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ADDENDUM NO. 02 DATE: 08/04/2023

PROJECT:
Clark/Mercedes Edwards Theater Remodel Phase 2
Clovis, CA 93612
Client Bid No: 2960

OWNER:
Clovis Unified School District
1450 E. Herndon Ave.
Clovis, CA 93611

ARCHITECT:
DARDEN ARCHITECTS, INC.
Attention: Mike Fennacy / Andrew Corral
6790 N. West Avenue
Fresno, California 93711
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DARDEN PROJECT NO. 2215
DSA File Nos. 10-27
DSA APPL. NO. 02-121097

It will be the responsibility of the General Contractor to submit the information contained in this addendum to all its subcontractors and suppliers. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject Bidder to disqualification.

The following additions, deletions, and revisions to the SHEETS and Project Manual are hereby made and do become a part of these Contract Documents.

INDEX OF ADDENDA TRANSMITTED HEREWITH

PROJECT MANUAL:

BIDDING AND CONTRACT REQUIREMENTS:

CHANGES TO PRIOR ADDENDA AD02-CPA01

CHANGES TO INTRODUCTORY INFORMATION ..... AD02-CII01 THRU AD02-CII03

SPECIFICATIONS:

CHANGES TO SPECIFICATIONS ..... AD02-SP01 THRU AD02-SP07

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CHANGES TO SHEETS:

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STRUCTURAL ..... AD02-S01 THRU AD02-S05
MECHANICAL ..... AD02-M01 THRU AD02-M05
PLUMBING ..... AD02-P01 THRU AD02-P03
FIRE SPRINKLER ..... AD02-FS01 THRU AD02-FS06

ATTACHMENTS:

DOCUMENTS OR SPECIFICATIONS:

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PHASE 1 & 2 EARTHWORK STUDY ..... (Pages 1 thru 3)
23 21 13 HYDRONIC PIPING ..... (Pages 1 thru 4)
23 21 16 HYDRONIC SPECIALTIES ..... (Pages 1 thru 4)
23 21 23 HVAC PUMPS ..... (Pages 1 thru 3)
23 25 00 CHEMICAL WATER TREATMENT ..... (Pages 1 thru 3)
23 52 16 CONDENSING BOILERS ..... (Pages 1 thru 8)
CPM Schedule ..... (Page 1)
BID PACKAGES REVISED ..... (Page 1 thru 57)

SHEETS:

ARCHITECTURAL ..... AD02-AX01 thru AD02-AX17
STRUCTURAL ..... AD02-SX01 thru AD02-SX05
MECHANICAL ..... AD02-MX01 thru AD02-MX05
PLUMBING ..... AD02-PX01 thru AD02-PX03
FIRE SPRINKLER ..... AD02-FSX01 THRU AD02-FSX06

PROJECT MANUAL:

BIDDING AND CONTRACT REQUIREMENTS:

CHANGES TO PRIOR ADDENDA:

AD02-CPA01 Refer to Addendum No.01 Item AD1-SP01 BID PACKAGES. Make the revisions to each Bid Package as detailed below. Revised Bid Package is included with AD-2 in the upper right-hand corner.

1. Refer to CLARK MET Addition-CMET 01 Concrete and Reinforcing Steel, Furnish and Install Items. Add the following item and language: Item #72 "Furnish and install all concrete saw cutting and removal of recyclable material. Coordinate with Plumbing and Electrical bid packages. Plumbing and Electrical bid packages will need to layout. All saw-cutting of concrete shall be from joint to joint. No overcuts accepted. (Addendum #2)".

2. Refer to CLAK MET Addition-CMET 02 Structural Steel & Metal Decking, General Items. Add the following item and language: Item #24 ""Due to safety concerns for students and staff for fall zones when erecting the structural steel, Structural steel must be installed when students and staff are not present on campus at times acceptable to the District and CM. Time examples are: Weekends - Saturday and Sunday, after hours (6 pm to 6 am), thanksgiving break, Christmas break, etc.(Addenda #2)"

3. Refer to CLARK MET Addition-CMET 03 Metal Framing, Drywall & Cement Plaster, Specification Sections. Add the following Division and Corresponding Specification Section: Division 04 Concrete Masonry Units - Section 04 22 00 Concrete Masonry Units (As applies Drywall & Cement Plaster) (Addenda #2)

4. Refer to CLARK MET Addition-CMET 05 Roofing, Furnish and Install Items, Item #6. Remove and replace with the following language: "Install all piping roof supports, runners and or sleepers as required for all conduit, piping that is mounted on roof. Coordinate with Plumbing and Site Utilities, HVAC and Electrical and Low Voltage bid packages. Plumbing, HVAC and Electrical contractors are to provide these items. (Addenda #2)".

5. Refer to CLARK MET Addition-CMET 05 Roofing, Furnish and Install Items, Item #22. Remove and replace with the following language: "Reinstall all piping roof supports, runners and or sleepers as required for all conduit, piping that is mounted on the roof. Coordinate with Plumbing and Site Utilities, HVAC and Electrical and Low Voltage bid packages. (Alternate 3) (Addenda #2)".

6. Refer to CLARK MET Addition-CMET 06 General Specialties, Furnish and Install Items. Add the following language/Items:
   i. Item #80: "Remove, salvage and protect roof mounted exhaust fan and return to owner. (Addenda #2)"
   ii. Item #81: "Remove wall mounted exhaust fans and associated duct work, see sheet T/M100. (Addenda #2)"
   iii. Item #82: "Remove existing boiler unit, duct, flue as shown and noted on the plans and specs. (Addenda #2)"

iv. Item #83: "Furnish and install all wood rough carpentry due to reroof. (Alternate 3) (Addenda #2)"
v. Item#84: "Remove portion of roof, roof structure, rain gutter, downspouts, chain link fence and all its anchoring systems as shown and noted on the plans. (Addenda #2)"

7. Refer to CLARK MET Addition-CMET 06 General Specialties, Specification Sections. Remove Section 08 80 00 Glass.

8. Refer to CLARK MET Addition-CMET 06 General Specialties, Furnish and Install Items, Item #15. Remove and replace with the following language: " Remove and reset roof access **hatches.** (Alternate 3). (Addenda #2)"

9. Refer to CLARK MET Addition-CMET 08 Painting & Concrete Sealer, Furnish and Install Items. Add the following language/Item: Item #37, "Furnish and provide all intumescent paint finish on all exposed and non-exposed structural steel i.e., columns, braced frames, beams, etc. as shown and noted on the plans**.** (Addenda #2)"

10. Refer to CLARK MET Addition-CMET 10 Plumbing and Site Utilities, Furnish and Install Items, Item #1. Remove and replace with the following language: "Furnish and install all main underground fire lines as shown on the plans and specifications. Fire line is to be installed inside building to approximately 6" above finish floor **and capped** in accordance with contract documents. (Addenda #2)"

11. Refer to CLARK MET Addition-CMET 10 Plumbing and Site Utilities, Furnish and Install Items. Add the following language/Items:
    i. Item #71: "Remove existing boiler condensate line and any other associated plumbing utility lines. Reroute as shown and noted on the plans. (Addenda #2)"
    ii. Item #72: "Furnish and install new boiler gas line and connect to existing gas line as shown and noted on the plans. (Addenda #2)"
    iii. Item #73: "Furnish and connect new HWS to existing HWS as shown and noted on the plans. (Addenda #2)
    iv. Item #74:" Furnish and install new condensate line from boiler to existing sump basin as shown and noted on the plans. (Addenda #2)"
    v. Item #75: "Furnish and connect new boiler HWR to existing return riser as shown and noted on the plans. (Addenda #2)"
12. Refer to CLARK MET Addition-CMET 10 Plumbing and Site Utilities, Furnish and Install Items, Item #57. Remove and replace with the following language, "Disconnect, reroute and reconnect all gas lines/water lines and condensate lines at roof. Replace lines as required. (Alternate 3) (Addenda #2)"

13. Refer to CLARK MET Addition-CMET 11 HVAC, Furnish and Install Items. Add the following language/Items:
    i. Item #44: "Furnish and install new gas fired condensing boiler as shown and noted on the plans. (Addenda #2)"

ii. Item #45: "Furnish and install new VDF controls for pumps as shown and noted on the plans. (Addenda #2)"
iii. Item #46: "Furnish and install inline boiler pumps as shown and noted on the plans. (Addenda #2)"
iv. Item #47: "Furnish and install new boiler flue to existing riser flue as shown and noted on the plans. (Addenda #2)"
v. Item #48: "Furnish and install dryer duct complete to include but not limited to sheet metal flashing, mesh bird screen, etc. as shown and noted on the plans. (Addenda #2)"

14. Refer to Clark MET Addition-CMET 11 HVAC, Furnish and Install Items, Item #18. Remove and replace with the following language: "Remove, salvage and reinstall all metal sheet flashing whether not shown or shown and noted on the plans. Replace sheet metal flashing as required and or provide and install new sheet metal flashing to include reglets and curb flashings as shown and noted on the plans. (Alternate 3) (Addenda #2)"

15. Refer to CLARK MET Addition-CMET 12 Electrical and Low Voltage, Furnish and Install Items, Item #7. Remove and replace with the following language: "Disconnect, remove and or relocate items as called for in the plans and specs. Coordinate before pulling back all wiring to source. Replace or provide conduit and or boxes as necessary to complete work. Demo all conduit noted on the plans. (Addenda #2)".

16. Refer to CLARK MET Addition-CMET 12 Electrical and Low Voltage, Furnish and Install Items, Item #8. Remove and replace with the following language: ". Furnish and install all building and site electrical complete as shown on and noted on the plans and specifications including but not limited to ~~concrete footings for lighting~~, equipment pedestals, precast concrete pads, IDF cabinets, disconnects, panels, transformers, conduit, wiring, and fixtures. (Addenda #2)".

17. Refer to CLARK MET Addition-CMET 12 Electrical and Low Voltage, Furnish and Install Items, Item #57. Remove and replace with the following language: "Disconnect, reroute and reconnect all roof conduit and wiring serving all roof mounted equipment at roof. Replace damaged conduit as required. Provide and install new conduit and conductors as shown and noted on the plans. (Alternate 3) (Addenda #2)"

CHANGES TO INTRODUCTORY INFORMATION:

AD02-CII01 Refer to NOTICE TO CONTRACTORS:

1. Omit the following text:

   "Time of completion for this project shall 300 calendar days…"

2. Replace with the following text:

   "Time of completion for this project shall be 340 calendar days…"

AD02-CII02 GEOTECHNICAL REPORT:

1. A copy of the geotechnical report has been included with AD-2 in the upper right-hand corner. This document is for reference only, refer to the specifications and drawings for the requirements of this contract.

AD02-CII03 PHASE 1 & 2 EARTHWORK STUDY:

1. A copy of Phase 1 & 2 Earthwork Study prepared by RMA Geoscience has been included with AD-2 in the upper right-hand corner. This document is for reference only, refer to the specifications and drawings for the requirements of this contract.

SPECIFICATIONS:

CHANGES TO SPECIFICATIONS:

AD02-SP01 Refer to Specification Section 01 11 13-SUMMARY OF WORK:

1. Add the attached CPM SCHEDULE document to the end of this section as identified with AD-2 in the upper right-hand corner.

AD02-SP02 Refer to Specification Section 23 21 13, HYDRONIC PIPING:

1. Add the attached Specification Section 23 21 13 – HYDRONIC PIPING, identified with AD-2 in the upper right-hand corner, to the project manual.
2. Add the following language, "Hydronic piping shall be welded steel. Existing flue piping is galvanized steel and shall be removed in its entirety up through roof and replaced with new Type 29-4C stainless steel flue vent kit.

AD02-SP03 Refer to Specification Section 23 21 16, HYDRONIC SPECIALTIES:

1. Add the attached Specification Section 23 21 16 – HYDRONIC SPECIALTIES, identified with AD-2 in the upper right-hand corner, to the project manual.

AD02-SP04 Refer to Specification Section 23 21 23, HVAC PUMPS:

1. Add the attached Specification Section 23 21 23 – HVAC PUMPS, identified with AD-2 in the upper right-hand corner, to the project manual.

AD02-SP05 Refer to Specification Section 23 25 00, CHEMICAL WATER TREATMENT:

1. Add the attached Specification Section 23 25 00 – CHEMICAL WATER TREATMENT, identified with AD-2 in the upper right-hand corner, to the project manual.

AD02-SP06 Refer to Specification Section 23 52 16, CONDENSING BOILERS:

1. Add the attached Specification Section 23 52 16 – CONDENSING BOILERS, identified with AD-2 in the upper right-hand corner, to the project manual.

AD02-SP07 Refer to Specification Section 25 50 00, DIRECT DIGITAL CONTROL AND ENERGY MANAGEMENT SYSTEM:

1. Clarification: The new DDC controls are indicated to report back to and integrate with the Campus BMS system GUI, the current system in place is Niagara N4.

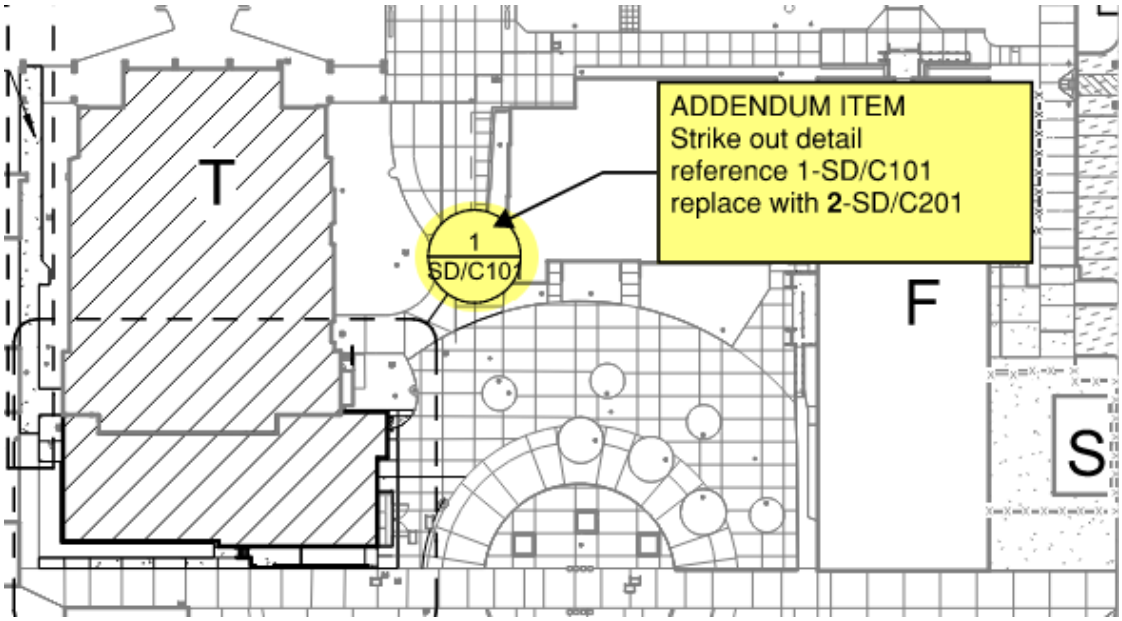
SHEETS:

CHANGES TO SHEETS:

ARCHITECTURAL:

AD02-A01 Refer to Sheet SD/A101:

1. Strike out detail reference 1-SD/C101 and replace with detail reference 2-SD/C201.



AD02-A02 Refer to Sheet X/A504:

1. Remove and replace with attached sheet AD02-AX01.
2. Detail J1 "Plan View at Canopy Perforated Panels" has been revised.

AD02-A03 Refer to Sheet X/A505 Detail N7 ELASTOMETRIC MEMBRANE ROOFING, Typical System Detail:

1. Add the following language: "NOTE: Rigid Roof insulation shall be a minimum of R-30."

AD02-A04 Refer to Sheet G103:

1. Updated Compliance plan to show correct fire wall symbols and added fire wall symbols to legend. See attached sheet AD02-AX02.

AD02-A05 Refer to Sheet X/A101:

1. Added detail J4. See attached sheet AD02-AX03.

AD02-A06 Refer to Sheet X/A301:

1. Fixed detail referenced on detail A1. See attached sheet AD02-AX04.

AD02-A07 Refer to Sheet X/A401:

1. Doors 202 a and 206 a updated to show 1 Hr. rating. See attached sheet AD02-AX05.

AD02-A08 Refer to Sheet X/A412:

1. Details J11 and J14 updated. See attached sheet AD02-AX06.

AD02-A09 Refer to Sheet X/A501:

1. Dimension fixed on Detail J11. See attached sheet AD02-AX07.

AD02-A10 Refer to Sheet X/A502:

1. Updated keynotes on Details A1, A7, and J11. See attached sheet AD02-AX08.

AD02-A11 Refer to Sheet X/A604:

1. Updated keynote on Detail E4. See attached sheet AD02-AX09.

AD02-A12 Refer to Sheet T/A101:

1. Added corner guard symbol to legend. See attached sheet AD02-AX10.

AD02-A13 Refer to Sheet T/A102:

1. Added corner guard symbol to legend. See attached sheet AD02-AX11.

AD02-A14 Refer to Sheet T/A103.1:

1. Added corner guard symbol to legend. See attached sheet AD02-AX12.

AD02-A15 Refer to Sheet T/A201:

1. No change, but DSA had a comment on it. See attached sheet AD02-AX13.

AD02-A16 Refer to Sheet T/A301:

1. Roof cricket updated. See attached sheet AD02-AX14.

AD02-A17 Refer to Sheet T/A401:

1. Keynotes updated to show “adhered veneer”. See attached sheet AD02-AX15.

AD02-A18 Refer to Sheet T/A501:

1. Keynotes updated to show “adhered veneer”. See attached sheet AD02-AX16.

AD02-A19 Refer to Sheet T/A502:

1. Fixed Beam. See attached sheet AD02-AX17.

STRUCTURAL:

AD02-S01 Refer to Sheet T/S100:

1. Remove and replace with attached sheet AD02-SX01. 1. A 3” recessed slab was indicated at the lift location at the west entrance. Size of the recess to be determined in accordance with manufacturer requirements.

AD02-S02 Refer to Sheet X/S004:

1. Remove and replace with attached sheet AD02-SX02.

   i. Field weld of rebar for detail 8 was clarified.

   ii. Detail 10 was added for the housekeeping pad specification and anchorage of the boiler.

AD02-S03 Refer to Sheet X/S500:

1. Remove and replace with attached sheet AD02-SX03. Section 4 was revised to indicate the foundation condition at the west end of the section.

AD02-S04 Refer to Sheet X/S701:

1. Remove and replace with attached sheet AD02-SX04

AD02-S05 Refer to Sheet X/S703:

1. Remove and replace with attached sheet AD02-SX05. Details 1 and 2 were revised to coordinate the size of the ramp curb and foundation with the architectural drawings.

MECHANICAL:

AD02-M01 Refer to Sheet X/M800:

1. Remove and replace with attached sheet AD02-MX01

AD02-M02 Refer to Sheet SD/M000:

1. Remove and replace with attached sheet AD02-MX02

AD02-M03 Refer to Sheet T/M100:

1. Remove and replace with attached sheet AD02-MX03

AD02-M04 Refer to Sheet T/M101:

1. Remove and replace with attached sheet AD02-MX04

AD02-M05 Refer to Sheet T/M102:

1. Remove and replace with attached sheet AD02-MX05

PLUMBING:

AD02-P01 Refer to Sheet X/P800:

1. Remove and replace with attached sheet AD02-PX01

AD02-P02 Refer to Sheet T/P101:

1. Remove and replace with attached sheet AD02-PX02

AD02-P03 Refer to Sheet T/P102:

1. Remove and replace with attached sheet AD02-PX03

FIRE SPRINKLER:

AD02-FS01 Refer to Sheet SD/FS001:

1. Remove and replace with attached sheet AD02-FSX01

AD02-FS02 Refer to Sheet X/FS800:

1. Remove and replace with attached sheet AD02-FSX02

AD02-FS03 Refer to Sheet X/FS801:

1. Remove and replace with attached sheet AD02-FSX03

AD02-FS04 Refer to Sheet T/FS100:

1. Remove and replace with attached sheet AD02-FSX04

AD02-FS05 Refer to Sheet T/FS101:

1. Remove and replace with attached sheet AD02-FSX05

AD02-FS06 Refer to Sheet T/FS102:

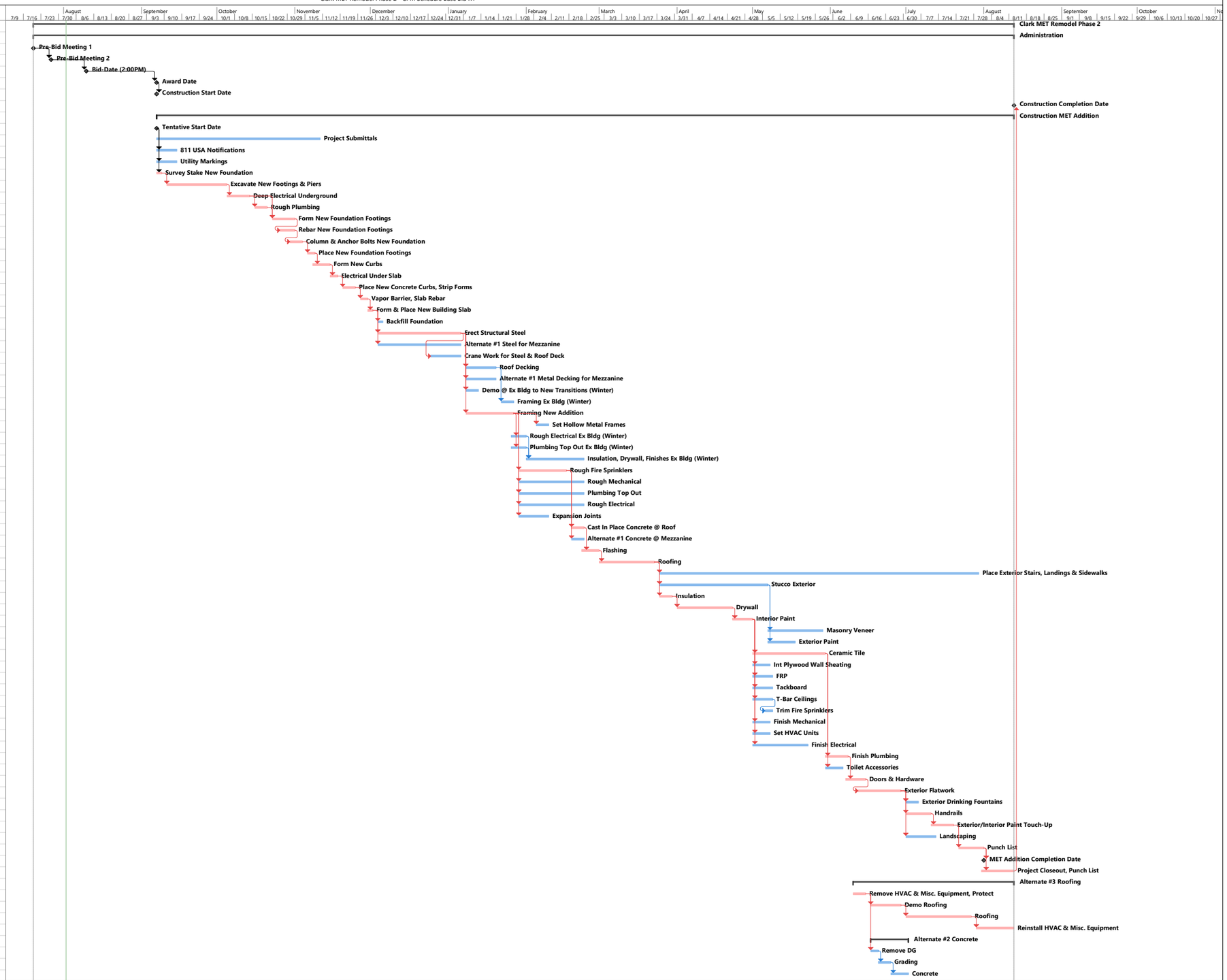
1. Remove and replace with attached sheet AD02-FSX06

END OF ADDENDUM NO. 02

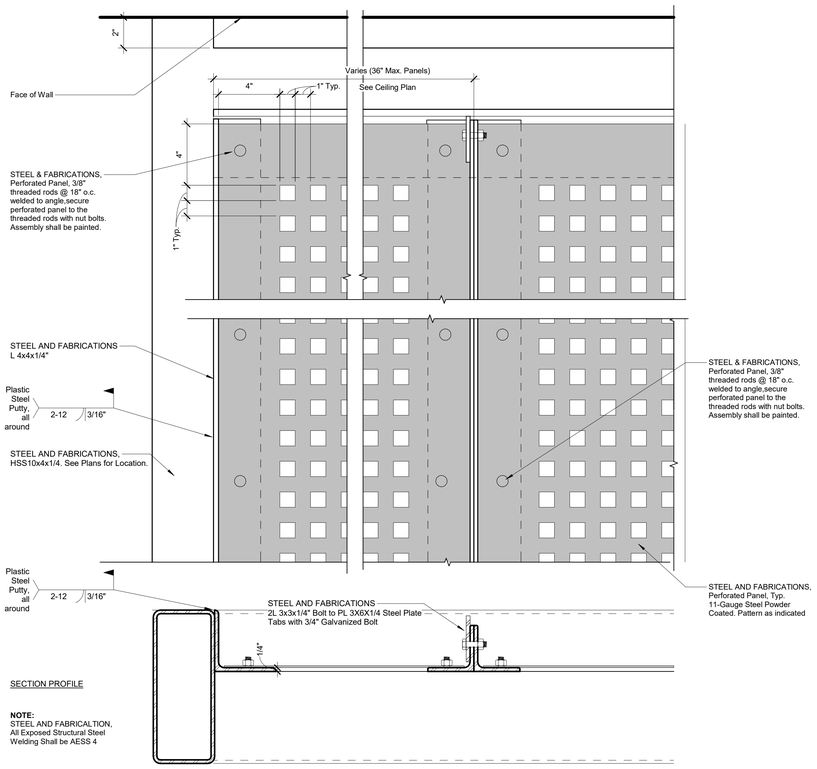
AD-2

Clark MET Remodel Phase 2 - CPM Schedule Base Bid R1

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		**Clark MET Remodel Phase 2**	**278 days**	**Thu 7/20/23**	**Mon 8/12/24**	
2		**Administration**	**278 days**	**Thu 7/20/23**	**Mon 8/12/24**	
3		Pre-Bid Meeting 1	0 days	Thu 7/20/23	Thu 7/20/23	
4		Pre-Bid Meeting 2	0 days	Thu 7/27/23	Thu 7/27/23	3
5		Bid-Date (2:00PM)	0 days	Thu 8/10/23	Thu 8/10/23	4
6		Award Date	0 days	Thu 9/7/23	Thu 9/7/23	5
7		Construction Start Date	0 days	Thu 9/7/23	Thu 9/7/23	6
8		Construction Completion Date	0 days	Mon 8/12/24	Mon 8/12/24	75
9		**Construction MET Addition**	**243 days**	**Thu 9/7/23**	**Mon 8/12/24**	
10		Tentative Start Date	0 days	Thu 9/7/23	Thu 9/7/23	
11		Project Submittals	47 days	Thu 9/7/23	Fri 11/10/23	
12		811 USA Notifications	6 days	Thu 9/7/23	Thu 9/14/23	10
13		Utility Markings	6 days	Thu 9/7/23	Thu 9/14/23	10
14		Survey Stake New Foundation	2 days	Thu 9/7/23	Fri 9/8/23	10
15		Excavate New Footings & Piers	18 days	Mon 9/11/23	Wed 10/4/23	14
16		Deep Electrical Underground	7 days	Thu 10/5/23	Fri 10/13/23	15
17		Rough Plumbing	5 days	Mon 10/16/23	Fri 10/20/23	16
18		Form New Foundation Footings	7 days	Mon 10/23/23	Tue 10/31/23	16,17
19		Rebar New Foundation Footings	4 days	Thu 10/26/23	Tue 10/31/23	18FS-4 days
20		Column & Anchor Bolts New Foundation	5 days	Mon 10/30/23	Fri 11/3/23	19FS-2 days
21		Place New Foundation Footings	3 days	Mon 11/6/23	Wed 11/8/23	20
22		Form New Curbs	5 days	Wed 11/8/23	Tue 11/14/23	21FS-1 day
23		Electrical Under Slab	3 days	Wed 11/15/23	Fri 11/17/23	22
24		Place New Concrete Curbs, Strip Forms	5 days	Mon 11/20/23	Fri 11/24/23	23
25		Vapor Barrier, Slab Rebar	3 days	Mon 11/27/23	Wed 11/29/23	24
26		Form & Place New Building Slab	2 days	Thu 11/30/23	Fri 12/1/23	25
27		Backfill Foundation	2 days	Mon 12/4/23	Tue 12/5/23	26
28		Erect Structural Steel	25 days	Mon 12/4/23	Fri 1/5/24	26
29		Alternate #1 Steel for Mezzanine	25 days	Mon 12/4/23	Fri 1/5/24	26
30		Crane Work for Steel & Roof Deck	10 days	Mon 12/25/23	Fri 1/5/24	28FS-10 days
31		Roof Decking	10 days	Mon 1/8/24	Fri 1/19/24	28
32		Alternate #1 Metal Decking for Mezzanine	10 days	Mon 1/8/24	Fri 1/19/24	28
33		Demo @ Ex Bldg to New Transitions (Winter)	5 days	Mon 1/8/24	Fri 1/12/24	28
34		Framing Ex Bldg (Winter)	5 days	Mon 1/22/24	Fri 1/26/24	31
35		Framing New Addition	15 days	Mon 1/8/24	Fri 1/26/24	28
36		Set Hollow Metal Frames	5 days	Mon 2/5/24	Fri 2/9/24	35FS+5 days
37		Rough Electrical Ex Bldg (Winter)	4 days	Fri 1/26/24	Wed 1/31/24	35FS-1 day
38		Plumbing Top Out Ex Bldg (Winter)	4 days	Fri 1/26/24	Wed 1/31/24	35FS-1 day
39		Insulation, Drywall, Finishes Ex Bldg (Winter)	17 days	Thu 2/1/24	Fri 2/23/24	37,38
40		Rough Fire Sprinklers	15 days	Mon 1/29/24	Fri 2/16/24	35
41		Rough Mechanical	20 days	Mon 1/29/24	Fri 2/23/24	35
42		Plumbing Top Out	20 days	Mon 1/29/24	Fri 2/23/24	35
43		Rough Electrical	20 days	Mon 1/29/24	Fri 2/23/24	35
44		Expansion Joints	10 days	Mon 1/29/24	Fri 2/9/24	35
45		Cast In Place Concrete @ Roof	5 days	Mon 2/19/24	Fri 2/23/24	40
46		Alternate #1 Concrete @ Mezzanine	5 days	Mon 2/19/24	Fri 2/23/24	40
47		Flashing	5 days	Fri 2/23/24	Thu 2/29/24	45FS-1 day
48		Roofing	16 days	Fri 3/1/24	Fri 3/22/24	47
49		Place Exterior Stairs, Landings & Sidewalks	91 days	Mon 3/25/24	Mon 7/29/24	48
50		Stucco Exterior	31 days	Mon 3/25/24	Mon 5/6/24	48
51		Insulation	5 days	Mon 3/25/24	Fri 3/29/24	48
52		Drywall	16 days	Mon 4/1/24	Mon 4/22/24	51
53		Interior Paint	6 days	Tue 4/23/24	Tue 4/30/24	52
54		Masonry Veneer	16 days	Tue 5/7/24	Tue 5/28/24	50
55		Exterior Paint	9 days	Tue 5/7/24	Fri 5/17/24	50
56		Ceramic Tile	21 days	Wed 5/1/24	Wed 5/29/24	53
57		Int Plywood Wall Sheating	5 days	Wed 5/1/24	Tue 5/7/24	53
58		FRP	6 days	Wed 5/1/24	Wed 5/8/24	53
59		Tackboard	6 days	Wed 5/1/24	Wed 5/8/24	53
60		T-Bar Ceilings	6 days	Wed 5/1/24	Wed 5/8/24	53
61		Trim Fire Sprinklers	3 days	Mon 5/6/24	Wed 5/8/24	60FS-3 days
62		Finish Mechanical	5 days	Wed 5/1/24	Tue 5/7/24	53
63		Set HVAC Units	5 days	Wed 5/1/24	Tue 5/7/24	53
64		Finish Electrical	16 days	Wed 5/1/24	Wed 5/22/24	53
65		Finish Plumbing	7 days	Thu 5/30/24	Fri 6/7/24	56
66		Toilet Accessories	5 days	Thu 5/30/24	Wed 6/5/24	56
67		Doors & Hardware	6 days	Fri 6/7/24	Fri 6/14/24	65FS-1 day
68		Exterior Flatwork	13 days	Wed 6/12/24	Fri 6/28/24	67FS-3 days
69		Exterior Drinking Fountains	5 days	Mon 7/1/24	Fri 7/5/24	68
70		Handrails	8 days	Mon 7/1/24	Wed 7/10/24	68
71		Exterior/Interior Paint Touch-Up	7 days	Thu 7/11/24	Fri 7/19/24	70
72		Landscaping	10 days	Mon 7/1/24	Fri 7/12/24	68
73		Punch List	8 days	Mon 7/22/24	Wed 7/31/24	71
74		MET Addition Completion Date	0 days	Wed 7/31/24	Wed 7/31/24	73
75		Project Closeout, Punch List	9 days	Wed 7/31/24	Mon 8/12/24	73FS-1 day
76		**Alternate #3 Roofing**	**46 days**	**Mon 6/10/24**	**Mon 8/12/24**	
77		Remove HVAC & Misc. Equipment, Protect	5 days	Mon 6/10/24	Fri 6/14/24	
78		Demo Roofing	10 days	Mon 6/17/24	Fri 6/28/24	77
79		Roofing	20 days	Mon 7/1/24	Fri 7/26/24	78
80		Reinstall HVAC & Misc. Equipment	11 days	Mon 7/29/24	Mon 8/12/24	79
81		**Alternate #2 Concrete**	**11 days**	**Mon 6/17/24**	**Mon 7/1/24**	
82		Remove DG	3 days	Mon 6/17/24	Wed 6/19/24	77
83		Grading	3 days	Thu 6/20/24	Mon 6/24/24	82
84		Concrete	5 days	Tue 6/25/24	Mon 7/1/24	83

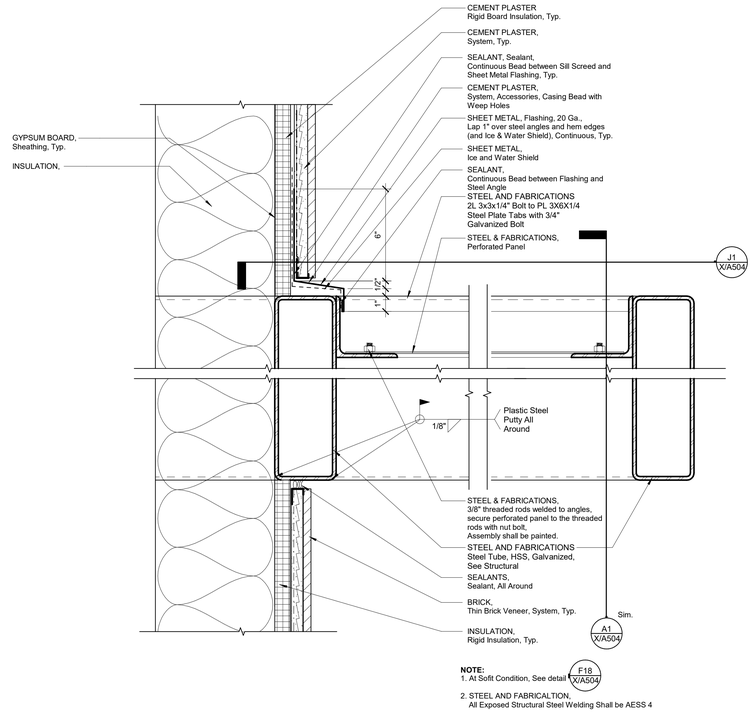


Critical · Critical Progress · Split · Manual Task · Finish-only · Baseline · Baseline Milestone · Summary Progress · Manual Summary · External Tasks · Inactive Task · Inactive Summary
Critical Split · Task · Task Progress · Start-only · Duration-only · Baseline Split · Milestone · Summary · Project Summary · External Milestone · Inactive Milestone · Deadline



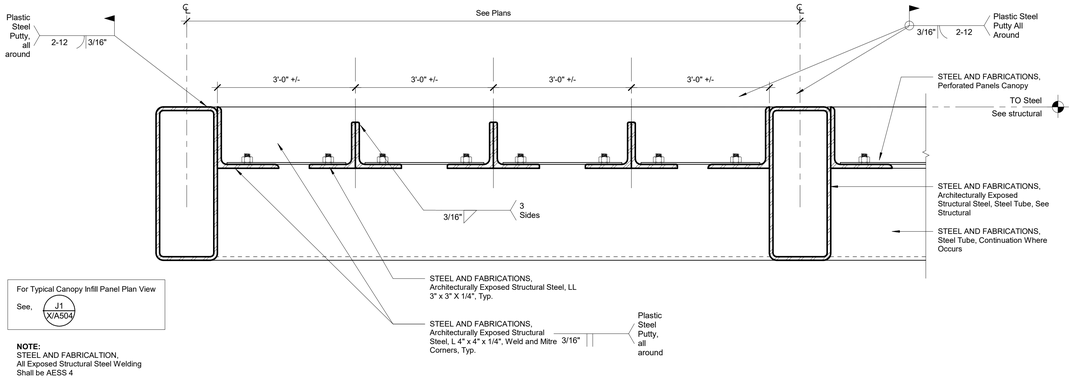
J1
3" = 1'-0"

STEEL AND FABRICATIONS, Plan View at Canopy Perforated Panels



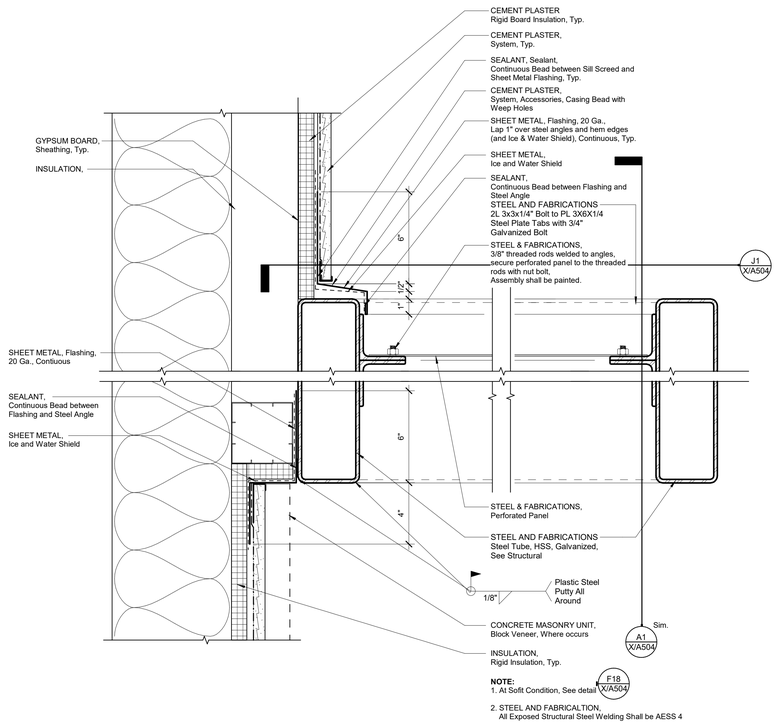
J11
3" = 1'-0"

STEEL AND FABRICATIONS, Section at Canopy Perforated Panels



A1
3" = 1'-0"

STEEL AND FABRICATIONS, Canopy Infill Panel



A11
3" = 1'-0"

STEEL AND FABRICATIONS, Section at Canopy Perforated Panels

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

NOTES

1. CEMENT PLASTER, Cement Plaster System, Accessories, Refer to Detail A4 X/A501
2. ELASTOMERIC MEMBRANE ROOFING, Roof System, Refer to Detail N7 X/A505
2. SHEET METAL, Boot Flashing, Refer to detail J4 X/A501

N18 — Exterior Detail Notes
No Scale

F18
3" = 1'-0"

STEEL AND FABRICATIONS, Section at Canopy

Clark Intermediate School - Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
Clovis, CA
Project

TYPICAL INFORMATION
EXTERIOR DETAILS - CANOPY
Drawing

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LICENSED ARCHITECT MICHAEL K. FERRO No. C23724 Exp. 4-30-23 STATE OF CALIFORNIA
Architect

No.	Revision/Submission	Date
1	Revision 1	Date 1

Revision

Designed By: -
Drawn By: FM
Checked By: MF
Reviewed By: MF

Scale: 3" = 1'-0"
Project Number: 2215
Date: 03/27/2023
Sheet

X/A504
AD02-AX01

8/3/2023 7:27:55 AM
\\da6\projects\K-12\Clovis\USD\ClarkIS\2215_Mercedes_Edwards_Theater_Modernization\02-Drawings\REVIT\2215_Mercedes Edwards Theater Addition_V22.rvt

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

CORRIDORS

6' - 0" WIDTH	=	72" / 0.2	=	360 OCCUPANTS
7' - 0" WIDTH	=	84" / 0.2	=	420 OCCUPANTS
8' - 0" WIDTH	=	96" / 0.2	=	480 OCCUPANTS
9' - 0" WIDTH	=	108" / 0.2	=	540 OCCUPANTS
10' - 0" WIDTH	=	120" / 0.2	=	600 OCCUPANTS
11' - 0" WIDTH	=	132" / 0.2	=	660 OCCUPANTS
12' - 0" WIDTH	=	144" / 0.2	=	720 OCCUPANTS

STAIRWAYS

6' - 0" WIDTH	=	72" / 0.3	=	240 OCCUPANTS
7' - 0" WIDTH	=	84" / 0.3	=	280 OCCUPANTS
8' - 0" WIDTH	=	96" / 0.3	=	320 OCCUPANTS
9' - 0" WIDTH	=	108" / 0.3	=	360 OCCUPANTS
10' - 0" WIDTH	=	120" / 0.3	=	400 OCCUPANTS
11' - 0" WIDTH	=	132" / 0.3	=	440 OCCUPANTS
12' - 0" WIDTH	=	144" / 0.3	=	480 OCCUPANTS
13' - 0" WIDTH	=	156" / 0.3	=	520 OCCUPANTS
14' - 0" WIDTH	=	168" / 0.3	=	560 OCCUPANTS
15' - 0" WIDTH	=	180" / 0.3	=	600 OCCUPANTS
16' - 0" WIDTH	=	192" / 0.3	=	640 OCCUPANTS
17' - 0" WIDTH	=	204" / 0.3	=	680 OCCUPANTS
18' - 0" WIDTH	=	216" / 0.3	=	720 OCCUPANTS

DOORWAYS

SINGLE 3'-0" DOORWAY	=	32.75" / 0.2	=	163 OCCUPANTS
SINGLE 4'-0" DOORWAY	=	46.75" / 0.2	=	233 OCCUPANTS
1 PAIR 3'-0" DOORWAY	=	68.75" / 0.2	=	343 OCCUPANTS
2 PAIR 4'-0" DOORWAY	=	92.75" / 0.2	=	463 OCCUPANTS
1-1/2 PAIR 3'-0" DOORWAY	=	104.25" / 0.2	=	521 OCCUPANTS
1-1/2 PAIR 4'-0" DOORWAY	=	136.50" / 0.2	=	682 OCCUPANTS
2 PAIR 3'-0" DOORWAY	=	137.50" / 0.2	=	687 OCCUPANTS
2 PAIR 4'-0" DOORWAY	=	185.50" / 0.2	=	927 OCCUPANTS

M18 Exit Width Schedule
No Scale

SYMBOLS

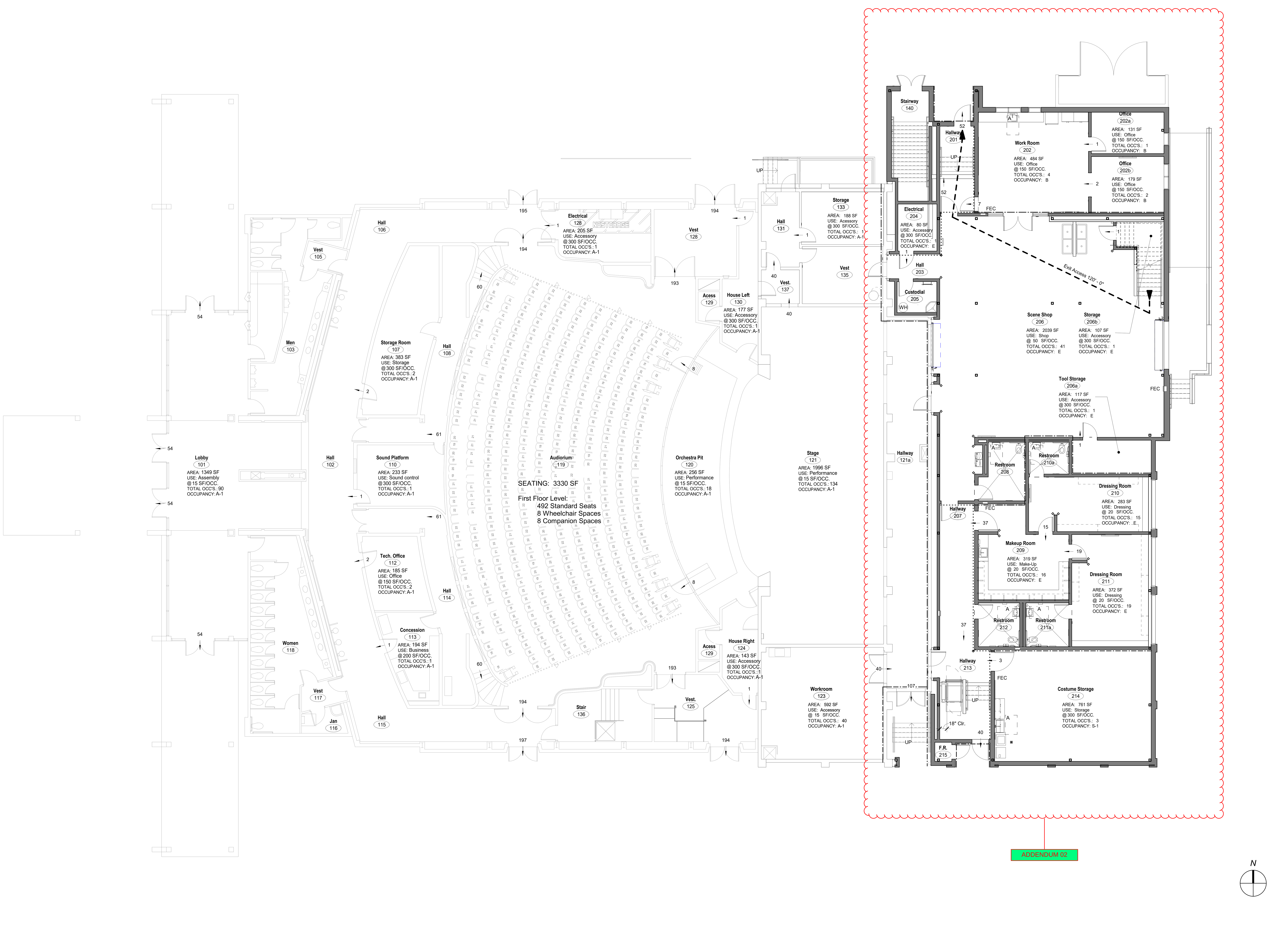
# ──►	Indicates Exit Occupant Loading
◄── ── ──	Indicates Exit Acess
A	Indicates Required Accessible Clearance Space
‐ ‐ ‐ ‐ ‐ ‐	1 Hr. Corridor Wall - (1 Hr. Fire Resistive Construction, 20 Min. Door Assemblies, 45 Min. Window Assemblies)
—·—·—	1 Hr. Fire Barrier - (1 Hr. Fire Resistive Construction, 60 Min. Door Assemblies)
——·——·—	1 Hr. Occupancy Separation / Fire Partition - (1 Hr. Fire Resistive Construction, 45 Min. Door Assemblies, 45 Min. Window Assemblies)
B G	Accessible Restroom Location: B = Boys, G = Girls, M = Men, W = Women, U = Unisex

ABBREVIATIONS

DF	ACCESSIBLE DRINKING FOUNTAIN LOCATION (-HA = High Adult) (-LA = Low Adult)
FEC	FIRE PROTECTION SPECIALTIES, Fire Extinguisher and Cabinet. Provide Fire Rated Cabinet at Rated Walls.
FEBC	FIRE PROTECTION SPECIALTIES, Fire Extinguisher, Blanket and Cabinet, Provide Fire Rated Cabinet at Rated Walls.

ADDENDUM 02

G18 Regulatory Compliance Floor Plan Legend
No Scale



A1 Regulatory Compliance Floor Plan - First Floor & Stage
1/8" = 1'-0"

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Clovis Unified School District
Clovis, CA
Project

GENERAL INFORMATION
REGULATORY FLOOR PLAN
Drawing

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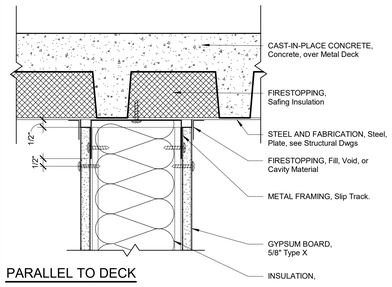
LICENSED ARCHITECT MICHAEL K. FENNACY No. C23724 Ren. 4-30-25 STATE OF CALIFORNIA
Architect

No.	Revision/Submission	Date

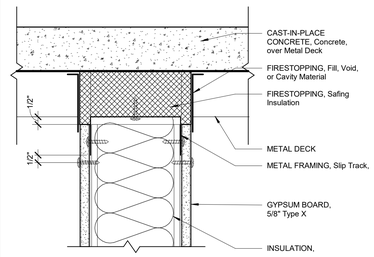
Revision

	Designed Designer	
Scale: 1/8" = 1'-0"	Drawn By: Author	G103
Project Number: 2215	Checked By: Checker	**AD02-AX02**
Date: 03/27/2023	Reviewer: Approver	

8/3/2023 9:42:07 AM
C:\Users\KennethX\Documents\2215_ Mercedes Edwards Theater Addition_V22_kennethxM8EKW.rvt



PARALLEL TO DECK



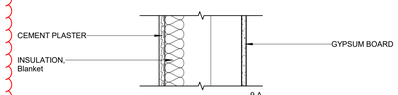
PERPENDICULAR TO DECK

TOP OF WALL ASSEMBLY
3M-UL #HW-D-0020
HILTI-UL #HW-D-0042

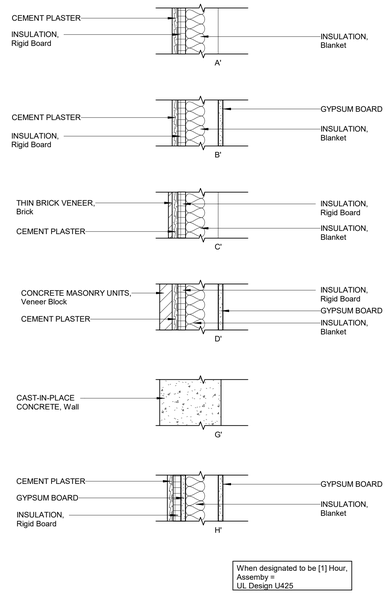
J4	1 Hour Rated Wall Assembly
3" = 1'-0"	

ADDENDUM 02

SPECIAL WALL ASSEMBLY

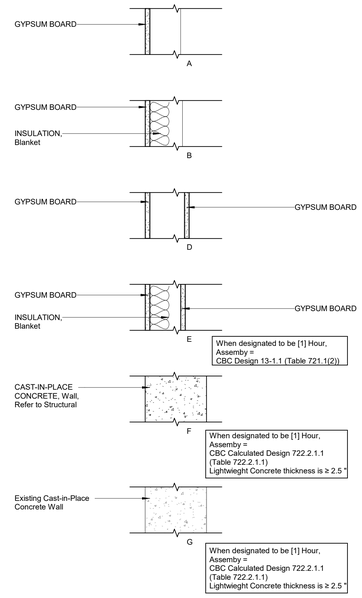


EXTERIOR



When designated to be [1] Hour, Assemby = UL Design U425

INTERIOR



DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

NOTES

1. These Schedules are provided for the convenience of the Contractor. All conditions and dimensions shall be field verified prior to any fabrication.
2. The intent of these schedules is to indicate the various layers of materials which comprise the different Wall Assemblies.
3. Refer to the Exterior Elevations and Exterior Finish Schedule for additional Wall Covering and for Material Finishes.
4. Refer to the Interior Elevations and Interior Finish Schedule for additional Wall Coverings and for Material Finishes.
5. Where Ceramic Tile Systems are designated, refer to the Finish Schedule and Specification Section for the appropriate Ceramic Tile System.
6. Provide a continuous Thermal Blanket Insulation at all walls designated as Exterior Walls. Refer to the Specification Section for the Insulation Type and location for Installation.
7. Provide a continuous Sound Blanket at walls designated as Interior walls where insulation is indicated as part of Assembly.
8. Refer to Floor Plans for Typical and Special Wall Assemblies References.
9. Refer to the Floor Plans for Walls that are Designated to be Rated Assemblies.
10. Refer to Structural Sheets for Metal Stud Gauges and Lengths.
11. Refer to sheet X/A102 for Fire Resistive Construction details

WALL ASSEMBLY SYMBOLS

Nominal Stud Depth — -#.X- — Wall Assemblies
Location — -X.X- — Stud Material

DEFINITIONS

LOCATION
E = Exterior
I = Interior

STUD MATERIAL
M = Metal

NOMINAL STUD DEPTH

		METAL
3	=	3 5/8"
4	=	4"
6	=	6"
8	=	8"
10	=	10"
9	=	Special Wall Assemblies. Reserved for Special Construction, i.e., Multi-Stud Assemblies, refer to Special Wall Assembly Schedules

WALL ASSEMBLIES
See Typical and Special Wall Assemblies Schedules

F18	Typical Wall Assemblies Legend
No scale	

Clark Intermediate School - Mercedes EdwardsTheater Modernization and Addition
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TYPICAL INFORMATION
WALL ASSEMBLIES
Drawing

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Architect

No.	Revision/Submission	Date

Revision

	Designed Designer	Copyright 2023 Darden Architects
Scale: As indicated	Drawn By: Author	*X/A101*
Project Number: 2215	Checked IChecker	**AD02-AX03**
Date: 03/27/2023	ReviewedApprover	

		A7	Special Wall Assembly	A11	Exterior Wall Assembly	A14	Interior Wall Assembly
		1 1/2" = 1'-0"		1 1/2" = 1'-0"		1 1/2" = 1'-0"	

8/4/2023 10:03:51 AM
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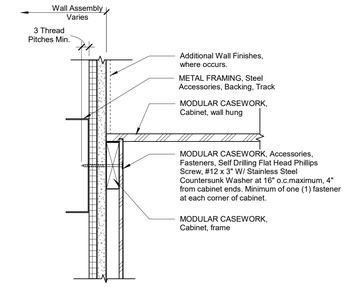
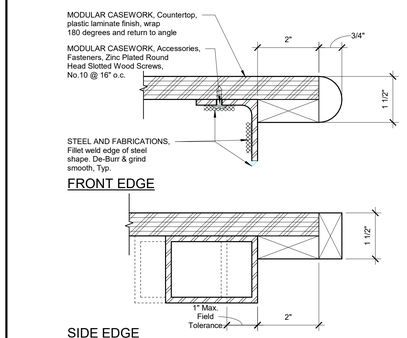


N1

3" = 1'-0"

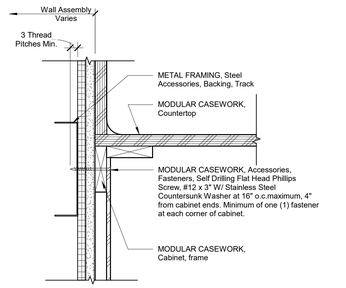
MODULAR CASEWORK, Cabinet Wall Hung Anchorage



N4

6" = 1'-0"

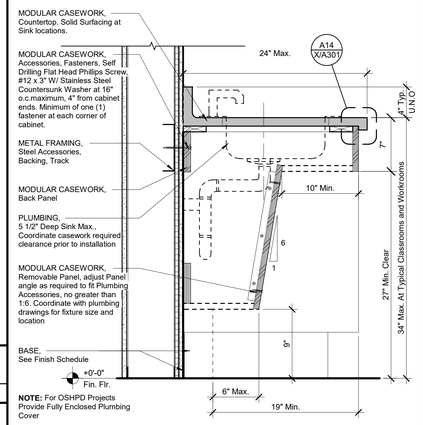
MODULAR CASEWORK, Countertop, Solid Stock Edges



J1

3" = 1'-0"

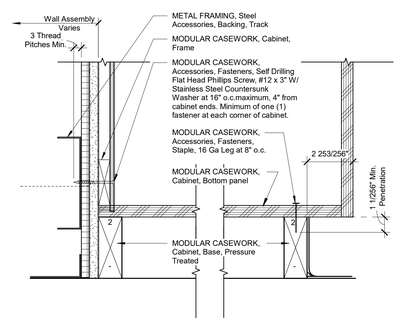
MODULAR CASEWORK, Cabinet Base Anchorage



H4

1 1/2" = 1'-0"

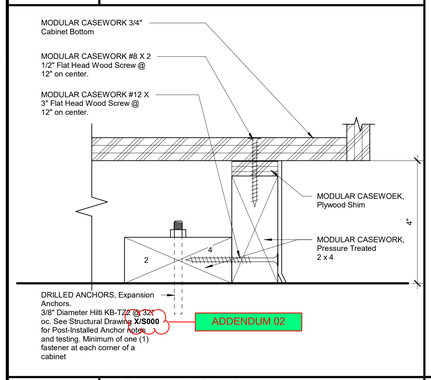
MODULAR CASEWORK, Cabinet Door, Accessible Sink Base



E1

3" = 1'-0"

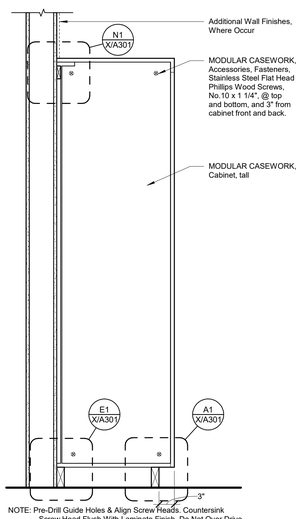
MODULAR CASEWORK, Cabinet Base Anchorage



A1

6" = 1'-0"

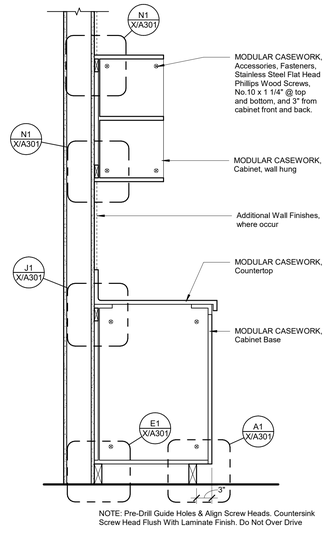
MODULAR CASEWORK, Detail Cabinet Anchorage



A4

1" = 1'-0"

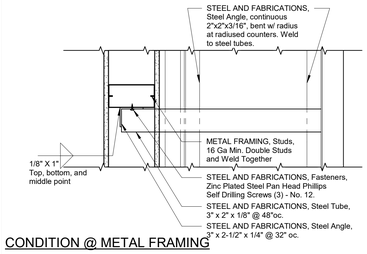
MODULAR CASEWORK, Cabinet, Tall



A7

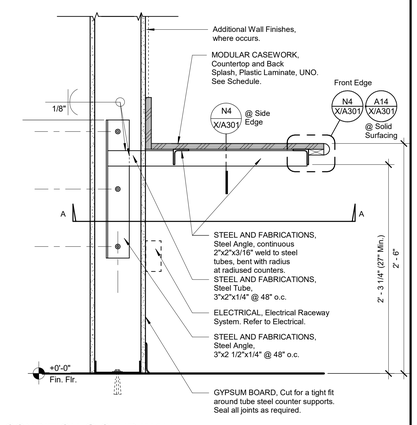
1" = 1'-0"

Modular Casework, Cabinet, Wall Hung & Base



CONDITION @ METAL FRAMING

SECTION A-A

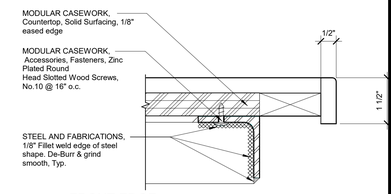


CONDITION @ STUD WALL

A11

1 1/2" = 1'-0"

MODULAR CASEWORK, Countertop



A14

6" = 1'-0"

MODULAR CASEWORK, Countertop, Solid Surface Edges

Casework Schedule

Building	Room No	Group No.	Description	Catalog No.	No Req'd	Length	Height	Depth	Remarks
T	202	a 202	Base Cabinet w/o Drawers	101	1	2' - 0"	2' - 8 1/2"	1' - 11"	
T	202	a 202	Base Cabinet w/o Drawers	102	2	3' - 0"	2' - 8 1/2"	1' - 11"	
T	202	a 202	Base Cabinet w/ ADA Plumbing Cover	153M	1	3' - 6"	2' - 8 1/2"	1' - 11"	3.
T	202	a 202	Base Cabinet w/ Drawers	230	1	1' - 8"	2' - 8 1/2"	1' - 11"	
T	202	a 202	Tall Storage Cabinet	402	1	2' - 6"	7' - 0"	2' - 0"	
T	202	a 202	Tall Storage Cabinet	402	1	3' - 0"	7' - 0"	2' - 0"	
T	202	a 202	Counter Top	-	1		2' - 10"	2' - 1"	1.
T	209	a 209	Base Cabinet w/ ADA Plumbing Cover	153M	1	3' - 6"	2' - 6 1/2"	1' - 11"	3.
T	209	a 209	Base Cabinet w/ Drawers	254	1	2' - 0"	2' - 8 1/2"	1' - 11"	
T	209	a 209	Counter Top	-	1		2' - 10"	2' - 1"	
T	209	a 209	Counter Top	-	1		2' - 5"	2' - 1"	1.
T	209	a 209	Shelf	-	1	8' - 0"	8"	1' - 3"	4.
	209	b 209	Shelf	-	1	8' - 0"	8"	1' - 3"	4.
	209	c 209	Wardrobe Shelf and Pole	540	1	4' - 4 3/4"	8"	1' - 3"	
	209	c 209	Wardrobe Shelf and Pole	540	2	6' - 0"	8"	1' - 3"	
	210	a 210	Wardrobe Shelf and Pole	540	1	4' - 0"	1' - 3"	1' - 6"	
	210	a 210	Wardrobe Shelf and Pole	541	1	8' - 6"	1' - 3"	1' - 6"	
	210	a 210	Counter Top	-	1		2' - 10"	1' - 3"	
	210	b 210	Base Cabinet w/o Drawers	100	2	2' - 8"	2' - 8 1/2"	1' - 2"	
	210	b 210	Base Cabinet w/o Drawers	100	2	3' - 0"	2' - 8 1/2"	1' - 2"	
	210	c 210	Wardrobe Shelf and Pole	541	2	8' - 6"	1' - 3"	1' - 6"	
	211		Wardrobe Shelf and Pole	540	3	4' - 0"	1' - 3"	1' - 6"	
	211		Wardrobe Shelf and Pole	541	2	8' - 6"	1' - 3"	1' - 6"	
	211	a 211	Base Cabinet w/o Drawers	100	1	2' - 6"	2' - 8 1/2"	1' - 2"	
	211	a 211	Base Cabinet w/o Drawers	100	5	2' - 8"	2' - 8 1/2"	1' - 2"	
T	211	a 211	Counter Top	-	1		2' - 10"	1' - 3"	
T	214	a 214	Base Cabinet w/o Drawers	102	1	2' - 6"	2' - 8 1/2"	1' - 11"	
T	214	a 214	Base Cabinet w/ Drawers	230	1	1' - 6"	2' - 8 1/2"	1' - 11"	
	214	a 214	Wall Hung Cabinet	301	1	1' - 6"	2' - 8"	1' - 2"	
	214	a 214	Wall Hung Cabinet	302	1	2' - 6"	2' - 8"	1' - 2"	
	214	a 214	Wall Hung Cabinet	302	1	3' - 0"	2' - 8"	1' - 2"	
T	214	a 214	Counter Top	-	1		2' - 10"	2' - 1"	1.

J7

Not to Scale

MODULAR CASEWORK, Schedule

Refer to H18 MODULAR CASEWORK, Notes.

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

TYPICAL NOTES

1. This schedule is provided for the convenience of the contractor. field verify all conditions and dimensions prior any fabrication
2. Schedule dimensions shall be considered nominal
3. See Sheet X/A301 for modular casework attachment and details.
4. All details, materials, and finishes shall be considered typical for all similar conditions unless noted otherwise.
5. W.I. Number cabinet designs with suffix "M" shall be modified as indicated or detailed.
6. Provide all filler pieces, scribe strips, flush panels and closures, matching modular cabinetwork, required to complete cabinetwork assemblies and close the finish surfaces.
7. Provide cabinet door and drawer locks at all cabinets unless noted otherwise.
8. All base cabinets, counters and desks shall have countertops constructed in accordance with the Architectural Woodwork Institute of Architectural Woodwork Standards, Section 11 for custom grade as modified by Specification Section 06 41 23, MODULAR CASEWORK, unless noted otherwise.

   P = premium grade
   E = economy grade
   C = custom grade
9. All cabinets shall be constructed in accordance with the Architectural Woodwork Institute of Architectural Woodwork Standards, Section 10 for custom grade as modified by Specification Section 06 41 23, MODULAR CASEWORK, unless noted otherwise.
10. All countertops shall be have 6" integral self coved Back and End Splashes, unless noted otherwise. Refer to interior elevations for splash heights which may vary in height. Align splashes with other materials, if shown to be aligned.
11. Base cabinet counter heights shall not exceed 34" in height, unless otherwise noted for undercounter equipment which requires at 36" counter height. In the event the interior elevations or cabinet schedule indicate a 36" counter height, the actual height shall be verified prior to and fabrication.
12. See MODULAR CASEWORK specification for shelves, typical.

REMARKS

1. MODULAR CASEWORK, Counter Top to be Solid Surfacing.
2. MODULAR CASEWORK, Cabinet, for Modifications see Interior Elevations.
3. MODULAR CASEWORK, Base Cabinet w/ ADA Plumbing Cover, for Modifications see detail H4 X/A301
4. MODULAR CASEWORK, Shelf Supports, Consealed. Plastic Laminate Shelf. Paint Supports to match Wall prior to installation of shelf.

H18

No Scale

MODULAR CASEWORK , Notes

Clark Intermediate School - Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

TYPICAL INFORMATION
MODULAR CASEWORK SCHEDULE & DETAILS

Drawing

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LICENSED ARCHITECT MICHAEL K. FOWLER No. C23724 Exp. 4-30-25 STATE OF CALIFORNIA

Architect

No.	Revision/Submission	Date

Revision

Designed Designer
Drawn By: Author
Checked tChecker
Reviewed Approver

Scale: As indicated
Project Number: 2215
Date: 03/27/2023

X/A301
AD02-AX04

8/3/2023 9:42:24 AM
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Opening Schedule Window

Building	Mark	Frame Type	Size Width	Size Height	Material	Head	Jamb	Sill	Glazing Type	Fire Rating	Comments
T	202 b	HM-9	5' - 4"	5' - 4"	HM-9	J14-X/A411	E14-X/A411	A14-X/A411	C2-2		
T	202 c	HM-8	2' - 8"	5' - 4"	HM-8	J14-X/A411	E14-X/A411	A14-X/A411	C2-2		
T	202a b	HM-8	2' - 8"	5' - 4"	HM-8	J14-X/A411	E14-X/A411	A14-X/A411	C2-2		
T	202b b	HM-9	5' - 4"	5' - 4"	HM-9	J14-X/A411	E14-X/A411	A14-X/A411	C2-2		
T	209a b	HM-11	10' - 4"	2' - 6"	HM-11	N14-X/A411	N14-X/A411	A14-X/A411	C2-2		
T	209a c	HM-11	10' - 4"	2' - 6"	HM-11	N14-X/A411	N14-X/A411	A14-X/A411	C2-2		
T	210 b	HM-11	10' - 4"	2' - 6"	HM-11	N14-X/A411	N14-X/A411	A14-X/A411	C2-2		

Opening Schedule Door

Building	Door No.	Frame Type	Size Width	Size Height	Size Thickness	Door Material	Door Type	Glass Type	Louver Type	Head	Jamb	Threshold	Hardware Group	Hardware Keying Room No	Fire Rating	Comments
T	133 a	(E) HM	3' - 0"	7' - 0"	1 3/4"	(E) HM	F	-		-	-	-	-			
T	135 a	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F			J14-X/A411	-	-	10R		1 Hr.	
T	135 b	(E) HM	3' - 0"	7' - 0"	1 3/4"	(E) HM	F	-		-	-	-	-			
T	139 a	(E) HM	6' - 0"	7' - 0"	1 3/4"	HM	PF	-		-	-	-	992E			Replace HM Doors and Hardware; prepare frame for new hardware.
T	140 a		4' - 6"	7' - 0"	1 3/4"	HM	F	-		J14-X/A411	E14-X/A411	A4-X/A411	992E			
T	201 a	HM-3	3' - 6"	7' - 0"	1 3/4"	HM	F	FRS-2		J14-X/A411	J11-X/A411 & E14-X/A411	A4-X/A411	99R-E		45 min.	FRS-2 Glass at Transom Window
T	202 a	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F	-		N7-X/A411	J7-X/A411 & E7-X/A411	-	73R		1 Hr.	
T	202a a		3' - 0"	7' - 0"	1 3/4"	HM	HG	-		N7-X/A411	J7-X/A411 & E7-X/A411	-	73			
T	202b a	HM-6	5' - 0"	7' - 0"	1 3/4"	-	-	-	-	J11-X/A412	E11-X/A412	-	*			*Hardware provided by Manufacturer
T	202b d	HM-2	3' - 6"	7' - 0"	1 3/4"	HM	F						99R		45 min.	
T	204 a	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F	-		N7-X/A411	J7-X/A411 & E7-X/A411	-	80R		45 min.	
T	205 a	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F	-		N7-X/A411	J7-X/A411 & E7-X/A411	-	80R		45 min.	
T	205 b	HM-7	2' - 6"	4' - 0"	1 3/4"	HM	F	-		N7-X/A411	E7-X/A411	E4-A/A411	80R		45 min.	
T	206 a	HM-4	6' - 0"	7' - 0"	1 3/4"	HM	PF	FRS-2		N7-X/A411	E7-X/A411	A7-X/A411	992R		1 Hr.	
T	206 b	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F	-		N7-X/A411	E7-X/A411	-	80			
T	206 c	HM-5	10' - 0"	10' - 0"	2"	CD	CD	-		J14-X/A412	E14-X/A412	A11-X/A412	*			ESD-30 *Hardware provided by Manufacturer
T	206 d	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F			N7-X/A411	E7-X/A411	-	99-AA		1 Hr.	
T	206 e	HM-6	8' - 8"	8' - 0"	2"	CD	CD			J11-X/A412	E11-X/A412	-	*		1 Hr.	ERD20 *Hardware provided by Manufacturer
T	206a a	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F	-		N7-X/A411	J7-X/A411 & E7-X/A411	-	80			
T	208 a	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F	-		N7-X/A411	J7-X/A411 & E7-X/A411	-	85R-RR		45 min.	
T	209 a	HM-1	4' - 0"	7' - 0"	1 3/4"	HM	F	-		N7-X/A411	J7-X/A411 & E7-X/A411	-	70-AA			
T	209a a	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F	-		N7-X/A411	J7-X/A411 & E7-X/A411	-	70-AA			
T	210 a	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F	-		N7-X/A411	J7-X/A411 & E7-X/A411	-	70-AA			
T	210a a	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F	-		N7-X/A411	J7-X/A411 & E7-X/A411	-	73-RR			
T	211a a	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F	-		N7-X/A411	J7-X/A411 & E7-X/A411	-	73-RR			
T	212 a	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F	-		N7-X/A411	J7-X/A411 & E7-X/A411	-	85R-RR		45 min.	
T	213 b	HM-3	3' - 6"	7' - 0"	1 3/4"	HM	F	FRS-2		J14-X/A411	E11-X/A411 & E14-X/A411	A4-X/A411	99R-E		45 min.	FRS-2 Glass at Transom Window
T	213 c	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F			N7-X/A411	J7-X/A411 & E7-X/A411	-	99R-AA		1 Hr.	
T	214 a	HM-1	4' - 0"	7' - 0"	1 3/4"	HM	F	-		N7-X/A411	J7-X/A411 & E7-X/A411	-	73R		45 min.	
T	215 a	HM-1	3' - 0"	7' - 0"	1 3/4"	HM	F	-		J14-X/A411	E11-X/A411 & E14-X/A411	A4-X/A411	80R-E		45 min.	

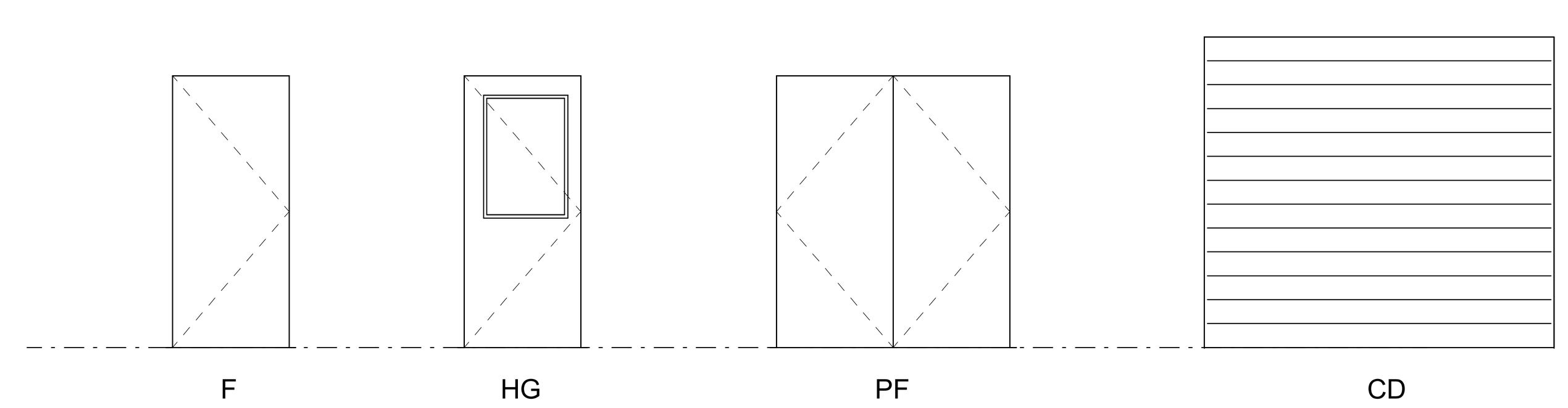
ADDENDUM 02

L1 Opening Schedule, Windows

N.T.S. Refer to F18 for Legend Abbreviations, Notes and Comments

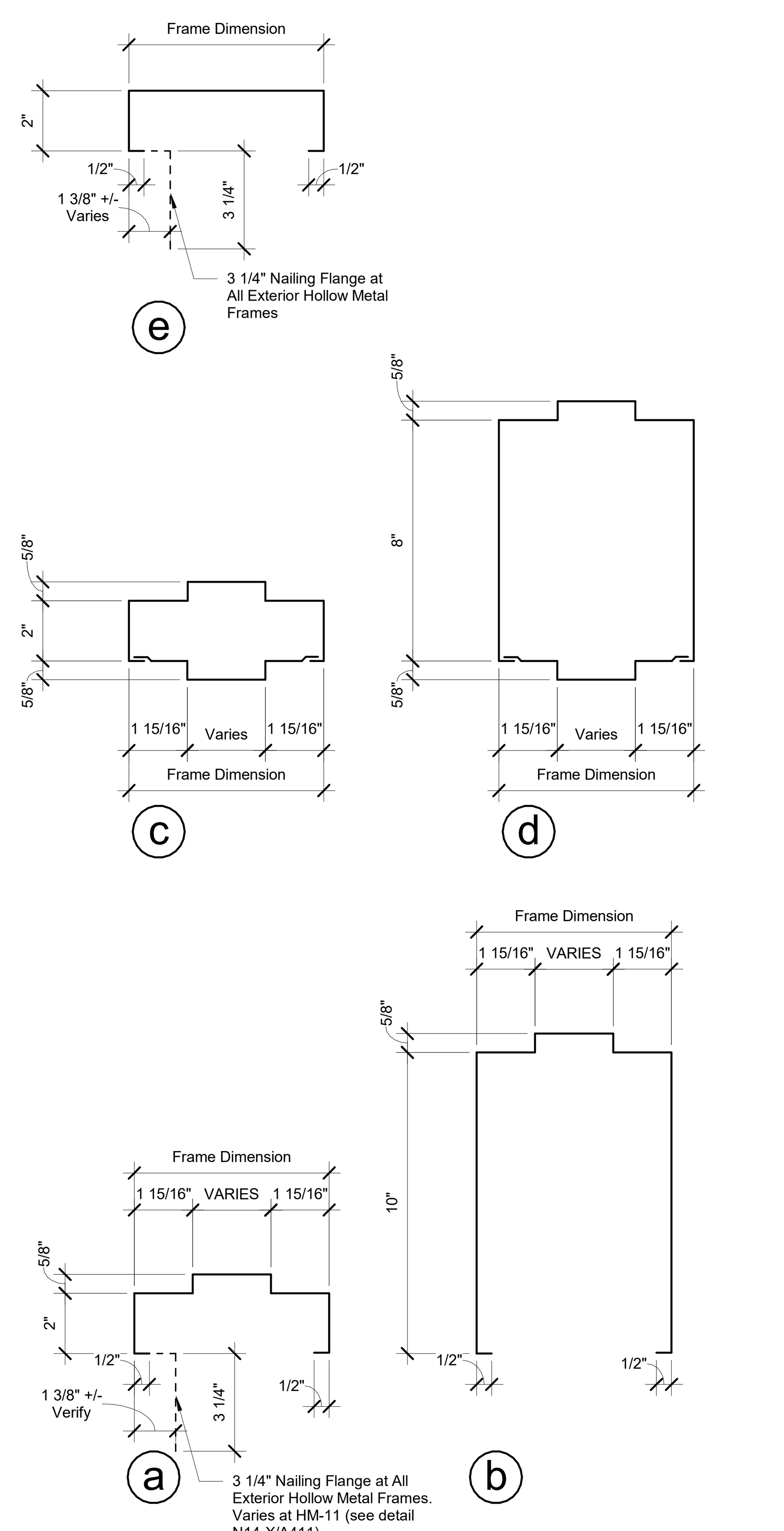
L8 Opening Schedule, Doors

N.T.S. Refer to F18 for Legend Abbreviations, Notes and Comments



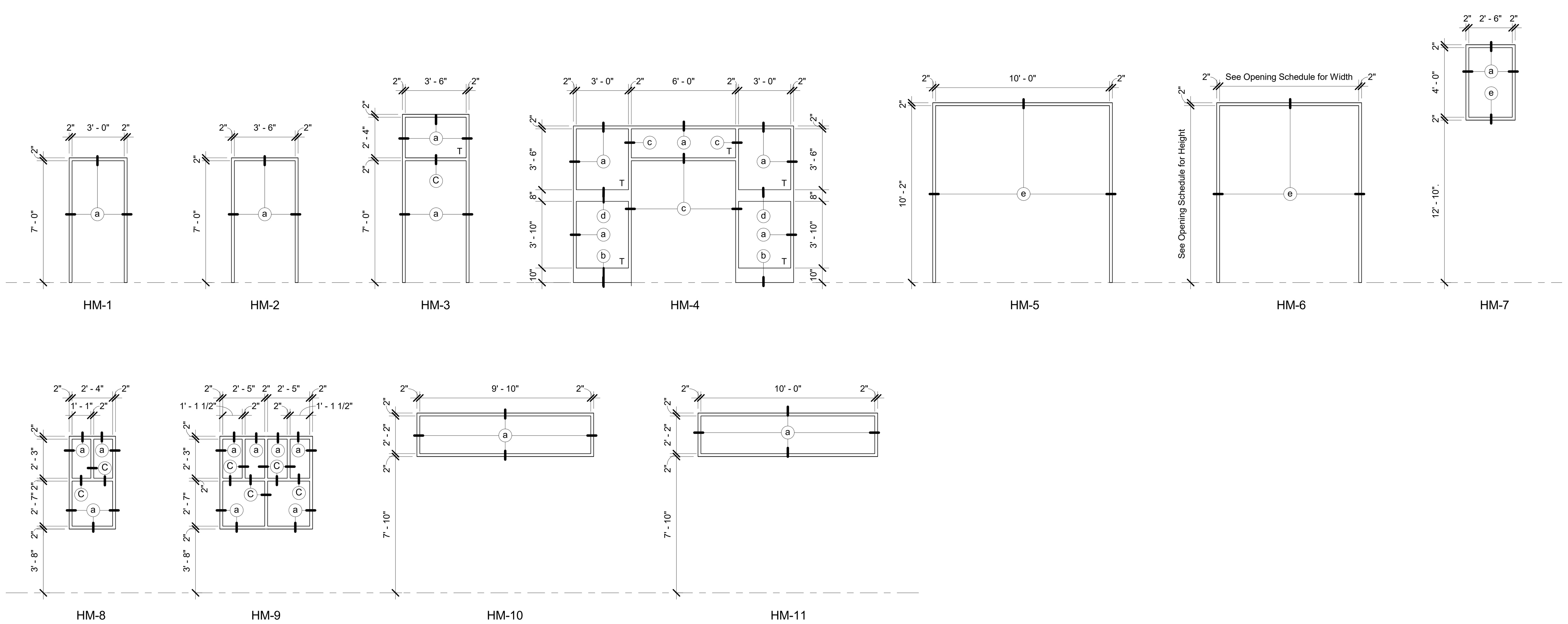
G4 Door Types

N.T.S.



A1 Hollow Metal Frame Details

3" = 1'-0"



A4 Frame Types

N.T.S.

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

ABBREVIATIONS

- HM - Hollow Metal
- (E) - Existing
- SS - Stainless Steel
- CD - COILING DOORS
- GALV - Galvanized Finish
- S&F - Steel and Fabrications
- RO - Rough Opening
- N.T.S. - Not to Scale
- U.N.O. - Unless Noted Otherwise

GENERAL NOTES

1. This schedule is provided for the convenience of the General Contractor. Dimensions indicated are nominal dimensions.
2. The General Contractor is responsible for all coordination and review of drawings and verifying all field conditions and dimensions prior to fabrication. Not all detail references are included in the schedule.
3. Provide metal closure plates for HM Frames at concrete curbs, Typical, Refer to Detail A11 X/A411
4. All details, materials and finishes shall be considered typical for all similar conditions unless noted otherwise.
5. Door Types are shown on sheet X/A401
6. Frame Types are shown on sheets X/A401
7. For material transition at doors see N11 X/A411
8. Exit Doors shall be openable from inside without the use of a key or any special knowledge or effort.
9. For opening Head, Jamb, and Sill framing conditions, see Structural Drawings.
10. At exterior wall locations, provide flashing as noted in Opening Schedule Comments #1, whether noted in the schedule or not.
11. Doors, and sidelites adjacent to doors, containing one or more glazing panels that permit viewing through the panels shall have the bottom of at least one glazed panel located 43 inches (1090 mm) maximum above the floor, This shall not apply if all Glazing Panels are 66" or greater above the Finish Floor.
12. All doors to rooms or spaces with an occupant load of 5 or more shall be equipped with hardware that is lockable from the inside per CBC 1010.2.8.2.

OPENING SCHEDULE COMMENTS

1 See Detail J1 X/A411 for flashing at Hollow Metal Doors: Exterior wall locations.

2 HARDWARE, Exit/Panic Devices, section HARDWARE, where occurs.

3 HARDWARE, Floor Stop, See detail A1 X/A411

4 HARDWARE, Floor Stop and Holder - See detail E1 X/A411

F18 Opening Schedule Legend

No Scale

Clark Intermediate School - Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

TYPICAL INFORMATION
OPENING SCHEDULES

Drawing

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LICENSED ARCHITECT MICHAEL K. FENNACY No. C23724 Ren. 4-30-25 STATE OF CALIFORNIA

Architect

No.	Revision/Submission	Date

Revision

	DesignedDesigner	
Scale: As indicated	Drawn By: Author	X/A401
Project Number: 2215	Checked EChecker	AD02-AX05
Date: 03/27/2023	ReviewerApprover	

8/3/2023 9:42:27 AM
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DSA File No.:
10-27

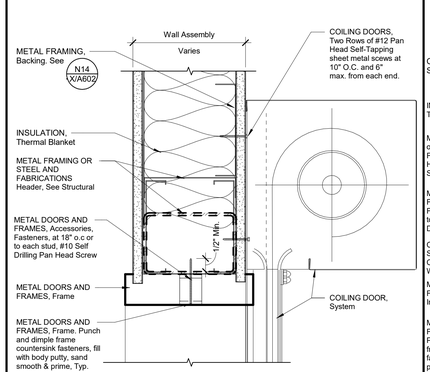
DSA Application No.:
02-121097

Agency Approval

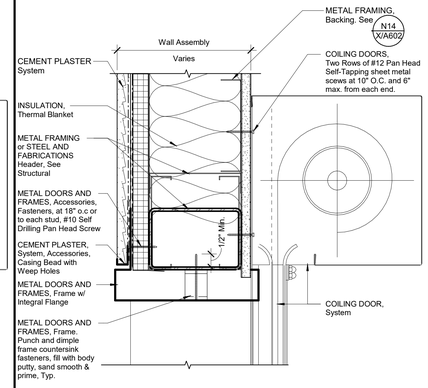
NOTES

1. WALL ASSEMBLY: Refer to Floor Plans, Typical Wall Assembly Schedule and Special Wall Assembly Schedule for wall depth and wall materials. Coordinate the required depth of Metal Frame.
2. WALL FINISHES: Refer to Interior Elevations and Interior Finish Schedules for the Wall Material Finishes and Additional Wall Coverings.
3. FLOOR MATERIAL: Refer to Floor Plans and Interior Finish Schedules for the actual floor material to be installed.
4. GLASS: Refer to Opening Schedules and SPECIFICATION SECTION - GLASS for Glass type and thickness.
5. SHEET METAL: For Information regarding Opening Head, Jamb, and Sill Flashing,refer to SPECIFICATION SECTION - SHEET METAL and Details J1 / X/A411
6. DETAIL REFERENCES: All Detail References are to this sheet, unless otherwise noted.

ADDENDUM 02

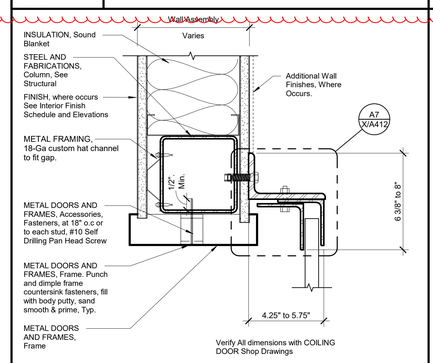


J11 — COILING DOORS, Head at Interior
3" = 1'-0"

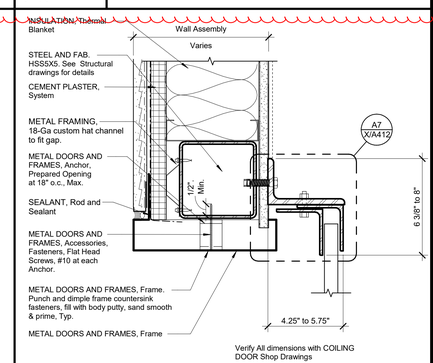


J14 — COILING DOORS, Head at Exterior
3" = 1'-0"

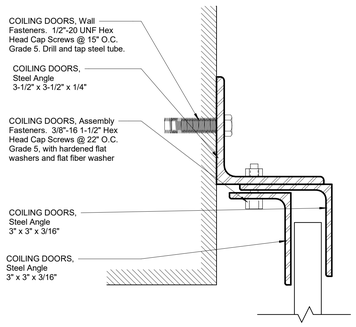
J18 — Exterior Opening Notes
No Scale



E11 — COILING DOORS, Jamb at Interior
3" = 1'-0"

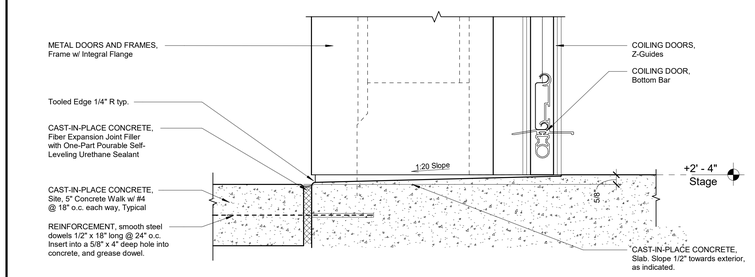


E14 — COILING DOORS, Jamb at Exterior
3" = 1'-0"



FACE OF WALL MOUNT DETAIL

A7 — COILING DOORS, Vertical Rail Details
6" = 1'-0"



A11 — COILING DOORS, Threshold
3" = 1'-0"

Clark Intermediate School - Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
Clovis, CA
Project

TYPICAL INFORMATION
OPENING DETAILS - COILING DOORS
Drawing

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LICENSED ARCHITECT MICHAEL K. FERNANDEZ No. C23724 REG. 4-30-25 STATE OF CALIFORNIA
Architect

No.	Revision/Submission	Date

Revision

Designed By: KT
Drawn By: KT
Checked By: MF
Reviewed By: MF

Scale: As indicated
Project Number: 2215
Date: 03/27/2023
Sheet:

X/A412

AD02-AX06

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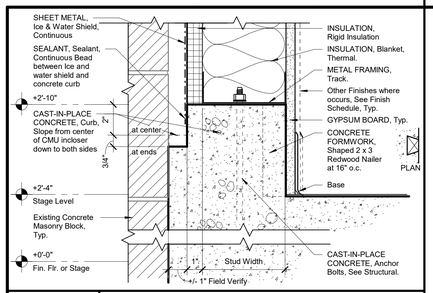
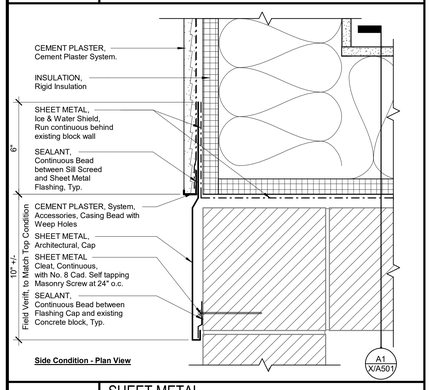


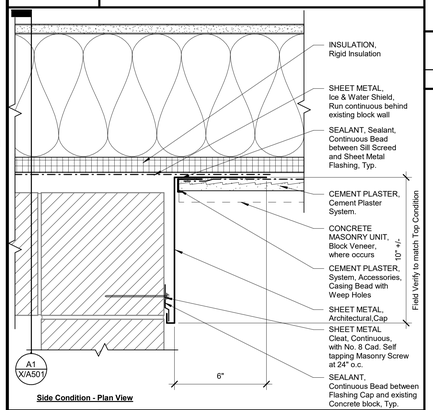
P1 — CAST-IN-PLACE CONCRETE, Exterior Wall Sill at Concrete Curb

3" = 1'-0"



J1 — SHEET METAL, Flashing Cap at existing Concrete Block

3" = 1'-0"



F1 — SHEET METAL, Flashing Cap at existing Concrete Block

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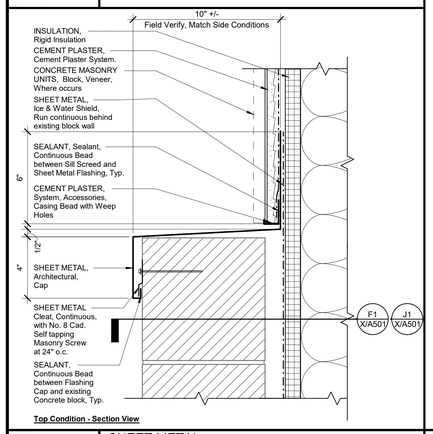
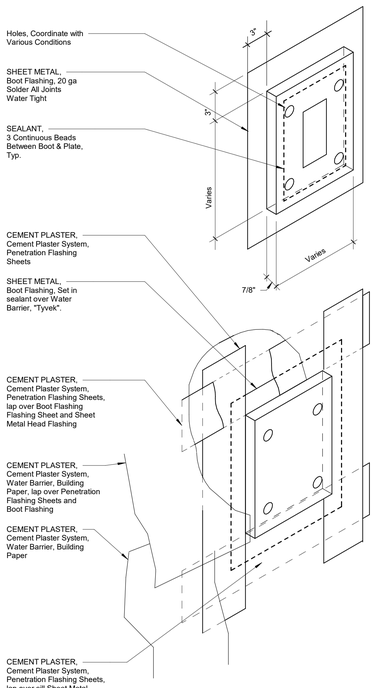


A1 — SHEET METAL, Flashing Cap at existing Concrete Block

3" = 1'-0"



J4 — SHEET METAL, Boot Flashing

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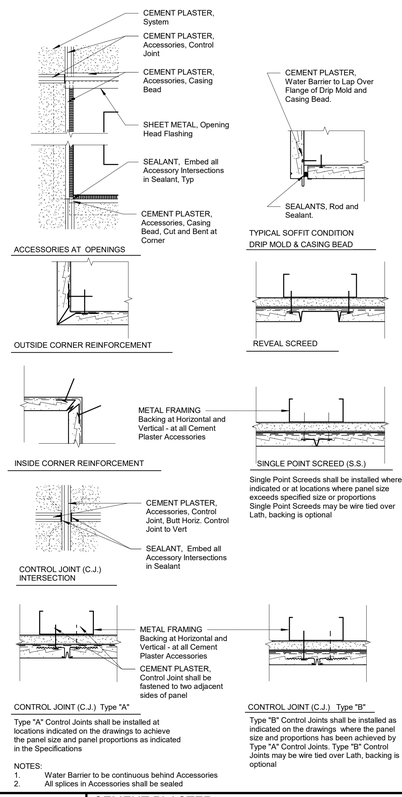
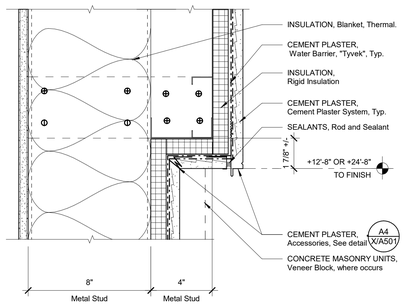


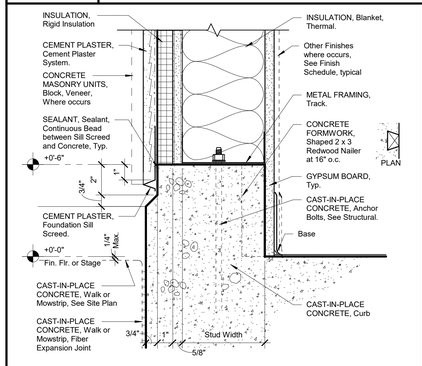
A4 — CEMENT PLASTER , Accessories

3" = 1'-0"



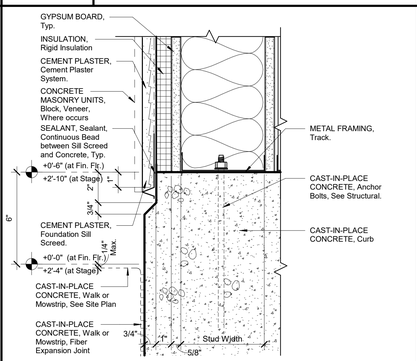
N7 — CEMENT PLASTER, Section at Bottom of Sofit

3" = 1'-0"



J7 — CAST-IN-PLACE CONCRETE, Exterior Wall Sill at Concrete Curb

3" = 1'-0"



E7 — CAST-IN-PLACE CONCRETE, Exterior Wall Sill at Concrete Curb

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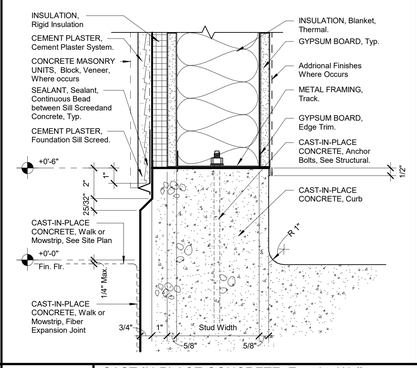

A7 — CAST-IN-PLACE CONCRETE, Exterior Wall Sill at Concrete Curb

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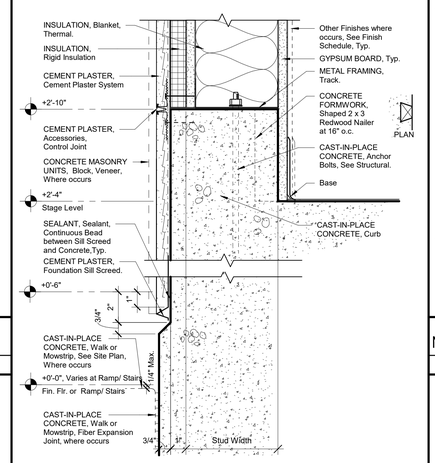
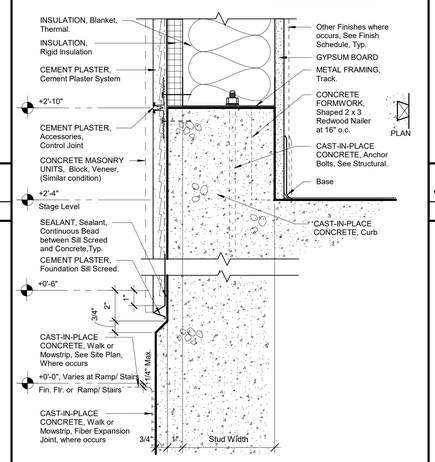


L11 — CAST-IN-PLACE CONCRETE, Exterior Wall Sill at Concrete Curb

3" = 1'-0"

ADDENDUM 02



F11 — CAST-IN-PLACE CONCRETE, Exterior Wall Sill at Concrete Curb

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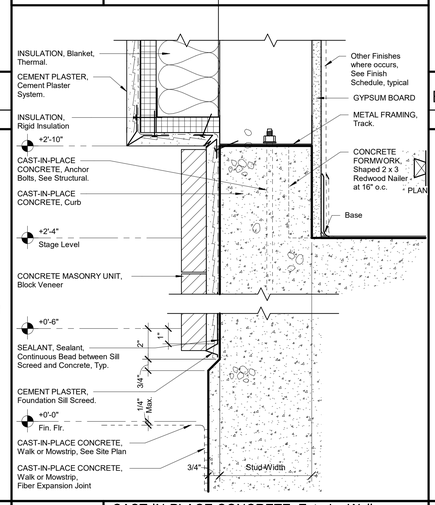

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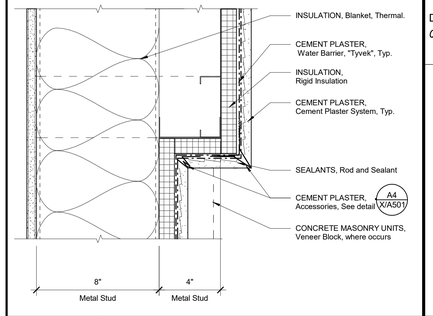
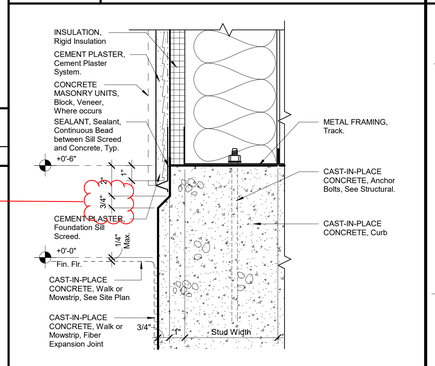


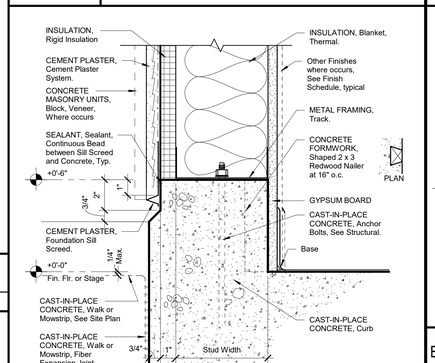
N14 — CEMENT PLASTER, Plan at Furred Wall

3" = 1'-0"



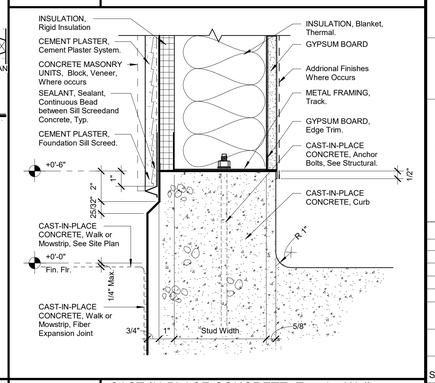
J11 — CAST-IN-PLACE CONCRETE, Exterior Wall Sill at Concrete Curb

3" = 1'-0"



E14 — CAST-IN-PLACE CONCRETE, Exterior Wall Sill at Concrete Curb

3" = 1'-0"



A14 — CAST-IN-PLACE CONCRETE, Exterior Wall Sill at Concrete Curb

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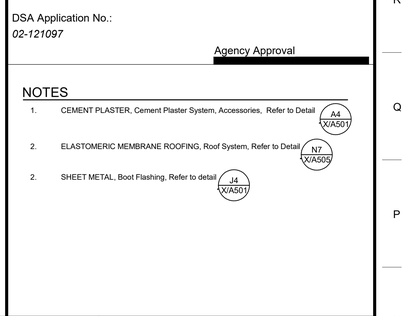
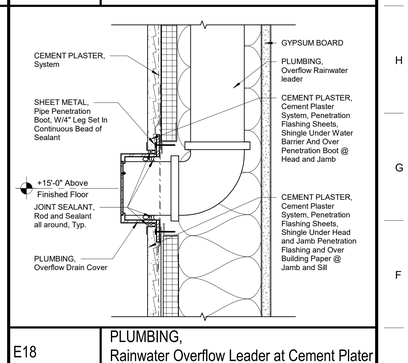


J18 — CEMENT PLASTER, Section at Top of Sofit

3" = 1'-0"



E18 — PLUMBING, Rainwater Overflow Leader at Cement Plater

3" = 1'-0"

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

NOTES

1. CEMENT PLASTER, Cement Plaster System, Accessories, Refer to Detail A4 X/A501
2. ELASTOMERIC MEMBRANE ROOFING, Roof System, Refer to Detail N7 X/A505
2. SHEET METAL, Boot Flashing, Refer to detail J4 X/A501

N18 — Exterior Detail Notes

No Scale

Clark Intermediate School - Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

TYPICAL INFORMATION
EXTERIOR DETAILS- MISCELLANEOUS

Drawing

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LICENSED ARCHITECT ROBERT K. FU No. C23724 Exp. 4-30-25 STATE OF CALIFORNIA

Architect

No.	Revision/Submission	Date

Revision

	Designed Designer	Copyright 2023 Darden Architects
Scale: 3" = 1'-0"	Drawn By: Author	X/A501
Project Number: 2215	Checked Checker	AD02-AX07
Date: 03/27/2023	Reviewed Approver	Sheet

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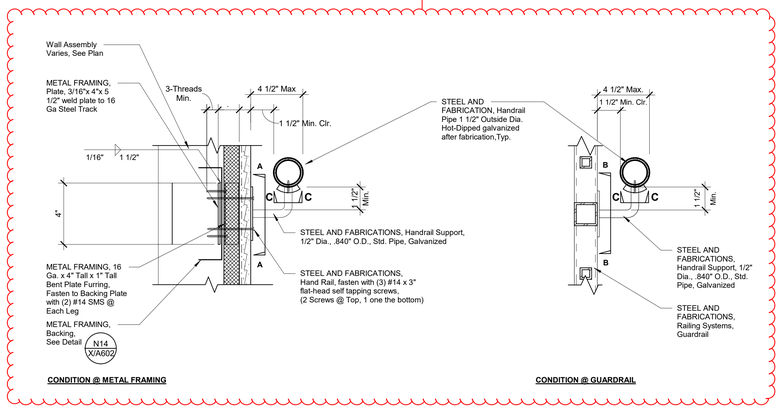
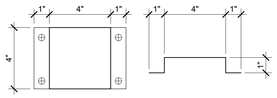
ADDENDUM 02

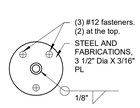


CONDITION @ METAL FRAMING

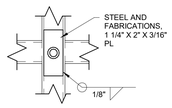
CONDITION @ GUARDRAIL



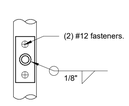
BENT PLATE FURRING (Occurs at Condition @ Metal Framing)



SECTION A-A

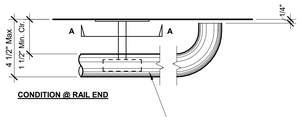


SECTION B-B



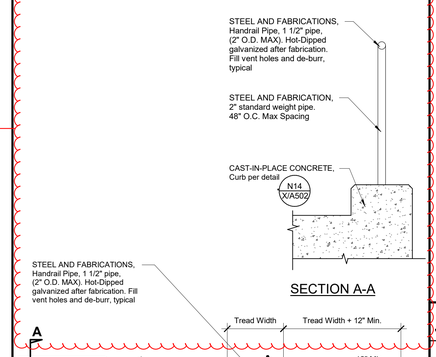
SECTION C-C

NOTE: provide handrail supports at 48" o.c. max., equally spaced



CONDITION @ RAIL END

ADDENDUM 02



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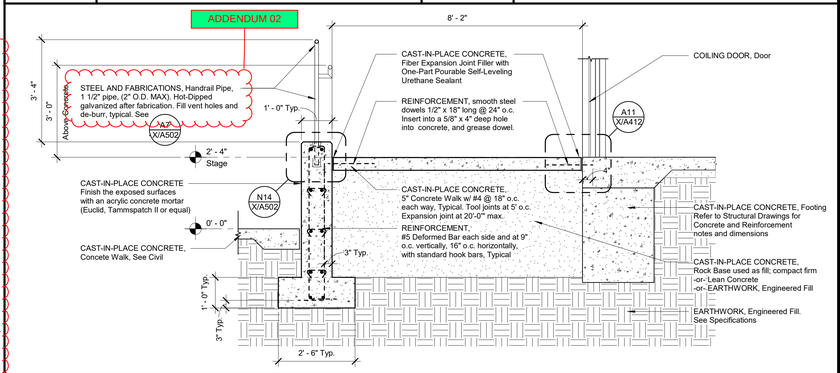
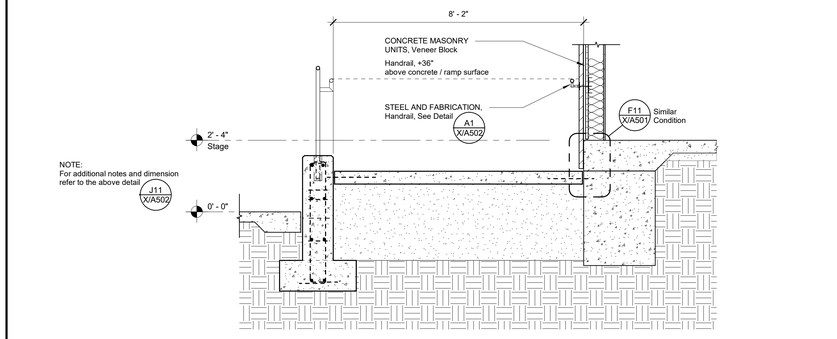
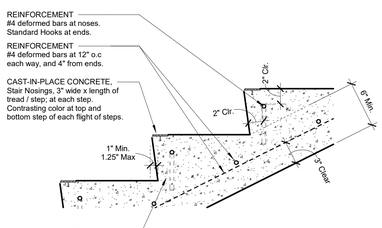
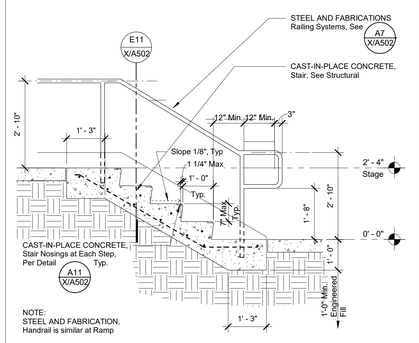
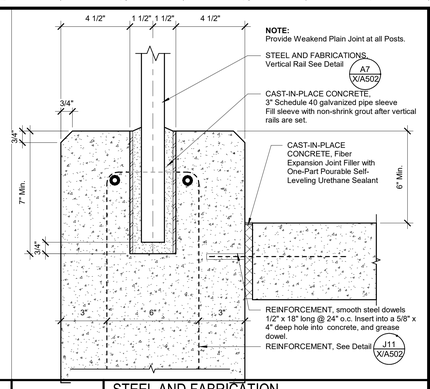








NOTE: STEEL AND FABRICATION, Handrail is similar at Ramp



N11	STEEL AND FABRICATIONS, Handrail Footing	N14	STEEL AND FABRICATION, , Verical Rail Sleeve Detail	N18	Exterior Detail Notes
3" = 1'-0"		3" = 1'-0"		No Scale	

J11	CAST-IN-PLACE CONCRETE, Ramp Landing Section	E11	CAST-IN-PLACE CONCRETE, Stair Section
1/2" = 1'-0"		1/2" = 1'-0"	

A1	STEEL AND FABRICATIONS, Handrail	A7	STEEL AND FABRICATION, Handrail Dimensions	A11	CAST-IN-PLACE CONCRETE, Step Nosing
3" = 1'-0"		1" = 1'-0"		1 1/2" = 1'-0"	

A14	CAST-IN-PLACE CONCRETE and STEEL AND FARCATION, Stair Section
1/2" = 1'-0"	

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

NOTES

1. CEMENT PLASTER, Cement Plaster System, Accessories, Refer to Detail A4 X/A501
2. ELASTOMERIC MEMBRANE ROOFING, Roof System, Refer to Detail N7 X/A502
2. SHEET METAL, Boot Flashing, Refer to detail J4 X/A501

Clark Intermediate School - Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

EXTERIOR DETAILS - STAIR AND RAMP

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LICENSED ARCHITECT MICHAEL K. FERRARO No. C23724 Exp. 4/30/25 STATE OF CALIFORNIA

Architect

No.	Revision/Submission	Date

Revision

	Designed By: AC	Copyright 2023 Darden Architects	
Scale: As indicated	Drawn By: BP		X/A502
Project Number: 2215	Checked By: AC		AD02-AX08
Date: 03/27/2023	Reviewed By: MF		

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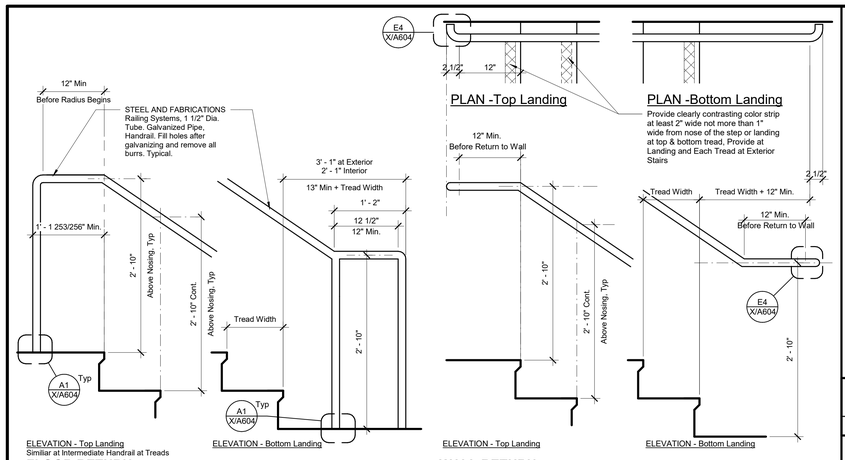
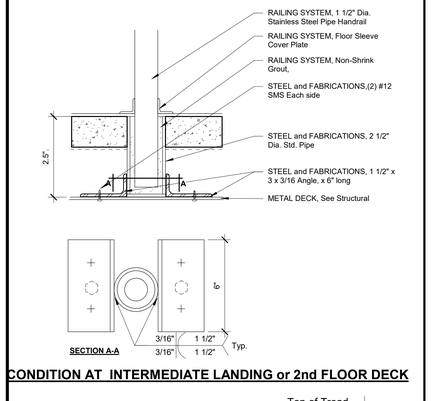
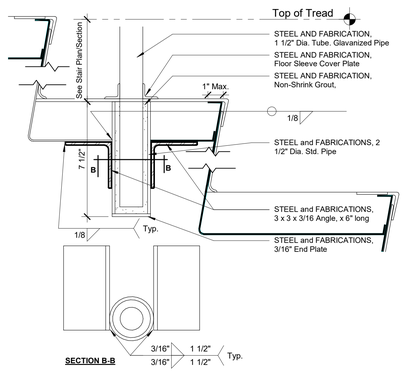


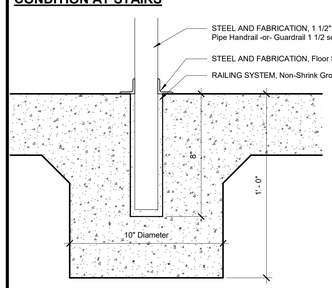
M1	STEEL AND FABRICATIONS Railing System Details
1" = 1'-0"	



CONDITION AT INTERMEDIATE LANDING or 2nd FLOOR DECK

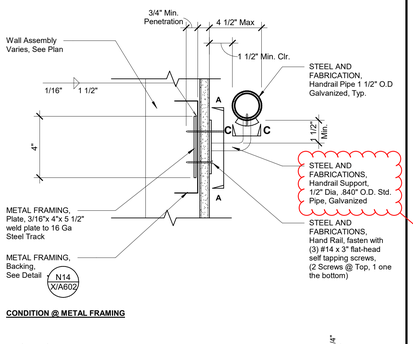


CONDITION AT STAIRS

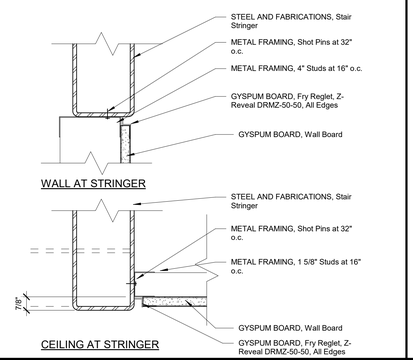


CONDITION AT SLAB ON GRADE

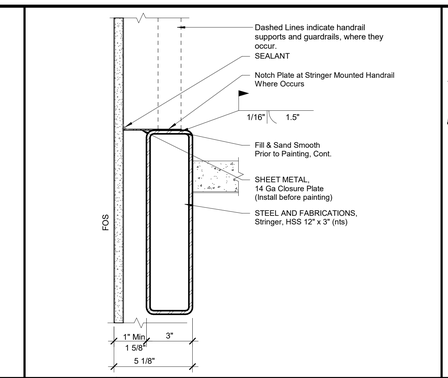
A1	STEEK AND FABRICATION, Handrail Support
3" = 1'-0"	



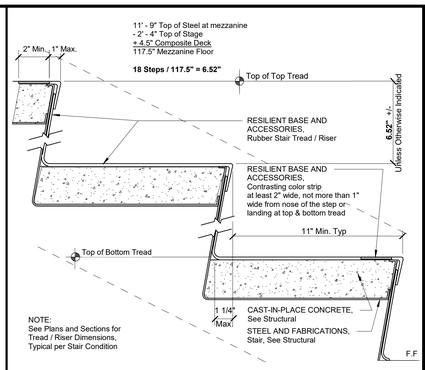
E4	STEEL AND FABRICATION, Handrail at Interior Wall
3" = 1'-0"	



A4	GYPSUM BOARD, Ceiling / Wall Under Stairs
3" = 1'-0"	

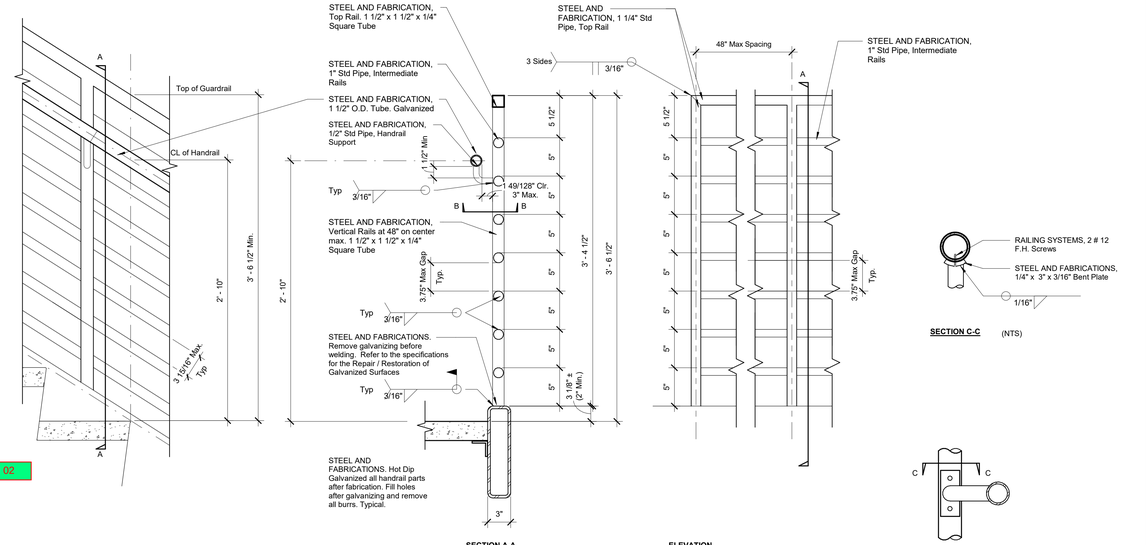


N11	SHEET METAL, Stair Stringer Closure
3" = 1'-0"	

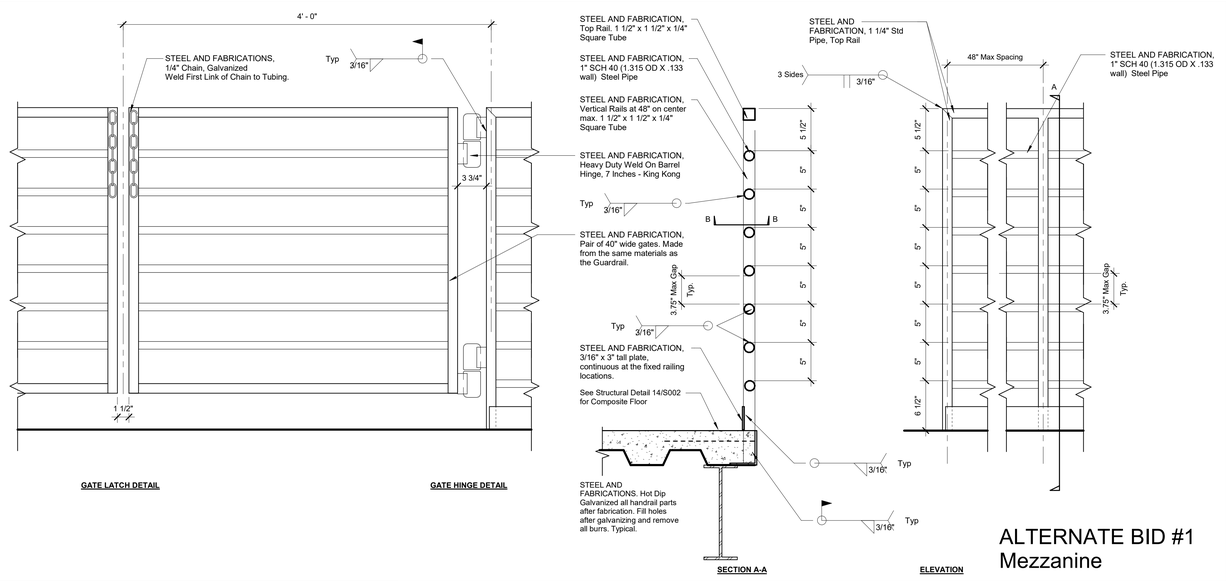


N14	RESILIENT BASE AND ACCESSORIES, Stair Tread & Riser
3" = 1'-0"	

ADDENDUM 02



F8	STEEL AND FABRICATIONS, Exit Stair Guard Rail
1 1/2" = 1'-0"	



ALTERNATE BID #1
Mezzanine

A8	STEEL AND FABRICATIONS, Exit Stair Guard Rail
1 1/2" = 1'-0"	

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

Clark Intermediate School - Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
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Project

TYPICAL INFORMATION
INTERIOR DETAILS - STAIR
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LICENSED ARCHITECT MICHAEL K. FONG No. C23724 Exp. 4-30-25 STATE OF CALIFORNIA
Architect

No.	Revision/Submission	Date

Revision

	Designed Designer	Copyright 2023 Darden Architects
Scale: As indicated	Drawn By: Author	
Project Number: 2215	Checked IChecker	X/A604
Date: 03/27/2023	ReviewedApprover	AD02-AX09

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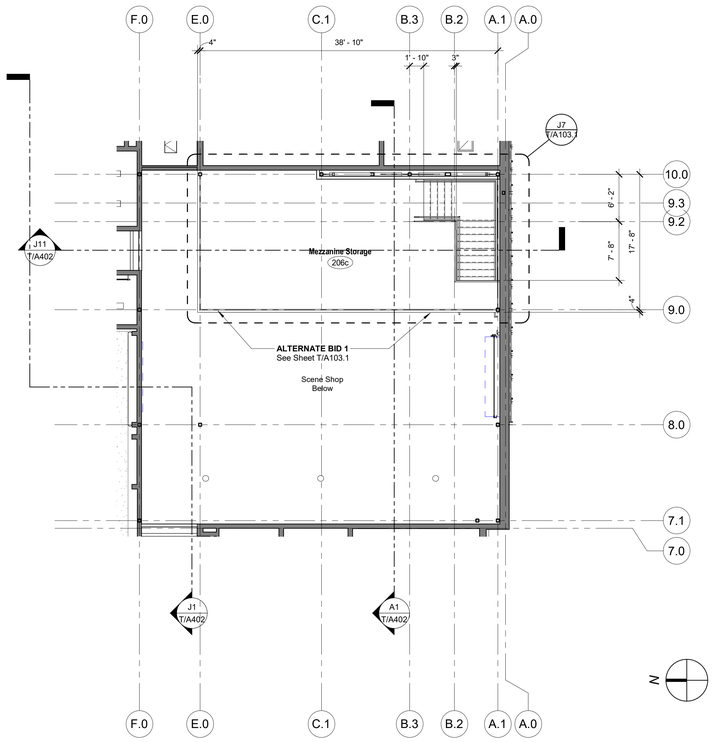
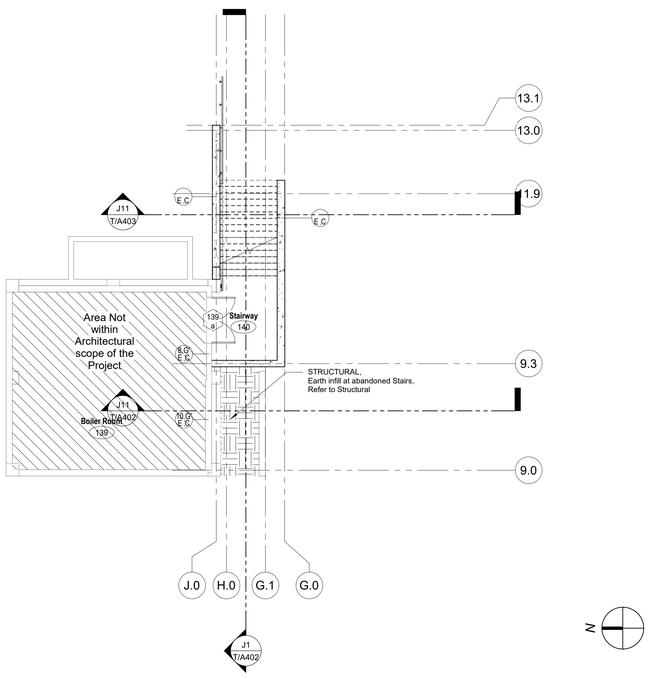


J1 — Floor Plan - Mezzanine Add Alternate 1

1/8" = 1'-0"

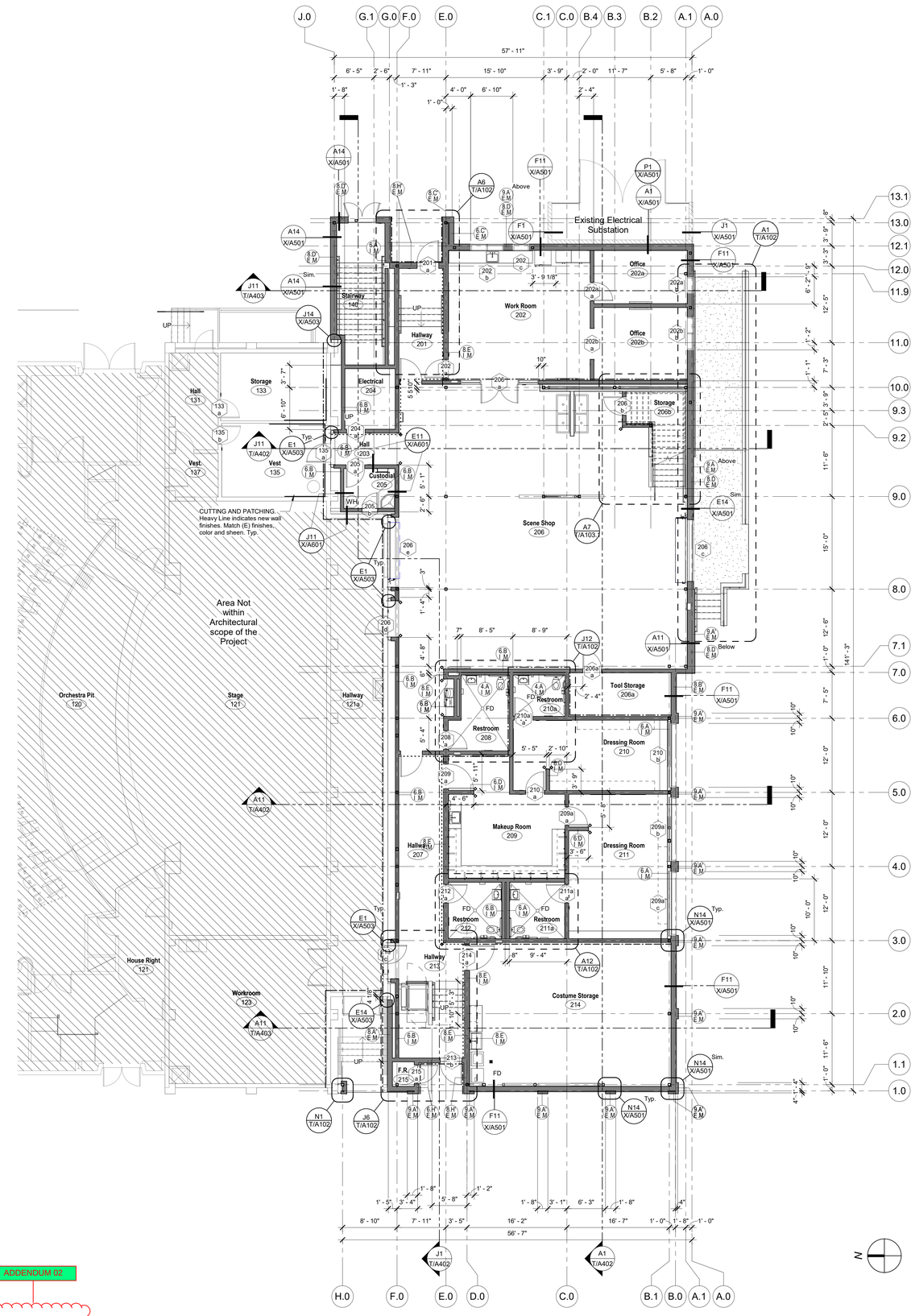
Refer to F18 for Legend Symbols, Abbreviations and Notes



A1 — CD -Floor Plan - Boiler Room

1/8" = 1'-0"

Refer to F18 for Legend Symbols, Abbreviations and Notes



ADDENDUM 02

A7 — Floor Plan

1/8" = 1'-0"

Refer to F18 for Legend Symbols, Abbreviations and Notes

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

SYMBOLS

- Existing Concrete Masonry Unit Wall. 8" wide unless otherwise noted.
- Concrete Wall, or Column. Size as indicated.
- Stud Wall, Studs and Interior Wall materials continuous from floor to underside of floor or roof deck. Studs at 16" o.c. unless otherwise noted. Interior Wall material shall include Batt Insulation, Sound Deadening Board, Plywood Sheathing, Gypsum Board, and Cement Plaster/ Ceramic Tile setting bed where occurs.
- Stud Wall. Studs and finish material continuous from floor to minimum 6" above ceiling. Studs to be braced to underside of roof framing or deck if not required to be continuous to roof framing or deck. Studs at 16"o.c. Unless Otherwise Noted. See Structural for bracing and extent of Structural Sheathing.
- 1 Hr. Corridor Wall - (1 Hr. Fire Resistive Construction, 20 Min. Door Assemblies, 45 Min. Window Assemblies)
- 1 Hr. Fire Barrier - (1 Hr. Fire Resistive Construction, 60 Min. Door Assemblies)
- 1 Hr. Occupancy Separation / Fire Partition - (1 Hr. Fire Resistive Construction, 45 Min. Door Assemblies, 45 Min. Window Assemblies)
- MISCELLANEOUS SPECIALTIES, Corner Guard, Stainless Steel.
- 0 — Reference Grid
- 101 a — Opening Group No. Refer to Door or Window Opening Schedules
- Room name 101 — Room Designation
- 8.B E.M — Wall Assembly Symbols. Refer to Sheet X/A101
- Reference Point

ADDENDUM 02

ABBREVIATIONS

FEC FIRE PROTECTION SPECIALTIES, Fire Extinguisher Cabinet, Type FEC-1, Unless Noted Otherwise. Provide Fire Rated Cabinet at Rated Walls, See J11 X/A602

FF	Face of Finish
FOC	Face of Concrete
FD	Floor Drain
FOM	Face of Masonry
FOS	Face of Stud
FS	Floor Sink
HB	Hose Bib
MO	Masonry Opening
UNO	Unless Noted Otherwise
RO	Rough Opening
VCT	RESILIENT FLOORING, Vinyl Composition Tile
Typ.	Typical
Sim.	Similar
OH	Opposite Hand

NOTES

1. All Exterior Walls shall be Wall Assembly Type 8.B E.M Unless Noted Otherwise.
2. All Interior Walls shall be Wall Assembly Type 6.E I.M Unless Noted Otherwise.
3. All Dimensions are to Face of Stud (FOS) or Center Line, Unless Noted Otherwise.
4. All Elevation Dimensions are above Finish Floor at each floor level, Unless Noted Otherwise.
5. Dimensions noted as "+/-" are nominal.
6. Floor Drains (FD) and Floor Sinks (FS) shall be set -3/4" and a min. of 3'-0" from nearest wall, Unless Noted Otherwise. Slopes to drain shall not exceed 2% in any direction
7. IDENTIFYING DEVICES, For Room Signage refer A11 X/A602 to and Specifications
8. FIRE RESISTIVE ASSEMBLIES:
   a. All Through Penetrations and Wall Membrane Penetrations through Walls of Fire Resistive Construction shall be protected in accordance with their Fire Resistive Ratings.
   b. All Walls of Fire and/or Smoke Resistive Construction Shall Be Permanently Identified with Signs or Stenciling in lettering not less than 3 inches (76 mm) in. height with a minimum 3/8 inch (9.5 mm) stroke in a contrasting color incorporating the following wording: FIRE AND/OR SMOKE BARRIER "#" HOUR RATED, PROTECT ALL OPENINGS. Signs or Stenciling shall be located above ceilings on both sides of the wall, located 15'-0" from ends of wall and at intervals not to exceed 30'-0" horizontally along the wall or partition. Note: "#" indicates the hourly rating of the wall or partition.
9. STEEL AND FABRICATION:
   a. All Structural Steel to be designated [1] hour fire rated.
   b. For exposed structural steel and non-exposed steel beams, Refer to Interior Finish Schedule
   c. For non-exposed structural steel columns, refer to Specification Section FIREPROOFING
10. FIRE RESISTIVE CONSTUCTION: Refer to X/A101 through X/A102 for Typical Details. Refer to to the Regulatory Floor Plans for the Rated Horizontal Assembly location(s).

F18 — Floor Plan Legend

No Scale

Clark Intermediate School - Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

BUILDING T
FLOOR PLAN

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LICENSED ARCHITECT MICHAEL K. FONG No. C23724 Exp. 4-30-25 STATE OF CALIFORNIA

Architect

No.	Revision/Submission	Date

Revision

Designed Designer
Drawn By: Author
Checked Checker
Reviewed Approver

Scale: 1/8" = 1'-0"
Project Number: 2215
Date: 03/27/2023

T/A101
AD02-AX10

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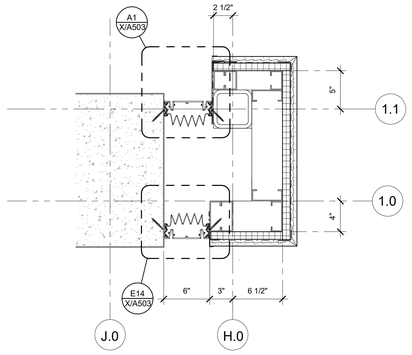
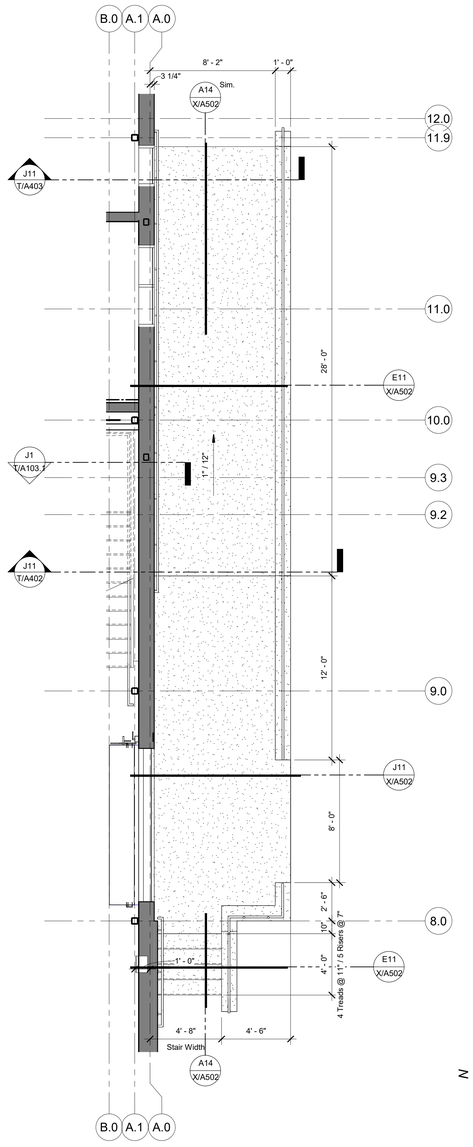
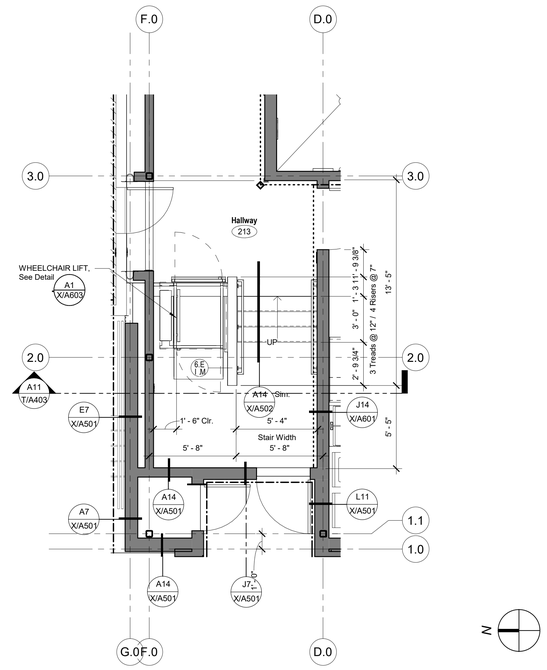


N1 — Enlarged Plan at Expansion Joint
1 1/2" = 1'-0"

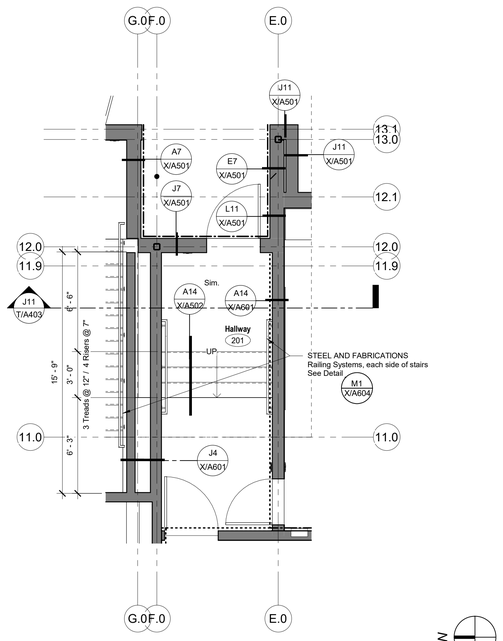


A1 — Floor Plan
1/4" = 1'-0"

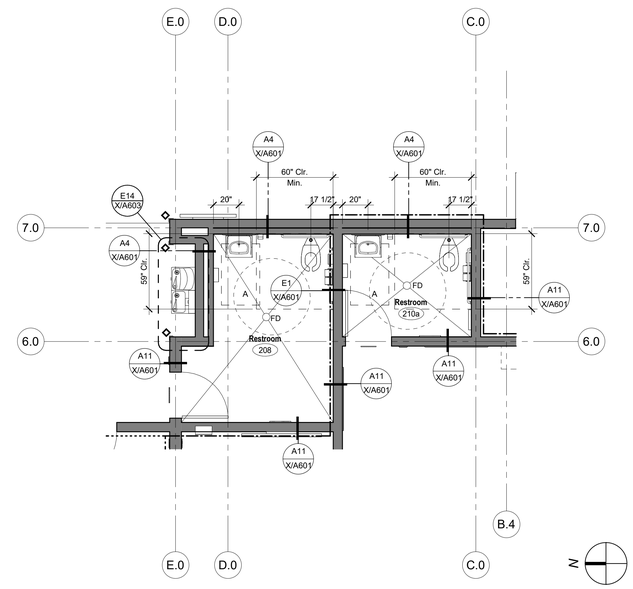


Note:
Platform Lift Design and Construction shall comply with
CBC 11B-410 & ASME A18.1

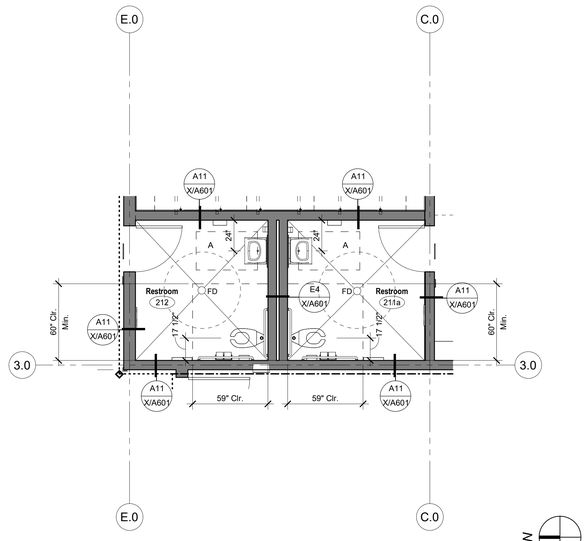
J6 — Floor Plan
1/4" = 1'-0"



A6 — Floor Plan
1/4" = 1'-0"



J12 — Floor Plan
1/4" = 1'-0"



A12 — Floor Plan
1/4" = 1'-0"

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

SYMBOLS

- Existing Concrete Masonry Unit Wall. 8" wide unless otherwise noted.
- Concrete Wall, or Column. Size as indicated.
- Stud Wall, Studs and Interior Wall materials continuous from floor to underside of floor or roof deck. Studs at 16" o.c. unless otherwise noted. Interior Wall material shall include Batt Insulation, Sound Deadening Board, Plywood Sheathing, Gypsum Board, and Cement Plaster/ Ceramic Tile setting bed where occurs.
- Stud Wall. Studs and finish material continuous from floor to minimum 6" above ceiling. Studs to be braced to underside of roof framing or deck if not required to be continuous to roof framing or deck. Studs at 16"o.c. Unless Otherwise Noted. See Structural for bracing and extent of Structural Sheathing.
- 1 Hr. Corridor Wall - (1 Hr. Fire Resistive Construction, 20 Min. Door Assemblies, 45 Min. Window Assemblies)
- 1 Hr. Fire Barrier - (1 Hr. Fire Resistive Construction, 60 Min. Door Assemblies)
- 1 Hr. Occupancy Separation / Fire Partition - (1 Hr. Fire Resistive Construction, 45 Min. Door Assemblies, 45 Min. Window Assemblies)
- MISCELLANEOUS SPECIALTIES, Corner Guard, Stainless Steel.
- 0 — Reference Grid
- 101 a — Opening Group No. Refer to Door or Window Opening Schedules
- Room name 101 — Room Designation
- # # # — Wall Assembly Symbols. Refer to Sheet X/A101
- Reference Point

ADDENDUM 02

ABBREVIATIONS

FEC	FIRE PROTECTION SPECIALTIES, Fire Extinguisher Cabinet, Type FEC-1, Unless Noted Otherwise. Provide Fire Rated Cabinet at Rated Walls, See J11 X/A602
FF	Face of Finish
FOC	Face of Concrete
FD	Floor Drain
FOM	Face of Masonry
FOS	Face of Stud
FS	Floor Sink
HB	Hose Bib
MO	Masonry Opening
UNO	Unless Noted Otherwise
RO	Rough Opening
VCT	RESILIENT FLOORING, Vinyl Composition Tile
Typ.	Typical
Sim.	Similar
OH	Opposite Hand

NOTES

1. All Exterior Walls shall be Wall Assembly Type 8.B' E.M Unless Noted Otherwise.
2. All Interior Walls shall be Wall Assembly Type 6.E I.M Unless Noted Otherwise.
3. All Dimensions are to Face of Stud (FOS) or Center Line, Unless Noted Otherwise.
4. All Elevation Dimensions are above Finish Floor at each floor level, Unless Noted Otherwise.
5. Dimensions noted as "+/-" are nominal.
6. Floor Drains (FD) and Floor Sinks (FS) shall be set -3/4" and a min. of 3'-0" from nearest wall, Unless Noted Otherwise. Slopes to drain shall not exceed 2% in any direction
7. IDENTIFYING DEVICES, For Room Signage refer A11 X/A602 to and Specifications
8. FIRE RESISTIVE ASSEMBLIES:
   a. All Through Penetrations and Wall Membrane Penetrations through Walls of Fire Resistive Construction shall be protected in accordance with their Fire Resistive Ratings.
   b. All Walls of Fire and/or Smoke Resistive Construction Shall Be Permanently Identified with Signs or Stenciling in lettering not less than 3 inches (76 mm) in. height with a minimum 3/8 inch (9.5 mm) stroke in a contrasting color incorporating the following wording: FIRE AND/OR SMOKE BARRIER "#" HOUR RATED, PROTECT ALL OPENINGS. Signs or Stenciling shall be located above ceilings on both sides of the wall, located 15'-0" from ends of wall and at intervals not to exceed 30'-0" horizontally along the wall or partition. Note: "#" indicates the hourly rating of the wall or partition.
9. STEEL AND FABRICATION:
   a. All Structural Steel to be designated [1] hour fire rated.
   b. For exposed structural steel and non-exposed steel beams, Refer to Interior Finish Schedule
   c. For non-exposed structural steel columns, refer to Specification Section FIREPROOFING
10. FIRE RESISTIVE CONSTUCTION: Refer to X/A101 through X/A102 for Typical Details. Refer to to the Regulatory Floor Plans for the Rated Horizontal Assembly location(s).

F18 — Floor Plan Legend
No Scale

Clark Intermediate School - Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
Clovis, CA
Project

ENLARGED FLOOR PLAN
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LICENSED ARCHITECT MICHAEL K. FENN No. C23724 Exp. 4-30-25 STATE OF CALIFORNIA
Architect

No.	Revision/Submission	Date

Revision

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Scale: As indicated | Drawn By: Author
Project Number: 2215 | Checked IChecker
Date: 03/27/2023 | ReviewedApprover

T/A102
AD02-AX11

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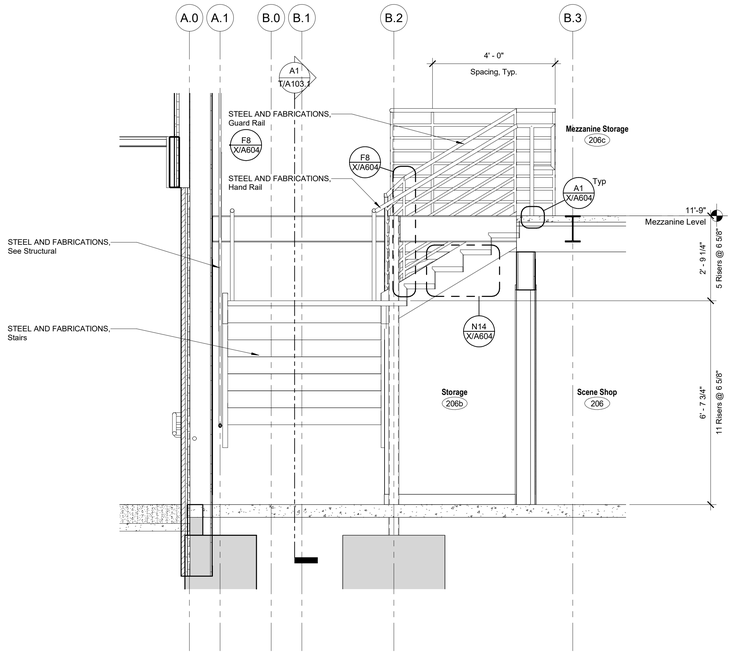
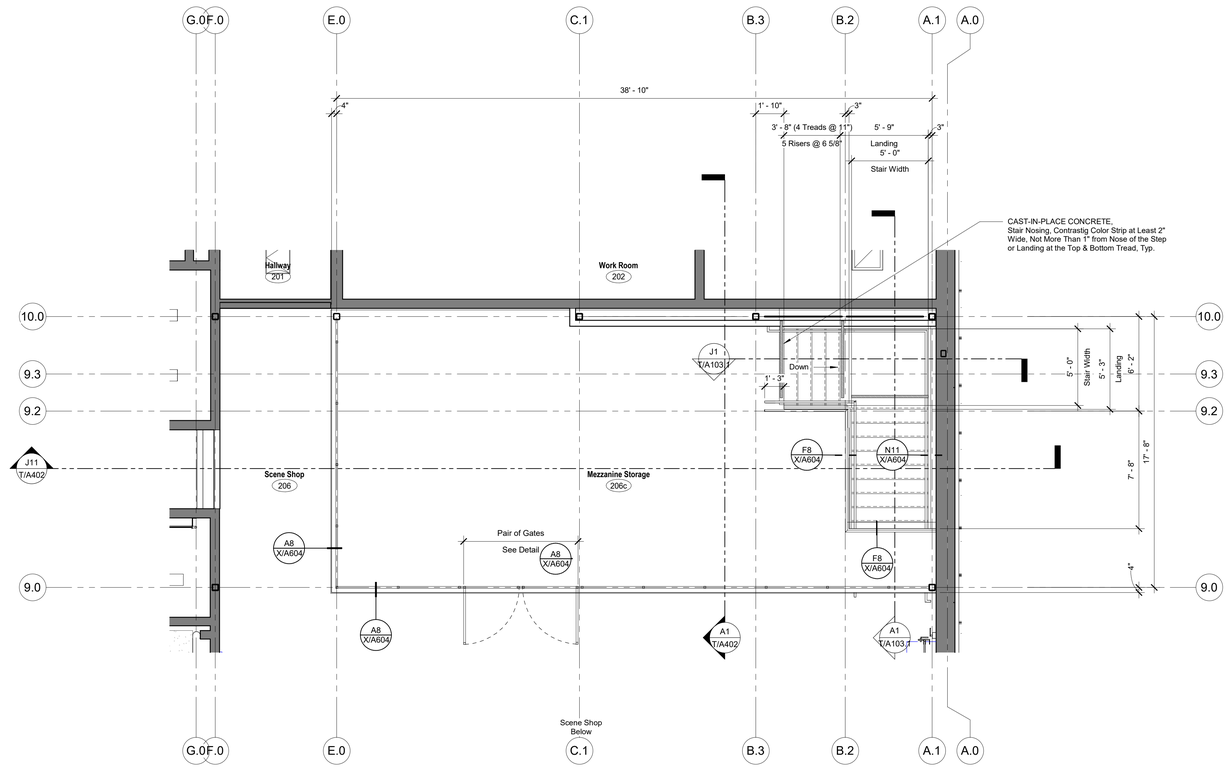


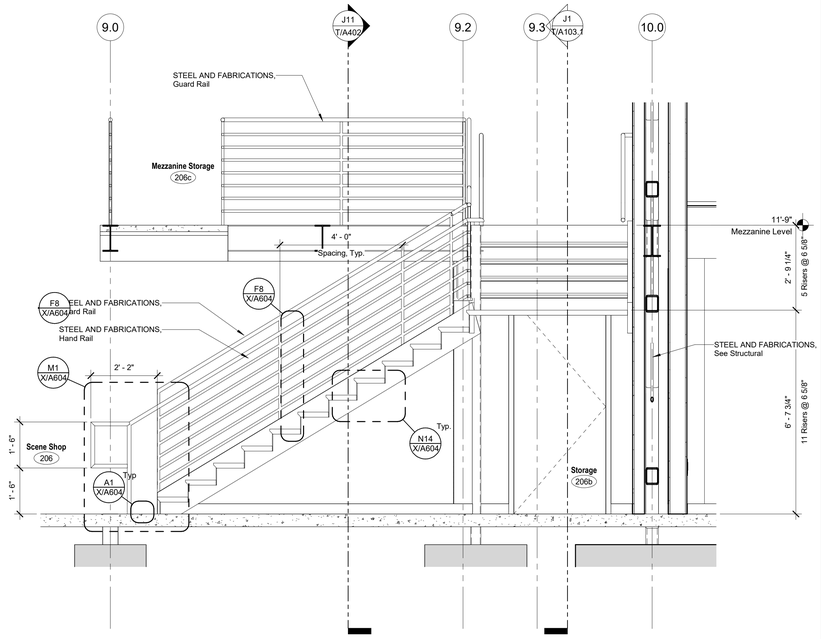
J1
1/2" = 1'-0"

Stair Section



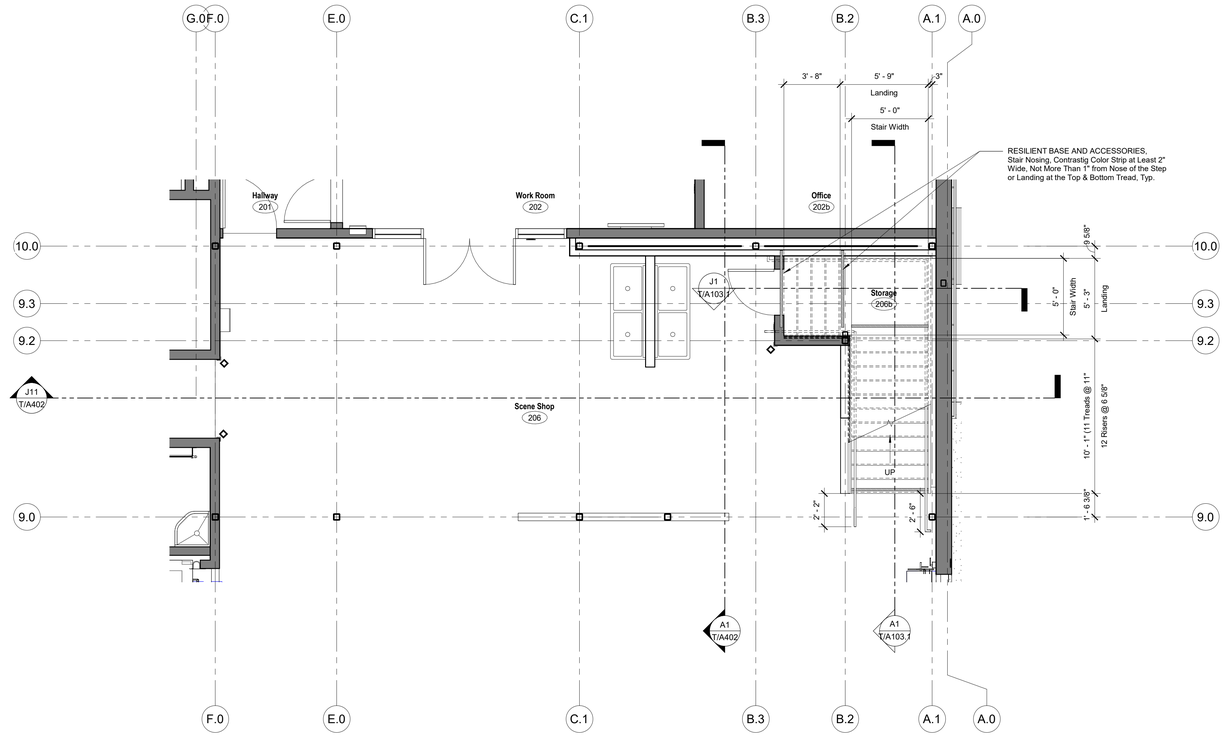
A7
1/4" = 1'-0"

Floor Plan - Mezzanine
Add Alternate 1



A1
1/2" = 1'-0"

Stair Section



A7
1/4" = 1'-0"

Floor Plan

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

SYMBOLS

- Existing Concrete Masonry Unit Wall. 8" wide unless otherwise noted.
- Concrete Wall, or Column. Size as indicated.
- Stud Wall, Studs and Interior Wall materials continuous from floor to underside of floor or roof deck. Studs at 16" o.c. unless otherwise noted. Interior Wall material shall include Batt Insulation, Sound Deadening Board, Plywood Sheathing, Gypsum Board, and Cement Plaster/ Ceramic Tile setting bed where occurs.
- Stud Wall. Studs and finish material continuous from floor to minimum 6" above ceiling. Studs to be braced to underside of roof framing or deck if not required to be continuous to roof framing or deck. Studs at 16"o.c. Unless Otherwise Noted. See Structural for bracing and extent of Structural Sheathing.
- 1 Hr. Corridor Wall - (1 Hr. Fire Resistive Construction, 20 Min. Door Assemblies, 45 Min. Window Assemblies)
- 1 Hr. Fire Barrier - (1 Hr. Fire Resistive Construction, 60 Min. Door Assemblies)
- 1 Hr. Occupancy Separation / Fire Partition - (1 Hr. Fire Resistive ~~Construction, 45 Min. Door Assemblies, 45 Min. Window Assemblies~~)
- MISCELLANEOUS SPECIALTIES, Corner Guard, Stainless Steel.
- 0 — Reference Grid
- 101 / a — Opening Group No. Refer to Door or Window Opening Schedules
- Room name / 101 — Room Designation
- F # / # — Wall Assembly Symbols. Refer to Sheet X/A101
- Reference Point

ADDENDUM 02

ABBREVIATIONS

FEC	FIRE PROTECTION SPECIALTIES, Fire Extinguisher Cabinet, Type FEC-1, Unless Noted Otherwise. Provide Fire Rated Cabinet at Rated Walls, See J11 X/A602
FF	Face of Finish
FOC	Face of Concrete
FD	Floor Drain
FOM	Face of Masonry
FOS	Face of Stud
FS	Floor Sink
HB	Hose Bib
MO	Masonry Opening
UNO	Unless Noted Otherwise
RO	Rough Opening
VCT	RESILIENT FLOORING, Vinyl Composition Tile
Typ.	Typical
Sim.	Similar
OH	Opposite Hand

NOTES

1. All Exterior Walls shall be Wall Assembly Type 8.8' E.M Unless Noted Otherwise.
2. All Interior Walls shall be Wall Assembly Type 6.E I.M Unless Noted Otherwise.
3. All Dimensions are to Face of Stud (FOS) or Center Line, Unless Noted Otherwise.
4. All Elevation Dimensions are above Finish Floor at each floor level, Unless Noted Otherwise.
5. Dimensions noted as "+/-" are nominal.
6. Floor Drains (FD) and Floor Sinks (FS) shall be set -3/4" and a min. of 3'-0" from nearest wall, Unless Noted Otherwise. Slopes to drain shall not exceed 2% in any direction
7. IDENTIFYING DEVICES, For Room Signage refer A11 X/A602 to and Specifications
8. FIRE RESISTIVE ASSEMBLIES:
   a. All Through Penetrations and Wall Membrane Penetrations through Walls of Fire Resistive Construction shall be protected in accordance with their Fire Resistive Ratings.
   b. All Walls of Fire and/or Smoke Resistive Construction Shall Be Permanently Identified with Signs or Stenciling in lettering not less than 3 inches (76 mm) in. height with a minimum 3/8 inch (9.5 mm) stroke in a contrasting color incorporating the following wording: FIRE AND/OR SMOKE BARRIER "#" HOUR RATED, PROTECT ALL OPENINGS, Signs or Stenciling shall be located above ceilings on both sides of the wall, located 15'-0" from ends of wall and at intervals not to exceed 30'-0" horizontally along the wall or partition. Note: "#" indicates the hourly rating of the wall or partition.
9. STEEL AND FABRICATION:
   a. All Structural Steel to be designated [1] hour fire rated.
   b. For exposed structural steel and non-exposed steel beams, Refer to Interior Finish Schedule
   c. For non-exposed structural steel columns, refer to Specification Section FIREPROOFING
10. FIRE RESISTIVE CONSTUCTION: Refer to X/A101 through X/A102 for Typical Details. Refer to to the Regulatory Floor Plans for the Rated Horizontal Assembly location(s).

F18 — Floor Plan Legend

No Scale

A/A101_Floor Plan Legend

1/8" = 1'-0"

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Clovis, CA
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Architect

No.	Revision/Submission	Date

Revision

Designed Designer
Drawn By: Author
Checked IChecker
Reviewed Approver

Scale: As indicated
Project Number: 2215
Date: 03/27/2023

T/A103.1
AD02-AX12

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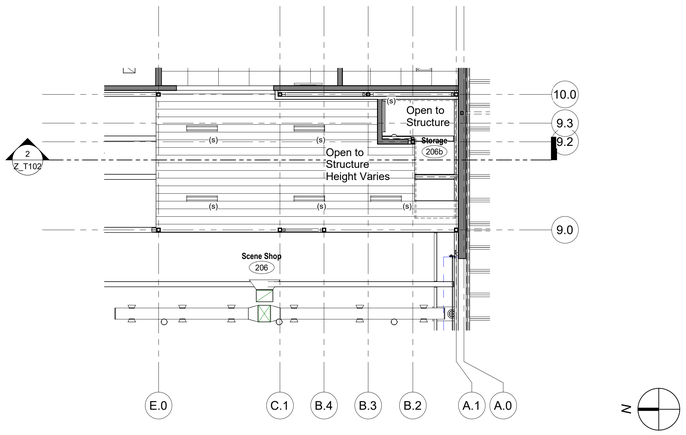
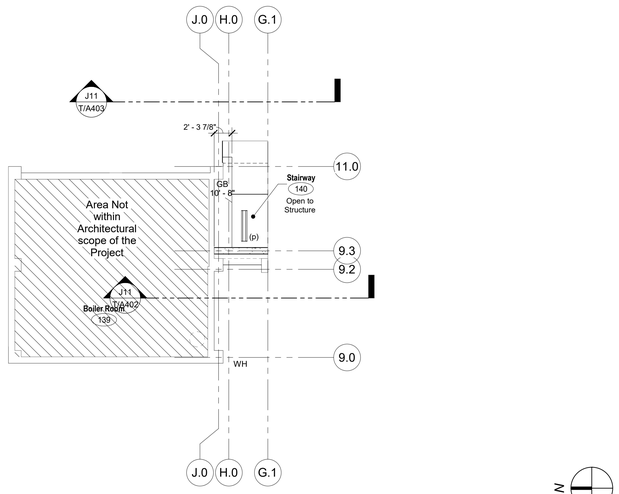


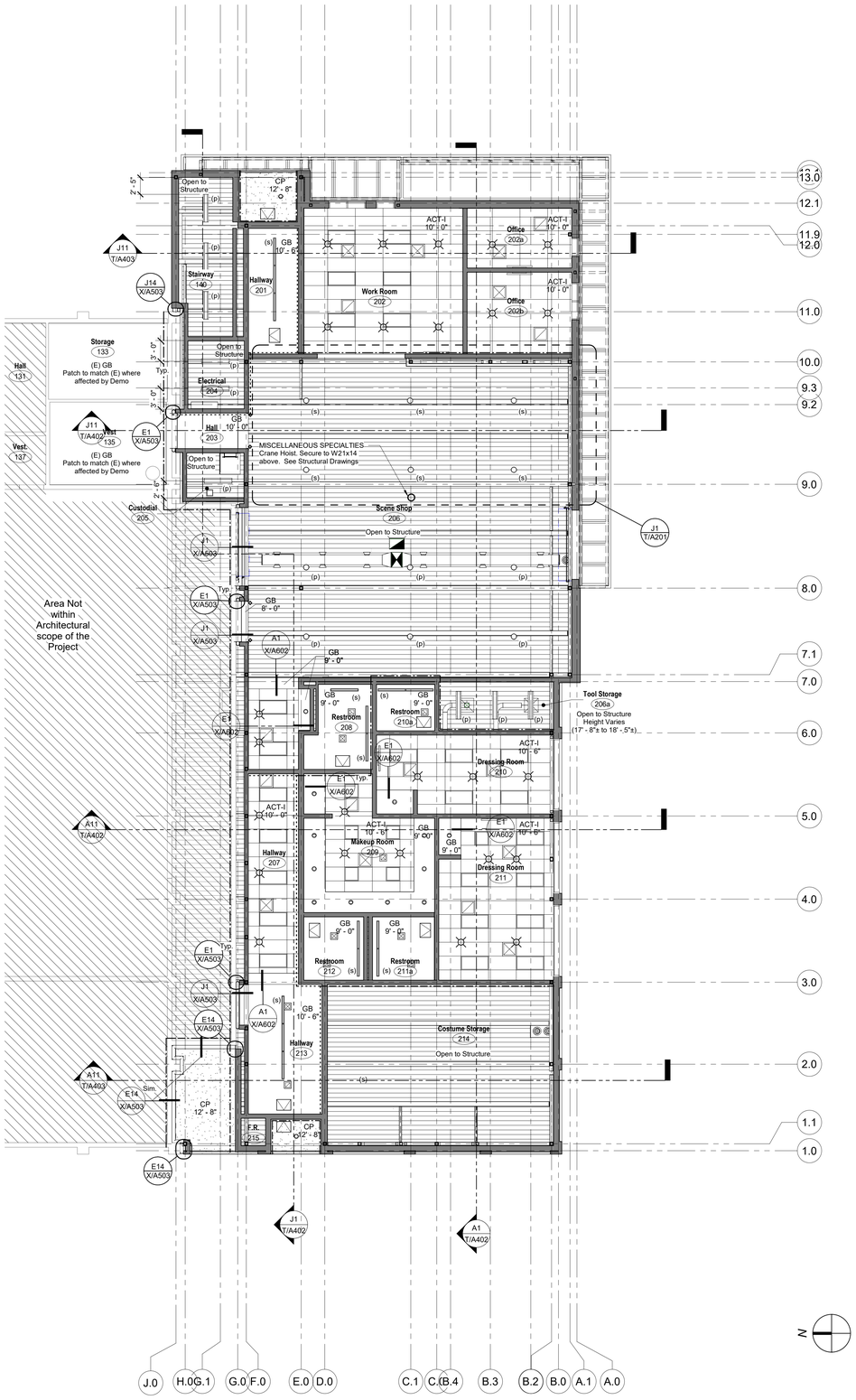
J1 — Reflected Ceiling Plan - Below Mezzanine Add Alternate 1

1/8" = 1'-0"



A1 — Boiler Rm

1/8" = 1'-0"



A7 — Reflected Ceiling Plan

1/8" = 1'-0"

Refer to F18 for Legend Symbols, Abbreviations and Notes

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

SYMBOLS

- MECHANICAL, Air Supply Grill
- MECHANICAL, Air Return Grill
- MECHANICAL, Strip Grill
- MECHANICAL, Exhaust Fan
- FIRE PROTECTION, Fire Sprinkler Head
- OD — PLUMBING, Overflow Drain
- ACOUSTICAL CEILINGS, Suspended Ceiling Compression Strut/ Splay Wire location
- (RA) — ROOF ACCESSORIES, Roof Hatch
- ELECTRICAL, Light Fixture, Recessed. Unless Noted Otherwise. (p) = Pendant Mounted (s) = Surface Mounted
- HD — ELECTRICAL, Fire Alarm Device, Heat Detector
- SD — ELECTRICAL, Fire Alarm Device, Smoke Detector
- S — ELECTRICAL, Speaker
- CEMENT PLASTER, Cement Plaster System
- GYPSUM BOARD, Refer to Interior Finish Schedule
- ACOUSTICAL CEILINGS, Refer to Plan for Type.
- ACOUSTICAL CEILINGS, Refer to Plan for Type.
- Metal Deck
- PLUMBING, Roof Drain, Refer to Plumbing.
- ACCESS DOORS AND FRAMES, Access Doors, Ceiling (20" X 30"), UNO
- 1 Hr. Corridor Wall - (1 Hr. Fire Resistive Construction, 20 Min. Door Assemblies, 45 Min. Window Assemblies)
- 1 Hr. Fire Barrier - (1 Hr. Fire Resistive Construction, 60 Min. Door Assemblies)
- 1 Hr. Occupancy Separation / Fire Partition - (1 Hr. Fire Resistive Construction, 45 Min. Door Assemblies, 45 Min. Window Assemblies)
- Reference Point

ABBREVIATIONS

ACT	ACOUSTICAL CEILINGS, Tile, Suspended, Unless Noted Otherwise.
CLG	Ceiling
(E)	Existing
GB	GYPSUM BOARD, Type 'X', Unless Noted Otherwise.
GLB	GLUE-LAMINATED CONSTRUCTION, Beam
HT	Height
MD	METAL DECK
TYP	Typical
SIM	Similar
OH	Opposite hand
DS	Downspout
OD	Overflow Drain
UNO	Unless Noted Otherwise

NOTES

1. ACOUSTICAL CEILINGS, For typical suspended ceiling support and bracing, Refer to A11 X/A605 A7 X/A605
2. Gypsum Board Ceilings Noted As "CLG HT Varies", Gypsum Board is attached to bottom side of framing/ joists, UNO
3. Ceiling Heights indicated are above Finish Floor at each floor level, UNO.
4. Where Fire Sprinklers occur at Acoustic Tile, Sprinkler Heads shall be centered in the Tile.
5. Not all fire Sprinkler Head locations are shown to provide code required coverage. But locations shown are intended to convey design intent. Coordinate with FIRE PROTECTION.
6. See Structural for framing of soffits and ceilings
7. Single Lights or Single Rows of Lights at Soffits/ Ceilings shall be centered, UNO.

E18 — Reflected Ceiling Legend

No Scale

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Clovis, CA

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REFLECTED CEILING PLAN

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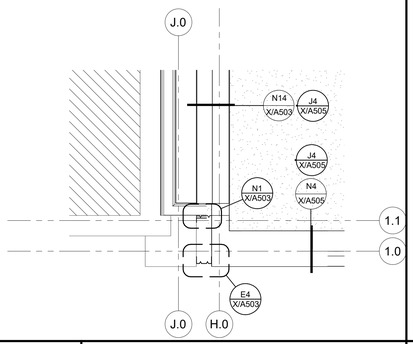
LICENSED ARCHITECT — MICHAEL K. FENNELL — No. C23724 — REN. 4-30-25 — STATE OF CALIFORNIA

Architect

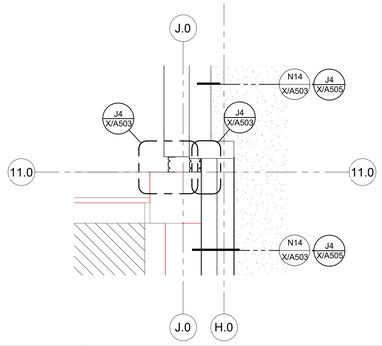
No.	Revision/Submission	Date

Revision

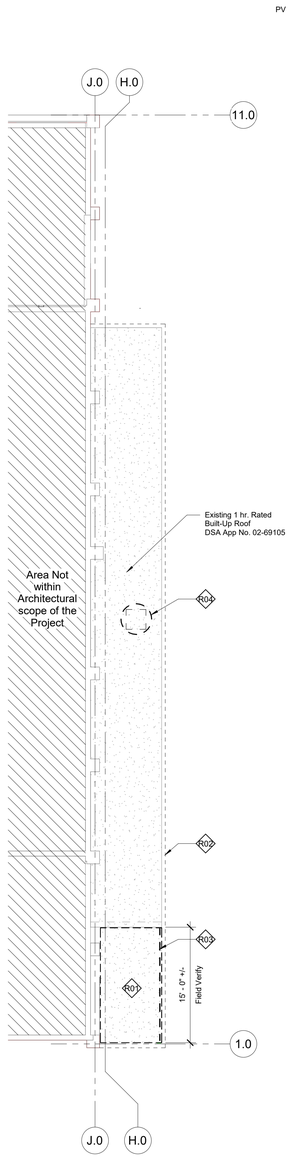
	Designed Designer	Copyright 2023 Darden Architects
Scale: 1/8" = 1'-0"	Drawn By: Author	T/A201
Project Number: 2215	Checked IChecker	AD02-AX13
Date: 03/27/2023	Reviewed Approver	ADDENDUM 02



N1	Enlarged Roof Plan
1/2" = 1'-0"	



N4	Enlarged Roof Plan
1/2" = 1'-0"	



DEMOLITION NOTES

- R01 SELECTIVE DEMOLITION, Remove portion of roof and structure up to existing walls
- R02 SELECTIVE DEMOLITION, Remove gutter and downspouts
- R03 SELECTIVE DEMOLITION, Remove chainlink fence and accessories
- R04 SELECTIVE DEMOLITION, Remove exhaust fan equipment, and protect the roof curb. Refer to mechanical drawings

SYMBOLS

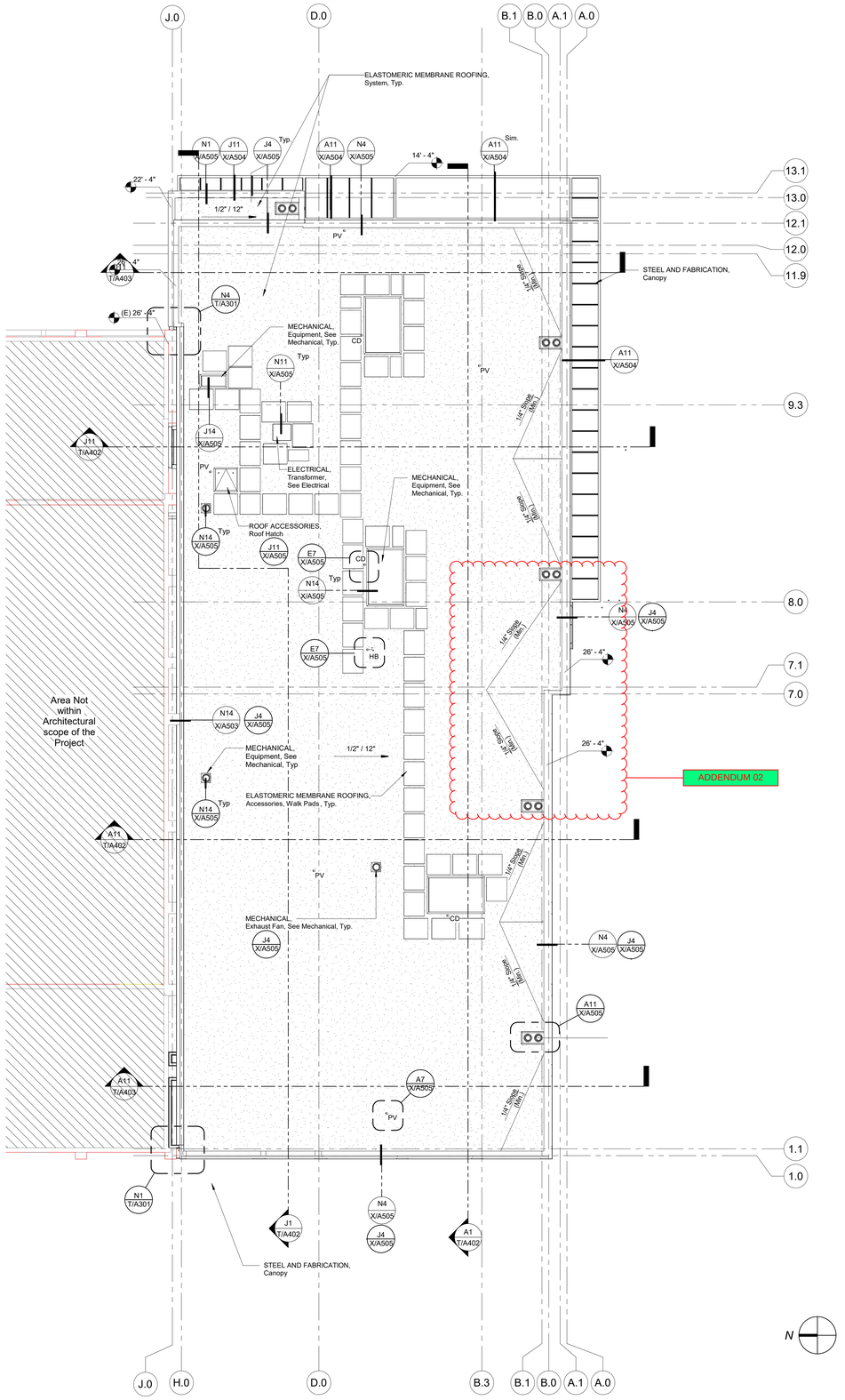
- Existing Wall
- Remove Existing Building Item (See Demolition Note, Plumbing, Mechanical, and Electrical Drawings)
- 10 Demolition Note Symbol

NOTES

1. See Specifications section, SELECTIVE DEMOLITION, See Plumbing, Mechanical, and Electrical Drawings and Specifications
2. Remove materials, equipment, and finishes indicated by demolition key notes
3. All Concrete removed shall be within sawcut lines or Existing expansion/ control joint lines.
4. Coordinate removal of door hardware with HARDWARE in the specifications.
5. Where Demolition work is indicated, contractor shall remove and reinstall any or all items necessary for installation of new work. Existing area affected by demolition work shall be patched and repaired to match Existing construction.
6. Any damage resulting from the modernization activity shall be corrected at no additional expense to the owner and all surfaces cleaned and readied to receive new work.
7. Remove, cut, and patch work in a manner to minimize damage and to provide means of restoring products and finishes to original condition.
8. Where new work abuts or aligns with Existing, make a smooth and even transition. Patch work shall match Existing adjacent work in texture and appearance.
9. When Finished surfaces are cut so that a smooth transition with new work is not possible, terminate Existing surfaces along a straight line at a natural line of division and make recommendation to the architect.

A1	Demolition Roof Plan
1/8" = 1'-0"	

A4	Roof Plan Legend
No Scale	



A7	Roof Plan
1/8" = 1'-0"	Refer to F18 for Legend Symbols, Abbreviations and Notes

DSA File No.:
10-27

DSA Application No.:
02-121097

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SYMBOLS

- PLUMBING, Roof Drain and Overflow. See Detail A11 X/A505
- ROOF ACCESSORIES, Roof Hatch. See Detail J11 X/A505
- PV PLUMBING, Vent or Flue. See Details A7 X/A505, J7 X/A505
- CD PLUMBING, Condensate Drain. See E7 X/A505
- HB PLUMBING, Hose Bibb. See Detail G18 X/A505
- +14'-6" TOP Elevation above finish floor
- Slope (DN) Direction of slope
- Line of Wall below
- Reference Point
- LOUVERS

ABBREVIATIONS

TOP	Top of Parapet Framing
FO Frmg.	Face of Framing
OD	PLUMBING, Overflow Drain
TOB	Top of Parapet Brace Framing
TOF	Top of Framing
RD	PLUMBING, Roof Drain
TOM	Top of Masonry
OH	Opposite Hand
DS	Downspout
FOS	Face of Stud
TOS	Top of Steel
Sim.	Similar
Typ.	Typical

NOTES

1. Refer to Plumbing, Mechanical, and Electrical for all roof penetrations and roof mounted equipment. For appropriate details, Refer to Sheet X/A505
2. Roof Slope and Crickets shall be constructed with tapered insulation to achieve slope as required.
3. When indicated, SHEET METAL, Reglet and Counter Flashing occurs at the Back Side and/or the Front Side of Parapet Walls. At each roof level such Reglet elevations shall be determined based upon the details of construction, and be installed at the same horizontal level.
4. SHEET METAL, Counter Flashing Boots shall be installed at all intersecting parapets that have different parapet heights. for conditions requiring such boots, refer to Details A1 X/A505, E1 X/A505
5. ELECTROMETRIC MEMBRANE ROOFING, System, Designated to be [1] Hour Fire Rated, refer to Details N7 X/A505

F18	Roof Plan Legend
No Scale	

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DEMOLITION ROOF PLAN AND ROOF PLAN
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LICENSED ARCHITECT MICHAEL K. FENWICK No. C23724 Exp. 4-30-25 STATE OF CALIFORNIA
Architect

No.	Revision/Submission	Date

Revision

	Designed Designer	Copyright 2023 Darden Architects
Scale: As indicated	Drawn By: Author	
Project Number: 2215	Checked tChecker	
Date: 03/27/2023	ReviewedApprover	

T/A301
AD02-AX14

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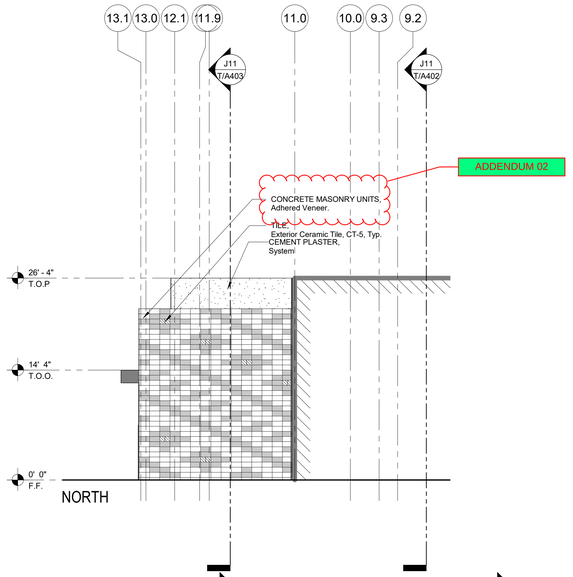

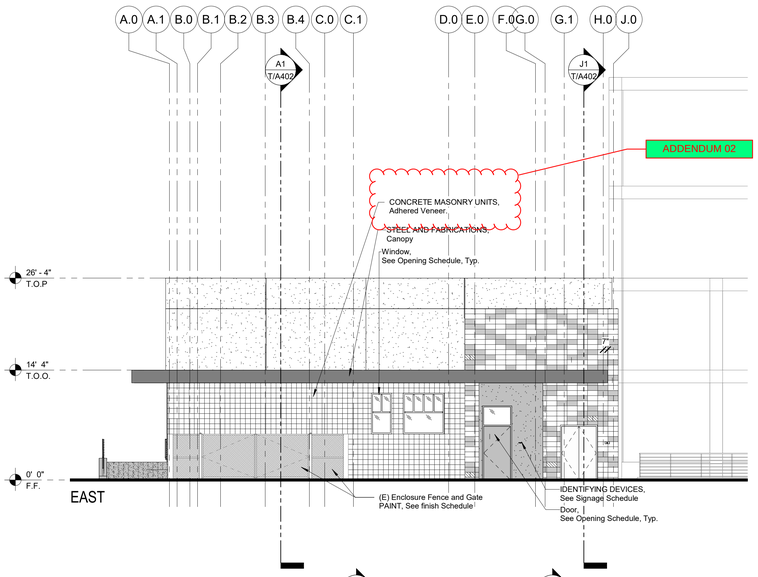

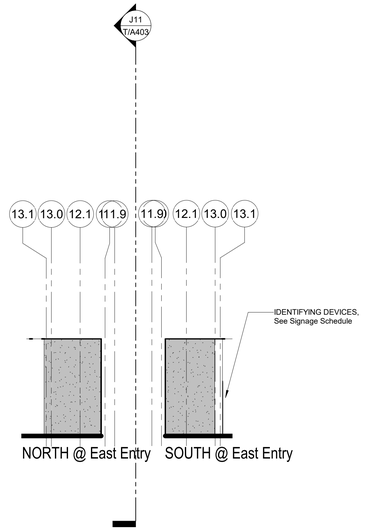

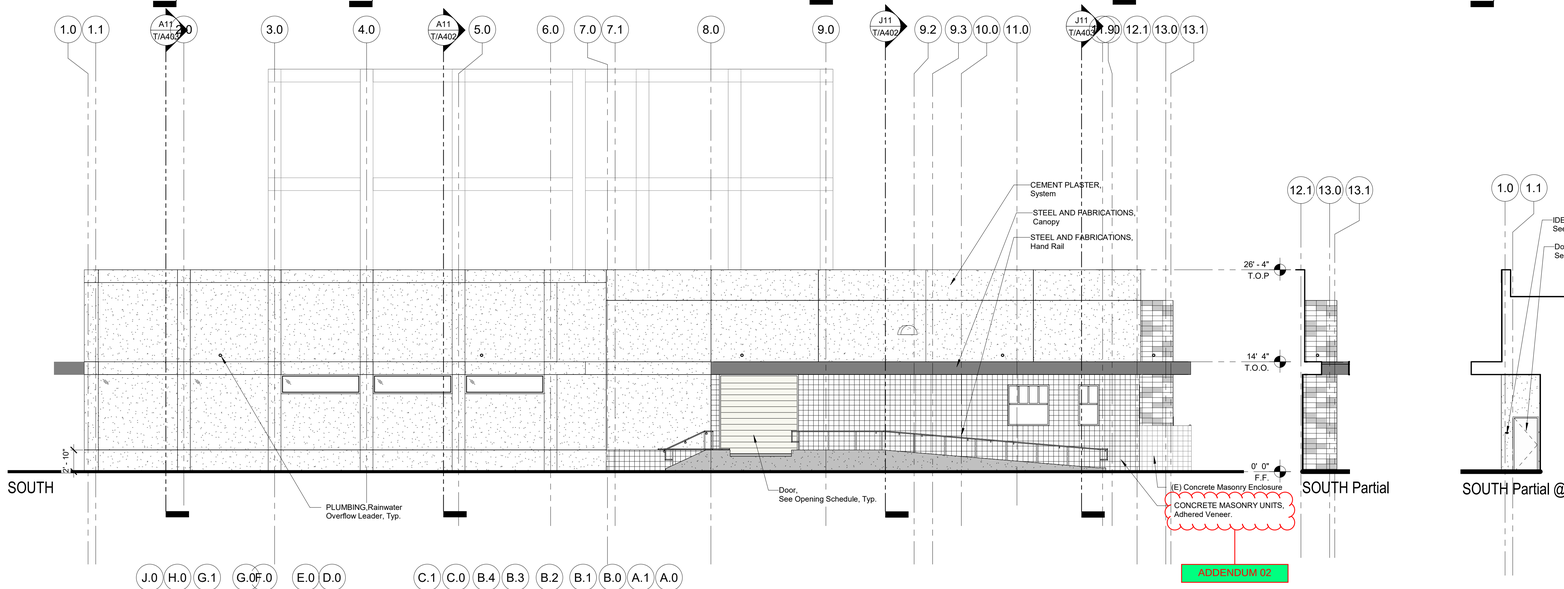

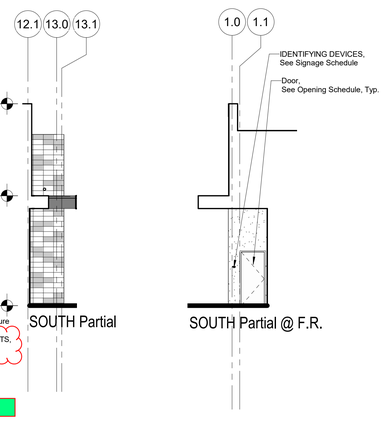

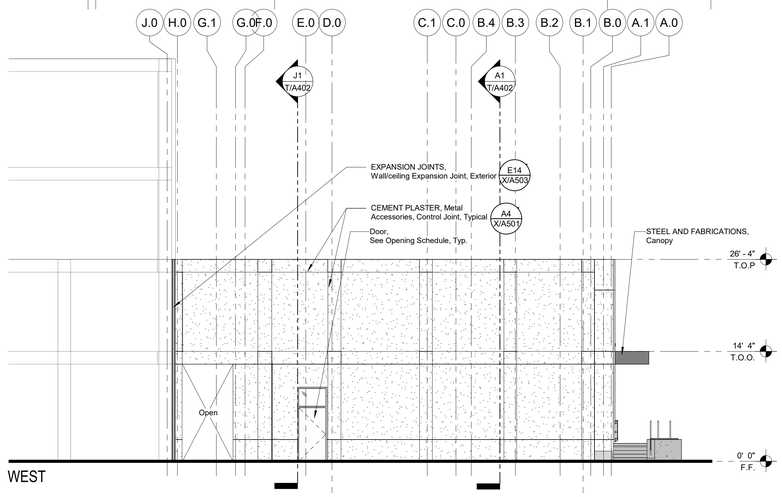

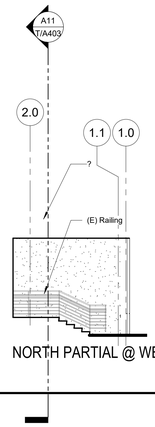

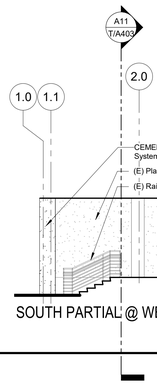

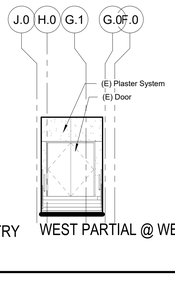

DSA File No.:
10-27

DSA Application No.:
02-121097

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EXTERIOR COLOR LEGEND

Plaster Colors

- Existing Plaster
- PC-1 "White" Unless Noted Otherwise
- PC-2 "Tan", UNO

Plaster walls perpendicular to elevation, not shown elsewhere, shall be the same color as face plane, Unless Noted Otherwise.

Block Colors

- BC-1 8" x 16" Precision
- BC-1 8" x 8" Precision
- BC-2 8" x 16" Split Face

All Precision Block to be BC-1, UNO.
All Split Face Block to be BC-2, UNO.
Concrete Masonry Units below +0'-0" Shall Be BC-1, UNO.
Existing Block to be painted CB-1 to match BC-1.

Metal Colors

- MC-1 "White" Unless Noted Otherwise
- MC-2 "Tan" Adjacent to Block
- MC-4 "Clark Blue"

All Hollow Metal Frames to be MC-3, UNO.
All Steel and Fabrications to match adjacent wall, UNO.
All Steel and Fabrications at Canopy to be MC-4.
All METAL DECKING to be MC-1, UNO.

Exterior Tile

- CT-5 TILE, Exterior Tile, CT-5, Color 1

Door Colors

All Doors to be MC-3, UNO.

Color Notes

1. XX-X Color Designation.
2. Parapet caps to match color of wall below, UNO.
3. Soffits to match color of outer face wall, UNO.
4. Horizontal soffits adjacent to fascia board shall be PC-1.

Outer Face Wall
Soffit
Inner Face Wall

Fascia Board
PC-1

SYMBOLS

- H ELECTRICAL, Horn
- S ELECTRICAL, Speaker
- ELECTRICAL, Outlet
- ELECTRICAL, Light Fixture, +10'-0" B.O. Fixture UNO
- Glass

ABBREVIATIONS

AFF	Above Finished Floor
BO	Bottom of
CJ	Control Joint
DS	Downspout
EJ	Expansion Joint
HB	PLUMBING, Hose Bibb.
OD	PLUMBING, Overflow Drain, Refer to Detail E18 X/A501 UNO.
OH	Opposite Hand
Sim.	Similar
TO	Top of
TOM	Top of Masonry
TOP	Top of Parapet Framing
TOF	Top of Framing
TOR	Top of Roof
TOS	Top of Steel
TPL	Top of Plate
Typ.	Typical
UNO	Unless Noted Otherwise

NOTES

1. CEMENT PLASTER, Cement Plaster System, Accessories, Refer to Detail
2. PLUMBING, Rain Water Leader Overflow, Refer to E18 X/A501 See Plumbing Drawings.
3. Refer to Specifications Section Appendix "C" Exterior Color Schedule.
4. Refer to Exterior Finish Schedule on Sheet X/A201.

E18 — Exterior Elevations Legend

No Scale

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Architect

No.	Revision/Submission	Date

Revision

Designed Designer
Drawn By: Author
Checked Checker
Reviewed Approver

Scale: As indicated
Project Number: 2215
Date: 03/27/2023

T/A401
AD02-AX15

A1 — Exterior Elevations
1/8" = 1'-0"
Refer to F18 for Legend Symbols, Abbreviations and Notes

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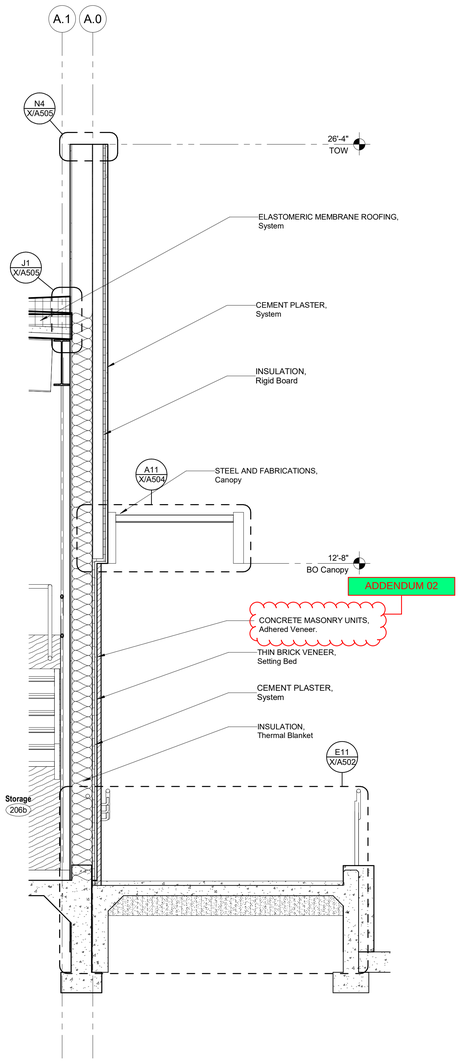

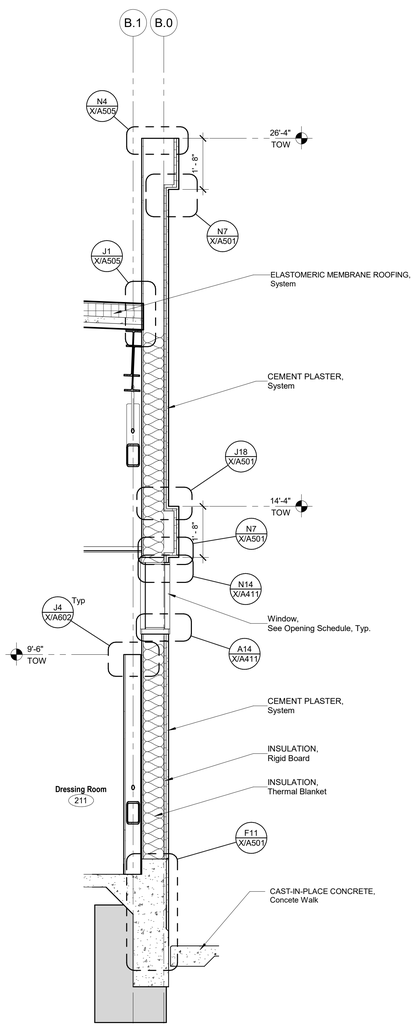

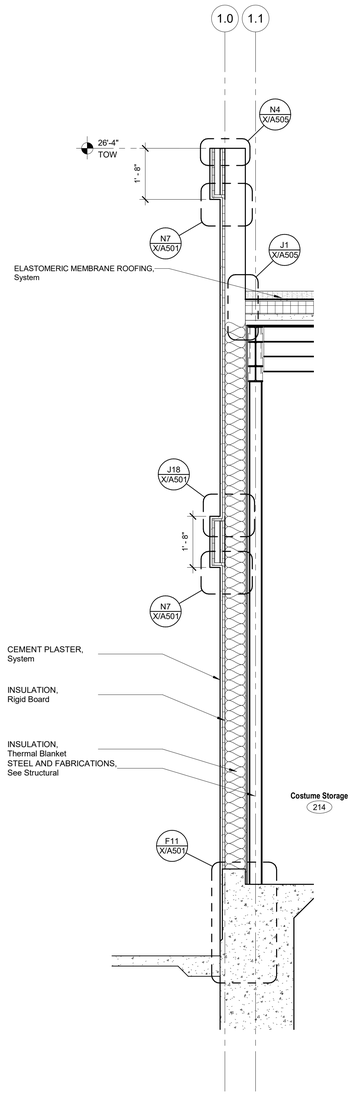

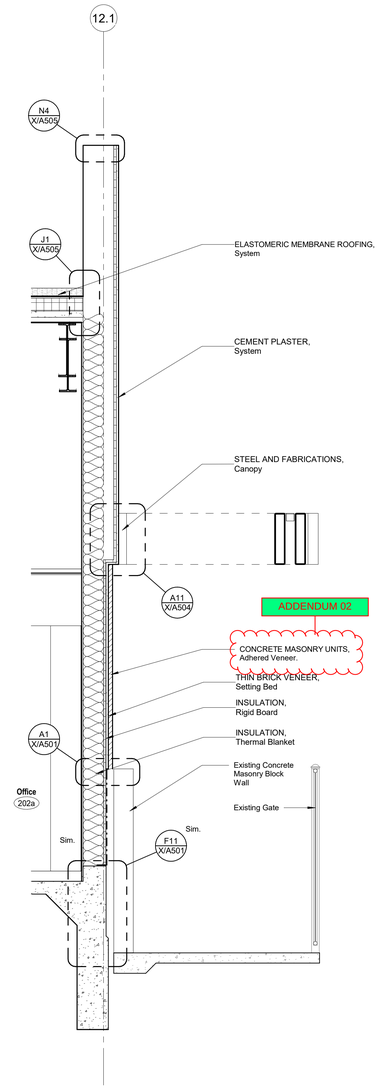

A1	Wall Section	A5	Wall Section
1/2" = 1'-0"		1/2" = 1'-0"	
A9	Wall Section	A13	Wall Section
1/2" = 1'-0"		1/2" = 1'-0"	

DSA File No.:
10-27

DSA Application No.:
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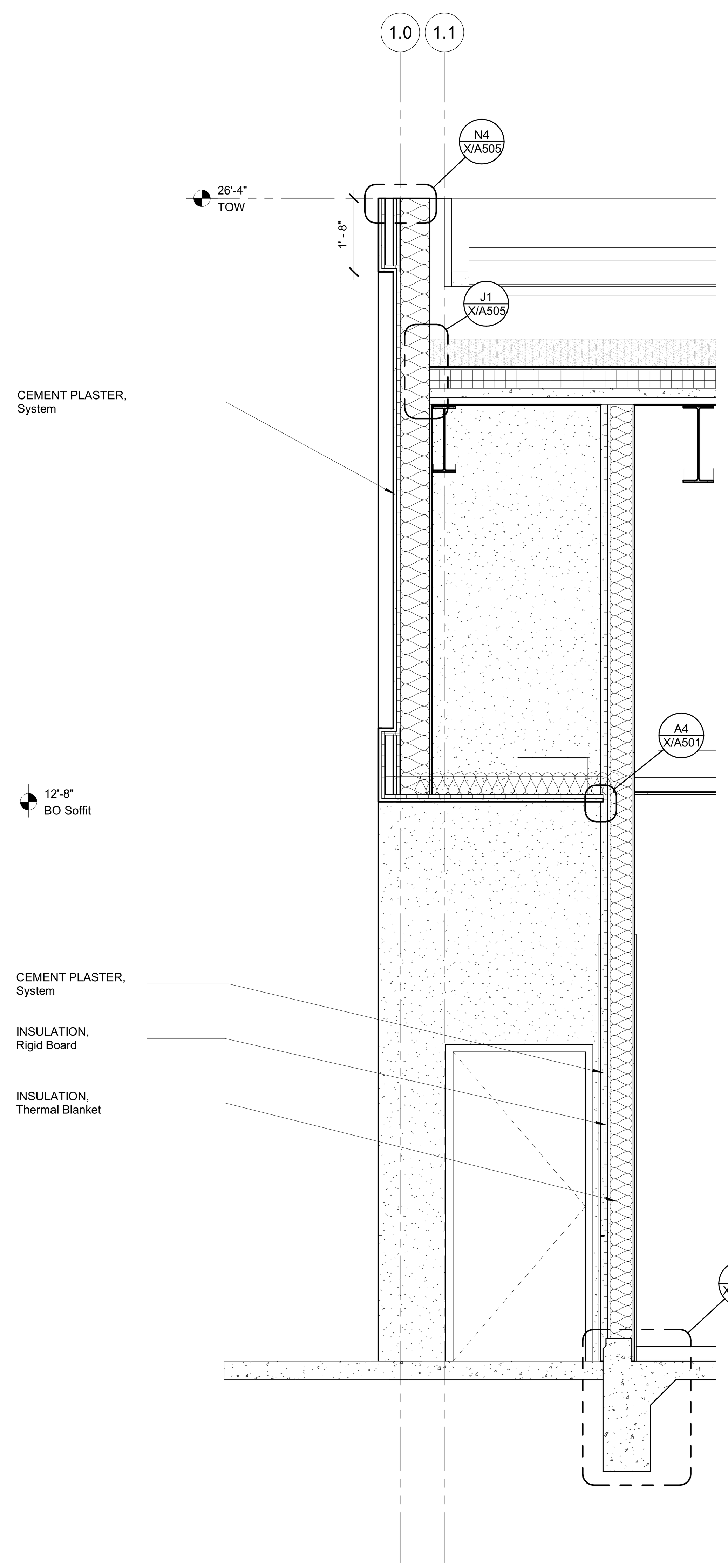
T/A501
AD02-AX16



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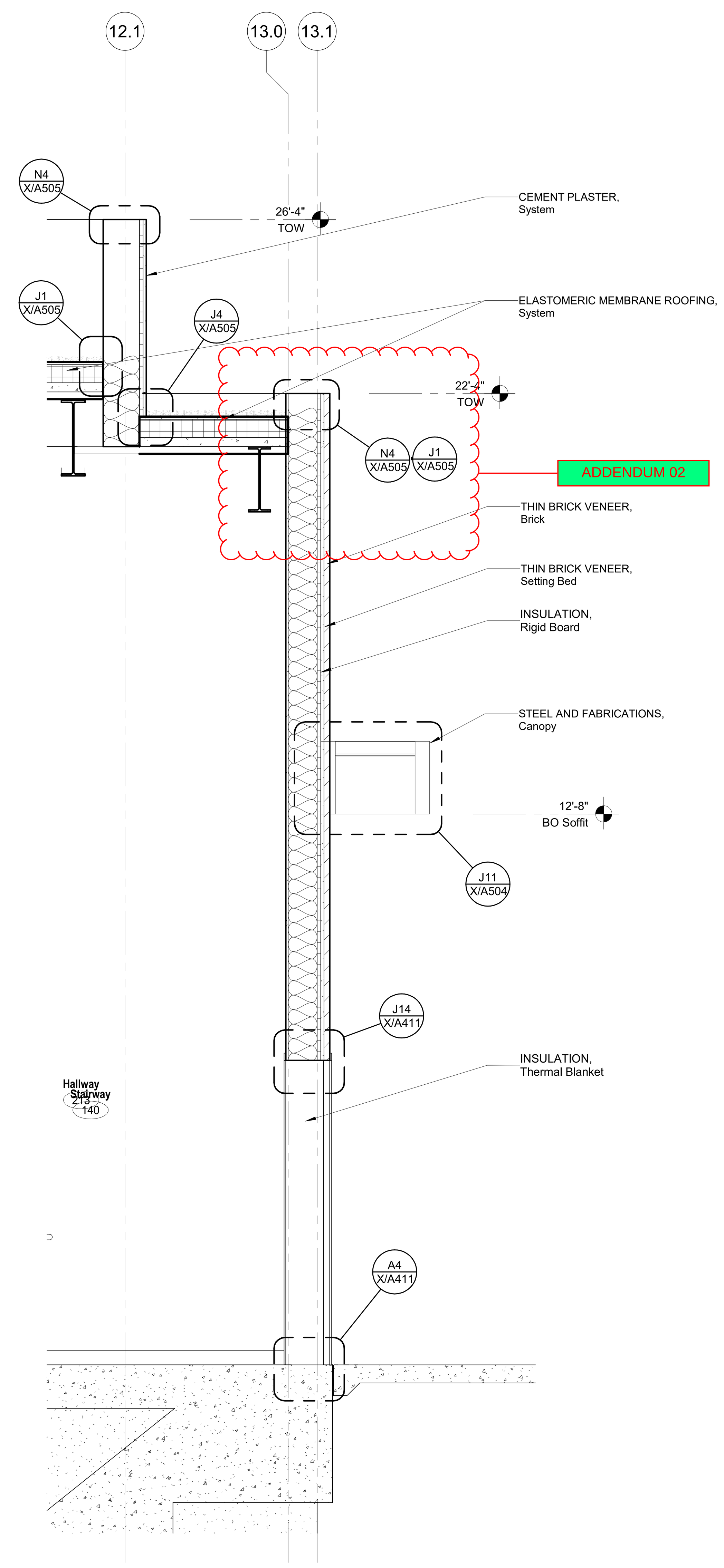
1/2" = 1'-0"



A12 Wall Section
1/2" = 1'-0"

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DSA Application No.: 02-121097

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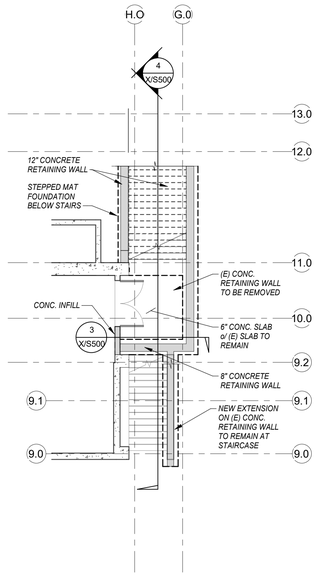
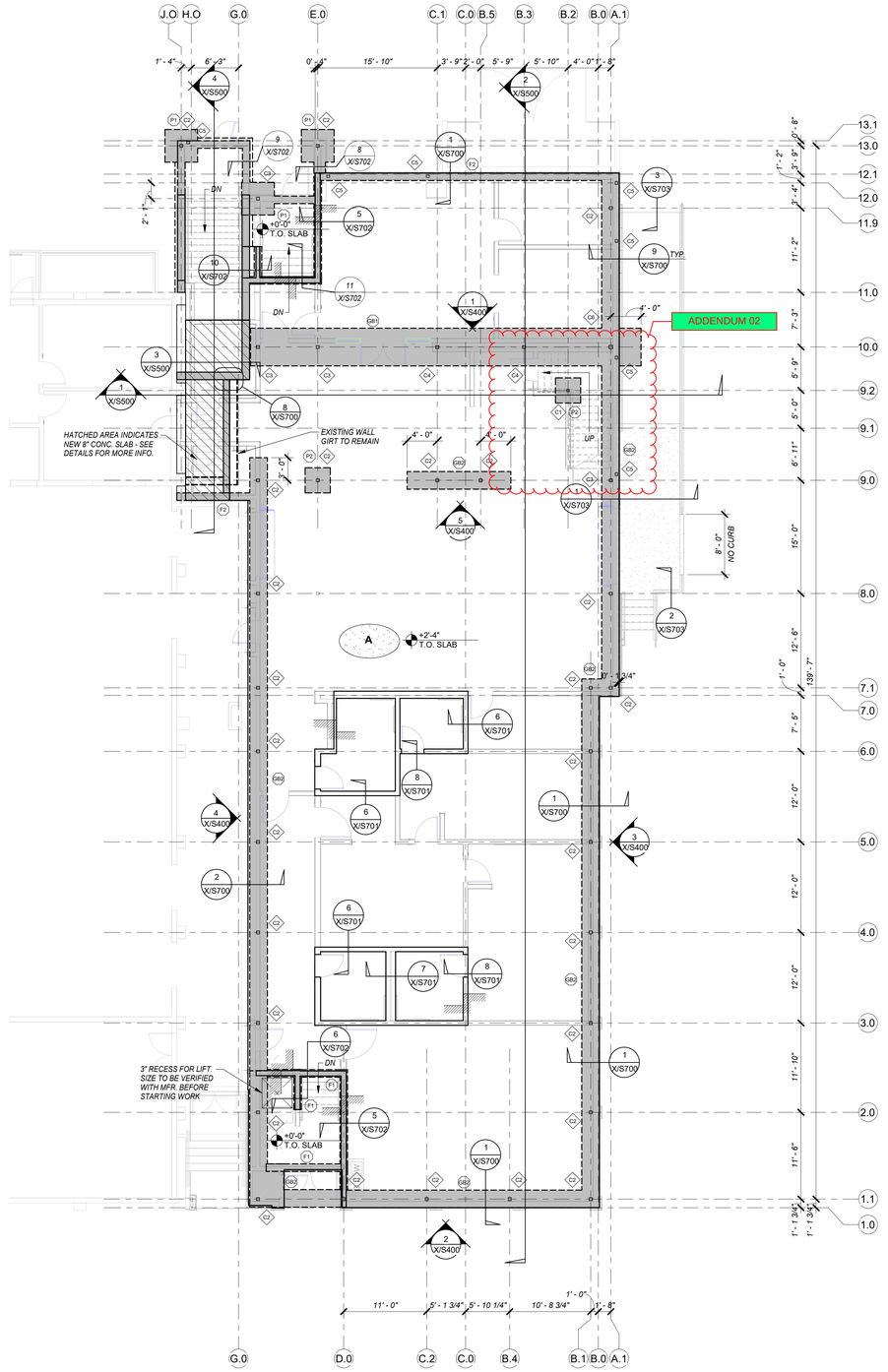


PARTIAL FOUNDATION PLAN @ BASEMENT

1/8" = 1'-0"

ADDENDUM 02



FOUNDATION PLAN

1/8" = 1'-0"

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DSA Application No.:

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FOUNDATION NOTES

1. *REFER TO GENERAL NOTES ON X/S000*
2. *ALL EMBEDDED ITEMS SHALL BE IN PLACE & SECURED PRIOR TO POURING OF CONCRETE.*
3. *ALL COLUMNS TO BE CENTERED OF PADS AND FOOTINGS, RESPECTIVELY, U.N.O.*
4. *CONTINUOUS FOOTINGS ARE TYPE F1, U.N.O.*
5. *FOR TYPICAL GRADE BEAM DETAILS SEE 2, 3, 4/X/S702*
6. *TOP OF FOOTING ELEVATION IS (+)1'-4", U.N.O.*

FOUNDATION LEGEND

- GL — *GRID LINE*
- 1 / S101 — *BRACE FRAME ELEVATION*
- *FOUNDATION*
- Fx — *FOOTING PER SCHEDULE*
- Cx — *COLUMN PER SCHEDULE.*
- A — *A: 5" CONC. SLAB w/ #4 @ 16"oc EA. WAY @ MID-DEPTH.*

FOOTING SCHEDULE

SYM.	SIZE	REINFORCEMENT
CONTINUOUS		
F1	1'-0" WIDE x 1'-6" DEEP	2 - #5 CONT. TOP & 2 - #5 CONT. BOTTOM
F2	1'-0" WIDE x 3'-10" DEEP	2 - #5 CONT. TOP & 2 - #5 CONT. BOTTOM
GRADEBEAM		
GB1	5'-0" WIDE x 3'-10" DEEP	12 - #7 CONT. TOP & 12 - #8 CONT. BOTTOM
GB2	2'-4" WIDE x 3'-10" DEEP	5 - #5 CONT. TOP & 6 - #5 CONT. BOTTOM
PAD		
P1	4'-4" SQ. x 1'-6" DEEP	8 - #5 EACH WAY - BOTTOM
P2	3'-4" SQ. x 3'-10" DEEP	8 - #5 EACH WAY - TOP & BOTTOM

COLUMN SCHEDULE

TYPE	SIZE
C1	*HSS4X4X1/4*
C2	*HSS5x5x1/4*
C3	*HSS5X5X3/8*
C4	*HSS5X5X1/2*
C5	*HSS5X4X1/4*
C6	*HSS6X6X3/8*

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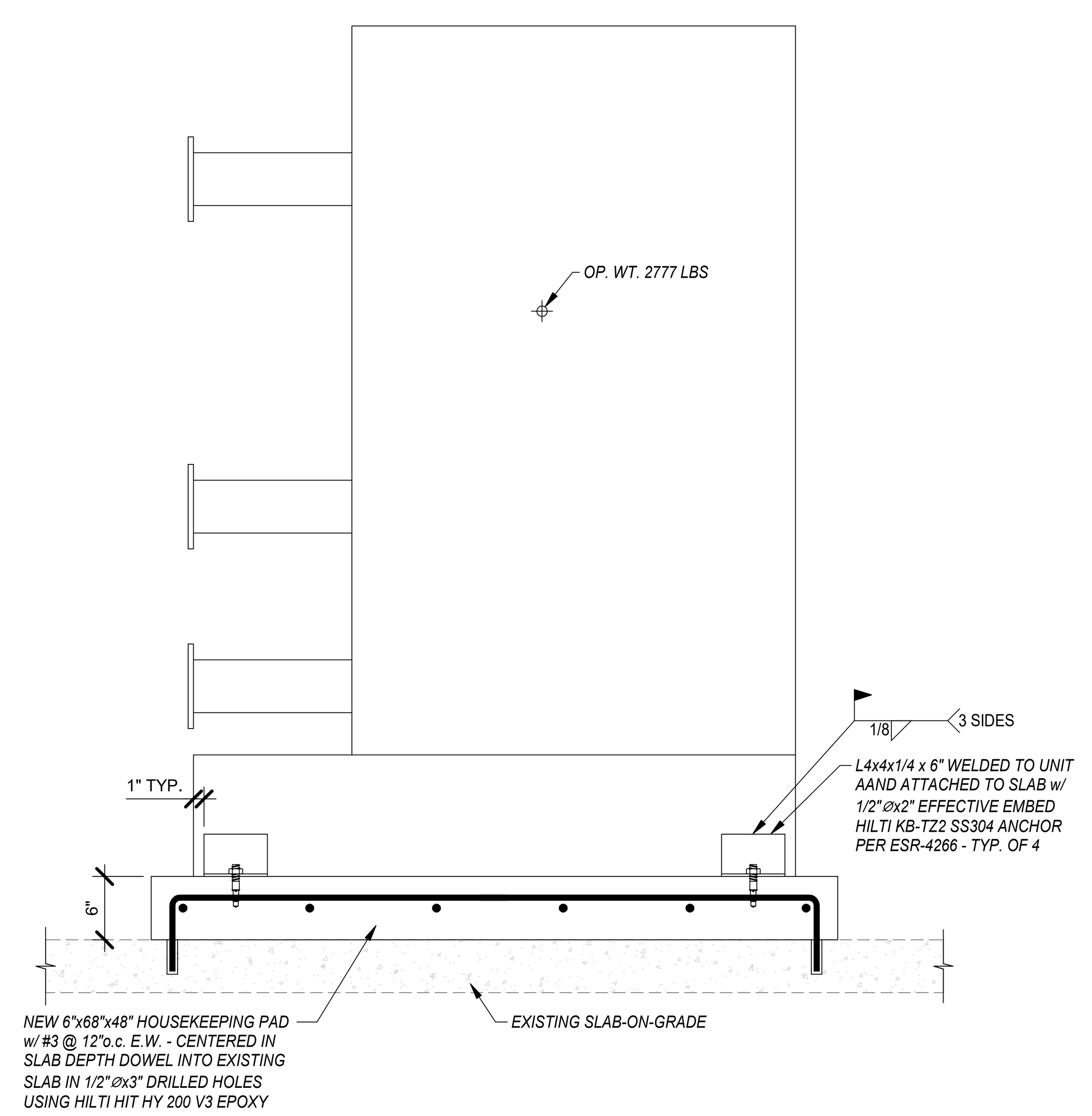

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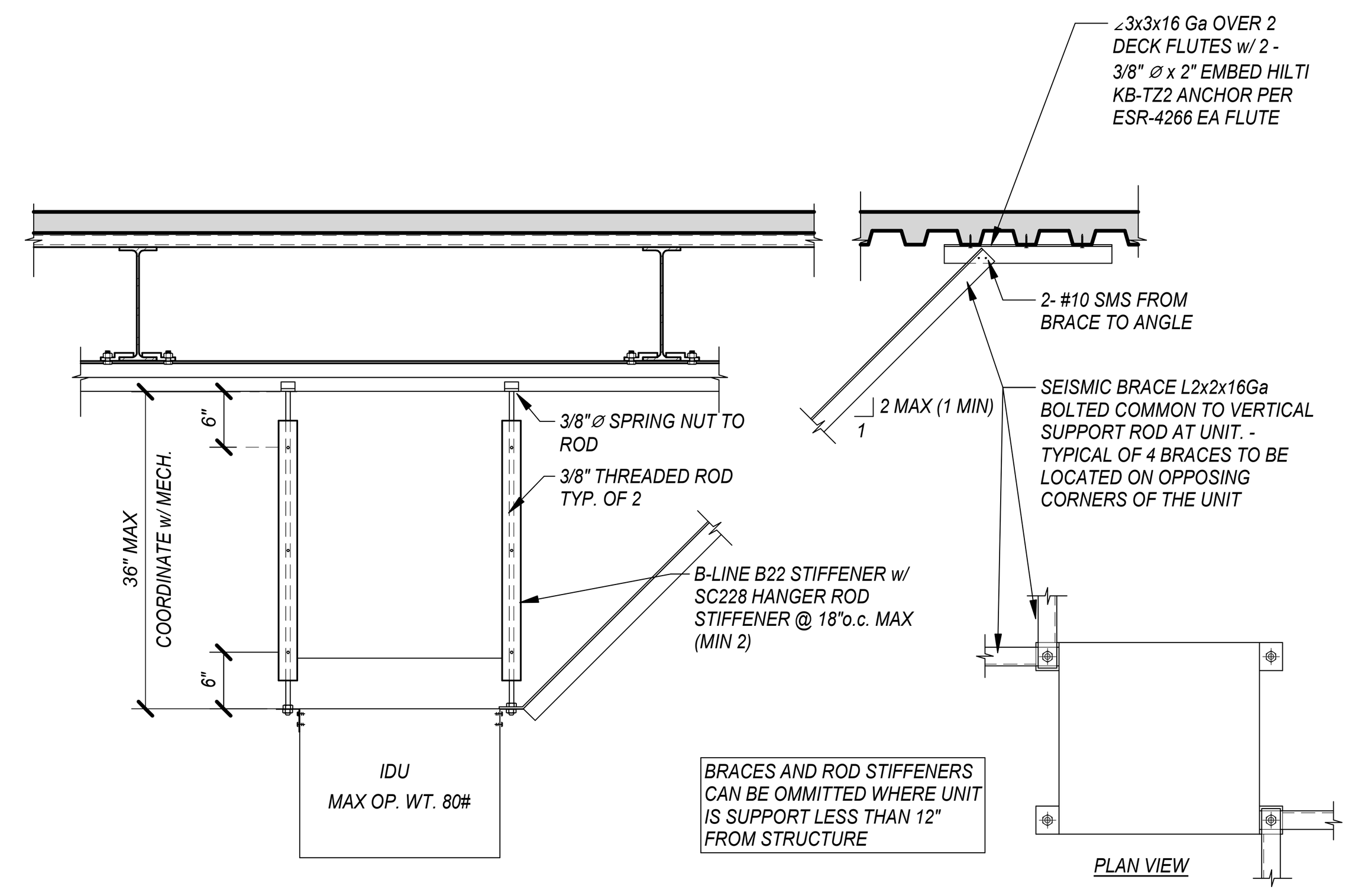

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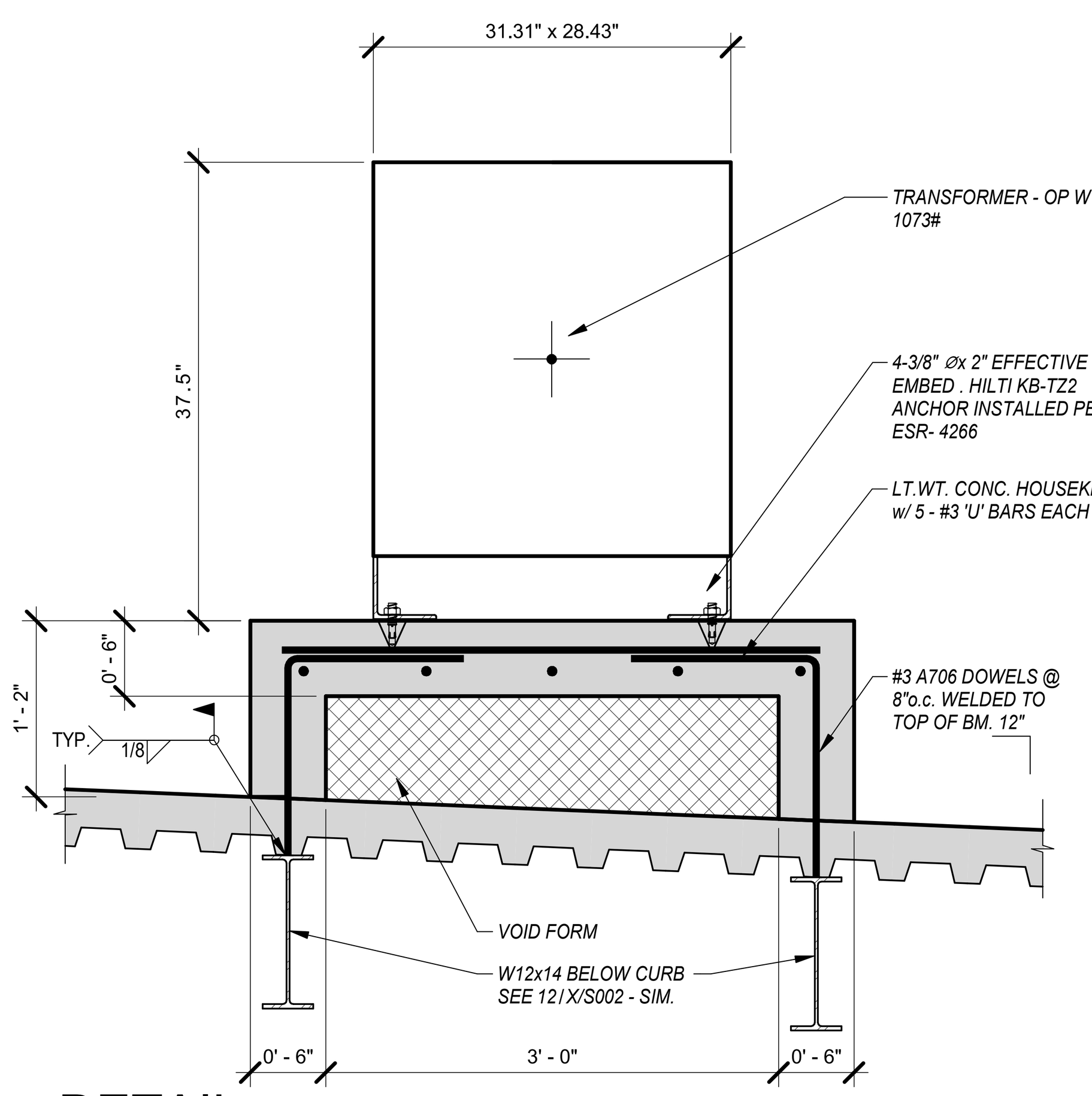

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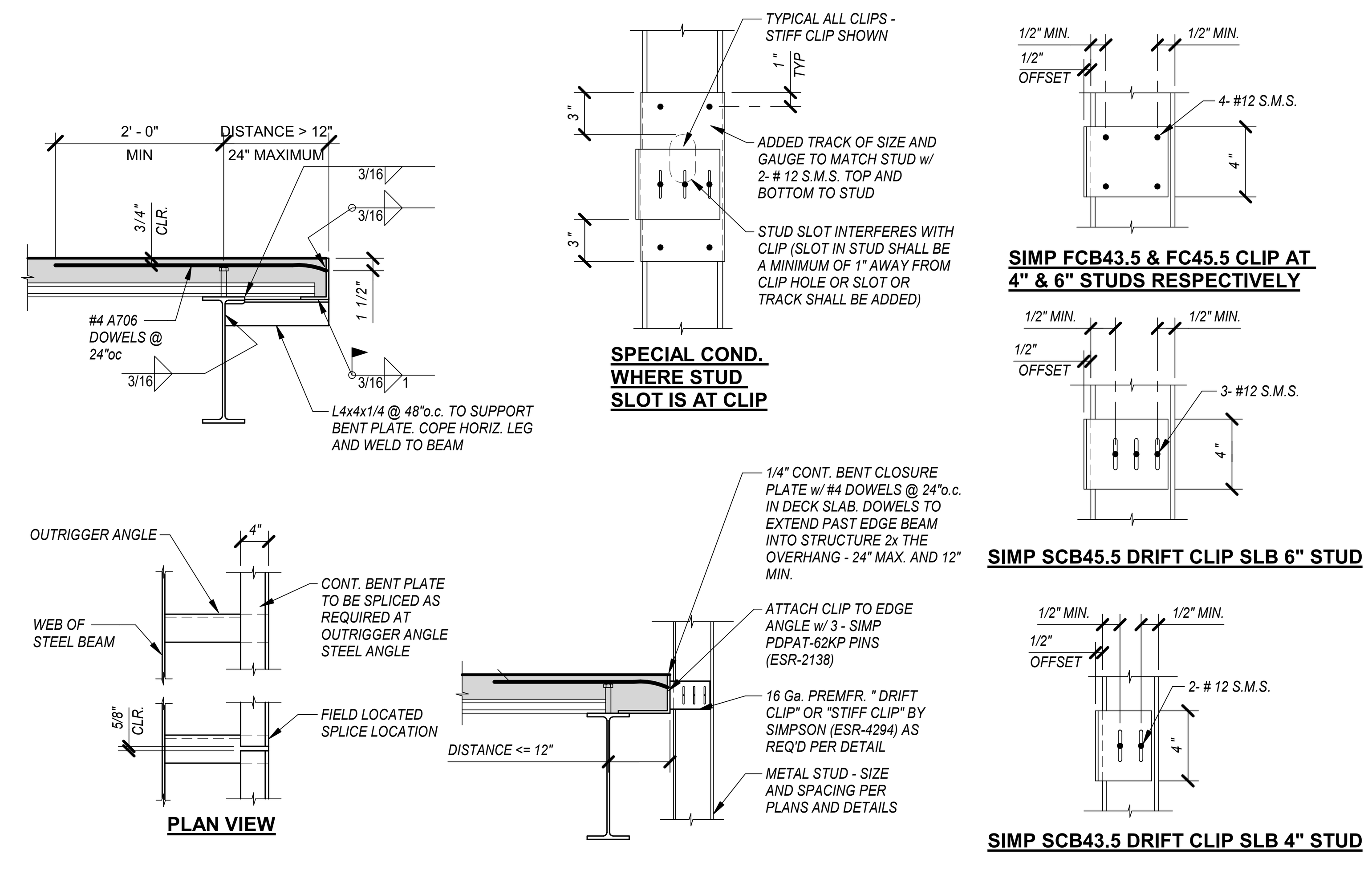

TYPICAL PERIMETER SLAB EXTENSION AND CURTAIN WALL SUPPORT

1 DETAIL
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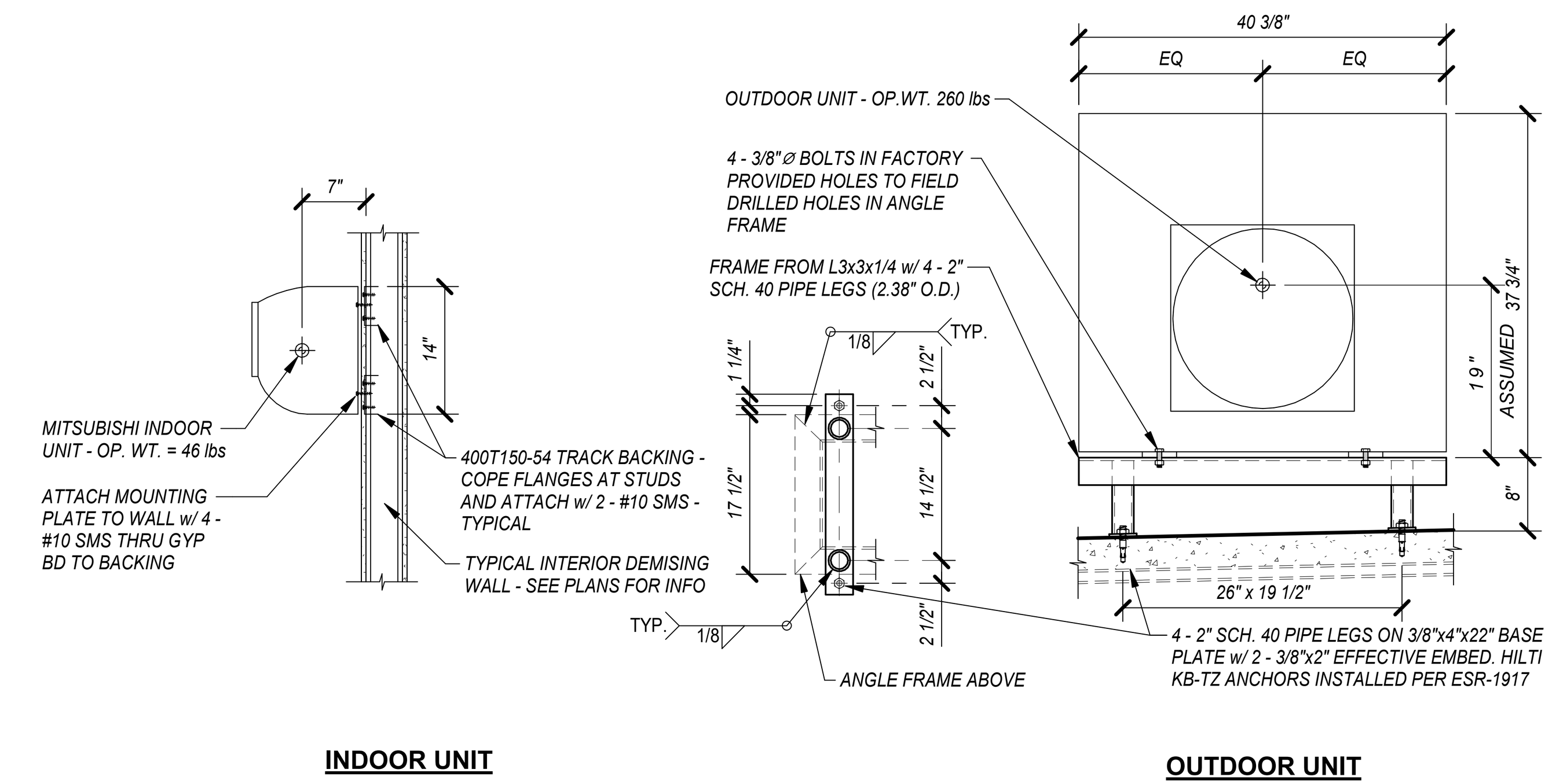

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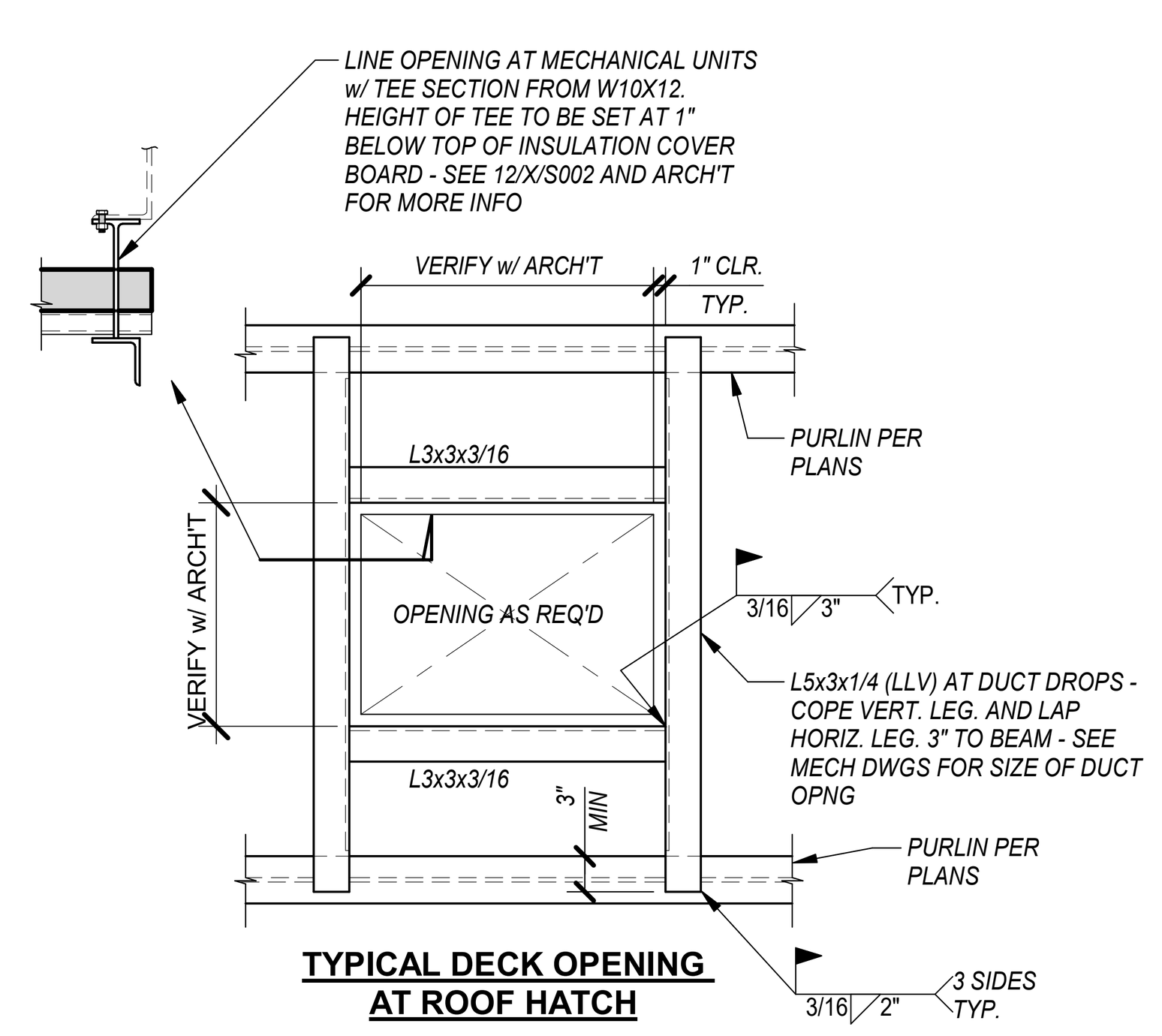

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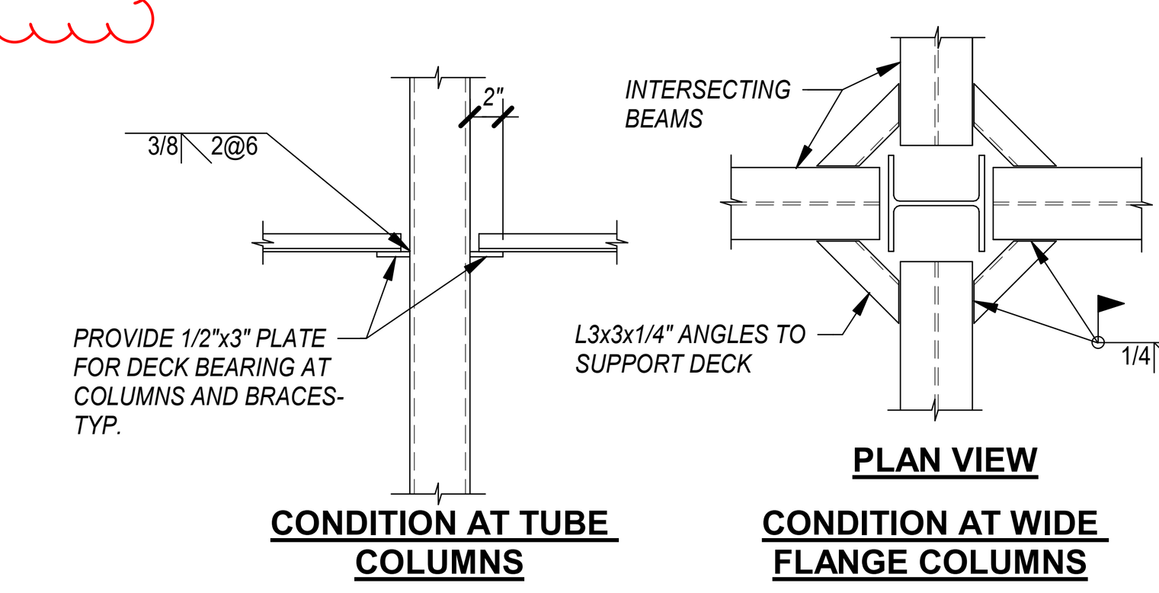

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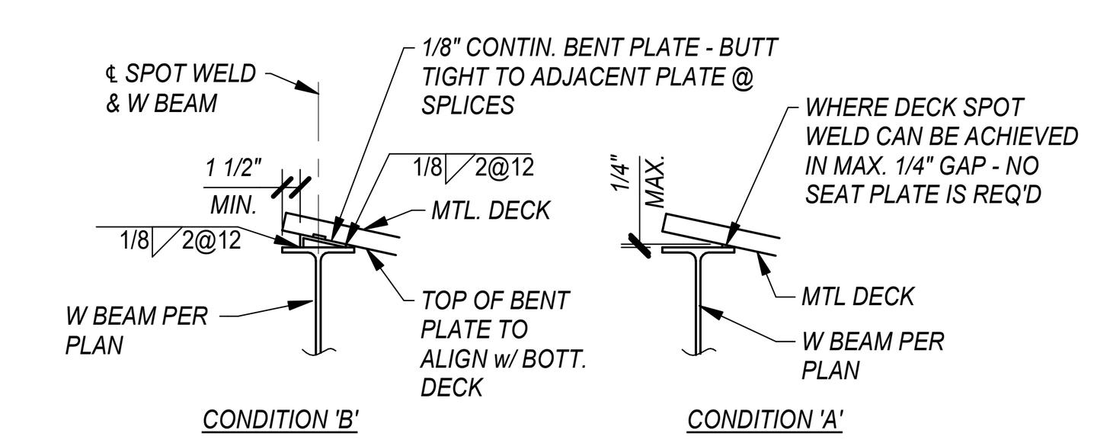

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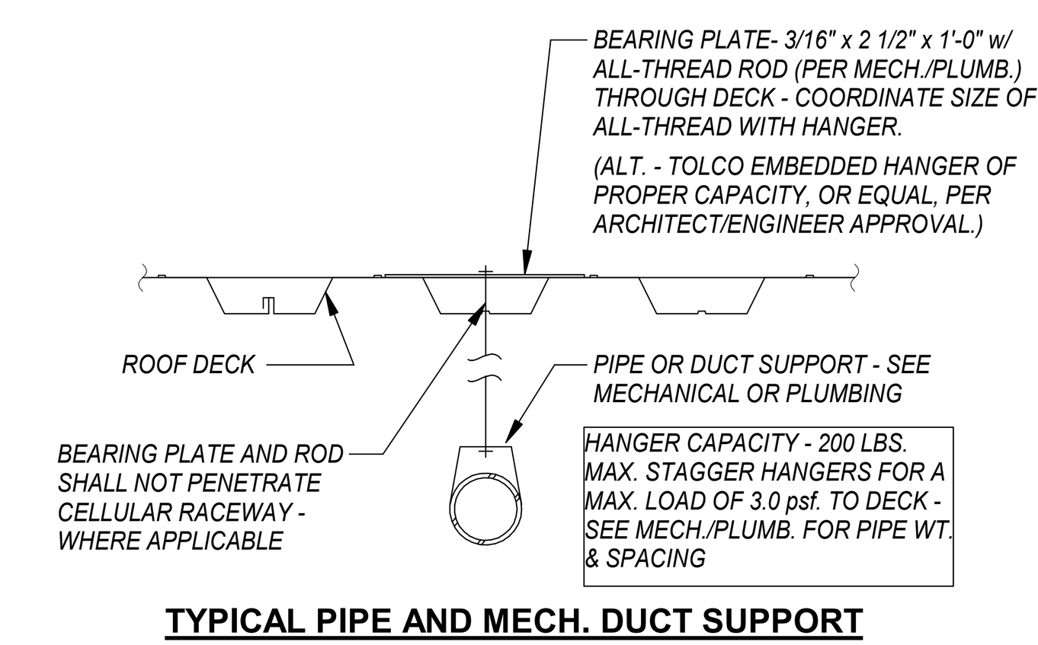

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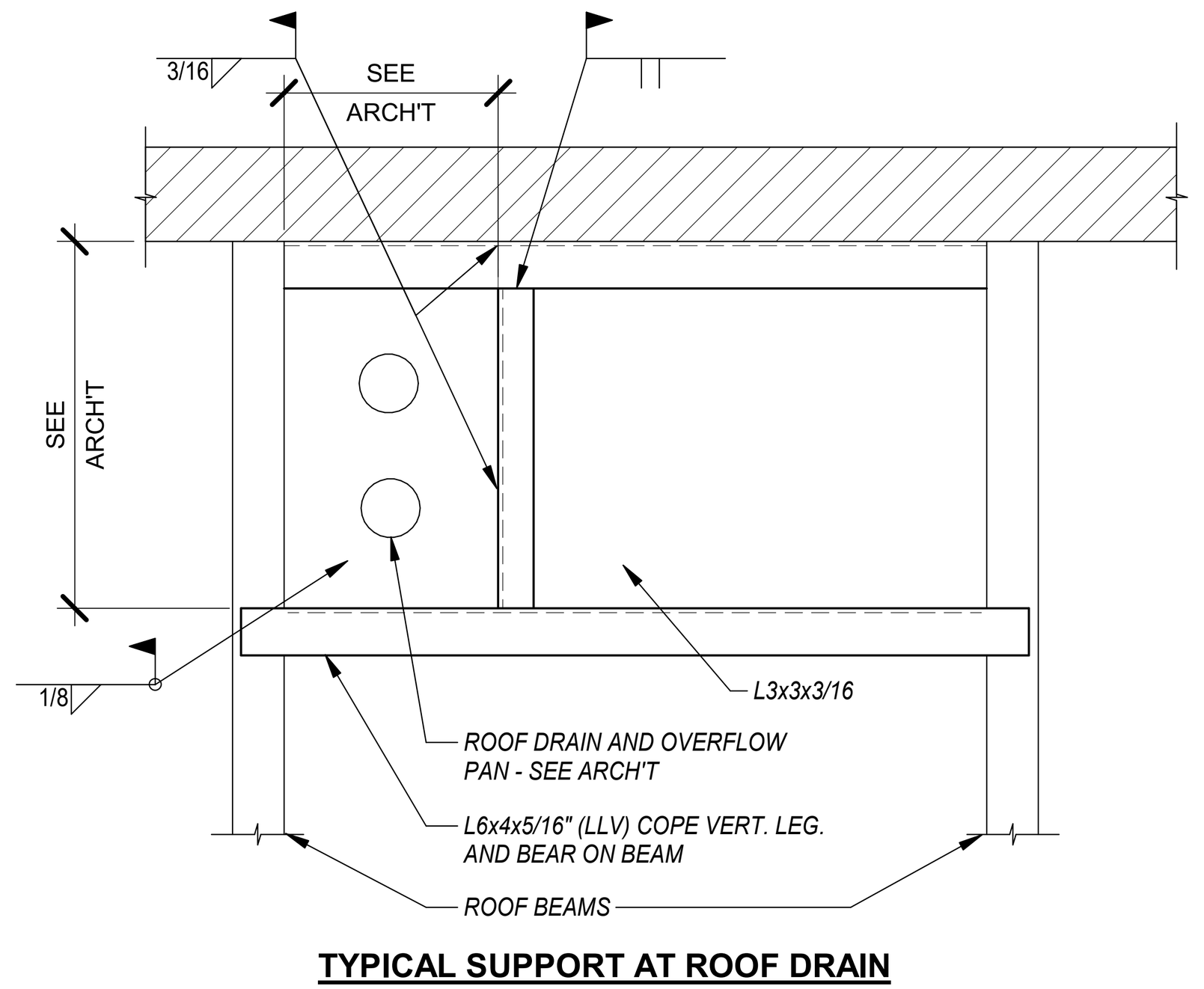

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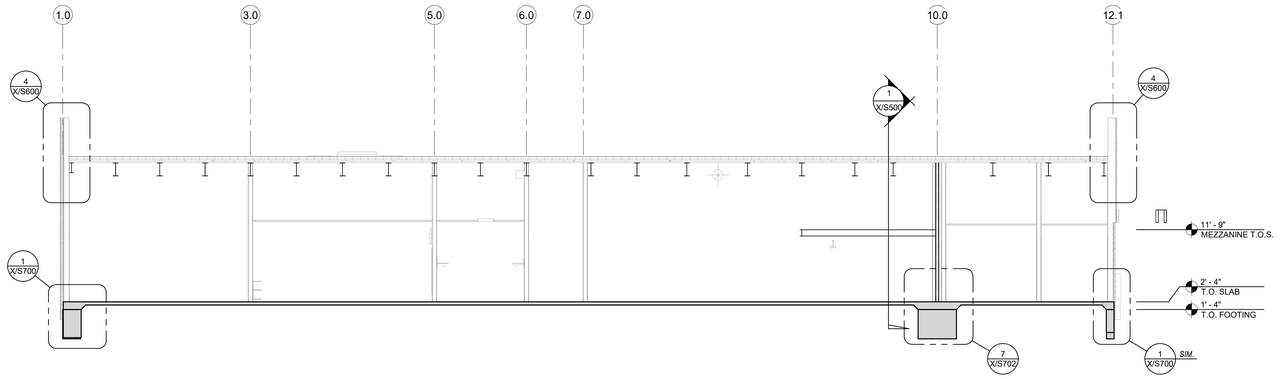

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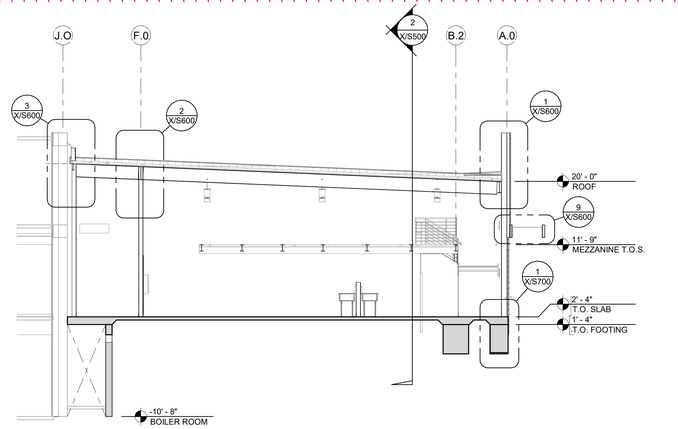

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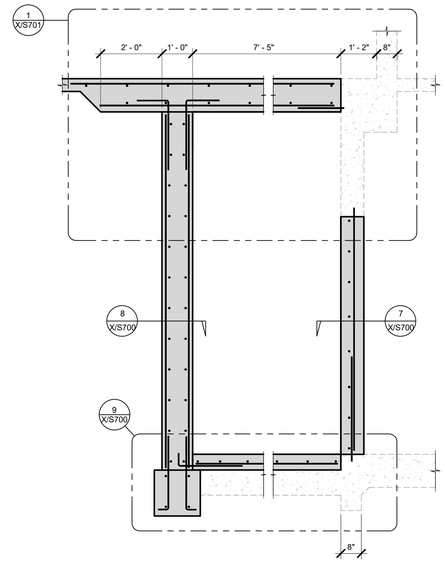

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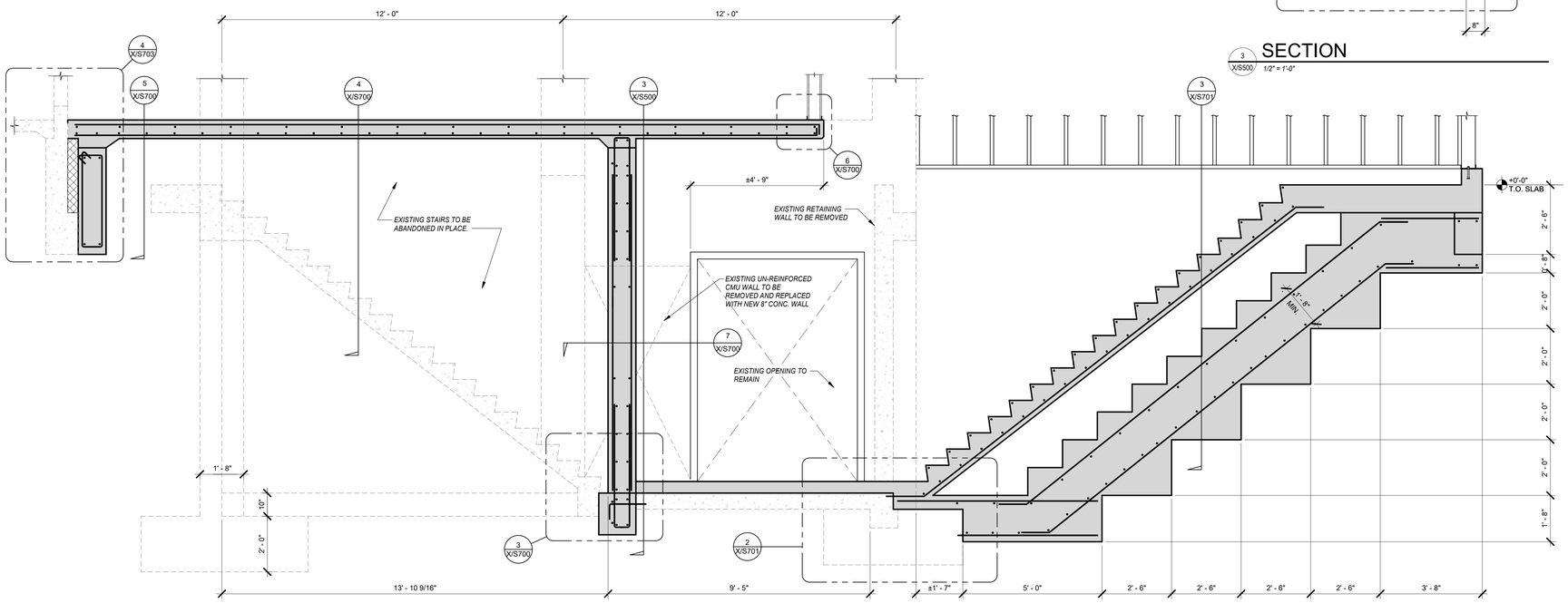

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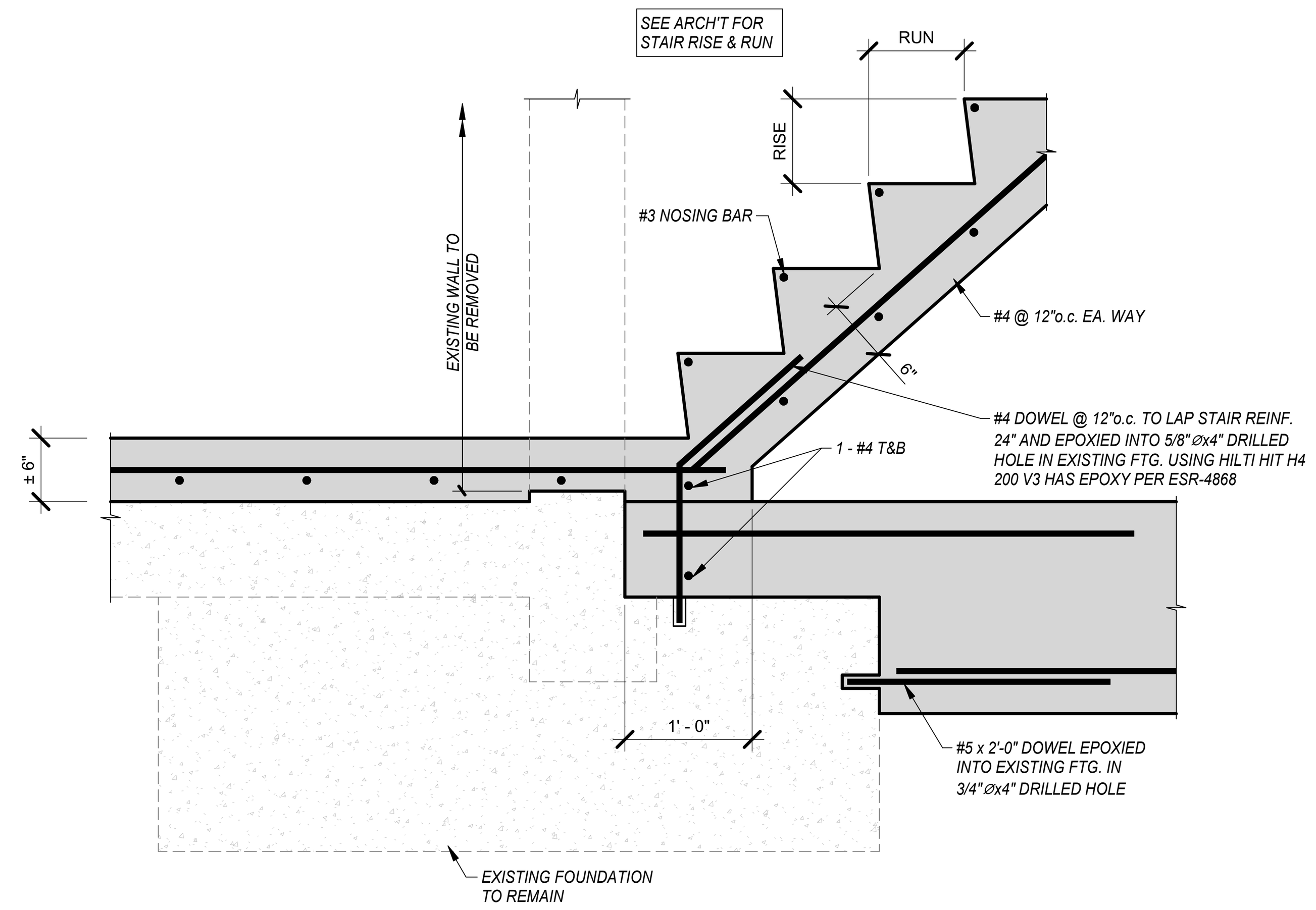

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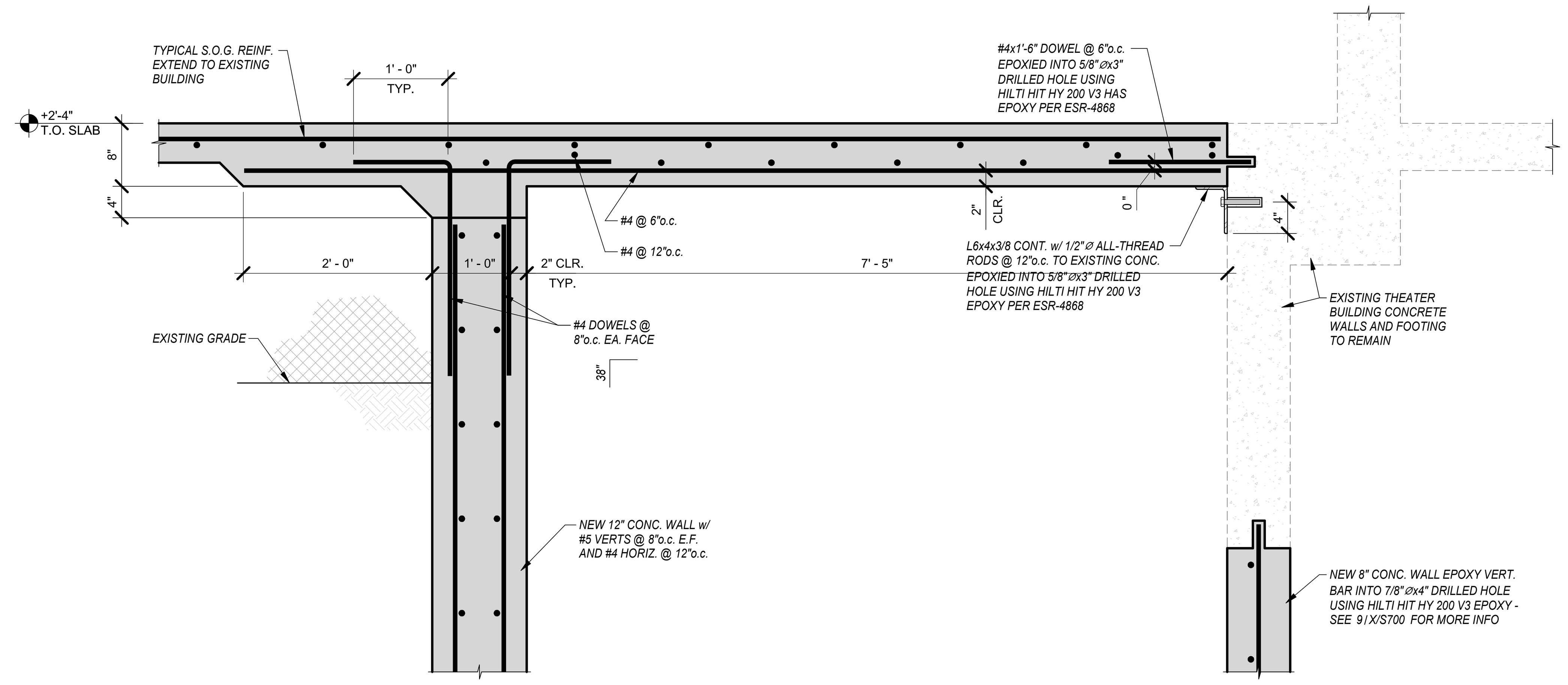

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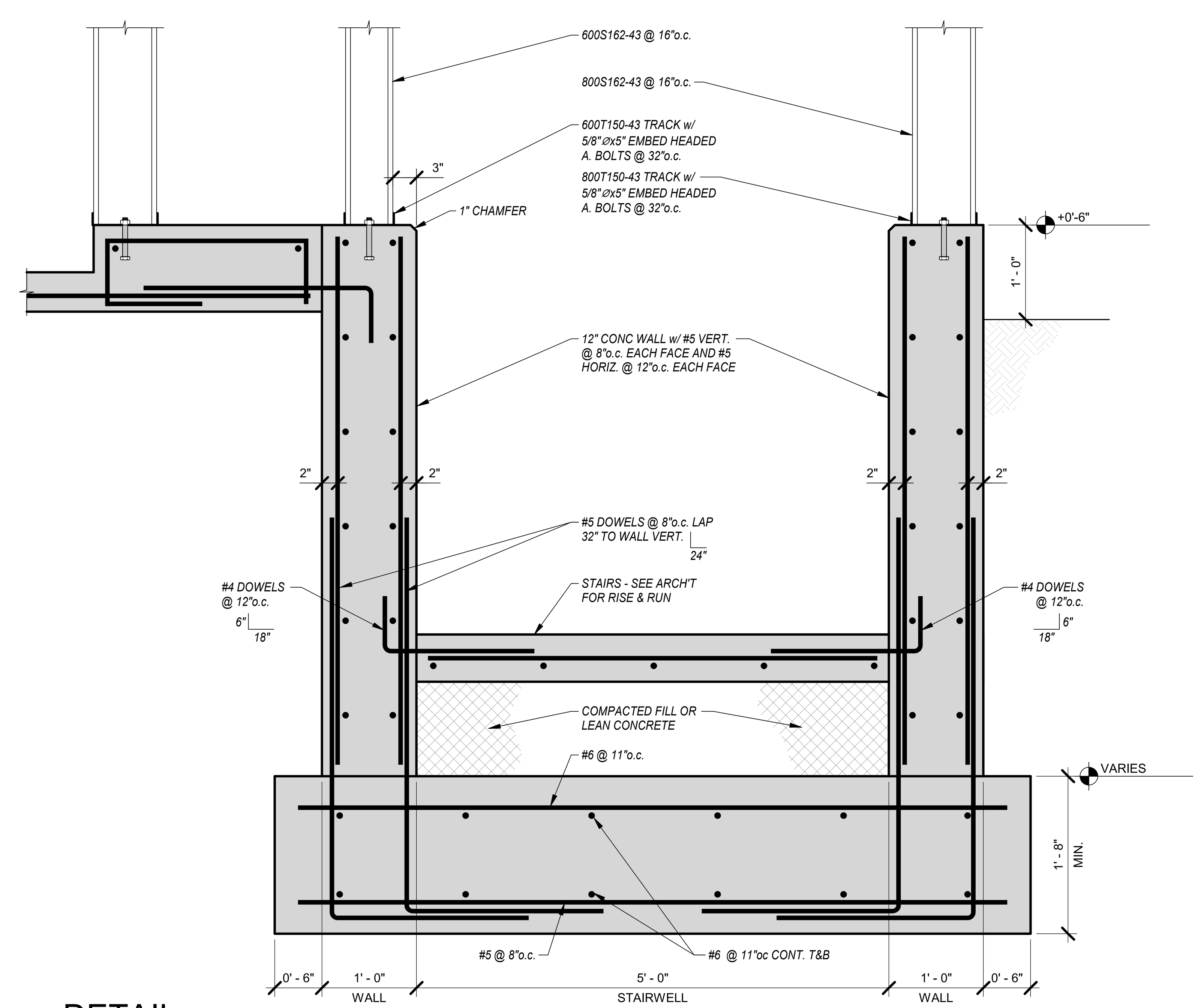

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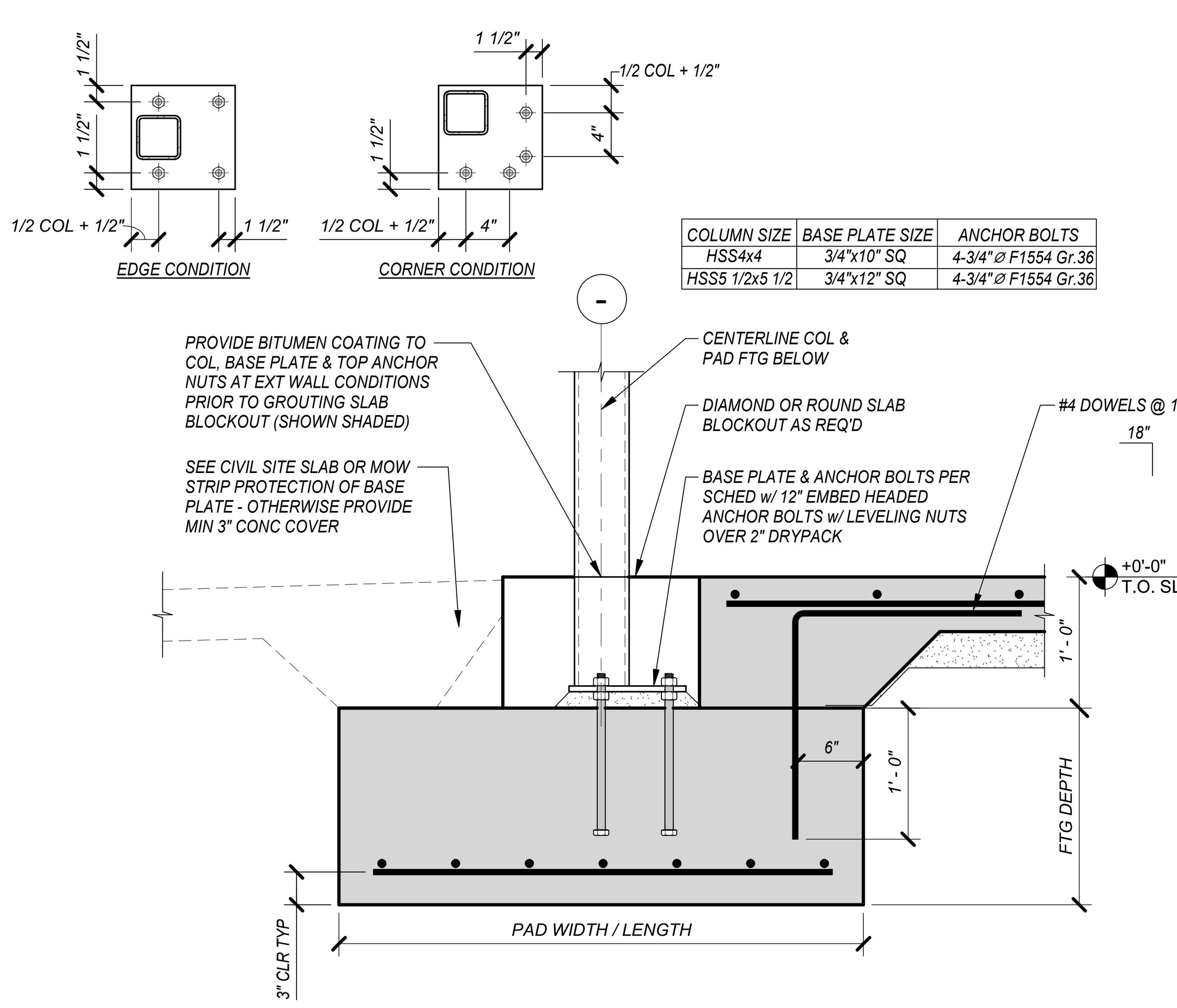
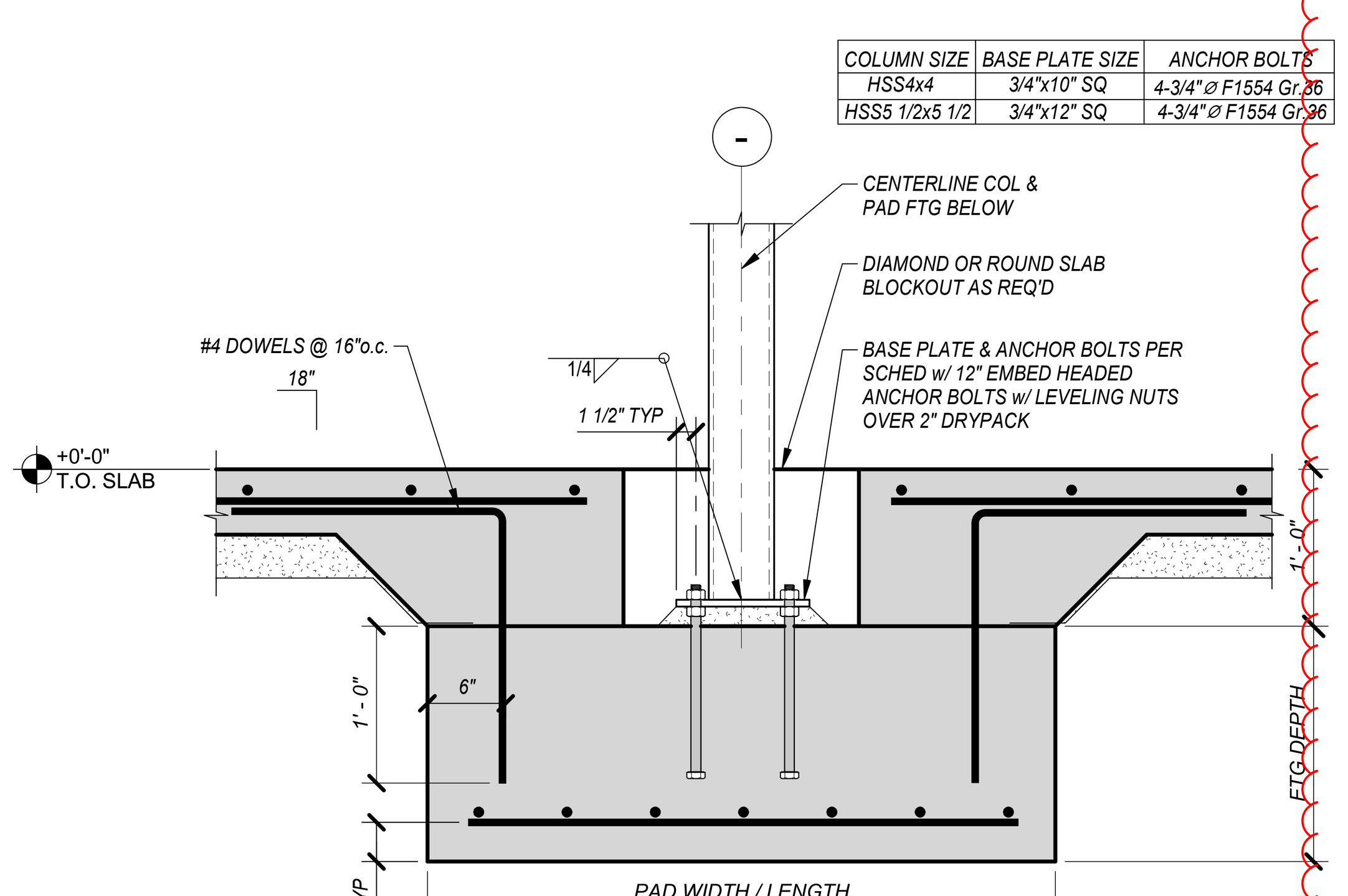


COLUMN SIZE	BASE PLATE SIZE	ANCHOR BOLTS
HSS4x4	3/4"x10" SQ	4-3/4"Ø F1554 Gr 36
HSS5 1/2x5 1/2	3/4"x12" SQ	4-3/4"Ø F1554 Gr 36

5 DETAIL
X/S701 1" = 1'-0"



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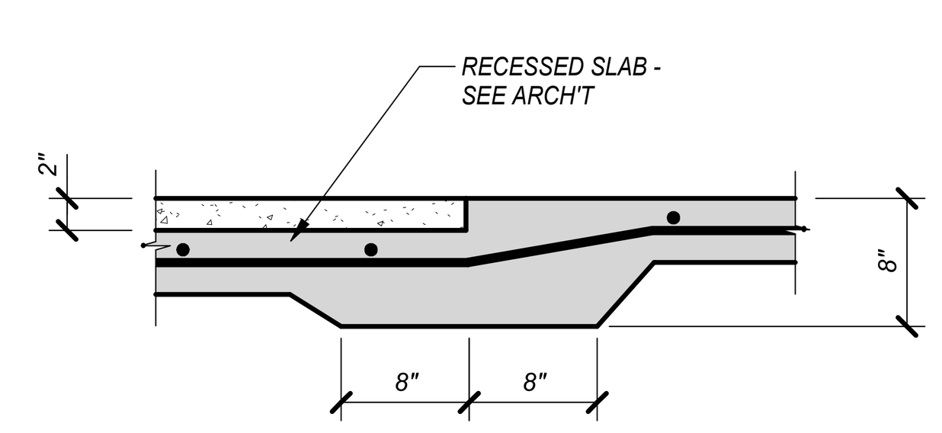
4 DETAIL
X/S701 1" = 1'-0"



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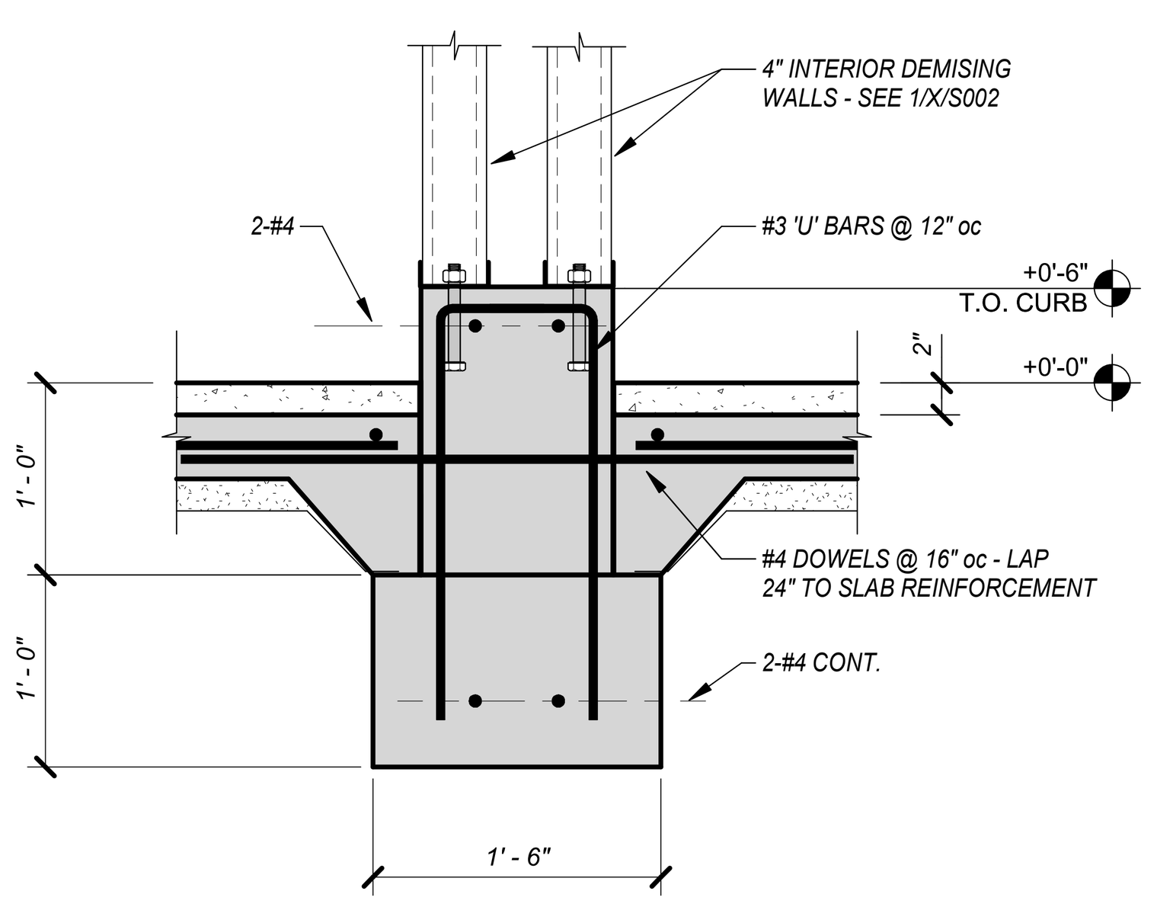

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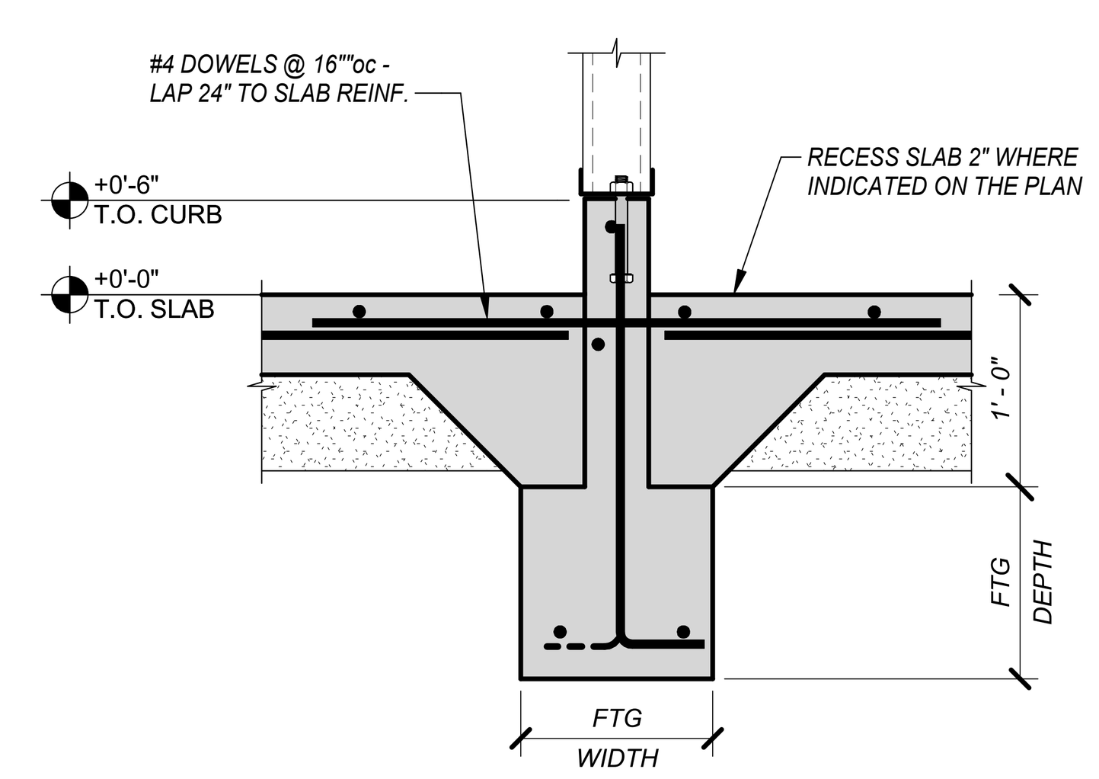

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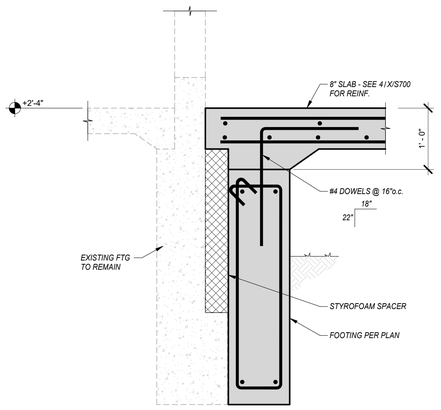

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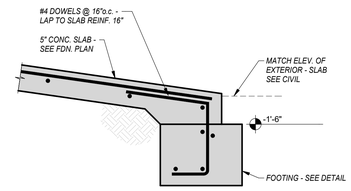

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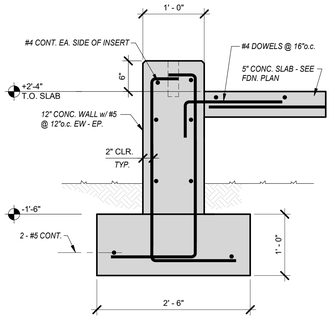

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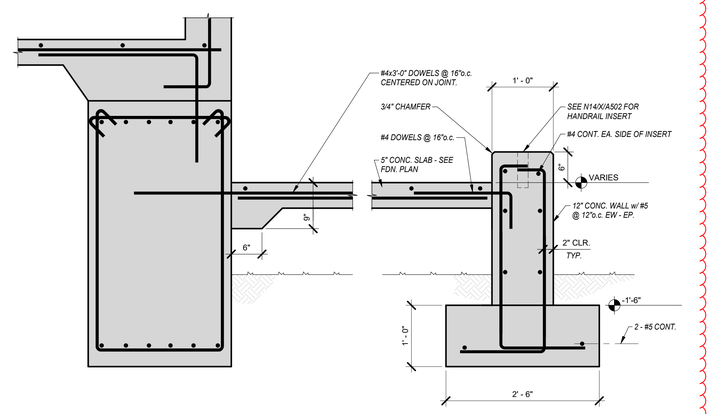

1 X/S703 DETAIL
1" = 1'-0"

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AD02-SX05

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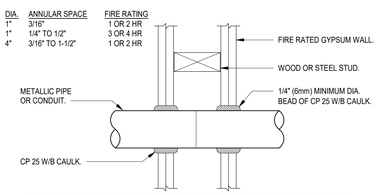
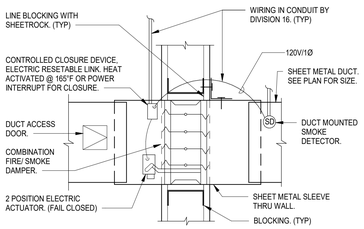
C:\Users\julieo\Documents\Clark IS - MET Addition_V22_jortizQ6M7A.rvt



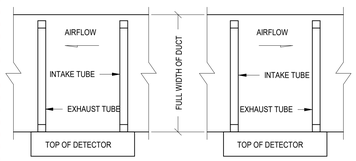
NOTES:
1. THE CAULK IS TO BE FORCED INTO THE ANNULAR SPACE TO THE MAXIMUM EXTENT POSSIBLE FLUSH WITH EXTERIOR OF THE PENETRATION SURFACE.
2. FINISH CAULKING WITH A 1/4" (6mm) MINIMUM BEAD OF CP 25 W/B CAULK APPLIED TO THE PERIMETER OF THE CONDUIT/PIPE AT ITS EGRESS FROM THE WALL.
3. INSTALL 3M FIREBARRIER ON BOTH SIDES OF THE WALL.
4. THESE RECOMMENDATIONS ARE BASED ON PRODUCT PERFORMANCE PER ASTM E-814 (UL 1479) FIRE TEST AND UL THROUGH-PENETRATION FIRESTOP SYSTEM # W-L-1001.

N1 — FIRE WALL PENETRATION - CONDUIT/PIPE
N.T.S.

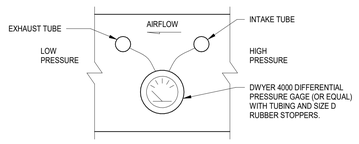


NOTES:
1. 16 GA. L FRAME WELDED, BOLTED OR SCREWED TO ALL 4 SIDES OF SLEEVE. L FRAME SHALL BE DESIGNED TO LAP WALL NOT LESS THAN 1". ROUGH OPENING IN MASONRY WALLS AND NET OPENING IN FRAME WALLS SHALL EXCEED NET O.D. OF DAMPER ASSEMBLY. DO NOT FASTEN SIDES OR TOP OF L TO WALL OR PARTITION.
2. SMOKE DETECTOR LOCATED IN DUCT WITHIN 5 FEET OF DAMPER.
3. FIRE DAMPER SHALL BE SFM LISTED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. CSFM LISTING: #3205-0245:0124.

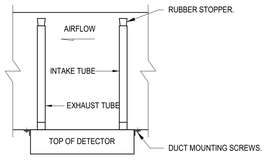
J1 — FIRE/SMOKE DAMPER THROUGH WALL
N.T.S.



SAMPLING TUBE ORIENTATION



AIR SAMPLING VERIFICATION

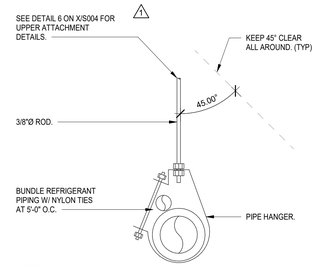


DETECTOR MOUNTING

ADDENDUM 02

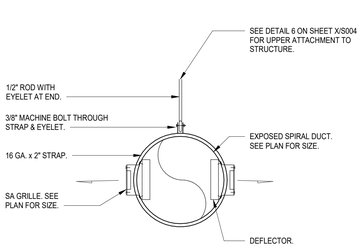
NOTES:
1. MOUNT DUCT DETECTOR IN SA DUCT UPSTREAM OF BRANCH TAKE-OFFS.
2. UPON DETECTION OF SMOKE UNITS SHALL BE SHUT-DOWN AUTOMATICALLY.
3. PROVIDE INTERLOCKS TO SHUT DOWN UNIT AS REQUIRED.
4. PROVIDE INTERLOCKS TO ACTIVATE ALARM SYSTEM PER CMC 609.0.

J4 — DUCT DETECTOR
N.T.S.



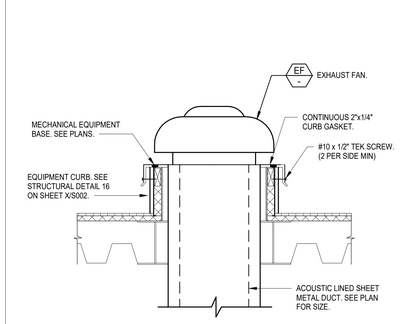
NOTES:
1. SEE PLANS FOR PIPE SIZE.
2. PROVIDE BRACING PER HCAI OPM 0043-13 FOR ROD LENGTHS OVER 12", AS MEASURED FROM ROD HANGER TO BOTTOM OF STRUCTURE.
3. SEE SPECIFICATIONS FOR REQUIRED SPACING.

N7 — REFRIGERANT PIPE HANGER
N.T.S.

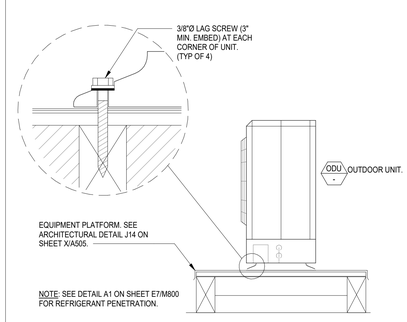


NOTES:
1. PROVIDE BRACING PER HCAI OPM 0043-13 FOR ROD LENGTHS OVER 12", AS MEASURED FROM ROD HANGER TO BOTTOM OF STRUCTURE.
2. SEE SPECIFICATIONS FOR REQUIRED SPACING.

J7 — EXPOSED SPIRAL DUCT & GRILLES
N.T.S.

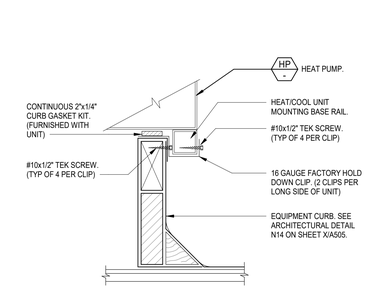


N11 — EXHAUST FAN ON CURB
N.T.S.

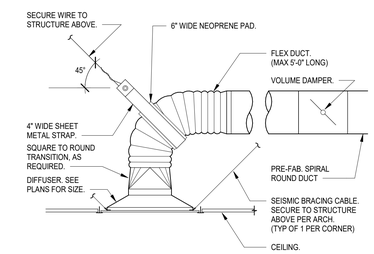


NOTE: SEE DETAIL A1 ON SHEET E7/M800 FOR REFRIGERANT PENETRATION.

J11 — SINGLE ZONE OUTDOOR UNIT
N.T.S.

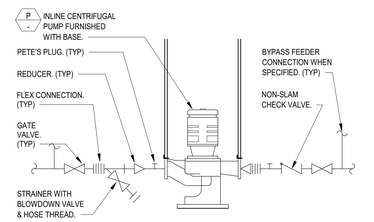


N14 — TYPICAL MECHANICAL UNIT ON CURB
N.T.S.



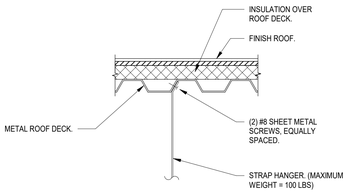
NOTES:
1. RETURN AND EXHAUST AIR REGISTERS SIMILAR.
2. INSTALL VOLUME DAMPER ON BRANCH DUCT AS CLOSE TO DUCT MAIN AS POSSIBLE.

J14 — CEILING GRILLE
N.T.S.

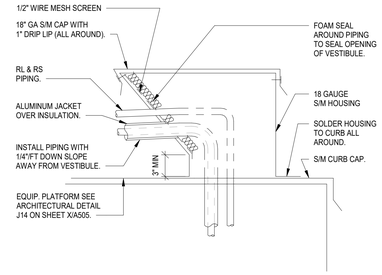


NOTE: SEE PLAN FOR PIPE SIZES.

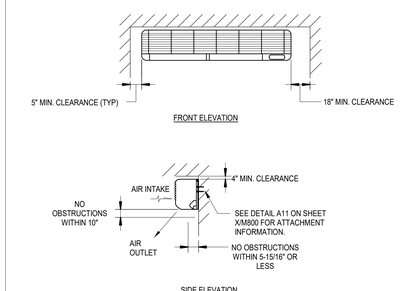
E1 — SUSPENDED IN-LINE PUMP
N.T.S.



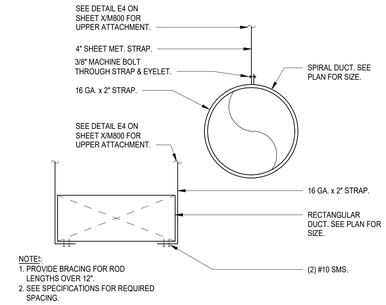
E4 — DUCTWORK SUPPORT DETAIL
N.T.S.



E7 — REFRIGERANT PIPE VESTIBULE
N.T.S.



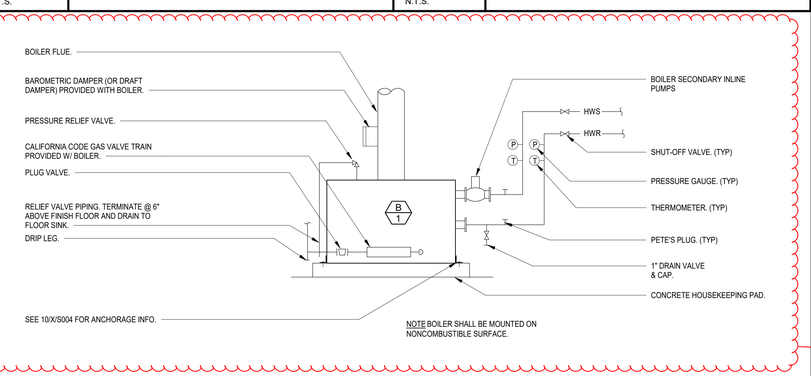
E11 — HIGH WALL CLEARANCES
N.T.S.



NOTE:
1. PROVIDE BRACING FOR ROD LENGTHS OVER 12".
2. SEE SPECIFICATIONS FOR REQUIRED SPACING.

DUCT SUPPORT DETAIL

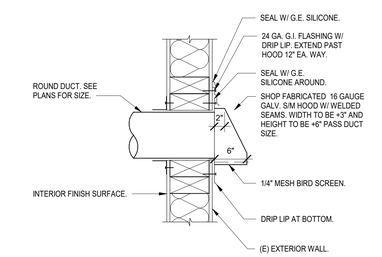
E14 — SUSPENDED DUCT SUPPORT
N.T.S.



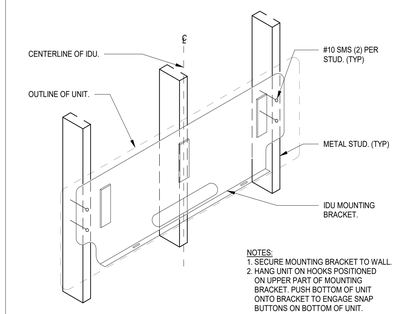
NOTE BOILER SHALL BE MOUNTED ON NONCOMBUSTIBLE SURFACE.

ADDENDUM 02

A1 — BOILER MOUNTING AND PIPING
N.T.S.

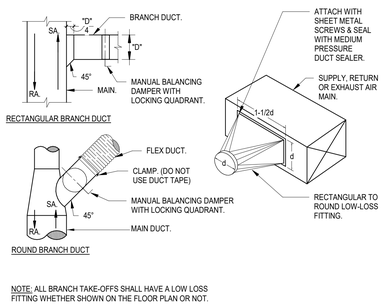


A7 — DRYER DUCT WALL PENETRATION
N.T.S.



NOTES:
1. SECURE MOUNTING BRACKET TO WALL.
2. HANG UNIT ON HOOKS POSITIONED ON UPPER PART OF MOUNTING BRACKET. PUSH BOTTOM OF UNIT ONTO BRACKET TO ENGAGE SNAP BUTTONS ON BOTTOM OF UNIT.

A11 — HIGH WALL INDOOR UNIT
N.T.S.



NOTE: ALL BRANCH TAKE-OFFS SHALL HAVE A LOW LOSS FITTING WHETHER SHOWN ON THE FLOOR PLAN OR NOT.

A14 — DUCT BRANCH CONNECTIONS
N.T.S.

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

General Notes

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(559) 940-7293
www.NPCeng.com
project no. 1326

Consultant

Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

TYPICAL INFORMATION
MECHANICAL DETAILS

Drawing

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Architect

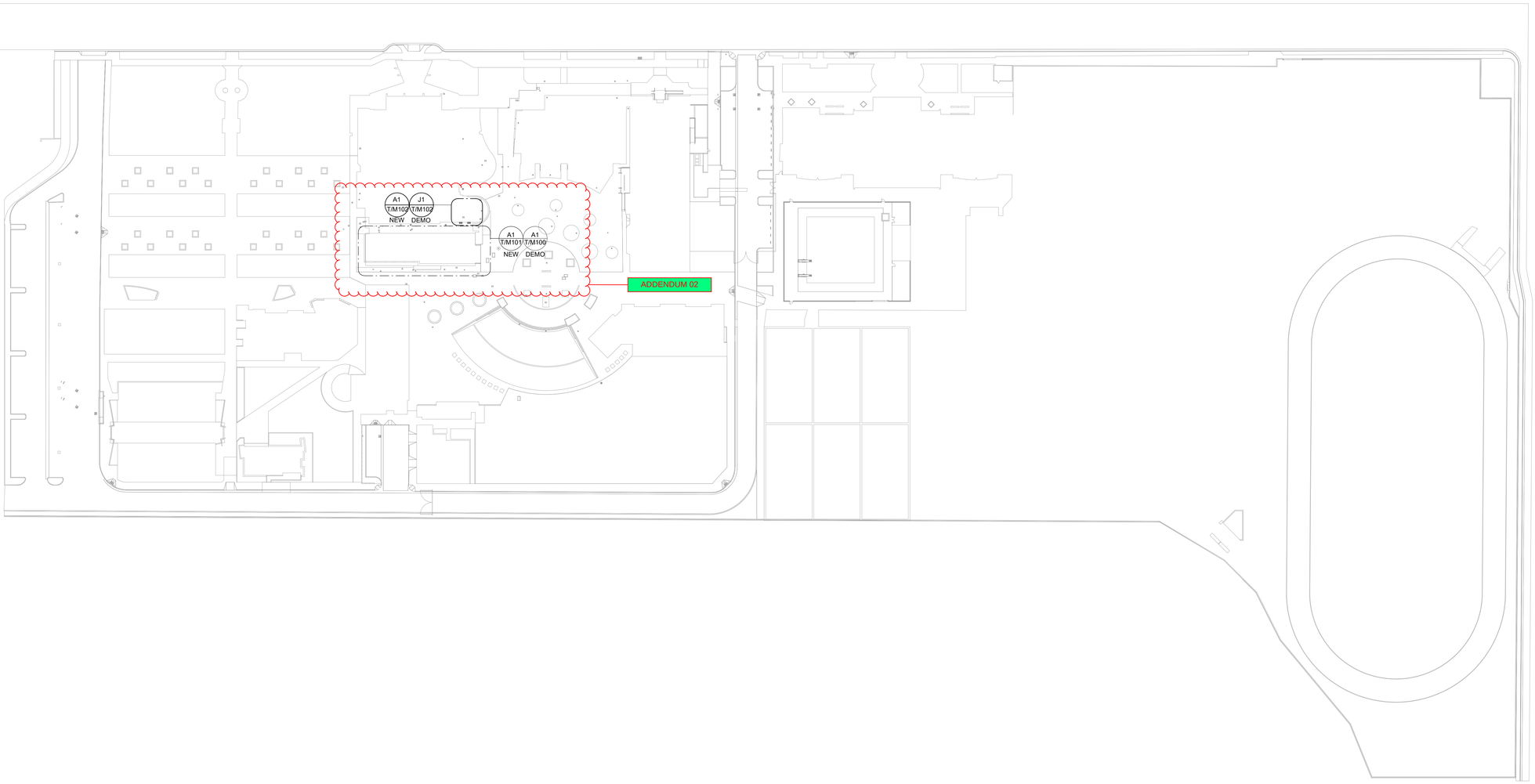
No.	Revision/Submission	Date

Revision

Designed By: JSS
Drawn By: JSS
Checked By: JS
Reviewed By: JS

Scale: As indicated
Project Number: 2215
Date: 03/27/2023

X/M800
AD02-MX01



N

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

General Notes

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engineers
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project no. 1326

Consultant

Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

SITE DEVELOPMENT
MECHANICAL SITE PLAN

Drawing

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Architect

No.	Revision/Submission	Date

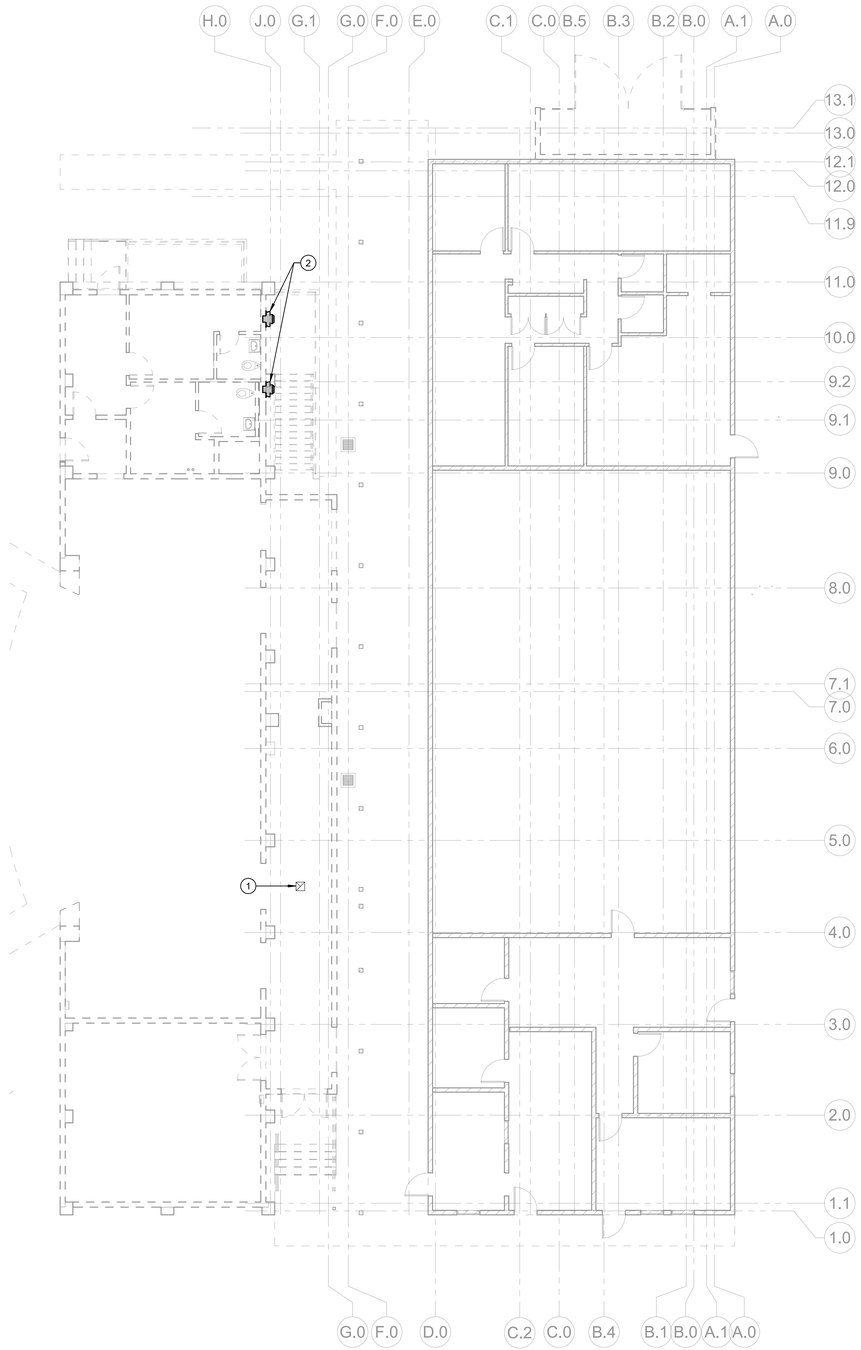
Revision

Designed By: JSS
Drawn By: JSS
Checked By: JS
Reviewed By: JS

Scale: 1" = 60'-0"
Project Number: 2215
Date: 03/27/2023

SD/M000
AD02-MX02

A1
MECHANICAL SITE PLAN
1" = 60'-0"



N

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

KEYNOTES (#)

1 REMOVE ROOF MOUNTED EXHAUST FAN AND SALVAGE FOR REINSTALL.

2 REMOVE (E) WALL MOUNT EXHAUST FANS ON SOUTH EXTERIOR WALL OF THE MET BUILDING AND DEMO (E) DUCTWORK.

General Notes

NET POSITIVE consulting engineers
(559) 940-7293
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project no. 1326

Consultant

Mercedes Edwards Theater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

BUILDING T
MECHANICAL DEMOLITION PLAN

Drawing

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Architect

No.	Revision/Submission	Date

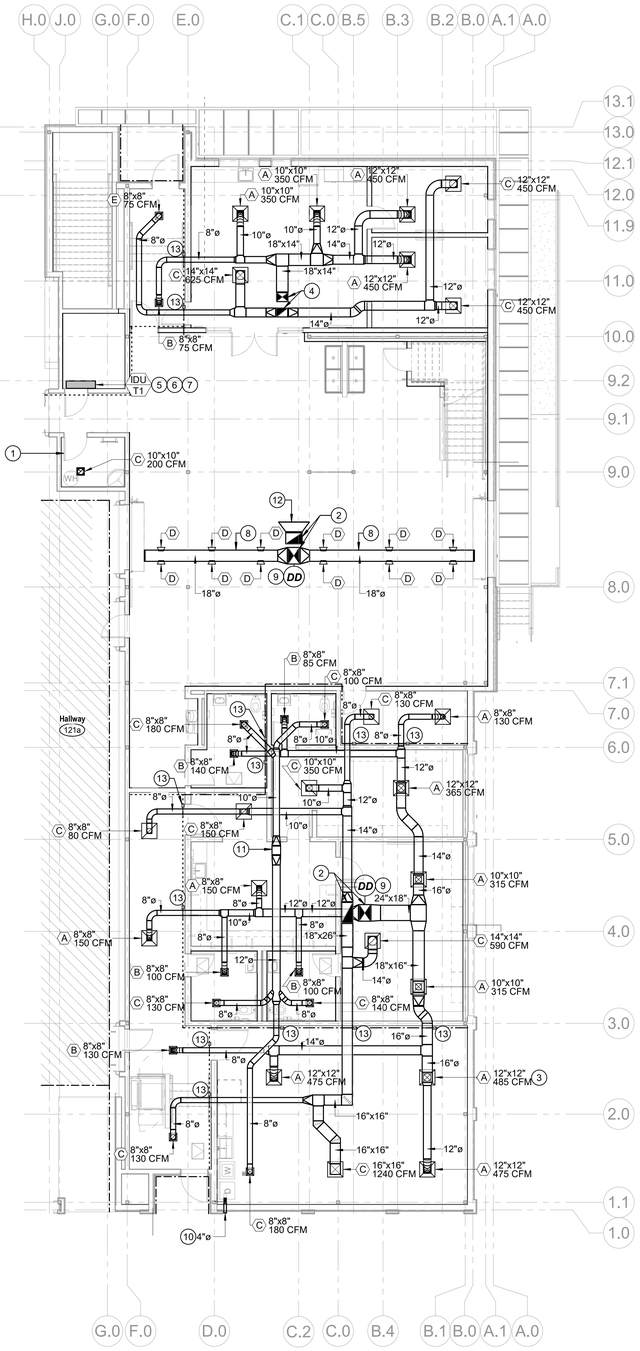
Revision

Designed By: JSS
Drawn By: JS
Checked By: JS
Reviewed By: JS

Scale: As indicated
Project Number: 2215
Date: 03/27/2023

T/M100
AD02-MX03

A1
1/8" = 1'-0"
MECHANICAL DEMOLITION PLAN



N

SYMBOLS LEGEND

ADDENDUM 02

- 1 HR. OCCUPANCY SEPARATION / FIRE PARTITION - (1 HR. FIRE RESISTIVE CONSTRUCTION, 45 MIN. DOOR ASSEMBLIES, 45 MIN. WINDOW ASSEMBLIES)
- 1 HR. FIRE BARRIER - (1 HR. FIRE RESISTIVE CONSTRUCTION, 60 MIN. DOOR ASSEMBLIES)
- 1 HR. CORRIDOR WALL - (1 HR. FIRE RESISTIVE CONSTRUCTION, 20 MIN. DOOR ASSEMBLIES, 45 MIN. WINDOW ASSEMBLIES)

KEYNOTES (#)

ADDENDUM 02

1. INCLUDE DOOR LOUVER AT CUSTODIAL (205).
2. 23 7/8"X19 1/4" SA & 32 1/4"X16 3/4" RA UP THROUGH ROOF TO PACKAGE UNIT. REFER TO ROOF PLAN FOR CONTINUATION.
3. NEW CEILING REGISTER WITH FLEXIBLE DUCT PER DETAIL J14 ON X/M800. (TYP)
4. 18"X15 1/2" SA & 24"X14" RA UP THROUGH ROOF TO PACKAGE UNIT. REFER TO ROOF PLAN FOR CONTINUATION.
5. CLEARANCES FOR IDU-T1 PER DETAIL E11 ON SHEET X/M800.
6. MOUNTING FOR INDOOR UNIT PER DETAIL A11 ON SHEET X/M800.
7. REFRIGERANT PIPING HANGERS PER DETAIL N7 ON SHEET X/M800.
8. EXPOSED SPIRAL DUCT & GRILLES INSTALLED PER DETAIL J7 ON SHEET X/M800.
9. DUCT DETECTOR INSTALLATION PER DETAIL J4 ON SHEET X/M800.
10. (N) 4" DRYER DUCT PENETRATION THROUGH WALL PER DETAIL A17 ON SHEET X/M800.
11. EXHAUST DUCT UP THRU ROOF TO EF-T2.
12. PROVIDE BELLMOUTH OPENING WITH 1/2" SCREEN INLET.
13. PROVIDE FIRE SMOKE DAMPER & FIRE WALL PENETRATION PER DETAIL J1 ON SHEET X/M800.

GENERAL NOTES

A. PIPE AND CONDUIT PENETRATIONS THROUGH FIRE WALL ASSEMBLIES PER DETAIL N1 ON SHEET X/M800.

DSA File No.:
10-27

DSA Application No.:
02-121097

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General Notes

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Consultant

Mercedes Edwards Theater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

BUILDING T
MECHANICAL FLOOR PLAN

Drawing

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Architect

No.	Revision/Submission	Date

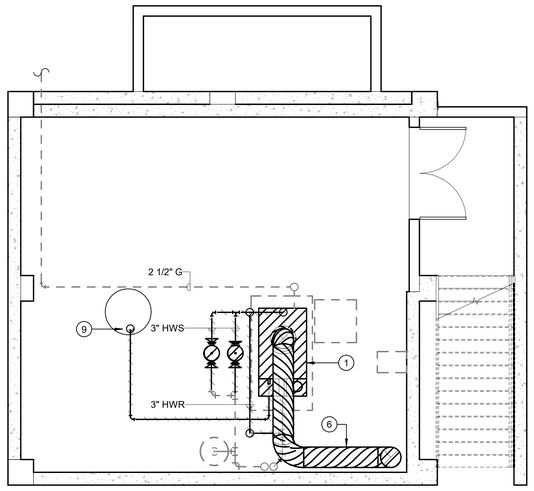
Revision

Designed By: JSS
Drawn By: JSS
Checked By: JS
Reviewed By: JS

Scale: As indicated
Project Number: 2215
Date: 03/27/2023

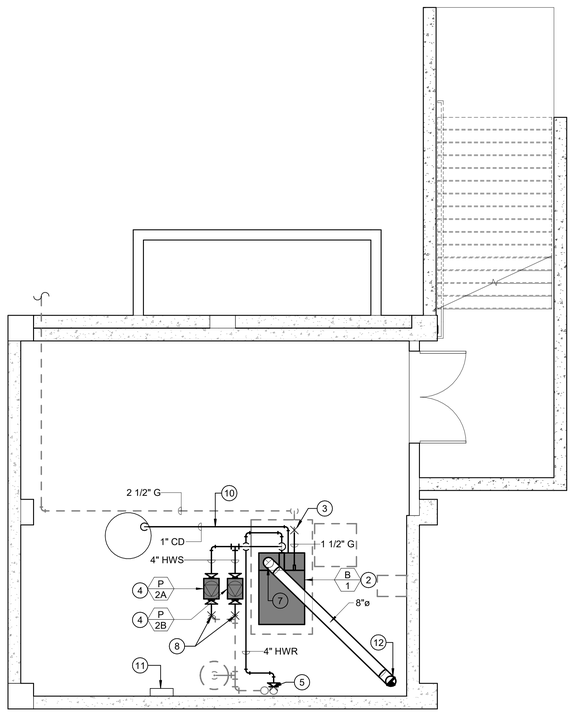
T/M101
AD02-MX04

A1
1/8" = 1'-0"
MECHANICAL FLOOR PLAN



J1
1/4" = 1'-0"

MECHANICAL BOILER ROOM DEMO PLAN



A1
1/4" = 1'-0"

MECHANICAL BOILER ROOM PLAN

N

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

KEYNOTES (#)

1 REMOVE (E) BOILER UNIT. CONCRETE PAD WILL REMAIN.
2 (N) GAS-FIRED, CONDENSING BOILER ON (E) CONCRETE PAD PER DETAIL A1 ON SHEET X/M800.
3 POC OF (N) 1-1/2" GAS TO EXISTING 2-1/2" GASLINE.
4 (N) INLINE BOILER PUMP SUSPENDED PER DETAIL E1 ON SHEET X/M800.
5 POC OF (N) 4" BOILER RETURN TO (E) RETURN RISER.
6 REMOVE (E) FLUE DUCT & FLUE RISER IN THE SOUTHWEST CORNER OF THE BOILER ROOM.
7 ROUTE (N) BOILER FLUE TO (E) FLUE RISER IN THE SOUTHWEST CORNER OF THE BOILER ROOM.
8 POC OF (N) 3" HWS TO (E) 3" HWS.
9 (E) SUMP BASIN. REMOVE (E) BOILER CONDENSATE LINE ROUTED TO BASIN.
10 ROUTE (N) 1" CONDENSATE LINE FROM BOILER TO (E) SUMP BASIN. — ADDENDUM 02
11 (N) VFD CONTROLS FOR SEONDARY PUMPS.
12 (N) FLUE UP THRU (E) ROOF PENETRATION. PROVIDE (N) FLASHING TO SEAL WATER TIGHT.

General Notes

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www.NPCeng.com
project no. 1326

Consultant

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Clovis Unified School District
Clovis, CA

Project

BUILDING T
MECHANICAL BOILER ROOM PLANS

Drawing

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Architect

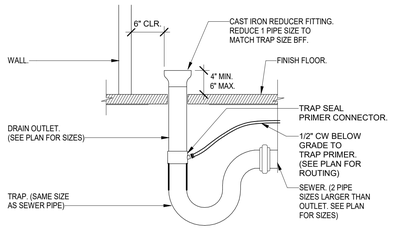
No.	Revision/Submission	Date

Revision

Designed By: JSS
Drawn By: JSS
Checked By: JS
Reviewed By: JS

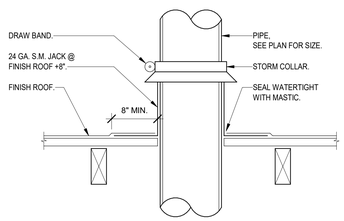
Scale: As indicated
Project Number: 2215
Date: 03/27/2023

T/M102
AD02-MX05



N4 HUB DRAIN DETAIL

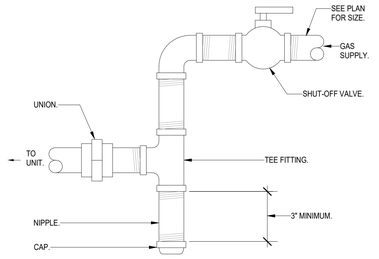
N.T.S.



NOTE:
FOR ROOF SYSTEM, SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.

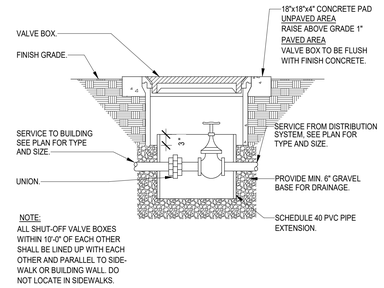
N8 PIPE THRU ROOF - NON INSULATED

N.T.S.



N11 GAS SOV & DIRT LEG

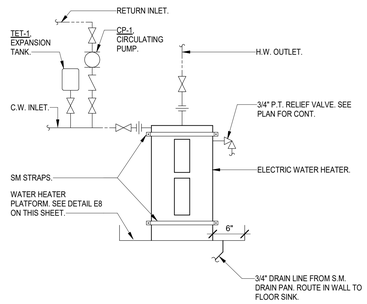
N.T.S.



NOTE:
ALL SHUT-OFF VALVE BOXES WITHIN 10'-0" OF EACH OTHER SHALL BE LINED UP WITH EACH OTHER AND PARALLEL TO SIDE-WALK OR BUILDING WALL. DO NOT LOCATE IN SIDEWALKS.

N14 SHUT-OFF VALVE IN YARD BOX

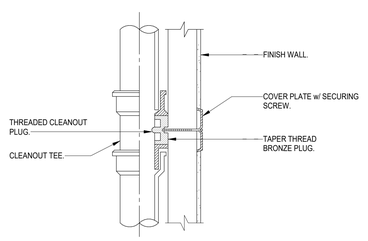
N.T.S.



NOTE: SEE PLAN FOR PIPE SIZES.

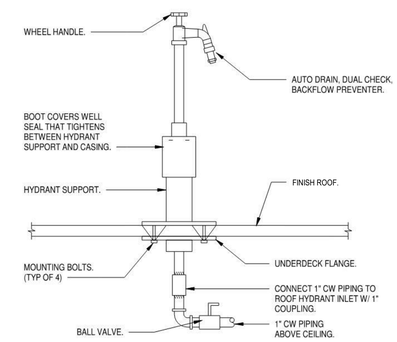
J4 ELECTRIC WATER HEATER INSTALLATION

1" = 1'-0"



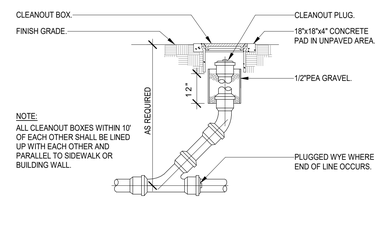
J8 WALL CLEANOUT

N.T.S.



J11 ROOF HYDRANT

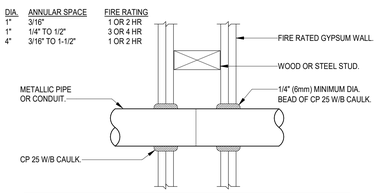
N.T.S.



J14 CLEANOUT TO GRADE

N.T.S.

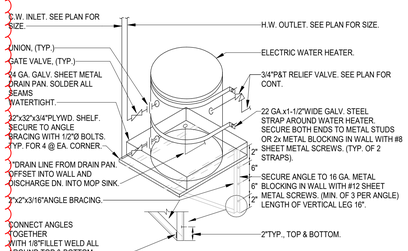
ADDENDUM 02



NOTES:
1. THE CAULK IS TO BE FORCED INTO THE ANNULAR SPACE TO THE MAXIMUM EXTENT POSSIBLE FLUSH WITH EXTERIOR OF THE PENETRATION SURFACE.
2. FINISH CAULKING WITH A 1/4" (6mm) MINIMUM BEAD OF CP 25 W/B CAULK APPLIED TO THE PERIMETER OF THE CONDUIT/PIPE AT ITS EGRESS FROM THE WALL.
3. INSTALL 3M FIREBARRIER ON BOTH SIDES OF THE WALL.
4. THESE RECOMMENDATIONS ARE BASED ON PRODUCT PERFORMANCE PER ASTM E-814 (UL 1479) FIRE TEST AND UL THROUGH-PENETRATION FIRESTOP SYSTEM # W-L-1001.

E4 FIRE WALL PENETRATION - CONDUIT/PIPE

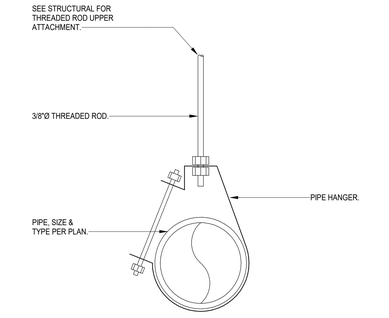
N.T.S.



WATER HEATER DETAIL

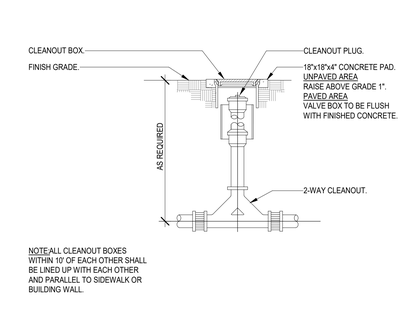
E8 WATER HEATER PLATFORM

N.T.S.



E11 TYPICAL PIPE SUPPORT

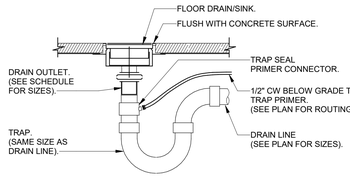
N.T.S.



NOTE:ALL CLEANOUT BOXES WITHIN 10' OF EACH OTHER SHALL BE LINED UP WITH EACH OTHER AND PARALLEL TO SIDEWALK OR BUILDING WALL.

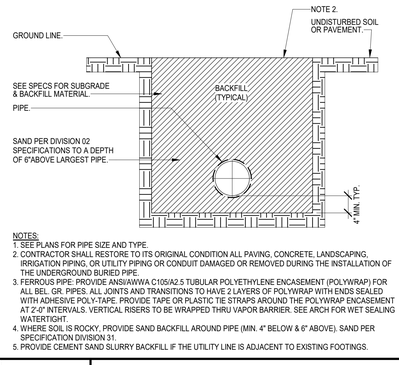
E14 2-WAY SURFACE CLEANOUT

N.T.S.



A8 FLOOR DRAIN/SINK w/ TP CONN.

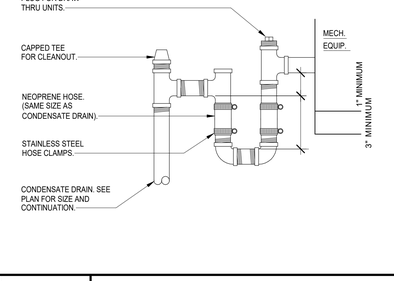
N.T.S.



NOTES:
1. SEE PLANS FOR PIPE SIZE AND TYPE.
2. CONTRACTOR SHALL RESTORE TO ITS ORIGINAL CONDITION ALL PAVING, CONCRETE, LANDSCAPING, IRRIGATION PIPING, OR UTILITY PIPING OR CONDUIT DAMAGED OR REMOVED DURING THE INSTALLATION OF THE UNDERGROUND BURIED PIPE.
3. FERROUS PIPE: PROVIDE ANSI/AWWA C105/A2.5 TUBULAR POLYETHYLENE ENCASEMENT (POLYWRAP) FOR ALL BEL. GR. PIPES. ALL JOINTS AND TRANSITIONS TO HAVE 2 LAYERS OF POLYWRAP WITH ENDS SEALED WITH ADHESIVE POLY-TAPE. PROVIDE TAPE OR PLASTIC TIE STRAPS AROUND THE POLYWRAP ENCASEMENT AT 2'-0" INTERVALS. VERTICAL RISERS TO BE WRAPPED THRU VAPOR BARRIER. SEE ARCH FOR WET SEALING WATERTIGHT.
4. WHERE SOIL IS ROCKY, PROVIDE SAND BACKFILL AROUND PIPE (MIN. 4" BELOW & 6" ABOVE). SAND PER SPECIFICATION DIVISION 31.
5. PROVIDE CEMENT SAND SLURRY BACKFILL IF THE UTILITY LINE IS ADJACENT TO EXISTING FOOTINGS.

A11 TYPICAL UTILITY TRENCH

1" = 1'-0"



A14 CONDENSATE DRAIN CONNECTION

N.T.S.

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

General Notes

NET POSITIVE consulting engineers
(559) 940-7293
www.NPCeng.com
project no. 1326

Consultant

Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

TYPICAL INFORMATION
PLUMBING DETAILS

Drawing

darden architects
ARCHITECTURE PLANNING INTERIORS
www.dardenarchitects.com
6790 N. West Ave. • Fresno, CA 93711 • T. 559.448.8051

Architect

No.	Revision/Submission	Date

Revision

	Designed By: JS	Copyright 2023 Darden Architects
Scale: As indicated	Drawn By: AV	
Project Number: 2215	Checked By: JDD	X/P800 AD02-PX01
Date: 03/27/2023	Reviewed By: JS	

7/27/2023 10:32:02 AM
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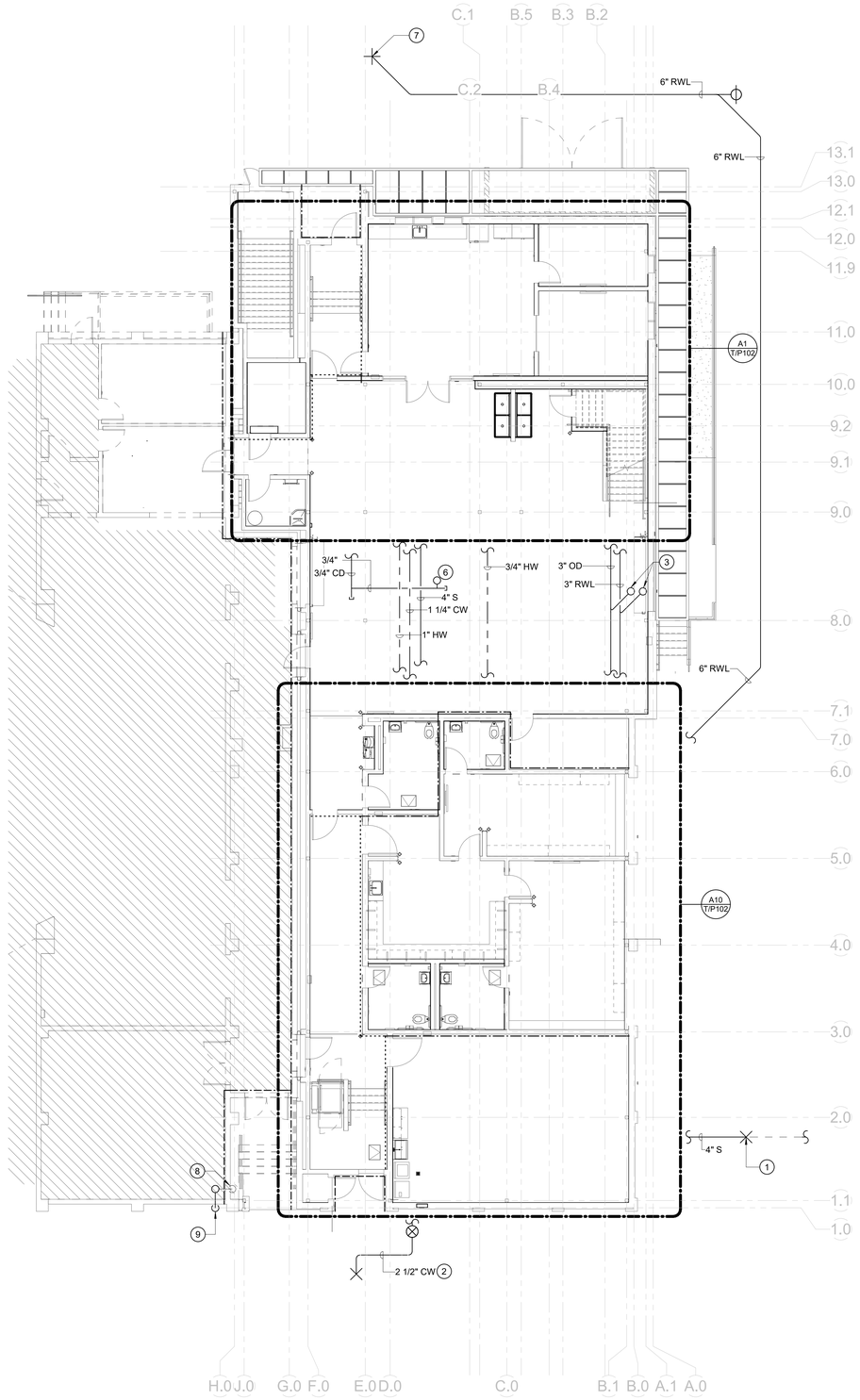

SYMBOLS LEGEND

- 1 HR. OCCUPANCY SEPARATION / FIRE PARTITION - (1 HR. FIRE RESISTIVE CONSTRUCTION, 45 MIN. DOOR ASSEMBLIES, 45 MIN. WINDOW ASSEMBLIES)
- 1 HR. CORRIDOR WALL - (1 HR. FIRE RESISTIVE CONSTRUCTION, 20 MIN. DOOR ASSEMBLIES, 45 MIN. WINDOW ASSEMBLIES)
- 1 HR. FIRE BARRIER - (1 HR. FIRE RESISTIVE CONSTRUCTION, 60 MIN. DOOR ASSEMBLIES)

ADDENDUM 02

KEYNOTES (#)

1 4" SEWER CONNECTION FOR BUILDING. COORDINATE WITH CIVIL.
2 2-1/2" COLD WATER CONNECTION FOR BUILDING. COORDINATE WITH CIVIL.
3 ROOF & OVERFLOW DRAIN DN THRU ROOF. SEE SHEET P500 FOR CONTINUATION.
4 CONDENSATE DRAIN DN IN WALL. TERMINATE IN FLOOR SINK W/ 90° ELL DN w/ +2" AIR GAP.
5 NOT USED.
6 CONDENSATE DRAIN THRU ROOF FROM MECHANICAL UNIT. SEE SHEET T/P500 FOR CONTINUATION.
7 POC TO EXISTING STORM LINE.
8 DEMO (E) FIRE RISER TEST CONNECTION ON SOUTH WALL.
9 (N) FIRE RISER TEST CONNECTION.

ADDENDUM 02

GENERAL NOTES

1. REFER TO OPTION #2 IN THE ANCHORAGE AND BRACING NOTES ON SHEET X/P001 FOR PLUMBING PIPING STANDARDS. PLUMBING PIPING SHALL COMPLY WITH OPM# 0043-13.
2. ALL BELOW GRADE STEEL PIPE SHALL BE POLY WRAPPED PER DETAIL A11 ON SHEET X/P800.
3. REFER TO DETAIL E4 ON SHEET X/P800 FOR PIPE/CONDUIT PENETRATIONS THROUGH FIRE WALL ASSEMBLIES.

N

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

General Notes

NET POSITIVE
consulting
engineers
(559) 940-7293
www.NPCeng.com
project no. 1326

Consultant

Mercedes Edwards Theater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

BUILDING T
PLUMBING FLOOR PLAN

Drawing

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ARCHITECTURE
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www.dardenarchitects.com
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Architect

No.	Revision/Submission	Date

Revision

Designed By: JS
Drawn By: AV
Checked By: JDD
Reviewed By: JS
Scale: As indicated
Project Number: 2215
Date: 03/27/2023

T/P101
AD02-PX02

A1
PLUMBING FLOOR PLAN
1/8" = 1'-0"

7/27/2023 10:31:54 AM
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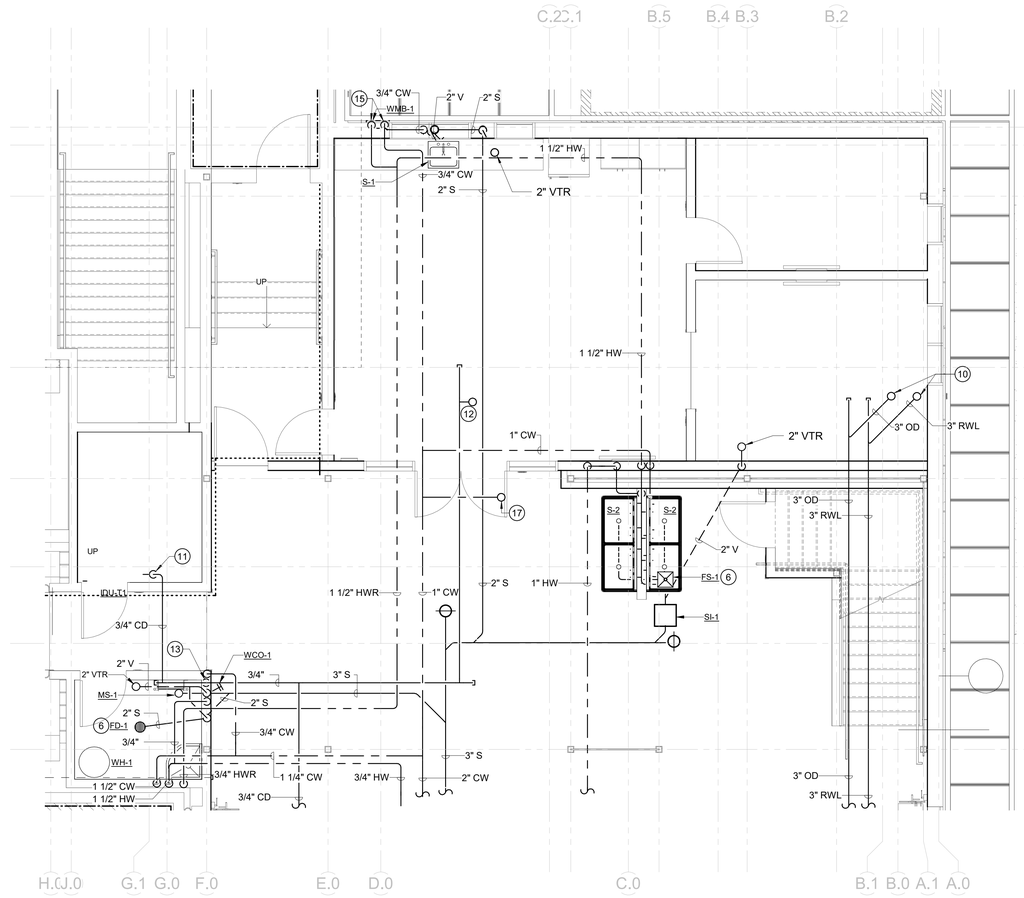

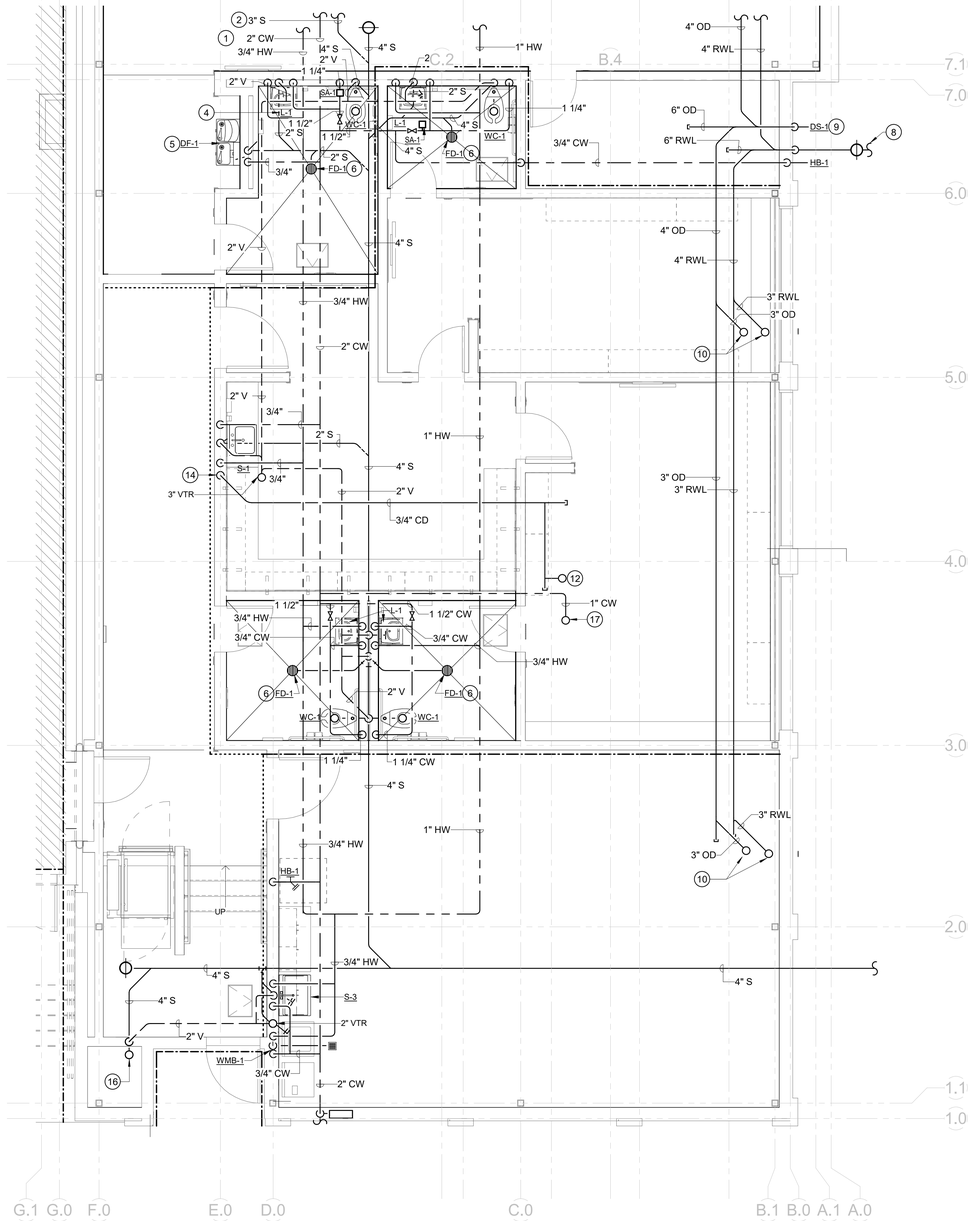

SYMBOLS LEGEND

ADDENDUM 02

- 1 HR. OCCUPANCY SEPARATION / FIRE PARTITION - (1 HR. FIRE RESISTIVE CONSTRUCTION, 45 MIN. DOOR ASSEMBLIES, 45 MIN. WINDOW ASSEMBLIES)
- 1 HR. CORRIDOR WALL - (1 HR. FIRE RESISTIVE CONSTRUCTION, 20 MIN. DOOR ASSEMBLIES, 45 MIN. WINDOW ASSEMBLIES)
- 1 HR. FIRE BARRIER - (1 HR. FIRE RESISTIVE CONSTRUCTION, 60 MIN. DOOR ASSEMBLIES)

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

KEYNOTES

1	1-1/4" CW FOR RESTROOMS. SEE PLAN A1 ON SHEET T/P101 FOR CONTINUATION.
2	3" S FOR RESTROOMS. SEE PLAN A1 ON SHEET T/P101 FOR CONTINUATION
3	4" S, 2" V & 1" CW DN TO WATER CLOSET.
4	2" S w/ WCO, 1-1/2" V, 3/4" CW/HW DN TO LAV.
5	2" S, 1-1/2" V & 3/4" CW DN FOR DRINKING FOUNTAIN.
6	INSTALL FLOOR DRAIN/FLOOR SINK WITH TRAP SEAL.
7	2" S w/ TRAP, 1-1/2" V & 1/2" TRAP PRIMER CONNECTION FOR FLOOR DRAIN/SINK.
8	RAINWATER LEADER DN IN EXTERIOR WALL AND CONNECT TO STROM DRAIN BELOW GRADE. PROVIDE 2-WAY SURFACE CLEAN OUT PER DETAIL E14 ON X/P800. SEE CIVIL SHEETS FOR CONTINUATION.
9	OVERFLOW DRAIN TO DAYLIGHT AT EXTERIOR WALL W/ DOWNSPOUT NOZZLE, DS-1. SEE ARCHITECTURAL EXTERIOR FOR ELEVATIONS.
10	ROOF & OVERFLOW DRAIN DN THRU ROOF. SEE SHEET T/P500 FOR CONTINUATION.
11	CONDENSATE DRAIN CONNECTION AT INDOOR UNIT PER DETAIL A14 ON SHEET X/P800.
12	CONDENSATE DRAIN THRU ROOF FROM MECHANICAL UNIT. SEE SHEET T/P500 FOR CONTINUATION.
13	CONDENSATE DRAIN DN IN WALL. TERMINATE ABOVE MOP SINK WITH 1" AIR GAP.
14	CONDENSATE DRAIN CONNECTION AT TAIL PIECE OF SINK.
15	DROP 3/4" CW & HW BELOW WINDOW FOR CONNECTION TO S-1 & CW CONNECTION TO WMB-1.
16	2" S w/ TRAP, 1-1/2" V & 1/2" TO HUB DRAIN, PER DETAIL N4 ON SHEET X/P800. INSTALL HUB DRAIN WITH TRAP SEAL.
17	1" CW UP TO HOSE BIBB ON ROOF PER DETAIL J11 ON SHEET X/800.

GENERAL NOTES

1. REFER TO OPTION #2 IN THE ANCHORAGE AND BRACING NOTES ON SHEET X/P001 FOR PLUMBING PIPING STANDARDS. PLUMBING PIPING SHALL COMPLY WITH OPM# 0043-13.
2. ALL BELOW GRADE STEEL PIPE SHALL BE POLY WRAPPED PER DETAIL A11 ON SHEET X/P800.
3. REFER TO DETAIL E4 ON SHEET X/P800 FOR PIPE/CONDUIT PENETRATIONS THROUGH FIRE WALL ASSEMBLIES.

ADDENDUM 02

General Notes

NET POSITIVE consulting engineers
(559) 940-7293
www.NPCeng.com
project no. 1326

Consultant

Mercedes Edwards Theater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

BUILDING T
ENLARGED PLUMBING PLANS

Drawing

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Architect

No.	Revision/Submission	Date

Revision

	Designed By: JS	Copyright 2023 Darden Architects
Scale: As indicated	Drawn By: AV	
Project Number: 2215	Checked By: JDD	*T/P102*
Date: 03/27/2023	Reviewed By: JS	**AD02-PX03**

A1	ENLARGED PLUMBING PLAN - WORKROOM / SCENE SHOP	A10 ENLARGED PLUMBING PLAN - RESTROOMS / LAUNDRY ROOM
1/4" = 1'-0"		1/4" = 1'-0"

CLOVIS FIRE DEPARTMENT

Standard #2.3

Water Flow for Sprinkler System

Whereas the City of Clovis Water Department is the sole water purveyor for all building properties within its city limit;

The following water supply information is the recognized standard water-flow data for the City of Clovis. This information is provided for the purpose of designing and installation of fire sprinkler systems.

Static: 45 PSI
Residual: 35 PSI
GPM: 1800 GPM

Exception:
Under special situations, the Clovis Fire Department reserves the right to require testing of the water supply in the general area of a project, to verify or determine the actual available water flow. The water supply flow testing shall be conducted by an approved third-party entity and will require an Operational Permit for the use of the fire hydrants in conformance with C.M.C. 6.5.109. All water-flow testing shall be done in the presence of a Clovis Fire Official. When this testing is required, the **most regulating** water-flow data will be used.

Regarding: Clark Intermediate School
Location: 902 5th St, Clovis CA 93612
Date: March 16, 2023

To Interested Parties,

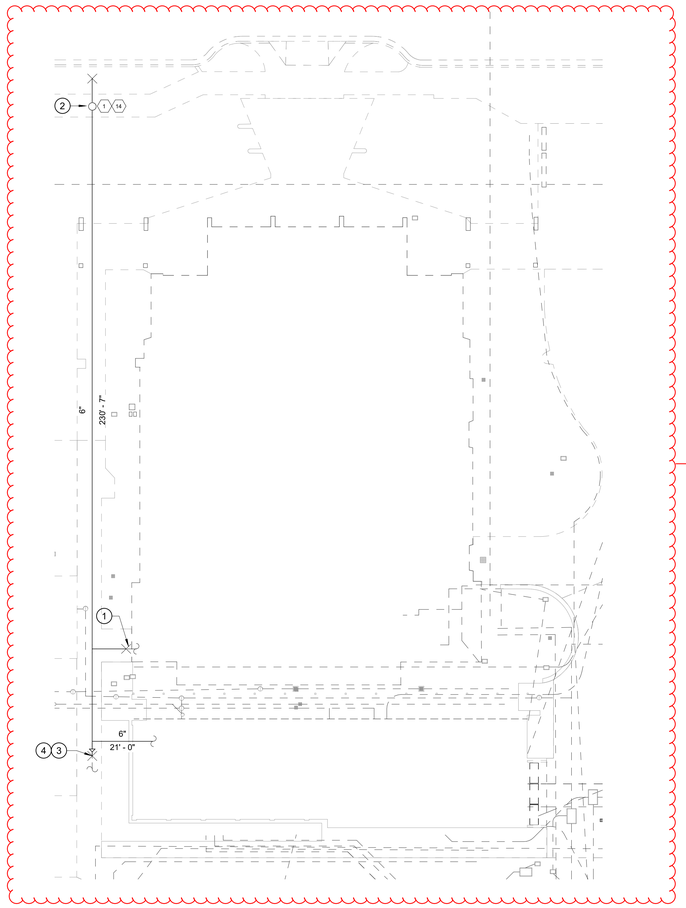
- ❑ The above project site has been evaluated and found to be included in the water-flow criteria of Clovis Fire Standard #41. If you should have any questions please feel free to call the Clovis Fire Department.

Clovis Fire Department
1233 Fifth Street
Clovis, CA 93612
559-324-2200

Sincerely,

Rick Fultz
Fire and Life Safety Specialist
Clovis Fire Department
Office (559)324-2214
rickf@cityofclovis.com

(P:Prev/Standards/Public/Standard 41Water Flow for Sprinkler System)



ADDENDUM 02

N

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

KEYNOTES

1 POC OF 4" FW TO (E) 4" FW SERVING MET STAGE USING C900 PIPE.
2 POC OF 6" FW TO (E) 6" MAIN. (E) HYDRANTS & VALVES TO REMAIN.
3 POC OF 6" FW TO (E) 4" FW CONT.
4 REQUIRES ENCROACHMENT PERMIT WITH THE CITY WATER DEPARTMENT.

ADDENDUM 02

General Notes

NET POSITIVE consulting engineers
(559) 940-7293
www.NPCeng.com
project no. 1326

Consultant

Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

SITE DEVELOPMENT
FIRE SPRINKLER SITE PLAN

Drawing

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Architect

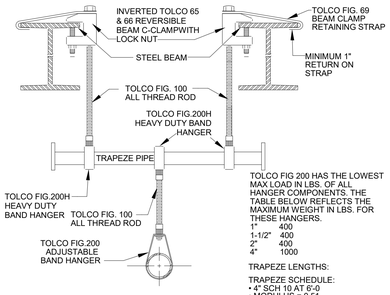
No.	Revision/Submission	Date

Revision

Designed Designer | Copyright 2022 Darden Architects
Scale: As indicated | Drawn By: Author
Project Number: 2215 | Checked fChecker
Date: 03/27/2023 | ReviewedApprover

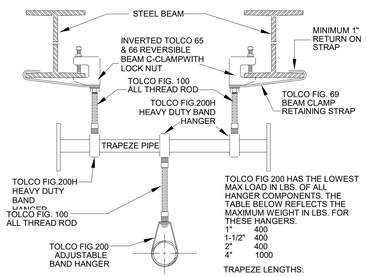
SD/FS001
AD02-FSX01

A1
3/64" = 1'-0"
FIRE SPRINKLER SITE PLAN



N1 — BEAM C-CLAMP WITH PIPE TRAPEZE HANGER

NTS



J1 — REVERSIBLE BEAM C-CLAMP WITH PIPE TRAPEZE HANGER

NTS

TABLE 9.2.2.1(a) MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN.)

NOMINAL PIPE SIZE	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"	8"
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	9-0	9-0	9-0	9-0
THREADED LIGHTWALL	N/A	12-0	12-0	12-0	12-0	12-0	9-0	N/A	N/A	N/A
COPPER TUBE	8-0	8-0	10-0	12-0	12-0	12-0	9-0	N/A	N/A	N/A
CPVC	5-6	6-0	6-6	7-0	8-0	9-0	N/A	N/A	N/A	N/A

FIGURE A.9.2.3.2.2 DISTANCE FROM SPRINKLER TO HANGER

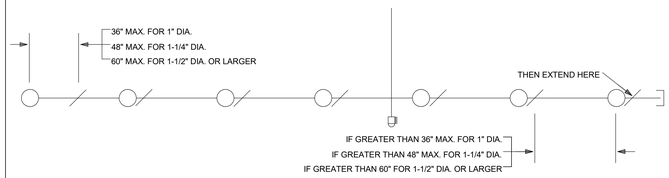
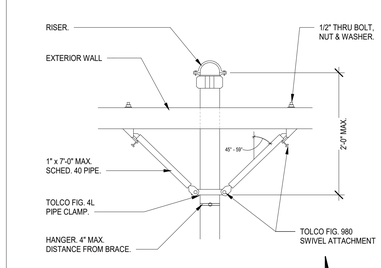


TABLE 9.1.2.1 HANGER ROD SIZE

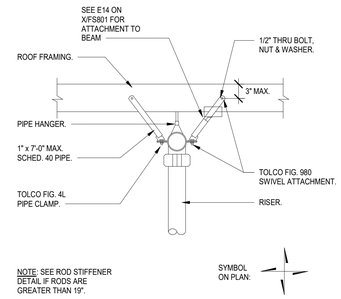
PIPE SIZE	DIAMETER OF ROD	PIPE SIZE	DIAMETER OF ROD
UP TO AND INCLUDING 4"	3/8"	6" AND 8"	1/2"

J4 — PROJECT HANGER SPACING TABLE

NTS



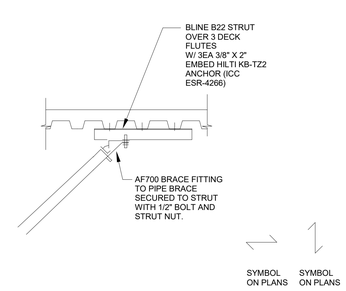
4-WAY SWAY BRACE @ RISER (PLAN VIEW)



4-WAY SWAY BRACE @ RISER

J11 — 4-WAY SWAY BRACE

NTS

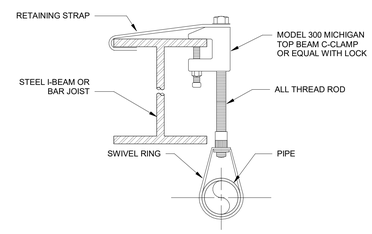


E1 — CADDY BRANCHLINE RESTRAINT SYSTEM TO CONCRETE STRUCTURE

NTS

E4 — AFCON FIG 700/778 ATTACHMENT TO CONCRETE STRUCTURE

NTS



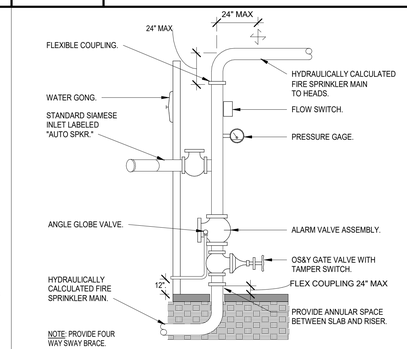
TOLCO FIG 200 HAS THE LOWEST MAX LOAD IN LBS. OF ALL HANGER COMPONENTS. THE TABLE BELOW REFLECTS THE MAXIMUM WEIGHT IN LBS. FOR THESE HANGERS.

1" 400
1-1/2" 400
2" 400
4" 1000

SYMBOL ON PLANS

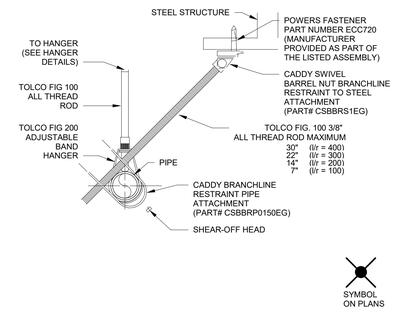
E7 — TOP BEAM C-CLAMP WITH RETAINING STRAP (BEAM)

NTS



E11 — FIRE RISER DETAIL

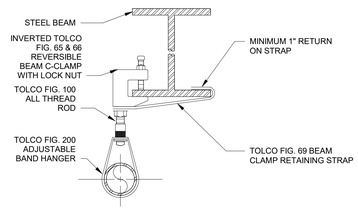
NTS



A4 — CADDY BRANCHLINE RESTRAINT SYSTEM TO STEEL DETAIL

NTS

** WHERE HANGERS OR BRACING ANCHORS/CLAMPS ARE INSTALLED ON THE BOTTOM FLANGE OF A BEAM, BOTTOM FLANGE BRACING ON ONE SIDE OF THE CLAMP MUST BE INSTALLED. **



TOLCO FIG 200 HAS THE LOWEST MAX LOAD IN LBS. OF ALL HANGER COMPONENTS. THE TABLE BELOW REFLECTS THE MAXIMUM WEIGHT IN LBS. FOR THESE HANGERS.

1" 400
1-1/2" 400
2" 400
4" 1000

SYMBOL ON PLANS

A11 — REVERSIBLE BEAM C-CLAMP WITH RETAINING STRAP

NTS

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

General Notes

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www.NPCeng.com
project no. 1326

Consultant

Mercedes EdwardsTheater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

TYPICAL INFORMAITON
FIRE SPRINKLER DETAILS

Drawing

darden architects
ARCHITECTURE PLANNING INTERIORS
www.dardenarchitects.com
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Architect

No.	Revision/Submission	Date

Revision

	Designed By: JS	Copyright 2022 Darden Architects
Scale: As indicated	Drawn By: JS	
Project Number: 2215	Checked By: JDD	
Date: 03/27/2023	Reviewed By: JS	

X/FS800

AD02-FSX02

ADDENDUM 02

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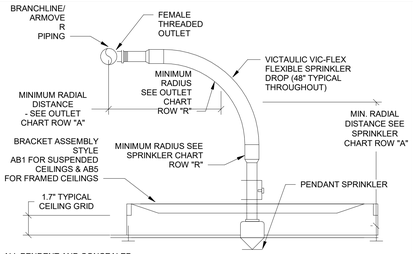
CAUTION

RELOCATION OF THIS DEVICE SHOULD ONLY BE PERFORMED BY QUALIFIED AND/OR LICENSED INDIVIDUALS THAT ARE AWARE OF THE ORIGINAL SYSTEM DESIGN CRITERIA, HYDRAULIC CRITERIA, SPRINKLER HEAD LISTING PARAMETERS, AND KNOWLEDGE OF THE STATE AND LOCAL CODES INCLUDING NFPA 13 INSTALLATION STANDARDS. RELOCATION OF THE DEVICE WITHOUT THIS KNOWLEDGE COULD ADVERSELY AFFECT THE PERFORMANCE OF THE FIRE PROTECTION AND LIFE SAFETY SYSTEM

TO BE INSTALLED ON ALL FLEX DROP ANCHORS.

SIMILAR VERBIAGE FROM MANUFACTURER, NFPA, OR OTHER SOURCE IS ACCEPTABLE.

STICKER MUST BE LARGE ENOUGH TO BE LEGIBLE WHILE STILL FITTING ON BRACKET STANCHIONS.



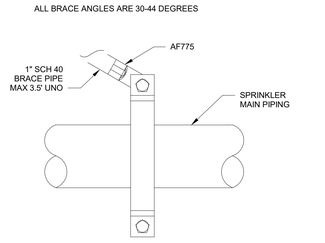
ALL PENDENT AND CONCEALED PENDENTS ON PROJECT SHALL BE INSTALLED USING 31" VIC FLEX FLEXIBLE SPRINKLER DROPS. MAX BENDS - 3 EQUIVALENT LENGTH = 52'-0"

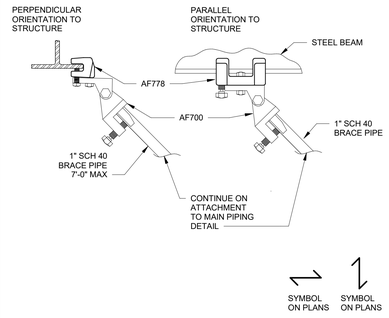
PROVIDE A LABEL ON THE ANCHORING COMPONENT LIMITING RELOCATION OF THE SPRINKLER.

OUTLET HOSE CLEARANCE CHART						
	DIM.	IN	IN	IN	IN	IN
R	MIN. BEND RADIUS	3	4	5	6	7
A	MINIMUM	9.4	10.4	11.4	12.4	13.4

SPRINKLER HOSE CLEARANCE CHART							
	DIM.	IN	IN	IN	IN	IN	IN
R	MIN. BEND RADIUS	2	3	4	5	6	7
A	MINIMUM	10.1	11.1	12.4	13.1	14.1	15.1

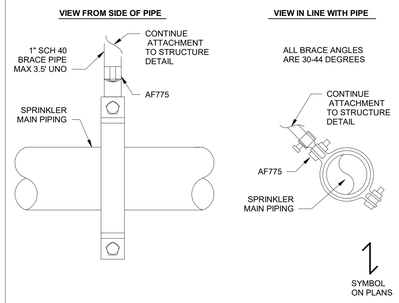
J11 — VIC-FLEX LABEL AND VIC-FLEX HEAD DETAIL
NTS





E11 — LONGITUDINAL SWAY BRACE ATTACHMENT
NTS

E14 — AFCON FIG 700 / 778 ATTACHMENT TO STEEL BAR JOIST
NTS



A11 — LATERAL SWAY BRACE ATTACHMENT
NTS

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

General Notes

NET POSITIVE consulting engineers
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www.NPCeng.com
project no. 1326

Consultant

Mercedes Edwards Theater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

TYPICAL INFORMATION
FIRE SPRINKLER DETAILS

Drawing

darden architects
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Architect

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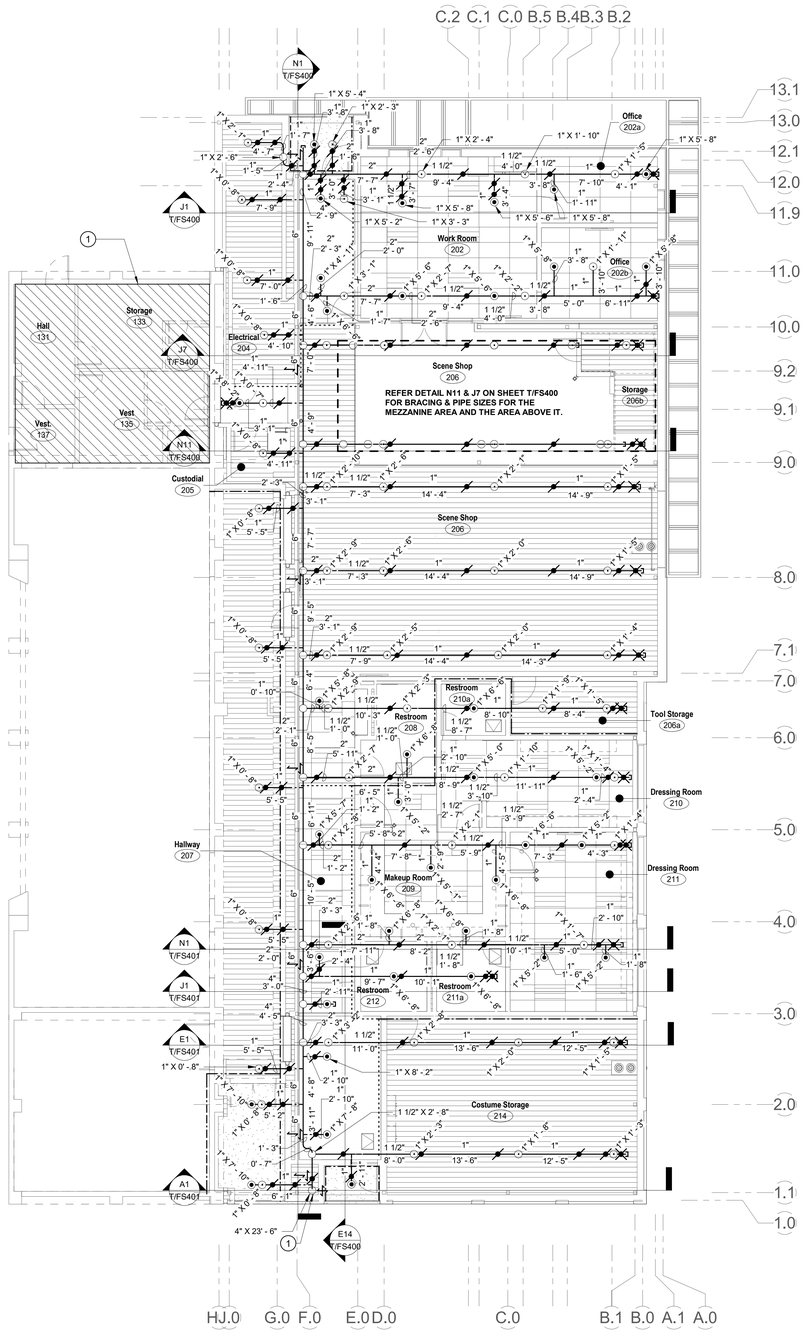
X/FS801

AD02-FSX03

ADDENDUM 02



SYMBOLS LEGEND

- PIPE DIAMETER, CUT LENGTH, AND SECTION LENGTHS
- PIPE DIAMETER, CUT LENGTH, AND SECTION LENGTHS
- PIPE CHANGE IN ELEVATION
- LATERAL SWAY BRACE. REFER DETAIL E4 ON SHEET X/FS800 AND DETAILS E14 & A11 ON SHEET X/FS801.
- LONGITUDINAL SWAY BRACE. REFER DETAIL E4 ON SHEET X/FS800. AND DETAILS E14 & E11 ON SHEET X/FS801.
- 4-WAY SWAY BRACE. REFER DETAIL J11 ON SHEET X/FS800.
- FLEX DROP. REFER DETAIL J11 ON SHEET X/FS801.
- HYDRAULIC NODE
- ALARM BELL. REFER E11 ON SHEET X/FS800.
- BRANCHLINE RESTRAINT. REFER DETAIL A4 & E1 ON SHEET X/FS800.
- PIPE HANGER - STEEL. REFER DETAILS E7, A11, J1 & N1 ON SHEET X/FS800.
- 1 HR. CORRIDOR WALL - (1 HR. FIRE RESISTIVE CONSTRUCTION, 20 MIN. DOOR ASSEMBLIES, 45 MIN. WINDOW ASSEMBLIES)
- 1 HR. FIRE BARRIER - (1 HR. FIRE RESISTIVE CONSTRUCTION, 60 MIN. DOOR ASSEMBLIES)
- 1 HR. OCCUPANCY SEPERATION / FIRE PARTITION - (1 HR. FIRE RESISTIVE CONSTRUCTION, 45 MIN. DOOR ASSEMBLIES, 45 MIN. WINDOW ASSEMBLIES)

ADDENDUM 02

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

KEYNOTES (#)

1 NOT IN SCOPE.

General Notes

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project no. 1326

Consultant

Mercedes Edwards Theater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

BUILDING T
OVERALL FIRE PROTECTION PLAN - FIRST FLOOR

Drawing

darden architects
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Architect

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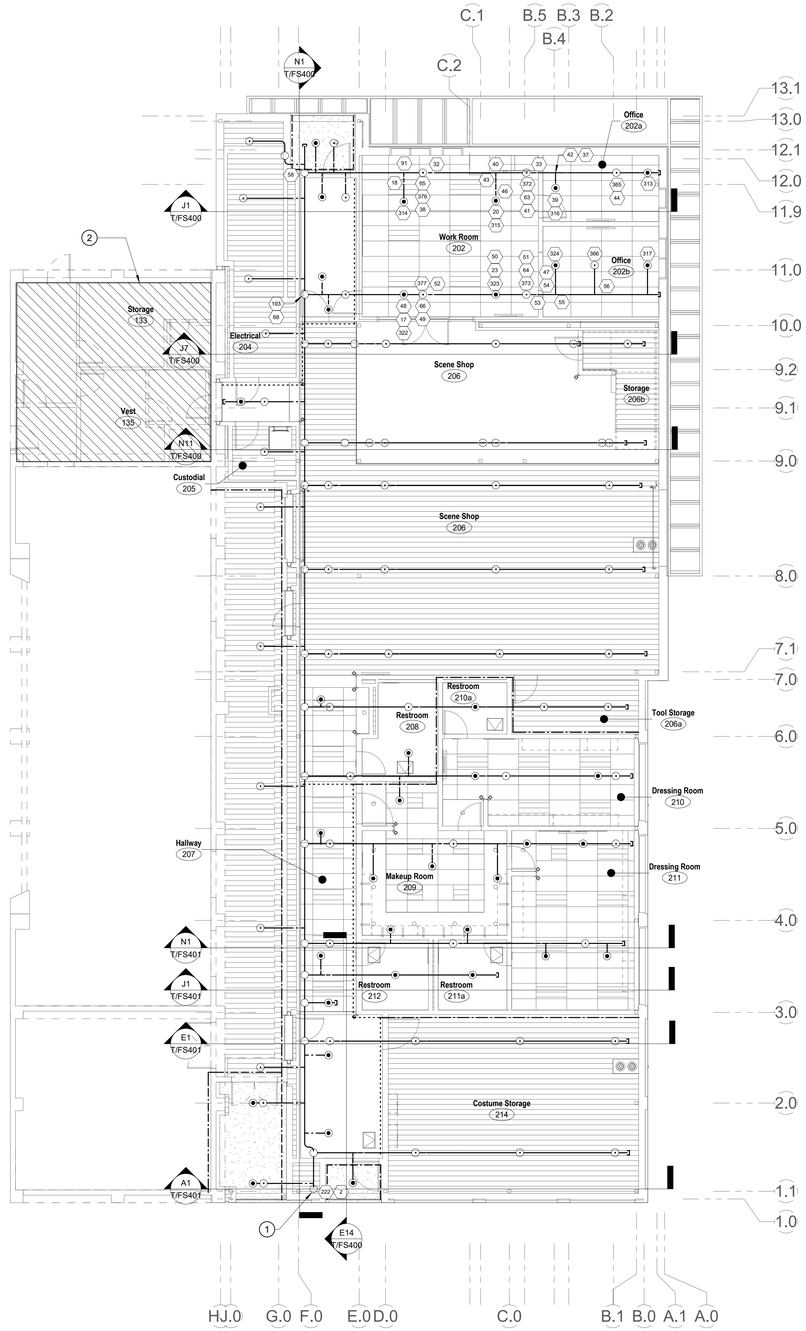
Scale: As indicated
Project Number: 2215
Date: 03/27/2023

T/FS100
AD02-FSX04

1 OVERALL FIRE PROTECTION PLAN - FIRST FLOOR
1/8" = 1'-0"



SYMBOLS LEGEND

- PIPE DIAMETER, CUT LENGTH, AND SECTION LENGTHS
- PIPE DIAMETER, CUT LENGTH, AND SECTION LENGTHS
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- FLEX DROP. REFER DETAIL J11 ON SHEET X/FS801.
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- 1 HR. OCCUPANCY SEPERATION / FIRE PARTITION - (1 HR. FIRE RESISTIVE CONSTRUCTION, 45 MIN. DOOR ASSEMBLIES, 45 MIN. WINDOW ASSEMBLIES)

ADDENDUM 02

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10-27

DSA Application No.:
02-121097

Agency Approval

KEYNOTES (#)

1 6" FIRE SPRINKLER RISER
2 NOT IN SCOPE.

GENERAL NOTES

A. PENDANT DROPS TO LOWER CEILING SHALL UTILIZE VICTAULIC FLEX DROP, VICFLEX VS2

General Notes

NET POSITIVE consulting engineers
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Consultant

Mercedes Edwards Theater Modernization and Addition
Clovis Unified School District
Clovis, CA

Project

BUILDING T
OVERALL FIRE PROTECTION PLAN - FIRST FLOOR-NODES

Drawing

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Architect

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Revision

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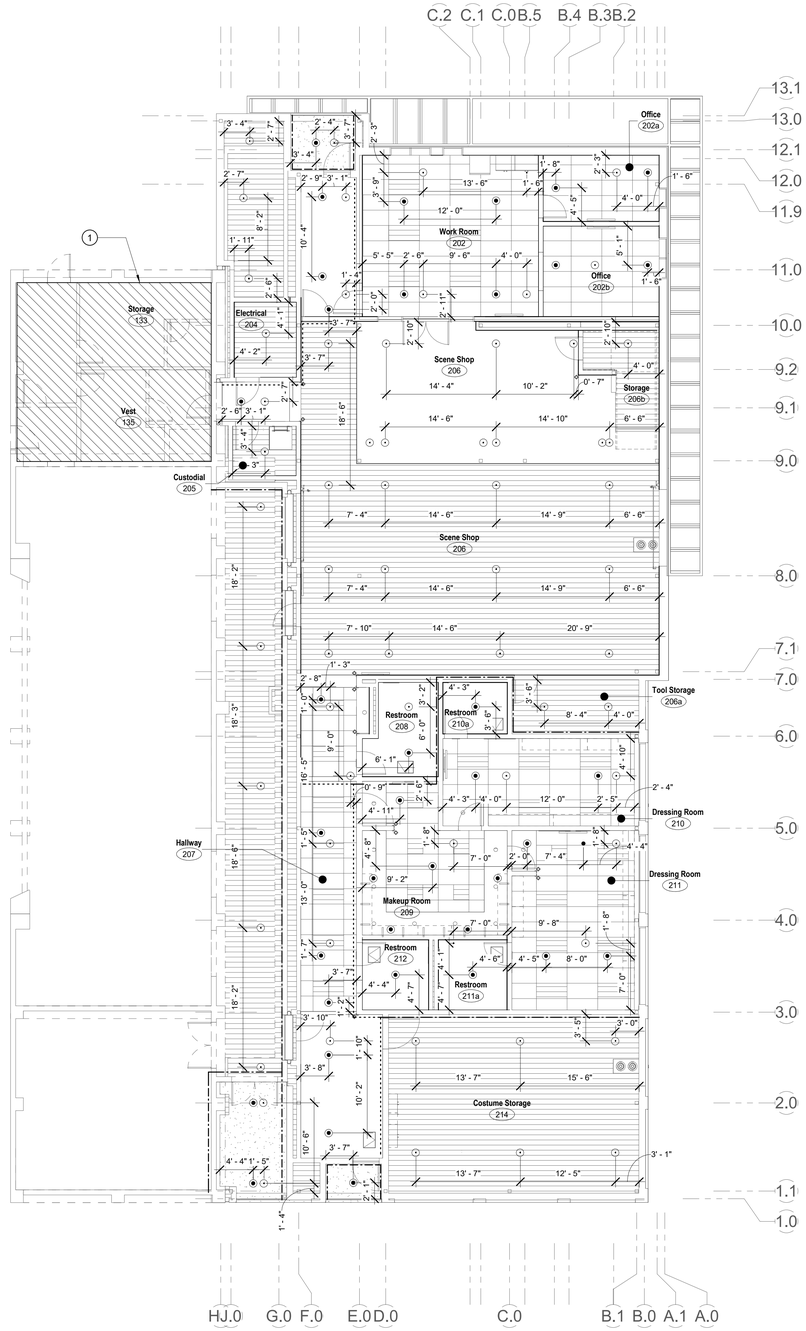
Drawn By: JS
Checked By: JDD
Reviewed By: JS

Scale: As indicated
Project Number: 2215
Date: 03/27/2023

T/FS101
AD02-FSX05

1 OVERALL FIRE PROTECTION PLAN - FIRST FLOOR - NODES
1/8" = 1'-0"

N



SYMBOLS LEGEND

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ADDENDUM 02

N

1 FIRE PROTECTION PLAN - HANGER CONFIGURATION
1/8" = 1'-0"

DSA File No.:
10-27

DSA Application No.:
02-121097

Agency Approval

KEYNOTES (#)

1 NOT IN SCOPE.

GENERAL NOTES

A. PENDANT DROPS TO LOWER CEILING SHALL UTILIZE VICTAULIC FLEX DROP, VICFLEX VS2

General Notes

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Consultant

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Clovis, CA

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FIRE PROTECTION PLAN - SPRINKLER PLAN

Drawing

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Architect

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March 10, 2023 Project No. 07-230020-0

Mr. Rick Lawson
Clovis Unified School District
1470 Herndon Avenue
Clovis, CA 93611

Subject: Geotechnical Investigation and Geohazards Study Report
New Addition to the Mercedes Edwards Theater at Clark Intermediate School
902 5th Street
Clovis, CA 93612

Dear Mr. Lawson:

In accordance with your request, we have performed a geohazards study for the subject project. This work was performed in accordance with Section 1803*A.6* of the 2022 California Building Code (CBC). The results of our geohazards study are presented in the accompanying report, which includes a description of site conditions and potential geologic hazards, conclusions, and recommendations.

We appreciate this opportunity to be of service to you. If you have any questions regarding this report, please do not hesitate to contact us at your convenience.

Respectfully submitted,

RMA GeoScience, Inc.

Megan J. Stewart, GIT
Staff Geologist

Josue A. Montes, PE|GE
Principal Geotechnical Engineer
GE 2904

REGISTERED PROFESSIONAL ENGINEER
JOSUE A. MONTES, JR.
No. GE2904
Exp. 12-31-24
GEOTECHNICAL
STATE OF CALIFORNIA

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President
EG 1781

PROFESSIONAL GEOLOGIST
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STATE OF CALIFORNIA

Distribution: Addressee (1 Original and a pdf copy to *christophersmith@clovisusd.k12.ca.us*)
Ms. Kari Trenhaile, Darden Architects, Inc. (pdf copy to *karit@dardenarchitects.com*)

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GEOTECHNICAL CONSULTANTS

GEOTECHNICAL INVESTIGATION AND GEOHAZARDS STUDY REPORT
NEW ADDITION TO THE MERCEDES EDWARDS THEATER AT CLARK INTERMEDIATE SCHOOL
902 5TH STREET
CLOVIS, CALIFORNIA 93612

for

Clovis Unified School District
1470 Herndon Avenue
Clovis, California 93611

March 10, 2023

Project No. 07-230020-0

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GEOTECHNICAL CONSULTANTS

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FIGURES

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GEOTECHNICAL CONSULTANTS

1.00 INTRODUCTION

1.01 Purpose

A geotechnical investigation and geohazards study has been completed for the new addition to the Mercedes Edwards Theater at Clark Intermediate School, which is located at 902 5th Street in Clovis, California. The purpose of the investigation was to summarize geotechnical and geologic conditions at the site, to assess their potential impact on the proposed development, and to develop geotechnical engineering design parameters for the project.

1.02 Scope of the Investigation

The general scope of this investigation included the following:

- Review of published and unpublished geologic, seismic, groundwater and geotechnical literature.
- Examination of aerial photographs and topographic maps.
- Contacting of Underground Service Alert to locate onsite utility lines.
- Logging, sampling, and backfilling of two exploratory borings drilled with a SIMCO 2800 drill rig: one to a depth of approximately 51 feet and one to a depth of approximately 21 feet.
- Laboratory testing of representative soil samples.
- Geotechnical evaluation of the compiled data.
- Preparation of this report presenting our findings, conclusions and preliminary recommendations.

As part of the geohazards study associated with our geotechnical investigation, our scope of services included addressing applicable items in California Geological Survey – Note 48, Checklist for the review of engineering Geology and Seismology Reports for California Public School, Hospitals, and Essential Service Buildings, October 2013.

Our scope of work did not include a preliminary site assessment for the potential of hazardous materials onsite.

1.03 Site Location and Description

The project location consists of the existing Mercedes Edwards Theater located within the existing Clark Intermediate School campus in Clovis, California. The location of the site relative to nearby streets and other improvements is indicated on Figure 1, Site Vicinity Map. The geographic position of the site is 36.8231° north latitude and 119.6977° west longitude. Aerial photos indicate the Mercedes Edwards Theater building has been present since at least 1994. The existing ground surface is relatively flat and the elevation above mean sea level at the project site is approximately 362 feet according to the USGS Clovis 7.5 Minute Quadrangle (see Figure 2). The photo below shows a view of the general area where planned improvements will be constructed.

Photo of the area where planned improvements will be constructed. Photo taken on February 13, 2023.

1.04 Planned Improvements

Based on our review of information provided in recent emails, which included a site plan prepared by Darden Architects, Inc. dated November 6, 2022, we understand the project will consist primarily of an approximately 6,900 square foot addition to the existing Mercedes Edwards Theater. It is anticipated that the new building will be CMU or wood-framed, with concrete slab-on-grade floors, and shallow reinforced-concrete foundations. Maximum wall and column loads (dead plus live, not including wind or seismic loads) are anticipated to be less than 2.0 kips per foot and 100 kips, respectively. Appurtenant improvements are anticipated to be various underground utilities, new asphalt concrete parking and drive areas, new concrete flatwork, and landscaping.

1.05 Investigation Methods

Our investigation consisted of office research, review of the compiled data, and preparation of this report. It has been performed in a manner consistent with generally accepted engineering and geologic principles and practices and has incorporated applicable requirements of California Building Code. Definitions of technical terms and symbols used in this report include those of the ASTM International, the California Building Code, and commonly

used geologic nomenclature. Technical supporting data are presented in the attached appendices. Appendix A presents a description of the methods and equipment used in performing the field exploration and logs of our subsurface exploration. Appendix B presents a description of our laboratory testing and the test results. Results of our liquefaction and seismic settlement analysis are provided in Appendix C. Finally, references are presented in Appendix D.

2.00 FINDINGS

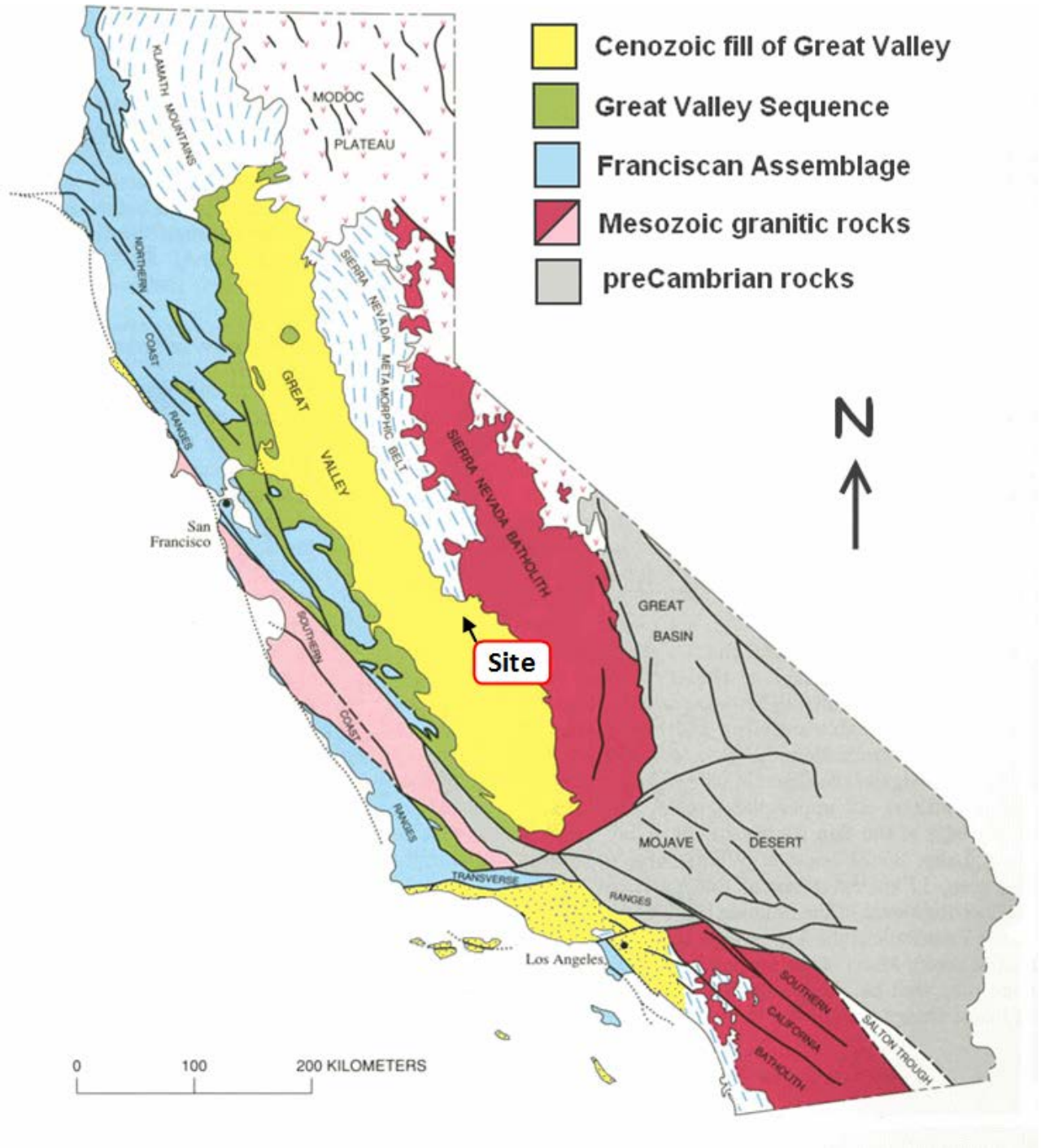
2.01 Geologic Setting

The subject site is located in the east-central San Joaquin Valley, which comprises the southern half of the Great Valley geomorphic province. The valley is a westward-titling trough which forms a broad alluvial fan, approximately 200 miles long and 50 to 70 miles wide, where the eastern flank is broad and gently inclined, as opposed to the western flank which is relatively narrow (Bartow, 1991; Page, 1968). The Central Valley consists of the Great Valley Sequence, overlain by Cenozoic alluvium. Underlying the Great Valley Sequence are the Franciscan Assemblage to the west and the Sierra Nevada batholith to the east (Bailey, Irwin, and Jones, 1964).

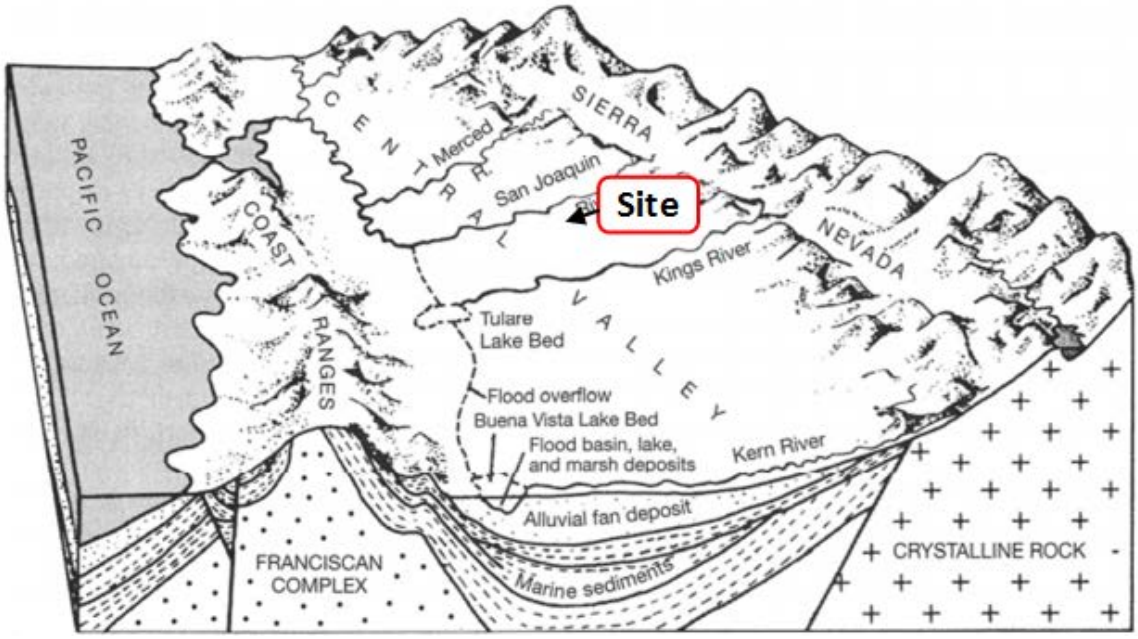
The Franciscan Assemblage, made up of deformed and high pressure and low temperature metamorphosed mafic and ultramafic rocks, was formed around the Late Jurassic through the Miocene (160 to about 20 million years ago) by the offscraping of rocks from a subducting plate dipping to the east (Wakabayashi, 1992; Wakabayashi, 2010).

The Sierra Nevada started to form during the Early Jurassic (around 200 million years ago) when the Farallon Plate began subducting under the North American Plate. This subduction resulted in several orogenies, or mountain building events, that created the granitic Sierra Nevada Batholith deep below the surface. During the Miocene (around 10 million years ago), vertical movement along the Sierra Nevada Frontal Fault Zone (part of the Eastern California Shear Zone) began to uplift the Sierra Nevada. This uplift and erosion exposed the batholiths to the surface. From the Pleistocene (commonly known as the most recent Ice Age) to the present, glaciers have been carving out many parts of the Sierras. The current uplift of the Sierra Nevada is 1 - 2mm per year (Hammond, et al. 2012).

The Great Valley Sequence is a 40,000 foot sequence of marine shale, sandstone, and conglomerate beds, deposited in a deep marine environment during the Late Jurassic through the Cretaceous (150 – 65 million years ago). Overlying the Great Valley Sequence is several thousand feet of Cenozoic alluvium, deposited by: streams and rivers draining from the mountains and creating alluvial fans; by lakes that covered parts of the valley floor from time to time; flooding; and marsh environments (Page, 1986). In some places, it is thousands of feet thick, and more than half of this thickness is composed of fine grained fluvial and lacustrine deposits. Holocene deposition consists mainly of episodic deposition of alluvial sediments (Bartow, 1991; Page, 1986). A generalized geologic map for the State of California is shown below and Figure 3A illustrates the geologic setting within the regional area of the project site. As shown on Figure 3A, the project site is situated on Quaternary deposits of alluvium that are estimated to be several hundred feet deep.



Geologic map showing the locations of Cenozoic alluvium/fill (yellow) overlying the Great Valley Sequence (green), the Franciscan Assemblage (blue), and the Sierra Nevada Batholith (red). Modified from: Irwin (1990).



Geologic block diagram of California. From: Harden (2004). Not to scale.

2.02 Earth Materials

The soils encountered in our test borings consisted of reworked and native soils. The reworked soils consisted of approximately 3 feet of fine to medium grained silty sand. The native soils consisted of silty sand with varying amounts of clay, clayey sand, sandy silt, silty clay, and poorly graded sand to the maximum depth explored of approximately 51 feet below ground surface. These layers varied in thicknesses and appeared to be horizontally continuous across the project site. The granular soils generally had a relative density of loose to dense with the fine-grained soils had a relative consistency of stiff to hard. As indicated above, the soils encountered in the test borings are related to deep alluvial deposits that have been deposited over the past several thousand years.

A Boring Location Map showing the locations of the referenced test borings is presented as Figure 5. The logs of our recent exploratory borings are presented in Appendix A, which provide more detailed information of the soils that were encountered to a depth of approximately 51 feet at the project site.

2.03 Expansive Soils

Our field exploration and expansion index test results indicate that the near surface soils at the project site have a very low expansion potential (Expansion Index, EI, of ≤ 20). Results of the current EI and PI test are presented in Appendix B.

2.04 Surface and Groundwater Conditions

No areas of ponding or standing water were present at the time of our study. Further, no springs or areas of natural seepage were observed at the project site. In addition, no groundwater was encountered in the test borings within the maximum depth explored of 51 feet.

According to the Groundwater Information Center Interactive Map Application for Spring 2022, the depth to groundwater in the vicinity of the project site was 115 feet. Historical data derived from wells (State Well IDs 12S21E33P001M, 13S21E02M001M, and 13S20E12H001M) located 1.25 miles northeast, 2.03 miles east-northeast, 2.16 miles west-southwest of the project site, respectively, indicates the depth to ground water in the vicinity of the project site on average was approximately 55 feet throughout the 1960's and then declined to a depth of approximately 110 feet by the 1990's, with a historical high of 23 feet in May 1953. Over the subsequent years, the data indicates that the groundwater elevation in the vicinity of the project site has declined an additional 5 feet.

Since the 1950's (the earliest well data available), the depth to groundwater has increased significantly, falling approximately 92 feet in 70 years. Some recovery in the groundwater could occur, especially following a period of wet years. However, in consideration of the demand for groundwater related to domestic and agricultural purposes, it is highly unlikely that the groundwater table will recover much above the levels observed during, or prior to, the 1990's. Thus, although the "historical high" groundwater table is approximately 23 feet at the project site, a design "high" groundwater table of 100 feet is recommended for Civil Engineering purposes.

2.05 Faults

The site is not located within the boundaries of an Earthquake Fault Zone for fault-rupture hazard as defined by the Alquist-Priolo Earthquake Fault Zoning Act and no faults are known to pass through the property. The nearest active earthquake fault zones are the Nunez Fault, the Ortigalita Fault Zone, the Round Valley Fault, the Hartley Springs Fault Zone, and, located approximately 58.1 miles southwest, 65.6 miles west, 66.1 miles east-northeast, and 67.4 miles north-northeast, respectively, of the project site. The location of the project site relative to these and other fault zones is illustrated on Figure 4a.

Our research of regional geologic and seismic data did not reveal any known instances of ground failure in the vicinity of the site associated with regional seismic activity. Seismic design parameters relative to the requirements of the 2022 California Building Code (CBC) are presented in Section 3.10.

2.06 Historic Seismicity

According to the California Historical Earthquakes Online Database maintained by the California Geological Survey and the United States Geological Survey (USGS) database, there have been no historic earthquakes with a magnitude greater than or equal to 5.5 epicentered within 50 miles of the site. Large historic earthquakes in California with an epicenter of less than 100 miles away from the site are summarized in the table below.

Large Historic Earthquakes

Event	Date	Magnitude	Distance from Site (Miles)
NE of San Juan Bautista	June 10, 1836	6.4	100
E of San Juan Bautista	January 18, 1840	6.5	100
SE of San Juan Bautista	July 3, 1841	6.0	100
E of King City	September 2, 1853	6.3	73
W of Coalinga	January 9, 1857	6.1	73
Fort Tejon	January 9, 1857	7.9	84
NE of King City	April 17, 1860	6.0	77
Owens Valley	March 26, 1872	7.4	89
N of Independence	March 26, 1872	6.8	83
S of Big Pine	April 3, 1872	6.3	84
NW of Bishop	April 11, 1872	6.8	81
NW of Parkfield	February 2, 1881	6.0	71
SW of Patterson	April 10, 1881	6.3	94
SW of Hollister	March 30, 1883	6.0	100
E of King City	April 12, 1885	6.5	75
SW of Bishop	September 30, 1889	6.0	61
SW of Independence	August 17, 1896	6.3	78
NW of Parkfield	March 3, 1901	6.4	72
SE of Mammoth Lakes	May 25, 1980	6.1	71
E of Mammoth Lakes	May 25, 1980	6.0	73
SE of Mammoth Lakes	May 25, 1980	6.1	70
SE of Mammoth Lakes	May 27, 1980	6.2	68
NE of Coalinga	May 2, 1983	6.7	53
NW of Bishop	November 23, 1984	6.1	74
N of Bishop	July 21, 1986	6.4	85
SE of Parkfield	September 28, 2004	6.0	79

2.07 Flooding Potential

According to the Federal Emergency Management Agency (Flood Insurance Rate Map #06019C1580H, effective February 18, 2009), the site is located within an unshaded area of Flood Zone X, which is an “area outside of 0.2% annual chance floodplain.”

Controlling surface runoff originating from within and outside of the site must be included in design of the project in accordance with the 2022 CBC.

2.08 Landslides

Since there are no natural or manmade slopes in the vicinity of the project site, landsliding is not a hazard at this site.

2.09 Other Geologic Hazards

California Geologic Survey Note 48 (2011) identifies a number of exceptional geologic hazards that can occur at individual sites, but do not occur statewide. Evaluation of these exceptional conditions is referred as a conditional geologic assessment by Note 48. Specific assessment items listed in Note 48 are addressed in the table below.

Conditional Geologic Assessment

Hazard	Assessment	Reference
Methane gas, hydrogen-sulfide gas, tar seeps	Not applicable; site is not located within an oil field identified as a high risk area for hazardous gas accumulations.	See Section 1.03.
Volcanic eruption	Not applicable; site is not located in a known hazard area for volcanic eruptions.	Miller, 1989 (U.S.G.S. Bulletin 1847)
Flooding	The proposed development area is not located within the boundaries of a 100-year or a 500-year flood zone.	See Section 2.07.
Tsunami and seiches inundation	Not applicable.	See Section 3.12.
Radon-222 gas	Not applicable; typically a concern in the California Coast Ranges.	See Section 2.01 and CGS Note 48.
Naturally occurring asbestos	Not applicable; site is not located in an area likely to contain naturally occurring asbestos.	Churchill and Hill, 2000 (DMG OFR 2000-19)
Hydrocollapse due to anthropic use of water	Due to the density of the underlying soils, hydrocollapse due to anthropic use of water is unlikely.	See Sections 2.01, 2.02, and Appendix A.
Regional land subsidence	The site is not identified in an area of large historic subsidence within the California Central Valley (although there is major subsidence 47 miles to the northwest and 48 miles to the south). Control of subsidence will dependent upon proper jurisdictional management of groundwater resources.	City of Clovis Master Environmental Impact Report, 2014; County of Fresno General Plan Background Report, October, 2000; and Borches and Carpenter, 2014.

Hazard	Assessment	Reference
Clays and cyclic softening	Soils within the upper 50 feet of the ground surface are primarily granular rather than clays. Expansive properties of near-surface soils have been considered in foundation design.	See Sections 3.04 and 3.11.

3.00 CONCLUSIONS AND RECOMMENDATIONS

3.01 General Conclusions

Based on specific data and information contained in this report, our understanding of the project, and our geotechnical engineering experience, it is our professional judgment that the proposed development is geologically and geotechnically feasible. Our review of geological literature and the field exploration performed for this project did not indicate any unusual conditions at the site that would entail special design considerations or construction procedures. Specific geotechnical recommendations are presented below to address the soil conditions at the site and provide information for other members of the design team to prepare the project plans and specifications for the planned improvements.

3.02 General Earthwork and Grading

All grading should be performed in accordance with the recommendations provided below, the project plans and specifications, Appendix J of the 2022 California Building Code and all applicable governmental agency requirements. In the event of conflicts between this report and the other referenced documents, this report shall govern. It should be noted that all references to maximum dry density, optimum moisture content, and relative compaction are based on ASTM D 1557 laboratory test procedures.

3.03 Rippability and Rock Disposal

Exploratory borings that have been done at the project site were advanced without difficulty and no oversize materials were encountered. Accordingly, we expect that all earth materials will be rippable with conventional grading equipment and oversized materials are not expected.

3.04 Earthwork Recommendations

All vegetation, organic rich soils (soils containing more than 2 percent organics by weight), trash, debris, concrete, and underground utilities, should be cleared from the grading area and removed from the site. After the removal of deleterious materials and the stripping of organic-rich soils, the following over-excavation must be done within the area of the planned improvements:

- Within the area of the planned building improvements plus at least 5 feet horizontally beyond the perimeter of these improvements, the subgrade must be over-excavated at least 36 inches below the stripped surface or 12 inches below the bottom of footings, whichever is deeper. The bottom of the over-excavation with the building area must be level and at a unfirm depth below the finished pad elevation.

- Outside of the "building pad" areas indicated above, and within the area of planned asphalt or concrete flatwork, the subgrade must be moisture-conditioned and compacted at least 12 inches below the stripped subgrade surface.

Following the over-excavation indicated above, a designated representative for the Project Geotechnical Engineer must review the exposed ground surface and determine if any additional over-excavation is required.

The over-excavated ground surface in all areas determined to be satisfactory for the support of fills must be scarified to a minimum depth of 12 inches. Scarification should be performed until the soils are broken down and free from lumps or clods and until the scarified zone is uniform. The moisture content of the scarified zone shall be adjusted to near optimum moisture content. The scarified zone must then be uniformly compacted to at least 90 percent relative compaction except for the upper 12 inches of subgrade below asphalt or concrete pavement sections subject to vehicular traffic, which should be compacted to at least 95 percent.

Removed and/or over-excavated soils free of organics and other deleterious material may be used as engineered fill. Fill material should be placed in nearly horizontal layers, uniformly moisture conditioned to near optimum moisture content, and then compacted in layers that do not exceed approximately 6 inches in thickness. Thicker lifts may be placed if testing indicates the compaction procedures are such that the required compaction is being achieved and the geotechnical consultant approves their use. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to insure uniformity of material in each layer. Engineered fill must be compacted to achieve a relative compaction of at least 90 percent except for the upper 12 inches of subgrade below asphalt or concrete pavement sections subject to vehicular traffic, which must be compacted to at least 95 percent.

The above recommendations are based on the assumption that soils encountered during field exploration are representative of soils throughout the site. However, there can be unforeseen and unanticipated variations in soils between points of subsurface exploration. Hence, over-excavation depths must be verified, and adjusted if necessary, at the time of grading. In addition, any contaminated or expansive soils within three (3) feet of the finished subgrade surface, must be removed and properly disposed of outside the area the planned improvements.

3.05 Earthwork Shrinkage

Shrinkage is the decrease in volume of soil upon removal and recompaction, or scarifying and recompacting, expressed as a percentage of the original in-place volume. Based on our observations of the existing field

conditions and lab testing data, a shrinkage factor in the range of 10 to 15 percent is considered applicable in the planned construction area.

The degree to which fill soils are compacted and variations in the insitu density of existing soils will influence earth volume changes. Consequently, some adjustments in cut and/or fill volume of soils near the completion of grading could be required to balance the earthwork.

3.06 Imported Fill Material

If required, imported fill materials that will be placed within building or concrete flatwork areas must be non-hazardous and be obtained from a single, uniform source that meets the following criteria:

Gradation			
Sieve Size	**Percent Passing**		
3-inch	100%		
3/4-inch	90% - 100%		
#4	60% - 100%		
#200	20% - 50%		
Maximum Expansion Index	**Maximum Plasticity Index**		
20	10		
Minimum R-Value (in paved areas)			
40			
Maximum Organic Content			
< 2% by weight			
Corrosivity			
pH	**Minimum Resistivity (ohm-cm)**	**Soluble Sulfates (mg/kg)**	**Soluble Chlorides (mg/kg)**
6.0 to 8.5	> 5,000*	< 1,000	< 200

*unless other requirement established by the Design Engineer

3.07 Temporary Slopes and Shoring

Cal/OSHA construction safety regulations should be observed during all underground work. Our geotechnical investigation indicates that excavations less than 4 feet in depth may generally be constructed with vertical sidewalls without shoring or shielding. Temporary excavations in existing alluvial soils that are deeper than 4 feet may be safely made at an inclination of 1:1 or flatter, up to depth allowed by Cal/OSHA. If vertical sidewalls are required in excavations greater than 4 feet in depth, the use of cantilevered or braced shoring is recommended. The following geotechnical parameters can be used to design a shoring system:

Moist Unit Weight of Soils:	125 pcf
Angle of Internal Friction (ø):	34°
Cohesion:	0 psf

Unless vehicles, equipment, materials, etc., are kept a minimum distance equal to the height of the excavation away from the edge of the excavation, a surcharge load equal to a uniform lateral pressure of 72 psf should be assumed to act on the shoring in addition to the earth pressure calculated using the above geotechnical parameters.

Vehicles, equipment, materials, etc. should be set back a minimum distance of 10 feet from the top edge of sloped or vertical excavations. Surface waters should be diverted away from temporary excavations and prevented from draining over the top of the excavation and down the slope face. During periods of heavy rain, the slope face should be protected with sandbags to prevent drainage over the edge of the slope, and a visqueen liner placed on the slope face to prevent erosion of the slope face.

Periodic observations of the excavations should be made by the geotechnical consultant to verify that the soil conditions have not varied from those anticipated and to monitor the overall condition of the temporary excavations over time. If at any time during construction conditions are encountered which differ from those anticipated, the geotechnical consultant should be contacted and allowed to analyze the field conditions prior to commencing work within the excavation. In any case, Cal/OSHA construction safety orders should be observed during all underground work.

3.08 Fill and Cut Slopes

Due to the low gradient of the property, it appears that construction of cut and fill slopes will not be required. If such slopes are proposed, they should be inclined no steeper than 2 horizontal to 1 vertical. In addition, appropriate landscaping measures should be taken to protect the face of slopes from erosion.

3.09 Utility Trench Backfill

The existing onsite soils will generally not be suitable for use as pipe bedding for buried utilities. All pipes should be bedded in sand or other suitable material as specified by the Project Civil Engineer and/or as specified by the pipe/conduit manufacturer. We recommend the bedding material have a Sand Equivalent (SE) of at least 30 and have less than 8 percent, by weight, passing the #200 Sieve. The geotechnical consultant should review and approve proposed bedding materials prior to use. Bedding materials should be compacted to at least 90% relative compaction (ASTM D1557) by mechanical methods.

The on-site soils are expected to be suitable as trench backfill provided they are screened of organic matter and other deleterious material. Trench backfill must be compacted to at least 90% relative compaction (ASTM D1557) and the upper 12 inches of trench backfill beneath pavement sections should be compacted to at least 95% relative compaction. Trench backfill should be compacted using mechanical methods; no jetting of backfill should

be allowed. A minimum trench width of 24 inches or 18 inches plus the diameter of the utility line, whichever is greater, should be provided to permit uniform compaction on both sides of utility line and allow for a technician to perform in-place density tests. If narrower trenches are desired, a sand-cement slurry should be used to backfill the trenches to within 8 inches of the top of trench. The sand-cement slurry should contain at least 2 sacks of cement per yard of mix and have a 4- to 6-inch slump. In addition, slurry should be consolidated using a suitable vibratory or mechanical method.

All utility trench backfill within street right of ways, utility easements, under or adjacent to sidewalks, driveways, or building pads should be observed and tested by the geotechnical consultant to verify proper compaction. Trenches excavated adjacent to foundations should not extend within the footing influence zone defined as the area within a line projected at a 1:1 drawn from the bottom edge of the footing. Trenches crossing perpendicular to foundations should be excavated and backfilled prior to the construction of the foundations. The excavations should be backfilled in the presence of the geotechnical engineer and tested to verify adequate compaction beneath the proposed footing. Where utility crossings are located within 12 inches of bottoms of footings, conduits should be wrapped with polystyrene foam or other suitable material with a minimum thickness of one inch. Conduits extending through footings shall be “sleeved” as determined by the Project Structural Engineer.

3.10 Faulting

Since the site is not located within the boundaries of an Earthquake Fault Zone and no faults are known to pass through or near the property, surface fault rupture within the site is considered unlikely.

3.11 Seismic Design Parameters

Seismic design parameters have been developed in accordance with Section 1613*A* of the 2022 California Building Code (CBC) using the online U.S. Geological Survey Seismic Design Maps Calculator (Version 3.1.0, ASCE 7-16 Standard) and a site location based on latitude and longitude. The calculator generates probabilistic and deterministic maximum considered earthquake spectral parameters represented by a 5-percent damped acceleration response spectrum having a 2-percent probability of exceedance in 50 years. The deterministic response accelerations are calculated as 150 percent of the largest median 5-percent damped spectral response acceleration computed on active faults within a region, where the deterministic values govern. The calculator does not, however, produce separate probabilistic and deterministic results. The parameters generated for the subject site are presented below:

2022 California Building Code (CBC) Seismic Parameters

Parameter	Value
Site Location	Latitude = 36.8231 degrees Longitude = -119.6977 degrees
Risk Category	III
Site Class	Site Class = D* Soil Profile Name = "Stiff Soil"
Mapped Spectral Accelerations	S_s (0.2-second period) = 0.536g S_1 (1-second period) = 0.214g
Site Coefficients (Site Class D)	F_a = 1.371 F_V = Null - Section 11.4.8
Maximum Considered Earthquake Spectral Accelerations (Site Class D)	S_{MS} (0.2-second period) = 0.735g S_{M1} (1-second period) = Null - Section 11.4.8
Design Earthquake Spectral Accelerations (Site Class D)	S_{DS} (0.2-second period) = 0.490g S_{D1} (1-second period) = Null - Section 11.4.8

*As defined in Chapter 20 of ASCE 7-16, a Site Class D is applicable to predominantly cohesionless soils with an **average** standard penetration resistance of 15 to 50 within the upper 100 feet. Based on the geologic setting, our 50-foot deep test boring (see Appendix A), and other historical geotechnical data (see Section 1.02), the soil profile at the project site meets these criteria.

As the Site Class is D and the S_1 value is greater than 0.20g, then per ASCE 7-16 Section 11.4.8 a site-specific ground motions procedure is required with several exceptions. We assume that Exception 2 is applicable to this site, and hence the seismic parameters indicated in the table above have been calculated. If Exception 2 does not apply, the structural engineer should contact us so we can develop the site-specific seismic parameters.

The above table shows that the mapped spectral response acceleration parameter for a 1-second period (S_1) is less than 0.75g. The Mercedes Edwards theater is in Risk Category III in accordance with CBC Section 1604A.5. Therefore, the Seismic Design Category using 2022 CBC Tables 1613.2.5(1) and 1613.2.5(2) is D for all Occupancy Categories (2022 CBC Section 1613.2.5). Consequently, as required for Seismic Design Categories C through F by CBC Section 1803.5.12, slope instability, liquefaction, total and differential settlement, and surface displacement by faulting or seismically lateral spreading or lateral flow have been evaluated.

Peak earthquake ground acceleration adjusted for site class effects (PGA_M) has been determined in accordance with ASCE 7-16 Section 11.8.3 as follows: $PGA_M = F_{PGA} \times PGA = 1.368 \times 0.232 = 0.317g$.

3.12 Liquefaction and Secondary Earthquake Hazards

Potential secondary seismic hazards that can affect land development projects include liquefaction, tsunamis, seiches, and seismically induced settlement.

Liquefaction

Liquefaction is a phenomenon where earthquake-induced ground vibrations increase the pore pressure in saturated, granular soils until it is equal to the confining, overburden pressure. When this occurs, the soil can completely lose its shear strength and enter a liquefied state. The possibility of liquefaction is dependent upon grain size, relative density, confining pressure, saturation of the soils, and intensity and duration of ground shaking. In order for liquefaction to occur, three criteria must be met: “low density”, coarse-grained (sandy) soils, a groundwater depth of less than about 50 feet, and a potential for seismic shaking from nearby large-magnitude earthquake.

Research has shown that saturated, loose sands with a silt content less than about 25 percent are most susceptible to liquefaction, whereas other soil types are generally considered to have a low susceptibility. According to the California Geologic Survey (CGS) Special Publication SP-117A (2008), "Guidelines for Evaluating and Mitigating Seismic Hazards in California," any materials with a PI > 12 and moisture content < 85% of the liquid limit were considered not subject to liquefaction. Liquefaction susceptibility is related to numerous factors, and the following conditions must exist for liquefaction to occur:

- Sediments must be relatively young in age and must not have developed large amounts of cementation
- Sediments must consist mainly of cohesionless sands and silts
- The sediment must not have a high relative density
- Free groundwater must exist in the sediment; and
- The site must be exposed to seismic events of a magnitude large enough to induce straining of soils particles.

The soils in the upper 51 feet at the project site consist primarily of silty sand with varying amounts of clay, clayey sand, sandy silt with clay, silty clay, and poorly graded sand. In addition, the corrected SPT value [$(N_1)_{60}$] was less than 20 in a silty sand layer from the surface to a depth of approximately 7.5 feet, a silty sand layer between a depth of approximately 17.5 and 22.5 feet, a clayey sand layer between a depth of approximately 22.5 and 27.5 feet, and a sandy silt with clay layer between a depth of approximately 32.5 and 37.5 feet in Boring B-2. Based on this, a liquefaction analysis was performed using the sampler blowcount and soil data from the deep boring that was performed at the project site (Boring B-2). The analysis was performed using LiquefyPro Version 5 (2015 edition) for two groundwater conditions: at a depth of 23 feet (historical high groundwater condition as required by CGS) and at a depth of 100 feet (representative of a recommended design "high groundwater condition" based on historical DWR data in the past 30 years). The analysis also took into account that the (PGA_M) is 0.317g and the Modal Magnitude (M_M) for the design level earthquake is 5.5 (based on the PSH Deaggregation tool on the USGS website at https://earthquake.usgs.gov/hazards/interactive/) for a 2-percent probability for exceedance in 50 years (a return period of 2,475 years). A summary of the input data and the results of this liquefaction analysis are provided in Appendix C of this report. Based on this analysis, there appears to be a very low risk of liquefaction occurring at the project site during a design level earthquake (Factor-of-Safety against liquefaction is greater than 1.2).

It should be noted that the California Geological Survey has not yet prepared a Seismic Hazard Zone Map of potential liquefaction hazards for the quadrangle in which the site is located. In addition, there are no liquefaction hazard zones near the site according to the City of Clovis and the County of Fresno General Plans. Because there are no mapped liquefaction hazard zones near the site, a map depicting such a zone relative to the site has not been prepared.

Tsunamis and Seiches

Tsunamis are sea waves that are generated in response to large-magnitude earthquakes. When these waves reach shorelines, they sometimes produce coastal flooding. Seiches are the oscillation of large bodies of standing water, such as lakes, that can occur in response to ground shaking. Tsunamis and seiches do not pose hazards due to the inland location of the site and lack of nearby bodies of standing water.

Seismically Induced Settlement

Seismically induced settlement occurs most frequently in areas underlain by loose, granular sediments. Damage as a result of seismically induced settlement is most dramatic when differential settlement occurs in areas with large variations in the thickness of underlying sediments. Settlement caused by ground shaking is often non-uniformly distributed, which can result in differential settlement.

A seismic settlement analysis was performed using LiquefyPro Version 5 (2015 edition) in conjunction with the liquefaction analysis that was performed for this project as indicated above. A summary of the input data and the results of the seismic settlement analysis are provided in Appendix C of this report. Based on this analysis, a seismic settlement of less than 1/4 inch is expected to occur at the project site during a design level earthquake.

Seismically Induced Flooding

The City of Clovis Environmental Impact Report (EIR) indicate the site is located within a potential dam inundation area of the Big Dry Creek Reservoir. According to the EIR, due to seepage concerns and lack of inflow, the Big Dry Creek Reservoir has never exceeded 15 thousand acre-feet (taf) or water and usually holds 10 taf. In the event of a failure at the Big Dry Creek Reservoir, the floodwater would flow into the Little Dry Creek Flood Channel. Consequently, seismically induced flooding at the site is unlikely.

Seismically Induced Landsliding

There are no cut or fill slopes that currently exist or are planned at the project site; therefore, the potential for seismically induced landsliding is nil.

3.13 Foundations

Isolated spread footings and/or continuous wall footings are recommended to support the proposed new building. New footings should be embedded at least 12 inches below the lowest adjacent grade and must be constructed on properly compacted fill as recommended in Section 3.04 of this report. Continuous and isolated spread footings

with a minimum width of 12 and 24 inches, respectively, may be designed using an allowable bearing capacity of 3,000 pounds per square foot (psf). An allowable increase of 750 psf per additional 12 inches of embedment, and an allowable increase of 500 psf per additional 12 inches of width, can be used in design, up to a maximum allowable bearing capacity of 5,000 psf. This allowable bearing capacity represents an allowable net increase in soil pressure over existing soil pressure and may be increased by one-third for short-term wind or seismic loads. The maximum expected settlement of footings is expected to be less than 3/4 inch with a differential settlement of less than 1/4 inch between similarly sized and loaded footings or less than 1/4 inch over a distance of 30 feet for continuous footings. This assumes that the maximum column and wall loads (dead plus live, not including wind or seismic) associated with new building improvements will not exceed 40 kips and 2.0 kips per foot, respectively.

Our lab testing indicates that the upper 5 feet of soils at the site should have a low expansion potential (Expansion Index ≤ 50). The type and dimensions of concrete, and the size and location of reinforcing steel, used in foundations should be specified by the Project Structural Engineer. As a minimum, reinforcement for continuous footings should include at least one #4 bar located near both the top and bottom of continuous footings.

It will be very important for all footing excavations to be observed by the geotechnical engineer to verify that they have been excavated into the recommended bearing material. Where zones of relatively loose or disturbed soils are present at the bottom of foundation excavations, these soils should be properly compacted to provide a uniform bearing surface that meets the approval of the geotechnical engineer (refer to Section 3.04).

3.14 Lateral Load Resistance and Earth Pressures

Lateral loads may be resisted by soil friction and the passive resistance of the soil. The following parameters are recommended.

- Allowable Passive Earth Pressure = 350 psf (equivalent fluid weight, includes a factor of safety = 2.0)
- Allowable Coefficient of Friction (soil to footing) = 0.35 (includes a factor of safety = 1.5)
- Retaining structures should be designed to resist a lateral active earth pressure of 35 pcf (equivalent fluid weight) for a level, non-expansive granular backfill with drainage provided.

The active earth pressure provided above is only applicable if the retained earth is allowed to strain sufficiently to achieve the active state. The required minimum horizontal strain to achieve the active state is approximately 0.0025H. Retaining structures should be designed to resist an at-rest lateral earth pressure of 55 pcf (equivalent fluid weight) if this horizontal strain cannot be achieved.

The Mononobe-Okabe method is commonly utilized for calculating seismically induced active and passive lateral earth pressures and is based on the limit equilibrium Coulomb theory for static stress conditions. This method entails three fundamental assumptions (e.g., Seed and Whitman, 1970): Wall movement is sufficient to ensure either active or passive conditions, the driving soil wedge inducing the lateral earth pressures is formed by a planar failure surface starting at the heel of the wall and extending to the free surface of the backfill, and the driving soil wedge and the retaining structure act as rigid bodies, and therefore, experiences uniform accelerations

throughout the respective bodies (U.S. Army Corps of Engineers, 2003, Engineering and Design - Stability Analysis of Concrete Structures).

- Seismic Lateral Earth Pressure for level backfill = 18 pcf (equivalent fluid weight)

The seismic lateral earth pressure given above is a triangular distribution increasing with depth, and the resultant of this pressure is an increment of force which should be applied to the back of the wall at 1/3 of the wall height from the wall base. The seismic increment of earth pressure should be added to the static active pressure. Even for the at-rest (K_o) condition, the seismic increment of earth pressure should be added to the static active soil pressure, not to the at-rest (SEAOC Seismology Committee 2019). Per CBC Section 1803.5.12 dynamic seismic lateral earth pressures shall be applied to foundation walls and retaining walls supporting more than 6 feet of backfill. Dynamic seismic lateral earth pressures may also be applied to shorter walls at the discretion of the structural engineer.

3.15 Pole Type Foundations

The light poles will be supported pole-type foundations or drilled piers. This type of foundation should be designed in accordance with Section 1807.3 of the 2022 CBC. However, it is recommended that an allowable lateral soil bearing pressure of 300 psf per foot of embedment be used to develop parameters S1 and S3 rather than one of the values given in Table 1806.2. This value includes a factor of safety of 2 and may be increased as indicated in Section 1806.3.4. In unpaved landscape areas, the upper 12 inches of soil should be ignored when calculating the minimum depth of embedment. The foundations should be at a minimum distance of 5 diameters away from the edge of top of a slope in order to use the allowable lateral soil bearing resistance.

An allowable end bearing pressure of 5,000 psf (includes a factor of safety of 3.0) and an allowable average skin friction of 330 psf (includes a factor of safety of 2.0) may be used to support vertical loads applied to pier foundations that are embedded at least 5 feet. The end bearing should be ignored if the drilled pier excavation is not properly cleaned out prior to installing the reinforcing steel and placing concrete. The uplift capacity of drilled piers can be calculated using an allowable skin friction of 230 psf plus the weight of the pier. In unpaved landscape areas, the skin friction within the upper 12 inches of embedded length should be ignored. The total settlement of pier foundations designed in accordance with these recommendations should not exceed one-half inch.

Prior to placing the pre-cast pole-type foundation, loose or disturbed soils should be removed from drilled shaft excavations. A representative of the Geotechnical Engineer should observe the drilling and clean-out associated with the installation of the foundations in order to assess whether the encountered soil conditions are compatible with the conditions anticipated during the preparation of this report. The contractor should be prepared to take measures to prevent caving or significant sloughing of the drilled holes (such as installing a temporary casing or using a stabilizing fluid). In any case, the pole-type foundation should be installed in an expeditious manner after each drilled hole is cleaned out. The contractor must take responsibility for staging the installation of the pre-cast piles so that significant amounts of sloughing or caving do not occur prior to installing the pile. The annular space around the pole must be backfilled using approved CLSM (controlled low strength material).

3.16 Interior Slabs on Grade

Concrete floors with a minimum thickness of 4 inches are recommended for interior slabs on grade. Existing onsite soils within 5 feet of the ground surface may be considered to have a low expansion potential for design purposes (Expansion Index of ≤ 50). However, to reduce the potential for excessive cracks as a result of differential movement, consideration should be given to reinforcing concrete slab-on-grade floors with at least #3 bars spaced 24 inches on-center in both directions. Reinforcement consisting of welded or woven wire mesh should not be used, due to the difficulty of keeping it centered in the slab during the construction process. If heavy concentrated or moving loads are anticipated, slabs should be designed using a modulus of subgrade reaction (k) of 180 pci. The concrete mix, reinforcement of slabs, and the location of construction and control joints should be specified by the Design Engineer.

Special care should be taken on floors slabs to be covered with thin-set tile or other inflexible coverings. These areas should have suitable reinforcement that is placed at the mid-height of the slab, to mitigate drying shrinkage cracks. Alternatively, inflexible flooring may be installed with unbonded fabric or liners to prevent reflection of slab cracks through the flooring.

A moisture vapor retarder/barrier is recommended beneath all slabs-on-grade that will be covered by moisture sensitive flooring materials such as vinyl, linoleum, wood, carpet, rubber, rubber-backed carpet, tile, impermeable floor coatings, adhesives, or where moisture-sensitive equipment, products, or environments will exist. We recommend that design and construction of the moisture vapor retarder/barrier conform to Section 1805 of the 2019 California Building Code and pertinent sections of American Concrete Institute (ACI) guidance documents 302.1R-04, 302.2R-06 and 360R-10.

The moisture vapor retarder/barrier should consist of a minimum 10 mils thick polyethylene with a maximum perm rating of 0.3 in accordance with ASTM E 1745. Seams in the moisture vapor retarder/barrier should be overlapped no less than 6 inches or in accordance with the manufacturer's recommendations. Joints and penetrations should be sealed with the manufacturer's recommended adhesives, pressure-sensitive tape, or both. The contractor must avoid damaging or puncturing the moisture vapor retarder/barrier and repair any punctures with additional polyethylene properly lapped and sealed.

The moisture vapor retarder/barrier may be placed directly beneath the floor slab with no intermediate granular fill layer. The vapor barrier should be placed directly on a smooth compacted subgrade surface consistent with the recommendations provided in Section 3.02 of this report. This method of construction will provide improved curing of the slab bottom and will eliminate potential problems caused by water being trapped in a granular fill layer. However, concrete slabs poured directly on a moisture vapor retarder/barrier can experience shrinkage cracking and curling due to differential rates of curing through the thickness of the slab. Therefore, for concrete placed directly on the moisture vapor retarder/barrier, we recommend a maximum water to cement ratio of 0.45 and the use of water-reducing admixtures to increase workability and decrease bleeding.

Alternatively, the slabs may be constructed over 2 inches of sand that is placed on the moisture vapor retarder/barrier. Granular fill should consist of clean, fine-graded materials with 100% passing the No. 4 sieve, 10% to 30% passing the No. 100 sieve, and less than 5% passing the No. 200 sieve. The granular layer should be moist but not saturated and uniformly compacted by making at least one pass with a vibratory base compactor or some other mechanical method that is approved by the Project Geotechnical Engineer. If uneven, the surface of the sand should be trimmed to provide the full design thickness of the proposed slab. The granular fill layer should not be left exposed to rain or other sources of water such as wet-grinding, power washing, pipe leaks or other processes, and should be damp but not saturated at the time of concrete placement. Granular fill layers that become saturated should be removed and replaced prior to concrete placement.

3.17 Miscellaneous Concrete Flatwork

Miscellaneous concrete flatwork and walkways may be designed with a minimum thickness of 4 inches. Large slabs should be reinforced with at least #4 bars spaced 24 inches on-center in both directions or as specified by the Project Design Engineer. Control joints should be constructed to create squares or rectangles with a maximum spacing of 10 feet. Concrete flatwork that will be subject to large truck traffic should be at least 6 inches thick and be underlain by at least 8 inches of Class 2 Aggregate Base. The aggregate base and upper 12 inches of subgrade should be compacted to at least 95 percent relative compaction. The Project Civil Engineer should provide design details and specifications for all exterior concrete flatwork including the concrete mix design, reinforcement, and the location of construction and control joints. We recommend walkways be separated from foundations with a thick expansion joint filler.

The subgrade soils beneath all miscellaneous concrete flatwork should be compacted to a minimum of 90 percent relative compaction for a minimum depth of 12 inches. As indicated above, the minimum relative compaction should be increased to 95 percent in areas where vehicular traffic is anticipated. The geotechnical engineer should monitor the compaction of the subgrade soils and perform testing to verify that proper compaction has been obtained.

3.18 Footing Excavations and Concrete Subgrade

All footing excavations should be observed by the geotechnical consultant to verify that they have been excavated into competent soils. The foundation excavations should be observed prior to the placement of forms, reinforcement steel, or concrete. These excavations should be evenly trimmed and level. Prior to concrete placement, any loose or soft soils should be removed. Excavated soils should not be placed within slab or footing areas unless properly compacted (see Section 3.04).

Prior to the placement of the moisture barrier and sand, the subgrade soils underlying the slab should be observed by the geotechnical consultant to verify that all under-slab utility trenches have been properly backfilled and compacted, that no loose or soft soils are present, and that the slab subgrade has been properly compacted to a minimum of 90 percent relative compaction within the upper 12 inches.

Footings may experience an overall loss in bearing capacity or an increased potential to settle where located in close proximity to existing or future utility trenches. Furthermore, stresses imposed by the footings on the utility lines may cause cracking, collapse and/or a loss of serviceability. To reduce this risk, footings should extend below a 1:1 plane projected upward from the closest bottom of a parallel utility trench.

The upper 6 inches of subgrade underlying slabs on grade and walkways should have a moisture content at or above optimum prior to the placement of concrete. The geotechnical consultant should perform insitu moisture tests to verify that the appropriate moisture content has been achieved within 48 hours prior to the placement of concrete or moisture barriers.

3.19 Existing Foundations

Existing foundation bottoms adjacent to a slope or excavation should extend below an imaginary 1:1 (H:V) plane projected from the bottom of the excavation.

3.20 Drainage and Moisture Proofing

Surface drainage should be directed away from the proposed improvements into suitable drainage devices (see Section 1804.4 of the 2022 CBC). Neither excess irrigation nor rainwater should be allowed to collect or pond against building foundations or within low-lying or level areas of the lot. Surface waters should be diverted away from the tops of slopes and prevented from draining over the top of slopes and down the slope face.

Walls and portions thereof that retain soil and enclose interior spaces and floors below grade should be waterproofed and damp-proofed in accordance with Section 1805 of the 2022 CBC.

Retaining structures should be drained to prevent the accumulation of subsurface water behind the walls. Backdrains should be installed behind all retaining walls exceeding 3 feet in height. All backdrains should be outlet to suitable drainage devices. Retaining walls less than 3 feet in height should be provided with backdrains or weep holes. Damp-proofing and/or waterproofing should also be provided on all retaining walls exceeding 3 feet in height. It is understood that a drainage system was installed as part of the original stadium improvements. In light of the seepage and migration of fine soil that is occurring through portions of the existing retaining walls within the stadium, it is recommended that the existing drainage system undergo a thorough review and be upgraded as needed.

3.21 Cement Type and Corrosion Potential

Soluble sulfate tests performed on a near-surface soil sample indicate a soluble sulfate content of 17.1 mg/kg (0.00171 percent by weight). Thus, below-grade concrete at the subject site should have a negligible exposure to water-soluble sulfate in the soil. Our recommendations for concrete exposed to sulfate-containing soils are presented in the table below.

Recommendations for Concrete exposed to Sulfate-Containing Soils

Sulfate Exposure	Water Soluble Sulfate (SO_4) in Soil (% by Weight)	Sulfate (SO_4) in Water (ppm)	Cement Type (ASTM C150)	Maximum Water-Cement Ratio (by Weight)	Minimum Compressive Strength (psi)
Negligible	0.00 - 0.10	0-150	--	--	2,500
Moderate	0.10 - 0.20	150-1,500	II	0.50	4,000
Severe	0.20 - 2.00	1,500-10,000	V	0.45	4,500
Very Severe	Over 2.00	Over 10,000	V plus pozzolan or slag	0.45	4,500

Use of alternate combinations of cementitious materials may be permitted if the combinations meet design recommendations contained in American Concrete Institute guideline ACI 318-11.

Our testing also indicates that there is a very low concentration of soluble chloride (< 1.0 mg/kg) in the onsite soils. Therefore, no special protection of reinforcing steel should be required due to soil conditions.

The soils were also tested for soil reactivity (pH) and electrical resistivity (ohm-cm). The test results indicate that the on-site soils have a pH of 6.28 and a minimum electrical resistivity of 7,390 ohm-cm. A neutral or non-corrosive soil has a value ranging from 6.0 to 8.5; thus, the onsite soils can be considered neutral. Generally, soils that could be considered moderately corrosive to ferrous metals have minimum resistivity values of about 3,000 ohm-cm to 10,000 ohm-cm. Soils with resistivity values less than 3,000 ohm-cm can be considered corrosive and soils with resistivity values less than 1,000 ohm-cm can be considered extremely corrosive. In any case, buried metal conduits should have a protective coating in accordance with the manufacturer's specifications. A corrosion specialist should be consulted if more detailed recommendations are required.

3.22 Plan Review

Once formal grading and foundation plans are prepared for the subject project, this office should review the plans from a geotechnical viewpoint, comment on changes from the plan used during preparation of this report and revise the recommendations of this report where necessary.

3.23 Geotechnical Observation and Testing During Grading

The geotechnical engineer should be contacted to provide observation and testing during the following stages of grading:

- During the clearing and grubbing of the site.

- During the demolition of any existing structures, buried utilities or other existing improvements.
- During excavation and over-excavation of existing subgrade.
- During all phases of grading including ground preparation and filling operations.
- When any unusual conditions are encountered during grading.

A grading and compaction report summarizing conditions encountered during grading and the in-place density testing that was performed should be submitted upon completion of the earthwork construction.

3.24 Geotechnical Observation and Testing During and After Grading

The geotechnical engineer should be contacted to provide observation and testing during the following stages of grading:

- During the clearing and grubbing of the site.
- During the demolition of any existing structures, buried utilities or other existing improvements.
- During excavation and over-excavation of existing subgrade.
- During all phases of grading including ground preparation and filling operations.
- When any unusual conditions are encountered during grading.

A grading and compaction report summarizing conditions encountered during grading and the in-place density testing that was performed should be submitted upon completion of the earthwork construction.

After the completion of grading, the geotechnical engineer should be contacted to provide additional observation and testing during the following construction activities:

- During trenching and backfilling operations of buried improvements and utilities to verify proper backfill and compaction of the utility trenches.
- After excavation and prior to placement of reinforcing steel or concrete within footing excavations to verify that footings are properly founded in competent materials.
- During fine or precise grading involving the placement of any fills underlying driveways, sidewalks, walkways, or other miscellaneous concrete flatwork to verify proper placement, mixing and compaction of fills.
- When any unusual ground or soil conditions are encountered during construction.

4.00 CLOSURE

The findings, conclusions and recommendations in this report were prepared in accordance with generally accepted engineering and geologic principles and practices. No other warranty, either expressed or implied, is made. This report has been prepared for the Clovis Unified School District and other members of the design team to be used for the design and construction of improvements at the project site. Anyone using this report for any other purpose must draw their own conclusions regarding required construction procedures and subsurface conditions.

RMA GeoScience should be retained during the earthwork and foundation phases of construction to monitor compliance with the design concepts and recommendations and to provide additional recommendations as needed. Should subsurface conditions be encountered during construction that are different from those described in this report, this office should be notified immediately so that our recommendations may be re-evaluated.

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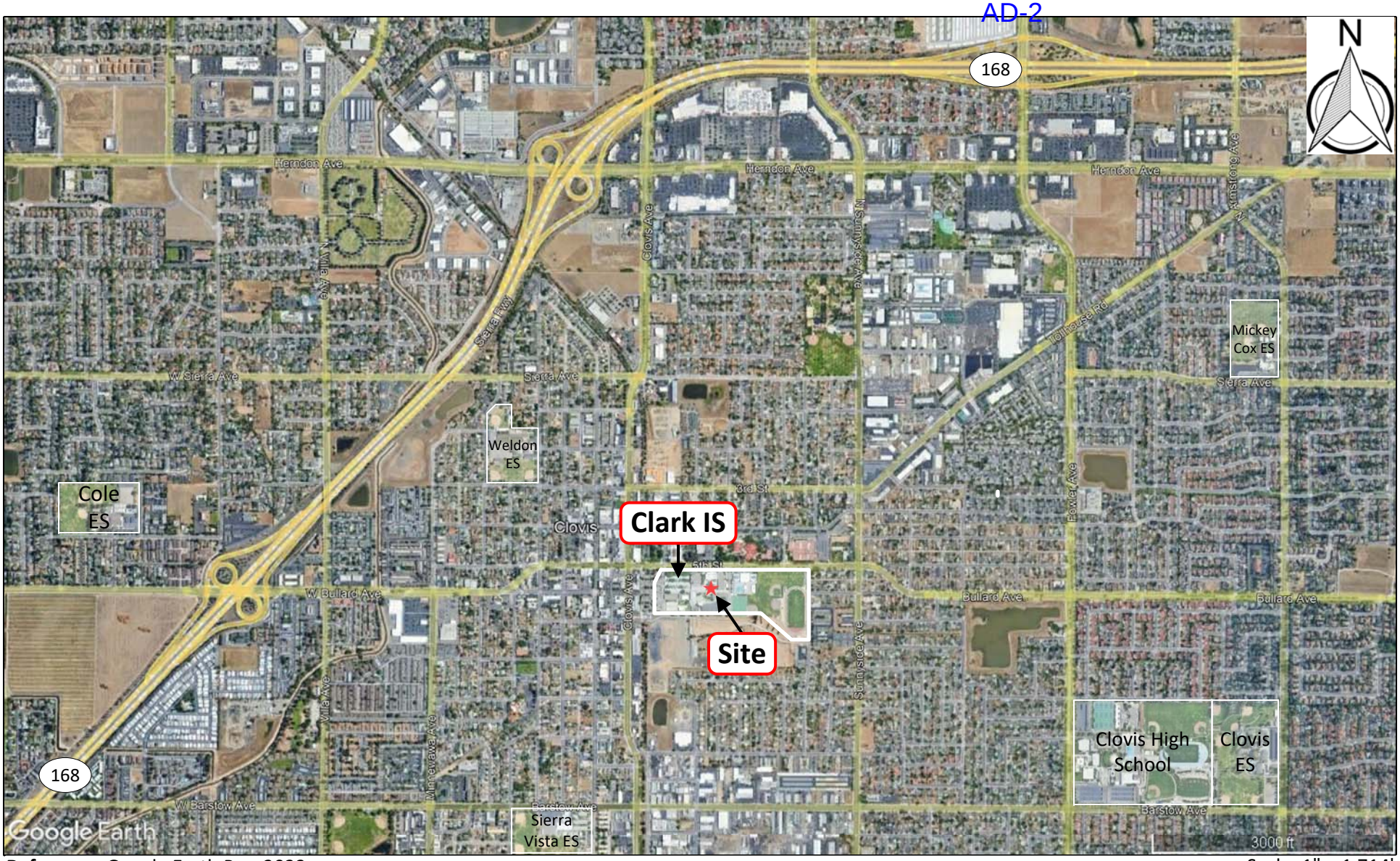
FIGURES



Reference: Google Earth Pro, 2023

Scale: 1" ≈ 1,714'

FIGURE 1

SITE VICINITY MAP

New Addition to the Mercedes Edwards Theater
at Clark Intermediate School
902 5th Street
Clovis, California 93612
Project #07-230020-0

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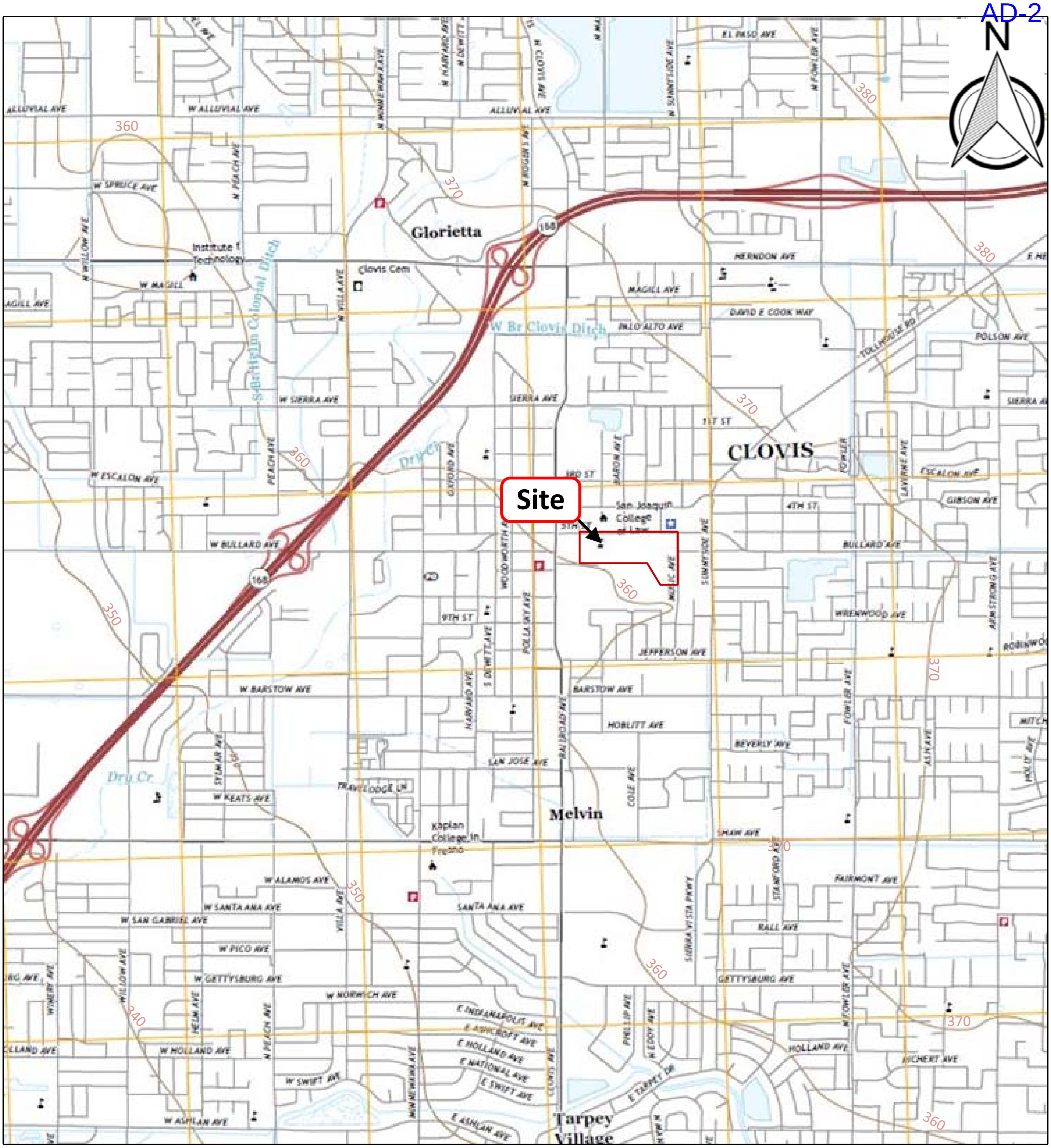
AD-2



Reference: USGS Clovis Quadrangle, California 7.5-Minute Series, 2018

Scale: 1" ≈ 0.48 miles

FIGURE 2

USGS CONTOUR MAP

New Addition to the Mercedes Edwards Theater
at Clark Intermediate School
902 5th Street
Clovis, California 93612
Project #07-230020-0

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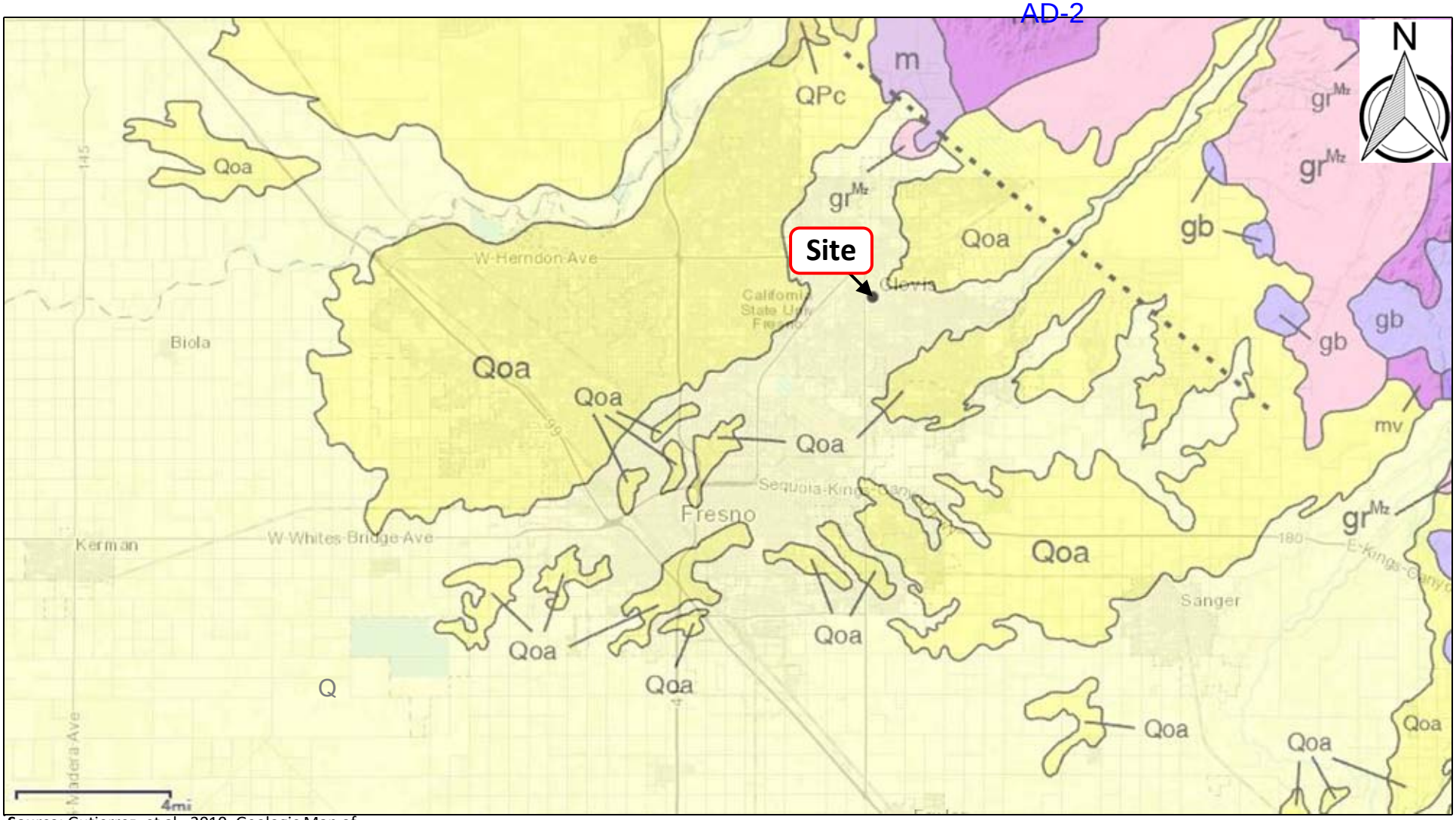

Source: Gutierrez, et al., 2010, Geologic Map of California, California Geologic Survey Map No. 2

FIGURE 3A

REGIONAL GEOLOGIC MAP

New Addition to the Mercedes Edwards Theater
at Clark Intermediate School
902 5th Street
Clovis, California 93612
Project #07-230020-0

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Q	Alluvium, lake, playa, and terrace deposits; consolidated and unconsolidated
Qoa	Older alluvium, lake, playa, and terrace deposits
mv	Undivided pre-Cenozoic metavolcanic rocks. Includes latite, dacite, tuff, and greenstone; commonly schistose
grMz	Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite
um	Ultramafic rocks, mostly serpentine. Minor peridotite, gabbro, and diabase; chiefly Mesozoic
gb	Gabbro and dark dioritic rocks; chiefly Mesozoic.
m	Undivided pre-Cenozoic metasedimentary and metavolcanic rocks of great variety. Mostly slate, quartzite, hornfels, chert, phyllite, mylonite, schist, gneiss, and minor marble

Source: Gutierrez, et al., 2010, Geologic Map of California, California Geologic Survey Map No. 2

FIGURE 3B
LEGEND FOR REGIONAL GEOLOGIC MAP
New Addition to the Mercedes Edwards Theater
at Clark Intermediate School
902 5th Street
Clovis, California 93612
Project #07-230020-0

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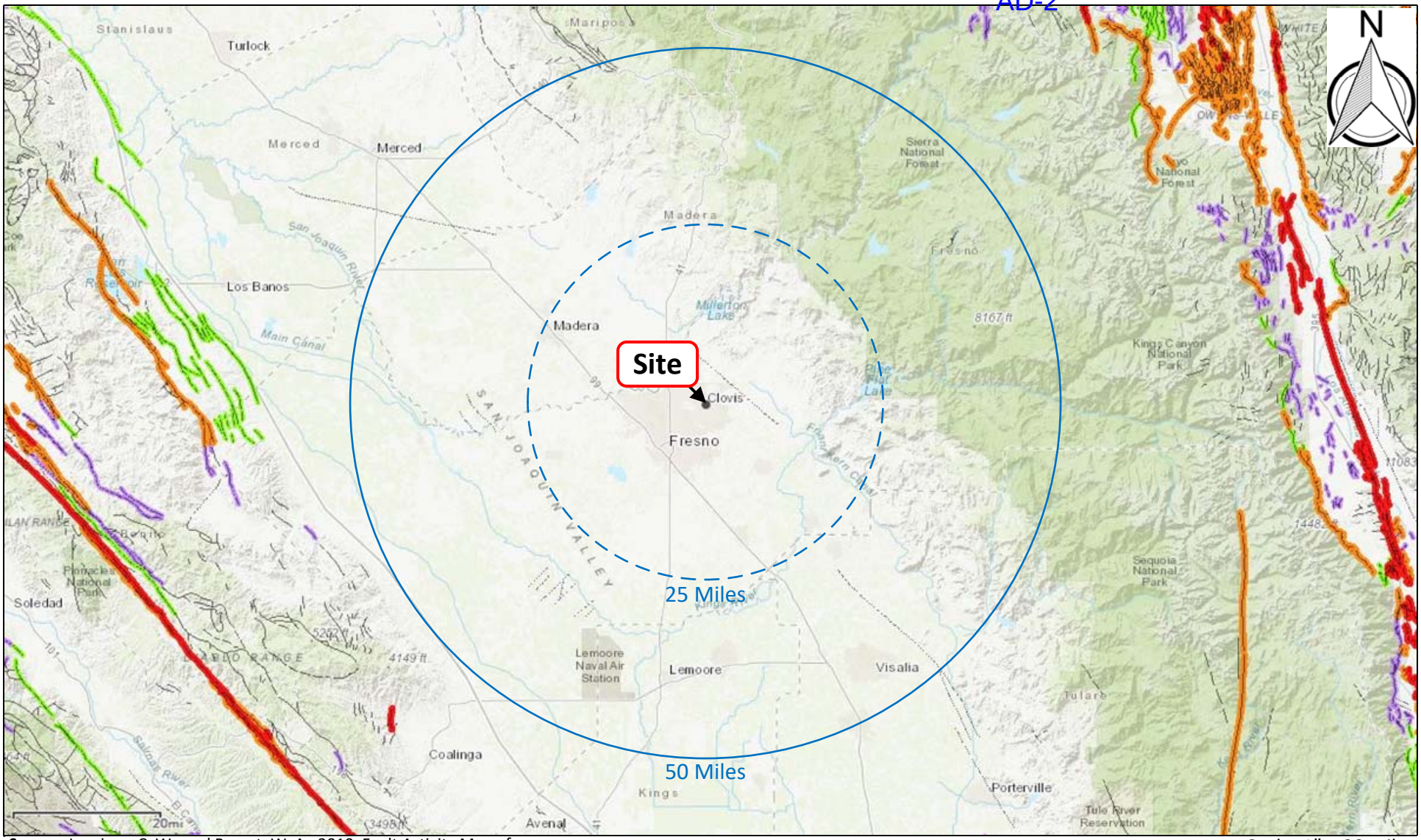

Source: Jennings, C. W., and Bryant, W. A., 2010, Fault Activity Map of California, California Geological Survey, Geologic Data Map No. 6.

Scale: 1" ≈ 20 miles

FIGURE 4A

FAULT ACTIVITY MAP

New Addition to the Mercedes Edwards Theater
at Clark Intermediate School
902 5th Street
Clovis, California 93612
Project #07-230020-0

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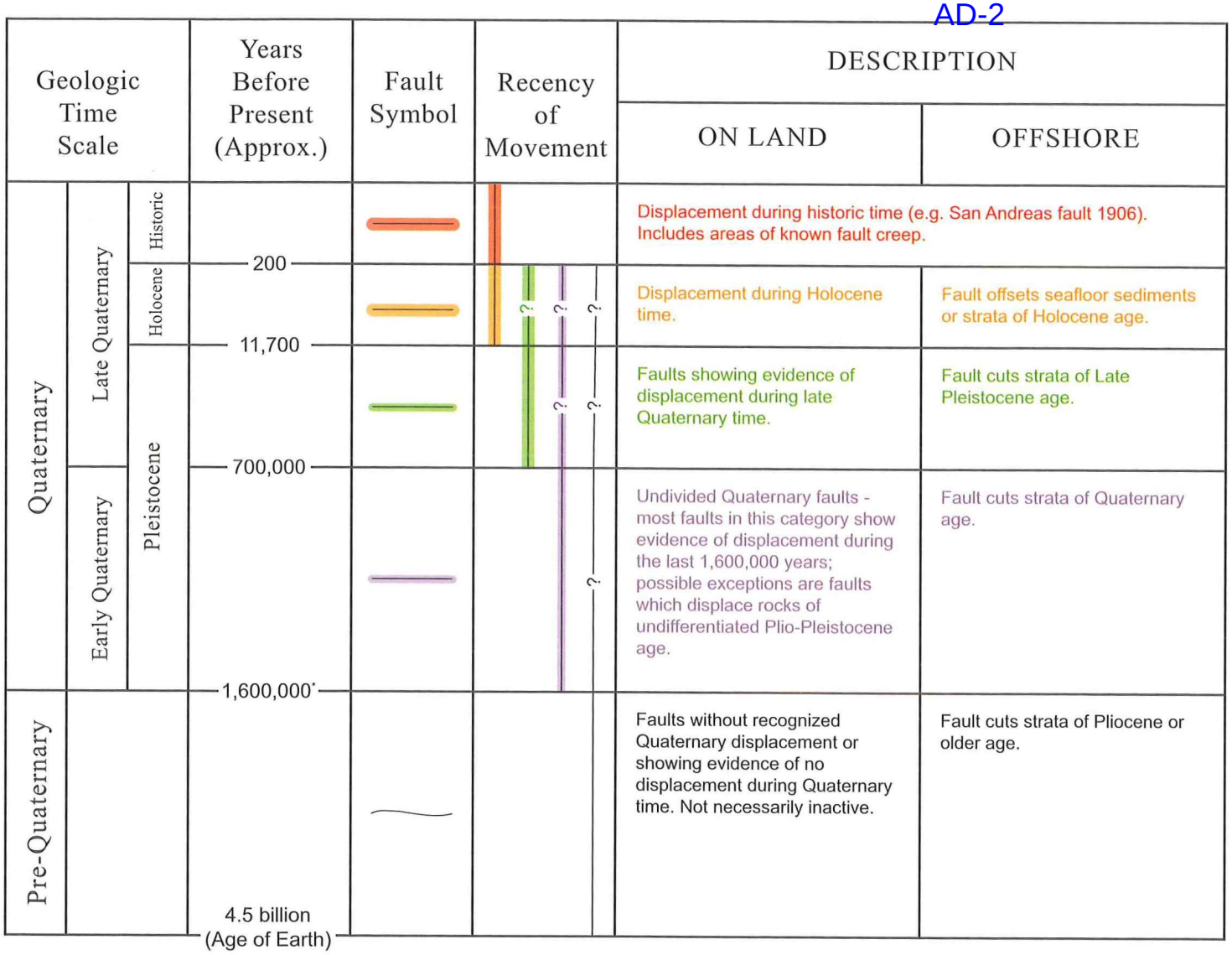

* Quaternary now recognized as extending to 2.6 Ma (Walker and Geissman, 2009). Quaternary faults in this map were established using the previous 1.6 Ma criterion.

Source: Jennings, C. W., and Bryant, W. A., 2010, Fault Activity Map of California, California Geologic Survey, Geologic Data Map No. 6.

FIGURE 4B
Legend for Fault Activity Map
New Addition to the Mercedes Edwards Theater
at Clark Intermediate School
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Clovis, California 93612
Project #07-230020-0

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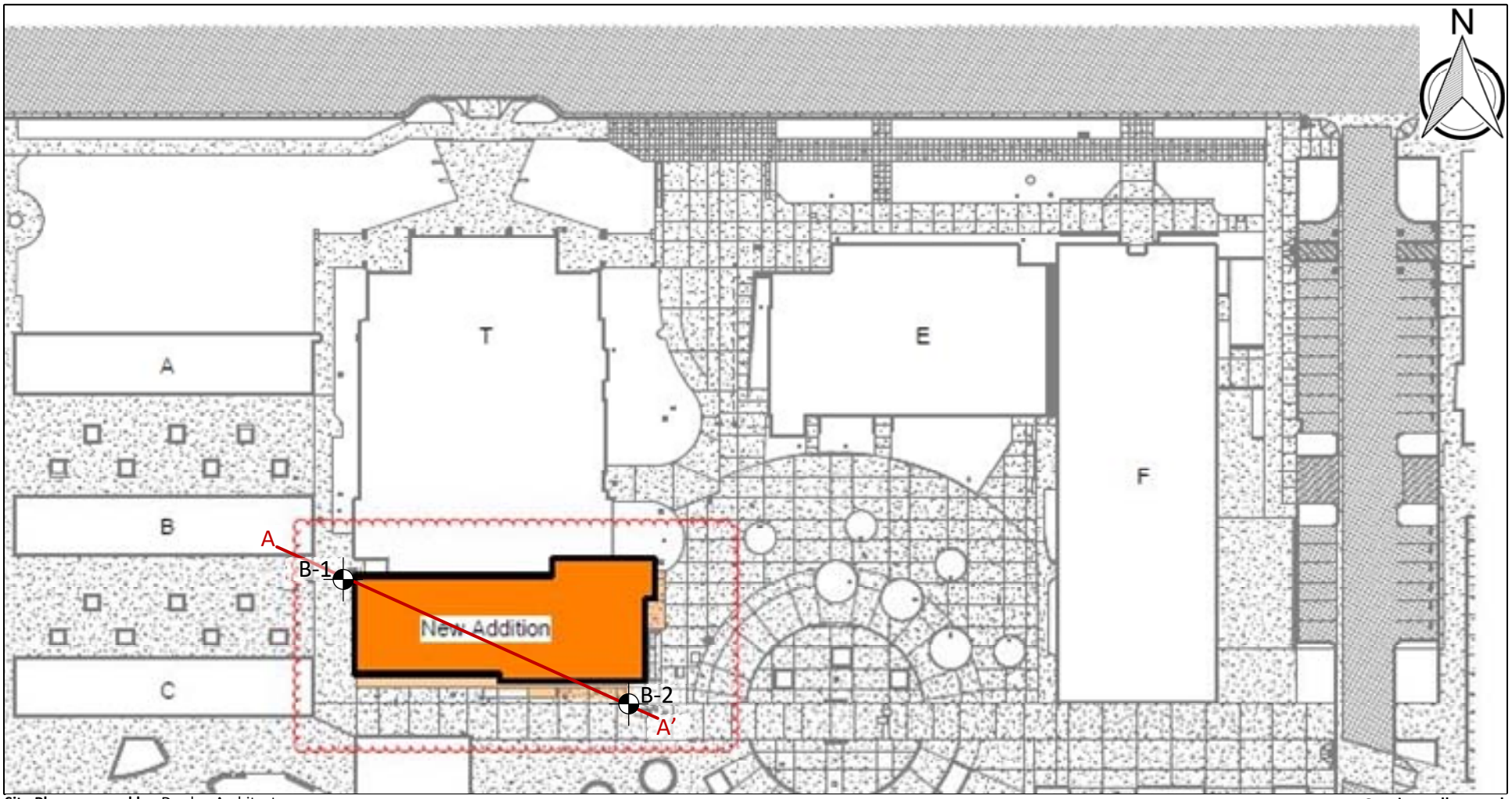

Site Plan prepared by: Darden Architects
dated November 8, 2022

Scale: 1" ≈ 71'

FIGURE 5

BORING LOCATION MAP

New Addition to the Mercedes Edwards Theater
at Clark Intermediate School
902 5th Street
Clovis, California 93612
Project #07-230020-0

B-2 Approximate Boring Locations

A —— A' Cross Section Line

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AD-2

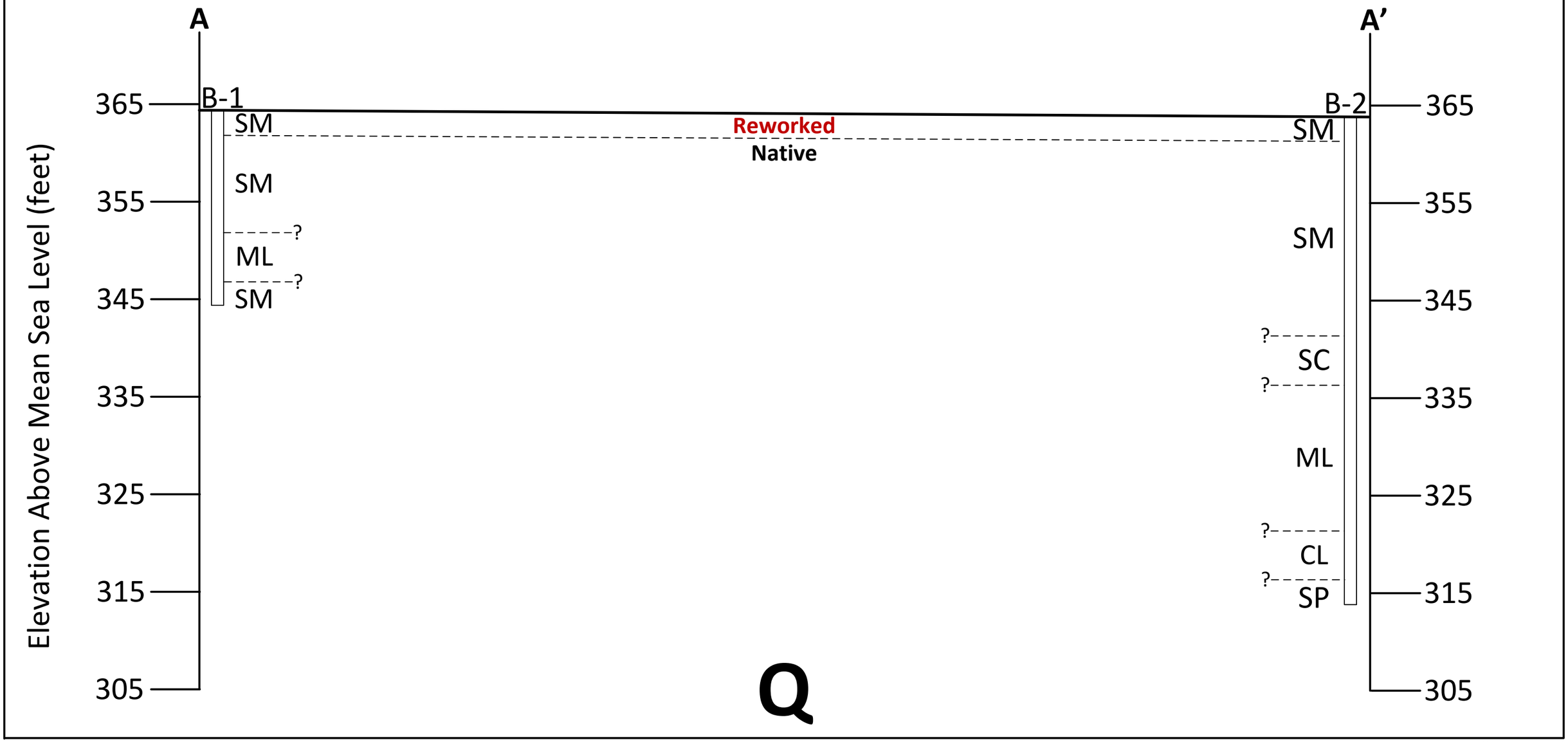

FIGURE 6
CROSS SECTION A TO A'
New Addition to the Mercedes Edwards Theater at Clark Intermediate School
902 5th Street
Clovis, California 93612
Project #07-230020-0

Horizontal Scale: 1" = 11.25'
Vertical Scale: 1" = 10'

E25S

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APPENDIX A

FIELD INVESTIGATION

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APPENDIX A

FIELD INVESTIGATION

A-1.00 FIELD EXPLORATION

A-1.01 Number of Borings

Our subsurface investigation consisted of excavating two test borings to a maximum depth of approximately 51 feet below existing grade. The test borings were excavated with a SIMCO 2800 drill rig equipped with a 4-inch solid stem auger and a 140-pound auto-hammer on February 13, 2023.

A-1.02 Location of Borings

The approximate locations of the borings are shown on Figure 5, Boring Location Map. GPS coordinates indicated on the logs are based on information provided by Google Earth Pro.

A-1.03 Logging Borings

Boring logs were prepared by one of our staff and are included in this appendix. The log contains factual information and interpretation of subsurface conditions between samples. The stratum indicated on the boring logs represents the approximate boundary between earth units and the transition may be gradual. The logs show subsurface conditions at the dates and locations indicated and may not be representative of subsurface conditions at other locations and times.

Identification of the soils encountered during the subsurface exploration was made using the field identification procedure of the Unified Soils Classification System (ASTM D2488). A legend defining the terms used in describing the relative compaction, consistency or firmness of the soil, and moisture level is provided on the following page. Bag, ring, or tube samples of the major earth units were obtained for laboratory inspection and testing.

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I. SOIL STRENGTH/DENSITY

BASED ON STANDARD PENETRATION TESTS

Compactness of sand		Consistency of clay	
Penetration Resistance N (blows/Ft)	Compactness	Penetration Resistance N (blows/ft)	Consistency
0-4	Very Loose	<2	Very Soft
4-10	Loose	2-4	Soft
10-30	Medium Dense	4-8	Medium Stiff
30-50	Dense	8-15	Stiff
>50	Very Dense	15-30	Very Stiff
		>30	Hard

N = Number of blows of 140 lb. weight falling 30 in. to drive 2-in OD sampler 1 ft. (corrected)

BASED ON RELATIVE COMPACTION

Compactness of sand		Consistency of clay	
% Compaction	Compactness	% Compaction	Consistency
<75	Loose	<80	Soft
75-83	Medium Dense	80-85	Medium Stiff
83-90	Dense	85-90	Stiff
>90	Very Dense	>90	Very Stiff

II. SOIL MOISTURE

Moisture of sands		Moisture of clays	
% Moisture	Description	% Moisture	Description
<5%	Dry	<12%	Dry
5-12%	Moist	12-20%	Moist
>12%	Very Moist, wet	>20%	Very Moist, wet

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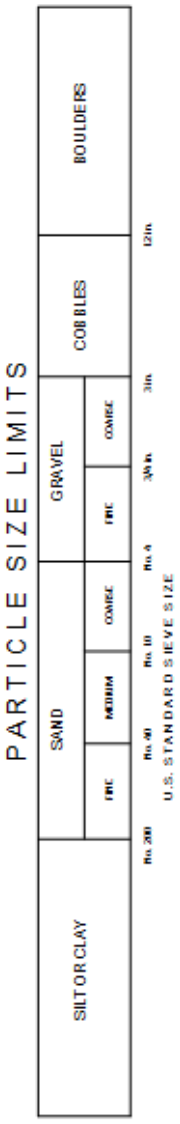

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	GW	Well graded gravel, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravel or gravel-sand mixtures, little or no fines.
		GRAVELS WITH FINES (Appreciable amt. of fines)	GM	Silty gravels, gravel-sand-silt mixtures.
			GC	Clayey gravels, gravel-sand-clay mixtures.
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 sieve size)	CLEAN SANDS (Little or no fines)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures.
			SC	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)	SILTS AND CLAYS (Liquid limit LESS than 50)		ML	Inorganic silts and very fine sands, rock flour silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS (Liquid limit GREATER than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

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GEOTECHNICAL CONSULTANTS

Exploratory Boring Log

Boring No. B-1
Sheet 1 of 1

Date Drilled:	February 13th, 2023	Drilling Equipment:	SIMCO 2800, Solid Stem Auger
Logged By:	GJV	Borehole Diameter:	4"
Location:	See Boring Location Map	Drive Weights:	140 lbs. (Autohammer)
Geographic Position:	36.823258°, -119.698063°	Drop Height:	30"

Depth (ft)	Sample Type	Blows (blows/ft)	Bulk Sample	Moisture Content (%)	Dry Density (pcf)	USCS	Graphic Symbol	Material Description
								4" Concrete
	R	11		6.9	122.0	SM		**REWORKED:** dark brown, fine to medium SILTY SAND, moist, medium dense
5	R	8		6.7	113.4	SM		**NATIVE:** dark brown to brown, fine to medium SILTY SAND, moist, loose
10	S	23						. . .brown, minor CLAY, medium dense
15	S	11				ML		Brown, fine SANDY SILT with CLAY, moist, stiff
20	S	23				SM		Brown, fine to medium SILTY SAND minor CLAY, moist, medium dense
25								
30								
35								

Notes:
1. Boring terminated at approximately 21'
2. No groundwater encountered
3. Boring backfilled with soil cuttings

***Note**
All blow counts associated with Modified California Sample are uncorrected. The sampler dimensions are as follows:
ID = 2.5" OD = 3"

Sample Types:
S - SPT Sample
Bulk Sample
T - Modified California Tube Sample
R - Modified California Ring Sample

Symbols:
- Groundwater
- End of Boring

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GEOTECHNICAL CONSULTANTS

Exploratory Boring Log

Boring No. B-2
Sheet 1 of 2

Date Drilled:	February 13th, 2023	Drilling Equipment:	SIMCO 2800, Solid Stem Auger
Logged By:	GJV	Borehole Diameter:	4"
Location:	See Boring Location Map	Drive Weights:	140 lbs. (Autohammer)
Geographic Position:	36.823103°, -119.697652°	Drop Height:	30"

Depth (ft)	Sample Type	Blows (blows/ft)	Bulk Sample	Moisture Content (%)	Dry Density (pcf)	USCS	Graphic Symbol	Material Description
								4" Concrete
	R	30	▨	4.3	123.4	SM		**REWORKED:** dark brown, fine to medium SILTY SAND, dry, dense
5	R	14		4.0	115.0			**NATIVE:** dark brown to brown, fine to medium SILTY SAND, dry, medium dense
10	S	22				SM		. . .brown, minor CLAY, moist
15	R	36		8.6	136.4			. . .with interlayers of CLAYEY SAND, dense
20	S	16						. . .no interlayers, medium dense
25	R	14		8.8	126.4	SC		Brown, fine to coarse CLAYEY SAND, moist, medium dense
30	S	30						Brown, fine SANDY SILT with CLAY, moist, hard
35	R	23		19.3	115.3	ML		. . .very stiff
	S							

***Note**
All blow counts associated with Modified California Sample are uncorrected. The sampler dimensions are as follows:
ID = 2.5" OD = 3"

Sample Types:
S - SPT Sample
▨ - Bulk Sample
T - Modified California Tube Sample
R - Modified California Ring Sample

Symbols:
▽ - Groundwater
◣ - End of Boring

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GEOTECHNICAL CONSULTANTS

Exploratory Boring Log

Boring No. B-2
Sheet 2 of 2

Date Drilled:	February 13th, 2023	Drilling Equipment:	SIMCO 2800, Solid Stem Auger
Logged By:	GJV	Borehole Diameter:	4"
Location:	See Boring Location Map	Drive Weights:	140 lbs. (Autohammer)
Geographic Position:	36.823103°, -119.697652°	Drop Height:	30"

Depth (ft)	Sample Type	Blows (blows/ft)	Bulk Sample	Moisture Content (%)	Dry Density (pcf)	USCS	Graphic Symbol	Material Description
	S	69						. . .gray brown, fine to medium grained, hard, partially cemented
45	R	50/6"		15.7	108.2	CL		Gray brown, SILTY CLAY, moist, hard
50	S	35				SP		Gray, fine SAND, dry, dense . . .with interlayers of fine SILTY SAND
55								Notes: 1. Boring terminated at approximately 51' 2. No groundwater encountered 3. Boring backfilled with soil cuttings
60								
65								
70								
75								

This log contains factual information and interpretation of the subsurface conditions between the samples. The stratum indicated on this log represent the approximate boundary between earth units and the transition may be gradual. The log show subsurface conditions at the date and location indicated, and may not be representative of subsurface conditions at other locations and times.

***Note**
All blow counts associated with Modified California Sample are uncorrected. The sampler dimensions are as follows:
ID = 2.5" OD = 3"

Sample Types:
S - SPT Sample
- Bulk Sample
T - Modified California Tube Sample
R - Modified California Ring Sample

Symbols:
- Groundwater
- End of Boring

APPENDIX B

LABORATORY TESTS

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APPENDIX B

B-1.00 LABORATORY TESTS

B-1.01 Moisture Determination

The moisture content of tube and ring samples obtained from the test borings was determined in accordance with ASTM D2216, the standard method for determining the water content of soil using a drying oven. The mass of material remaining after oven drying is used as the mass of the solid particles. The results of these tests are provided on the boring logs in Appendix A.

B-1.02 Density of Split-Barrel Samples

The densities of ring and tube samples, which were obtained using a split-barrel sampler, were determined in accordance with ASTM D2937. The results of these tests are provided on the boring logs in Appendix A.

B-1.03 Soluble Sulfates and Chlorides

Tests were performed in accordance with California Test Methods 417 and 422 on one near-surface soil sample obtained during the field exploration. These tests were performed by Dellavalle Laboratory, Inc. located in Fresno, California (see Table B1 for results).

B-1.04 Soil Reactivity (pH) and Minimum Electrical Resistivity

One near-surface soil sample was tested for soil reactivity (pH) and minimum electrical resistivity using California Test Method 643 (see Table B1). The pH measurement determines the degree of acidity or alkalinity in the soils. The minimum electrical resistivity is used as an indicator of how corrosive the soil is relative to buried metallic items.

TABLE B1: SUMMARY OF CORROSIVITY TEST RESULTS

Sample Location	Soluble Sulfates (mg/kg)	Soluble Chlorides (mg/kg)	pH	Minimum Resistivity (ohm-cm)
B-2 @ 1’ – 3’	17.1	< 1.0	6.28	7,390

B-1.05 Percent Passing #200 Sieve

Two soil samples were tested in accordance with ASTM D1140 to determine the percent passing the #200 sieve (see Table B2). This represents the amount of silt and clay that is present in the soil.

TABLE B2: PERCENT PASSING #200 SIEVE TEST RESULTS

Sample Location	Dry Weight Before Wash (grams)	Dry Weight After Wash (grams)	Percent Passing #200 Sieve
B-1 @ 1' – 3'	278.3	219.3	21
B-2 @ 25.5'	277.9	143.7	48

B-1.06 Atterberg Limits

The liquid limit, plastic limit, and the plasticity index of a near-surface soil sample were determined using the standard test methods of ASTM D4318 (See Figure B1).

B-1.07 Expansion Index

Expansion index testing was performed on one near-surface sample of the on-site soils in accordance with the standard test methods of ASTM D4829. The results of this test are shown on Figure B2.

B-1.08 Direct Shear

One 3-point direct shear test was performed on a representative near-surface sample of soil using the standard test method of ASTM D3080 (consolidated and drained). The shear test was performed on a direct shear machine of the strain-controlled type. To simulate possible adverse field conditions, the samples were saturated prior to shearing. Three soil specimens were sheared at varying normal loads for the test and the results plotted to establish the angle of the internal friction and cohesion of the tested sample. The results of this test are shown on Figure B3.

B-1.09 One-Dimensional Consolidation Properties

The magnitude and rate of consolidation of soils obtained from test borings, when it is restrained laterally and drained axially while subjected to incrementally applied controlled-stress loading, was determined using the standard test methods of ASTM D2435. The results of this test are shown on Figure B4.

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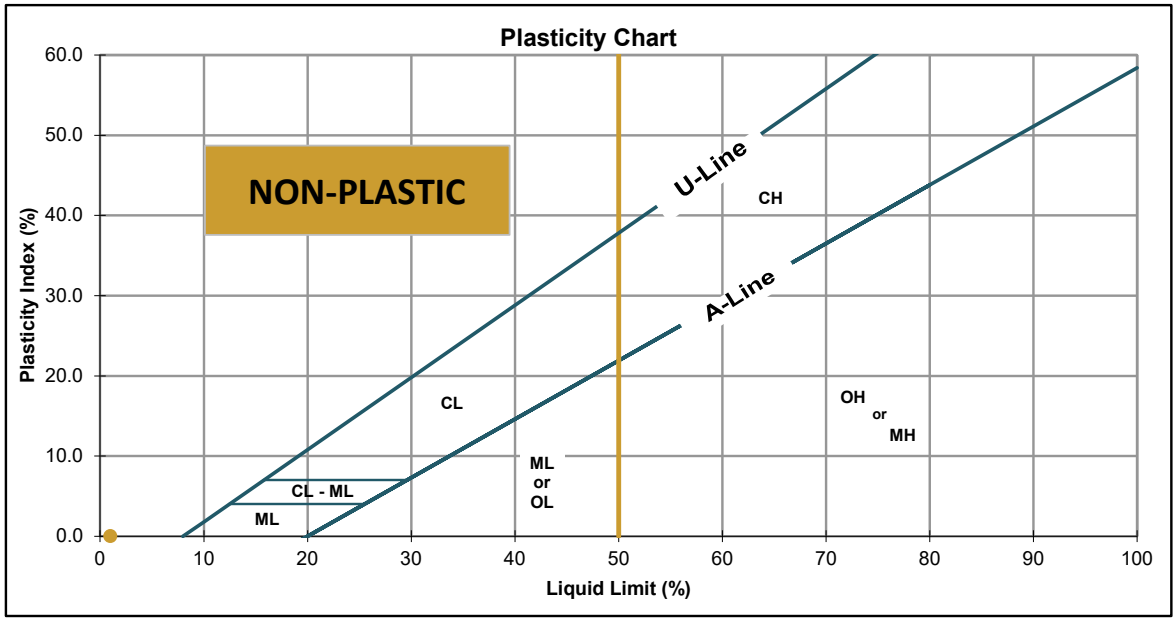
Figure B1
Laboratory Test Form | ASTM D4318
Plasticity Index (PI) of Soils

Project Number:	07-230020-0/02	Lab ID:	23-012182
Project Name:	New Addition to the Mercedes Edwards Theater	Date Tested:	2/21/2023
Sampled By:	Gabe V.	Tested By:	Jason M.
Sample Date:	2/13/2023		
Sample Location:	B-2 @ 1ft - 3ft		
Sample Description:	Silty SAND, fine to medium grained, dark brown		

Plasticity Index Results

Liquid Limit:	N/A
Average Plastic Limit :	N/A
Plasticity Index:	N/A



Liquid Limit Data

	Trial 1	Trial 2	Trial 3
Wet Weight (gm.)	--	--	--
Dry Weight (gm.)	--	--	--
Tare Weight (gm.)	--	--	--
Number of Blows	--	--	--
Moisture Content (%)	--	--	--

Plastic Limit Data

	Trial 1	Trial 2
Wet Weight (gm.)	--	--
Dry Weight (gm.)	--	--
Tare Weight (gm.)	--	--
Moisture Content (%)	--	--

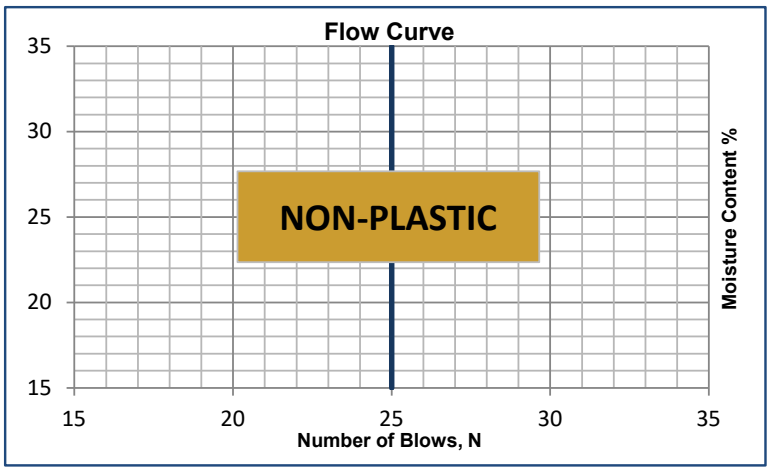


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Figure B2
Laboratory Test Form | ASTM D4829
Expansion Index of Soils

Project Number:	07-230020-0/02	Lab ID:	23-012179
Project Name:	New Addition to the Mercedes Edwards Theater	Date Sampled:	2/13/2023
Sampled By:	Gabe V.	Date Tested:	2/26/2023
Tested By:	Jason M.		
Sample Location:	B-1 @ 1ft - 3ft		
Sample Description:	Silty SAND, fine to medium grained, dark brown		

Expansion Readings

Initial Sample Height (in):	0.0168
Final Sample Height (in):	0.0172
Expansion (in):	**0.0004**
Expansion Index, EI:	0

Classification of Expansive Soil

EI	Potential Expansion
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
>130	Very High

Expansion Index Data

Initial Set-Up Data		Final Data	
Sample + Tare Weight (gm):	797.0	Sample + Tare Weight (gm):	808.6
Tare Weight (gm):	365.9	Tare Weight (gm):	365.9
Initial Gauge Reading (in):	0.0172	Final Gauge Reading (in):	0.0774
Moisture Content And Density Data			
Wet Weight + Tare (gm):	100.0	Wet Weight + Tare (gm):	833.8
Dry Weight + Tare (gm):	92.8	Dry Weight + Tare (gm):	764.1
Tare Weight (gm):	0	Tare Weight (gm):	365.9
Moisture Content:	7.8%	Moisture Content:	17.5%
Initial Volume (ft^3):	0.007345	Final Volume (ft^3):	0.007275
Remolded Wet Density (pcf):	129.4	Final Wet Density (pcf):	134.2
Remolded Dry Density (pcf):	120.1	Final Dry Density (pcf):	114.2
Degree of Saturation:	**52**	Assumed Specific Gravity:	2.7

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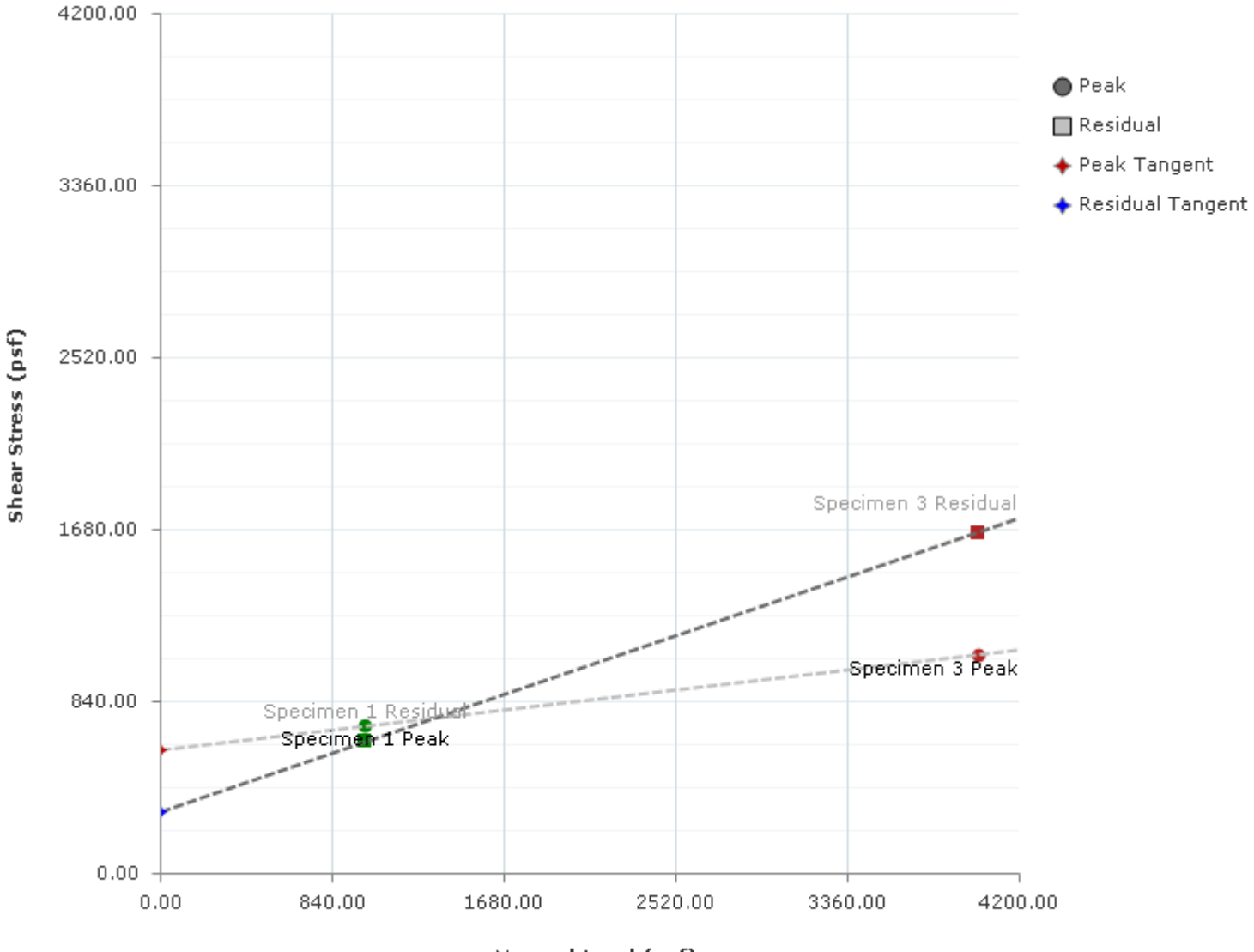
Figure B3a - Direct Shear Test
Shear Stress Vs. Normal Stress

ASTM D3080



Tangent Results	C (psf)	Phi (°)
Peak Tangent:	600.98	6.7
Residual Tangent:	304.82	18.8

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AD-2

Figure B3b - Direct Shear Test

ASTM D3080

Project: New Addition to the Mercedes Edwards Theater at Clark Intermediate School
Project Number: 07-230020-0/02
Sampling Date: 2/13/2023
Sample Number: 3
Sample Depth: 5.5 ft
Location: B-1 @ 5.5ft
Client Name: Clovis Unified School District
Soil: Silty SAND, fine to medium grained, brown

Information Parameters	Specimen Number 1	2	3	4	5	6	7	8
Liquid Limit:	0	0	0					
Plastic Limit:	0	0	0					
Specific Gravity:	2.65	2.65	2.65					
Specific Gravity Method:	ASSUMED	ASSUMED	ASSUMED					
Initial Parameters	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Test Temperature (°C):	14.9	16.1	16.3					
Sample Shape:	ROUND	ROUND	ROUND					
Height (in):	1.0000	1.0000	1.0000					
Diameter (in):	2.4200	2.4200	2.4200					
Area (in²):	4.600	4.600	4.600					
Volume (in³):	4.5996	4.5996	4.5996					
Moisture (%):	7.2	7.1	6.7					
Dry Density (pcf):	101.5	102.8	106.5					
Wet Density (pcf):	108.8	110.2	113.6					
Saturation (%):	30.2	31.0	32.2					
Void Ratio:	0.629	0.609	0.554					
Porosity (%):	38.6	37.8	35.6					
Consolidation Parameters	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Initial Reference Height (in):	1.0000	1.0000	1.0000					
Final Reference Height (in):	0.9910	0.9584	0.9917					
Height (in):	0.9910	0.9584	0.9917					
Final Parameters	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Moisture Content (%)	15.9	16.1	15.1					
Dry Density (pcf):	102.4	107.3	107.4					
Wet Density (pcf):	118.7	124.6	123.6					
Saturation (%):	68.5	78.9	73.9					
Void Ratio:	0.615	0.542	0.541					
Porosity (%):	38.1	35.1	35.1					

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Figure B4a
Laboratory Test Form | ASTM D2435
Consolidation, No Time Rate

Project Number:	07-230020-0/02	Lab ID:	23-012184
Project Name:	New Addition to the Mercedes Edwards Theater	Date Sampled:	2/13/2023
Sampled By:	Gabe V.	Date Tested:	2/15/23 - 2/28/23
Tested By:	Johnathann R.		
Sample Location:	B-2 @ 5.5ft		
Sample Description:	Silty SAND, fine to medium grained, dark brown		
Sample Preparation:	In-Situ Ring Sample		

Consolidation Test Data

Initial Data		Final Data	
Initial Sample Height (in):	1.0000	Final Sample Height (in):	0.9700
Intial Void Ratio:	0.55	Final Void Ratio:	0.50
Initial Gauge Reading (in):	0.2527	Final Gauge Reading (in):	0.2827

Moisture Content and Density Data

Intial Wet Weight + Tare (gm):	172.93	Final Wet Weight + Tare (gm):	187.10
Intial Dry Weight + Tare (gm):	167.40	Final Dry Weight + Tare (gm):	167.40
Tare Weight (gm):	44.60	Tare Weight (gm):	44.60
Initial Moisture Content:	4.50%	Final Moisture Content:	16.04%
Initial Volume (ft^3):	0.002531	Final Volume (ft^3):	0.002456
Initial Wet Density (pcf):	111.76	Final Wet Density (pcf):	127.94
Initial Dry Density (pcf):	106.95	Final Dry Density (pcf):	110.25
Initial Degree of Saturation:	21.1	Final Degree of Saturation:	82.0

Moisture Condition	Load (psf)	Dial Reading (in)	Sample Height (in)	Axial Strain (%)
In Situ	0	0.2527	1.0000	0.00
	100	0.2528	0.9999	0.01
	250	0.2529	0.9998	0.02
Saturated	250	0.2533	0.9994	0.06
	500	0.2533	0.9994	0.06
	1000	0.2538	0.9989	0.11
	2000	0.2620	0.9907	0.93
	4000	0.2742	0.9785	2.15
	8000	0.2865	0.9662	3.38
	4000	0.2853	0.9674	3.26
	2000	0.2841	0.9686	3.14
	1000	0.2827	0.9700	3.00

(As required by ASTM E-329-18)

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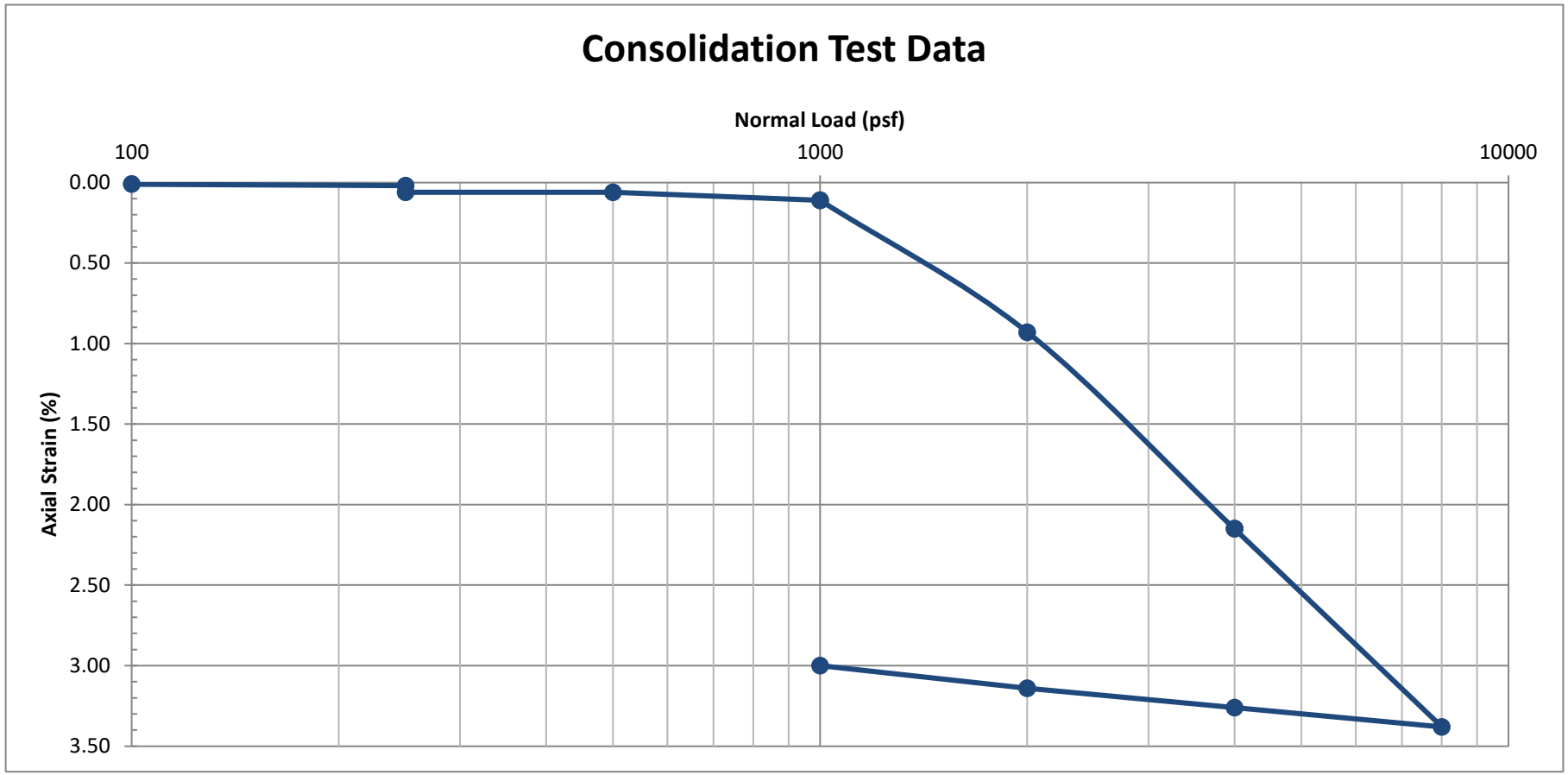
Figure B4b
Laboratory Test Form | ASTM D2435
Consolidation, No Time Rate



Project Number:	07-230020-0/02	**Project Name:**	New Addition to the Mercedes Edwards Theater at Clark Intermediate Shool		
Date Tested:	2/15/23 - 2/28/23	**Lab ID:**	23-012184	**Sample Location:**	B-2 @ 5.5ft
Tested By:	Johnathann R.	**Description:**	SM	**Sampled By:**	Gabe V.

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GEOTECHNICAL CONSULTANTS

APPENDIX C

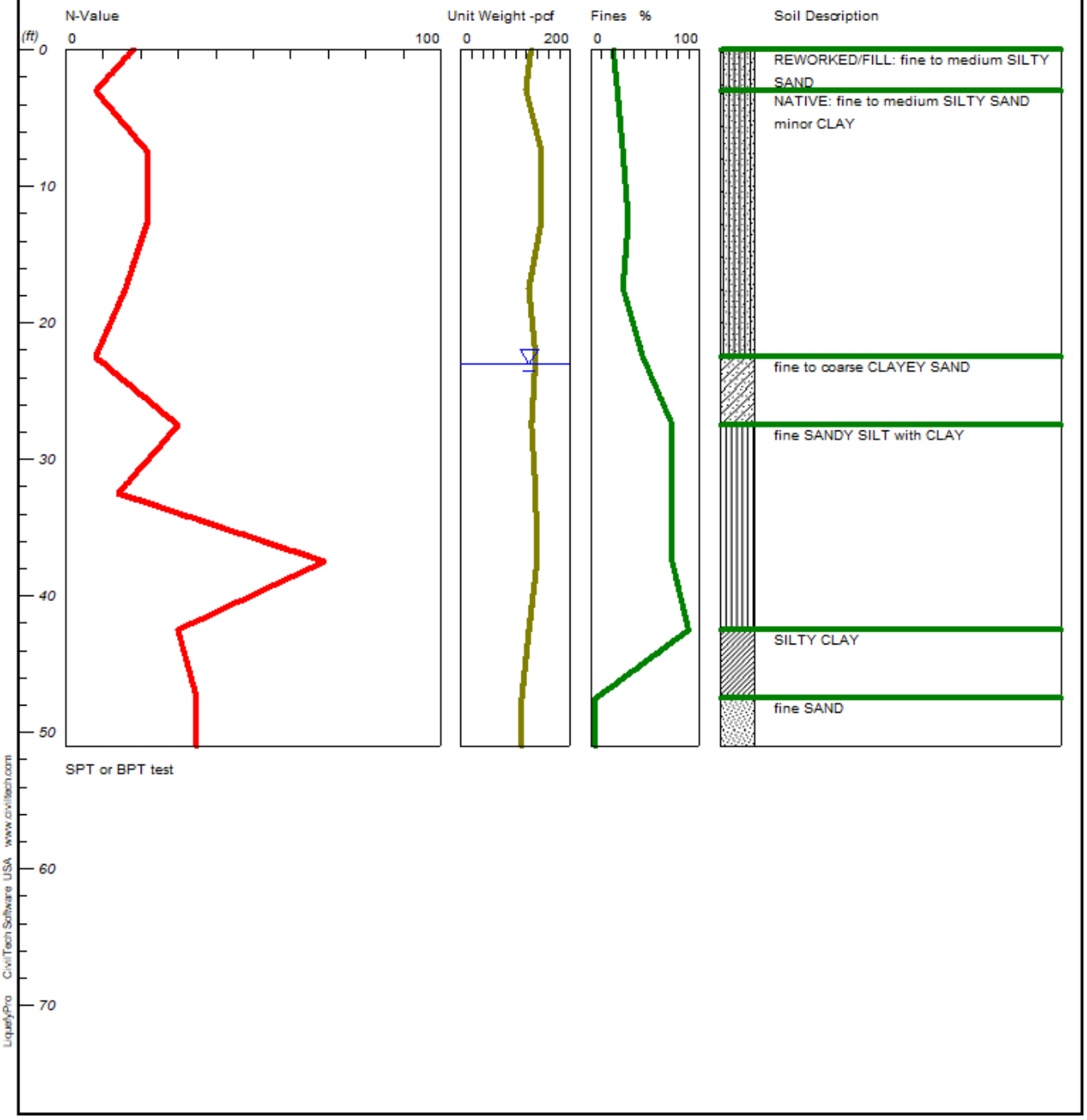
LIQUIFACTION AND SEISMIC SETTLEMENT ANALYSIS
(Figures and Analysis Summary)

LIQUEFACTION ANALYSIS

New Addition to the Mercedes Edwards Theater

Hole No.=B-2 Water Depth=23 ft Surface Elev.=363

Magnitude=5.5
Acceleration=0.317g

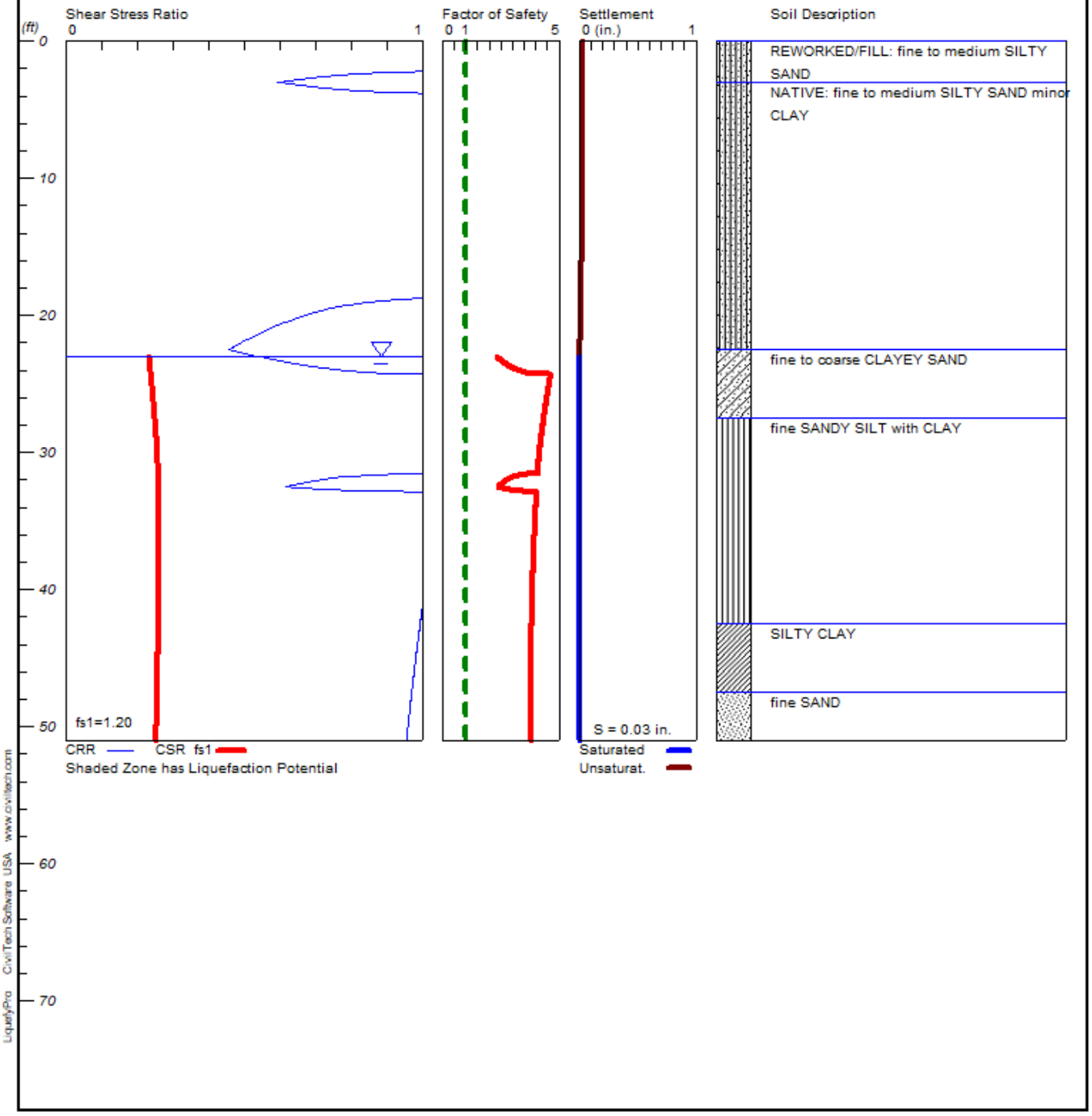


LIQUEFACTION ANALYSIS

New Addition to the Mercedes Edwards Theater

Hole No.=B-2 Water Depth=23 ft Surface Elev.=363

Magnitude=5.5
Acceleration=0.317g

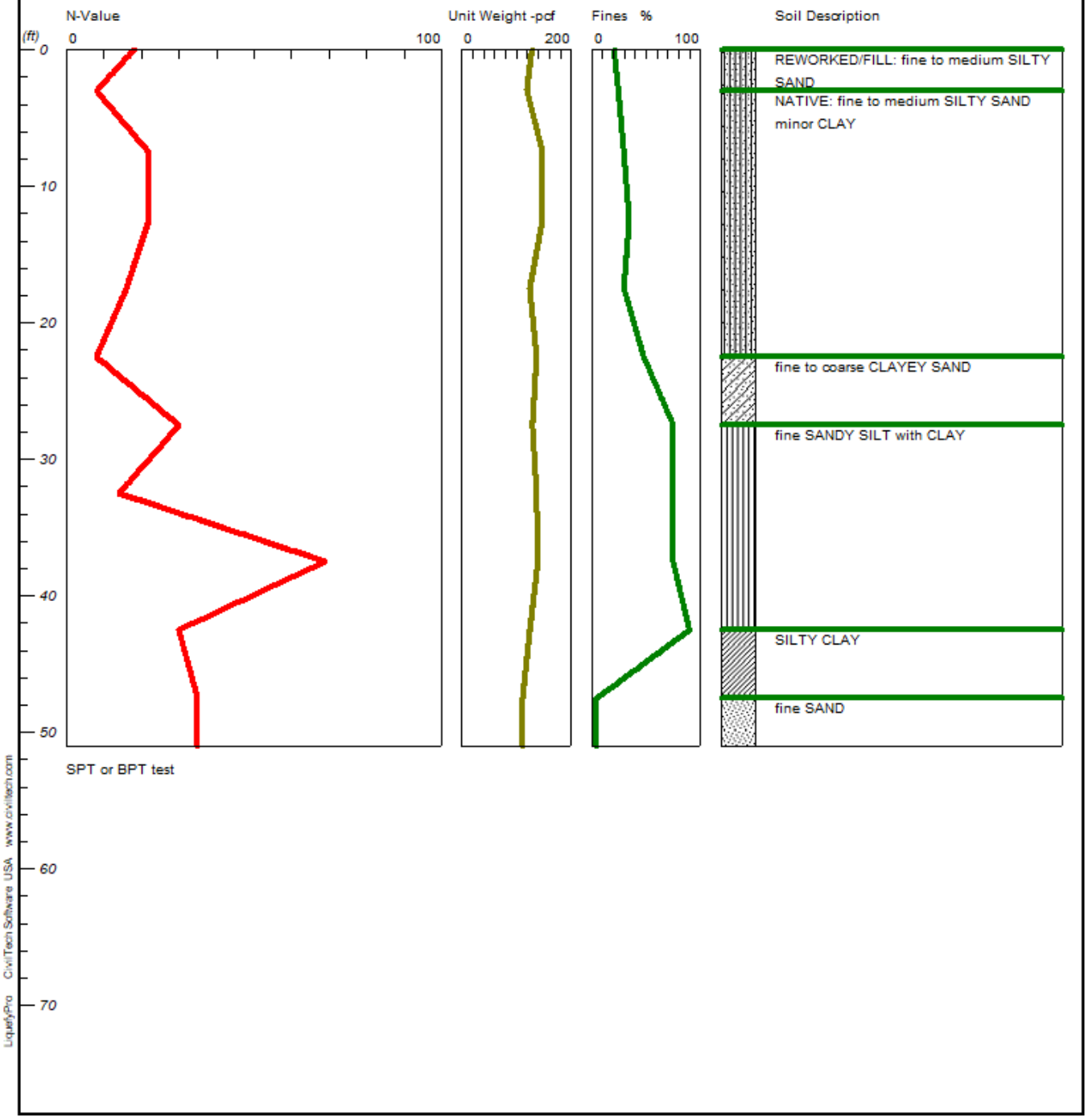


LIQUEFACTION ANALYSIS

New Addition to the Mercedes Edwards Theater

Hole No.=B-2 Water Depth=100 ft Surface Elev.=363

Magnitude=5.5
Acceleration=0.317g

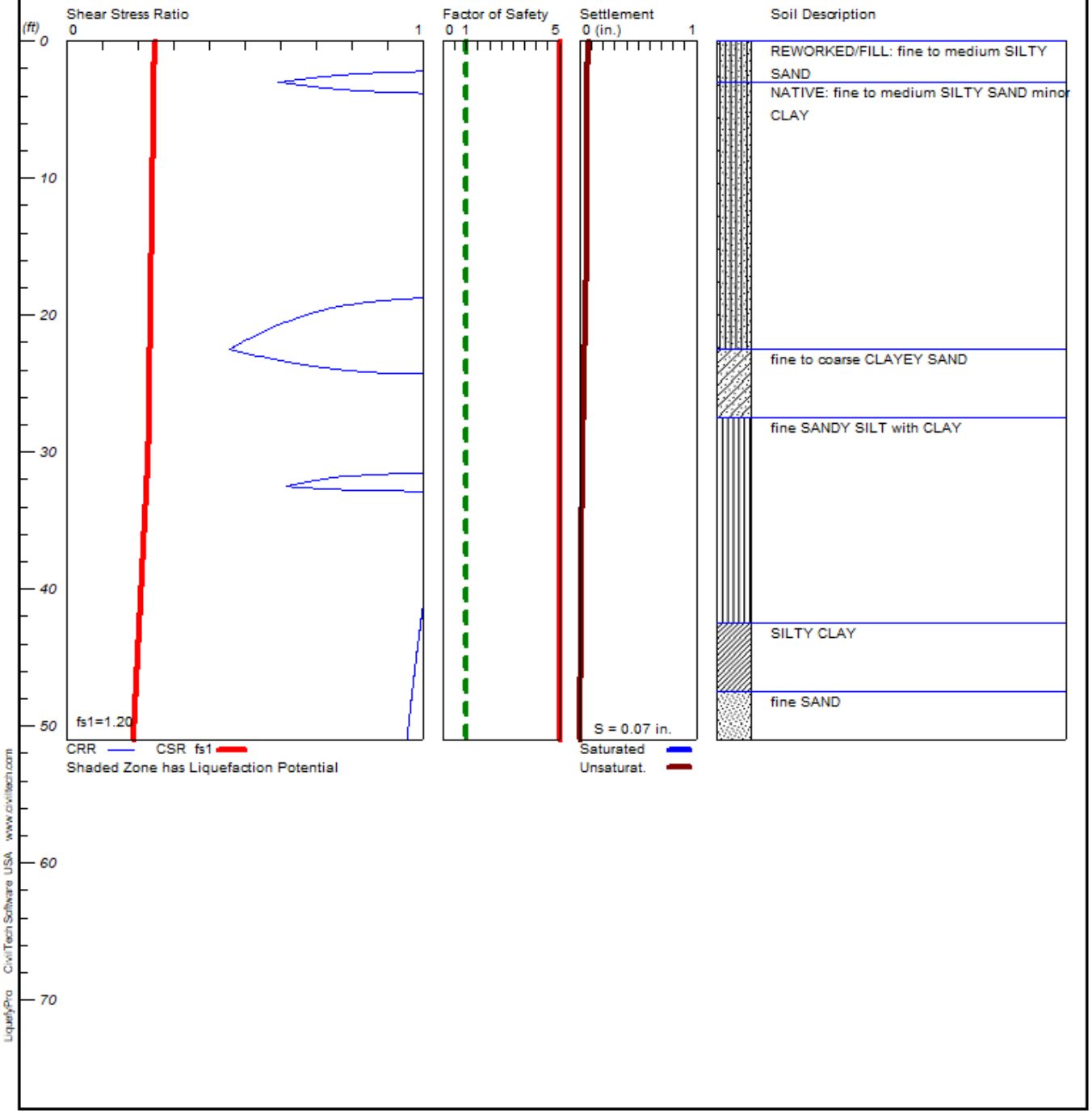


LIQUEFACTION ANALYSIS

New Addition to the Mercedes Edwards Theater

Hole No.=B-2 Water Depth=100 ft Surface Elev.=363

Magnitude=5.5
Acceleration=0.317g



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LIQUEFACTION ANALYSIS SUMMARY
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Font: Courier New, Regular, Size 8 is recommended for this report.
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Input File Name: C:\Users\Engineering\Desktop\07-230020-0.liq
Title: New Addition to the Mercedes Edwards Theater
Subtitle: 07-230020-0

Surface Elev.=363
Hole No.=B-2
Depth of Hole= 51.00 ft
Water Table during Earthquake= 23.00 ft
Water Table during In-Situ Testing= 115.00 ft
Max. Acceleration= 0.32 g
Earthquake Magnitude= 5.50

Input Data:
Surface Elev.=363
Hole No.=B-2
Depth of Hole=51.00 ft
Water Table during Earthquake= 23.00 ft
Water Table during In-Situ Testing= 115.00 ft
Max. Acceleration=0.32 g
Earthquake Magnitude=5.50
No-Liquefiable Soils: Based on Analysis

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Tokimatsu, M-correction
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.5
7. Borehole Diameter, Cb= 1.05
8. Sampling Method, Cs= 1.2
9. User request factor of safety (apply to CSR) , User= 1.2
Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: Yes*
* Recommended Options

In-Situ Test Data:

Depth	SPT	gamma	Fines
ft		pcf	%
0.00	18.00	128.70	21.00
3.00	8.00	119.60	25.00

7.50	22.00	148.10	30.00
12.50	22.00	148.10	35.00
17.50	16.00	125.00	30.00
22.50	8.00	137.50	48.00
27.50	30.00	130.00	75.00
32.50	14.00	137.60	75.00
37.50	69.00	140.00	75.00
42.50	30.00	125.20	90.00
47.50	35.00	112.00	5.00

Output Results:

Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.03 in.
Total Settlement of Saturated and Unsaturated Sands=0.03 in.
Differential Settlement=0.014 to 0.019 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
0.00	1.11	0.25	5.00	0.00	0.03	0.03
0.05	1.11	0.25	5.00	0.00	0.03	0.03
0.10	1.11	0.25	5.00	0.00	0.03	0.03
0.15	1.11	0.25	5.00	0.00	0.03	0.03
0.20	1.11	0.25	5.00	0.00	0.03	0.03
0.25	1.11	0.25	5.00	0.00	0.03	0.03
0.30	1.11	0.25	5.00	0.00	0.03	0.03
0.35	1.11	0.25	5.00	0.00	0.03	0.03
0.40	1.11	0.25	5.00	0.00	0.03	0.03
0.45	1.11	0.25	5.00	0.00	0.03	0.03
0.50	1.11	0.25	5.00	0.00	0.03	0.03
0.55	1.11	0.25	5.00	0.00	0.03	0.03
0.60	1.11	0.25	5.00	0.00	0.03	0.03
0.65	1.11	0.25	5.00	0.00	0.03	0.03
0.70	1.11	0.25	5.00	0.00	0.03	0.03
0.75	1.11	0.25	5.00	0.00	0.03	0.03
0.80	1.11	0.25	5.00	0.00	0.03	0.03
0.85	1.11	0.25	5.00	0.00	0.03	0.03
0.90	1.11	0.25	5.00	0.00	0.03	0.03
0.95	1.11	0.25	5.00	0.00	0.03	0.03
1.00	1.11	0.25	5.00	0.00	0.03	0.03
1.05	1.11	0.25	5.00	0.00	0.03	0.03
1.10	1.11	0.25	5.00	0.00	0.03	0.03
1.15	1.11	0.25	5.00	0.00	0.03	0.03
1.20	1.11	0.25	5.00	0.00	0.03	0.03
1.25	1.11	0.25	5.00	0.00	0.03	0.03
1.30	1.11	0.25	5.00	0.00	0.03	0.03
1.35	1.11	0.25	5.00	0.00	0.03	0.03
1.40	1.11	0.25	5.00	0.00	0.03	0.03
1.45	1.11	0.25	5.00	0.00	0.03	0.03
1.50	1.11	0.25	5.00	0.00	0.03	0.03
1.55	1.11	0.25	5.00	0.00	0.03	0.03
1.60	1.11	0.25	5.00	0.00	0.03	0.03
1.65	1.11	0.25	5.00	0.00	0.03	0.03

1.70 1.11 0.25 5.00 0.00 0.03 0.03
1.75 1.11 0.25 5.00 0.00 0.03 0.03
1.80 1.11 0.25 5.00 0.00 0.03 0.03
1.85 1.11 0.25 5.00 0.00 0.03 0.03
1.90 1.11 0.25 5.00 0.00 0.03 0.03
1.95 1.11 0.25 5.00 0.00 0.03 0.03
2.00 1.11 0.25 5.00 0.00 0.03 0.03
2.05 1.11 0.25 5.00 0.00 0.03 0.03
2.10 1.11 0.25 5.00 0.00 0.03 0.03
2.15 1.11 0.25 5.00 0.00 0.03 0.03
2.20 1.11 0.25 5.00 0.00 0.03 0.03
2.25 0.96 0.25 5.00 0.00 0.03 0.03
2.30 0.88 0.25 5.00 0.00 0.03 0.03
2.35 0.84 0.25 5.00 0.00 0.03 0.03
2.40 0.80 0.25 5.00 0.00 0.03 0.03
2.45 0.78 0.25 5.00 0.00 0.03 0.03
2.50 0.75 0.25 5.00 0.00 0.03 0.03
2.55 0.73 0.25 5.00 0.00 0.03 0.03
2.60 0.71 0.25 5.00 0.00 0.03 0.03
2.65 0.70 0.25 5.00 0.00 0.03 0.03
2.70 0.68 0.25 5.00 0.00 0.03 0.03
2.75 0.66 0.25 5.00 0.00 0.03 0.03
2.80 0.65 0.25 5.00 0.00 0.03 0.03
2.85 0.63 0.25 5.00 0.00 0.03 0.03
2.90 0.62 0.25 5.00 0.00 0.03 0.03
2.95 0.61 0.25 5.00 0.00 0.03 0.03
3.00 0.59 0.25 5.00 0.00 0.03 0.03
3.05 0.61 0.25 5.00 0.00 0.03 0.03
3.10 0.62 0.25 5.00 0.00 0.03 0.03
3.15 0.63 0.25 5.00 0.00 0.03 0.03
3.20 0.65 0.25 5.00 0.00 0.03 0.03
3.25 0.66 0.25 5.00 0.00 0.03 0.03
3.30 0.68 0.25 5.00 0.00 0.03 0.03
3.35 0.70 0.25 5.00 0.00 0.03 0.03
3.40 0.72 0.25 5.00 0.00 0.03 0.03
3.45 0.73 0.25 5.00 0.00 0.03 0.03
3.50 0.76 0.25 5.00 0.00 0.03 0.03
3.55 0.78 0.25 5.00 0.00 0.03 0.03
3.60 0.81 0.25 5.00 0.00 0.03 0.03
3.65 0.84 0.25 5.00 0.00 0.03 0.03
3.70 0.89 0.25 5.00 0.00 0.03 0.03
3.75 0.97 0.25 5.00 0.00 0.03 0.03
3.80 1.11 0.25 5.00 0.00 0.03 0.03
3.85 1.11 0.25 5.00 0.00 0.03 0.03
3.90 1.11 0.25 5.00 0.00 0.03 0.03
3.95 1.11 0.24 5.00 0.00 0.03 0.03
4.00 1.11 0.24 5.00 0.00 0.03 0.03
4.05 1.11 0.24 5.00 0.00 0.03 0.03
4.10 1.11 0.24 5.00 0.00 0.03 0.03
4.15 1.11 0.24 5.00 0.00 0.03 0.03
4.20 1.11 0.24 5.00 0.00 0.03 0.03
4.25 1.11 0.24 5.00 0.00 0.03 0.03
4.30 1.11 0.24 5.00 0.00 0.03 0.03
4.35 1.11 0.24 5.00 0.00 0.03 0.03

4.40 1.11 0.24 5.00 0.00 0.03 0.03
4.45 1.11 0.24 5.00 0.00 0.03 0.03
4.50 1.11 0.24 5.00 0.00 0.03 0.03
4.55 1.11 0.24 5.00 0.00 0.03 0.03
4.60 1.11 0.24 5.00 0.00 0.03 0.03
4.65 1.11 0.24 5.00 0.00 0.03 0.03
4.70 1.11 0.24 5.00 0.00 0.03 0.03
4.75 1.11 0.24 5.00 0.00 0.03 0.03
4.80 1.11 0.24 5.00 0.00 0.03 0.03
4.85 1.11 0.24 5.00 0.00 0.03 0.03
4.90 1.11 0.24 5.00 0.00 0.03 0.03
4.95 1.11 0.24 5.00 0.00 0.03 0.03
5.00 1.11 0.24 5.00 0.00 0.03 0.03
5.05 1.11 0.24 5.00 0.00 0.03 0.03
5.10 1.11 0.24 5.00 0.00 0.03 0.03
5.15 1.11 0.24 5.00 0.00 0.03 0.03
5.20 1.11 0.24 5.00 0.00 0.03 0.03
5.25 1.11 0.24 5.00 0.00 0.03 0.03
5.30 1.11 0.24 5.00 0.00 0.03 0.03
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5.45 1.11 0.24 5.00 0.00 0.03 0.03
5.50 1.11 0.24 5.00 0.00 0.03 0.03
5.55 1.11 0.24 5.00 0.00 0.03 0.03
5.60 1.11 0.24 5.00 0.00 0.03 0.03
5.65 1.11 0.24 5.00 0.00 0.03 0.03
5.70 1.11 0.24 5.00 0.00 0.03 0.03
5.75 1.11 0.24 5.00 0.00 0.03 0.03
5.80 1.11 0.24 5.00 0.00 0.03 0.03
5.85 1.11 0.24 5.00 0.00 0.03 0.03
5.90 1.11 0.24 5.00 0.00 0.03 0.03
5.95 1.11 0.24 5.00 0.00 0.03 0.03
6.00 1.11 0.24 5.00 0.00 0.03 0.03
6.05 1.11 0.24 5.00 0.00 0.03 0.03
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12.50	1.11	0.24	5.00	0.00	0.02	0.02
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12.70	1.11	0.24	5.00	0.00	0.02	0.02
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12.85	1.11	0.24	5.00	0.00	0.02	0.02
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12.95	1.11	0.24	5.00	0.00	0.02	0.02
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13.45	1.11	0.24	5.00	0.00	0.02	0.02
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13.55	1.11	0.24	5.00	0.00	0.02	0.02
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13.65	1.11	0.24	5.00	0.00	0.02	0.02
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13.80	1.11	0.24	5.00	0.00	0.02	0.02
13.85	1.11	0.24	5.00	0.00	0.02	0.02
13.90	1.11	0.24	5.00	0.00	0.02	0.02
13.95	1.11	0.24	5.00	0.00	0.02	0.02
14.00	1.11	0.24	5.00	0.00	0.02	0.02
14.05	1.11	0.24	5.00	0.00	0.02	0.02
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14.25	1.11	0.24	5.00	0.00	0.02	0.02
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14.45	1.11	0.24	5.00	0.00	0.02	0.02
14.50	1.11	0.24	5.00	0.00	0.02	0.02
14.55	1.11	0.24	5.00	0.00	0.02	0.02
14.60	1.11	0.24	5.00	0.00	0.02	0.02
14.65	1.11	0.24	5.00	0.00	0.02	0.02
14.70	1.11	0.24	5.00	0.00	0.02	0.02
14.75	1.11	0.24	5.00	0.00	0.02	0.02
14.80	1.11	0.24	5.00	0.00	0.02	0.02
14.85	1.11	0.24	5.00	0.00	0.02	0.02
14.90	1.11	0.24	5.00	0.00	0.02	0.02
14.95	1.11	0.24	5.00	0.00	0.02	0.02
15.00	1.11	0.24	5.00	0.00	0.02	0.02
15.05	1.11	0.24	5.00	0.00	0.02	0.02
15.10	1.11	0.24	5.00	0.00	0.02	0.02
15.15	1.11	0.24	5.00	0.00	0.02	0.02

15.20	1.11	0.24	5.00	0.00	0.02	0.02
15.25	1.11	0.24	5.00	0.00	0.02	0.02
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15.35	1.11	0.24	5.00	0.00	0.02	0.02
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15.45	1.11	0.24	5.00	0.00	0.02	0.02
15.50	1.11	0.24	5.00	0.00	0.02	0.02
15.55	1.11	0.24	5.00	0.00	0.02	0.02
15.60	1.11	0.24	5.00	0.00	0.02	0.02
15.65	1.11	0.24	5.00	0.00	0.02	0.02
15.70	1.11	0.24	5.00	0.00	0.02	0.02
15.75	1.11	0.24	5.00	0.00	0.02	0.02
15.80	1.11	0.24	5.00	0.00	0.02	0.02
15.85	1.11	0.24	5.00	0.00	0.02	0.02
15.90	1.11	0.24	5.00	0.00	0.02	0.02
15.95	1.11	0.24	5.00	0.00	0.02	0.02
16.00	1.11	0.24	5.00	0.00	0.02	0.02
16.05	1.11	0.24	5.00	0.00	0.02	0.02
16.10	1.11	0.24	5.00	0.00	0.02	0.02
16.15	1.11	0.24	5.00	0.00	0.02	0.02
16.20	1.11	0.24	5.00	0.00	0.02	0.02
16.25	1.11	0.24	5.00	0.00	0.02	0.02
16.30	1.11	0.24	5.00	0.00	0.02	0.02
16.35	1.11	0.24	5.00	0.00	0.02	0.02
16.40	1.11	0.24	5.00	0.00	0.02	0.02
16.45	1.11	0.24	5.00	0.00	0.02	0.02
16.50	1.11	0.24	5.00	0.00	0.02	0.02
16.55	1.11	0.24	5.00	0.00	0.02	0.02
16.60	1.11	0.24	5.00	0.00	0.02	0.02
16.65	1.11	0.24	5.00	0.00	0.02	0.02
16.70	1.11	0.24	5.00	0.00	0.02	0.02
16.75	1.11	0.24	5.00	0.00	0.02	0.02
16.80	1.11	0.24	5.00	0.00	0.02	0.02
16.85	1.11	0.24	5.00	0.00	0.02	0.02
16.90	1.11	0.24	5.00	0.00	0.02	0.02
16.95	1.11	0.24	5.00	0.00	0.02	0.02
17.00	1.11	0.24	5.00	0.00	0.02	0.02
17.05	1.11	0.24	5.00	0.00	0.02	0.02
17.10	1.11	0.24	5.00	0.00	0.02	0.02
17.15	1.11	0.24	5.00	0.00	0.02	0.02
17.20	1.11	0.24	5.00	0.00	0.02	0.02
17.25	1.11	0.24	5.00	0.00	0.02	0.02
17.30	1.11	0.24	5.00	0.00	0.02	0.02
17.35	1.11	0.24	5.00	0.00	0.02	0.02
17.40	1.11	0.24	5.00	0.00	0.02	0.02
17.45	1.11	0.24	5.00	0.00	0.02	0.02
17.50	1.11	0.24	5.00	0.00	0.02	0.02
17.55	1.11	0.24	5.00	0.00	0.02	0.02
17.60	1.11	0.24	5.00	0.00	0.02	0.02
17.65	1.11	0.24	5.00	0.00	0.02	0.02
17.70	1.11	0.24	5.00	0.00	0.02	0.02
17.75	1.11	0.24	5.00	0.00	0.02	0.02
17.80	1.11	0.24	5.00	0.00	0.02	0.02
17.85	1.11	0.24	5.00	0.00	0.02	0.02

17.90	1.11	0.24	5.00	0.00	0.02	0.02
17.95	1.11	0.24	5.00	0.00	0.02	0.02
18.00	1.11	0.24	5.00	0.00	0.02	0.02
18.05	1.11	0.24	5.00	0.00	0.02	0.02
18.10	1.11	0.24	5.00	0.00	0.02	0.02
18.15	1.11	0.24	5.00	0.00	0.02	0.02
18.20	1.11	0.24	5.00	0.00	0.02	0.02
18.25	1.11	0.24	5.00	0.00	0.02	0.02
18.30	1.11	0.24	5.00	0.00	0.01	0.01
18.35	1.11	0.24	5.00	0.00	0.01	0.01
18.40	1.11	0.24	5.00	0.00	0.01	0.01
18.45	1.11	0.24	5.00	0.00	0.01	0.01
18.50	1.11	0.24	5.00	0.00	0.01	0.01
18.55	1.11	0.24	5.00	0.00	0.01	0.01
18.60	1.11	0.24	5.00	0.00	0.01	0.01
18.65	1.11	0.24	5.00	0.00	0.01	0.01
18.70	1.05	0.24	5.00	0.00	0.01	0.01
18.75	0.99	0.24	5.00	0.00	0.01	0.01
18.80	0.95	0.24	5.00	0.00	0.01	0.01
18.85	0.92	0.24	5.00	0.00	0.01	0.01
18.90	0.90	0.24	5.00	0.00	0.01	0.01
18.95	0.88	0.24	5.00	0.00	0.01	0.01
19.00	0.86	0.24	5.00	0.00	0.01	0.01
19.05	0.84	0.24	5.00	0.00	0.01	0.01
19.10	0.83	0.24	5.00	0.00	0.01	0.01
19.15	0.81	0.24	5.00	0.00	0.01	0.01
19.20	0.80	0.24	5.00	0.00	0.01	0.01
19.25	0.79	0.24	5.00	0.00	0.01	0.01
19.30	0.78	0.24	5.00	0.00	0.01	0.01
19.35	0.77	0.24	5.00	0.00	0.01	0.01
19.40	0.76	0.24	5.00	0.00	0.01	0.01
19.45	0.75	0.24	5.00	0.00	0.01	0.01
19.50	0.74	0.24	5.00	0.00	0.01	0.01
19.55	0.73	0.24	5.00	0.00	0.01	0.01
19.60	0.73	0.24	5.00	0.00	0.01	0.01
19.65	0.72	0.24	5.00	0.00	0.01	0.01
19.70	0.71	0.24	5.00	0.00	0.01	0.01
19.75	0.70	0.24	5.00	0.00	0.01	0.01
19.80	0.70	0.24	5.00	0.00	0.01	0.01
19.85	0.69	0.24	5.00	0.00	0.01	0.01
19.90	0.68	0.24	5.00	0.00	0.01	0.01
19.95	0.68	0.24	5.00	0.00	0.01	0.01
20.00	0.67	0.24	5.00	0.00	0.01	0.01
20.05	0.67	0.24	5.00	0.00	0.01	0.01
20.10	0.66	0.24	5.00	0.00	0.01	0.01
20.15	0.65	0.24	5.00	0.00	0.01	0.01
20.20	0.65	0.24	5.00	0.00	0.01	0.01
20.25	0.64	0.24	5.00	0.00	0.01	0.01
20.30	0.64	0.24	5.00	0.00	0.01	0.01
20.35	0.63	0.24	5.00	0.00	0.01	0.01
20.40	0.63	0.24	5.00	0.00	0.01	0.01
20.45	0.62	0.24	5.00	0.00	0.01	0.01
20.50	0.62	0.24	5.00	0.00	0.01	0.01
20.55	0.61	0.24	5.00	0.00	0.01	0.01

20.60	0.61	0.24	5.00	0.00	0.01	0.01
20.65	0.60	0.24	5.00	0.00	0.01	0.01
20.70	0.60	0.24	5.00	0.00	0.01	0.01
20.75	0.59	0.24	5.00	0.00	0.01	0.01
20.80	0.59	0.24	5.00	0.00	0.01	0.01
20.85	0.58	0.24	5.00	0.00	0.01	0.01
20.90	0.58	0.24	5.00	0.00	0.01	0.01
20.95	0.57	0.24	5.00	0.00	0.01	0.01
21.00	0.57	0.24	5.00	0.00	0.01	0.01
21.05	0.56	0.24	5.00	0.00	0.01	0.01
21.10	0.56	0.24	5.00	0.00	0.01	0.01
21.15	0.56	0.24	5.00	0.00	0.01	0.01
21.20	0.55	0.24	5.00	0.00	0.01	0.01
21.25	0.55	0.24	5.00	0.00	0.01	0.01
21.30	0.54	0.23	5.00	0.00	0.01	0.01
21.35	0.54	0.23	5.00	0.00	0.01	0.01
21.40	0.54	0.23	5.00	0.00	0.01	0.01
21.45	0.53	0.23	5.00	0.00	0.01	0.01
21.50	0.53	0.23	5.00	0.00	0.01	0.01
21.55	0.52	0.23	5.00	0.00	0.01	0.01
21.60	0.52	0.23	5.00	0.00	0.01	0.01
21.65	0.52	0.23	5.00	0.00	0.01	0.01
21.70	0.51	0.23	5.00	0.00	0.01	0.01
21.75	0.51	0.23	5.00	0.00	0.01	0.01
21.80	0.51	0.23	5.00	0.00	0.01	0.01
21.85	0.50	0.23	5.00	0.00	0.01	0.01
21.90	0.50	0.23	5.00	0.00	0.01	0.01
21.95	0.49	0.23	5.00	0.00	0.01	0.01
22.00	0.49	0.23	5.00	0.00	0.00	0.00
22.05	0.49	0.23	5.00	0.00	0.00	0.00
22.10	0.48	0.23	5.00	0.00	0.00	0.00
22.15	0.48	0.23	5.00	0.00	0.00	0.00
22.20	0.48	0.23	5.00	0.00	0.00	0.00
22.25	0.47	0.23	5.00	0.00	0.00	0.00
22.30	0.47	0.23	5.00	0.00	0.00	0.00
22.35	0.47	0.23	5.00	0.00	0.00	0.00
22.40	0.46	0.23	5.00	0.00	0.00	0.00
22.45	0.46	0.23	5.00	0.00	0.00	0.00
22.50	0.46	0.23	5.00	0.00	0.00	0.00
22.55	0.47	0.23	5.00	0.00	0.00	0.00
22.60	0.47	0.23	5.00	0.00	0.00	0.00
22.65	0.48	0.23	5.00	0.00	0.00	0.00
22.70	0.49	0.23	5.00	0.00	0.00	0.00
22.75	0.50	0.23	5.00	0.00	0.00	0.00
22.80	0.50	0.23	5.00	0.00	0.00	0.00
22.85	0.51	0.23	5.00	0.00	0.00	0.00
22.90	0.52	0.23	5.00	0.00	0.00	0.00
22.95	0.53	0.23	5.00	0.00	0.00	0.00
23.00	0.54	0.23	5.00	0.00	0.00	0.00
23.05	0.55	0.23	2.34	0.00	0.00	0.00
23.10	0.56	0.23	2.38	0.00	0.00	0.00
23.15	0.57	0.23	2.41	0.00	0.00	0.00
23.20	0.58	0.23	2.45	0.00	0.00	0.00
23.25	0.58	0.23	2.49	0.00	0.00	0.00

23.30	0.59	0.23	2.53	0.00	0.00	0.00
23.35	0.60	0.24	2.57	0.00	0.00	0.00
23.40	0.62	0.24	2.61	0.00	0.00	0.00
23.45	0.63	0.24	2.66	0.00	0.00	0.00
23.50	0.64	0.24	2.70	0.00	0.00	0.00
23.55	0.65	0.24	2.75	0.00	0.00	0.00
23.60	0.66	0.24	2.80	0.00	0.00	0.00
23.65	0.67	0.24	2.85	0.00	0.00	0.00
23.70	0.69	0.24	2.90	0.00	0.00	0.00
23.75	0.70	0.24	2.95	0.00	0.00	0.00
23.80	0.71	0.24	3.01	0.00	0.00	0.00
23.85	0.73	0.24	3.07	0.00	0.00	0.00
23.90	0.74	0.24	3.13	0.00	0.00	0.00
23.95	0.76	0.24	3.20	0.00	0.00	0.00
24.00	0.78	0.24	3.29	0.00	0.00	0.00
24.05	0.80	0.24	3.38	0.00	0.00	0.00
24.10	0.83	0.24	3.47	0.00	0.00	0.00
24.15	0.85	0.24	3.58	0.00	0.00	0.00
24.20	0.89	0.24	3.73	0.00	0.00	0.00
24.25	0.95	0.24	3.97	0.00	0.00	0.00
24.30	1.08	0.24	4.51	0.00	0.00	0.00
24.35	1.11	0.24	4.64	0.00	0.00	0.00
24.40	1.11	0.24	4.64	0.00	0.00	0.00
24.45	1.11	0.24	4.63	0.00	0.00	0.00
24.50	1.11	0.24	4.63	0.00	0.00	0.00
24.55	1.11	0.24	4.62	0.00	0.00	0.00
24.60	1.11	0.24	4.62	0.00	0.00	0.00
24.65	1.11	0.24	4.61	0.00	0.00	0.00
24.70	1.11	0.24	4.61	0.00	0.00	0.00
24.75	1.11	0.24	4.60	0.00	0.00	0.00
24.80	1.11	0.24	4.60	0.00	0.00	0.00
24.85	1.11	0.24	4.59	0.00	0.00	0.00
24.90	1.11	0.24	4.59	0.00	0.00	0.00
24.95	1.11	0.24	4.58	0.00	0.00	0.00
25.00	1.11	0.24	4.58	0.00	0.00	0.00
25.05	1.10	0.24	4.57	0.00	0.00	0.00
25.10	1.10	0.24	4.57	0.00	0.00	0.00
25.15	1.10	0.24	4.56	0.00	0.00	0.00
25.20	1.10	0.24	4.56	0.00	0.00	0.00
25.25	1.10	0.24	4.55	0.00	0.00	0.00
25.30	1.10	0.24	4.55	0.00	0.00	0.00
25.35	1.10	0.24	4.54	0.00	0.00	0.00
25.40	1.10	0.24	4.54	0.00	0.00	0.00
25.45	1.10	0.24	4.53	0.00	0.00	0.00
25.50	1.10	0.24	4.53	0.00	0.00	0.00
25.55	1.10	0.24	4.52	0.00	0.00	0.00
25.60	1.10	0.24	4.52	0.00	0.00	0.00
25.65	1.10	0.24	4.51	0.00	0.00	0.00
25.70	1.10	0.24	4.51	0.00	0.00	0.00
25.75	1.10	0.24	4.50	0.00	0.00	0.00
25.80	1.10	0.24	4.50	0.00	0.00	0.00
25.85	1.10	0.24	4.49	0.00	0.00	0.00
25.90	1.10	0.24	4.49	0.00	0.00	0.00
25.95	1.10	0.24	4.49	0.00	0.00	0.00

26.00	1.10	0.25	4.48	0.00	0.00	0.00
26.05	1.10	0.25	4.48	0.00	0.00	0.00
26.10	1.10	0.25	4.47	0.00	0.00	0.00
26.15	1.10	0.25	4.47	0.00	0.00	0.00
26.20	1.10	0.25	4.46	0.00	0.00	0.00
26.25	1.10	0.25	4.46	0.00	0.00	0.00
26.30	1.10	0.25	4.45	0.00	0.00	0.00
26.35	1.10	0.25	4.45	0.00	0.00	0.00
26.40	1.10	0.25	4.44	0.00	0.00	0.00
26.45	1.09	0.25	4.44	0.00	0.00	0.00
26.50	1.09	0.25	4.44	0.00	0.00	0.00
26.55	1.09	0.25	4.43	0.00	0.00	0.00
26.60	1.09	0.25	4.43	0.00	0.00	0.00
26.65	1.09	0.25	4.42	0.00	0.00	0.00
26.70	1.09	0.25	4.42	0.00	0.00	0.00
26.75	1.09	0.25	4.41	0.00	0.00	0.00
26.80	1.09	0.25	4.41	0.00	0.00	0.00
26.85	1.09	0.25	4.41	0.00	0.00	0.00
26.90	1.09	0.25	4.40	0.00	0.00	0.00
26.95	1.09	0.25	4.40	0.00	0.00	0.00
27.00	1.09	0.25	4.39	0.00	0.00	0.00
27.05	1.09	0.25	4.39	0.00	0.00	0.00
27.10	1.09	0.25	4.38	0.00	0.00	0.00
27.15	1.09	0.25	4.38	0.00	0.00	0.00
27.20	1.09	0.25	4.38	0.00	0.00	0.00
27.25	1.09	0.25	4.37	0.00	0.00	0.00
27.30	1.09	0.25	4.37	0.00	0.00	0.00
27.35	1.09	0.25	4.36	0.00	0.00	0.00
27.40	1.09	0.25	4.36	0.00	0.00	0.00
27.45	1.09	0.25	4.35	0.00	0.00	0.00
27.50	1.09	0.25	4.35	0.00	0.00	0.00
27.55	1.09	0.25	4.35	0.00	0.00	0.00
27.60	1.09	0.25	4.34	0.00	0.00	0.00
27.65	1.09	0.25	4.34	0.00	0.00	0.00
27.70	1.09	0.25	4.33	0.00	0.00	0.00
27.75	1.09	0.25	4.33	0.00	0.00	0.00
27.80	1.09	0.25	4.33	0.00	0.00	0.00
27.85	1.09	0.25	4.32	0.00	0.00	0.00
27.90	1.09	0.25	4.32	0.00	0.00	0.00
27.95	1.08	0.25	4.31	0.00	0.00	0.00
28.00	1.08	0.25	4.31	0.00	0.00	0.00
28.05	1.08	0.25	4.31	0.00	0.00	0.00
28.10	1.08	0.25	4.30	0.00	0.00	0.00
28.15	1.08	0.25	4.30	0.00	0.00	0.00
28.20	1.08	0.25	4.29	0.00	0.00	0.00
28.25	1.08	0.25	4.29	0.00	0.00	0.00
28.30	1.08	0.25	4.29	0.00	0.00	0.00
28.35	1.08	0.25	4.28	0.00	0.00	0.00
28.40	1.08	0.25	4.28	0.00	0.00	0.00
28.45	1.08	0.25	4.27	0.00	0.00	0.00
28.50	1.08	0.25	4.27	0.00	0.00	0.00
28.55	1.08	0.25	4.27	0.00	0.00	0.00
28.60	1.08	0.25	4.26	0.00	0.00	0.00
28.65	1.08	0.25	4.26	0.00	0.00	0.00

28.70	1.08	0.25	4.25	0.00	0.00	0.00
28.75	1.08	0.25	4.25	0.00	0.00	0.00
28.80	1.08	0.25	4.25	0.00	0.00	0.00
28.85	1.08	0.25	4.24	0.00	0.00	0.00
28.90	1.08	0.25	4.24	0.00	0.00	0.00
28.95	1.08	0.25	4.24	0.00	0.00	0.00
29.00	1.08	0.25	4.23	0.00	0.00	0.00
29.05	1.08	0.25	4.23	0.00	0.00	0.00
29.10	1.08	0.25	4.22	0.00	0.00	0.00
29.15	1.08	0.26	4.22	0.00	0.00	0.00
29.20	1.08	0.26	4.22	0.00	0.00	0.00
29.25	1.08	0.26	4.21	0.00	0.00	0.00
29.30	1.08	0.26	4.21	0.00	0.00	0.00
29.35	1.08	0.26	4.21	0.00	0.00	0.00
29.40	1.08	0.26	4.20	0.00	0.00	0.00
29.45	1.07	0.26	4.20	0.00	0.00	0.00
29.50	1.07	0.26	4.19	0.00	0.00	0.00
29.55	1.07	0.26	4.19	0.00	0.00	0.00
29.60	1.07	0.26	4.19	0.00	0.00	0.00
29.65	1.07	0.26	4.18	0.00	0.00	0.00
29.70	1.07	0.26	4.18	0.00	0.00	0.00
29.75	1.07	0.26	4.18	0.00	0.00	0.00
29.80	1.07	0.26	4.17	0.00	0.00	0.00
29.85	1.07	0.26	4.17	0.00	0.00	0.00
29.90	1.07	0.26	4.17	0.00	0.00	0.00
29.95	1.07	0.26	4.16	0.00	0.00	0.00
30.00	1.07	0.26	4.16	0.00	0.00	0.00
30.05	1.07	0.26	4.16	0.00	0.00	0.00
30.10	1.07	0.26	4.16	0.00	0.00	0.00
30.15	1.07	0.26	4.15	0.00	0.00	0.00
30.20	1.07	0.26	4.15	0.00	0.00	0.00
30.25	1.07	0.26	4.15	0.00	0.00	0.00
30.30	1.07	0.26	4.15	0.00	0.00	0.00
30.35	1.07	0.26	4.14	0.00	0.00	0.00
30.40	1.07	0.26	4.14	0.00	0.00	0.00
30.45	1.07	0.26	4.14	0.00	0.00	0.00
30.50	1.07	0.26	4.14	0.00	0.00	0.00
30.55	1.07	0.26	4.14	0.00	0.00	0.00
30.60	1.07	0.26	4.13	0.00	0.00	0.00
30.65	1.07	0.26	4.13	0.00	0.00	0.00
30.70	1.07	0.26	4.13	0.00	0.00	0.00
30.75	1.07	0.26	4.13	0.00	0.00	0.00
30.80	1.07	0.26	4.13	0.00	0.00	0.00
30.85	1.07	0.26	4.12	0.00	0.00	0.00
30.90	1.07	0.26	4.12	0.00	0.00	0.00
30.95	1.06	0.26	4.12	0.00	0.00	0.00
31.00	1.06	0.26	4.12	0.00	0.00	0.00
31.05	1.06	0.26	4.11	0.00	0.00	0.00
31.10	1.06	0.26	4.11	0.00	0.00	0.00
31.15	1.06	0.26	4.11	0.00	0.00	0.00
31.20	1.06	0.26	4.11	0.00	0.00	0.00
31.25	1.06	0.26	4.11	0.00	0.00	0.00
31.30	1.06	0.26	4.10	0.00	0.00	0.00
31.35	1.06	0.26	4.10	0.00	0.00	0.00

31.40	1.06	0.26	4.10	0.00	0.00	0.00
31.45	1.06	0.26	4.10	0.00	0.00	0.00
31.50	1.06	0.26	4.08	0.00	0.00	0.00
31.55	0.93	0.26	3.60	0.00	0.00	0.00
31.60	0.88	0.26	3.38	0.00	0.00	0.00
31.65	0.84	0.26	3.24	0.00	0.00	0.00
31.70	0.81	0.26	3.14	0.00	0.00	0.00
31.75	0.79	0.26	3.06	0.00	0.00	0.00
31.80	0.77	0.26	2.98	0.00	0.00	0.00
31.85	0.76	0.26	2.92	0.00	0.00	0.00
31.90	0.74	0.26	2.86	0.00	0.00	0.00
31.95	0.73	0.26	2.81	0.00	0.00	0.00
32.00	0.72	0.26	2.76	0.00	0.00	0.00
32.05	0.70	0.26	2.71	0.00	0.00	0.00
32.10	0.69	0.26	2.67	0.00	0.00	0.00
32.15	0.68	0.26	2.63	0.00	0.00	0.00
32.20	0.67	0.26	2.59	0.00	0.00	0.00
32.25	0.66	0.26	2.55	0.00	0.00	0.00
32.30	0.65	0.26	2.51	0.00	0.00	0.00
32.35	0.64	0.26	2.47	0.00	0.00	0.00
32.40	0.63	0.26	2.44	0.00	0.00	0.00
32.45	0.62	0.26	2.40	0.00	0.00	0.00
32.50	0.62	0.26	2.37	0.00	0.00	0.00
32.55	0.64	0.26	2.47	0.00	0.00	0.00
32.60	0.67	0.26	2.59	0.00	0.00	0.00
32.65	0.71	0.26	2.72	0.00	0.00	0.00
32.70	0.75	0.26	2.87	0.00	0.00	0.00
32.75	0.80	0.26	3.07	0.00	0.00	0.00
32.80	0.89	0.26	3.44	0.00	0.00	0.00
32.85	1.05	0.26	4.05	0.00	0.00	0.00
32.90	1.05	0.26	4.04	0.00	0.00	0.00
32.95	1.05	0.26	4.04	0.00	0.00	0.00
33.00	1.05	0.26	4.04	0.00	0.00	0.00
33.05	1.05	0.26	4.04	0.00	0.00	0.00
33.10	1.05	0.26	4.04	0.00	0.00	0.00
33.15	1.05	0.26	4.04	0.00	0.00	0.00
33.20	1.05	0.26	4.03	0.00	0.00	0.00
33.25	1.05	0.26	4.03	0.00	0.00	0.00
33.30	1.05	0.26	4.03	0.00	0.00	0.00
33.35	1.05	0.26	4.03	0.00	0.00	0.00
33.40	1.05	0.26	4.03	0.00	0.00	0.00
33.45	1.05	0.26	4.03	0.00	0.00	0.00
33.50	1.05	0.26	4.02	0.00	0.00	0.00
33.55	1.05	0.26	4.02	0.00	0.00	0.00
33.60	1.05	0.26	4.02	0.00	0.00	0.00
33.65	1.05	0.26	4.02	0.00	0.00	0.00
33.70	1.05	0.26	4.02	0.00	0.00	0.00
33.75	1.05	0.26	4.02	0.00	0.00	0.00
33.80	1.05	0.26	4.01	0.00	0.00	0.00
33.85	1.05	0.26	4.01	0.00	0.00	0.00
33.90	1.05	0.26	4.01	0.00	0.00	0.00
33.95	1.04	0.26	4.01	0.00	0.00	0.00
34.00	1.04	0.26	4.01	0.00	0.00	0.00
34.05	1.04	0.26	4.01	0.00	0.00	0.00

34.10	1.04	0.26	4.01	0.00	0.00	0.00
34.15	1.04	0.26	4.00	0.00	0.00	0.00
34.20	1.04	0.26	4.00	0.00	0.00	0.00
34.25	1.04	0.26	4.00	0.00	0.00	0.00
34.30	1.04	0.26	4.00	0.00	0.00	0.00
34.35	1.04	0.26	4.00	0.00	0.00	0.00
34.40	1.04	0.26	4.00	0.00	0.00	0.00
34.45	1.04	0.26	3.99	0.00	0.00	0.00
34.50	1.04	0.26	3.99	0.00	0.00	0.00
34.55	1.04	0.26	3.99	0.00	0.00	0.00
34.60	1.04	0.26	3.99	0.00	0.00	0.00
34.65	1.04	0.26	3.99	0.00	0.00	0.00
34.70	1.04	0.26	3.99	0.00	0.00	0.00
34.75	1.04	0.26	3.99	0.00	0.00	0.00
34.80	1.04	0.26	3.98	0.00	0.00	0.00
34.85	1.04	0.26	3.98	0.00	0.00	0.00
34.90	1.04	0.26	3.98	0.00	0.00	0.00
34.95	1.04	0.26	3.98	0.00	0.00	0.00
35.00	1.04	0.26	3.98	0.00	0.00	0.00
35.05	1.04	0.26	3.98	0.00	0.00	0.00
35.10	1.04	0.26	3.98	0.00	0.00	0.00
35.15	1.04	0.26	3.97	0.00	0.00	0.00
35.20	1.04	0.26	3.97	0.00	0.00	0.00
35.25	1.04	0.26	3.97	0.00	0.00	0.00
35.30	1.04	0.26	3.97	0.00	0.00	0.00
35.35	1.04	0.26	3.97	0.00	0.00	0.00
35.40	1.04	0.26	3.97	0.00	0.00	0.00
35.45	1.04	0.26	3.97	0.00	0.00	0.00
35.50	1.03	0.26	3.96	0.00	0.00	0.00
35.55	1.03	0.26	3.96	0.00	0.00	0.00
35.60	1.03	0.26	3.96	0.00	0.00	0.00
35.65	1.03	0.26	3.96	0.00	0.00	0.00
35.70	1.03	0.26	3.96	0.00	0.00	0.00
35.75	1.03	0.26	3.96	0.00	0.00	0.00
35.80	1.03	0.26	3.96	0.00	0.00	0.00
35.85	1.03	0.26	3.96	0.00	0.00	0.00
35.90	1.03	0.26	3.95	0.00	0.00	0.00
35.95	1.03	0.26	3.95	0.00	0.00	0.00
36.00	1.03	0.26	3.95	0.00	0.00	0.00
36.05	1.03	0.26	3.95	0.00	0.00	0.00
36.10	1.03	0.26	3.95	0.00	0.00	0.00
36.15	1.03	0.26	3.95	0.00	0.00	0.00
36.20	1.03	0.26	3.95	0.00	0.00	0.00
36.25	1.03	0.26	3.94	0.00	0.00	0.00
36.30	1.03	0.26	3.94	0.00	0.00	0.00
36.35	1.03	0.26	3.94	0.00	0.00	0.00
36.40	1.03	0.26	3.94	0.00	0.00	0.00
36.45	1.03	0.26	3.94	0.00	0.00	0.00
36.50	1.03	0.26	3.94	0.00	0.00	0.00
36.55	1.03	0.26	3.94	0.00	0.00	0.00
36.60	1.03	0.26	3.94	0.00	0.00	0.00
36.65	1.03	0.26	3.93	0.00	0.00	0.00
36.70	1.03	0.26	3.93	0.00	0.00	0.00
36.75	1.03	0.26	3.93	0.00	0.00	0.00

36.80	1.03	0.26	3.93	0.00	0.00	0.00
36.85	1.03	0.26	3.93	0.00	0.00	0.00
36.90	1.03	0.26	3.93	0.00	0.00	0.00
36.95	1.03	0.26	3.93	0.00	0.00	0.00
37.00	1.03	0.26	3.93	0.00	0.00	0.00
37.05	1.03	0.26	3.93	0.00	0.00	0.00
37.10	1.02	0.26	3.92	0.00	0.00	0.00
37.15	1.02	0.26	3.92	0.00	0.00	0.00
37.20	1.02	0.26	3.92	0.00	0.00	0.00
37.25	1.02	0.26	3.92	0.00	0.00	0.00
37.30	1.02	0.26	3.92	0.00	0.00	0.00
37.35	1.02	0.26	3.92	0.00	0.00	0.00
37.40	1.02	0.26	3.92	0.00	0.00	0.00
37.45	1.02	0.26	3.92	0.00	0.00	0.00
37.50	1.02	0.26	3.92	0.00	0.00	0.00
37.55	1.02	0.26	3.91	0.00	0.00	0.00
37.60	1.02	0.26	3.91	0.00	0.00	0.00
37.65	1.02	0.26	3.91	0.00	0.00	0.00
37.70	1.02	0.26	3.91	0.00	0.00	0.00
37.75	1.02	0.26	3.91	0.00	0.00	0.00
37.80	1.02	0.26	3.91	0.00	0.00	0.00
37.85	1.02	0.26	3.91	0.00	0.00	0.00
37.90	1.02	0.26	3.91	0.00	0.00	0.00
37.95	1.02	0.26	3.91	0.00	0.00	0.00
38.00	1.02	0.26	3.90	0.00	0.00	0.00
38.05	1.02	0.26	3.90	0.00	0.00	0.00
38.10	1.02	0.26	3.90	0.00	0.00	0.00
38.15	1.02	0.26	3.90	0.00	0.00	0.00
38.20	1.02	0.26	3.90	0.00	0.00	0.00
38.25	1.02	0.26	3.90	0.00	0.00	0.00
38.30	1.02	0.26	3.90	0.00	0.00	0.00
38.35	1.02	0.26	3.90	0.00	0.00	0.00
38.40	1.02	0.26	3.90	0.00	0.00	0.00
38.45	1.02	0.26	3.89	0.00	0.00	0.00
38.50	1.02	0.26	3.89	0.00	0.00	0.00
38.55	1.02	0.26	3.89	0.00	0.00	0.00
38.60	1.02	0.26	3.89	0.00	0.00	0.00
38.65	1.02	0.26	3.89	0.00	0.00	0.00
38.70	1.02	0.26	3.89	0.00	0.00	0.00
38.75	1.01	0.26	3.89	0.00	0.00	0.00
38.80	1.01	0.26	3.89	0.00	0.00	0.00
38.85	1.01	0.26	3.89	0.00	0.00	0.00
38.90	1.01	0.26	3.89	0.00	0.00	0.00
38.95	1.01	0.26	3.89	0.00	0.00	0.00
39.00	1.01	0.26	3.88	0.00	0.00	0.00
39.05	1.01	0.26	3.88	0.00	0.00	0.00
39.10	1.01	0.26	3.88	0.00	0.00	0.00
39.15	1.01	0.26	3.88	0.00	0.00	0.00
39.20	1.01	0.26	3.88	0.00	0.00	0.00
39.25	1.01	0.26	3.88	0.00	0.00	0.00
39.30	1.01	0.26	3.88	0.00	0.00	0.00
39.35	1.01	0.26	3.88	0.00	0.00	0.00
39.40	1.01	0.26	3.88	0.00	0.00	0.00
39.45	1.01	0.26	3.88	0.00	0.00	0.00

39.50	1.01	0.26	3.87	0.00	0.00	0.00
39.55	1.01	0.26	3.87	0.00	0.00	0.00
39.60	1.01	0.26	3.87	0.00	0.00	0.00
39.65	1.01	0.26	3.87	0.00	0.00	0.00
39.70	1.01	0.26	3.87	0.00	0.00	0.00
39.75	1.01	0.26	3.87	0.00	0.00	0.00
39.80	1.01	0.26	3.87	0.00	0.00	0.00
39.85	1.01	0.26	3.87	0.00	0.00	0.00
39.90	1.01	0.26	3.87	0.00	0.00	0.00
39.95	1.01	0.26	3.87	0.00	0.00	0.00
40.00	1.01	0.26	3.87	0.00	0.00	0.00
40.05	1.01	0.26	3.87	0.00	0.00	0.00
40.10	1.01	0.26	3.86	0.00	0.00	0.00
40.15	1.01	0.26	3.86	0.00	0.00	0.00
40.20	1.01	0.26	3.86	0.00	0.00	0.00
40.25	1.01	0.26	3.86	0.00	0.00	0.00
40.30	1.01	0.26	3.86	0.00	0.00	0.00
40.35	1.01	0.26	3.86	0.00	0.00	0.00
40.40	1.01	0.26	3.86	0.00	0.00	0.00
40.45	1.00	0.26	3.86	0.00	0.00	0.00
40.50	1.00	0.26	3.86	0.00	0.00	0.00
40.55	1.00	0.26	3.86	0.00	0.00	0.00
40.60	1.00	0.26	3.86	0.00	0.00	0.00
40.65	1.00	0.26	3.86	0.00	0.00	0.00
40.70	1.00	0.26	3.85	0.00	0.00	0.00
40.75	1.00	0.26	3.85	0.00	0.00	0.00
40.80	1.00	0.26	3.85	0.00	0.00	0.00
40.85	1.00	0.26	3.85	0.00	0.00	0.00
40.90	1.00	0.26	3.85	0.00	0.00	0.00
40.95	1.00	0.26	3.85	0.00	0.00	0.00
41.00	1.00	0.26	3.85	0.00	0.00	0.00
41.05	1.00	0.26	3.85	0.00	0.00	0.00
41.10	1.00	0.26	3.85	0.00	0.00	0.00
41.15	1.00	0.26	3.85	0.00	0.00	0.00
41.20	1.00	0.26	3.85	0.00	0.00	0.00
41.25	1.00	0.26	3.85	0.00	0.00	0.00
41.30	1.00	0.26	3.85	0.00	0.00	0.00
41.35	1.00	0.26	3.84	0.00	0.00	0.00
41.40	1.00	0.26	3.84	0.00	0.00	0.00
41.45	1.00	0.26	3.84	0.00	0.00	0.00
41.50	1.00	0.26	3.84	0.00	0.00	0.00
41.55	1.00	0.26	3.84	0.00	0.00	0.00
41.60	1.00	0.26	3.84	0.00	0.00	0.00
41.65	1.00	0.26	3.84	0.00	0.00	0.00
41.70	1.00	0.26	3.84	0.00	0.00	0.00
41.75	1.00	0.26	3.84	0.00	0.00	0.00
41.80	1.00	0.26	3.84	0.00	0.00	0.00
41.85	1.00	0.26	3.84	0.00	0.00	0.00
41.90	1.00	0.26	3.84	0.00	0.00	0.00
41.95	1.00	0.26	3.84	0.00	0.00	0.00
42.00	1.00	0.26	3.84	0.00	0.00	0.00
42.05	1.00	0.26	3.84	0.00	0.00	0.00
42.10	1.00	0.26	3.83	0.00	0.00	0.00
42.15	1.00	0.26	3.83	0.00	0.00	0.00

42.20	1.00	0.26	3.83	0.00	0.00	0.00
42.25	1.00	0.26	3.83	0.00	0.00	0.00
42.30	0.99	0.26	3.83	0.00	0.00	0.00
42.35	0.99	0.26	3.83	0.00	0.00	0.00
42.40	0.99	0.26	3.83	0.00	0.00	0.00
42.45	0.99	0.26	3.83	0.00	0.00	0.00
42.50	0.99	0.26	3.83	0.00	0.00	0.00
42.55	0.99	0.26	3.83	0.00	0.00	0.00
42.60	0.99	0.26	3.83	0.00	0.00	0.00
42.65	0.99	0.26	3.83	0.00	0.00	0.00
42.70	0.99	0.26	3.83	0.00	0.00	0.00
42.75	0.99	0.26	3.83	0.00	0.00	0.00
42.80	0.99	0.26	3.83	0.00	0.00	0.00
42.85	0.99	0.26	3.82	0.00	0.00	0.00
42.90	0.99	0.26	3.82	0.00	0.00	0.00
42.95	0.99	0.26	3.82	0.00	0.00	0.00
43.00	0.99	0.26	3.82	0.00	0.00	0.00
43.05	0.99	0.26	3.82	0.00	0.00	0.00
43.10	0.99	0.26	3.82	0.00	0.00	0.00
43.15	0.99	0.26	3.82	0.00	0.00	0.00
43.20	0.99	0.26	3.82	0.00	0.00	0.00
43.25	0.99	0.26	3.82	0.00	0.00	0.00
43.30	0.99	0.26	3.82	0.00	0.00	0.00
43.35	0.99	0.26	3.82	0.00	0.00	0.00
43.40	0.99	0.26	3.82	0.00	0.00	0.00
43.45	0.99	0.26	3.82	0.00	0.00	0.00
43.50	0.99	0.26	3.82	0.00	0.00	0.00
43.55	0.99	0.26	3.82	0.00	0.00	0.00
43.60	0.99	0.26	3.82	0.00	0.00	0.00
43.65	0.99	0.26	3.82	0.00	0.00	0.00
43.70	0.99	0.26	3.82	0.00	0.00	0.00
43.75	0.99	0.26	3.81	0.00	0.00	0.00
43.80	0.99	0.26	3.81	0.00	0.00	0.00
43.85	0.99	0.26	3.81	0.00	0.00	0.00
43.90	0.99	0.26	3.81	0.00	0.00	0.00
43.95	0.99	0.26	3.81	0.00	0.00	0.00
44.00	0.99	0.26	3.81	0.00	0.00	0.00
44.05	0.99	0.26	3.81	0.00	0.00	0.00
44.10	0.99	0.26	3.81	0.00	0.00	0.00
44.15	0.99	0.26	3.81	0.00	0.00	0.00
44.20	0.99	0.26	3.81	0.00	0.00	0.00
44.25	0.99	0.26	3.81	0.00	0.00	0.00
44.30	0.98	0.26	3.81	0.00	0.00	0.00
44.35	0.98	0.26	3.81	0.00	0.00	0.00
44.40	0.98	0.26	3.81	0.00	0.00	0.00
44.45	0.98	0.26	3.81	0.00	0.00	0.00
44.50	0.98	0.26	3.81	0.00	0.00	0.00
44.55	0.98	0.26	3.81	0.00	0.00	0.00
44.60	0.98	0.26	3.81	0.00	0.00	0.00
44.65	0.98	0.26	3.81	0.00	0.00	0.00
44.70	0.98	0.26	3.81	0.00	0.00	0.00
44.75	0.98	0.26	3.80	0.00	0.00	0.00
44.80	0.98	0.26	3.80	0.00	0.00	0.00
44.85	0.98	0.26	3.80	0.00	0.00	0.00

44.90	0.98	0.26	3.80	0.00	0.00	0.00
44.95	0.98	0.26	3.80	0.00	0.00	0.00
45.00	0.98	0.26	3.80	0.00	0.00	0.00
45.05	0.98	0.26	3.80	0.00	0.00	0.00
45.10	0.98	0.26	3.80	0.00	0.00	0.00
45.15	0.98	0.26	3.80	0.00	0.00	0.00
45.20	0.98	0.26	3.80	0.00	0.00	0.00
45.25	0.98	0.26	3.80	0.00	0.00	0.00
45.30	0.98	0.26	3.80	0.00	0.00	0.00
45.35	0.98	0.26	3.80	0.00	0.00	0.00
45.40	0.98	0.26	3.80	0.00	0.00	0.00
45.45	0.98	0.26	3.80	0.00	0.00	0.00
45.50	0.98	0.26	3.80	0.00	0.00	0.00
45.55	0.98	0.26	3.80	0.00	0.00	0.00
45.60	0.98	0.26	3.80	0.00	0.00	0.00
45.65	0.98	0.26	3.80	0.00	0.00	0.00
45.70	0.98	0.26	3.80	0.00	0.00	0.00
45.75	0.98	0.26	3.80	0.00	0.00	0.00
45.80	0.98	0.26	3.80	0.00	0.00	0.00
45.85	0.98	0.26	3.80	0.00	0.00	0.00
45.90	0.98	0.26	3.80	0.00	0.00	0.00
45.95	0.98	0.26	3.79	0.00	0.00	0.00
46.00	0.98	0.26	3.79	0.00	0.00	0.00
46.05	0.98	0.26	3.79	0.00	0.00	0.00
46.10	0.98	0.26	3.79	0.00	0.00	0.00
46.15	0.98	0.26	3.79	0.00	0.00	0.00
46.20	0.98	0.26	3.79	0.00	0.00	0.00
46.25	0.98	0.26	3.79	0.00	0.00	0.00
46.30	0.98	0.26	3.79	0.00	0.00	0.00
46.35	0.98	0.26	3.79	0.00	0.00	0.00
46.40	0.98	0.26	3.79	0.00	0.00	0.00
46.45	0.97	0.26	3.79	0.00	0.00	0.00
46.50	0.97	0.26	3.79	0.00	0.00	0.00
46.55	0.97	0.26	3.79	0.00	0.00	0.00
46.60	0.97	0.26	3.79	0.00	0.00	0.00
46.65	0.97	0.26	3.79	0.00	0.00	0.00
46.70	0.97	0.26	3.79	0.00	0.00	0.00
46.75	0.97	0.26	3.79	0.00	0.00	0.00
46.80	0.97	0.26	3.79	0.00	0.00	0.00
46.85	0.97	0.26	3.79	0.00	0.00	0.00
46.90	0.97	0.26	3.79	0.00	0.00	0.00
46.95	0.97	0.26	3.79	0.00	0.00	0.00
47.00	0.97	0.26	3.79	0.00	0.00	0.00
47.05	0.97	0.26	3.79	0.00	0.00	0.00
47.10	0.97	0.26	3.79	0.00	0.00	0.00
47.15	0.97	0.26	3.79	0.00	0.00	0.00
47.20	0.97	0.26	3.79	0.00	0.00	0.00
47.25	0.97	0.26	3.79	0.00	0.00	0.00
47.30	0.97	0.26	3.79	0.00	0.00	0.00
47.35	0.97	0.26	3.79	0.00	0.00	0.00
47.40	0.97	0.26	3.79	0.00	0.00	0.00
47.45	0.97	0.26	3.78	0.00	0.00	0.00
47.50	0.97	0.26	3.78	0.00	0.00	0.00
47.55	0.97	0.26	3.78	0.00	0.00	0.00

47.60	0.97	0.26	3.78	0.00	0.00	0.00
47.65	0.97	0.26	3.78	0.00	0.00	0.00
47.70	0.97	0.26	3.78	0.00	0.00	0.00
47.75	0.97	0.26	3.78	0.00	0.00	0.00
47.80	0.97	0.26	3.78	0.00	0.00	0.00
47.85	0.97	0.26	3.78	0.00	0.00	0.00
47.90	0.97	0.26	3.78	0.00	0.00	0.00
47.95	0.97	0.26	3.78	0.00	0.00	0.00
48.00	0.97	0.26	3.78	0.00	0.00	0.00
48.05	0.97	0.26	3.78	0.00	0.00	0.00
48.10	0.97	0.26	3.78	0.00	0.00	0.00
48.15	0.97	0.26	3.78	0.00	0.00	0.00
48.20	0.97	0.26	3.78	0.00	0.00	0.00
48.25	0.97	0.26	3.78	0.00	0.00	0.00
48.30	0.97	0.26	3.78	0.00	0.00	0.00
48.35	0.97	0.26	3.78	0.00	0.00	0.00
48.40	0.97	0.26	3.78	0.00	0.00	0.00
48.45	0.97	0.26	3.78	0.00	0.00	0.00
48.50	0.97	0.26	3.78	0.00	0.00	0.00
48.55	0.97	0.26	3.78	0.00	0.00	0.00
48.60	0.97	0.26	3.78	0.00	0.00	0.00
48.65	0.97	0.26	3.78	0.00	0.00	0.00
48.70	0.97	0.26	3.78	0.00	0.00	0.00
48.75	0.96	0.26	3.78	0.00	0.00	0.00
48.80	0.96	0.26	3.78	0.00	0.00	0.00
48.85	0.96	0.26	3.78	0.00	0.00	0.00
48.90	0.96	0.26	3.78	0.00	0.00	0.00
48.95	0.96	0.26	3.78	0.00	0.00	0.00
49.00	0.96	0.26	3.78	0.00	0.00	0.00
49.05	0.96	0.26	3.78	0.00	0.00	0.00
49.10	0.96	0.26	3.78	0.00	0.00	0.00
49.15	0.96	0.26	3.78	0.00	0.00	0.00
49.20	0.96	0.25	3.78	0.00	0.00	0.00
49.25	0.96	0.25	3.78	0.00	0.00	0.00
49.30	0.96	0.25	3.78	0.00	0.00	0.00
49.35	0.96	0.25	3.78	0.00	0.00	0.00
49.40	0.96	0.25	3.78	0.00	0.00	0.00
49.45	0.96	0.25	3.78	0.00	0.00	0.00
49.50	0.96	0.25	3.78	0.00	0.00	0.00
49.55	0.96	0.25	3.78	0.00	0.00	0.00
49.60	0.96	0.25	3.78	0.00	0.00	0.00
49.65	0.96	0.25	3.78	0.00	0.00	0.00
49.70	0.96	0.25	3.78	0.00	0.00	0.00
49.75	0.96	0.25	3.78	0.00	0.00	0.00
49.80	0.96	0.25	3.78	0.00	0.00	0.00
49.85	0.96	0.25	3.78	0.00	0.00	0.00
49.90	0.96	0.25	3.78	0.00	0.00	0.00
49.95	0.96	0.25	3.78	0.00	0.00	0.00
50.00	0.96	0.25	3.77	0.00	0.00	0.00
50.05	0.96	0.25	3.77	0.00	0.00	0.00
50.10	0.96	0.25	3.77	0.00	0.00	0.00
50.15	0.96	0.25	3.77	0.00	0.00	0.00
50.20	0.96	0.25	3.77	0.00	0.00	0.00
50.25	0.96	0.25	3.77	0.00	0.00	0.00

50.30	0.96	0.25	3.77	0.00	0.00	0.00
50.35	0.96	0.25	3.77	0.00	0.00	0.00
50.40	0.96	0.25	3.77	0.00	0.00	0.00
50.45	0.96	0.25	3.77	0.00	0.00	0.00
50.50	0.96	0.25	3.77	0.00	0.00	0.00
50.55	0.96	0.25	3.77	0.00	0.00	0.00
50.60	0.96	0.25	3.77	0.00	0.00	0.00
50.65	0.96	0.25	3.77	0.00	0.00	0.00
50.70	0.96	0.25	3.77	0.00	0.00	0.00
50.75	0.96	0.25	3.77	0.00	0.00	0.00
50.80	0.96	0.25	3.77	0.00	0.00	0.00
50.85	0.96	0.25	3.77	0.00	0.00	0.00
50.90	0.96	0.25	3.77	0.00	0.00	0.00
50.95	0.96	0.25	3.77	0.00	0.00	0.00
51.00	0.96	0.25	3.77	0.00	0.00	0.00

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

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

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1 atm (atmosphere) = 1 tsf (ton/ft2)

CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

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LIQUEFACTION ANALYSIS SUMMARY
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Input File Name: C:\Users\Engineering\Desktop\07-230020-0.liq
Title: New Addition to the Mercedes Edwards Theater
Subtitle: 07-230020-0

Surface Elev.=363
Hole No.=B-2
Depth of Hole= 51.00 ft
Water Table during Earthquake= 100.00 ft
Water Table during In-Situ Testing= 115.00 ft
Max. Acceleration= 0.32 g
Earthquake Magnitude= 5.50

Input Data:
Surface Elev.=363
Hole No.=B-2
Depth of Hole=51.00 ft
Water Table during Earthquake= 100.00 ft
Water Table during In-Situ Testing= 115.00 ft
Max. Acceleration=0.32 g
Earthquake Magnitude=5.50
No-Liquefiable Soils: Based on Analysis

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Tokimatsu, M-correction
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.5
7. Borehole Diameter, Cb= 1.05
8. Sampling Method, Cs= 1.2
9. User request factor of safety (apply to CSR) , User= 1.2
Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: Yes*
* Recommended Options

In-Situ Test Data:

Depth	SPT	gamma	Fines
ft		pcf	%
0.00	18.00	128.70	21.00
3.00	8.00	119.60	25.00

7.50	22.00	148.10	30.00
12.50	22.00	148.10	35.00
17.50	16.00	125.00	30.00
22.50	8.00	137.50	48.00
27.50	30.00	130.00	75.00
32.50	14.00	137.60	75.00
37.50	69.00	140.00	75.00
42.50	30.00	125.20	90.00
47.50	35.00	112.00	5.00

Output Results:

Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.07 in.
Total Settlement of Saturated and Unsaturated Sands=0.07 in.
Differential Settlement=0.034 to 0.045 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
0.00	1.11	0.25	5.00	0.00	0.07	0.07
0.05	1.11	0.25	5.00	0.00	0.07	0.07
0.10	1.11	0.25	5.00	0.00	0.07	0.07
0.15	1.11	0.25	5.00	0.00	0.07	0.07
0.20	1.11	0.25	5.00	0.00	0.07	0.07
0.25	1.11	0.25	5.00	0.00	0.07	0.07
0.30	1.11	0.25	5.00	0.00	0.07	0.07
0.35	1.11	0.25	5.00	0.00	0.07	0.07
0.40	1.11	0.25	5.00	0.00	0.07	0.07
0.45	1.11	0.25	5.00	0.00	0.07	0.07
0.50	1.11	0.25	5.00	0.00	0.07	0.07
0.55	1.11	0.25	5.00	0.00	0.07	0.07
0.60	1.11	0.25	5.00	0.00	0.07	0.07
0.65	1.11	0.25	5.00	0.00	0.07	0.07
0.70	1.11	0.25	5.00	0.00	0.07	0.07
0.75	1.11	0.25	5.00	0.00	0.07	0.07
0.80	1.11	0.25	5.00	0.00	0.07	0.07
0.85	1.11	0.25	5.00	0.00	0.07	0.07
0.90	1.11	0.25	5.00	0.00	0.07	0.07
0.95	1.11	0.25	5.00	0.00	0.07	0.07
1.00	1.11	0.25	5.00	0.00	0.07	0.07
1.05	1.11	0.25	5.00	0.00	0.07	0.07
1.10	1.11	0.25	5.00	0.00	0.07	0.07
1.15	1.11	0.25	5.00	0.00	0.07	0.07
1.20	1.11	0.25	5.00	0.00	0.07	0.07
1.25	1.11	0.25	5.00	0.00	0.07	0.07
1.30	1.11	0.25	5.00	0.00	0.07	0.07
1.35	1.11	0.25	5.00	0.00	0.07	0.07
1.40	1.11	0.25	5.00	0.00	0.07	0.07
1.45	1.11	0.25	5.00	0.00	0.07	0.07
1.50	1.11	0.25	5.00	0.00	0.07	0.07
1.55	1.11	0.25	5.00	0.00	0.07	0.07
1.60	1.11	0.25	5.00	0.00	0.07	0.07
1.65	1.11	0.25	5.00	0.00	0.07	0.07

1.70 1.11 0.25 5.00 0.00 0.07 0.07
1.75 1.11 0.25 5.00 0.00 0.07 0.07
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2.00 1.11 0.25 5.00 0.00 0.07 0.07
2.05 1.11 0.25 5.00 0.00 0.07 0.07
2.10 1.11 0.25 5.00 0.00 0.07 0.07
2.15 1.11 0.25 5.00 0.00 0.07 0.07
2.20 1.11 0.25 5.00 0.00 0.07 0.07
2.25 0.96 0.25 5.00 0.00 0.07 0.07
2.30 0.88 0.25 5.00 0.00 0.07 0.07
2.35 0.84 0.25 5.00 0.00 0.07 0.07
2.40 0.80 0.25 5.00 0.00 0.07 0.07
2.45 0.78 0.25 5.00 0.00 0.07 0.07
2.50 0.75 0.25 5.00 0.00 0.07 0.07
2.55 0.73 0.25 5.00 0.00 0.07 0.07
2.60 0.71 0.25 5.00 0.00 0.07 0.07
2.65 0.70 0.25 5.00 0.00 0.07 0.07
2.70 0.68 0.25 5.00 0.00 0.07 0.07
2.75 0.66 0.25 5.00 0.00 0.07 0.07
2.80 0.65 0.25 5.00 0.00 0.07 0.07
2.85 0.63 0.25 5.00 0.00 0.07 0.07
2.90 0.62 0.25 5.00 0.00 0.07 0.07
2.95 0.61 0.25 5.00 0.00 0.07 0.07
3.00 0.59 0.25 5.00 0.00 0.07 0.07
3.05 0.61 0.25 5.00 0.00 0.07 0.07
3.10 0.62 0.25 5.00 0.00 0.07 0.07
3.15 0.63 0.25 5.00 0.00 0.07 0.07
3.20 0.65 0.25 5.00 0.00 0.07 0.07
3.25 0.66 0.25 5.00 0.00 0.07 0.07
3.30 0.68 0.25 5.00 0.00 0.07 0.07
3.35 0.70 0.25 5.00 0.00 0.07 0.07
3.40 0.72 0.25 5.00 0.00 0.07 0.07
3.45 0.73 0.25 5.00 0.00 0.07 0.07
3.50 0.76 0.25 5.00 0.00 0.07 0.07
3.55 0.78 0.25 5.00 0.00 0.07 0.07
3.60 0.81 0.25 5.00 0.00 0.07 0.07
3.65 0.84 0.25 5.00 0.00 0.07 0.07
3.70 0.89 0.25 5.00 0.00 0.07 0.07
3.75 0.97 0.25 5.00 0.00 0.07 0.07
3.80 1.11 0.25 5.00 0.00 0.07 0.07
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12.40 1.11 0.24 5.00 0.00 0.06 0.06
12.45 1.11 0.24 5.00 0.00 0.06 0.06

12.50	1.11	0.24	5.00	0.00	0.06	0.06
12.55	1.11	0.24	5.00	0.00	0.06	0.06
12.60	1.11	0.24	5.00	0.00	0.06	0.06
12.65	1.11	0.24	5.00	0.00	0.06	0.06
12.70	1.11	0.24	5.00	0.00	0.06	0.06
12.75	1.11	0.24	5.00	0.00	0.06	0.06
12.80	1.11	0.24	5.00	0.00	0.06	0.06
12.85	1.11	0.24	5.00	0.00	0.06	0.06
12.90	1.11	0.24	5.00	0.00	0.06	0.06
12.95	1.11	0.24	5.00	0.00	0.06	0.06
13.00	1.11	0.24	5.00	0.00	0.06	0.06
13.05	1.11	0.24	5.00	0.00	0.06	0.06
13.10	1.11	0.24	5.00	0.00	0.06	0.06
13.15	1.11	0.24	5.00	0.00	0.06	0.06
13.20	1.11	0.24	5.00	0.00	0.06	0.06
13.25	1.11	0.24	5.00	0.00	0.06	0.06
13.30	1.11	0.24	5.00	0.00	0.06	0.06
13.35	1.11	0.24	5.00	0.00	0.06	0.06
13.40	1.11	0.24	5.00	0.00	0.06	0.06
13.45	1.11	0.24	5.00	0.00	0.06	0.06
13.50	1.11	0.24	5.00	0.00	0.06	0.06
13.55	1.11	0.24	5.00	0.00	0.06	0.06
13.60	1.11	0.24	5.00	0.00	0.06	0.06
13.65	1.11	0.24	5.00	0.00	0.06	0.06
13.70	1.11	0.24	5.00	0.00	0.06	0.06
13.75	1.11	0.24	5.00	0.00	0.06	0.06
13.80	1.11	0.24	5.00	0.00	0.06	0.06
13.85	1.11	0.24	5.00	0.00	0.06	0.06
13.90	1.11	0.24	5.00	0.00	0.06	0.06
13.95	1.11	0.24	5.00	0.00	0.06	0.06
14.00	1.11	0.24	5.00	0.00	0.06	0.06
14.05	1.11	0.24	5.00	0.00	0.06	0.06
14.10	1.11	0.24	5.00	0.00	0.06	0.06
14.15	1.11	0.24	5.00	0.00	0.06	0.06
14.20	1.11	0.24	5.00	0.00	0.06	0.06
14.25	1.11	0.24	5.00	0.00	0.06	0.06
14.30	1.11	0.24	5.00	0.00	0.06	0.06
14.35	1.11	0.24	5.00	0.00	0.06	0.06
14.40	1.11	0.24	5.00	0.00	0.06	0.06
14.45	1.11	0.24	5.00	0.00	0.06	0.06
14.50	1.11	0.24	5.00	0.00	0.06	0.06
14.55	1.11	0.24	5.00	0.00	0.06	0.06
14.60	1.11	0.24	5.00	0.00	0.06	0.06
14.65	1.11	0.24	5.00	0.00	0.06	0.06
14.70	1.11	0.24	5.00	0.00	0.06	0.06
14.75	1.11	0.24	5.00	0.00	0.06	0.06
14.80	1.11	0.24	5.00	0.00	0.06	0.06
14.85	1.11	0.24	5.00	0.00	0.06	0.06
14.90	1.11	0.24	5.00	0.00	0.06	0.06
14.95	1.11	0.24	5.00	0.00	0.06	0.06
15.00	1.11	0.24	5.00	0.00	0.06	0.06
15.05	1.11	0.24	5.00	0.00	0.06	0.06
15.10	1.11	0.24	5.00	0.00	0.06	0.06
15.15	1.11	0.24	5.00	0.00	0.06	0.06

15.20	1.11	0.24	5.00	0.00	0.06	0.06
15.25	1.11	0.24	5.00	0.00	0.06	0.06
15.30	1.11	0.24	5.00	0.00	0.06	0.06
15.35	1.11	0.24	5.00	0.00	0.06	0.06
15.40	1.11	0.24	5.00	0.00	0.06	0.06
15.45	1.11	0.24	5.00	0.00	0.06	0.06
15.50	1.11	0.24	5.00	0.00	0.06	0.06
15.55	1.11	0.24	5.00	0.00	0.06	0.06
15.60	1.11	0.24	5.00	0.00	0.06	0.06
15.65	1.11	0.24	5.00	0.00	0.06	0.06
15.70	1.11	0.24	5.00	0.00	0.06	0.06
15.75	1.11	0.24	5.00	0.00	0.06	0.06
15.80	1.11	0.24	5.00	0.00	0.06	0.06
15.85	1.11	0.24	5.00	0.00	0.06	0.06
15.90	1.11	0.24	5.00	0.00	0.06	0.06
15.95	1.11	0.24	5.00	0.00	0.06	0.06
16.00	1.11	0.24	5.00	0.00	0.06	0.06
16.05	1.11	0.24	5.00	0.00	0.06	0.06
16.10	1.11	0.24	5.00	0.00	0.06	0.06
16.15	1.11	0.24	5.00	0.00	0.06	0.06
16.20	1.11	0.24	5.00	0.00	0.06	0.06
16.25	1.11	0.24	5.00	0.00	0.06	0.06
16.30	1.11	0.24	5.00	0.00	0.06	0.06
16.35	1.11	0.24	5.00	0.00	0.06	0.06
16.40	1.11	0.24	5.00	0.00	0.06	0.06
16.45	1.11	0.24	5.00	0.00	0.06	0.06
16.50	1.11	0.24	5.00	0.00	0.06	0.06
16.55	1.11	0.24	5.00	0.00	0.06	0.06
16.60	1.11	0.24	5.00	0.00	0.06	0.06
16.65	1.11	0.24	5.00	0.00	0.06	0.06
16.70	1.11	0.24	5.00	0.00	0.06	0.06
16.75	1.11	0.24	5.00	0.00	0.06	0.06
16.80	1.11	0.24	5.00	0.00	0.06	0.06
16.85	1.11	0.24	5.00	0.00	0.06	0.06
16.90	1.11	0.24	5.00	0.00	0.06	0.06
16.95	1.11	0.24	5.00	0.00	0.06	0.06
17.00	1.11	0.24	5.00	0.00	0.06	0.06
17.05	1.11	0.24	5.00	0.00	0.06	0.06
17.10	1.11	0.24	5.00	0.00	0.06	0.06
17.15	1.11	0.24	5.00	0.00	0.06	0.06
17.20	1.11	0.24	5.00	0.00	0.06	0.06
17.25	1.11	0.24	5.00	0.00	0.06	0.06
17.30	1.11	0.24	5.00	0.00	0.06	0.06
17.35	1.11	0.24	5.00	0.00	0.06	0.06
17.40	1.11	0.24	5.00	0.00	0.06	0.06
17.45	1.11	0.24	5.00	0.00	0.06	0.06
17.50	1.11	0.24	5.00	0.00	0.06	0.06
17.55	1.11	0.24	5.00	0.00	0.05	0.05
17.60	1.11	0.24	5.00	0.00	0.05	0.05
17.65	1.11	0.24	5.00	0.00	0.05	0.05
17.70	1.11	0.24	5.00	0.00	0.05	0.05
17.75	1.11	0.24	5.00	0.00	0.05	0.05
17.80	1.11	0.24	5.00	0.00	0.05	0.05
17.85	1.11	0.24	5.00	0.00	0.05	0.05

17.90	1.11	0.24	5.00	0.00	0.05	0.05
17.95	1.11	0.24	5.00	0.00	0.05	0.05
18.00	1.11	0.24	5.00	0.00	0.05	0.05
18.05	1.11	0.24	5.00	0.00	0.05	0.05
18.10	1.11	0.24	5.00	0.00	0.05	0.05
18.15	1.11	0.24	5.00	0.00	0.05	0.05
18.20	1.11	0.24	5.00	0.00	0.05	0.05
18.25	1.11	0.24	5.00	0.00	0.05	0.05
18.30	1.11	0.24	5.00	0.00	0.05	0.05
18.35	1.11	0.24	5.00	0.00	0.05	0.05
18.40	1.11	0.24	5.00	0.00	0.05	0.05
18.45	1.11	0.24	5.00	0.00	0.05	0.05
18.50	1.11	0.24	5.00	0.00	0.05	0.05
18.55	1.11	0.24	5.00	0.00	0.05	0.05
18.60	1.11	0.24	5.00	0.00	0.05	0.05
18.65	1.11	0.24	5.00	0.00	0.05	0.05
18.70	1.05	0.24	5.00	0.00	0.05	0.05
18.75	0.99	0.24	5.00	0.00	0.05	0.05
18.80	0.95	0.24	5.00	0.00	0.05	0.05
18.85	0.92	0.24	5.00	0.00	0.05	0.05
18.90	0.90	0.24	5.00	0.00	0.05	0.05
18.95	0.88	0.24	5.00	0.00	0.05	0.05
19.00	0.86	0.24	5.00	0.00	0.05	0.05
19.05	0.84	0.24	5.00	0.00	0.05	0.05
19.10	0.83	0.24	5.00	0.00	0.05	0.05
19.15	0.81	0.24	5.00	0.00	0.05	0.05
19.20	0.80	0.24	5.00	0.00	0.05	0.05
19.25	0.79	0.24	5.00	0.00	0.05	0.05
19.30	0.78	0.24	5.00	0.00	0.05	0.05
19.35	0.77	0.24	5.00	0.00	0.05	0.05
19.40	0.76	0.24	5.00	0.00	0.05	0.05
19.45	0.75	0.24	5.00	0.00	0.05	0.05
19.50	0.74	0.24	5.00	0.00	0.05	0.05
19.55	0.73	0.24	5.00	0.00	0.05	0.05
19.60	0.73	0.24	5.00	0.00	0.05	0.05
19.65	0.72	0.24	5.00	0.00	0.05	0.05
19.70	0.71	0.24	5.00	0.00	0.05	0.05
19.75	0.70	0.24	5.00	0.00	0.05	0.05
19.80	0.70	0.24	5.00	0.00	0.05	0.05
19.85	0.69	0.24	5.00	0.00	0.05	0.05
19.90	0.68	0.24	5.00	0.00	0.05	0.05
19.95	0.68	0.24	5.00	0.00	0.05	0.05
20.00	0.67	0.24	5.00	0.00	0.05	0.05
20.05	0.67	0.24	5.00	0.00	0.05	0.05
20.10	0.66	0.24	5.00	0.00	0.05	0.05
20.15	0.65	0.24	5.00	0.00	0.05	0.05
20.20	0.65	0.24	5.00	0.00	0.05	0.05
20.25	0.64	0.24	5.00	0.00	0.05	0.05
20.30	0.64	0.24	5.00	0.00	0.05	0.05
20.35	0.63	0.24	5.00	0.00	0.05	0.05
20.40	0.63	0.24	5.00	0.00	0.05	0.05
20.45	0.62	0.24	5.00	0.00	0.05	0.05
20.50	0.62	0.24	5.00	0.00	0.05	0.05
20.55	0.61	0.24	5.00	0.00	0.05	0.05

20.60	0.61	0.24	5.00	0.00	0.05	0.05
20.65	0.60	0.24	5.00	0.00	0.05	0.05
20.70	0.60	0.24	5.00	0.00	0.05	0.05
20.75	0.59	0.24	5.00	0.00	0.05	0.05
20.80	0.59	0.24	5.00	0.00	0.05	0.05
20.85	0.58	0.24	5.00	0.00	0.05	0.05
20.90	0.58	0.24	5.00	0.00	0.05	0.05
20.95	0.57	0.24	5.00	0.00	0.05	0.05
21.00	0.57	0.24	5.00	0.00	0.05	0.05
21.05	0.56	0.24	5.00	0.00	0.05	0.05
21.10	0.56	0.24	5.00	0.00	0.05	0.05
21.15	0.56	0.24	5.00	0.00	0.05	0.05
21.20	0.55	0.24	5.00	0.00	0.05	0.05
21.25	0.55	0.24	5.00	0.00	0.05	0.05
21.30	0.54	0.23	5.00	0.00	0.05	0.05
21.35	0.54	0.23	5.00	0.00	0.05	0.05
21.40	0.54	0.23	5.00	0.00	0.05	0.05
21.45	0.53	0.23	5.00	0.00	0.05	0.05
21.50	0.53	0.23	5.00	0.00	0.05	0.05
21.55	0.52	0.23	5.00	0.00	0.05	0.05
21.60	0.52	0.23	5.00	0.00	0.05	0.05
21.65	0.52	0.23	5.00	0.00	0.04	0.04
21.70	0.51	0.23	5.00	0.00	0.04	0.04
21.75	0.51	0.23	5.00	0.00	0.04	0.04
21.80	0.51	0.23	5.00	0.00	0.04	0.04
21.85	0.50	0.23	5.00	0.00	0.04	0.04
21.90	0.50	0.23	5.00	0.00	0.04	0.04
21.95	0.49	0.23	5.00	0.00	0.04	0.04
22.00	0.49	0.23	5.00	0.00	0.04	0.04
22.05	0.49	0.23	5.00	0.00	0.04	0.04
22.10	0.48	0.23	5.00	0.00	0.04	0.04
22.15	0.48	0.23	5.00	0.00	0.04	0.04
22.20	0.48	0.23	5.00	0.00	0.04	0.04
22.25	0.47	0.23	5.00	0.00	0.04	0.04
22.30	0.47	0.23	5.00	0.00	0.04	0.04
22.35	0.47	0.23	5.00	0.00	0.04	0.04
22.40	0.46	0.23	5.00	0.00	0.04	0.04
22.45	0.46	0.23	5.00	0.00	0.04	0.04
22.50	0.46	0.23	5.00	0.00	0.04	0.04
22.55	0.47	0.23	5.00	0.00	0.04	0.04
22.60	0.47	0.23	5.00	0.00	0.04	0.04
22.65	0.48	0.23	5.00	0.00	0.04	0.04
22.70	0.49	0.23	5.00	0.00	0.04	0.04
22.75	0.50	0.23	5.00	0.00	0.04	0.04
22.80	0.50	0.23	5.00	0.00	0.04	0.04
22.85	0.51	0.23	5.00	0.00	0.04	0.04
22.90	0.52	0.23	5.00	0.00	0.04	0.04
22.95	0.53	0.23	5.00	0.00	0.04	0.04
23.00	0.54	0.23	5.00	0.00	0.04	0.04
23.05	0.55	0.23	5.00	0.00	0.04	0.04
23.10	0.56	0.23	5.00	0.00	0.04	0.04
23.15	0.57	0.23	5.00	0.00	0.04	0.04
23.20	0.58	0.23	5.00	0.00	0.04	0.04
23.25	0.58	0.23	5.00	0.00	0.04	0.04

23.30	0.59	0.23	5.00	0.00	0.04	0.04
23.35	0.60	0.23	5.00	0.00	0.04	0.04
23.40	0.62	0.23	5.00	0.00	0.04	0.04
23.45	0.63	0.23	5.00	0.00	0.04	0.04
23.50	0.64	0.23	5.00	0.00	0.04	0.04
23.55	0.65	0.23	5.00	0.00	0.04	0.04
23.60	0.66	0.23	5.00	0.00	0.04	0.04
23.65	0.67	0.23	5.00	0.00	0.04	0.04
23.70	0.69	0.23	5.00	0.00	0.04	0.04
23.75	0.70	0.23	5.00	0.00	0.04	0.04
23.80	0.71	0.23	5.00	0.00	0.04	0.04
23.85	0.73	0.23	5.00	0.00	0.04	0.04
23.90	0.74	0.23	5.00	0.00	0.04	0.04
23.95	0.76	0.23	5.00	0.00	0.04	0.04
24.00	0.78	0.23	5.00	0.00	0.04	0.04
24.05	0.80	0.23	5.00	0.00	0.04	0.04
24.10	0.83	0.23	5.00	0.00	0.04	0.04
24.15	0.85	0.23	5.00	0.00	0.04	0.04
24.20	0.89	0.23	5.00	0.00	0.04	0.04
24.25	0.95	0.23	5.00	0.00	0.04	0.04
24.30	1.08	0.23	5.00	0.00	0.04	0.04
24.35	1.11	0.23	5.00	0.00	0.03	0.03
24.40	1.11	0.23	5.00	0.00	0.03	0.03
24.45	1.11	0.23	5.00	0.00	0.03	0.03
24.50	1.11	0.23	5.00	0.00	0.03	0.03
24.55	1.11	0.23	5.00	0.00	0.03	0.03
24.60	1.11	0.23	5.00	0.00	0.03	0.03
24.65	1.11	0.23	5.00	0.00	0.03	0.03
24.70	1.11	0.23	5.00	0.00	0.03	0.03
24.75	1.11	0.23	5.00	0.00	0.03	0.03
24.80	1.11	0.23	5.00	0.00	0.03	0.03
24.85	1.11	0.23	5.00	0.00	0.03	0.03
24.90	1.11	0.23	5.00	0.00	0.03	0.03
24.95	1.11	0.23	5.00	0.00	0.03	0.03
25.00	1.11	0.23	5.00	0.00	0.03	0.03
25.05	1.10	0.23	5.00	0.00	0.03	0.03
25.10	1.10	0.23	5.00	0.00	0.03	0.03
25.15	1.10	0.23	5.00	0.00	0.03	0.03
25.20	1.10	0.23	5.00	0.00	0.03	0.03
25.25	1.10	0.23	5.00	0.00	0.03	0.03
25.30	1.10	0.23	5.00	0.00	0.03	0.03
25.35	1.10	0.23	5.00	0.00	0.03	0.03
25.40	1.10	0.23	5.00	0.00	0.03	0.03
25.45	1.10	0.23	5.00	0.00	0.03	0.03
25.50	1.10	0.23	5.00	0.00	0.03	0.03
25.55	1.10	0.23	5.00	0.00	0.03	0.03
25.60	1.10	0.23	5.00	0.00	0.03	0.03
25.65	1.10	0.23	5.00	0.00	0.03	0.03
25.70	1.10	0.23	5.00	0.00	0.03	0.03
25.75	1.10	0.23	5.00	0.00	0.03	0.03
25.80	1.10	0.23	5.00	0.00	0.03	0.03
25.85	1.10	0.23	5.00	0.00	0.03	0.03
25.90	1.10	0.23	5.00	0.00	0.03	0.03
25.95	1.10	0.23	5.00	0.00	0.03	0.03

26.00	1.10	0.23	5.00	0.00	0.03	0.03
26.05	1.10	0.23	5.00	0.00	0.03	0.03
26.10	1.10	0.23	5.00	0.00	0.03	0.03
26.15	1.10	0.23	5.00	0.00	0.03	0.03
26.20	1.10	0.23	5.00	0.00	0.03	0.03
26.25	1.10	0.23	5.00	0.00	0.03	0.03
26.30	1.10	0.23	5.00	0.00	0.03	0.03
26.35	1.10	0.23	5.00	0.00	0.03	0.03
26.40	1.10	0.23	5.00	0.00	0.03	0.03
26.45	1.09	0.23	5.00	0.00	0.03	0.03
26.50	1.09	0.23	5.00	0.00	0.03	0.03
26.55	1.09	0.23	5.00	0.00	0.03	0.03
26.60	1.09	0.23	5.00	0.00	0.03	0.03
26.65	1.09	0.23	5.00	0.00	0.03	0.03
26.70	1.09	0.23	5.00	0.00	0.03	0.03
26.75	1.09	0.23	5.00	0.00	0.03	0.03
26.80	1.09	0.23	5.00	0.00	0.03	0.03
26.85	1.09	0.23	5.00	0.00	0.03	0.03
26.90	1.09	0.23	5.00	0.00	0.03	0.03
26.95	1.09	0.23	5.00	0.00	0.03	0.03
27.00	1.09	0.23	5.00	0.00	0.03	0.03
27.05	1.09	0.23	5.00	0.00	0.03	0.03
27.10	1.09	0.23	5.00	0.00	0.03	0.03
27.15	1.09	0.23	5.00	0.00	0.03	0.03
27.20	1.09	0.23	5.00	0.00	0.03	0.03
27.25	1.09	0.23	5.00	0.00	0.03	0.03
27.30	1.09	0.23	5.00	0.00	0.03	0.03
27.35	1.09	0.23	5.00	0.00	0.03	0.03
27.40	1.09	0.23	5.00	0.00	0.03	0.03
27.45	1.09	0.23	5.00	0.00	0.03	0.03
27.50	1.09	0.23	5.00	0.00	0.03	0.03
27.55	1.09	0.23	5.00	0.00	0.03	0.03
27.60	1.09	0.23	5.00	0.00	0.03	0.03
27.65	1.09	0.23	5.00	0.00	0.03	0.03
27.70	1.09	0.23	5.00	0.00	0.03	0.03
27.75	1.09	0.23	5.00	0.00	0.03	0.03
27.80	1.09	0.23	5.00	0.00	0.03	0.03
27.85	1.09	0.23	5.00	0.00	0.03	0.03
27.90	1.09	0.23	5.00	0.00	0.03	0.03
27.95	1.08	0.23	5.00	0.00	0.03	0.03
28.00	1.08	0.23	5.00	0.00	0.03	0.03
28.05	1.08	0.23	5.00	0.00	0.03	0.03
28.10	1.08	0.23	5.00	0.00	0.03	0.03
28.15	1.08	0.23	5.00	0.00	0.03	0.03
28.20	1.08	0.23	5.00	0.00	0.03	0.03
28.25	1.08	0.23	5.00	0.00	0.03	0.03
28.30	1.08	0.23	5.00	0.00	0.03	0.03
28.35	1.08	0.23	5.00	0.00	0.03	0.03
28.40	1.08	0.23	5.00	0.00	0.03	0.03
28.45	1.08	0.23	5.00	0.00	0.03	0.03
28.50	1.08	0.23	5.00	0.00	0.03	0.03
28.55	1.08	0.23	5.00	0.00	0.03	0.03
28.60	1.08	0.23	5.00	0.00	0.03	0.03
28.65	1.08	0.23	5.00	0.00	0.03	0.03

28.70	1.08	0.23	5.00	0.00	0.03	0.03
28.75	1.08	0.23	5.00	0.00	0.03	0.03
28.80	1.08	0.23	5.00	0.00	0.03	0.03
28.85	1.08	0.23	5.00	0.00	0.03	0.03
28.90	1.08	0.23	5.00	0.00	0.03	0.03
28.95	1.08	0.23	5.00	0.00	0.03	0.03
29.00	1.08	0.23	5.00	0.00	0.03	0.03
29.05	1.08	0.23	5.00	0.00	0.03	0.03
29.10	1.08	0.23	5.00	0.00	0.03	0.03
29.15	1.08	0.23	5.00	0.00	0.03	0.03
29.20	1.08	0.23	5.00	0.00	0.03	0.03
29.25	1.08	0.23	5.00	0.00	0.03	0.03
29.30	1.08	0.23	5.00	0.00	0.03	0.03
29.35	1.08	0.23	5.00	0.00	0.03	0.03
29.40	1.08	0.23	5.00	0.00	0.03	0.03
29.45	1.07	0.23	5.00	0.00	0.03	0.03
29.50	1.07	0.23	5.00	0.00	0.03	0.03
29.55	1.07	0.23	5.00	0.00	0.03	0.03
29.60	1.07	0.23	5.00	0.00	0.03	0.03
29.65	1.07	0.23	5.00	0.00	0.03	0.03
29.70	1.07	0.23	5.00	0.00	0.03	0.03
29.75	1.07	0.23	5.00	0.00	0.03	0.03
29.80	1.07	0.23	5.00	0.00	0.03	0.03
29.85	1.07	0.23	5.00	0.00	0.03	0.03
29.90	1.07	0.23	5.00	0.00	0.03	0.03
29.95	1.07	0.23	5.00	0.00	0.03	0.03
30.00	1.07	0.23	5.00	0.00	0.03	0.03
30.05	1.07	0.23	5.00	0.00	0.03	0.03
30.10	1.07	0.23	5.00	0.00	0.03	0.03
30.15	1.07	0.23	5.00	0.00	0.03	0.03
30.20	1.07	0.23	5.00	0.00	0.03	0.03
30.25	1.07	0.23	5.00	0.00	0.03	0.03
30.30	1.07	0.23	5.00	0.00	0.03	0.03
30.35	1.07	0.23	5.00	0.00	0.03	0.03
30.40	1.07	0.23	5.00	0.00	0.03	0.03
30.45	1.07	0.23	5.00	0.00	0.03	0.03
30.50	1.07	0.23	5.00	0.00	0.03	0.03
30.55	1.07	0.23	5.00	0.00	0.03	0.03
30.60	1.07	0.23	5.00	0.00	0.03	0.03
30.65	1.07	0.23	5.00	0.00	0.03	0.03
30.70	1.07	0.23	5.00	0.00	0.03	0.03
30.75	1.07	0.23	5.00	0.00	0.03	0.03
30.80	1.07	0.23	5.00	0.00	0.03	0.03
30.85	1.07	0.23	5.00	0.00	0.03	0.03
30.90	1.07	0.23	5.00	0.00	0.03	0.03
30.95	1.06	0.23	5.00	0.00	0.03	0.03
31.00	1.06	0.23	5.00	0.00	0.03	0.03
31.05	1.06	0.23	5.00	0.00	0.03	0.03
31.10	1.06	0.23	5.00	0.00	0.03	0.03
31.15	1.06	0.23	5.00	0.00	0.03	0.03
31.20	1.06	0.23	5.00	0.00	0.03	0.03
31.25	1.06	0.23	5.00	0.00	0.03	0.03
31.30	1.06	0.23	5.00	0.00	0.03	0.03
31.35	1.06	0.23	5.00	0.00	0.02	0.02

31.40	1.06	0.23	5.00	0.00	0.02	0.02
31.45	1.06	0.23	5.00	0.00	0.02	0.02
31.50	1.06	0.23	5.00	0.00	0.02	0.02
31.55	0.93	0.23	5.00	0.00	0.02	0.02
31.60	0.88	0.23	5.00	0.00	0.02	0.02
31.65	0.84	0.23	5.00	0.00	0.02	0.02
31.70	0.81	0.23	5.00	0.00	0.02	0.02
31.75	0.79	0.23	5.00	0.00	0.02	0.02
31.80	0.77	0.23	5.00	0.00	0.02	0.02
31.85	0.76	0.23	5.00	0.00	0.02	0.02
31.90	0.74	0.23	5.00	0.00	0.02	0.02
31.95	0.73	0.23	5.00	0.00	0.02	0.02
32.00	0.72	0.23	5.00	0.00	0.02	0.02
32.05	0.70	0.23	5.00	0.00	0.02	0.02
32.10	0.69	0.23	5.00	0.00	0.02	0.02
32.15	0.68	0.23	5.00	0.00	0.02	0.02
32.20	0.67	0.23	5.00	0.00	0.02	0.02
32.25	0.66	0.23	5.00	0.00	0.02	0.02
32.30	0.65	0.23	5.00	0.00	0.02	0.02
32.35	0.64	0.23	5.00	0.00	0.02	0.02
32.40	0.63	0.23	5.00	0.00	0.02	0.02
32.45	0.62	0.22	5.00	0.00	0.02	0.02
32.50	0.62	0.22	5.00	0.00	0.02	0.02
32.55	0.64	0.22	5.00	0.00	0.02	0.02
32.60	0.67	0.22	5.00	0.00	0.02	0.02
32.65	0.71	0.22	5.00	0.00	0.02	0.02
32.70	0.75	0.22	5.00	0.00	0.02	0.02
32.75	0.80	0.22	5.00	0.00	0.02	0.02
32.80	0.89	0.22	5.00	0.00	0.02	0.02
32.85	1.05	0.22	5.00	0.00	0.02	0.02
32.90	1.05	0.22	5.00	0.00	0.02	0.02
32.95	1.05	0.22	5.00	0.00	0.02	0.02
33.00	1.05	0.22	5.00	0.00	0.02	0.02
33.05	1.05	0.22	5.00	0.00	0.02	0.02
33.10	1.05	0.22	5.00	0.00	0.02	0.02
33.15	1.05	0.22	5.00	0.00	0.02	0.02
33.20	1.05	0.22	5.00	0.00	0.02	0.02
33.25	1.05	0.22	5.00	0.00	0.02	0.02
33.30	1.05	0.22	5.00	0.00	0.02	0.02
33.35	1.05	0.22	5.00	0.00	0.02	0.02
33.40	1.05	0.22	5.00	0.00	0.02	0.02
33.45	1.05	0.22	5.00	0.00	0.02	0.02
33.50	1.05	0.22	5.00	0.00	0.02	0.02
33.55	1.05	0.22	5.00	0.00	0.02	0.02
33.60	1.05	0.22	5.00	0.00	0.02	0.02
33.65	1.05	0.22	5.00	0.00	0.02	0.02
33.70	1.05	0.22	5.00	0.00	0.02	0.02
33.75	1.05	0.22	5.00	0.00	0.02	0.02
33.80	1.05	0.22	5.00	0.00	0.02	0.02
33.85	1.05	0.22	5.00	0.00	0.02	0.02
33.90	1.05	0.22	5.00	0.00	0.02	0.02
33.95	1.04	0.22	5.00	0.00	0.02	0.02
34.00	1.04	0.22	5.00	0.00	0.02	0.02
34.05	1.04	0.22	5.00	0.00	0.02	0.02

34.10	1.04	0.22	5.00	0.00	0.02	0.02
34.15	1.04	0.22	5.00	0.00	0.02	0.02
34.20	1.04	0.22	5.00	0.00	0.02	0.02
34.25	1.04	0.22	5.00	0.00	0.02	0.02
34.30	1.04	0.22	5.00	0.00	0.02	0.02
34.35	1.04	0.22	5.00	0.00	0.02	0.02
34.40	1.04	0.22	5.00	0.00	0.02	0.02
34.45	1.04	0.22	5.00	0.00	0.02	0.02
34.50	1.04	0.22	5.00	0.00	0.02	0.02
34.55	1.04	0.22	5.00	0.00	0.02	0.02
34.60	1.04	0.22	5.00	0.00	0.02	0.02
34.65	1.04	0.22	5.00	0.00	0.02	0.02
34.70	1.04	0.22	5.00	0.00	0.02	0.02
34.75	1.04	0.22	5.00	0.00	0.02	0.02
34.80	1.04	0.22	5.00	0.00	0.02	0.02
34.85	1.04	0.22	5.00	0.00	0.02	0.02
34.90	1.04	0.22	5.00	0.00	0.02	0.02
34.95	1.04	0.22	5.00	0.00	0.02	0.02
35.00	1.04	0.22	5.00	0.00	0.02	0.02
35.05	1.04	0.22	5.00	0.00	0.02	0.02
35.10	1.04	0.22	5.00	0.00	0.02	0.02
35.15	1.04	0.22	5.00	0.00	0.02	0.02
35.20	1.04	0.22	5.00	0.00	0.02	0.02
35.25	1.04	0.22	5.00	0.00	0.02	0.02
35.30	1.04	0.22	5.00	0.00	0.02	0.02
35.35	1.04	0.22	5.00	0.00	0.02	0.02
35.40	1.04	0.22	5.00	0.00	0.02	0.02
35.45	1.04	0.22	5.00	0.00	0.02	0.02
35.50	1.03	0.22	5.00	0.00	0.02	0.02
35.55	1.03	0.22	5.00	0.00	0.02	0.02
35.60	1.03	0.22	5.00	0.00	0.02	0.02
35.65	1.03	0.22	5.00	0.00	0.02	0.02
35.70	1.03	0.22	5.00	0.00	0.02	0.02
35.75	1.03	0.22	5.00	0.00	0.02	0.02
35.80	1.03	0.22	5.00	0.00	0.02	0.02
35.85	1.03	0.22	5.00	0.00	0.02	0.02
35.90	1.03	0.22	5.00	0.00	0.02	0.02
35.95	1.03	0.22	5.00	0.00	0.02	0.02
36.00	1.03	0.22	5.00	0.00	0.02	0.02
36.05	1.03	0.22	5.00	0.00	0.02	0.02
36.10	1.03	0.22	5.00	0.00	0.02	0.02
36.15	1.03	0.22	5.00	0.00	0.02	0.02
36.20	1.03	0.22	5.00	0.00	0.02	0.02
36.25	1.03	0.22	5.00	0.00	0.02	0.02
36.30	1.03	0.22	5.00	0.00	0.02	0.02
36.35	1.03	0.22	5.00	0.00	0.02	0.02
36.40	1.03	0.22	5.00	0.00	0.02	0.02
36.45	1.03	0.22	5.00	0.00	0.02	0.02
36.50	1.03	0.22	5.00	0.00	0.02	0.02
36.55	1.03	0.22	5.00	0.00	0.02	0.02
36.60	1.03	0.22	5.00	0.00	0.02	0.02
36.65	1.03	0.22	5.00	0.00	0.02	0.02
36.70	1.03	0.22	5.00	0.00	0.02	0.02
36.75	1.03	0.22	5.00	0.00	0.02	0.02

36.80	1.03	0.22	5.00	0.00	0.02	0.02
36.85	1.03	0.22	5.00	0.00	0.02	0.02
36.90	1.03	0.22	5.00	0.00	0.02	0.02
36.95	1.03	0.22	5.00	0.00	0.02	0.02
37.00	1.03	0.22	5.00	0.00	0.02	0.02
37.05	1.03	0.22	5.00	0.00	0.02	0.02
37.10	1.02	0.22	5.00	0.00	0.02	0.02
37.15	1.02	0.22	5.00	0.00	0.02	0.02
37.20	1.02	0.22	5.00	0.00	0.02	0.02
37.25	1.02	0.22	5.00	0.00	0.02	0.02
37.30	1.02	0.22	5.00	0.00	0.02	0.02
37.35	1.02	0.22	5.00	0.00	0.02	0.02
37.40	1.02	0.22	5.00	0.00	0.02	0.02
37.45	1.02	0.21	5.00	0.00	0.02	0.02
37.50	1.02	0.21	5.00	0.00	0.02	0.02
37.55	1.02	0.21	5.00	0.00	0.01	0.01
37.60	1.02	0.21	5.00	0.00	0.01	0.01
37.65	1.02	0.21	5.00	0.00	0.01	0.01
37.70	1.02	0.21	5.00	0.00	0.01	0.01
37.75	1.02	0.21	5.00	0.00	0.01	0.01
37.80	1.02	0.21	5.00	0.00	0.01	0.01
37.85	1.02	0.21	5.00	0.00	0.01	0.01
37.90	1.02	0.21	5.00	0.00	0.01	0.01
37.95	1.02	0.21	5.00	0.00	0.01	0.01
38.00	1.02	0.21	5.00	0.00	0.01	0.01
38.05	1.02	0.21	5.00	0.00	0.01	0.01
38.10	1.02	0.21	5.00	0.00	0.01	0.01
38.15	1.02	0.21	5.00	0.00	0.01	0.01
38.20	1.02	0.21	5.00	0.00	0.01	0.01
38.25	1.02	0.21	5.00	0.00	0.01	0.01
38.30	1.02	0.21	5.00	0.00	0.01	0.01
38.35	1.02	0.21	5.00	0.00	0.01	0.01
38.40	1.02	0.21	5.00	0.00	0.01	0.01
38.45	1.02	0.21	5.00	0.00	0.01	0.01
38.50	1.02	0.21	5.00	0.00	0.01	0.01
38.55	1.02	0.21	5.00	0.00	0.01	0.01
38.60	1.02	0.21	5.00	0.00	0.01	0.01
38.65	1.02	0.21	5.00	0.00	0.01	0.01
38.70	1.02	0.21	5.00	0.00	0.01	0.01
38.75	1.01	0.21	5.00	0.00	0.01	0.01
38.80	1.01	0.21	5.00	0.00	0.01	0.01
38.85	1.01	0.21	5.00	0.00	0.01	0.01
38.90	1.01	0.21	5.00	0.00	0.01	0.01
38.95	1.01	0.21	5.00	0.00	0.01	0.01
39.00	1.01	0.21	5.00	0.00	0.01	0.01
39.05	1.01	0.21	5.00	0.00	0.01	0.01
39.10	1.01	0.21	5.00	0.00	0.01	0.01
39.15	1.01	0.21	5.00	0.00	0.01	0.01
39.20	1.01	0.21	5.00	0.00	0.01	0.01
39.25	1.01	0.21	5.00	0.00	0.01	0.01
39.30	1.01	0.21	5.00	0.00	0.01	0.01
39.35	1.01	0.21	5.00	0.00	0.01	0.01
39.40	1.01	0.21	5.00	0.00	0.01	0.01
39.45	1.01	0.21	5.00	0.00	0.01	0.01

39.50	1.01	0.21	5.00	0.00	0.01	0.01
39.55	1.01	0.21	5.00	0.00	0.01	0.01
39.60	1.01	0.21	5.00	0.00	0.01	0.01
39.65	1.01	0.21	5.00	0.00	0.01	0.01
39.70	1.01	0.21	5.00	0.00	0.01	0.01
39.75	1.01	0.21	5.00	0.00	0.01	0.01
39.80	1.01	0.21	5.00	0.00	0.01	0.01
39.85	1.01	0.21	5.00	0.00	0.01	0.01
39.90	1.01	0.21	5.00	0.00	0.01	0.01
39.95	1.01	0.21	5.00	0.00	0.01	0.01
40.00	1.01	0.21	5.00	0.00	0.01	0.01
40.05	1.01	0.21	5.00	0.00	0.01	0.01
40.10	1.01	0.21	5.00	0.00	0.01	0.01
40.15	1.01	0.21	5.00	0.00	0.01	0.01
40.20	1.01	0.21	5.00	0.00	0.01	0.01
40.25	1.01	0.21	5.00	0.00	0.01	0.01
40.30	1.01	0.21	5.00	0.00	0.01	0.01
40.35	1.01	0.21	5.00	0.00	0.01	0.01
40.40	1.01	0.21	5.00	0.00	0.01	0.01
40.45	1.00	0.21	5.00	0.00	0.01	0.01
40.50	1.00	0.21	5.00	0.00	0.01	0.01
40.55	1.00	0.21	5.00	0.00	0.01	0.01
40.60	1.00	0.21	5.00	0.00	0.01	0.01
40.65	1.00	0.21	5.00	0.00	0.01	0.01
40.70	1.00	0.21	5.00	0.00	0.01	0.01
40.75	1.00	0.21	5.00	0.00	0.01	0.01
40.80	1.00	0.21	5.00	0.00	0.01	0.01
40.85	1.00	0.21	5.00	0.00	0.01	0.01
40.90	1.00	0.21	5.00	0.00	0.01	0.01
40.95	1.00	0.21	5.00	0.00	0.01	0.01
41.00	1.00	0.21	5.00	0.00	0.01	0.01
41.05	1.00	0.21	5.00	0.00	0.01	0.01
41.10	1.00	0.21	5.00	0.00	0.01	0.01
41.15	1.00	0.21	5.00	0.00	0.01	0.01
41.20	1.00	0.21	5.00	0.00	0.01	0.01
41.25	1.00	0.21	5.00	0.00	0.01	0.01
41.30	1.00	0.21	5.00	0.00	0.01	0.01
41.35	1.00	0.21	5.00	0.00	0.01	0.01
41.40	1.00	0.21	5.00	0.00	0.01	0.01
41.45	1.00	0.21	5.00	0.00	0.01	0.01
41.50	1.00	0.21	5.00	0.00	0.01	0.01
41.55	1.00	0.21	5.00	0.00	0.01	0.01
41.60	1.00	0.21	5.00	0.00	0.01	0.01
41.65	1.00	0.21	5.00	0.00	0.01	0.01
41.70	1.00	0.21	5.00	0.00	0.01	0.01
41.75	1.00	0.21	5.00	0.00	0.01	0.01
41.80	1.00	0.21	5.00	0.00	0.01	0.01
41.85	1.00	0.21	5.00	0.00	0.01	0.01
41.90	1.00	0.21	5.00	0.00	0.01	0.01
41.95	1.00	0.21	5.00	0.00	0.01	0.01
42.00	1.00	0.21	5.00	0.00	0.01	0.01
42.05	1.00	0.21	5.00	0.00	0.01	0.01
42.10	1.00	0.21	5.00	0.00	0.01	0.01
42.15	1.00	0.21	5.00	0.00	0.01	0.01

42.20	1.00	0.21	5.00	0.00	0.01	0.01
42.25	1.00	0.21	5.00	0.00	0.01	0.01
42.30	0.99	0.21	5.00	0.00	0.01	0.01
42.35	0.99	0.21	5.00	0.00	0.01	0.01
42.40	0.99	0.20	5.00	0.00	0.01	0.01
42.45	0.99	0.20	5.00	0.00	0.01	0.01
42.50	0.99	0.20	5.00	0.00	0.01	0.01
42.55	0.99	0.20	5.00	0.00	0.01	0.01
42.60	0.99	0.20	5.00	0.00	0.01	0.01
42.65	0.99	0.20	5.00	0.00	0.01	0.01
42.70	0.99	0.20	5.00	0.00	0.01	0.01
42.75	0.99	0.20	5.00	0.00	0.01	0.01
42.80	0.99	0.20	5.00	0.00	0.01	0.01
42.85	0.99	0.20	5.00	0.00	0.01	0.01
42.90	0.99	0.20	5.00	0.00	0.01	0.01
42.95	0.99	0.20	5.00	0.00	0.01	0.01
43.00	0.99	0.20	5.00	0.00	0.01	0.01
43.05	0.99	0.20	5.00	0.00	0.01	0.01
43.10	0.99	0.20	5.00	0.00	0.01	0.01
43.15	0.99	0.20	5.00	0.00	0.01	0.01
43.20	0.99	0.20	5.00	0.00	0.01	0.01
43.25	0.99	0.20	5.00	0.00	0.01	0.01
43.30	0.99	0.20	5.00	0.00	0.01	0.01
43.35	0.99	0.20	5.00	0.00	0.01	0.01
43.40	0.99	0.20	5.00	0.00	0.01	0.01
43.45	0.99	0.20	5.00	0.00	0.01	0.01
43.50	0.99	0.20	5.00	0.00	0.01	0.01
43.55	0.99	0.20	5.00	0.00	0.01	0.01
43.60	0.99	0.20	5.00	0.00	0.01	0.01
43.65	0.99	0.20	5.00	0.00	0.01	0.01
43.70	0.99	0.20	5.00	0.00	0.01	0.01
43.75	0.99	0.20	5.00	0.00	0.01	0.01
43.80	0.99	0.20	5.00	0.00	0.01	0.01
43.85	0.99	0.20	5.00	0.00	0.01	0.01
43.90	0.99	0.20	5.00	0.00	0.01	0.01
43.95	0.99	0.20	5.00	0.00	0.01	0.01
44.00	0.99	0.20	5.00	0.00	0.01	0.01
44.05	0.99	0.20	5.00	0.00	0.01	0.01
44.10	0.99	0.20	5.00	0.00	0.01	0.01
44.15	0.99	0.20	5.00	0.00	0.01	0.01
44.20	0.99	0.20	5.00	0.00	0.01	0.01
44.25	0.99	0.20	5.00	0.00	0.01	0.01
44.30	0.98	0.20	5.00	0.00	0.01	0.01
44.35	0.98	0.20	5.00	0.00	0.01	0.01
44.40	0.98	0.20	5.00	0.00	0.01	0.01
44.45	0.98	0.20	5.00	0.00	0.01	0.01
44.50	0.98	0.20	5.00	0.00	0.01	0.01
44.55	0.98	0.20	5.00	0.00	0.01	0.01
44.60	0.98	0.20	5.00	0.00	0.01	0.01
44.65	0.98	0.20	5.00	0.00	0.01	0.01
44.70	0.98	0.20	5.00	0.00	0.01	0.01
44.75	0.98	0.20	5.00	0.00	0.01	0.01
44.80	0.98	0.20	5.00	0.00	0.01	0.01
44.85	0.98	0.20	5.00	0.00	0.01	0.01

44.90	0.98	0.20	5.00	0.00	0.01	0.01
44.95	0.98	0.20	5.00	0.00	0.01	0.01
45.00	0.98	0.20	5.00	0.00	0.01	0.01
45.05	0.98	0.20	5.00	0.00	0.01	0.01
45.10	0.98	0.20	5.00	0.00	0.01	0.01
45.15	0.98	0.20	5.00	0.00	0.01	0.01
45.20	0.98	0.20	5.00	0.00	0.01	0.01
45.25	0.98	0.20	5.00	0.00	0.01	0.01
45.30	0.98	0.20	5.00	0.00	0.01	0.01
45.35	0.98	0.20	5.00	0.00	0.01	0.01
45.40	0.98	0.20	5.00	0.00	0.01	0.01
45.45	0.98	0.20	5.00	0.00	0.01	0.01
45.50	0.98	0.20	5.00	0.00	0.01	0.01
45.55	0.98	0.20	5.00	0.00	0.01	0.01
45.60	0.98	0.20	5.00	0.00	0.01	0.01
45.65	0.98	0.20	5.00	0.00	0.01	0.01
45.70	0.98	0.20	5.00	0.00	0.01	0.01
45.75	0.98	0.20	5.00	0.00	0.01	0.01
45.80	0.98	0.20	5.00	0.00	0.01	0.01
45.85	0.98	0.20	5.00	0.00	0.01	0.01
45.90	0.98	0.20	5.00	0.00	0.01	0.01
45.95	0.98	0.20	5.00	0.00	0.01	0.01
46.00	0.98	0.20	5.00	0.00	0.01	0.01
46.05	0.98	0.20	5.00	0.00	0.01	0.01
46.10	0.98	0.20	5.00	0.00	0.01	0.01
46.15	0.98	0.20	5.00	0.00	0.01	0.01
46.20	0.98	0.20	5.00	0.00	0.01	0.01
46.25	0.98	0.20	5.00	0.00	0.01	0.01
46.30	0.98	0.20	5.00	0.00	0.01	0.01
46.35	0.98	0.20	5.00	0.00	0.01	0.01
46.40	0.98	0.20	5.00	0.00	0.01	0.01
46.45	0.97	0.20	5.00	0.00	0.01	0.01
46.50	0.97	0.20	5.00	0.00	0.01	0.01
46.55	0.97	0.20	5.00	0.00	0.01	0.01
46.60	0.97	0.20	5.00	0.00	0.01	0.01
46.65	0.97	0.20	5.00	0.00	0.01	0.01
46.70	0.97	0.20	5.00	0.00	0.01	0.01
46.75	0.97	0.20	5.00	0.00	0.01	0.01
46.80	0.97	0.20	5.00	0.00	0.01	0.01
46.85	0.97	0.20	5.00	0.00	0.01	0.01
46.90	0.97	0.20	5.00	0.00	0.01	0.01
46.95	0.97	0.20	5.00	0.00	0.01	0.01
47.00	0.97	0.20	5.00	0.00	0.01	0.01
47.05	0.97	0.20	5.00	0.00	0.01	0.01
47.10	0.97	0.20	5.00	0.00	0.01	0.01
47.15	0.97	0.20	5.00	0.00	0.01	0.01
47.20	0.97	0.20	5.00	0.00	0.01	0.01
47.25	0.97	0.20	5.00	0.00	0.01	0.01
47.30	0.97	0.20	5.00	0.00	0.01	0.01
47.35	0.97	0.20	5.00	0.00	0.01	0.01
47.40	0.97	0.19	5.00	0.00	0.00	0.00
47.45	0.97	0.19	5.00	0.00	0.00	0.00
47.50	0.97	0.19	5.00	0.00	0.00	0.00
47.55	0.97	0.19	5.00	0.00	0.00	0.00

47.60	0.97	0.19	5.00	0.00	0.00	0.00
47.65	0.97	0.19	5.00	0.00	0.00	0.00
47.70	0.97	0.19	5.00	0.00	0.00	0.00
47.75	0.97	0.19	5.00	0.00	0.00	0.00
47.80	0.97	0.19	5.00	0.00	0.00	0.00
47.85	0.97	0.19	5.00	0.00	0.00	0.00
47.90	0.97	0.19	5.00	0.00	0.00	0.00
47.95	0.97	0.19	5.00	0.00	0.00	0.00
48.00	0.97	0.19	5.00	0.00	0.00	0.00
48.05	0.97	0.19	5.00	0.00	0.00	0.00
48.10	0.97	0.19	5.00	0.00	0.00	0.00
48.15	0.97	0.19	5.00	0.00	0.00	0.00
48.20	0.97	0.19	5.00	0.00	0.00	0.00
48.25	0.97	0.19	5.00	0.00	0.00	0.00
48.30	0.97	0.19	5.00	0.00	0.00	0.00
48.35	0.97	0.19	5.00	0.00	0.00	0.00
48.40	0.97	0.19	5.00	0.00	0.00	0.00
48.45	0.97	0.19	5.00	0.00	0.00	0.00
48.50	0.97	0.19	5.00	0.00	0.00	0.00
48.55	0.97	0.19	5.00	0.00	0.00	0.00
48.60	0.97	0.19	5.00	0.00	0.00	0.00
48.65	0.97	0.19	5.00	0.00	0.00	0.00
48.70	0.97	0.19	5.00	0.00	0.00	0.00
48.75	0.96	0.19	5.00	0.00	0.00	0.00
48.80	0.96	0.19	5.00	0.00	0.00	0.00
48.85	0.96	0.19	5.00	0.00	0.00	0.00
48.90	0.96	0.19	5.00	0.00	0.00	0.00
48.95	0.96	0.19	5.00	0.00	0.00	0.00
49.00	0.96	0.19	5.00	0.00	0.00	0.00
49.05	0.96	0.19	5.00	0.00	0.00	0.00
49.10	0.96	0.19	5.00	0.00	0.00	0.00
49.15	0.96	0.19	5.00	0.00	0.00	0.00
49.20	0.96	0.19	5.00	0.00	0.00	0.00
49.25	0.96	0.19	5.00	0.00	0.00	0.00
49.30	0.96	0.19	5.00	0.00	0.00	0.00
49.35	0.96	0.19	5.00	0.00	0.00	0.00
49.40	0.96	0.19	5.00	0.00	0.00	0.00
49.45	0.96	0.19	5.00	0.00	0.00	0.00
49.50	0.96	0.19	5.00	0.00	0.00	0.00
49.55	0.96	0.19	5.00	0.00	0.00	0.00
49.60	0.96	0.19	5.00	0.00	0.00	0.00
49.65	0.96	0.19	5.00	0.00	0.00	0.00
49.70	0.96	0.19	5.00	0.00	0.00	0.00
49.75	0.96	0.19	5.00	0.00	0.00	0.00
49.80	0.96	0.19	5.00	0.00	0.00	0.00
49.85	0.96	0.19	5.00	0.00	0.00	0.00
49.90	0.96	0.19	5.00	0.00	0.00	0.00
49.95	0.96	0.19	5.00	0.00	0.00	0.00
50.00	0.96	0.19	5.00	0.00	0.00	0.00
50.05	0.96	0.19	5.00	0.00	0.00	0.00
50.10	0.96	0.19	5.00	0.00	0.00	0.00
50.15	0.96	0.19	5.00	0.00	0.00	0.00
50.20	0.96	0.19	5.00	0.00	0.00	0.00
50.25	0.96	0.19	5.00	0.00	0.00	0.00

50.30	0.96	0.19	5.00	0.00	0.00	0.00
50.35	0.96	0.19	5.00	0.00	0.00	0.00
50.40	0.96	0.19	5.00	0.00	0.00	0.00
50.45	0.96	0.19	5.00	0.00	0.00	0.00
50.50	0.96	0.19	5.00	0.00	0.00	0.00
50.55	0.96	0.19	5.00	0.00	0.00	0.00
50.60	0.96	0.19	5.00	0.00	0.00	0.00
50.65	0.96	0.19	5.00	0.00	0.00	0.00
50.70	0.96	0.19	5.00	0.00	0.00	0.00
50.75	0.96	0.19	5.00	0.00	0.00	0.00
50.80	0.96	0.19	5.00	0.00	0.00	0.00
50.85	0.96	0.19	5.00	0.00	0.00	0.00
50.90	0.96	0.19	5.00	0.00	0.00	0.00
50.95	0.96	0.19	5.00	0.00	0.00	0.00
51.00	0.96	0.19	5.00	0.00	0.00	0.00

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

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

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1 atm (atmosphere) = 1 tsf (ton/ft2)

CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

APPENDIX D

REFERENCES

RMA GeoScience
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GEOTECHNICAL CONSULTANTS

APPENDIX D

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July 17, 2023 RMA Project No. 07-230020-0

Mr. Rick Lawson
Clovis Unified School District
1470 Herndon Avenue
Clovis, CA 93611

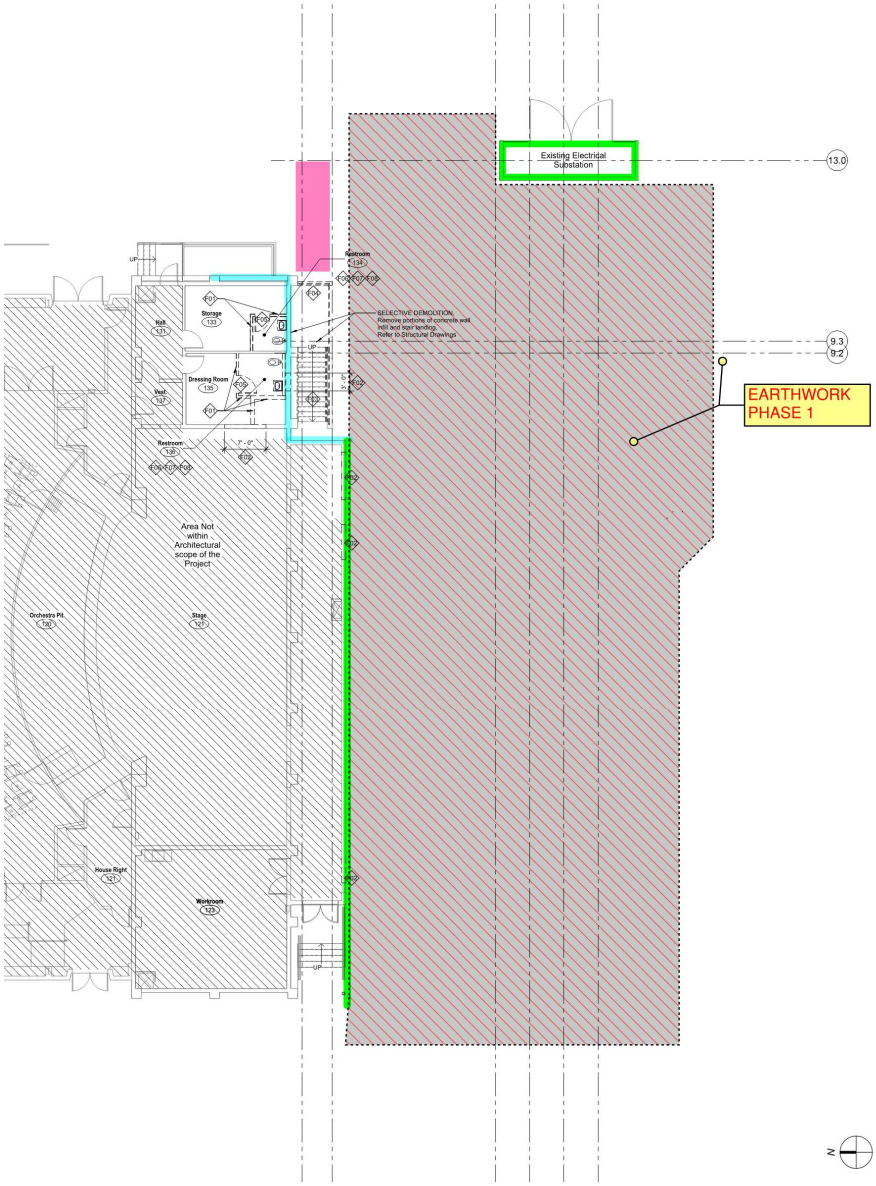
Subject: Addendum – Phase 1 & Phase 2 Earthwork
New Addition to the Mercedes Edwards Theater at Clark Intermediate School
902 5th Street
Clovis, CA 93612

Dear Mr. Lawson:

At the request of Mike Fennacy, Principal/Architect, of Darden Architects, RMA GeoScience (RMA) has prepared this addendum based on information provided by Mr. Fennacy, to address earthwork during the Phase 1 and Phase 2 stages of the project. Phase 1 earthwork will include an area indicated on the image presented below. Phase 2 earthwork will include areas inside and/or adjacent to green and blue lines on the referenced image presented below. Additional recommendations for specific conditions based on provided information are presented herein. All other recommendations for earthwork in the Geotechnical Investigation and Geohazards Study Report dated March 10, 2023 remain applicable.

Phase 1 Earthwork – All recommendations for earthwork in the Geotechnical Investigation and Geohazards Study Report dated March 10, 2023 remain applicable. Where adjacent structures are present, the horizontal extent of the over-excavation can be reduced to where the space allows. Prior to over-excavation adjacent to grid line G.0, RMA should be provided the opportunity to review the soil conditions adjacent to the existing footings. As an alternative to excavating the entire length of the new grid line G.0 footing, slot cuts can be performed.

Phase 2 Earthwork - Construction will include selective demolition of continuous walls infill and stair landing. Where space is limited, use of a 2-sack slurry can be used to backfill voids. Shoring or underpinning may be required when the existing foundation supporting soils experience excessive caving. There are conditions in this area that are not known at this time. It is recommended that a representative of RMA GeoScience be provided the opportunity to inspect the conditions prior and/or during the demolition.



CLOSING REMARKS

The information contained in this report was provided in accordance with generally accepted engineering principles and practices. No other warranty, either express or implied, is made. This report has been prepared for Clovis Unified School District and the Project Design Team to be used for the design and construction of the subject project. Anyone using this report for any other purpose must draw their own conclusions regarding required construction procedures and subsurface conditions.

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Thank you for the opportunity to be of service to you on this project. If you should have any questions regarding the information provided in this report, please contact the undersigned at (559) 708-8865.

Respectfully submitted,
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SECTION 232113
HYDRONIC PIPING

PART 1 - GENERAL

1.1 WORK INCLUDED:

A. Pipe and pipe fittings.
B. Valves.
C. Heating water piping system.
D. Chilled water piping system.
E. Chilled/Hot water piping system.
F. Condensate drains.

1.2 REFERENCES:

A. ANSI/ASME - Boiler and Pressure Vessel Code.
B. ANSI/ASME Sec 9 - Welding and Brazing Qualifications.
C ANSI/ASME B16.3 - Malleable Iron Threaded Fittings Class 150 and 300.
D. ANSI/ASME B31.9 - Building Services Piping.
E. ANSI/ASTM D2466 - Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
F. ANSI/AWS A5.8 - Brazing Filler Metal.
G. ANSI/AWS Dl.1 - Structural Welding Code.
H. ASTM A53 - Pipe, Steel, Black and Hot-Dipped Zinc Coated, Welded and Seamless.
I. ASTM A120 - Pipe, Steel, Black and Hot-Dipped Zinc Coated (Galvanized), Welded and Seamless, for Ordinary Uses.
J. ASTM A234 - Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures.
K. ASTM B32 - Solder Metal.
L. ASTM B88 - Seamless Copper Water Tube.
M. ASTM D1785 - Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
N. ASTM D2241 - Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR).
O. ASTM D2310 - Machine-Made Reinforced Thermosetting Resin Pipe.
P. ASTM D2466 - Socket-Type PVC Plastic Type Fittings, Schedule 40.
Q. ASTM D2467 - Socket-Type PVC Plastic Type Fittings, Schedule 80.
R. ASTM D2855 - Making Solvent-Cemented Joints with PVC Pipe and Fittings.
S. ASTM F477 - Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

1.3 REGULATORY REQUIREMENTS:

A. Conform to ANSI/ASME B31.9.

1.4 QUALITY ASSURANCE:

A. Valves: Manufacturer's name and pressure rating marked on valve body. Valves shall be manufactured in the USA.
B. Welding Materials and Procedures: Conform to ANSI/ASME SEC 9 and applicable state labor regulations.
C. Welders Certification: In accordance with ANSI/ASME SEC 9. ANSI/AWS D1.1.

1.5 SUBMITTALS:

A. Submit product data under provisions of Section 01300.
B. Include data on pipe materials, pipe fittings, valves, and accessories.
C. Include welder's certification of compliance with ANSI/ASME SEC 9 or ANSI/AWS D1.1.

1.6 DELIVERY, STORAGE AND HANDLING:

A. Deliver material to jobsite in new, dry, unopened, and well-marked containers showing product and manufacturer's name.
B. Material handling equipment shall be selected and operated so as not to damage equipment or existing construction.
C. Deliver material in sufficient quantity to allow continuity of work.
D. No material may be stored uncovered in the open or in contact with the ground.
E. Handle material to prevent damage during transportation and installation.
F. The Contractor shall assume full responsibility for the protection and safekeeping of products stored on premises.
G. Deliver and store valves in shipping containers with labeling in place.

PART 2 – PRODUCTS

2.1 HEATING WATER/CHILLED/HOT WATER PIPING, ABOVE GROUND:

A. Steel Pipe: ASTM A53 or A120, Schedule 40, black.

1. Fittings: ANSI/ASTM B16.3, malleable iron or ASTM A234, forged steel welding type fittings.
2. Joints: Screwed, or ANSI/AWS D1.1, welded.

B. Copper Tubing: ASTM B88, Type L, hard drawn, may be used at unit ventilators and air handlers; all other shall be steel pipe.

1. Fittings: ANSI/ASME B 16.23 cast brass of ANSI/ASME B 16.29 solder wrought copper.
2. Joints: ASTM B32, solder, Grade 95TA. ANSI/AWS A5.8, BCuP silver braze.

2.2 EQUIPMENT DRAINS AND OVERFLOWS:

A. Steel Pipe: ASTM A53 or A120, Schedule 40 galvanized.
B. Fittings: Galvanized cast iron, or ANSI/ASTM B16.3 malleable iron.
C. Joints: Screwed or grooved mechanical couplings.
D. Copper Tubing: ASTM B88, Type M, K hard drawn.
E. Fittings: ANSI/ASME B16.23 cast brass, or ANSI/ASME B16.29 solder wrought copper.
F. Joints: ASTM B32, solder, Grade 95TA. ANSI/AWS A5.8, BCuP silver braze.

2.3 FLANGES, UNIONS AND COUPLINGS:

A. Pipe Size 2 Inches and Under: 150 psig malleable iron unions for threaded ferrous piping; bronze unions for copper pipe, soldered joints.
B. Pipe Size Over 2 Inches: 150 psig forged steel slip-on flanges for ferrous piping; bronze

flanges for copper piping; 1/16-inch-thick preformed neoprene.

2.4 GATE VALVES:

A. Up to 2” Inches: Threaded or soldered, lead-free, Bronze body, non-rising stem, malleable iron hand wheel w/ stainless steel nut. Nibco T-113 or equal.
B. Over 2” Inches: Flanged, lead-free, ductile iron body, resilient wedge non rising stem w/ 2” operating nut below grade or hand wheel above grade.

2.5 GLOBE VALVES:

A. Up to 2 Inches: Bronze body, bronze trim, rising stem and handwheel, inside screw, renewable composition disc, screwed ends, with backseating capacity.
B. Over 2 Inches: Iron body, bronze trim, rising stem, handwheel OS&Y, plug-type disc, flanged ends, renewable seat and disc.

2.6 BALL VALVES:

A. Up to 2 Inches: Bronze one piece body, stainless steel ball, Teflon seats and stuffing box ring, lever handle, and balancing stops, threaded ends with union.
B. Over 2 Inches: Cast steel body, chrome plated steel ball, Teflon seat and stuffing box seals, lever handle, or gear drive handwheel for sizes 10 inches and over, ranged.

2.7 PLUG COCKS:

A. Up to 2 Inches: Bronze body, bronze tapered plug, non-lubricated, Teflon packing, threaded ends, with one wrench operator for every ten plug cocks.
B. Over 2 Inches: Cast iron body and plug, pressure lubricated, Teflon packing, flanged ends, with wrench operator with set screw.

2.8 BUTTERFLY VALVES:

A. Iron body, bronze or stainless steel disc, resilient replaceable seat for service to 250 degrees F wafer or lug ends, extended neck, 10-position Iever handle.

2.9 SPRING LOADED CHECK VALVES:

A. Iron body, bronze trim, stainless steel spring, renewable composition disc, screwed, wafer or flanged ends.

2.10 RELIEF VALVES:

A. Bronze body, Teflon seat, stainless steel stem and springs, automatic, direct pressure actuated, capacities ASME certified and labeled.

PART 3 - EXECUTION

3.1 PREPARATION:

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare piping connections to equipment with flanges or unions.

D. After completion, fill, clean, and treat systems.

3.2 INSTALLATION:

A. Route piping in orderly manner, plumb and parallel to building structure, and maintain gradient.
B. Install piping to conserve building space, and not interfere with use of space and other work.
C. Group piping whenever practical at common elevations.
D. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Slip joints for underground piping when certified by pipe manufacturer shall be acceptable as expansion compensation. Welded or other mechanical joints shall require expansion loops or joints as required.
E. Provide clearance for installation of insulation, and access to valves and fittings.
F. Provide access where valves and fittings are not exposed.
G. Slope piping and arrange systems to drain al low points. Use eccentric reducers to maintain top of pipe level.
H. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
I. Prepare pipe, fittings, supports, and accessories for finish painting. Refer to Section 09900.
J. Install valves with stems upright or horizontal, not inverted.
K. PVC material will not be allowed within a building. Use only for exterior.

3.3 APPLICATION:

A. Install unions downstream of valves and at equipment or apparatus connections.
B. Install brass male adapters each side of valves in copper piped system. Sweat solder adapters to pipe.
C. Install gate, ball, or butterfly valves for shut-off and to isolate equipment, part of systems, or vertical risers.
D. Install gate, ball, or butterfly valves for throttling, bypass, or manual flow control services.
E. Provide spring loaded check valves on discharge of condenser water pumps.
F. Use plug cocks for throttling service. Use non-lubricated plug cocks only when shut-off or isolating valves are also provided.
G. Use butterfly valves in heating, and chilled water systems interchangeably with gate and globe valves.
H. Use only butterfly valves in chilled water systems for throttling and isolation service.
I. Use lug end butterfly valves to isolate equipment.
J. Provide 3/4-inch gate or ball drain valves at main shut-off valves, low points of piping, bases of vertical risers, and at equipment. Pipe to nearest drain.
K. Use all-electric unions or couplings where dissimilar metals are joined.

END OF SECTION

SECTION 232116
HYDRONIC SPECIALTIES

PART 1 - GENERAL

1.1 WORK INCLUDED:

A. Expansion tanks.
B. Air vents.
C. Air separators.
D. Strainers.
E. Pump suction fittings.
F. Combination fittings.
G. Flow indicators, controls, meters.
H. Relief valves.

1.2 REFERENCES:

A. ANSI/ASME - Boilers and Pressure Vessels Code.

1.3 REGULATORY REQUIREMENTS:

A. Conform to ANSI/ASME Boilers and Pressure Vessels Code Section 8D for manufacture of tanks.

1.4 QUALITY ASSURANCE:

A. Manufacturer: For each product specified, provide components by same manufacturer throughout. Valves shall be manufactured in the USA.

1.5 SUBMITTALS:

A. Submit shop drawings and product data under provisions of Specification Section-SUBMITTALS.
B. Submit shop drawings and product data for manufactured products and assemblies required for this project.
C. Include component sizes, rough-in requirements, service sizes, and finishes. Include product description, model and dimensions.
D. Submit inspection certificates for pressure vessels from authority having jurisdiction.
E. Submit manufacturer's installation instructions under provisions of Specification Section-SUBMITTALS.

1.6 OPERATION AND MAINTENANCE DATA:

A. Submit operation and maintenance data under provisions of Specification Section-PROJECT CLOSEOUT.
B. Include installation instruction, assembly views, lubrication instructions, and replacement parts list.

1.7 DELIVERY, STORAGE AND HANDLING:

A. Deliver material to jobsite in new, dry, unopened, and well-marked containers showing product and manufacturer's name.
B. Material handling equipment shall be selected and operated so as not to damage equipment or existing construction.
C. Deliver material in sufficient quantity to allow continuity of work.
D. No material may be stored uncovered in the open or in contact with the ground.
E. Handle material to prevent damage during transportation and installation.
F. The Contractor shall assume full responsibility for the protection and safekeeping of products stored on premises.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS - DIAPHRAGM-TYPE COMPRESSION TANKS:

A. Bell & Gossett.
B. Amtrol.
C. Taco.
D. Substitutions: Under provisions of Specification Section-SUBSTITUTIONS.

2.2 DIAPHRAGM-TYPE COMPRESSION TANKS:

A. Construction: Welded steel, tested and stamped in accordance with Section 8D of ANSI/ASME Code; supplied with National Board Form U-1, rated for working pressure of 125 psig, with flexible diaphragm sealed into tank, and steel legs or saddles.
B. Accessories: Pressure gauge and air-charging fitting, tank drain; pre-charge to 12 psig.
C. Size: See Schedule on Drawings.

2.3 ACCEPTABLE MANUFACTURERS - AIR VENTS:

A. Bell & Gossett.
B. Amtrol.
C. Taco.
D. Substitutions: Under provisions of Specification Section-SUBSTITUTIONS.

2.4 AIR VENTS:

A. Manual Type: Short vertical sections of 2-inch diameter pipe to form air chamber, with 1/8-inch

brass needle valve at top of chamber (Amtrol 710).

B. Float Type: Brass or semi-steel body, copper float, stainless steel valve and valve seat; suitable for system operating temperature and pressure (Amtrol 720); with isolating valve.

2.5 ACCEPTABLE MANUFACTURERS - AIR SEPARATORS:

A. Bell & Gossett.
B. Amtrol.
C. Taco.
D. Substitutions: Under provisions of Section 01630.

2.6 AIR SEPARATORS:

A. Dip Tube Fitting: For 125 psig operating pressure; to prevent free air collected in boiler from rising info system.
B. In-line Air Separators: Cast iron for sizes 1 1/2 inches and smaller, or steel for sizes 2 inches and larger, tested and stamped in accordance with Section 8D of ANSI/ASME Code; for 125 psig operating pressure (Amtrol Model AS).
C. Air Elimination Valve: Bronze, float operated, for 125 psig operating pressure.
D. Combination Air Separators/Strainers: Steel, tested and stamped in accordance with Section 8D of ANSI/ASME Code, for 125 psig operating pressure, with galvanized steel integral strainer with 3/16-inch perforations, tangential inlet and outlet connections, and internal stainless steel air collector tube.

2.7 STRAINERS:

A. Size 2 inches and Under: Screwed brass or iron body for 175 psig working pressure, Y pattern with 1/32-inch stainless steel perforated screen.
B. Size 2 1/2 inch to 4 inch: Flanged iron body for 175 psig working pressure, Y pattern with 3/64-inch stainless steel perforated screen.
C. Size 5 inch and Larger: Flanged iron body for 175 psig working pressure, basket pattern with 1/8-inch stainless steel perforated screen.

2.8 PUMP SUCTION FITTINGS:

A. Fitting: Angle pattern, cast-iron body, threaded for 2 inch and smaller, flanged for 2 1/2 inch and larger, rated for 175 psig working pressure, with inlet vanes, cylinder strainer with 3/16-inch diameter openings, disposable fine mesh strainer to fit over cylinder strainer, and permanent magnet located in flow stream and removable for cleaning.
B. Accessories: Adjustable foot support, blowdown tapping in bottom, gauge tapping in side.

2.9 ACCEPTABLE MANUFACTURERS - COMBINATION PUMP DISCHARGE VALVES:

A. Bell & Gossett.

B. Amtrol.
C. Taco.
D. Substitutions: Under provisions of Section 01600.

2.10 COMBINATION PUMP DISCHARGE VALVES:

A. Valve: Straight or angle pattern, flanged cast-iron valve body with bolt-on bonnet for 175 psig operating pressure, non-slam check valve with spring-loaded bronze disc and seat, stainless steel stem, and calibrated adjustment permitting flow regulation.

2.11 RELIEF VALVES:

A. Bronze body, Teflon seat, stainless steel stem and springs, automatic, direct pressure actuated, capacities ASME certified and labeled.

PART 3 - EXECUTION

3.1 INSTALLATION AND APPLICATION:

A. Install specialties in accordance with manufacturer's instructions to permit intended performance.
B. Support tanks inside building from building structure, in accordance with manufacturer's instructions and seismic details on drawings.
C. Where large air quantities can accumulate, provide enlarged air collection standpipes.
D. Provide manual air vents at system high points and as indicated.
E. For automatic air vents in ceiling spaces or other concealed locations, provide vent tubing to nearest drain.
F. Provide air separator on suction side of system circulation pump and connect to expansion tank.
G. Provide valved drain and hose connection on strainer blow down connection.
H. Support pump fittings with floor mounted pipe and flange supports.
I. Provide relief valves on pressure tanks, low pressure side of reducing valves, heat exchangers, and expansion tanks.
J. Select system relief valve capacity so that it is greater than make-up pressure reducing valve capacity. Select equipment relief valve capacity to exceed rating of connected equipment.
K. Pipe relief valve outlet to nearest floor drain.
L. Where one line vents several relief valves, make cross sectional area equal to sum of individual vent areas.

END OF SECTION

SECTION 232123
HVAC PUMPS

PART 1 - GENERAL

1.1 WORK INCLUDED:

A. In-line circulators.

1.2 REFERENCES:

A. ANSI/UL 778 - Motor Operated Water Pumps.

1.3 QUALITY ASSURANCE:

A. Manufacturer Company specializing in manufacture, assembly, and field performance of pumps with minimum three years experience.
B. Alignment Base mounted pumps shall be aligned by qualified millwright and alignment certified.

1.4 SUBMITTALS:

A. Submit shop drawings and product data under provisions of Specification Section-SUBMITTALS.
B. Submit certified pump curves showing performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable.
C. Submit manufacturer's installation instructions under provisions of Specification Section-SUBMITTALS.

1.5 OPERATION AND MAINTENANCE DATA:

A. Submit operation and maintenance data under provisions of Specification Section-PROJECT CLOSEOUT.
B. Include installation instructions, assembly views, lubrication instructions, and replacement parts list.

1.6 DELIVERY, STORAGE AND HANDLING:

A. Deliver material to jobsite in new, dry, unopened, and well-marked containers showing product and manufacturer’s name.

B. Material handling equipment shall be selected and operated so as not to damage equipment or existing construction.
C. Deliver material in sufficient quantity to allow continuity of work.
D. No material may be stored uncovered in the open or in contact with the ground.
E. Handle material to prevent damage during transportation and installation.
F. The Contractor shall assume full responsibility for the protection and safekeeping of products stored on premises.

1.7 EXTRA PARTS:

A. Provide one extra set of mechanical seals for pumps.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS:

A. Armstrong.
B. Grundfos.
C. B & G.
D. Substitutions: Under provisions of Specification Section-SUBSTITUTIONS.

2.2 GENERAL CONSTRUCTION REQUIREMENTS:

A. Balance: Rotating parts, statically and dynamically.
B. Construction: To permit servicing without breaking piping or motor connections.
C. Pump Motors: Operate at 1750 rpm, unless specified otherwise.
D. Pump Connections: Flanged.

2.3 VERTICAL IN-LINE PUMPS:

A. Type: Vertical, single stage, close coupled, radially or horizontally split casing, for in-line mounting, for 175 psig working pressure.
B. Casing: Cast iron, with suction and discharge gauge port, casing wear ring, seal flush connection, drain plug, flanged suction and discharge.
C. Impeller bronze, fully enclosed, keyed directly to motor shaft or extension.
D. Shaft stainless steel.
E. Seal: Carbon rotating against a stationary ceramic seat, viton fitted, 225 degrees F maximum continuous operating temperature.

PART 3 - EXECUTION

3.1 INSTALLATION:

A. Install pumps in accordance with manufacturer's instructions.

B. Provide access space around pumps for service. Provide no less than minimum as recommended by manufacturer.
C. Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.
D. Decrease from line size with long radius reducing elbows or reducers. Support piping adjacent to pump such that no weight is carried on pump casings. For close coupled or base mounted pumps, provide supports under elbows on pump suction and discharge line sizes four inches and over.
E. Provide line sized shut-off valve and strainer on pump suction, and line sized soft seat check valve and balancing valve or combination pump discharge valve on pump discharge.
F. Provide air cock and drain connection on horizontal pump casings.
G. Provide drains for bases and seals, piped to and discharging into floor drains.
H. Lubricate pumps before start-up.
I. Install close coupled and base mounted pumps on concrete base, with anchor bolts, set and level, and grout in place.

END OF SECTION

SECTION 232500
CHEMICAL WATER TREATMENT

PART 1 - GENERAL

1.1 SECTION INCLUDES:

A. Cleaning of piping systems.
B. Chemical feeder equipment.
C. Treatment for closed systems.

1.2 SUBMITTALS:

A. Submit shop drawings under provisions of Specification Section-SUBMITTALS.
B. Submit shop drawings indicating system schematics, equipment locations, and controls schematics.
C. Submit product data under provisions of Specification Section-SUBMITTALS.
D. Submit product data indicating chemical treatment materials, chemicals, and equipment.
E. Submit manufacturer's installation instructions under provisions of Specification Section-SUBMITTALS.
F. Submit manufacturer's field reports.
G. Submit reports indicating start-up of treatment systems is completed and operating properly.
H. Submit reports indicating analysis of system water after cleaning and after treatment.

1.3 OPERATION AND MAINTENANCE DATA:

A. Submit operation and maintenance data under provisions of Specification Section-PROJECT CLOSEOUT.
B. Include data on chemical feed pumps, agitators, and other equipment including spare parts lists, procedures, and treatment programs.
C. Include step by step instructions on test procedures including target concentrations.

1.4 QUALIFICATIONS:

A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum three years documented experience. Company shall have local representatives with water analysis laboratories and full-time service personnel.

1.5 REGULATORY REQUIREMENTS:

A. Conform to applicable EPA code for addition of non-potable chemicals to building mechanical systems and for delivery to public sewage systems.

1.6 MAINTENANCE SERVICE:

A. Furnish service and maintenance of treatment systems for one year from date of substantial completion.
B. Provide semiannual technical service visits to perform field inspections and make water analysis on site. Detail findings in writing on proper practices, chemical treating requirements, and corrective actions needed. Submit two copies of field service report after each visit.
C. Provide laboratory and technical assistance services for warranty period.
D. Include two-hour training course for operating personnel, instructing them on installation, care, maintenance, testing, and operation of water treatment systems. Arrange course at start-up of systems.
E. Provide on-site inspections of equipment during scheduled or emergency shutdown to properly evaluate success of water treatment program and make recommendations in writing based upon these inspections.

1.7 MAINTENANCE MATERIALS:

A. Submit maintenance materials under provisions of Specification Section-PROJECT CLOSEOUT.
B. Provide sufficient chemicals for treatment and testing during warranty period.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. San Joaquin Chemicals.
B. Substitutions: Under provisions of Specification Section-SUBSTITUTIONS.

2.2 MATERIALS:

A. System Cleaner:
   1. Liquid alkaline compound with emulsifying agents and detergents to remove grease and petroleum products.
   2. Algaecide, chlorine release agents such as sodium hypochlorite or calcium hypochlorite, or microbiocides such as quarternary ammonia compounds, tributyl tin oxide, methylene bis (thiocyanate) or isothiazolones.

B. Closed System Treatment (Water):
   1. Sequestering agent to reduce deposits and adjust ph.
   2. Corrosion inhibitors.
   3. Conductivity enhancers.

2.3 EQUIPMENT:

A. Bypass (Pot) Feeder 5.0 gal. quick opening cap for working pressure of 175 psig PART 3 – EXECUTION

PART 3 - EXECUTION

3.1 PREPARATION:

A. Systems shall be operational, filled, started, and vented prior to cleaning. Use water meter to record capacity in each system.
B. Place terminal control valves in open position during cleaning.

3.2 CLEANING SEQUENCE:

A. Add cleaner to closed systems at concentration as recommended by manufacturer.
B. Hot Water Heating Systems: Apply heat while circulating, slowly raising temperature to 160 degrees F and maintain for 12 hours minimum. Remove heat and circulate to 100 degrees F or less; drain systems as quickly as possible and refill with clean water. Circulate for six hours at design temperatures, then drain. Refill with clean water and repeat until system cleaner is removed.
C. Chilled Water Systems: Circulate for 48 hours, then drain systems as quickly as possible. Refill with clean water, circulate for 24 hours, then drain. Refill with clean water and repeat until system cleaner is removed.
D. Use neutralizer agents on recommendation of system cleaner supplier and review of
E. District/Engineer.
F. Remove, clean, and replace strainer screens.
G. Inspect, remove sludge, and flush low points with clean water after cleaning process is completed. Include disassembly of components as required.

3.3 INSTALLATION:

A. Install in accordance with manufacturer's instructions.

3.4 CLOSED SYSTEM TREATMENT:

A. Provide one bypass feeder on each system. Install isolating and drain valves and necessary piping. Install around globe valve downstream of circulating pumps unless indicated otherwise.
B. Introduce closed system treatment through bypass feeder when required or indicated by test.

END OF SECTION

SECTION 235216
CONDENSING BOILERS

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. This Section includes packaged, factory-fabricated and -assembled, gas-fired, fire-tube condensing boilers, trim, and accessories for generating hot water.

1.3 SUBMITTALS

A. Product Data: Include performance data, operating characteristics, furnished specialties, and accessories.

B. Shop Drawings: For boilers, boiler trim, and accessories. Include plans, elevations, sections, details, and attachments to other work.

1. Design calculations and vibration isolation base details, signed and sealed by a qualified professional engineer.

a. Design Calculations: Calculate requirements for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.
b. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment. Include auxiliary motor slides and rails and equipment mounting frames.

2. Wiring Diagrams: Power, signal, and control wiring.

C. Source quality-control test reports.

D. Field quality-control test reports.

E. Operation and Maintenance Data: For boilers to include in emergency, operation, and maintenance manuals.

F. Warranty: Special warranty specified in this Section.

G. Other Informational Submittals:

1. ASME Stamp Certification and Report: Submit "A," "S," or "PP" stamp certificate of authorization, as required by authorities having jurisdiction, and document hydrostatic testing of piping external to boiler.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. ASME Compliance: Fabricate and label boilers to comply with ASME Boiler and Pressure Vessel Code.

C. ASHRAE/IESNA 90.1 Compliance: Boilers shall have minimum efficiency according to "Gas and Oil Fired Boilers - Minimum Efficiency Requirements."

D. DOE Compliance: Minimum efficiency shall comply with 10 CFR 430, Subpart B, Appendix N, "Uniform Test Method for Measuring the Energy Consumption of Furnaces and Boilers."

E. UL Compliance: Test boilers for compliance with UL 795, "Commercial-Industrial Gas Heating Equipment." Boilers shall be listed and labeled by a testing agency acceptable to authorities having jurisdiction.

1.5 COORDINATION

A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 03.

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of boilers that fail in materials or workmanship within specified warranty period.

1. Warranty Period for Fire-Tube Condensing Boilers:

   a. Pressure Vessel/Heat Exchanger Failure due to Flue Gas Condensate Corrosion and/or Defective Material/Workmanship: Non-prorated period of 10 years from the date of shipment from factory.
   b. Pressure Vessel/Heat Exchanger Failure due to Thermal Shock: Lifetime of the boiler.
   c. Burner Failure due to Defective Material/Workmanship: Non-prorated period of 5 years from the date of shipment from the factory.
   d. All Other Components: Boiler manufacturer will repair or replace any part of the boiler that is found to be defective in workmanship or material for a non-prorated period of 2 years from the date of shipment from the factory.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Fulton Boiler Works, Inc.
2. Cleaver-Brooks, Inc.
3. Lochinvar Corporation.

2.2 MANUFACTURED UNITS

A. Description: Factory-fabricated, -assembled, and -tested, fire-tube condensing boiler with heat exchanger sealed pressure tight, built on a steel base; including insulated jacket; flue-gas vent; combustion-air intake connections; water supply, return, and condensate drain connections; and controls. Water heating service only.

B. Heat Exchanger: Nonferrous, corrosion-resistant combustion chamber.

C. Pressure Vessel: Carbon steel with welded heads and tube connections.

D. Burner: Natural gas, forced draft.

E. Blower: Centrifugal fan to operate during each burner firing sequence and to pre-purge and post-purge the combustion chamber.

1. Motors: Comply with requirements specified in Division 23 Section "Common Motor Requirements for HVAC Equipment."

a. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.

F. Gas Train: Combination gas valve with manual shutoff and pressure regulator.

G. Ignition: Spark ignition with 100 percent main-valve shutoff with electronic flame supervision.

H. Casing:

1. Jacketed steel enclosure, with fully removable latching access panels.
2. Control Compartment Enclosures: NEMA 250, Type 1A.
3. Finish: Internally and externally primed and painted or powder coated.
4. Combustion-Air Connections: Inlet and vent duct collars.
5. Mounting base to secure boiler.

a. Seismic Fabrication Requirements: Fabricate mounting base and attachment to boiler pressure vessel, accessories, and components with reinforcement strong enough to withstand seismic forces defined in Division 23 Section "Vibration and Seismic Controls for HVAC Piping and Equipment" when mounting base is anchored to building structure.

2.3 TRIM

A. Include devices sized to comply with ANSI B31.1, "Power Piping."

B. Pressure Controllers: Operating, firing rate, and high limit.

C. Safety Relief Valve:

1. Size and Capacity: As required for equipment according to ASME Boiler and Pressure Vessel Code.
2. Description: Fully enclosed steel spring with adjustable pressure range and positive shutoff; factory set and sealed.

a. Drip-Pan Elbow: Cast iron and having threaded inlet and outlet with threads complying with ASME B1.20.1.

D. Pressure Gage: Minimum 3-1/2-inch diameter. Gage shall have normal operating pressure about 50 percent of full range.

E. Water Column: Minimum 12-inch glass gage with shutoff cocks.

F. Drain Valves: Minimum NPS 3/4 or nozzle size with hose-end connection.

G. Blowdown Valves: Factory-installed bottom and surface, slow-acting blowdown valves same size as boiler nozzle. Blowdown valves shall be combination of slow and quick acting as required by ANSI B31.1.

H. Stop Valves: Boiler inlets and outlets, except safety relief valves or preheater inlet and outlet, shall be equipped with stop valve in an accessible location as near as practical to boiler nozzle and same size or larger than nozzle. Valves larger than NPS 2 shall have rising stem.

I. Stop-Check Valves: Factory-installed, stop-check valve and stop valve at boiler outlet with free-blow drain valve factory installed between the two valves and visible when operating stop-check valve.

2.4 CONTROLS

A. Refer to Division 23 Section "Building Automation Systems."

B. Boiler operating controls shall include the following devices and features:

1. Control transformer.
2. Set-Point Adjust: Set points shall be adjustable.
3. Operating Pressure Control: Factory wired and mounted to cycle burner.
4. Low-Water Cutoff and Pump Control: Cycle feedwater pump(s) for makeup water control.
5. Sequence of Operation: Electric, factory-fabricated and field-installed panel to control burner firing rate to maintain space temperature in response to thermostat with heat anticipator located in heated space.

C. Burner Operating Controls: To maintain safe operating conditions, burner safety controls limit burner operation.

1. High Cutoff: Automatic reset stops burner if operating conditions rise above maximum boiler design temperature.
2. Low-Water Cutoff Switch: Electronic probe shall prevent burner operation on low water. Cutoff switch shall be automatic-reset type.
3. Blocked Inlet Safety Switch: Manual-reset pressure switch field mounted on boiler combustion-air inlet.
4. Audible Alarm: Factory mounted on control panel with silence switch; shall sound alarm for above conditions.

D. Building Automation System Interface: Factory install hardware and software to enable building automation system to monitor, control, and display boiler status and alarms.

1. Hardwired Points:

a. Monitoring: On/off status, common trouble alarm.
b. Control: On/off operation, hot water supply temperature set-point adjustment.

2. A communication interface with building automation system shall enable building automation system operator to remotely control and monitor the boiler from an operator workstation. Control features available, and monitoring points displayed, locally at boiler control panel shall be available through building automation system.

2.5 ELECTRICAL POWER

A. Controllers, Electrical Devices, and Wiring: Electrical devices and connections are specified in Division 26 Sections.

B. Single-Point Field Power Connection: Factory-installed and -wired switches, motor controllers, transformers, and other electrical devices necessary shall provide a single-point field power connection to boiler.

1. House in NEMA 250, Type 1 enclosure.
2. Wiring shall be numbered and color-coded to match wiring diagram.
3. Install factory wiring outside of an enclosure in a raceway.
4. Field power interface shall be to non-fused disconnect switch.
5. Provide branch power circuit to each motor and to controls with a disconnect switch or circuit breaker.
6. Provide each motor with overcurrent protection.

2.6 VENTING KITS

A. Kit: Complete system, ASTM A 959, Type 29-4C stainless steel, pipe, vent terminal, thimble, indoor plate, vent adapter, condensate trap and dilution tank, and sealant.

B. Combustion-Air Intake: Complete system, stainless steel, pipe, vent terminal with screen, inlet air coupling, and sealant.

2.7 SOURCE QUALITY CONTROL

A. Burner and Hydrostatic Test: Factory adjust burner to eliminate excess oxygen, carbon dioxide, oxides of nitrogen emissions, and carbon monoxide in flue gas and to achieve combustion efficiency; perform hydrostatic test.

B. Test and inspect factory-assembled boilers, before shipping, according to ASME Boiler and Pressure Vessel Code.

C. Allow Owner access to source quality-control testing of boilers. Notify Architect 14 days in advance of testing.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Before boiler installation, examine roughing-in for concrete equipment bases, anchor-bolt sizes and locations, and piping and electrical connections to verify actual locations, sizes, and other conditions affecting boiler performance, maintenance, and operations.

1. Final boiler locations indicated on Drawings are approximate. Determine exact locations before roughing-in for piping and electrical connections.

B. Examine mechanical spaces for suitable conditions where boilers will be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 BOILER INSTALLATION

A. Install boilers level on concrete base. Concrete base is specified in Division 23 Section "Common Work Results for HVAC," and concrete materials and installation requirements are specified in Division 03.

B. Vibration Isolation: Elastomeric isolation pads with a minimum static deflection of 0.25 inch. Vibration isolation devices and installation requirements are specified in Division 23 Section "Vibration and Seismic Controls for HVAC Piping and Equipment."

C. Install gas-fired boilers according to NFPA 54.

D. Assemble and install boiler trim.

E. Install electrical devices furnished with boiler but not specified to be factory mounted.

F. Install control wiring to field-mounted electrical devices.

3.3 CONNECTIONS

A. Piping installation requirements are specified in other Division 23 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to boiler to allow service and maintenance.

C. Install piping from equipment drain connection to nearest floor drain. Piping shall be at least full size of connection. Provide an isolation valve if required.

D. Connect piping to boilers, except safety relief valve connections, with flexible connectors of materials suitable for service. Flexible connectors and their installation are specified in Division 23 Section "Common Work Results for HVAC,"

E. Connect gas piping to boiler gas-train inlet with union. Piping shall be at least full size of gas train connection. Provide a reducer if required.

F. Connect hot-water piping to supply- and return-boiler tappings with shutoff valve and union or flange at each connection.

G. Install piping from safety relief valves to nearest floor drain.

H. Install piping from safety valves to drip-pan elbow and to nearest floor drain.

I. Boiler Venting:

1. Install flue venting kit and combustion-air intake.
2. Connect full size to boiler connections. Comply with requirements in Division 23 Section "Breechings, Chimneys, and Stacks."

J. Ground equipment according to Division 26.

K. Connect wiring according to Division 26.

3.4 FIELD QUALITY CONTROL

A. Perform tests and inspections and prepare test reports.

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

B. Tests and Inspections:

1. Perform installation and startup checks according to manufacturer's written instructions.
2. Leak Test: Hydrostatic test. Repair leaks and retest until no leaks exist.
3. Operational Test: Start units to confirm proper motor rotation and unit operation. Adjust air-fuel ratio and combustion.
4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

a. Check and adjust initial operating set points and high- and low-limit safety set points of fuel supply, water level and water temperature.
b. Set field-adjustable switches and circuit-breaker trip ranges as indicated.

C. Remove and replace malfunctioning units and retest as specified above.

D. 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 two visits to Project during other than normal occupancy hours for this purpose.

E. Performance Tests:

1. Engage a factory-authorized service representative to inspect component assemblies and equipment installations, including connections, and to conduct performance testing.
2. Boilers shall comply with performance requirements indicated, as determined by field performance tests. Adjust, modify, or replace equipment to comply.
3. Perform field performance tests to determine capacity and efficiency of boilers.

a. Test for full capacity.
b. Test for boiler efficiency at low fire 20, 40, 60, 80, 100, 80, 60, 40, and 20 percent of full capacity. Determine efficiency at each test point.

4. Repeat tests until results comply with requirements indicated.
5. Provide analysis equipment required to determine performance.
6. Provide temporary equipment and system modifications necessary to dissipate the heat produced during tests if building systems are not adequate.
7. Notify Architect in advance of test dates.
8. Document test results in a report and submit to Architect.

3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain boilers. Video training sessions. Refer to Division 01 Specifications for district required commissioning.

END OF SECTION

CLARK MET Addition - Summary of Work

SUMMARY

A. General: Construction of BASE BID and Alternate portions of the work for **Clark MET Addition.** BASE BID and Alternate portions of the work is defined as all material, labor, equipment and services necessary to do all work shown on the drawings, specifications and all associated Addendums.

General Summary of the Project:

The following information **applies to all bid packages** and shall be reviewed carefully for inclusion in each bid. The following are critical logistics related to the Project:

1. Construction of a brand-new Building 'T"
2. Site Improvements for the affected areas.
3. RMA GeoScience Geotechnical Investigation Report dated, March 10, 2023.
4. All work for the project will be performed during the hours of 7:00 a.m. to 3:30 p.m. Utility tie-ins may be required to be performed after hours and or weekends.
5. Bid packages shall review the project completely prior to bidding the work.
6. Any substitution of details or materials must be pre-approved by the Architect, engineers and/ or DSA. All substitutions requests must be submitted to Durham Construction prior to bid. Prime Contractors will be responsible for all costs and time delays required for substitution approval.

In addition to the summary of work for each Bid Package, the following will apply and become a part of the contract with each respective Bid package.

Alternates

1. Add steel structure, stairs, guardrail and crane hoist for Mezzanine.
2. Add concrete walk at curved Amphitheater
3. Demo entire roofing material, remove and reset the HVAC equipment and roofing accessories at Building "F". Furnish and install new 80-mil PVC roofing system at building "F".

Submittals and material procurement

1. Submittals and material procurement shall begin immediately upon award or letter of intent from the District or the construction manager (Durham Construction).
2. Material procurement is critical and shall be diligently pursued to meet the contract schedule.

Schedule

1. Bid Packages shall review the project and schedule completely prior to bidding the work.
2. The Bid Package will be required to provide a schedule and crew sizing showing how the work will be accomplished within the given time frame.
3. All bid packages shall use and adhere to both "Construction Management Baseline Schedule" and the "Short Interval Schedule" also known as Weekly Look Ahead Schedule as per GENERAL CONDITIONS FOR GENERAL CONTRACTOR; ARTICLE 32. CONSTRUCTION SCHEDULES AND ALL IT'S SUB PARTS.

Storm water: Pollution Prevention Plan

1. This project does not require a (SWPPP) however, all respective bid packages must provide respective BMP's for their own work.

2. All work under each bid package shall comply with Air Pollution Control District Standards. Provide dust control for own work.

Crew Sizes

1. All bid packages shall review the schedule and confirm that they can crew the project accordingly prior to submitting a bid. Include with each bid minimum and maximum crew sizes projected for the project.

State Agency Requirements

1. All work shall comply with OSHA & DSA requirements.

Coordination of work

1. Coordination of work during the preconstruction period is equally as critical to resolving all issues prior to the start of work. Bid Package shall review the project, coordinate and question any issues to allow resolution prior to the start of work.
2. Review and verify all existing conditions.
3. Provide all necessary temporary utility for own work.
4. All bid packages shall attend coordination meetings and weekly site meetings and provide coordination drawings for underground and above ceiling work for work related to this subcontract and for coordination of utilities, openings and other areas that require interface between trades. Coordinate all drawings with the drawings of this subcontract. Note conflicts and provide potential solutions to the Architect for review. Coordination and drawing approval must occur prior to excavation (and/or) overhead work. Bid packages shall attend a pre-installation meeting prior to the start of their work onsite. All bid packages shall be available for pre-installation meetings of other Bid Packages for coordination of related work.
5. Provide written request for information through the CM for layout information from related trades for all rough-in, embedded items, openings and block-outs, etc.
6. Request and review all associated shop drawings for coordination and layout purposes prior to installation of related materials.
7. Coordinate all work with mechanical, plumbing and electrical bid package for shut down of services as needed. (48) hours' notice is required prior to all shut down activities.
8. Review as-builts & underground locator survey & pothole utilities prior to starting work

Site Logistics:

1. Safety - Hard hats, safety glasses, Hi Vis Vests and approved work boots project and must be worn at all times.
2. Monitor vehicle speed while entering school campus and project site.
3. Only company vehicles are allowed onsite. No tool drop-off or parking by personal vehicles will be allowed. Bid package to make provisions for transport or tool distribution needs.
4. No alcohol or tobacco products of any kind on project site and/or school campus.
5. Lunch and breaks shall be at designated areas only. No other areas will be allowed.
6. No personal vehicles are allowed on site. Parking is only allowed in designated parking areas.
7. Storage areas will be confined to the areas designated by the CM. Staging areas around the building shall be coordinated with the CM. Storage onsite will be controlled due to limited space available.
8. Daily cleanup and off haul is required for each trade for their own work.

General Items to be provided by each bid package:

1. Prime contractors must provide copies of their reports before end of day Friday of that week.
2. Prime contractors must have a copy of their company safety policy and procedure manual on site and must post a Code of Safe Practices posted in a conspicuous location where it can be viewed by employees on a daily basis.
3. Contact underground service alert a minimum of 48 hours prior to excavating or digging.
4. Protect all work, new and existing, from damage until acceptance by owner.
5. Provide water and shade for own crews.

6. Furnish all access to roof for own work.
7. Provide dewatering for own work.
8. Lighting for own work areas are to be provided by each bid package.
9. Furnish and install own floor protection.
10. Furnish and install all physical layout for own work.
11. Each bid package will be responsible for removal from the site of all debris and spoils generated by each bid package.
12. Secure all ladders and lifts each evening.
13. Provide caution tape and /or barriers for open area work and traffic control.
14. Each bid package will be responsible for their wash out, wash out area as designated by CM.
15. Provide written request for information through the CM for layout information from related Prime Contractors for all rough-in, embedded items, openings and block-outs.

Survey - (Provided by District)

The District will provide Survey staking to construct the work shown on the plans and specifications. Each bid package is responsible for protecting the surveyed staking. Should stakes become damaged, knocked down or missing, each bid package shall be responsible for any re-staking including for their own work. Each bid package must comply with the requirements in section 01 71 23 “Field Engineering” for layout of each respective bid packages work.

Specific Requirements

1. Provide move-ins for each section of work as listed on the Project Baseline Schedule.
2. Calculate trenching near footings to be outside angle of repose.
3. Furnish and install all survey for onsite.

Earthwork

1. Establish a minimum of two permanent horizontal and vertical control points on the site, remote from the building area referenced to data established by survey control points.
3. Certify site grades after completion of rough grading.

Underground Utilities

1. Staking of all electrical vaults and boxes – horizontal and vertical
2. Staking of all sewer lines and cleanouts (100’); gas lines and vaults (as required for excavation and installation horizontal and vertical) at the site.
3. Stake all lateral tees and POC’s at Buildings for utilities

CLARK MET Addition – CMET 01 Concrete and Reinforcing Steel

Furnish and install all work specifically required throughout the project documents to complete the work of this Bid Package that specifically includes, but is not limited to, the following:

Specification Sections:

Division 00
Division 01

Division 2 Existing Conditions
Section 02 49 19 Selective Demolition

Division 03 Concrete
Section 03 11 01 Concrete Formwork
Section 03 15 14 Drilled Anchors
Section 03 20 00 Reinforcement
Section 03 30 00 Cast-In-Place Concrete
Section 03 35 10 Polished Concrete Finishing

Division 07 Thermal and Moisture Protection
Section 07 14 16 Fluid-Applied Waterproofing
Section 07 92 00 Sealants

Division 31 Earthwork
Section 31 10 00 Site Clearing
Section 31 20 00 Earthwork
Section 31 22 22 Soil Materials
Section 31 23 33 Trench Excavation and Backfill
Section 31 31 00 Soil Treatment

Division 32 Exterior Improvements
Section 32 13 13 Site Concrete Improvements
RMA Geoscience Geotech Report – Project 07-230020-0
RMA Geoscience Geotech Report – Project 07-230020-0 Addendum

This bid package includes all provisions in its entirety for **Specifications Section 00700 General Conditions for Contracts on Construction Management Projects – Clovis Unified School District**; Division - 00 "Bidding and Contract Requirements," and Division 01 "General Requirements." The Work under this Bid Package shall include the furnishing and installing of all material, labor and equipment, means and methods, procedures, and items as required to complete the work described in this Bid Package. Bid packages work shall be completed as shown on the DSA approved drawings and specified in any applicable specification sections.

Durham Construction Company, Inc. is the Construction Manager for all bid packages and will be referred to as the CM in all bid package descriptions.

Refer to additional related specifications sections and descriptions of work specifically included in this Bid Package / Prime Contract as noted below.

General Items

1. Conform to the Construction Manager's project overall schedule and the 4 Week Look-Ahead schedules.
2. Any substitution of details or materials must be pre-approved by the Architect, engineers and DSA. All substitution requests must be submitted to the CM prior to bid. This contractor is responsible for all costs and time delays required for DSA approval. Any substitutions of materials must conform to Section 01 25 00 "Substitution Procedures and form."
3. This Bid Package Prime Contractor must always protect the new and existing site property, landscaping, site concrete and furnishings. Any damage to sod/grass, concrete and furnishings by this bid's forces will need to be replaced at own's contractor expense.
4. This bid package must protect the concrete floor at all times as the new finish floor will be sealed concrete. Always keep the concrete slab clean and observe the following rules: **A**- never park vehicles or equipment on the concrete slab to receive polishing **B** - No pipe cutting of any kind ferrous or nonferrous. **C** - No storage of any items. **D**- No staging of construction material without authorization of the CM. **E** – No ferrous metals placed or stored on the slab to receive sealing **F** – All equipment must be diapered to prevent any fluid spills, oils, hydraulic or battery acid. **G** – No charging scissor lifts on slabs to receive sealed concrete – charge scissor lifts in rooms that will have floor covering. **H** – No acidic products used or placed on the new concrete slab. **I** – No painting over the new concrete slab surface without proper covering or plan to mitigate paint spills, drips or overspray. **J** – No markers or chalk lines on the surface of the new concrete slab outside of any wall lines. **K** – No tape is to be used on the surface that will leave residue. **L** – No brace or shot pins or bolting in the concrete slab field of visibility for polished concrete areas. **M** – No welding or bracing over the new concrete slab. **N** -All equipment operated on the new concrete slab will have non marking tires free from embedded items such as screws and nails. **O** – No eating or food will be allowed on the new concrete slab floor. **P** – No chewing gum or tobacco products are allowed on the project site.
5. Any damage to any site utilities by this bids work will be replaced at this bid contractors' expense.
6. Any damage to the existing concrete slabs, walkways etc. during this scope activities and or installation of own work shall be completely restored to the satisfaction of the Owner or CM.
7. Provide all backfill and required compaction of excavations to original sub-grade for work included in this Bid.
8. Provide a schedule of values to include an itemization of costs as per Section 01 29 73.01 "Schedule of Values" or in any detail or format as the owner, Construction manager, or architect seems appropriate.
9. Must provide exterior dust control during work and or this scope activities under this bid package.
10. Provide cleanup, broom sweep, washing concrete and concrete paved areas, remove tire marks caused by this bid packages operations on all hardscape areas.
11. Review as-builts & underground locator survey and pothole marked utilities by hand or other approved methods prior to starting work as to ensure no damage of existing utilities. Submit to Clovis Unified 48-hour notice locate utility request to the CM 72 hours prior to conducting site work. District will mark existing utilities. Contractor is responsible for obtaining a valid USA (Underground Service Alert) ticket.
12. Provide notification to inspector, CM, or Owner's representatives and/or governing agencies of required inspections and tests at least 48 hours in advance of when such inspection is required.
13. Any existing utilities that become damaged during this bid packages work shall be completely restored to the satisfaction of the Owner, Construction Manager, Architect, Architect consultants or governing agency.
14. Protect and preserve in place any found survey monuments. Any monuments disturbed shall be reset by a licensed surveyor and appropriate paperwork must be filed with appropriate governing agency.
15. Obtain all permits required to perform the work for this bid package from appropriate Municipalities but not limited to encroachment permits, SJVAPCD, SWPP, etc. Permit fees are reimbursable from the District.
16. Must provide traffic control AT ALL TIMES for work on any road or sidewalk and paths of travel, including public roads or on Clovis Unified owned property for this Bid.
17. Vehicles leaving the site shall take every reasonable precaution so as to not track or deposit construction debris or miscellaneous trash onto onsite and offsite roads, parking areas, sidewalks or any locations on the owner's property. Any dirt, rocks, or construction materials, and miscellaneous debris or foreign object that may be tracked or dropped on roads outside the limits of the construction shall be cleaned up immediately

by this subcontractor to the satisfaction of the CM.

18. This bid package will adhere to all Clovis Unified School rules and policies including but not limited to the following: No verbal or physical contact with any student or site personnel. No tobacco or drug use. No smoking. Proper work dress attire must be worn at all times as determined by the CM. No taking photos of the project site where students or site personnel are included in such photos. Drive vehicles or equipment on school grounds in a safe and cautious manner at a maximum speed of 5 Miles per hour.
19. This bid package shall perform daily cleanup and off haul of own debris to the satisfaction of the CM.
20. Provide cleanup, broom sweep, and washing concrete and concrete paved areas, removing tire marks caused by this Bid Packages operations on all hardscape areas.
21. Furnish and install own floor protection (i.e. tarps, plastic, plywood, etc.) while performing own work.
22. Provide permits and certifications.
23. Provide power for own work.
24. While performing own work, SAFETY of students and staff is a priority.
25. The "Limit of Demolition" shown is approximate and is generally considered to be the minimum removal requirements. Must furnish and provide all layout for own work from survey provided.
26. There will be one wash out area for all Bid Package as designated by the CM. Each Bid Package will be responsible for removal from the site of all debris and spoils generated by own work.
27. Comply with Project Waste Management Plan and provide documentation to the CM upon request.

Coordination with Other Trades

1. Review as-builts & underground locator survey & pothole utilities prior to starting work.
2. Provide coordination drawings for underground work as related to this bid package.
3. Coordinate all drawings with the drawings of other bid packages. Note conflicts and provide potential solutions to the Architect for review. Coordination must occur prior to excavation and/or installation of the work.
4. Review and coordinate all block outs in concrete as shown in contract documents, shop drawings and /or written layouts provided by other bid packages prior to concrete pour.
5. Attend all coordination meetings required to coordinate all underground work. Provide a detailed site work schedule to coordinate with other utilities.
6. Coordinate all work to provide access to site, and or building for other trades as scheduled.
7. Coordinate the protection of existing utilities especially those not specifically designated existing to remain.
8. Receive and coordinate written layout from other bid packages for items embedded in or passing through concrete. All sleeves are to be installed by other trades as it pertains to their scope of work.
9. Coordinate placement of ALL rebar as it pertains to this bid package.
10. Coordinate ALL embedded items on this bid package prior to pour.
11. Coordinate the location of depressions, block outs, slopes, drains with other trades and/or drawings prior to pouring of concrete.
12. Coordinate the location of all site concrete improvements, sidewalks, curbs and, mow strips, concrete collars to facilitate installation of fine grading by Earthwork bid package. This bid package must protect concrete until fine grading is complete. Once concrete has been poured and block outs removed, this bid package must backfill and fine grade those areas.
13. Coordinate all drawings with the drawings of other bid packages. Note conflicts and provide potential solutions to the architect for review. Coordination must occur prior to excavation and/or installation of the work.

Furnish and Install Items

1. Provide dewatering for own work.
2. Furnish and install all layout for own work from survey provided. This bid package will be responsible for all additional layout not performed by the District provided survey.

3. Furnish off haul of spoils from own work, including but not limited to footings, stairs, etc. daily.
4. Furnish and install all building, site and site improvement concrete along with steel reinforcing as shown and noted on the plans.
5. Furnish and install all site clearing and earthwork as necessary for new concrete improvements for both building and site concrete including but not limited to stripping, excavation, compaction, & fine grading as relates to new concrete improvements.
6. Furnish and install all engineered fill, aggregate base, sand base and vapor retarder. Reference all contract documents including but not limited to Geotech soils reports, architectural and structural drawings and project specifications.
7. Provide layout and install block outs i.e slab block outs as per written layout provided by other bid packages for installation of their work.
8. Furnish and install concrete pour backs at structural steel.
9. Furnish and install all reinforcing steel complete including all dowels tying to existing concrete.
10. Furnish and install all layout for own work from survey provided. This bid package will be responsible for all additional layout not performed by the survey provided.
11. Protect surveyed staking. Should stakes become damaged, knocked down or missing while performing own scope of work, this bid package shall be responsible for any re-staking needed.
12. Furnish and install all saw cutting, removal of recyclable material, excavation, off haul of spoils, backfill and compact. All saw-cutting of concrete shall be from joint to joint. No overcuts accepted.
13. Provide pre and post survey for all structural steel anchor bolts/threaded rods. Surveying shall be performed by a license surveyor and verified for proper alignment prior to pouring of concrete and erection of steel.
14. Install anchor bolts/threaded rods, nuts, washers/bearing plates for structural steel. These items and templates will be provided by the Steel bid package contractor. This bid package will need to coordinate.
15. Install all concrete embedded framing anchor bolts, nuts and bearing/washers. Anchor bolts, nuts, washers and templates will be provided by the Metal Framing and Gypsum Board bid package.
16. Furnish and install cleaning and protection of anchor bolts/threaded rods until turned over to Structural Steel bid package for erection or setting of leveling nuts.
17. Furnish and install rebar, steel stakes and anchor bolts protection at all times in accordance with OSHA approved method. No exposed protruding sharp objects/edges are allowed.
18. Furnish and install fiber expansion joints, control joints and concrete sealant complete in concrete. Provide layout drawings for all site and building concrete joints for approval prior to installation of concrete.
19. Furnish and provide mechanical excavation equipment for light grading, backfill & cleanup activities.
20. Provide backfill and compaction of excavations to original or acceptable sub-grade for work included in this bid package.
21. Furnish and install backfill at concrete slabs, mow strips, walks, curb, curb & gutter, planter, and turf areas.
22. Provide all clean up and provide off-haul of own debris from site on daily basis.
23. Provide notification to USA (Underground Service Alert) 811 at least (2) days before commencing excavation operations.
24. Provide written notification of inspection for own work to Owner's representatives and/or governing agencies of required test or inspections at least 48 hours in advance of when such inspection is required.
25. Pouring of all concrete shall be from joint to joint.
26. Furnish and install all floor prep for concrete cracking, saw cut joints and construction joints. Leveling will be provided by this bid package as necessary for all areas out of tolerance.
27. Furnish and install all rebar in footings/foundations and slabs.
28. Furnish and install all dowels, rebar for site concrete.
29. Furnish and install all drilling of holes for own work performed by this bid package.
30. Furnish and install all epoxy for dowels and rebar.

31. Furnish and install own floor protection while performing own work.
32. Furnish and install ALL concrete collars for manholes, vaults, valve boxes, cleanouts, underground structures, inlets, drywells, cleanouts, Christy boxes, etc. as shown and noted on the plans.
33. Provide excavation for thickened edges and/or shovel footings at sidewalks, off haul spoils and backfill.
34. Provide and install all concrete shovel footings and thickened edges.
35. Furnish and install concrete curbs, concrete stairs/steps, concrete ramps and landings as shown and noted on the plans.
36. Furnish and install concrete in stairs, landings and second floor deck at Mezzanine. **(Alternate 1)**
37. Furnish and install all drypack, grouting and/or non-shrink grout for structural steel at concrete.
38. Furnish and install cleaning and protection of anchor bolts until turned over to Structural Steel bid package for erection or setting of leveling nuts.
39. Furnish and install 2x redwood shaped nailer as shown and noted on the plans.
40. Adjust existing utility lids within new concrete work to match finished grade.
41. Install steel threshold angle with welded lugs. This item is to be provided by the Structural Steel bid package.
42. Install stair nosings. Stair nosings will be provided by the General Specialties bid package.
43. Install all sleeves for handrails/guardrails. Sleeves will be provided by the Steel bid package. This bid package will need to coordinate. Handrails/guardrails will be installed and grouted by Gen. Specialties.
44. Install plate anchors for door stops and door strikes. These items are to be provided by the General Specialties bid package.
45. Furnish and install concrete collars, concrete mowstrip, shovel footings and concrete thickened edges.
46. Clean concrete splatters at all areas where work was conducted.
47. Repair or patch all concrete defects from own or damaged work.
48. Provide sack and patch work at any areas deemed to be rough concrete surfaces.
49. Furnish and install all lightweight concrete with welded wire mesh as shown and noted on the plans.
50. Furnish and install lightweight concrete housekeeping pad as shown and noted on the plans.
51. Furnish, install and/or provide barricades, signs or flagmen and maintain traffic control while performing own work included in this bid package.
52. Provide all cleanup and provide off-haul of own debris from site on a daily basis.
53. Furnish off-haul of all excavation spoils from site daily.
54. Provide exterior dust control while performing own work.
55. Provide road/street sweeping services for duration of own scope of work.
56. Materials designated to be removed and/or demoed shall legally dispose and hauled off site.
57. Provide and maintain proper documentation to the Construction Manager of all recyclable materials removed from site, including type of material, weights or volumes, receiving facility and percentages of recyclable content of such material.
58. Furnish, install, and maintain traffic control while performing own work included in this bid package.
59. Provide barricades, signs and protective structure devices as required for own work under this bid package.
60. Protect from damage ALL finishes indicated to remain throughout the duration of own scope of work such as exterior of building structures, landscaping, utility lines, concrete walks, concrete curbs, fencing/gates, mowstrips, etc. If contractor damages or removes any facilities or structures, this contractor shall be responsible for replacement or repair of such items acceptable to CM or Owner.
61. Provide cleanup, broom sweep, washing of concrete walks areas, removal of debris from sod/turf areas caused by this Bid Package operation of work.
62. Trucks leaving the construction site shall take reasonable precautions as to not track or drop any construction debris or trash onto school site roads, off haul routes and subcontractor designated parking areas. Any dirt or miscellaneous debris that is tracked or dropped on roads within or outside the limits of the construction site shall be cleaned up immediately by this subcontractor.
63. Furnish and install all compacted fill or lean concrete under new concrete.
64. Furnish and install all new concrete walls.

65. Sawcut break and remove all existing concrete as shown on sheet A1 - SD/A101 for fire line installation including procurement of encroachment permit with the City of Clovis.
66. Patch existing concrete as per plan details as shown on sheet A1 - SD/A101 after fire line installation including procurement of encroachment permit with the City of Clovis.
67. **(Alternate #2)** Reference sheet SDC202.2 - remove and dispose existing decomposed granite in location of new concrete walk, grade and compact in preparation of new concrete, furnish and install new concrete walk as per details A&B / SD/ X101 & return existing adjacent decomposed granite to proper grade for a new clean finish.
68. Furnish and install all Soil Treatment including but not limited to termite treatment and herbicide as per plans and specifications.
69. Provide selective demolition of continuous walls infill at stair landing and retaining wall. Use lean concrete approved by structural engineer to backfill voids. Furnish and install shoring or underpinning to support existing soils as required.
70. Provide excavation for new concrete stairs and new stairway retaining walls. Furnish and install all backfill as required for new and existing concrete stairs.
71. Furnish and install all Styrofoam spacers adjacent to concrete (new and existing).
72. **Furnish and install all concrete saw cutting and removal of recyclable material. Coordinate with Plumbing and Electrical bid packages. Plumbing and Electrical bid packages will need to layout. All saw-cutting of concrete shall be from joint to joint. No overcuts accepted. (Addendum #2)**

Note: Unload, inventory, store and notify of deficiencies for all items delivered to the job site FOB, to be installed by this Bid Package.

Installation of FOB items by this Bid Package:

- **Install column anchor bolts/threaded rods, nuts, washers/bearing plates for all structural steel. These items and templates to be furnished by Steel bid package. Coordinate with Steel bid package.**

- **Install steel threshold angle with welded lugs. This item is to be provided by the Structural Steel bid package.**

- **Install stair nosings. Stair nosings will be provided by the General Specialties bid package.**

- **Install plate anchors for door stops and door strikes. Coordinate with General Specialties bid package.**

- **Install column anchor bolts, nuts, washers for steel columns. All these items and templates to be furnished by Steel Bid Package. Coordinate with Steel Bid Package**

End of Bid Package

CLARK MET Addition - CMET 02 Structural Steel & Metal Decking

Furnish and install all work specifically required throughout the project documents to complete the work of this Bid Package that specifically includes, but is not limited to the following:

Specification Sections:
Division 00
Division 01

Division 05 Metals
Section 05 12 00 Steel and Fabrications
Section 05 30 00 Metal Deck

This bid package includes all provisions in its entirety for **Specifications Section 00700 General Conditions for Contracts on Construction Management Projects – Clovis Unified School District**; Division - 00 "Procurement and Contracting Requirements", and Division 01 "General Requirements." The Work under this Bid Package shall include the furnishing and installing of all material, labor and equipment, means and methods, procedures, and items as required to complete the work described in this Bid Package. This bid package's work shall be completed as shown on the DSA approved drawings and specified in any applicable specification sections.

Durham Construction Company, Inc. is the Construction Manager for all bid packages and will be referred to as the CM in all bid package descriptions.

Refer to additional related specifications sections and descriptions of work specifically included in this Bid Package / Prime Contract as noted below.

"Due to safety concerns for students and staff for fall zones when erecting the structural steel, Structural steel must be installed when students and staff are not present on campus at times acceptable to the District and CM. Time examples are: Weekends - Saturday and Sunday, after hours (6 pm to 6 am), thanksgiving break, Christmas break, etc." (Addenda #2)

General Items

1. Conform to the Construction Manager's project overall schedule and the 4 Week Look-Ahead schedules.
2. Any substitution of details or materials must be pre-approved by the Architect, engineers and DSA. All substitution requests must be submitted to the CM prior to bid. This contractor is responsible for all costs and time delays required for DSA approval. Any substitutions of materials must conform to Section 01 25 00 "Substitution Procedures and form."
3. This Bid Package Prime Contractor must always protect the new and existing site property, landscaping, site concrete and furnishings. Any damage to sod/grass, concrete and furnishings by this bid's forces will need to be replaced at own's contractor expense.
4. This bid package must protect the concrete floor at all times as the new finish floor will be sealed concrete. Always keep the concrete slab clean and observe the following rules: **A**- never park vehicles or equipment on the concrete slab to receive polishing **B** - No pipe cutting of any kind ferrous or nonferrous. **C** - No storage of any items. **D**- No staging of construction material without authorization of the CM. **E** – No ferrous metals placed or stored on the slab to receive sealing **F** – All equipment must be diapered to prevent any fluid spills, oils, hydraulic or battery acid. **G** – No charging scissor lifts on slabs to receive sealed concrete – charge scissor lifts in rooms that will have floor covering. **H** – No acidic products used or placed on the new concrete slab. **I** – No painting over the new concrete slab surface without proper covering or plan to mitigate paint

spills, drips or overspray. **J** – No markers or chalk lines on the surface of the new concrete slab outside of any wall lines. **K** – No tape is to be used on the surface that will leave residue. **L** – No brace or shot pins or bolting in the concrete slab field of visibility for polished concrete areas. **M** – No welding or bracing over the new concrete slab. **N** -All equipment operated on the new concrete slab will have non marking tires free from embedded items such as screws and nails. **O** – No eating or food will be allowed on the new concrete slab floor. **P** – No chewing gum or tobacco products are allowed on the project site.

5. Any damage to any site utilities by this bids work will be replaced at this bid contractors' expense.
6. Any damage to the existing concrete slabs, walkways etc. during this scope activities and or installation of own work shall be completely restored to the satisfaction of the Owner or CM.
7. Provide a schedule of values to include an itemization of costs as per Section 01 29 73.01 "Schedule of Values" or in any detail or format as the owner, Construction manager, or architect seems appropriate.
8. Must provide exterior dust control during work and or this scope activities under this bid package.
9. Provide cleanup, broom sweep, washing concrete and concrete paved areas, remove tire marks caused by this bid packages operations on all hardscape areas.
10. Provide notification to inspector, CM, or Owner's representatives and/or governing agencies of required inspections and tests at least 48 hours in advance of when such inspection is required.
11. Any existing utilities that become damaged during this bid packages work shall be completely restored to the satisfaction of the Owner, Construction Manager, Architect, Architect consultants or governing agency.
12. Obtain all permits required to perform the work for this bid package from appropriate Municipalities but not limited to encroachment permits, SJVAPCD, SWPP, etc. Permit fees are reimbursable from the District.
13. Must provide traffic control AT ALL TIMES for work on any road or sidewalk and paths of travel, including public roads or on Clovis Unified owned property for this Bid.
14. Vehicles leaving the site shall take every reasonable precaution so as to not track or deposit construction debris or miscellaneous trash onto onsite and offsite roads, parking areas, sidewalks or any locations on the owner's property. Any dirt, rocks, or construction materials, and miscellaneous debris or foreign object that may be tracked or dropped on roads outside the limits of the construction shall be cleaned up immediately by this subcontractor to the satisfaction of the CM.
15. This bid package will adhere to all Clovis Unified School rules and policies including but not limited to the following: No verbal or physical contact with any student or site personnel. No tobacco or drug use. No smoking. Proper work dress attire must be worn at all times as determined by the CM. No taking photos of the project site where students or site personnel are included in such photos. Drive vehicles or equipment on school grounds in a safe and cautious manner at a maximum speed of 5 Miles per hour.
16. This bid package shall perform daily cleanup and off haul of own debris to the satisfaction of the CM.
17. Provide cleanup, broom sweep, and washing concrete and concrete paved areas, removing tire marks caused by this Bid Packages operations on all hardscape areas.
18. Furnish and install own floor protection (i.e. tarps, plastic, plywood, etc.) while performing own work.
19. Provide permits and certifications.
20. Provide power for own work.
21. While performing own work, SAFETY of students and staff is a priority.
22. There will be one wash out area for all Bid Package as designated by the CM. Each Bid Package will be responsible for removal from the site of all debris and spoils generated by own work.
23. Comply with Project Waste Management Plan and provide documentation to the CM upon request.

Coordination with Other Trades

1. Review and comment on concrete bid package provided pre and post survey anchor bolt survey.
2. Verify all anchor bolt layout prior to erection of structural steel. Report any bolts out of tolerance to CM.
3. Coordinate all drawings with the drawings of other bid packages. Note conflicts and provide potential solutions to the architect for review. Coordination must occur prior to installation of the work.
4. Coordinate priming and installation of other materials prior to priming of structural steel.

5. Coordinate with other bid packages that require holes, openings, reinforcing or bracing as it relates to this Bid Package but not limited to bolt holes for attachment, roof openings, HVAC support. This Bid Package must receive written layout from other Bid Package prior to detailing and fabrication of structural steel.
6. Coordinate crane access to site and provide movement schedule for other bid packages.

Furnish and Install Items

1. Furnish and install all structural steel, misc. iron, angles, clips, plates, welded studs, metal fabrications, metal decking, etc. for the project complete as shown and noted on the plans.
2. Furnish, install and/or weld all miscellaneous steel angles, plates, clips, channels, and end/cap plates, closure angles/plates, bolts, nuts, washers/bearing plates, etc. as shown and noted on the plans.
3. Furnish all structural steel anchor bolts/threaded rods, nuts, washers/bearing plates and templates. Coordinate with Concrete and Rebar for installation.
4. Furnish and install all steel angle frames for outdoor units.
5. Furnish and install all steel angle supports as noted and shown on the plans.
6. Provide steel counter support brackets, angles and steel tubes complete and ready for installation. Installation of these items will be provided by General Specialties bid package.
7. Furnish and provide shop priming of all structural steel, misc. iron, angles, clips, plates, welded studs, metal fabrications, etc. complete.
8. Furnish and install/erect all shop-primed structural steel as shown and noted on the plans.
9. Provide protection for concrete slab and utilities from cranes and equipment.
10. Furnish and provide all welding as shown and noted on the plans and specs. All welds must be cleaned and free from slag prior to painting.
11. Provide welder qualifications, test records and welding procedures.
12. Furnish and install safety measures to ensure not to expose any campus personnel and students to eye-flash burns due to welding light exposure.
13. Provide crane lift plan for structural steel erection.
14. Furnish complete shop drawings for all steel fabrications to include any revisions made and calculations prior to steel fabrications. Shop drawings shall be generated and submitted for review in a timely manner so as not to delay the project schedule.
15. Furnish and install all primer touch up and at welding of metal deck. All welds must be cleaned and free from slag and painted.
16. Furnish and install primer touch up at all welding and grinding.
17. Furnish steel roof access ladder with spacer bars, bolts and washers complete. Installation will be provided by General Specialties bid package.
18. Provide steel threshold angle with welded lugs. Installation will be provided by Concrete bid package.
19. Furnish all steel and or stainless steel handrails/guardrails at concrete stairs shown and noted on the plans. Installation will be provided by the General Specialties bid package.
20. Furnish all steel and or stainless-steel handrails/guardrails at concrete ramps as shown and noted on the plans. Installation will be provided by the General Specialties bid package.
21. Furnish and install all structural steel structure with primer at Mezzanine. **(Alternate 1)**
22. Furnish and install steel stairs, steel tube stringers with closure sheet metal pieces and end plates, steel pipe guardrail system, stainless steel handrails, steel angles, bent plates, etc. complete at the Mezzanine Level as shown and noted on the plans. **(Alternate 1)**
23. Furnish and install protection of steel stairs, steel tube stringers with end plates, steel pipe guardrail and pipe handrail. Remove protection as required for installation of subsequent equipment / material activities as directed by the Construction Manager. **(Alternate 1)**
24. Furnish and install metal deck at Mezzanine as shown and noted on the plans. **(Alternate 1)**

25. Furnish and install all exterior canopy structural steel with steel angles, plates and perforated panels complete as shown and noted on the plans and specs. Coordinate with the Painting bid package for the powder coating of the perforate panels.
26. Furnish and install all drilling of holes for work performed in this bid package.
27. Furnish and install all steel reinforcement and or steel support at metal deck openings.
28. Furnish all openings at metal deck for roof drains, HVAC equipment, condensing units, exhaust fans, roof hatch, electrical transformer, etc. All openings must be reinforced. Coordinate opening sizes with proper bid packages.
29. Furnish and install fall protection at all openings in metal deck. No open exposed openings allowed.
30. Provide and install safety railing or cabling for fall protection in accordance with OSHA approved method.
31. Provide written notification of inspection for own work to owner's representatives and/or governing agencies of required test or inspections at least 48 hours in advance of when such inspection is required.
32. Provide all cleanup and provide off-haul of own debris from site on daily basis.
33. Provide cleanup, broom sweep, washing of concrete walks and asphalt paved areas caused by this Bid Package's operation of work.
34. Trucks leaving the construction site shall take reasonable precaution as to not track or drop any construction debris or trash onto school site roads, off haul routes and subcontractor parking designated parking areas. Any dirt or miscellaneous debris that is tracked or dropped on roads within or outside the limits of the construction site shall be cleaned up immediately by this subcontractor.
35. Furnish, install and/or provide barricades, signs or flagmen and maintain traffic control for own work included in this Bid Package.
36. Furnish and install all steel angles supporting new concrete slabs including but not limited to steel angles as detailed on 1/XS701.

Note: Unload, inventory, store and notify of deficiencies for all items delivered to the job site FOB, to be installed by this Bid Package.

FOB items provided by this Bid Package for others to install:

- **Provide the General Specialties bid package with steel counter support brackets, angles and steel tubes complete ready for installation.**
- **Provide the General Specialties bid package with roof access ladders and steel ladder extensions complete ready for installation.**
- **Provide the General Specialties bid package with steel and or stainless-steel handrails/guardrails complete ready for installation.**
- **Provide the Concrete bid package with all anchor bolts and steel templates as required for all structural steel for installation by concrete bid package.**
- **Provide the Concrete bid package with steel threshold angle with welded lugs for installation by concrete bid package.**

End of Bid Package

CLARK MET Addition – CMET 03 Metal Framing, Drywall & Cement Plaster

Furnish and install all work specifically required throughout the project documents to complete the work of this Bid Package that specifically includes, but is not limited to the following:

Specification Sections:
Division 00
Division 01

Division 04 Concrete Masonry Units
Section 04 22 00 Concrete Masonry Units (As applies Drywall & Cement Plaster) **(Addenda #2)**

Division 05 Metals
Section 05 12 00 Steel and Fabrications

Division 07 Thermal and Moisture Protection
Section 07 92 00 Sealants (As applies Drywall & Cement Plaster)

Division 09 Finishes
Section 09 24 00 Cement Plaster
Section 09 29 00 Gypsum Board
Section 09 91 00 Painting and Coating (As applies Drywall & Cement Plaster)

This bid package includes all provisions in its entirety for **Specification Section 00700 General Conditions for Contracts on Construction Management Projects – Clovis Unified School District**; Division - 00 "Procurement and Contracting Requirements," and Division 01 "General Requirements." The Work under this Bid Package shall include the furnishing and installing of all material, labor, and equipment, means and methods, procedures, and items as required to complete the work described in this Bid Package. This Bid Package's work shall be completed as shown on the DSA approved drawings and specified in any applicable specification sections.

Durham Construction Company, Inc. is the Construction Manager for all bid packages and will be referred to as the CM in all bid package descriptions.

Refer to additional related specifications section and descriptions of work specifically included in this Bid Package / Prime Contract as noted below.

General Items

1. Conform to the Construction Manager's project overall schedule and the 4 Week Look-Ahead schedules.
2. Any substitution of details or materials must be pre-approved by the Architect, engineers and DSA. All substitution requests must be submitted to the CM prior to bid. This contractor is responsible for all costs and time delays required for DSA approval. Any substitutions of materials must conform to Section 01 25 00 "Substitution Procedures and form."
3. This Bid Package Prime Contractor must always protect the new and existing site property, landscaping, site concrete and furnishings. Any damage to sod/grass, concrete and furnishings by this bid's forces will need to be replaced at own's contractor expense.
4. This bid package must protect the new concrete floor at all times as the new finish floor will be sealed concrete. Always keep the concrete slab clean and observe the following rules: **A**- never park vehicles or equipment on the concrete slab to receive polishing **B** - No pipe cutting of any kind ferrous or nonferrous.

C - No storage of any items. **D**- No staging of construction material without authorization of the CM. **E** – No ferrous metals placed or stored on the slab to receive sealing **F** – All equipment must be diapered to prevent any fluid spills, oils, hydraulic or battery acid. **G** – No charging scissor lifts on slabs to receive sealed concrete – charge scissor lifts in rooms that will have floor covering. **H** – No acidic products used or placed on the new concrete slab. **I** – No painting over the new concrete slab surface without proper covering or plan to mitigate paint spills, drips or overspray. **J** – No markers or chalk lines on the surface of the new concrete slab outside of any wall lines. **K** – No tape is to be used on the surface that will leave residue. **L** – No brace or shot pins or bolting in the concrete slab field of visibility for polished concrete areas. **M** – No welding or bracing over the new concrete slab. **N** -All equipment operated on the new concrete slab will have non marking tires free from embedded items such as screws and nails. **O** – No eating or food will be allowed on the new concrete slab floor. **P** – No chewing gum or tobacco products are allowed on the project site.

5. Any damage to any site utilities by this bids work will be replaced at this bid contractors' expense.
6. Trucks leaving the construction site shall take reasonable precaution as to not track or drop any construction debris or trash onto school site roads, off haul routes and subcontractor designated parking areas. Any dirt or miscellaneous debris that is tracked or dropped on roads within or outside the limits of the construction site shall be cleaned up immediately by this subcontractor.
7. Any damage to the existing concrete slabs, walkways etc. during this scope activities and or installation of own work shall be completely restored to the satisfaction of the Owner or CM.
8. Provide a schedule of values to include an itemization of costs as per Section 01 29 73 "Schedule of Values" or in any detail or format as the Owner, Construction Manager, or Architect seems appropriate.
9. Must provide exterior dust control during work and or this scope activities under this bid package.
10. Provide cleanup, broom sweep, washing concrete and concrete paved areas, remove tire marks caused by this bid packages operations on all hardscape areas.
11. Provide notification to inspector, CM, or Owner's representatives and/or governing agencies of required inspections and tests at least 48 hours in advance of when such inspection is required.
12. Any existing utilities that become damaged during this bid packages work shall be completely restored to the satisfaction of the Owner, Construction Manager, Architect, Architect consultants or governing agency.
13. Must provide traffic control AT ALL TIMES for work on any road or sidewalk and paths of travel, including public roads or on Clovis Unified owned property for this Bid.
14. Vehicles leaving the site shall take every reasonable precaution so as to not track or deposit construction debris or miscellaneous trash onto onsite and offsite roads, parking areas, sidewalks or any locations on the owner's property. Any dirt, rocks, or construction materials, and miscellaneous debris or foreign object that may be tracked or dropped on roads outside the limits of the construction shall be cleaned up immediately by this subcontractor to the satisfaction of the CM.
15. This bid package will adhere to all Clovis Unified School rules and policies including but not limited to the following: No verbal or physical contact with any student or site personnel. No tobacco or drug use. No smoking. Proper work dress attire must be worn at all times as determined by the CM. No taking photos of the project site where students or site personnel are included in such photos. Drive vehicles or equipment on school grounds in a safe and cautious manner at a maximum speed of 5 Miles per hour.
16. This bid package shall perform daily cleanup and off haul of own debris to the satisfaction of the CM.
17. Provide cleanup, broom sweep, and washing concrete and concrete paved areas, removing tire marks caused by this Bid Packages operations on all hardscape areas.
18. Furnish and install own floor protection (i.e. tarps, plastic, plywood, etc.) while performing own work.
19. Provide permits and certifications.
20. Provide power for own work.
21. While performing own work, SAFETY of students and staff is a priority.
22. Comply with Project Waste Management Plan and provide documentation to the CM upon request.
23. Provide written notification of inspection for own work to Owner's representatives and/or governing agencies of required test or inspections at least 24 hours in advance of when such inspection is required.
24. Provide all cleanup and provide off-haul of own debris from site on daily basis.
25. Provide cleanup, broom sweep, washing of concrete walks and asphalt paved areas caused by this bid

package operation of work.

Coordination with Other Trades

1. Attend all coordination meetings required to coordinate all items under this bid package.
2. Coordinate all drawings with the drawings of other bid packages. Note conflicts and provide potential solutions to the Architect for review. Coordination must occur prior installation of the work.
3. Coordinate with other bid packages that require holes, openings, reinforcing or bracing as it relates to this Bid Package but not limited to bolt holes for attachment and openings. This Bid Package must receive written layout from other Bid Package prior to installation of own work.
4. Coordinate locations of all door and window frame openings with the General Specialties Bid Package.
5. Coordinate with other bid packages for concrete curb placement vs framing to ensure proper alignment.
6. Coordinate and provide written physical layout for backing required for own work.
7. Provide coordination drawings for above ceiling work for work related to this Bid Package. Coordinate all drawings with other bid packages. Report any conflicts to CM.
8. Due to schedule constraints field measuring should be considered at framing stage in lieu of after all drywall and finishes are complete.
9. Coordinate and confirm installation of blocking, metal straps, backing, nailers/plaster grounds, etc. with General Specialties bid package. This bid package will provide written layout.

Furnish and Install Items

1. Furnish and install own floor protection (i.e. tarps, plastic, plywood, etc.) while performing own work.
2. Furnish and install all metal framing, drywall, rigid board, rigid insulation, water barriers, lathing & cement plaster including all accessories complete as shown and noted on the plans and specs.
3. Furnish anchor bolts/threaded rods, nuts, washers/plates and templates for this scope of work. Installation of these items will be provided by the Concrete and Rebar bid package contractor. This bid package will need to coordinate with the Concrete and Rebar bid package for the placement of these items.
4. Furnish and install all cold formed metal framing, backing, bracing, supports, straps, clips, etc. as shown and noted on the plans.
5. Furnish and install all 12 gauge or thinner metals attached to framing system as shown or noted on the plans and specs.
6. Furnish and install all metal bracing, clips, etc. that attach to metal studs, metal deck and steel.
7. Furnish and install all metal backing, straps, blocking supports for other trades to include and not limited to toilet accessories, casework, plumbing fixtures, water heaters, Owner Furnish items, etc. Coordinate with other bid packages.
8. Provide own power to perform own work.
9. Furnish, install and remove own scaffolding.
10. Furnish spark protection backer at metal cutting stations as per OSHA approved requirements.
11. Furnish and install dust control while performing own scope of work.
12. Furnish and install all drilling of holes for work performed under this bid package.
13. Furnish and install top track connections for full height walls.
14. Furnish and install all fire-rated top of wall systems and base complete to include fire rated caulking and or sealant.
15. Furnish and install metal framing and gyp board with all its fire rating assemblies as shown and noted on the plans and specs.
16. Furnish and install all drywall/gypsum board walls, ceilings and soffits complete with metal accessories and shown and noted on the plans and specs.

17. Furnish all skim coating, primer and prep coats as required for finishes.
18. Furnish and install all exterior gypsum board sheathing at the back of the parapet wall.
19. Furnish and install all fire rated wall and assemblies complete as it pertains to own scope of work and as shown or indicated on plans and specs.
20. Furnish and install all bituminous/flexible penetration flashing sheets and or waterproofing flashing sheets at and around all items that penetrate the cement plaster including but not limited to door frames, window frames, structural steel, piping etc. This bid package must ensure that it provides a complete water/airtight construction assembly system.
21. Furnish and install all exterior cement plaster with metal lath, rigid board, rigid insulation and metal accessories as shown and noted on the plans and specs.
22. Furnish and install all plaster joints, expansion joints, weep screeds, reveals, etc. as shown and noted on the plans and specs.
23. Furnish and install exterior cement plaster system at all areas that receive the concrete masonry unit veneer.
24. Furnish and install all Tyvek/water barrier and or waterproofing underlayment membrane as shown and noted on the plans and specs.
25. Furnish and install all fire rated sealants and caulking as it pertains to own scope of work and as shown and noted on the plans and specs including but not limited to all sealants directly adjacent to drywall.
26. Provide own lighting as required to perform own work under this bid package.
27. Furnish and install 3/16" thickness or less drywall over plumbing fixture support plates to create a flush wall condition.
28. Furnish and install dust control while performing work under this bid package.
29. Furnish and install all continuous corners, and joint treatments as called for in contract documents including but not limited to caulking/sealants for own work.
30. Repair cement plaster and gypsum board due to damage caused by other trades and or damage caused by installation of their work.

Note: Unload, inventory, store and notify of deficiencies for all items delivered to the job site FOB, to be installed by this Bid Package.

FOB items provided by this Bid Package for others to install:

- **Furnish anchor bolts/threaded rods, nuts, washers/plates and templates for this scope of work. Installation of these items will be provided by the Concrete and Rebar bid package contractor. This bid package will need to coordinate with the Concrete and Rebar bid package for the placement of these items.**

End of Bid Package

CLARK MET Addition – CMET 04 Insulation

Furnish and install and / or provide all work specifically required throughout the project documents to complete the work of this Bid Package that specifically includes, but is not limited to, the following:

Specification Sections:
Division 00
Division 01

Division 7 Thermal and Moisture Protection
07 21 00 Insulation
07 84 00 Firestopping
07 92 00 Sealants (As applies to Insulation)

This bid package includes all provisions in its entirety for **Specifications Sections 00700 General Conditions for Contracts on Construction Management Projects – Clovis Unified School District**; Division - 00 "Procurement and Contracting Requirements," and Division 01 "General Requirements." The Work under this Bid Package shall include the furnishing and installing of all material, labor and equipment, means and methods, procedures, and items as required to complete the work described in this Bid Package. This Bid Packages work shall be completed as shown on the DSA approved drawings and specified in any applicable specification sections.

Durham Construction Company, Inc. is the Construction Manager for all bid packages and will be referred to as the CM in all bid package descriptions.

Refer to additional related specification sections and descriptions of work specifically included in this Bid Package / Prime Contract as noted below.

General Items

1. Any substitution of details or materials must be pre-approved by the Architect, engineers and DSA. All substitution requests must be submitted to the CM prior to bid. This contractor is responsible for all costs and time delays required for DSA approval. Any substitutions of materials must conform to Section 01 25 00 "Substitution Procedures".
2. This bid package must protect the new concrete floor at all times as the new finish floor will be polished concrete. Always keep the concrete slab clean and observe the following rules: A- Never park vehicles or equipment on the concrete slab to receive polishing B - No pipe cutting of any kind ferrous or nonferrous. C - No storage of any items. D- No staging of construction material without authorization of the CM. E – No Ferrous Metals placed or stored on the slab to receive polishing F – All equipment must be diapered to prevent any fluid spills, oils, hydraulic or battery acid. G – No charging scissor lifts on slabs to receive polished concrete – charge scissor lifts in rooms that will have floor covering. H – No acidic products used or placed on the new concrete slab. I – No painting over the new concrete slab surface without proper covering or plan to mitigate paint spills, drips or overspray. J – No markers or chalk lines on the surface of the new concrete slab outside of any wall lines. K – No tape is to be used on the surface that will leave residue. L – No brace or shot pins or bolting in the concrete slab field of visibility for polished concrete areas. M – No welding or bracing over the new concrete slab. N -All equipment operated on the new concrete slab will have non marking tires free from embedded items such as screws and nails. O – No eating or food will be allowed on the new concrete slab floor. P – No chewing gum or tobacco products are allowed on the project site.
3. Provide a schedule of values to include an itemization of costs as per Section 01 29 73 "Schedule of Values" or in any detail or format as the Owner, Construction Manager, or Architect seems appropriate or requests.
4. Provide dust control both interior and exterior during the work under this bid package.
5. Vehicles leaving the site shall take every reasonable precaution so as to not track or deposit construction debris or miscellaneous trash onto onsite and offsite roads, parking areas, sidewalks or any locations on the owner's property. Any dirt, rocks, or construction materials, and miscellaneous debris or foreign object that may be tracked or dropped on roads outside the limits of the construction shall be cleaned up immediately by this subcontractor to the satisfaction of the CM.
6. This bid package will adhere to all Clovis Unified School rules and policies including but not limited to the following: No verbal or physical contact with any student or site personnel. No tobacco or drug use. No smoking. Proper work dress attire must be worn at all times as determined by the CM. No taking photos of the project site where students or site personnel are included in such photos. Drive vehicles or equipment on school grounds in a safe and cautious

manner at a maximum speed of five miles per hour.

7. Provide cleanup, broom sweep, and washing concrete and asphalt concrete paved areas, removing tire marks caused by this bid packages operations on all hardscape areas.
8. Furnish and install own floor protection (i.e. Tarps, plastic, plywood, etc.).
9. Provide notification to inspector, CM, or Owner's representatives and/or governing agencies of required inspections and tests at least 48 hours in advance of when such inspection is required.
10. Comply with Project Waste Management Plan and provide documentation to the CM upon request.
11. This bid package shall perform daily cleanup and off haul of own debris to the satisfaction of the CM.

Coordination with Other Trades

1. This Bid Package shall coordinate with each of its own sub trade for a complete project. Each Bid package shall submit upon request of the Construction Manager, their crewing and bid package plan as to who will be performing what scopes of work and the crew size planned for each.
2. Attend all coordination meetings required to coordinate this bid packages work.
3. Coordinate locations of all openings, block-outs, backing, fixture supports, and blocking with related bid packages prior to installation of this bid package work.
4. Coordinate all work with other bid packages to allow contiguous access to the building and site for other bid packages and other trades as necessary to complete scheduled work. Coordinate with other activities in the CPM schedule or look ahead schedules for other bid packages.
5. Bid package CNCTE4 Metal Framing, Gypsum Board – Rough Carpentry and Soundboard shall be responsible for the furnish and installation of all sound deadening board for the project.
6. Bid Package CNCTE6 “Roofing” shall be responsible for furnish and install of all rigid insulation on roof deck that will be covered by roofing.

Furnish and Install Items

1. Furnish and install all insulation complete for the project per plans and specifications.
2. Furnish and install all Fire stopping complete for the project per plans and specifications including but not limited to fire stopping at top of walls adjacent to roof deck.
3. Furnish and install all sound blankets, exterior rigid wall insulation (except behind cement plaster), acoustical blankets, sound attenuation fire blanket insulation, foamed in place insulation, batt insulation, acoustical insulation, and thermal blanket insulation as shown on the plans and specifications.
4. Furnish and install all insulation draft / firestops.
5. Furnish and install all Vapor Retarder Membrane / FSK tape at exterior rigid insulation per specifications.

End of Bid Package

CLARK MET Addition – CMET 05 Roofing

Furnish and install all work specifically required throughout the project documents to complete the work of this Bid Package that specifically includes, but is not limited to the following:

Specification Sections:
Division 00
Division 01

Division 07 Thermal and Moisture Protection
Section 07 14 16 Fluid-applied Waterproofing
Section 07 21 00 Insulation (As applies to Roofing)
Section 07 60 00 Sheet Metal (As applies to Roofing)
Section 07 72 00 Roof Accessories
Section 07 92 00 Sealants

This bid package includes all provisions in its entirety for **Specification Section 00700 General Conditions for Contracts on Construction Management Projects – Clovis Unified School District**; Division - 00 "Procurement and Contracting Requirements," and Division 01 "General Requirements." The Work under this Bid Package shall include the furnishing and installing of all material, labor, and equipment, means and methods, procedures, and items as required to complete the work described in this Bid Package. This Bid Package's work shall be completed as shown on the DSA approved drawings and specified in any applicable specification sections.

Durham Construction Company, Inc. is the Construction Manager for all bid packages and will be referred to as the CM in all bid package descriptions.

Refer to additional related specifications section and descriptions of work specifically included in this Bid Package / Prime Contract as noted below.

General Items

1. Conform to the Construction Manager's project overall schedule and the 4 Week Look-Ahead schedules.
2. Any substitution of details or materials must be pre-approved by the Architect, engineers and DSA. All substitution requests must be submitted to the CM prior to bid. This contractor is responsible for all costs and time delays required for DSA approval. Any substitutions of materials must conform to Section 01 25 00 "Substitution Procedures and form."
3. This Bid Package Prime Contractor must always protect the new and existing site property, landscaping, site concrete and furnishings. Any damage to sod/grass, concrete and furnishings by this bid's forces will need to be replaced at own's contractor expense.
4. This bid package must protect the new concrete floor at all times as the new finish floor will be sealed concrete. Always keep the concrete slab clean and observe the following rules: **A**- never park vehicles or equipment on the concrete slab to receive polishing **B** - No pipe cutting of any kind ferrous or nonferrous. **C** - No storage of any items. **D**- No staging of construction material without authorization of the CM. **E** – No ferrous metals placed or stored on the slab to receive sealing **F** – All equipment must be diapered to prevent any fluid spills, oils, hydraulic or battery acid. **G** – No charging scissor lifts on slabs to receive sealed concrete – charge scissor lifts in rooms that will have floor covering. **H** – No acidic products used or placed on the new concrete slab. **I** – No painting over the new concrete slab surface without proper covering or plan to mitigate paint spills, drips or overspray. **J** – No markers or chalk lines on the surface of the new concrete slab outside of any wall lines. **K** – No tape is to be used on the surface that will leave residue. **L** – No brace or shot pins or bolting in the concrete slab field of visibility for polished concrete areas. **M** – No welding or bracing over the new concrete slab. **N** -All equipment operated on the new concrete slab will have non

marking tires free from embedded items such as screws and nails. **O** – No eating or food will be allowed on the new concrete slab floor. **P** – No chewing gum or tobacco products are allowed on the project site.

5. Any damage to any site utilities by this bids work will be replaced at this bid contractors' expense.
6. Any damage to the existing concrete slabs, walkways etc. during this scope activities and or installation of own work shall be completely restored to the satisfaction of the Owner or CM.
7. Provide a schedule of values to include an itemization of costs as per Section 01 29 73 "Schedule of Values" or in any detail or format as the Owner, Construction Manager, or Architect seems appropriate.
8. Must provide exterior dust control during work and or this scope activities under this bid package.
9. Provide cleanup, broom sweep, washing concrete and concrete paved areas, remove tire marks caused by this bid packages operations on all hardscape areas.
10. Provide notification to inspector, CM, or Owner's representatives and/or governing agencies of required inspections and tests at least 48 hours in advance of when such inspection is required.
11. Any existing utilities that become damaged during this bid packages work shall be completely restored to the satisfaction of the Owner, Construction Manager, Architect, Architect consultants or governing agency.
12. Must provide traffic control AT ALL TIMES for work on any road or sidewalk and paths of travel, including public roads or on Clovis Unified owned property for this Bid.
13. Vehicles leaving the site shall take every reasonable precaution so as to not track or deposit construction debris or miscellaneous trash onto onsite and offsite roads, parking areas, sidewalks or any locations on the owner's property. Any dirt, rocks, or construction materials, and miscellaneous debris or foreign object that may be tracked or dropped on roads outside the limits of the construction shall be cleaned up immediately by this subcontractor to the satisfaction of the CM.
14. This bid package will adhere to all Clovis Unified School rules and policies including but not limited to the following: No verbal or physical contact with any student or site personnel. No tobacco or drug use. No smoking. Proper work dress attire must be worn at all times as determined by the CM. No taking photos of the project site where students or site personnel are included in such photos. Drive vehicles or equipment on school grounds in a safe and cautious manner at a maximum speed of 5 Miles per hour.
15. This bid package shall perform daily cleanup and off haul of own debris to the satisfaction of the CM.
16. Provide cleanup, broom sweep, and washing concrete and concrete paved areas, removing tire marks caused by this Bid Packages operations on all hardscape areas.
17. Furnish and install own floor protection (i.e. tarps, plastic, plywood, etc.) while performing own work.
18. Provide permits and certifications.
19. Provide power for own work.
20. While performing own work, SAFETY of students and staff is a priority.
21. Comply with Project Waste Management Plan and provide documentation to the CM upon request.

Coordination with Other Trades

1. Attend all coordination meetings required to coordinate all items under this bid package.
2. Coordinate all drawings with the drawings of other bid packages. Note conflicts and provide potential solutions to the Architect for review. Coordination must occur prior installation of the work.
3. Coordinate with other bid packages that require holes, openings, reinforcing or bracing as it relates to this Bid Package but not limited to bolt holes for attachment and openings. This Bid Package must receive written layout from other Bid Package prior to installation of own work.
4. Coordinate locations of all door and window frame openings with the General Specialties Bid Package.
5. Coordinate with other bid packages for concrete curb placement vs framing to ensure proper alignment.
6. Coordinate and provide written physical layout for backing required for own work.
7. Provide coordination drawings for above ceiling work for work related to this Bid Package. Coordinate all drawings with other bid packages. Report any conflicts to CM.
8. Due to schedule constraints field measuring should be considered at framing stage in lieu of after all drywall and finishes are complete.

9. Coordinate and confirm installation of blocking, metal straps, backing, nailers/plaster grounds, etc. with General Specialties bid package. This bid package will provide written layout.

Furnish and Install Items

1. Furnish and install all roofing and its components for a complete and watertight system per the plans, specifications and manufacturers requirements.
2. Provide all necessary roof cleaning and roof surface preparation prior to commencing with roofing operations.
3. Furnish and install all specified vapor retarder, insulation rigid board, insulation cove board/fiber board, and fully adhered elastomeric roof membrane and or PVC roofing as shown and noted on the plans and specs.
4. Furnish and install all roofing base/wall flashing, curb flashings, PVC clad material, miscellaneous flashings, cant strips, fastener cover strips, crickets, sealants and adhesives.
5. Furnish and install walkway protection around all mechanical units/equipment, electrical transformer and roof hatch as shown and noted on the plans.
6. ~~**Furnish and**~~ Install all piping roof supports, runners and or sleepers as required for all conduit, piping that is mounted on roof. Coordinate with Plumbing and Site Utilities, HVAC and Electrical and Low Voltage bid packages. **Plumbing, HVAC and Electrical contractors are to provide these items. (Addenda #2)**
7. Furnish and install all flashings for any type of roof penetration to include and not limited to hose bibbs, pipes and conduits.
8. Furnish and install all necessary roofing accessories for a complete system, including, but not limited to, wall and curb flashings, PVC clad material, architectural sheet metal parapet caps, and miscellaneous flashings.
9. Furnish and install all PVC flashings for roof curbs, roof hatches, electrical transformers, and HVAC equipment.
10. Furnish and install all penetration flashings and storm collars including lead and sheet metal at roof including roof drains related and adjacent to the roofing material. Flash/tie roofing into roof drains to be installed by plumbing contractor.
11. Furnish and install all fluid-applied waterproofing as shown and noted on the plans and specs.
12. Perform roof demolition in accordance with contract documents – including but not limited to removal existing built-up roofing including gutters and downspouts as per plan sheet T/A301 notes R01 and R02.
13. Perform all roof demolition as shown and noted on the plans and specs. **(Alternate 3)**
14. Remove, salvage and reinstall sheet metal parapet cap and flashing. Replace sections of parapet cap and flashing as needed. **(Alternate 3)**
15. Remove, salvage and reinstall all roof scuppers. Replace scuppers as required. **(Alternate 3)**
16. Provide all necessary roof cleaning and roof surface preparation prior to commencing with roofing operations. **(Alternate 3)**
17. Furnish and install all roofing and its components for a complete and watertight system per the plans, specifications and manufacturers requirements. **(Alternate 3)**
18. Furnish and install roof walkway protection/walking pads. **(Alternate 3)**
19. Furnish and install all specified vapor retarder, insulation rigid board, insulation cove board/fiber board, and fully adhered elastomeric roof membrane and or PVC roofing as shown and noted on the plans and specs. **(Alternate 3)**
20. Furnish and install all roofing base/wall flashing, curb flashings, PVC clad material, miscellaneous flashings, cant strips, fastener cover strips, crickets, sealants and adhesives. **(Alternate 3)**
21. Furnish and install walkway protection around all mechanical units/equipment, electrical transformer and roof hatch as shown and noted on the plans. **(Alternate 3)**
22. ~~**Furnish and**~~ **Reinstall** all piping roof supports, runners and or sleepers as required for all conduit, piping that is mounted on the roof. Coordinate with Plumbing and Site Utilities, HVAC and Electrical and Low

Voltage bid packages. **(Alternate 3) (Addenda #2)**

23. Furnish and install all flashings for any type of roof penetration to include and not limited to hose bibbs, pipes and conduits. **(Alternate 3)**
24. Furnish and install all necessary roofing accessories for a complete system, including, but not limited to, wall and curb flashings, PVC clad material, architectural sheet metal parapet caps, and miscellaneous flashings. **(Alternate 3)**
25. Furnish and install all PVC flashings for roof curbs, roof hatches, electrical transformers, and HVAC equipment. **(Alternate 3)**
26. Furnish and install all penetration flashings and storm collars including lead and sheet metal at roof including roof drains related and adjacent to the roofing material. Flash/tie roofing into roof drains to be installed by plumbing contractor. **(Alternate 3)**

Note: Unload, inventory, store and notify of deficiencies for all items delivered to the job site FOB, to be installed by this Bid Package.

Installation of FOB items by this Bid Package:

- **Install all boots, lead jacks, flue caps and vandal caps for all pipe penetrations through roof. These items will be provided by the Plumbing and Site Utilities, HVAC and Electrical and Low Voltage Bid Packages.**

- **Install piping roof supports, runners and or sleepers as required. Pipe roof supports, runners and or sleepers are to be provided each by the HVAC, Plumbing & Site Utilities and Electrical contractors as it pertains to their work.**

End of Bid Package

CLARK MET Addition – CMET 06 General Specialties

Furnish and install all work specifically required throughout the project documents to complete the work of this Bid Package that specifically includes, but is not limited to the following:

Specification Sections:
Division 00
Division 01 General Requirements
Section 01 64 00 Owner-Furnished Items

Division 02 Existing Conditions
Section 02 49 19 Selective Demolition

Division 04 Masonry
Section 04 22 00 Concrete Masonry Units

Division 05 Metals
Section 05 12 00 Steel and Metal Fabrications

Division 06 Wood, Plastics and Composites
Section 06 10 00 Rough Carpentry
Section 06 41 23 Modular Casework

Division 07 Thermal and Moisture Protection
Section 07 14 16 Fluid-applied Waterproofing
Section 07 60 00 Sheet Metal (As applies to General Specialties)
Section 07 72 00 Roof Accessories
Section 07 81 16 Fireproofing
Section 07 84 00 Firestopping
Section 07 92 00 Sealants
Section 07 95 00 Expansion Joints

Division 08 Openings
Section 08 11 00 Metal Doors and Frames
Section 08 31 13 Access Doors and Frames
Section 08 33 00 Coiling Doors
Section 08 70 00 Hardware
Section 08 70 00.1 Hardware Schedule
Section 08 80 00 Glass

Division 09 Finishes
Section 09 30 00 Tile
Section 09 65 10 Resilient Base and Accessories

Division 10 Specialties
Section 10 05 00 Miscellaneous Specialties
Section 10 11 00 Visual Display Boards
Section 10 14 00 Identifying Devices
Section 10 14 53 Road and Parking Signage
Section 10 28 13 Toilet Accessories
Section 10 44 00 Fire Protection Specialties
~~**Section 08 80 00** Glass~~ **(Addenda #2)**

Division 14 Conveying Equipment
Section 14 42 00 Wheelchair Lift

Division 32 Exterior Improvements
Section 32 01 90 Existing Landscape Protection
Section 32 84 00 Irrigation System
Section 32 93 00 Landscape Planting

This bid package includes all provisions in its entirety for **Specification Section 00700 General Conditions for Contracts on Construction Management Projects – Clovis Unified School District**; Division - 00 "Procurement and Contracting Requirements," and Division 01 "General Requirements." The Work under this Bid Package shall include the furnishing and installing of all material, labor, and equipment, means and methods, procedures, and items as required to complete the work described in this Bid Package. This Bid Package's work shall be completed as shown on the DSA approved drawings and specified in any applicable specification sections.

Durham Construction Company, Inc. is the Construction Manager for all bid packages and will be referred to as the CM in all bid package descriptions.

Refer to additional related specifications section and descriptions of work specifically included in this Bid Package / Prime Contract as noted below.

General Items

1. Conform to the Construction Manager's project overall schedule and the 4 Week Look-Ahead schedules.
2. Any substitution of details or materials must be pre-approved by the Architect, engineers and DSA. All substitution requests must be submitted to the CM prior to bid. This contractor is responsible for all costs and time delays required for DSA approval. Any substitutions of materials must conform to Section 01 25 00 "Substitution Procedures and form."
3. This Bid Package Prime Contractor must always protect the new and existing site property, landscaping, site concrete and furnishings. Any damage to sod/grass, concrete and furnishings by this bid's forces will need to be replaced at own's contractor expense.
4. This bid package must protect the new concrete floor at all times as the new finish floor will be sealed concrete. Always keep the concrete slab clean and observe the following rules: **A**- never park vehicles or equipment on the concrete slab to receive polishing **B** - No pipe cutting of any kind ferrous or nonferrous. **C** - No storage of any items. **D**- No staging of construction material without authorization of the CM. **E** – No ferrous metals placed or stored on the slab to receive sealing **F** – All equipment must be diapered to prevent any fluid spills, oils, hydraulic or battery acid. **G** – No charging scissor lifts on slabs to receive sealed concrete – charge scissor lifts in rooms that will have floor covering. **H** – No acidic products used or placed on the new concrete slab. **I** – No painting over the new concrete slab surface without proper covering or plan to mitigate paint spills, drips or overspray. **J** – No markers or chalk lines on the surface of the new concrete slab outside of any wall lines. **K** – No tape is to be used on the surface that will leave residue. **L** – No brace or shot pins or bolting in the concrete slab field of visibility for polished concrete areas. **M** – No welding or bracing over the new concrete slab. **N** -All equipment operated on the new concrete slab will have non marking tires free from embedded items such as screws and nails. **O** – No eating or food will be allowed on the new concrete slab floor. **P** – No chewing gum or tobacco products are allowed on the project site.
5. Any damage to any site utilities by this bids work will be replaced at this bid contractors' expense.
6. Any damage to the existing concrete slabs, walkways etc. during this scope activities and or installation of own work shall be completely restored to the satisfaction of the Owner or CM.
7. Provide a schedule of values to include an itemization of costs as per Section 01 29 73 "Schedule of Values" or in any detail or format as the Owner, Construction Manager, or Architect seems appropriate.
8. Must provide exterior dust control during work and or this scope activities under this bid package.
9. Provide cleanup, broom sweep, washing concrete and concrete paved areas, remove tire marks caused by this bid packages operations on all hardscape areas.
10. Provide notification to inspector, CM, or Owner's representatives and/or governing agencies of required inspections and tests at least 48 hours in advance of when such inspection is required.
11. Any existing utilities that become damaged during this bid packages work shall be completely restored to the satisfaction of the Owner, Construction Manager, Architect, Architect consultants or governing agency.

12. Must provide traffic control AT ALL TIMES for work on any road or sidewalk and paths of travel, including public roads or on Clovis Unified owned property for this Bid.
13. Vehicles leaving the site shall take every reasonable precaution so as to not track or deposit construction debris or miscellaneous trash onto onsite and offsite roads, parking areas, sidewalks or any locations on the owner's property. Any dirt, rocks, or construction materials, and miscellaneous debris or foreign object that may be tracked or dropped on roads outside the limits of the construction shall be cleaned up immediately by this subcontractor to the satisfaction of the CM.
14. This bid package will adhere to all Clovis Unified School rules and policies including but not limited to the following: No verbal or physical contact with any student or site personnel. No tobacco or drug use. No smoking. Proper work dress attire must be worn at all times as determined by the CM. No taking photos of the project site where students or site personnel are included in such photos. Drive vehicles or equipment on school grounds in a safe and cautious manner at a maximum speed of 5 Miles per hour.
15. This bid package shall perform daily cleanup and off haul of own debris to the satisfaction of the CM.
16. Provide cleanup, broom sweep, and washing concrete and concrete paved areas, removing tire marks caused by this Bid Packages operations on all hardscape areas.
17. Furnish and install own floor protection (i.e. tarps, plastic, plywood, etc.) while performing own work.
18. This Bid Package is responsible for securing all openings specifically window and door openings as it pertains to this bid packages scope of work. A secure building must be maintained at all times.
19. This Bid Package is responsible to ensure that adequate irrigation to existing plants and/or landscaping remain active throughout the duration and completion of the project.
20. Provide permits and certifications.
21. Provide power for own work.
22. While performing own work, SAFETY of students and staff is a priority.
23. Trucks leaving the construction site shall take reasonable precautions as to not track or drop any construction debris or trash onto school site roads, off haul routes and subcontractor designated parking areas. Any dirt or miscellaneous debris that is tracked or dropped on roads within or outside the limits of the construction site shall be cleaned up immediately by this subcontractor.

Coordination with Other Trades

1. Attend all coordination meetings required to coordinate all items under this bid package.
2. Coordinate all drawings with the drawings of other bid packages. Note conflicts and provide potential solutions to the Architect for review. Coordination must occur prior installation of the work.
3. Coordinate with other bid packages that require holes, openings, reinforcing or bracing as it relates to this bid package but not limited to bolt holes for attachment and openings. This bid package must receive written layout from other bid packages prior to installation of own work.
4. Coordinate locations of all door and window frame openings with the Metal Framing bid package.
5. Coordinate with other bid packages for concrete curb placement vs framing to ensure proper alignment.
6. Coordinate and provide written physical layout for backing required for own work.
7. Provide coordination drawings for above ceiling work for work related to this bid package. Coordinate all drawings with other bid packages. Report any conflicts to CM.
8. Due to schedule constraints field measuring should be considered at framing stage in lieu of after all drywall and finishes are complete.

Furnish and Install Items:

1. This bid package will need to furnish and install floor protection in its entirety. Replace and maintain floor protection as required for the duration of the project.
2. Provide project trash / recyclables dumpsters (debris boxes) for the entire and duration of the project per specification section 017419.
3. Remove walls and or portions of walls, doors, door frames, handrails/guardrails, plumbing fixtures, toilet accessories, light fixtures, frp, flooring and selective wall finishes as shown and noted on the plans. See sheet T/A110 for additional demolition. Concrete bid package is to saw-cut concrete wall infill, portion of retaining wall and stair landing.
4. Waterblast and remove all flooring, base, glue/adhesive and or mastic as shown and noted on the plans.

5. Materials designated to be removed and/or demoed shall legally disposed of and hauled off site.
6. Furnish and install all casework, casework hardware and accessories complete as shown on and noted on the plans and specs.
7. Furnish complete shop drawings for all casework to include any modifications and revisions made prior to fabrications. Shop drawings shall be generated and submitted for review in a timely manner so as not to delay the project schedule.
8. Provide WIC Certification.
9. Furnish and install all wood rough carpentry and wood Finish carpentry work.
10. Install steel counter support brackets, angles and steel tubes. Steel counter support brackets, angles and steel tubes will be provided by the Steel bid package.
11. Furnish and install all drilling of holes for own work performed by this bid package.
12. Furnish and install all openings in casework and tops for other trades as well as cable holes, grommets etc.
13. Furnish and install all sleepers, shims, floor anchorage devices. Coordinate with Metal Framing bid package for backing/blocking installation. This bid package is to provide written layout for backing/blocking.
14. Install all roof access ladders and steel ladder extensions. Roof access ladders will be provided by the Structural Steel bid package.
15. Remove and reset roof access **hatches. (Alternate 3). (Addenda #2)**
16. Furnish and install all roof hatches with curbs and telescoping post complete as per contract documents. Coordinate with Metal Framing bid package for backing/blocking.
17. Furnish and install fire caulking/sealant as it pertains to own scope of work and as shown and noted on the plans and specs.
18. Furnish and install all hollow metal doors, hollow metal frames and complete door/ finish hardware as shown and noted on the plans and specs.
19. Furnish and install all hollow metal window frames as shown and noted on the plans and specs.
20. Furnish and install all glazing.
21. Furnish and install all complete working coiling doors as shown and noted on the plans and specs, including but not limited to any necessary angles, accessories and framing.
22. Furnish and install all bituthene (weather barrier) at all hollow metal doors, hollow metal windows and coiling door openings.
23. Furnish and install all required hollow metal door/frame accessories.
24. Furnish and install all shims, nailers and wood backing necessary for plumb installation of work included in this bid package.
25. Furnish and install all sealants and backer rods at entire perimeter of all windows openings; both interior and exterior.
26. Furnish and install all sealants and backer rods at entire perimeter of all door openings; both interior and exterior.
27. Furnish and install all glass and glazing with all its accessories as shown and noted on the plans and specs.
28. Furnish and install all access doors and frames.
29. Furnish plate anchors for door stops and door strikes. Installation of these items will be provided by the Concrete and Reinforcing bid package
30. Install all Owner Furnished items i.e. carpet and/or walk-off carpet, etc.
31. Install steel and or stainless-steel handrails/guardrails complete with sleeves and non-shrink grout at concrete stairs as shown and noted on the plans. These items will be provided by the Structural Steel bid package.
32. Furnish and install all resilient rubber base complete as shown and noted on the plans and specs.
33. Furnish and install rubber stair tread system with contrasting stripe complete at the Mezzanine as shown and noted on the plans and specs. **(Alternate 1)**
34. Furnish and install crane hoist. **(Alternate 1)**

35. Furnish stair nosings at concrete stairs. Installation of these items will be provided by the Concrete and Reinforcing bid package. This bid package needs to protect the stair nosing and is responsible id damaged.
36. Furnish and install Vapor Alkalinity Control as noted on the plans and specs.
37. Install all Owner Furnished items including but not limited to carpet, toilet accessories, refrigerators, washers, dryers, and television mounts.
38. Furnish and install all tiling complete as per contract documents.
39. Furnish and install all grout sealers as per contract documents.
40. Furnish and install mortar bed system with waterproofing and crack isolation membranes and or expansion joints complete as per contract documents.
41. Furnish and install plywood filler strip at bottom of tackboard.
42. Furnish and install all finished plywood as shown and noted on the plans and specs. See Interior Elevations.
43. Furnish and install all visual display boards/liquid markerboards and shown and noted on the plans.
44. Remove existing road sign and furnish and install new road and parking signage complete as shown and noted on the plans and specs.
45. Furnish and install wheelchair lifts complete as shown and noted on the plans and specs. Coordinate with Concrete bid package for recessed installation and with Electrical for power and low voltage.
46. Furnish and install all interior and exterior building signage.
47. Furnish and install concrete masonry unit veneer block complete with reinforcement as shown and noted on the plans and specs.
48. Furnish and install all fire protection specialties and/or devices as shown and noted on the plans and specs.
49. Furnish and install all Fire Extinguishers and cabinets.
50. Furnish and install all spray fireproofing as shown and noted on the plans and specs.
51. Repair sprayed fireproofing due to installation of others work and or damaged caused by other trades.
52. Furnish and install fire rated plywood backboard for electrical/telephone equipment.
53. Furnish and install all toilets accessories i.e. grab bars, mirrors, convex mirrors, soap dispensers, toilet tissue dispensers, toilet seat covers, sanitary napkin disposal and dispenser, paper towel dispensers, recessed trash receptacles, mop/broom rack, and electric hand dryers with recessed kits.
54. Furnish and install all expansion joints (wall, floor, ceiling and Roof), expansion joint transition sill flashing as shown and noted on the plans and specs.
55. Furnish and provide final building clean, interior and exterior including but not limited to cleaning of all windows, doors, walls, casework restrooms, site concrete, landscape areas, roof any and all exterior and interior surfaces.
56. Provide dewatering for own work.
57. Furnish and install all decomposed granite (DG) as shown and noted on the plans and specs.
58. Furnish and provide all excavation, removal and off haul of spoils, compact and grade area to receive DG as shown and noted on the plans and specs.
59. Furnish and install all landscape and irrigation complete as shown and noted on the plans and specs. Connect to power, wiring and controls as required.
60. Provide all backfill and required compaction of trenching and or excavations to original sub-grade for work included in this bid package.
61. Furnish & install all irrigation sleeves to include sleeves under all concrete improvements. Coordinate with Concrete contractor.
62. Furnish & install all thrust blocks for this bid package work as shown and noted on the plans.
63. Furnish and install all pipes, fittings, valves, valve boxes, couplers, controller, wires, tracer wires, irrigation heads, bubblers, etc as show and noted on the plans and specs. Test as required for a complete working system.
64. Furnish and install all trees, shrubs and other plants, grasses, ground covers and root control barriers complete per contract documents.
65. Provide maintenance of all landscape and irrigation for duration of the project.
66. Furnish and install all landscape wood bark and or mulch.

67. Furnish and maintain landscape planting observation log per contract documents.
68. Provide and pay for existing soil analysis and submit to CM per plans and specifications for approval by landscape consultant.
69. This bid package is to include $1,000.00 allowance for exiting tree removal and or replacement whether specifically shown and or not shown on the construction documents.
70. Provide maintenance period as required per contract documents.
71. Provide weed control per contract documents.
72. Furnish and install all soil amendments, fertilizers and mulch per the plans and specifications.
73. Provide water test of planter areas prior to planting to confirm proper drainage and coverage.
74. Furnish & install grading and topsoil.
75. Furnish and install all necessary patch back and or infill of all landscaping areas due to utilities and new concrete required for the project. Review utility plans for areas that will be damaged by other bid packages.
76. Remove and relocate irrigation systems as required for a new and functioning irrigation system. This bid package is responsible for identifying control wires for stem tie in.
77. Perform an existing irrigation system operational assessment of all irrigation in all areas to confirm proper working order prior of existing systems prior to starting work. Notify CM of any operational deficiencies.
78. Furnish, install & maintain an irrigation system for existing landscaping to remain during construction. Any damage caused by lack of water will be the responsibility of this prime contract. Hand water as required.
79. Provide cleanup, broom sweep, washing of concrete walks areas, removal of debris from sod/turf areas caused by this bid package operation of work.
80. Remove, salvage and protect roof mounted exhaust fan and return to owner. **(Addenda #2)**
81. Remove wall mounted exhaust fans and associated duct work, see sheet T/M100. **(Addenda #2)**
82. Remove existing boiler unit, duct, flue as shown and noted on the plans and specs. **(Addenda #2)**
83. **Furnish and install all wood rough carpentry due to reroof. (Alternate 3) (Addenda #2)**
84. **Remove portion of roof, roof structure, rain gutter, downspouts, chain link fence and all its anchoring systems as shown and noted on the plans. (Addenda #2)**

Note: Unload, inventory, store and notify of deficiencies for all items delivered to the job site FOB, to be installed by this Bid Package.

FOB items provided by this bid package for other to install:

- **Provide the Concrete and Reinforcing bid package will stair nosings complete for installation.**
- **Furnish plate anchors for door stops and door strikes. Installation of these items will be provided by the Concrete and Reinforcing bid package.**

Installation of FOB items by this Bid Package:

- **Install steel counter support brackets, angles and steel tubes. Steel counter support brackets will be provided by the Structural Steel bid package.**
- **Install roof access ladders and steel ladder extensions. Roof access ladders and steel ladder extensions will be provided by the Structural Steel bid package.**
- **Install steel and or stainless-steel handrails/guardrails. These items will be provided in the Structural Steel bid package.**

CLARK MET Addition – CMET 07 Acoustical Ceiling and Wall Covering

Furnish and install and / or provide all work specifically required throughout the project documents to complete the work of this Bid Package that specifically includes, but is not limited to, the following:

Specification Sections:
Division 00
Division 01

09 50 00 Acoustical Ceilings
09 72 00 Wall Coverings
10 05 00 Miscellaneous Specialties (Corner Guards)
07 92 00 Sealants (As applies to wall coverings and acoustical ceiling)

This bid package includes all provisions in its entirety for **Specifications Sections 00700 General Conditions for Contracts on Construction Management Projects – Clovis Unified School District**; Division - 00 "Procurement and Contracting Requirements," and Division 01 "General Requirements." The Work under this Bid Package shall include the furnishing and installing of all material, labor and equipment, means and methods, procedures, and items as required to complete the work described in this Bid Package. This Bid Packages work shall be completed as shown on the DSA approved drawings and specified in any applicable specification sections.

Durham Construction Company, Inc. is the Construction Manager for all bid packages and will be referred to as the CM in all bid package descriptions.

Refer to additional related specification sections and descriptions of work specifically included in this Bid Package / Prime Contract as noted below.

General Items

1. Any substitution of details or materials must be pre-approved by the Architect, engineers and DSA. All substitution requests must be submitted to the CM prior to bid. This contractor is responsible for all costs and time delays required for DSA approval. Any substitutions of materials must conform to Section 01 25 00 "Substitution Procedures".
2. This bid package must protect the new concrete floor at all times as the new finish floor will be polished concrete. Always keep the concrete slab clean and observe the following rules: A- Never park vehicles or equipment on the concrete slab to receive polishing B - No pipe cutting of any kind ferrous or nonferrous. C - No storage of any items. D- No staging of construction material without authorization of the CM. E – No Ferrous Metals placed or stored on the slab to receive polishing F – All equipment must be diapered to prevent any fluid spills, oils, hydraulic or battery acid. G – No charging scissor lifts on slabs to receive polished concrete – charge scissor lifts in rooms that will have floor covering. H – No acidic products used or placed on the new concrete slab. I – No painting over the new concrete slab surface without proper covering or plan to mitigate paint spills, drips or overspray. J – No markers or chalk lines on the surface of the new concrete slab outside of any wall lines. K – No tape is to be used on the surface that will leave residue. L – No brace or shot pins or bolting in the concrete slab field of visibility for polished concrete areas. M – No welding or bracing over the new concrete slab. N -All equipment operated on the new concrete slab will have non marking tires free from embedded items such as screws and nails. O – No eating or food will be allowed on the new concrete slab floor. P – No chewing gum or tobacco products are allowed on the project site.
3. Provide a schedule of values to include an itemization of costs as per Section 01 29 73 "Schedule of Values" or in any detail or format as the Owner, Construction Manager, or Architect seems appropriate or requests.
4. Provide dust control both interior and exterior during the work under this bid package.
5. Vehicles leaving the site shall take every reasonable precaution so as to not track or deposit construction debris or miscellaneous trash onto onsite and offsite roads, parking areas, sidewalks or any locations on the owner's property. Any dirt, rocks, or construction materials, and miscellaneous debris or foreign object that may be tracked or dropped on roads outside the limits of the construction shall be cleaned up immediately by this subcontractor to the satisfaction of the CM.
6. This bid package will adhere to all Clovis Unified School rules and policies including but not limited to the following: No verbal or physical contact with any student or site personnel. No tobacco or drug use. No smoking. Proper work dress attire must be worn at all times as determined by the CM. No taking photos of the project site where students or site personnel are included in such photos. Drive vehicles or equipment on school grounds in a safe and cautious

manner at a maximum speed of five miles per hour.

7. Provide cleanup, broom sweep, and washing concrete and asphalt concrete paved areas, removing tire marks caused by this bid packages operations on all hardscape areas.
8. Furnish and install own floor protection (i.e. Tarps, plastic, plywood, etc.).
9. Provide notification to inspector, CM, or Owner's representatives and/or governing agencies of required inspections and tests at least 48 hours in advance of when such inspection is required.
10. Comply with Project Waste Management Plan and provide documentation to the CM upon request.
11. This bid package shall perform daily cleanup and off haul of own debris to the satisfaction of the CM.
12. Provide temporary power for this bid packages work.

Coordination with Other Trades

1. This Bid Package shall coordinate with each of its own sub trade for a complete project. Each Bid package shall submit upon request of the Construction Manager, their crewing and bid package plan as to who will be performing what scopes of work and the crew size planned for each.
2. Attend all coordination meetings required to coordinate this bid packages work.
3. Coordinate locations of all openings, block-outs, backing, fixture supports, and blocking with related bid packages prior to installation of this bid package work.
4. Coordinate all work with other bid packages to allow contiguous access to the building and site for other bid packages and other trades as necessary to complete scheduled work. Coordinate with other activities in the CPM schedule or look ahead schedules for other bid packages.

Furnish and Install Items

1. Furnish and install all acoustical ceilings complete as per contract documents.
2. Furnish and install all hanger wires, strut supports and bracing necessary for installation of work included in this Bid Package.
3. Furnish and install all hanger wires for suspended and/or recessed lighting, light fixtures, ceiling fans.
4. Furnish and install trapeze supports for acoustical ceiling as required.
5. Furnish and install wall covering accessories and trim as per detail A7& E7 – X/A602.
6. Furnish and install all wall coverings and / or vinyl covered tack board and associated vinyl tackboard trim.
7. Furnish and install all wall coverings and / or FRP panels and associated FRP trim.
8. Furnish and install all caulking and sealant at locations where tack board meets adjacent materials.
9. Furnish and install all corner guards.

End of Bid Package

CLARK MET Addition – CMET 08 Painting & Concrete Sealer

Furnish and install all work specifically required throughout the project documents to complete the work of this Bid Package that specifically includes, but is not limited to the following:

Specification Sections:
Division 00
Division 01

Division 03 Concrete
Section 03 30 00 Cast-In- Place Concrete

Division 04 Masonry
Section 04 22 00 Concrete Masonry Unit (As applies to Painting & Concrete Sealer)

Division 07 Thermal and Moisture Protection
Section 07 92 00 Sealants

Division 09 Finishes
Section 09 91 00 Painting

Appendix "B" Interior Color Schedule
Appendix "C" Exterior Color Schedule

This bid package includes all provisions in its entirety for **Specification Section 00700 General Conditions for Contracts on Construction Management Projects – Clovis Unified School District**; Division - 00 "Procurement and Contracting Requirements," and Division 01 "General Requirements." The Work under this Bid Package shall include the furnishing and installing of all material, labor, and equipment, means and methods, procedures, and items as required to complete the work described in this Bid Package. This Bid Package's work shall be completed as shown on the DSA approved drawings and specified in any applicable specification sections.

Durham Construction Company, Inc. is the Construction Manager for all bid packages and will be referred to as the CM in all bid package descriptions.

Refer to additional related specifications section and descriptions of work specifically included in this Bid Package / Prime Contract as noted below.

General Items

1. Conform to the Construction Manager's project overall schedule and the 4 Week Look-Ahead schedules.
2. Any substitution of details or materials must be pre-approved by the Architect, engineers and DSA. All substitution requests must be submitted to the CM prior to bid. This contractor is responsible for all costs and time delays required for DSA approval. Any substitutions of materials must conform to Section 01 25 00 "Substitution Procedures and form."
3. This Bid Package Prime Contractor must always protect the new and existing site property, landscaping, site concrete and furnishings. Any damage to sod/grass, concrete and furnishings by this bid's forces will need to be replaced at own's contractor expense.
4. This bid package must protect the new concrete floor at all times as the new finish floor will be sealed concrete. Always keep the concrete slab clean and observe the following rules: **A**- never park vehicles or equipment on the concrete slab to receive polishing **B** - No pipe cutting of any kind ferrous or nonferrous. **C** - No storage of any items. **D**- No staging of construction material without authorization of the CM. **E** – No

ferrous metals placed or stored on the slab to receive sealing **F** – All equipment must be diapered to prevent any fluid spills, oils, hydraulic or battery acid. **G** – No charging scissor lifts on slabs to receive sealed concrete – charge scissor lifts in rooms that will have floor covering. **H** – No acidic products used or placed on the new concrete slab. **I** – No painting over the new concrete slab surface without proper covering or plan to mitigate paint spills, drips or overspray. **J** – No markers or chalk lines on the surface of the new concrete slab outside of any wall lines. **K** – No tape is to be used on the surface that will leave residue. **L** – No brace or shot pins or bolting in the concrete slab field of visibility for polished concrete areas. **M** – No welding or bracing over the new concrete slab. **N** -All equipment operated on the new concrete slab will have non marking tires free from embedded items such as screws and nails. **O** – No eating or food will be allowed on the new concrete slab floor. **P** – No chewing gum or tobacco products are allowed on the project site.

5. Any damage to any site utilities by this bids work will be replaced at this bid contractors' expense.
6. Any damage to the existing concrete slabs, walkways etc. during this scope activities and or installation of own work shall be completely restored to the satisfaction of the Owner or CM.
7. Provide a schedule of values to include an itemization of costs as per Section 01 29 73 "Schedule of Values" or in any detail or format as the Owner, Construction Manager, or Architect seems appropriate.
8. Must provide exterior dust control during work and or this scope activities under this bid package.
9. Provide cleanup, broom sweep, washing concrete and concrete paved areas, remove tire marks caused by this bid packages operations on all hardscape areas.
10. Provide notification to inspector, CM, or Owner's representatives and/or governing agencies of required inspections and tests at least 48 hours in advance of when such inspection is required.
11. Any existing utilities that become damaged during this bid packages work shall be completely restored to the satisfaction of the Owner, Construction Manager, Architect, Architect consultants or governing agency.
12. Must provide traffic control AT ALL TIMES for work on any road or sidewalk and paths of travel, including public roads or on Clovis Unified owned property for this Bid.
13. Vehicles leaving the site shall take every reasonable precaution so as to not track or deposit construction debris or miscellaneous trash onto onsite and offsite roads, parking areas, sidewalks or any locations on the owner's property. Any dirt, rocks, or construction materials, and miscellaneous debris or foreign object that may be tracked or dropped on roads outside the limits of the construction shall be cleaned up immediately by this subcontractor to the satisfaction of the CM.
14. This bid package will adhere to all Clovis Unified School rules and policies including but not limited to the following: No verbal or physical contact with any student or site personnel. No tobacco or drug use. No smoking. Proper work dress attire must be worn at all times as determined by the CM. No taking photos of the project site where students or site personnel are included in such photos. Drive vehicles or equipment on school grounds in a safe and cautious manner at a maximum speed of 5 Miles per hour.
15. This bid package shall perform daily cleanup and off haul of own debris to the satisfaction of the CM.
16. Provide cleanup, broom sweep, and washing concrete and concrete paved areas, removing tire marks caused by this Bid Packages operations on all hardscape areas.
17. Furnish and install own floor protection (i.e. tarps, plastic, plywood, etc.) while performing own work.
18. Provide permits and certifications.
19. Provide power for own work.
20. While performing own work, SAFETY of students and staff is a priority.
21. Comply with Project Waste Management Plan and provide documentation to the CM upon request.

Coordination with Other Trades

1. This Bid Package shall coordinate with each of its own sub trade for a complete project. Each Bid package shall submit upon request of the construction Manager, their crewing and bid package plan as to who will be performing what scopes of work and the crew size planned for each.
2. Attend all coordination meetings required to coordinate this bid packages work.
3. Schedule paint coats to allow for completion of work with minimal damage with final coat being installed with majority of work completed. Touch up as required.

4. Coordinate all work with other bid packages to allow contiguous access to the building and site for other bid packages and other trades as necessary to complete scheduled work. Coordinate with other activities in the CPM schedule or look ahead schedules for other bid packages.

Furnish and Install Items

1. Furnish and install own floor protection (i.e. tarps, plastic, plywood, etc.) while performing own work.
2. Furnish and install all interior and exterior painting and sealing complete for the project including but not limited to concrete or masonry units, gypsum board, metal finishes, woodwork, special finishes, exterior metal finishes, exterior wood finishes as per the plans and specifications.
3. Furnish and install all concrete floor sealers and clear floor hardeners.
4. Furnish and install all surface preparation and finish of all sheet metal and sheet metal flashing/coping to be painted.
5. Furnish and install all surface preparation on all items to be painted.
6. Furnish and install all water repellant sealers on masonry units as per section 04 22 00 and section 09 91 00.
7. Furnish and install all painting of sheet metal, sheet metal flashing/ counter flashing and coping.
8. Furnish and install all painting of exposed metal deck ceiling as shown and noted on the plans and specs.
9. Furnish and install all painting at doors and frames.
10. Furnish and install all painting of coiling doors, frames and steel angles.
11. Furnish and install all painting of steel counter support brackets, angles and steel tubes.
12. Furnish and install all painting at window frames.
13. Furnish and install all painting of access doors/panels and roof hatch.
14. Furnish and install sealants/caulking at all exterior and interior door frames and window frames.
15. Furnish and install all caulking and or sealants at hood/counter coiling doors.
16. Furnish and install all caulking and or sealant at all sheet metal, metal panels, expansion joints abut to dissimilar materials.
17. Furnish and install all caulking and or sealant where exterior materials abut next to each other i.e. plaster, concrete masonry unit veneer, steel, etc. as shown and noted on the plans.
18. Furnish and install all painting of steel handrails/guardrails.
19. Furnish and install all painting for all roof access ladders and roof extensions.
20. Paint plywood backboard for electrical/telephone equipment, (fire rated paint).
21. Furnish and install all painting of sheet metal parapet cap and trim.
22. Furnish and install all touch up painting.
23. Furnish and install all painting of exposed mechanical, plumbing and electrical equipment and utilities.
24. Furnish and install all painting of exposed to view; ceiling hangers, wires, bracing, strut supports, ducts, grilles, conduits, etc.
25. Furnish and install all painting of exposed piping and conduits.
26. Furnish and install all painting for exhaust fans, vent stacks, mechanical units, ducts and miscellaneous mechanical equipment.
27. Furnish and install all painting of structural steel and miscellaneous steel at the Mezzanine. **(Alternate 1)**
28. Furnish and install all painting of steel stairs, steel tube stringers with closure sheet metal pieces and end plates, steel pipe guardrail system, steel angles, bent plates, etc. complete at the Mezzanine. **(Alternate 1)**
29. Furnish and install all painting of guardrail at the Mezzanine Level. **(Alternate 1)**
30. Furnish and install all painting of metal deck underneath the Mezzanine. **(Alternate 1)**
31. Furnish and install all painting of exterior canopy structural steel with steel angles.
32. Furnish and provide all sandblasting and powder coating of the exterior canopy perforated panels. The Structural Steel bid package is to provide the perforated panels and this bid package is to coordinate.
33. Furnish and install all touch up painting due to damage caused by other trades and or damage caused by installation of their work.

34. Furnish and install all painting of any exposed downspouts and overflow drain covers.
35. Furnish and install all painting and or touch up painting as required at parapet cap. **(Alternate 3)**
36. Furnish and install all painting and or touch up painting of exhaust ducts, ductwork, vents, vent stacks, mechanical units, conduit and miscellaneous mechanical equipment and or accessories. **(Alternate 3)**
37. Furnish and provide all intumescent paint finish on all exposed and non-exposed structural steel i.e. columns, braced frames, beams, etc. as shown and noted on the plans. **(Addenda #2)**

End of Bid Package

CLARK MET Addition – CMET 09 Fire Protection

Furnish and install and / or provide all work specifically required throughout the project documents to complete the work of this Bid Package that specifically includes, but is not limited to, the following:

Specification Sections:
Division 00
Division 01

Division 03 Concrete
Section 03 15 14 Drilled Anchors (As applies to Fire Protection)

Division 07 Thermal and Moisture Protection
Section 07 92 00 Sealants (As applies to Fire Protection)

Division 21 Fire Suppression
Section 21 05 17 Sleeves and Sleeve Seals for Fire Suppression Piping
Section 21 05 18 Escutcheons for Fire Suppression Piping
Section 21 05 23 General Duty Valves for Fire Suppression Piping
Section 21 05 29 Hangers and Supports for Fire Suppression Piping and Equipment
Section 21 05 48 Vibration and Seismic Controls for Fire Suppression Piping and Equipment
Section 21 05 53 Identification for Fire Suppression Piping and Equipment
Section 21 11 00 Facility Fire Suppression Water Service Piping
Section 21 11 19 Fire Department Connections
Section 21 13 13 Wet Pipe Sprinkler System

Division 28 Electronic Safety and Security
Section 28 31 00 Fire Detection and Alarm (As applies to Fire Protection)

This bid package includes all provisions in its entirety for **Specifications Sections 00700 General Conditions for Contracts on Construction Management Projects – Clovis Unified School District**; Division - 00 "Procurement and Contracting Requirements," and Division 01 "General Requirements." The Work under this Bid Package shall include the furnishing and installing of all material, labor and equipment, means and methods, procedures, and items as required to complete the work described in this Bid Package. This Bid Packages work shall be completed as shown on the DSA approved drawings and specified in any applicable specification sections.

Durham Construction Company, Inc. is the Construction Manager for all bid packages and will be referred to as the CM in all bid package descriptions.

Refer to additional related specification sections and descriptions of work specifically included in this Bid Package / Prime Contract as noted below.

General Items

1. Any substitution of details or materials must be pre-approved by the Architect, engineers and DSA. All substitution requests must be submitted to the CM prior to bid. This contractor is responsible for all costs and time delays required for DSA approval. Any substitutions of materials must conform to Section 01 25 00 "Substitution Procedures".
2. This bid package must protect the new concrete floor at all times as the new finish floor will be polished concrete. Always keep the concrete slab clean and observe the following rules: A- Never park vehicles or equipment on the concrete slab to receive polishing B - No pipe cutting of any kind ferrous or nonferrous. C - No storage of any items. D- No staging of construction material without authorization of the CM. E – No Ferrous Metals placed or stored on the slab to receive polishing F – All equipment must be diapered to prevent any fluid spills, oils, hydraulic or battery acid. G – No charging scissor lifts on slabs to receive polished concrete – charge scissor lifts in rooms that will have floor covering. H – No acidic products used or placed on the new concrete slab. I – No painting over the new concrete slab surface without proper covering or plan to mitigate paint spills, drips or overspray. J – No markers or chalk lines on the surface of the new concrete slab outside of any wall lines. K – No tape is to be used on the surface that will

leave residue. L – No brace or shot pins or bolting in the concrete slab field of visibility for polished concrete areas. M – No welding or bracing over the new concrete slab. N -All equipment operated on the new concrete slab will have non marking tires free from embedded items such as screws and nails. O – No eating or food will be allowed on the new concrete slab floor. P – No chewing gum or tobacco products are allowed on the project site.

3. Provide a schedule of values to include an itemization of costs as per Section 01 29 73 "Schedule of Values" or in any detail or format as the Owner, Construction Manager, or Architect seems appropriate or requests.
4. Provide dust control both interior and exterior during the work under this bid package.
5. Vehicles leaving the site shall take every reasonable precaution so as to not track or deposit construction debris or miscellaneous trash onto onsite and offsite roads, parking areas, sidewalks or any locations on the owner's property. Any dirt, rocks, or construction materials, and miscellaneous debris or foreign object that may be tracked or dropped on roads outside the limits of the construction shall be cleaned up immediately by this subcontractor to the satisfaction of the CM.
6. This bid package will adhere to all Clovis Unified School rules and policies including but not limited to the following: No verbal or physical contact with any student or site personnel. No tobacco or drug use. No smoking. Proper work dress attire must be worn at all times as determined by the CM. No taking photos of the project site where students or site personnel are included in such photos. Drive vehicles or equipment on school grounds in a safe and cautious manner at a maximum speed of five miles per hour.
7. Provide cleanup, broom sweep, and washing concrete and asphalt concrete paved areas, removing tire marks caused by this bid packages operations on all hardscape areas.
8. Furnish and install own floor protection (i.e. Tarps, plastic, plywood, etc.).
9. Provide notification to inspector, CM, or Owner's representatives and/or governing agencies of required inspections and tests at least 48 hours in advance of when such inspection is required.
10. Comply with Project Waste Management Plan and provide documentation to the CM upon request.
11. This bid package shall perform daily cleanup and off haul of own debris to the satisfaction of the CM.
12. Provide temporary power for this bid packages work.

Coordination with Other Trades

1. Coordinate with Plumbing bid package location for underground point of connection to main fire line for building.
2. This Bid Package shall coordinate with each of its own sub trade for a complete project. Each Bid package shall submit upon request of the Construction Manager, their crewing and bid package plan as to who will be performing what scopes of work and the crew size planned for each.
3. Attend all coordination meetings required to coordinate this bid packages work.
4. Coordinate locations of all openings, block-outs, backing, fixture supports, and blocking with related bid packages prior to installation of this bid package work.
5. Coordinate all work with other bid packages to allow contiguous access to the building and site for other bid packages and other trades as necessary to complete scheduled work. Coordinate with other activities in the CPM schedule or look ahead schedules for other bid packages.
6. Coordinate all Fire sprinkler lines and heads with all mechanical, electrical and plumbing pipes as to not interfere with other trades.

Furnish and Install Items:

1. Furnish and provide shop drawings for all Fire Sprinkler work per NFPA 13.
2. Furnish and install a complete fire sprinkler system from the point of connection (approximately 6" above finish floor as per code and contract documents) as shown on the contract documents, plans and NFPA 13. The plumbing bid package will supply underground fire piping stub and cap inside building above finish floor per contract documents.
3. Make provisions to tie into existing fire line at point of connection including all necessary shutdowns and safe offs.
4. Furnish and install all drilling of holes for work performed in this bid package.
5. Furnish and install complete fire suppression system under Mezzanine as shown and noted on the plans. **(Alternate 1)**
6. Furnish and install all fire stopping, fire caulking, and regular caulking to seal penetrations of this bid package scope of work.
7. Furnish and install all hangers, supports, hangers, bracing, rods, pipe sleeves, sway/lateral bracing and struts for

work related to this bid package.

8. Furnish and install all trenching for site fire lines, sawcut, demo and patch back of existing site improvements.
9. Cleaning and purging of all fire suppression systems is included in this bid package. Coordinate with Plumbing and Site Utility bid package prior to connection.
10. Test and flush system per specifications
11. Coordinate the installation of the fire alarm safety devices with the electrical, low voltage Prime Contractor for devices associated with the sprinkler system.
12. Furnish and install all Fire Risers complete.
13. Furnish and install all piping, gate valves, check valves, globe valves, flow switches, tamper switches water gong, pressure gage, sprinkler heads and escutcheons for work related to this bid package.
14. Furnish and install all required signage as shown and noted on the plans, specs and NFPA 13 requirements for work related to this bid package.
15. Furnish and install identification. All controls, piping, valves and equipment shall be labeled for function and service as required for this bid package.
16. Procure and pay for all necessary permits as required for Fire Sprinkler work.
17. Provide all required testing, adjustments and components as required by the authority having jurisdiction for this bid package.
18. At completion of the project, provide a certificate of inspection from the authority having jurisdiction indicating installation and testing in accordance with NFPA 13 and any referenced standards shall be provided to the Owner and CM.

End of Bid Package

CLARK MET Addition – CMET 10 Plumbing and Site Utilities

Furnish and install all work specifically required throughout the project documents to complete the work of this Bid Package that specifically includes, but is not limited to, the following:

Specification Sections:
Division 00
Division 01

Division 2 Existing Conditions
Section 02 49 19 Selective Demolition

Division 07 Thermal and Moisture Protection
Section 07 92 00 Sealants

Division 22 Plumbing
Section 22 00 00 General Plumbing Provisions
Section 22 00 50 Plumbing

Division 31 Earthwork
Section 31 22 22 Soil Materials
Section 31 23 33 Trench Excavation and Backfill

Division 33 Utilities
Section 33 12 00 Water Utilities
Section 33 30 00 Site Sewer Systems
Section 33 40 00 Storm drainage

This bid package includes all provisions in its entirety for **Specifications Section 00700 General Conditions for Contracts on Construction Management Projects – Clovis Unified School District**; Division - 00 "Bidding and Contract Requirements," and Division 01 "General Requirements." The Work under this Bid Package shall include the furnishing and installing of all material, labor and equipment, means and methods, procedures, and items as required to complete the work described in this Bid Package. Bid packages work shall be completed as shown on the DSA approved drawings and specified in any applicable specification sections.

Durham Construction Company, Inc. is the Construction Manager for all bid packages and will be referred to as the CM in all bid package descriptions.

Refer to additional related specifications sections and descriptions of work specifically included in this Bid Package / Prime Contract as noted below.

General Items

1. Conform to the Construction Manager's project overall schedule and the 4 Week Look-Ahead schedules.
2. Any substitution of details or materials must be pre-approved by the Architect, engineers and DSA. All substitution requests must be submitted to the CM prior to bid. This contractor is responsible for all costs and time delays required for DSA approval. Any substitutions of materials must conform to Section 01 25 00 "Substitution Procedures and form."
3. This Bid Package Prime Contractor must always protect the new and existing site property, landscaping, site concrete and furnishings. Any damage to sod/grass, concrete and furnishings by this bid's forces will need to be replaced at own's contractor expense.
4. This bid package must protect the concrete floor at all times as the new finish floor will be sealed concrete. Always keep the concrete slab clean and observe the following rules: **A**- never park vehicles or equipment

on the concrete slab to receive polishing **B** - No pipe cutting of any kind ferrous or nonferrous. **C** - No storage of any items. **D**- No staging of construction material without authorization of the CM. **E** – No ferrous metals placed or stored on the slab to receive sealing **F** – All equipment must be diapered to prevent any fluid spills, oils, hydraulic or battery acid. **G** – No charging scissor lifts on slabs to receive sealed concrete – charge scissor lifts in rooms that will have floor covering. **H** – No acidic products used or placed on the new concrete slab. **I** – No painting over the new concrete slab surface without proper covering or plan to mitigate paint spills, drips or overspray. **J** – No markers or chalk lines on the surface of the new concrete slab outside of any wall lines. **K** – No tape is to be used on the surface that will leave residue. **L** – No brace or shot pins or bolting in the concrete slab field of visibility for polished concrete areas. **M** – No welding or bracing over the new concrete slab. **N** -All equipment operated on the new concrete slab will have non marking tires free from embedded items such as screws and nails. **O** – No eating or food will be allowed on the new concrete slab floor. **P** – No chewing gum or tobacco products are allowed on the project site.

5. Any damage to any site utilities by this bids work will be replaced at this bid contractors' expense.
6. Any damage to the existing concrete slabs, walkways etc. during this scope activities and or installation of own work shall be completely restored to the satisfaction of the Owner or CM.
7. Provide all backfill and required compaction of excavations to original sub-grade for work included in this Bid.
8. Provide a schedule of values to include an itemization of costs as per Section 01 29 73.01 "Schedule of Values" or in any detail or format as the owner, Construction manager, or architect seems appropriate.
9. Must provide exterior dust control during work and or this scope activities under this bid package.
10. Provide cleanup, broom sweep, washing concrete and concrete paved areas, remove tire marks caused by this bid packages operations on all hardscape areas.
11. Review as-builts & underground locator survey and pothole marked utilities by hand or other approved methods prior to starting work as to ensure no damage of existing utilities. Submit to Clovis Unified 48-hour notice locate utility request to the CM 72 hours prior to conducting site work. District will mark existing utilities. Contractor is responsible for obtaining a valid USA (Underground Service Alert) ticket.
12. Provide notification to inspector, CM, or Owner's representatives and/or governing agencies of required inspections and tests at least 48 hours in advance of when such inspection is required.
13. Any existing utilities that become damaged during this bid packages work shall be completely restored to the satisfaction of the Owner, Construction Manager, Architect, Architect consultants or governing agency.
14. Obtain all permits required to perform the work for this bid package from appropriate Municipalities but not limited to encroachment permits, SJVAPCD, SWPP, etc. Permit fees are reimbursable from the District.
15. Must provide traffic control AT ALL TIMES for work on any road or sidewalk and paths of travel, including public roads or on Clovis Unified owned property for this Bid.
16. Vehicles leaving the site shall take every reasonable precaution so as to not track or deposit construction debris or miscellaneous trash onto onsite and offsite roads, parking areas, sidewalks or any locations on the owner's property. Any dirt, rocks, or construction materials, and miscellaneous debris or foreign object that may be tracked or dropped on roads outside the limits of the construction shall be cleaned up immediately by this subcontractor to the satisfaction of the CM.
17. This bid package will adhere to all Clovis Unified School rules and policies including but not limited to the following: No verbal or physical contact with any student or site personnel. No tobacco or drug use. No smoking. Proper work dress attire must be worn at all times as determined by the CM. No taking photos of the project site where students or site personnel are included in such photos. Drive vehicles or equipment on school grounds in a safe and cautious manner at a maximum speed of 5 Miles per hour.
18. This bid package shall perform daily cleanup and off haul of own debris to the satisfaction of the CM.
19. Provide cleanup, broom sweep, and washing concrete and concrete paved areas, removing tire marks caused by this Bid Packages operations on all hardscape areas.
20. Furnish and install own floor protection (i.e. tarps, plastic, plywood, etc.) while performing own work.
21. Provide permits and certifications.
22. Provide power for own work.
23. While performing own work, SAFETY of students and staff is a priority.

24. There will be one wash out area for all Bid Package as designated by the CM. Each Bid Package will be responsible for removal from the site of all debris and spoils generated by own work.
25. Comply with Project Waste Management Plan and provide documentation to the CM upon request.

Coordination with Other Trades

1. Coordinate with Fire Protection Bid Package location of fire line main stub into building.
2. Review as-builts & underground locator survey & pothole utilities prior to starting work.
3. Provide coordination drawings for underground work as related to this bid package.
4. Coordinate all drawings with the drawings of other bid packages. Note conflicts and provide potential solutions to the Architect for review. Coordination must occur prior to excavation and/or installation of the work.
5. Review and coordinate all block outs in concrete as shown in contract documents, shop drawings and /or written layouts provided by other bid packages prior to concrete pour.
6. Attend all coordination meetings required to coordinate all underground work. Provide a detailed site work schedule to coordinate with other utilities.
7. Coordinate all work to provide access to site, and or building for other trades as scheduled.
8. Coordinate the protection of existing utilities especially those not specifically designated existing to remain.
9. Receive and coordinate written layout from other bid packages for items embedded in or passing through concrete. All sleeves are to be installed by other trades as it pertains to their scope of work.
10. Coordinate placement of ALL rebar as it pertains to this bid package.
11. Coordinate ALL embedded items on this bid package prior to pour.
12. Coordinate the location of depressions, block outs, slopes, drains with other trades and/or drawings prior to pouring of concrete.
13. Coordinate the location of all site concrete improvements, sidewalks, curbs and, mowstrips, concrete collars to facilitate installation of fine grading by Earthwork bid package. This bid package must protect concrete until fine grading is complete. Once concrete has been poured and block outs removed, this bid package must backfill and fine grade those areas.
14. Coordinate all drawings with the drawings of other bid packages. Note conflicts and provide potential solutions to the architect for review. Coordination must occur prior to excavation and/or installation of the work.

Furnish and Install Items

1. Furnish and install all main underground fire lines as shown on the plans and specifications. Fire line is to be installed inside building to approximately 6" above finish floor ***and capped*** in accordance with contract documents. **(Addenda #2)**
2. Provide dewatering for own work.
3. Furnish and install all cut and cap of existing utilities (gas, water & sewer), and terminate to nearest box or valve. Coordinate with other bid packages.
4. Furnish and install own floor protection (i.e. tarps, plastic, plywood, etc.) while performing own work.
5. Review as-builts & underground locator survey & pothole for utilities prior to starting work.
6. Provide written notification of inspection for own work to Owner's representatives and/or governing agencies of required test or inspections at least 48 hours in advance of when such inspection is required.
7. Furnish and install all layout for own work from survey provided. This bid package will be responsible for all additional layout not performed by the District provided survey.
8. Furnish and install all building plumbing, site plumbing, plumbing fixtures and site utilities as shown and noted on the plans and specification.
9. Furnish and install all sleeves in site concrete, building concrete and foundations as it pertains to own scope of work prior to the installation of concrete and reinforcing steel. Coordinate location with other related bid packages prior to excavation. This includes existing utilities on governing municipality and or

school site.

10. Furnish & install all tracer wires, metallic locator tape, protective coatings, wraps, at all piping as required and as it pertains to this bid package.
11. Furnish and install a protective coating or approved protective wrap on all buried metallic objects.
12. Furnish and provide excavation and off-haul of own spoils daily from own scope of work as per this bid package.
13. Furnish and install all trench drains complete for the project.
14. Furnish and install all temporary trench plates/covers for excavations performed by this bid package for construction access. **No open trenches** are allowed.
15. Furnish and install all drilling of holes for work performed in this bid package.
16. Furnish and install all backfill and required compaction of excavations to original sub-grade as it pertains to this bid package. Certify that grades have been returned to original or acceptable grade when work is complete.
17. Furnish and install all underground utilities and tie into existing school site and or city utilities. Special conditions are as follows:
    - I. Furnish and install all piping. Coordinate shutdowns and tie-ins with governing municipality and school site.
    - II. Furnish and install water valve(s), water meter(s), box(s) and concrete collars and or pads associated with this work.
    - III. Furnish and install all required thrust blocks for work related to this bid package.
    - IV. If the top of the stem of any water gate valve is deeper than 4’ below finished pavement/grade, install a stem extension so that the top of the stem, with extension shall be no deeper than 4’ nor shallower than 2’ from finished grade.
    - V. Furnish, install and maintain marker 4x4 painted stakes indicating end and depth of service for connection by other bid packages. Provide, maintain an update as-built points for each end of service on as-built drawings located inside project trailer. Should inaccurate information be recorded, this Bid Package will be responsible for the costs of locating the end of service for proper and accurate record keeping.
18. Storm Drain-Sewer-Domestic Water Main, gas - Install all underground wet utilities as required by the contract documents. Backfill, compact, patch back and off haul of own spoils.
19. Furnish and install storm drains, sewer lines, roof drains, condensate lines, rain water leaders, cleanouts, drain inlets, manholes, vaults, valves, boxes, and concrete thrust blocks associated with this work and per contract documents. Backfill, compact, patch back and off haul of own spoils.
20. Furnish and install gas pressure regulators, shut-off valves and assemblies as per contract documents.
21. Allow use, and as directed by CM of the underground utility systems during construction for construction and testing operations without the start of the warranty period until the notice of completion for the project. Set inlets to allow drainage until site finishes are installed. Raise to proper elevation prior to installation of site concrete finishes. Raise all site utilities to grade in paving areas and or landscape areas once paving is complete. Provide all concrete collars/pads. Raise all existing boxes to new grades as required.
22. Adjust all existing utility lids within the project limits of construction to finish grade per utility company standards and/or Civil and Plumbing Drawings.
23. Demolish existing fire riser and install new fire riser test connection in accordance with the plans and specifications.
24. Furnish and install all signage and lettering called for in the contract documents as related to scope of work under this bid package.
25. Furnish & install permanent patch backs required for tie in of existing systems.
26. Furnish, install, and maintain traffic control for own scope of work under this bid package.
27. Furnish and install traffic rated lids where located in a traffic area and/or as per Civil and Plumbing Drawings.
28. Furnish and install all site and building plumbing, fixtures and utilities as shown on the Architectural and

Plumbing Drawings.

29. Furnish and install all hose bibs.
30. Furnish and install drinking fountains.
31. Furnish required bacterial reports and/or purity test on all water system installations.
32. Furnish and install roof hydrant / hose bibb as shown and noted on the plans.
33. Furnish and install base plate for hose bibs on the roof. Coordinate with roofing contractor for installation.
34. Furnish and install all plumbing fixtures, piping, fittings and accessories as per contract documents.
35. Furnish and install wall plumbing access doors/panels associated with this scope. Provide and coordinate rough openings.
36. Furnish and install all water hammer arrestors/shock absorbers, plaster jar trap, trap primers, thermal expansion tanks, recessed washing machine box and circulation pumps as shown and noted on the plans and contract documents.
37. Furnish and install bracing plates for wall mounted plumbing fixtures.
38. Furnish and provide shut off valves in domestic water piping servicing each room. No angle stops permitted.
39. Provide layout for above ceiling blocking as required for hangers, supports and bracing for own scope of work.
40. Furnish all storm collars, boots, lead jacks and vandal caps for pipe penetrations through roof as it pertains to this bid package. Installation will be provided by the Roofing bid package.
41. Furnish and install lead drain pans for roof drains and overflow. Coordinate sizes and installation with roofing contractor.
42. Furnish and install rainwater leader and overflow with brackets. Make connections below grade and to storm drain as per Civil and Plumbing Drawings. Coordinate with other bid packages as required.
43. Furnish and install cover plates and or escutcheons for overflow pipe through wall.
44. Furnish and install all insulated pipe wrapping of all exposed under sink piping.
45. Furnish and install all drilling of holes for work performed in this bid package.
46. Furnish and install flues/vent piping complete as per contract documents.
47. Furnish and install fire caulking and fire safing at pipe penetrations as pertains to this bid package.
48. Furnish and install floor and wall cleanouts shown on Plumbing Drawings.
49. Furnish and install gas riser as per contract documents.
50. Furnish and install all equipment to gas connection as per contract documents.
51. Furnish and install all water heaters gas and or electric as per contract documents.
52. Furnish and install all trap primers as per contract documents.
53. Furnish and install equipment condensate lines/connections as per Plumbing Drawings.
54. Furnish and install condensate pump as per contract documents.
55. Furnish, install and/or provide barricades, signs or flagmen and maintain traffic control while performing own work included in this bid package.
56. Remove and reinstall all roof and overflow drains. Coordinate with Roofing bid package. **(Alternate 3)**
57. Disconnect, reroute and reconnect all gas lines/water lines **and condensate lines** at roof. Replace lines as required. **(Alternate 3) (Addenda #2)**
58. Remove and reinstall all flues. **(Alternate 3)**
59. Disconnect, salvage and reinstall all lines from roof support/sleepers/runners. **(Alternate 3)**
60. Provide all cleanup and provide off-haul of own debris from site on a daily basis.
61. Furnish off-haul of all excavation spoils from site daily.
62. Provide exterior dust control while performing own work.
63. Provide road/street sweeping services for duration of own scope of work.
64. Materials designated to be removed and/or demoed shall legally dispose and hauled off site.
65. Provide and maintain proper documentation to the Construction Manager of all recyclable materials removed from site, including type of material, weights or volumes, receiving facility and percentages of recyclable content of such material.
66. Furnish, install, and maintain traffic control while performing own work included in this bid package.

67. Provide barricades, signs and protective structure devices as required for own work under this bid package.
68. Protect from damage ALL finishes indicated to remain throughout the duration of own scope of work such as exterior of building structures, landscaping, utility lines, concrete walks, concrete curbs, fencing/gates, mowstrips, etc. If contractor damages or removes any facilities or structures, this contractor shall be responsible for replacement or repair of such items acceptable to CM or Owner.
69. Provide cleanup, broom sweep, washing of concrete walks areas, removal of debris from sod/turf areas caused by this Bid Package operation of work.
70. Trucks leaving the construction site shall take reasonable precautions as to not track or drop any construction debris or trash onto school site roads, off haul routes and subcontractor designated parking areas. Any dirt or miscellaneous debris that is tracked or dropped on roads within or outside the limits of the construction site shall be cleaned up immediately by this subcontractor.
71. Remove existing boiler condensate line and any other associated plumbing utility lines. Reroute as shown and noted on the plans. **(Addenda #2)**
72. Furnish and install new boiler gas line and connect to existing gas line as shown and noted on the plans. **(Addenda #2)**
73. Furnish and connect new HWS to existing HWS as shown and noted on the plans. **(Addenda #2)**
74. Furnish and install new condensate line from boiler to existing sump basin as shown and noted on the plans. **(Addenda #2)**
75. Furnish and connect new boiler HWR to existing return riser as shown and noted on the plans. **(Addenda #2)**

End of Bid Package

CLARK MET Addition – CMET 11 HVAC

Furnish and install all work specifically required throughout the project documents to complete the work of this Bid Package that specifically includes, but is not limited to, the following:

Specification Sections:
Division 00
Division 01

Division 2 Existing Conditions
Section 02 49 19 Selective Demolition

Division 07 Thermal and Moisture Protection
Section 07 60 00 Sheet Metal
Section 07 92 00 Sealants

Division 23 Heating, Ventilating and Air Conditioning
Section 23 00 50 Heating, Ventilating and Air Conditioning
Section 23 05 48 Vibration & Seismic Controls for HVAC piping & Equipment
Section 23 05 93 Testing Adjusting and Balancing for HVAC
Section 23 21 13 Hydronic Piping **(Addenda #2)**
Section 23 21 16 Hydronic Specialties **(Addenda #2)**
Section 23 21 23 HVAC Pumps **(Addenda #2)**
Section 23 25 00 Chemical Water Treatment **(Addenda #2)**
Section 23 52 16 Condensing Boilers **(Addenda #2)**

Section 23 74 13 Packaged Outdoor Central Station Air Handling Units
Section 23 81 26 Split System Air Conditioners

Division 25 Integrated Automation
Section 25 50 00 Direct Digital Control and Energy Management System

This bid package includes all provisions in its entirety for **Specifications Section 00700 General Conditions for Contracts on Construction Management Projects – Clovis Unified School District**; Division - 00 "Bidding and Contract Requirements," and Division 01 "General Requirements." The Work under this Bid Package shall include the furnishing and installing of all material, labor and equipment, means and methods, procedures, and items as required to complete the work described in this Bid Package. Bid packages work shall be completed as shown on the DSA approved drawings and specified in any applicable specification sections.

Durham Construction Company, Inc. is the Construction Manager for all bid packages and will be referred to as the CM in all bid package descriptions.

Refer to additional related specifications sections and descriptions of work specifically included in this Bid Package / Prime Contract as noted below.

General Items

1. Conform to the Construction Manager's project overall schedule and the 4 Week Look-Ahead schedules.
2. Any substitution of details or materials must be pre-approved by the Architect, engineers and DSA. All substitution requests must be submitted to the CM prior to bid. This contractor is responsible for all costs and time delays required for DSA approval. Any substitutions of materials must conform to Section 01 25 00 "Substitution Procedures and form."
3. This Bid Package Prime Contractor must always protect the new and existing site property, landscaping, site concrete and furnishings. Any damage to sod/grass, concrete and furnishings by this bid's forces will need to be replaced at own's contractor expense.

4. This bid package must protect the concrete floor at all times as the new finish floor will be sealed concrete. Always keep the concrete slab clean and observe the following rules: **A**- never park vehicles or equipment on the concrete slab to receive polishing **B** - No pipe cutting of any kind ferrous or nonferrous. **C** - No storage of any items. **D**- No staging of construction material without authorization of the CM. **E** – No ferrous metals placed or stored on the slab to receive sealing **F** – All equipment must be diapered to prevent any fluid spills, oils, hydraulic or battery acid. **G** – No charging scissor lifts on slabs to receive sealed concrete – charge scissor lifts in rooms that will have floor covering. **H** – No acidic products used or placed on the new concrete slab. **I** – No painting over the new concrete slab surface without proper covering or plan to mitigate paint spills, drips or overspray. **J** – No markers or chalk lines on the surface of the new concrete slab outside of any wall lines. **K** – No tape is to be used on the surface that will leave residue. **L** – No brace or shot pins or bolting in the concrete slab field of visibility for polished concrete areas. **M** – No welding or bracing over the new concrete slab. **N** -All equipment operated on the new concrete slab will have non marking tires free from embedded items such as screws and nails. **O** – No eating or food will be allowed on the new concrete slab floor. **P** – No chewing gum or tobacco products are allowed on the project site.
5. Any damage to any site utilities by this bids work will be replaced at this bid contractors' expense.
6. Any damage to the existing concrete slabs, walkways etc. during this scope activities and or installation of own work shall be completely restored to the satisfaction of the Owner or CM.
7. Provide a schedule of values to include an itemization of costs as per Section 01 29 73.01 "Schedule of Values" or in any detail or format as the owner, Construction manager, or architect seems appropriate.
8. Must provide exterior dust control during work and or this scope activities under this bid package.
9. Provide cleanup, broom sweep, washing concrete and concrete paved areas, remove tire marks caused by this bid packages operations on all hardscape areas.
10. Review as-builts & underground locator survey and pothole marked utilities by hand or other approved methods prior to starting work as to ensure no damage of existing utilities. Submit to Clovis Unified 48-hour notice locate utility request to the CM 72 hours prior to conducting site work. District will mark existing utilities. Contractor is responsible for obtaining a valid USA (Underground Service Alert) ticket.
11. Provide notification to inspector, CM, or Owner's representatives and/or governing agencies of required inspections and tests at least 48 hours in advance of when such inspection is required.
12. Any existing utilities that become damaged during this bid packages work shall be completely restored to the satisfaction of the Owner, Construction Manager, Architect, Architect consultants or governing agency.
13. Obtain all permits required to perform the work for this bid package from appropriate Municipalities but not limited to encroachment permits, SJVAPCD, SWPP, etc. Permit fees are reimbursable from the District.
14. Must provide traffic control AT ALL TIMES for work on any road or sidewalk and paths of travel, including public roads or on Clovis Unified owned property for this Bid.
15. Vehicles leaving the site shall take every reasonable precaution so as to not track or deposit construction debris or miscellaneous trash onto onsite and offsite roads, parking areas, sidewalks or any locations on the owner's property. Any dirt, rocks, or construction materials, and miscellaneous debris or foreign object that may be tracked or dropped on roads outside the limits of the construction shall be cleaned up immediately by this subcontractor to the satisfaction of the CM.
16. This bid package will adhere to all Clovis Unified School rules and policies including but not limited to the following: No verbal or physical contact with any student or site personnel. No tobacco or drug use. No smoking. Proper work dress attire must be worn at all times as determined by the CM. No taking photos of the project site where students or site personnel are included in such photos. Drive vehicles or equipment on school grounds in a safe and cautious manner at a maximum speed of 5 Miles per hour.
17. This bid package shall perform daily cleanup and off haul of own debris to the satisfaction of the CM.
18. Provide cleanup, broom sweep, and washing concrete and concrete paved areas, removing tire marks caused by this Bid Packages operations on all hardscape areas.
19. Furnish and install own floor protection (i.e. tarps, plastic, plywood, etc.) while performing own work.
20. Furnish and install protection of roofing when accessing finish roof systems.
21. Provide permits and certifications.
22. Provide power for own work.
23. While performing own work, SAFETY of students and staff is a priority.

24. Comply with Project Waste Management Plan and provide documentation to the CM upon request.
25. Provide early startup and maintenance of HVAC equipment as required by the District / or CM for acclimatization of buildings prior to final acceptance, which will not initiate the warranty period until the filing Notice of Completion is filed. This includes replacing of air filters.

Coordination with Other Trades

1. HVAC coordination drawings must be established in a joint effort with other contractor's drawings to avoid any conflicts and establish elevations that best suit all trades. Must take into consideration Plumbing and Electrical drawings.
2. Attend all coordination meetings required to coordinate all overhead work. While at site, visit and measure every room where own work occurs. Confirm no conflict in design, pathways, routing of own work. Advise if modifications are needed.
3. Coordinate all drawings with the drawings of other bid packages for above ceiling work. Note conflicts and provide potential solutions to the architect for review. Coordination must occur prior to installation of the work.
4. Coordinate and layout blocking and or support as required with Metal Framing bid package for hangers and supports for own work under this bid package.
5. Coordinate with other bid packages that require openings, reinforcing or bracing as it relates to this bid package but not limited to roof openings for mechanical platforms and or curbs. This bid package must provide a written layout to other bid packages.
6. Any holes through materials i.e. metal deck to allow installation of piping and/or utilities not called for in the contract documents shall be installed and reinforced by this bid package.
7. Provide all necessary openings and/or connection points for EMS and fire alarm wiring and devices.
8. Coordinate, review and provide plan for routing of ductwork and EMS system wiring and raceway.
9. Coordinate heights of all roof curbs/pre-engineered platforms/manufactured curbs to confirm roofing clearance requirements prior to ordering or fabrication of such items.
10. Coordinate all work to provide access to site, and or building for other trades as scheduled.

Furnish and Install Items

1. Provide own floor protection for concrete slab while maneuvering aerial lifts. Any damaged caused by using their own equipment, this contractor shall be responsible for repairing of such items as deemed acceptable to CM or owner.
2. Furnish and install all HVAC equipment, heat pumps, outdoor units, indoor units, exhaust fans, ERV's, acoustically lined/insulated ducting, duct inlet transitions, duct detectors, hangers, backing, bracing, supports, piping, VFD's, Flues, sheet metal flashing/counter flashing and roof curbs/platforms necessary for complete installation of own work as shown and indicated on the plans and specs.
3. Furnish and install all indoor and outdoor units' anchorage system complete.
4. Furnish and install mounting brackets for indoor units complete.
5. Demo exhaust fans as per contract documents.
6. Furnish and provide all HVAC equipment ready for hook up by electrical and plumbing contractors.
7. Furnish and install all mechanical roof curbs, sheet metal caps, pre-engineered platforms and/or manufactured curbs complete with sheet metal flashing, drip edge flashing, gaskets, isolator and earthquake restraint with proper required heights.
8. Furnish and install ALL sheet metal flashing as required for HVAC scope of work and architectural sheet metal.
9. Furnish and install all sheet metal for the project complete including but not limited to all architectural sheet metal, architectural caps, flashings, Ice and water shield underneath sheet metal, counter flashing boots, sheet metal saddles at wall intersections and reglets as shown and noted on the plans and specs. The Architectural Sheet Metal Parapet caps will be furnished and installed by Roofing Bid Package.

10. Furnish and install refrigerant piping to include vestibule/housing as shown and noted on the plans and specs.
11. Furnish and install all sheet metal that requires modification due to mechanical work as it pertains to own work under this bid package.
12. Furnish and install all fire stopping and/or caulking as it pertains to own work under this bid package.
13. Furnish and install ALL flex, straight wrap and tape sealant.
14. Provide all boots and or roof jacks for this bid package scope of work. Installation will be provided by the Roofing bid package.
15. Disconnect, salvage and reinstall all lines from roof support/sleepers/runners. **(Alternate 3)**
16. Remove, protect, reset and reconnect all HVAC/mechanical roof mounted equipment, exhaust fans, evaporative coolers, etc. as shown and noted on plans. Coordinate with other bid packages. **(Alternate 3)**
17. Remove, salvage and reinstall all mechanical equipment curbs and or platforms as required and as shown and noted on the plans. **(Alternate 3)**
18. Remove, salvage and reinstall all metal sheet flashing whether not shown or shown and noted on the plans. Replace sheet metal flashing as required **and or provide and install new sheet metal flashing to include reglets and curb flashings as shown and noted on the plans. (Alternate 3) (Addenda #2)**
19. Furnish and install all sheet metal and sheet metal flashing that requires modification and or replacement due to re-roofing and resetting of HVAC and roof mounted equipment. **(Alternate 3)**
20. Furnish and install opening fall protection on roof to ensure a safe working environment is always provided. No open exposed openings allowed.
21. Furnish and install all signage and lettering called for in the contract documents as it relates to own work under this bid package.
22. Furnish and install all attachments and/or connections i.e. hangers, wires, straps, supports and bracing necessary for installation of own work included in this bid package.
23. Furnish and install all drilling of holes for own work performed under this bid package.
24. Furnish and install watertight closures at all gang and/or individual pipe penetration thru exterior walls and/ or roof as per contract documents.
25. Furnish and install all support i.e. bent plates and or clips for HVAC equipment as shown and noted on the plans and specs.
26. Remove, salvage, protect and reinstall existing roof mounted exhaust fan. Provide new mounting curb and duct work as shown and noted on the plans.
27. Furnish and install all Fire smoke dampers (Electrical bid package to provide connection).
28. Provide for testing of fire smoke dampers and coordinate with Fire Alarm contractor in electrical bid package.
29. Furnish and install all flues associated with own work under this bid package.
30. Furnish and install a complete working EMS system including conduit and wiring tie-in to existing system complete. Provide conduit and wiring as required for unit shutdown.
31. Provide all necessary openings and/or connection points for EMS and fire alarm wiring and devices.
32. Provide all controls and control conductors unless specifically called for on electrical drawings.
33. Provide start up and run equipment for acclimation and allow use of HVAC systems without affecting official start date of warranty period upon Owner acceptance of project which will not initiate the warranty period until the filing of Notice of Completion.
34. Provide and change the air filters as required during construction prior to installation of final filters.
35. Furnish & install combustion air intake.
36. Furnish Air Balancing and reports for all HVAC equipment and ducting.
37. Furnish and install all diffusers, louvers and screens as per Mechanical Drawings.
38. Furnish and install ice and water shield.
39. Provide early startup and maintenance of HVAC equipment as required by the District / or CM for acclimatization of buildings prior to final acceptance, which will not initiate the warranty period until the filing Notice of Completion is filed.
40. Provide written notification of inspection for own work to Owner's representatives and/or governing

agencies of required test or inspections at least 24 hours in advance of when such inspection is required.

41. Provide all cleanup and provide off-haul of own debris from site on daily basis.
42. Provide cleanup, broom sweep, washing of concrete walks and asphalt paved areas caused by this Bid Package operation of work.
43. Trucks leaving the construction site shall take reasonable precaution as to not track or drop any construction debris or trash onto school site roads, off haul routes and subcontractor designated parking areas. Any dirt or miscellaneous debris that is tracked or dropped on roads within or outside the limits of the construction site shall be cleaned up immediately by this subcontractor.
44. Furnish and install new gas fired condensing boiler as shown and noted on the plans. **(Addenda #2)**
45. Furnish and install new VDF controls for pumps as shown and noted on the plans. **(Addenda #2)**
46. Furnish and install inline boiler pumps as shown and noted on the plans**. (Addenda #2)**
47. Furnish and install new boiler flue to existing riser flue as shown and noted on the plans. **(Addenda #2)**
48. Furnish and install dryer duct complete to include but not limited to sheet metal flashing, mesh bird screen, etc. as shown and noted on the plans. **(Addenda #2)**

Note: Unload, inventory, store and notify of deficiencies for all items delivered to the job site FOB, to be installed by this Bid Package.

FOB items provided by this Bid Package for others to install:

- **Furnish all boots and or roof jacks for all roof penetrations. These items are to be installed by the Roofing bid package.**

End of Bid Package

CLARK MET Addition – CMET 12 Electrical & Low Voltage

Furnish and install all work specifically required throughout the project documents to complete the work of this Bid Package that specifically includes, but is not limited to, the following:

Specification Sections:
Division 00
Division 01

Division 02 Selective Demolition
Section 02 49 19 Selective Demolition (As applies to Electrical and Low Voltage)

Division 14 Conveying Equipment
Section 14 42 00 Wheelchair Lifts (As applies to Electrical and Low Voltage)

Division 26 Electrical
Section 26 00 00 General Electrical Requirements
Section 26 05 00 Basic Electrical Material and Methods
Section 26 05 26 Grounding
Section 26 05 29 Hangers and Supports for Electrical Systems
Section 26 05 48 Vibration and Seismic Controls for Electrical Systems
Section 26 08 00 Commissioning of Electrical Systems
Section 26 24 16 Panelboards
Section 26 27 00 Low Voltage (0-600v) Distribution Equipment
Section 26 28 00 Low Voltage (0-600v) Circuit Protective Devises
Section 26 50 00 Lighting
Section 26 57 00 Lighting Controls

Division 27 Communications
Section 27 00 00 Communications General
Section 27 05 28 Communications Infrastructure System
Section 27 10 00 Structured Cabling System
Section 27 20 10 Uninterruptable Power Supply
Section 27 51 16 Public Address and Mass Notification

Division 28 Electronic Safety and Security
Section 28 31 00 Fire Detection and Alarm

This bid package includes all provisions in its entirety for **Specifications Section 00700 General Conditions for Contracts on Construction Management Projects – Clovis Unified School District**; Division - 00 "Bidding and Contract Requirements," and Division 01 "General Requirements." The Work under this Bid Package shall include the furnishing and installing of all material, labor and equipment, means and methods, procedures, and items as required to complete the work described in this Bid Package. Bid packages work shall be completed as shown on the DSA approved drawings and specified in any applicable specification sections.

Durham Construction Company, Inc. is the Construction Manager for all bid packages and will be referred to as the CM in all bid package descriptions.

Refer to additional related specifications sections and descriptions of work specifically included in this Bid Package / Prime Contract as noted below.

General Items

1. Conform to the Construction Manager's project overall schedule and the 4 Week Look-Ahead schedules.
2. Any substitution of details or materials must be pre-approved by the Architect, engineers and DSA. All substitution requests must be submitted to the CM prior to bid. This contractor is responsible for all costs and time delays required for DSA approval. Any substitutions of materials must conform to Section 01 25 00 "Substitution Procedures and form."
3. This Bid Package Prime Contractor must always protect the new and existing site property, landscaping, site concrete and furnishings. Any damage to sod/grass, concrete and furnishings by this bid's forces will need to be replaced at own's contractor expense.
4. This bid package must protect the concrete floor at all times as the new finish floor will be sealed concrete. Always keep the concrete slab clean and observe the following rules: **A**- never park vehicles or equipment on the concrete slab to receive polishing **B** - No pipe cutting of any kind ferrous or nonferrous. **C** - No storage of any items. **D**- No staging of construction material without authorization of the CM. **E** – No ferrous metals placed or stored on the slab to receive sealing **F** – All equipment must be diapered to prevent any fluid spills, oils, hydraulic or battery acid. **G** – No charging scissor lifts on slabs to receive sealed concrete – charge scissor lifts in rooms that will have floor covering. **H** – No acidic products used or placed on the new concrete slab. **I** – No painting over the new concrete slab surface without proper covering or plan to mitigate paint spills, drips or overspray. **J** – No markers or chalk lines on the surface of the new concrete slab outside of any wall lines. **K** – No tape is to be used on the surface that will leave residue. **L** – No brace or shot pins or bolting in the concrete slab field of visibility for polished concrete areas. **M** – No welding or bracing over the new concrete slab. **N** -All equipment operated on the new concrete slab will have non marking tires free from embedded items such as screws and nails. **O** – No eating or food will be allowed on the new concrete slab floor. **P** – No chewing gum or tobacco products are allowed on the project site.
5. Any damage to any site utilities by this bids work will be replaced at this bid contractors' expense.
6. Any damage to the existing concrete slabs, walkways etc. during this scope activities and or installation of own work shall be completely restored to the satisfaction of the Owner or CM.
7. Provide a schedule of values to include an itemization of costs as per Section 01 29 73.01 "Schedule of Values" or in any detail or format as the owner, Construction manager, or architect seems appropriate.
8. Must provide exterior dust control during work and or this scope activities under this bid package.
9. Provide cleanup, broom sweep, washing concrete and concrete paved areas, remove tire marks caused by this bid packages operations on all hardscape areas.
10. Review as-builts & underground locator survey and pothole marked utilities by hand or other approved methods prior to starting work as to ensure no damage of existing utilities. Submit to Clovis Unified 48-hour notice locate utility request to the CM 72 hours prior to conducting site work. District will mark existing utilities. Contractor is responsible for obtaining a valid USA (Underground Service Alert) ticket.
11. Provide notification to inspector, CM, or Owner's representatives and/or governing agencies of required inspections and tests at least 48 hours in advance of when such inspection is required.
12. Any existing utilities that become damaged during this bid packages work shall be completely restored to the satisfaction of the Owner, Construction Manager, Architect, Architect consultants or governing agency.
13. Obtain all permits required to perform the work for this bid package from appropriate Municipalities but not limited to encroachment permits, SJVAPCD, SWPP, etc. Permit fees are reimbursable from the District.
14. Must provide traffic control AT ALL TIMES for work on any road or sidewalk and paths of travel, including public roads or on Clovis Unified owned property for this Bid.
15. Vehicles leaving the site shall take every reasonable precaution so as to not track or deposit construction debris or miscellaneous trash onto onsite and offsite roads, parking areas, sidewalks or any locations on the owner's property. Any dirt, rocks, or construction materials, and miscellaneous debris or foreign object that may be tracked or dropped on roads outside the limits of the construction shall be cleaned up immediately by this subcontractor to the satisfaction of the CM.
16. This bid package will adhere to all Clovis Unified School rules and policies including but not limited to the following: No verbal or physical contact with any student or site personnel. No tobacco or drug use. No smoking. Proper work dress attire must be worn at all times as determined by the CM. No taking photos of the project site where students or site personnel are included in such photos. Drive vehicles or equipment on school grounds in a safe and cautious manner at a maximum speed of 5 Miles per hour.

17. This bid package shall perform daily cleanup and off haul of own debris to the satisfaction of the CM.
18. Provide cleanup, broom sweep, and washing concrete and concrete paved areas, removing tire marks caused by this Bid Packages operations on all hardscape areas.
19. Furnish and install own floor protection (i.e. tarps, plastic, plywood, etc.) while performing own work.
20. Provide permits and certifications.
21. Provide trenching plan and permits for excavations over 5' per OSHA requirements to the CM.
22. Provide shoring as required for excavations as it pertains to own scope of work.
23. Provide power for own work.
24. While performing own work, SAFETY of students and staff is a priority.

Coordination with Other Trades

1. Review as-builts & underground locator survey and pothole marked utilities by hand or other approved methods prior to starting work as to ensure no damage of existing utilities. Submit to Clovis Unified 48-hour notice locate utility request to the CM 72 hours prior to conducting site work. District will mark existing utilities. Contractor is responsible for obtaining a valid USA (Underground Service Alert) ticket.
2. Provide coordination drawings for underground and above ceiling work as related to this bid package.
3. Coordinate all drawings with the drawings of other bid packages. Note conflicts and provide potential solutions to the Architect for review. Coordination must occur prior to excavation and/or installation of the work.
4. Attend all coordination meetings required to coordinate all overhead work. While at site, visit and measure every room where own work occurs. Confirm no conflict in design, pathways, routing of own work. Advise if modifications are needed.
5. Coordinate all drawings with the drawings of other bid packages for above ceiling work. Note conflicts and provide potential solutions to the architect for review. Coordination must occur prior to installation of the work.
6. Notify the CM of any required power shutdowns and coordinate with the CM appropriate times for power shot downs. As a rule of thumb all power shutdowns shall occur after school hours unless specifically authorized by the CM and or Owner.
7. Coordinate and layout blocking and or support as required with Metal Framing bid package for hangers and supports for own work under this bid package.
8. Any holes through materials i.e. metal deck to allow installation of piping and/or utilities not called for in the contract documents shall be installed and reinforced by this bid package.
9. Provide all necessary openings and/or connection points for EMS and fire alarm wiring and devices.
10. Coordinate, review and provide plan for routing of ductwork and EMS system wiring and raceway.
11. Coordinate all work to provide access to site, and or building for other trades as scheduled.
12. Verify integrity of all conduit paths required for work through use of a mandrel as needed. Submit a proposed underground conduit path proposal for review and approval by Electrical Engineer and Construction Manager.
13. Provide dimensions and physical layout. Coordinate with Metal Framing bid package for backing and or bracing.
14. At conflicts with any underground plumbing and site utilities, electrical are to have the lower elevations.
15. Provide trenching plan and permit for excavation over 5' per OSHA requirements to Durham Construction.
16. Coordinate the safing-off of existing utilities within the limits of construction, along with the awareness that the temporary facilities and those existing are to remain intact and operational.
17. Coordinate and contact all required utility agencies prior to the start of any work. Coordinate with all underground utilities prior to excavation.
18. Coordinate and obtain District approval through the CM for all low voltage labeling.
19. Coordinate with PG&E, AT&T, Comcast, Clovis Unified School District for service requirements to the site.
20. Coordinate and USA PG&E main electrical feed and conduit.
21. Coordinate location of UG utilities to be out of angle of repose of building equipment.
22. District will provide survey locations for all site pull boxes as shown on the drawings. Staking

offsets are to be determined through discussions of CM, District and this bid package Electrical contractor.

23. Coordinate alignment of all utilities between Electrical, Plumbing and Civil drawings prior to excavation.
24. Provide dimensions and physical layout for own work.
25. Gas, sewer, storm drain, fire and other site utilities have elevation preference over electrical duct banks/conduits. This bid package shall adjust conduit and/ or duct banks if required to lower elevations as necessary.
26. Coordinate routing of electrical conduit and other utility lines or pipes to miss existing utility lines, footings, foundations and or structures.
27. Coordinate with other bid packages plans for routing of building electrical and low voltage wiring as to not interfere or conflict with other building elements or other bid package work.
28. This bid package is responsible for any coring of building walls or site electrical boxes to facilitate the installation of new conduits.
29. Coordinate locations of pull boxes, manholes etc. away from doorways.
30. This bid package shall connect all "hanger wires" as provided by other bid packages to light fixtures, cable trays and any other fixtures or equipment. Coordinate layout in the field.
31. Coordinate ALL electrical with other trades during rough-in stage to assure proper fit at time of casework and equipment installation.
32. Coordinate any cut and patch for any concrete work with other bid packages. Provide layout of any required saw cutting or demolition for this bid packages work with other appropriate bid packages. Saw cutting, breaking, removal and associated patch back for this bid packages work will be provided by other appropriate bid packages. Any cut and patch beyond what can be inferred in the drawings will be the responsibility of this package.
33. Any openings, holes and cut-outs made through materials to allow installation of utilities not identified in the plans shall be provided and reinforced by this bid package.
34. Coordinate with other trades that will interact with any electrical equipment, light poles and or material. Measure every room where own work occurs, confirm no conflict occurs. Provide new plan or layout for re-routing electrical conduit pathways.
35. Provide use and maintenance of electrical equipment and devices as required by the District/or CM for construction and testing of other equipment prior to final acceptance, which will not initiate the warranty period until filing of Notice of Completion.
36. The HVAC bid package will provide any and all required starters for HVAC units, this bid package shall quantify, coordinate and provide final connections of any and all motor starters.
37. After bid package has been awarded, review existing electrical conduits, circuits, wire, breakers, low voltage conduits, and all actual conditions on the site for comparison to what is detailed on the plans and specifications. Report any discrepancies to the CM immediately after discovering.
38.

Furnish and Install Items

1. Provide dewatering for own work.
2. Furnish, install and disconnect required temporary power for construction project. Furnish and install (2) temporary power spider boxes to serve power during construction of building addition. Coordinate hookup of spider boxes to existing electrical services on campus at adjacent building or buildings.
3. This bid package is to safe-off and disconnect all electrical, conduits, wiring, panels, etc. as shown and noted on the plans.
4. Furnish and install temporary lighting in building addition as to satisfaction of the CM for a visible safe working environment.
5. Provide written notification of inspection for own work to Owner's representatives and/or governing agencies of required test or inspections at least 48 hours in advance of when such inspection is required.
6. Furnish and install all layout for own work from survey provided. This bid package will be responsible for all additional layout not performed by the survey bid package.
7. Disconnect, remove **and or relocate** items as called for in the plans and specs. Coordinate before pulling back all wiring to source. Replace or provide conduit and or boxes as necessary to complete work. **Demo**

all conduit noted on the plans. (Addenda #2)

8. Furnish and install all building and site electrical complete as shown on and noted on the plans and specifications including but not limited to ~~**concrete footings for lighting**~~, equipment **pedestals**, precast concrete pads, IDF cabinets, disconnects, panels, transformers, conduit, wiring, and **fixtures**. **(Addenda #2)**
9. Furnish and install all interior/exterior building lighting to include and not limited to sensors, controls, etc.
10. Furnish and install all low voltage complete, including all communication, lighting controls, public address system, Intrusion and Fire Alarm.
11. Furnish and install data communications complete including but not limited to: A) Fiber Optic Cable. B) Data Cable and Jacks. C) Cabinets and Panels. D) Testing Furnish and install raceways, boxes, wire, cable for Audio/Visual System.
12. Furnish and install all sleeves in site concrete, building concrete, foundations and retaining walls as it pertains to own scope of work prior to the installation of concrete and reinforcing steel. Coordinate location with other related bid packages prior to excavation. This includes existing utilities on governing municipality and or school site.
13. This bid package shall verify all proposed routing of conduits with architectural and structural plans prior to construction and notify the CM of any potential conflicts of conduit routing with new construction and or existing items.
14. Furnish and provide excavation and off haul of own spoils from own work daily as per this bid package.
15. Provide all backfill and compaction of excavations to original subgrade for work included in this bid package.
16. Furnish and install trench plates, shoring, barricades and or any necessary safety items as required for own work for excavations performed by this bid package. Protect campus walk paths due to construction activities.
17. Furnish and install pull strings, rope and / or polyester pull “mule” tape in all empty or future conduits and secure, cap appropriately.
18. Remove, reroute, and/or replace any and all electrical, conduit and wiring as required for the construction of the new building and or site work.
19. Furnish and install all site conduits, including vaults and boxes for all electrical and low voltage systems.
20. Adjust any new and or existing electrical or low voltage utility boxes and or vaults to new grade as noted on the drawings or as required to accommodate for new work.
21. Furnish and install drilling of holes and or core drilling in or around any type of materials whether new or existing for work performed under this bid package to facilitate installation of this bid packages work.
22. Any required cutting to facilitate this bid packages work shall be performed by this bid package.
23. Remove the existing pullbox and replace with new traffic rated christy pullbox as shown and noted on the plans.
24. Provide own floor protection for concrete slab while maneuvering aerial lifts. Any damaged caused by using own equipment, this contractor shall be responsible for repairing of such items as deemed acceptable to CM or owner.
25. Furnish and install all low voltage systems complete, refer to HVAC Spec Sections for designation of responsibilities of HVAC bid package and Electrical bid package.
26. Furnish and install all line voltage power to Mechanical equipment.
27. Furnish and install access panels where specifically required for own work.
28. Furnish and install power to landscape controllers and pumps. Coordinate with CM, Owner and General Specialties bid package.
29. Furnish and install beam clamps and unistruts as it pertains to own scope of work.
30. Furnish and install all new clocks (wires and or wireless), speakers and intercom.
31. Furnish and install lighting control system complete.
32. Furnish and install cord reels complete with bracing as per detail 12/X-E107.
33. Furnish and install all required utilities for OFCI equipment and or appliances.
34. Furnish and install all transformers as shown and noted on the plans.
35. Furnish and install all Structure Cabling, Overhead Paging Systems, Master Clocks, CCTV systems, DVR’s,

Cameras, Audio and Video systems, Video Walls complete.

36. Furnish and install all fire stopping, fire caulking, and regular caulking to seal penetrations and or coring of this bid packages work.
37. Furnish and install raceways, boxes, wire, wiremold, cable for audio/visual system.
38. Furnish and install all pull boxes as it pertains to this bid package.
39. Furnish and install all signage and lettering called for in the contract documents as related to scope of work under this bid package.
40. Furnish and install all wall or ceiling mounted WAP's as shown and or noted on the plans.
41. Route power and low voltage in ceilings and in walls as required at all buildings. Surface mounted raceways, not shown on the plans, will not be accepted without the Architect/Owner approval.
42. Furnish and install all lighting and controls as required.
43. Coordinate electrical work with the work of other trades so as to provide raceways, conductors and outlets in the correct location for the equipment served, including all mechanical, and signal equipment and connect same. Electrical Contractor must provide power of the correct voltage and phase to each item of equipment – coordinate with other bid packages and submittal information to obtain proper electrical information.
44. Disconnect and remove the existing fire alarm initiation device and fire alarm notification as shown and noted on the plans. Reconnect initiation and notification devices. Must provide fire watch if classes are on session.
45. Furnish and install all fire alarm and tie-in required as well as duct detectors.
46. Furnish and install fire alarm below Mezzanine as shown and noted on the plans. **(Alternate 1)**
47. Furnish and install lighting, electrical and low voltage at Mezzanine as shown and noted on the plans. **(Alternate 1)**
48. Furnish and install all sealing of holes at enclosures.
49. Provide all power and low voltage testing for this bid packages work.
50. Ensure that at all penetrations through exterior walls are watertight.
51. Furnish and install all required protection of this bid packages work by any means necessary to provide a new and undamaged product at the end of the project.
52. Furnish and install protection of all roofing when work under this bid package requires access on the roofing systems.
53. Furnish and install electrical power and disconnect to new HVAC units and exhaust to include startup coordination.
54. Furnish and install all piping/conduit roof supports/sleepers/runners as it pertains to Electrical & Low Voltage. Coordinate with the Roofing bid package.
55. Furnish all boots, lead jacks and vandal caps for pipe penetrations through roof as it pertains to this bid package. Installation will be provided by the Roofing bid package.
56. Disconnect, salvage and reinstall all lines from roof support/sleepers/runners. **(Alternate 3)**
57. Disconnect, reroute and reconnect all roof conduit and wiring serving all roof mounted equipment at roof. Replace damaged conduit as required. **Provide and install new conduit and conductors as shown and noted on the plans**. **(Alternate 3) (Addenda #2)**
58. Furnish all piping roof supports/sleepers/runners as it pertains to Electrical & Low Voltage. Roofing bid package is to install. **(Alternate 3)**
59. Furnish and install roof junction boxes as shown and noted on the plans.
60. Provide penetrations through new and existing walls, floors, ceilings or any other barriers to facilitate this bid packages work. Demo/ core penetrations though concrete as required for this bid packages work, including but not limited to, all conduit installation.
61. Raise, remove or replace all electrical and low voltage boxes in new landscape areas and concrete areas.
62. Provide protection for existing utilities occurring on site within the scope of this work.
63. Coordinate any necessary power shutdowns with acceptable times as approved by the CM and owner.

Note: Unload, inventory, store and notify of deficiencies for all items delivered to the job site FOB, to be installed by this Bid Package.

FOB items provided by this Bid Package for others to install:

- **Furnish all boots and or roof jacks for all roof penetrations. These items are to be installed by the Roofing bid package.**

End of Bid Package