Size/SKU to be Coordinated with Architect and Whiteboard Size Specified.
- D. Assistive Listening System
- a. Refer to specifications section 27 51 26 Assistive Listening Systems.

2.4 GENERAL PRODUCTS FOR SYSTEMS

A. CABLE – ALL SPACES

1. Digital Video Twisted Pair Cable, Extron only XTP/DTP 24P, Shielded Twisted Pair Cable, Plenum Rated: (Quantity as required). With Extron Only Shielded RJ-45 Connectors.
2. Distributed Loudspeaker 18-2, 18 AWG, 2-conductor Plenum Rated (70 volts): Belden, or equal.
3. Analog Microphone/Line Level cable, 2-22, 22 AWG conductor, jacketed, shielded, twisted-pair) plenum-rated: Belden or equal.
4. Control System Device Control (RS232, Relay or Contact Closure): (Dual 22 AWG shielded twisted pairs with individual drain wires; each pair is color-coded Red/Black and Green/White to simplify identification.) Plenum Rated: Belden or equal.

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION REQUIREMENTS

- A. The installation, configuration, and wiring of the System shall be executed in accordance with the drawings and the equipment manufacturer's wiring diagrams. Should any variations in these requirements occur, the AVS Contractor shall notify the Owner's Project Manager before making any changes. It shall be the responsibility of the manufacturer-authorized distributor of the approved equipment to install the equipment and guarantee the System to operate as per plans and specifications.
- B. Furnish all conductors, equipment plugs, terminal strips, etc., and labor to install a complete and operable system.
- C. The cables within the rack or cabinets shall be labeled/numbered for identification following the AVIXA (InfoComm) F501.01:2015, Cable Labeling of Audiovisual Systems, standard unless otherwise directed.
- D. Splices of cables in underground pull boxes are not permitted unless otherwise noted on the drawings.
- E. The labor employed by the AVS Contractor shall be regularly employed in the installation and repair of audiovisual systems and shall be acceptable to the Owner's Project Manager to engage in the installation and service of this System.
- F. The AVS Contractor shall thoroughly clean all equipment and materials. All exposed parts of the equipment, cabinets, and other equipment shall be left in a clean condition, unblemished, and free of all dirt, dust, smudges, spots, fingerprints, etc. The AVS Contractor shall remove all debris and rubbish created in the course of this Project. The AVS Contractor shall thoroughly clean all buildings of any dirt, debris, rubbish, marks, etc., caused by the performance of this work.
- G. The System must meet all local and other prevailing codes.

- H. All cabling installations shall be performed by qualified technicians.
- I. All cabling shall be splice-free unless otherwise noted on drawings.
- J. In order to ensure the least amount of cable untwisting, it is required that all cables shall be stripped using a special tool.
- K. The use of lubricants (i.e., Yellow 77) to facilitate the installation of cables in conduits is highly discouraged. If such a lubricant must be used, the AVS Contractor shall verify the acceptability of the lubricant to be used with the cable manufacturer prior to using such a lubricant. Lubricants that harden after installation are not allowed.
- L. Under no circumstance are "channel locks" or other pliers to be used.
- M. Cables may be run exposed above ceilings, provided the cabling is supported independently of other utilities such as conduits, pipes, and the ceiling support systems. The AVS Contractor shall include all costs in the base bid for any additional supports/seismic bracing required by the Local Authority having Jurisdiction. The cables shall not be laid directly on the ceiling panels. The use of hook and loop ties shall be done in accordance with the cable manufacturer's requirements. The cable jacket composition must meet local, and all other prevailing fire and safety codes – "Plenum Rated" cable shall be used.
- N. All fire-rated walls penetrated by AVS Contractor shall be sealed by use of a non-permanent fire blanket or other methods in compliance with the current edition of NFPA and the NEC or other prevailing code and must be a system listed by UL. The AVS Contractor must not use concrete or other non-removable substance for fire stopping on cable trays, wire ways, or conduits. Contractors who use this method will be required to replace all cables affected and provide the originally specified access to each affected area. This requirement also applies to maintaining fire ratings of all floors penetrated by conduits or devices designated for use by voice and data cabling.
- O. All equipment racks shall be bolted to the floor by the AVS Contractor in the location shown on drawings. The earthquake mounting brackets that come with each rack kit shall be screwed to studs, not drywall.
- P. Any cable damaged or exceeding recommended installation parameters during installation shall be replaced by the AVS Contractor before final acceptance at no cost to the Owner.
- Q. The cable's minimum bend radius and maximum pulling tension shall not be exceeded.
- R. Cable raceways, when required, shall not be filled greater than 40% of cross sectional area.

3.2 SPECIFIC SYSTEM INSTALLATION REQUIREMENTS

- A. All Audiovisual cabling used throughout this Project shall comply with the requirements as outlined in the NEC Articles 725, 760, 770, and 800 and the appropriate local codes. All copper cabling shall bear UL listed type CMP (Plenum-Rated). All fiber optic cabling shall bear OFNP (Plenum-Rated). The AVS Contractor is responsible for installing appropriately rated cable for the environment in which it is installed. For cables run outside of a building to outdoor speakers,

the cable shall be Outdoor Plant Rated (OPR) or Direct Burial cable and must be run in conduit point to point. For longer cable runs between the buildings, fiber optic cable shall be used, the fiber cable shall be run in conduits.

B. Cable Pathways:

1. In the suspended ceiling and raised floor areas where duct, cable trays, or conduit are not available, the AVS Contractor shall bundle cabling with half-inch hook and loop strips but not deforming the cable geometry. Cable bundles shall be supported via "J" hooks attached to the existing building structure and framework at a maximum of five (5) foot intervals. Plenum-rated hook and loop ties will be used in all appropriate areas. The AVS Contractor shall adhere to the manufacturers' requirements for bending radius and pulling tension of all cables.
2. Cables or J hooks shall not be attached to lift out ceiling grid supports or laid directly on the ceiling grid.
3. Cables or J hooks shall not be attached to or supported by fire sprinkler heads or delivery systems or any environmental sensor located in the ceiling air space.
4. Where additional conduit(s)/sleeve(s) are required but not provided by the Electrical Contractor, the AVS Contractor shall be responsible for providing such conduit(s)/sleeve(s). Conduit(s) and sleeve(s) shall be of suitable material, sized, installed, fire-stopped, and grounded as required by the NEC, ANSI/TIA/EIA standards, and all other applicable codes and standards. Any conduit(s) and sleeve(s) added by the AVS Contractor shall be approved by the Owner's Project Manager prior to rough-in.

C. The AVS Contractor shall be responsible for damage to any surfaces or work disrupted as a result of his work. Repair of surfaces, including painting, shall be included as necessary.

D. Rack-mounted equipment shall be grounded via the chassis, in accordance with Manufacturer's instructions. The equipment chassis shall be bonded to the rack/cabinet using one of the following methods:

1. If the equipment has a separate grounding hole or stud, use a # 6 AWG ground wire from the chassis ground hole/stud to the rack grounding bus if required.
2. If the Manufacturer suggests grounding via the chassis mounting flanges, use tri-lobular thread-forming screws (not self-tapping or sheet metal screws) to attach the equipment to the rack/cabinet rails. If the equipment mounting flanges are painted, remove the paint and apply an anti-oxidant, or use tri-lobular thread-forming screws and two (2) "Type B" internal-external tooth lock washers to safely ground equipment to the rack.
3. All equipment racks shall be grounded to the AC outlet box or building ground by a # 6 AWG Green ground wire attached to the Grounding lug in the rack.

3.3 GENERAL INSTALLATION DESCRIPTION

A. The labor employed by the AVS Contractor shall be regularly employed in the installation and repair of Audiovisual Systems and shall be acceptable to the Owner and architect to engage in the installation and service of this System.

B. The AVS Contractor shall thoroughly clean all equipment and materials. All exposed parts of the equipment, cabinets, and other equipment shall be left in a clean condition, unblemished, and free

of all dirt, dust, smudges, spots, fingerprints, etc. The AVS Contractor shall remove all debris and rubbish occasioned by the work from the site. The AVS Contractor shall thoroughly clean all buildings of any dirt, debris, waste, marks, etc., Caused by the performance of this work.

C. Labeling

1. Wiring Labels: At all connection points for all types of cable & wiring, a label strip shall be attached at both ends of the cable following the AVIXA (InfoComm) F501.01:2015 Cable Labeling of Audiovisual Systems, standard unless otherwise directed, indicating the name/number of that cable or wire as follows:
 - a. At internal locations (inside racks, cabinets, or boxes), a pressure-sensitive label shall be used.
 - b. At external locations, a printed label covered with clear shrink wrap or an approved labeling system shall be used.
2. Equipment Labels: All active components shall have labels at the front and rear.
 - a. Labels shall be applied plumb and neat and shall not cover any equipment lights, recessed controls, or control labels.
 - b. Front labels shall indicate functional use of equipment.
 - c. Rear labels shall indicate system schematic reference designation.
3. Contractor Label: AVS Contractor nameplate shall be attached to a blank panel inside each equipment rack or group of racks.
 - a. The nameplate shall be printed, self-adhesive type and shall be no larger than 1-3/4" high by 6" wide. Alternatively, the nameplate may be preprinted onto a 1RU blank panel.
 - b. The nameplate shall contain AVS Contractor's name, city/state address, and phone number.

D. The Equipment Rack and Equipment Testing and Adjusting Procedures: Conduct procedures in fabrication shop following the AVIXA (InfoComm) 10:2013 Audiovisual Systems Performance Verification procedure. Verify safe and proper operation of all components, devices, or equipment, establish nominal signal levels within the systems and verify the absence of extraneous or degrading signals. Make all preliminary adjustments and document the setting of all controls, parameters of all corrective networks, voltages at key system interconnection points, gains and losses, as applicable. Submit test report with color photographs of each equipment rack, front, and back. Perform at least the following procedures:

1. Preliminary: Verify:
 - a. Grounding of devices and equipment. The integrity of the signal and electrical system ground connections.
 - b. Proper provision of power to devices and equipment.
 - c. The integrity of all insulation, shield terminations and connections.
 - d. The integrity of soldered connections. Absence of solder splatter, solder bridges.
 - e. Absence of debris of any kind, tools, etc.
 - f. Routing and dressing of wire and cable.

2. The second section shall contain the comparative specification listing, including a complete listing of the characteristics of the equipment to be furnished next to all of the specified equipment's features and functions as stated in the specifications and datasheets.
3. The third section shall contain an original manufacturer datasheet for every component listed in the drawings or specifications.
4. The fourth section shall contain a designation schedule for each system component location and complete "E" size (30" x 42"), unless otherwise specified, bond drawings showing system wiring plans. The drawings shall be professionally drafted, generated on AutoDesk AutoCAD 2010 computer design software. These drawings shall also include:
 - C. As-Built/Closeout Documentation: Within fifteen (15) days after the completion of work (signed off by Owner), the Contractor shall provide a complete Contractor-provided set of professionally drafted "E" size (30" x 42"), unless otherwise noted, reproducible bond as-built drawings, generated on AutoDesk AutoCAD 2014 computer design software. The AVS Contractor will supply to the Owner one set of CDs containing all as-builts.
 - D. As-Built Documentation Display in each equipment rack location: Within fifteen (15) days after completing work, the Contractor shall install a complete Contractor-provided, professionally drafted as-built floor plan in color in each equipment rack room mounting frame. Each floor plan, generated on AutoDesk AutoCAD 2014 computer design software and printed in black and white, shall depict all audiovisual jack locations in each room with an audiovisual system and all other areas. The Contractor will provide to Owner one set of CDs containing all as-built.
 - E. Controls: Adjust all controls to achieve the specified performance. Provide security covers for all level controls, as appropriate to prevent unauthorized gain changes. The AVS Contractor will confirm that all control system operations are properly programmed and repeatable.
 - F. Testing Report: Provide a letter/report documenting the results of these preliminary tests, including amplifier gain/level settings, crossover filter settings, and AV equalization curves for review by the Owner and the AV Design Consultant.
 - G. Qualification for Acceptance: After completing preliminary testing, the Contractor shall furnish the Construction Manager with the letter/report documenting the results of the initial tests and five (5) copies of "as-built" wiring diagrams of the entire System, including the connection numbers, and their locations. The receipt of this documentation will constitute the Contractor's acknowledgment that the installation is complete and conforms to this specification and is ready to be reviewed and tested by the Owner and the AV Design Consultant.
 - H. Acceptance Test: The Consultant, Owner's Representative and/or Construction Manager will be present during the acceptance testing and require the assistance and cooperation of the Contractor. Provide personnel who participated in the actual installation and preliminary testing and adjustment of the audiovisual systems.
 1. Equipment cabinet keys and any tamper-proof fastener tools must be available to the Owner and the AV Design Consultant. Delays associated with failure to access the equipment will be back charged to the Contractor at the AV Design Consultant's current hourly rates.
 2. Each major component shall be demonstrated to function, as specified.
 3. Measurements: Further electrical and acoustical measurements may be performed at the discretion of the Owner and the Owner's Representatives. The Acoustical test equipment

will be supplied by the Contractor. Such measurements may include sound pressure levels, uniformity of coverage, distortion, or other pertinent characteristics.

4. The Contractor shall provide a laptop with all Manufacturer-supplied configuration software necessary for communicating with DSP Audio Matrix Mixers. A review of system settings may be required for either programmable units at the Owner and the AV Design Consultant's request, and settings may be adjusted if necessary.
 - I. Such tests may be performed on any piece of equipment or System. If any test shows the equipment or System is defective or does not comply with the specifications, the Contractor shall perform any remedies at his expense and pay the subsequent expenses of any retesting required.
 - J. Delays: If the acceptance of the System is delayed because it does not meet the specification requirements, the Contractor shall reimburse the Owner for all expenses of consultants retained to represent the Owner during the final acceptance testing. This will include costs associated with travel to the site and include reimbursable business travel expenses.

3.6 INSTALLATION

- A. All installation shall be done in conformance with ANSI/TIA/EIA and AVIXA (InfoComm) standards and manufacturers' installation guidelines. The Contractor shall ensure that the maximum pulling tensions of the specified distribution cables are not exceeded and cable bends maintain the proper radius during the placement of the facilities. Failure to follow the appropriate guidelines will require the Contractor to provide, in a timely fashion, any additional material and labor necessary to properly rectify the situation to the satisfaction and written approval of the Owner's Project Manager. This shall also apply to any and all damages sustained to the cables by the Contractor during the implementation.
 1. Bonding and Grounding: The Contractor shall be responsible for providing an approved ground at all racks. The Contractor shall also be responsible for ensuring ground continuity by properly bonding all appropriate cabling, closures, cabinets, service boxes, and racks. All grounds shall consist of #6 AWG copper wire and shall be supplied from an approved building ground and bonded to the main electrical ground. Grounding must be in accordance with the NEC, NFPA, ANSI-J-STD-607-A, and all local codes and practices.
 2. Power Separation: The Contractor shall not place any low voltage and speaker cabling alongside power lines or share the same conduit, channel, or sleeve within racks.
 3. Miscellaneous Equipment: The Contractor shall provide any necessary screws, anchors, clamps, hook & loop ties, distribution rings, wire molding, miscellaneous grounding and support hardware, etc., necessary to facilitate the installation of the System.
 4. Special Equipment and Tools: It shall be the responsibility of the Contractor to furnish any special installation equipment or tools necessary to properly complete the System. This may include, but is not limited to, tools for terminating cables, testing, and splicing equipment for copper/fiber cables, communication devices, jack stands for cable reels or cable winches.
 5. Labeling: The Contractor shall be responsible for printed labels for all cables and cords, distribution frames, and outlet locations, according to the specifications. No labels are to be written by hand. The labeling shall follow the AVIXA (InfoComm) F51.01:2015 standard unless otherwise directed.

3.7 DAMAGES

- A. The Contractor will be held responsible for any and all damages to portions of the building caused by it, its employees, or subcontractors; including but not limited to:
 - 1. Damage to any portion of the building that has been caused by the movement of tools, materials, or equipment.
 - 2. Damage to any component of the construction of spaces.
 - 3. Damage to the electrical distribution system.
 - 4. Damage to the electrical, mechanical and/or life safety or other systems caused by inappropriate operation or connections made by the Contractor or other actions of Contractor.
 - 5. Damage to the materials, tools and/or equipment of the Owner, its consultants, agents, and lease tenants.

3.8 PENETRATIONS OF WALLS FLOORS AND CEILINGS

- A. Unless specifically shown on the drawings, the Contractor shall make no penetration of floors, walls, or ceiling without the prior written approval of the Owner's Project Manager.
- B. Any penetrations through acoustical walls or other walls for cable pathways shall be sleeved by the AVS Contractor. Sleeves shall consist of metallic conduit deburred and grommited on both ends, with flanges or other means to prevent the sleeve from slipping or falling out of the partition. Sleeves shall extend a minimum of 6" on both sides of the partition. The outside perimeter of sleeves shall be sealed against sound, air, heat, or as required by partition design. Inside of sleeve shall be sealed similarly after installation of all cabling. Cables shall be independently supported on either side of the sleeve. Sleeves shall not be used as cable supports. Additional requirements in compliance with applicable code shall apply.
- C. Any penetrations through fire-rated walls for cable pathways/cables shall be sealed by the Contractor as required by code and directed by the Owner's Project Manager. The Contractor shall be required to work together with the General Contractor and the Electrical Contractor to coordinate and develop all fire stopping methods before any cable installation. The Contractor shall also, prior to the commencement of on-site activities, submit to the Owner's Project Manager details of any special systems to be used.

3.9 TESTING/WARRANTY

- A. The Contractor shall provide competent, factory-trained engineers and/or technicians, authorized by the Manufacturer of the AVS, to technically supervise and participate during all tests for the systems. All performance testing shall follow the AVIXA (InfoComm) 10:2013 Audiovisual Systems Performance Verification procedure.

3.10 COMPLETION OF WORK

- A. At the completion of the System, the AS Contractor shall restore to its former condition all aspects of the project site and on a daily basis, shall remove all waste and excess materials, rubbish debris,

tools, and equipment resulting from or used in the services provided under this Contract All cleanup, restoration, and removal noted above shall be by the AVS Contractor and at no cost to Owner. If the Contractor fails in its duties under this paragraph, the Owner may, upon notice to the AVS Contractor, perform the necessary cleanup and deduct the costs thereof from any amounts due or to become due to the Contractor. It shall be the AVS Contractor's responsibility to remove trash from the areas it is working in and bring trash and debris to the AVS Contractor-provided dumpster.

3.11 INSPECTION

- A. On-going inspections shall be performed during construction by the Owner's Project Manager. All work shall be performed in a quality manner, and the overall appearance shall be clean, neat, and orderly.

3.12 MISCELLANEOUS PROJECT REQUIREMENTS SYSTEM DOCUMENTATION, TRAINING, AND FIELD SUPPORT

- A. Operation and Maintenance Manuals: As part of the "Close Out" documents, for each System, provide five (5) copies of system manuals per System. Manuals shall be adequately sized three-ring binders, clearly labeled on the spine. Manuals shall contain the following:
 - 1. Service Reference Cover Sheet: Provide a cover sheet with Audiovisual AVS Contractor name, address, Email, WEB Address, telephone, and Fax numbers.
 - 2. System Operation Instructions: Step-by-step operating instructions based on the control system touch panel (if applicable) for the basic day-to-day use of the System including power activation, connection of source devices, adjustment of volume levels, selection of sources, etc. Include illustrations and references to individual equipment manuals as necessary.
 - 3. Equipment Manuals: Include copies of individual equipment operation manuals separated by tabbed dividers. Order the manuals in nominal signal path order (i.e., sources first, amplifiers/loudspeakers last), followed by control system manuals, followed by miscellaneous manuals.
 - 4. Equipment List: List all system equipment, including connectors and specialty hardware, by Manufacturer and model, and serial number.
 - a. As-built Drawings: Provide reduced 11" x17" foldout "as-built" functional diagrams in clear plastic binder sleeves. Fold and insert drawings so that the drawing title is clearly visible at the front of the sleeve. Five (5) half or full-size drawing sets are also to be provided for clearer system reference.
 - b. Provide software-programmable device configuration files to the Owner for all control system interfaces and computer-based files and the DSP Audio Matrix Mixer. Store files on-site in the system documentation binders in disk sleeves. Provide the files on CD-ROM.
- B. Training: Provide as-needed system training to the operator(s) designated by the Owner. Training time is to be non-contiguous, in multiple separate sessions. Training sessions are to be digital video recorded upon the Owner's request.

3.13 MISCELLANEOUS SUPPORT REQUIREMENTS

- A. Upon approval of shop drawings and equipment submittals, the AVS Contractor shall immediately place orders for all required materials, components, and supplies, especially long-lead items. In addition, the AVS Contractor shall secure and forward written confirmations (including orders and shipping dates) direct from each manufacturer/vendor to the Owner's Project Manager.
- B. The AVS Contractor shall expedite the shipment of all materials, components, and supplies, as necessary, to ensure the successful completion of the Project by the date required. All costs for expediting shall be included within the AVS Contractor's pricing as provided below.
- C. The system/network cost herein shall include administration/maintenance training for at least ten Owner's representatives with a minimum allotment of sixteen hours. All training shall include written and/or video materials that shall remain the property of the Owner. If materials are noted, they shall be provided in quantities sufficient for each person trained; if materials are video, one copy of each will be required. The administration/maintenance training shall include, but not be limited to, the following:
 - 1. Review of as-built documentation, including a site demonstration.
 - 2. All warranty information.

3.14 AV SYSTEM AND NETWORK TESTING

- A. Upon completion of installation, The AVS Contractor shall execute all of the required tests summarized in this specification. When all such tests have been completed to the Owner's satisfaction and the Manufacturer's specifications, the AVS Contractor shall give the Owner written notice.
- B. The AVS Contractor must assume responsibility for assuring that the AV system and network installed operates appropriately, including any required coordination with other suppliers.

3.15 FINAL ACCEPTANCE

- A. The Owner or Owner's representative may visit the site during the System's installation to ensure that correct installation practices are being followed.
- B. The Owner or Owner's representative will conduct a final job review once the Contractor has finished the job. This review will take place within one week after the Contractor notifies the Owner.
- C. Two copies of all certification data and drawings for all identifications shall be provided to the Owner before the Owner's review.
- D. The Owner or Owner's representative will review the installation and certification data prior to the system acceptance.

- E. The Owner or Owner's representative may test some of the System's features to ensure that the certification data is correct. If a substantial discrepancy is found, the Owner reserves the right to have an independent consultant perform certification of the entire System. If such a procedure is undertaken, the cost of the testing will be billed back to the Contractor.
- F. In the event that repairs or adjustments are necessary, the AVS Contractor shall make these repairs at his own expense. All repairs shall be completed within five days from the time they are discovered.
- G. The Contractor shall hand the Owner a copy of any applicable installation-specific software configurations in CD format.

END OF SECTION 27 41 16

Addendum Number 06

Gensler

Project	College of the Desert – Palm Desert Campus – Science Building Renovation	Date	3/5/2024
Project Location	43-500 Monterey Avenue Palm Desert, CA	Architect's Project Number	007.3766.00
Owner / Client	College of the Desert	File	6A This is page 1 of 1
To	California Community Chancellor's Office	Attention	Chay Yang
Address	1102 Q. Street		
City	Sacramento	State	CA Zip Code 95811
Delivered via:	<input type="checkbox"/> Messenger <input type="checkbox"/> Hand carried <input type="checkbox"/> Facsimile <input type="checkbox"/> Express <input type="checkbox"/> Pick-up <input checked="" type="checkbox"/> E-mail Address cyang@cccco.edu <input type="checkbox"/> Mail <input type="checkbox"/> UPS <input type="checkbox"/> Website Address		
<p>This Addendum will become part of the Contract Documents. The Contractor shall promptly inform subcontractors and all others performing or supplying any of the Work of all relevant contents of this Addendum. In case of conflicting provisions with previous addenda or communications, provisions in this Addendum supersede only those conflicting issues. It is the responsibility of the Contractor to notify all subcontractors from whom it accepts bids of all changes in the drawings and specifications covering this project. Receipt shall be acknowledged by inserting the addendum number and its date in the bid form.</p>			
Distribution	jdawson@bond.collegeofthedesert.edu		
Prepared by Gensler by	Tim Hall	Date Signed	3/5/2024

Instructions / Description / References / Dates

Addendum number of attachments:
 3 Attachments
 49 Pages

Addendum Item	Reference Item	Description
A6-01	Bid RFI 22	Markerboard and Tackboard Substitution.
A6-02	Mechanical Drawings Sheets	<ul style="list-style-type: none"> • M0.01: Revised sheet index to include new sheet M5.03. • M0.02: Revised Control Valves Schedule to clarify Mechanical Room 111 AHU control valves. Note the control valves are already indicated in Detail 4/M6.02 and have been added to the schedule for additional information. • M5.03: New sheet added to clarify Network Architecture. The campus controls standard is Distech. The previous controls diagram indicated to connect to EMS. The addition of M5.03 Network Architecture Diagram is to clarify the basis of design is Distech. • There is no new scope or added cost involved with these drawings.
A6-03	New Spec Section - 23 09 00 - Instrumentation and Controls for HVAC	<ul style="list-style-type: none"> • Clarification of controls in specification to align with drawings, campus controls standard Distech, and specify "Or Equal". • Clarifies submittal requirements. • There is no new scope or added cost involved with this new spec section.

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 Fax: +1 949.553.1676

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: <u>03/05/2024</u> Project Name: <u>Science Building Renovation</u> Bid No: <u>43-98P-0500-SBR</u>	Bidder Name: <u>Nielsen Construction Ca., Inc.</u>
--	---

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Please review the attached substitution request and confirm it is acceptable. The proposed substitution will have no effect on the Contract sum, Contract schedule or Contract details.

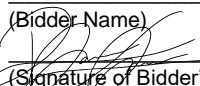
Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: 15

Response to Bidder's Pre-Bid Request for Information

- Proposed 4'H x 8'W markerboard Nelson Adams NACO Series 1000 BLT with porcelain enamel is acceptable for use in Lab Services 107 per interior elevation 04/A3.701 sheet note 20. _____
- Proposed 4'H x 8'W tackboard Nelson Adams NACO Series 1000 with standard vinyl on 1/2" fibreboard is acceptable for use in Lab Services 107 per interior elevation 04/A3.701 sheet note 21. _____
- Proposed Nelson Adams NACO Series Teaching Wall (TW) is not acceptable as a substitution since it does not meet design intent per detail 03/A8.804 and use for interactive projection whiteboard at teaching wall in classrooms. _____
- Tim Hall/ Gensler 3/5/2024 _____

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
Rick Cesena
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

(Phone and Fax)
rcesena@nielsencc.com
(Email Address)

Submittal Date: 03/05/2024

Bidder Contact Information:
Rick Cesena
(Bidder Contact Name)
(760) 234-2112





(Re: Product Comparison / Substitution)

We hereby submit for your consideration the following product in lieu of specified item:

- * Section:
- * Specified Item: **[MARKERBOARDS –] or equal**
- * Proposed Substitution: **[Nelson Adams NACO – Series 1000 BLT Series]**
- * Reason for Substitution: **[Nelson Adams NACO products are equal or superior to]**
- * (See Comparison Below)

Markerboards (Magnetic)

SERIES:	Series 1000 (NACO)	
WRITING SURFACE:	Porcelain e ³ Surface (low or high gloss)	Porcelain Surface
TRIM:	Standard ¾" face 6063T - Alloy (C18 Trim Opt.)	Standard Trim
CORE THICKNESS:	½" Particleboard or 7/16 MDF	1/2" Particleboard
BACKER:	0.005" OR 0.015"	0.005" OR 0.015"
TRAY:	Standard Blade Tray OR Box Tray with Radius Edges	Standard Blade Tray with Plastic End Caps
MAP RAIL	1" OR 2" wide	1" OR 2" wide
ATTACHMENT:	Angle clips	Angle clips

Enclosed is our submittal for your approval.
Please forward our request to the architect.

The Proposed substitution will have no effect on the Contract sum, Contract schedule or Contract details.

Sincerely,



Re: Product Comparison / Substitution

We hereby submit for your consideration the following product in lieu of specified item:

- * Section:
- * Specified Item: **[TACK STRIPS –] or equal**
- * Proposed Substitution: **[Nelson Adams NACO – Tack Strip]**
- * Reason for Substitution: **[Nelson Adams NACO products are equal or superior to]**
- * (See Comparison Below)

Tack Strips

SIZES:	1" OR 2"	1" OR 2"
INSERTS:	Natural cork, Forbo, or Vinyl covered	Natural cork, Forbo, or Vinyl covered
COLOR :	Clear anodized or Powercoated	Clear anodized or Powercoated

Enclosed is our submittal for your approval.
Please forward our request to the architect.

The Proposed substitution will have no effect on the Contract sum, Contract schedule or Contract details.

Sincerely,



Re: Product Comparison / Substitution

We hereby submit for your consideration the following product in lieu of specified item:

- * Section:
- * Specified Item: **[Teaching walls visual display surfaces –] or equal**
- * Proposed Substitution: **[Nelson Adams NACO – Series TW Series]**
- * Reason for Substitution: **[Nelson Adams NACO products are equal or superior to]**
- * (See Comparison Below)

Case work – teaching walls horizontal sliders

SERIES:	Series TW Teaching walls horizontal slider	
WRITING SURFACE:	Porcelain e ³ surface or Konematsu surface	Porcelain LCS
TRIM:	Standard 3/4" face 6063T - Alloy	Standard 3/4" face 6063T-Alloy
CORE THICKNESS:	1/2" Fiberboard or 1/2" Particle board	1/2" honeycomb
BACKER:	.015	.015
TRAY:	Standard blade tray with radius edges	Standard blade tray with straight edges
MAP RAIL	1" or 2" Running full length of board	1" or 2" Under cut at 6" on each side
TRACK SYSTEM:	Top hung with nylon guides	Top hung with nylon guides

Enclosed is our submittal for your approval.
Please forward our request to the architect.

The Proposed substitution will have no effect on the Contract sum, Contract schedule or Contract details.

Sincerely,

FIXED MARKERBOARDS	NELSON ADAMS NACO	CLARIDGE	ABC
TRAY TYPE	BLADE & BOX	BLADE & BOX	BLADE & BOX
STANDARD MAPRAIL TYPES	1" & 2"	1" & 2"	1" & 2"
STANDARD TRAY EDGE CONFIGURATION	SMOOTH RADIUS EDGES	REMOVEABLE PLASTIC END CAPS	SMOOTH RADIUS EDGES
BOX TRAY EDGE CONFIGURATION	CAST ALUMINUM END CAPS	PLASTIC END CAPS	CAST ALUMINUM END ENCLOSURES
MAPRAIL INSERTS	NAT.CORK, VINYL COVERED CORK & FORBO	NAT.CORK, VINYL COVERED CORK & FORBO	NAT.CORK, VINYL COVERED CORK & FORBO
END STOPS	1" & 2"	1" & 2"	1" & 2"
PORCELAIN	e3 WRITING SURFACE & KONEMATSU	e3 WRITING SURFACE & LCS	e3 WRITING SURFACE
PORCELAIN WIDTHS	4'-0" AND 5'-0"	4'-0" AND 5'-0"	4'-0" AND 5'-0"
PORCELAIN STD OPTIONS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS
PORCELAIN FUSED GRAPHIC OPTIONS	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR
SUBSTRATE	1/2" AND 7/16" PARTICLE BOARD	7/16" PARTICLE BOARD	1/2" PARTICLE BOARD
MOISTURE BARRIER BACKER	.005 & .015 MOISTURE BARRIER BACKER	.005 & .015 BACKER	.005 & .015 MOISTURE RESISTANT BACKER
ACCESSORIES	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.
JOINT OPTIONS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS
COLOR OPTIONS	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED
ANCHORING CONFIGURATIONS	DIRECT ATTACHED & L-CLIPS	DIRECT ATTACHED & L-CLIPS	DIRECT ATTACHED & L-CLIPS
ADHESIVE	HENRY'S 317 OR 237	HENRY'S 317	HENRY'S 317
HORIZONTAL SLIDERS MARKERBOARDS - TW	NELSON ADAMS NACO	CLARIDGE	ABC
TRAY TYPE	BLADE	BLADE	BLADE
STANDARD MAPRAIL TYPES	1" & 2" OR NONE - FASCIA ONLY	STANDARD 2"	STANDARD 2"
STANDARD TRAY EDGE CONFIGURATION	SMOOTH RADIUS EDGES	REMOVEABLE PLASTIC END CAPS	SMOOTH RADIUS EDGES
MAPRAIL INSERTS	NAT.CORK, VINYL COVERED CORK & FORBO	NAT.CORK, VINYL COVERED CORK & FORBO	NAT.CORK, VINYL COVERED CORK & FORBO
END STOPS	1" & 2"	1" & 2"	1" & 2"
PORCELAIN	e3 WRITING SURFACE	e3 WRITING SURFACE	e3 WRITING SURFACE
PORCELAIN WIDTHS	4'-0" AND 5'-0"	4'-0" AND 5'-0"	4'-0" AND 5'-0"
PORCELAIN STD OPTIONS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS
PORCELAIN FUSED GRAPHIC OPTIONS	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR
SUBSTRATE	1/2" FIBERBOARD	1/2" HONEYCOMB	1/2" HONEYCOMB
MOISTURE BARRIER BACKER	.005 & .015 MOISTURE BARRIER BACKER	.005 & .015 BACKER	.005 & .015 MOISTURE RESISTANT BACKER
ACCESSORIES	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.
JOINT OPTIONS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS
COLOR OPTIONS	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED
ANCHORING CONFIGURATIONS	DIRECT ATTACHED	DIRECT ATTACHED	DIRECT ATTACHED
HORIZONTAL SLIDERS MARKERBOARDS - HS	NELSON ADAMS NACO	CLARIDGE	ABC
TRAY TYPE	BLADE	BLADE	BLADE
STANDARD MAPRAIL TYPES	1" & 2" OR NONE - FASCIA ONLY	STANDARD 2"	STANDARD 2"
STANDARD TRAY EDGE CONFIGURATION	SMOOTH RADIUS EDGES	REMOVEABLE PLASTIC END CAPS	SMOOTH RADIUS EDGES
MAPRAIL INSERTS	NAT.CORK, VINYL COVERED CORK & FORBO	NAT.CORK, VINYL COVERED CORK & FORBO	NAT.CORK, VINYL COVERED CORK & FORBO
END STOPS	1" & 2"	1" & 2"	1" & 2"
PORCELAIN	e3 WRITING SURFACE	e3 WRITING SURFACE	e3 WRITING SURFACE
PORCELAIN WIDTHS	4'-0" AND 5'-0"	4'-0" AND 5'-0"	4'-0" AND 5'-0"
PORCELAIN STD OPTIONS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS
PORCELAIN FUSED GRAPHIC OPTIONS	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR
SUBSTRATE	1/2" FIBERBOARD	1/2" HONEYCOMB	1/2" HONEYCOMB
MOISTURE BARRIER BACKER	.005 & .015 MOISTURE BARRIER BACKER	.005 & .015 BACKER	.005 & .015 MOISTURE RESISTANT BACKER
FIXED BACK PANEL	OPTIONAL FIXED BACK PANEL	OPTIONAL FIXED BACK PANEL	OPTIONAL FIXED BACK PANEL
ACCESSORIES	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.
JOINT OPTIONS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS
COLOR OPTIONS	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED
ANCHORING CONFIGURATIONS	L-CLIPS	L-CLIPS	L-CLIPS
HOUSING	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED
VERTICAL SLIDERS MARKERBOARDS	NELSON ADAMS NACO	CLARIDGE	ABC
TRAY TYPE	BLADE OR BOX	BOX	BOX
STANDARD TRAY EDGE CONFIGURATION	SMOOTH RADIUS EDGES OR OR CAST ALUMINUM END CAPS	REMOVEABLE PLASTIC END CAPS	CAST ALUMINUM END CAPS
PORCELAIN	e3 WRITING SURFACE	e3 WRITING SURFACE	e3 WRITING SURFACE
PORCELAIN WIDTHS	4'-0" AND 5'-0"	4'-0" AND 5'-0"	4'-0" AND 5'-0"
PORCELAIN STD OPTIONS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS
PORCELAIN FUSED GRAPHIC OPTIONS	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR
SUBSTRATE	1/2" FIBERBOARD	7/8" HONEYCOMB	7/8" HONEYCOMB
MOISTURE BARRIER BACKER	.005 & .015 MOISTURE BARRIER BACKER	.005 & .015 BACKER	.005 & .015 MOISTURE RESISTANT BACKER
FIXED BACK PANEL	OPTIONAL FIXED BACK PANEL	OPTIONAL FIXED BACK PANEL	OPTIONAL FIXED BACK PANEL
JOINT OPTIONS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS
COLOR OPTIONS	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED

ANCHORING CONFIGURATIONS HOUSING	DIRECT ATTACHED CLEAR SATIN ANODIZED & POWDERCOATED	DIRECT ATTACHED CLEAR SATIN ANODIZED & POWDERCOATED	DIRECT ATTACHED CLEAR SATIN ANODIZED & POWDERCOATED
FULL HEIGHT MARKERWALLS	NELSON ADAMS NACO	CLARIDGE	ABC
TRIM	STANDARD 1/2"ALUMINUM J-TRM	STANDARD 1/2"ALUMINUM J-TRM	STANDARD 1/2"ALUMINUM J-TRM
PORCELAIN	e3 WRITING SURFACE	e3 WRITING SURFACE	e3 WRITING SURFACE
PORCELAIN WIDTHS	4'-0" AND 5'-0"	4'-0" AND 5'-0"	4'-0" AND 5'-0"
PORCELAIN STD OPTIONS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS
SUBSTRATE	1/2" PARTICLEBOARD	7/16" PARTICLEBOARD	1/2" PARTICLEBOARD
MOISTURE BARRIER BACKER	.005 & .015 MOISTURE BARRIER BACKER	.005 & .015 BACKER	.005 & .015 MOISTURE RESISTANT BACKER
JOINT OPTIONS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS
COLOR OPTIONS	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED
ANCHORING CONFIGURATIONS	DIRECT ATTACHED	DIRECT ATTACHED	DIRECT ATTACHED
ADHESIVE	HENRY'S 317 OR 237	HENRY'S 317	HENRY'S 317
FULL HEIGHT SLIDERS	NELSON ADAMS NACO	CLARIDGE	ABC
TRIM	STANDARD 1/2"ALUMINUM J-TRM	STANDARD 1/2"ALUMINUM J-TRM	STANDARD 1/2"ALUMINUM J-TRM
PORCELAIN	e3 WRITING SURFACE	e3 WRITING SURFACE	e3 WRITING SURFACE
PORCELAIN WIDTHS	4'-0" AND 5'-0"	4'-0" AND 5'-0"	4'-0" AND 5'-0"
PORCELAIN STD OPTIONS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS
SUBSTRATE	1/2" HONEYCOMB & 1/2" FB ON 1/4" HB W/.005	7/16" HONEYCOMB	7/8" HONEYCOMB
MOISTURE BARRIER BACKER	.005 & .015 MOISTURE BARRIER BACKER	.005 & .015 BACKER	.005 & .015 MOISTURE RESISTANT BACKER
TRACK SYSTEM	BOTTOM ROLLERS AND TOP NYLON GUIDE TRACK	BOTTOM ROLLERS AND TOP NYLON GUIDE TRACK	BOTTOM ROLLERS AND TOP NYLON GUIDE TRACK
TACKBOARDS	NELSON ADAMS NACO	CLARIDGE	ABC
1/4" FORBO ON 1/4" HARDBOARD	FORBO WITH STD C-4 "U" ALUMINUM FRAME	FORBO WITH STD "U" ALUMINUM FRAME	FORBO WITH STD "U" ALUMINUM FRAME
VINYL ON 1/2" FIBERBOARD	VINYL WITH STD C-4 "U" ALUMINUM FRAME	VINYL WITH STD "U" ALUMINUM FRAME	VINYL WITH STD "U" ALUMINUM FRAME
STD FABRIC ON 1/2" FIBERBOARD	FABRIC WITH STD C-4 "U" ALUMINUM FRAME	FABRIC WITH STD "U" ALUMINUM FRAME	FABRIC WITH STD "U" ALUMINUM FRAME
VINYL ON 1/4" NAT.CORK ON 1/4" HB	VINYL WITH STD C-4 "U" ALUMINUM FRAME	VINYL WITH STD "U" ALUMINUM FRAME	VINYL WITH STD "U" ALUMINUM FRAME
STD FABRIC ON 1/4" NAT.CORK ON 1/4" HB	FABRIC WITH STD C-4 "U" ALUMINUM FRAME	FABRIC WITH STD "U" ALUMINUM FRAME	FABRIC WITH STD "U" ALUMINUM FRAME
VINYL ON 1/2" FIBERBOARD	VINYL WITH STD C-4 "U" ALUMINUM FRAME	VINYL WITH STD "U" ALUMINUM FRAME	VINYL WITH STD "U" ALUMINUM FRAME
STD FABRIC ON 1/2" FIBERBOARD	FABRIC WITH STD C-4 "U" ALUMINUM FRAME	FABRIC WITH STD "U" ALUMINUM FRAME	FABRIC WITH STD "U" ALUMINUM FRAME
ANCHORING CONFIGURATIONS	L-CLIPS	L-CLIPS	L-CLIPS
ADHESIVE	HENRY'S 317 OR 237	HENRY'S 317	HENRY'S 317
ADDITIONAL COMBINATIONS AVAILABLE			
TACKWALL PANELS	NELSON ADAMS NACO	CLARIDGE	ABC
STANDARD VINYL 1/2" FIBERBOARD	STANDARD VINYL 1/2" FIBERBOARD	STANDARD VINYL 1/2" FIBERBOARD	STANDARD VINYL 1/2" FIBERBOARD
STANDARD FABRIC 1/2" FIBERBOARD	STANDARD FABRIC 1/2" FIBERBOARD	STANDARD FABRIC 1/2" FIBERBOARD	STANDARD FABRIC 1/2" FIBERBOARD
1/2" J-TRIM	CLEAR ANODIZED, POWDERCOATED & VINYL COVERED	CLEAR ANODIZED, POWDERCOATED & VINYL COVERED	CLEAR ANODIZED, POWDERCOATED & VINYL COVERED
*FABRIC W/ ACRYLIC BACKER			
ADDITIONAL COMBINATIONS AVAILABLE			
DISPLAY CASES	NELSON ADAMS NACO	CLARIDGE	ABC
CONFIGURATION	SLIDING, HINGED AND FREESTANDING	SLIDING, HINGED AND FREESTANDING	SLIDING, HINGED AND FREESTANDING
FIXED BACK PANEL	VINYL, NAT.CORK, FORBO AND FABRIC	VINYL, NAT.CORK, FORBO AND FABRIC	VINYL, NAT.CORK, FORBO AND FABRIC
GLASS	1/4" TEMPERED GLASS	1/4" TEMPERED GLASS	1/4" TEMPERED GLASS
STANDARD SHELVES	2 EACH	2 EACH	2 EACH
LIGHTING	STANDARD LED 110 V LIGHTING	STANDARD FLUORESCENT 110 V LIGHTING	STANDARD FLUORESCENT 110 V LIGHTING
KEYS	SLIDING LOCKS W/2 KEYS ALIKE	SLIDING LOCKS W/2 KEYS ALIKE	SLIDING LOCKS W/2 KEYS ALIKE
ALUMINUM FINISHED	CLEAR SATIN ANODIZED OR POWDERCOATED	CLAR SATIN ANODIZED	CLEAR SATIN ANODIZED
HANDLES	PLASTIC PULLS	PLASTIC PULLS	PLASTIC PULLS
APPLICATIONS	RECESS, SURFACE AND STAND ALONE	RECESS, SURFACE AND STAND ALONE	RECESS, SURFACE AND STAND ALONE
TACKSTRIPS	NELSON ADAMS NACO	CLARIDGE	ABC
SIZES	1" AND 2"	1" AND 2"	1" AND 2"
INSERTS	NATURAL CORK, FORBO & VINYL COVERED	NATURAL CORK, FORBO & VINYL COVERED	NATURAL CORK, FORBO & VINYL COVERED
COLOR	CLEAR ANODIZED & POWDERCOATED	CLEAR ANODIZED & POWDERCOATED	CLEAR ANODIZED & POWDERCOATED
FDW - FORBO DIRECTLY TO WALL	NELSON ADAMS NACO	CLARIDGE	ABC
FORBO	1/4" FORBO	1/4" FORBO	1/4" FORBO
1/4" J-TRIM	SATIN CLEAR ANODIZED & POWDERCOATED	SATIN CLEAR ANODIZED & POWDERCOATED	SATIN CLEAR ANODIZED & POWDERCOATED
ADHESIVE	HENRY'S 317, HENRY'S 237 OR L910	HENRY'S 317 OR L910	HENRY'S 317 OR L910
FRAMELESS PANELS	NELSON ADAMS NACO - e3 CONCEPT STEEL SURFACES	POLYVISION - a3 CERAMICSTEEL SANS	EGAN VISUAL - DIMENSION STEEL LINXX
TRIM	NONE - PAINTED EDGE TO MATCH WRITING SURFACE	NONE-PAINTED EDGE TO MATCH WRITING SURFACE	NONE-PAINTED EDGE TO MATCH WRITING SURFACE

PORCELAIN
PORCELAIN WIDTHS
PORCELAIN STD OPTIONS
SUBSTRATE
MOISTURE BARRIER BACKER
JOINT OPTIONS
ANCHORING CONFIGURATIONS
ADHESIVE

e3 WRITING SURFACE
4'-0" AND 5'-0"
WHITE LOW & HIGH GLOSS
1/2" PARTICLEBOARD
.005 & .015 MOISTURE BARRIER BACKER
NONE REQUIRED
DIRECT ATTACHED
Z-CLIPS

a3 WRITING SURFACE
4'-0" AND 5'-0"
WHITE LOW & HIGH GLOSS
1/2" PARTICLEBOARD
.005 & .015 BACKER
NONE REQUIRED
DIRECT ATTACHED
Z-BAR

e3 WRITING SURFACE
4'-0" AND 5'-0"
WHITE LOW & HIGH GLOSS
1/2" PARTICLEBOARD
.005 & .015 MOISTURE RESISTANT BACKER
NONE REQUIRED
DIRECT ATTACHED
Z-BAR

TACKWALL PANELS

STANDARD VINYL 1/2" FIBERBOARD
1/2" J-TRIM

NELSON ADAMS NACO

KOROSEAL SCHOOL COLLECTION VINYL 1/2" FIBERBOARD
CLEAR ANODIZED, POWDERCOATED, VINYL COVERED & PVS

CHATFIELD CLARKE

KOROSEAL SCHOOL COLLECTION VINYL 1/2" FIBERBOARD
PVS TRIMS ONLY & VINYL COVERED

1000 Series - Visual Display Boards - Product Data

Nelson Adams NACO



1. Product name:

1000 SERIES - Blade tray

2. Contact information:

Nelson Adams NACO
 420 S E ST
 San Bernardino, CA 92401
 Phone: 877-810-4080
 Email: sales@nelsonadamsnaco.com
 Web: www.nelsonadamsnaco.com

3. Product Description

Since 1953, Nelson Adams NACO has created products to meet the needs of multipurpose rooms such as classrooms, labs and conference rooms. Independently owned and operated, the company focuses on precision-focused technology to create outstanding products.

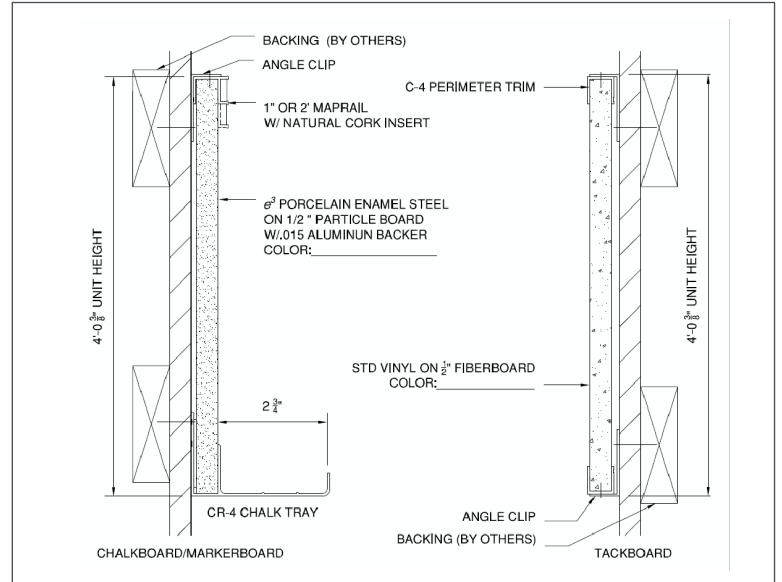
Basic Use

Nelson Adams NACO visual display boards are designed for daily high daily usage with minimum maintenance. They are suited for both new construction and renovation in a range of applications.

Composition & Materials

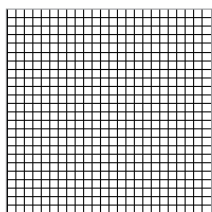
**Marker Board/Chalkboard substrate construction consist of e3 porcelain on 1/2" particle board with optional .005 or .015 moisture resistant barrier. With standard satin clear anodized aluminum that include 2ea - C4 side trims, standard CR-4 blade tray with radius edges an optional 1" or 2" map-rail with various insert options: natural cork, forbo or vinyl covered natural cork insert at an additional cost.

**Tack Boards substrate construction consist in various options; Vinyl on 1/2" fiberboard / 1/4" forbo on 1/4" hardboard / 1/4" natural cork on 1/4" hardboard. All fully framed with standard perimeter satin clear anodized aluminum C4 side trims. All aluminum is 6063T alloy that comes in a satin standard clear anodized color, call the office for a powder-coat option at an additional cost.

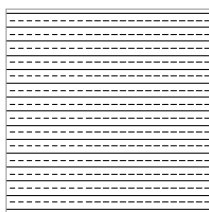


Standard sizes: Chalkboards/Markerboards

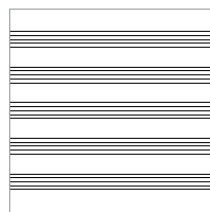
MB blade	SQ/FT	size	weight
	16	4x4	55 lbs
	20	4x5	69 lbs
	24	4x6	83 lbs
	28	4x7	97 lbs
	32	4x8	110 lbs
	36	4x9	124 lbs
	40	4x10	138 lbs
	44	4x11	151 lbs
	48	4x12	165 lbs
	52	4x13	179 lbs
	64	4x16	220 lbs
		u/m=3.43 lbs per sq.ft.	
		blade tray	



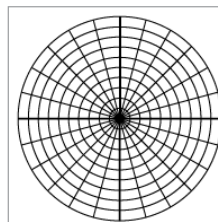
Graph Coordinates



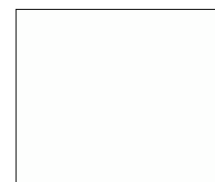
Penmanship Lines



Music Staff Lines



Polar Coordinates



WHITE

6100H - High Gloss Finish
 6100S - Satin Finish

Optional Graphics (at additional cost)

e³ Porcelain Writing Surfaces

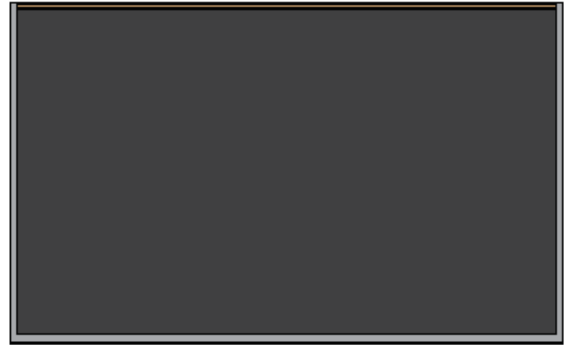
1000 Series - Visual Display Boards - Product Data

Nelson Adams NACO

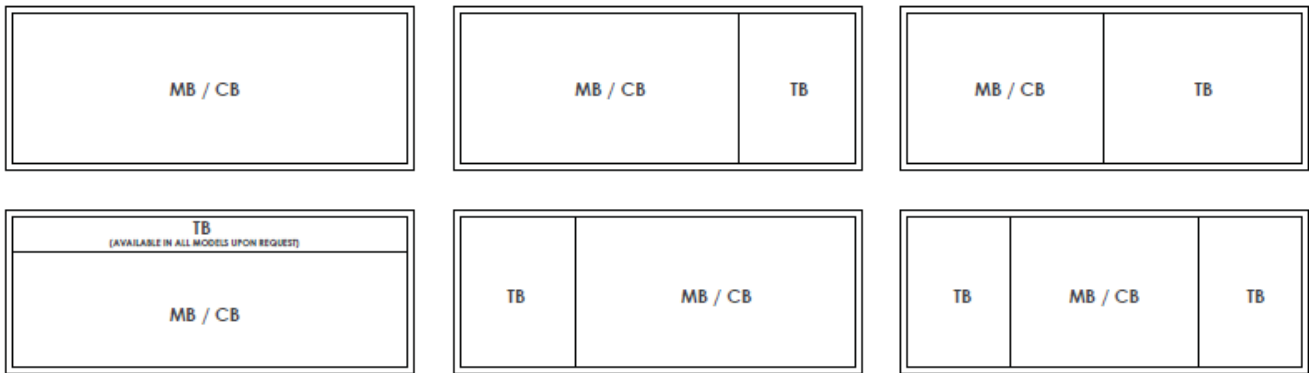
MARKERBOARD



CHALKBOARD



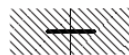
TYPICAL COMBINATION BOARDS (AVAILABLE WITH SLIDING BOARDS ALSO)



NACO - STANDARD FORBO COLORS



JOINTS FOR BOARDS OVER 16' IN LENGTH



SPLINE JOINT



H-BAR



DIVIDER BAR

NATURAL CORK (1 SINGLE COLOR)



NACO - STANDARD VINYL COLORS



Note: Nelson Adams NACO requires that all buildings must be climate controlled prior to installation. Materials exposed to extreme temperatures are subject to color fading, shrinkage, warpage and/or deviation from their original state.

NOTE: DUE TO PRINTING PROCESS, A SLIGHT COLOR VARIATION BETWEEN COLOR SAMPLES AND ACTUAL FINISH PRODUCT IS POSSIBLE.



1. Product name:

TKS-1 AND TKS-2 SERIES

2. Contact information:

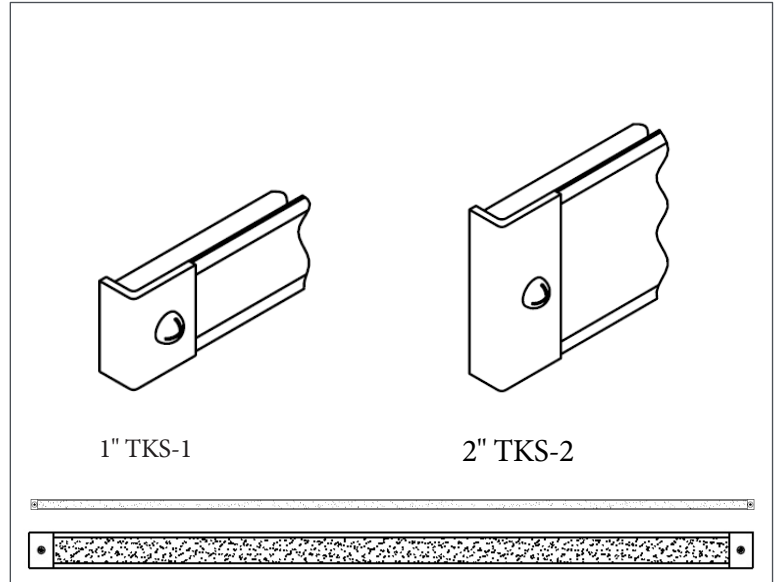
Nelson Adams NACO
 420 S E St.
 San Bernardino, CA 92401
 Phone: 877-810-4080
 Email: sales@nelsonadamsnaco.com
 Web: www.nelsonadamsnaco.com

3. Product Description

Since 1953, Nelson Adams NACO has created products to meet the needs of multipurpose rooms such as classrooms, labs and conference rooms. Independently owned and operated, the company focuses on precision-focused technology to create outstanding products.

Basic Use

Nelson Adams NACO tackstrips are designed for daily high daily usage with minimum maintenance. It is suited for both new construction and renovation in a range of applications.

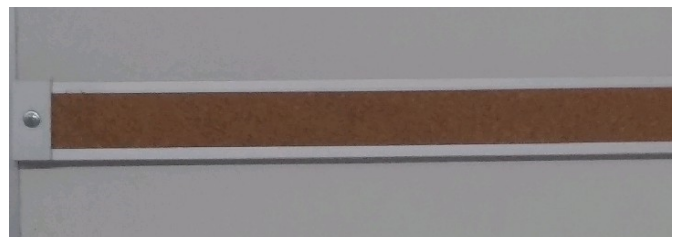


Standard sizes: Tackstrip

1" TACKSTRIP / DISPLAY RAIL			2" TACKSTRIP / DISPLAY RAIL		
L/F	size	weight	L/F	size	weight
4	4X1	.48 LBS	4	4X2	.75 LBS
5	5X1	.60 LBS	5	5X2	.94 LBS
6	6X1	.72 LBS	6	6X2	1.12 LBS
7	7X1	.84 LBS	7	7X2	1.31 LBS
8	8X1	.96 LBS	8	8X2	1.50 LBS
9	9X1	1.08 LBS	9	9X2	1.69 LBS
10	10X1	1.20 LBS	10	10X2	1.88 LBS
11	11X1	1.32 LBS	11	11X2	2.06 LBS
12	12X1	1.44 LBS	12	12X2	2.25 LBS
14	14X1	1.68 LBS	14	14X2	2.63 LBS
16	16X1	1.92 LBS	16	16X2	3.00 LBS
u/m=0.120 lbs per l/f			u/m=0.188 lbs per l/f		

Composition and Materials

Tackstrips / display rails come standard in clear satin anodized with a powder-coat option at an additional cost. Our tackstrips consists of different sizes: Our standards 1" and 2" tackstrips or display rails consist of natural cork insert including 1" or 2" aluminum end caps. Also available 1" and 2" tackstrips or display rails consist of various forbo cork insert colors including 1" or 2" aluminum end caps. 1" and 2" tackstrips or display rails consist of various vinyl colors, natural cork vinyl covered insert including 1" or 2" aluminum caps.



ELEVATIONS

Forbo color inserts

Natural cork insert



Product description:

Construction: Forbo tackstrip is a homogeneous tackable surface material made of primary natural materials consisting of linseed oil, cork, rosin binders and dry pigments mixed and calendared onto a natural jute backing. The uni-color extends throughout the thickness of the material.

Technical information:

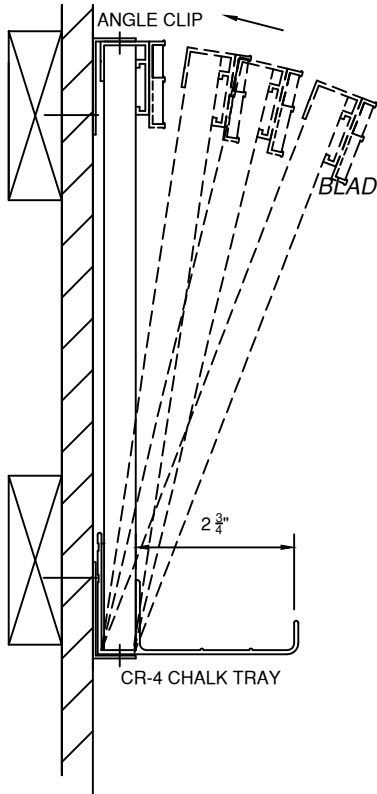
Physical characteristics (dimensions are approximate)

Gauge-----1/4" [6.0mm]

Backing-----Jute

Width-----1" [2.54cm] and 2" [5.08cm]

NOTE: DUE TO PRINTING PROCESS, A SLIGHT COLOR VARIATION BETWEEN COLOR SAMPLES AND ACTUAL FINISH PRODUCT IS POSSIBLE.



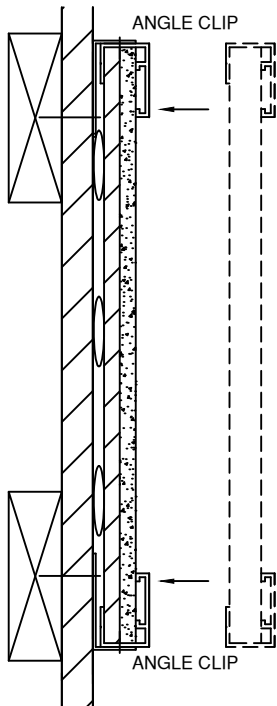
**BLADE TRAY
DRY MARKERBOARD, CHALKBOARD AND TACKBOARD**

**SUGGESTED INSTALLATION INSTRUCTIONS FOR
BLADE TRAY FIXED MARKERBOARD, CHALKBOARD AND TACKBOARD**

Note: Please read all instructions before installing Nelson Adams whiteboards and tackboards. Materials must be stored, installed and used in environmentally controlled conditions. Install Nelson Adams markerboards and tackboards level flat against the wall at the height indicated on shop drawings. Installation with mounting clips.

1. Snap a level line at the required height of the chalk tray using a the chalktray or a mounting clip as a template, depending on the board being installed align the chalk tray to the chalkline and mark the height dimension of the chalk tray and anchor chalk tray 16" o.c. or 24" o.c. max.
2. After chalk tray has been properly installed, attach all clips required for the top of the board at 16" o.c. or 24" o.c max. (If tray is already attached - use the same method of attachment as the tackboard detail shown on bottom left corner illustration.)
3. Apply six 3" circles of construction adhesive or Henry's #237 or #317 on the back of an 8'-0" and ten 3" circles on the back of the 12'-0" board. Lift the board on to the chalk tray and push board against the wall and adjust top clips against the board frame by hammering down the clips gently. Using self-tapping screws attach the clips and complete the installation by fastening the top clips
4. Remove porcelain protective film and clean writing surface prior to use.

Note: Installation to be done by at least 2 qualified installers.





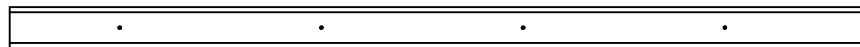
TKS-1 AND TKS-2
1' AND 2" TACKSTRIPS

*SUGGESTED INSTALLATION INSTRUCTIONS FOR
TKS-1 AND TKS-2 1" AND 2" TACKSTRIPS*

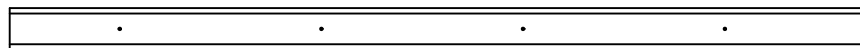
Note: Please read all instructions before installing Nelson Adams TKS-1 and TKS-2 tackstrips. Materials must be stored, installed and used in environmentally controlled conditions. Install Nelson Adams TKS-1 and TKS-2 level flat against the wall at the height indicated on shop drawings.

1. Inspect the finished wall where you need the tackstrip installed.
2. Check if there's continuous backing or wood studs @ 24" o.c. and use existing backing as the method of attachment for all your tackstrips.
3. Once you identify the existing backing proceed with prepping the tackstrip.
4. Mark the hole locations with a pencil and use the 24" spacing o.c. or 18" o.c. if you have continuous backing, all marks should be in the center of the tackstrip.
5. Use a $\frac{1}{8}$ " drill bit to drill all the pilot holes, after completing all the pilot holes, proceed to countersink all holes. Remove all aluminum shavings, all burrs edges and any debris from the inside of the tackstrip channel.
6. Proceed to anchor the tackstrip start from one end and then anchor the opposite end and work your way in until all holes are filled.
7. After tackstrip has been properly installed, insert your forbo or natural cork tackstrip insert make sure that you leave about 1" overhang on eachside if it's natural cork and about $\frac{1}{2}$ " if it's forbo cork tackstrip insert.
8. Before installing the end 1st endstop move the insert until it's flushed with the aluminum tackstrip and proceed to install the end stop, fastener should be facing the front of the board.
9. Before installing endstop #2 proceed to push the natural cork or the forbo until it's flushed with the aluminum tackstrip, the natural cork insert and the cork are always longer than actual tackstrip, these inserts tend to shrink and extra length of the insert alleviates that problem.
10. Clean the tackstrip with a clean towel and it's ready for use.

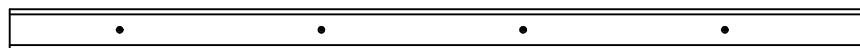
Note: Installation to be done by at least 2 qualified installers.



STEP 4 - MARKING THE HOLES



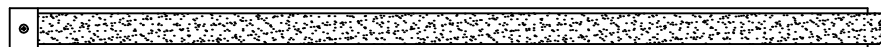
STEP 5 - DRILLING PILOT HOLES



STEP 5 - COUNTERSKING HOLES



STEP 7 - INSERT CORK STRIP



STEP 8 INSTALL LEFT END CAP



STEP 9 INSTALL RIGHT END CAP



PROJECT NAME:

NACO JOB#:

Subject to the terms set out in this warranty, Nelson Adams Naco guarantees its Visual Display Products, to be free from manufacturing defects in material and workmanship for the specified periods below, all from the date of shipment.

Porcelain Enamel can be replaced for any of the following reasons: The writing surface fails to retain original writing and erasing qualities, becomes slick and shiny, fails to erase completely, or exhibits cracking/flaking.

This warranty is for material supplied by Nelson Adams Naco only, and only applies to the original installation of the Visual Display Products, installed in accordance with Nelson Adams Naco's written installation instructions. Recommendations for proper handling, storage, cleaning, and maintenance must be followed for this warranty to be valid.

This warranty excludes defects in the Visual Display Products caused by: vandalism, improper use, improper installation, neglect, and environmental damage. Note: Nelson Adams Naco Visual Display Products should be stored and installed in environments that are temperature controlled. Mold and mildew can develop in wet, damp, or humid environments. It is essential that boards are not installed on CMU or concrete walls that are not fully cured. Masonry wall condensation (sweating) can lead to mold damage and warped or distorted boards. The Nelson Adams Naco Visual Display Products warranty will void when boards are installed in improperly conditioned environments or on uncured walls.

If the Visual Display Product is found to be defective in workmanship or materials within the warranty period, Nelson Adams Naco will replace all affected components, free of charge. Nelson Adams Naco will not be responsible for any other expenses including, but not limited to: removal costs, installation costs, or any other costs associated with the repair or replacement of the Visual Display Product.

The replacement or repair of defective material as stated in this warranty shall constitute the sole remedy of the buyer and the sole liability of Nelson Adams Naco under this warranty. Nelson Adams Naco shall not be liable for any incidental, consequential, or indirect damages caused by the failure or defect in the material supplied, or any delay in the replacement or repair of warranty items.

Architectural Products

Warranty claims must be made during the warranty period, and communicated to Nelson Adams Naco by contacting the sales office directly at:
420 S E St San Bernardino, CA 92401 - Phone: 909-383-0819

Warranty Start Date:

Warranty must be signed by Nelson Adams Naco officer in order to be valid

Signature

Date

GENERAL LEGEND

SYMBOL	DESCRIPTION
	NOTE CALLOUT
	DETAIL CALLOUT - NUMBER ON TOP DENOTES DETAIL NUMBER - NUMBER ON BOTTOM DENOTES SHEET DETAIL IS SHOWN
	MECHANICAL EQUIPMENT CALLOUT, SEE MECHANICAL PLANS FOR EXACT LOCATION AND REQUIREMENTS
	SECTION CALLOUT
	POINT OF CONNECTION
	POINT OF DISCONNECTION
	NEW LINEWORK
	EXISTING LINEWORK
	DEMOLITION LINEWORK
	DIRECTION OF FLOW
	DIFFUSER LABEL - NECK SIZE AND DIFFUSER TYPE - CUBIC FEET PER MINUTE

DUCTWORK LEGEND

SYMBOL	DESCRIPTION
	SHEET METAL DUCT
	HIDDEN SHEET METAL DUCT
	INTERNALLY INSULATED SHEET METAL DUCT CLEAR INSIDE DIMENSION SHOWN, LINER THICKNESS IN PARENTHESIS
	STANDARD BRANCH FOR SUPPLY AND RETURN
	ROUND ELBOW DOWN
	ROUND ELBOW UP
	RECTANGULAR TO ROUND TRANSITION
	FLEXIBLE DUCT
	FLEX CONNECTION
	BACK DRAFT DAMPER
	FIRE DAMPER
	COMBINATION FIRE AND SMOKE DAMPER
	MOTORIZED DAMPER
	BALANCING DAMPER
	SUPPLY DIFFUSER, 1-WAY/2-WAY/3-WAY/4-WAY
	GRILLE: RETURN/EXHAUST
	SUPPLY AIR DUCT SECTION
	RETURN AIR DUCT SECTION
	EXHAUST AIR DUCT SECTION
	UNDERCUT DOOR
	TRANSFER GRILLE OR LOUVER
	DOOR GRILLE OR LOUVER
	SINGLE DUCT VAV BOX WITH REHEAT COIL
	SINGLE DUCT VAV BOX WITHOUT REHEAT COIL
	FILTER
	HUMIDIFIER DISPERSION GRID
	LOUVER
	ACCESS DOOR OR ACCESS PANEL (AP) IN DUCTWORK
	STATIC PRESSURE CHANGE TAG
	TURNING VANES (RECTANGULAR)
	THERMOSTAT

PIPING LEGEND

SYMBOL	DESCRIPTION
	NEW PIPING (SIZE-SERVICE)
	EXISTING PIPING (SIZE-SERVICE)
	ELBOW FACING AWAY FROM VIEWER
	ELBOW FACING TOWARD VIEWER
	TEE FACING AWAY FROM VIEWER
	TEE FACING TOWARD VIEWER
	PIPE CAP
	TRANSITION, ASYMMETRIC
	TRANSITION, SYMMETRIC
	EXPANSION JOINT (COMPENSATOR)
	PIPE GUIDE
	PIPE ANCHOR
	UNION, SCREWED
	DRAIN, FUNNEL
	PUMP
	BALL VALVE
	BALL VALVE W/ ACTUATOR
	BUTTERFLY VALVE
	BUTTERFLY VALVE W/ ACTUATOR
	GATE VALVE
	GATE VALVE W/ ACTUATOR
	GLOBE VALVE
	GLOBE VALVE W/ ACTUATOR
	THREE-WAY VALVE
	THREE-WAY VALVE W/ ACTUATOR
	CHECK VALVE, SWING
	CHECK VALVE, SPRING LOADED
	MULTI-PURPOSE VALVE
	FLOW MEASURING AND BALANCING VALVE
	HOSE BIBB VALVE
	LOCK SHIELD MANUAL VALVE
	PLUG VALVE
	PRESSURE REGULATOR
	STRAINER, Y-TYPE
	STRAINER WITH HOSE CONNECTION
	PRESSURE GAUGE WITH SHUTOFF COCK
	PRESSURE GAUGE WITH SNUBBER AND SHUTOFF COCK
	SELF-SEALING PRESSURE AND TEMPERATURE TAP
	THERMOMETER
	THERMOWELL
	FLOW METER
	FLOW REGULATOR AND FLOW LIMITING VALVE
	PUMP SUCTION DIFFUSER
	VACUUM BREAKER
	AIR VENT, AUTOMATIC
	FLEXIBLE CONNECTION
	COMBINATION FLEX-VANE STRAIGHTENER
	SAFETY OR RELIEF VALVE
	STEAM TRAP
	AIR SEPARATOR

CONTROL LEGEND

SYMBOLS	DESCRIPTION
	DDC PHYSICAL POINT
	SENSOR
	SWITCH
	COMMUNICATION GATEWAY CONNECTION TO DDC
	ELECTRONICALLY COMMUTATED MOTOR
	VARIABLE FREQUENCY DRIVE
	ELECTRONIC 3-WAY VALVE
	ELECTRONIC 2-WAY VALVE
	ELECTRONIC BUTTERFLY VALVE
	DAMPER WITH ACTUATOR, OPPOSED BLADE
	DAMPER WITH ACTUATOR, PARALLEL BLADE
	COOLING COIL
	HEATING COIL
	AIR FILTER BANK
	AVERAGING AIR TEMPERATURE SENSOR
	FIELD CONTROL WIRING
	FIELD POWER WIRING

ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
AAV	AUTOMATIC AIR VENT	HHWR	HEATING HOT WATER RETURN
AF	ABOVE FINISHED FLOOR	HHWS	HEATING HOT WATER SUPPLY
AHU	AIR HANDLING UNIT	HP	HORSEPOWER
AP	ACCESS PANEL	HT	HEIGHT
APD	AIR PRESSURE DROP	HZ	HERTZ
BD	BLOWDOWN	ID	INSIDE DIAMETER
BDD	BACK DRAFT DAMPER	IN	INCHES
BFC	BELOW FINISHED CEILING	KW	KILOWATTS
BFP	BACK FLOW PREVENTER	LAT	LEAVING AIR TEMPERATURE
BHP	BREAK HORSEPOWER	LBS	POUNDS
BLDG	BUILDING	LF	LINEAR FEET
BOB	BOTTOM OF BEAM	LWT	LEAVING WATER TEMPERATURE
BOP	BOTTOM OF PIPE	MAX	MAXIMUM
BSC	BIO SAFETY CABINET	MBH	THOUSAND BTU PER HOUR
BTU	BRITISH THERMAL UNIT	MC	MECHANICAL CONTRACTOR
CAB	CABINET	MCA	MINIMUM CIRCUIT AMPS
CFM	CUBIC FEET PER MINUTE	MH	MANHOLE
CHWR	CHILLED WATER RETURN	MIN	MINIMUM
CHWS	CHILLED WATER SUPPLY	MOCP	MAXIMUM OVERLOAD CIRCUIT PROTECTION
CI	CENTER LINE	NFA	NET FREE AREA
CL	CENTER LINE	NIC	NOT IN CONTRACT
CP	CONDENSATE PUMP	NPSHR	NET POSITIVE SUCTION HEAD REQUIRED
CT	COOLING TOWER	OA	OUTSIDE AIR
CU	CONDENSING UNIT	OAT	OUTSIDE AIR TEMPERATURE
CV	CONSTANT VOLUME BOX	OB	OPPOSED BLADE DAMPER
CWFR	CONDENSER WATER FILTER RETURN	OC	ON CENTER
CWFS	CONDENSER WATER FILTER SUPPLY	OD	OUTSIDE DIAMETER
CWR	CONDENSER WATER RETURN	OD	OUTSIDE DIAMETER
CWS	CONDENSER WATER SUPPLY	PD	PRESSURE DROP
DB	DRY BULB	PERF	PERFORATED
DEG	DEGREES	PH	PHASE
DIA	DIAMETER	POD	POINT OF DISCONNECT
DL	DOOR LOUVER	PR	PRESSURE RELIEF
DN	DOWN	PRV	PRESSURE REDUCING VALVE
DX	DIRECT EXPANSION	PSID	POUNDS PER SQUARE INCH DIFFERENTIAL
EA	EACH	PSIG	POUNDS PER SQUARE INCH GAUGE
EAT	ENTERING AIR TEMPERATURE	PVC	POLYVINYL CHLORIDE
EC	ELECTRICAL CONTRACTOR	RA	RETURN AIR
EFF	EFFICIENCY	RF	RETURN FAN
EL	ELEVATION	RLA	RATED LOAD AMPS
ESP	EXTERNAL STATIC PRESSURE	RLM	REVOLUTIONS PER MINUTE
EWT	ENTERING WATER TEMPERATURE	SA	SUPPLY AIR
FD	FIRE DAMPER	SF	SUPPLY FAN
FG	FILTER GRILLE	SPEC	SPECIFICATION
FH	FLAME HOOD	SS	STAINLESS STEEL
FLA	FULL LOAD AMPS	STD	STANDARD
FLR	FLOOR	TAD	TRANSFER AIR DUCT
FOB	FLAT ON BOTTOM	TDH	TOTAL DYNAMIC HEAD
FOT	FLAT ON TOP	TEFC	TOTALLY ENCLOSED FAN COOLED
FPI	FINS PER INCH	TSP	TOTAL STATIC PRESSURE
FPM	FEET PER MINUTE	TYP	TYPICAL
FSD	FIRE SMOKE DAMPER	UC	UNDERCUT
FT	FEET OR FOOT	V	VOLTS
FX	FLEXIBLE CONNECTION	VAV	VARIABLE AIR VOLUME
GA	GAUGE	VD	VOLUME DAMPER
GALV	GALVANIZED	VFD	VARIABLE FREQUENCY DRIVE
GC	GENERAL CONTRACTOR	VTR	VENT THRU ROOF
GEX	GENERAL EXHAUST	W	WITH
GPH	GALLONS PER HOUR	W/O	WITHOUT
GPM	GALLONS PER MINUTE	WB	WET BULB
HB	HOSE BIBB	WC	WATER COLUMN
HD	HEAD	WG	WATER GAUGE
		WPD	WATER PRESSURE DROP
		WT	WEIGHT
		°F	DEGREES FAHRENHEIT

IN THE EVENT ABBREVIATIONS NOT MENTIONED HEREIN ARE USED, REFERENCE WILL BE MADE TO ANSI Y1.1, MILITARY STANDARD ABBREVIATIONS AND OTHER STANDARD INDUSTRY CONVENTIONS.

CONTROL ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	ALARM	PS	PRESSURE SWITCH
AFMS	AIRFLOW MONITORING STATIONS	PT	PRESSURE TRANSMITTER
AI	ANALOG INPUT	RH	RELATIVE HUMIDITY
AO	ANALOG OUTPUT	S	STATUS
CS	CURRENT SWITCH	SC	SPEED CONTROL
DI	DIGITAL INPUT	SI	SPEED INDICATOR
DO	DIGITAL OUTPUT	SP	SETPPOINT
DP	DIFFERENTIAL PRESSURE	SS	START/STOP
FM	FLOW METER	T	TEMPERATURE
FS	FLOW SWITCH	TI	TEMPERATURE INDICATOR
HOA	HANDS-OFF-AUTO	VA	DAMPER/VALVE ACTUATOR
KW	KILOWATTS	VP	VELOCITY PRESSURE
LA	LEVEL ALARM	VSH	VIBRATION SWITCH
MOD	MOTOR OPERATED DAMPER	ZC	CLOSED END SWITCH
NC	NORMALLY CLOSED	ZI	POSITION INDICATOR
NO	NORMALLY OPEN	ZO	OPEN END SWITCH

IN THE EVENT ABBREVIATIONS NOT MENTIONED HEREIN ARE USED, REFERENCE WILL BE MADE TO ANSI Y1.1, MILITARY STANDARD ABBREVIATIONS AND OTHER STANDARD INDUSTRY CONVENTIONS.

GENERAL NOTES

- ALL WORK SHALL COMPLY WITH THE 2019 EDITIONS OF THE CALIFORNIA BUILDING, MECHANICAL, PLUMBING, AND OTHER APPLICABLE FEDERAL, STATE, OR LOCAL CODES AS ADOPTED AND ENFORCED BY THE LOCAL JURISDICTION. IN CASE THE PLANS SHOW MORE STRINGENT REQUIREMENTS, THE PLANS SHALL GOVERN THE DESIGN. YET NOTHING ON THE DESIGN DOCUMENTS SHALL BE INTERPRETED AS AUTHORITY TO VIOLATE CODE(S) OR REGULATIONS.
- SUBMISSION OF BID IN CONNECTION WITH THIS WORK SHALL IMPLY THAT THE BIDDER HAS EXAMINED THE JOB SITE UNDER WHICH THE CONTRACTOR WILL BE OBLIGATED TO OPERATE UNDER THIS CONTRACT. NO EXTRA CHARGE WILL BE ALLOWED FOR FAILURE OF ANY BIDDER TO EXAMINE THE SITE PRIOR TO BID.
- WHERE USED, THE TERM "PROVIDE" SHALL MEAN "FURNISH AND INSTALL".
- IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN ITEMS INDICATED ON DRAWINGS AND SPECIFICATIONS WITH CODE REQUIREMENTS, THE MORE STRINGENT STANDARD SHALL PREVAIL.
- CARE SHALL BE EXERCISED TO MINIMIZE ANY INCONVENIENCE OR DISTURBANCE TO OTHER AREAS OF THE BUILDING WHICH ARE TO REMAIN IN OPERATION. ISOLATE WORK AREAS TO KEEP DUST AND DIRT WITHIN THE CONSTRUCTION AREA.
- NO PIPING, EQUIPMENT, ETC. SHALL BE REMOVED, DISCONNECTED OR SHUT DOWN WITHOUT PRIOR REVIEW WITH THE OWNER TO CONFIRM THAT AREAS TO REMAIN IN OPERATION WILL NOT BE AFFECTED. IF ANY AREAS NOT WITHIN THE SCOPE OF WORK ARE AFFECTED BY ANY SHUTDOWN, REMOVAL OR DISCONNECTION, SUFFICIENT ADVANCE NOTICE MUST BE GIVEN TO THE OWNER INDICATING WHICH AREAS WILL BE AFFECTED, WHEN THE PROPOSED SHUTDOWN WILL OCCUR, AND FOR HOW LONG A PERIOD OF TIME.
- THE ARRANGEMENT OF EQUIPMENT AND PIPING SHOWN ON THE DRAWINGS IS BASED UPON INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME OF DESIGN AND IS NOT INTENDED TO SHOW EXACT DIMENSIONS. THIS CONTRACTOR SHALL VERIFY ALL DIMENSIONS AT THE SITE MAKING FIELD MEASUREMENTS AND SHOP DRAWINGS NECESSARY FOR FABRICATION OR REPAIR OF HVAC SYSTEMS. MAKE ALLOWANCE FOR BEAMS, PIPES AND OTHER OBSTRUCTIONS IN BUILDING CONSTRUCTION. CHECK DRAWINGS SHOWING WORK OF OTHER TRADES AND CONSULT WITH THE OWNER'S REPRESENTATIVE IN THE EVENT OF POTENTIAL INTERFERENCE. SHOP DRAWINGS SHALL BE MINIMUM 1/4"=1'-0" SCALE, INDICATING FITTINGS, SIZES, WELDS AND CONFIGURATIONS AND SUBMITTED TO ENGINEER FOR REVIEW.
- THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES PRIOR TO FABRICATION, PURCHASE AND/OR INSTALLATION OF ALL WORK.
- EXISTING MATERIALS THAT ARE REMOVED SHALL NOT BE REUSED IN NEW SYSTEMS, EXCEPT WHERE INDICATED AS BEING RELOCATED.
- ALL EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- THIS CONTRACTOR SHALL NOT BORE, NOTCH, CUT, OR PENETRATE INTO A STRUCTURAL MEMBER WITHOUT WRITTEN APPROVAL FROM A DESIGNATED STRUCTURAL ENGINEER AND THE OWNER.
- ALL PIPE ELBOWS SHALL BE LONG RADIUS UNLESS OTHERWISE SPECIFICALLY NOTED ON THE DRAWINGS.
- INSTALL MANUAL VOLUME DAMPERS WITHIN DUCT BRANCHES TO BALANCE AIRFLOW CFM ON INSULATED DUCTS. MOUNT DAMPER REGULATOR ON 2" STAND-OFF BRACKET TO CLEAR INSULATION.
- ALL MATERIAL EXPOSED WITHIN RA PLENUMS SHALL BE NON-COMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX NOT GREATER THAN 25 AND SMOKE DEVELOPED INDEX NOT GREATER THAN 50. COMPLY WITH CMC-602.2.
- COORDINATE ACCESS TO EQUIPMENT WITH WORK OF OTHER TRADES. PROVIDE DUCT ACCESS DOORS AND CEILING ACCESS DOORS TO ALLOW ACCESS FOR FILTER CHANGEOUT, CONTROLS ACCESS AND ACCESS TO SERVICE/REMOVE COMPONENTS INCLUDING, BUT NOT LIMITED TO, FANS, PULLEYS, SHEAVES, BELTS, ETC.

DSA NOTES

- MEP COMPONENT ANCHORAGE NOTE:
ALL MECHANICAL 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 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.

- COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVING A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
- 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 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 AND DUCTWORK DISTRIBUTION SYSTEM BRACING NOTE:
PIPING AND DUCTWORK 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 PRE-APPROVED 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 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL OPM #0043-13.

- AIR FILTERS SHALL BE STATE FIRE MARSHAL APPROVED AND LISTED TYPE. PREFORMED FILTERS HAVING COMBUSTIBLE FRAMING SHALL BE TESTED AS A COMPLETE ASSEMBLY. AIR FILTERS IN ALL OCCUPANCIES SHALL BE CLASS 2 OR BETTER (AS SHOWN IN THE STATE FIRE MARSHAL LISTING). AIR FILTERS SHALL BE ACCESSIBLE FOR CLEANING OR REPLACEMENT PER CMC 304.0.

SHEET INDEX

SHEET	DESCRIPTION
M0.01	GENERAL NOTES, LEGEND, ABBREVIATIONS AND SHEET INDEX
M0.02	SCHEDULES
M0.03	SCHEDULES
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M1.111	PIPING PLAN - LEVEL 01
M1.112	HVAC PLAN - ROOF
M5.01	CONTROL DIAGRAMS
M6.01	MECHANICAL CONTRACTOR INTERFERENCES
M6.02	DETAILS
M6.03	DETAILS
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M7.01	T24 COMPLIANCE FORMS
M7.02	T24 COMPLIANCE FORMS
MD1.101	HVAC DEMO PLAN - LEVEL 01
MD1.112	HVAC DEMO PLAN - ROOF

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Date	Description
3/22/2023	DSA RESUBMITTAL
8/16/2023	DSA BACKCHECK 01
10/2/2023	DSA BACKCHECK 02
6/30/2024	ADDENDUM 6

THE ANCHORAGE OF ALL MECHANICAL 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.

Seal / Signature



Project Name
Science Building Renovation
DSA # 04-121828

Project Number
007.3766.000

Description
GENERAL NOTES, LEGEND, ABBREVIATIONS AND SHEET INDEX

Scale
NOT TO SCALE

AIR HANDLING UNIT

MARK	MANUFACTURER & MODEL	TYPE	SERVICE	SUPPLY FAN										OUTSIDE AIR		COOLING COIL										HEATING COIL										FILTERS		OPERATING WEIGHT (LBS)	REMARKS								
				QTY	TOTAL (CFM)	TSP (IN WC)	ESP (IN WC)	RPM	MOTOR					MIN OSA (CFM)	DCV MIN OSA (CFM)	FV (FPM)	TOTAL (MBH)	SENS (MBH)	AIR SIDE				WATER SIDE				COIL DESCRIPTION				QTY	SIZE (INCHES)	ROWS / FT	TYPE	QUANTITY/SIZE												
									BHP	HP	RPM	VOLTS	PHASE						EAT (°F)	LAT (°F)	AP (IN WC)	GPM	EWT (°F)	LWT (°F)	AP (FT)	QTY	SIZE (INCHES)	ROWS / FT	QTY	SIZE (INCHES)						ROWS / FT											
AHU-1	ENERGY LABS C32102-FCH-L	CUSTOM BUILT-UP	BUILDING	2	14,555	5.0	3.5	1,831	7.8	10.0	1,800	460	3	3,715	-	339	1,013	965	116.0	74.0	53.3	52.5	0.47	100	42.0	62.3	7.8	2	36 X 73	6 / 9	339	336	34.0	55.4	0.06	7.5	180	94.2	4.9	2	36 X 73	1 / 6	MERV 13	9 / 24"x24" / 3 / 12"x24"	9,100	1	2

1 PROVIDE CONCRETE PAD PER DETAIL 1/M6.03 AND 12/SO.012. 2 AHU-1 IS SIZED FOR 70% DIVERSITY.

LABORATORY EXHAUST FANS

MARK	MANUFACTURER & MODEL	LOCATION	TYPE	SERVICE	FAN					DRIVE		MOTOR			OPERATING WEIGHT (LBS)	REMARKS		
					AIRFLOW (CFM)	TSP (IN WC)	ESP (IN WC)	RPM	BHP	HP	VFD	HP	RPM	V / PH			ENCLOSURE	
EF-1	GREENHECK VEKTOR-CH-33-10-II	ROOF	FUME EXHAUST	LAB & BUILDING EXHAUST	14,275	3.7	3.5	1,181	14.5	BELT	Y	20	1,725	460 / 3	TEFC	1	2	3
EF-2	GREENHECK VEKTOR-CH-33-10-II	ROOF	FUME EXHAUST	LAB & BUILDING EXHAUST	14,275	3.7	3.5	1,181	14.5	BELT	Y	20	1,725	460 / 3	TEFC	1	2	3

1 EF-1 & EF-2 SHALL BE A PACKAGED LAB EXHAUST FAN SYSTEM WITH N+1 REDUNDANCY AND BUILT-IN BYPASS. THE SYSTEM TOTAL WEIGHT IS 5,640 LBS. 3 EXHAUST FAN IS SIZED FOR 70% DIVERSITY.
2 PROVIDE VIBRATION ISOLATION BASE W/ 2" SPRINGS.

FAN COIL UNIT

MARK	MANUFACTURER & MODEL	LOCATION	TYPE	SERVICE	SUPPLY FAN		DX COIL		FILTER		PIPING CONN			ELECTRICAL				OPERATING WEIGHT (LBS)	REMARKS		
					AIRFLOW (CFM)	WATTS	TYPE	CHARGE (LBS)	%	TYPE	SUCT (IN)	LIQUID (IN)	COND (IN)	FLA	MCA	MCCP	V/PH				
FC-1	DAIKIN FTK12AXVJU	109 ELEC ROOM	WALL MOUNTED	109 ELEC ROOM	435	38	10.9	9.09	R410A	2.09	-	WASHABLE	3/8	1/4	3/4	0.36	8.7	15	208 / 1	25	-

CONDENSING UNIT

MARK	MANUFACTURER & MODEL	LOCATION	SERVICE	NAMEPLATE				COOLING CAPACITY			PIPING CONN		REFRIGERANT		EFFICIENCY		OPERATING WEIGHT (LBS)	REMARKS
				FLA	MCA	MCCP	V/PH	AMB (°F)	TONS	MBH	SUCT (IN)	LIQUID (IN)	TYPE	CHARGE (LBS)	COOLING EFFIEVER			
CU-1	DAIKIN FTK12AXVJU	ROOF	109 ELEC ROOM	0.47	8.7	15	208 / 1	115	1	6.1	3/8	1/4	R410A	2.09	12.5 / -	65	1	

1 PROVIDE LOW AMBIENT KIT.

SUPPLY AIR VALVES

MARK	MANUFACTURER & MODEL	SERVICE	INLET SIZE (IN)	MIN (CFM)	MAX (CFM)	MAX PD (IN WC)	SONES	WEIGHT (LBS)	REMARKS
SAV-1	ACCUVALVE AVT6000	101 ORGANIC CHEMISTRY LAB	36x12	2,000	4,050	0.19	-	97	1 2
SAV-2	ACCUVALVE AVT6000	101 ORGANIC CHEMISTRY LAB	36x12	2,000	4,050	0.19	-	97	1 2
SAV-3	ACCUVALVE AVT6000	102 ORGANIC CHEMISTRY INSTRUMENT ROOM	12	425	1,280	0.23	-	26	1 2
SAV-4	ACCUVALVE AVT6000	103 CHEMISTRY LAB	14	425	1,490	0.20	-	30	1 2
SAV-5	ACCUVALVE AVT6000	104 BIOLOGY CLASSLAB	14	335	1,505	0.12	-	30	1 2
SAV-6	ACCUVALVE AVT6000	105 BIOLOGY LAB	14	425	1,810	0.16	-	30	1 2
SAV-7	ACCUVALVE AVT6000	106 MICROBIOLOGY LAB	24x12	1,380	2,415	0.17	-	49	1 2
SAV-8	ACCUVALVE AVT6000	107 LAB SERVICES	36x12	2,505	3,360	0.12	-	97	1 2
SAV-9	ACCUVALVE AVT6000	108 GEOLOGY LAB	18x12	400	2,250	0.21	-	43	1 2
SAV-10	ACCUVALVE AVT6000	112, 113, 114, & 115 OFFICES	12	320	1,060	0.20	-	26	1 2
SAV-11	ACCUVALVE AVT6000	116, 117, 118, & 119 OFFICES	12	320	1,060	0.20	-	26	1 2

1 VALVE SHALL BE 24V POWER, FAIL TO LAST POSITION.
2 VALVE SHALL BE ALUMINUM.

EXHAUST AIR VALVES

MARK	MANUFACTURER & MODEL	SERVICE	INLET SIZE (IN)	MIN (CFM)	MAX (CFM)	MAX PD (IN WC)	SONES	WEIGHT (LBS)	REMARKS
EAV-1	ACCUVALVE AVC6000	FUME HOOD - 101 ORGANIC CHEMISTRY LAB	10	375	700	0.13	-	26	1 3
EAV-2	ACCUVALVE AVC6000	FUME HOOD - 101 ORGANIC CHEMISTRY LAB	10	375	700	0.13	-	26	1 3
EAV-3	ACCUVALVE AVC6000	FUME HOOD - 101 ORGANIC CHEMISTRY LAB	10	375	700	0.13	-	26	1 3
EAV-4	ACCUVALVE AVC6000	FUME HOOD - 101 ORGANIC CHEMISTRY LAB	10	375	700	0.13	-	26	1 3
EAV-5	ACCUVALVE AVC6000	FUME HOOD - 101 ORGANIC CHEMISTRY LAB	10	375	700	0.13	-	26	1 3
EAV-6	ACCUVALVE AVC6000	FUME HOOD - 101 ORGANIC CHEMISTRY LAB	10	375	700	0.13	-	26	1 3
EAV-7	ACCUVALVE AVC6000	FUME HOOD - 101 ORGANIC CHEMISTRY LAB	10	375	700	0.13	-	26	1 3
EAV-8	ACCUVALVE AVC6000	FUME HOOD - 101 ORGANIC CHEMISTRY LAB	10	375	700	0.13	-	26	1 3
EAV-9	ACCUVALVE AVC6000	FUME HOOD - 101 ORGANIC CHEMISTRY LAB	10	375	700	0.13	-	26	1 3
EAV-10	-	-	-	-	-	-	-	-	NOT USED.
EAV-11	ACCUVALVE AVC6000	FUME HOOD - 101 ORGANIC CHEMISTRY LAB	10	375	700	0.13	-	26	1 3
EAV-12	-	-	-	-	-	-	-	-	NOT USED.
EAV-13	ACCUVALVE AVC6000	FUME HOOD - 101 ORGANIC CHEMISTRY LAB	12	245	1,100	0.17	-	26	1 3
EAV-14	-	-	-	-	-	-	-	-	NOT USED.
EAV-15	ACCUVALVE AVT6000	GEN EXH - 102 ORGANIC CHEMISTRY INSTRUMENT RM	10	180	855	0.20	-	26	1 2
EAV-16	ACCUVALVE AVC6000	FUME HOOD - 103 CHEMISTRY LAB	12	245	1,100	0.17	-	26	1 3
EAV-17	ACCUVALVE AVT6000	GENERAL EXHAUST - 103 CHEMISTRY LAB	12	180	1,065	0.16	-	26	1 2
EAV-18	ACCUVALVE AVT6000	GENERAL EXHAUST - 104 BIOLOGY CLASSLAB	14	335	1,505	0.12	-	30	1 2
EAV-19	ACCUVALVE AVT6000	GENERAL EXHAUST - 105 BIOLOGY LAB	14	425	1,810	0.18	-	30	1 2
EAV-20	ACCUVALVE AVC4000	BIOSAFETY CABINET - 106 MICROBIOLOGY LAB	12	1,200	1,200	0.20	-	26	1 3
EAV-21	ACCUVALVE AVT6000	GENERAL EXHAUST - 106 MICROBIOLOGY LAB	12	180	1,215	0.20	-	30	1 2
EAV-22	ACCUVALVE AVC4000	CORROSIVE CABINET - 107 LAB SERVICES	8	300	300	0.07	-	16	1 3
EAV-23	-	-	-	-	-	-	-	-	NOT USED.
EAV-24	ACCUVALVE AVC4000	CANOPY HOOD - 107 LAB SERVICES	8	450	450	0.18	-	16	1 3
EAV-25	ACCUVALVE AVT6000	GENERAL EXHAUST - 107 LAB SERVICES	18x12	260	2,575	0.25	-	43	1 2
EAV-26	ACCUVALVE AVT6000	GENERAL EXHAUST - 108 GEOLOGY LAB	18x12	400	2,250	0.23	-	43	1 2
EAV-27	-	-	-	-	-	-	-	-	NOT USED.
EAV-28	-	-	-	-	-	-	-	-	NOT USED.

1 VALVE SHALL BE 24V POWER, FAIL TO LAST POSITION. 3 VALVE SHALL BE STAINLESS STEEL.
2 VALVE SHALL BE ALUMINUM.

VARIABLE FREQUENCY DRIVES

MARK	MANUFACTURER & MODEL	LOCATION	TYPE	SERVICE	VARIABLE FREQUENCY DRIVE				REMARKS
					MOTOR (HP)	VFD (HP)	VOLTS	FLA	
VFD-EF-1	ABB ACH 580	ROOF	6-PULSE DRIVE	EF-1	20	25	480	34	1
VFD-EF-2	ABB ACH 580	ROOF	6-PULSE DRIVE	EF-2	20	25	480	34	1

1 PROVIDE WITH NEMA 3R ENCLOSURE.

GRILLES, REGISTERS, DIFFUSERS

MARK	MANUFACTURER & MODEL	DESCRIPTION	NOMINAL SIZE (IN)	NECK SIZE (IN)	MATERIAL	BORDER	DAMPER	FINISH	REMARKS
SG-2	PRICE RFD	RADIAL FLOW DIFFUSER	48 x 24	SEE PLANS	ALUMINUM	SURFACE MOUNT	NONE	1	2
SG-3	PRICE RFD	RADIAL FLOW DIFFUSER	48 x 24	SEE PLANS	ALUMINUM	SURFACE MOUNT	NONE	1	3
EG-1	PRICE APDDR	PERFORATED EXHAUST	24 x 24	SEE PLANS	ALUMINUM	SURFACE MOUNT	NONE	1	-
RG-1	PRICE APDDR	PERFORATED EXHAUST	24 x 24	SEE PLANS	ALUMINUM	SURFACE MOUNT	NONE	1	-

1 COORDINATE WITH ARCHITECTURAL FINISH.
2 1-WAY BLOW.
3 2-WAY BLOW.

HOT WATER HEATING COILS

MARK	MANUFACTURER & MODEL	LOCATION	SERVICE	COIL LENGTH (IN)	COIL HEIGHT (IN)	COOLING AIRFLOW (CFM)	HEATING AIRFLOW (CFM)	AIR				HOT WATER				REMARKS		
								HTG (MBH)	FACE VEL (FPM)	EAT °F	LAT °F	MAX PD (IN WC)	NO. OF ROWS	FLUID VEL (FT/S)	GPM		EWT °F	LWT °F
HC-1	HEATCRAFT 5M10601A	101 ORGANIC CHEMISTRY LAB	SAV-1	28	21	4,050	2,000	42.6	489.8	55.0	74.6	0.15	1	2.2	2.9	180.0	150.0	0.7
HC-2	HEATCRAFT 5M10601A	101 ORGANIC CHEMISTRY LAB	SAV-2	28	21	4,050	2,000	42.6	489.8	55.0	74.6	0.15	1	2.2	2.9	180.0	150.0	0.7
HC-3	HEATCRAFT 5S50901A	102 ORGANIC CHEMISTRY INSTRUMENT ROOM	SAV-3	15	12	1,280	425	8.8	340.0	55.0	74.2	0.11	1	0.6	0.6	180.0	149.0	0.1
HC-4	HEATCRAFT 5S50801A	103 CHEMISTRY LAB	SAV-4	18	12	1,490	425	14.2	283.3	55.0	85.8	0.14	1	1.0	0.9	180.0	148.1	0.3
HC-5	HEATCRAFT 5S50801A	104 BIOLOGY CLASSLAB	SAV-5	18	12	1,505	445	14.5	283.3	55.0	86.5	0.18	1	1.1	1.0	180.0	150.0	0.3
HC-6	HEATCRAFT 5S50901A	105 BIOLOGY LAB	SAV-6	18	15	1,810	535	20.7	285.3	55.0	90.7	0.18	1	1.5	1.4	180.0	149.3	0.7
HC-7	HEATCRAFT 5S50701A	106 MICROBIOLOGY LAB	SAV-7	24	18	2,415	1,380	35.7	460.0	55.0	78.8	0.11	1	2.5	2.4	180.0	149.4	2.3
HC-8	HEATCRAFT 5S50801A	107 LAB SERVICES	SAV-8	22	18	3,360	2,505	39.2	860.0	55.0	70.3	0.18	1	2.9	2.7	180.0	150.0	2.6
HC-9	HEATCRAFT 5S50801A	108 GEOLOGY LAB	SAV-9	18	18	2,250	665	25.4	295.6	55.0	90.2	0.31	1	1.8	1.7	180.0	149.5	1.1
HC-10	HEATCRAFT 5S50801A	112, 113, 114, & 115 OFFICES	SAV-10	12	12	1,060	255	8.6	225.0	55.0	90.2	0.21	1	0.6	0.5	180.0	147.0	0.9
HC-11	HEATCRAFT 5S50801A	116, 117, 118, & 119 OFFICES	SAV-11	12	12	1,060	255	8.6	225.0	55.0	90.2	0.21	1	0.6	0.5	180.0	147.0	0.9

CONTROL VALVES

MARK	MANUFACTURER & MODEL	LOCATION	TYPE	SERVICE	FLOW RATE (GPM)	VALVE Cv	CLOSE-OFF (PSI)	PRESSURE DROP (PSID)	VALVE SIZE (INCH)	PIPE SIZE (INCH)	VOLTAGE (VAC)	ACTUATOR	REMARKS
CV-1	BELIMO B212	101 ORGANIC CHEMISTRY LAB	2-WAY CCV	HC-1	5.2	3.0	200	0.90	1/2	1	24	MFT	-
CV-2	BELIMO B212	101 ORGANIC CHEMISTRY LAB	2-WAY CCV	HC-2	5.2	3.0	200	0.90	1/2	1	24	MFT	-
CV-3	BELIMO B330HT290	102 ORGANIC CHEMISTRY INSTRUMENT ROOM	2-WAY CCV	HC-3	0.6	2.9	200	0.05	3/4	3/4	24	MFT	-
CV-4	BELIMO B217	103 CHEMISTRY LAB	2-WAY CCV	HC-4	0.9	4.7	200	0.11	3/4	3/4	24	MFT	-
CV-5	BELIMO B217	104 BIOLOGY CLASSLAB	2-WAY CCV	HC-5	1.0	4.7	200	0.13	3/4	3/4	24	MFT	-
CV-6	BELIMO B212	105 BIOLOGY LAB	2-WAY CCV	HC-6	1.4	3.0	200	0.28	1/2	3/4	24	MFT	-
CV-7	BELIMO B212	106 MICROBIOLOGY LAB	2-WAY CCV	HC-7	2.3	3.0	200	0.93	1/2	3/4	24	MFT	-
CV-8	BELIMO B212	107 LAB SERVICES	2-WAY CCV	HC-8	2.5	3.0	200	1.00	1/2	3/4	24	MFT	-
CV-9	BELIMO B210	108 GEOLOGY LAB	2-WAY CCV	HC-9	1.2	1.2	200						

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△	Date	Description
6	3/01/2024	ADDENDUM 6

Seal / Signature



Project Name

Science Building Renovation
DSA # 04-121828

Project Number

007.3766.000

Description

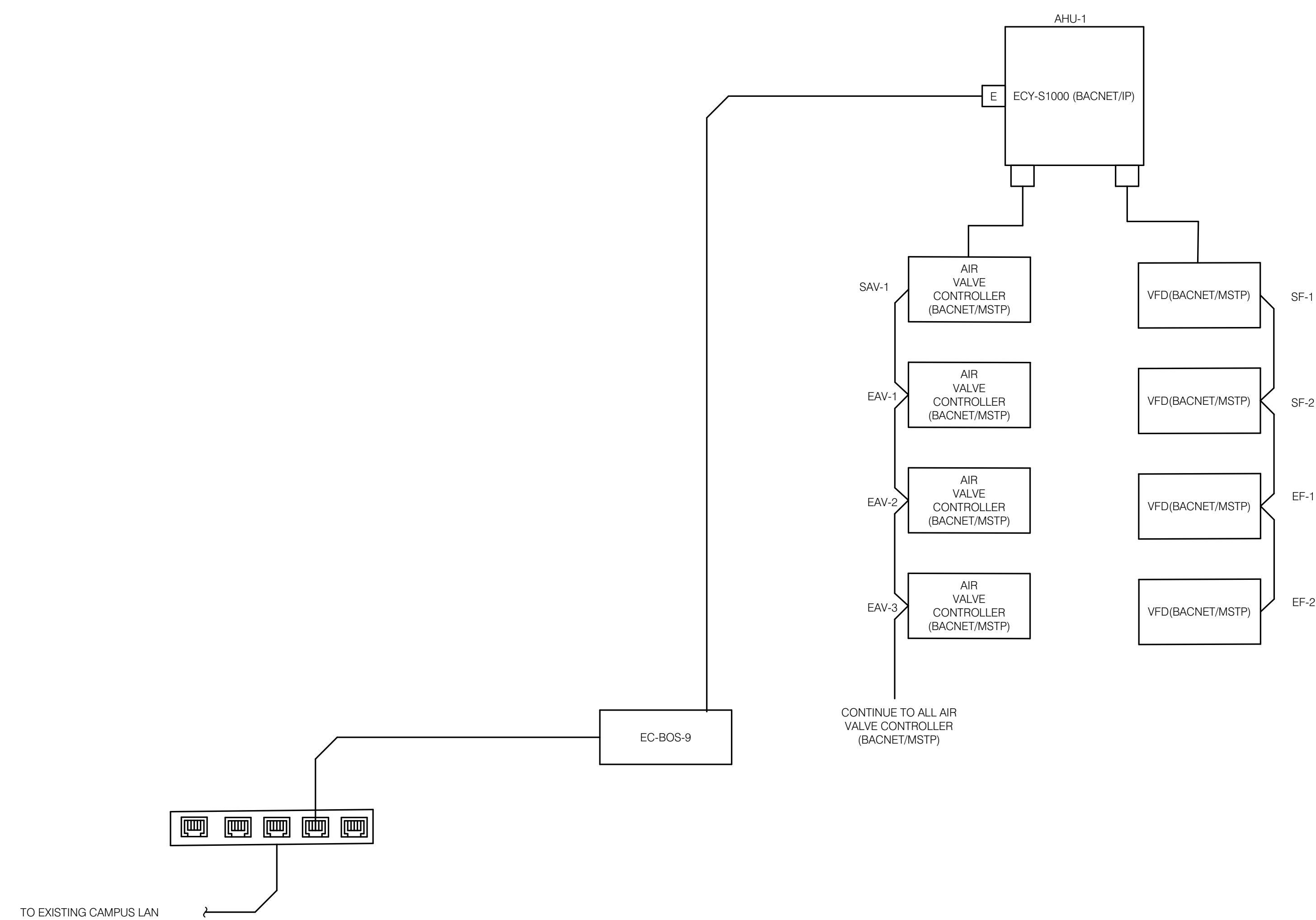
NETWORK ARCHITECTURE

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M5.03

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SECTION 23 09 00 – INSTRUMENTATION AND CONTROL FOR HVAC

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. The basis of design for the control system is Distech and mentioned throughout this specification section. Other manufacturers with equal or better performance may be provided. See section 2.1 for list of manufacturers and providers.
- B. This Section includes control equipment for HVAC systems and components, including control components for cooling units not supplied with factory-wired controls.
- C. Related Sections include the following:
 - 1. Section 230519 "Meters and Gages for HVAC Piping" for measuring equipment that relates to this Section.
 - 2. Section 230993 "Sequences of Operation"
- D. Definitions:
 - 1. Alarm: Notification of an abnormal condition.
 - 2. Algorithm: A logical procedure for solving a recurrent mathematical problem.
 - 3. Analog: A continuously varying signal value (temperature current, velocity, etc.)
 - 4. Application Generic Controller (AGC): A networked device or node that contains a complete, configurable application that is generic in nature and suited for various control tasks. The device manufacturer produces this application. The manufacturer exposes a high number of network variables and configuration properties on the device to allow the specific use of the device to be configured with network tools.
 - 5. Application Specific Controller (ASC): A networked device or node that contains a complete, configurable application that is specific to a particular task. This application is normally produced by the device manufacturer and contains a number of configuration parameters that may be adjusted by network tools.
 - 6. Binary: A two-state system where an "on" condition is represented by a high signal level and an "off" condition is represented by a low signal level.
 - 7. Bridge: A device that routes messages or isolates message traffic to a particular segment sub-net or domain of the same physical communication media.
 - 8. Building Management System (BMS): The complete facility control system comprised of all mechanical system automation, and automatic temperature control, etc., as defined in the contract documents. The BAS is built upon a single network infrastructure based upon BACnet protocol. This infrastructure may include field wiring, BACnet wiring, routers,

- bridges, raceways, and gateways as required connecting non-interoperable subsystems and devices.
9. Channel: A physical media serving a number of nodes. All nodes on any given channel 'hear' messages produced by other nodes on the channel. The network configuration and node application program determines whether or not a device responds to the messages.
 10. Control Unit: A BACnet control product that handles multiple inputs and outputs and more than one control loop. May utilize a supplemental general-purpose microprocessor in addition to the standard BACnet chip to perform additional functions or software applications.
 11. Control Wiring: Includes conduit, wire and wiring devices to install complete control systems including motor control circuits, interlocks, thermostats, EP and PE switches and like devices. Includes all wiring from Intelligent Devices and Controllers to all sensors and points defined in the input/output summary shown on the drawings or specified herein and required to execute the sequence of operation.
 12. Custom Application Controller (CAC): Programmable control product that incorporates solid-state components to perform control loops or functions. The application in the controller is custom software produced by the Control System Contractor specifically for the project. These applications shall conform to BACnet functional profiles and interoperability standards. Complete documentation including object diagrams, Device Resource Files (DRF), and External Interface Files (XIF) must be submitted EOR (Engineer of Record) when such devices/controllers are used.
 13. Deadband: A temperature range over which no heating or cooling energy is supplied, such as 72-78 degrees F, i.e. as opposed to single point changeover or overlap.
 14. Device Resource File: External Interface files and BACnet plug-ins that are required to display manufacturer's defined network variables or configuration parameters correctly.
 15. DDC: Direct digital control.
 16. Distributed Control: A system whereby all control processing is decentralized and independent of a central computer.
 17. Diagnostic Program: A machine-executable program with instructions used to detect and isolate system and component malfunctions.
 18. Domain: A domain is logical collection of nodes on one or more channels. Communications can only take place among nodes configured in a common domain; therefore, a domain forms a virtual network. Multiple domains can occupy the same channels, so domains may be used.
 19. Gateway: A device that contains an I/O software driver to translate data from other protocols to the conforming BACnet standards.
 20. Graphical User Interface (GUI): A graphical subset of operator interfaces.
 21. HVAC Control Systems: The complete BACnet Control System comprising User Interface, routers, gateways, repeaters, Control Units (CU), software, portable operators terminals, network communications wiring and raceways, and required field hardware, etc.
 22. Intelligent Devices: BACnet product that is configured to provide control over a single control loop or to monitor a single or multiple control variable(s); incorporates solid-state components based upon BACnet protocol to perform dedicated functions (ex: actuators, sensors, and switches).
 23. Man-Machine Interface (MMI): A graphical, object-oriented method by which an operator is capable of communicating with the system. The Man-Machine interface allows the operator to manage, control, monitor, and configure the system.
 24. Network: A system of distributed control devices that are linked together on a communication bus. A network allows sharing of point information between all control devices. Additionally, a network may provide central monitoring and control of the entire system from an MMI/GUI.

25. Node: An intelligent device attached to the network. Usually falls into one of the following categories - sensor, actuator, ASC, AGC, CAC.
26. Operator Interface: A device combination of hardware and software, (PC, laptop or display terminal) which provides client access to the control system, primarily used for network management, configuration, and diagnostics.
27. Operating System (OS): Software which controls the execution of computer programs.
28. Peripheral: External devices used to communicate to and from a computer. Peripherals include CRT, printer, hard drives, disk drives, modems, etc.
29. Point: Group of data, which corresponds to a hardware input, output, or calculated value.
30. Portable Operator's Terminal (POT): Laptop/tablet device that allows local and remote access to the local control network.
31. Router: A device that routes or forwards messages destined for a node on another subnet or domain of the control network. The device controls message traffic based on node address and priority. Routers may also serve as communication interfaces between different channel media. (i.e., powerline, twisted pair, Ethernet\TCP\IP, and RF)
32. Segment: A set of channels connected by bridges or repeaters. A node sees every packet from every other node on its segment.
33. Sensor: Device capable of measuring the condition or value of a variable.
34. Software: Programs and routines used to extend the capabilities of computers hardware.
35. Subnet: A subnet is a logical collection of up to 127 nodes within a domain. Up to 255 subnets can be defined within a single domain. All nodes in a subnet must be on the same segment. Subnets cannot cross-intelligent routers.

E. Abbreviations

- | | | |
|-----|------------------------------|--------------------------------------|
| 1. | AAC | Advanced Application Controllers |
| 2. | AGC | Application Generic Controller |
| 3. | ASC | Application Specific Controller |
| 4. | BAS | Energy Management System |
| 5. | BC | Building Controllers |
| 6. | CAC | Custom Application Controller |
| 7. | DDC | Direct Digital Controller |
| 8. | DRF | Device Resource File |
| 9. | EMS Energy Management System | |
| 10. | FPM | Feet per minute |
| 11. | GPM | Gallons per minute |
| 12. | GUI | Graphical User Interface |
| 13. | I/O | Input/Output |
| 14. | NFPA | National Fire Protection Association |
| 15. | OS | Operating System |
| 16. | OWS | Operating Work Station |
| 17. | PE | Pneumatic-electric |
| 18. | PID | Proportional Integral Derivative |
| 19. | PRV | Pressure Reducing Valve |
| 20. | PSI(g) | Pounds per square inch (gauge) |
| 21. | RAM | Random Access Memory |
| 22. | SA | Smart Actuators |
| 23. | SS | Smart Sensors |
| 24. | TCS | Temperature Control System |
| 25. | TCC | Temperature Control Contractor |
| 26. | UL | Underwriters' Laboratory |

- | | | |
|-----|-----|----------------------------|
| 27. | VCS | Voice Communication System |
| 28. | WC | Water Column |
| 29. | XIF | External Interface File |

1.3 SYSTEM PERFORMANCE

- A. Comply with the following performance requirements:
1. Graphic Display: Display graphic with minimum 20 dynamic points with current data within 10 seconds.
 2. Graphic Refresh: Update graphic with minimum 20 dynamic points with current data within 8 seconds.
 3. Object Command: Reaction time of less than two seconds between operator command of a binary object and device reaction.
 4. Object Scan: Transmit change of state and change of analog values to control units or workstation within six seconds.
 5. Alarm Response Time: Annunciate alarm at workstation within 45 seconds. Multiple workstations must receive alarms within five seconds of each other.
 6. Program Execution Frequency: Run capability of applications as often as five seconds, but selected consistent with mechanical process under control.
 7. Performance: Programmable controllers shall execute DDC PID control loops, and scan and update process values and outputs at least once per second.

1.4 QUALITY ASSURANCE

- A. The Building Management System (BMS) shall be furnished, engineered and installed by a certified Distech controls system supplier and approved by the College Representative.
- B. System Integrator shall:
1. Be in good standing with the Manufacturer.
 2. Have on staff, trained Distech Integrators.
 3. Have at least four (4) fully trained staff members at all times.
 4. Provide training class certifications of staff members if requested.
 5. Have direct line of technical support from suppliers.
 6. Employ technicians who have completed factory-authorized training.
 7. Employ technicians to provide instruction, routine maintenance, and emergency service within 24 hours upon receipt of request.
- C. The installing Contractor must be regularly engaged in the service and installation of Distech based systems as specified herein.
- D. The installing Contractor shall have an office within 200 miles that is staffed with designers trained in integrating interoperable systems and technicians fully capable of providing instruction and routine emergency maintenance service on all system components.
- E. The installing Contractor shall have in house capabilities to provide control strategies for whole building control. This includes HVAC, lighting, access, and security applications etc.

- F. The installing Contractor shall have a service facility, staffed with qualified service personnel, capable of providing instructions and routine emergency maintenance service for networked control systems.

1.5 ACTION SUBMITTALS

- A. The manufacturer, contractor or supplier shall include a written statement that the submitted equipment, hardware or accessory complies with the requirement of this particular specification section.
 - 1. The manufacturer shall resubmit this specification section showing compliance with each respective paragraphs and specified items and features.
 - 2. All exceptions shall be clearly identified by referencing respective paragraph and other requirements along with proposed alternative.
 - 3. Individual or partial submittals are not acceptable and will be returned without review.
- B. The installing Contractor shall provide project list stating completion of no less than three (3) Chilled Water Central Plants projects of similar size or larger within the past five (5) years, which have BacNET based BAS as specified herein installed by the Contractor. These projects must be on-line and functional such that the system can be observed in full operation.
- C. Product Data: Include manufacturer's technical literature for each control device. Indicate dimensions, capacities, performance characteristics, electrical characteristics, finishes for materials, and installation and startup instructions for each type of product indicated.
 - 1. DDC System Hardware: Bill of materials of equipment indicating quantity, manufacturer, and model number. Include technical data for operator workstation equipment, interface equipment, control units, transducers/transmitters, sensors, actuators, valves, relays/switches, control panels, and operator interface equipment.
 - 2. Control System Software: Include technical data for operating system software, operator interface, color graphics, and other third-party applications.
 - 3. Controlled Systems: Instrumentation list with element name, type of device, manufacturer, model number, and product data. Include written description of sequence of operation including schematic diagram.
- D. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 1. Bill of materials of equipment indicating quantity, manufacturer and model number.
 - 2. Schematic flow diagrams showing chillers, cooling tower, pumps, valves and control devices and accessories.
 - 3. Wiring Diagrams: Power, signal and control wiring.
 - 4. Details of control panel faces, including controls, instruments and labeling.
 - 5. Written description of sequence of operation.
 - 6. Schedule of valves including flow characteristics.
 - 7. DDC System Hardware:
 - a. Wiring diagrams for control units with termination numbers.
 - b. Schematic diagrams and floor plans for field sensors and control hardware.

- c. Schematic diagrams for control, communication, and power wiring, showing trunk data conductors and wiring between operator workstation and control unit locations.
8. Control System Software: List of color graphics indicating monitored systems, data (connected and calculated) point addresses, output schedule, and operator notations.
9. Controlled Systems:
 - a. Schematic diagrams of each controlled system with control points labeled and control elements graphically shown, with wiring.
 - b. Scaled drawings showing mounting, routing, and wiring of elements including bases and special construction.
 - c. Written description of sequence of operation including schematic diagram.
 - d. Points list.

1.6 INFORMATIONAL SUBMITTALS

- A. Data Communications Protocol Certificates: Certify that each proposed DDC system component complies with ASHRAE 135.
- B. Qualification Data: For Installer and manufacturer.
- C. Software Upgrade Kit: For Owner to use in modifying software to suit future systems revisions or monitoring and control revisions.
- D. Field quality-control test reports.

1.7 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For direct digital control system to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017000 "Execution and Closeout Requirements," include the following:
 1. Maintenance instructions and lists of spare parts for each type of control device and compressed-air station.
 2. Interconnection wiring diagrams with identified and numbered system components and devices.
 3. Keyboard illustrations and step-by-step procedures indexed for each operator function.
 4. Inspection period, cleaning methods, cleaning materials recommended, and calibration tolerances.
 5. Calibration records and list of set points.
- B. Software and Firmware Operational Documentation: Include the following:
 1. Software operating and upgrade manuals.
 2. Program Software Backup: On a magnetic media or compact disc, complete with data files.
 3. Device address list.
 4. Printout of software application and graphic screens.
 5. Software license required by and installed for DDC workstations and control systems.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Factory-Mounted Components: Where control devices specified in this Section are indicated to be factory mounted on equipment, arrange for shipping of control devices to equipment manufacturer.
- B. System Software: Update to latest version of software at Project completion.

1.9 COORDINATION

- A. Coordinate location of exposed control sensors with plans and room details before installation.
- B. Coordinate supply of conditioned electrical branch circuits for control units and operator workstation.
- C. Coordinate equipment with Section 262416 "Panelboards" to achieve compatibility with starter coils and annunciation devices.

1.10 COMMISSIONING

- A. Commissioning requires the participation of Division 23 BAS work to ensure that all systems are operating in a manner consistent with the DSA Approved for Construction and the design intent. The general commissioning requirements and coordination are detailed in Division 1 and Division 23. This Division shall be familiar with all parts of Division 1 and Division 23 and the commissioning plan issued by the Commissioning Authority and shall execute all commissioning responsibilities assigned to them in the Contract Documents.
- B. The controls contractor is responsible for assisting the commissioning agent throughout the entire commissioning process. The controls work is not complete until the commissioning agent and the District has signed off on the commissioned systems.

PART 2 - PRODUCTS

2.1 CONTROL SYSTEM

- A. The basis of design for the control system is Distech and mentioned throughout this specification section. Other manufacturers with equal or better performance may be provided. See below:

Manufacturer	Provider
Siemens	Next Level EMS, Control Works, Control Electric, Southcoast Mechanical, Air Conditioning Solutions, Siemens Branch
ABB Controls	Next Level EMS, Control Works, Zaretsky Engineering, C.E. Mechanical, Signet Controls, Countywide Mechanical

Honeywell	Next Level EMS, ACS, R&R Controls
Johnson Controls- FX	Next Level EMS, South Coast, Johnson Controls Branch, RSD Total Control
Distech Controls	Sunbelt, MESA Energy Systems, Climatec
Delta Controls	Mesa Energy Systems, Southland Industries, Advanced Automated System, Power Edge Solutions, Diversified Thermal Services
Schneider Electric	Mesa Energy Systems, Albireo Energy, Industrial Technial Services, Triton Concepts

- B. Control system shall consist of sensors, indicators, actuators, final control elements, interface equipment, other apparatus, accessories, and software connected to distributed controllers operating in multiuser, multitasking environment on token-passing network and programmed to control mechanical systems. An operator workstation permits interface with the network via dynamic color graphics with each mechanical system, building floor plan, and control device depicted by point-and-click graphics.
- C. The selected Distech System Contractor shall be fully responsible to integrate all graphic required under this project onto the College front end. Provide necessary upgrades, modifications, etc. as required for a fully operational direct digital controls (DDC) system.

2.2 COMMUNICATION

- A. Control products, communication media, connectors, repeaters, hubs, and routers shall comprise a BACnet internetwork. Controller and operator interface communication shall conform to the latest version of ASHRAE/ANSI Standard 135, BACnet.
- B. Install new wiring and network devices as required providing a complete and workable control network.
- C. Each controller shall have a communication port for temporary connection to a laptop computer or other operator interface. Connection shall support memory downloads and other commissioning and troubleshooting operations.
- D. Internetwork operator interface and value passing shall be transparent to internetwork architecture.
 - 1. An operator interface connected to a controller shall allow the operator to interface with each internetwork controller as if directly connected. Controller information such as data, status, and control algorithms shall be viewable and editable from each internetwork controller.
 - 2. Inputs, outputs, and control variables used to integrate control strategies across multiple controllers shall be readable by each controller on the internetwork. Program and test all cross-controller links required to execute control strategies specified in this section. An

authorized operator shall be able to edit cross-controller links by typing a standard object address or by using a point-and-click interface.

- E. Controllers with real-time clocks shall use the BACnet Time Synchronization service. System shall automatically synchronize system clocks daily from an operator-designated controller via the internetwork. If applicable, system shall automatically adjust for daylight saving and standard time.
- F. System shall be expandable to at least twice the required input and output objects with additional controllers, associated devices, and wiring.
- G. System shall support Web services data exchange with any other system that complies with XML (extensible markup language) and SOAP (simple object access protocol) standards specified by the Web Services Interoperability Organization (WS-I) Basic Profile 1.0 or higher. Web services support shall as a minimum be provided at the workstation or web server level and shall enable data to be read from or written to the system.
 - 1. System shall support Web services read data requests by retrieving requested trend data or point values (I/O hardware points, analog value software points, or binary value software points) from any system controller or from the trend history database.
 - 2. System shall support Web services write data request to each analog and binary object that can be edited through the system operator interface by downloading a numeric value to the specified object.
 - 3. For read or write requests, the system shall require user name and password authentication and shall support SSL (Secure Socket Layer) or equivalent data encryption.
 - 4. System shall support discovery through a Web services connection or shall provide a tool available through the Operator Interface that will reveal the path/identifier needed to allow a third party Web services device to read data from or write data to any object in the system which supports this service.

2.3 BAS HARDWARE AND SOFTWARE

- A. The control system shall be seamlessly integrated to the existing campus control system.
 - 1. The selected Distech Controls System Contractor shall be fully responsible to integrate all graphic required under this project onto the College front end system. Provide necessary upgrades, modifications, etc. as required for a fully operational direct digital controls (DDC) system.
- B. Building and energy management application software shall reside and operate in system controllers. Applications shall be editable through operator workstation, web browser interface, or engineering workstation.
- C. Scheduling: System shall provide the following schedule options as a minimum:
 - 1. Weekly: Provide separate schedules for each day of the week. Each schedule shall be able to include up to 5 occupied periods (5 start-stop pairs or 10 events).
 - 2. Exception: Operator shall be able to designate an exception schedule for each of the next 365 days. After an exception schedule has executed, system shall discard and replace exception schedule with standard schedule for that day of the week.

3. Holiday: Operator shall be able to define 24 special or holiday schedules of varying length on a scheduling calendar that repeats each year.
- D. System Coordination: Operator shall be able to group related equipment based on function and location and to use these groups for scheduling and other applications.
- E. Remote Communication: System shall automatically contact operator workstation or server on receipt of critical alarms. If no network connection is available, system shall use a modem connection.
- F. Maintenance Management: System shall generate maintenance alarms when equipment exceeds adjustable runtime, equipment starts, or performance limits.
- G. Sequencing: Application software shall sequence chillers, pumps, etc. as specified in Sequences of Operation.
- H. PID Control: System shall provide direct and reverse acting PID (proportional-integral-derivative) algorithms. Each algorithm shall have anti-windup and selectable controlled variable, setpoint, and PID gains. Each algorithm shall calculate a time-varying analog value that can be used to position an output or to stage a series of outputs.
- I. Staggered Start: System shall stagger controlled equipment restart after power outage. Operator shall be able to adjust equipment restart order and time delay between equipment restarts.
- J. Energy Calculations:
 1. System shall accumulate and convert instantaneous power (kW) or flow rates (gpm) to energy usage data.
 2. System shall calculate a sliding-window average (rolling average). Operator shall be able to adjust window interval to 15 minutes, 30 minutes, or 60 minutes.
- K. Anti-Short Cycling: Binary output objects shall be protected from short cycling by means of adjustable minimum on-time and off-time settings.
- L. On and Off Control with Differential: System shall provide direct and reverse acting on and off algorithms with adjustable differential to cycle a binary output based on a controlled variable and setpoint.
- M. Runtime Totalization: System shall provide an algorithm that can totalize runtime for each binary input and output. Operator shall be able to enable runtime alarm based on exceeded adjustable runtime limit.
- N. Graphic screens shall be provided for all systems included in the Sequence of Operations and Points List.
- O. Control equipment and network failures shall be treated as alarms and annunciated.
- P. Alarms shall be visually identified via the HTML graphics pages. Overrides and setpoint changes for all points shall be configured via the HTML interface.
- Q. Alarms shall be annunciated in any of the following manners as defined by the user:

1. Screen message text
 2. SMS and email message
 3. Graphic with flashing alarm object(s)
- R. Alarms shall be logged for a period of no less than 1 week
- S. The following shall be recorded by the Web Server for each alarm (at a minimum):
1. Time and date
 2. Location (building, floor, zone, office number, etc.)
 3. Equipment (unit #, access way, etc.)

2.4 DDC CONTROL PRODUCTS

A. General:

1. Provide Building Controllers (BC), Advanced Application Controllers (AAC), Application Specific Controllers (ASC), Smart Actuators (SA), and Smart Sensors (SS) as required to achieve performance specified in this section and the sequence of operations.
2. Every device in the system which executes control logic and directly controls HVAC equipment must conform to a standard BACnet Device profile as specified in latest edition of ASHRAE/ANSI 135, BACnet Annex L. Unless otherwise specified, hardwired actuators and sensors may be used in lieu of BACnet Smart Actuators and Smart Sensors.

B. BACnet:

1. Building Controllers (BCs): Each BC shall conform to BACnet Building Controller (B-BC) device profile as specified in ASHRAE/ANSI 135, BACnet Annex L and shall be listed as a certified B-BC in the BACnet Testing Laboratories (BTL) Product Listing.
2. Advanced Application Controllers (AACs): Each AAC shall conform to BACnet Advanced Application Controller (B-AAC) device profile as specified in ASHRAE/ANSI 135, BACnet Annex L and shall be listed as a certified B-AAC in the BACnet Testing Laboratories (BTL) Product Listing.
3. Application Specific Controllers (ASCs): Each ASC shall conform to BACnet Application Specific Controller (B-ASC) device profile as specified in ASHRAE/ANSI 135, BACnet Annex L and shall be listed as a certified B-ASC in the BACnet Testing Laboratories (BTL) Product Listing.
4. Smart Actuators (SAs): Each SA shall conform to BACnet Smart Actuator (B-SA) device profile as specified in ASHRAE/ANSI 135 , BACnet Annex L and shall be listed as a certified B-SA in the BACnet Testing Laboratories (BTL) Product Listing.
5. Smart Sensors (SSs): Each SS shall conform to BACnet Smart Sensor (B-SS) device profile as specified in ASHRAE/ANSI 135, BACnet Annex L and shall be listed as a certified B-SS in the BACnet Testing Laboratories (BTL) Product Listing.
6. BACnet Communication:
 - a. Each BC shall reside on or be connected to a BACnet network using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol and BACnet/IP addressing.
 - b. BACnet routing shall be performed by BCs or other BACnet device routers as necessary to connect BCs to networks of AACs and ASCs.

- c. Each AAC and ASC shall reside on a BACnet network using Arcnet Data Link/Physical layer protocol.
- d. Each SA shall reside on a BACnet network using MS/TP Data Link/Physical layer protocol.
- e. Each SS shall reside on a BACnet network using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol with BACnet network using MS/TP Data Link/Physical layer protocol.

C. Communication.

1. Service Port: Each controller shall provide a service communication port for connection to a Portable Operator's Terminal. Connection shall be extended to space temperature sensor ports where shown on drawings.
2. Signal Management: BC and ASC operating systems shall manage input and output communication signals to allow distributed controllers to share real and virtual object information and to allow for central monitoring and alarms.
3. Data Sharing: Each BC and AAC shall share data as required with each networked BC and AAC.
4. Stand-Alone Operation: Each piece of equipment specified this section shall be controlled by a single controller to provide stand-alone control in the event of communication failure. All I/O points specified for a piece of equipment shall be integral to its controller. Provide stable and reliable stand-alone control using default values or other method for values normally read over the network.

D. Environment. Controller hardware shall be suitable for anticipated ambient conditions.

1. Controllers used outdoors or in wet ambient conditions shall be mounted in waterproof enclosures and shall be rated for operation at -20°F to 140°F.
2. Controllers used in conditioned space shall be mounted in dust-protective enclosures and shall be rated for operation at 32°F to 120°F.

E. Keypad: Provide a local keypad and display for each BC and AAC. Operator shall be able to use keypad to view and edit data. Keypad and display shall require password to prevent unauthorized use. If the manufacturer does not normally provide a keypad and display for each BC and AAC, provide the software and any interface cabling needed to use a laptop computer as a Portable Operator's Terminal for the system.

F. Real-Time Clock: Controllers that perform scheduling shall have a real-time clock.

G. Serviceability:

1. Controllers shall have diagnostic LEDs for power, communication, and processor.
2. Wires shall be connected to a field-removable modular terminal strip or to a termination card connected by a ribbon cable.
3. Each BC and AAC shall continually check its processor and memory circuit status and shall generate an alarm on abnormal operation. System shall continuously check controller network and generate alarm for each controller that fails to respond.

H. Memory:

1. Controller memory shall support operating system, database and programming requirements.
 2. Each BC and AAC shall retain BIOS and application programming for at least 72 hours in the event of power loss.
 3. Each ASC and SA shall use nonvolatile memory and shall retain BIOS and application programming in the event of power loss. System shall automatically download dynamic control parameters following power loss.
- I. Immunity to Power and Noise: Controllers shall be able to operate at 90% to 110% of nominal voltage rating and shall perform an orderly shutdown below 80% nominal voltage. Operation shall be protected against electrical noise of 5 to 120 Hz and from keyed radios up to 3 ft.
- J. Transformer: ASC power supply shall be fused or current limiting and shall be rated at a minimum of 125% of ASC power consumption.

2.5 INPUT AND OUTPUT INTERFACE

- A. General: Hard-wire input and output points to BCs, AACs, ASCs, or SAs.
- B. Protection: Shorting an input or output point to itself, to another point, or to ground shall cause no controller damage. Input or output point contact with up to 24 V for any duration shall cause no controller damage.
- C. Binary Inputs: Binary inputs shall monitor the on and off signal from a remote device. Binary inputs shall provide a wetting current of at least 12 mA and shall be protected against contact bounce and noise. Binary inputs shall sense dry contact closure without application of power external to the controller.
- D. Pulse Accumulation Inputs: Pulse accumulation inputs shall conform to binary input requirements and shall accumulate up to 10 pulses per second.
- E. Analog Inputs: Analog inputs shall monitor low-voltage (0-10 Vdc), current (4-20 mA), or resistance (thermistor or RTD) signals. Analog inputs shall be compatible with and field configurable to commonly available sensing devices.
- F. Binary Outputs: Binary outputs shall send an on-or-off signal for on and off control. Building Controller binary outputs shall have three-position (on-off-auto) override switches and status lights. Outputs shall be selectable for normally open or normally closed operation.
- G. Analog Outputs: Analog outputs shall send a modulating 0-10 Vdc or 4-20 mA signal as required to properly control output devices. Each Building Controller analog output shall have a two-position (auto-manual) switch, a manually adjustable potentiometer, and status lights. Analog outputs shall not drift more than 0.4% of range annually.
- H. Tri-State Outputs: Control three-point floating electronic actuators without feedback with tri-state outputs (two coordinated binary outputs). Tri-State outputs may be used to provide analog output control in zone control and terminal unit control applications such as VAV terminal units, duct-mounted heating coils, and zone dampers.

- I. Universal Inputs and Universal Outputs or Universal Input/output (UniPut): Inputs and outputs that can be designated as either binary or analog in software shall conform to the provisions of this section that are appropriate for their designated use.

2.6 POWER SUPPLIES AND LINE FILTERING

- A. Power Supplies. Control transformers shall be UL listed. Furnish Class 2 current-limiting type or furnish over-current protection in primary and secondary circuits for Class 2 service in accordance with NEC requirements. Limit connected loads to 80% of rated capacity.
 1. DC power supply output shall match output current and voltage requirements. Unit shall be full wave rectifier type with output ripple of 5.0 mV maximum peak-to-peak. Regulation shall be 1.0% line and load combined, with 100-microsecond response time for 50% load changes. Unit shall have built-in over-voltage and over-current protection and shall be able to withstand 150% current overload for at least three seconds without trip-out or failure.
 - a. Unit shall operate between 32°F and 120°F. EM/RF shall meet FCC Class B and VDE 0871 for Class B and MILSTD 810C for shock and vibration.
 - b. Line voltage units shall be UL recognized and CSA listed.
- B. Power Line Filtering.
 1. Provide internal or external transient voltage and surge suppression for workstations and controllers. Surge protection shall have:
 2. Dielectric strength of 1000 V minimum
 3. Response time of 10 nanoseconds or less
 4. Transverse mode noise attenuation of 65 dB or greater
 5. Common mode noise attenuation of 150 dB or greater at 40-100 Hz

2.7 THERMOWELLS

- A. When thermowells are required, the sensor and well shall be supplied as a complete assembly including wellhead and Greenfield fitting.
- B. Thermowells shall be pressure rated and constructed in accordance with the system working pressure.
- C. Thermowells and sensors shall be mounted in a threadolet or 1/2" NPT saddle and allow easy access to the sensor for repair or replacement.
- D. Thermowells shall be constructed of machined stainless steel, Type 316.
- E. Manufacturer shall be BAPI Model BA/4"M316 or approved equal.
- F. Provide Honeywell 107408 heat conductive compound in each thermowell.

2.8 LIQUID IMMERSION TEMPERATURE SENSORS & TRANSMITTER

- A. Temperature Sensor BAPI Model 1K8 or approved equal.

1. Operating Temperature -40 to 185°F
2. Sensing Element 1000 Ohm 385 Curve RTD
3. Accuracy at Calibration Temperature +/- 0.27 °F

B. Temperature Transmitter Minco Model TT807

1. Min / Max Span 35°F to 1112°F
2. Accuracy +/- 0.1% of Span
3. Linearity +/- 0.1% of Span

C. All sensors measuring temperatures in pipes larger than 2 inches in diameter or in pressure vessels shall be supplied with wells properly fabricated for the service. Wells shall be non-corrosive to the medium being measured and shall have sufficient physical strength to withstand pressures and velocities to which they are subjected. Wells shall be installed in the piping at elbows where piping is smaller than the length of the well to affect proper flow across the entire area of the well.

D. Stainless steel, Type 304, socket with minimum insertion length of 4 inches.

2.9 OUTSIDE AIR TEMPERATURE AND HUMIDITY SENSORS

A. Vaisala HUMICAP Outdoor Humidity and Temperature Transmitter HMD60YO. No known equal.

1. Humidity Operating Range 0-100% RH
2. Humidity Output Signal 4 to 20 mA, 0 to 100% linear, proportional
3. Humidity Accuracy +/- 2.0% RH, 0-90% RH
4. Humidity Sensing Element HUMICAP 180
5. Temperature Range -40-140°F
6. Temperature Output Signal 4 to 20 mA, 0 to 100% linear, proportional
7. Temperature Accuracy ± 0.36°F
8. Temperature Sensing Element 1K-ohm Platinum RTD 1/3 Class B IEC 751

B. Outdoor installations shall be of weatherproof construction or in appropriate NEMA enclosures. These installations shall be protected from solar radiation and wind effects. They shall also be provided with a solar radiation shield.

2.10 DUCT TYPE TEMPERATURE SENSORS

A. BAPI or approved equal.

1. Operating Temperature -40 to 240°F
2. Sensing Element NTC 10K (Type III) Thermistor
3. Accuracy at Calibration Temperature +/- 1 °F

B. Sensors in ducts shall be mounted in locations to sense the correct temperature of the air only and shall not be located in dead air spaces, in close proximity to coils so as to display inaccurate temperatures, or positions obstructed by ducts, equipment, and so forth. Locations where installed shall be within the vibration and velocity limit of the sensing element.

- C. Duct mount sensors shall mount in an electrical box through a hole in the duct and be positioned so as to be easily accessible for repair or replacement. A neoprene grommet (Seal-tite fitting and mounting plate) shall be used on the sensor assembly to prevent air leaks.
- D. Duct sensors shall be insertion type and constructed as a complete assembly including lock nut and mounting plate. Duct sensors probe shall be constructed of 304/316 stainless steel.
- E. Duct sensors shall not be mounted within 36 inches of heating and cooling coils.
- F. Duct temperature sensors mounted within 36 inches of heating and cooling coils shall be either rigid averaging sensors for the full width of the longest dimension of the duct mounted in the middle up to 48" wide. Beyond 48" wide the averaging sensor shall be flexible averaging sensor serpentine across the coil and not physically touching the coil.
- G. For outdoor air duct applications, use a weatherproof mounting box with weatherproof cover and gasket.

2.11 AVERAGING DUCT TYPE TEMPERATURE SENSORS

- A. Minco 1000 Ohm 375 Platinum Averaging Sensor & T90PNR Temperature Transmitter.
 - 1. Operating Temperature -40 to 240°F
 - 2. Sensing Element 1000 Ohm 375 Curve RTD
 - 3. Accuracy at Calibration Temperature +/- 0.6 °F
- B. For ductwork that has a dimension greater than 48 inches and/or where air temperature stratification exists, utilize an averaging sensor with multiple sensing points. The averaging sensor shall be installed complete with end cap, compression fittings, gaskets, mounting flange and required accessories.
- C. Provide CC-1G-K capillary supports at the sides of the duct to support the sensing string.
- D. Thermistor Averaging sensors (NTC 10K (Type III) Thermistor) can also be used with the same accuracy as 2.10 duct sensors.

2.12 ROOM TEMPERATURE SENSORS

- A. Room temperature sensors shall be Distech or approved equal.
- B. Room sensors are to be provided with a cover to prevent accidental damage.
 - 1. Operating Temperature -40 to 240°F
 - 2. Operating Range, Active Signal Types 40 to 90°F
 - 3. Temperature Effect Less than 0.1% per °C
 - 4. Sensing Element NTC 10K (Type III) Thermistor
 - 5. Accuracy at Calibration Temperature +/- 1 °F

2.13 WATER differential PRESSURE TRANSMITTERS

- A. Water differential pressure sensors shall be Setra Model 230 transmitters or approved equal.
- B. Pressure transmitters shall be constructed to withstand 100% pressure over-range without damage and to hold calibrated accuracy when subject to a momentary 40% over-range input.
- C. Provide:
 - 1. NEMA 1 transmitter housing and locate in accessible local control panels wherever possible.
 - 2. Brass 3-valve manifold assembly with shut-off and shunt valves.
 - 3. Standard Viton/Silicone bleed screw seals.
 - 4. Calibration certificate.
- D. The pressure transmitter shall be capable of transmitting a linear electronic signal proportional to the differential of the pressure input signals with the following minimum performance specifications.
 - 1. Span: Refer to Points List
 - 2. Accuracy: $\pm 0.25\%$ of full scale
 - 3. Non-Repeatability: 0.05%
 - 4. Non-Linearity: $\pm 0.20\%$
 - 5. Response: 30 to 50 ms
 - 6. Temperature Stability: Less than 0.02%FS/ $^{\circ}$ F change
 - 7. Output: 4 to 20mA

2.14 BTU METERS CHILLED AND HEATING HOT WATER

- A. Provide Onicon F-3200 Magmeter Flow Sensor with System 10 BTU Interface including matched temperature sensors. Integration shall be through 4-20 mA & pulsed relay contact closure. See Mechanical Drawings for location and sizes.
- B. General Water Flow Meter
 - 1. Operating Range: 0.033 to 33 ft/s
 - 2. Pipe Size Range: 1 in. to 48 in.
 - 3. Accuracy: $\pm 0.2\%$ of reading from 1.6 to 33 ft/s, ± 0.0033 ft/s from 0.033 to 1.6 ft/s
 - 4. Minimum Conductivity: 5 μ S/cm
 - 5. Class 150 flanges.
 - 6. Flow tube shall be epoxy coated steel and the sensing electrodes shall be 316 stainless steel.
- C. General Flow Meter Electrical
 - 1. Power Requirements - 4 to 20 mA: 24 VDC $\pm 10\%$, regulated, 22.1 mA max.
 - 2. Frequency: 5 to 24 VDC $\pm 10\%$, regulated, 15 mA max.
 - 3. Digital (S3L): 5 to 6.5 VDC, 15 mA max.
 - 4. Auxiliary (only required for units with relays): 9 to 24 VDC, 0.4 A max
 - 5. Reverse polarity and short circuit protected
 - 6. Current output (4 to 20 mA): - Loop Accuracy: 32 μ A max. error (25 $^{\circ}$ C @ 24 VDC)

7. Isolation: Low voltage < 48 VAC/DC from electrodes and auxiliary power
8. Maximum Cable: 1000 ft
9. Error condition: 22.1 mA
10. Max. Loop Resistance: 300 Ω
11. Compatible with PLC, PC or similar equipment
12. 4 to 20 mA load needed
13. Frequency Output: - Output Modes: Freq., or Mirror Relay (display version only)
14. Max. Pull-up Voltage: 30 VDC
15. Max. Current Sink: 50 mA, current limited

D. Relay Specifications

1. #1, #2 Type: Mechanical SPDT Rating: 5 A @ 30 VDC max., 5 A @ 250 VDC max.
2. #3 Type: Solid State Rating: 50 mA @ 30 VDC, 50 mA @ 42 VAC
3. Hysteresis: User adjustable for exiting alarm condition
4. Alarm On Trigger Delay: Adjustable (0 to 9999.9 sec.)
5. Relay Modes: Off, Low, High, Window, and Proportional Pulse
6. Relay Source: Flow Rate, Resettable Totalizer
7. Error Condition: Selectable; Fail Open or Closed

E. Display/Controller/Temperature Sensors

1. Provide Onicon System-10 or approved equal.
2. Shall provide the following points both at the integral LCD and as outputs to the BMS:
 - a. Energy Total
 - b. Energy Rate
 - c. Flow Rate
 - d. Supply and Return Temperatures
3. Provide BacNet interface.
4. Output shall be either serial network (compliant with the BMS system) or via individual analog and pulse outputs.
5. Temperature sensors shall be loop-powered current based (mA) sensors and shall be bath calibrated and matched (NIST traceable). Sensors shall be matched to an accuracy better than $\pm 0.15^{\circ}\text{F}$
6. Meter shall be provided per section above.
7. Meter shall be re-programmable using the front panel keypad.

F. Max. Temperature/Pressure Rating

1. Storage Temperature: -4°F to 158°F
2. Relative Humidity: 0 to 95% (non-condensing)
3. Operating Temperature: Ambient: 14°F to 158°F , Media: 32°F to 185°F
4. Maximum Operating Pressure: 150 psi @ 77°F

G. Standards and Approvals

1. NEMA 4X / IP65 Enclosure (with cap installed)

2.15 CURRENT TRANSFORMERS

- A. The current transformers shall be provided to be installed or removed without dismantling the primary bus or cables. The transformer shall be of a split core design.
- B. The core and windings shall be completely encased in a UL approved thermoplastic rated 94VA. No metal parts shall be exposed other than the terminals.
- C. The current transformers shall meet the following specifications.
 - 1. Frequency Limits: 50 to 400 Hz.
 - 2. Insulation: 0.6 KV Class, 10 KV BIL.
 - 3. Accuracy: $\pm 1\%$ at 5.0 to 25.0 VA accuracy class with U.P.F. burden.
 - 4. Provide a disconnect switch for each current transformer.

2.16 CURRENT SENSING SWITCHES

- A. Current sensing switch shall be self-powered with solid-state circuitry and a dry contact output.
- B. Current sensing switches shall consist of a solid state current sensing circuit, adjustable trip point, solid state switch, SPDT relay and an LED indicating the on or off status. A conductor of the load shall be passed through the window of the device. It shall accept over current up to twice its trip into range.

2.17 ACTUATORS

- A. Electric Motors: Size to operate with sufficient reserve power to provide smooth modulating action or two-position action.
 - 1. Comply with requirements in Section 230513 "Common Motor Requirements for HVAC."
 - 2. Permanent Split-Capacitor or Shaded-Pole Type: Gear trains completely oil immersed and sealed. Equip spring-return motors with integral spiral-spring mechanism in housings designed for easy removal for service or adjustment of limit switches, auxiliary switches, or feedback potentiometer.
 - 3. Nonspring-Return Motors for Valves Larger Than NPS 2-1/2: Size for running torque of 150 in. x lbf and breakaway torque of 300 in. x lbf.
 - 4. Nonspring-Return Motors for Dampers Larger Than 25 Sq. Ft.: Size for running torque of 150 in. x lbf and breakaway torque of 300 in. x lbf.
- B. Electronic Actuators: Direct-coupled type designed for minimum 60,000 full-stroke cycles at rated torque.
 - 1. Manufacturers shall be Belimo Aircontrols (USA), Inc.
 - 2. Valves: Size for torque required for valve close off at maximum pump differential pressure.
 - 3. Coupling: V-bolt and V-shaped, toothed cradle.
 - 4. Overload Protection: Electronic overload or digital rotation-sensing circuitry.
 - 5. Provide external, manual gear release on nonspring-return actuators.
 - 6. Power Requirements (Two-Position): 24-V ac.

7. Power Requirements (Modulating): Maximum 10 VA at 24-V ac or 8 W at 24-V dc.
8. Proportional Signal: 2- to 10-V dc or 4 to 20 mA, and 2- to 10-V dc position feedback signal.
9. Temperature Rating: 40 to 104 deg F.
10. Temperature Rating (Smoke Dampers): Minus 22 to plus 250 deg F
11. Run Time: 60 seconds.

2.18 CONTROL VALVES

- A. Manufacturer shall be Belimo Aircontrols or approved equal.
- B. Control Valves: Factory fabricated, of type, body material and pressure class based on maximum pressure and temperature rating of piping system, unless otherwise indicated.
- C. Ball Valves:
 1. NPS 2 and Smaller: 400 psi brass body, nickel plated, stainless steel trim, PTFE seats and screwed ends.
 2. NPS 2-1/2 and 4: 400 psi brass body, nickel plated, stainless steel trim, PTFE seats and flanged ends.
 3. Sizing:
 - a. Two Position: Line size.
 - b. Two-Way Modulating: As specified on the Drawings with Tefzel characterizing disc.
 4. Flow Characteristics: Two-way valves shall have equal percentage characteristics.
 5. Close-Off or Differential Pressure Rating: Combination of actuator and trim shall provide minimum close-off pressure rating of 200 psig.
- D. High Performance Butterfly Valves:
 1. Maximum close-off or differential pressure of 150 psig, ASTM A 126 cast-iron or ASTM A 536 ductile-iron body and bonnet, extended neck, stainless-steel stem, field-replaceable EPDM or Buna N sleeve and stem seals.
 2. Body Style: Lug.
 3. Disc Type: Nickel-plated ductile iron.
 4. Sizing: 1-psig maximum pressure drop at design flow rate.
- E. Pressure Independent Control Valves (CV-427& CV-428):
 1. Manufacturer shall be Bell and Gossett Ultra Setter PVL-3L-125 or approved equal.
 2. Maximum close-off or differential pressure of 175 psig,
 3. Body: ASTM A 536 ductile-iron
 4. Valve Flow Setting Element: Brass
 5. Differential Pressure Regulator: Stainless Steel with stainless steel spring and EPDM rubber diaphragm.
 6. Maximum Working Temperature: 248 deg F
 7. Maintain flow accuracy to within +/-5% of desired flow rate for the entire control range up to 85PSID.

8. Include two pressure/temperature readout valves to allow measurements of differential pressure.
9. Max flow setting shall be set using a rotation flow setting motion and an external adjustable dial with GPM scale.
10. Close off pressure: Up to 90PSID

2.19 ELECTRICAL BULK MATERIALS

- A. The controls contractor shall be fully responsible to provide all wiring (low voltage, 120 volts, etc.) and conduit (3/4" minimum or as required by electrical codes) for connection of all associated DDC central plant and building chilled water control valves, sensors, panels and any other DDC components for a completely operational DDC system.
 1. The controls contractor shall be fully responsible to coordinate with their electrical subcontractor, prior to bid, to insure that all necessary electrical power wiring and conduit are provided for the new chilled water and heating hot water 2-way control valves, control panels, etc.
- B. Enclosures: Terminal boxes located indoors shall be rated for NEMA 1. Terminal boxes exposed to outdoors shall be rated for NEMA 12. Terminal boxes with potential water leakage shall be rated for NEMA 4X. They shall have protective coatings suitable to the environment in which they are to be installed. All enclosures shall be hinged with lockable doors.
- C. Transformers: Provide step-down transformers where control equipment operates at lower than circuit voltage. Transformers serving shall be fed from the fan motor leads, or fed from the nearest distribution panelboard or motor control center, using circuits provided for the purpose. Transformers, other than transformers in bridge circuits, shall have primaries wound for the voltage available and secondaries wound for the correct control circuit voltage. Size transformers so that 80 percent of the rated capacity equals the connected load. Enclose transformers in a steel cabinet with conduit connections. Provide a disconnect switch on the primary side and a fuse cutout on the secondary side. Transformers shall conform to UL 506.
- D. The Controls Contractor shall furnish all electrical relays and coordinate with the supplier of magnetic starters for the auxiliary contact requirements. All electrical control devices shall be of a type to meet current, voltage, and switching requirement of their particular application. Relays shall be provided with 24 VAC coils and contacts shall be rated at 10 amps minimum.
- E. Wiring:
 1. Provide complete electric wiring for all temperature control apparatus, including wiring to transformer primaries, panels, valves, etc.
 2. Control circuit conductors which run in same conduit as power circuit conductors shall have same insulation level as power circuit conductors.
 3. Circuits operating at more than 100 volts shall be in accordance with Division 26 specifications.
 4. Circuits operating at 100 volts or less shall be defined as low voltage and shall be run in rigid or flexible conduit, metallic tubing, metal raceways or wireways, armored cable, or multiconductor cable. Use multiconductor cable for concealed accessible locations only. Provide circuit and wiring protection as required by CEC. Aluminum-sheathed cable or aluminum conduit may be used but shall not be buried in concrete.

5. Provide all exposed wiring shall be in rigid conduit (minimum ¾”) or EMT. Refer to Section 260000, "General Electrical Requirements" for different usages of rigid conduit, EMT, or IMT. All wiring in return air plenums shall be plenum rated.
6. For less than nominal 120V service: Cable in control panels for analog loops shall be twisted and shielded two conductor, #16 x 30 stranded with #22 AWG drain wire and aluminum-polyester 100 percent shielding cover for each pair. Cable outside of control panels for analog signal loops shall be single twisted #18 AWG shielded pair. Conductors shall be copper coated with Class B strand. Insulation shall be 30 mils XPLE rated at 300 volts. Cable for digital signals shall be two conductor, #16 x 30 stranded. Each conductor shall be color coded. Each cable shall have polyethylene jacket.
7. Wire for low voltage DC and electronic circuits carrying less than 0.5 ampere, cable of two or more conductors, shall be not smaller than No. 18 AWG stranded copper (shielded).
8. Shield cables carrying analog signals and install in separate conduit from AC power circuits.
9. Terminate cables in solder or screw type terminal strips. Do not tap cables at intermediate points.
10. Color code or number wires, whether individual or in cables, for identification.
11. Cables terminating in screw type terminal strips shall have pressure type connectors conforming to UL 486A. Wire in physical contact with compression screw is not acceptable.

2.20 NETWORK COMMUNICATION REQUIREMENTS

- A. Wired network communication shall follow the published guidelines for twisted pair BacNET network.
- B. Communication conduits shall not be installed closer than six feet from high power transformers or run parallel within six feet of electrical high power cables. Care shall be taken to route the cable as far from interference generating devices as possible. Where communication wire must cross high power wire (deemed as 110VAC or greater) it must do so at right angles.
- C. All shields shall be grounded (earth ground) at one point only to eliminate ground loops. All shield grounding shall be done at the controller location with the shield at the sensor/device end of the applicable wire being left long and “safed” off in an appropriate manner.
- D. There shall be no power wiring, in excess of 30 VAC rms, run in conduit with communications wiring. In cases where signal wiring is run in conduit with communication wiring, all communication wiring and signal wiring shall be run using separate twisted pairs (24awg) in accordance with the manufacturer’s wiring practices.

2.21 INPUT/OUTPUT CONTROL WIRING

- A. RTD wiring shall be two-wire or four-wire twisted, shielded, minimum number 22 gauge.
- B. Other analog inputs shall be a minimum of number 22 gauge, twisted, (shielding optional).
- C. Binary control function wiring shall be a minimum of number 18 gauge.
- D. Analog output control functions shall be a minimum of number 18 gauge, twisted, shielded.

- E. Binary input wiring shall be a minimum of number 18 gauge.

2.22 SPLICES

- A. Splices in shielded cables shall consist of terminations and the use of shielded cable couplers, which maintain the integrity of the shielding. Terminations shall be in accessible locations. Cables shall be harnessed with cable ties as specified herein.

2.23 CONDUIT AND FITTINGS

- A. Conduit for Control Wiring, Control Cable and Transmission Cable: Electrical metallic tubing (EMT) with compression fittings, cold rolled steel, zinc coated or zinc-coated rigid steel with threaded connections.
- B. Outlet Boxes (Dry Location): Sheradized or galvanized drawn steel suited to each application, in general, four inches square or octagon with suitable raised cover.
- C. Outlet Boxes (Exposed to Weather): Threaded hub cast aluminum or iron boxes with gasket device plate.
- D. Pull and Junction Boxes: Size according to number, size, and position of entering raceway as required by National Electrical Codes. Enclosure type shall be suited to location.

2.24 RELAYS

- A. Relays other than those associated with digital outputs shall be general-purpose, enclosed plug-in type with 8-pin octal plug and protected by a heat and shock resistant duct cover. Number of contacts and operational function shall be as required.
- B. Relays associated with digital outputs shall have the ability to override the controlled equipment as a function of the relay. Relays shall be protected by a heat and shock resistant duct cover. Number of contacts and operational function shall be as required.

2.25 IDENTIFICATION

- A. Automatic Control Valve Tags
 - 1. For valves, etc., use metal tags with a 2-inch minimum diameter, fabricated of brass, stainless steel or aluminum. Attach tags with chain of same materials. For lubrication instructions, use linen or heavy duty shipping tag.
 - 2. Tag valves with identifying number and system. Number valves by floor level, column location and system served.
 - 3. Prepare lists of all tagged valves showing location, floor level, and tag number, use. Prepare separate lists for each system. Include copies in each maintenance manual.
- B. Wire Tags
 - 1. All multi-conductor cables in all pull boxes and terminal strip cabinets shall be tagged.

2. Provide wire Tags as per Division 26.
- C. Conduit Tags
 1. Provide tagging or labeling of conduit so that it is always readily observable which conduit was installed or used in implementation of this Work.
- D. Miscellaneous Equipment Identification
 1. Screwed-on, engraved black lamincoid sheet with white lettering on all control panels and remote processing panels. Lettering sizes subject to approval.
 2. Inscription, subject to review and acceptance, indicating equipment, system numbers, functions and switches. For panel interior wiring, input/output modules, local control panel device identification.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that systems are ready to receive work.
- B. Beginning of installation means installer accepts existing conditions.
- C. The project plans shall be thoroughly examined for control device and equipment locations, and any discrepancies, conflicts, or omissions shall be reported to the College Representative for resolution before rough-in work is started.
- D. The contractor shall inspect the site to verify that equipment is installable as show, and any discrepancies, conflicts, or omissions shall be reported to the College Representative for resolution before rough-in work is started.
- E. The Controls Contractor shall examine the drawings and specifications for other parts of the work, and if head room or space conditions appear inadequate or if any discrepancies occur between the plans and his work and the plans for the work of others, he shall report such discrepancies to the College Representative and shall obtain written instructions for any changes necessary to accommodate his work with the work of others.

3.2 INSTALLATION, GENERAL

- A. Install routers and repeaters as required to combine different communication channels onto a central field bus or as required to segment groups of Intelligent Devices and/or Control Units.
- B. Install Intelligent Control Devices, Programmable Controllers, and Application Specific Controllers as herein specified, as needed to perform functions indicated in the input/output summaries and sequences of operation, and/or indicated on the HVAC drawings.
- C. Install wire, raceway systems, conduit, 24 VDC and/or 24 VAC power supplies and final connections to nodes provided by this contract. Must comply with Division 26 requirements.

- D. Provide 120 VAC power to control panel locations. The controls contractor shall be fully responsible to provide all wiring (low voltage, 120 volts, etc.) and conduit (3/4" minimum or as required by electrical codes) for connection of all associated DDC sensors, panels, valves, and any other DDC components for a completely operational DDC system.
- E. Install all required devices, sensors, hardware, software, wiring, controllers, etc. including any required and not specifically addressed in this specification but required for system functionality. It shall be the responsibility of the Contractor to provide a complete and functional system.
- F. Install all control components in accordance with manufacturer's instructions and recommendations.
- G. Mount control panels adjacent to associated equipment on vibration-free walls or freestanding angle iron supports. One cabinet may accommodate more than one system in same equipment room. Provide nameplates for instruments and controls inside cabinet and nameplates on cabinet face.
- H. After completion of installation, test and adjust control equipment. Submit data showing setpoints and final adjustments of controls.
- I. Install end of line resistor as necessary on BACnet MS/TP lines.
- J. Install equipment, piping, wiring/conduit parallel to building lines (i.e., horizontal, vertical, and parallel to walls) wherever possible.
- K. Install software in control units and operator workstation(s). Implement all features of programs to specified requirements and as appropriate to sequence of operation.
- L. Connect and configure equipment and software to achieve sequence of operation specified.
- M. Provide sufficient slack and flexible connections to allow for vibration of piping and equipment.
- N. Verify integrity of all wiring to ensure continuity and freedom from shorts and grounds.
- O. All equipment, installation, and wiring shall comply with acceptable industry specifications and standards for performance, reliability, and compatibility and be executed in strict adherence to local codes and standard practices.
- P. Verify location of temperature, humidity and other sensors, and other exposed control sensors with Drawings and room details before installation. Install devices 48 inches above the floor.
 - 1. Install averaging elements in ducts and plenums in crossing or zigzag pattern.
- Q. Install labels and nameplates to identify control components according to Section 230553 "Identification for HVAC Piping and Equipment."
- R. Install hydronic instrument wells, valves, and other accessories according to Section 232113 "Hydronic Piping."
- S. Flow Meters (Gas & Water) must be installed with the required upstream and downstream lengths with no other instrument or fitting installed within that straight length.

- T. Chemical Treatment system shall be provided with MODBUS TCP/IP communication option. Refer to points list for points required to be transferred to BMS.

3.3 ELECTRICAL SYSTEM INSTALLATION

- A. Comply with all Division 26 Installation Requirements.
- B. Install low voltage power and LAN communication trunks in conduit in the following locations regardless of local building code allowances otherwise.
 - 1. Mechanical rooms
 - 2. Electrical rooms
 - 3. Vertical risers (exception: fire rated continuous closet like a telephone closet)
 - 4. Open Areas where the wiring will be exposed to view or tampering
- C. Conceal conduit within finished shafts, ceilings and wall as required. Install exposed conduit parallel with or at right angles to the building walls and ceilings.
- D. Where Class 2 wires are in concealed and accessible locations including ceiling return air plenums, approved cables not in raceway may be used provided that:
 - 1. Circuits meet CEC Class 2 (current-limited) requirements. (Low-voltage power circuits shall be sub-fused when required to meet Class 2 current-limit.)
 - 2. All cables shall be UL listed for application, i.e., cables used in ceiling plenums shall be UL listed specifically for that purpose.
 - 3. Do not install Class 2 wiring in conduit containing Class 1 wiring. Boxes and panels containing high voltage may not be used for low voltage wiring except for the purpose of interfacing the two (e.g., relays and transformers).
 - 4. Where Class 2 wiring is run exposed, wiring to be run parallel along a surface or perpendicular to it, and NEATLY tied at 3m (10 ft.) intervals minimum.
- E. All wire-to-device connections shall be made at a terminal blocks or terminal strip. All wire-to-wire connections shall be at a terminal block, or with a crimped connector. All wiring within enclosures shall be neatly bundled and anchored to permit access and prevent restriction to devices and terminals.
- F. Plug or cap all unused conduit openings and stub-ups. Do not use caulking compound.
- G. Route all conduit to clear beams, plates, footings and structure members. Do not route conduit through column footings or grade beams.
- H. Set conduits as follows:
 - 1. Expanding silicone fire stop material sealed watertight where conduit is run between floors and through walls of fireproof shaft.
 - 2. Cap open ends of conduits until conductors are installed.
 - 3. Where conduit is attached to vibrating or rotating equipment, flexible conduit with a minimum length of 18 inches and maximum length of 36 inches shall be installed and anchored in such a manner that vibration and equipment noise will not be transmitted to the rigid conduit.

4. Where exposed to the elements or in damp or wet locations, waterproof flexible conduit shall be installed. Installation shall be as specified for flexible metal conduit.

3.4 CLEANING

- A. The Controls Contractor shall clean up all debris resulting from his or her activities daily. The contractor shall remove all cartons, containers, crates, etc. under his (or his subcontractors) control as soon as their contents have been removed. Waste shall be collected and placed in a location designated by the Construction Manager or General Contractor.
- B. At the completion of work in any area, the Controls Contractor shall clean all of his/her work, equipment, etc., making it free from dirt and debris, etc.
- C. At the completion of work, all equipment furnished under this Section shall be checked for paint damage, and any factory-finished paint that has been damaged shall be repaired to match the adjacent areas. Any metal cabinet or enclosure that has been deformed shall be replaced with new material and repainted to match the adjacent areas.

3.5 PROTECTION

- A. The Controls Contractor shall protect all work and material from damage by his/her work or workers or sub-contractors, and shall be liable for all damage thus caused.
- B. The Controls Contractor shall be responsible for his/her work and equipment until finally inspected, tested, and accepted. The Controls Contractor shall protect his/her work against theft or damage, and shall carefully store material and equipment received on-site that is not immediately installed. The Controls Contractor shall close all open ends of work with temporary covers or plugs during storage and construction to prevent entry of foreign objects.

3.6 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections and prepare test reports:
 1. Operational Test: After electrical circuitry has been energized, start units to confirm proper unit operation. Remove and replace malfunctioning units and retest.
 2. Test and adjust controls and safeties.
 3. Test each point through its full operating range to verify that safety and operating control set points are as required.
 4. Test each control loop to verify stable mode of operation and compliance with sequence of operation. Adjust PID actions.
 5. Test each system for compliance with sequence of operation.
 6. Test software and hardware interlocks.
- B. DDC Verification:
 1. Verify that instruments are installed before calibration, testing, and loop or leak checks.
 2. Check instruments for proper location and accessibility.

3. Check instrument installation for direction of flow, elevation, orientation, insertion depth, and other applicable considerations.
 4. Check instrument tubing for proper fittings, slope, material, and support.
 5. Check installation of air supply for each instrument.
 6. Check flow instruments. Inspect tag number and line and bore size, and verify that inlet side is identified and that meters are installed correctly.
 7. Check pressure instruments, piping slope, installation of valve manifold, and self-contained pressure regulators.
 8. Check temperature instruments and material and length of sensing elements.
 9. Check control valves. Verify that they are in correct direction.
 10. Check air-operated dampers. Verify that pressure gages are provided and that proper blade alignment, either parallel or opposed, has been provided.
 11. Check DDC system as follows:
 - a. Verify that DDC controller power supply is from emergency power supply, if applicable.
 - b. Verify that wires at control panels are tagged with their service designation and approved tagging system.
 - c. Verify that spare I/O capacity has been provided.
 - d. Verify that DDC controllers are protected from power supply surges.
- C. Replace damaged or malfunctioning controls and equipment and repeat testing procedures.

3.7 ADJUSTING

- A. Calibrating and Adjusting:
1. Calibrate instruments.
 2. Make three-point calibration test for both linearity and accuracy for each analog instrument.
 3. Calibrate equipment and procedures using manufacturer's written recommendations and instruction manuals. Use test equipment with accuracy at least double that of instrument being calibrated.
 4. Control System Inputs and Outputs:
 - a. Check analog inputs at 0, 50, and 100 percent of span.
 - b. Check analog outputs using milliamper meter at 0, 50, and 100 percent output.
 - c. Check digital inputs using jumper wire.
 - d. Check digital outputs using ohmmeter to test for contact making or breaking.
 - e. Check resistance temperature inputs at 0, 50, and 100 percent of span using a precision-resistant source.
 5. Flow:
 - a. Set differential pressure flow transmitters for 0 and 100 percent values with 3-point calibration accomplished at 50, 90, and 100 percent of span.
 - b. Manually operate flow switches to verify that they make or break contact.
 6. Pressure:

- a. Calibrate pressure transmitters at 0, 50, and 100 percent of span.
 - b. Calibrate pressure switches to make or break contacts, with adjustable differential set at minimum.
7. Temperature:
- a. Calibrate resistance temperature transmitters at 0, 50, and 100 percent of span using a precision-resistance source.
 - b. Calibrate temperature switches to make or break contacts.
8. Stroke and adjust control valves and dampers without positioners, following the manufacturer's recommended procedure, so that valve or damper is 100 percent open and closed.
9. Stroke and adjust control valves and dampers with positioners, following manufacturer's recommended procedure, so that valve and damper is 0, 50, and 100 percent closed.
10. Provide diagnostic and test instruments for calibration and adjustment of system.
11. Provide written description of procedures and equipment for calibrating each type of instrument. Submit procedures review and approval before initiating startup procedures.
- B. Adjust initial temperature and humidity set points.
- C. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to three visits to Project during other than normal occupancy hours for this purpose.

3.8 CALIBRATION

- A. The following devices shall be factory calibrated prior to installation and calibration certificates shall be provided by the manufacturer. The device will have to be field calibrated (4-20 mA of VDC signal to GUI/Trend value):
1. Water flow meters
 2. Air differential pressure sensors
 3. Water differential pressure sensors
 4. Humidity sensors
- B. The following devices shall be factory and field(4-20 mA signal to GUI/Trend value) calibrated after installation:
1. RTD temperature sensors
 2. Thermistor Sensors (If it is not an offset calibration but varies with span outside of accuracy, replace the sensor)
 3. Current switches
 4. Air flow sensors

3.9 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain HVAC instrumentation and controls.

3.10 TRENDING

- A. All points connected to BMS shall be trended. Analog points shall be trended in 15 mins intervals and all Binary points and setpoints shall be trended at change of value.

3.11 TRAINING

- A. Provide a minimum of four (4) classroom training sessions, four (4) hours each, throughout the contract period for personnel designated by the College.
- B. Train the College staff to enable them to proficiently operate the system; create, modify and delete programming; add, remove and modify physical points for the system, and perform routine diagnostic and troubleshooting procedures.
- C. Additional training shall be available in courses designed to meet objectives as divided into three logical groupings; participants may attend one or more of these, depending on the level of knowledge required:
 - 1. Day-to-day Operators
 - 2. Advanced Operators
 - 3. System Managers/Administrators
- D. Provide course outline and materials as per Part 1 of this Section. The instructor(s) shall provide one copy of training material per student.
- E. The instructor(s) shall be factory-trained instructors experienced in presenting this material.
- F. Classroom training shall be done using a network of working controllers representative of the installed hardware or at the customer's site. This training shall be made available in addition to the interactive audio-visual tutorial, provided with the system.

3.12 ACCEPTANCE

- A. The control systems will not be accepted as meeting the requirements of Completion until all tests described in this specification have been performed to the satisfaction of the College Representatives.
- B. Any tests that cannot be performed due to circumstances beyond the control of the Contractor may be exempt from the Completion requirements if stated as such in writing by the College's Representative. Such tests shall then be performed as part of the warranty.

END OF SECTION 23 09 00

Addendum Number 07

Gensler

Project	College of the Desert – Palm Desert Campus – Science Building Renovation	Date	3/12/2024
Project Location	43-500 Monterey Avenue Palm Desert, CA	Architect's Project Number	007.3766.00
Owner / Client	College of the Desert	File	6A This is page 1 of 1
To	California Community Chancellor's Office	Attention	Chay Yang
Address	1102 Q. Street		
City	Sacramento	State	CA Zip Code 95811
Delivered via:	<input type="checkbox"/> Messenger <input type="checkbox"/> Hand carried <input type="checkbox"/> Facsimile <input type="checkbox"/> Express <input type="checkbox"/> Pick-up <input checked="" type="checkbox"/> E-mail Address cyang@cccco.edu <input type="checkbox"/> Mail <input type="checkbox"/> UPS <input type="checkbox"/> Website Address		
<p>This Addendum will become part of the Contract Documents. The Contractor shall promptly inform subcontractors and all others performing or supplying any of the Work of all relevant contents of this Addendum. In case of conflicting provisions with previous addenda or communications, provisions in this Addendum supersede only those conflicting issues. It is the responsibility of the Contractor to notify all subcontractors from whom it accepts bids of all changes in the drawings and specifications covering this project. Receipt shall be acknowledged by inserting the addendum number and its date in the bid form.</p>			
Distribution	jdawson@bond.collegeofthedesert.edu		
Prepared by Gensler by	Tim Hall	Date Signed	3/12/2024

Instructions / Description / References / Dates

Addendum number of attachments:
 14 Attachments
 25 Pages

Addendum Item	Reference Item	Description
A7-01	Bid RFI 23	Clarify backing track.
A7-02	Bid RFI 24	Clarify extent of cement plaster skim coat.
A7-03	Bid RFI 25	Clarify extent of cement plaster skim coat.
A7.04	Bid RFI 26	Clarify roller shade locations.
A7.05	Bid RFI 27	Clarify controls for HVAC.
A7.06	Bid RFI 28	Refer to utility trench backfill requirements per geotechnical report.
A7.07	Bid RFI 29	Clarify controls for HVAC.
A7.08	Bid RFI 30	Clarify shoring requirements.
A7.09	Bid RFI 31	Horizontal sliding whiteboard substitution request accepted.
A7.10	Bid RFI 32	Site visit not allowed.
A7.11	Bid RFI 33	BIM model contractor responsibilities clarified.
A7.12	Bid RFI 34	Roof insulation clarified.
A7.13	Bid RFI 35	Duct cleaning clarified.
A7.14	Bid RFI 36	Ductwork clarified.

4675 MacArthur Court
 Suite 100
 Newport Beach CA 92660
 Tel: +1 949.863.9434
 Fax: +1 949.553.1676

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: <u>3/6/24</u> Project Name: Science Building Renovation Bid No: 43-98P-0500-SBR	Bidder Name: <u>2H Construction</u> <hr/> <hr/>
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Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Provide attachment detail for notched track backing at 1-5/8" studs at perimeter walls per S0.041

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

Trim the backing flange of unpunched track 600T200-54 to accommodate 1 5/8" stud as required; refer to backing detail 1G/S0.041. _____

Tim Hall/ Gensler 3/12/2024 _____

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 3/6/24

Bidder Contact Information:
Ryan Shotwell
(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com
(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 3/6/24
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
2H Construction

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

What is the extent of the exterior plaster skim coating per A4.000 and 9/A8.000? The elevation appears to show infills only but also notes typical. The 9/A8.000 detail appears to show skim coating beyond the infills on existing exterior walls .

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

All existing building perimeter exterior walls (below precast concrete arched beams) are to receive 1/4" thick cement plaster skim coat, except exterior wall infill locations that will receive fill 7/8" thick exterior cement plaster. Repair all building perimeter exterior walls, and precast concrete columns and arched beams per S0.045. After repair of precast concrete columns and arched beams, finish surface of joints or cracks per note 11 on detail 2/S0.045.

Tim Hall/ Gensler 3/12/2024

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 3/6/24

Bidder Contact Information:
Ryan Shotwell
(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com
(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 3/6/24
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
2H Construction

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

If the entire building is being re-skimmed per 9/A8.000. Please confirm perimeter columns are to remain as is. Also please confirm the height of this re-skimming. Confirm the re-skimming is up to the arch.

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

All existing building perimeter exterior walls (below precast concrete arched beams) are to receive 1/4" thick cement plaster skim coat, except exterior wall infill locations that will receive fill 7/8" thick exterior cement plaster. Repair all building perimeter exterior walls, and precast concrete columns and arched beams per S0.045. After repair of precast concrete columns and arched beams, finish surface of joints or cracks per note 11 on detail 2/S0.045. _____

Tim Hall/ Gensler 3/12/2024 _____

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 3/6/24

Bidder Contact Information:
Ryan Shotwell
(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com
(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: <u>3/6/24</u> Project Name: Science Building Renovation Bid No: 43-98P-0500-SBR	Bidder Name: <u>2H Construction</u> <hr/> <hr/>
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Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

9/A8.401 – Please confirm we are only required to frame a roller shade soffit at perimeter drywall and not at all exterior doors with ACT.

Additional pages attached by Bidder: ___ Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

___ For roller shade locations, refer to sheet A1.501 Finish Plan General Note #6 and as indicated on plan that was issued as part of Addendum dated 2/5/2024. _____

___ Tim Hall/ Gensler 3/12/2024 _____

Additional pages of RFI Response attached: ___ Yes ___ No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 3/6/24

Bidder Contact Information:
Ryan Shotwell
(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com
(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: <u>3/6/24</u> Project Name: Science Building Renovation Bid No: 43-98P-0500-SBR	Bidder Name: <u>2H Construction</u> <hr/> <hr/>
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Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Please provide specifications for Lab Controls or will Bacnet Lab Controllers that have the ability to be intergrated be acceptable?

Additional pages attached by Bidder: ___ Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information
Per Spec Section 23 09 00 Instrumentation and Control for HVAC, which was issued in Addendum #6 on 3/05/24, lab controllers shall be BACnet.

Joy Ernacio
P2S Inc.
3/11/24

Additional pages of RFI Response attached: ___ Yes ___ No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 3/6/24

Bidder Contact Information:
Ryan Shotwell
(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com
(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: <u>3/6/24</u> Project Name: <u>Science Building Renovation</u> Bid No: <u>43-98P-0500-SBR</u>	Bidder Name: <u>2H Construction</u> <hr/> <hr/>
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Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Is it acceptable to use native soils for backfill materials at underground piping? _____

Additional pages attached by Bidder: ___ Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

___ Refer to Utility Trenches on page 18 of geotechnical report dated 2/14/2022 issued as part of Addendum 2 dated 2/6/2024. ___

___ Tim Hall/ Gensler 3/12/2024 ___

Additional pages of RFI Response attached: ___ Yes ___ No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 3/6/24

Bidder Contact Information:
Ryan Shotwell
(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com
(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: _____ Project Name: Science Building Renovation Bid No: 43-98P-0500-SBR	Bidder Name: <u>Performance Automation Solutions, Inc.</u> _____ _____
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Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Please confirm that Distech Controls is the only type if DDC Controls approved by College.

Also please provide a DDC Controls Spec.

Additional pages attached by Bidder: ___ Yes ___ No
 Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

Per Spec Section 23 09 00 Instrumentation and Control for HVAC, which was issued in Addendum #6 on 3/05/24, the control system shall be Distech or other manufacturers listed in Paragraph 2.1 A may be provided with equal or better performance.

Joy Ernacio
P2S Inc.
3/11/24

Additional pages of RFI Response attached: ___ Yes ___ No
 Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By: Performance Automation Solutions, Inc.

(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: March 8, 2024

Bidder Contact Information:

Michael Volf

(Bidder Contact Name)
michael@pascontrols.com

(Phone and Fax)
858-391-6403 858-391-6407 fax

(Email Address)
michael@pascontrols.com

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: <u>03/08/2024</u> Project Name: Science Building Renovation Bid No: 43-98P-0500-SBR	Bidder Name: <u>Nielsen Construction Ca., Inc.</u>
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Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Please confirm if shoring will be required when undermining footings per the excerpt from the soils report and also confirm slurry can be used to backfill around the footings rather than engineered fill.

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: 2

Response to Bidder's Pre-Bid Request for Information

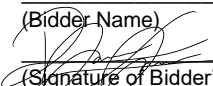
(1) Based on the section details of S3.002, the undermined footings will generate load surcharges within the excavation sidewalls. Such conditions require shoring. The type/selection of shoring is the responsibility of the contractor's competent person.

(2) Geocon takes no exception to the use of slurry as a replacement for the engineered fill. A minimum of 2-sack slurry should be used, but should be confirmed as acceptable with the governing jurisdiction (in case a 3-sack) is required.

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

No Exception taken to
response from Geocon.
J. Dawson-Garcia 03.12.2024

Date of RFI Response: _____

Submitted By:
Rick Cesena
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

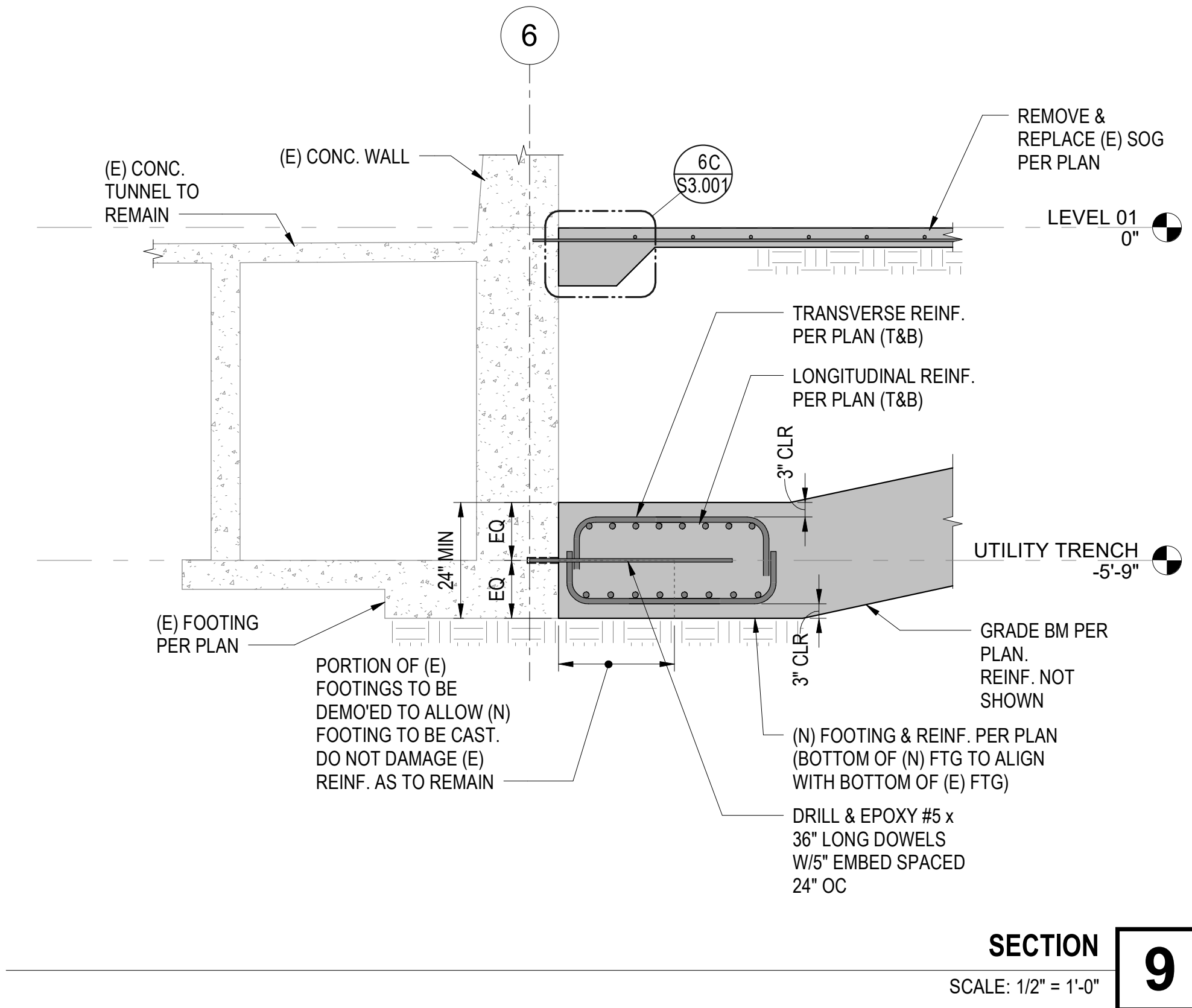
(Phone and Fax)
rcesena@nielsencc.com
(Email Address)

Submittal Date: 03/08/2024

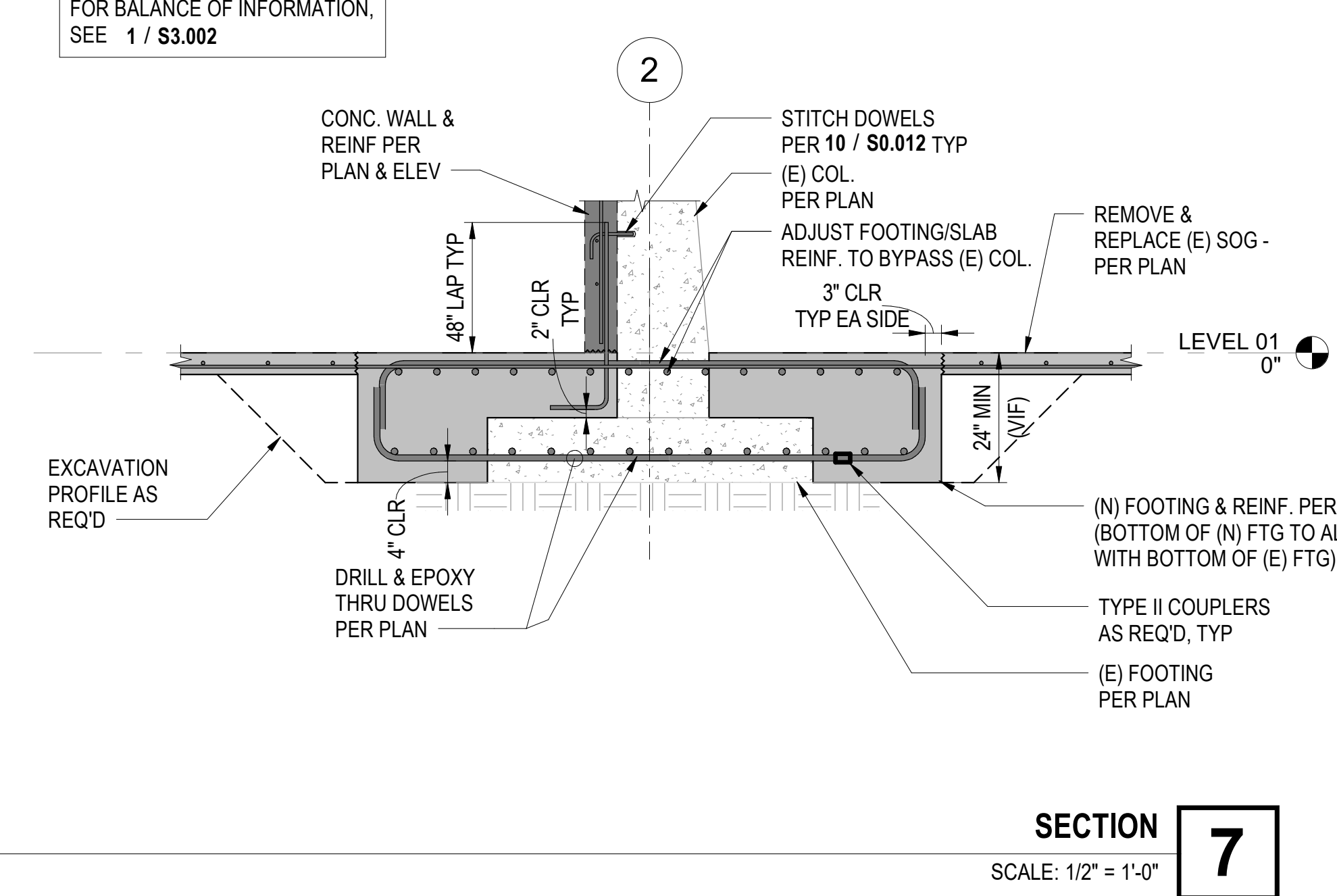
Bidder Contact Information:
Rick Cesena
(Bidder Contact Name)
(760) 234-2112

TYPICAL NOTES THIS SHEET:

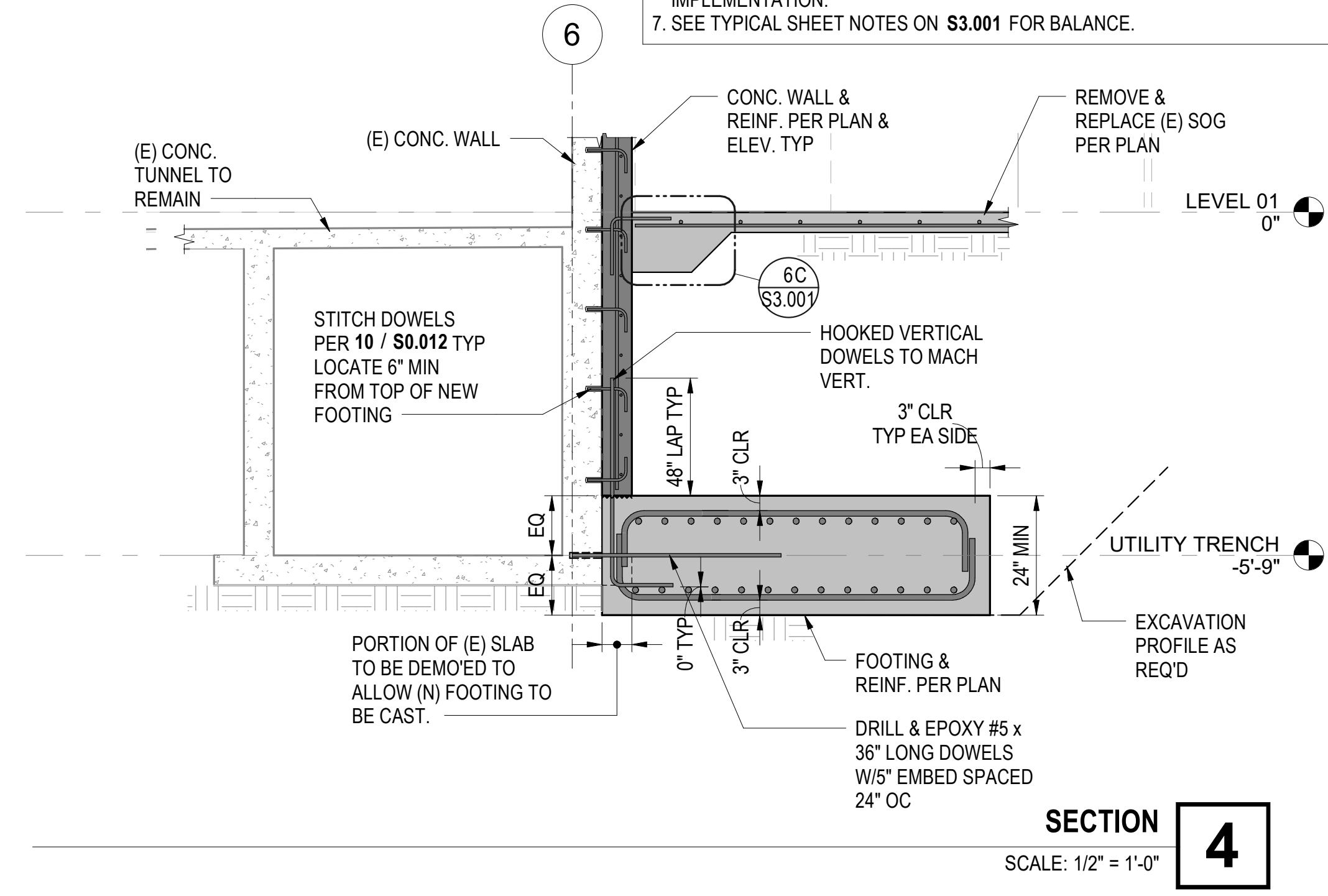
1. NOTIFY ENGINEER IF EXISTING CONDITIONS DIFFER THAN SHOWN.
2. ROUGHEN ALL SURFACES OF EXISTING CONCRETE IN CONTACT WITH NEW CONCRETE TO 1/4" AMPLITUDE. ALSO APPLICABLE TO CONSTRUCTION JOINTS DUE TO CASTING SEQUENCE. SEE "CONCRETE" NOTE #19 ON S0.002.
3. DO NOT DAMAGE (E) REINF. NOTIFY E.O.R. IF CONFLICT.
4. EPOXY PER "POST INSTALLED ANCHORS" ON SHEET S0.004
5. FOR EXISTING CONCRETE SLAB ON GRADE REPLACEMENT, SEE KEY NOTE #6 ON S2.001.
6. ACCEPTABLE TO EMPLOY USE OF TYPE II COUPLERS, FORM BREAKERS, OR LAPPED REINFORCEMENT AT CONSTRUCTION JOINTS AT WALL FOOTINGS, ONLY. SUBMIT PROPOSED FOR SEOR REVIEW PRIOR TO IMPLEMENTATION.
7. SEE TYPICAL SHEET NOTES ON S3.001 FOR BALANCE.



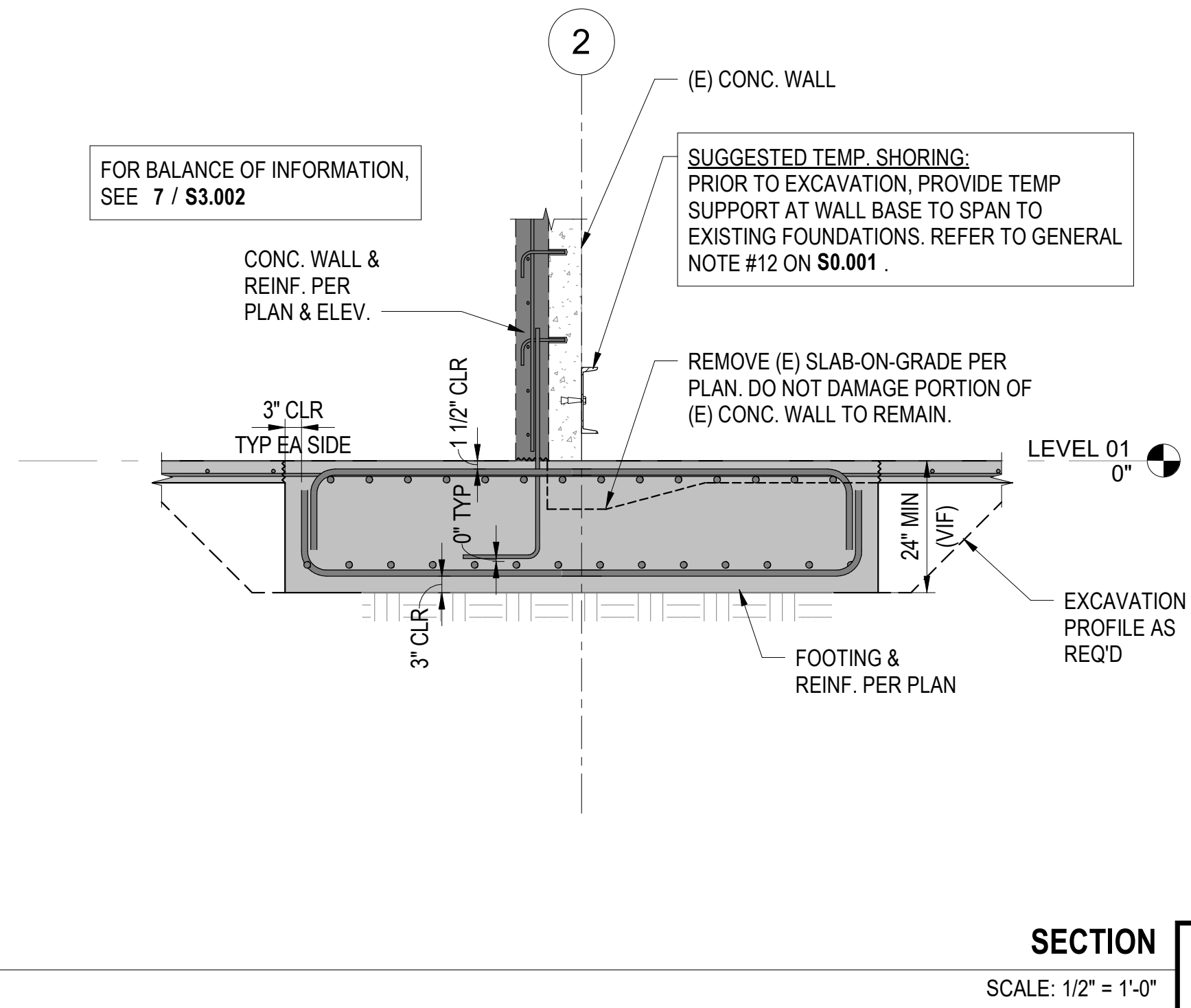
SECTION 9
 SCALE: 1/2" = 1'-0"



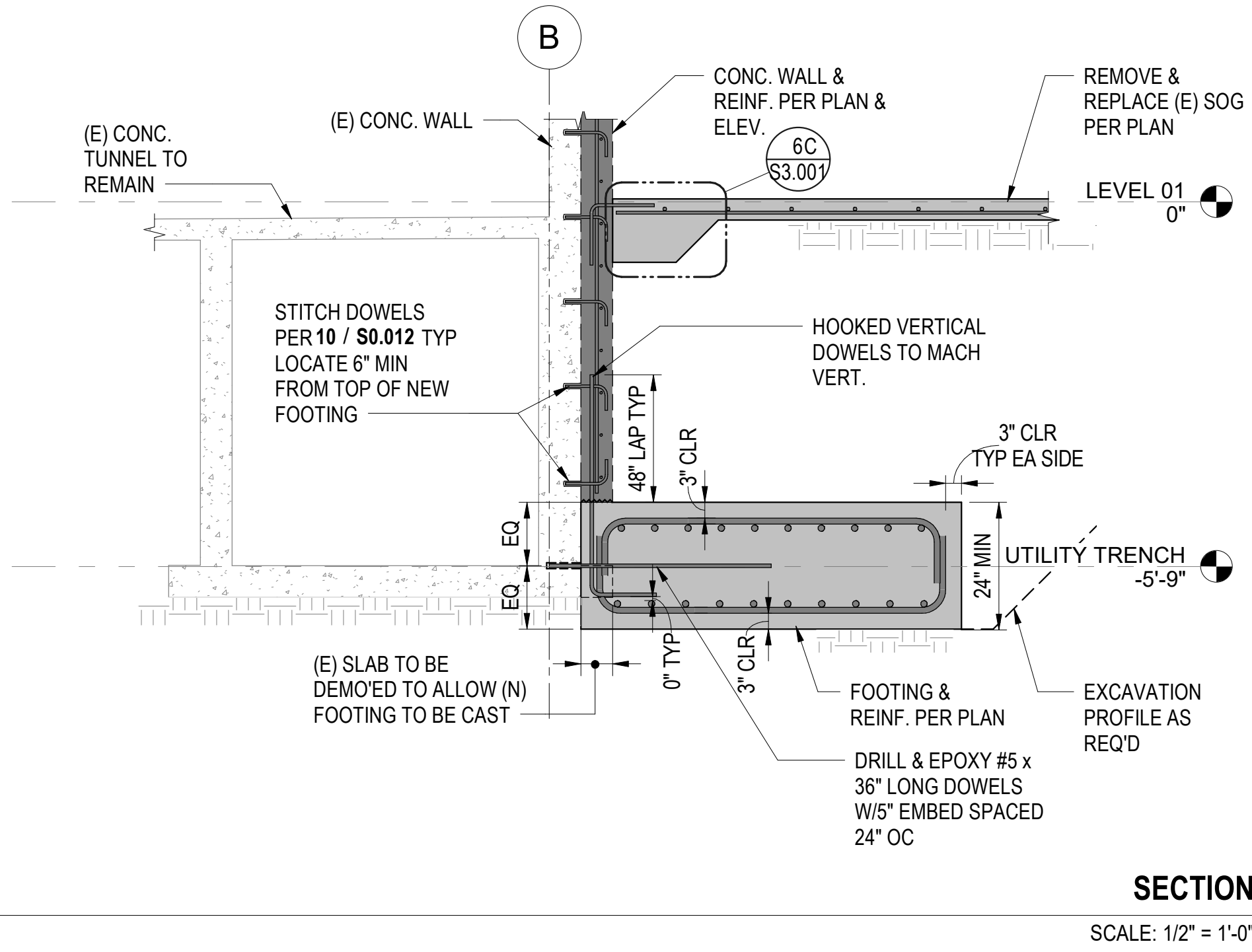
SECTION 7
 SCALE: 1/2" = 1'-0"



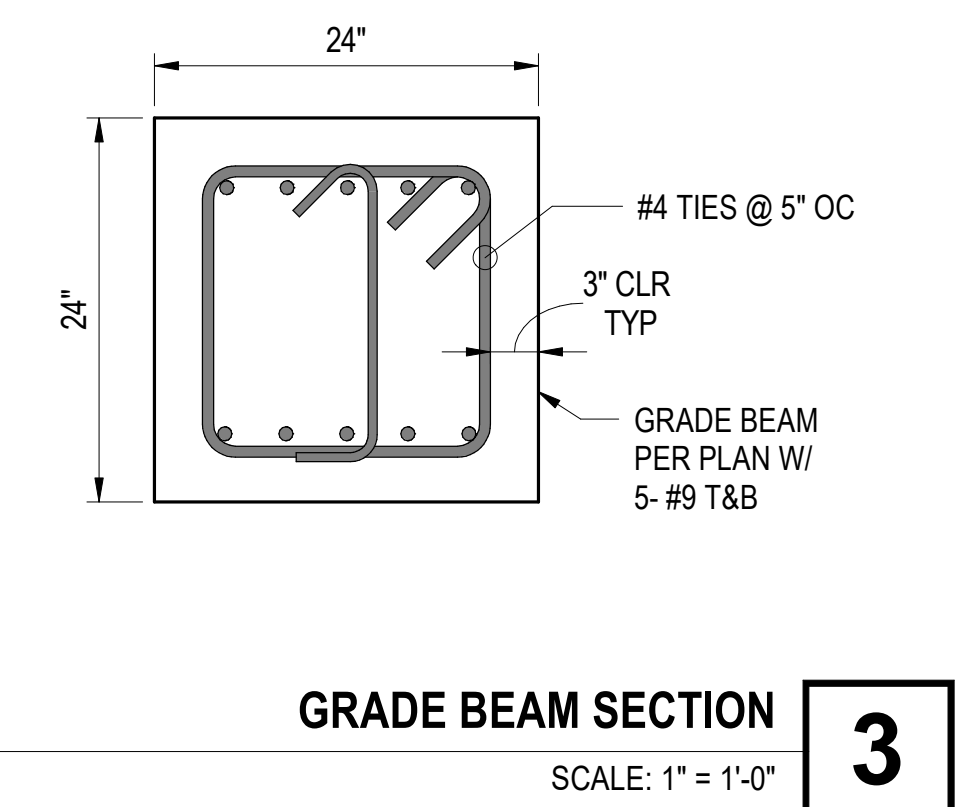
SECTION 4
 SCALE: 1/2" = 1'-0"



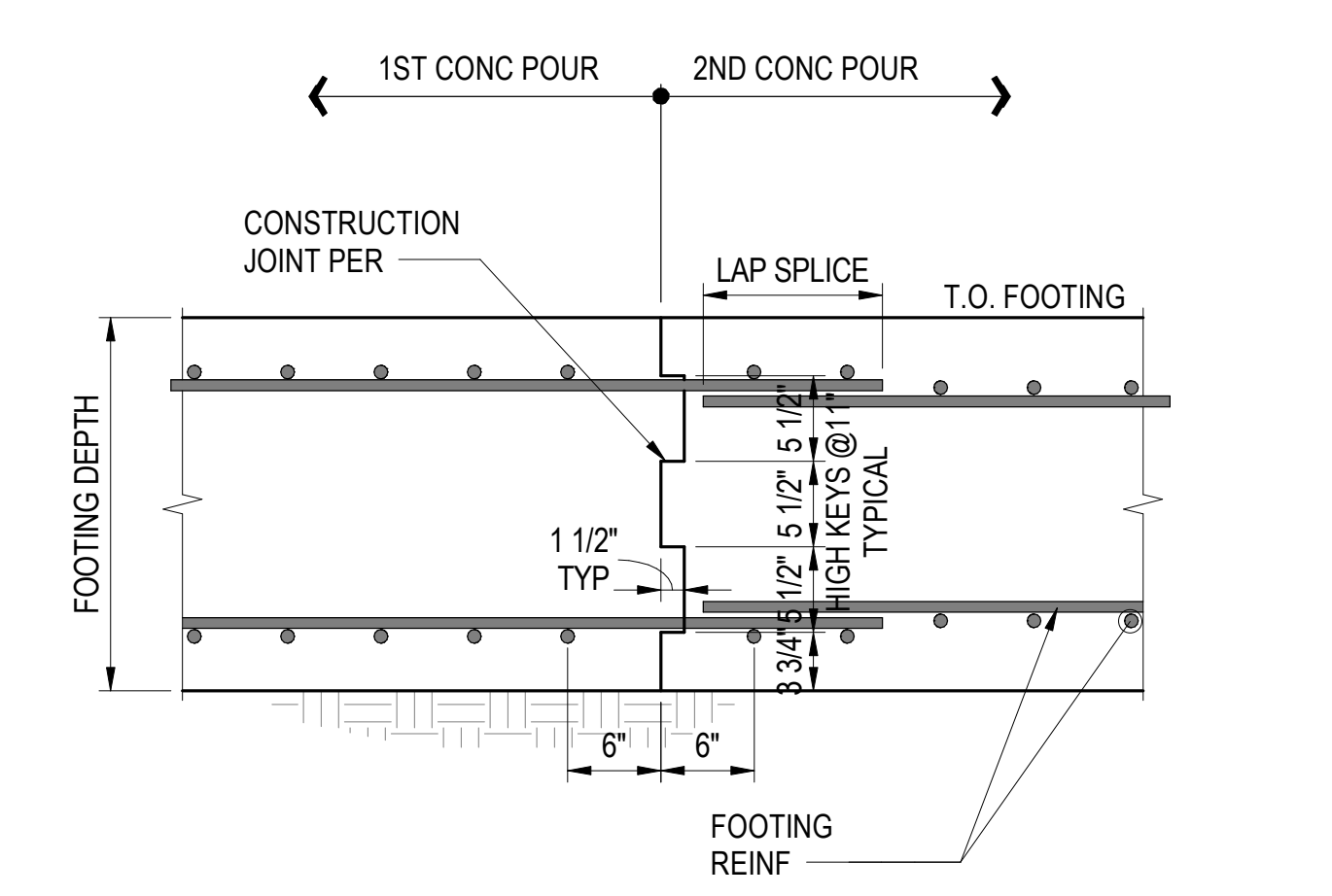
SECTION 8
 SCALE: 1/2" = 1'-0"



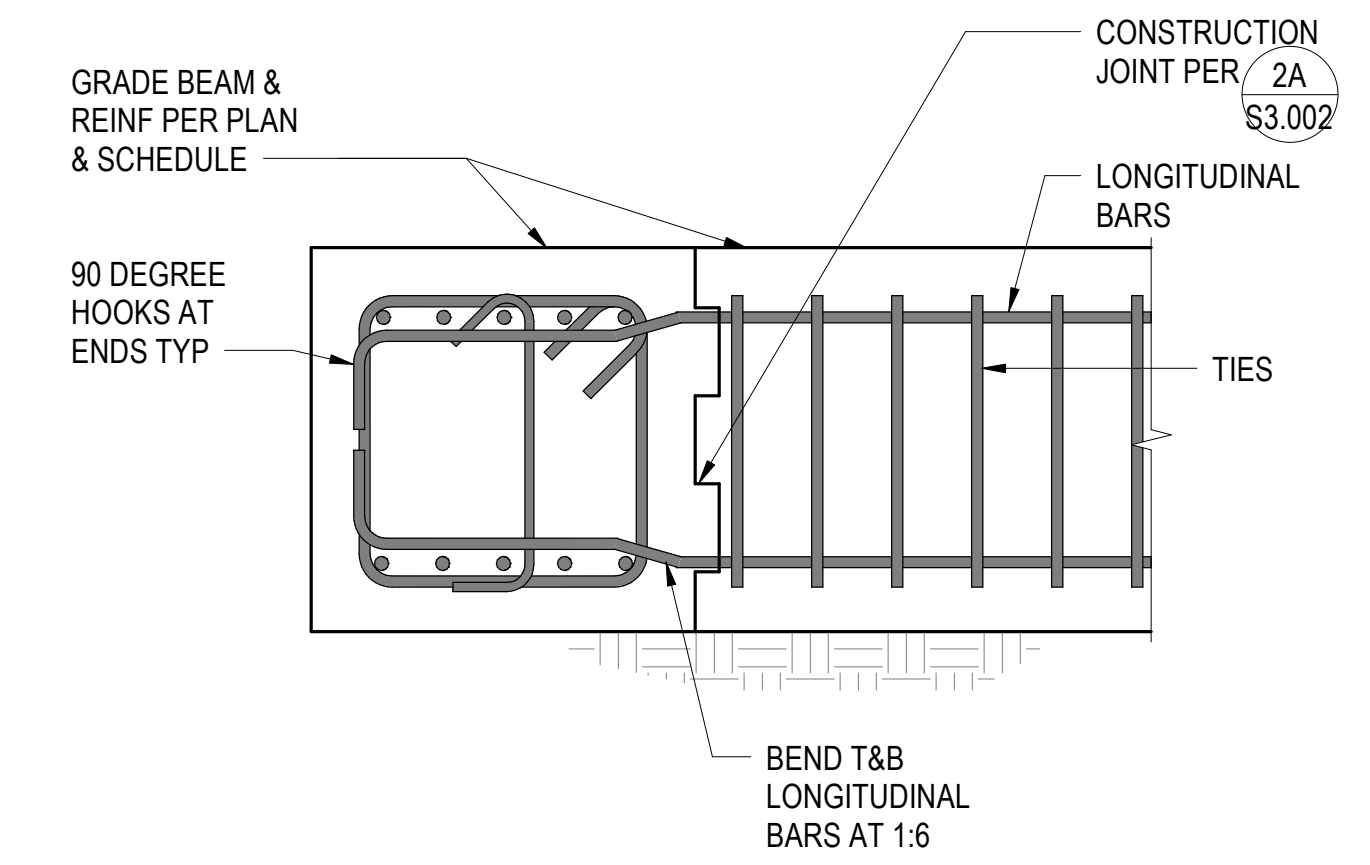
SECTION 6
 SCALE: 1/2" = 1'-0"



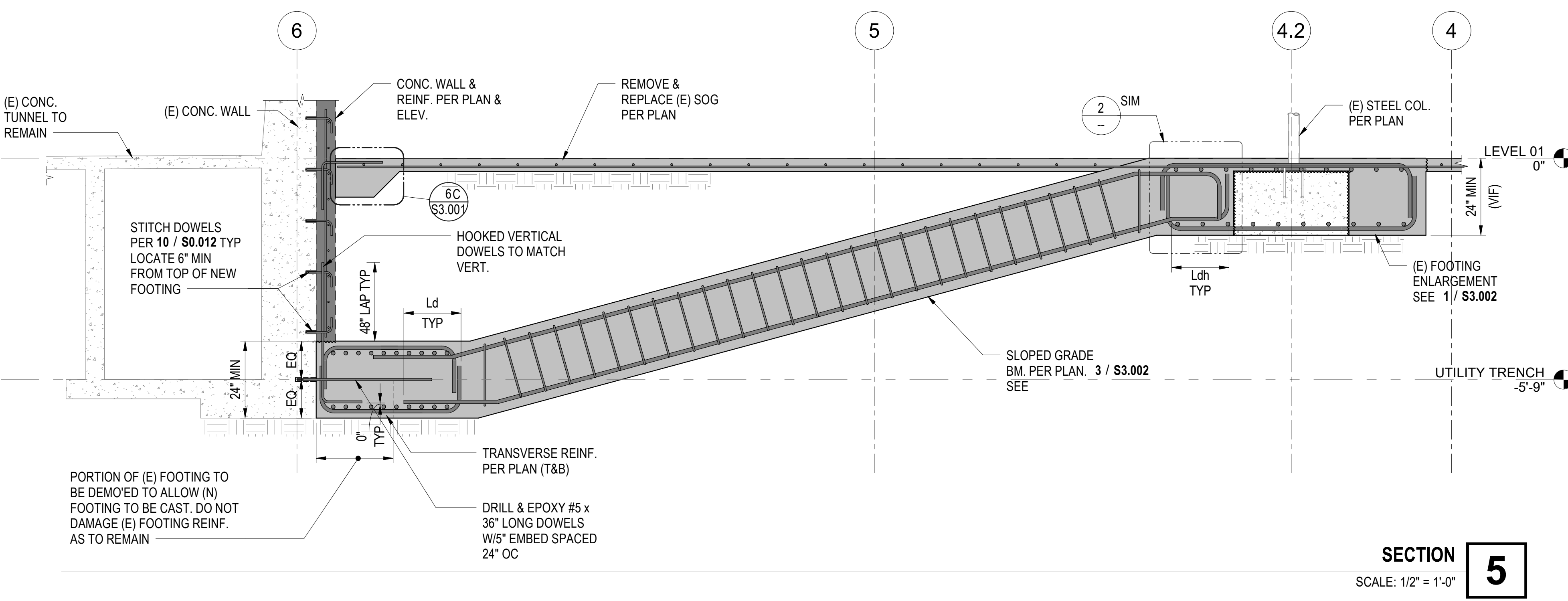
GRADE BEAM SECTION 3
 SCALE: 1" = 1'-0"



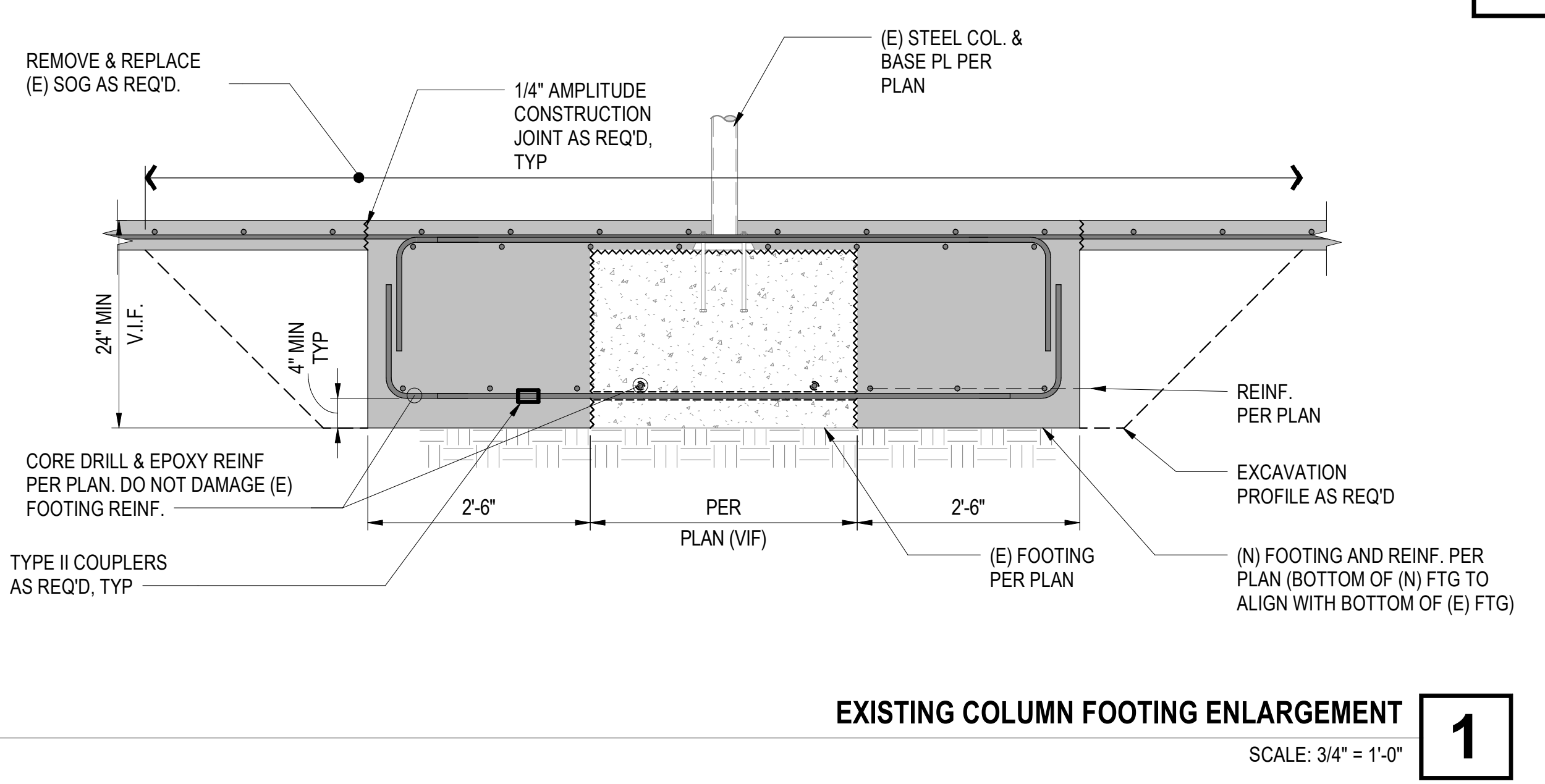
A TYPICAL CONSTRUCTION JOINT DETAIL



TYPICAL FOOTING REINFORCING AT CORNERS AND INTERSECTIONS DETAIL
 SCALE: 1" = 1'-0"



SECTION 5
 SCALE: 1/2" = 1'-0"



EXISTING COLUMN FOOTING ENLARGEMENT 1
 SCALE: 3/4" = 1'-0"

Date	Description

Seal / Signature



Project Name
Science Building Renovation
 DSA # 04-121828
 Project Number
007.3766.000

Description
FOUNDATION DETAILS AND SECTIONS

Scale
 As indicated

S3.002

EARTHWORK

The following recommendations include site preparation, excavation, subgrade preparation and placement of engineered fills on the project. The recommendations presented for design and construction of earth supported elements including foundations, slabs, and pavements are contingent upon following the recommendations outlined in this section.

Earthwork on the project should be observed and evaluated by Terracon. The evaluation of earthwork should include observation and testing of engineered fill, subgrade preparation, foundation bearing soils, and other geotechnical conditions exposed during the construction of the project.

Site Preparation

This project is rehabilitation and retrofit of an existing structure, If demolition of the existing slab is required, the existing slab should be demolished and any deleterious materials such as construction debris and organics, including demolished fragments, should be removed and properly wasted from the project site.

Evidence of underground utilities along the south side of the structure was found. No evidence of other underground facilities such as septic tanks, cesspools, and basements was not observed during the reconnaissance, such features could be encountered during construction. If unexpected fills, utilities, or underground facilities are encountered, such features should be removed and the excavation thoroughly cleaned prior to backfill placement and/or construction.

Subgrade Preparation

We recommend that the proposed new retrofit footings be supported on engineered fill extending to a minimum depth of 1 foot below the bottom of foundations, or 3 feet below existing grades, whichever is greater

After clearing, any required subgrade cuts should be made. Once any required subgrade cuts are made, and prior to placing fill, the surfaces of all areas to receive fill should be scarified to a minimum depth of 10 inches. The scarified soils should be brought to near optimum moisture content and compacted per the compaction requirements in this report.

If sufficient compaction cannot be achieved in-place, the loose soils should be removed and replaced as engineered fill. The excavation should be widened laterally at least 8 inches for each 12 inches of fill placed below footing base elevations.

The moisture content and compaction of subgrade soils should be maintained until slab/pavement construction. Care should be taken to prevent wetting or drying of the bearing materials during construction.

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: <u>03/08/2024</u> Project Name: <u>Science Building Renovation</u> Bid No: <u>43-98P-0500-SBR</u>	Bidder Name: <u>Nielsen Construction Ca., Inc.</u>
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Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Please review the attached proposed substitution. This will have no effect on the Contract sum, Contract schedule or Contract details.

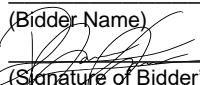
Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: 8

Response to Bidder's Pre-Bid Request for Information

- Proposed Nelson Adams NACO Series Horizontal Sliding (HS) whiteboard is acceptable as a substitution to Claridge HS per detail 03/A8.804. The interactive projection whiteboard is to be located at backpanel of NACO HS at teaching wall in classrooms. Refer to bid RFI 10 for additional information regarding interactive projection whiteboard issued as part of Addendum 5 dated 2/28/2024. _____
- Refer to page 10 of this PDF for NACO Series HS cut sheet. _____
- Tim Hall/ Gensler 3/12/2024 _____

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

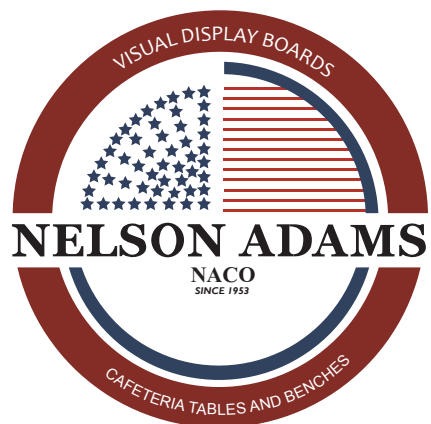
Date of RFI Response: _____

Submitted By:
Rick Cesena
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

(Phone and Fax)
rcesena@nielsencc.com
(Email Address)

Submittal Date: 03/08/2024

Bidder Contact Information:
Rick Cesena
(Bidder Contact Name)
(760) 234-2112





Date: 03/08/2024

Gensler
 4675 MacArthur Court Suite 100
 Newport Beach, California 92660

Re: Science Building Renovation (Product Comparison / Substitution)

We hereby submit for your consideration the following product in lieu of specified item:

- * Section: **[101100 Visual Display Units]**
- * Specified Item: **[Surface mount visual display surfaces – Claridge] or equal**
- * Proposed Substitution: **[Nelson Adams NACO – Series HSS Series]**
- * Reason for Substitution: **[Nelson Adams NACO products are equal or superior to Claridge]**
- * (See Comparison Below)

Surface mount sliders– horizontal sliders

SERIES:	Series HSS Surface mount horizontal slider	Series horizontal slider unit
WRITING SURFACE:	Porcelain e ³ surface or Konematsu surface	Porcelain LCS
HOUSING & TRIM:	Tubular and Standard ¾” face 6063T - Alloy	Tubular and Standard ¾” face 6063T-Alloy
CORE THICKNESS:	½” Fiberboard or ½” Particle board	½” honeycomb
BACKER:	.015	.015
TRAY:	Standard blade tray with radius edges	Standard blade tray with straight edges
MAP RAIL	1” or 2” Running full length of board	1” or 2” Running full length of board
TRACK SYSTEM:	Top hung with nylon guides	Top hung with nylon guides

Enclosed is our submittal for your approval.
 Please forward our request to the architect.

The Proposed substitution will have no effect on the Contract sum, Contract schedule or Contract details.

Sincerely,
 Melanie Mojica

FIXED MARKERBOARDS	NELSON ADAMS NACO	CLARIDGE	ABC
TRAY TYPE	BLADE & BOX	BLADE & BOX	BLADE & BOX
STANDARD MAPRAIL TYPES	1" & 2"	1" & 2"	1" & 2"
STANDARD TRAY EDGE CONFIGURATION	SMOOTH RADIUS EDGES	REMOVEABLE PLASTIC END CAPS	SMOOTH RADIUS EDGES
BOX TRAY EDGE CONFIGURATION	CAST ALUMINUM END CAPS	PLASTIC END CAPS	CAST ALUMINUM END ENCLOSURES
MAPRAIL INSERTS	NAT.CORK, VINYL COVERED CORK & FORBO	NAT.CORK, VINYL COVERED CORK & FORBO	NAT.CORK, VINYL COVERED CORK & FORBO
END STOPS	1" & 2"	1" & 2"	1" & 2"
PORCELAIN	e3 WRITING SURFACE & KONEMATSU	e3 WRITING SURFACE & LCS	e3 WRITING SURFACE
PORCELAIN WIDTHS	4'-0" AND 5'-0"	4'-0" AND 5'-0"	4'-0" AND 5'-0"
PORCELAIN STD OPTIONS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS
PORCELAIN FUSED GRAPHIC OPTIONS	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR
SUBSTRATE	1/2" AND 7/16" PARTICLE BOARD	7/16" PARTICLE BOARD	1/2" PARTICLE BOARD
MOISTURE BARRIER BACKER	.005 & .015 MOISTURE BARRIER BACKER	.005 & .015 BACKER	.005 & .015 MOISTURE RESISTANT BACKER
ACCESSORIES	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.
JOINT OPTIONS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS
COLOR OPTIONS	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED
ANCHORING CONFIGURATIONS	DIRECT ATTACHED & L-CLIPS	DIRECT ATTACHED & L-CLIPS	DIRECT ATTACHED & L-CLIPS
ADHESIVE	HENRY'S 317 OR 237	HENRY'S 317	HENRY'S 317

HORIZONTAL SLIDERS MARKERBOARDS - TW	NELSON ADAMS NACO	CLARIDGE	ABC
TRAY TYPE	BLADE	BLADE	BLADE
STANDARD MAPRAIL TYPES	1" & 2" OR NONE - FASCIA ONLY	STANDARD 2"	STANDARD 2"
STANDARD TRAY EDGE CONFIGURATION	SMOOTH RADIUS EDGES	REMOVEABLE PLASTIC END CAPS	SMOOTH RADIUS EDGES
MAPRAIL INSERTS	NAT.CORK, VINYL COVERED CORK & FORBO	NAT.CORK, VINYL COVERED CORK & FORBO	NAT.CORK, VINYL COVERED CORK & FORBO
END STOPS	1" & 2"	1" & 2"	1" & 2"
PORCELAIN	e3 WRITING SURFACE	e3 WRITING SURFACE	e3 WRITING SURFACE
PORCELAIN WIDTHS	4'-0" AND 5'-0"	4'-0" AND 5'-0"	4'-0" AND 5'-0"
PORCELAIN STD OPTIONS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS
PORCELAIN FUSED GRAPHIC OPTIONS	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR
SUBSTRATE	1/2" FIBERBOARD	1/2" HONEYCOMB	1/2" HONEYCOMB
MOISTURE BARRIER BACKER	.005 & .015 MOISTURE BARRIER BACKER	.005 & .015 BACKER	.005 & .015 MOISTURE RESISTANT BACKER
ACCESSORIES	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.
JOINT OPTIONS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS
COLOR OPTIONS	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED
ANCHORING CONFIGURATIONS	DIRECT ATTACHED	DIRECT ATTACHED	DIRECT ATTACHED

HORIZONTAL SLIDERS MARKERBOARDS - HS	NELSON ADAMS NACO	CLARIDGE	ABC
TRAY TYPE	BLADE	BLADE	BLADE
STANDARD MAPRAIL TYPES	1" & 2" OR NONE - FASCIA ONLY	STANDARD 2"	STANDARD 2"
STANDARD TRAY EDGE CONFIGURATION	SMOOTH RADIUS EDGES	REMOVEABLE PLASTIC END CAPS	SMOOTH RADIUS EDGES
MAPRAIL INSERTS	NAT.CORK, VINYL COVERED CORK & FORBO	NAT.CORK, VINYL COVERED CORK & FORBO	NAT.CORK, VINYL COVERED CORK & FORBO
END STOPS	1" & 2"	1" & 2"	1" & 2"
PORCELAIN	e3 WRITING SURFACE	e3 WRITING SURFACE	e3 WRITING SURFACE
PORCELAIN WIDTHS	4'-0" AND 5'-0"	4'-0" AND 5'-0"	4'-0" AND 5'-0"
PORCELAIN STD OPTIONS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS
PORCELAIN FUSED GRAPHIC OPTIONS	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR
SUBSTRATE	1/2" FIBERBOARD	1/2" HONEYCOMB	1/2" HONEYCOMB
MOISTURE BARRIER BACKER	.005 & .015 MOISTURE BARRIER BACKER	.005 & .015 BACKER	.005 & .015 MOISTURE RESISTANT BACKER
FIXED BACK PANEL	OPTIONAL FIXED BACK PANEL	OPTIONAL FIXED BACK PANEL	OPTIONAL FIXED BACK PANEL
ACCESSORIES	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.	1" & 2" MAPHOOKS, FLAG HOLDERS & ROLLING B.
JOINT OPTIONS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS
COLOR OPTIONS	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED
ANCHORING CONFIGURATIONS	L-CLIPS	L-CLIPS	L-CLIPS
HOUSING	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED

VERTICAL SLIDERS MARKERBOARDS	NELSON ADAMS NACO	CLARIDGE	ABC
TRAY TYPE	BLADE OR BOX	BOX	BOX
STANDARD TRAY EDGE CONFIGURATION	SMOOTH RADIUS EDGES OR OR CAST ALUMINUM END CAPS	REMOVEABLE PLASTIC END CAPS	CAST ALUMINUM END CAPS
PORCELAIN	e3 WRITING SURFACE	e3 WRITING SURFACE	e3 WRITING SURFACE
PORCELAIN WIDTHS	4'-0" AND 5'-0"	4'-0" AND 5'-0"	4'-0" AND 5'-0"
PORCELAIN STD OPTIONS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS
PORCELAIN FUSED GRAPHIC OPTIONS	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR	PENMANSHIP LINES, MUSIC LINES, GRAPH & POLAR
SUBSTRATE	1/2" FIBERBOARD	7/8" HONEYCOMB	7/8" HONEYCOMB
MOISTURE BARRIER BACKER	.005 & .015 MOISTURE BARRIER BACKER	.005 & .015 BACKER	.005 & .015 MOISTURE RESISTANT BACKER
FIXED BACK PANEL	OPTIONAL FIXED BACK PANEL	OPTIONAL FIXED BACK PANEL	OPTIONAL FIXED BACK PANEL
JOINT OPTIONS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS
COLOR OPTIONS	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED

ANCHORING CONFIGURATIONS HOUSING	DIRECT ATTACHED CLEAR SATIN ANODIZED & POWDERCOATED	DIRECT ATTACHED CLEAR SATIN ANODIZED & POWDERCOATED	DIRECT ATTACHED CLEAR SATIN ANODIZED & POWDERCOATED
FULL HEIGHT MARKER WALLS	NELSON ADAMS NACO	CLARIDGE	ABC
TRIM	STANDARD 1/2" ALUMINUM J-TRM	STANDARD 1/2" ALUMINUM J-TRM	STANDARD 1/2" ALUMINUM J-TRM
PORCELAIN	e3 WRITING SURFACE	e3 WRITING SURFACE	e3 WRITING SURFACE
PORCELAIN WIDTHS	4'-0" AND 5'-0"	4'-0" AND 5'-0"	4'-0" AND 5'-0"
PORCELAIN STD OPTIONS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS
SUBSTRATE	1/2" PARTICLEBOARD	7/16" PARTICLEBOARD	1/2" PARTICLEBOARD
MOISTURE BARRIER BACKER	.005 & .015 MOISTURE BARRIER BACKER	.005 & .015 BACKER	.005 & .015 MOISTURE RESISTANT BACKER
JOINT OPTIONS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS	SPLINE JOINT, DIVIDER BAR & BUTT JOINTS
COLOR OPTIONS	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED	CLEAR SATIN ANODIZED & POWDERCOATED
ANCHORING CONFIGURATIONS	DIRECT ATTACHED	DIRECT ATTACHED	DIRECT ATTACHED
ADHESIVE	HENRY'S 317 OR 237	HENRY'S 317	HENRY'S 317
FULL HEIGHT SLIDERS	NELSON ADAMS NACO	CLARIDGE	ABC
TRIM	STANDARD 1/2" ALUMINUM J-TRM	STANDARD 1/2" ALUMINUM J-TRM	STANDARD 1/2" ALUMINUM J-TRM
PORCELAIN	e3 WRITING SURFACE	e3 WRITING SURFACE	e3 WRITING SURFACE
PORCELAIN WIDTHS	4'-0" AND 5'-0"	4'-0" AND 5'-0"	4'-0" AND 5'-0"
PORCELAIN STD OPTIONS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS	WHITE LOW & HIGH GLOSS
SUBSTRATE	1/2" HONEYCOMB & 1/2" FB ON 1/4" HB W/.005	7/16" HONEYCOMB	7/8" HONEYCOMB
MOISTURE BARRIER BACKER	.005 & .015 MOISTURE BARRIER BACKER	.005 & .015 BACKER	.005 & .015 MOISTURE RESISTANT BACKER
TRACK SYSTEM	BOTTOM ROLLERS AND TOP NYLON GUIDE TRACK	BOTTOM ROLLERS AND TOP NYLON GUIDE TRACK	BOTTOM ROLLERS AND TOP NYLON GUIDE TRACK
TACKBOARDS	NELSON ADAMS NACO	CLARIDGE	ABC
1/4" FORBO ON 1/4" HARDBOARD	FORBO WITH STD C-4 "U" ALUMINUM FRAME	FORBO WITH STD "U" ALUMINUM FRAME	FORBO WITH STD "U" ALUMINUM FRAME
VINYL ON 1/2" FIBERBOARD	VINYL WITH STD C-4 "U" ALUMINUM FRAME	VINYL WITH STD "U" ALUMINUM FRAME	VINYL WITH STD "U" ALUMINUM FRAME
STD FABRIC ON 1/2" FIBERBOARD	FABRIC WITH STD C-4 "U" ALUMINUM FRAME	FABRIC WITH STD "U" ALUMINUM FRAME	FABRIC WITH STD "U" ALUMINUM FRAME
VINYL ON 1/4" NAT.CORK ON 1/4" HB	VINYL WITH STD C-4 "U" ALUMINUM FRAME	VINYL WITH STD "U" ALUMINUM FRAME	VINYL WITH STD "U" ALUMINUM FRAME
STD FABRIC ON 1/4" NAT.CORK ON 1/4" HB	FABRIC WITH STD C-4 "U" ALUMINUM FRAME	FABRIC WITH STD "U" ALUMINUM FRAME	FABRIC WITH STD "U" ALUMINUM FRAME
VINYL ON 1/2" FIBERBOARD	VINYL WITH STD C-4 "U" ALUMINUM FRAME	VINYL WITH STD "U" ALUMINUM FRAME	VINYL WITH STD "U" ALUMINUM FRAME
STD FABRIC ON 1/2" FIBERBOARD	FABRIC WITH STD C-4 "U" ALUMINUM FRAME	FABRIC WITH STD "U" ALUMINUM FRAME	FABRIC WITH STD "U" ALUMINUM FRAME
ANCHORING CONFIGURATIONS	L-CLIPS	L-CLIPS	L-CLIPS
ADHESIVE	HENRY'S 317 OR 237	HENRY'S 317	HENRY'S 317
ADDITIONAL COMBINATIONS AVAILABLE			
TACKWALL PANELS	NELSON ADAMS NACO	CLARIDGE	ABC
STANDARD VINYL 1/2" FIBERBOARD	STANDARD VINYL 1/2" FIBERBOARD	STANDARD VINYL 1/2" FIBERBOARD	STANDARD VINYL 1/2" FIBERBOARD
STANDARD FABRIC 1/2" FIBERBOARD	STANDARD FABRIC 1/2" FIBERBOARD	STANDARD FABRIC 1/2" FIBERBOARD	STANDARD FABRIC 1/2" FIBERBOARD
1/2" J-TRIM	CLEAR ANODIZED, POWDERCOATED & VINYL COVERED	CLEAR ANODIZED, POWDERCOATED & VINYL COVERED	CLEAR ANODIZED, POWDERCOATED & VINYL COVERED
*FABRIC W/ ACRYLIC BACKER			
ADDITIONAL COMBINATIONS AVAILABLE			
DISPLAY CASES	NELSON ADAMS NACO	CLARIDGE	ABC
CONFIGURATION	SLIDING, HINGED AND FREESTANDING	SLIDING, HINGED AND FREESTANDING	SLIDING, HINGED AND FREESTANDING
FIXED BACK PANEL	VINYL, NAT.CORK, FORBO AND FABRIC	VINYL, NAT.CORK, FORBO AND FABRIC	VINYL, NAT.CORK, FORBO AND FABRIC
GLASS	1/4" TEMPERED GLASS	1/4" TEMPERED GLASS	1/4" TEMPERED GLASS
STANDARD SHELVES	2 EACH	2 EACH	2 EACH
LIGHTING	STANDARD LED 110 V LIGHTING	STANDARD FLUORESCENT 110 V LIGHTING	STANDARD FLUORESCENT 110 V LIGHTING
KEYS	SLIDING LOCKS W/2 KEYS ALIKE	SLIDING LOCKS W/2 KEYS ALIKE	SLIDING LOCKS W/2 KEYS ALIKE
ALUMINUM FINISHED	CLEAR SATIN ANODIZED OR POWDERCOATED	CLEAR SATIN ANODIZED	CLEAR SATIN ANODIZED
HANDLES	PLASTIC PULLS	PLASTIC PULLS	PLASTIC PULLS
APPLICATIONS	RECESS, SURFACE AND STAND ALONE	RECESS, SURFACE AND STAND ALONE	RECESS, SURFACE AND STAND ALONE
TACKSTRIPS	NELSON ADAMS NACO	CLARIDGE	ABC
SIZES	1" AND 2"	1" AND 2"	1" AND 2"
INSERTS	NATURAL CORK, FORBO & VINYL COVERED	NATURAL CORK, FORBO & VINYL COVERED	NATURAL CORK, FORBO & VINYL COVERED
COLOR	CLEAR ANODIZED & POWDERCOATED	CLEAR ANODIZED & POWDERCOATED	CLEAR ANODIZED & POWDERCOATED
FDW - FORBO DIRECTLY TO WALL	NELSON ADAMS NACO	CLARIDGE	ABC
FORBO	1/4" FORBO	1/4" FORBO	1/4" FORBO
1/4" J-TRIM	SATIN CLEAR ANODIZED & POWDERCOATED	SATIN CLEAR ANODIZED & POWDERCOATED	SATIN CLEAR ANODIZED & POWDERCOATED
ADHESIVE	HENRY'S 317, HENRY'S 237 OR L910	HENRY'S 317 OR L910	HENRY'S 317 OR L910
FRAMELESS PANELS	NELSON ADAMS NACO - e3 CONCEPT STEEL SURFACES	POLYVISION - a3 CERAMIC STEEL SANS	EGAN VISUAL - DIMENSION STEEL LINXX
TRIM	NONE - PAINTED EDGE TO MATCH WRITING SURFACE	NONE - PAINTED EDGE TO MATCH WRITING SURFACE	NONE - PAINTED EDGE TO MATCH WRITING SURFACE

PORCELAIN
PORCELAIN WIDTHS
PORCELAIN STD OPTIONS
SUBSTRATE
MOISTURE BARRIER BACKER
JOINT OPTIONS
ANCHORING CONFIGURATIONS
ADHESIVE

e3 WRITING SURFACE
4'-0" AND 5'-0"
WHITE LOW & HIGH GLOSS
1/2" PARTICLEBOARD
.005 & .015 MOISTURE BARRIER BACKER
NONE REQUIRED
DIRECT ATTACHED
Z-CLIPS

a3 WRITING SURFACE
4'-0" AND 5'-0"
WHITE LOW & HIGH GLOSS
1/2" PARTICLEBOARD
.005 & .015 BACKER
NONE REQUIRED
DIRECT ATTACHED
Z-BAR

e3 WRITING SURFACE
4'-0" AND 5'-0"
WHITE LOW & HIGH GLOSS
1/2" PARTICLEBOARD
.005 & .015 MOISTURE RESISTANT BACKER
NONE REQUIRED
DIRECT ATTACHED
Z-BAR

TACKWALL PANELS

STANDARD VINYL 1/2" FIBERBOARD
1/2" J-TRIM

NELSON ADAMS NACO

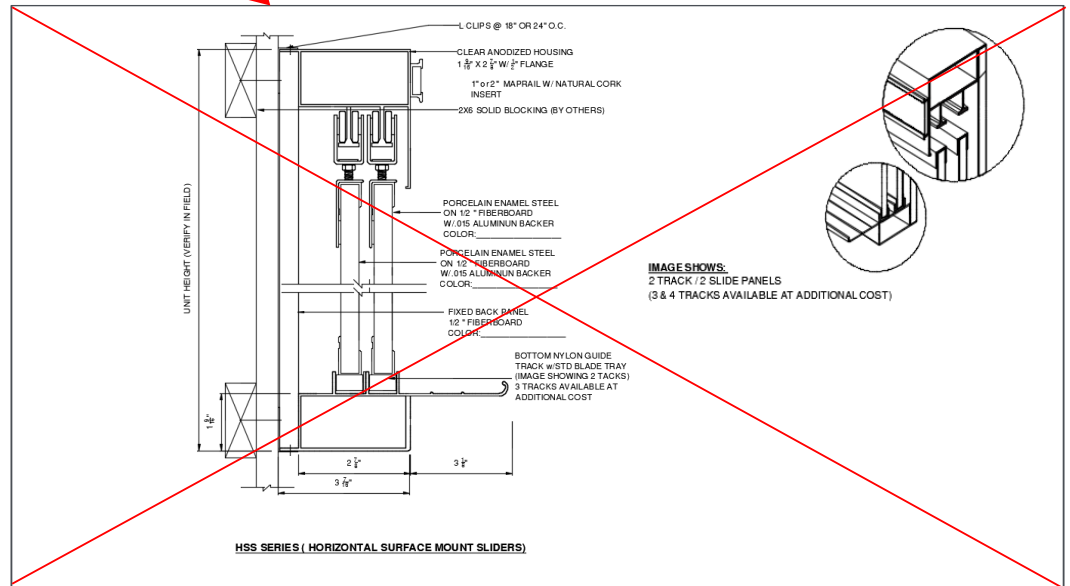
KOROSEAL SCHOOL COLLECTION VINYL 1/2" FIBERBOARD
CLEAR ANODIZED, POWDERCOATED, VINYL COVERED & PVS

CHATFIELD CLARKE

KOROSEAL SCHOOL COLLECTION VINYL 1/2" FIBERBOARD
PVS TRIMS ONLY & VINYL COVERED

HSS Series - Visual Display Boards - Product Data

See last page of this PDF for cut sheet provided by Nelson Adams Naco that matches detail 03/A8.804.



1. Product name:

HSS SERIES

2. Contact information:

Nelson Adams NACO
 420 S E St.
 San Bernardino, CA 92401
 Phone: 877-810-4080
 Email: sales@nelsonadamsnaco.com
 Web: www.nelsonadamsnaco.com

3. Product Description

Since 1953, Nelson Adams NACO has created products to meet the needs of multipurpose rooms such as classrooms, labs and conference rooms. Independently owned and operated, the company focuses on precision-focused technology to create outstanding products.

Basic Use

Nelson Adams NACO visual display boards are designed for daily high daily usage with minimum maintenance. They are suited for both new construction and renovation in a range of applications.

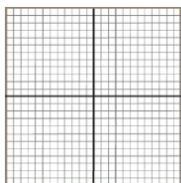
Standard sizes: HSS

SLIDER INDIVIDUAL PANEL SIZE		
SQ/FT	size	weight
16	4x4	20lbs
20	4x5	25 lbs
24	4x6	30 lbs
28	4x7	35 lbs
32	4x8	40 lbs
36	4x9	45 lbs
40	4x10	50 lbs
44	4x11	55 lbs
48	4x12	60 lbs
52	4x13	65 lbs
64	4x16	80 lbs
u/m=1.25 lbs per sq.ft.		

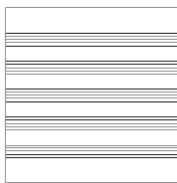
Composition and Materials

HSS substrate construction consist of e³ porcelain on 1/2" fiberboard with .015 moisture resistant backer. 2 7/8" x 1 9/16" aluminum housing with standard satin clear anodized aluminum that include C4 perimeter trim, standard integrated blade tray with radius edges an optional 1" or 2" map-rail with various insert options: natural cork, forbo or vinyl covered natural cork insert at an additional cost. ** Plastic accessories included.

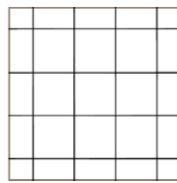
All aluminum is 6063T alloy comes in satin standard clear anodized color. Powder-coated aluminum is available at an additional cost.



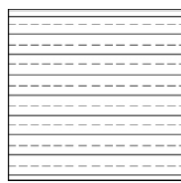
Graph Coordinates
 (Available only 4x4 Sheets)



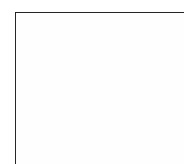
Music Lines 5



Grid
 (Available 1" x 1" or 2" x 2"
 Grey or Black)



Penmanship Lines



WHITE
 6100H - High Gloss Finish
 6100S - Satin Finish

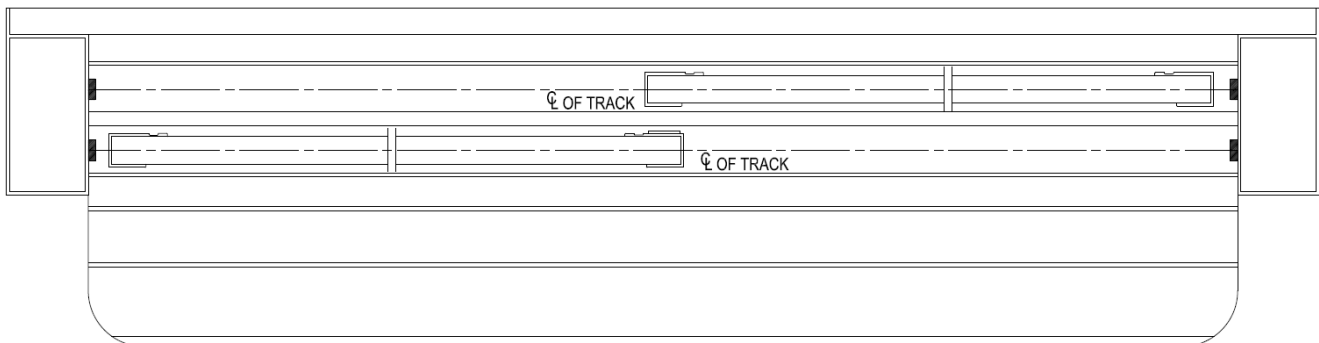
Optional Graphics

e³ Porcelain Writing Surfaces

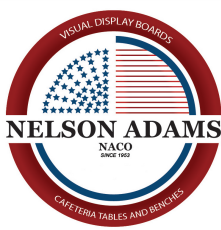
HSS Series - Visual Display Boards - Product Data



Note: Nelson Adams NACO requires that all buildings must be climate controlled prior to installation. Materials exposed to extreme temperatures are subject to color fading, shrinkage, warpage and/or deviation from their original state



HORIZONTAL SECTION



PROJECT NAME:

NACO JOB#:

Subject to the terms set out in this warranty, Nelson Adams Naco guarantees its Visual Display Products, to be free from manufacturing defects in material and workmanship for the specified periods below, all from the date of shipment.

Porcelain Enamel can be replaced for any of the following reasons: The writing surface fails to retain original writing and erasing qualities, becomes slick and shiny, fails to erase completely, or exhibits cracking/flaking.

This warranty is for material supplied by Nelson Adams Naco only, and only applies to the original installation of the Visual Display Products, installed in accordance with Nelson Adams Naco's written installation instructions. Recommendations for proper handling, storage, cleaning, and maintenance must be followed for this warranty to be valid.

This warranty excludes defects in the Visual Display Products caused by: vandalism, improper use, improper installation, neglect, and environmental damage. Note: Nelson Adams Naco Visual Display Products should be stored and installed in environments that are temperature controlled. Mold and mildew can develop in wet, damp, or humid environments. It is essential that boards are not installed on CMU or concrete walls that are not fully cured. Masonry wall condensation (sweating) can lead to mold damage and warped or distorted boards. The Nelson Adams Naco Visual Display Products warranty will void when boards are installed in improperly conditioned environments or on uncured walls.

If the Visual Display Product is found to be defective in workmanship or materials within the warranty period, Nelson Adams Naco will replace all affected components, free of charge. Nelson Adams Naco will not be responsible for any other expenses including, but not limited to: removal costs, installation costs, or any other costs associated with the repair or replacement of the Visual Display Product.

The replacement or repair of defective material as stated in this warranty shall constitute the sole remedy of the buyer and the sole liability of Nelson Adams Naco under this warranty. Nelson Adams Naco shall not be liable for any incidental, consequential, or indirect damages caused by the failure or defect in the material supplied, or any delay in the replacement or repair of warranty items.

Architectural Products

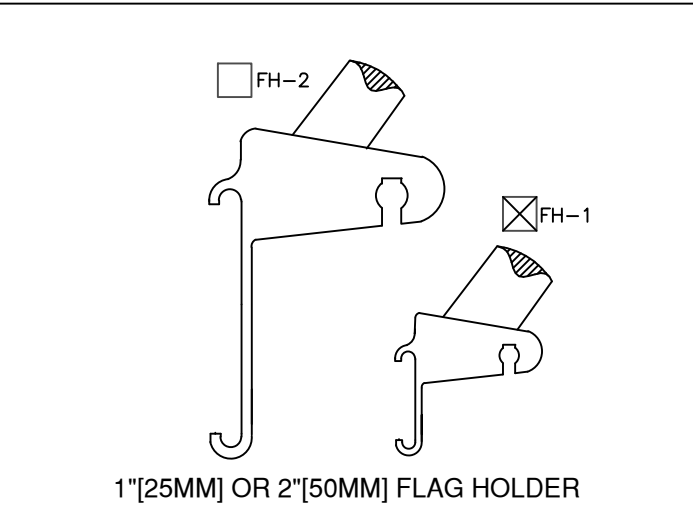
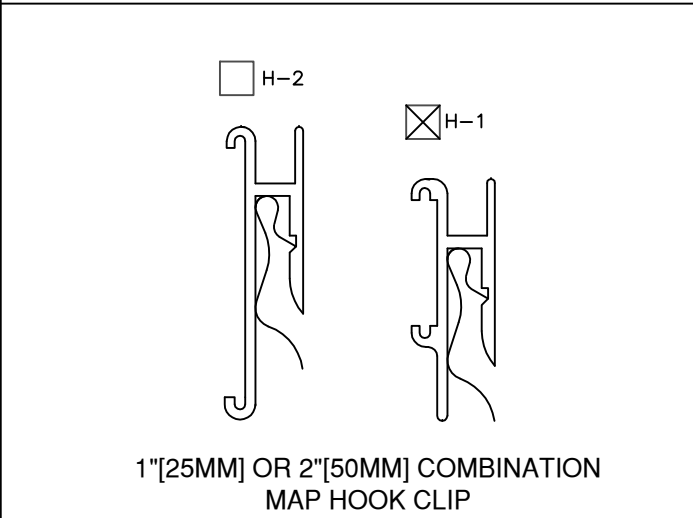
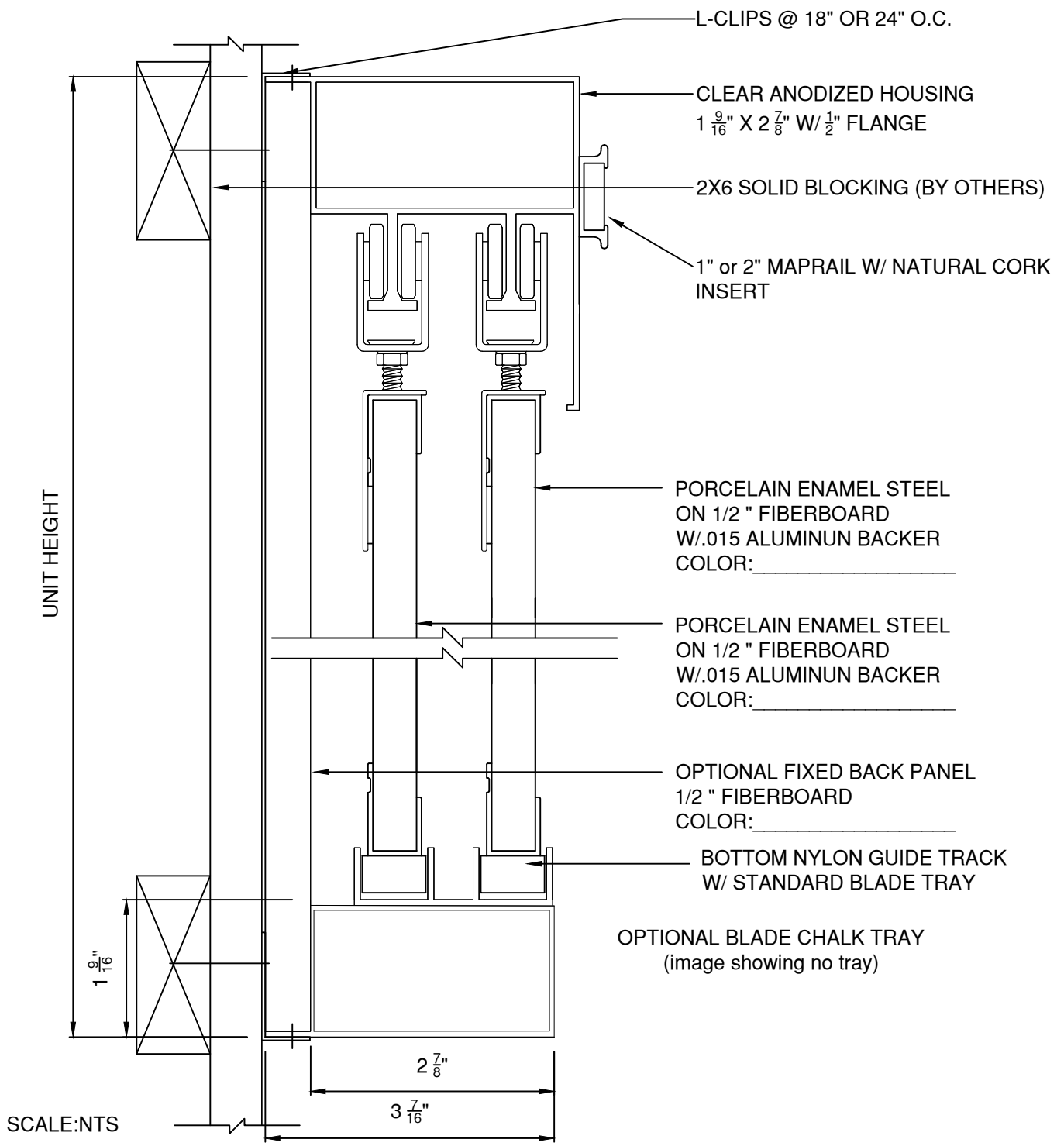
Warranty claims must be made during the warranty period, and communicated to Nelson Adams Naco by contacting the sales office directly at:
420 S E St San Bernardino, CA 92401 - Phone: 909-383-0819

Warranty Start Date:

Warranty must be signed by Nelson Adams Naco officer in order to be valid

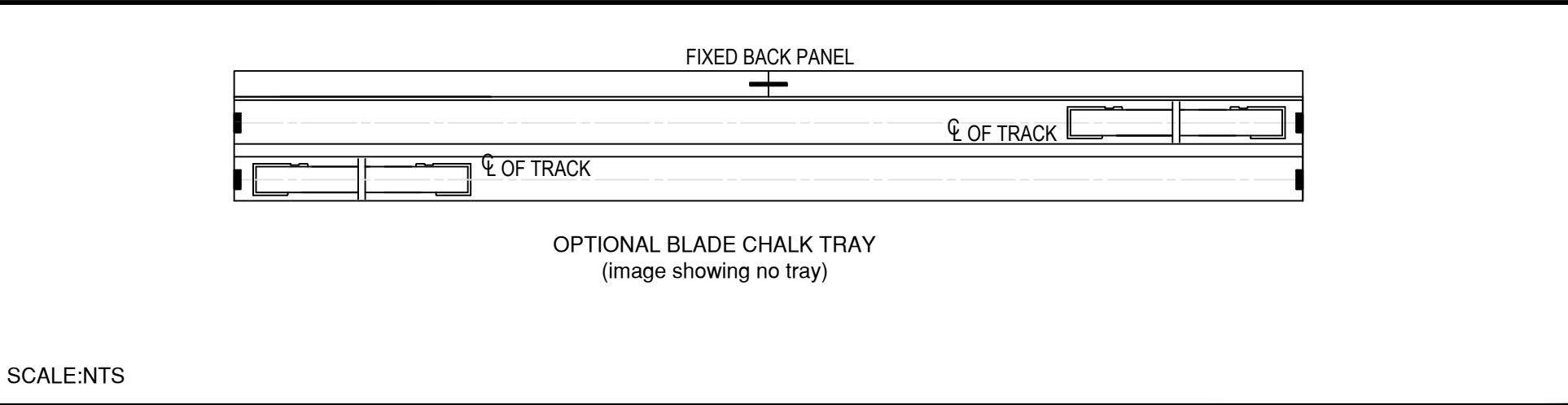
Signature

Date




QTY	TYPE	ADDITIONAL COMMENTS
ACCESORIES SCHEDULE		

HSS SERIES



PROJECT:


 NELSON ADAMS NACO
 420 S E ST
 SAN BERNARDINO, CA 92401

ARCHITECT:	SCALE: NTS
CONTRACTOR:	JOB #:
DRAWN: SM	
DATE: 3/8/24	

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: <u>3/8/24</u> Project Name: Science Building Renovation Bid No: 43-98P-0500-SBR	Bidder Name: <u>2H Construction</u> <hr/> <hr/>
--	---

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Is it possible to setup a voluntary site visit/jobwalk for subcontractors?

Additional pages attached by Bidder: ___ Yes No
 Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

~~It is not possible to schedule a voluntary site visit/jobwalk for subcontractors. It is the General Contractor's responsibility to disseminate the information to their subcontractors. J. Dawson-Garcia 03.08.2024~~

Additional pages of RFI Response attached: ___ Yes ___ No
 Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction
 (Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 3/8/24

Bidder Contact Information:
Ryan Shotwell
 (Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com
 (Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 3/8/24
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
2H Construction

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Sections 013100 and 013300 refer to a Building Information Model. Will there be a Model for this project? If so, who is responsible for establishing, maintaining, and updating the model.

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

- Refer to spec sections 01 31 00 - 1, Part 1.2A, 01 31 00 - 3, Part 1.5, and 01 33 00 - 7, Part 2.1 D4. _____
- This is the contractor's responsibility. _____
- Tim Hall/ Gensler 3/12/2024 _____

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 3/8/24

Bidder Contact Information:
Ryan Shotwell
(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com
(Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: <u>3/8/24</u> Project Name: Science Building Renovation Bid No: 43-98P-0500-SBR	Bidder Name: <u>2H Construction</u> <hr/> <hr/>
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Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Section 075419 2.6 calls out for a 1-1/2" Roof Insulation Base Layer. However the insulation noted on the plans achieves R-30. Is the base layer still required?

Additional pages attached by Bidder: Yes No
 Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

Install roof insulation per spec section 07 54 19 - 10, Part 3.5C to achieve R-30 per sheet note 01 on sheet A1.202 Roof Plan. _____

Tim Hall/ Gensler 3/12/2024 _____

Additional pages of RFI Response attached: Yes No
 Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction
 (Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 3/8/24

Bidder Contact Information:
Ryan Shotwell
 (Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com
 (Email Address)

(FOR PRE-BID USE ONLY)
PRE-BID REQUEST FOR INFORMATION
DESERT COMMUNITY COLLEGE DISTRICT

Date of Pre-Bid RFI: 3/8/24
Project Name: Science Building Renovation
Bid No: 43-98P-0500-SBR

Bidder Name:
2H Construction

Bidder's Pre-Bid Request for Information (Include references to Drawing Sheet Numbers and/or Sections of the Specifications)

Section 23 31 13 calls for out to clean all new duct systems. This adds unnecessary cost and leakage points for the added access doors required to perform the duct cleaning. The ductwork will be protected during transportation and installation as identified in SMACNA's Duct Cleanliness Standards.

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder: _____

Response to Bidder's Pre-Bid Request for Information

No exceptions taken - new duct systems are not required to be cleaned out if ductwork is protected during transportation and installation per SMACNA's Duct Cleanliness Standards.

Joy Ernacio
P2S Inc.
3/11/24

Additional pages of RFI Response attached: Yes No
Number of additional RFI Response pages attached: _____

Date of RFI Response: _____

Submitted By:
2H Construction
(Bidder Name)

(Signature of Bidder's Authorized Employee, Officer or Representative)

Submittal Date: 3/8/24

Bidder Contact Information:
Ryan Shotwell
(Bidder Contact Name)

(Phone and Fax) 562-424-5567 and 562-424-5578
ryan@2hconstruction.com
(Email Address)

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Is all exhaust ductwork to be stainless steel? or only the lab exhaust ductwork
per 23 31 13

Additional pages attached by Bidder: Yes No
Number of additional pages attached by Bidder:

Response to Bidder's Pre-Bid Request for Information

Per duct schedule in Spec Section 233113 3.11 C 3, lab exhaust ductwork shall be Type 316L, stainless steel. Refer to duct schedule for other duct systems.

Joy Ernacio
P2S Inc.
3/11/24

Additional pages of RFI Response attached: Yes No
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