

CENTRAL LIBRARY CEILING AND LIGHTING UPGRADES

2420 Mariposa St.
Fresno, CA 93721

Contract # 25-S-01

The County of Fresno **Department of Public Works and Planning**

2220 Tulare St., 8th Floor
Fresno, California 93721

PROJECT MANUAL

Budget / Account – 8868 / 8150 / 92037



Development Services & Capital Projects Division

Department of Public Works and Planning

CONTRACT # 25-S-01

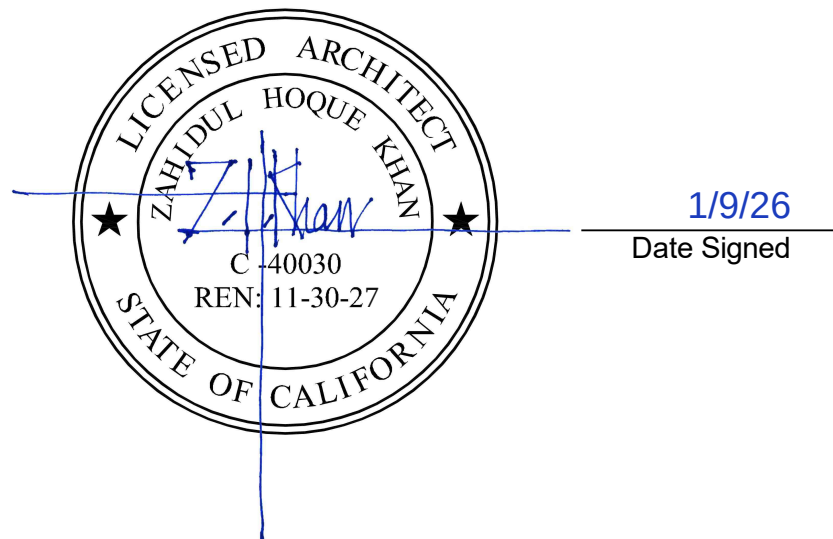
ADDENDUM 01

Contract # 25-S-01

Dated: January 9, 2026

The foregoing documents are amended in the respects as herein set forth. This addendum and the amendments herein shall become part of said documents and of any contract entered into pursuant to said documents.

PLEASE ACKNOWLEDGE THIS ADDENDUM ON YOUR PROPOSAL. IF YOU HAVE GIVEN THE CONTRACT DOCUMENTS TO SOMEONE ELSE, PLEASE FORWARD THIS ADDENDUM.



Architect of Record: _____ Zahidul Hoque Khan, Lic. # C-40030

FRESNO COUNTY
Department of Public Works and Planning
Development Services and Capital Projects Division
m/a 2220 Tulare Street, Eighth Floor
Fresno, CA 93721 (559) 600-4536
zkhan@fresnocountyca.gov

A. BID FORMS: Bid Express Solicitation

No changes

B. BID FORMS: Paper

No changes

**C. SPECIFICATIONS / PROCUREMENT CONTRACTING REQUIREMENTS –
DIVISION 00**

a. Section 00 01 07 – County Adoption and Acknowledgement & Seals

DELETE:

Garry Bredefeld, Chairman	2 nd District
Brian Pacheco, Vice Chairman	1 st District
Luis Chavez	3 rd District
Ernest “Buddy” Mendes	4 th District
Nathan Magsig	5 th District

REPLACE WITH:

Garry Bredefeld, Chairman	2 nd District
Luis Chavez, Vice Chairman	3 rd District
Brian Pacheco	1 st District
Ernest “Buddy” Mendes	4 th District
Nathan Magsig	5 th District

b. Section 00 11 13 – Notice to Bidders

The one hundred seventy-five (175) working days listed in the Notice to Bidders posted on December 2, 2025 is correct.

In the Project Manual posted on December 8, 2025:

DELETE: All work one hundred twenty (120) working days

REPLACE WITH: All work one hundred seventy-five (175) working days

c. Section 00 52 13 – Agreement

No changes

d. Section 00 72 00 – General Conditions

No changes

D. SPECIFICATIONS / SPECIAL PROVISIONS – DIVISION 01

No changes

E. DRAWINGS

0.1 BID SCOPE IS ALL ITEMS INCLUDED WITHIN THE DRAWINGS, INCLUDING ALL ITEMS WITHIN THE DELTA REVISIONS B AND ALL ITEMS NOT WITHIN THE DELTA REVISIONS B INCLUDING THE SPECIFICATIONS.

1. REFER TO SHEET G1.01.01:

DELETE:

BRIAN PACHECO	VICE CHAIRMAN	DISTRICT 1
GARRY BREDEFELD	CHAIRMAN	DISTRICT 2
LUIS CHAVEZ		DISTRICT 3

REPLACE WITH:

BRIAN PACHECO		DISTRICT 1
GARRY BREDEFELD	CHAIRMAN	DISTRICT 2
LUIS CHAVEZ	VICE CHAIRMAN	DISTRICT 3

2. REFER TO SHEET G1.01.02 AND ADD THE FOLLOWING NOTE 16, 17, 18 & 19 TO THE GENERAL NOTES:

- 2.1 16. SERVICE ELEVATOR ON SOUTH SIDE MAY BE USED FOR REMOVAL OF ABATED MATERIAL. WORKERS CANNOT RIDE WITHIN THE INTERIOR OF THE ELEVATOR WITH ABATED MATERIALS.
- 2.2 17. LIBRARY STAFF WILL PROTECT BOOKS AND REMOVE ALL LOOSE ITEMS. CONTRACTOR SHALL COVER AND PROTECT ALL FURNITURE IN PLACE SEE SHEET AP0.00.01.
- 2.3 18. THE CONTRACTOR SHALL COORDINATE WORK WITH SUBCONTRACTORS FOR THE STAGING OF WORK ON ALL FLOORS ACCORDINGLY AND SHALL PROTECT ALL EXISTING FLOORING, STAIRWELLS, AND WALLS NOT IN SCOPE FROM DAMAGE DURING THE EXECUTION OF WORK.
- 2.4 19. CONTRACTOR CAN UTILIZE THE SOUTH PARKING LOT OF THE LIBRARY FOR MOBILIZATION OF EQUIPMENT AND MATERIALS. COORDINATE WITH LIBRARY STAFF FOR EXACT LOCATION PRIOR TO COMMENCEMENT OF WORK.

3. REFER TO SHEET G1.01.02 AND ADD THE FOLLOWING NOTE 9 TO THE HAZARDOUS MATERIAL ABATEMENT REQUIREMENT:

- 3.1 9. IT IS THE RESPONSIBILITY OF THE ABATEMENT CONTRACTOR TO INSTALL CRITICAL BARRIERS ON ALL HVAC DUCTING DURING THE ABATEMENT PROCESS AS TO NOT CONTAMINATE THE INTERIOR OF THE DUCTING. FOR ALL DUCTWORK WORK THAT WILL BE LEFT IN PLACE DURING ABATEMENT, MUST BE COVERED WITH 6MIL POLY OR CLEANED POST ABATEMENT BY THE ABATEMENT CONTRACTOR. ANY FIBERGLASS INSULATION THAT IS CONTAMINATED BY THE ABATEMENT PROCESS MUST BE DISPOSED OF AS FRIABLE ACM BY THE ABATEMENT CONTRACTOR. IT'S THE ABATEMENT CONTRACTOR'S RESPONSIBILITY TO PROTECT OR CLEAN THE DUCTWORK, AND TO ENSURE THERE IS NO CONTAMINATION TO THE HVAC SYSTEM.

4. REFER TO SHEET AP1.00.02:

4.1 **DELETE:**

EXISTING BOOKSHELF TYPE AND PROCEDURE SCHEDULE	
LINETYPE	DESCRIPTION
	TYPICAL WALL MOUNTED AND/OR FREE-STANDING BOOKSHELVES - TO BE PROTECTED IN PLACE WITH TARP THEN PLASTIC WRAPPED, CREATING AN AIR-TIGHT SEAL DURING ABATEMENT AND CONSTRUCTION PHASE
	HIGH DENSITY STORAGE SHELVING - TO BE PROTECTED IN PLACE WITH 3/4-INCH PLYWOOD AND TARP THEN PLASTIC WRAPPED, CREATING AN AIR-TIGHT SEAL DURING ABATEMENT AND CONSTRUCTION PHASE
	HIGH DENSITY STORAGE SHELVING - TO BE DISASSEMBLED AND REMOVED DURING ABATEMENT AND CONSTRUCTION
	EQUIPMENT, CASEWORK, AND PLUMBING FIXTURES - TO BE PROTECTED IN PLACE WITH TARP THEN PLASTIC WRAPPED, CREATING AN AIR-TIGHT SEAL DURING ABATEMENT AND CONSTRUCTION PHASE
	FURNITURE AND LOOSE BOOKS - TO BE BOXED AND REMOVED DURING ABATEMENT AND CONSTRUCTION
	AREA NOT IN SCOPE AND SHALL NOT BE DISTURBED DURING CONSTRUCTION
NOTE: 1. ALL EXISTING WALLS SHALL BE PROTECTED AND SHALL REMAIN IN PLACE.	

4.2 **REPLACE WITH:**

EXISTING BOOKSHELF TYPE AND PROCEDURE SCHEDULE	
LINETYPE	DESCRIPTION
	BOOKSHELVES - TO BE REMOVED BY THE LIBRARY'S STAFF
	HIGH DENSITY STORAGE SHELVING - TO BE PROTECTED IN PLACE WITH 3/4-INCH PLYWOOD AND TARP THEN PLASTIC WRAPPED, CREATING AN AIR-TIGHT SEAL DURING ABATEMENT AND CONSTRUCTION PHASE
	
	EQUIPMENT, CASEWORK, AND PLUMBING FIXTURES - TO BE PROTECTED IN PLACE WITH TARP THEN PLASTIC WRAPPED, CREATING AN AIR-TIGHT SEAL DURING ABATEMENT AND CONSTRUCTION PHASE
	FURNITURE AND LOOSE BOOKS - TO BE BOXED AND REMOVED BY THE LIBRARY'S STAFF
	AREA NOT IN SCOPE AND SHALL NOT BE DISTURBED DURING CONSTRUCTION UNLESS OTHERWISE NOTED WITHIN THE PLANS.
NOTE: 1. ALL EXISTING WALLS SHALL BE PROTECTED AND SHALL REMAIN IN PLACE.	

4.3 ADD NOTE 4 UNDER GENERAL NOTES:

4. THIS SHEET IS FOR PHOTO REFERENCE OF EXISTING CONDITIONS IN THE BASEMENT. REFER TO SHEET AP0.00.01 FOR CONTRACTOR RESPONSIBLE FOR PROTECTION IN PLACE OF EXISTING SHELVES.

5. REFER TO SHEET A1.01.01:

5.1 ADD THE FOLLOWING TO THE ABBREVIATION LIST:

FSD FIRE SMOKE DAMPER

SMD SMOKE DETECTOR

5.2 ADD THE FOLLOWING NOTE 39 TO THE GENERAL NOTES:

39. THE CONTRACTOR'S PAINTING SCOPE OF WORK INCLUDES BUT IS NOT LIMITED TO: THE NEW BASEMENT CEILING AND SOFFITS, NEW WALLS, THE ROOM 223 CEILING, AND ALL PATCHING AND REPAIRS.

6. REFER TO SHEET A2.01.01 & A2.02.01:

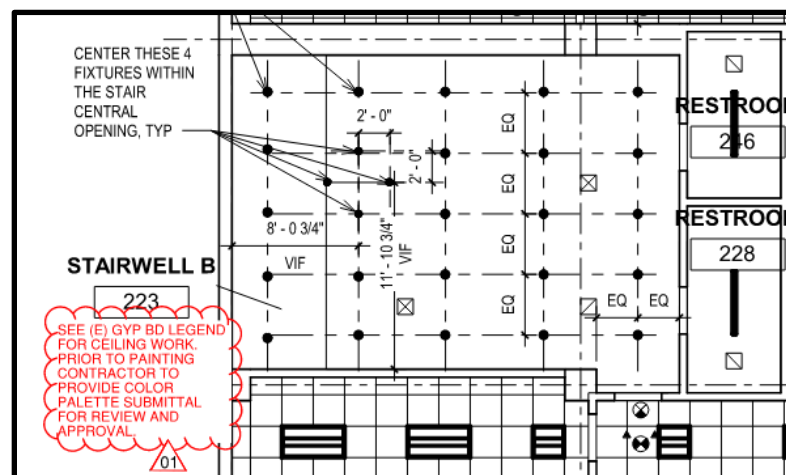
6.1 DELETE GENERAL NOTE 5:

5. PER TERRENCE ECKMAN, THE LIBRARY HAS ITS OWN STAFF AND THEY WILL DO THE PAINTING.

6.2 REPLACE WITH GENERAL NOTE 5:

5. THE LIBRARY STAFF WILL ONLY PERFORM MINOR TOUCH-UP PAINTING. REFER TO SHEET A1.01.01 GENERAL NOTE 39.

7. REFER TO SHEET A2.02.02 AND ADD THE FOLLOWING TEXT CLARIFICATION TO THE STAIRWELL B #223 SHOWN WITHIN THE REVISION CLOUD:



8. REFER TO SHEET F1.01 AND ADD NOTE UNDER CONTRACTOR SCOPE OF WORK:

8.1 THE CONTRACTOR SHALL PROVIDE A 24-HOUR FIRE WATCH WHENEVER THE FIRE SPRINKLER SYSTEM IS TAKEN OFFLINE. THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE FRESNO FIRE DEPARTMENT FIRE PREVENTION DIVISION BEFORE TAKING THE SYSTEM OFFLINE

9. REFER TO SHEET E1.01.01 AND ADD THE FOLLOWING NOTE 38 TO THE GENERAL NOTES:

9.1 38. CONTRACTOR TO USE VELCRO CABLE STRAPS FOR ALL EXISTING LOW-VOLTAGE CABLE WITHIN ALL CEILINGS AND STRAP THEM TO THE SUSPENSION CABLES. CONTRACTOR SHALL

COORDINATE THE WORK FOR ALL FLOORS ACCORDINGLY.
CONTRACTOR SHALL INCLUDE (50) 6-INCH VELCRO STRAPS ON
THEIR BID.

10. REFER TO SHEET E3.00.01 AND ADD THE FOLLOWING ROOM CEILING HEIGHT SCHEDULE:

ROOM CEILING HEIGHT SCHEDULE			
###	ROOM NAME	###	ROOM NAME
001	8 FEET, 10 $\frac{1}{8}$ INCHES	021	N/A
002		022	N/A
003		023	N/A
004		024	N/A
005	12 FEET, 7 $\frac{1}{8}$ INCHES	025	N/A
006	8 FEET, 10 $\frac{1}{8}$ INCHES	026	8 FEET, 10 $\frac{1}{8}$ INCHES
007		027	
008		028	
009		029	18 FEET, 6 $\frac{3}{8}$ INCHES
010		030	
011		031	8 FEET, 10 $\frac{1}{8}$ INCHES
012		032	OPEN TO UNDER DECKING
013		033	
014		034	
015		035	
016	12 FEET, 7 $\frac{1}{8}$ INCHES	036	N/A
017	N/A	037	8 FEET, 10 $\frac{1}{8}$ INCHES
018	8 FEET, 10 $\frac{1}{8}$ INCHES	038	N/A
019		039	8 FEET, 10 $\frac{1}{8}$ INCHES
020	12 FEET, 7 $\frac{1}{8}$ INCHES	040	

11. REFER TO E3.00.02 AND ADD THE FOLLOWING ROOM CEILING HEIGHT SCHEDULE:

ROOM CEILING HEIGHT SCHEDULE			
###	ROOM NAME	###	ROOM NAME
001	OPEN TO UNDER DECKING	021	N/A
002		022	N/A
003		023	N/A
004		024	N/A
005	12 FEET, 7 $\frac{1}{8}$ INCHES	025	N/A
006	OPEN TO UNDER DECKING	026	8 FEET, 10 $\frac{1}{8}$ INCHES
007		027	
008		028	
009		029	18 FEET, 6 $\frac{3}{8}$ INCHES
010		030	
011		031	8 FEET, 10 $\frac{1}{8}$ INCHES
012		032	OPEN TO UNDER DECKING
013		033	
014		034	
015		035	
016	12 FEET, 7 $\frac{1}{8}$ INCHES	036	N/A
017	N/A	037	OPEN TO UNDER DECKING
018	8 FEET, 10 $\frac{1}{8}$ INCHES	038	N/A
019		039	OPEN TO UNDER DECKING
020	12 FEET, 7 $\frac{1}{8}$ INCHES	040	

12. REFER TO SHEET E3.00.05 AND ADD GENERAL NOTE 3:

- 12.1 3. GENERAL CONTRACTOR TO PROVIDE TEMPORARY FREE STANDING ELECTRICAL PANEL WITH 125A/3P MAIN CIRCUIT BREAKER. TEMPORARY PROVIDE/INSTALL DOUBLE LUG CONNECTORS TO EXISTING PANEL 'PAB' FOR CONNECTION OF THE TEMPORARY PANEL. PLACE THE TEMPORARY ELECTRICAL PANEL NEXT TO THE EXISTING PANEL 'PAB'. CONTRACTOR TO COORDINATE WITH THEIR SUBCONTRACTORS FOR THEIR EQUIPMENT POWER REQUIREMENTS AND PROVIDE CIRCUIT BREAKERS TO THE TEMPORARY ELECTRICAL PANEL AS REQUIRED.

13. REFER TO SHEET E3.01.01 AND ADD THE FOLLOWING ROOM CEILING HEIGHT SCHEDULE:

ROOM CEILING HEIGHT SCHEDULE			
###	ROOM NAME	###	ROOM NAME
101	10 FEET, 11 $\frac{3}{8}$ INCHES	117	8 FEET, 10 $\frac{1}{16}$ INCHES
102		118	
103		119	
104		120	
105		121	N/A
106		122	N/A
107		123	N/A
108		124	N/A
109		125	8 FEET, 10 $\frac{1}{16}$ INCHES
110		126	OPEN TO UNDER DECKING
111		127	N/A
112	10 FEET, 6 $\frac{1}{16}$ INCHES	128	10 FEET, 6 $\frac{1}{16}$ INCHES
113	8 FEET, 10 $\frac{1}{16}$ INCHES	129	10 FEET, 11 $\frac{3}{8}$ INCHES
114		130	N/A
115		131	13 FEET, 7 $\frac{1}{8}$ INCHES
116	N/A		

14. REFER TO SHEET E3.01.02 AND ADD THE FOLLOWING ROOM CEILING HEIGHT SCHEDULE:

ROOM CEILING HEIGHT SCHEDULE			
###	ROOM NAME	###	ROOM NAME
101	10 FEET, 11 $\frac{3}{8}$ INCHES	117	8 FEET, 10 $\frac{1}{16}$ INCHES
102		118	
103		119	
104		120	
105		121	N/A
106		122	N/A
107		123	N/A
108		124	N/A
109		125	8 FEET, 10 $\frac{1}{16}$ INCHES
110		126	OPEN TO UNDER DECKING
111		127	N/A
112	10 FEET, 6 $\frac{1}{16}$ INCHES	128	10 FEET, 6 $\frac{1}{16}$ INCHES
113	8 FEET, 10 $\frac{1}{16}$ INCHES	129	10 FEET, 11 $\frac{3}{8}$ INCHES
114		130	N/A
115		131	13 FEET, 7 $\frac{1}{8}$ INCHES
116	N/A		

15. REFER TO SHEET E3.02.01 AND ADD THE FOLLOWING ROOM CEILING HEIGHT SCHEDULE:

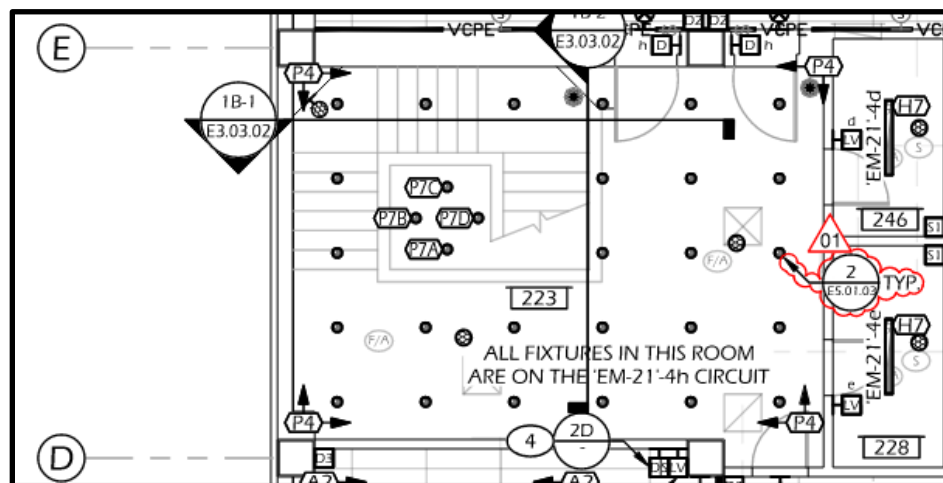
ROOM CEILING HEIGHT SCHEDULE			
###	ROOM NAME	###	ROOM NAME
201	8 FEET, 11 $\frac{1}{16}$ INCHES	228	8 FEET, 11 $\frac{1}{16}$ INCHES
202		229	
203		230	
204		231	
205		232	N/A
206		233	8 FEET, 11 $\frac{1}{16}$ INCHES
207		234	
208		235	
209		236	
210		237	
211	13 FEET, 7 $\frac{3}{16}$ INCHES	238	
212		239	
213	8 FEET, 11 $\frac{1}{16}$ INCHES	240	
214		241	
215		242	
216	N/A	243	
217	8 FEET, 11 $\frac{1}{16}$ INCHES	244	
218		245	
219		246	
220	N/A	247	
221	N/A	248	
222	OPEN TO UNDER DECKING	249	
223	8 FEET, 11 $\frac{1}{16}$ INCHES	250	
224	N/A	251	
225	8 FEET, 11 $\frac{1}{16}$ INCHES	252	
226	N/A	253	
227	8 FEET, 11 $\frac{1}{16}$ INCHES		

16. REFER TO SHEET E3.02.02:

16.1 ADD THE FOLLOWING ROOM CEILING HEIGHT SCHEDULE:

ROOM CEILING HEIGHT SCHEDULE			
###	ROOM NAME	###	ROOM NAME
201	8 FEET, 11 $\frac{1}{8}$ INCHES	228	8 FEET, 11 $\frac{1}{8}$ INCHES
202		229	
203		230	
204		231	
205		232	N/A
206		233	8 FEET, 11 $\frac{1}{8}$ INCHES
207		234	
208		235	
209		236	
210		237	
211	13 FEET, 7 $\frac{1}{8}$ INCHES	238	
212		239	
213	8 FEET, 11 $\frac{1}{8}$ INCHES	240	
214		241	
215		242	
216	N/A	243	
217	8 FEET, 11 $\frac{1}{8}$ INCHES	244	
218		245	
219		246	
220	N/A	247	
221	N/A	248	
222	OPEN TO UNDER DECKING	249	
223	8 FEET, 11 $\frac{1}{8}$ INCHES	250	
224	N/A	251	
225	8 FEET, 11 $\frac{1}{8}$ INCHES	252	
226	N/A	253	
227	8 FEET, 11 $\frac{1}{8}$ INCHES		

16.2 ADD THE FOLLOWING REFERENCE DETAIL (2/E5.01.03) TO THE LIGHT FIXTURES IN ROOM 223 INDICATED WITHIN THE REVISION CLOUD.



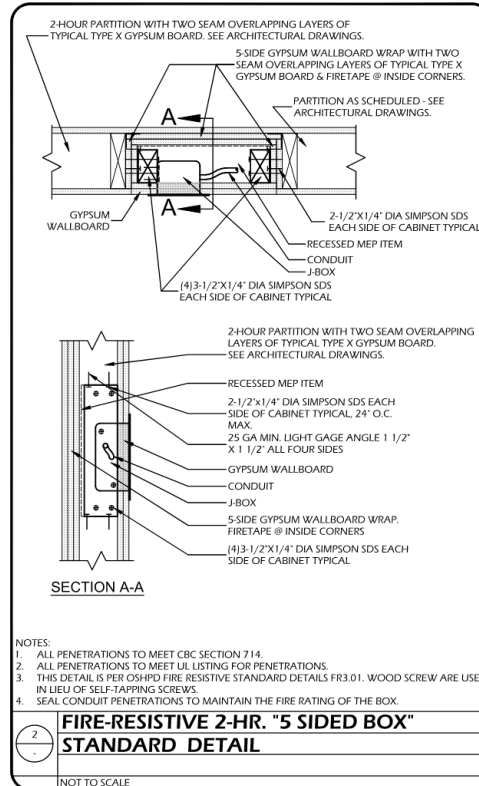
17. REFER TO SHEET E4.00.01:

17.1 CHANGE TITLE TO DETAIL DESIGNATOR 1/E4.00.01 TO "BASEMENT LEVEL FIRE ALARM FLOOR PLAN"

17.2 STRIKE/DELETE VERBIAGE 'THIS SHEET FOR REFERENCE ONLY'. REFER TO PLAN SHEET FOR FIRE ALARM SCOPE OF WORK.

~~THIS SHEET IS FOR REFERENCE ONLY~~

18. REFER TO SHEET E4.01.01
18.1 STRIKE/DELETE VERBIAGE 'THIS SHEET FOR REFERENCE ONLY'.
REFER TO PLAN SHEET FOR FIRE ALARM SCOPE OF WORK
19. REFER TO SHEET E4.02.01
19.1 STRIKE/DELETE VERBIAGE 'THIS SHEET FOR REFERENCE ONLY'.
REFER TO PLAN SHEET FOR FIRE ALARM SCOPE OF WORK
20. REFER TO SHEET E5.01.03 AND ADD THE FOLLOWING DETAIL 2/E5.01.03:



F. GENERAL CLARIFICATIONS:

No Changes

G. REQUEST FOR CLARIFICATIONS

1. Not Used.
2. **Question 25S1-2:** Does this Project have a Project Labor Agreement (PLA)?
Response: No, this project is not subject to a Project Labor Agreement
3. **Question 25S1-3:** Spec pg194 (2.01-C) states to provide all materials to provide safety barricades, Insulation: kraft-faced fiberglass. No other specs mention thermal or acoustical insulation. 7/A3.01.03 shows insulation in a wall. RCP Legend/A2.01.02 shows New Walls & Shafts with Details on plan page A3.01.03. Is there any insulation

to be installed for this project? Ceiling insulation: None shown/mentioned. Lay-on at Acoustical tile ceilings? Wall Insulation: Which walls?

Drawing Number: RCP Legend/A2.01.02

Specification Section: Demo 024120-3 (pg194), Division 9, Division 7

Response: Insulation is not required for the project. Refer to Addendum 1.

4. **Question 25S1-4:** While asbestos abatement is happening in the basement, can demolition be done at the same time on the first and second floors?

Response: Yes, demolition on the first and second floors can happen at the same time as asbestos abatement in the basement. However, the Contractor or subcontractor cannot use the same elevator that they use to transport asbestos debris to also transport the demolition debris.

5. **Question 25S1-5:** Is there a plan to vent the basement?

Response: The flexible vent ducts can be routed up the stairs, and it will be the contractor/subcontractor's responsibility to determine how they will flex out the negative air machines to get the ducting out of the building as part of the worksite abatement plan. The costs for implementation and oversight should be included in the bid.

6. **Question 25S1-6:** Please clarify signage as 101400 2.2B - requests metal frames at ADA signs & A8.01 - Calls out frame-less signs screwed to walls

Drawing Number: A8.01 - Calls out frameless signs screwed to walls

Specification Section: 101400 2.2B - requests metal frames at ADA signs

Response: Requirements for signage are indicated on sheet A3.01.02. Utilize high bond double stick foam tape with two screws per sign to fasten to walls. Metal frames for signage are not required.

7. **Question 25S1-7:** Note 8 states "Finish ceiling shall be level within 1/8 in 12", U.O.N." For securing supports above finished ceiling for lights, conduit, etc., what is the approximate height?

Drawing Number: A2.01.02

Response: The ceiling height within the first-floor T-bar areas are approximately 11-feet. The ceiling height on the second floor is approximately 9-feet.

8. **Question 25S1-8:** Will lifts or scaffolding be allowed for the 1st floor if ceiling height is too high for ladders?

Drawing Number: A2.01.02

Response: Scaffolding and lifts are allowed on the first floor. Contractor to utilize means and methods and protect all flooring with 1-inch-thick minimum plywood sheets.

9. **Question 25S1-9:** Per job walk, contractor is allowed to use facility restroom provided they are normal usage. Per Note 8 on G1.01.02, we are required to provide a chemical toilet on site. Please confirm not needed and we can use On-site restroom

Drawing Number: G1.01.02

Response: In accordance with OSHA requirements, the contractor shall provide adequate, sanitary, and accessible chemical toilet facilities in the south rear parking lot of the project site for the duration of construction.

10. **Question 25S1-10:** Note 2 on Sheet AP1.00.02 states for Contractor to relocate all

monitors and equipment to beneath the desk. Per Job Walk, please confirm if this will be done by the County and the Contractor will tarp, plastic and wrap.

Drawing Number: AP1.00.02

Response: Yes, Library staff will relocate all monitors and equipment beneath the desks per the Job Walk. Contractor will be responsible for placing tarp, plastic, wrap and protect in place.

11. **Question 25S1-11:** Please confirm General Note 5 on Sheet A2.02.01 applies for the whole project and all painting.

Drawing Number: A2.02.01

Response: Painting will only be required for areas as described per upcoming Addendum 1.

12. **Question 25S1-12:** RCP Note 2 on A2.0B.02 mentions Window Coverings, please confirm these are not in the Scope

Drawing Number: A2.0B.02

Response: New window coverings are not part of the scope. There are no windows at the basement level.

13. **Question 25S1-13:** Per job walk and plans, the desk are to remain in place and protected. Per note 10 on G1.01.02 contractor is to repair/replace damaged desk. On the job walk there was mention of some desk that were old and possibly getting replaced by the county either way. Please clarify if Contractor is responsible for all damaged Furniture.

Drawing Number: G1.01.02

Response: Contractor to protect in place all desks, furniture etc. and these items are to remain in place and protected u.o.n. If the Contractor discovers a damaged piece of furniture prior to commencement of work, the Contractor shall note the damage and provide a list to the County/Library.

14. **Question 25S1-14:** Confirm the Parking Lot and the whole building is open and available to the contractor during construction

Response: Yes. The Contractor will need to coordinate with Library/County for building access.

END OF SECTION

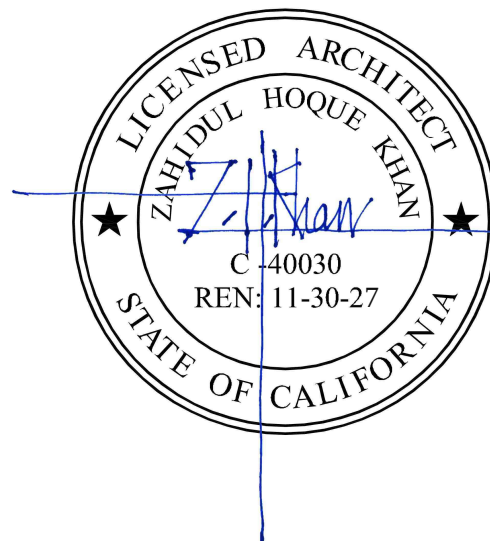
ADDENDUM 02

Contract # 25-S-01

Dated: January 14, 2026

The foregoing documents are amended in the respects as herein set forth. This addendum and the amendments herein shall become part of said documents and of any contract entered into pursuant to said documents.

PLEASE ACKNOWLEDGE THIS ADDENDUM ON YOUR PROPOSAL. IF YOU HAVE GIVEN THE CONTRACT DOCUMENTS TO SOMEONE ELSE, PLEASE FORWARD THIS ADDENDUM.



01/14/26

Date Signed

Architect of Record: _____ Zahidul Hoque Khan, Lic. # C-40030

FRESNO COUNTY
Department of Public Works and Planning
Development Services and Capital Projects Division
m/a 2220 Tulare Street, Eighth Floor
Fresno, CA 93721 (559) 600-4536
zkhan@fresnocountyca.gov

A. Bid Express Solicitation

General Info

- a. Replace Deadline 1/15/2026 02:00 PM PST with 1/21/2026 02:00 PM PST

B. PROCUREMENT CONTRACTING REQUIREMENTS – DIVISION 00

- a. **Section 00 01 07 – County Adoption and Acknowledgement & Seals**
No changes

- b. **Section 00 11 13 – Notice to Bidders**

Bid Opening Date & Time:

DELETE:

Thursday, January 15, 2026
2:00 P.M. (1400 hours and 00 seconds)

REPLACE WITH:

Wednesday, January 21, 2026
2:00 P.M. (1400 hours and 00 seconds)

- c. **Section 00 52 13 – Agreement**
No changes
- d. **Section 00 72 00 – General Conditions**
No changes

C. SPECIFICATIONS

- 1. Refer to Specification section 21 00 00 FIRE SPRINKLER SYSTEM Part 1.2 SCOPE PART A.

DELETE:

General: Provide all labor, materials and services necessary for complete, lawful and operating systems as shown or noted on the drawings or as specified here. The entire facility shall be fire sprinklered.

REPLACE WITH:

General: Provide all labor, materials and services necessary for a complete, lawful and operating systems as shown or noted on the drawings and specified within this specification. Refer to plan set for scope of the fire sprinkler work. Fire sprinkler work is only within the basement.

D. DRAWINGS

No changes

E. GENERAL CLARIFICATIONS:

No changes

END OF ADDENDUM

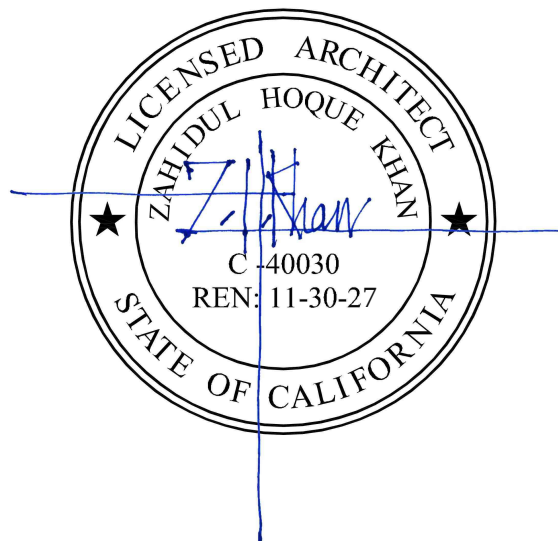
ADDENDUM 03

Contract # 25-S-01

Dated: January 20, 2026

The foregoing documents are amended in the respects as herein set forth. This addendum and the amendments herein shall become part of said documents and of any contract entered into pursuant to said documents.

PLEASE ACKNOWLEDGE THIS ADDENDUM ON YOUR PROPOSAL. IF YOU HAVE GIVEN THE CONTRACT DOCUMENTS TO SOMEONE ELSE, PLEASE FORWARD THIS ADDENDUM.



01/20/26

Date Signed

Architect of Record: _____ Zahidul Hoque Khan, Lic. # C-40030

FRESNO COUNTY
Department of Public Works and Planning
Development Services and Capital Projects Division
m/a 2220 Tulare Street, Eighth Floor
Fresno, CA 93721 (559) 600-4536
zkhan@fresnocountyca.gov

A. Bid Express Solicitation

General Info

- a. Replace Deadline 1/21/2026 02:00 PM PST with 1/23/2026 02:00 PM PST

B. PROCUREMENT CONTRACTING REQUIREMENTS – DIVISION 00

- a. **Section 00 01 07 – County Adoption and Acknowledgement & Seals**

No changes

- b. **Section 00 11 13 – Notice to Bidders**

Bid Opening Date & Time:

DELETE:

Wednesday, January 21, 2026

2:00 P.M. (1400 hours and 00 seconds)

REPLACE WITH:

Friday, January 23, 2026

2:00 P.M. (1400 hours and 00 seconds)

- c. **Section 00 52 13 – Agreement**

No changes

- d. **Section 00 72 00 – General Conditions**

No changes

C. SPECIFICATIONS

No changes

D. DRAWINGS

- a. **Sheet M1.00.01: General Notes**

- 1. Add the following Note 3 to the General Notes: Provide an existing conditions air balance report for all air handling equipment and all grilles and registers for all floors of the Library prior to the start of any work.

- b. **Sheet M1.02.02: Replace this sheet with the attached Sheet M1.02.02 with additional clouded notes.**

- c. **Sheet M3.01.01: Specifications; General Mechanical Specifications:**

- 1. Balance: Provide an existing conditions air balance test for all air handling equipment and all grilles and registers

E. GENERAL CLARIFICATIONS:

No changes

END OF ADDENDUM

SECTION 000107 - COUNTY ADOPTION AND ACKNOWLEDGEMENT & SEALS

CENTRAL LIBRARY CEILING AND LIGHTING UPGRADES

Contract # 25-S-01

Garry Bredefeld, Chairman
Brian Pacheco, Vice Chairman
Luis Chavez
Ernest "Buddy" Mendes
Nathan Magsig

2nd District
1st District
3rd District
4th District
5th District

Paul Nerland, County Administrative Officer

Steven White

Digitally signed by Steven White
Date: 2025.12.08 09:50:12
-08'00'

Steven E. White, Director
Department of Public Works and Planning

Date Signed

Date Signed

Architect: _____



Date: 2025.12.08 09:30:03-08'00'

Zahidul Hoque Khan, C-40030

FRESNO COUNTY
Department of Public Works and Planning
Development Services and Capital Projects Division
m/a 2220 Tulare Street, Eighth Floor
Fresno, California 93721 (559) 600-4410
zkhan@fresnocountyca.gov

CONTRACT # 25-S-01

TITLE SHEET

**FRESNO CENTRAL LIBRARY
CEILING & LIGHTING UPGRADE**

County of Fresno Central Library
2420 Mariposa Street
Fresno, CA 93721

PREPARED BY:
BORRELLI AND ASSOCIATES, INC.
2032 N. GATEWAY BLVD.
FRESNO, CALIFORNIA 93727



ARCHITECT



ELECTRICAL ENGINEER



ARCHITECTURAL CONSULTANT



MECHANICAL ENGINEER



STRUCTURAL ENGINEER

END OF SECTION

TABLE OF CONTENTS

INDEX TO TECHNICAL SPECIFICATIONS AND BID DOCUMENTS

SECTION NUMBER	SECTION TITLE	Number of Pages
DIVISION 00 – PROCUREMENT CONTRACTING REQUIREMENTS		
00 01 01	COVER SHEET	1
00 01 07	COUNTY ADOPTION AND ACKNOWLEDGMENT & SEALS	2
00 01 10	TABLE OF CONTENTS	2
00 11 13	NOTICE TO BIDDERS	5
00 21 13	INSTRUCTIONS TO BIDDERS	7
00 22 13	BIDDERS' CHECKLIST	2
00 42 13	PROPOSAL FORM	2
	Bidder's Declaration	
	Bid Sheet	
	Acknowledgment of Addendum	
00 43 13	BID SECURITY FORM	1
00 43 36	SUBCONTRACTOR LIST	5
00 45 19	NON-COLLUSION DECLARATION	1
00 46 56	TITLE 13 CARB CERTIFICATION	1
00 52 13	AGREEMENT	8
	Exhibit A – Self Dealing Transaction Disclosure Form	
00 65 36	GUARANTY	1
00 72 00	GENERAL CONDITIONS	69

TECHNICAL SPECIFICATIONS / SPECIAL PROVISIONS

SECTION NUMBER	SECTION TITLE

DIVISION 01 - GENERAL REQUIREMENTS

011000	Summary
012500	Substitution Procedures
013100	Project Management and Coordination
013323	Submittal Procedures
013545	Special Procedures for Hazardous Materials
014000	Quality Requirements
015000	Temporary Facilities and Controls
017113	Mobilization, Site Maintenance, Demobilization
017300	Execution
017419	Construction Waste Management and Disposal
017719	Project Closeout

017836	Warranties and Bonds
017839	Project Record Documents
DIVISION 02 - EXISTING CONDITIONS	
024119	Selective Component Demolition
028113	Removal Hazardous Waste/Hazmat Survey
028319	Lead-Based Encapsulation
DIVISION 08 - OPENINGS	
081100	Prefinished Steel Door Frames
087100	Door Hardware
DIVISION 09 - FINISHES	
092900	Gypsum Board
098100	Acoustical Ceilings
099000	Paint
DIVISION 20 - GENERAL MECHANICAL PROVISIONS	
200100	General Mechanical Provisions
DIVISION 21 - FIRE SUPPRESSION	
210000	Fire Sprinkler Systems
DIVISION 22 - PLUMBING	
220400	Plumbing
DIVISION 26 - ELECTRICAL	
260000	General Electrical Requirements
260500	Basic Electrical Material and Methods
260526	Grounding
260529	Hangers and Support for Electrical Systems
260548	Vibration and Seismic Controls for Electrical Systems
260800	Commissioning of Electrical Systems
262416	Panelboards
265000	Lighting

END OF TABLE OF CONTENTS

NOTICE TO BIDDERS

Contract Name: **CENTRAL LIBRARY CEILING AND LIGHTING UPGRADES**

Project Address / Location: **2420 Mariposa St.
Fresno, CA 93721**

Contract Number: **25-S-01**

Bid Opening Date & Time: Thursday, January 15, 2026
2:00 P.M. (1400 hours and 00 seconds)

Sealed Proposals / Bids Received at EITHER (choose ONE):

<https://www.bidexpress.com/businesses/36473/home>

or

Department of Public Works and Planning
Office of the Design Engineer
2220 Tulare St., 7th Floor
Fresno, CA 93721

The work to be done consists of, in general, the demolition of existing ceilings for the basement, first floor, and second floor of the Fresno County Central Library and fire sprinkler modifications in the basement. Ceilings for the first and second floor will be replaced with new T-bar, and some new ceilings will be installed in the basement and mechanical ducts will be extended to the new ceiling levels. Existing lighting fixtures will be replaced with new lighting fixture components and a new lighting system in the basement, first floor, and second floor with the addition of power circuits to two (2) break rooms and installation of new electrical panels.

Pre-bid Conference: Mandatory
10:00 A.M. PT on Tuesday, December 16, 2025
2420 Mariposa St. Fresno, CA 93721

Planholders Website: "Contractor Bidding Opportunities"
<http://www.fresnocountyca.gov/planholders>

Requests for Clarification (RFC) Deadline & Form:
<http://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/Construction-Bidding-Opportunities/25-S-01-Central-Library-Ceiling-and-Lighting-Upgrades/Request-for-Clarification-Form>
no later than 2:00 p.m. on the tenth (10th) calendar day before bid opening

Bid Submission Questions: DesignServices@fresnocountyca.gov
(559) 353-4919 or (559) 600-4543

Request to be Added to Planholders Form: <https://www.fresnocountyca.gov/Departments/Public-Works-and-Planning/Construction-Bidding-Opportunities/Request-to-Be-Added-to-the-Planholders-List-Form>

Architect's Estimate Range: \$5,700,000 - \$6,300,000
Working Days (Section 005213): All work one hundred twenty (120) working days
Required Valid California Contractor's License:
Class B (General Building)

Basis of Bid: Bids are required for the entire work described herein. Bids will be compared on the basis of the total lump sum bid.

Project Details: Electronic copies, in ".pdf" file format, of the official project plans and specifications, bid books and proposal sheets, and such additional supplemental project information as may be provided, are available to view, download, and print on the Planholders website.

This project is funded by the Building Forward Library Improvements Grant Program.

Bid Opening: Promptly following the closing of the bidding all timely submitted bids will be publicly opened and viewable via a livestream (the link for which will be posted on the project website) for construction in accordance with the project specifications therefor. A bid summary of the bids received will be posted to the project's website, generally within twenty-four (24) hours of the bid opening.

Planholders: Bidders may fill out a Request to be Added to Planholders list at the link listed above. Requesters will then be listed as a planholder for the project on the website and receive notifications and addenda issued for the project. Prospective bidders may also select the project on www.BidExpress.com. Those that demonstrate interest in the project will be added to the planholders list, and receive notifications and addenda issued for the project. Planholder and exchange/publication names may be obtained from the County of Fresno Planholders website listed above.

Requests for Clarification (RFC), Substitution of Materials, & Addenda: All questions and requests for substitutions (refer to Section 012500, Substitution Procedures) regarding this project shall be in writing and shall be received by the Department of Public Works and Planning, Design Division, no later than the deadline listed above and shall be submitted on the "Request for Clarification Form" provided on our website above. Any questions and substitution requests received after this deadline may not receive a response unless the Department of Public Works and Planning elects to issue an addendum to revise the bid opening date. In the event that the bid opening date is revised, the deadline for questions and substitutions will be extended to no later than 2:00 P.M. on the calendar days listed above before the revised bid opening date. Questions and their responses will be posted on our website under "Request for Clarification Responses."

Any changes to, or clarification of, the project plans and specifications shall be in the form of a written addendum issued to planholders of record.

Any oral explanation or interpretations given to this project are not binding.

Bid Submission Instructions: If a bidder is unable to submit a bid via Bid Express, Bid Books, which contain bid proposal sheets necessary to submit a bid, may be obtained within the Specifications documents posted on the County of Fresno website.

Electronic bids shall be submitted via the Bid Express website.

Hardcopy bids shall be submitted in a sealed envelope addressed to the "Department of Public Works and Planning, Office of the Design Engineer" and labeled with the name of the bidder, contract number, name of the project, and the statement "Do Not Open Until The Time Of Bid Opening."

The apparent lowest bidder shall submit a Cost Distribution of the bid, otherwise known as a "Schedule of Values," (refer to Section 002113 Instructions to Bidders 1.16 Post-Bid / Pre-Award Information and Requirements) within eight (8) days of the Bid Opening.

Bid Security: Bid security in the amount of ten percent (10%) of the amount of the bid, and in the form of a bid bond issued by an admitted surety insurer licensed by the California Department of Insurance, cash, cashier's check or certified check shall accompany the bid. You must either attach an electronic bid bond or provide an original bid bond (or other form of bid security authorized by Public Contract Code section 20129(a)), prior to the bid opening. Bid security shall be made in favor of the ***County of Fresno***.

Hardcopy bid bonds shall be submitted in a sealed envelope addressed to "Department of Public Works and Planning, Office of the Design Engineer" and labeled with the name of the bidder, contract number, name of the project, and the statement "Do Not Open Until The Time Of Bid Opening – BID BOND."

Each bond specified in this Notice shall be issued by a surety company designated as an admitted surety insurer in good standing with and authorized to transact business in this state by the California Department of Insurance, and acceptable to the County of Fresno. Bidders are cautioned that representations made by surety companies will be verified with the California Department of Insurance. Additionally, the County of Fresno, in its discretion, when determining the sufficiency of a proposed surety company, may require the surety company to provide additional information supported by documentation. The County generally requires such information and documentation whenever the proposed surety company has either a Best's Key Rating Guide of less than **A** and a financial size designation of less than **VIII**. Provided, however, that the County expressly reserves its right to require all information and documentation to which the County is legally entitled from any proposed surety company.

Insurance: Insurance requirements for this contract are listed in Article XI of the Agreement and Section 2.40 of the General Conditions.

Additional Information and Requirements: No contract will be awarded to a contractor who has not been licensed in accordance with the provisions of the Contractors State License Law, California Business and Professions Code, Division 3, Chapter 9, as amended, or whose bid is not on the proposal form included in the contract document.

Bidders or their subcontractor(s) are required to possess asbestos certification from the Contractors State License Board and registration with the Division of Occupational Safety and Health prior to the opening of bids for this project. [Health and Safety Code 25914.2]

Non-friable asbestos containing material (ACM) is to be removed as a part of this project, and it is anticipated that removal of ACM will not result in release of airborne asbestos fibers to the atmosphere. This material consists of sprayed-on acoustic ceiling material.

This project is subject to the contracting requirements and implementing regulations as amended in Title 13, Section 2449 General Requirements for In-Use Off-Road Diesel-Fueled Fleets, of the California Code of Regulations (13 CCR § 2449(i)). Bidders must submit a valid Certificate of Reported Compliance (CRC) issued by the California Air Resources Control Board at the time of bidding. Bidders are responsible for submitting their listed subcontractors' CRCs and any supporting documentation within five (5) calendar days of the bid opening. Failure to submit the required CRCs may render a bid non-responsive.

Minimum wage rates for this project, as predetermined by the Secretary of Labor, are set forth in the Special Provisions. If there is a difference between the minimum wage rates predetermined by the Secretary of Labor and the Prevailing Wage Rates predetermined by the Director of the Department of Industrial Relations of the State of California for similar classifications of labor, the contractor and their subcontractors shall pay not less than the higher wage rate.

Pursuant to Section 1773 of the Labor Code, the general prevailing wage rates in the county, or counties, in which the work is to be done have been determined by the Director of the California Department of Industrial Relations. These wages are set forth in the General Prevailing Wage Rates for this project, available at County of Fresno, Department of Public Works and Planning, 2220 Tulare Street, Sixth (6th) Floor, Fresno CA 93721-2104 and available from the California Department of Industrial Relations' Internet web site at <http://www.dir.ca.gov/DLSR/PWD>. Future effective general prevailing wage rates, which have been predetermined and are on file with the California Department of Industrial Relations are referenced but not printed in the general prevailing wage rates.

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code section 1771.1(a)].

No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.

The Contractor and their subcontractors shall comply with all applicable statutes and regulations, and all provisions of Sections 2.51, 2.52 and 2.55 of the General Conditions, regarding payment of wages, hours of work and all other labor compliance issues.

This contract is subject to state contract nondiscrimination and compliance requirements pursuant to Government Code section 12990.

In addition to the bid bond required by law of all bidders on public works projects, the successful bidder shall furnish a faithful performance bond, a payment bond and a warranty bond in accordance with the provisions of Section 2.36 of the General Conditions.

The successful bidder shall furnish a faithful performance bond in the amount of 100 percent (100%) of the contract amount, a payment bond in the amount of 100 percent (100%) of the contract amount, and one-year warranty bond in the amount of ten percent (10%) of the contract amount. Each bond specified in this Notice (bid bond, faithful performance bond, payment bond, and warranty bond) shall meet the requirements of all applicable statutes, including but not limited to those specified in Public Contract Code section 20129 and Civil Code section 3248.

Pursuant to Public Contract Code section 22300, substitution of securities for any moneys withheld by the County of Fresno to ensure performance under the contract shall be permitted.

The Board of Supervisors reserves the right to reject any or all bids.

Board of Supervisors, County of Fresno

Paul Nerland, County Administrative Officer

Bernice E. Seidel, Clerk of the Board

Issue Date: December 2, 2025

INSTRUCTIONS TO BIDDERS

1.01 EXPLANATION TO BIDDERS

An explanation desired by bidders regarding the meaning or interpretation of the bid documents must be requested in writing no later than 10 days prior to the bid opening.

Oral explanations given before the award of the contract will not be binding. Any interpretation made will be in the form of an addendum to the bid documents, said addendum will only be issued by the County's Director of Public Works and Planning ("Director"). Any addenda or supplemental information will be published on the Fresno County website at <https://www.fresnocountyca.gov/planholders> and the planholders of record will be notified.

1.02 EXAMINATION OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS AND SITE OF WORK

The bidder is required to examine carefully the proposal, plans, specifications, special provisions, and contract forms for submitting a proposal. It is mutually agreed that the submission of a proposal shall be considered prima facie evidence that the bidder has made such examination and is satisfied with the conditions to be encountered in performing the work and as to the requirements of the plans, specifications, and special provisions of the contract documents.

1.03 PROPOSAL GUARANTEE

The bidder shall furnish a proposal guarantee, consisting of a bid bond, cash, certified check, or cashier's check, for ten percent (10%) of the total amount bid, including additives.

If security is provided in the form of a certified check or cashier's check, the County may make such disposition of same as will accomplish the purpose for which submitted. Checks deposited by unsuccessful bidders will be returned as soon as practicable after the bid opening.

1.04 PREPARATION OF PROPOSALS

The bidder shall prepare a proposal on the blank proposal form furnished by the County.

The bidder's proposal shall be executed by the individual, by one or more partners of the partnership, or by one or more of the officers of the corporation submitting it. If the proposal is made by an individual, a name and post office address must be shown. If made by a partnership, the name of each member of the partnership must be shown. If made by a corporation, the proposal must show the name of the state under which the corporation was chartered and the name of the president, vice president, secretary and treasurer.

1.05 SUBCONTRACTORS

Every person submitting a bid to perform the work called for in the bid request shall set forth in this bid:

- A. The name and the location of the place of business, and the California contractor's license number, and the public works contractor registration number issued pursuant to Section 1725.5 of the Labor Code, of each subcontractor who will perform work or labor or render service to the general contractor in or about the construction of the work or improvement in an amount in excess of one-half (1/2) of one percent (1%) of the general contractor's total bid; and
- B. The portion of the work which will be done by each subcontractor.

The attention of bidders is directed to the provisions of Public Contract Code Section 4100 et seq which set forth the consequences and possible penalties which may result from a failure to comply strictly with the foregoing requirements for listing of subcontractors.

1.06 SUBMISSION OF PROPOSAL

A. Electronic Bid Submittal

The bidder has the option to submit the bid for this Project electronically. The bidder must either attach an electronic bid bond or provide an original bid bond (or other form of bid security authorized by Public Contract Code Section 20129(a)), prior to the bid opening.

Bidders submitting online may

1. use one of the accepted electronic sureties (Tinubu Surety or Surety 2000) to submit their bid bond; or
2. attach to the online bid a scan of a notarized paper bid bond, followed by delivery of the original paper notarized bidder's bond by the admitted surety insurer so that it is received by Design Services no later than 4:00 PM on the fifth (5th) calendar day after the bid opening; or
3. submit cash, cashier's check, certified check, or a bidder bond so that it is received by Design Services prior to the bid opening.

Hardcopy bid bonds shall be

- submitted in a sealed envelope
- addressed to "Department of Public Works and Planning, Office of the Design Engineer" and
- labeled with
 - the name of the bidder,
 - contract number,
 - name of the project, and
 - the statement "Do Not Open Until The Time Of Bid Opening – BID BOND."

The address for hand delivery is listed in the Notice to Bidders for the bid opening (Seventh Floor, Fresno County Plaza Building, 2220 Tulare St., Fresno, CA 93721). The address for delivery by mail is Sixth Floor, Fresno County Plaza Building, 2220 Tulare Street, Fresno, CA 93721).

B. Bid Submittal by Personal Delivery or by Mail

The bidder has the option to submit the bid by personal delivery or by mail. The bidder shall specify, on the blank Proposal form, a lump sum price in both words and figures for each bid item, including alternates, additives and supplemental items. If the bid is not submitted electronically, then all words

and figures shall be written on the Proposal form in ink. In the case of a discrepancy between the prices written in words and those written in figures, the written words shall govern. The bidder's proposal shall be signed in ink by the individual executing the bid on behalf of the bidder.

The required Proposal Guarantee must accompany the proposal.

When sent by mail, a sealed proposal must be addressed to the Fresno County Department of Public Works and Planning, Office of the Design Engineer, Sixth Floor, Fresno County Plaza Building, 2220 Tulare Street, Fresno, CA 93721. All proposals shall be filed prior to the time and at the place specified in the NOTICE TO BIDDERS. Proposals received after the time for opening of the proposals will be returned to the bidder unopened.

1.07 IRREGULAR PROPOSALS

Proposals that do not conform to bid requirements may be rejected as nonresponsive. Proposals shall be considered irregular and may be rejected for various reasons, including but not limited to the following:

- A. The proposal forms furnished by the County are not used or are altered.
- B. There are unauthorized additions, conditional or alternate proposals or irregularities of any kind which tend to make the proposal incomplete or indefinite.
- C. The bidder adds any provision reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
- D. The bid fails to contain a price for each bid component.

1.08 DISQUALIFICATION OF BIDDERS

Any one or more of the following may be considered to constitute sufficient cause for disqualification of a bidder and rejection of that bidder's proposal:

- A. More than one proposal for the same work from an individual, partnership or corporation.
- B. Evidence of collusion among bidders. Participants in such collusion will receive no recognition as bidders for any future work of the County until such participant shall have been reinstated as a qualified bidder.
- C. Lack of competency or inadequate machinery, plant or other equipment as considered necessary to perform this project, as may be revealed by financial statement if required.
- D. Unsatisfactory performance record as shown by past work for the County, judged from the standpoint of workmanship and progress.
- E. Prior commitments or obligations which in the judgment of the County might hinder or prevent the prompt completion of the work.

- F. Failure to pay, or satisfactorily settle, all bills due for labor or materials which remain pending under any former contract(s) at the time of submittal of the bid for this project.
- G. Failure to comply with any prequalification requirements of the County.
- H. Failure to furnish full amount of Proposal Guarantee with bid or failure to sign bid bond.

1.09 WITHDRAWAL OR REVISION OF PROPOSALS

A bidder may, without prejudice, withdraw a proposal after it has been deposited, provided the request for such withdrawal is received in writing before the time set for opening proposals. The request shall be executed by the bidder or the bidder's duly authorized representative and shall include the name of the individual authorized to receive the withdrawn proposal. Said individual shall be required to present photo identification prior to withdrawing the proposal. The bidder may then submit a revised proposal provided it is received prior to the time set for opening proposals.

1.10 PUBLIC OPENING OF PROPOSALS

Proposals will be opened and read publicly at the time and place indicated in the Notice to Bidders. Bidders or their authorized agents are invited to be present.

1.11 BID PROTEST PROCEDURE / RELIEF OF BIDDER

A. BID PROTEST PROCEDURE

Any bid protest must be submitted in writing and delivered by the Bidder by either of the following means: (1) via e-mail to DesignServices@fresnocountyca.gov; or (2) via certified mail, return receipt requested to the following address: Design Division, Department of Public Works and Planning, 2220 Tulare Street, Sixth Floor, Fresno, CA 93721.

The bid protest must be received no later than 5:00 p.m. of the seventh (7th) calendar day following the deadline for submittal of the specific bid document(s) placed at issue by the protest. Any Bidder filing a protest is encouraged to submit the bid protest via e-mail, because the deadline is based on the Department's receipt of the bid protest. A bid protest accordingly may be rejected as untimely if it is not received by the deadline, regardless of the date on which it was postmarked. The Bidder's compliance with the following additional procedures also is mandatory:

The initial protest document shall contain a complete statement of the grounds for the protest, including a detailed statement of the factual basis and any supporting legal authority.

The protest shall identify and address the specific portion of the document(s) forming the basis for the protest.

The protest shall include the name, address and telephone number of the person representing the protesting party.

The Department will provide a copy of the initial protest document and any attached documentation to all other Bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

The Board of Supervisors will issue a decision on the protest. If the Board of Supervisors determines that a protest is frivolous, the party originating the protest may be determined to be irresponsible and that party may be determined to be ineligible for future contract awards.

The procedure and time limits set forth herein are mandatory and are the Bidder's sole and exclusive remedy in the event of a bid protest. Failure by the Bidder to comply with these procedures shall constitute a waiver of any right to further pursue the bid protest, including the subsequent filing of a Government Code Claim or legal proceedings.

B. RELIEF OF BIDDER

A bidder who claims a mistake in their bid must follow the procedures in Public Contract Code Section 5100 et seq in seeking relief of their bid.

1.12 AWARD OF CONTRACT

The award of the contract, if it is awarded, will be to the lowest responsible bidder whose proposal complies with all the prescribed requirements. The award, if made, will be within 68 days after the opening of proposals.

If the County finds that it will be unable to award the contract within 68 calendar days after the opening of proposals, the Director may request any or all bidders to extend all terms of their proposal(s) to a specified date. It is possible that additional extensions may subsequently be requested. If a bidder does not elect to extend the terms of their proposal beyond the 68 calendar days following opening of proposals, or does not respond within 10 days to any request for an extension, that bidder's proposal will be deemed as having expired 68 calendar days following opening of the proposals, and that bidder's proposal will not be considered for award of the contract.

The successful bidder will be notified in writing, by letter mailed to the address shown on their proposal, that their bid has been accepted and that they have been awarded the contract.

The right is reserved by the County to reject any or all proposals, to waive technicalities (such as immaterial bid irregularities), to advertise for new proposals, or to proceed to do this work otherwise, if in the judgment of the awarding authorities the best interests of the County will be promoted thereby.

1.13 CANCELLATION OF AWARD

The awarding authority reserves the right to cancel the award of any contract at any time before the execution of said contract by all parties without any liability against the County.

1.14 CONTRACT BONDS

The bidder to whom the award is made shall, within ten days, enter into a written contract with the County. The bidder shall forfeit the Proposal Guarantee in case the bidder does not follow through with execution of the written contract within ten days after the contract is awarded.

The successful bidder shall furnish a faithful performance bond in the amount of 100 percent (100%) of the contract amount and a payment bond in the amount of 100 percent (100%) of the contract amount, and one-year Warranty Bond in the amount of 10 percent (10%) of the contract amount. Said bonds shall be submitted in triplicate.

The payment bond shall contain provisions such that if the Contractor or their subcontractors shall fail to pay (a) amounts due under the Unemployment Insurance Code with respect to work performed under the contract, or (b) any amounts required to be deducted, withheld and paid over to the Employment Development Department and to the Franchise Tax Board from the wages of the employees of the Contractor and subcontractors pursuant to Section 13020 of the Unemployment Insurance Code with respect to such work and labor, then the surety will pay these amounts. In case suit is brought upon the payment bond, the surety will pay a reasonable attorney's fee to be fixed by the court.

The contract form is attached hereto for the Contractor's information only. Execution of the contract by the successful bidder will not be required until after the bid award is made. Liability and Workers Compensation Insurance requirements shall be as set forth in the Agreement.

1.15 BUILDERS RISK INSURANCE

The Contractor shall obtain and maintain in force Builder's Risk Insurance against loss or damage from all perils. The policy shall cover the entire structure on which the work of this contract is to be done, up to the full insurable value thereof (except that if the contract is for remodeling, alteration, repair, or maintenance, then the policy shall cover the value of the contract therefore), including items of labor and materials connected therewith on the site, materials in place or to be used as part of the permanent construction including materials stored and partially paid for by the County as provided in Division 00-General Conditions, surplus materials, shanties, protective fences, bridges, or temporary structures, miscellaneous materials and supplies incident to the work, and such scaffolding, stagings, towers, forms and equipment as are not owned or rented by the Contractor, the cost of which is included in the cost of the work. EXCLUDED: This insurance does not cover any tools owned by mechanics, any tools, equipment, scaffolding, staging, towers, and forms owned or rented by the Contractor, the capital value of which is not included in the cost of the work, or any structures erected for the Contractor's administration of the project.

All subcontractors shall be insured to the extent of their portion of the work under the Contractor. The Contractor shall request, and is responsible to confirm with its insurer, that the County and all subcontractors are named, both as additional insured and as additional loss payees, on the Builder's Risk insurance policy. The County, Contractor, and all subcontractors waive all rights, each against the others, for damages arising from perils covered by the insurance required under the terms of this article, except such rights as they may have to the proceeds of the Builder's Risk insurance obtained and maintained by the Contractor. The Contractor shall file a certificate of such insurance with the County upon issuance of the policy, and with any subcontractors upon its request.

1.16 POST-BID / PRE-AWARD INFORMATION

Within eight (8) calendar days after bid opening, the apparent low bidder shall submit the following information to the DesignServices@fresnocountyca.gov:

- a. A cost distribution of the bid, with costs shown for major items of work as defined by either the project specification index, the Uniform Construction Index (UCI), or other method as appropriate for the project and approved by the Engineer.
- b. The cost distribution shall distinguish between work to be done by the bidder's own forces and work that will be subcontracted (including those who are to furnish materials or equipment fabricated to a special design); all subcontractors shall be named, regardless of the dollar amount of subcontracted work. Bidders' attention is also directed to California Public Contract Code Section 4100 et seq regarding subcontracting.

The County reserves the right to reject any proposed subcontractor, installer, or supplier who cannot show satisfactory evidence of meeting the qualifications required by the specification documents. In the event of such rejection, the apparent low bidder shall, within five working days, submit the name and qualifications of a replacement subcontractor, installer, or supplier satisfactory to the County. Such replacement submittal shall be in accordance with all specification requirements.

No adjustment of bid prices shall be made in the event of such replacement.

This information may be used in the evaluation of bids. If the project is awarded, the cost distribution will be used in determining amounts payable on progress payments and final payment.

The County may request that bidders other than the apparent low bidder submit similar cost distribution or qualification information, for the purpose of evaluating bids.

Upon completion of the bid evaluation process, cost distributions or qualification information submitted by other than the apparent low bidder will be returned upon request.

END OF SECTION

BIDDERS' CHECKLIST (BUILDING CONTRACTS)

Because of numerous technical irregularities resulting in rejected proposals for projects, the following checklist is offered for the bidders' information and use in preparing the proposal. This checklist is not to be considered as part of the contract documents. Bidders are cautioned that deleting or not submitting a form supplied in the bid documents (even if the form does not require signature) may result in an irregular bid.

PROPOSAL/BID SHEET (Section 004213)

Bidder name on each sheet. Price for each item including: each additive, deductive, supplemental or alternate items. Make no additions such as "plus tax", "plus freight", or conditions such as "less 2% if paid by 15th". Use ink or type. Acknowledge addenda.

BID SECURITY FORM - Read the Notices and Notes (Section 004313)

Indicate type of bid security provided.
Provide contract license information.

State business name and if business is a:

Corporation - list officers

Partnership - list partners

Joint Venture - list members

If Joint Venture members are corporations or partnerships, list their officers or partners.

Individual - list Owner's name and firm name style

Signature of Bidder – BID MUST BE SIGNED!

Corporation - by an officer

Partnership - by a partner

Joint Venture - by a member

Individual - by the Owner

If signature is by a Branch Manager, Estimator, Agent, etc., the bid must be accompanied by a power of attorney authorizing the individual to sign bids, otherwise the bid may be rejected.

Business Address - Firm's Street Address

Mailing Address - P.O. Box or Street Address

BID SECURITY (PROPOSAL GUARANTEE)

Ten percent (10%) of the total amount bid (to include supplemental or additive items).

Type of Bid Security:

Cash - Not recommended; cash is deposited in a clearing account and is returned to bidders by County warrant. This process may take several weeks.

Cashier's or Certified Checks - Will be held until the bid is no longer under consideration. If submitted by a potential awardee, they will be returned when the contract bonds are submitted and approved.

Bid Bonds - Must be signed by the bidder and by the attorney-in-fact for the bonding company. Signature of attorney-in-fact should be notarized and the bond should be

accompanied by bonding company's affidavit authorizing attorney-in-fact to execute bonds. An unsigned bid bond will be cause for rejection. If the bid is submitted electronically, then the bidder must either attach an electronic bid bond or provide an original bid bond (or other form of bid security authorized by Public Contract Code Section 20129(a)), prior to the bid opening, as more thoroughly specified in the Instructions to Bidders, Section 1.06.A ("Electronic Bid Submittal").

SUBCONTRACTOR LIST (Section 004336)

One firm for each type of work to be subcontracted. Fill out as completely as possible. Name and location of place of business, California contractor's license number, public works contractor registration number issued pursuant to Section 1725.5 of the Labor Code, and description of work to be performed are required to be listed for each subcontractor in accordance with Public Contract Code section 4104.

NON-COLLUSION DECLARATION (Section 004519)

Must be completed, signed, and returned with bid.

TITLE 13 CARB CERTIFICATION (Section 004556)

Contractors, if applicable, must submit valid Certificates of Reported Compliance with their bid. Subcontractor certificates will be due no later than 4:00 PM on the fifth (5th) calendar day after the bid opening if not submitted with the bid.

GUARANTY OF WORK (Section 006536)

Does not need to be submitted with the bid. (Must be signed and submitted by the successful bidder together with the executed contract and requisite bonds and insurance certificates, within ten days after award of the Project.)

OTHER

If the bid forms have been removed from the Specifications booklet, staple the pages together.

Make sure the bid envelope is sealed and shows the project name, bid package and contract number.

If the bid is mailed, allow sufficient time for postal delivery prior to the bid closing time. Bids received after the scheduled time will be returned unopened. Be sure the statement "**DO NOT OPEN UNTIL TIME OF BID OPENING**" is on the envelope.

END OF SECTION

General Info

Total:

\$4,660,300.00

Number	Description
25-S-01	Central Library Ceiling and Lighting Upgrades
Deadline 01/23/2026 02:00 PM PST	The work to be done consists of, in general, the demolition of existing ceilings for the basement, first floor, and second floor of the Fresno County Central Library and fire sprinkler modifications in the basement. Ceilings for the first and second floor will be replaced with new T-bar, and some new ceilings will be installed in the basement and mechanical ducts will be extended to the new ceiling levels. Existing lighting fixtures will be replaced with new lighting fixture components and a new lighting system in the basement, first floor, and second floor with the addition of power circuits to two (2) break rooms and installation of new electrical panels.
Vendor Better Enterprises, Inc.	
Submitted 01/23/2026 01:53 PM PST	
Signed by Marc Kerkochian	
Account Holder Susan Waide	
Opened 01/23/2026 02:07 PM PST	Allows zero unit prices and labor No
By jgeddert@fresnocountyca.gov	Allows negative unit prices and labor No

Attachment List

County of Fresno - Project Website
RFC form, bid opening details, any Supplemental Information
including RFC responses, Pre-bid Conference information, etc.

Project Manual (5.5 MB)
Specifications

Plans (81 MB)
Drawings

Instructions to Bidders
Instructions for Completing the Bid Book within the Specifications

Addendum 1
Addendum 1

Addendum 2
Addendum 2

Addendum 3
Addendum 3

Addendum 3 - Plan Sheet M1.02.02
Addendum 3 - Plan Sheet M1.02.02

Proposal Form Section 004213 - 1

PROPOSAL TO THE COUNTY OF FRESNO

Contract Name: **CENTRAL LIBRARY CEILING AND LIGHTING UPGRADES**

Contract No.: **25-S-01**

Fund / Subclass / Org / Account / Program or Memo No.: **0400 / 8868 / 8150 / 92037**

Work to be performed: The work to be done consists, in general, of the demolition of existing ceilings and replacement of new T-bar in the basement, first floor, and second floor of the Central Library. A new ceiling will be constructed in the basement, where indicated in the plans, with extensions to mechanical ducts. Replacement of existing lighting fixtures with new lighting fixture components and lighting system will be done in the basement, first floor, and second floor with the addition of power circuits to two (2) break rooms and installation of new electrical panels. Fire sprinkler modifications will be done in the basement, per the performance specifications.

The work to be done is shown on a set of Plans, entitled "Fresno County Central Library Ceiling & Lighting Upgrades"

Building No.: **#800**

Project Address:

2420 Mariposa St.

Fresno, CA 93721

If this proposal shall be accepted and the undersigned shall fail to contract, as aforesaid, and to give the two bonds in the sums to be determined as aforesaid, each issued by a surety satisfactory to the Awarding Authority, within ten (10) days after the award of the contract, the Awarding Authority, at its option, may determine that the bidder has abandoned the contract, and thereupon this proposal and the acceptance thereof shall be null and void, and the forfeiture of such security accompanying this proposal shall operate and the same shall be the property of the County.

The undersigned, as bidder, declares that all addenda issued with respect to this bid have been received and incorporated into this Proposal. The bidder's signature on this Proposal also constitutes acknowledgement of all addenda.

The undersigned, as bidder, declares that the only persons, or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any other person, firm or corporation; that the bidder has carefully examined the annexed proposed form of contract, and the plans therein referred to; and the bidder proposes and agrees if this proposal is accepted, that the bidder will contract with the County of Fresno to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the contract in the manner and time therein prescribed, and according to the requirements of the County as therein set forth, and that the bidder will take in full payment therefor the following lump sum price, to-wit:

Proposal Form Section 004213 - 2 Bid Sheet

\$4,660,300.00

Item No.	Item Description	Item Price	Extension
1	Base Bid	\$4,660,300.00	\$4,660,300.00
			Total: \$4,660,300.00

Proposal Form Section 004213 - 2 Acknowledgement of Addendum

Type N/A if no addenda were issued. Click "+" to add additional fields.

Addendum No. *

01

Dated *

01/09/2026

Type N/A if no addenda were issued. Click "+" to add additional fields. 1

Addendum No. *

02

Dated *

01/14/2026

Type N/A if no addenda were issued. Click "+" to add additional fields. 2

Addendum No. *

03

Dated *

01/20/2026

Bid Security Form Section 004313 - 1

Accompanying this proposal is security (check one only) in an amount equal to at least ten percent (10%) of the total amount of the bid:

Bond Percentage

10.00%

Guarantee Method *

Paper Bid Bond, Certified
Check, Cashier's Check,
Cash, Scan of Paper Bid
Bond

Paper Bid Bond, Certified Check, Cashier's Check, Cash, Scan of Paper Bid Bond

Confirmation *

I have provided a Paper Bid Bond for 10.00% of the bid total amount, to the public works office, prior to the solicitation deadline.

If Cash Security, Enter Amount

You must either attach an electronic bid bond here or provide an original bid bond (or other form of bid security authorized by Public Contract Code Section 20129(a)), **prior to** the bid opening.

Bid Security Form Section 004313 - 2

Business Name *

Better Enterprises, Inc.

Note: If bidder or other interested person is a corporation, state legal name of corporation. If bidder is a co-partnership, state true name of firm.

Type of Business *

Corporation - list Officers

Business Owners and Officers Names *

Marc Kerkochian - President/Manager
Susan Waid - Secretary
Ben Emerzian - Treasurer

List majority owners of your firm. If multiple owners, list all. (SB1439)

Note: If bidder or other interested person is:

- a corporation, list names of the president, secretary, treasurer and manager thereof*
- a partnership, list names of all individual co-partners composing firm.*
- an individual, state first and last name in full.*

Licensed in accordance with an act providing for the registration of Contractors,

Class *

B, C8, C33

Contractor License No. * Expires *

1012660 04/30/2026

DIR Registration Number *

1000565193

Business Address *

1148 N Cypress Ave, Fresno, CA 93727-6871

Mailing Address *

1148 N Cypress Ave, Fresno, CA 93727-6871

Business Phone *

(559) 233-2225 x1007

Fax Number

(559) 233-2850

E-mail Address *

susan@betterenterprisesinc.com

Signature of Bidder *

Better Enterprises, Inc., a California Corporation by Marc Kerkochian, President

Dated *

01/23/2026

NOTE: If bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation; if bidder is a co-partnership, the true name of the firm shall be set forth above together with the signature of the partner or partners authorized to sign contracts on behalf of the co-partnership; and if bidder is an individual, bidder signature shall be placed above. If signature is by an agent, other than an officer of a corporation or a member of a partnership, a Power of Attorney must be on file with the Owner prior to opening bids or submitted with the bid; otherwise, the bid will be disregarded as irregular and unauthorized.

Subcontractors List Section 004336 - 1

SUBCONTRACTORS

The following named subcontractor(s) will perform with labor, or otherwise render services to the general contractor in or about the construction of the work or improvement in an amount in excess of one-half of one percent of the total bid presented herewith. Please fill out as completely as possible when submitting your bid. Use subcontractor's business name style as registered with the License Board. Submission of subcontractor's name, location of business and description of work, California contractor's license number and public works contractor registration number issued pursuant to Section 1725.5 of the Labor Code, all are REQUIRED, by Section 4104 of the California Public Contract Code, to be submitted prior to bid opening. (The "location of business" must specify the city in which the subcontractor's business is located, and the state if other than California.) All other requested information shall be submitted, either with the bid or within 24 hours after bid opening.

Please fill out as completely as possible when submitting your bid. Use subcontractor's business name style as registered with the License Board.

FAILURE TO LIST SUBCONTRACTORS AS DIRECTED MAY RENDER THE BID NON-RESPONSIVE, OR MAY RESULT IN ASSESSMENT OF A PENALTY AGAINST THE BIDDER IN ACCORDANCE WITH SECTION 4110 OF THE CALIFORNIA PUBLIC CONTRACT CODE.

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields.

Subcontractor: *

Cencal Services, Inc.

Business Address *

3299 S. Cedar Avenue, Fresno, CA 93725

Class

A, B, C21, C22, C-8

License No. *

976935

DIR Registration No. *

1000002906

Item No. or Description of Work *

Abatement and Selective Demolition

Dollar Amount:

OR

Percentage of Total Bid:

17.27%

Email Address:

jamesd@cencaldemo.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 1

Subcontractor: *

Best Fire Protection

Business Address *

1201 24th St, Ste B110-334, Bakersfield CA 93301

Class

C16

License No. *

1054075

DIR Registration No. *

1000580773

Item No. or Description of Work *

Fire Sprinklers

Dollar Amount:

OR

Percentage of Total Bid:

.36%

Email Address:

chris@bestfire.us

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 2

Subcontractor: *

Grid Iron Services, Inc.

Business Address *

6077 Coffee Road, Suite 4 PMB37. Bakersfield, CA 93308

Class

C-61/D63

License No. *

1035685

DIR Registration No. *

1000055894

Item No. or Description of Work *

Construction Clean Up

Dollar Amount:

OR

Percentage of Total Bid:

.92%

Email Address:

steve@gridironservicesinc.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 3

Subcontractor: *

KC&S Construction Specialties, Inc.

Business Address *

432 Bitritto Way, Unit 3, Modesto, CA 95356

Class

B, C-61/D28, C-61/D34, C28

License No. *

1048604

DIR Registration No. *

1000063244

Item No. or Description of Work *

Hm Doors, HM Frames and Finish Hardware

Dollar Amount:

OR

Percentage of Total Bid:

.88%

Email Address:

a.landingham@kcsconstructionspecialties.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 4

Subcontractor: *

Tarlton & Son, Inc.

Business Address *

3562 S. Elm Avenue, Fresno, CA 93706

Class

B, C-2, C-9, C35, C33, C-61/
D28

License No. *

342341

DIR Registration No. *

1000004368

Item No. or Description of Work *

Painting

Dollar Amount:

OR

Percentage of Total Bid:

3.05%

Email Address:

randyt@tarltonandson.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 5

Subcontractor: *

Western Building Materials Co.

Business Address *

4620 E. Olive Avenue, Fresno, CA 93702

Class

B, C-2, C-61/D28

License No. *

248608

DIR Registration No. *

1000003005

Item No. or Description of Work *

Suspended Acoustical Ceilings

Dollar Amount:

OR

Percentage of Total Bid:

6.27%

Email Address:

brian@wbmco.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 6

Subcontractor: *

Frontline Plastering, Inc.

Business Address *

2549 N. Bundy Drive, Fresno, CA 93727

Class

C35, C-9

License No. *

1017354

DIR Registration No. *

1000055393

Item No. or Description of Work *

Metal Framing & Gypsum Board

Dollar Amount:

OR

Percentage of Total Bid:

5.14%

Email Address:

paul@frontlineplasteringinc.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 7

Subcontractor: *

American Incorporated

Business Address *

1345 N. American Street, Visalia, CA 93291

Class

A, B, C10, C43, C-4, C20,
C36, C38, C-7, C21, C-61/
D06

License No. *

292529

DIR Registration No. *

1000000369

Item No. or Description of Work *

HVAC

Dollar Amount:

OR

Percentage of Total Bid:

15.49%

Email Address:

tsardinha@aminc.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 8

Subcontractor: *

Infinity Power Solutions, Inc.

Business Address *

3001 N. Miami Ave., Fresno, CA 93727

Class

C10

License No. *

1080287

DIR Registration No. *

1000817136

Item No. or Description of Work *

Electrical and Low Voltage

Dollar Amount:

OR

Percentage of Total Bid:

41.39%

Email Address:

chad@infinity-psi.com

Subcontractors List Section 004336 - 2

Optional: Vendor is not required to complete.

SUBCONTRACTORS

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields.

Subcontractor: *

No bid

Business Address *

No bid

Class

No bid

License No. *

No bid

DIR Registration No. *

No bid

Item No. or Description of Work *

No bid

Dollar Amount:

OR

Percentage of Total Bid:

No bid

No bid

Email Address:

No bid

Non-Collusion Declaration Section 004519 - 1

CONTRACT: CENTRAL LIBRARY CEILING AND LIGHTING UPGRADES

CONTRACT NO.: 25-S-01

To the County of Fresno:

NON-COLLUSION DECLARATION TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID *

The undersigned declares:

I am the (Choose one of the following options): *

Corporate Officer

If Corporate Officer please list Title:

President

of (Business Name): *

Better Enterprises, Inc.

the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, and has not paid, and will not pay, any person or entity for that purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on

Date: *

01/23/2026

at City, State: *

Fresno, California

Signature: *

Marc Kerkochian

(See Title 23 United States Code Section 112; Calif Public Contract Code Section 7106)

*NOTE: Completing, signing, and returning the Non-collusion Declaration is a required part of the Proposal. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

CENTRAL LIBRARY CEILING & LIGHTING UPGRADES
FRESNO, CA

TITLE 13 CARB CERTIFICATION
SECTION 004556 - 1

**TITLE 13, CALIFORNIA CODE OF REGULATIONS § 2449(I) GENERAL REQUIREMENTS
FOR IN-USE OFF-ROAD DIESEL-FUELED FLEETS**

In conformance with Title 13 § 2449(i), bidders will be required to attach copies of valid Certificates of Reported Compliance for the fleet selected for the contract and their listed subcontractors.

Before May 15th of each year, the prime contractor must collect a new valid Certificate of Reported Compliance for the current compliance year, as defined in section 2449(n), from all fleets that have an ongoing contract with the prime contractor as of March 1st of that year. Prime contractors must not write contracts to evade this requirement. Annual renewals must be provided to the Resident Engineer at least one week prior to the expiration date of the current certificate.

<https://ww2.arb.ca.gov/resources/fact-sheets/fact-sheet-contracting-requirements>

Choose all that apply:

- ☐ Bidder's Certificate of Reported Compliance has been attached to the bid.
- ☒ Bidder does not have a fleet subject to this regulation as outlined in Section 2449(i)(1)-(4).
- ☒ Listed subcontractors' Certificate of Reported Compliance have been attached.
Cencal Services, Inc.; Tarlton & Son, Inc.; and, American Incorporated.
- ☒ The following subcontractors do not have a fleet subject to this regulation as outlined in Section 2449(i)(1)-(4):

Best Fire Protection; Grid Iron Services, Inc.; KC&S Construction Specialties,
Inc.; Western Building Materials Co.; Frontline Plastering, Inc.; and Infinity
Power Solutions, Inc.

- ☐ Additional information regarding subcontractor fleets and/or certificates will be submitted within five (5) calendar days of the bid opening.

**FAILURE TO PROVIDE THE CERTIFICATES OF REPORTED COMPLIANCE AS DIRECTED
MAY RENDER THE BID NON-RESPONSIVE.**

END OF SECTION

Guaranty Section 006536 - 1

Optional: Vendor is not required to complete.

CENTRAL LIBRARY CEILING AND LIGHTING UPGRADES
CONTRACT NO: 25-S-01

This guaranty shall be executed by the successful bidder in accordance with Section 2.32 of the General Conditions. The bidder may execute the guaranty on this page at the time of submitting the bid or may, in the alternative, submit it with the insurance certificates and bonds within ten (10) days after award.

G U A R A N T Y

To the Owner: County of Fresno

The undersigned guarantees the construction and installation of the following work included in this project:

ALL WORK

Should any of the materials or equipment prove defective or should the work as a whole prove defective, due to faulty workmanship, material furnished or methods of installation, or should the work or any part thereof fail to operate properly as originally intended and in accordance with each individual Work Order Detailed Scope of Work and specifications, due to any of the above causes, all within 365 calendar days after the date on which the Work under this contract is accepted by the Owner, the undersigned agrees to reimburse the Owner, upon demand, for its expenses incurred in restoring said work to the condition contemplated in said project, including the cost of any such equipment or materials replaced and the cost of removing and replacing any other work necessary to make such replacement or repairs, or, upon demand by the Owner, to replace any such material and to repair said work completely without cost to the Owner so that said work will function successfully as originally contemplated.

The Owner shall have the unqualified option to make any needed replacement or repairs itself or to have such replacements or repairs done by the undersigned. In the event the Owner elects to have said work performed by the undersigned, the undersigned agrees that the repairs shall be made and such materials as are necessary shall be furnished and installed within a reasonable time after the receipt of demand from the Owner. If the undersigned shall fail or refuse to comply with his or her obligations under this guaranty, the Owner shall be entitled to all costs and expenses reasonably incurred by reason of said failure or refusal.

Date: *

01/23/2026

Name (Printed): *

Marc Kerkochian

Signature: *

Marc Kerkochian

Title: *

President

Contractor: *

Better Enterprises, Inc.

Upload Required Documents

Name	Omission Terms	Submitted File
Electronic Bid Bond - Scan of Bid Bond Scan of Notarized Paper Bid Bond with original due by 4pm on the 5th calendar day after the bid opening.	I have already provided a bid bond, i.e. through an electronic Surety above or to the public works office prior to the deadline.	Bid Bond - CoF Central Library Ceiling & Lighting Upgrades.pdf
CARB Certification of Reported Compliance - Bidder Valid CARB Certification of Reported Compliance - Bidder	Does not have a fleet subject to this regulation.	I am not enclosing this document because the omission terms have been met.
CARB Certification(s) of Reported Compliance - Subcontractors Valid CARB Certification(s) of Reported Compliance - Subcontractors	Due by 4pm on the 5th calendar day after bid opening or no listed subcontractors have a fleet subject to this regulation.	I am not enclosing this document because the omission terms have been met.
3 Required Documents		

Additional Documents (use if needed)

Name	Omission Terms	Submitted File
Not Required - Extra Space if needed Not Required - Extra Space if needed	Not Required - Extra Space if needed	I am not enclosing this document because the omission terms have been met.
Not Required - Extra Space if needed Not Required - Extra Space if needed	Not Required - Extra Space if needed	I am not enclosing this document because the omission terms have been met.
Not Required - Extra Space if needed Not Required - Extra Space if needed	Not Required - Extra Space if needed	I am not enclosing this document because the omission terms have been met.
3 Required Documents		

California Environmental Protection Agency
Air Resources Board

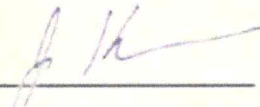
January 1, 2025

**CERTIFICATE OF REPORTED COMPLIANCE
OFF-ROAD DIESEL VEHICLE REGULATION**

is issued to

CENCAL SERVICES, INC.

This certificate indicates that the fleet listed above has reported off-road diesel vehicles to the California Air Resources Board and has certified they are in compliance with title 13 CCR, section 2449. All applicable vehicles owned by the individual, company, or agency must be reported and labeled, as specified in Section 2449, with all possible completeness, else this certificate is null and void. **Certificate expires 2/28/2026**



Jack Kitowski
Chief, Mobile Source Control Division
California Air Resources Board

Off-road Diesel Fleet Identification

16441

To verify the authenticity of this certificate, enter this number at
http://www.arb.ca.gov/doors/compliance_cert1.html

California Environmental Protection Agency

Air Resources Board

January 1, 2026

CERTIFICATE OF REPORTED COMPLIANCE OFF-ROAD DIESEL VEHICLE REGULATION

is issued to

TARLTON AND SON, INC.

This certificate indicates that the fleet listed above has reported off-road diesel vehicles to the California Air Resources Board and has certified they are in compliance with title 13 CCR, section 2449. All applicable vehicles owned by the individual, company, or agency must be reported and labeled, as specified in Section 2449, with all possible completeness, else this certificate is null and void. **Certificate expires 2/28/2027**

Michelle Buffington

Michelle Buffington
Chief, Mobile Source Control Division
California Air Resources Board

Off-road Diesel Fleet Identification

69429

To verify the authenticity of this certificate, enter this number at
http://www.arb.ca.gov/doors/compliance_cert1.html

California Environmental Protection Agency
Air Resources Board

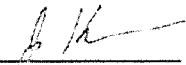
January 1, 2025

**CERTIFICATE OF REPORTED COMPLIANCE
OFF-ROAD DIESEL VEHICLE REGULATION**

is issued to

AMERICAN INCORPORATED

This certificate indicates that the fleet listed above has reported off-road diesel vehicles to the California Air Resources Board and has certified they are in compliance with title 13 CCR, section 2449. All applicable vehicles owned by the individual, company, or agency must be reported and labeled, as specified in Section 2449, with all possible completeness, else this certificate is null and void. **Certificate expires 2/28/2026**



Jack Kilowski
Chief, Mobile Source Control Division
California Air Resources Board

Off-road Diesel Fleet Identification

12732

To verify the authenticity of this certificate, enter this number at
http://www.arb.ca.gov/doors/compliance_cert1.html

AGREEMENT

THIS AGREEMENT is made at Fresno, in Fresno County, California, by and between Better Enterprises, Inc., hereinafter "Contractor", and the County of Fresno, hereinafter "Owner", both of whom may be referred to individually as a "Party" or jointly as "Parties".

WITNESSETH, the Contractor and the Owner, for the consideration hereinafter named, agree as follows:

ARTICLE I. The Contractor agrees to furnish all labor, equipment and materials, including tools, implements, and appliances required, and to perform all the work in a good and workmanlike manner, free from any and all liens and claims of mechanics, materialmen, subcontractors, artisans, machinists, teamsters, and laborers required for:

CENTRAL LIBRARY CEILING AND LIGHTING UPGRADES Contract No. 25-S-01

located at 2420 Mariposa St., Fresno, California, all in strict compliance with the plans, drawings, and specifications therefore prepared by the Director of the Fresno County Department of Public Works and Planning and his authorized representatives, hereinafter called the Project Manager, and other contract documents relating thereto.

ARTICLE II. The Contractor and the Owner agree that the Advertisement (Notice to Bidders), the Wage Scale, the Proposal hereto attached, the Instructions to Bidders, the General Conditions of the contract, the Specifications, the Drawings, and the Addenda and Bulletins thereto, the Contract Bonds and Certificates of Liability and Workers Compensation Insurance, and the Contract Change Orders, together with this Agreement form the Contract Documents, all of which are fully a part of the contract as if hereto attached or herein repeated. The Specifications and Drawings are intended to cooperate so that any work exhibited in the Drawings and not mentioned in the Specifications, or vice versa, is to be executed the same as if both are mentioned in the Specifications and set forth in the drawings, to the true intent and meaning of the said Drawings and Specifications when taken together. Provided, however, that no part of said specifications that is in conflict with any portion of this Agreement or the Contract, or that is not actually descriptive of the Work (as defined in Section 2.04 A of the General Conditions) to be done thereunder, or of the manner in which the said work is to be executed, shall be considered as any part of this Agreement and the Contract, but shall be utterly null and void, and anything that is expressly stated, delineated or shown in or upon the Specifications or Detailed Scope of Work shall govern and be followed, notwithstanding anything to the contrary in any other source of information or authority to which reference may be made.

ARTICLE III. The Contractor agrees that the Work under the Contract shall be completed as determined by the Owner within ONE HUNDRED SEVENTY-FIVE (175) WORKING DAYS from the date shown in the Notice to Proceed. Time of performance shall be deemed as of the essence hereof and it is agreed that actual damages to the Owner from any delay in completion beyond the date provided for herein, or any extension thereof until the Work is completed or accepted, shall be all provable damages plus liquidated damages in the amount of ONE THOUSAND 00/100 DOLLARS (\$1,000) per day; that said liquidated damage was arrived at by a studied estimate of loss to the Owner in the event of a delay considering the following damage items which are extremely difficult or impossible to determine: Additional construction expense resulting

from delay of completion including, but not limited to, engineering, inspection, rental and utilities; provided, however, the Owner may conditionally accept the Work and occupy and use the same if there has been such a degree of completion as shall in its opinion render the same safe, fit and convenient for the use for which it is intended and in such cases the Contractor and surety shall not be charged for liquidated damages for any period subsequent to such conditional acceptance and occupation by the Owner but Owner may assess actual damages caused by failure of total completion during such period. The time during which the Contractor is delayed in the Work by the acts or neglects of the Owner or its employees or those under it by contract or otherwise, or by the acts of God which the Contractor could not have reasonably foreseen and provided for, or by storms and inclement weather which delays the work, or by any strikes, boycotts, or like obstructive action by employee or labor organizations, or by any general lockouts or other defensive action by employers, whether general, or by organizations of employers, shall be added to the time for completion as aforesaid.

ARTICLE IV. COMPENSATION: The Owner agrees to make payments on account thereof as provided in the General Conditions in the total amount of FOUR MILLION SIX HUNDRED SIXTY THOUSAND THREE HUNDRED DOLLARS AND 00/100 (\$4,660,300.00) in current funds for the performance of the contract which sum is computed as follows: **TOTAL BID LUMP SUM.**

ARTICLE V. The Contractor and the Owner agree that changes in this Agreement and the Contract or in the Work to be done under this Agreement shall become effective only when written in the form of a supplemental agreement or change order and approved and signed by the Owner and the Contractor. It is specifically agreed that the Owner shall have the right to request any alterations, deviations, reductions, or additions to the Contract, plans, and/or specifications and the amount of the cost thereof shall be added to or deducted from the amount of the Contract price aforesaid by fair and reasonable valuations thereof.

This Contract shall be deemed completed when the Work is finished in accordance with all Contract Documents as amended by such changes. No such change or modification shall release or exonerate any surety upon any guaranty or bond given in connection with this Contract.

ARTICLE VI. In the event of a dispute between the Owner or Project Manager and the Contractor as to an interpretation of any of the specifications or as to the quality of sufficiency of material or workmanship, the decision of the Project Manager shall for the time being prevail and the Contractor, without delaying the job, shall proceed as directed by the Project Manager without prejudice to a final determination by negotiation, arbitration by mutual consent or litigation and should the Contractor be finally determined to be either wholly or partially correct, the Owner shall reimburse them for any added costs they may have incurred by reason of work done or material supplied beyond the terms of the Contract as a result of complying with the Project Manager's directions as aforesaid. In the event the Contractor shall neglect to prosecute the Work properly or fail to perform any provisions of this Contract, the Owner, after three (3) days' written notice to the Contractor, may, without prejudice to any other remedy it may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due to the Contractor, subject to final settlement between the parties as in this paragraph hereinabove provided.

ARTICLE VII. TERMINATION: If the Contractor should be adjudged a bankrupt, or if they should make a general assignment for the benefit of their creditors, or if a receiver should be appointed on account of his insolvency, or if they or any of their subcontractors should persistently violate any of the provisions of the Contract, or if they should persistently or repeatedly refuse or should

fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper material, or if they should fail to make prompt payment to subcontractors or for material or labor or persistently disregard laws, ordinances or the instructions of the Project Manager, then the Owner may, upon the certificate of the Project Manager, serve written notice upon the Contractor and their surety of its intention to terminate the contract, such notice to contain the reasons for such intention to terminate the Contract, and unless within five (5) days after the serving of such notice, such violations shall cease and satisfactory arrangements for correction thereof be made, the contract shall, upon the expiration of said five (5) days, cease and terminate.

In the event of any such termination, the Owner shall immediately serve written notice thereof upon the surety and the Contractor, and the surety shall have the right to take over and perform the contract, provided, however, that if the surety within ten (10) days after the serving upon it of notice of termination does not give the Owner written notice of its intention to take over and perform the contract or does not commence performance thereof within the ten (10) days stated above from the date of the serving of such notice, the Owner may take over the Work and prosecute the same to completion by contract or by any other method it may deem advisable for the account and at the expense of the Contractor, and the Contractor and his surety shall be liable to the Owner for any excess cost occasioned the Owner thereby, and in such event the Owner may without liability for so doing, take possession of and utilize in completing the Work, such materials, appliances, construction plant and other property belonging to the Contractor as may be on the site or the work and necessary therefore. In such case, the Contractor shall not be entitled to receive any further payment until the Work is finished.

If the unpaid balance of the Contract price shall exceed the expense of finishing the Work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided, and damage incurred through the Contractor's default, shall be certified by the Project Manager.

ARTICLE VIII. The Contractor and his subcontractors shall comply with Sections 1770 – 1780 of the California Labor Code and the provisions of Sections 2.52 and 2.55 of the General Conditions concerning the payment of wages to all workers and mechanics, and the employment and payment of apprentices by the Contractor or any subcontractor for all work performed under this Agreement and the Contract.

ARTICLE IX. The Contractor and his subcontractors shall comply with Sections 1810 to 1815 of the California Labor Code and the provisions of Section 2.51 of the General Conditions, concerning hours of work and payment of overtime compensation for all work performed under this Agreement and the Contract.

The Board of Supervisors hereby specifies that portions of the Work can only be performed outside the regular working hours as defined in the applicable collective bargaining agreement filed with the Director of Industrial Relations in accordance with Labor Code Section 1773.1, and that the overtime requirements for Saturdays, and holidays are hereby waived for these portions of the Work, as more particularly described in the specifications. However, this exemption shall not negate the overtime provisions specified in Labor Code Section 1815.

ARTICLE X. INDEMNIFICATION: To the fullest extent permitted by law, Contractor agrees to and shall indemnify, save, hold harmless and at Owner's request, defend Owner and its officers, agents and employees, the Project Manager, the State of California, the State Library, and their

respective officers, agents and employees, from any and all costs and expenses, attorney fees and court costs, damages, liabilities, claims and losses occurring or resulting to Owner, or the Project Manager in connection with the performance, or failure to perform, by Contractor, its officers, agents or employees under this Agreement and the Contract, and from any and all costs and expenses, attorney fees and court costs, damages, liabilities, claims and losses occurring or resulting to any person, firm or corporation who may be injured or damaged by the performance, or failure to perform, of Contractor, its officers, agents or employees under this Agreement and the Contract. In addition, Contractor agrees to indemnify the Owner for Federal, State of California and/or local audit exceptions resulting from non-compliance herein on the part of Contractor.

In any and all claims against the Owner, the Project Manager, or any of their respective officers, agents or employees, initiated by any employee of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation set forth in the immediately preceding paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under workmen's compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE XI. INSURANCE: Without limiting the Owner's right to obtain indemnification from Contractor or any third parties, Contractor, at its sole expense, in accordance with the provisions of Section 2.40 of the General Conditions, shall maintain in full force and effect the following insurance policies throughout the term of this Agreement, excepting only those policies for which a longer term is specified:

A. Course of Construction (Builder's All Risk) Insurance, with scope and amount of coverage as specified in Section 2.40 B.5 of the General Conditions.

B. Commercial General Liability Insurance, with scope and amount of coverage as specified in Section 2.40 B.1 of the General Conditions.

C. Automobile Liability Insurance, with scope and amount of coverage as specified in Section 2.40 B.2 of the General Conditions.

D. Professional Liability Insurance, with scope and amount of coverage as specified in Section 2.40 B.3 of the General Conditions.

E. Worker's Compensation Insurance, with scope and amount of coverage as specified in Section 2.40 B.3 of the General Conditions.

The Certificate of Insurance shall be issued to the County of Fresno and all other participating agencies, whether or not said agencies are named herein, who contribute to the cost of the work or have jurisdiction over areas in which the work is to be performed and all officers and employees of said agencies while acting within the course and scope of their duties and responsibilities.

ARTICLE XII. MISCELLANEOUS PROVISIONS:

1. AUDITS AND INSPECTIONS: The Contractor shall at any time during business hours, and as often as the Owner may deem necessary, make available to the Owner for examination all of its records and data with respect to the matters covered by this Agreement. The Contractor shall, upon request by the Owner, permit the Owner to audit and inspect all of such records and data necessary to ensure Contractor's compliance with the terms of this Agreement and the Contract. If this Agreement exceeds ten thousand dollars (\$10,000.00), Contractor shall be subject to the examination and audit of the Auditor General for a period of three (3) years after final payment under Contract (Government Code Section 8546.7).

2. INDEPENDENT CONTRACTOR: In performance of the work, duties, and obligations assumed by Contractor under this Agreement, it is mutually understood and agreed that Contractor, including any and all of Contractor officers, agents and employees, will at all times be acting and performing as an independent contractor, and shall act in an independent capacity and not as an officer, agent, servant, employee, joint venture, partner, or associate of the Owner. Contractor and Owner shall comply with all applicable provisions of law and the rules and regulations, if any, of governmental authorities having jurisdiction over matters of the subject thereof. Because of its status as an independent contractor, Contractor shall have absolutely no right to employment rights and benefits available to Owner's employees. Contractor shall be solely liable and responsible for providing to, or on behalf of, its employees all legally-required employee benefits. In addition, Contractor shall be solely responsible and save Owner harmless from all matters related to payment of Contractor's employees, including compliance with Social Security, withholding, and all other regulations governing such matters. It is acknowledged that during the term of this Agreement, Contractor may be providing services to others unrelated to the Owner or to this Agreement.

3. DISCLOSURE OF SELF-DEALING TRANSACTIONS: This provision is only applicable if the Contractor is operating as a corporation (a for-profit or non-profit corporation) or if during the term of the agreement, the Contractor changes its status to operate as a corporation. Members of the Contractor's Board of Directors shall disclose any self-dealing transactions that they are a party to while Contractor is providing goods or performing services under this Agreement and the Contract. A self-dealing transaction shall mean a transaction to which the Contractor is a party and in which one or more of its directors has a material financial interest. Members of the Board of Directors shall disclose any self-dealing transactions that they are a party to by completing and signing a Self-Dealing Transaction Disclosure Form, attached hereto as Exhibit A and incorporated herein by reference, and submitting it to the Owner prior to commencing with the self-dealing transaction or immediately thereafter.

4. EXECUTIVE ORDER N-6-22: Under Executive Order N-6-22 as a contractor, subcontractor, or grantee, compliance with the economic sanctions imposed in response to Russia's actions in Ukraine is required, including with respect to, but not limited to, the federal executive orders identified in the EO and the sanctions identified on the U.S. Department of the Treasury website (<https://ofac.treasury.gov/sanctions-programs-and-country-information/russia-related-sanctions>). Failure to comply may result in the termination of contracts or grants, as applicable. Specially Designated Nationals and Blocked Persons List (SDN) (<https://sanctionslist.ofac.treas.gov/Home/SdnList>).

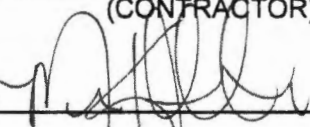
ARTICLE XIII. The Contractor represents that he has secured the payment of Workers Compensation in compliance with the provisions of the Labor Code of the State of California and Paragraphs B.3 of Article 2.40 of the General Conditions, and will continue so to comply with such statutory and contractual provisions for the duration and entirety of the performance of the work contemplated herein.

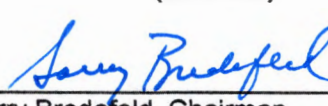
CENTRAL LIBRARY CEILING AND LIGHTING UPGRADES
FRESNO, CA

AGREEMENT
SECTION 005213 - 6

This Contract, **25-S-01**, was awarded by the Board of Supervisors on February 10, 2026. It has been reviewed by the Department of Public Works and Planning and is in proper order for signature of the Chairman of the Board of Supervisors.

IN WITNESS WHEREOF, they have executed this Agreement this 16th day of March, 2026

Better Enterprises, Inc.
(CONTRACTOR)
By: 
Name (Printed): Marc Kerkochian
Title: President

COUNTY OF FRESNO
(OWNER)
By: 
Garry Bredefeld, Chairman
of the Board of Supervisors of the
County of Fresno

ATTEST:
Bernice E. Seidel
Clerk of the Board of Supervisors
County of Fresno, State of
California

By: 
Deputy

FOR ACCOUNTING USE ONLY
VARIOUS ORGS.
0400 / 8868 / 8150 / 92037

END OF SECTION

CONTRACT # 25-S-01

SELF-DEALING TRANSACTION DISCLOSURE FORM

In order to conduct business with the County of Fresno (hereinafter referred to as "County"), members of a corporation's board of directors of the Contractor, must disclose any self-dealing transactions that they are a party to while providing goods, performing services, or both for the County. A self-dealing transaction is defined below:

"A self-dealing transaction means a transaction to which the corporation is a party and in which one or more of its directors has a material financial interest."

The definition above will be utilized for purposes of completing this disclosure form.

INSTRUCTIONS

- (1) Enter board member's name, job title (if applicable), and date this disclosure is being made.
- (2) Enter the board member's company/agency name and address.
- (3) Describe in detail the nature of the self-dealing transaction that is being disclosed to the County. At a minimum, include a description of the following:
 - a. The name of the agency/company with which the corporation has the transaction; and
 - b. The nature of the material financial interest in the Corporation's transaction that the board member has.
- (4) Describe in detail why the self-dealing transaction is appropriate based on applicable provisions of the Corporations Code.
- (5) Form must be signed by the board member that is involved in the self-dealing transaction described in Sections (3) and (4).

(1) Company Board Member Information:			
Name:		Date:	
Job Title:			
(2) Company/Agency Name and Address:			
(3) Disclosure (Please describe the nature of the self-dealing transaction you are a party to):			
(4) Explain why this self-dealing transaction is consistent with the requirements of Corporations Code 5233 (a):			
(5) Authorized Signature			
Signature:		Date:	

GENERAL CONDITIONS

2.01 IDENTIFICATION OF CONTRACT

- A. The Agreement shall be signed by the Contractor and the Owner.
- B. The Contract Documents are defined in ARTICLE II of the Agreement.
- C. The Contract Documents form the Contract for Construction ("Contract"). This Contract represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification as defined above. The Contract Documents shall not be construed to create any contractual relationship of any kind between the Architect of record and the Contractor, but the Architect of record shall be entitled to performance of the obligations of the Contractor intended for their benefit and to enforcement thereof. Nothing contained in the Contract Documents shall create any contractual relationship between the Owner and any Subcontractor or Sub-subcontractor.

2.02 EXECUTION, CORRELATION, AND INTENT OF CONTRACT DOCUMENTS

- A. The Contract Documents are complementary and anything called for by one shall be supplied as if called for by all, providing it comes clearly within the scope of the Contract.
- B. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work. Words and abbreviations that have well-known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.
- C. Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become familiar with the local conditions under which the Work is to be performed, and has correlated personal observations with the requirements of the Contract Documents.
- D. All work and material shall be the best of the respective kinds specified or indicated. Should any workmanship or materials be required that are not directly or indirectly called for in the Contract Documents, but which nevertheless are necessary for proper fulfillment of the obvious intent thereof, said workmanship or materials shall be the same for similar parts that are detailed, indicated or specified, and the Contractor shall understand the same to be implied and provide for it in his/her tender as if it were particularly described or delineated.

2.03 OWNERSHIP AND USE OF DOCUMENTS

All Contract Documents and copies thereof furnished shall remain the property of the Owner. With the exception of one (1) contract set for each party to the Contract, such documents are to be returned by Contractor or suitably accounted for to the Owner upon request at the completion of the Work. Submission or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's common law copyright or other reserved rights. The Owner's use of the documents will not increase the Architect's design liability beyond the Project and the site for which the design was originally intended.

2.04 DEFINITIONS

The following words, or variations thereof, as used in these documents have meanings as defined:

- A. The Work – The Work comprises the completed construction required of the Contractor by the Contract Documents, and includes all labor, materials, equipment and services necessary to produce such construction, and all materials, other permits and equipment incorporated or to be incorporated in such construction.
- B. The Project – The collective improvements to be constructed by the Contractor pursuant to the construction of the Sheriff Substation, Vehicle/Evidence Storage building, parking, and associated site improvements for Fresno County.
- C. Owner – The County of Fresno, State of California, as represented by the Fresno County Board of Supervisors and so named in the Agreement. The term Owner additionally includes the Owner's authorized representative (also known as the Project Manager or Construction Manager) for this Project.
- D. Architect of Record – The Owner and his/her authorized representative, as defined in Section 2.04C, or a duly California licensed Architect.
- E. Contractor – When used in the General Conditions refers to person(s) or entity (partnership or corporation) so named in Agreement and when used in the body of the Specifications, refers to the Contractor for that specific work, whether it be the General Contractor, Subcontractor, or other Contractor. The term Contractor means the Contractor or the Contractor's authorized representative.
- F. Subcontractor – Person, persons, entity, co-partnership or corporation having direct contract with Contractor to perform any of the Work at the site. The term Subcontractor means a Subcontractor or a Subcontractor's authorized representative. The term Subcontractor does not include any separate contractor or any separate contractor's subcontractors.

- G. Sub-subcontractor – Person, persons, entity, co-partnership or corporation having a direct or indirect contract with a Subcontractor to perform any of the Work at the site (i.e. a second-tier, third-tier or lower-tier Subcontractor). The term Sub-subcontractor means a Sub-subcontractor or an authorized representative thereof.
- H. Notice to Proceed – A written notice issued by the Owner directing the Contractor to proceed with construction activities to complete the Project.
- I. Technical Specifications – Contains the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.
- J. Days – All days shall be measured in calendar days unless specifically noted otherwise in these documents or referenced codes.
- K. Year – One year shall be measured in terms of 365 calendar days.

2.05 SPECIFICATIONS AND DRAWINGS

- A. Precedence – Anything mentioned in the Specifications and not shown on the Drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. Subject to Section 2.02, in cases of discrepancy concerning dimension, quantity and location, the Drawings shall take precedence over the Specifications. Explanatory notes on the Drawings shall take precedence over conflicting drawn indications. Large scale details shall take precedence over smaller scale details and figured dimensions shall take precedence over scaled measurement. Where figures are not shown, scale measurements shall be followed but shall in all cases be verified by measuring actual conditions of Work already in place. In cases of discrepancy concerning quality and application of materials and non-technical requirements over materials, the specifications shall take precedence over Drawings.
- B. Division of Specifications – For convenience of reference and to facilitate the letting of independent contracts, this specification may be separated into certain sections; such separation shall not operate to oblige the Owner, Architect or Professional Consultant to establish the limits of any contract between the Contractor and Sub-Contractor each of whom shall depend upon his/her own contract stipulations. The General Conditions apply with equal force to all work, including extra work.
- C. Governing Factors – Dimensions figured on drawings shall be followed in every case in preference to scale of drawings.

- D. Discrepancies – Should the Contractor, at any time, discover a discrepancy in a drawing or specification, or any variation between dimensions on drawings and measurements at site, or any lacking of dimensions or other information, he/she shall report at once to the Project Manager requesting clarification and shall not proceed with the work affected thereby until such clarification has been made. If the Contractor proceeds with work affected by such discrepancies, without having received such clarification, he/she does so at his/her own risk. Any adjustments involving such circumstances made by the Contractor, prior to approval by the Project Manager, shall be at the Contractor's risk and the settlement of any complications or disputes arising therefrom shall be at the Contractor's sole expense and Contractor shall indemnify, hold harmless and defend Owner, Owner's representatives, and Project Manager from any liability or loss with respect to said adjustments.
- E. Scope of Drawings – The drawings shall be held to determine the general character of the Work as well as its details. Parts not detailed shall be constructed in accordance with best standard practice for work of this class, so as to afford the requisite strength and logically complete the parts they compose. Where it is obvious that a drawing illustrates only a part of a given work or of a number of items, the remainder shall be deemed repetitious and so construed. The Contractor shall be responsible for all errors made in using any drawings which have been superseded.
- F. Shop Drawings, Product Data and Samples –
1. Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work. Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate a material, product or system for some portion of the Work. Samples are physical examples that illustrate materials, equipment or workmanship, and establish standards by which the work will be judged.
 2. The Contractor shall prepare, review, approve and submit to the Project Manager, with reasonable promptness and in such sequence as to cause no delay in the Work or in the work of the Owner or any separate contractor, all Shop Drawings, Product Data and Samples required by the Contract Documents.
 3. By preparing, approving and submitting Shop Drawings, Product Data and Samples, the Contractor represents that the Contractor has determined and verified all materials, field measurements and field construction criteria related thereto, or will do so with reasonable promptness, and has checked and coordinated the information contained within such submittals with the requirements of the Work, the Project, the Work Order and the Contract Documents.

4. The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Architect's review of Shop Drawings, Product Data or Samples, unless the Contractor has specifically informed the Project Manager in writing of such deviation at the time of submission and the Architect has reviewed the specific deviation. The Contractor shall not be relieved from responsibility for errors or omissions in the Shop Drawings, Product Data or Samples by the Architect's review of them.
5. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the Architect shall be entitled to rely upon the accuracy and completeness of such calculations and certifications. The cost of such certifications shall be borne by the Contractor. Owner may elect to have an independent certification performed at its own expense. The Owner shall have final approving authority for performance-based items.
6. The Contractor shall direct specific attention, in writing or on resubmitted Shop drawings, Product Data, or Samples, to revisions other than those requested by the Architect on previous submittals.
7. No portion of the Work requiring submission of a Shop Drawing, Product Data or Sample shall be commenced until the submittal has been reviewed by the Architect. All such portions of the Work shall be in accordance with reviewed submittals.
8. Submission of Shop Drawings and Samples to the Project Manager is required for only those items specifically mentioned in the Specification Sections. If Contractor submits Shop Drawings for items other than the above, the Project Manager will not be obligated to distribute or review them. Contractor shall be responsible for the procuring of Shop Drawings for his/her own use as he/she may require for the progress of the Work.
9. The term "Shop Drawings" as used herein also includes but is not limited to fabrication, erection, layout and setting drawings, manufacturer's standard drawings, descriptive literature, catalogs, brochures, performance and test data, wiring and control diagrams, all other drawings and descriptive data pertaining to materials, equipment, piping, duct and conduit systems, and methods of construction as may be required to show that the materials, equipment or systems and the positions and layout of each conform to the Contract requirements. As used herein the term "manufactured" applies to standard units usually mass-produced, and the term "fabricated" means items specifically assembled or made out of selected materials to meet individual design requirements. Shop Drawings shall establish the actual detail of all manufactured or fabricated items; indicate proper relation to adjoining work; amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure; and incorporate minor changes of design or construction to suit actual conditions.

10. Drawings: Following Contractor's review and approval, Contractor shall submit to the Project Manager for approval four (4) minimum to six (6) maximum prints and/or PDF submission of the same information via email. (Required delivery methods and quantities of submittals will be determined at the time of the Pre-Construction Meeting.) The Project Manager will check the submittal to see if it is complete. If complete, the Project Manager will forward the drawings to the Owner and the Architect. The Architect and Owner will check the drawings and note Architect and Owner comments and affix a stamp to the drawings indicating the status of acceptance, and will return same to the Project Manager, each retaining prints for his/her records. The Architect or his/her consultants, as applicable, will review the Shop Drawings; mark the prints with required revisions; stamp the prints and indicate "No Exceptions Taken", "Make Corrections Noted", "Revise and Resubmit", "Submit Specified Item", or "Rejected", and return the prints. The Project Manager will return the prints to the Contractor. The Contractor shall then print and distribute the appropriate number of copies to his/her job personnel as required. If a drawing is stamped "Rejected" or "Revise and Resubmit", the Contractor shall correct and resubmit as outlined above. When stamped "Make Corrections Noted", or similar instructions, the Contractor shall correct and resubmit for record only, three (3) prints of each drawing. Also see Technical Specifications, Division I, General Requirements.
11. Samples: Following Contractor's review and approval, Contractor shall submit to the Architect, five (5) minimum samples of all materials in quantities and sizes as specified herein as requested by the Architect. Submittals shall be given to the Architect at a time determined by the Contractor, which allows for any necessary resubmittal and which will not cause any delay in the Work. Samples will be forwarded to the Architect. If a sample is stamped "Rejected" or "Revise and Resubmit", one sample so noted will be returned to the Contractor. The Contractor shall correct and resubmit as outlined above. If a sample is stamped "Make Corrections Noted", one sample so noted will be returned. Corrected samples shall be resubmitted for approval as per the original submittal. Also see Technical Specifications and General Requirements.
12. Brochures: Following Contractor's review and approval, Contractor shall submit to the Architect, five (5) copies of all manufacturer's catalogs or brochures as required. Brochures will be forwarded to the Architect for review. If a brochure is stamped "No Exception Taken", two (2) copies will be returned to the Contractor. If stamped "Rejected", one marked copy and two (2) unmarked copies will be returned. Corrected copies shall be resubmitted for approval as per the original submittal. Also see General Requirements.
13. Manufacturer's Instructions: Where any item or work is required by Specifications to be furnished, installed or performed in accordance with a specified product manufacturer's instructions, Contractor shall procure and distribute the necessary copies of such instructions to all concerned parties.

- G. Materials – All materials, unless otherwise specified, shall be new and of good quality, proof of which shall be furnished by the Contractor; in case of doubt as to kind or quality required, samples shall be submitted to the Architect through the Project Manager who will specify the kind and use of the material appropriate to the location and the function of the item in question. Contractor shall furnish such item accordingly. Before final payment, all material rejected by the Architect or Project Manager shall be promptly removed from the premises by the Contractor, whether or not completely installed, and promptly and properly replaced with correct materials, including any other work adjoining if disturbed, in accordance with the contract and without expense to the Owner; the Contractor also shall pay for work of other Contractors as is affected by such removals and replacements.

2.06 THE ARCHITECT

- A. The Owner may delegate all or a portion of its rights and responsibilities to a California licensed Architect as deemed necessary.
- B. The Architect advises the Project Manager in all aspects of the construction phase of the Project. The Architect's functions include advice and assistance to the Project Manager in the correct interpretation and application of the Contract Documents. The Architect is not authorized independently to issue Addenda, Clarifications, Field Orders, Work Authorizations, or Supplemental Work Orders, or in any other way to bind the Owner in discussions with the Contractor.
- C. The Contractor shall deliver all correspondence relating to the proper execution of the Work to the Project Manager. The Project Manager reserves the right to consult with the Architect and Owner prior to responding to the Contractor's correspondence.
- D. When discussions between the Contractor and the Project Manager occur either on the site or elsewhere, but the Architect is not present, the Project Manager reserves the right to consult with the Architect and Owner prior to issuing his/her final decision or instruction.
- E. The Architect shall review or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for conformance with the design concept of the Work and the information given in the Contract Documents. Such action shall generally be taken within ten (10) working days, however under certain circumstances such as very complex submittals or if large number of submittals are submitted at one time it may take longer. In this case the Contractor will be notified and given the opportunity to advise the Architect of priorities. The Architect's review of a specific item shall not indicate review of an assembly of which the item is a component.

2.07 THE PROJECT MANAGER

- A. The Project Manager is the authorized representative of the Owner in all aspects of administering the construction contract on behalf of the Owner. All communications from and to the Contractor will be channeled through the Project Manager. However, the Project Manager does not have the authority to bind the Owner in matters affecting adjustments to the time or cost of the Project as defined in the Agreement for Construction.
- B. The Project Manager will be the Owner's representative during the construction and warranty periods, and until final payment to all contractors is due. The Project Manager will advise and consult with the Owner. All instructions to the Contractor shall be forwarded through the Project Manager. The Project Manager will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified by written instrument.
- C. The Project Manager will be on site during construction to monitor the progress and quality of the Work and to determine in general if the Work is proceeding in accordance with the Contract Documents. On the basis of on-site observations and communication with the Contractor, the Project Manager will keep the Owner informed of the progress of the Work, and will endeavor to guard the Owner against defects and deficiencies in the Work of the Contractor.
- D. The Project Manager shall at all times have access to the Work wherever it is in preparation and progress. The Contractor shall provide facilities for such access so that the Project Manager may perform its functions under the Contract Documents.
- E. Based on the Project Manager's observations, and an evaluation of the Contractor's Application for Payment, the Project Manager will determine the amount owing to the Contractor and will issue to the Owner Certificates for Payment incorporating such amount.
- F. The Project Manager will be the initial interpreter of the requirements of the Contract Documents and the initial judge of the performance hereunder by the Contractor. The Owner will have final authority of all such matters.
- G. The Project Manager will render interpretations necessary for the proper execution or progress of the Work, with reasonable promptness and in accordance with agreed upon time limits. Either party to the Contract may make written request to the Project Manager for such interpretations.
- H. Claims, disputes and other matters in question between the Contractor and the Project Manager relating to the execution or progress of the Work or the interpretation of the Contract Documents shall be referred to the Owner (or his/her designee).
- I. All interpretations and decisions of the Project Manager will be in writing or in graphic form, and shall be both consistent with the intent of the Contract Documents and reasonably inferable therefrom.

- J. The Project Manager will have the authority to reject, or recommend to the Owner the rejection, of any work that does not conform to the Contract Documents. Whenever, in the Project Manager's opinion, it is considered necessary or advisable for the implementation of the intent of the Contract Documents, the Project Manager will have authority to require special inspection or testing of the Work whether or not such work be then fabricated, installed or completed.
- K. The Project Manager will receive from the Contractor and review all Shop Drawings, Product Data and Samples, and forward same to Architect and Owner for review.
- L. Following consultation with the Owner, the Project Manager will take appropriate action on changes, and will have authority to order minor changes in the Work as provided herein.
- M. The Project Manager will conduct inspections to determine the date of Completion, and will receive and forward to the Owner for the Owner's review written warranties and related documents required by the Contract Documents and assembled by the Contractor. The Project Manager will issue a final Project Certificate for Payment upon compliance with the requirements for completion and final payment. The Project Manager will monitor the warranty for a period of 365 Calendar Days from and after the date of acceptance of the Work, unless otherwise specified as a longer term.
- N. The duties, responsibilities and limitations of authority of the Project Manager as the Owner's representative during construction, as set forth in the Contract Documents, will not be modified or extended without written consent of the Owner, the Contractor and the Project Manager, which consent shall not be unreasonably withheld. Failure of the Contractor to respond within ten (10) business days to a written request shall constitute consent by the Contractor.
- O. In case of the termination of the employment of the Project Manager, the Owner may appoint a successor Project Manager, whose status and duties under the Contract Documents shall be the same as those of the former Project Manager.

2.08 OWNER

- A. Information and Services Required of the Owner
 - 1. Unless otherwise provided in the Contract Documents, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for the construction, use or occupancy of permanent structures or for permanent changes in existing facilities.
 - 2. Information or services under the Owner's control shall be furnished by the Owner with reasonable promptness to avoid delay in the orderly progress of the Work.
 - 3. The Owner shall forward all instructions to the Contractor through the Project Manager.

B. Owner's Right to Stop the Work

If the Contractor fails to correct defective work as required by Section 2.42 herein or persistently fails to carry out the Work in accordance with the Contract Documents, the Owner, by a written order signed personally or by an agent specifically so empowered by the Owner in writing, may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Owner to stop the Work shall not give rise to any duty on the part of the Owner to exercise this right for the benefit of any contractor or any other person or entity, except to the extent required by Section 2.12.C.

C. Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, and fails after written notice from the Owner to correct such default or neglect with diligence and promptness, the Owner may, after an additional written notice and without prejudice to any other remedy the Owner may have, make good such deficiencies. In such case an appropriate Contract Change Order shall be issued deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the additional services of the Architect or other professionals made necessary by such default, neglect or failure. Such action by the Owner and the amount charged to the Contractor are both subject to the prior approval of the Architect. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner, or Owner may require payment by the surety on the performance or warranty bonds as appropriate. Such action shall, in no way, affect the status of either party under contract, nor be held as a basis of any claim by the Contractor for damages or extension of time.

2.09 CONTRACTOR RESPONSIBILITIES

A. Review of Contract Documents and Field Conditions

1. The Contractor shall carefully study and compare the Contract Documents and shall at once report to the Project Manager any discrepancy or inconsistency that may be discovered. The Contractor shall not be liable to the Owner or the Project Manager for any damage resulting from any such inconsistencies or discrepancies in the Contract Documents unless the Contractor recognized such inconsistencies or discrepancies and knowingly failed to report it to the Project Manager. The Contractor shall perform no portion of the Work at any time unless authorized by the Contract Documents or, where required, approved Shop Drawings, Product Data or Samples for such portion of the Work.

2. Neither the Owner nor the Project Manager or Architect assume any responsibility for an understanding or representation made by any of their agents or representation prior to the execution of the Agreement unless (1) such understanding or representations are expressly stated in the Agreement, and (2) the Agreement expressly provides that responsibility therefor is assumed by the Owner.
3. Failure by the Contractor to acquaint himself/herself with all available information will not relieve him/her from responsibility for estimating properly the difficulty or cost of successfully performing the Work.
4. The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Any inconsistencies or discrepancies discovered by the Contractor shall be reported to the Project Manager at once.
5. Before submitting any Request for Information (RFI), or other contractor-initiated request for information, the Contractor shall determine that the information requested is not clearly provided in the Contract Documents. RFI's shall be submitted to the Project Manager only from the Contractor, or Owner, and not from any subcontractor, supplier or other vendor, and shall be on a form approved by the Project Manager. The Contractor shall provide a revised and updated RFI Priority Schedule on a weekly basis. The RFI Priority Schedule shall rank RFI's in order of priority and include a brief statement of reason for priority. Owner initiated RFI's will not be listed on the Contractor's RFI Priority Schedule. The Owner will provide the Architect a separate list of Owner initiated RFI's upon request of the Architect. The Architect will endeavor to respect the order of priorities as requested by the Contractor or Owner for the overall benefit of the Project. The RFI process is for information and clarification only and may not be utilized to obtain approval for changes in Work Order Price or time. Also see Division 01 - General Requirements.

B. Supervision Procedures

1. The Contractor shall efficiently supervise and direct the Work, using therein the Contractor's best skill and diligence for which he/she is remunerated in the Contract Price. The Contractor shall carefully inspect the site and study and compare the Contract Documents, as ignorance of any phase of any of the features or conditions affecting the Contract will not excuse him/her from carrying out its provisions to its full intent.

2. The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during the progress of the Work. The superintendent shall represent the Contractor and all communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be so confirmed upon written request in each case. The Superintendent who begins the Project shall remain on the Project until the Project is completed, as long as the Contractor employs that person. The Superintendent shall not be replaced without the approval of the Owner.
3. The Contractor shall be responsible to the Owner for the acts and omissions of his/her employees, subcontractors and their agents and employees, and other persons performing any of the Work under a contract with the Contractor.
4. The Contractor shall at all times enforce strict discipline and good order among his/her employees and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to him/her.
5. The Contractor shall not be relieved from his/her obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the Owner or the Architect in his/her administration of the Contract, or by inspections, tests or approvals required or performed by persons other than the Contractor.
6. Contractor shall alert and inform their employees that State law requires that the identities of inmates/wards/patients/clients be kept confidential. Revealing the identities of inmates/wards/patients/clients is punishable by law.

C. Construction Procedures

1. Means and Methods – The Contractor shall be solely responsible for and control of construction means, methods, techniques, sequences, coordination and procedures for all the Work of this contract. Additionally, the Contractor shall be responsible for safety precautions and programs in connection with the Work.
2. Laws of County and State – The Contractor must comply with all laws, rules, regulations, provisions and ordinances of the County in which the Work is being done, and all State laws pertaining to the Work.
3. Safeguards – The Contractor shall provide, in conformity with all local codes and ordinances and as may be required, such temporary walls, fences, guard-rails, barricades, lights, danger signs, enclosures, etc., and shall maintain such safeguards until all work is completed.

4. Housekeeping – Contractor shall keep the premises free of excess accumulated debris. Clean up as required and as directed by the Project Manager. At completion of work all debris shall be removed from the site. Refer to General Requirements for additional requirements.
5. Labor and Materials – Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.
6. The Contractor shall deliver to the Project Manager, prior to final acceptance of the Work as a whole, signed certificates from suppliers of materials and manufactured items stating that such items conform to the Contract Documents.
7. The Contractor, immediately upon receipt of the Notice to Proceed (or where shop drawings, samples, etc., are required, immediately upon receipt of review thereof), shall place orders for all materials, work fabrication, and/or equipment to be employed by him/her in connection with that portion of the contracted Work. The Contractor shall keep all materials, work fabrications and/or equipment specified and shall advise the Project Manager promptly, in writing, of all orders placed and of such materials, work fabrications and/or equipment which may not be available in a timely manner for the purposes of the Contract.
8. Any worker whose work is unsatisfactory to the Owner or the Architect, or are considered by the Owner or Architect to be careless, incompetent, unskilled or otherwise unfit, shall be dismissed from work under the Contract upon written request to the Contractor from the Owner or the Architect.
9. Temporary Facilities – Contractor may connect to existing water and electricity available on the site, provided it is suitable to the Contractor's requirements. Water and electricity used will be paid by the Owner. Contractor shall bear all expenses for carrying the water or electricity to the appropriate locations and to connect or tap into existing lines. Toilet facilities may be available on a site to the workmen engaged in the performance of this contract. It shall be the responsibility of the Contractor to confirm with the Owner the availability of toilet facilities on the site. The use of such facilities may be revoked in the event of excess janitorial requirements.
10. Contractor shall not perform any fire hazardous operation adjacent to combustible materials. Any fire hazardous operation shall have proper fire extinguisher close by and the adjacent area shall be policed before stopping work for the day. Contractor shall provide not less than one OSHA/NFPA Class 6-ABC fire extinguisher for each 9,000 square feet of Project area or fraction thereof.

11. Contractor shall erect temporary dust separation partitions and floor mats as necessary to confine dust and debris within area of work. Contractor shall post signs, erect and maintain barriers and warning devices for the protection of the general public and Owner personnel.
12. Trenching and Excavation – In accordance with Section 7104 of the California Public Contract Code, the following provisions shall apply to any contract involving digging of trenches or other excavations that extend deeper than four (4) feet below the surface:
 - a. The Contractor shall promptly, and before the following conditions are disturbed, notify the Owner, in writing, of any:
 - i. Material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.
 - ii. Subsurface or latent physical conditions at the Project site differing from those indicated by information about the site made available to bidders prior to the deadline for submitting bids.
 - iii. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.
 - b. The Owner shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the work, shall issue a Contract Change Order in accordance with the provisions of Section 2.09 of the General Conditions.
 - c. In the event that a dispute arises between the Owner and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the work, the Contractor shall not be excused from any scheduled completion date provided for by the contract, but shall proceed with all work to be performed under the contract. The Contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

2.10 SUBCONTRACTORS

- A. Agreements – Agreements between the Contractor, Subcontractors, and Subcontractors of lower tier shall be subject to the approval of the Owner, but in no case does such approval relieve the Contractor of any conditions imposed by the Contract Documents. The Contractor shall only use those subcontractors that are required to be listed and included in his/her sealed bid Subcontractor List, section 004336, unless any proposed substitution is first approved by the Owner pursuant to statute. The Contractor shall not use any subcontractor who is ineligible to perform work on a Public Works Project pursuant to section 1777.1 or 1777.7 of the Labor Code. Notwithstanding any other provision of the Contract Documents, subcontractors may be added, deleted or substituted only in accordance with the provisions of Public Contract Code Section 4100 et seq.
- B. Relation with Subcontractor – By an appropriate agreement, written where legally required for enforceability, the Contractor shall bind every Subcontractor and require therein that every Subcontractor agrees to be bound by the terms of the Contract Documents to carry out their provisions insofar as applicable to their work; and the Contractor further agrees to pay to each Subcontractor promptly upon issuance of Certificate of Payment, his/her or their due portion. Said agreement shall preserve and protect the rights of the Owner and the Architect under the Contract Documents with respect to the work to be performed by the Subcontractor so that the subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the Contractor-Subcontractor Agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, under the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with their Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the Subcontract, copies of the Contract Documents to which the Subcontractor will be bound by this Paragraph and identify to the Subcontractor any terms and conditions of the proposed Subcontract which may be at variance with the Contract Documents. Each Subcontractor shall similarly make copies of Contract Documents available to their Sub-subcontractors. Nothing contained herein shall be deemed to create an agency relationship between the Owner and any Subcontractor or material supplier.
- C. Owner's Relation – Neither the acceptance of the name of Subcontractor nor the suggestion of such name nor any other act of the Owner or Architect nor anything contained in any Contract Document is to be construed as creating any contractual relation between the Owner (or Owner's authorized representatives) and any Subcontractor of any tier nor as creating any contractual relation between the Architect and any Subcontractor of any tier.
- D. All Subcontractors employed by the Contractor shall be appropriately licensed in conformity with the laws of the State of California.

- E. Jurisdictional disputes between Subcontractors or between Contractor and Subcontractor shall not be mediated or decided by the Owner or the Architect. The Contractor shall be responsible for the resolution of all such disputes based upon his/her contractual relationship with his/her Subcontractors.

2.11 OWNER'S RIGHT TO PERFORM WORK AND TO AWARD SEPARATE CONTRACTS

- A. The Owner reserves the right to perform work related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other work on the site under these or similar Conditions of the Contract. If the Contractor claims that the Owner's action results in delay, damage or additional cost attributable thereto, the Contractor shall make such claim as provided elsewhere in the Contract Documents.
- B. When separate contracts are awarded for different portions of the Project or other work on the site, the term Contractor in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.
- C. The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors, and the Owner, until subsequently revised.
- D. Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights which apply to the Contractor under the Conditions of the Contract.

2.12 MUTUAL RESPONSIBILITY

- A. The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

- B. When any part of the Contractor's Work depends upon proper execution or results of the work of the Owner or any separate contractor, the Contractor shall, prior to proceeding with the Work, promptly report to the Project Manager any apparent discrepancies or defects in such other work that render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acceptance of the Owner's or separate contractor's work as fit and proper to receive the Work, except as to defects which may subsequently become apparent in such work by others.
- C. If, following the reporting of any discrepancy or defect as required herein above, the Contractor suffers damage due to disruption or delay caused by the separate contractor, without fault by the Owner, the Contractor's remedy shall be limited to seeking recovery from the separate contractor.
- D. Any costs caused by defective or ill-timed work shall be borne by the Contractor responsible therefor.
- E. Should the Contractor cause damage to the work or property of the Owner, or to other work or property on the site, the Contractor shall promptly remedy such damage as provided herein.
- F. Should the Contractor wrongfully delay or cause damage to the work or property of any separate contractor, the Contractor shall, upon due notice, promptly attempt to settle with such other contractor by agreement, or otherwise to resolve the dispute. If such separate contractor sues the Owner on account of any delay or damage alleged to have been caused by the Contractor, the Owner shall notify the Contractor who shall defend such proceedings, and if any judgment or award against the Owner (or Owner's authorized representatives) arises therefrom, the Contractor shall pay or satisfy such judgment or award in full and shall reimburse the Owner for all costs which the Owner has incurred in connection with such matter.

2.13 OWNER'S RIGHT TO CLEAN UP

If a dispute arises between the Contractor and separate contractors as to their responsibility for cleaning up as required in the Contract Documents, the Owner may clean up and the contractor responsible shall pay Owner such portions of the cost as the Project Manager shall determine to be just.

2.14 GOVERNING LAW

The Contract shall be governed by the law of the State of California.

2.15 INSPECTION

- A. All material and workmanship (if not otherwise designated by the Contract Documents) shall be subject to inspection, examination, and test by the Owner and Project Manager at any and all times during manufacture and/or construction and at any and all places where such manufacture and/or construction are carried on. The Owner and Project Manager shall have the right to reject defective material and workmanship or require its correction.
- B. The Contractor shall furnish promptly without additional charge, all reasonable facilities, labor, and materials necessary for the safe and convenient inspection and tests that may be required by the Owner and Project Manager.
- C. Where the Contract Documents, instructions by the Owner, laws, ordinances, or any public authority having jurisdiction requires work to be inspected, tested or approved before work proceeds, such work shall not proceed, nor shall it be concealed prior to inspection.
- D. The Contractor shall give the Project Manager at least two (2) business days advance notice of the readiness for any Contract compliance inspection by the Inspector. The Contractor shall give notice as required by all other inspecting and testing agencies of jurisdiction for Code and regular compliance inspection. In all cases, the Contractor shall schedule inspections so as not to delay the Work.
- E. If the Project Manager determines that any work requires additional special inspection beyond that identified in the specifications, the Project Manager will, upon written authorization from the Owner, instruct the Contractor to order such special inspection, testing or approval, and the Contractor shall give notice as provided above. If such special inspection or testing reveals a failure of the Work to comply with the requirements of the Contract Documents, the Contractor shall bear all costs thereof, including compensation for the Project Manager's additional services, testing or inspections made necessary by such failure; otherwise the Owner shall bear such costs, and an appropriate Contract Change Order shall be issued.
- F. Should it be considered necessary or advisable by the Project Manager at any time, either before acceptance of the entire Work, or after acceptance and within the guaranty period, to make an examination of work already completed, by removing or tearing out same, the Contractor shall on request promptly furnish all necessary facilities, labor, and material. If such work is found to be defective in any material respect, due to the fault of the Project Manager or his/her Subcontractors, he/she shall defray all the expenses of such examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, any compensation deemed appropriate shall be handled by issuance of a Contract Change Order to the Contractor and he/she shall, in addition, if completion of the work has been delayed thereby, be granted a suitable extension of time on account of the additional work involved.

- G. Required certificates of inspection, testing, or approval shall be secured by the Contractor and the Contractor shall promptly deliver them to the Project Manager for review and evaluation of compliance with the appropriate specifications and standards.
- H. When the work is completed, the Contractor shall notify the Project Manager in writing that the work will be ready for final inspection and test on a definite date, which shall be stated in such notice.

2.16 TAXES, PERMITS, FEES, AND INDEMNIFICATION FOR PATENT INFRINGEMENT CLAIM

- A. The Contractor shall pay for and include all Federal, State, and local taxes direct or indirect for the work or portions thereof provided by the Contractor which are legally enacted at the time the Notice to Proceed is issued, whether or not yet enacted, and secure and pay all fees and charges for permits and licenses, unless otherwise specified.
- B. Royalty and license fees incidental to the use of any patented material, device, or process shall be paid by the Contractor and in the event of a claim of alleged infringement of patent copyright, or Trade Secret rights, the Contractor shall indemnify, save the Owner (and Owner's authorized representatives) free and harmless, and defend, at the Contractor's own expense, any and all suits that may be brought in such connection.
- C. Unless otherwise provided in the Contract Documents, the Owner shall secure and pay for the building permit, permanent utility connection fees, and right-of-way encroachment permit. The Contractor shall secure and pay for temporary construction utilities, and all other permits and governmental fees, licenses, and inspections necessary for the proper execution and completion of the Work.
- D. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the performance of the Work.
- E. It is not the responsibility of the Contractor to make certain that the Contract Documents are in accordance with applicable laws, statutes, building codes and regulations. If the Contractor observes that any of the Contract Documents are at variance therewith in any respect, the Contractor shall promptly notify the Project Manager in writing, and any necessary changes shall be accomplished by appropriate Modification.
- F. If the Contractor performs any work knowing it to be contrary to any laws, ordinances, rules, and regulations, without notice to the Project Manager, the Contractor shall assume full responsibility therefor and shall bear all costs attributable thereto.
- G. Any reference in the Contract Documents to codes, standard specifications, or manufacturer's instructions, shall mean the latest printed edition of each in effect at the Contract date.

2.17 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Within thirty (30) calendar days after receipt of Notice to Proceed, the Contractor shall submit a Construction Schedule in CPM (Critical Path Method) form to the Project Manager for approval. The Construction Schedule shall be sufficiently detailed to accurately depict all the work required by the Contract. CPM Construction Schedule shall reflect shop drawings; submittals due and return dates, fabrication and delivery times, cost loading, crew mix, and equipment loading data. The Contractor shall thereafter adhere to the Construction Schedule, as updated monthly, or as necessary in accordance with the Contract Documents, including any scope changes or changes in the work approved by the Owner during the course of construction. "Slack" or "float" time on the CPM Construction Schedule is not intended, and shall not be, for the sole benefit of either the Owner or Contractor.
- B. Within fourteen (14) calendar days after the pre-construction conference, the Contractor shall provide a Submittal and Procurement Schedule indicating time periods for review of Shop Drawings, Data, Samples, and procurement of material and equipment required for the Work. Contractor shall allow time for submittal review in accordance with the General Requirements Section – Construction Progress Documentation. All items that require review by the Project Manager and/or are not readily available from stock and requiring more than thirty-five (35) days lead-time shall be included in the Submittal and Procurement Schedule. Items listed in the Submittal and Procurement Schedule shall also be identified as activities on the CPM Construction Schedule. Contractor shall identify items requiring coordination with work of separate contractors. The working day to calendar date correlation shall be based upon the Contractor's proposed work week with adequate allowance for legal holidays, days lost due to abnormal weather, and any special requirements of the Project.
- C. The Construction Schedule shall be prepared and maintained by the Contractor.
- D. The Owner, Project Manager, Contractor, and other Contractor(s) shall jointly review the progress of the work weekly. Should this review, in the opinion of the Project Manager, indicate that the work is behind the schedule established by currently reviewed Construction Schedule, the Contractor shall either (a) provide a plan to the Project Manager indicating the steps the Contractor intends to take in order to recover the time behind schedule and conform to the reviewed Construction Schedule; or (b) submit a revised Construction Schedule for completion of the work, remaining within the contract completion time, to the Project Manager for review by the next weekly meeting. If the Contractor's recovery or revised schedule requires work to occur during other than normal working hours, the Contractor will be responsible for any resulting costs incurred by the Owner, including but not limited to, the costs for construction management, contract administration, inspection, testing, and staffing.

- E. The Contractor shall deliver copies of his/her daily job logs to the Project Manager and Owner on a weekly basis or as otherwise agreed to by Owner. At a minimum, the Contractor's daily job log should include the sub-contractors working onsite, number of workers and their trade classification, description of work, visitors, temperature and weather conditions, accidents, delays, and any other important information pertaining to the Project that day. The Contractor will schedule and coordinate the Work of all sub-contractors on the Project. The Contractor will keep the Sub-contractors informed of the Construction Schedule to enable the Contractor to plan and perform the Work properly.

2.18 RECORDS, DOCUMENTS, AND SAMPLES AT THE SITE

- A. The Contractor shall maintain all records of required Review Agencies, County, or State inspections, and shall promptly notify the Project Manager of the results of any inspection. Copies of all such records shall be provided to the Owner.
- B. The Contractor shall secure and maintain required certificates of inspection, testing, or approval and shall promptly deliver them to the Project Manager.
- C. The Contractor shall maintain at the Project site, on a daily basis, one (1) record copy of all Drawings, Specifications, Addenda, Change Orders, and other Modifications, in good order and marked currently to record all changes made during construction, and reviewed Shop Drawings, Product Data, and Samples. These shall be available to the Project Manager and the Owner and reviewed weekly, and shall be delivered to the Project Manager for forwarding to the Owner upon completion of the Project. The Contractor shall advise the Project Manager on a current basis of all changes in the Work made during construction. Payment may be withheld from Contractor for failure to maintain current Record Documents.

2.19 USE OF SITE

- A. The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits, and the Contract Documents, and shall not unreasonably encumber the site with any materials or equipment.
- B. The Contractor shall coordinate all of the Contractor's operations with, and secure approval from, the Project Manager before using any portion of the site. Also see Technical Specifications, Division 01, General Requirements.

2.20 CUTTING AND PATCHING OF WORK

- A. The Contractor shall be responsible for all cutting, fitting, or patching that may be required to complete the Work or to make its several parts fit together properly.

- B. The Contractor shall not damage or endanger any portion of the Work or the work of the Owner, or any separate contractors by cutting, patching, or otherwise altering any work, or by excavation. The Contractor shall not cut or otherwise alter the work of the Owner or any separate contractor except with the written consent of the Owner and of such separate contractor. The Contractor shall not unreasonably withhold from the Owner or any separate contractor consent to cutting or otherwise altering the Work.
- C. The Contractor in all cases shall exercise extreme care in any cutting operations, and perform such operations under adequate supervision by competent mechanics skilled in the applicable trade. Openings shall be neatly cut and shall be kept as small as possible to avoid unnecessary damage. Careless and/or avoidable cutting damage, etc., will not be tolerated, and the Contractor will be held responsible for such avoidable or willful damage.
- D. All replacing, patching, and repairing of all materials and surfaces cut or damaged in the execution of the Work shall be performed by experienced mechanics of the several trades involved. All work of such nature shall be done with the applicable materials, in such a manner that all surfaces so replaced, repaired, or patched, will, upon completion of the Work, match the surrounding similar surfaces.

2.21 CLEANING UP

- A. The Contractor shall at all times keep the premises free from accumulation of waste materials or rubbish caused by the Contractor's operations. At the completion of the Work, the Contractor shall remove all the Contractor's waste materials and rubbish from and about the Project as well as all the Contractor's tools, construction equipment, machinery and surplus materials.
- B. If the Contractor fails to clean up at the completion of the Work, the Owner may do so, and the cost thereof shall be paid by the Contractor.

2.22 INDEMNIFICATION

- A. To the fullest extent permitted by law, Contractor agrees to and shall indemnify, save, hold harmless and at Owner's request, defend Owner and its officers, agents and employees, and the Architect and Consultants and their respective officers, agents and employees, from any and all costs and expenses, attorney fees and court costs, damages, liabilities, claims and losses occurring or resulting to Owner, the Architect or Consultants in connection with the performance, or failure to perform, by Contractor, its officers, agents or employees under this Agreement, and from any and all costs and expenses, attorney fees and court costs, damages, liabilities, claims and losses occurring or resulting to any person, firm or corporation who may be injured or damaged by the performance, or failure to perform, of Contractor, its officers, agents or employees under this Agreement. In addition, Contractor agrees to indemnify Owner for Federal, State of California and/or local audit exceptions resulting from non-compliance herein on the part of Contractor.
- B. In any and all claims against the Owner, the Architect or Consultants, or any of their respective officers, agents or employees, initiated by any employee of the

Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation set forth in the immediately preceding paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workmen's compensation acts, disability benefit acts or other employee benefit acts.

2.23 FAIR EMPLOYMENT PRACTICES CLAUSE

Nondiscrimination: In connection with the performance of Work under the contract, the Contractor agrees (as prescribed in Chapter 6 of Division 3 of Title II of the Government Code of the State of California, commencing at Section 12900 and by Labor Code Section 1735) not to discriminate against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, age, sexual orientation, or military and veteran status. The aforesaid provisions shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post hereafter in conspicuous places, available for employees and applicants for employment, Notices to be provided by the County, setting forth the provisions of this discrimination clause. The Contractor further agrees to insert the foregoing provisions in all subcontracts hereunder, except subcontracts for standard commercial supplies of raw materials.

2.24 PAYMENT

A. CONTRACT SUM

The Contract Sum is stated in the Owner-Contractor Agreement ("the Agreement"), Section 005213, and, including authorized adjustments thereto, is the total amount payable by the Owner to the Contractor for the performance of the Work under the Contract Documents.

B. SCHEDULE OF VALUES

Before the first Application for Payment, and within eight (8) days of the bid opening, the Contractor shall submit to DesignServices@fresnocountyca.gov a Schedule of Values allocated to the various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Project Manager may require. This schedule, unless objected to by the Project Manager, shall be used only as a basis for the Contractor's Applications for Payment.

C. APPLICATIONS FOR PAYMENT

The Owner will make progress payments to the Contractor upon completion of portions of the Work, as covered by the Contract Documents, in accordance with established Owner procedures. Before submitting an Application for Payment (Final or Partial), the Contractor shall reach an agreement with the Project Manager (in consultation with the Architect) concerning the percentage complete of the Work and the dollar value for which the Application for Payment may be submitted.

1. On or about the twentieth (20th) day of the month in which the work was performed, the Contractor shall submit to the Project Manager an itemized Application for Payment, notarized if required, supported by such data substantiating the Contractor's right to payment as the Owner or the Project Manager may require, including appropriate updates to the Construction Schedule, and reflecting retainage, if any, as provided elsewhere in the Contract Documents. Payment is expressly conditioned upon submission by the Contractor of conditional and unconditional waivers and release of lien rights upon progress payment as the Owner or the Architect may require. Waiver and Release forms must be submitted on forms approved by the Owner. Copies of said forms shall comply with Civil Code Section 8132 through 8138, inclusive.
2. Unless otherwise provided in the Contract Documents, payments may be made on account of materials or equipment not incorporated in the Work but delivered and suitably stored at the site and, if approved in advance by the Owner, payments may similarly be made for materials or equipment suitably stored at some other location agreed upon in writing. Payments for materials or equipment stored on or off the site shall be conditioned upon submission by the Contractor of bills of sale or such other procedures satisfactory to the Owner to establish the Owner's title to such materials or equipment or otherwise protect the Owner's interest, including applicable insurance and transportation to the site for those materials and equipment stored off the site.
3. The Contractor warrants that title to all work, materials, and equipment covered by an Application for Payment will pass to the Owner either by incorporation in the construction or upon receipt of payment by the Contractor, whichever occurs first, free and clear of all liens, stop notices, claims, security interest or encumbrances, hereinafter referred to as "liens"; and that no work, materials or equipment covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

4. On or about the twentieth (20th) day of the month following the month in which the work was performed, the Owner shall pay to the Contractor ninety-five percent (95%) of the value of said work in place, as checked and approved by the Project Manager. The balance of five percent (5%) of the estimate shall be retained by the Owner until the time of final acceptance of said work. In lieu of the five percent (5%) retainage, the Contractor may substitute securities as provided herein below.
 - a. If the Owner does not pay the Contractor within thirty (30) days after receipt of an undisputed and properly submitted payment request for a progress payment, excluding that portion of the final payment designated by the contract as retention earnings, then the Owner shall pay interest to the Contractor as provided by Public Contract Code Section 20104.50. Said interest penalty is the sole recourse of Contractor and Contractor shall have no right to stop the Work until payment of the amount owing has been received, nor shall the contract completion time be extended, nor shall the Contract Sum be increased in any way, including by reason of any costs incurred by Contractor, except to the extent of said interest payment.
 - b. Pursuant to Public Contract Code Section 7107, in the event of a dispute between the Owner and Contractor, the Owner may withhold from the final payment an amount not to exceed one hundred and fifty percent (150%) of the disputed amount. Except as so provided, the Owner shall release the retention withheld within sixty (60) days after the date of completion of the Work, as "completion" is defined in Public Contract Code Section 7107. In the event that retention payments are not made within the time periods required by Public Contract Code Section 7107, the Owner may be subject to the interest provisions of Public Contract Code Section 7107.
 - c. As a requirement for processing a Pay Request from the contractor, the contractor's Labor Compliance documents must be up to date and uploaded into the LCP Tracker for all weeks up to the date of the Pay Request. The labor Compliance documents for the week preceding the Pay Request must be inputted into the LCP Tracker within 10 days of that preceding week. Failure to comply with this requirement may result in the payment to the contractor being delayed. Completed documentation in the LCP Tracker shall include a listing of all subcontractors that will be doing work on the project.
5. Security Substitutions and Escrow for Moneys Withheld to Insure Contractor's Performance. Pursuant to Public Contract Code section 22300, the Contractor may deposit in an escrow, equivalent securities for any moneys withheld to ensure performance and have said moneys paid directly to Contractor, or, in the alternative, have the Owner deposit such moneys directly into an escrow. Upon the closing of any such escrow, Contractor shall pay to each Subcontractor, not later than twenty (20) days after receipt of the closing payment, the respective amount of interest earned, net of costs attributed to retention withheld from each Subcontractor, on the amount of retention withheld to insure

the performance of the Contractor. Any escrow established pursuant to this article shall be with a state or federally chartered bank, shall be at the sole expense of the Contractor, and shall be established using an escrow agreement in substantially the following form:

(Begin Escrow Agreement)

ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into by and between the County of Fresno, (hereinafter called "Owner"), _____, (hereinafter called "Contractor"); and _____, a state or federally chartered bank in California, (hereinafter called "Escrow Agent").

For the consideration hereinafter set forth, the Owner, Contractor, and Escrow Agent agree as follows:

1. Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by Owner pursuant to the Construction Contract entered into between the Owner and Contractor for _____ in the amount of \$ _____, and dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the Owner shall make payments of the retention earnings directly to the Escrow Agent. When Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the Owner within ten (10) days of the deposit. The market value of the securities at the time of the substitution, as valued by the Owner, shall be at least equal to the cumulative total cash amount then required to be withheld as retention under the terms of the contract between Owner and Contractor. If the Owner determines that the securities are not adequate, it will notify Contractor and Escrow Agent, and Contractor shall deposit additional security as further determined by the Owner. Securities shall be held in the name of the Owner and shall designate the Contractor as the beneficial owner.
2. Securities eligible for investment under subdivision (c) of the above-referenced Section 22300 shall include those listed in Section 16430 of the Government Code, and shall also include bank or savings and loan certificates of deposit, interest-bearing demand deposit accounts, and standby letters of credit. Deposit of any other type of security may be permitted only by mutual agreement of the Contractor and the Owner, evidenced by an amendment to this agreement executed by all of the parties hereto.
3. Upon the deposit of adequate securities, Owner shall make progress payments to the Contractor for such funds which otherwise would be withheld from progress payments pursuant to the Contract provisions.
4. When the Owner, at Contractor's written request, makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until such time as the escrow created under this contract is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the Owner pays the Escrow Agent directly.

5. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the Owner. The Owner, Contractor, and Escrow Agent shall determine these expenses and payment terms.
6. The interest earned on the securities, or the money market accounts held in escrow, and all interest earned on that interest, shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the Owner.
7. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from Owner to the Escrow Agent that Owner consents to the withdrawal of the amount sought to be withdrawn by Contractor.
8. The Owner shall have the right to draw upon the securities or any amount paid directly to Escrow Agent in the event of default by the Contractor. Upon seven (7) days written notice to the Escrow Agent from the Owner of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash, including any amounts paid directly to Escrow Agent, as instructed by the Owner. Escrow Agent shall not be concerned with the validity of any notice of default given by Owner pursuant to this paragraph, and shall promptly comply with Owner's instructions to pay over said escrowed assets. Escrow Agent further agrees not to interplead the escrowed assets in response to conflicting demands and hereby waives any present or future right of interpleader.
9. Upon receipt of written notification from the Owner certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payment of fees and charges.
10. Escrow Agent shall rely on the written notifications from the Owner and Contractor pursuant to Sections (6), (7), (8), and (9) of this Agreement and the Owner and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.
11. The venue of any litigation concerning the rights and obligations of the parties to this agreement shall be the County of Fresno and the parties hereto waive the removal provisions of Code of Civil Procedure Section 394.
12. The names of the persons who are authorized to give written notice or to receive written notice on behalf of the Owner and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

On behalf of Owner:

Title – **Business Manager**

Name – **Lemuel Asprec**

Signature _____

Address: **2220 Tulare St, 6th Floor
Fresno, CA 93721**

On behalf of Contractor:

Title

Name

Signature _____

Address:

On behalf of Escrow Agent:

Title

Name

Signature

Address

At the time the Escrow Account is opened, the Owner and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement

IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date first set forth above.

Owner:

Title – **Director, Department of Public
Works and Planning**

Name – **Steven E. White**

Signature _____

Address – **2220 Tulare St, 6th Floor
Fresno, CA 93721**

Contractor:

Title

Name

Signature _____

Address

Escrow Agent:

Title

Name

Signature

Address

(End Escrow Agreement)

6. Itemized Breakdown: The Contractor shall submit a financial breakdown of the work, itemized by crafts or sections as designated by the Owner. The Contractor's payment shall be based upon the monthly percentage of completion of these items.
7. Lien Waivers: The Owner may require the Contractor to submit, along with the progress payment request, notarized lien waivers from each Subcontractor, materials, or equipment supplier. Lien waivers shall comply with Civil Code Section 8132, et seq., and the aggregate sum thereof shall reflect all progress payments previously made.

D. CERTIFICATES FOR PAYMENT

1. The Project Manager shall, within seven (7) days after the receipt of the Project Application for Payment, review the Project Application for Payment and either issue a Project Certificate for Payment to the Owner for such amounts as the Project Manager determines are properly due, or notify the Contractor in writing of the reasons for withholding a Certificate provided in Part F of this Section 2.24.
2. The issuance of a Project Certificate for Payment will constitute a representation by the Project Manager to the Owner that, based on the Project Manager's observations at the site as provided herein and the data comprising the Project Application for Payment, the Work has progressed to the point indicated and that, to the best of the Project Manager's knowledge, information and belief, the quality and timeliness of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work for conformance with the Contract Documents upon Completion of the Work, to the results of any subsequent tests required by or performed under the Contract Documents, to minor deviations from the Contract Documents correctable prior to completion, and to any specific qualifications stated in the Certificate); and that based upon all currently available information, the Contractor is entitled to payment in the amount certified. However, by issuing a Project Certificate for Payment, the Project Manager shall not thereby be deemed to represent that the Project Manager has made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, has reviewed the construction means, methods, techniques, sequences, or procedures, or has made any examination to ascertain how or for what purpose the Contractor has used the monies previously paid on account of the Contract Sum.

E. PROGRESS PAYMENTS

1. After the Project Manager has issued a Project Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents.

2. The Contractor shall promptly pay each Subcontractor upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's Work, the amount to which Subcontractor is entitled, reflecting the percentage actually retained, if any, from payments to the Contractor on account of such Subcontractor's Work. The Contractor shall, by an appropriate agreement with each Subcontractor, require each Subcontractor to make payments to their Sub-subcontractors in similar manner.
3. The Project Manager may on request of any Subcontractor, at the Project Manager's discretion, furnish to that Subcontractor, if practicable, information regarding the percentages of completion or the amounts applied for by the Contractor and the action taken thereon by the Project Manager on account of Work done by such Subcontractor.
4. Neither the Owner nor the Project Manager shall have any obligation to pay or to see to the payment of any monies to any Subcontractor or Material Suppliers except as may otherwise be required by law.
5. Neither certification of a progress payment, delivery of a progress payment, nor partial or entire use or occupancy of the Project by the Owner, shall constitute an acceptance of any Work not performed in accordance with the Contract Documents.

F. PAYMENTS WITHHELD

1. The Project Manager may decline to certify payment and may withhold the Certificate in whole or in part to the extent necessary to reasonably protect the Owner, if, in the Project Manager's opinion, the Project Manager is unable to make representations to the Owner as provided herein above for Certificates for Payment. If the Project Manager is unable to make representations to the Owner and certify payment in the amount of the Project Application, the Project Manager will notify the Contractor as provided herein. If the Contractor and the Project Manager cannot agree on a revised amount, the Project Manager will promptly issue a Project Certificate for Payment for the amount for which the Project Manager is able to make such representations to the Owner. The Project Manager may also decline to certify payment or, because of subsequently discovered evidence or subsequent observations, the Project Manager may nullify the whole or any part of any Project Certificate for Payment previously issued to such extent as may be necessary, in the Project Manager's opinion, to protect the Owner from loss because of:
 - a. Defective Work not remedied;
 - b. Third party claims filed or reasonable evidence indicating probable filing of such claims, including claims by separate contractors;
 - c. Failure of the Contractor to make payments properly to Subcontractors, or for labor, materials or equipment;
 - d. Architect's determination, based upon reasonable evidence, that the Work cannot be completed for the unpaid balance of the Contract Sum;
 - e. Damage to the Owner or another contractor;

- f. Architect's determination, based upon reasonable evidence, that the Work will not be accomplished in compliance with the Work Order Completion Time;
 - g. Persistent failure to carry out the Work in accordance with the Contract Documents;
 - h. Failure of the Contractor to submit Construction Schedules or Submittal and Procurement Schedules as required;
 - i. Failure of the Contractor to maintain record drawings on a current basis;
 - j. Failure of the Contractor to submit notarized lien waivers from each Subcontractor, materials, or equipment supplier;
 - k. Failure of the Contractor to submit certified payroll reports;
 - l. Stop notice served upon the Owner.
2. The Department withholds from the Contractor's monthly progress payments for each and every required document that is inadequate or not submitted in a timely manner (Labor Code Section 1771.5) by the Contractor or its subcontractors up to ten percent (10%) of the monthly progress estimate, exclusive of mobilization. If you have not submitted an adequate record by the month's fifteenth (15th) day for the period ending on or before the first (1st) of that month, the retention will be in the amount of one-thousand dollars (\$1,000) up to a maximum of ten-thousand dollars (\$10,000).
3. For purposes of this Paragraph, the term "required document" includes, but is not limited to, certified payrolls, labor compliance documents, Disadvantaged Business Enterprise documents, and any other information or documents required to be submitted by the Contractor or any of its subcontractors under the terms of this Agreement or pursuant to applicable federal, state, or local laws or regulations. The retention provided for in this Paragraph shall be in addition to any other deduction or retention allowed under this Agreement, and shall be in addition to any other remedy or consequence provided by law for untimely submission of any required document. Such retention shall remain in effect only until such time as the required documents have been submitted by the Contractor or its subcontractor(s) and have been determined by the Owner to be both complete and acceptable as to form.
4. When the grounds as noted above are removed, payment shall be made for amounts withheld on the basis thereof.
5. The contractor and his/her subcontractors acknowledge and agree that maintaining the LCP Tracker with current information on Labor Compliance is mandatory. Failure to do so may result in the delay of processing of the current Pay Request in addition to the penalties outlined in the preceding articles of this specification.

G. COMPLETION AND FINAL PAYMENT

1. Following the Contractor's completion of the Work, the Contractor shall forward to the Project Manager a written notice that the Work is ready for final inspection and acceptance, and shall also forward to the Project Manager a final Application for Payment. Upon receipt, the Project Manager will promptly make such inspection. When the Project Manager finds the Work acceptable under the Contract documents and the Contract fully performed, the Project Manager will issue a Project Certificate for Payment which will certify the final payment due the Contractor. This certification will constitute a representation that, to the best of the Project Manager's knowledge, information, and belief, and on the basis of observations and inspections, the Work has been completed in accordance with the Terms and Conditions of the Contract Documents and that the entire balance found to be due the Contractor, and noted in said Certificate, is due and payable. The Project Manager's certification of said Project Certificate for Payment will constitute a further representation that the conditions precedent to the Contractor's being entitled to final payment as set forth herein below have been fulfilled.
2. Neither the final payment nor the remaining retainage shall become due until the Contractor submits to the Project Manager (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might in any way be responsible, have been paid or otherwise satisfied, (2) consent of surety, if any, to final payment, and (3) other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens arising out of the Contract, to the extent and in such form as may be designated by the Owner, and (4) All Labor Compliance documents are current in the LCP Tracker. If any Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against any such lien. The bond cannot be from the original surety insurer for the Project or any affiliate of the original surety. If any such lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such lien.
3. All provisions of this Agreement, including without limitation those establishing obligations and procedures, shall remain in full force and effect notwithstanding the making or acceptance of final payment, and the making of final payment shall not constitute a waiver of any claims by the Owner.
4. Upon completion and acceptance of all work whatsoever required, and upon the release of all claims against the Owner as specified, the Owner shall file a written Notice of Completion with the County Recorder as to the entire amount of work performed.

5. Final payment will be released within sixty (60) days after the date of acceptance of the Work as reflected in the Notice of Completion filed with the County Recorder's Office; provided, that Owner may withhold from the final payment, in the event of a dispute between Owner and Contractor, retentions in, and amount not exceeding, one hundred fifty percent (150%) of the disputed amount. At the Contractor's option, the Owner may release retention upon receipt of an unconditional lien release for the full value of the Work and any of its Contract Change Orders.
6. All manufacturers' warranties required by the Contract Documents shall commence on the date of the Notice of Completion for the Work. It shall be the Contractor's responsibility, through appropriate contractual arrangements with all subcontractors, materialmen, and suppliers, to ensure compliance with this requirement.
7. The acceptance by the Contractor of the final payment, after the date of Notice of Completion of the Project, shall be and shall operate as a release to the Owner of all claims and of all liability to the Contractor, under the Contract Documents or otherwise, for all things done or furnished in connection with this Work, excepting only the Contractor's claims for interest upon final payment, if such final payment be improperly delayed. No payments, however, final or otherwise, shall operate to release the Contractor or his/her sureties from any obligations under the Contract Documents, including but not limited to the Performance and Payment Bonds.

2.25 CHANGES TO THE WORK

- A. The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletion, or other revisions. All such changes in the Work shall be authorized by a Contract Change Order, and shall be performed under the applicable conditions of the Contract Documents.
- B. **CONTRACT CHANGE ORDER:** A Change Order issued to add or delete Work from the Contract. Only an executed Contract Change Order will effectuate change in either the Contract Sum and/or the contract time. A Change Order is a written order to the Contractor dually signed to show both the approval of the Architect and Authorization of the Owner, issued after execution of the Contract. A Change Order signed by the Contractor indicates the Contractor's agreement therewith, including any adjustment in the Contract Sum or the contract time, and the full and final settlement of all costs (direct, indirect, and overhead) related to the Work authorized by the Change Order.
- C. All claims for additional compensation to the Contractor shall be presented in writing before the expense is incurred, and will be adjusted as provided herein. No work shall be allowed to lag pending such adjustment, but shall be promptly executed as directed, even if a disputed claim arises. No claim will be considered after the work in question has been done unless a Contract Change Order has been issued or a timely written notice of claim has been made by Contractor.

- D. Costs mean an itemized breakdown of all labor (by crafts), materials, sales taxes, equipment rentals, etc., for each portion of the Work which comprises the Change Order including any Subcontractor's itemized breakdown, plus not more than twenty percent (20%) to cover all profits and administration.
1. Under no circumstance will the total sum of allowable mark up for General Conditions, General Requirements, supervision, overhead (excluding small tools) and profit, exceed a cumulative total of twenty percent (20%), including markups for all parties involved in a change.
 - a. Work done by Contractor's own forces, not including bond and insurance premiums, shall not exceed a cumulative total of fifteen percent (15%);
 - b. Work done by subcontractors, all tiers, including bond and insurance premiums, if any, shall not exceed a cumulative total of fifteen percent (15%);
 - c. General Conditions, General Requirements, Supervision, Overhead and Profit for Contractor on Subcontractor's work, shall not exceed a cumulative total of five percent (5%).
 2. The cost or credit to the Owner resulting from a change in the Work shall be determined in one or more of the following ways:
 - a. By mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
 - b. By unit prices state in the Contract Documents or subsequently agreed upon;
 - c. By cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
 - d. By the method provided under Article 2.26.
- E. The amount of credit to be allowed by the Contractor to the Owner, as confirmed by the Project Manager, for any deletion or change that results in a decrease in the Contract Sum will be the amount of the actual cost. When both additions and credits covering related Work or substitutions are involved in any one change, the allowance for overhead and profit shall be figured on the basis of the net increase, if any, with respect to that change.

2.26 CHANGES TO THE CONTRACT (EXTRA WORK AT FORCE ACCOUNT)

- A. If none of the methods set forth in Section 2.25.D, is agreed upon, the Contractor, provided that a written order signed by the Owner is received, shall promptly proceed with the Work involved. The cost of such Work shall then be determined by the Project Manager, on the basis of reasonable expenditures or savings of those performing the Work attributable to the change, including, in the case of an increase in the Contract Sum, not more than twenty percent (20%) for all overhead and profit. In such case, and also under Section 2.25.D, Paragraph 3, the Contractor shall keep and present, in such form as the Owner or the Project Manager may prescribe, an itemized accounting of actual cost together with appropriate supporting data for inclusion in a Contract Change Order. Unless otherwise provided in the Contract Documents, cost shall be limited to the following:
1. Labor Cost is the cost of labor for the workers (including working foremen) used in the actual and direct performance of the extra work, whether employed by the Contractor, or Subcontractors and Specialized Forces of any tier. Labor Cost shall include:
 - a. Actual Wages paid to the works, plus employer payments to or on behalf of the workers for health and welfare, pension, vacation, and training. If required by the Project Manager, certified payrolls shall be submitted with extra work reports as verification of wages paid to the workers.
 - b. A Labor Surcharge of twenty percent (20%) (thirty five percent (35%) for demolition work and roofing work) will be added to the Actual Wages as defined above. The Labor Surcharge shall constitute full compensation for all payments imposed by State and Federal laws, including Workers Compensation Insurance, Social Security, and Unemployment Insurance.
 - c. Subsistence and Travel Allowance if actually paid to the workers. Labor Surcharge will not be added to Subsistence and Travel Allowance.
 2. Equipment Cost is the payment made for the equipment actually used in the performance of the extra work.
 - a. Equipment valued at three hundred dollars (\$300) or less shall be considered as small tools, and no payment will be made therefor.
 - b. Equipment costs will be paid in accordance with the rental rates listed in the "Cal-Trans Equipment Rental Rates, County of Fresno, Department of Public Works and Planning," in effect at the time of bid, available from the Department, Suite 711, Fresno County Plaza Building, 2220 Tulare Street, Fresno, CA 93721.

- c. In the event that any of the equipment to be used is not listed in the above publication, the rental rate shall be agreed upon in writing by the Contractor and CM before the extra work is begun.
- 3. Materials Cost is the payment made for materials incorporated into the Work.
 - a. Materials Cost shall include sales tax, freight, and delivery charges, less any available discounts whether or not said discounts are taken.
 - b. Materials Cost shall be based upon supplier's or manufacturer's invoice. If invoices or other satisfactory evidence of cost are not furnished within sixty (60) days of delivery or within fifteen (15) days after acceptance of the Contract, whichever occurs first, then the Project Manager shall determine the Materials Cost, in his/her sole discretion, on the basis of available information and on his/her considered experience.
- 4. Specialized Services are those services or items of extra work that, by agreement of the Contractor and the Project Manager, cannot be performed by forces of the Contractor or his/her Subcontractors, and may be performed by a specialist.
 - a. Specialized Services may be paid for by invoice if the established practice of the specialized force industry does not provide complete itemization of Labor, Equipment, and Materials Costs.
- 5. Markup for Profit, Home Office and Field Office Overhead, Bond Premium, insurance, taxes, and supervision will be added to the total of Labor Cost, Equipment Cost, Materials Cost, and Specialized Services.
 - a. Markup will be added only once on any Extra Work at Force Account, regardless of the number of contractors and subcontractors involved.
 - b. It is recognized that individual contractors and subcontractors have different overhead costs, profit requirements, and bond premium rates. The amount to be added to Extra Work for markup shall include compensation for profit, overhead and bond premium without distinguishing among these items.
 - c. The markup to be added for Extra Work at Force Account on this Project shall be fifteen percent (15%) plus 1-1/2% for Performance and Payment Bonds for Contractor only.

6. Records shall be maintained by the Contractor and Subcontractors in such a manner as to provide a clear distinction between the costs of Extra Work paid for on a force account basis and the costs of other operations. From these records, the Contractor shall furnish the Project Manager a completed extra work report for each day's extra work to be paid for on a force account basis. Extra work reports shall itemize the materials used, equipment rental charges, and specialized services costs, and shall provide names or identifications and classifications of workmen, the hourly rate of pay, and hours worked. Extra work reports shall be compiled and submitted to the Project Manager daily for verification and signature. Extra work reports shall be signed by the Contractor or his/her authorized representative.
7. If the Contractor disputes the Architect's cost determination, the Contractor may initiate a claim in compliance with the Claims and Disputes Resolution provisions of these General Conditions.

2.27 SITE CONDITIONS

- A. Where investigations have been conducted by the Owner of existing conditions on a site, including subsurface conditions, such investigations are made for the purpose of design only and for the information of bidders. The results of such investigations represent only the statement by the Owner as to the circumstance and character of materials actually encountered by the Owner during the investigations. The Owner makes no guarantee or warranty, express or implied, that the conditions indicated are representative of conditions existing throughout the site of a Project or any part of it, or that unanticipated conditions might not occur.
- B. All excavation work shall be performed on an "unclassified basis"; that is, such work shall include the removal of all material encountered including earth or rock formations, regardless of the type or hardness thereof, or groundwater conditions in the excavation, the cost of such excavations being included in the Contract Sum. Unclassified excavation Work includes drilling or blasting operations.
- C. If site conditions are discovered that materially differ from previous information that the Contractor has received, and that could not have been discovered by the Contractor through prudent and reasonable investigation prior to developing the Contract Sum for the Work, the Contractor shall be compensated for additional costs incurred in working with the unknown site conditions, but only to the extent that such previously unknown and undiscoverable site conditions cause the Contractor to incur costs in addition to the Contract Sum for that portion of the Work. The Contractor must be able to demonstrate clearly the original Contract Sum for that portion of the Work (plus any Contract Change Orders applicable to that portion of the Work) and the additional costs incurred as a direct result of the unknown site conditions. Only additional costs over and above the amount of the Contract Sum for that portion of the Work will be compensated upon a recommendation of approval by the Project Manager.

2.28 REQUEST FOR EQUITABLE ADJUSTMENT

- A. If the Contractor considers a Request for Equitable Adjustment is justified for any increase in the contract time, the Contractor shall promptly, upon first observance of the condition giving rise to the request, provide the Project Manager and Owner written notice of such condition and circumstance. This notice shall be given by the Contractor before proceeding to execute the Work, except in emergency endangering life or property, in which case the Contractor shall proceed in accordance with the Emergency provisions of these General Conditions. No such request shall be valid unless so made. A Contract Change Order shall be required to authorize any change in the contract time resulting from such request for equitable adjustment.
- B. If the Contractor requests that additional cost or time is involved because of, but not limited to, (1) any written interpretation pursuant to Section 2.07.G, (2) any order by the Owner to stop the Work pursuant to Section 2.08 where the Contractor was not at fault, or any such order by the Project Manager as the Owner's agent, (3) any written order for a minor change in the Work issued pursuant to Section 2.29, the Contractor shall make such request for equitable adjustment as provided in Section 2.28.A.

2.29 MINOR CHANGES IN THE WORK

The Project Manager will have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or extension of the contract time and not inconsistent with the intent of the Contract Documents. Such changes shall be enacted by written order issued through the Project Manager, and shall be binding on the Owner and the Contractor. The Contractor shall carry out such written orders promptly.

2.30 SUCCESSORS AND ASSIGNS

The Owner and the Contractor, respectively, bind themselves, their partners, successors, assigns, and legal representatives to the other party hereto and to the partners, successors, assigns, and legal representatives of such other party with respect to all covenants, agreements, and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other.

2.31 ASSIGNMENT OF MONEYS

The Contractor shall not assign moneys due or to become due him/her under the contract without the written consent of the Auditor-Controller of Fresno County. Any assignment of moneys shall be subject to all proper set-offs in favor of the County of Fresno and to all deductions provided for in the contract and particularly all money withheld, whether assigned or not, shall be subject to being used by the County of Fresno for the completion of the work in the event that the Contractor should be in default therein.

2.32 GUARANTEE OF WORK

- A. The Contractor warrants to the Owner that all materials and equipment and the Work as a whole furnished under this Contract will be new unless otherwise specified, and that all Work will be of good quality, free from faults and defects, and in conformance with the Contract Documents, for a period of 365 Calendar Days from the date of acceptance of the Work as specified in the Notice of Completion, unless a longer period is otherwise specified. All manufacturer's warranties required by the Contract Documents shall commence on the date of the filing of the Notice of Completion for the Work (which date necessarily will follow the performance under separate contracts). It shall be the Contractor's responsibility, through appropriate contractual arrangements with all subcontractors, materialmen, and suppliers, to ensure compliance with this requirement. All Work not conforming to these requirements, including substitutions not properly reviewed and authorized, may be considered defective. If required by the Project Manager, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.
- B. If repairs or changes are required in connection with guaranteed work within any guaranteed period, which, in the opinion of the Project Manager is rendered necessary as the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the Contract Documents, the Contractor shall, promptly upon receipt of notice from the Owner, and without expense to the Owner, (1) place in satisfactory condition in every particular all of such guaranteed work, correct all defects therein; and (2) make good all damage to the building or site, or equipment or contents thereof, which, in the opinion of the Project Manager, is the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the Contract Documents; and (3) make good any work or materials, or the equipment and contents of said building or site disturbed in fulfilling any such guarantee.
- C. If the Contractor disturbs any work guaranteed under another contract in fulfilling the requirements of the contract or of any guarantee, embraced in or required thereby, he/she shall restore such disturbed work to a condition satisfactory to the Project Manager and guarantee such restored work to the same extent as it was guaranteed under such other contract.
- D. The Owner may have the defects corrected if the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee and the Contractor and his/her surety shall be liable for all costs and expenses incurred in connection therewith.
- E. All special guarantees applicable to definite parts of the work that may be stipulated in the Contract Documents shall be subject to the terms of this Article 2.32 during the first (1st) year (365 Calendar Days) of the life of such special guarantee.

2.33 RESPONSIBILITY FOR DAMAGE

- A. Neither the Owner, the Architect, nor any officer or employee of the County, or officer or employee thereof, within the limits of which the work is being performed, shall be answerable or accountable in any manner, for any loss or damage that may happen to the work or any part thereof; or for any of the materials or other things used or employed in performing the work; or for injury to any person or persons, either workmen or the public, for damage to property from any cause which might have been prevented by the Contractor, or his/her workmen, or anyone employed by him/her, against all of which injuries or damages to persons and property the Contractor having control over such work must properly guard.
- B. The Contractor shall be responsible for any liability imposed by law for any damage to any person or property resulting from defects or obstructions or from any cause whatsoever during the progress of the work or at any time before the issuance of the Notice of Completion.
- C. The Contractor shall indemnify and hold harmless the State of California, the Owner, the Project Manager, the Architect, the State Library and all of their respective officers and employees, from all claims, lawsuits or actions of every kind and nature whatsoever, brought for, or on account of any injuries or damages received or sustained by any person or persons, resulting from any act or admission by the Contractor or his/her servants or agents, in the construction of the work or by or in consequence of any negligence in guarding the same, in improper materials used in its construction, or by or on account of any act or omission of the Contractor or his/her agents in the performance of Contractor's obligations under the Contract Documents. In addition to any remedy authorized by law, so much of the money due the Contractor under and by virtue of the contract as shall be considered necessary by the Owner may be retained by the Owner until disposition has been made of such claims, lawsuits, or actions for damages as aforesaid.

2.34 WRITTEN NOTICE

Subject to any additional requirements that may be applicable to claims under the immediately following Article 2.35 RESOLUTION OF CONTRACT CLAIMS AND DISPUTES, formal service, when required, of written notice shall be deemed to have been duly served if delivered in person, to the individual or member of the firm or entity or to an officer of the corporation for whom it was intended, or if sent by registered or certified mail to the listed address of that entity for the attention of such individual.

2.35 RESOLUTION OF CONTRACT CLAIMS AND DISPUTES

- A. A Claim is a demand or assertion, sent by registered mail or certified mail with return receipt, requested by one (1) of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, extension of time, or a request for equitable adjustment or Contract Change Order which cannot be resolved per provisions of Section 2.25 - CHANGES TO THE WORK. Any Claim shall be reduced to writing and filed with the Project Manager, within ten (10) calendar days after the Contractor has notice of the condition giving rise to the Claim, and final action per Section 2.25 - CHANGES TO THE WORK procedures has taken place or has been declared as such in writing, by either party. Such ten (10)-day notice of an asserted claim is in addition to the requirement for prompt notice required per Section 2.25 - CHANGES TO THE WORK.
- B. The Contractor shall not claim or recover any overhead cost administrative or otherwise, particularly 'Home Office' expenses, 'Extended site overhead', or any other overhead cost on the basis of any 'Home Office' damages formula, 'Eichleay' formula, 'Total Cost' recovery formula or any other such formula.
- C. REQUIREMENTS FOR FILING A CLAIM. Claims shall be submitted to the Project Manager. Claims must be filed within the time specified above, but in no event shall any claim be considered by the Project Manager that is filed later than the date of final payment of the Project. The claim shall be in writing and shall be a sum certain, if known. If unknown, Contractor shall specify the basis for establishing the sum certain. Claim shall include a statement of the reasons for the asserted entitlement and include the documents necessary to substantiate the claim. Such documents may include, but are not limited to, payroll records, purchase orders, quotations, invoices, estimates, subcontracts, daily logs, supplier contracts, subcontract billings, bid takeoffs, equipment rental invoices, ledgers, journals, daily reports, job diaries, and any documentation related to the requirements of Section 2.25 - CHANGES TO THE WORK. In the case of a continuing delay, only one (1) claim is necessary. If adverse weather conditions are the basis for a claim for additional time, such claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the critical activities on the construction schedule. The Contractor shall certify, at the time of submission of a claim, as follows:

"I, _____, being the
_____, (MUST BE AN OFFICER) of
_____, (GENERAL CONTRACTOR),
declare under penalty of perjury under the laws of the State of
California, and do personally certify and attest that: I have thoroughly
reviewed the attached claim for additional compensation and/or
extension of time, and know its contents, and said claim is made in
good faith; the supporting data is truthful and accurate; the amount
requested accurately reflects the contract adjustment for which the
Contractor believes the Owner is liable; and, further, that I am familiar
with California Penal Code Section 72 and California Government Code
Section 12560, et seq., pertaining to false claims, and further know and
understand that submission or certification of a false claim may lead to
fines, imprisonment and/or other severe legal consequences."

By: _____
(Contractor's signature) (Date)

- D. Nothing in this Article is intended to extend the time limit or supersede notice requirements otherwise provided by this contract or by applicable law for the filing of claims. Any formal claim shall be processed in accordance with the provisions of Public Contract Code Section 9204 and Section 20104 et. seq., each of which establishes a process for resolution of claims, the provisions of which are consistent with and effectively summarized by the following:
1. The Owner (or his/her designee), shall review the facts pertinent to the claim, obtain additional information deemed necessary for a decision (if any), review recommendations of the Project Manager, coordinate with the contract administrator (if any), and secure assistance from legal and other advisors, and render a written decision on the claim within forty-five (45) days of receipt of the claim. If additional information or documentation is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the Owner (or his/her designee) and claimant. The Owner's (or his/her designee's) written response to the claim, as supplemented by any additional information and/or documentation provided by claimant, shall be submitted to the claimant within fifteen (15) days after receipt of the further information and/or documentation or within a period of time no greater than that taken by the claimant in producing the additional information, whichever is greater.
 - a. For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the Owner (or his/her designee), shall respond in writing to all written claims within sixty (60) days of receipt of the claim, or may request, in writing, within thirty (30) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the Owner (or his/her designees) may have against the claimant.

2. If the claimant disputes the written response of Owner (or his/her designee), or Owner fails to respond within the time prescribed, the claimant may so notify the Owner (or his/her designee), in writing, either within fifteen (15) days of receipt of the Owner (or his/her designee's) response or within fifteen (15) days of the Owner (or his/her designee's) failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the Owner (or his/her designee) shall schedule a meet and confer conference within thirty (30) days for settlement of the dispute.
3. Within ten (10) business days following conclusion of the meet and confer conference, any unpaid portion of the claim remaining in dispute shall be submitted to nonbinding mediation, as that term is defined by Public Contract Code Section 9204(d)(2)(C).
4. If following the conclusion of the meet and confer conference and mediation process, the claim or any portion thereof remains in dispute, the claimant may file a claim pursuant to Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time the claimant submits his/her written claim pursuant to subdivision (a) until the time the claim is denied, including any period of time utilized by the meet and confer conference and mediation process as described in the immediately preceding Paragraphs 2 and 3 of this Section D.
5. In the event of any perceived conflict between the summary of the procedure set forth in this Article and the actual provisions of the Public Contract Code Section 9204 and Section 20104, et seq., the statutory provisions shall control; and in the event of any perceived conflict between the provisions of Section 9204 and Section 20104, et seq., the provisions of Section 9204 shall control.

- E. PROCEDURES FOR CIVIL ACTIONS TO RESOLVE DISPUTED CLAIMS.
Non-binding Mediation: Within sixty (60) days, but no earlier than thirty (30) days, following the filing of a responsive pleading, the court shall submit the matter to non-binding mediation unless waived by mutual stipulation by both parties. The mediation process shall provide for the selection within fifteen (15) days by both parties of a disinterested third person as mediator, shall be commenced within thirty (30) days of the submittal, and shall be concluded within fifteen (15) days from the commencement of the mediation unless a time requirement is extended upon a good cause shown to the court. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

Judicial Arbitration: If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of the code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subsection consistent with the rules pertaining to judicial arbitration. Arbitrators shall be experienced in construction law.

Appeals: As provided by statute (specifically Public Contract Code section 20104.4(b)(3) and Code of Civil Procedure section 1141.21), any party appealing an arbitration award who does not obtain a more favorable judgment shall, in addition to payment of costs and fees, also pay the attorneys' fees on appeal of the other party.

- F. CLAIMS AND DISPUTES EXEMPT FROM FILING REQUIREMENTS. The requirements and procedures imposed by this Article do not apply to:
1. Any claims by the Owner; or
 2. Any claim for or respecting personal injury or death or reimbursement or other compensation arising out of or resulting from liability for personal injury or death; or
 3. Any claim or dispute relating to stop payment requests or stop notices; or
 4. Any claim or dispute related to the approval, refusal to approve, or substitution of Subcontractors, regardless of tier, and suppliers.
- G. PAYMENT OF UNDISPUTED PORTION OF CLAIM. Owner shall pay claimant such portion of a claim that is undisputed except as otherwise provided in the contract.
- H. CONTINUE WORK DURING DISPUTE. In the event of any disputed claim or other dispute between the Owner and the Contractor, the Contractor will not stop work but will prosecute the work diligently to completion in his/her manner directed by the Owner, and the dispute shall be resolved by a court of law after completion of the Work. However, Contractor must submit all disputes in accordance with the provisions of this Section 2.35.
- I. SUIT IN FRESNO COUNTY ONLY. Any litigation arising out of this Contract shall be brought in Fresno County and Contractor hereby waives the removal provisions of California Code of Civil Procedure Section 394.

2.36 PERFORMANCE BOND, LABOR AND MATERIAL PAYMENT BOND, AND WARRANTY BOND

- A. The Contractor shall furnish Performance Bond in the amount of one hundred percent (100%) of the Contract Sum, and Payment Bond in the amount of one hundred percent (100%) of the Contract Sum and One Year Warranty Bond in the amount of ten percent (10%) of the Final Contract Sum, which is the cumulative amount that will have been paid to Contractor for all of the Work performed under the Contract once the Project has been completed and the Work has been accepted by the County.
- B. All bonds required, whether Bid bonds, Performance, Payment, Warranty, or other bonds, shall be issued by an admitted surety insurer authorized by the California Insurance Commissioner to transact surety insurance in the state. The same admitted surety insurer must issue the Bid Bond, Performance Bond, Payment Bond, and Warranty Bond. The payment, performance, and warranty bonds required by these specifications will neither be accepted nor approved by the Owner unless the bonds are underwritten by an admitted surety and the requirements of California Code of Civil Procedure section 995.630 are met. The bonds must include a physical mailing address, phone number, and contract person for the admitted surety insurer. The Owner further reserves the right to satisfy itself as to the acceptability of the surety and the form of bond. Upon request of the Owner, the bidder must submit the following documents:
 - 1. The original, or a certified copy, of the unrevoked appointment, power of attorney, bylaws, or other instrument authorizing the person who executed the bond to do so.
 - 2. A certified copy of the certificate of authority of the insurer issued by the California Insurance Commissioner.
 - 3. A certificate from the county clerk that the certificate of authority has not been surrendered, revoked, canceled, annulled, or suspended, or in the event that it has, that renewed authority has been granted.
 - 4. A financial statement of the assets and liabilities of the insurer to the end of the quarter calendar year prior to thirty (30) days next preceding the date of the execution of the bond, in the form of an officers' certificate as defined in Corporations Code section 173.

2.37 RIGHTS AND REMEDIES

- A. The duties and obligations imposed by the Contract Documents and the rights and remedies available hereunder shall be in addition to, and not a limitation of, any duties, obligations, rights, and remedies otherwise imposed or available by law.

- B. No action or failure to act by the Owner, or by the Project Manager or Architect, regarding any deficiency, breach, or default in performance by the Contractor under the Contract Documents, shall be deemed or construed to constitute acquiescence of the Owner in connection therewith or with regard to any subsequent deficiency, breach, or default in performance by the Contractor; nor shall any such prior act of failure to act by or on behalf of Owner be deemed or construed as a waiver of any rights in favor of Owner regarding any such deficiency, breach, or default in performance by the Contractor, regardless of the similarity to the prior incident or circumstance when no action was taken regarding any alleged deficiency, breach, or default in performance by the Contractor.

2.38 TIME, DELAYS, AND LIQUIDATED DAMAGES

A. DEFINITIONS

1. Unless otherwise provided, the contract time is the period of time allotted in the Contract Documents for completion of the Work, including authorized adjustments thereto.
2. The Date of Commencement of the Work is the date established in the Notice to Proceed.
3. The Date of Completion of the Work is the date on which the work is certified as complete by the Project Manager as specified in the Notice of Completion.
4. The term "day" as used in the Contract Documents shall mean calendar day unless specifically designated otherwise.

B. PROGRESS AND COMPLETION

1. Time is of the essence regarding all time limits stated in the Contract Documents. By executing the Agreement, the Contractor confirms that the contract time is a reasonable period for performing the Work.
2. The Contractor shall begin the Work on the Date of Commencement. The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required herein to be furnished by the Contractor. The Date of Commencement of the Work shall not be changed by the effective date of such insurance.
3. The Contractor shall carry the Work forward expeditiously with adequate forces and shall achieve Completion of the Work within the contract time.

C. DELAYS AND EXTENSIONS OF TIME

1. Delays in prosecution of parts or classes of the Work that are not demonstrated to prevent or delay completion of the entire Project or specific milestones within the contract time are not "unavoidable delays" for purposes of this section.
2. In all cases, the time authorized for extension of the contract time shall be no greater than the number of days directly attributable to the event or circumstances which causes unavoidable delay in the completion of the Project. Contractor shall be entitled, in the case of unavoidable delays, to an extension in the contract time, but not to any increase to the Contract Sum. "Unavoidable delay" for this purpose shall be defined as follows:
 - a. Unavailable Materials. That materials or articles called for in the Contract Documents are not obtainable within the time required for timely completion; provided that such materials or articles were listed by the Contractor in the schedule required by Section 2.17 - CONTRACTOR'S CONSTRUCTION SCHEDULE; that the Contractor demonstrates that the unavailability of the materials is in fact the cause for the delay, and could not have been avoided by an appropriate adjustment in the Construction Schedule; and that the unavailability of such materials is due to circumstances beyond the Contractor's control. If good cause for delay is demonstrated pursuant to this subsection, the Owner, at its sole discretion, may grant a time extension.
 - b. Force Majeure. That delays in construction have resulted from circumstances beyond the control of the Contractor and which the Contractor could not have provided against by the exercise of reasonable care, prudence, foresight, and diligence. Unavoidable delays within the meaning of this subparagraph shall be those caused by acts of God, war, insurrection, civil disorder, fire, floods, epidemic, or strikes.
 - c. Unseasonable Weather. An extension of contract time may be granted due to weather which is unsuitable for the Work currently in progress, upon the determination of the Owner that the weather conditions in fact caused the delay in completion of the Project and that such weather conditions were not, and could not in the exercise of reasonable diligence, have been foreseen by the Contractor. Seasonable weather that, in the exercise of reasonable foresight and diligence, should be expected in the area at the time of year in question is not cause for an extension of time.

- d. Time Extensions Due to Contract Change Orders or Work Authorizations. A time extension may be granted due to additional work that results in a delay in the Project caused by the approval by the Owner of a Contract Change Order or Work Authorization. The Contractor shall be entitled to a contract time extension Change Order only when the extra Work is demonstrated by the Contractor to have caused a delay in the Project.
 - e. Owner-Caused Delays. In the event that the Project is delayed by acts of the Owner not authorized by the Contract Documents which the Contractor demonstrates will or have caused an unavoidable delay, the Contractor shall be entitled to a contract time Change Order to offset the extra time incurred by the Contractor. The Contractor will not be entitled to adjustments in the Contract Sum. Extra time shall be limited to that which is directly identified as critical by the delay.
3. The Contractor specifically agrees that a time extension as provided herein is its sole remedy for Owner-caused delays, and agrees to make no claim or demand for additional damages, nor claim an acceleration of the time for performance.
 4. The Contractor shall not be entitled to any contract time extension nor Contract Sum adjustment for alleged Owner delays if the Owner has acted within the time limits specified by the Contract Documents.

D. NOTICE OF DELAYS

1. Contractor shall notify the Project Manager promptly whenever the Contractor foresees any event or circumstance that may delay the prosecution of the Work and in Contractor's opinion may provide grounds for an extension, and shall in any event notify the Project Manager immediately upon the occurrence of any such delay. The Contractor shall take immediate steps to prevent, if possible, the occurrence or continuance of the delay. If this cannot be done, the Project Manager shall determine how long the delay shall continue and to what extent the prosecution and completion of the Work are being delayed thereby. Such notification shall specify with detail the cause asserted by the Contractor to constitute grounds for an extension. Failure of the Contractor to submit such a notice within ten (10) days after the initial occurrence of the event giving rise to the delay shall constitute a waiver by the Contractor of any request for a time extension, and no extension shall be granted as a consequence of such delay.

2. If the Contractor believes that the delay in prosecution in the Work will result in an unavoidable delay in completion of the entire Project, the Contractor shall submit evidence to support that belief, together with its request for a time extension. Such evidence shall include a demonstration that the delayed portion of the Work will affect the Critical Path Scheduling of the entire Project. The Contractor shall also submit a proposed revised Construction Schedule, which accounts for the delay in completion of the entire Project caused by the delay in prosecution of part of the Project, and includes a revised Critical Path demonstrating how the Project will be completed within the proposed revised contract time.

E. INVESTIGATION; PROCEDURE

1. Upon receipt of a request for Time extension, the Project Manager shall conduct an investigation of the facts asserted by the Contractor to constitute grounds for an extension. The results of this investigation shall be reported by the Project Manager to the Contractor and shall indicate whether he/she will recommend for or against such extension to the Owner. The performance of this investigation by the Project Manager shall not be construed as direction or recommendation to the Contractor regarding scheduling of the work. Scheduling this work is the sole responsibility of the Contractor.
2. The Project Manager may, in his/her sole discretion, defer this recommendation to allow the accumulation of time extensions due to Work Authorizations into a periodic or final Contract Change Order request.
3. Upon receiving the Project Manager's recommendation to the Owner regarding the Contractor's request for a time extension, the Contractor may either withdraw its application for extension, or request that it be scheduled for action by the Owner. If the Owner disallows the request, there shall be no allowance made for the time during which the request was pending, and the Contractor shall remain obligated to complete the Work in the time specified.
4. If the Owner approves the time extension Contract Change Order, the new Construction Schedule submitted by the Contractor and approved by the Owner shall be deemed to amend the original Construction Schedule approved by the Owner; thereafter, the amended Construction Schedule shall have the same force and effect as the originally approved Progress Schedule.
5. The revised Construction Schedule must be submitted within seven (7) calendar days of the date on which the Owner approves the change.
6. The Contractor agrees that the Owner's determination as to the existence of grounds for an extension, and the duration of any such extension, shall be final and binding upon both Owner and Contractor.

F. DISCRETIONARY TIME EXTENSION FOR BEST INTEREST OF OWNER

1. The Owner reserves the right to extend the contract time for completion of the Work if the Director of Public Works and Planning or designee determines that such extension is in the best interest of the Owner.
2. In the event that such discretionary extension is made at the request of the Contractor, the Owner shall have the right to charge to the Contractor all or any part, as the Board may deem proper, of the actual cost to the Owner for engineering, inspection, supervision, contract administration, incidental, and other overhead expenses that accrue during the period of such extension, and to deduct all or any portion of such amounts from the final payment for the Work.
3. In the event such extension is ordered over the objection of the Contractor, the Contractor shall be entitled to a Contract Change Order adjusting the price paid to reflect the actual costs incurred by the Contractor as a direct and proximate result of the delay, upon his/her written application therefor, accompanied by such verification of costs as the Project Manager requires. Only additional direct costs incurred at the site will be reimbursable by Contract Change Order.

G. LIQUIDATED DAMAGES

1. If the Work is not completed by Contractor in the time specified in the Work Order, or within any period of extension authorized pursuant to this Article, the Contractor acknowledges and admits that the Owner will suffer damage, and that it is impracticable and infeasible to fix the amount of actual damages. Therefore, it is agreed by and between the Contractor and the Owner that the Contractor shall pay to the Owner as fixed and liquidated damages, and not as a penalty, the sum specified in Section 005213, Agreement, Article III for each calendar day of delay until the Work is completed and accepted, and that both the Contractor and the Contractor's surety shall be liable for the total amount thereof, and that the Owner may deduct said sums from any monies due or that may become due to the Contractor.
2. This liquidated damages provision shall apply to all delays of any nature whatsoever, save and except only unavoidable delays approved by the Owner pursuant to the provisions of Article 2.38.C.2 hereinabove, or discretionary time extensions approved by the Board of Supervisors pursuant to the provisions of Article 2.38.F hereinabove.

H. EXTENSION OF TIME NOT A WAIVER

1. Any extension of contract time granted pursuant to this Article shall not constitute a waiver by the Owner, nor a release of the Contractor, from his/her obligations to perform the Work within the allotted contract time.

2. Granting of a time extension due to one (1) circumstance on one (1) request therefore shall not constitute a granting by the Owner of an extension of time for any other circumstance or the same circumstance occurring at some other time, and shall not be interpreted as a precedent for any other request for extension.

2.39 PROTECTION OF PERSONS AND PROPERTY

A. SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work.

B. SAFETY OF PERSONS AND PROPERTY

The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury, or loss to:

1. All employees on the Work and all other persons who may be affected thereby;
2. All the work and all materials and equipment to be incorporated therein, whether in storage or off the site, and that is under the care, custody, or control of the Contractor or any of the Contractor's Subcontractors or Sub-subcontractors;
3. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction; and
4. The work of the Owner or other separate contractors.

C. The Contractor shall give all notices and comply with all applicable laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss.

D. The Contractor shall erect and maintain, as required by existing conditions and the progress of the Work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent facilities.

E. When the use or storage of explosives or other hazardous materials or equipment is necessary for the execution of the Work, the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.

- F. The Contractor shall promptly remedy all damage or loss to any property referred to above caused in whole or in part by the Contractor, any Subcontractor, any Sub-subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, and for which the Contractor is responsible under the above noted clauses, except damage or loss attributable solely to the acts or omissions of the Owner, the Project Manager, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable in any degree to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under the Indemnification provisions provided herein.
- G. The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and the Project Manager.
- H. The Contractor shall not load or permit any part of the Work to be loaded in a manner that could endanger its safety or pose a risk to anyone working at the Project site.
- I. EMERGENCIES

In any emergency affecting the safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Any additional compensation or extension of time claimed by the Contractor on account of emergency work shall be determined as provided in the provisions herein for Changes in the Work.

2.40 INSURANCE

A. CONTRACTOR'S INSURANCE

- 1. Bidders' attention is directed to the insurance requirements below. It is highly recommended that Bidders confer with their respective insurance carriers or brokers to determine in advance of bid submission the availability of the insurance certificates and endorsements required below. A bidder who is awarded a contract and thereafter fails to comply strictly with the insurance requirements, will be deemed to be in default of its obligations.
- 2. Contractor shall procure and maintain for the duration of the Contract, and for three (3) years thereafter, insurance against claims for injuries to persons or damages to property which may arise from, or in connection with, the performance of the work hereunder by the Contractor, his agents, representatives, employees, or subcontractors. The cost of such insurance shall be included in the Contractor's bid.
- 3. No later than ten (10) calendar days following the Award of the Contract, and prior to execution of the Agreement for Construction by

the Owner, the Contractor shall submit certificates of insurance, signed by an authorized agent of the insurer, attesting to insurance coverage of the Contractor as required by this Article and identifying the applicable contract number.

B. MINIMUM SCOPE AND LIMITS OF INSURANCE

Coverage shall be at least as broad as:

1. Commercial General Liability (CGL): Insurance Services Office (ISO) Form CG 00 01 covering CGL on an "occurrence" basis, including premises, operations, and mobile equipment, products and completed operations, property damage, explosion, collapse, and underground hazards, contractual liability, bodily injury, and personal & advertising injury with limits no less than one million dollars (\$1,000,000) per occurrence and an annual aggregate of two million dollars (\$2,000,000). If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be three times the required occurrence limit. The umbrella or excess policy of ten million dollars (\$10,000,000) must contain a clause stating that it takes effect (drops down) in the event the primary limits are impaired or exhausted.
2. Automobile Liability: Automobile liability insurance with limits of not less than one million dollars (\$1,000,000) per accident for bodily injury and for property damages. Coverage must include any auto used in connection with this Agreement.
3. Workers' Compensation insurance as required by the State of California, with Statutory Limits, and Employers' Liability insurance with a limit of no less than one million dollars (\$1,000,000) per accident for bodily injury or disease.
4. If Contractor is a licensed professional or employs professional staff, (e.g., Architect, Engineer, Surveyor, etc.) in providing services, Professional Liability with limits no less than two million dollars (\$2,000,000) per occurrence or claim, and three million dollars (\$3,000,000) annual aggregate.
5. Builder's Risk (Course of Construction) insurance utilizing an "All Risk" (Special Perils) coverage form, with limits equal to the completed value of the project and no coinsurance penalty provisions.

If Contractor maintains broader coverage and/or higher limits than the minimums shown above, the Owner requires and shall be entitled to the broader coverage and/or the higher limits maintained by the Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the Owner.

Self-Insured Retentions

Self-insured retentions must be declared to and approved by the Owner. At the option of the Owner, either: the Contractor shall obtain coverage to reduce or eliminate such self-insured retentions as respects the Owner, its officers, officials, employees, and volunteers; or the Contractor shall provide a financial guarantee satisfactory to the Owner guaranteeing payment of losses and related investigations, claim administration, and defense expenses. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or Owner.

C. OTHER INSURANCE PROVISIONS

Contractor's insurance policies are to contain, or be endorsed to contain, the following provisions:

1. The coverage shall contain no special limitations on the scope of protection afforded to the Owner, its officers, officials, employees, or volunteers.
2. The County of Fresno, its officers, officials, employees, and volunteers are to be named individually and collectively, as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts, or equipment furnished in connection with such work or operations and automobiles owned, leased, hired, or borrowed by or on behalf of the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Owner, its officers, officials, employees, or volunteers.
3. The insurer shall agree to waive all rights of subrogation against the Owner, its officers, officials, employees, and volunteers for losses arising from work performed by the Contractor for the Owner.
4. For any claims related to this project, the Contractor's insurance coverage shall be primary insurance coverage at least as broad as ISO CG 20 01 04 13 as respects the Owner, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the Owner, its officers, officials, employees, or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.
5. Any failure to comply with reporting provisions of the policies shall not affect Coverage provided to the Owner, its officers, officials, employees, agents, Engineers, Consulting Engineers, or volunteers.
6. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

7. All Contractor's insurance policies for coverage required under this agreement shall not be cancelled or changed, such as a reduction in coverage, without a minimum of thirty (30) days advance written notice given to Owner.
8. The insurer shall agree to waive all rights of subrogation against the Owner, its officers, officials, employees, and volunteers for losses arising from work performed by the Contractor for the Owner.
9. The Builder's Risk (Course of Construction) policy shall be an "All Risk" (Special Perils) coverage form, with limits equal to the completed value of the project and no coinsurance penalty provisions. All subcontractors shall be insured to the extent of their portion of the work under the Contractor. The Contractor shall request, and is responsible to confirm with its insurer, that the County of Fresno and all subcontractors are named, both as additional insured and as additional loss payees, on the Builder's Risk insurance policy. The Contractor and all subcontractors waive all rights, each against the others, for damages arising from perils covered by the insurance required under the terms of this article, except such rights as they may have to the proceeds of the Builder's Risk insurance obtained and maintained by the Contractor.

D. ACCEPTABILITY OF INSURERS

Contractor shall obtain the policies and coverages specified herein from an admitted insurer in good standing with and authorized to transact business in this state by the California Department of Insurance, and having a Best's rating of no less than A FSC VIII.

E. SUBCONTRACTORS

Contractor shall include all Subcontractors as insured under its policies or shall furnish separate certificates and endorsements for each Subcontractor.

F. EVIDENCE OF COVERAGE

Within ten (10) days of bid award, Contractor shall furnish the Owner with original Certificates of Insurance including all required amendatory endorsements (or copies of the applicable policy language effecting coverage required by this Article 2.40) and a copy of the Declarations and Endorsement Page of the CGL policy listing all policy endorsements to Owner. However, failure to obtain the required documents prior to the work beginning shall not waive the Contractor's obligation to provide them. The Owner reserves the right to require complete, certified copies of all required insurance policies, including endorsements, required by these specifications, at any time.

Certificates of Insurance and Endorsements for all policies must be signed by a person authorized by the insurer to bind coverage on its behalf, indicate the name and address of the official who will administer this contract, state that such insurance coverages have been obtained and are in full force and effect, and clearly indicate that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice has been given to the Owner.

Commercial General Liability Endorsements must name the County of Fresno, its officers, agents and employees, individually and collectively, as additional insured, but only insofar as the operations under this Agreement are concerned; that such coverage for additional insured shall apply as primary insurance and any other insurance, or self-insurance, maintained by Owner, its officers, agents and employees, shall be excess only and not contributing with insurance provided under Contractor's policies herein.

2.41 UNCOVERING WORK

- A. This Section shall apply to any Work installed and covered up by the Contractor that is required by the Building Code or other statutory or regulatory requirement to undergo inspection or special inspection and/or testing approval by an appropriate official representing the Owner or other public authority having jurisdiction to conduct such inspection and/or testing. Work covered up by the Contractor, Contractor's Subcontractors, or Suppliers prior to inspection/special inspection and/or testing approval shall be uncovered and repaired or replaced after inspection approval at the sole expense of the Contractor. This shall apply to all labor and material needed to complete both physical and cosmetic repairs, and any additional inspection costs associated with restoring the Work.
- B. This Section also shall apply to any Work installed and covered up by the Contractor, Contractor's Subcontractors, or Suppliers that is determined by the Owner or its Project Manager, during construction or within the Warranty period, to be defective, broken, or inoperative. Work covered up by the Contractor, Contractor's Subcontractors, or Suppliers that is found to be defective, broken, or inoperative shall be uncovered and repaired or replaced at the sole expense of the Contractor. This shall apply to all labor and material needed to complete both physical and cosmetic repairs, and any additional inspection costs associated with restoring the Work.

2.42 CORRECTION OF WORK

- A. The Contractor shall promptly correct all Work rejected by the Project Manager as defective or as failing to conform to the Contract Documents, whether or not fabricated, installed, or completed. The Contractor shall submit a plan of action, within twenty-four (24) hours of notification of the rejected work by the Project Manager, for correcting the rejected work. The Contractor shall bear all costs of correcting such rejected Work, including compensation for the additional architectural and/or engineering services made necessary thereby.

- B. If, within 365 Calendar Days after the date of acceptance of the Work as specified in the Notice of Completion, or designated portion thereof, or within 365 Calendar Days after acceptance by the Owner of designated equipment, or within such longer period of time as may be prescribed by the terms of any applicable special warranty required by the Contract Documents, any of the Work is found by Owner to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. This obligation shall survive both final payment for the Work or designated portion thereof and termination of the Contract. The Owner shall give such notice promptly after discovery of the condition.
- C. The Contractor shall, at his/her sole expense, remove from the site all portions of the Work that are defective or nonconforming and which have not been corrected under Articles 2.32, 2.42.A, and 2.42.B, unless the Owner waives removal.
- D. If the Contractor fails to submit a plan of action, within twenty-four (24) hours of notification of the rejected work by the Project Manager, for correcting the rejected work, or fails to correct defective or nonconforming Work as provided herein in Articles 2.32, 2.42.A, and 2.42.B, the Owner may correct it in accordance with Article 2.08.C.
- E. If the Contractor does not take action under the plan to initiate such correction of such defective or nonconforming Work within ten (10) days of written notice from the Project Manager, the Owner may remove it and may store the materials or equipment at the expense of the Contractor. If the Contractor does not pay the cost of such removal and storage within ten (10) days thereafter, the Owner may, upon ten (10) additional days' written notice, sell such Work at auction or at private sale and shall account for the proceeds thereof, after deducting all the costs that should have been borne by the Contractor, including compensation for the Project Manager, Architect, or other Professional's additional services made necessary thereby. If such proceeds of sale do not cover all costs that the Contractor should have borne, the difference shall be charged to the Contractor and an appropriate Supplemental Work Order shall be issued. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.
- F. The Contractor shall bear the cost of making good all work of the Owner or separate contractors destroyed or damaged by such correction or removal.

- G. Nothing contained in this Section 2.42 shall be construed to establish a period of limitation with respect to any other obligation which the Contractor might have under the Contract Documents, including Section 2.32 hereof. The establishment of the time periods noted in this Section 2.42, or such longer period of time as may be prescribed by law or by the terms of any warranty required by the Contract Documents, relates only to the specific obligation of the Contractor to correct the defective or nonconforming Work, and has no relationship to the time within which the Contractor's obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the defective or nonconforming Work.

2.43 ACCEPTANCE OF DEFECTIVE OR NONCONFORMING WORK

If the Owner prefers to accept defective or nonconforming Work, the Owner may do so instead of requiring its removal and correction, in which case a Contract Change Order will be issued to reflect a reduction in the Contract Sum where appropriate and equitable. Such adjustment shall be given effect whether or not final payment has been made. The Project Manager shall determine the amount of reduction in the Contract Sum.

2.44 TERMINATION BY THE OWNER

- A. If the Contractor is adjudged bankrupt, or makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of the Contractor's insolvency, or stop notices are served upon the Owner, or if the Contractor persistently or repeatedly refuses or fails, except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or fails to make prompt payment to Subcontractors or for materials or labor, or persistently disregards applicable laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction, or otherwise is guilty of a substantial violation of a provision of the Contract Documents, and fails after written notice to commence and continue correction of such default, neglect, or violation with diligence and promptness, the Owner upon certification by the Project Manager that sufficient cause exists to justify such action, may, after an additional written notice and without prejudice to any other remedy the Owner may have, terminate the Contract and take possession of all materials, equipment, tools, construction equipment, and machinery thereon owned by the Contractor and may finish the Work by whatever methods the Owner may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the Work is finished.

- B. If the unpaid balance of the Contract Sum exceeds the costs of finishing the Work, including compensation for the Project Manager's and Architect's additional services made necessary thereby, Contractor will only be paid for his/her actual unpaid costs from such excess. If such costs exceed the unpaid balance, the contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or to the Owner, as the case may be, shall be certified by the Project Manager, upon application, in the manner provided in Section 2.24 and this obligation for payment shall survive the termination of the Contract.

2.45 SUBSTITUTION OF MATERIALS

- A. When a specific manufacturer, trade name, or material is specified, or indicated, it is to establish a standard of quality and shall not be construed as limiting competition. The intent of the Contract Documents is to specify high-grade standard material and equipment, and it is not the intent of these Contract Documents to exclude or omit the products of any responsible manufacturer, if such products are equally acceptable in terms of quality, finish, performance, durability, and serviceability, in the judgment of the Owner and the Architect, to those specified herein. Wherever an article, or any class of materials, is specified by the trade name or by the name of any particular patentee, manufacturer, or dealer, it shall be taken as intending to mean and specify the article of material described or any other equal thereto in quality, finish, performance, durability, and serviceability, in the judgment of the Owner and the Architect, for the purpose for which it is or they are intended.
- B. If the Contractor desires to use material or equipment other than that specified, he/she shall submit a request for approval of such substitution, in writing, with the substitution request that provides that substitution (1) causes no delay and (2) is of equal or better quality and suitability. The request for approval of substitution shall be submitted either:
- a. Ten (10) days prior to bid opening to DesignServices@fresnocountyca.gov; or
 - b. To the Project Manager with a time period that (1) follows Contract award, (2) allows for thirty days for review, and (3) causes no delays.

Substitution requests will not be considered if received after the time stipulated.

- C. The Owner does not guarantee that alternative articles, components, materials, or equipment other than the item specified by trade name or other specific identification, will fit within the design parameters of the Project without alteration of the Project design by the Contractor.
- D. The Owner has the right to reject any proposed alternative material which requires alteration of the project design which impacts the safety of the public or the user of a completed facility. If the proposed alternative material requires alteration of the design of the Project or any aspect thereof, and said alterations are acceptable to the Owner, the Contractor shall be responsible for performing said alterations at no additional cost to the Owner.

- E. Submittals for approval of substitute materials shall contain sufficient detailed information, descriptive brochures, drawings, samples, or other data as is necessary to provide a detailed side-by-side comparison to the specified materials. It is the sole responsibility of the Contractor to submit complete descriptive and technical information so the Project Manager can make proper appraisal. Lack of either proper or sufficient information shall constitute cause for rejection. Reference to product data will not be acceptable.
- F. It is the Contractor's responsibility to confirm and correlate all quantities and dimensions, and coordinate with all trades whose work may be affected by the requested substitution.

2.46 REFERENCE TO STANDARDS

- A. Reference to known standards shall mean and intend the latest edition or amendment published prior to date of these Specifications, unless specifically indicated otherwise, and to such portions of it that relate and apply directly to the material or installation called for on the Project.
- B. Where material is specified solely by reference to standard specifications, the Contractor shall, if requested by the Project Manager, submit to the Project Manager for his/her approval, data on all such material proposed to be incorporated into the Work of the Contractor, listing the name and address of the vendor, the manufacturer or producer, and the trade or brand names of such materials.

2.47 SPECIFICATIONS

- A. The Specifications are organized into Divisions, Sections, and Trade headings based on the Construction Specifications Institute's Master format and the Master format numbering system. This organization shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of the Work to be performed by any trade. The Contractor shall be responsible for examining all Sections of the Specifications for interrelated items of the Work, and for furnishing each item identified or specified.
- B. No responsibility will be assumed by the Owner, Architect, or the Project Manager for omissions or duplications by the Contractor in the completion of the Contract due to any alleged discrepancy in the arrangement of the material in these Specifications, nor shall any such segregation of work and materials operate to make the Project Manager an arbiter in defining the limits to the agreements between the Contractor and his/her Subcontractors or suppliers.
- C. The misplacement, addition, or omission of any letter, word, or punctuation mark shall in no way damage the true spirit, intent, or meaning of these Specifications.
- D. The words "shown", "indicated", "noted", "scheduled" or words of that effect shall be understood to mean that reference is made to Drawings accompanying these Specifications.

- E. Where reference herein is made to colors or finishes "as selected", the reference is to the Architect with concurrence by the Owner.

2.48 APPROVED APPLICATORS

- A. Where specific instructions in these Specifications require that a particular product and/or materials be installed and/or applied by an "approved applicator" of the manufacturer, it shall be the Contractor's responsibility to ensure that any Subcontractors used for such work be approved applicators.
- B. Contractor accordingly shall bear any and all costs, and shall reimburse Owner for any such costs incurred by Owner, resulting from Contractor's failure to insure the use of an "approved applicator".

2.49 DELIVERY AND STORAGE OF MATERIALS

- A. Deliver all manufactured materials in the original packages, containers, or bundles (with the seals intact), bearing the name or identification mark of all manufacturers.
- B. Deliver fabrications in as large assemblies as practicable and where specified to be shop-primed or shop-finished; they shall be packaged or crated as required to preserve such priming or finish intact and free from abrasion.
- C. Store all materials in such manner as necessary to properly protect same from damage, as materials or equipment damaged by handling, weather, dirt or from any other cause will not be acceptable.
- D. Store materials so as to cause no obstructions (i.e. stored off all sidewalks and other walkways, roadways, and underground services). The Contractor shall be responsible for protecting from damage all material and equipment furnished under the Contract.

2.50 QUALITY OF WORK

- A. Where not more specifically described in any of the various Sections of these Specifications, the quality of work shall conform to all of the methods and operations of best standards and accepted practices of the trade or trades involved, and shall include all items of fabrication, construction, or installation regularly furnished or required for completion of the work (including any finish), and for successful operation as intended of the Project and the component thereof corresponding to that work.
- B. All Work shall be executed by mechanics skilled in their respective lines of work.
- C. When completed, all parts shall have been durably and substantially built and shall present a neat, finished appearance.

2.51 HOURS OF WORK

- A. Eight (8) hours of labor shall constitute a legal day's work upon all work done hereunder, and it is expressly stipulated that no worker employed at any time by the Contractor, or by a Subcontractor under this Contract, upon the Work, shall be required or permitted to work thereon more than eight (8) hours in any one (1) calendar day and forty (40) hours in any one (1) calendar week, except as provided in Sections 1810-1815 inclusive, of the Labor Code of the State of California, all the provisions of which are deemed to be incorporated herein as if set forth in full; and it is further expressly stipulated that for each and every violation of said last named stipulation, said Contractor shall forfeit, as a penalty to the Owner, fifty dollars (\$50.00) for each worker employed by the Contractor in the execution of this Contract, for each calendar day during which said worker is required or permitted to labor more than eight (8) hours in any one (1) calendar day and forty (40) hours in any one (1) calendar week in violation of any of said provisions of the Labor Code.
- B. Notwithstanding the above stipulations, pursuant to Section 1815 of the Labor Code, work performed by employees of contractors in excess of eight (8) hours per day and forty (40) hours during any one (1) week shall be permitted on the Project upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and a half (1 1/2) times the basic rate of pay.

2.52 WAGE RATES AND RELATED LABOR COMPLIANCE REQUIREMENTS

- A. This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations (DIR), including the obligation to submit certified payroll records directly to the DIR Compliance Monitoring Unit (CMU) at least monthly using the CMU's eCPR system. Detailed information may be obtained on the State of California's Department of Industrial Relations website, www.dir.ca.gov/dlse/cmu/CMU.

The Contractor shall also submit certified payroll records of the Contractor, Subcontractors, and all Sub-subcontractors of any tier to the Inspector of Record at least monthly.

- B. The Contractor shall also keep accurate payroll records and submit certified payroll records of the Contractor, Subcontractors, and all Sub-subcontractors of any tier to the Inspector of Record at least monthly. Include:
 - 1. Each employee's:
 - a. Full name
 - b. Address
 - c. Last four digits of social security number pursuant to Labor Code Section 226(a)
 - d. Work classification
 - e. Straight time and overtime hours worked each day and week
 - f. Actual wages paid for each day to each:
 - i. Journeyman
 - ii. Apprentice
 - iii. Worker

- iv. Other employee you employ for the work
 - g. Pay rate
 - h. Itemized deductions made
 - i. Check number issued
 - 2. Apprentices and the apprentice-to-journeyman ratio
- C. Each certified payroll record must include a Statement of Compliance signed under penalty of perjury that declares:
 - 1. Information contained in the payroll record is true, correct, and complete
 - 2. Employer has complied with the requirements of sections 1771, 1811, and 1815 for any work performed by his or her employees on the public works project
 - 3. Wage rates paid are at least those required by the Contract
- D. Submitted certified payrolls for hauling and delivering ready-mixed concrete must be accompanied by a written time record. The time record must include:
 - 1. Truck driver's full name and address
 - 2. Name and address of the factory or batching plant
 - 3. Time the concrete was loaded at the factory or batching plant
 - 4. Time the truck returned to the factory or batching plant
 - 5. Truck driver's signature certifying under penalty of perjury that the information contained in this written time record is true and correct
- E. Contractor shall, and shall cause each of its Subcontractors (as defined in Labor Code Section 1722.1) to provide written proof that they are currently registered with the California Department of Industrial Relations at the time of bid submittal, and have paid the applicable annual fee and are thereby qualified to submit a bid and to perform public work pursuant to Labor Code Section 1725.5, prior to award of this Contract or any subcontract hereunder. No bid shall be accepted, nor shall this Contract or any subcontract hereunder, be entered into without such proof.
- F. Pursuant to Section 1770-1780 of the Labor Code of the State of California, the Director of the Department of Industrial Relations has determined the general prevailing rates of wages and rates for legal holidays and overtime in the locality in which this work is to be performed, which under Labor Code Section 1773.1 are deemed to include employer payments for health and welfare, pension, vacation, travel time, and subsistence pay, and apprenticeship or other authorized training programs, for each craft or type of worker or mechanic needed to perform this contract. Said wage rates are available only at the Fresno County Department of Public Works and Planning, Design Division, and will be made available to any interested person upon

request. Minimum wage rates for this Project, as predetermined by the Secretary of Labor, are set forth in the Special Provisions. If there is a difference between the minimum wage rates predetermined by the Secretary of Labor and the Prevailing Wage Rates predetermined by the Director of the Department of Industrial Relations of the State of California for similar classifications of labor, the contractor and his subcontractors shall pay not less than the higher wage rate.

- G. It shall be mandatory upon the Contractor to whom the Contract is awarded, and upon any Subcontractor under him/her, to pay not less than the said specified rates to all laborers, workers, and mechanics employed by them in the execution of the Contract, and to pay all laborers, workers, and mechanics not less often than once weekly. The Contractor to whom the Contract is awarded shall post a copy of the determination of prevailing wages at the job site. The Contractor shall require all Subcontractors to comply with Sections 1770-1780 of the Labor Code of the State of California and shall insert into every subcontract the requirements contained therein.
- H. The Contractor shall comply with Labor Code Section 1775. In accordance with said Section 1775, it is hereby further agreed that the Contractor shall forfeit to the Owner, as a penalty, fifty dollars (\$50.00) for each laborer, worker, or mechanic employed for each calendar day or portion thereof, who is paid less than the said stipulated rates for any work done under the Contract, by him/her, or by any Subcontractor under him/her. The difference between said stipulated rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than said stipulated rate, shall be paid to each worker by the Contractor. The Contractor, and each Subcontractor, shall keep or cause to be kept an accurate record showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker or other employee employed by him/her in connection with the public work. The records shall be open at all reasonable hours to the inspection of the Owner, to its officers and agents, and to the Division of Labor Law Enforcement of the State Department of Industrial Relations, its deputies and agents, or as otherwise provided by applicable law (including but not limited to Labor Code Section 1776).
- I. In case it becomes necessary for the Contractor or any Subcontractor to employ on the Work under this Contract any person in a trade or occupation (except executive, supervisory, administrative, clerical, or other non-manual workers as such) for which no minimum wage rate is specified, the Contractor shall immediately notify the Owner, who shall promptly thereafter determine the prevailing rate for such additional trade or occupation from the time of the initial employment of the person affected and during the continuance of such employment.
- J. Submit certified payroll records electronically and maintain current information on Labor Compliance using the Department's contracted certified payroll internet system LCPTracker Pro. The contractor and their subcontractors acknowledge and agree that maintaining the LCP Tracker with current information on labor compliance is mandatory. For information on submittal of certified payroll records and maintaining information using LCPTracker Pro, go to the LCPTracker website, <https://www.lcptracker.com/solutions/lcptracker>, or

contact LCPtracker Phone Support at (714) 669-0052, Monday thru Friday 5:00 A.M. - 5:30 P.M. PST.

Request user account for your designated representative by submitting LCPtracker Vendor Access Request form.

- K. Make certified payroll records available for inspection at all reasonable hours at your main office on the following basis:
 - 1. Upon the employee's request or upon request of the employee's authorized representative, make available for inspection a certified copy of the employee's payroll record.
 - 2. Refer the public's requests for certified payroll records to the Department. Upon the public's request, the Department makes available for inspection or furnishes copies of your certified payroll records. Do not give the public access to the records at your main office.
- L. Make all payroll records, including employee's complete social security number, available for inspection and copying or furnish a copy upon request of a representative of the:
 - 1. Department
 - 2. Division of Labor Standards Enforcement of the Department of Industrial Relations
 - 3. Division of Apprenticeship Standards of the Department of Industrial Relations
- M. Furnish the Department the location of the records. Include the street address, city, and county. Furnish the Department a notification of a location and address change within five (5) business days of the change.
- N. Comply with a request for the records within ten (10) days after you receive a written request. If you do not comply within this period, the Department withholds from progress payments a one hundred dollar (\$100) penalty for each day or part of a day for each worker until you comply. You are not assessed this penalty for a subcontractor's failure to comply with Labor Code Section 1776.

2.53 APPLICATION OF HIGHEST STANDARDS AND REQUIREMENTS

Whenever two (2) or more standards or requirements appear in these General Conditions or in any other part of the Contract Documents that form the Contract, the highest standard or requirement shall be applied and followed in the performance under this Contract.

2.54 NONDISCRIMINATION IN EMPLOYMENT

Contractor shall comply with all Federal and State Laws prohibiting discrimination in employment, including the following:

- A. California Labor Code Section 1735, which prohibits discrimination in employment on any basis listed in subdivision (a) of Section 12940 of the Government Code, as those bases are defined in Sections 12926 and 12926.1 of the Government Code, except as otherwise provided in Section 12940 of the Government Code, and applies to all employers, employment agencies and labor organizations.
- B. Title VII of the Federal 1964 Civil Rights Act (42 U.S.C. Section 2000e - 2000e - 17) which prohibits employment discrimination on the basis of race, color, sex, religion, or national origin, and applies to all employers that employ at least fifteen (15) workers during each working day in each of twenty (20) or more calendar weeks in the current or preceding year.
- C. In addition to these two (2) laws of general application listed in the immediately preceding paragraphs A and B, there are other Federal and State laws that prohibit employment discrimination in particular cases.
- D. The Owner is an Affirmative Action Employer and expects all of its contractors and suppliers to familiarize themselves with, and comply with, all applicable laws relating to employment discrimination.
- E. To the extent required by law, the Contractor shall meet all requirements of law relating to the participation of minority, women, and disabled veteran business enterprise contracting goals, and shall comply with Public Contract Code 10115 et seq. and all applicable regulations. Contractor further agrees that, when required, Contractor shall ensure compliance by all Subcontractors and shall complete all forms required by all agencies exercising jurisdiction over the Project.

2.55 APPRENTICES

- A. Pursuant to Sections 1770-1780 of the Labor Code of the State of California, the Director of the Department of Industrial Relations has determined the general prevailing rate of wages in the locality for each craft or type of worker needed to execute the work. Said wage rates pursuant to Section 1773.2 of the Labor Code are on file with the Clerk of the Fresno County Board of Supervisors, and will be made available to any interested person on request. A copy of this wage scale may also be obtained at the following website: <https://www.dir.ca.gov/OPRL/>.
- B. Pursuant to Section 1775 of the Labor Code of the State of California, nothing in this Article shall prevent the employment of properly registered apprentices upon public works. Every such apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he/she is employed, and shall be employed only at the work of the craft or trade to which he/she is registered.
- C. Only apprentices, as defined in Section 3077, who are in training under apprenticeship standards and written apprentice agreements under Chapter 4 (commencing at Section 3070), Division 3, of the Labor Code, are eligible to be employed on public works. The employment and training of each apprentice

shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which he/she is training.

2.56 PROVISIONS REQUIRED BY LAW DEEMED INSERTED

Every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted, and this contract shall be read and enforced as though it were included, and if through mistake or otherwise, any provision is not inserted or is not correctly inserted, upon application of either party the contract shall be amended to make the insertion or correction.

2.57 DRUG-FREE WORKPLACE CERTIFICATION

- A. The Contractor shall comply with Government Code Section 8355 in matters relating to providing a drug-free workplace.
- B. The Contractor shall publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession, or use of controlled substance is prohibited, and specifying actions to be taken against employees for violations, as required by Government Code Section 8355(a).
- C. The Contractor shall establish a Drug-Free Awareness Program as required by Government Code 8355(a)(2), to inform employees about all of the following:
 - 1. The dangers of drug abuse in the workplace,
 - 2. The Contractor's policy for maintaining a drug-free workplace,
 - 3. Any available counseling, rehabilitation, and employee assistance programs,
 - 4. Penalties that may be imposed upon employees for drug abuse violations.
- D. Provide as required by Government Code 8355(c), that everyone who provides work under the Agreement:
 - 1. Will receive a copy of the company's drug-free policy statement, and
 - 2. Will agree to abide by the terms of the Contractor's statement as a condition of employment on the contract.

2.58 BUILDING PERMIT AND OTHER PERMITS

The Building permit shall be obtained and paid for by the Owner. All other required permits are the responsibility of the Contractor to obtain. Fees for all other required permits shall be reimbursed to the Contractor at actual cost when the County is presented with a valid receipt.

2.59 CODES AND REGULATIONS

All work, materials, and equipment shall be in full compliance with the California Building Code; California Plumbing Code; California Electrical Code; California Mechanical Code; California Fire Code; California Energy Code; as those codes may be amended from time to time; Cal/OSHA Safety Regulations; and all Federal, State, and Local laws, ordinances, regulations and Fresno County Charter provisions in effect and applicable in the performance of the work.

END OF SECTION

Technical Specifications

TECHNICAL SPECIFICATIONS

FRESNO COUNTY LIBRARY CENTRAL LIBRARY CEILING & LIGHTING UPGRADES

2420 MARIPOSA STREET, FRESNO, CA 93721

FOR
COUNTY OF FRESNO
Department of Public Works and Planning
FRESNO, CALIFORNIA

Contract Number: 25-S-01

Prepared by

BORRELLI AND ASSOCIATES, INC

Date of Issue
10/23/2025

TECHNICAL SPECIFICATIONS TABLE OF CONTENTS

DIVISION 01:

GENERAL INFORMATION

01 10 00	Summary
01 25 00	Substitution Procedures
01 31 00	Project Management and Coordination
01 33 23	Submittal Procedures
01 35 43	Special Procedures for Hazardous Materials
01 40 00	Quality Requirements
01 50 00	Temporary Facilities and Controls
01 73 00	Execution
01 71 13	Mobilization, Site Maintenance, Demobilization
01 74 19	Construction Waste Management and Disposal
01 77 19	Project Closeout
01 78 36	Warranties and Bonds
01 78 39	Project Record Documents

DIVISION 02:

EXISTING CONDITIONS

02 41 20	Selective Component Demolition
02 81 13	Removal Hazardous Material/ Hazmat Survey
02 83 19	Lead-Based Paint Encapsulation

DIVISION 08:

OPENINGS

08 11 00	Prefinished Steel Door Frames
08 71 00	Door Hardware

DIVISION 09:

FINISHES

09 29 00	Gypsum Board
09 81 00	Acoustical Ceilings
09 90 00	Paint

DIVISION 20:

GENERAL MECHANICAL PROVISIONS

20 01 00	General Mechanical Provisions

DIVISION 21:

FIRE SUPPRESSION

21 00 00	Fire Sprinkler Systems

DIVISION 22:

PLUMBING

22 04 00	Plumbing

DIVISION 26:

ELECTRICAL

26 00 00	General Electrical Requirements

26 05 00	Basic Electrical Material And Methods
26 05 26	Grounding
26 05 29	Hangers and Support for Electrical Systems
26 05 48	Vibration And Seismic controls for Electrical Systems
26 08 00	Commissioning of Electrical Systems
26 24 16	Panelboards
26 50 00	Lighting

SECTION 011000 - SUMMARY**PART 1 - GENERAL****1.1 RELATED DOCUMENTS 1**

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

1.2 SUMMARY

- A. Section Includes:

- 1. Project information.
- 2. Work covered by Contract Documents.
- 3. Work required but not shown.
- 4. Governing documents, codes, and standards.
- 5. Conflicts/Clarifications
- 6. Access to site.
- 7. Work restrictions.
- 8. Specification and drawing conventions.

1.3 PROJECT INFORMATION

- A. Project Identification: Fresno County Library – Central Library Ceiling and Lighting Upgrades

- 1. Project Location: 2420 Mariposa street, Fresno, CA 93721

- B. Owner:

- 1. Fresno County

- C. Project Engineer:

- 1. County of Fresno, Department of Public Works and Planning

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:

- 1. Central Library Ceiling & Lighting Upgrades
 - a. Replacement of existing lighting fixtures with new lighting fixtures, components, and lighting system.
 - b. Demolition of existing ceilings for basement, first floor and second floor, replacement with new T-Bar, no new ceiling in the basement except where indicated.
 - c. Extension of mechanical ducts to the new ceiling level, new fire smoke dampers as indicated per the plans.
 - d. Addition of power circuits to two break rooms.
 - e. Provide new panels as indicated per the plans.
 - f. Fire sprinkler modifications within the basement per the performance specifications.
 - g. Basement fire rated wall and ceiling replacement in central area.

- h. Complete removal of all asbestos materials.
- i. Contractor to refer to the plans for complete work of the project.

B. Type of Contract:

- 1. Project will be constructed under a single prime contract.

1.5 WORK REQUIRED BUT NOT SHOWN

B. The following items not shown on the drawings and/or described in the specifications shall be done by the Contractor and are included in the General Scope of the Work:

- 1. Contractor shall coordinate locations of all piping, electrical work and other items required to be installed in overhead, wall or room spaces. Carefully study all drawings, and request permission for sleeves, cutouts, etc., wherever required for proper installation and clearances.
- 2. Provide drawings showing vertical sections through building wherever required to assure that overhead clearances will not be impaired. These requirements shall apply both to subcontracted and assigned work. Impairment of clearances in equipment rooms and similar spaces will not be permitted.
- 3. Provide coordination drawings, plans and sections as necessary, showing the relationships between the structure and the systems to be installed. Ensure routing of the services is coordinated and that the routings are not in conflict with each other.

1.6 GOVERNING DOCUMENTS, CODES, AND STANDARDS

A. All work shall be done in strict accordance with:

- 1. First: Permits as may be required by law.
- 2. Second: Addenda
- 3. Third: Technical Specifications
- 4. Fourth: Plans
- 5. Fifth: General Requirements, Division 1
- 6. Sixth: 2023 State Standard Specifications
- 7. Seventh: Reference Documents

1.7 CONFLICTS/CLARIFICATIONS

A. Contract Drawings and Specifications

1. Relationship of Drawings and Specifications:
 - a. The Drawings and Specifications taken together are the Contract Documents for this project. In the case of a discrepancy between the two, the more stringent will apply.
 - b. The Drawings and Specifications are meant to be supplementary and complementary to each other.
 - 1) That which is shown on the Drawings but not shown in the Specifications shall be provided the same as if shown in both places and to the same standard of quality as for similar items.
 - 2) That which is shown in the Specifications but not shown on the Drawings shall be provided the same as if shown in both places and to the same extent as for similar items.
 - 3) Drawings show extent, location, dimension, relationship among various parts, and quantity of items.
 - 4) Specifications show quality, trade names, generic names and workmanship standards.
2. Specifications:
 - a. The Specifications consist of several parts, which are intended to complement each other so that when taken together they provide the complete project requirements.
 - b. Specifications are of the abbreviated type and include incomplete sentences; all instructions are directed to the Contractor even though such phrases as "the Contractor shall," or "shall be done by the Contractor" have been omitted.
 - c. Terms such as "directed," "required," "selected," "permitted," "approved," "acceptable," "satisfactory," and the like mean by the Engineer, unless otherwise indicated.
 - d. Terms such as "shown," "indicated," "detailed," and the like mean upon the Drawings.
 - e. The terms "provide" or "furnish" mean complete and in place.
 - f. The Scope paragraph, or similar paragraphs that describe the work, in each Section is intended to serve as an index of those items specified within the Section, as a locator for those items which are similar or are interfaces as specified elsewhere, and as a reminder of the inclusion of requirements of all documents; the index may not be complete; all products, equipment and labor necessary for a complete, safe and operating project are implied if not fully mentioned.

- B. See also **GENERAL PROVISIONS** of the Special Provisions for additional information and requirements.

1.8 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of

Project.

- B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.9 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Engineer not less than two days in advance of proposed utility interruptions.
 - 2. Obtain Engineer's written permission before proceeding with utility interruptions.
- C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Engineer.
 - 1. Notify Engineer & adjacent residents not less than two days in advance of proposed disruptive operations.
 - 2. Obtain Engineer's written permission before proceeding with disruptive operations.
- D. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.
 - 1. Maintain list of approved screened personnel with Owner's representative.

1.10 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 012500 - SUBSTITUTION PROCEDURES**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor. Unless substitution is expressly precluded in the Special Provisions, a reference to a specific brand or trade name establishes a quality standard and is not intended to limit competition.
Unless the Department has made a public interest finding expressly authorizing sole source procurement of a particular item, you may use a product that is equal to or better than the specified brand or trade name if authorized.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer an advantage to Contractor or Owner.
- B. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- C. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

- D. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.
- E. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit PDF copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Request Form: Use CSI Form 13.1A.
 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of Engineers and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with

- j. building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Engineer will notify Contractor through County of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Engineer's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Engineer does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals. Request must allow a minimum of 30 days for review.
 - 1. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution is consistent with Contract Award.
 - c. Requested substitution provides sustainable design characteristics that specified product provided.
 - d. Substitution request is fully documented and properly submitted.

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION**PART 1 – GENERAL****1.1 RELATED DOCUMENTS**

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

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

General coordination procedures.
Coordination drawings.
Requests for Information (RFIs).
Project meetings.

- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

- C. Related Requirements:

Section 01 73 00 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
Section 01 77 19 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. RFI: Request from Owner, Engineer, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Key Personnel Names: At least 15 days prior to starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each

other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

1.6 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Engineer will return RFIs submitted to Engineer by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Engineer
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested

resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.

12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Engineer.
1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow seven working days for Engineer's response for each RFI. RFIs received by Engineer after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Engineer's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
 2. Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt of additional information.
 3. Engineer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal.
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify the Engineer in writing within 10 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Engineer.
 4. RFI number including RFIs that were returned without action

- or withdrawn.
 - 5. RFI description.
 - 6. Date the RFI was submitted.
- F. Date Engineer's response was received.
- G. On receipt of Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Engineer within seven days if Contractor disagrees with response.
- 1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 - 2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.7 PROJECT MEETINGS

- A. General: Engineer will schedule and conduct meetings and conferences at Project site unless otherwise indicated.
- 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times.
 - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 - 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Engineer, within three days of the meeting.
- B. Preconstruction Conference: Engineer will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Project Engineer, but no later than 15 days after execution of the Agreement.
- 1. Conduct the conference to review responsibilities and personnel assignments.
 - 2. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Lines of communications.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for RFIs.

- h. Procedures for testing and inspecting.
 - i. Procedures for processing Applications for Payment.
 - j. Distribution of the Contract Documents.
 - k. Submittal procedures.
 - l. Preparation of record documents.
 - m. Use of the premises.
 - n. Work restrictions.
 - o. Working hours.
 - p. Owner's occupancy requirements.
 - q. Responsibility for temporary facilities and controls.
 - r. Procedures for disruptions and shutdowns.
 - s. Construction waste management and recycling.
 - t. Parking availability.
 - u. Office, work, and storage areas.
 - v. Equipment deliveries and priorities.
 - w. First aid.
 - x. Security.
 - y. Progress cleaning.
- C. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Engineer of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility requirements.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written instructions.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.

- t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
- 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
- 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
- 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: Engineer will schedule and conduct a project closeout conference, at a time
- E. convenient to Owner and Engineer, but no later than 90 days prior to the scheduled date of Substantial Completion.
 - 1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 - 2. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of record documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Submittal of written warranties.
 - d. Requirements for preparing operations and maintenance data.
 - e. Requirements for delivery of material samples, attic stock, and spare parts.
 - f. Requirements for demonstration and training.
 - g. Preparation of Contractor's punch list.
 - h. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - i. Submittal procedures.
 - j. Responsibility for removing temporary facilities and controls.
 - 4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- F. Progress Meetings: Engineer will conduct progress meetings at weekly intervals.
 - 1. Coordinate dates of meetings with preparation of payment requests.
 - 2. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current

progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of proposal requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 –PRODUCTS (Not Used)
PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 013323 – SUBMITTAL PROCEDURES**PART 1 - GENERAL****1.1 RELATED DOCUMENTS:**

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

1.2 SUMMARY:

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Mill Certificates, Samples, and other miscellaneous submittals.

1.3 DEFINITIONS:

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's approval. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTAL PROCEDURES:

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities and identify on project construction schedule the expected submittal dates and submittal return date.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Processing Time: Allow enough time for submittal review, including time for re-submittals, as follows. Time for review shall commence on the Architect's receipt of submittal.
 - 1. Initial Review: Allow five working days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals.
 - 2. Concurrent Review. Where concurrent review of submittals by Architect's consultants, Owner, or other parties is required, allow ten working days for initial review of each submittal. It is the Contractor's responsibility to track his submittals and notify the Project Manager of submittals not returned to the Contractor within the time specified herein.
 - 3. Allow five working days for processing each resubmittal.
 - 4. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.

The Contractor, in preparing his work schedule, shall allocate time for at least one re-submittal for each submitted item.

- C. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space on label or beside title block to record Contractor's review and approval markings and action taken by Architect (approximately 3" by 3" for Architects approval markings).
 3. Include the following information on label for processing and recording action taken:
 - a. Project name
 - b. Date
 - c. Name and address of Owner
 - d. Name and address of Contractor
 - e. Name and address of subcontractor
 - f. Name and address of supplier
 - g. Name of manufacturer
 - h. Unique identifier, including revision number
 - i. Number and title of appropriate Specification Section
 - j. Drawing number and detail references, as appropriate
- D. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
- E. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.
1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.
 2. On each submittal include Contractor's certification stating that information submitted has been reviewed, complies with requirements of the Contract Documents, and has been coordinated with other related portions of the Work.
 3. Transmittal Form: Provide locations on form for the following information:
 - a. Project name
 - b. Date
 - c. Destination (To:)
 - d. Source (From:)
 - e. Names of subcontractor, manufacturer, and supplier
 - f. Category and type of submittal
 - g. Submittal purpose and description
 - h. Submittal and transmittal distribution record
 - i. Remarks
 - j. Signature of transmitter
- F. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as

necessary for performance of construction activities. Show distribution on transmittal forms.

- G. Use for Construction: Use only final submittals with mark indicating action taken by Architect in connection with construction.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS:

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
1. Number of Copies: Submit six copies of each submittal, unless otherwise indicated. Architect through Project Manager will return two copies. Mark up and retain one returned copy as a Project Record Document. Submit one additional copy for operation and maintenance manuals as required by other sections of these specifications.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations
 - b. Manufacturer's product specifications
 - c. Manufacturer's installation instructions
 - d. Full selection color charts
 - e. Manufacturer's catalog cuts
 - f. Wiring diagrams showing factory-installed wiring
 - g. Printed performance curves
 - h. Operational range diagrams
 - i. Mill reports
 - j. Standard product operating and maintenance manuals
 - k. Compliance with recognized trade association standards
 - l. Compliance with recognized testing agency standards
 - m. Application of testing agency labels and seals
 - n. Notation of coordination requirements
- C. Samples: Prepare physical units of materials or products, including the following:
1. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

2. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Architect's sample where so indicated. Attach label on unexposed side that includes the following:
 - a. Generic description of Sample
 - b. Product name or name of manufacturer
 - c. Sample source
 3. Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, provide the following:
 - a. Size limitations
 - b. Compliance with recognized standards
 - c. Availability
 - d. Delivery time
 4. Number of Samples for Initial Selection: Submit two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect through Construction Inspector will return submittal with options selected.
- D. Contractor's Construction Schedule: At minimum, submit an updated Contractor's Construction Schedule at monthly intervals.

2.2 INFORMATIONAL SUBMITTALS:

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit three copies of each submittal, unless otherwise indicated. Architect will not return copies.
 2. Certificates and Certifications: Provide a notarized statement that includes signature of Contractor, testing agency, or design professional responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of the company.
 3. Test and Inspection Reports: Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service. Tests and Inspection Reports are to be performed by a testing agency with experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548.
- B. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- C. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

- E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
- F. Mill Certificates: provide testing data regarding the fabrication and strength of metal products. Mill Certificates shall be less than 1 year old.
- G. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.
- H. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- I. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.
- J. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- K. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization
 - 2. Date of evaluation
 - 3. Time period when report is in effect
 - 4. Product and manufacturers' names
 - 5. Description of product
 - 6. Test procedures and results
 - 7. Limitations of use
- L. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- M. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
 - 1. Preparation of substrates
 - 2. Required substrate tolerances
 - 3. Sequence of installation or erection
 - 4. Required installation tolerances
 - 5. Required adjustments
 - 6. Recommendations for cleaning and protection

PART 3 - EXECUTION**3.1 CONTRACTOR'S REVIEW:**

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Owner.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, coordinated and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION:

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows (or similar terminology):
 - 1. No exceptions taken
Proceed as shown
 - 2. Make corrections noted
Proceed making minor corrections noted
No resubmittal is required
 - 3. Submit specified item
Resubmittal required
 - 4. Revise and resubmit
Resubmittal required
 - 5. Rejected
Resubmittal required
- C. Informational Submittals: Architect will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Architect and Inspector of Record will forward each submittal to appropriate party.
- D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION

SECTION 013543 - SPECIAL PROCEDURES FOR HAZARDOUS MATERIALS**PART 1: GENERAL****1.01 DESCRIPTION**

- A. This Section is to describe requirements which apply to the Technical Sections, wherein the Hazardous Material requirements demand cooperation.

PART 2: COORDINATION REQUIRED BY VARIOUS PARTIES**2.01 CATEGORIES REQUIRING COORDINATION**

- A. Removal (or demolition) of fluorescent fixture containing ballasts with PCBs and/or fluorescent tubes containing mercury.
1. This condition requires cooperation between various subcontractors, and the abatement contractor.
 2. The first step is disconnecting the power to the fixture, by DIV. 26.
 3. The next step is removal of the fixture by Section 02 41 13 from the ceiling to an interim location at floor level.
 4. While in this interim location, the Abatement Contractor shall remove the hazardous materials. The Abatement Contractor shall dispose of the hazardous materials per instructions.
 5. The light fixture "bodies" shall be moved to disposal bins and shall be removed (along with all the other Removal Materials from the site) by Spec. Section 02 14 13.

PART 3: ABESTOS ABATEMENT**3.01 CONTRACTUAL RELATIONSHIPS**

- A. The abatement contractor shall be a subcontractor to the General Contractor; there will be no direct contractual relationship to the County. All provisions in the Asbestos Abatement requirements shall recognize this relationship.
- B. Krazan & Associates prepared all hazmat survey documents in this Project Manual, Section 02 41 13. All technical questions during the abatement work shall be directed to Krazan & Associates, and all submittals required by the abatement specifications shall be directed to Krazan & Associates.
- C. Tommy Leon of Leon Environmental Services 4545 N. Brawley Ave Suite #104 Fresno CA 93722 Office: 559-274-9200, Cel: 559-916-5141, email: leonenviro@leonenviro.com will provide monitoring and review services during the abatement process.
- D. Borrelli And Associates, Inc no role in direct asbestos abatement procedures. The abatement contractor shall coordinate all work with other trades.

3.02 APPLICATION OF OTHER PORTIONS OF THE PROJECT MANUAL

- A. All provisions and requirements of the Project Manual Divisions 0 and 1 are applicable to the work

- B. Attention is called to project scheduling. Abatement work shall be done in accord with the requirements of Project Phasing, per that Section. Provide an adequate number of workers and crews as required to meet the Project Schedule.

3.03 MISCELLANEOUS REQUIREMENTS

- A. The scope of the asbestos abatement requires that the subcontractor performing the work of abating asbestos remove all traces of asbestos before the structure are demolished. Refer to Reference Drawing for Existing/Demolition plans for the areas that are required to be removed under this contract.
- B. Take precautions as needed to protect existing surface which are scheduled to remain, and are not otherwise scheduled to be refinished. Should abatement procedures result in damage or marring of adjacent surfaces not otherwise required to be refinished under the General Contract, then this Contractor shall clean and repair such surfaces without extra cost to the Owner.
- C. The data provided by Krazan & Associates, Inc., containing scope of Hazardous Materials removal prior to demolition, lead paint survey and specification for removals are collected and presented in Specification Section 02 41 13, following in this Project manual.

END OF SECTION

SECTION 014000 - QUALITY REQUIREMENTS**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
 - 4. Specific test and inspection requirements are not specified in this Section.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Engineer.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Laboratory Mockups: Full-size physical assemblies constructed at testing facility to verify performance characteristics.
 2. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.
 3. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- 1.4 CONFLICTING REQUIREMENTS
- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Engineer for a decision before proceeding.

- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum
- C. Within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

1.5 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- D. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.

1.6 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Engineer. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
 - 1. Project quality-control manager may also serve as Project superintendent.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
 3. Owner-performed tests and inspections indicated in the Contract Documents.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Engineer has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.7 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of technical representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- C. **Factory-Authorized Service Representative's Reports:** Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement that equipment complies with requirements.
 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 4. Statement whether conditions, products, and installation will affect warranty.
 5. Other required items indicated in individual Specification Sections.
- D. **Permits, Licenses, and Certificates:** For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.8 QUALITY ASSURANCE

- A. **General:** Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. **Manufacturer Qualifications:** A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. **Fabricator Qualifications:** A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. **Installer Qualifications:** A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. **Professional Engineer Qualifications:** A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated.

Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens, assemblies, and mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Engineer with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.9 QUALITY CONTROL

- A. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
 1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01 33 00 "Submittal Procedures."
- C. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and

inspections.

1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
1. Distribution: Distribute schedule to Owner, Engineer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.10 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified testing agency and/or special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
2. Notifying Engineer and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Engineer with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 1. Date test or inspection was conducted.
 2. Description of the Work tested or inspected.
 3. Date test or inspection results were transmitted to Engineer.
 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Engineer's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
- B. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 01 73 00 "Execution."
- C. Protect construction exposed by or for quality-control service activities.
- D. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 015000 – TEMPORARY FACILITIES AND CONTROLS**PART 1 - GENERAL****1.1 RELATED DOCUMENTS:**

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 01 General Requirements, apply to this Section.

1.2 SUMMARY:

- A. This Section specifies requirements for temporary facilities and controls, including utility, construction and support facilities, and security and protection. Furnish and install all required temporary facilities and controls as shown or specified herein plus such facilities as required for proper performance of the Contract. All such temporary facilities and controls shall be located where directed and re-located as required by the progress of the work and maintained in a safe and sanitary condition at all times until completion of the Contract.
- B. Contractor shall be responsible for all of its own office and construction utilities including the cost of permits, usage, generation, installation, relocation, distribution, metering, maintenance, safety, disposal, and removal. Coordinate this work with the Project Manager.
- C. Coordinate installation and removal of temporary utilities with Project Manager, utility companies, other contractors, and authorities having jurisdiction. Contractor shall submit plans to the Project Manager for approval of proposed temporary utilities and facilities.
- D. Do not install or remove any temporary utility without prior written approval by Project Manager. Project Manager's written approval does not guarantee or warrant that utilities installed by the Contractor will not require relocation in the future due to the follow-on and/or sequence of work by Contractor or other contractors or by changes in scope and sequence of work by the Owner.
- E. Temporary utilities placed underground shall be permanently marked as to prevent damage by others, and accurately located for removal. Damage to above ground and underground utilities by the Contractor or others shall be repaired or replaced by the Contractor at not cost to the Owner.
- F. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution
 - 2. Electric power service
 - 3. Lighting
 - 4. Telephone service
- G. Support facilities include, but are not limited to, the following:
 - 1. Project identification and temporary signs
 - 2. Waste disposal facilities
 - 3. Temporary heat and ventilation
 - 4. Field offices and storage boxes

5. Sanitary facilities, including drinking water
 6. Temporary enclosures, fencing and barricades
 7. Construction aids and miscellaneous services and facilities
 8. Storm water control and drainage
- H. Security of the buildings shall be maintained at all times. Security and protection facilities include, but are not limited to, the following:
1. Environmental protection
 2. Security enclosure and lockup
 3. Temporary fire protection
 4. Barricades, warning signs, lights
 5. Shoring and scaffolding
- I. Removal of Temporary Facilities
1. Remove temporary facilities and controls, including associated materials and equipment, when their use is no longer required.
 2. Restore and recondition areas of the site damaged and disturbed by temporary facilities and controls and their installation.
 3. Remove and properly dispose of debris resulting from removal and reconditioning operations.
- J. Submittals
1. Temporary Utilities: Submit reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.
 2. Implementation and Termination Schedules: Submit a schedule indicating implementation of each temporary utility within 15 days of the date established for commencement of the Work.
- 1.3 USE CHARGES:
- A. General: Cost or use charges for temporary facilities are not chargeable to Owner, Project Manager or Architect and shall be included in the Contract Sum. Contractor shall be responsible for his/her own temporary power and for coordination with Pacific Gas and Electric Company (PG&E) for that temporary power service. Multiple temporary power services to the site may be required due to availability of power. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
1. Owner's Representatives
 2. Inspection and/or Testing agencies
 3. Personnel of authorities having jurisdiction
- 1.4 QUALITY ASSURANCE:
- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:
1. Building Code requirements
 2. Health and safety regulations
 3. Utility company regulations
 4. Police, Fire Department and Rescue Squad rules
 5. Environmental protection regulations.

- B. Standards: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities."
 - 1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
 - 2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70 and applicable codes.
 - 3. Refer to Guidelines for Bid conditions for Temporary Job Utilities and services prepared jointly by AGC and ASC for industry recommendations.
- C. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS:

- A. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
 - 1. Keep temporary services and facilities clean and neat
 - 2. Relocate temporary services and facilities as required by progress of the Work
 - 3. Operate in a safe and effective manner
 - 4. Take necessary fire prevention measures
 - 5. Do not overload facilities, or permit them to interfere with progress
 - 6. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the Site.
 - 7. Allow free use and access of all utilities at all times to all entities contracted to perform the Work.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by the Project Manager. Provide materials suitable for use intended. Provide specified utility services required during construction and extend temporary service lines to construction areas to allow use by all trades, and subcontractors.
- B. Paint: Comply with requirements in Section 09 90 00 "Painting"
 - 1. For sign panels and applying graphics, provide exterior grade alkyd glass enamel over exterior primer.
- C. Tarpaulins: Provide waterproof, fire-resistant, UL labeled tarpaulins with flame spread rating of fifteen (15) or less. For temporary enclosures provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.
- D. Water: Provide potable water approved by local health authorities.

E. For fences and vision barriers, provide exterior type, minimum 3/8" thick plywood.

1. For safety barriers, sidewalk bridges and similar uses provide minimum 5/8" thick exterior plywood.

2.2 EQUIPMENT:

A. General: Provide equipment and materials suitable for use intended.

B. Field Offices: Provide mobile units with lockable entrances, operable windows, serviceable finishes, heated, air conditioned and on foundations adequate for normal loading. Comply with all applicable codes and requirements.

C. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.

1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

D. Temporary Toilet Units: Provide a sufficient number of self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material. Units shall be accompanied by hand washing stations, including paper towels and covered trash receptacles in accordance with governing regulations.

E. Drinking-Water Fixtures: Containerized, bottled-water drinking-water units, including paper cup supply.

1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F (7.2 to 12.7 deg C).

F. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.

G. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.

H. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress.

I. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where fixtures are exposed to breakage. Provide exterior fixtures where exposed to moisture.

J. Trash removal: The Contractor shall be responsible for providing trash receptacles. He/she shall be responsible for the removal of debris from the job site and shall keep all work areas and passageways in and around the project free from debris. Collect waste from construction areas daily. Comply with requirements of NFPA 241 for

removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than seven (7) days during normal weather or three (3) days when the temperature is expected to rise above eighty (80) deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner. Owner trash facilities may not be used. If, in the Project Manager's opinion, the Contractor has not performed due diligence in keeping the site clean on a weekly basis, monies will be withheld from the Contractor's monthly progress payment in the maximum amount of \$1,000.00 per weekly occurrence. This notification will come from the Project Manager in writing. These accumulated monies will be released to the Contractor in the Contractor's next pay application upon verification by the Project Manager that the site has been cleaned.

- K. First Aid Supplies: Comply with governing regulations.
- L. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses one hundred feet long (100'), with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL:

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION:

- A. General: Engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials, and equipment. Comply with utility company recommendations.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
 - 2. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked-in services.
 - 3. Obtain easements to bring temporary utilities to Project site where Owner's easements cannot be used for that purpose.
 - 4. Arrange with electric utility service company to provide service for power and lighting for temporary field offices. Pay costs for service and power used.
 - 5. Distribute electric power and lighting.
 - 6. Provide lighting and convenience outlets in the temporary structures, and as otherwise required for the performance of the Work.

7. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Project Manager, change over from use of temporary service to use of the permanent service.
8. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

B. Water Service:

1. Contractor may connect to existing water point of connection for their use. Contractor is responsible for flushing and sterilizing new and existing piping prior to connection. Owner is not responsible for any damage to Contractors system or equipment due to inadequate flushing or sterilization of existing piping.
2. Provide water for construction purposes.
3. Install branch piping with taps located so that water for demolition, grub, clear, compaction, and construction purposes is available throughout the Work by the use of hoses. Protect piping and fitting against freezing.
4. Make potable water available for human consumption.

C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.

1. Locate as approved by the Project Manager.
2. Provide containers to remove and dispose of effluent off the site in a lawful manner.

D. Electric Power Service: Contractor may tap into site electrical service at the existing Warehouse or Shade Structure Building. Contractor must install power meter for monitoring construction power.

E. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment in quantity, size, and type acceptable for each phase of the Work.

F. Telephone Service: Provide temporary telephone service throughout construction period for common-use facilities used by all personnel engaged in construction activities.

1. Provide one telephone and one facsimile machine (FAX) in each Contractor's field office and pay costs for installation, maintenance, service, and removal.

3.3 SUPPORT FACILITIES INSTALLATION:

A. General: Comply with the following:

1. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities as directed by the Project Manager.
2. Provide noncombustible construction for offices, shops, and sheds located within thirty (30) feet of building lines. Comply with NFPA 241.

3. Maintain support facilities until Completion as necessary. Remove upon completion of the Contractor's final contract milestone and written approval by the Project Manager. Personnel remaining after Notice of Completion may be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Temporary Heat and Ventilation: Provide temporary heat required by construction activities, for curing or drying of completed installations or protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy. Provide forced ventilation of enclosed areas for proper installation and curing of materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors, and gases. Pay the costs of installation, maintenance, operation, and removal of temporary heat and ventilation, including costs for fuel consumed, required for the performance of the Work.
- C. Storage and Fabrication Sheds: Install storage and fabrication sheds, sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility services. Sheds may be open shelters or fully enclosed spaces within the designated building site.
- D. Toilets: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented, and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material. Units shall be accompanied by hand washing stations, including paper towels and covered trash receptacles in accordance with governing regulations.
 1. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.
- E. Drinking Water Fixtures: Provide drinking water as required by OSHA, including paper supply.
- F. Temporary Enclosures: Provide temporary enclosures for protection of construction in progress and completed, from exposure, foul weather, other construction operations and similar activities.
 1. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of twenty-five (25) square feet or less with plywood or similar materials.
 2. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with venting and material drying and curing requirements to avoid dangerous conditions and effects
- G. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste.
 1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.

2. Develop a waste management plan for Work performed on Project. Indicate types of waste materials Project will produce and estimate quantities of each type. Provide detailed information for on-site waste storage and separation of recyclable materials. Provide information on destination of each type of waste material and means to be used to dispose of all waste materials.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION:

- A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until requested by the Project Manager.
- B. Temporary Fire Protection: Until fire protection needs are supplied by permanent facilities, install and maintain temporary fire protection facilities, including but not limited to, water truck or water storage tank, fire hoses, nozzles and fire extinguishers. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations."
 1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one (1) extinguisher for every seventy-five (75') of travel.
 2. Store combustible materials in containers in fire-safe locations.
 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
 4. Provide fire extinguisher access and supervision welding operations and similar sources of fire ignition.
 5. Provide water truck or other means to provide temporary fire protection until such time as permanent fire protection is in service.
- C. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
- D. Barricades, Warning Signs and Lights: Comply with standards and code requirements for the erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public, of the hazard being protected against. Where appropriate and needed provide lighting, including flashing red or amber lights.
- E. Environmental Protection:
 1. Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result.
 2. Avoid use of tools and equipment which produce harmful noise.
 3. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons in or near the site.
 4. Erosion and Sediment Control: Prepare and implement a comprehensive erosion and sediment control program. Perform daily cleanup of mud and dust carried onto street surfaces by construction vehicles. Throughout

excavation, haul trucks shall use tarpaulins or other effective covers. Upon completion, use effective measures to reduce wind erosion. Perform replanting and repaving operations as soon as practicable after site grading.

5. Air Quality / Dust Control:

- a. Indoor Operations: Control dust resulting from indoor construction operations by localizing it to greatest possible extent using temporary partitions, curtains, or other means which will prevent spread of dust beyond immediate work area. Duct openings and other openings communicating with other parts of building shall have effective temporary closures.
- b. Outdoor operations: Provide dust control as required to abate any dust nuisance on or adjacent to Project Site. Apply water by means of approved sprinkling equipment, water wagons, or spray from hoses to extent and amount required at any time that dust control is necessary, as determined by the City, County, or Project Manager. Use of chemicals, oil or other such materials will not be permitted.

- F. Provide and maintain suitable temporary barriers as required to prevent public entry; protect the work and existing facilities, persons, and trees and plants from damage or injury from construction operations.
- G. Preserve and protect existing trees, irrigation, all landscaping, and plants not designated or required to be removed, and those adjacent to the site. As required, provide barriers to a minimum height of 6'-0" around each tree and plant, or around groups in proximity of construction operations.

3.5 CLEANING DURING CONSTRUCTION:

- A. Contractor shall dispose of all material off-site, in a lawful manner. Do not allow the accumulation of scraps debris, waste material and other items not required for construction of this work. Remove waste materials and rubbish not less than on a weekly basis and dispose of at Contractor's expense.
- B. Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.
- C. Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the ecology.
- D. Each sub-contractor shall clean up the results of his/her work and deliver such debris to areas designated for holding by Prime Contractor.
- E. Weekly, and more often if necessary, sweep all interior spaces clean. "Clean", for the purpose of this sub-paragraph, shall be interpreted as meaning free from dust and other materials capable of being removed by reasonable diligence using a hand-held broom.
- F. Following the installation of finish floor materials, clean the finish floor and provide adequate protection. Inspect protection daily (or more often if necessary) while work is being performed in the space in-which finish materials have been installed. "Clean", for the purpose of this sub-paragraph, shall be interpreted as meaning free from all

foreign materials which, in the opinion of the Project Manager or Architect, may be injurious to the finish floor material.

3.6 OPERATION, TERMINATION AND REMOVAL:

- A. Maintenance: Maintain facilities in good operating condition until removal. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation and similar facilities on a twenty-four (24) hour/day basis where required to achieve indicated results and to avoid the possibility of damage.
- B. Termination and Removal: Unless the Project Manager requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by the authorized use of a permanent facility, or no later than the Final Billing. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are property of the Contractor. The Owner reserves the right to take possession of the Project identification signs.
 - 2. Prior to Notice of Completion, clean and renovate permanent facilities that have been used during the construction period, including but not limited to:
 - a. Replace air filters and clean the inside of ductwork and housings.
 - b. Replace significantly worn parts and parts that have been subject to unusual operating conditions as determined by the Project Manager.
 - c. Replace lamps that are burned out or noticeably dimmed by substantial hours of use.

3.7 TREE AND PLANT PROTECTION

- A. Preserve and protect existing trees, plants and grapevines which are not designated or required to be removed, and those adjacent to the site.
- B. Consult with the Project Manager prior to removal of roots and branches which interfere with demolition and construction operations. Remove only those items agreed upon in writing with the Project Manager.
- C. Provide barriers to a minimum height of 6' around each tree and plant, around each group of trees and plants, as applicable, in the proximity of demolition and construction operations.
- D. In the proximity of root zones of trees and plants:
 - 1. Prohibit vehicular traffic and parking.
 - 2. Prohibit storage of materials and equipment.
 - 3. Prevent dumping of refuse and chemically injurious materials and liquids.
 - 4. Prevent puddling and continuous running water.
- E. Carefully supervise excavating, grading, and filling, and subsequent construction operations, to prevent damage.

- F. At no increase in Contract Sum, replace, or suitably restore trees and plants designated to remain which are damaged or destroyed as a result of demolition and construction operations.
- G. Remove and lawfully dispose of soil that has been contaminated during the performance of the Work by oil, solvents, and other materials which could be harmful to trees and plants, and replace with good soil, at no increase in Contract Sum. Provide manifests for removed soil to Project Manager.

3.8 SECURITY

- A. Secure, maintain, and protect the Work, stored materials, equipment, and temporary facilities until time of Final Completion, or such earlier time as Owner may choose to assume such responsibility.
- B. Security and protection may be by any legal method, or combination of methods, acceptable by the Project Manager.

3.9 TEMPORARY CONTROLS

A. Noise and Vibration:

- 1. Equipment and impact tools shall have intake and exhaust mufflers.
- 2. Secure written permission from the Project Manager at least three (3) working days prior to using noisy and vibratory equipment, such as jackhammers, concrete saws, impact tools, and high-frequency electrical equipment.
- 3. Cooperate with the Owner and/or Project Manager if the use of noisy and vibratory equipment becomes objectionable by its longevity.

B. Dust and Dirt:

- 1. Conduct demolition and construction operations to minimize the generation of dust and dirt and prevent dust and dirt from interfering with the progress of the Work and from accumulating in Work and adjacent areas.
- 2. To additionally minimize the generation of dust and dirt, hauling equipment and trucks carrying loads of soil and debris shall have their loads sprayed with water or covered with tarpaulins.
- 3. Prevent dust and dirt from accumulating on walks, roadways, parking areas, and planting, and from washing into sewer and storm drain lines.
- 4. Periodically water exterior demolition and construction areas to minimize the generation of dust and dirt.

C. Water: Do not permit surface and subsurface water and other liquids to accumulate in or about the Project site and vicinity thereof. Should such conditions develop, control the water or other liquid, and suitably dispose of it by means of temporary pumps, piping, drainage lines, troughs, ditches, dams, or other methods.

D. Pollution:

- 1. No burning of refuse, debris, or other materials shall be permitted on or in the vicinity of the Project site.
- 2. Comply with applicable regulatory requirements and anti-pollution ordinances during the conduct of construction and disposal operations.

- E. Pest Control: Take necessary provisions to control rodents, insects, and other pests.

3.10 PROJECT IDENTIFICATION AND SIGNS

A. General:

1. Contractor shall have provisions in their contract to provide a 4'-0" x 8'-0" project identification sign with graphics and verbiage given to them by the Project Manager. No other language or graphics will be permitted the sign other than what is approved by the Project Manager. Contractor shall construct and maintain, at the Contractor's cost, this identification sign throughout the entire course of the project. Location of the sign will be provided by the Project Manager.
2. Signs other than the specified Project sign will not be permitted, unless otherwise approved in advance by the Project Manager. No Contractor signs or banners are allowed on the temporary fence.

3.11 SITE CONTROLS AND PARKING

- A. Entrance to Work Site: Contractor and his/her employees shall use certain access roads or entrances as indicated on attached drawing or as directed by Construction Manager. Maintain these roads in satisfactory condition during Contract time, and repair damages attributable to Work of this Project at intervals as needed. At completion of Contract, roads and entrances shall be left in condition at least equal to that existing at start of Contract, except as may be otherwise required by Contract Documents.
- B. Site Storage and Work Areas: Project Manager will allocate available on-site storage and work areas to Contractor, subject to change as may be necessary by job progress such as site development or other intervening Work.
- C. Regulations: Observe and comply with rules and regulations in effect at occupied facilities, including, but not restricted to, parking and traffic regulations, security restrictions, hours of access, etc.
- D. Use of Public Sidewalks and Streets: Make arrangements with local authorities including Traffic Engineer, for temporary use of streets and sidewalks for offices, shops, storage, etc. Abide by County rules, regulations, and ordinances. Obtain permits and pay all required fees.

END OF SECTION

SECTION 017300– EXECUTION**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and coordination with County surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Coordination of Owner-installed products.
 - 6. Progress cleaning.
 - 7. Starting and adjusting.
 - 8. Protection of installed construction.
- B. Related Requirements:
 - 1. Section 01 10 00 "Summary" for limits on use of Project site.
 - 2. Section 01 77 19 "Closeout Procedures" for submitting final Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

- 1. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information
 - a. Extent: Describe reason for and extent of each occurrence of cutting and patching.
 - b. Products: List products to be used for patching and firms or entities

that will perform patching work.

- c. Dates: Indicate when cutting and patching will be performed.
- d. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.

Include description of provisions for temporary services and systems

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

1.5 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

- 1. Construction layout.
- 2. Field engineering and coordination with County surveying.
- 3. Installation of the Work.
- 4. Cutting and patching.
- 5. Coordination of Owner-installed products.
- 6. Progress cleaning.
- 7. Starting and adjusting.
- 8. Protection of installed construction.

- B. Related Requirements:

- 1. Section 01 10 00 "Summary" for limits on use of Project site.
- 2. Section 01 77 19 "Closeout Procedures" for submitting final Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.6 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.7 INFORMATIONAL SUBMITTALS

- 2. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information
 - a. Extent: Describe reason for and extent of each occurrence of

- cutting and patching.
 - b. Products: List products to be used for patching and firms or entities that will perform patching work.
 - c. Dates: Indicate when cutting and patching will be performed.
 - d. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - e. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
- A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.8 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land- surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
1. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
- a. Primary operational systems and equipment.
 - b. Fire-suppression systems.
 - c. Control systems.
 - d. Communication systems.
 - e. Conveying systems.
 - f. Electrical wiring systems.
 - g. Operating systems of special construction.
- C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to

the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Engineer for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, and other construction affecting the Work.
 1. Before construction, verify the location and invert elevation at points of connection of septic sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
- C. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- D. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 1. Description of the Work.
 2. List of detrimental conditions, including substrates.
 3. List of unacceptable installation tolerances.
 4. Recommended corrections.
- E. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck

measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Engineer according to requirements in Section 01 31 00 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the adjacent improvements. If discrepancies are discovered, notify Engineer and Construction Manager promptly.
- B. County will provide necessary staking for construction.
- C. Stakes and marks will be set by the County surveyor for the completion of the work as indicated in the Plans . The Contractor shall take all necessary measures to ensure stakes and marks are not removed, damaged, or destroyed during construction. If the stakes or marks are removed, damaged, or destroyed, and the County surveyor has to make extra trips to replace them, Contractor will be charged a \$1,000 per day and will be deducted from the contract.
- D. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Engineer.
 - 2. Allow for movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.

- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 01 10 00 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.

- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
 1. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - a. Remove liquid spills promptly.
 - b. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- C. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- D. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- E. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- F. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 01 74 19 "Construction Waste Management and Disposal."
- G. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

- H. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- I. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in Section 01 40 00 "Quality Requirements."

3.8 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION

SECTION 017113 - MOBILIZATION, SITE MAINTENANCE, DEMOBILIZATION**PART 1 - GENERAL****1.1 GENERAL**

- A. Mobilization, site maintenance, and demobilization consists of moving in and establishing the work zones, establishing health and safety procedures, performing site maintenance and cleanup, and moving out of the work site.

1.2 PERMITS

- A. Obtain all licenses and permits. Coordinate obtaining permits with County of Fresno Development Services Department, as necessary.
- B. The contractor shall be responsible for obtaining and paying for the necessary permit from Development Services.

1.3 FENCING

- A. Install any temporary fencing on the locations as deemed necessary by the County or the Contractor for site security.

1.4 NOTIFICATION FOR PROPERTY OWNERS AND TENANTS

- A. The Contractor shall furnish written notification that describes the proposed work for the general public to be aware. The notices shall include relevant dates and describe anticipated impacts during the work, including, but not limited to, a description of areas that may be affected. The content, format, and method of delivery of such notices shall be approved by the Engineer prior to placement on the park. Notices shall include ingress/egress route from within the Project limits.
- B. The Contractor shall provide approved notification to all affected users a minimum of ten (10) CALENDAR DAYS prior to the commencement of any Project site work. Failure to distribute notices shall be sufficient cause for the Engineer to suspend the work until such notices are distributed.

1.5 WORK ZONES

- A. Establish exclusion, decontamination, and clean zones at the Site, using temporary chain link fence, traffic barricades, caution tape, or other appropriate method.

1.6 RUBBISH AND TRASH

- A. Collect rubbish and trash daily. Do not allow rubbish and trash to collect such that a safety or fire hazard exists or nuisance or bad appearance.

1.7 SITE MAINTENANCE

- A. Promptly decontaminate and remove materials or equipment that have served their use on the Site. At the end of each day, perform the following:
 - 1. Secure the site;
 - 2. Store equipment and materials in locations approved by County;
 - 3. Disconnect water and power (except as needed for health and safety and security.)

1.8 FINAL CLEANUP AND DEMOBILIZATION

- A. Upon completion of the Work, decontaminate (if necessary) and remove all materials and equipment brought to the Site.
- B. Leave the Site clear of all debris, including thoroughly sweeping all paved areas.
- C. Remove any temporary fencing that was installed.
- D. Repair any damage to fences, buildings, streets, parking lots, curbs, landscaping, and other property caused by Contractor's activities.
- E. Decontaminate all equipment, vehicles, or other items prior to removal from the Site.

PART 2 – PRODUCTS

(Not Used) PART 3 –

EXECUTION (Not Used)

END OF SECTION

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**PART 1 – GENERAL****1.1 RELATED DOCUMENTS**

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:

- 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.

- B. Related Requirements:

- 1. "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of 75 percent by weight of total non- hazardous solid waste generated by the Work. Practice efficient waste

management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials, including the following:

1. Demolition Waste:

- a. Asphalt paving.
- b. Concrete.
- c. Concrete reinforcing steel.
- d. Concrete masonry units.
- e. Electrical conduit.
- f. Copper wiring.
- g. Lighting fixtures.
- h. Lamps.
- i. Ballasts.
- j. Electrical devices.
- k. Switchgear and panelboards.
- l. Transformers.
- m. Wood fence.
- n. Tubular steel fence.
- o. Utility poles

2. Construction Waste:

- a. Masonry and CMU.
- b. Lumber.
- c. Wood sheet materials.
- d. Wood trim.
- e. Metals.
- f. Piping.
- g. Electrical conduit.
- h. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - 1) Paper.
 - 2) Cardboard.
 - 3) Boxes.
 - 4) Plastic sheet and film.
 - 5) Polystyrene packaging.
 - 6) Wood crates.
 - 7) Plastic pails.

1.5 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within 30 days of date established for the Notice of Award.

1.6 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Use Form CWM-7 for construction waste and Form CWM-8 for demolition waste. Include the following information:
 - 1. Material category.
 - 2. Generation point of waste.
 - 3. Total quantity of waste in tons.
 - 4. Quantity of waste salvaged, both estimated and actual in tons.
 - 5. Quantity of waste recycled, both estimated and actual in tons.
 - 6. Total quantity of waste recovered (salvaged plus recycled) in tons.
 - 7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

1.7 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 - 1. Comply with operation, termination, and removal requirements in Section 01 50 00 "Temporary Facilities and Controls."
- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.
 - 1. Review locations established for salvage, recycling, and disposal.
- C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 - 2. Comply with Section 01 50 00 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

- A. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 - 3. Store items in a secure area until installation.
 - 4. Protect items from damage during transport and storage.
 - 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.
- B. Salvaged Items for Sale and Donation: Not permitted on Project site.
- C. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to Owner's storage area off-site designated by Owner.
 - 5. Protect items from damage during transport and storage.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
 - 1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
 - 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
 - 4. Store components off the ground and protect from the weather.
 - 5. Remove recyclable waste from Owner's property and transport to recycling

receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

- A. Asphalt Paving: Break up and transport paving to asphalt-recycling facility.
- B. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- C. Metals: Separate metals by type.
 - 1. Structural Steel: Stack members according to size, type of member, and length.
 - 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

3.5 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
 - 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 - 2. Polystyrene Packaging: Separate and bag materials.
 - 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 - 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Wood Materials:
 - 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 - 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

3.6 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Burning: Burning of waste materials is permitted only at designated areas on Owner's property, provided required permits are obtained. Provide full-time monitoring for burning materials until fires are extinguished.

- D. Disposal: Remove waste materials and dispose of at designated spoil areas on Owner's property.
- E. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION

SECTION 017719 – PROJECT CLOSEOUT**PART 1 - GENERAL****1.1 RELATED DOCUMENTS:**

- A. Drawings and general provisions of Contract, including General Conditions and other Division 01 General Requirements, apply to this Section.

1.2 SUMMARY:

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
 - 1. Inspection procedures
 - 2. Project record document submittal
 - 3. Operation and Maintenance Data
 - 4. Instruction of Owner's personnel
 - 5. Service and maintenance contracts
 - 6. Submittal of guarantees/warranties and bonds
 - 7. Final Cleaning
 - 8. Restoration of damaged and remedial work
 - 9. Delivery of extra materials
- B. Process individual buildings, site package and landscape package separately for project closeouts.

1.3 FINAL COMPLETION:

- A. Preliminary Procedures: Before requesting inspection for certification of Final Completion, complete the following. List exceptions in the request.
 - 1. In the Application for Payment that coincides with, or first follows, the date Final Completion is claimed, show 100 percent (100%) completion for the portion of the Work claimed as complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of charges to the Contract Sum.
 - a. If 100 percent (100%) completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
 - 2. Advise Project Manager of pending insurance changeover requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 - 4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
 - 5. Complete final clean up requirements, including touch-up painting. Touch up and otherwise repair and restore marred exposed finishes.
- B. Inspection Procedures: On receipt of a request for inspection, the Project Manager will either proceed with inspection scheduling or advise the Contractor of unfilled requirements. The Project Manager will prepare the Notice of Completion following

inspection or advise the Contractor of construction that must be completed or corrected before the Notice will be issued.

1. The Project Manager will repeat inspection scheduling when requested and assured that the Work has been completed.
2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE:

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Submit a certified copy of the Project Manager's and Architect's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Project Manager and Architect.
4. Submit record drawings, damage or settlement survey, property survey, and similar final record information.
5. Submit consent of surety to final payment.
6. Submit a final liquidated damages settlement statement.
7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Re-inspection Procedure: The Project Manager will re-inspect the Work upon receipt of notice that the work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Project Manager.

1. Upon completion of re-inspection, the Project Manager will prepare a Notice of Completion, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final completion.
2. If necessary, the re-inspection procedure will be repeated.

1.5 RECORD DOCUMENT SUBMITTALS:

A. General: Do not use record drawings for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Owner, Project Manager and Architect reference during normal working hours.

B. Record Drawings: Maintain clean undamaged set of prints of Contract Drawings and Shop Drawings. Mark the set in the manner approved in advance by the Project Manager to show the actual installation where the installation varies from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

Label each document "PROJECT RECORD" in large, neat, printed letters. Failure to maintain record drawings shall result in withholding of Contractor's payment. See provisions in Section 2.24 – Payment, located in the General Conditions.

1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
2. Mark information that is important to the Owner, but was not adequately shown on Contract Drawings or Shop Drawings.
 - a. Changes made by Change Order and other modifications described in the GENERAL CONDITIONS noting the change or modification source.
 - b. Locations of significant Work concealed inside the building whose general locations have been changed from those shown on the Contract Documents
 - c. Locations of items, not necessarily concealed, which have been changed, with the Architect's prior written approval, from the location shown on the Contract Documents.
 - d. Revisions to routing of piping and conduit.
 - e. Revisions to electrical circuitry.
 - f. Actual equipment locations.
 - g. Ducting Size and routing.
3. Note related Change Order or Work Authorization number where applicable.
4. Organize Record Drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on cover of each set.
5. Keep up to date during entire progress of the Work, and furnish additional drawings as necessary for clarification. Failure to maintain record drawings shall result in withholding of Contractor's payment. See provisions in Section 2.24 – 'Payment', located in the General Conditions.
6. Record deviations from the sizes, locations, and other features of installations shown in the Contract Documents.
7. Establish locations of underground Work by Global Positioning Systems (GPS) and reference invert elevations and rates of fall.
8. Give sufficient information to locate Work concealed in the building.
9. Locate main runs of piping, conduit, ductwork and similar items by dimensions.
10. Locate other items either by dimensions or in relation to spaces within the building.
11. Where feasible, the individual or entity that obtained record data, whether the individual or entity is the installer, subcontractor, or similar entity, is required to prepare the mark-up on Record Drawings.
12. Accurately record information in an understandable drawing technique.
13. Record data as soon as possible after it has been obtained. In the case of concealed installation, record and check the mark-up prior to concealment.

C. As-Built Drawings:

1. At time of acceptance of the Work and prior to final payment, using the record drawings for reference, prepare "As-Built" drawings on permanent, transparent, reproducible prints furnished by the Architect. Furnish reproducible record drawings, made from final Shop Drawings, which have

been updated to show actual conditions, for Work specified in the individual Specification sections. Where Shop Drawings are marked, show cross-reference on "As Built" Drawings.

- a. Employ and pay a professional draftsman to prepare the "As-Built" drawings from the record drawings, using typical drafting devices and recording information in ink clouding all changes.
- b. After completing the preparation of transparency record drawings, produce three (3) copies of each Drawing, whether or not changes and additional information were recorded. Organize the copies into manageable sets. Bind each set with durable paper cover sheets, with appropriate identification, including titles, dates and other information on cover sheets.
- c. Organize and bind original marked-up set of prints that were maintained during the construction period in the same manner.
- d. Organize record mylar transparencies into sets matching the print sets. Reverse roll and place these sets in durable tube-type Drawing containers with end caps. Mark the end cap of each container with suitable identification.
- e. Sign and date the completed Project "Record Drawings" and transmit them to the Construction Manager, who will forward them to the Owner after final acceptance of the Work.

D. Large-Scale Coordination Drawings:

1. The preparation of large-scale, detailed coordination drawings will be required for the Work of Divisions 22, 23, 25, 26, 27, 28 and 31 of these Specifications. These coordination drawings are not Shop Drawings as defined by the General Conditions, but, together with Shop Drawings or coordination drawings of other affected Work, are used to check, coordinate, and integrate the various types of Work.
2. If furnished, include the coordination drawings as part of the Project "Record Drawings".

E. Record Drawing Construction Schedule:

1. Using as a basis the latest, updated Progress Schedule required by Section 013323 "Submittal Procedures," prepare and transmit a Record Construction Schedule to indicate the actual dates and durations of the various construction activities.

F. Record Specifications: Maintain one (1) complete copy of the Project Manual, including addenda, and one (1) copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in the actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.

1. Mark each Specification SECTION to record:
 - a. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually incorporated in the Work.
 - b. Changes made by Change Order and other modifications described in the GENERAL CONDITIONS

- G. Operation and Maintenance Manuals: Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data into individual heavy-duty 2-inch, 3-ring vinyl-covered binder, with pocket folders for folded sheet information. Mark the appropriate identification on front spine of each binder. Provide index near front of binder furnishing immediate information as to locations in the manual of all emergency data regarding the equipment included in the manual. Provide entire contents of Binder on a USB storage device organized in same sequence as binder.

1. Include the following types of information:
 - a. Emergency instructions
 - b. Spare parts list
 - c. Copies of warranties
 - d. Wiring diagrams
 - e. Recommended maintenance schedules and a list of maintenance performed during the construction process.
 - f. Inspection procedures
 - g. Shop drawings and product data
 - h. Fixture lamping schedule.
 - i. Complete nomenclature of replaceable parts, their part numbers, current cost and name and address of nearest source of parts.
 - j. Copy of each guarantee/warranty and service contract issued for the equipment included in the manual.
 - k. Delete Extraneous Data from manufacture's catalog pages, information, which is not applicable to this project installation.
 - l. Video tape of Training Procedures
2. Submittal Schedule: Comply with the following schedule for submittal of operating and maintenance manuals.
 - a. Before submittal of Request for Final Payment, when each installation that requires submittal of operating and maintenance manuals is nominally complete, submit two (2) draft copies of each manual to the Construction Manager for review. Include a complete index or table of contents.
 - b. The Construction Manager will return one (1) copy of the draft with comments within fifteen (15) days of receipt.
 - c. Submit one (1) copy of the manuals in final form at least fifteen (15) days before final inspection. This copy will be returned within fifteen (15) days after Final Inspection, with comments.
 - d. After final inspection, make corrections or modifications to comply with the Construction Manager's comments. Submit the specified number of copies of each approved manual to the Construction Manager within fifteen (15) days of receipt of Construction Manager's comments

H. Operation Tests

1. Conduct systematic start-up and operational tests as required to demonstrate that all systems have been completed and are in compliance with all requirements of the Contract Documents and are fully functioning and operational. Contractor shall coordinate his/her start-up and operational tests with contractors performing work under other bid packages.

2. Furnish a written record of test results using recording type instruments where applicable
- I. Upon completion of the Work, submit Close out Documents to the Project Manager for the Owner's records.
- J. Transmit manuals in the quantity, which is required to be returned, plus the following, unless otherwise specified, which will be retained by the Project Manager for forwarding to the Owner after acceptance of the work.
 1. Two (2) copies of Mechanical and Electrical manuals and one (2) electronic copies on a USB storage device.
 2. Two (2) copies of all other manuals and one (2) electronic copies on a USB storage device.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES:

- A. Owner's Training Sessions: Arrange for each installer of equipment that requires regular maintenance to provide DVD-recorded Owner's training sessions. Arrange for each installer of equipment that requires regular maintenance, to meet with the Owner's personnel to review contractor furnished DVD-recorded instruction in the proper operation and maintenance of each component of each system. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:
 1. Maintenance manuals
 2. Record documents
 3. Spare parts and materials
 4. Tools
 5. Lubricants
 6. Fuels
 7. Identification systems
 8. Control sequences
 9. Hazards
 10. Cleaning
 11. Warranties, bonds
 12. Maintenance agreements and similar continuing commitments
- B. As part of instruction for operating equipment, demonstrate the following procedures:
 1. Start-up
 2. Shut-down
 3. Emergency operations
 4. Noise and vibration adjustments
 5. Safety procedures
 6. Economy and efficiency adjustments
 7. Effective and energy utilization.

- C. Schedule training to conform to personnel availability at the facility and to conclude prior to start up of system. The base duration of training shall be determined by the complexity of the system or equipment and shall be done by qualified instructors from the manufacturer or contractor.
- D. As part of the operator's training, one (1) lesson plan shall be devoted to reviewing of DVD, which shall be incorporated into the training program to allow new employees to view the DVD at their own convenience and be able to comprehend the system without the need for an instructor in attendance.
- E. Prepare one (1) set of DVD's to assist maintenance personnel in trouble-shooting the systems and making routine repairs. All DVD's shall be made at the Project facility to ensure that the video portrayal is representative of the true systems.
- F. In addition to written technical descriptions, the training shall lay out prescribed hands-on-training under the supervision of others who have previously completed the training program. The foregoing techniques are to be developed to produce a program that is self-perpetuating and permits a high level of operator training in the event of high turnover rates among those who are assigned to duties in maintenance.

3.2 FINAL CLEANING:

- A. General: General cleaning during construction is required by the General Conditions and included Section "Temporary Facilities and Controls".
 - 1. Comply with applicable regulatory requirements during the cleaning and disposal operations. Special cleaning requirements for specific elements of the Work are included in appropriate Sections of Division 3 through 50.
 - 2. Use cleaning materials, which will not create hazards to health or property or cause damage to products or Work. Conduct cleaning and waste disposal operations in compliance with local laws and ordinances. Comply fully with federal and local environmental and anti-pollution regulations.
 - 3. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to a condition acceptable to the Construction Manager. Use cleaning materials and methods recommended by the manufacturer of the products to be cleaned.
 - 4. Schedule operations with sufficient time for surfaces to dry thoroughly to prevent dust, and other contaminants resulting from cleaning operations from adhering to wet or newly finished surfaces.
 - 5. Complete the following cleaning operations before requesting inspection for Certificate of Completion.
 - a. Remove labels that are not permanent labels.
 - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable as vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, grease, fingerprints, labels, spills, spatters, films, and similar foreign substances. Restore reflective surfaces to their original reflective condition. Mop clean concrete floors. Vacuum carpeted surfaces.

- d. Wipe surfaces of mechanical and electrical equipment, elevator equipment and similar equipment. Remove excess lubrication, paint, mortar droppings and other foreign substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps, vacuum inside of electrical panels and cabinetwork.
 - e. Clean the Site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
 - f. Clean permanent filters and replace disposable filters of units operated during construction.
 - g. Clean ducts, blowers, and coils if units were operated without filters during construction.
 - h. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - i. Touch up and otherwise repair and restore marred exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or show evidence of repair or restoration. Do not paint over "UL" and similar labels including mechanical and electrical nameplates.
- 6. Pest Control: Engage an experienced exterminator to make a final inspection, and to rid Project of rodents, insects, and other pests.
 - 7. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
 - 8. Compliances: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
 - 9. Materials remaining after completion of associated Work shall be disposed of or stored as directed by the Construction Manager.

END OF SECTION

SECTION 017836 – WARRANTIES AND BONDS**PART 1 - GENERAL****1.1 RELATED DOCUMENTS:**

- A. Drawings and general provisions of Contract, including General Conditions and other Division 01 General Requirements, apply to this Section.

1.2 SUMMARY:

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturer's standard warranties on products and special warranties. Contractor will review guarantee/warranty and bonds to verify compliance with Contract Documents.

1. Refer to Article 2.32 of the General Conditions and Section 006536 "Guaranty."
2. General closeout requirements are included in Section 017719 "Project Closeout."
3. Specific requirements for warranties of the Work and products and installations that are specified to be warranted, are included in the individual Sections of Division 03 through Division 49. If no specific information is included in individual sections of the specifications, warranty period shall be as follows: Manufacturer's warranties notwithstanding, warrant the entire Work against defects in materials and workmanship for three hundred sixty-five (365) calendar days from date of Notice of Completion.
4. Certifications and other commitments and agreements for continuing services to the Owner are specified elsewhere in the Contract Documents.
5. The Contractor will not be responsible for defects due to misuse, negligence, willful damage, improper maintenance, or accident caused by others, nor shall he be responsible for defective parts whose replacement is necessitated by failure of the Owner's maintenance forces to properly clean and service them, provided the Contractor has furnished complete maintenance instructions to the Owner.

- B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.3 BOND REQUIREMENTS

- A. Refer to Article 2.36 of the General Conditions

1.4 DEFINITIONS RE: WARRANTIES:

- A. Standard Product Warranties are pre-printed written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.

- B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner. WARRANTY REQUIREMENTS:
- A. Related Damages and Losses: When correcting warranty Work that has failed, remove, and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranty Work.
- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Costs: Upon determination that Work covered by a warranty has failed, replace, or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
- E. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

1.6 SUBMITTALS RE: WARRANTIES:

- A. Submit written warranties to the Project Manager upon request of the Construction Manager, and in any event prior to any request by Contractor for final acceptance of the Work. The commencement date for warranties applicable to the Work shall be the date of acceptance of the Work as specified in the Notice of Completion, unless otherwise noted in the Contract Documents (e.g., as to manufacturer's warranties for equipment).
1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Project Manager within ten (10) days of completion of that designated portion of the Work.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
- B. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier, or manufacturer, prepare a written

document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Construction Manager for approval prior to final execution.

1. Refer to individual Sections of Division - 03 through Division - 49 for specific content requirements, and particular requirements for submittal of special warranties.
 2. Submit the Guarantee/Warranty typed on the Contractor's letterhead if for the entire Work, or on the Subcontractor's letterhead if for the Work of a Specification Section.
- C. Form of Submittal: At Final Completion compile two (2) copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
- D. Bind warranties and bonds into heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper. Provide separate binders for each building, site and landscape package.
1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name address and telephone number of the installer.
 2. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS," the Project title or name, and the name of the Contractor.
 3. When operating and maintenance manuals are required for warrantied construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.
- E. Time of Submittal
1. Submit guarantees/warranties within ten (10) days after date of Notice of Completion, prior to request for Final Payment.
 2. For items of Work where acceptance is delayed materially beyond the date of Notice of Completion, furnish updated submittal within ten (10) days after such delayed acceptance, listing the date of delayed acceptance as the start of the guarantee/warranty period.
- 1.7 REVIEW MEETING:
- A. Eleven (11) months following date of acceptance of the Work, hold a meeting for the purpose of review of, and action upon, guarantees/ warranties, bonds, and service and maintenance contracts.
- 1.8 SERVICE AND MAINTENANCE CONTRACTS
- A. Compile, review, and transmit specified service and maintenance contracts as specified for guarantees/warranties and bonds.
- 1.9 PREPARATION FOR FINAL INSPECTION
- A. Perform final cleaning as specified hereinbefore.

- B. Assemble guarantees/warranties, service, and maintenance contracts, operating and maintenance instructions, and other items as specified, and transmit to the Project Manager, who will forward them to the Owner after final acceptance of the Work.

1.10 RESTORATION OF DAMAGED WORK

- A. Restore or replace, as specified, or determined by the Architect, material and finishes damaged from construction activities at no additional expense to the Owner.
- B. Restoration shall be equal to the original Work, and finishes shall match the appearance of existing adjacent Work.

1.11 REMEDIAL WORK

- A. Remedial Work necessary owing to faulty workmanship or materials shall be at no additional expense to the Owner.
- B. Work shall be coordinated with the Owner and performed at such time and in such manner to cause minimal interruption and inconvenience to the Owner's operations.

1.12 EXTRA MATERIALS

- A. Where required in the individual Specification SECTIONS, furnish extra materials in the quantities and manners specified. Prior to submitting any materials submit a list of all extra material required in the specification sections.
- B. Delivery and certification of such extra materials shall be a prerequisite to Notice of Completion.
- C. Deliver extra materials directly to Owner for sign-off.
- D. Package in clearly identifiable boxes.
- E. Indicate manufacturer's name, part name, and stock number.
- F. Indicate piece of equipment part or tool is for.
- G. Indicate name, address and phone number of closest supplier.

1.13 MISCELLANEOUS RECORD SUBMITTALS

- A. Refer to other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Immediately prior to Final Acceptance, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Submit to the Project Manager for the County's records.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION (not used)

END OF SECTION

SECTION 017839 - PROJECT RECORD DOCUMENT
PART 1 GENERAL

1. RELATED DOCUMENTS

1

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

1. SUMMARY

2

- A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

- B. Related Requirements:

1. Section 01 73 00 "Execution".
2. Section 01 77 19 "Closeout Procedures" for general closeout procedures.

1. CLOSEOUT SUBMITTALS

3

- A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set(s) of marked-up record prints.
2. Number of Copies: Submit copies of record Drawings as follows:

a. Initial Submittal:

- 1) Submit PDF electronic files of scanned record prints and one of file prints.
- 2) Engineer will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

b. Final Submittal:

- 1) Submit PDF electronic files of scanned record prints and one set(s) of prints.
- 2) Print each drawing, whether or not changes and additional information were recorded.

- B. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record- keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.
- A. Reports: Submit written report weekly indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued. Records shall be kept up to date with all entries checked by the Engineer before the Work is buried or covered up. The Contractor shall make the Record Drawings available for review by the Engineer at any time.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference record prints to corresponding archive photographic documentation.
 - 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Locations and depths of underground utilities.
 - d. Revisions to routing of piping and conduits.
 - e. Revisions to electrical circuitry.
 - f. Actual equipment locations.
 - g. Changes made by Change Order or Construction Change Directive.
 - h. Changes made following Engineer's written orders.
 - i. Details not on the original Contract Drawings.

- j. Field records for variable and concealed conditions.
 - k. Record information on the Work that is shown only schematically.
- 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 - 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 - 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 - 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Engineer. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
- 1. Format: Annotated PDF electronic file with comment function enabled.
 - 2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 - 3. Refer instances of uncertainty to Engineer for resolution.
 - 4. Engineer will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.
 - a. See Section 01 33 00 "Submittal Procedures" for requirements related to use of Engineer's digital data files.
 - b. Engineer will provide data file layer information. Record markups in separate layers.
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
- 1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 - 2. Format: Annotated PDF electronic file with comment function enabled.
 - 3. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Engineer.
 - e. Name of Contractor.

2.2 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as PDF electronic file or scanned PDF electronic file(s) of marked-up miscellaneous record submittals.
 - 1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Engineer's reference during normal working hours.

END OF SECTION

SECTION 024120 - SELECTIVE COMPONENT DEMOLITION**PART 1: GENERAL****1.01 DESCRIPTION**

- A. Work Included in This Section: Provide demolition, cutting and removal of existing construction as designated or required to provide for new work, including but not necessarily limited to:
1. Cutting and removal of all existing building construction elements as required preparatory to new construction work (excluding Hazard Materials identified in these Documents).
 2. Careful removal of all items to be salvaged or reused in the new construction.
 3. Temporary shoring and bracing, hoists, chutes, etc. required for work of this Section.
 4. Protection of all existing improvements to remain.
 5. Removal of plumbing, elec., HVAC or other utility.
- B. Related Work Specified Elsewhere:
1. Disconnecting, removal and storing of electrical items are specified in DIVISION 26, ELEC- TRICAL.
 2. Disconnecting and capping, or rerouting of existing utility lines as required for the new construction.
 3. Identification and abatement of Hazardous Materials.
 4. Cutting & Patching, Section 01 73 29.

1.02 INCORPORATED DOCUMENTS

In addition to the Codes and Standards listed in Section 01 10 00, the published specifications, standards and methods of the trade cited below shall apply to work of this Section.

- A. American National Standards Institute, Inc.'s "American National Standard Safety Requirements of Demolition" (ANSI A10.6).

1.03 QUALITY ASSURANCE

State and local code requirements shall control removal, handling and disposal of debris.

1.04 SCHEDULING OF WORK

- A. Scheduling, coordination, priorities and phasing of work shall be in sequence as specified in Section 01 10 00, SPECIAL REQUIREMENTS. Notice shall be given to the Owner, in advance of each portion of the work as specified.
- B. Arrangements shall be made in advance of demolition with the Owner for storage space for items to be removed and reinstalled in the new work.
- C. The Owner shall designate the location to deliver salvageable items to remain the property of the Owner.
- D. Schedule all work so as to avoid conflicts with other necessary activities on or adjacent

to the site, such as other work, normal traffic, etc.

1.05 JOB CONDITIONS

Carefully maintain methods and schedules and protect adjacent construction with approved barricades and enclosures.

A. Disposition of Existing Improvements:

1. Personal property and movable furniture and equipment items shall remain the Owner's property and be removed by the Owner, when indicated on the Drawings.
2. Material forming portions of permanent structure designated for demolition shall become the Contractor's property and the Contractor shall be responsible for their removal.
3. Carefully remove materials and equipment designated to be reused and incorporated into the new work. Remove items in a manner that will prevent damage. Store salvaged items on the site where indicated or as directed by the Owner and provide protection from damage for all items until incorporation into new work.
4. Salvageable materials to be delivered to the Owner shall include all items indicated on the Drawings and specific items listed below. All salvaged materials shall be carefully removed to avoid damage and shall be delivered to the Owner for removal from the construction site.
5. General demolition shall proceed after all salvage work is completed and shall include removal of all partitions, ceilings, etc. shown to be removed, and the stripping down to base materials where new finishes are to be applied. It shall be the responsibility of the contractor to determine which elements must be stripped down and to what extent in order to properly install new finish materials fully in conformance with other Sections of the Specifications.

B. Protection:

1. Obtain approval of the Owner and local authorities for all work which creates a hazardous condition on or adjacent to the site.
2. Provide and maintain barricades, warning signs, lights, flagmen, or security guards to warn and protect all workmen, the Owner's employees, and the public. Erect and maintain temporary bracing, shoring, dustproof and protective coverings as required to protect from damage the structures, finishes and improvements to remain.
3. Wet down and/or sweep areas affected by this work using compounds or other means as required to prevent dust and dirt from rising.
4. Structure and Property: Take any and all steps necessary to protect all adjacent improvements and all elements of the existing buildings to remain free from damage during the progress of this Work. Any and all damage caused to public and private property and the property of the Owner shall be repaired or restored to the original condition prior to the initiation of this Work. All repair shall be done at no additional cost to the Owner.

PART 2: PRODUCTS

2.01 MATERIALS

Provide all materials incidental and required to construct safety barricades, dust-proof enclosures, and noise and/or weather-proof enclosures, including but not necessarily limited to:

- A. Wood: Meet requirements of CBC for Standard or Better grade Douglas Fir.
- B. Moisture Barrier: Polyethylene film, minimum six mils thick, conforming to ASTM D2103.
- C. Insulation: Friction-fit, flexible blanket or batt of fiberglass, kraft paper vapor barrier one side, conforming to FS HH-I-521E.
- D. Miscellaneous: Rough hardware, nails, wire, clips, staples, tape paint, etc.

PART 3: EXECUTION

3.01 INSPECTION

- A. Examine areas affected by work of this Section and verify that:
 - 1. Utilities have been disconnected.
 - 2. Utilities serving occupied portions of buildings will not be disturbed, or that acceptable temporary services are fully operable.
 - 3. Determine the sequence of demolition work to achieve efficient progress and to maintain general structural safety.
 - 4. Removal of the Owner's property, movable furniture and equipment items has been completed.
- B. Report unacceptable conditions to the Architect. Do not begin Work until unacceptable conditions have been resolved. Commencement of Selective Component Demolition shall constitute acceptance of the existing conditions. Do not start work until unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Lay out cutting and enclosure work at job site and coordinate with related work for which cutting is required.
- B. Review proposed layout with the Architect prior to performing cutting operations.

3.03 DEMOLITION

- A. Perform work in accordance with ANSI A10.6 unless otherwise indicated.
- B. Demolish concrete and masonry in small sections; lower heavy framing members carefully.
- C. Power tools may be employed as required to cut masonry or concrete elements to facilitate removal. The Contractor shall schedule all noisy activities to cause a minimum of interference with other adjacent activities. Saw cut perimeter of all openings prior to demolition, and where required by the Drawings. When building use is scheduled to continue during demolition operations, the Contractor shall review the use of equipment which creates undue noise or vibration with the Owner for verification of allowable hours of use.
- D. Cutting torches shall be employed as required to cut metal members to facilitate removal, taking great care to avoid creating danger of collapse of large, heavy elements, and to avoid setting fires within adjacent combustible materials.

- E. All penetrations of concrete slabs or walls and masonry wall for mechanical, plumbing or electrical pipe shall be cut using an acceptable coring method. Cutting at existing concrete and AC paving, slab and walk shall not exceed 3" deep to prevent damaging existing shallow utility lines. Obtain specific permission from the Architect for all cutting or coring of structural elements including beams, slabs, reinforced walls, or bearing walls of unknown internal construction. Cored holes shall be restricted to a minimum standard core barrel to admit the pipe to be installed.
- F. Use of explosives will NOT be permitted.

3.04 REPAIR OF DAMAGE

If the operations of the required demolition cause damage to components scheduled to remain, Contractor shall repair such damage without extra cost to the Owner. Such repair shall restore the damaged components to the condition as of the start of operations, and to match adjacent finishes or components.

3.05 FIELD QUALITY CONTROL

- A. The Contractor shall make inspections of adjacent structures, and of improvements to remain, and report defects and structural weaknesses of structures to remain, be partially demolished, cut or removed.
- B. The Architect will inspect conditions before and after performance of work to confirm physical soundness of structures or improvements involved.

3.06 REMOVALS

- A. Remove salvage materials and items scheduled for reuse and store as directed.
- B. Do not permit the presence of debris to delay progress of related work. Remove from job site as debris accumulates.
- C. Remove from the site all demolished materials not otherwise scheduled for salvage. Do not store, sell, burn or otherwise dispose of materials resulting from this work on job site.
- D. Saw-cutting and slab removal for underslab piping or conduit for a single trade shall be by that respective trade. For large-area slab removal for multiple trades, involves cutting curbs or under an existing wall, or shown only on the A-Series Drawings: Shall be by this Section 02 41 20.

3.07 REMOVALS RELATED TO ELECTRICAL, HVAC, PLUMBING AND SIMILAR TRADES

- A. If the Drawings of E-, P- and M-Series (or other Drawings of similar "utilities" trades indicate "by Sec. 02 41 20", or something similar), or if the General Contractor directs that the demolition of certain materials or systems is to be provided by this Sec. 02 41 20, the following shall be the basis under which the removal shall be made.
 - 1. Piping, wiring and ductwork, etc., shall to be removed by the respective trade related to the Drawings under consideration. If the Drawings show modification or replacement of the system to which the subject work is directly related, the removal

work shall be by the respective trade.

2. If there is solely removal and no follow-up modification or replacement, or if the demolition requires removal of the wall or ceiling which supports the electrical or plumbing system which is to be removed (as long as the respective trade indicates to the demolition people the manner in which the existing system is to be handled), then the General Contractor may designate a "demolition subcontractor is so remove".
3. The remover of fluorescent fixtures shall be responsible for initiating the requirements of Section 01 35 43.

END OF SECTION

SECTION 028113 - REMOVAL OF HAZARDOUS MATERIAL**PART 1: GENERAL****1.01 DESCRIPTION**

- A. This Section contains the Krazan & Associates, Inc. hazardous materials data on existing ceilings which are to be demolished by Sec. 02 41 20 under this Project. All of the instructions prepared by Krazan & Associates, Inc. are to be followed by the subcontractor providing the hazardous material removal work herein required. The removals required by the Krazan & Associates data shall be accomplished by the licensed Contractor before demolition of the items indicated per these plans and specifications in which the removals are scheduled.

PART 2: CONTENTS OF THIS SECTION ARE AS FOLLOWS:

Asbestos Survey, Prepared by Krazan & Associates dated June 25, 2025.

Lead-Based Paint Survey, Prepared by Krazan & Associates, dated June 25, 2025.

* * * * *

**HAZARDOUS MATERIALS SURVEY
CENTRAL LIBRARY CEILING UPGRADES
2420 MARIPOSA STREET
FRESNO, CALIFORNIA**

Project No. 014-25063
June 25, 2025

Prepared for:
Hoque Kahn
Fresno County Public Works and Planning
2220 Tulare Street, Eighth Floor
Fresno, California 93721
(559) 600-4528

Prepared by:
Krazan & Associates, Inc.
215 West Dakota Avenue
Clovis, California 93612
(559) 348-2200

TABLE OF CONTENTS
Project No. 014-25063

	Page
1.0 INTRODUCTION	1
2.0 PURPOSE AND SCOPE OF WORK	1
3.0 BUILDING DESCRIPTION	2
4.0 INVESTIGATIVE METHODS	2
4.1 Survey Protocols	2
4.1.1 Asbestos	2
4.1.2 Lead	2
4.1.3 Fluorescent Light Ballasts	3
4.2 Laboratory Analytical Methods	3
4.2.1 Laboratory Analysis: Asbestos	3
4.2.2 Laboratory Analysis: Lead	3
5.0 RESULTS OF INVESTIGATION	3
6.0 CONCLUSIONS	4
6.1 Asbestos	4
6.2 Lead	5
6.3 Fluorescent Light Ballasts	6
7.0 LIMITATIONS	6

Appendices

Asbestos Analytical Results and Chain-of-Custody Record, Table I, Figures 1, 2 and 3	A
Lead-Based Paint Analytical Results and Chain-of-Custody Record, Table II, Figures 4, 5, and 6	B
Inspector Certifications	C

June 25, 2025

Project No. 014-25063
Page No. 1

**HAZARDOUS MATERIALS SURVEY
CENTRAL LIBRARY CEILING UPGRADES
2420 MARIPOSA STREET
FRESNO, CALIFORNIA**

1.0 INTRODUCTION

This report presents the results of our hazardous materials (hazmat) survey for the library structure located at 2420 Mariposa St. in Fresno, California in interior areas planned for ceiling upgrades. The survey was conducted under the conditions of Krazan & Associates, Inc.'s (Krazan's) Proposal No. P25-219, dated May 9, 2025. Erin Haagenson gave written authorization on May 16, 2025, for Krazan to proceed with the survey.

2.0 PURPOSE AND SCOPE OF WORK

The purpose of the hazmat survey was to identify and quantify the presence of asbestos containing material (ACM) and lead containing paint / lead based paint (LCP/LBP) at the on-site structure. The scope of work for the asbestos survey included conducting a visual survey of the structure and conducting bulk sampling and analysis of materials suspected to contain asbestos or lead. This survey was performed in accordance with applicable local, state, and federal regulations.

The Krazan representative collected samples and obtained analytical data for suspect asbestos and/or lead containing materials identified in the building. Once collected, each bulk sample was sealed in an unadulterated plastic bag to eliminate the possibility of cross-contamination. "Chain-of-Custody" tracking was followed to maintain sample integrity during handling and data reporting. A walk-through inspection of all accessible areas of this structure was performed to identify potential hazardous materials. The walk-through inspection included a review of the internal aspects of this structure. The locations and types of potential hazardous materials were noted.

Fresno County additionally requested a visual examination of exposed surfaces within the structure for fluorescent lamps and PCB containing ballasts. These additional services were visual only and do not constitute a comprehensive inspection. Inaccessible areas of the structure were not examined for these additional potential hazards.

3.0 BUILDING DESCRIPTION

The site is located on the south side of Mariposa, west of O in Fresno, California. The structure was a two-story structure with basement. Interior construction included gypsum board, sprayed-on acoustic, acoustic ceiling tiles, plaster, concrete, and suspended ceilings with two-foot by four-foot ceiling panels; gypsum board, plaster, wood, concrete, concrete block, and ceramic-tiled walls; and concrete floors overlain (in areas) by floor tiles and ceramic tiles.

4.0 INVESTIGATIVE METHODS

4.1 Survey Protocols

4.1.1 Asbestos

Thirty (30) samples of suspected ACMs were collected from the interior of library structure. Sample locations for this survey were chosen in a semi-random fashion with emphasis placed on minimizing damage to the sampled materials. The samples were collected by carefully removing a small amount of the suspect material in a non-abrasive manner. If possible, samples were collected from existing damaged areas or loose pieces of materials. Each sample was placed in a separate sealed plastic bag, and labeled with the sample number. Refer to the Floor Plans (Figures 1, 2, and 3) in appendix A for the bulk sample locations.

4.1.2 Lead

Eleven (11) representative samples of paint were collected from the interior of the library structure. Once collected, each bulk sample was sealed in a separate sealed plastic bag and labeled with a sample number.. Sampling was representative of all layers of paint. Refer to the Floor Plans (Figures 4, 5, and 6) in appendix B for the bulk sample locations.

4.1.3 Fluorescent Light Ballasts

Fluorescent light ballasts were examined using a Philips electronic ballast checker, the ballasts in light fixtures that were not in working order are considered to contain PCBs unless visually verified by the contractor..

4.2 Laboratory Analytical Methods

4.2.1 Laboratory Analysis: Asbestos

The bulk samples collected were analyzed by Environmental Hazards Services (EHS) of Richmond, Virginia, to detect the presence, type, and percentage of asbestos by polarized light microscopy/dispersion staining, following the procedure described in 40 CFR 763, Subpart E, Appendix A (ASHERA). Copies of the Analytical Results and Chain-of-Custody Record are included in Appendix A.

4.2.2 Laboratory Analysis: Lead

Paint chip samples were analyzed by EHS of Richmond, Virginia, to detect the presence of total lead in accordance with EPA Method 7420. Copies of the analytical results and Chain-of-Custody Record are included in Appendix B.

5.0 RESULTS OF INVESTIGATION

As stated previously, 30 samples of suspected ACMs and 11 samples of suspected LBPs were collected from interior of the library structure. Analytical laboratory results and field observations of the materials sampled have been summarized on Table I and II, respectively in appendixes A & B respectively. Information presented within these tables includes the sample number, the sample description, the location where the sample was obtained, the asbestos/lead content, the volume of ACMs/LBPs identified (typically expressed in square feet), the condition of the material sampled, and a listing of locations where similar (homogenous) ACMs were also noted (although not necessarily sampled in these areas). In addition, footnotes have been provided to convey pertinent information regarding the specific sample or homogenous material.

The following materials were identified as containing at least one percent asbestos:

Sprayed-on acoustic ceiling – throughout basement (Sample Nos. 1, 2, 3, and 4). This material would be considered a friable ACM under the NESHAP Regulations.

The following paints contained 0.5% or greater total lead by weight and are defined as lead-based paint:

No paint samples contained 0.5% or greater lead by weight which defines lead-based paint.

The following paints contained greater than 0.009% total lead by weight and are defined as lead-containing paint:

Tan concrete wall – basement (Sample No. 1)

Tan plaster wall – 1st floor (Sample No. 3)

Tan concrete wall – 1st floor (Sample No. 4)

Blue concrete wall – 1st floor (Sample No. 6)

Green plaster wall – 1st floor (Sample No. 7)

Blue plaster wall – 2nd floor (Sample No. 8)

Tan plaster wall – 2nd floor (Sample No. 10)

The paints on the interior of the library building were generally in good condition.

Fluorescent Light Ballasts		
Total Ballasts	Non-PCB	Assumed-PCB
Basement – 355	198	157
1 st Floor – 636	477	159
2 nd Floor – 600	500	100

6.0 CONCLUSIONS

6.1 Asbestos

The National Emissions Standards for Hazardous Air Pollutants (NESHAP) defines regulated asbestos-containing materials (RACM) as the following: friable materials containing more than one percent asbestos as determined by polarized light microscopy; Category I non-friable materials (i.e., floor tiles, asphalt roofing products) containing more than one percent asbestos that have become friable, have been subjected to or will be subjected to sanding, grinding, cutting, or abrading; and Category II non-friable materials (i.e., non-friable asbestos-containing materials that are not Category I materials) containing more than one percent asbestos that have a high probability of becoming or have already been reduced to a friable condition by demolition or renovation activities. The above-noted samples that contain greater than one percent asbestos meet the definition of a RACM under the NESHAP. In addition, the California Division of Occupational Safety and Health (Cal-OSHA) defines asbestos-containing construction

material (ACCM) as greater than 0.1 percent asbestos. The above-noted samples that contain greater than 0.1 percent asbestos would meet the definition of an ACCM.

If these asbestos-containing materials are left in place, the occupants of the structure should avoid buffing, sanding, grinding, or abrading these materials in any way. These activities could potentially release asbestos fibers. An Operations and Maintenance Program (O&M Program) could be developed for the management of asbestos-containing materials if left in place. The development and implementation of such a program would require the designation and training of an asbestos program manager. The asbestos program manager would be responsible for conducting periodic inspections of the asbestos-containing materials, record keeping requirements, and providing awareness training necessary for any maintenance or custodial personnel required to clean or repair these materials. Furthermore, it is recommended that the asbestos program manager notify all potentially affected individuals.

When building maintenance, repair, renovation, or other activities disturb or damage ACMs, asbestos fibers may be released creating a potential hazard. Therefore, removal of friable and non-friable ACMs that have the potential to become friable during demolition and/or renovation is federally regulated under the NESHAP. The San Joaquin Valley Air Pollution Control District (APCD) is the responsible agency on the local level to enforce the NESHAP. The APCD Regional Office requires that asbestos-containing materials (ACM) be removed prior to renovation or demolition activities. Additionally, the APCD must be notified prior to any demolition and/or renovation activities.

6.2 Lead

Occupational exposure to lead is regulated by both the Federal Occupational Safety and Health Administration (OSHA) (29 CFR 1926.62) and California OSHA (Title 8, GISO 5198 and CSO 1532.1). Based on Federal and California OSHA, when disturbing paints which contain lead (any amount of detectable lead), the above-noted OSHA and California OSHA regulations should be followed. Furthermore, the United States Department of Housing and Urban Development (HUD) publication entitled "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing," dated 1995, outlines specific guidelines for disrupting paint with lead in excess of 5,000 mg/kg (lead-based paint). These guidelines have been developed primarily to address conditions within buildings utilized for residential purposes. In addition, industry accepted standards also suggest that building owners notify occupants regarding the presence, location, and extent of lead-based paints.

All construction work where an employee may be occupationally exposed to lead containing paint, including building renovation and demolition, must comply with OSHA Regulation 29 CFR 1926.62 and California OSHA Title 8, CSO 1532.1. This regulation requires initial employee exposure monitoring to evaluate worker exposure during work that disturbs lead containing paint. Krazan suggests that engineering controls and air monitoring for airborne lead be conducted at the start of projects in which worker exposure to lead containing paint is likely.

Demolition of buildings containing lead-based paint is not specifically regulated by the San Joaquin Valley Air Pollution Control District (APCD). General requirements for building demolition, however, such as dust control, must be strictly followed. Also, building components which have been identified as being coated with loose and flaking LBPs must be handled (typically done by scraping of loose/flaking LBPs and then stabilized with an over coating of fresh paint) and LBP chips disposed of as a Hazardous Waste and not be discarded as general construction debris.

6.3 Fluorescent Light Ballasts

Krazan observed fluorescent light ballasts in the inspected areas of the library structure. Fluorescent light ballasts were examined using a Philips electronic ballast checker in the course of the investigation. Many of the lights had one or more of the fluorescent light tubes missing or burned out. Light fixtures that were operating correctly indicated an electronic ballast so that the presence of PCBs were not suspected. However, the inspector was not able to get an accurate read of the ballast checking device on lights that were not functioning properly. Krazan recommends that ballasts that are not labeled as “No PCBs” be handled and disposed of as if they were PCBs-containing (due to the cost of analytical testing versus disposal costs).

7.0 LIMITATIONS

This survey and review of the subject property has been limited in scope. This investigation is undertaken with the risk that visual observations and random sampling alone would not reveal the presence, full nature, and extent of all potentially hazardous materials. Krazan makes no representation as to the presence of hazardous materials not sampled or that were inaccessible to our inspector (i.e., between walls, beneath floors, in pipe chases, etc.). The sample locations and building dimensions were measured/located in the field by tape measurement from existing features. Therefore, the sample

locations, building dimensions, and approximate square footage of asbestos-containing materials should be considered accurate only to the degree implied by the methods used.

The findings presented in this report were based on field observations, random sampling and analysis, review of available data, and discussions with local regulatory and advisory agencies. Therefore, the data obtained are clear and accurate only to the degree implied by the sources and methods used. The information presented herewith was based on professional interpretation using presently accepted methods with a degree of conservatism deemed proper as of the report date. We do not warrant that future technical developments cannot supersede such data.

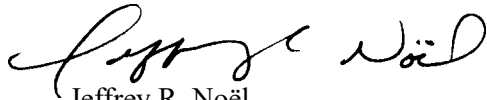
This hazmat survey is not intended to be the sole basis for hazardous materials removal bids. Confirmation of the condition and volume of hazardous materials should be conducted by prospective removal contractors prior to accepting removal bids. This report is provided for the exclusive use of the client noted on the cover page and is subject to the terms and conditions in the applicable contract between the Client and Krazan. The client is the only party to whom Krazan has explained the risks involved and has been involved in the shaping of the scope of services needed to satisfactorily manage those risks, if any, from the client's point of view. Any third party use of this report, including use by the Client's lender, prospective purchaser, or lessee will be subject to the terms and conditions governing the contractual work between the Client and Krazan. The unauthorized use of, reliance on, or release of the information contained in this report, without the expressed written consent of Krazan, is strictly prohibited and will be without risk or liability to Krazan.

Asbestos analysis was conducted by a laboratory accredited under the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology (NIST). The results of the asbestos analyses are accurate only to the degree and care of ensuring the testing accuracy and the representative nature of the samples obtained.

Lead-paint testing was done by a laboratory certified by the State of California Department of Public Health (DPH) and accredited as an AIHA Environmental Lead Laboratory Accreditation Program (ELLAP) laboratory. Therefore, the data are accurate only to the degree implied by review of the data obtained and by professional interpretation, and the degree of care of ensuring the testing accuracy and the representative nature of the samples obtained.

If you have any questions or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Jeffrey R. Noël".

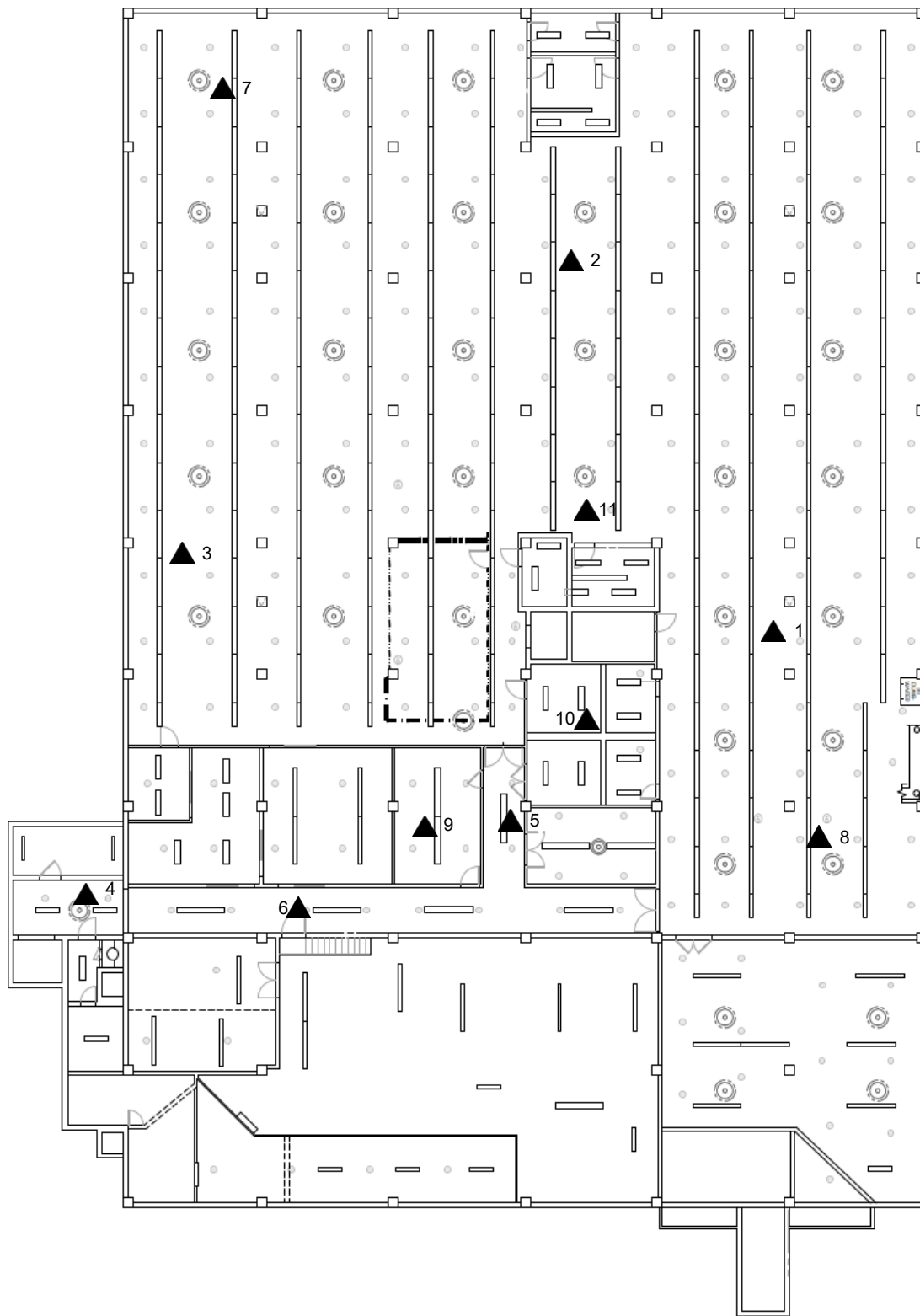
Jeffrey R. Noël
DOSH Certified Asbestos Consultant
No. 00-2828
DPH Certified Lead Inspector/Assessor
LRC-00003853

JRN/mlt

Appendix A

TABLE I
ASBESTOS ANALYSIS RESULTS
Central Library Ceiling Upgrades
2420 Mariposa Street
Fresno, California
June 17, 2025 Sampling

Sample No.	Sample Description	Sample Location	Asbestos Content	Approx. Sq. Ft.	Condition / Friability	Notes/ Additional locations
1	Sprayed-on acoustic	basement	5%	14,000	G/FR	homogenous throughout
2	Sprayed-on acoustic	basement	5%	see # 1	G/FR	homogenous throughout
3	Sprayed-on acoustic	basement	5%	see # 1	G/FR	homogenous throughout
4	Sprayed-on acoustic	basement	5%	see # 1	G/FR	homogenous throughout
5	Plaster	basement	ND	NC	NA	homogenous throughout
6	Plaster	basement	ND	NC	NA	homogenous throughout
7	Plaster	basement	ND	NC	NA	homogenous throughout
8	Plaster	basement	ND	NC	NA	homogenous throughout
9	Skim coat	basement	ND	NC	NA	homogenous throughout
10	Skim coat	basement	ND	NC	NA	homogenous throughout
11	Skim coat	basement	ND	NC	NA	homogenous throughout
12	12-in by 12-in Ceiling tile	1st floor	ND	NC	NA	acoustic, off-white, main
13	12-in by 12-in Ceiling tile	1st floor	ND	NC	NA	acoustic, off-white, patch
14	Ceiling tile mastic	1st floor	ND	NC	NA	
15	Gypsum board / taping material	1st floor	ND	NC	NA	homogenous throughout
16	Gypsum board / taping material	1st floor	ND	NC	NA	homogenous throughout
17	Gypsum board / taping material	1st floor	ND	NC	NA	homogenous throughout
18	Plaster	1st floor	ND	NC	NA	homogenous throughout
19	Plaster	1st floor	ND	NC	NA	homogenous throughout
20	Plaster	1st floor	ND	NC	NA	homogenous throughout
21	12-in by 12-in Ceiling tile	2nd floor	ND	NC	NA	acoustic, off-white, main
22	12-in by 12-in Ceiling tile	2nd floor	ND	NC	NA	acoustic, off-white, patch
23	12-in by 12-in Ceiling tile	2nd floor	ND	NC	NA	acoustic, off-white, patch
24	Ceiling tile mastic	2nd floor	ND	NC	NA	
25	Gypsum board	2nd floor	ND	NC	NA	homogenous throughout
26	Gypsum board	2nd floor	ND	NC	NA	homogenous throughout
27	Gypsum board	2nd floor	ND	NC	NA	homogenous throughout
28	Plaster	2nd floor	ND	NC	NA	homogenous throughout
29	Plaster	2nd floor	ND	NC	NA	homogenous throughout
30	Plaster	2nd floor	ND	NC	NA	homogenous throughout
NA	= Not applicable		F	= Fair condition		
NC	= Not calculated		G	= Good condition		
ND	= None detected		NF	= Non-friable		
Trace	= Less than one percent (<1%) chrysotile asbestos		FR	= Friable		



Basement

EXPLANATION

▲ BUILDING MATERIAL SAMPLE LOCATION

FLOOR PLAN WITH BUILDING MATERIAL
SAMPLE LOCATIONS

CENTRAL LIBRARY CEILING UPGRADES
2420 MARIPOSA STREET
FRESNO, CALIFORNIA

Scale:
NOT TO SCALE

Drawn by:
J. R. N.

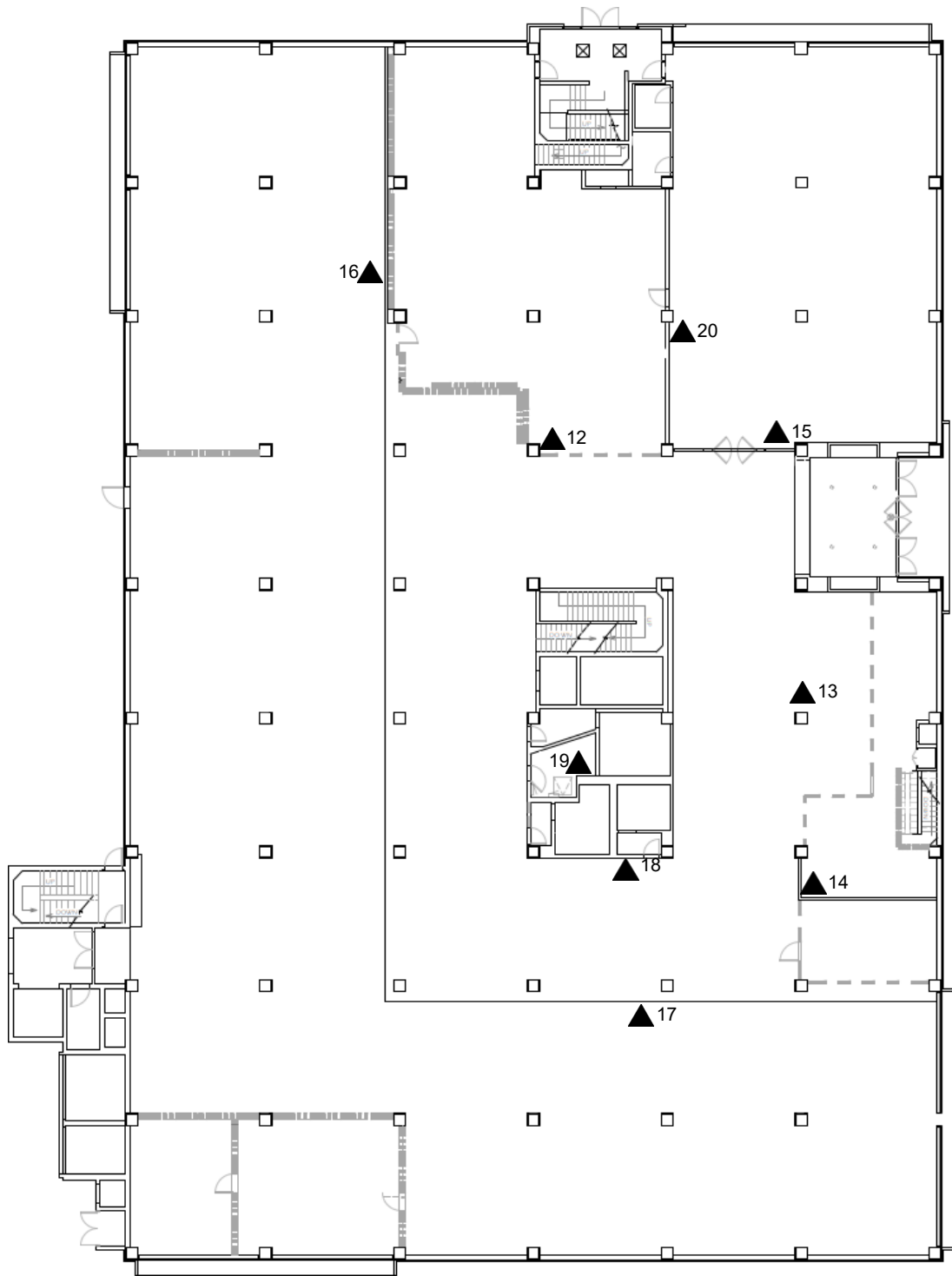
Project No.
014-25063

Date:
6 / 25

Approved by:
J.R.N

Figure No.
1

 **Krazan**
ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS
Offices Serving the Western United States



1st Floor

EXPLANATION

▲ BUILDING MATERIAL SAMPLE LOCATION

**FLOOR PLAN WITH BUILDING MATERIAL
SAMPLE LOCATIONS**

**CENTRAL LIBRARY CEILING UPGRADES
2420 MARIPOSA STREET
FRESNO, CALIFORNIA**

Scale:
NOT TO SCALE

Drawn by:
J. R. N.

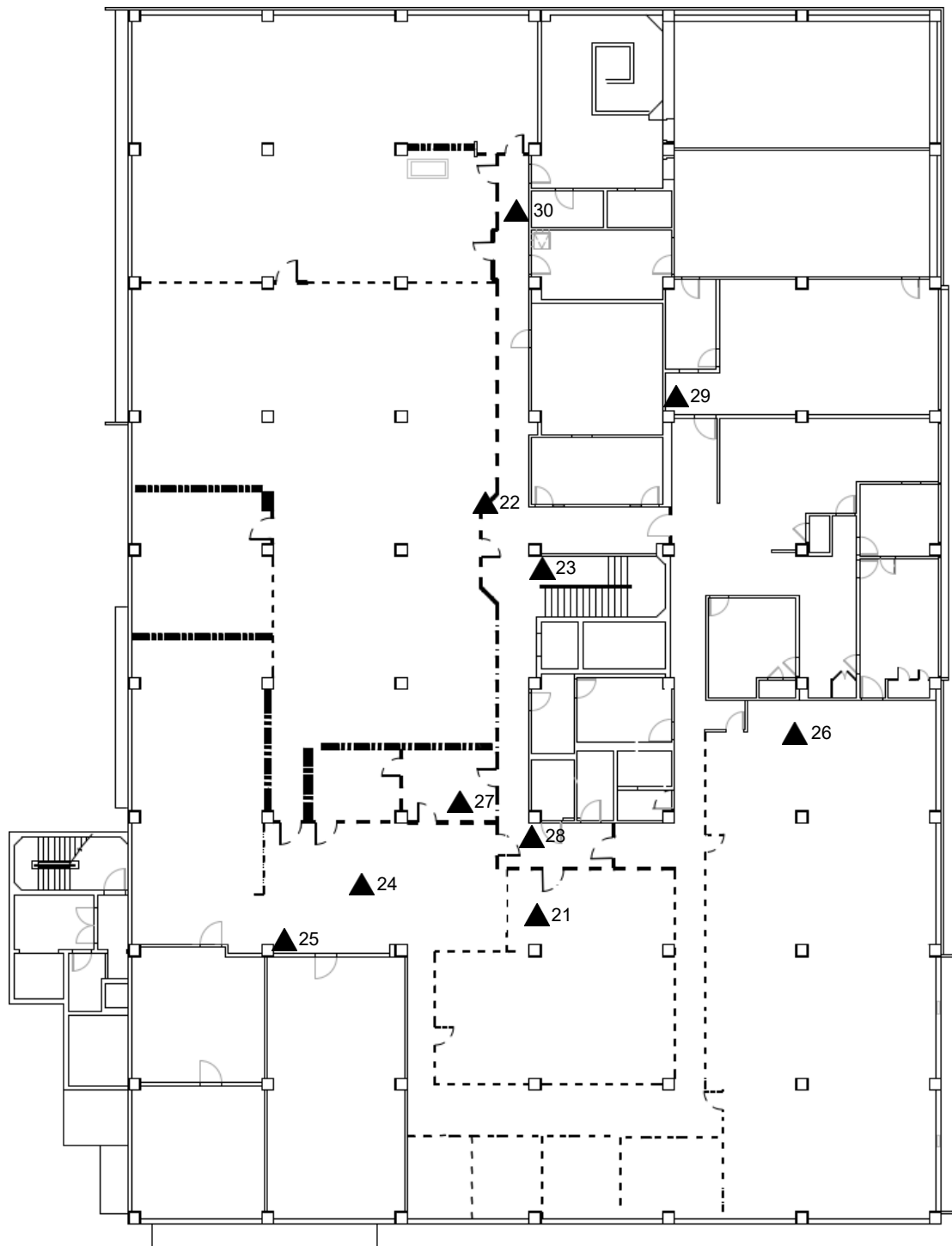
Project No.
014-25063

Date:
6 / 25

Approved by:
J.R.N

Figure No.
2

Krazan
ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS
Offices Serving the Western United States



2nd Floor

EXPLANATION

▲ BUILDING MATERIAL SAMPLE LOCATION

FLOOR PLAN WITH BUILDING MATERIAL
SAMPLE LOCATIONS

CENTRAL LIBRARY CEILING UPGRADES
2420 MARIPOSA STREET
FRESNO, CALIFORNIA

Scale:
NOT TO SCALE

Drawn by:
J. R. N.

Project No.
014-25063

Date:
6 / 25

Approved by:
J.R.N

Figure No.
3

 **Krazan**
ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS
Offices Serving the Western United States



7469 Whitepine Rd
North Chesterfield, VA 23237
Telephone: 800.347.4010

Asbestos Bulk Analysis Report

Report Number: 25-06-03652

Client: Krazan & Associates Inc.
215 West Dakota Ave
Clovis, CA 93612

Received Date: 06/18/2025
Analyzed Date: 06/19/2025
Reported Date: 06/19/2025

Project/Test Address: 014-25063; Central Library Ceiling Upgrades

Client Number:
05-5650

Fax Number:
559-348-2201

Laboratory Results

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
25-06-03652-001	1		White Textured Paint-Like; Beige Powdery; Fibrous; Inhomogeneous	5% Chrysotile	95% Non-Fibrous
Total Asbestos:				5%	
Chrysotile present throughout sample.					
25-06-03652-002	2		White Textured Paint-Like; Beige Powdery; Inhomogeneous	5% Chrysotile	95% Non-Fibrous
Total Asbestos:				5%	
Chrysotile present throughout sample.					
25-06-03652-003	3		White Textured Paint-Like; Beige Powdery; Inhomogeneous	5% Chrysotile	95% Non-Fibrous
Total Asbestos:				5%	
Chrysotile present throughout sample.					
25-06-03652-004	4		White Textured Paint-Like; Beige Powdery; Inhomogeneous	5% Chrysotile	95% Non-Fibrous
Total Asbestos:				5%	
Chrysotile present throughout sample.					
25-06-03652-005	5		Off-White Granular; Homogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 05-5650

Report Number: 25-06-03652

Project/Test Address: 014-25063; Central Library Ceiling
Upgrades

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
25-06-03652-006	6		Off-White Granular; Homogeneous	NAD	100% Non-Fibrous
25-06-03652-007	7		Off-White Granular; Homogeneous	NAD	100% Non-Fibrous
25-06-03652-008	8		Off-White Granular; Homogeneous	NAD	100% Non-Fibrous
25-06-03652-009	9		Tan Paint-Like; White Granular; Inhomogeneous	NAD	100% Non-Fibrous
25-06-03652-010	10		Tan Paint-Like; White Granular; Inhomogeneous	NAD	100% Non-Fibrous
25-06-03652-011	11		Tna Paint-Like; White Granular; Inhomogeneous	NAD	100% Non-Fibrous
25-06-03652-012	12		White Paint-Like; White Fibrous; Inhomogeneous	NAD	3% Cellulose 85% Fibrous Glass 12% Non-Fibrous
25-06-03652-013	13		White Paint-Like; White Fibrous; Inhomogeneous	NAD	3% Cellulose 85% Fibrous Glass 12% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 05-5650

Report Number: 25-06-03652

Project/Test Address: 014-25063; Central Library Ceiling
Upgrades

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
25-06-03652-014	14		Brown Adhesive; Homogeneous	NAD	100% Non-Fibrous
25-06-03652-015	15		Green Paint-Like; White Brittle; Brown Fibrous; White Chalky; Inhomogeneous	NAD	25% Cellulose 75% Non-Fibrous
25-06-03652-016	16		Beige Powdery; Brown Fibrous; White Chalky; Inhomogeneous	NAD	25% Cellulose 75% Non-Fibrous
25-06-03652-017	17		Beige Powdery; Brown Fibrous; White Chalky; Inhomogeneous	NAD	25% Cellulose 75% Non-Fibrous
25-06-03652-018	18		White Granular; Homogeneous	NAD	100% Non-Fibrous
25-06-03652-019	19		White/Off-White Granular; Inhomogeneous	NAD	100% Non-Fibrous
25-06-03652-020	20		Green Paint-Like; White Granular; Inhomogeneous	NAD	100% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 05-5650

Report Number: 25-06-03652

Project/Test Address: 014-25063; Central Library Ceiling
Upgrades

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
25-06-03652-021	21		White Paint-Like; White Fibrous; Inhomogeneous	NAD	3% Cellulose 85% Fibrous Glass 12% Non-Fibrous
25-06-03652-022	22		White Paint-Like; White Fibrous; Inhomogeneous	NAD	3% Cellulose 85% Fibrous Glass 12% Non-Fibrous
25-06-03652-023	23		White Paint-Like; White Fibrous; Inhomogeneous	NAD	3% Cellulose 85% Fibrous Glass 12% Non-Fibrous
25-06-03652-024	24		Brown Adhesive; Homogeneous	NAD	100% Non-Fibrous
25-06-03652-025	25		White Chalky; Homogeneous	NAD	3% Cellulose 8% Fibrous Glass 89% Non-Fibrous
25-06-03652-026	26		White Chalky; Homogeneous	NAD	3% Cellulose 8% Fibrous Glass 89% Non-Fibrous
25-06-03652-027	27		Brown Fibrous; White Chalky; Inhomogeneous	NAD	15% Cellulose 5% Fibrous Glass 80% Non-Fibrous

Environmental Hazards Services, L.L.C

Client Number: 05-5650
Project/Test Address: 014-25063; Central Library Ceiling
Upgrades

Report Number: 25-06-03652

Lab Sample Number	Client Sample Number	Layer Type	Lab Gross Description	Asbestos	Other Materials
25-06-03652-028	28		Beige Paint-Like; Off-White Granular; Inhomogeneous	NAD	100% Non-Fibrous
25-06-03652-029	29		Beige Paint-Like; Off-White Granular; Inhomogeneous	NAD	100% Non-Fibrous
25-06-03652-030	30		Beige Paint-Like; Off-White Granular; Inhomogeneous	NAD	100% Non-Fibrous

QC Sample: 96-M22012-4
QC Blank: SRM 1866 Fiberglass
Reporting Limit: 1% Asbestos
Method: EPA Method 600/R-93/116, EPA Method 600/M4-82-020
Analyst: Keleigh King

Reviewed By Authorized Signatory:



Tasha Eaddy
QA/QC Clerk

These results are based on a comparative visual estimate. The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Each distinct component in an inhomogeneous sample was analyzed separately and reported as a composite. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of the Environmental Hazards Service, L.L.C. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection. . NVLAP #101882-0 VELAP 460172

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), (for enhanced detection capabilities) for materials regulated by EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

400 Point Count Analysis, where noted, performed per EPA Method 600/R-93/116 with a Reporting Limit of 0.25%.

LEGEND: NAD = no asbestos detected

EPA 600 PLM ASBESTOS SAMPLE

CHAIN OF CUSTODY

TURNAROUND TIME: Same Day 1-DAY 2-DAY 3-DAY 5-Day

Client Name: Krazan & Associates, Inc.	Contact: Jeff Noel	Phone: (559) 348-2200	Fax: (559) 348-2201
Address: 215 West Dakota Avenue	City: Clovis	State: California	Zip: 93612

PROJECT NAME: Central Library Ceiling Moorades PROJECT ID #: 014-25063 DATE SAMPLES TAKEN: 6/17/25

SAMPLES RECEIVED (#) _____ DATE RECEIVED _____ CONDITION: _____ SAMPLES ACCEPTED (Y , Ig) _____ IF NO, WHY? _____

25-06-03b52



Due Date:

06/25/2025

(Wednesday)

EL

30 PLM

E.H.S. Sample #	Client ID#	Sample Location	Sample Description	E.H.S. Sample #	Client ID#	Sample Location
	1	2420 Mariposa Street	Sprayed-on acoustic			
	2		Sprayed-on acoustic			
	3		Sprayed-on acoustic			
	4		Sprayed-on acoustic			
	5		Plaster			
	6		Plaster			
	7		Plaster			
	8		Plaster			
1	9		Skiff COdt			
	10		Skimcoat			
	11		Skimcoat			
	12		12-in Dy 12-in Ceiling tile			
	13		12-in Dy 12-in Ceiling tile			
	14		Ceiling tile mastic			
	15		} Gypsum board / taping material			
	16		Gypsum board / taping material			
	17		Gypsum board / taping material			
	18		Plaster			
	19		Plaster			
	20		Plaster			
	21		12-in by 12-in Ceiling tile			
	22		12-in by 12-in Ceiling tile			
	23		12-in by 12-in Ceiling tile			
	24		Ceiling tile mastic			
	25		Gypsum board			
	26		{ Gypsum board			
	27		Gypsum board			
	28		Plaster			
	29		} Plaster			
			Plaster			

ENVIRONMENTAL HAZARD SERVICES, L.L.C
 7469 WHITE PINE ROAD
 RICHMOND, VA 23237
 PHONE (804) 275-4788 FAX (804) 275-4907

RELINQUISHED BY:

RECEIVED AT E.H.S. BY:

DATE:

DATE:

Appendix B

TABLE II
LEAD-BASED PAINT SURVEY RESULTS
Central Library Ceiling Upgrades
2420 Mariposa Street
Fresno, California
June 17, 2025 Sampling

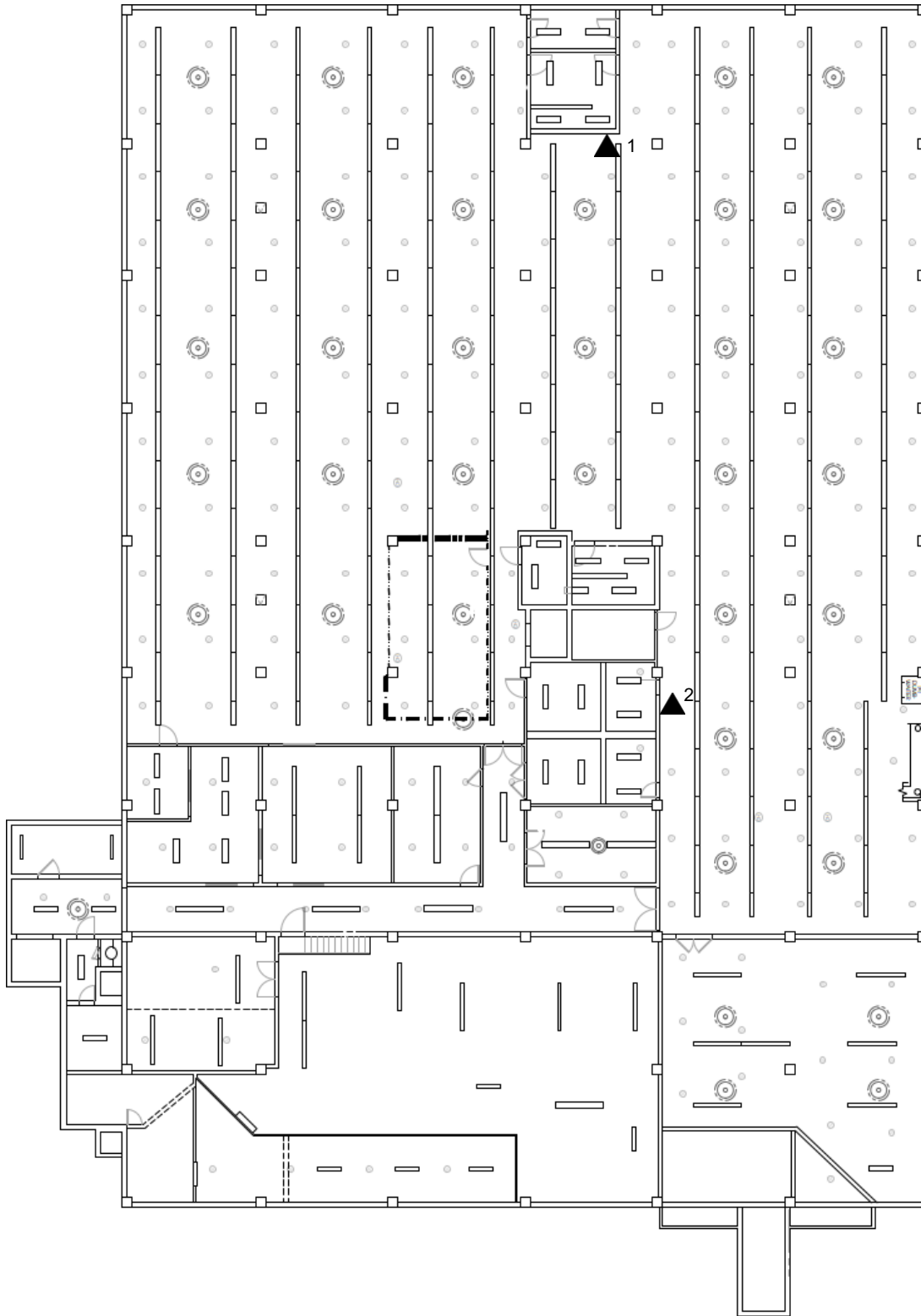
Sample No.	Sample Location	Paint Sampled	Lead content % by weight	Volume est. in sq. ft.	Condition	Notes/ Additional locations
<i>1</i>	<i>basement</i>	<i>concrete wall</i>	<i>0.056</i>	<i>NC</i>	<i>good</i>	<i>tan</i>
<i>2</i>	<i>basement</i>	<i>plaster wall</i>	<i><0.0036</i>	<i>NC</i>	<i>good</i>	<i>green</i>
<i>3</i>	<i>1st floor</i>	<i>plaster wall</i>	<i>0.032</i>	<i>NC</i>	<i>good</i>	<i>tan</i>
<i>4</i>	<i>1st floor</i>	<i>concrete wall</i>	<i>0.058</i>	<i>NC</i>	<i>good</i>	<i>tan</i>
<i>5</i>	<i>1st floor</i>	<i>concrete wall</i>	<i><0.0043</i>	<i>NC</i>	<i>good</i>	<i>green</i>
<i>6</i>	<i>1st floor</i>	<i>concrete wall</i>	<i>0.093</i>	<i>NC</i>	<i>good</i>	<i>blue</i>
<i>7</i>	<i>1st floor</i>	<i>plaster wall</i>	<i>0.010</i>	<i>NC</i>	<i>good</i>	<i>green</i>
<i>8</i>	<i>2nd floor</i>	<i>plaster wall</i>	<i>0.050</i>	<i>NC</i>	<i>good</i>	<i>blue</i>
<i>9</i>	<i>2nd floor</i>	<i>plaster wall</i>	<i>0.0036</i>	<i>NC</i>	<i>good</i>	<i>green</i>
<i>10</i>	<i>2nd floor</i>	<i>plaster wall</i>	<i>0.019</i>	<i>NC</i>	<i>good</i>	<i>tan</i>
<i>11</i>	<i>2nd floor</i>	<i>plaster wall</i>	<i><0.0043</i>	<i>NC</i>	<i>good</i>	<i>tan</i>

NOTE: Lead-based paint is defined as paint containing 0.5% or greater lead by weight. NC = Notcalculated

 Lead containing paint is defined as paint containing greater than 0.009% lead by weight.

Bold text items are considered Lead-based paint

Italic text items are considered Lead-containing paint



Basement

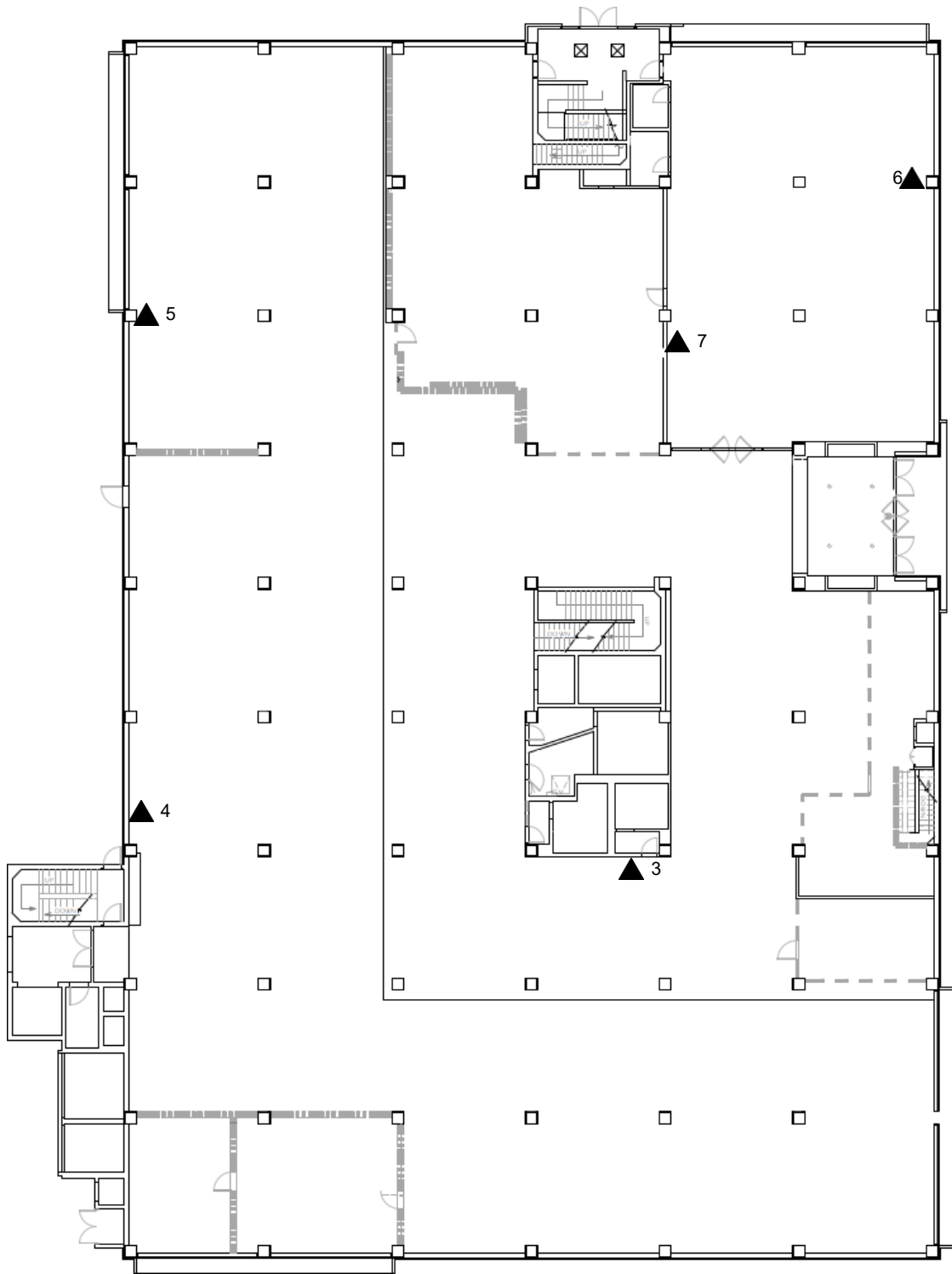
EXPLANATION

▲ PAINT SAMPLE LOCATION

FLOOR PLAN WITH
PAINT SAMPLE LOCATIONS
CENTRAL LIBRARY CEILING UPGRADES
2420 MARIPOSA STREET
FRESNO, CALIFORNIA

Scale: NOT TO SCALE	Date: 6 / 25
Drawn by: J. R. N.	Approved by: J.R.N
Project No. 014-25063	Figure No. 4

 **Krazan**
ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS
Offices Serving the Western United States



1st Floor

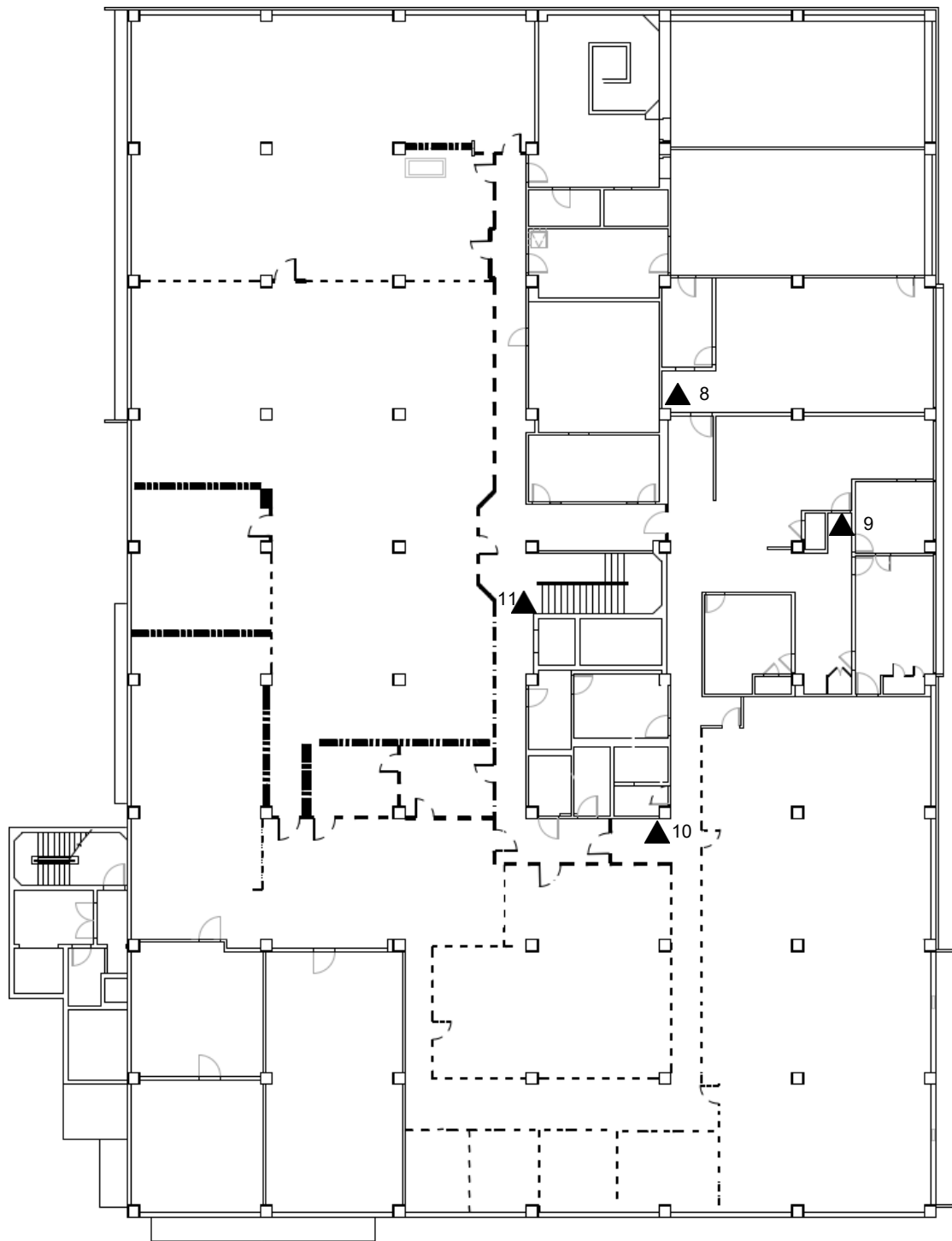
EXPLANATION

▲ PAINT SAMPLE LOCATION

FLOOR PLAN WITH
PAINT SAMPLE LOCATIONS
CENTRAL LIBRARY CEILING UPGRADES
2420 MARIPOSA STREET
FRESNO, CALIFORNIA

Scale: NOT TO SCALE	Date: 6 / 25
Drawn by: J. R. N.	Approved by: J.R.N
Project No. 014-25063	Figure No. 5

 **Krazan**
ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS
Offices Serving the Western United States



2nd Floor

EXPLANATION

▲ PAINT SAMPLE LOCATION

FLOOR PLAN WITH PAINT SAMPLE LOCATIONS CENTRAL LIBRARY CEILING UPGRADES 2420 MARIPOSA STREET FRESNO, CALIFORNIA	Scale:	Date:	 ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SPECIALISTS <i>Offices Serving the Western United States</i>
	NOT TO SCALE	6 / 25	
	Drawn by:	Approved by:	
	J. R. N.	J.R.N	
	Project No.	Figure No.	
	014-25063	6	



7469 Whitepine Rd
North Chesterfield, VA 23237
Telephone: 800.347.4010

Lead Paint Chip Analysis Report

Report Number: 25-06-03646

Client: Krazan & Associates Inc.
215 West Dakota Ave
Clovis, CA 93612

Received Date: 06/18/2025
Analyzed Date: 06/24/2025
Reported Date: 06/24/2025

Project/Test Address: 014-25063; Central Library Ceiling Upgrades; 2420 Mariposa Street
Collection Date: 06/17/2025

Client Number:
05-5650

Fax Number:
559-348-2201

Laboratory Results

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID
25-06-03646-001	1		560	0.056	
25-06-03646-002	2		<36	<0.0036	
25-06-03646-003	3		320	0.032	
25-06-03646-004	4		580	0.058	
25-06-03646-005	5		<43	<0.0043	
25-06-03646-006	6		930	0.093	
25-06-03646-007	7		100	0.010	
25-06-03646-008	8		500	0.050	
25-06-03646-009	9		36	0.0036	
25-06-03646-010	10		190	0.019	
25-06-03646-011	11		<43	<0.0043	

Environmental Hazards Services, L.L.C

Client Number: 05-5650
Project/Test Address: 014-25063; Central Library Ceiling Upgrades; 2420
Mariposa Street

Report Number: 25-06-03646

Lab Sample Number	Client Sample Number	Collection Location	Pb (ug/g) ppm	% Pb by Wt.	Narrative ID

Sample Narratives:

Preparation Method: ASTM E-1979-17
Analysis Method: EPA SW846 7000B

Reviewed By Authorized Signatory:

Melissa Kanode

Melissa Kanode
QA/QC Clerk

The Reporting Limit (RL) for samples prepared by ASTM E-1979-17 is 10.0 ug Total Pb. The RL for samples prepared by EPA SW846 3050B is 25.0 ug Total Pb. Paint chip area and results are calculated based on area measurements determined by the client. All internal quality control requirements associated with this batch were met, unless otherwise noted.

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, etc., was provided by the client. Results reported above in mg/cm3 are calculated based on area supplied by client. This report shall not be reproduced except in full, without the written consent of Environmental Hazards Services, L.L.C.

ELLAP Accreditation through AIHA LAP, LLC (100420), NY ELAP #11714.

LEGEND	Pb= lead	ug = microgram	ppm = parts per million
	ug/g = micrograms per gram	Wt. = weight	

Appendix C

DEPARTMENT OF INDUSTRIAL RELATIONS

Division of Occupational Safety and Health-Asbestos & Carcinogen Unit

1750 Howe Avenue, Suite 460

Sacramento, CA 95825

(916) 574-2993 Office <http://www.dir.ca.gov/dosh/asbestos.html> actu_dir.ca.oov

009132828C

210

August 21, 2024

Jeffrey Ronald Noel
1055 Chennoult Avenue
Clovis CA 93611

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please contact our office at the above address or email w any changes in your contact/mailing information within 15 days of the change.

Sincerely,

Dean Mochrie, CAC
Senior Safety Engineer

State of California
Division of Occupational Safety and Health
Certified Asbestos Consultant

Attachment: Certification Card

cc: File

Jeff/e a e

Certification No. zaz.

Expires on In/n/a«

This certification was issued by the Division of Occupational Safety and Health as by Sections 7180 et seq. of the Business and Professions Code.



Renewal — Card Attached (08/24)



STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH



LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:



Jeffrey Noel

CERTIFICATE TYPE:

Lead Inspector/Assessor
Lead Project Designer
Lead Supervisor

NUMBER:

LRC-00003853
LRC-00003854
LRC-00003852

EXPIRATION DATE:

1/4/2026
1/4/2026
1/4/2026

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at www.cdph.ca.gov/programs/clmnl or calling (800) 597-LEAD

SECTION 028319 - LEAD-BASED PAINT ABATEMENT – ENCAPSULATION**1.00 GENERAL REQUIREMENTS****1.01 WORK INCLUDED**

- A. Provide labor, equipment and materials to complete encapsulation of lead-based paint work involving floors, including and encapsulant and subsequent protective coating, as indicated on the drawings and as specified herein (for a historic/heritage structure in New Hampshire).

1.02 RELATED SECTIONS

- A. Specified elsewhere:
5. Section 09900 – Finishes
- B. References:
1. Lead and Environmental Hazards Association (LEHA)
 2. American Society for Testing and Materials (ASTM)
 3. U.S. Environmental Protection Agency (USEPA, EPA)
 4. U.S. Department of Housing and Urban Development (HUD)
 5. New Hampshire RSA Title X Public Health; Chapter 130-A Lead Paint Poisoning Prevention and Control, Subsections: VII “Encapsulation”, XIII “Lead base substance abatement”.
 6. New Hampshire Division of Public Health Services
 7. New Hampshire Bureau of Public Health Protection, Lead Poisoning Prevention Program

1.03 QUALITY ASSURANCE

- A. Cited Standards are incorporated herein by reference and govern the work:
1. ASTM E 1795-04 *Standard Specification for Non-Reinforced Liquid Coating Encapsulation Products for Leaded Paint in Buildings*, 2004
 2. ASTM E 1796-03(2011) *Standard Guide for Selection and Use of Liquid Coating Encapsulation Products for Leaded Paint in Buildings*
 3. ASTM D 4263-83 *Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method*
 4. ASTM F 1869-03 *Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride*
 5. ASTM F 2170-18 *Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes*
 6. Requirements for Lead-Based Paint Activities in Target Housing and Child-Occupational Facilities: 40 CFR 745, U.S. Environmental Protection Agency (EPA) (1996)
 7. U.S. Department of Housing and Urban Development (HUD), *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*, Chapter 13 Abatement by Encapsulation, 2nd edition, July 2012
 8. Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X of the Housing and Community Development Act of 1992 (US Public Law 102-550), Section 1017, 42 U.S.C. 4852c)

9. Lead Standard: 29 CFR 1910.1025 and 29 CFR 1926.62, U.S. Occupational Safety and Health Administration (OSHA) (1993)
 10. Steel Structures Painting Council (SSPC):
 - a. SSPC-SP 1 - Solvent Cleaning.
 - b. SSPC-SP 2 - Hand Tool Cleaning.
 - c. SSPC-SP 3 - Power Tool Cleaning.
 - d. SSPC-SP5/NACE No. 1, White Metal Blast Cleaning.
 - e. SSPC-SP6/NACE No. 3, Commercial Blast Cleaning.
 - f. SSPC-SP7/NACE No. 4, Brush-Off Blast Cleaning.
 - g. SSPC-SP10/NACE No. 2, Near-White Blast Cleaning.
 - h. SSPC-SP11, Power Tool Cleaning to Bare Metal.
 - i. SSPC-SP12/NACE No. 5, Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating.
 - j. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete.
 11. South Coast Air Quality Management District (SCAQMD): Rule 1113 - Architectural Coatings.
 12. FixAll Epoxy Troubleshooting Guide
 13. FixAll Epoxy Surface Preparation Guide
- C. Contractor Experience: The installer shall be a firm or individual experienced in applying coatings similar in material, design, and extent to those indicated for this Project, and whose work has resulted in applications with a record of at least 5 projects of successful in-service performance completed in the last 10 years.¹ Contractor must furnish the following proof of experience:
1. Letter or Certificate provided directly by Approved Encapsulant manufacturer stating that contractor (including project dedicated supervisor) has completed and satisfactorily demonstrated competent understanding of instructional training in lead-based paint encapsulation, and specific use of both the Approved Encapsulant, as well as the recommended protective topcoat (when specified for specific applications (such as floors).

1.04 SUBMITTALS

- A. Submit three (3) copies of product literature including technical data and label. Product submittals shall include the Approved Encapsulant product, any specified protective topcoats, and documentation for all supplementary system components (please refer to end notes of this specification for system components available).
- B. Submit three (3) copies performance testing reports from an independent testing laboratory demonstrating satisfactory compliance with all requirements of the ASTM E 1795 protocol, and the dry film thickness at which compliance was achieved.
- C. Submit three (3) copies of 20-year performance warranty, and any product installation and any application guide relevant to qualifying application for manufacturer's warranty. Warranty shall cover performance in accord with intent and purpose of encapsulation and definition of abatement of lead-based paint, as described in documents cited at 1.03 Quality Assurance. Encapsulant warranties which are limited to claims concerning manufacturer defect are not acceptable. Acceptable encapsulant performance warranties will be limited to materials, and not to labor. Not all application circumstances will be eligible for a performance warranty, and the manufacturer's representative must have been consulted regarding any warranty prior to bidding and award of the project.

No warranty extended subsequently will be considered valid without the express written consent of and provision by the manufacturer.

- D. Submit three (3) copies of contact information for pertinent local representative Approved Encapsulant manufacturer. Manufacturer must have representation sufficiently local and knowledgeable that assistance is available and informative in order to resolve project and material-specific questions.
- E. Submit three (3) copies of an applicator's proposed guarantee of workmanship for a period of one year from the date of substantial completion. This shall apply not to the encapsulant alone, but to the completed system.
- F. Submit three (3) copies of Underwriter's Laboratory (UL) Classification that the encapsulant is currently classified with UL in good standing, and that when evaluated by UL in accord with UL 723, the flame spread and smoke development has each been determined not to exceed a rating of 15. [N.B., The UL723 test standard has been approved by the American National Standard Institute (ANSI) as Standard A2.5, and the National Fire Protection Association as NFPA 255].
- G. Submit three (3) copies of manufacturer's Safety Data Sheets (SDS). Content of VOCs may vary by product color, but compliance is required with pertinent regulations regarding VOCs (EPA, CARB, OTC, OTC II). To ensure compliance with district regulations and other rules, businesses that perform coating activities should contact the local district in each area where the coating will be used.
- H. Submit three (3) sets of documentation available from encapsulant manufacturer indicating that the encapsulant composition has been independently reviewed by a certified toxicologist, that the encapsulant has been determined to be non-toxic, and that the encapsulant has been formulated with an EPA accepted and FDA approved, bitter tasting anti-ingestion agent.
- I. Submit three (3) copies of batch numbers from containers of material to be applied before Approved Encapsulant is installed. Owner, Client, Architect or Engineer will decide on a by-project basis if/which party is to retain this information. Such information must be retained and available (if applicable) during a warranty period has been extended by the manufacturer to the project.
- J. Encapsulant Maintenance Manual: Upon conclusion of the project, the Installer and/or encapsulant manufacturer/supplier shall furnish an encapsulant maintenance manual. Manual shall include an Area Summary with finish schedule*, Area Detail designating where each product/color/finish was used*, Technical Product Data Sheet (TDS)**, Safety Data Sheets (SDS)**, care and cleaning instructions, touch-up procedures, and contact information for manufacturer's local representation should assistance be required**. [Items marked with a * are expected from the Installer; Items marked with ** are expected from the encapsulant manufacturer.]
 - a) Only submit complying products based on project design requirements and VOC content regulations (CARB, OTC, OTC II, EPA). To ensure compliance with district regulations and other rules, businesses that perform coating activities should contact the local district in each area where the coating will be used.
 - b) Substitutions will only be considered for products manufactured by companies of primarily U.S. ownership, and when the proposed substitute product is "all or virtually" all

manufactured in the United States (in accord with the Made in USA Standard as defined by the U.S. Federal Trade Commission (FTC)).

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and product number (as well as minimum information detailed at Section 2.01, Subsection C of this specification).
- B. Storage of materials:
 - 1. Store only acceptable project materials on site.
 - 2. Store in suitable location convenient to progress of work.
 - 3. Comply with health and fire regulations.
 - 4. Storage temperature shall be between 40 F (4.5 C) and 90 F (32 C), or such other ambient temperature conditions as may be specifically recommended by product manufacturer.
 - 5. Encapsulants shall not be permitted to freeze on site, and delivery of encapsulant should be refused if freezing during transit is probable.
 - 6. Avoid storage directly in hot sun exposures.
 - 7. Keep containers tightly closed when not in use.
 - 8. Keep out of reach of children.
- C. Handling:
 - a. Dispose of water-based and solvent-based materials, encapsulant and supplemental products, in accordance with requirements of local authorities having jurisdiction.
 - b. Verify that encapsulant and supplemental products are within acceptable shelf life, and do not utilize any product that is older than the maximum shelf life stated by the manufacturer.
- D. Extra Materials:
 - a. Furnish extra encapsulant materials in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.
 - b. Furnish Owner with an additional one percent of each material and color, but not less than 1 gal (3.8 l), pail (19 l), or 1 case, as appropriate and collectively agreed upon in advance of substantial completion.

1.06 JOB CONDITIONS

- A. Environmental requirements
 - 1. Comply with manufacturer's recommendations as to environmental conditions under which encapsulant coating systems can be applied.
 - a. Temperature:

- i. At Application: Surfaces to be coated and ambient air temperature shall be between 45° F (7.2° C) and 100° F (38° C). Do not apply encapsulants at temperatures beyond those limits stated in the manufacturer's technical data sheet unless given written permission by the manufacturer.
 - ii. After Application: Site temperature shall remain within the manufacturer's acceptable range for no less than twenty-four (24) hours post-application.
 - iii. Fluctuating Conditions: When temperatures are expected to be consistently in the cooler segment of the acceptable range (<50 F), or temperatures are expected to fluctuate significantly, multiple thin applications with dry time in between is advisable versus a single application. Supply of air movement may be recommended to aid curing when site conditions are minimal for application.
 - b. Humidity:
 - i. Ideal humidity for encapsulant application is 40-50% Relative Humidity (%RH).
 - ii. Humidity in excess of 70% RH will slow the drying and curing of encapsulant coatings. Application of multiple thin coats, and/or supply of air movement may be recommended when site conditions are minimal for application.
 - iii. Do not apply encapsulant when the Relative Humidity is above 85% or when the Dew Point is closer than 3 degrees to the ambient air temperature.
2. Surface/Substrate Moisture:
- a. Do not apply encapsulants when precipitation can be reasonably expected to directly contact the curing film within 24 hours after application.
 - b. Consult manufacturer regarding whether topical dampness (latent moisture tangible by touch) after wet cleaning or recent precipitation is acceptable at time of application, or if a completely dry substrate's surface is required. At no time should encapsulants be applied where significant topical moisture is present (such as droplets, "beading" water). Applicators are expected to account for slow-drying surface elements (such as shaded areas, hairline cracks, nail holes).
 - c. Do not apply encapsulants when wood substrates exhibit a subsurface moisture content in excess of 11%. For concrete, brick and masonry, use moisture detection and measurement instruments designed for that purpose and those specific substrates. Follow the instrument manufacturer's guidance to identify the paintable range of dryness, and apply encapsulants only towards the more dry extent of that paintable range.

B. Surface Protection/Prevention of Cross-Contamination:

- 1. Cover or otherwise protect finished work from activity of occupants and/or of other trades, and surfaces not being coated concurrently or not to be coated.

2. Do not apply encapsulants in areas where dust or other airborne particulate matter is being generated. Avoid cross-contaminating encapsulation areas with airborne particulate from areas of surface preparation and demolition. Such particulate may contain lead and other hazardous contaminants.

E. Provide adequate illumination and ventilation during application.

2.00 PRODUCTS

2.01 MATERIALS (Basis of Design)

A. L-B-C LEAD BARRIER COMPOUND – (TYPE III INTERIOR/EXTERIOR), Product ID: 5800-5 (Antique Linen), 5801-5 (Tintable White), 5802-5 (Black). Manufactured by FIBERLOCK, a brand of ICP Building Solutions Group; located at 150 Dascomb Road, Andover, MA. 01810. (800-342-3755) www.fiberlock.com [or equal]

a. Key Performance Attributes of Encapsulant

- i. Exposure: Interior/Exterior
- ii. Dry Film Thickness Compliance to ASTM E 1795 (Interior Use): 7 mils DFT
- iii. Dry Film Thickness Compliance to ASTM E 1795 (Exterior Use): 7 mils DFT
- iv. Finish: Matte
- v. Specular Gloss: $5.5^{\circ} \pm 1$ @ 60°
- vi. Volume Solids: 45.0% ± 2
- vii. Weight Solids: 59.0% ± 2
- viii. Viscosity @ 77°F : 95-120 KU @ 70°F
- ix. Maximum VOC: 88 g/l
- x. Flame Spread (UL 723): 0
- xi. Smoke Development (UL 723): 0
- xii. Contains FDA-approved Anti-Ingestant: Yes (Bitrex®)
- xiii. Underwriter's Laboratories (UL®): Classified

B. ULTRA-TRED WATERBORNE EPOXY HIGH GLOSS-(INTERIOR ONLY), Product ID: F01551-1K (Battleship Gray), F01573-1K (Seacoast Gray), F01591-1K (Pastel Base), F01592-1K (Medium Base), F01593-1K (Deep Base), F01595-1K (Neutral Base). Manufactured by FIXALL, a brand of ICP Building Solutions Group; located at 150 Dascomb Road, Andover, MA. 01810. (800-342-3755) www.fixallpaint.com/

a. Key Performance Attributes of Epoxy Topcoat

- i. Custom Color:
 1. *Brookside* (selected from the [Historic Colors of America](#) palette)
 2. Historic Colors of America is a joint venture of [Historic New England](#) and the [California Paints](#) brand of ICP Group
- ii. Exposure: Interior
- iii. Dry Film Thickness [DFT]
 1. 1.5-1.7 mils per coat
 2. 3.0-3.5 mils cumulative for two applications
- iv. Finish: High Gloss
- v. Specular Gloss: $75^{\circ} \pm 5$ @ 60°
- vi. Volume Solids: 30.6% ± 2
- vii. Weight Solids: 44.0% ± 2
- viii. Viscosity @ 77°F : 93 KU ± 5 @ 70°F (when 2 components are mixed, and within Standard Pot Life)
- ix. Maximum VOC: 250 g/l
- x. Flash Point $^{\circ}\text{F}$: Non-Combustible

- xi. Standard Pot Life: 4 Hours @ 70°F
- xii. Catalyzation Time: 30 Minutes

- C. Specific surface preparation products may be incorporated into a project specific system. Encapsulant and supplementary product systems shall be applied in accordance with manufacturer's instructions and these specification documents. Unless an alternative product is submitted to the Architect/Engineer and deemed acceptable (see Section 1.04, Note "a" of this specification), supplementary materials (topcoats, primers, foam) only of type and from a source recommended by the manufacturer (of the encapsulant) shall be used.
- D. Ensure the following information is present and legible on labels of containers of encapsulant, epoxy topcoat, and all supplementary products:
 - a. Product name, and type (description).
 - b. Batch Number
 - c. Manufacture date.
 - d. Product SKU
 - e. Color number/identification

2.02 COLORS

- A. Colors shall be selected by the Architect/Engineer/Owner's Agent from Manufacturer's standard palette of not less than 3 standard solid colors. (Also, see 1.04, subsection G *Submittals*).
- B. Clear encapsulants for lead-based paint are not acceptable. Current minimum performance standards (E.g., requirements of ASTM E 1795) preclude any viable clear lead encapsulants. For guidance on management of lead-containing substrates with minimal appearance alteration, contact the encapsulant manufacturer for alternatives to this specification.

2.03 MIXING

- A. Accomplish job mixing and application only when acceptable to the Architect/Engineer.
- B. Mix components only in containers furnished or approved in writing by the Manufacturer.
- C. Mix encapsulant thoroughly, preferably with an electric drill mounted device designed for blending liquid coatings. When a clear liquid is present in the headspace when container is opened, installer is to consider that liquid an integral part of the product, and such liquid must be mixed in completely (unless the encapsulant manufacturer expressly instructs otherwise)/
- C. Thinning or diluting of the encapsulant is not permitted, unless expressly instructed in writing in advance by the manufacturer.
- D. Waterborne Epoxy consists of 2 parts, Part B which is to be mixed with Part A, yielding a mix ratio of 3:1 volume.
 - a. Thoroughly stir each part, using separate clean paddles.
 - b. Pour entire contents of Part B into Part A container. Be certain to scrape the container and transfer as much of Part B as possible into Part A.

- c. **Stir mixture of part A and part B thoroughly**
- d. **Wait for 30 minutes for the two parts to catalyze properly.**

E. Thinning or diluting of the epoxy is not permitted, unless expressly instructed in writing in advance by the manufacturer.

3. EXECUTION

3.01 EXAMINATION

A. PRE-WORK VISUAL INSPECTION

- a. Visually examine surfaces to be encapsulated. The purpose of the visual inspection is to evaluate existing surface conditions and determine how to properly encapsulate in accordance with this Specification. If the surface cannot be put into an acceptable condition, as described within this Specification for the particular substrate type and/or surface conditions, do not encapsulate.
- b. Examine surfaces scheduled to receive encapsulant for conditions that will adversely affect execution, permanence or quality of work and which cannot be put into an acceptable condition through preparatory work as included in 3.02. PREPARATION OF SURFACES.
- c. Notify Owner's agent immediately upon determination that surfaces scheduled to receive encapsulant are unacceptable for proper adhesion or subsequent performance. If substrate preparation is the responsibility of another installer, notify Owner's agent of unsatisfactory preparation before proceeding.
- d. Do not proceed with surface preparation or encapsulant application until conditions are suitable. Work should commence only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.
- e. Do not proceed with surface preparation and application without first consulting with federal, state and local authorities for specific work practice guidelines and safety procedure information for that jurisdiction.
- f. During the visual inspection of surfaces, direct special attention to doors, windows and other surfaces that may receive repeated friction or wear from ordinary operation. Components of doors and windows that do not receive friction and abrasion during ordinary operation (e.g., casing, muntins, mullions, jalousies) may be encapsulated in accordance with this Specification for the particular substrate type and/or surface conditions.

A.A void encapsulating surfaces that may receive repeated friction or wear from ordinary operation, unless it is possible to prepare the surface in a manner that eliminates the source of the friction or wear.

- 1. Paint can be removed from the edges of a door or window by sanding or planing the edges within a contained area that has been properly constructed per HUD, EPA and OSHA rules and regulations for the control of lead-containing dust. Such a temporary containment area shall be constructed with negative pressure, HEPA filtration, and decontamination at entrance/exits as required by the project jurisdiction.

2. Paint on friction surfaces can be removed in a non-dust generating manner by using a chemical paint remover such as Fiberlock brand Piranha® or NexStrip™ chemical removersⁱⁱ.

B. The surfaces of a door that are frequently abraded include, but are not limited to the doorstop, threshold, and limited surface area of the door, which meets these surfaces during ordinary operation. Additional options for door systems:

1. Rubber pads may be used to eliminate contact between doors and doorstops where practicable.
2. The plumb of door systems may also be altered to ensure the only impact is strictly between the striker and strike plate.

C. The surfaces of a window that are frequently abraded include, but are not limited to the channels, sash edges, top rails, meeting rails, etc. Additional options for window systems:

1. Vinyl inserts or similar barriers can also be attached to the friction surfaces of a window.
2. Casement and louver/jalousie window systems have components that move into contact, but generally without significant impact force or friction, and as such may be encapsulated. Rubber pads may be used to eliminate contact between window elements where practicable.
3. Operational window shutters can be addressed similar to door systems. Impact points should have paint removed, then impact and non-impact areas (such as jalousies) can be encapsulated.

NOTE ON 3.01, B: The surface assessment procedures described herein may differ across states and provinces. Project sponsorship and funding may also trigger specific preferred surface assessment metrics, such as projects involving the U.S. Department of Housing and Urban Development (HUD). Requirements regarding who may conduct surface assessment such as described in 3.01 B (below), as well as documentation requirements, can also vary per jurisdiction. Always check with local authorities for specific surface assessment requirements.

B. PRE-WORK SURFACE ASSESSMENTS

a. ADHESION TAPE TEST:

A. Description: Following the visual inspection, use the procedure outlined below to perform an adhesion tape test. A tape test involves the application of pressure sensitive tape to the paint system, then removing the tape and measuring the paint removed by the tape, if any. Surfaces to be evaluated should be appropriately clean, dry and sound as if prepared for encapsulation

B. Purpose: The purpose of the adhesion tape test is to determine the intercoat adhesion of the existing paint system.

C. Tools Required:

1. Tape: two (2") inch wide, pressure sensitive adhesive clear tape.
 - a. Recommended: 3M 600 or equivalent.

- b. Not recommended: duct tape, opaque packing tape
 - 2. Pencil with rubber eraser.
 - 3. Resealable plastic storage bags
 - 4. Permanent Marker
 - D. Conducting Adhesion Tape Test:
 - 1. Apply a 6 - 10" strip of pressure sensitive adhesive tape.
 - 2. Burnish the tape down on surface with the rubber eraser end of a pencil.
 - 3. After 90 seconds, remove (do not yank) the tape by pulling smoothly and slowly back upon itself at as close to a 180° angle as possible.
 - E. Evaluation of Adhesion Tape Test:
 - 1. If more than a square inch of paint is removed along with the tape, the inter-coat adhesion of the existing paint system is poor and surface preparation (i.e. wet sanding, scraping, cleaning, etc.), must be administered to remove layers that are poorly adhered before applying a primer or the encapsulant.
 - 2. If less than a square inch of paint is removed from the substrate, the surface is sound and can be encapsulated.
 - 3. Tape can be retained in plastic bags to be labeled with location, time and date, name of project; and filed with project documents.
- b. ENCAPSULANT PATCH TEST:
- A. Description: The encapsulant patch test is a small-scale application of encapsulant to an area or areas representative of the surface to be encapsulated. An encapsulant manufacturer may consider a patch test mandatory or optional. Check with the manufacturer. Performance of an encapsulant patch test should be performed at the discretion of the installer, or by Owner's agent, Client, Enforcement Authority, Architect or Engineer.
 - B. Purpose: Conduct a patch test if there is any question concerning surface conditions that may interfere with encapsulant performance (e.g., adhesion interference due to unstable existing paint systems, excessive gloss sheens, surface contaminants (mold, soot), or repellent chemical residues, such as alkalinity, grease, oils.), excessive substrate moisture content; or conditions that might generate unsatisfactory aesthetics (e.g., migrating or "bleeding" stains)). Surfaces to be evaluated should be appropriately clean, dry and sound as if prepared for full-scale encapsulation.
 - C. Note: Certain states require the performance of a patch test prior to application.
 - D. Tools Required:
 - 1. Tape: two (2") inch wide, pressure sensitive adhesive clear tape.
 - a. Recommended: 3M 600 or equivalent.
 - b. Not recommended: duct tape, opaque packing tape
 - 2. Pencil with rubber eraser.

3. Resealable plastic storage bags
4. Permanent Marker
5. Small liquid (wet) sample of the candidate encapsulant product
6. Wet film thickness gauge
7. Application and cleaning tools as needed (brush, roller)

E. Conducting an Encapsulant Patch Test: An encapsulant patch test may be performed using the following procedures:

1. Choose a 6"x6" area of a surface representative of those to be encapsulated. If working on trim or other narrow components, the shape of the patch may change provided the same area (36 square inches) is encapsulated for the test.
2. Patch tests may be conducted where deemed necessary (i.e., one per room, or one per type of architectural element present in the dwelling) or as required by relevant state rules and regulations concerning the proper use of lead-based paint encapsulants.
3. Apply encapsulant in accordance with the instructions within this Specification for the substrate type and existing paint conditions present.
4. Use a wet film thickness gauge to ensure proper application to the minimum wet film thickness specified by the manufacturer.
5. Allow the encapsulant to cure substantially (but not necessarily to total cure) before evaluating performance. Under ideal ambient conditions (78°F (air and substrate) and 50% relative humidity) curing sufficiently to evaluate the patch test may take 4-10 days. Consult the manufacturer for product specific guidance. Cure can be accelerated by using forced ambient or warmed air.
6. Visually Evaluating Encapsulant Patch Test: Examine the patch for defects.
 - a. Bubbling may indicate chemical contamination of the surface that must be removed by more thorough cleaning.
 - b. Cracking may indicate inadequate temperatures for proper curing, surface contaminants, or other environmental conditions not conducive to application of an encapsulant or any topical coating (paint).
 - c. Stains generated within the encapsulant film subsequent to application may indicate a source of water-soluble pigment on or within the surface that must be blocked using a primer recommended by the manufacturer. Choose a primer or sealer appropriate for the substrate type and the perceived source of the pigmentation.
 - d. When visual defects are noted in the cured patch test, remedy the source condition that was likely to have generated those defects, and retest.
7. Evaluating Adhesion of Encapsulant Patch Test:

- a. Perform an adhesion tape test on a fully cured patch test in accordance with the description in section 3.01.B.a of this Specification.
- b. If delamination occurs (i.e., encapsulant or encapsulant and some of the underlying paint is present on the tape, and the encapsulant has not cured under ideal conditions, allow more time to elapse then retest.
- c. Failure of the test patch does not indicate that the candidate encapsulant may not be used to encapsulate the surface in question
- d. Failure of any encapsulant test patch indicates that additional surface preparation procedures are necessary for successful application

***IMPORTANT NOTE: SEVERELY DETERIORATED PAINT SYSTEMS SHOULD NOT BE ENCAPSULATED UNLESS** they can be rendered sound through proper surface preparation. It is frequently advisable (and is required in several states) to employ the services of a certified lead abatement contractor when extensive dust generating surface preparation procedures are necessary.

CAUTION NOTICE: Dry sanding, scraping and other surface preparation procedures can create toxic dust and hazardous waste. A HEPA (High Efficiency Particulate Air) vacuum should be used on all surfaces to remove hazardous dust and particles. Use MSHA/NIOSH approved or equivalent respiratory protection suitable for concentrations and types of air contaminants encountered.

3.02 PREPARATION OF SURFACES

- A. GENERAL SURFACE PREPARATION INSTRUCTIONS FOR ALL SUBSTRATES: All surfaces to be encapsulated should be properly prepared so that all are clean, dry, sound and deglossed at the time of application.
 - a. Wash all areas to be encapsulated with manufacturer approved lead-specific surface cleanerⁱⁱⁱ. Clean to the extent required to remove existing deteriorated coatings and any other foreign matter, paying particular attention to areas found under structural components such as eaves, beams, archways, etc.
 - b. If necessary, oil, grease and similar surface contamination should be removed with any manufacturer-approved degreasing surface cleaner which is free-rinsing and does not require a neutralizer^{iv}.
 - c. Rinse surfaces with clean water. Avoid uncontrolled release of rinsate beyond the work area, as it may contain lead. Jurisdictional regulations for management of rinsate (collection and disposal of waste liquids) can vary, and project-specific requirements are the responsibility of the installer.
 - d. On representative surfaces, perform a "water-break" test to determine if traces of oil, grease and similar hydrophobic contaminants are still present.
 - i. Wet a portion of the surface with clean water by splashing to induce runoff in a sheeting action. If water "beads", oil and/or grease is still present, and the washing and/or rinsing procedure must be repeated.

- ii. Water-break tests can be difficult for architectural elements involving complex geometry, including acute angles, undercuts and overhangs. Examine such areas carefully by eye and touch to detect whether hydrophobic residues remain present.
- e. Surfaces contaminated with mold, mildew and/or other contaminant microorganisms (e.g., biofilms) should be examined carefully for sources of excess moisture and water-damage, and then thoroughly cleaned.
 - i. Active, visible mold growth is frequently an indicator of higher than normal moisture that may require correction prior to encapsulation.
 - 1. Mold Remediation is a professional contractor discipline to address mold and return a structure to normal operating conditions. Contact the regional Fiberlock area manager for more information when mold remediation may be necessary prior to lead encapsulation.
 - ii. Clean mold and mildew from surfaces to be encapsulated. Oxidizing cleaners reactive with organic contaminants, formulated with hydrogen peroxide^v, can provide a more effective and thorough cleaning and removal.
 - 1. Avoid using bleaches for mold removal.
 - 2. Avoid using cleaners for mold removal that require a rinse.
 - iii. Kill residual mold after cleaning with application of an EPA-registered disinfectant/sanitizer.^{vi}
 - iv. Mold-stains present after cleaning may migrate or “bleed” into the encapsulant film, negatively affecting intended appearance of the final project. Mold stain specific stain removers formulated with hydrogen peroxide or sodium hypochlorite can be effective in removing stains^{vii}.
- f. Thick and sharp edges of paint build-ups, runs and sags should be wet sanded smooth to achieve a feathered edge.
 - i. Note that depressions or “cratering” where loose paint was removed will contrast with areas where existing paint continued to adhere. An encapsulant will only partially smooth such surfaces. Also referred to as “step-ups and step-downs”, these surface variations will not adversely affect performance of a lead provided the entire surface is coated with equal to or in excess of the required dry film thickness for the encapsulant used.
 - ii. Repair and wet sand smooth surface defects to the extent required by Owner, Client, Architect or Engineer.
 - iii. Always avoid dry sanding any lead-containing surfaces as this may increase lead exposure.

- g. Fill minor surface voids (e.g., isolated hairline cracks) with appropriate caulk or patching compound and smooth off to match adjacent surfaces. Review filler or caulk before use to ensure the product will accept a water-based coating.
 - i. Larger surface voids may require using spray foam to fill, and smooth off to match adjacent surfaces^{viii}.
- h. High-Sheen/Gloss Surfaces: A good profile (roughened surface) must be developed on high gloss or smooth, sound surfaces in order for an encapsulant to sufficiently adhere to the substrate. To reduce sheen and provide a profile that permits encapsulant adhesion
 - i. Wet sand gloss surfaces, and/or;
 - ii. Wet clean and scour with detergent;
 - iii. Utilize a commercially available liquid deglosser formulated to etch high-sheen surfaces. Use deglossers strictly in accordance with the manufacturer's instructions for that product.
- i. If cleaned and dry surfaces continue to exhibit loose particulate residues, such as chalking, dusting, attempt to remove post-cleaning residues with a HEPA vacuum.
- j. Surfaces can continue to be dimensionally unstable after removal of deteriorated paint and proper cleaning, but may still be eligible for encapsulation. Common conditions in such situations can include minor spalling, chalking and "running edges" (chronic peeling at paint edges after each cleansing and clean water rinse cycle) along otherwise adhered paint systems. It can be possible to stabilize these situations by applying a surface stabilizing bonding agent/primer^{ix}. To determine if a bonding agent is a viable solution, test applications must be conducted as part of an Encapsulant Patch Test, in accord with Section 3.01.B.b of this specification.
- k. Surface Drying After Cleaning:
 - i. Allow surface to dry before applying an encapsulant.
 - ii. The extent of drying after cleaning may be product specific, and specific guidance will be available from the manufacturer.
 - iii. When sub-surface moisture is a concern, use a moisture meter designed to evaluate residual moisture content left behind by cleaning or precipitation in that substrate type. Generally, lead encapsulants do not efficiently permit trapped moisture to migrate through the encapsulant film. Apply encapsulants only when conditions measured are within the dry (lower moisture) end of the paintable range per the moisture meter used.

B. SURFACE PREPARATION INSTRUCTIONS FOR SPECIFIC SURFACES:

A. WOOD

- i. Water-soluble Stains: Surfaces which exhibit water-damage, or highly-pigmented woods (including, but not limited to redwood, cypress, cedar, and/or knots in most

wood substrates) rendered bare by deterioration of existing paint or by surface preparation should be primed with a stain-blocking primer^x.

- ii. Rust: Wood substrates containing nails or other metal fixtures which may cause a migrating or "bleeding" rust stain should be spot-primed with a rust inhibiting primer.
- iii. Rot (Wood Decay Fungi): Old, weathered wood that is moist and spongy is attributable to "damp" or "wet" rot. Areas that are dry and crumbly are referred to as "dry rot." Both dry and damp rot are caused by microorganisms that must be removed to prevent the rot from spreading. Cut away the rot affected wood plus several inches beyond the perimeter of the rot damage. Apply an EPA-registered disinfectant/sanitizer that includes fungicidal capability^{xi} and instructions on the product label. Patch-in or plug removed areas with rot-free, new wood. Or replace entire components with rot-free replacements.

B. CONCRETE, MASONRY, STUCCO, BRICK, CONCRETE BLOCKS, ETC.:

- i. Remove surface dust. Steam-cleaning and/or a high-pressure-water system may be used for cleaning. Such a system must adequately remove dirt and chalk from the surface without damaging the substrates or adjacent areas.
- ii. Remove efflorescence (a growth of salt crystals on a surface caused by evaporation of alkali/salt-laden water). Efflorescence indicates the presence of alkaline surface residues that may interfere with the adhesion of any topically-applied coating.
 - 1. Since alkaline residues may persist after ordinary cleansing, check suspect areas with pH indicator paper suitable for detecting surface pH in the 1-12 range. Follow the manufacturer's instructions for the proper use of pH indicator paper, and use distilled water whenever possible to avoid analysis biased by acidic tap water.
 - 2. If a highly-alkaline surface pH is detected, apply a manufacturer-recommended acid wash solution designed to neutralize alkaline surface conditions^{xii}. Rinse neutralizer residue with clean water and permit the surface to dry. Retest with pH paper after neutralization, and repeat process as necessary before encapsulation.
- iii. If surfaces continue to spall and/or exhibit chalk after thorough and repeated cleaning, apply a masonry conditioner^{xiii} to bind up loose surface particulate matter. Consider an Encapsulant Patch Test to determine whether a masonry conditioner or other primer coat is necessary.
- iv. Surfaces which exhibit water-damage, discoloration, or highly-pigmented bare brick or masonry substrates should be primed with a stain-blocking primer^{xiv}. Some masonry conditioners can also block some potentially migrating stains.
- v. Concrete floors are not covered in this specification. For information on encapsulating lead-based paint on concrete floors, consult a Fiberlock Area Manager.
- vi. For below-grade applications to cementitious substrates such as concrete, conduct multiple Encapsulant Patch Tests, and observe tests for a longer than normal evaluation period. Below-grade applications can be impacted by hydrostatic pressure and water-vapor transmission through substrates on the perimeter of a foundation. Generally, lead encapsulants do not efficiently permit moisture to migrate through the encapsulant film.

- vii. Brick (especially, red, brown) can contain iron and other mineral compounds which can migrate into an encapsulant topcoat creating a bleeding stain similar to a rust stain. Bare brick, especially dark color brick, may need to be sealed with a stain blocking primer or masonry conditioner.
- viii. Previously applied waterproofing/dampproofing membranes and coatings can be hydrophobic and interfere with the adhesion of an encapsulant.

C. PLASTER, GYPSUM WALLBOARD

- a. All surface defects shall be filled, wet sanded and spot primed with a masonry conditioner, stain blocking primer, or equivalent sealant/undercoat.
- b. Gypsum wallboard exhibiting "nail-popping" shall be repaired, filled, wet sanded and spot-primed with a 100% acrylic rust-inhibiting universal surface primer prior to encapsulating.

D. SURFACE ASSESSMENT & PREPARATION FOR METAL SURFACES: Note: The proper encapsulation of lead-based painted metal surfaces will require the determination of the degree of deterioration, the expected severity of exposure, and any information available on the type of coatings previously used.

- a. Degrees of Deterioration of Painted Steel Surfaces: Use the ASTM Method D160 or "SSPC Guide to Visual Standard No. 2 for evaluating Degree of Rusting on Painted Steel Surfaces". The degree of rusting shall be correlated as follows:

Sound Paint System	9 - 10
Slight to Moderately Deteriorated Paint System	6 - 8
Severely Deteriorated Paint System	0 - 5

- b. Ferrous Metal: The surface preparation of any ferrous metal depends not only on its condition, but also on the severity of the environment. For descriptive purposes, two will be referred to in this specification: Severe Exposures and Domestic Atmospheric Exposures.

- i. Severe Exposures: Circumstances that affect the coatings to extremes are marine atmospheric conditions, immersion, brackish water exposure, chemicals, and similar severe environments. This would include sewage treatment plants, water tanks, etc. If the steel was not properly prepared on the previous painting, such preparation must be accomplished before applying an encapsulant. Specifically, sharp edges, protruding welds, and weld splatters must be ground smooth before application of an encapsulant.

1. Grease, rust, scale, dirt and dust must be removed as follows:

- a. Remove rust and scale by wet wire brushing and wet sanding. Always avoid dry wire brushing or sanding any lead-containing surfaces as this may increase lead exposure.
 - b. Remove dust, dirt, oil and grease. Clean surfaces using a manufacturer-approved degreasing surface cleaner which is free-rinsing, and does not require a neutralizer^{xv}.
 - c. Perform a water-break test per Section 3.02 Subsection A.d of this specification to determine if oil and grease have been removed. Repeat if necessary. Apply phosphoric acid solution. Let set as recommended by acid etch manufacturer. Rinse with clean water. If water "beads-up" on the surface, oil and/or grease is still present and cleaning process must be repeated before applying

2. When cleaned ferrous metal surfaces are thoroughly dry, immediately apply a manufacturer-approved rust inhibiting metal primer^{xvi} to prevent “flash” rusting.
- ii. Domestic Atmospheric Exposures: These conditions are less severe and generally dryer than those explained under the “Severe Exposure” section above. Investigate the soundness of any existing coatings to determine the amount of surface preparation that is necessary and desirable. If the steel was not properly prepared on the previous painting, it must be accomplished before applying an encapsulant. Specifically, sharp edges, protruding welds, and weld splatters must be ground smooth before repainting. Grease, rust, scale, dirt and dust are required to be removed as follows:
 1. Remove rust and scale by wire brushing and wet sanding. Always avoid dry wire brushing or sanding any lead-containing surfaces as this may increase lead exposure.
 2. Remove dust, dirt, oil and grease. Clean surfaces using a manufacturer-approved degreasing surface cleaner which is free-rinsing, and does not require a neutralizer^{xvii}.
 3. Perform a water-break test per Section 3.02 Subsection A.d of this specification to determine if oil and grease have been removed. Repeat if necessary. Apply phosphoric acid solution. Let set as recommended by acid etch manufacturer. Rinse with clean water. If water “beads-up” on the surface, oil and/or grease is still present and cleaning process must be repeated before applying
 4. When cleaned ferrous metal surfaces are thoroughly dry, immediately apply a manufacturer-approved rust inhibiting metal primer^{xviii} to prevent “flash” rusting.
 - c. Galvanized Metals: Remove all oil, grease, dirt, loose or scaling paint, mil scale and other foreign matter by wire brushing and wet sanding. Always avoid dry wire brushing or sanding any lead-containing surfaces as this may increase lead exposure. Surface oil should be wiped off with mineral spirits and a clean rag. Perform a water-break test per Section 3.02 Subsection A.d of this specification to determine if oil, grease and residual mineral spirits remain on the substrate. When thoroughly dry apply a manufacturer-approved rust inhibiting metal primer^{xix} to any areas where galvanization has been lost due to exposure and/or cleansing, and encapsulants would be applied directly to bare metal. Previously painted galvanized substrates may not need to be primed except for spot areas where the encapsulants would be applied directly to bare metal.
 - d. Copper:
 - i. Copper will readily accept encapsulants and preparation requirements entail only a thorough cleaning. Perform solvent degreasing as above, followed by application of a “tie-coat” adhesion enhancing primer.
 - ii. Lead-coated copper and similar cladding and ornamental materials can be encapsulated. However, specialized cleaning and application of a vinyl butyral wash primer (or similar) requires a separate specification available from Fiberlock.
 - e. Aluminum:
 - i. Remove rust and scale by wire brushing and wet sanding. Always avoid dry wire brushing or sanding any lead-containing surfaces as this may increase lead exposure.

- ii. Wash all areas to be encapsulated with manufacturer approved lead-specific surface cleaner^{xx}. Clean to the extent required to remove existing deteriorated coatings and any other foreign matter, paying particular attention to areas found under structural components such as eaves, beams, archways, etc. Cleaner should be mildly acidic (pH 5-6), TSP-free (no trisodium phosphate) free-rinsing, and does not require a neutralizer. In some cases, a degreaser may also be needed to remove stubborn oils, grease and similar contaminants. Under certain circumstances, it may be necessary to develop a profile by mechanical means such as power tool cleaning.
- iii. When cleaned aluminum metal surfaces are thoroughly dry, immediately apply a manufacturer-approved rust inhibiting metal primer^{xxi} to prime rust post cleaning on ferrous metal architectural components (such as nail &/or screw heads, fasteners, etc.), and to prevent "flash" rusting.
- iv. To ensure adhesion, prime entire lead painted and bare aluminum surface that is required to be encapsulated, to achieve proper bond. Primers utilized shall be water-based, urethane modified, acrylic primer-sealers ^{xxii}.

3.03 APPLICATION

- A. Apply encapsulant only after the surface has been examined, assessed, prepared, cleaned, primed and dried, as outlined in the surface assessment and preparation sections of this specification (sections 3.01 and 3.02). Application of encapsulant to surfaces that are not clean, dry, sound, deglossed and properly primed as described will void all warranties.
- B. Apply encapsulant at a wet mil film thickness that will yield the recommended minimum dry mil film thickness at which the submitted testing to ASTM E 1795 documents compliance with performance requirements mandated in regulations (see Submittals Section 1.04, Subsection E).
- C. Wet mil film thickness should be measured throughout any encapsulation project using a wet mil gauge
 - a. Wet film thickness gauges are available upon request and at no charge from the manufacturer of the lead paint encapsulant.
 - b. Another method to assure that a minimum dry film thickness is achieved, is to tape a panel (with a predetermined thickness), to the area being coated so that it receives the same treatment as the surrounding area. Once the film dries the panel should be measured again using a micrometer or dial caliper. Subtract overall thickness from the panel thickness to determine the dry film thickness.
- D. Apply Epoxy only after the surface has been examined, assessed, prepared, cleaned, primed and dried, as outlined in the surface assessment and preparation sections of this specification (sections 3.01 and 3.02). Application of Epoxy to surfaces that are not clean, dry, sound, deglossed and properly primed as described will void all warranties.
- E. After the 2 components of Epoxy have been mixed and proper catalyzation time has passed as outlined in the mixing section of this specification (Section 2.03), Apply epoxy at a wet film thickness as outlined in the Materials (Basis of Design) section of this specification (section 2.01).
- F. Wet mil film thickness should be measured throughout any epoxy project, using a wet mil gauge.
 - a. Wet film thickness gauges are available upon request and at no charge from the manufacturer of the epoxy topcoat.
 - b. Another method to assure that a minimum dry film thickness is achieved, is to tape a panel (with a predetermined thickness), to the area being coated so that it receives the same treatment as the surrounding area. Once the film dries the panel should be measured again

using a micrometer or dial caliper. Subtract overall thickness from the panel thickness to determine the dry film thickness.

3.03 METHODS OF APPLICATION

- A. Airless Spray: Encapsulants can be successfully applied with most major brands of airless spray equipment.
- B. Typical settings for airless spray equipment (for encapsulant)

(Reversible) Tip Orifice	Tip Fan Size	Operating Air Pressure	Airless Hose ID	Min. Pump G.P.M.	Hose Length
0.021" to 0.025" psi	521	1800 - 2000	1/4"	0.50	50' -100'

- C. Technique of Spraying - For best results,

- a. Apply encapsulants in sweeping strokes always keeping the tip of the gun parallel to the surface at a distance between 12" to 18" inches.

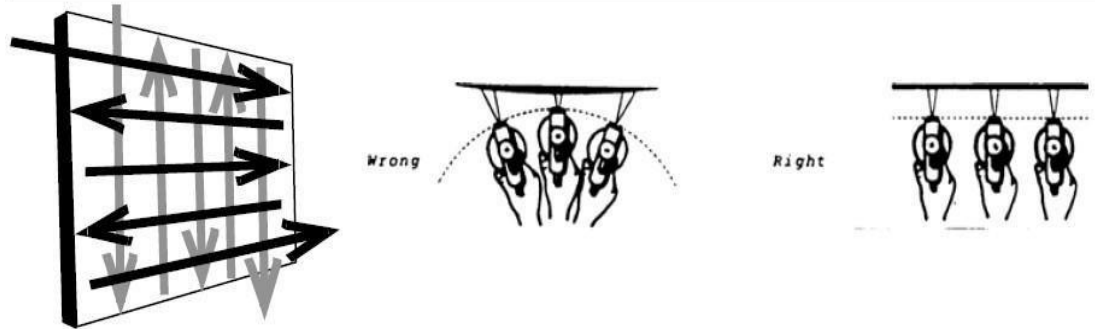


Figure 3. Proper spray application of L-B-C Lead Barrier Compound

- b. The speed at which the product is applied depends on the system used.
 - c. Normally a slow to moderate sweeping stroke of first horizontal followed by vertical passes will afford the desired results.
 - d. If necessary, an angular mist coat may be applied to even out irregularities.
- D. SPECIAL NOTE FOR SPRAY APPLICATION OF ENCAPSULANTS CONTAINING ANTI-INGESTANTS (DOES NOT PERTAIN TO BRUSH OR ROLLER APPLICATION)
- a. Per this specification, the Architect/Engineer require that the encapsulant contain a non-toxic, bitter tasting anti-ingestion agent.
 - b. When sprayed, anti-ingestion agents have a strong bitter taste even in low concentrations.
 - c. There is no health hazard even if the temporarily airborne particulate is ingested or inhaled. It may cause slight irritation to the nose, mouth and/or throat and therefore as a result, will leave a bitter taste in the mouth. To avoid this discomfort, it is recommended that exposure to the airborne mist be avoided.

- d. When areas to be sprayed adjoin inhabited spaces, rooms or offices should be closed off. The following procedures can be implemented to assure ventilation in the area to be sprayed and yet prevent airflow containing bitter-tasting mists from affecting adjoining rooms. Place an 18-24" fan (air flow pointed outward) turned on "high" in an open window of the room to be sprayed. Open a door to an adjoining area by no less than 2 inches. This will allow adequate air flow away from inhabited areas and yet allow persons to walk back and forth from the application area to the adjoining rooms.
- E. Roller: For best results apply with a 3/8" - 1/2" nap roller (manufacturer recommendations may vary).
- F. Brush: Apply liberally and uniformly with a polyester or nylon brush.
- G. PROTECTIVE EPOXY TOPCOAT – METHODS OF APPLICATION
 - a. The mixed epoxy components can be applied by brush roller or spray.
 - b. Temperature must be maintained within the recommended ranges during the application and curing process as outlined in the Materials (Basis of Design) section of this specification (section 2.01).
 - c. When the end of the pot life has been reached, material becomes hard to apply and tends to roll back up onto the roller.
 - d. When pot life expires, application should be stopped, and a freshly mixed kit (after proper catalyzation) should be used and application can continue. It is common practice due to catalyzation time to mix the next kit when at least halfway through the batched kit currently being applied.
 - e. To ensure the epoxy application is consistent, kits should be ready as to achieve proper wet on wet application. This is crucial to achieve consistent gloss and color. It is recommended to have more than one person applying the epoxy. A two person tandem team can roll immediately into areas cut in by a brush. This will ensure wet on wet application, regulate consistent wet film thickness, and minimizing flashing, "hat banding", "picture framing" or similar.
 - f. Applications made at different times with differing environmental conditions, may show slight variations in gloss.
- H. Airless Spray: Epoxy can be successfully applied with most major brands of airless spray equipment.
- I. Typical settings for airless spray equipment (for epoxy):

(Reversible) Tip Orifice	Tip Fan Size	Minimum Air Pressure	Airless Hose ID	Hose Length
0.015" to 0.019"	517	1800 - 2000 psi	1/4" 3/8"	50' 100'

Roller: 3/8" – 1/2" Synthetic Nap. Brush: Nylon, Polyester or Natural.

3.04 CLEANING

- A. Remove debris promptly from work area and dispose of properly.
- B. Remove spilled, splashed, or splattered coating materials from all surfaces.
- D. Do not mar surface finish of items being cleaned.
- E. Wash all work areas to be with manufacturer approved lead-specific surface cleaner^{xxxiii}.

3.06 WARRANTY

- A. Installer shall provide Owner, through Architect/Engineer, with an acceptable form of warranty against defects in workmanship for a period of one (1) year from date of substantial completion.
- B. Issuance of manufacturer warranty shall be a condition precedent to receipt by Fiberlock Area Manager of completed and signed warranty documentation.
- C. Extent of warranty shall be limited to the repair or replacement of defective surfaces at no additional cost of materials to the Owner during the warranty period of 20 years. Manufacturer may choose instead of replacing product to reimburse for current product value for quantity necessary to effect repairs. The warranty shall not include any remedy for defects caused by abuse, improper maintenance or operation, or by normal wear, tear and usage.

END OF SECTION

SECTION 081100 - PREFINISHED STEEL DOOR FRAMES**GENERAL****1.1 SECTION INCLUDES**

- A. Prefinished steel frames for interior doors

1.2 RELATED SECTIONS

- C. SECTION 08 11 00 - METAL DOORS AND FRAMES.
- D. SECTION 08 71 00 - DOOR HARDWARE.
- F. SECTION 09 90 00 - PAINTING AND COATING.

1.3 REFERENCES

- A. ASTM INTERNATIONAL (ASTM):
 - 1. ASTM A1008/A1008M STANDARD SPECIFICATION FOR COMMERCIAL STEEL (CS) SHEET, CARBON (0.15 MAXIMUM PERCENT) COLD-ROLLED.
 - 2. ASTM A653 - STANDARD SPECIFICATION FOR STEEL SHEET, ZINC-COATED (GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY THE HOT-DIP PROCESS.
- B. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):
 - 1. ANSI/BHMA A156.115 SPECIFICATIONS FOR STEEL DOOR AND FRAME PREPARATION FOR HARDWARE.
- C. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):
 - 1. NFPA 80 - FIRE DOORS AND WINDOWS.
- D. UNDERWRITERS LABORATORIES, INC. (UL):
 - 1. UL 10B - FIRE TESTS OF DOOR ASSEMBLIES.
 - 2. UL 10C - POSITIVE PRESSURE FIRE TESTS OF DOOR ASSEMBLIES.

1.4 SUBMITTALS

- B. PRODUCT DATA: Submit product data, including manufacturer's product sheet, for specified products. include details of design and construction and printed instructions covering installation.
- C. SHOP DRAWINGS: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors and textures. indicate installation requirements of finish hardware and reinforcements.
- D. SELECTION SAMPLES: Submit the following for selection of finishes, colors and textures.
 - 2. Samples of factory stocked colors of prefinished components.
- E. QUALITY ASSURANCE SUBMITTALS: SUBMIT THE FOLLOWING:
 - 1. TEST REPORTS: Certified test reports showing compliance with specified performance characteristics and physical properties.
 - 2. CERTIFICATES: Manufacturer's certification that installer is acceptable.
 - 3. WARRANTY: Submit the warranty documents specified.

1.5 QUALITY ASSURANCE

- A. MANUFACTURER QUALIFICATIONS: Minimum 5 years experience manufacturing similar products.
- B. INSTALLER QUALIFICATIONS: Installer experienced in performing work of this section who has specialized in the installation of work similar to that required for this project.
 - 1. PERSONNEL: Assembly and installation shall be performed by qualified personnel who have successfully completed manufacturer's prefinished steel door frame installation course online and have been approved by the manufacturer.
- C. REGULATORY REQUIREMENTS: Fire-rated steel frames shall be of types tested and approved by Intertek testing services, Warnock Hersey and shall bear labels of same.
 - 1. THREE-sided frames shall receive a permanent embossed 90 minute label. sidelight and borrowed lite frames shall receive a mylar Warnock Hersey label when required by authority having jurisdiction AHJj).
 - 2. 1-1/2 hour fire rating assembly in accordance with ul 10c.
 - 3. ASSEMBLY passes positive pressure test in accordance with ul 10c.
- D. SOURCE: Obtain steel door frame products from a single manufacturer.

1.6 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. DELIVERY: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
 - 1. FACTORY package components in protective cartons to prevent damage during shipping.
- B. Storage and protection: store materials protected from exposure to harmful weather and at temperature conditions recommended by manufacturer.
 - 1. STORE material on wooden skids under cover in a protected area and keep vented to avoid condensation until ready for installation.
- C. HANDLING: Handle materials to avoid damage.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturers for optimum results. do not install products under environmental conditions outside manufacturers' recommended limits.

1.9 SEQUENCING

- A. Field measurements: verify actual measurements/openings by field measurements before fabrication. show recorded measurements on shop drawings. coordinate field measurements and fabrication schedule with construction progress schedule to avoid construction delays.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.10 WARRANTY

A. Manufacturer's warranty: submit manufacturer's standard warranty document executed by authorized company official. manufacturer's warranty is in addition to, and not a limitation of, other rights owner may have under the contract documents.

1. WARRANTY PERIOD: 5 YEARS.

PART 2 PRODUCTS

1.1 MANUFACTURERS

ACCEPTABLE MANUFACTURERS:

- A. DUNBARTON CORPORATION
- B. USA FIRE DOOR GALVANNEAL COMMERCIAL STEEL DOORS
- C. DKS STEEL DOOR AND FRAME SYSTEMS, INC.
- B. OR EQUAL.

1.1 PERFORMANCE REQUIREMENTS

- A. 1-1/2 Hour fire rating in accordance with UL 10b.
- B. B. Passes positive pressure test in accordance with UL 10c.

1.2 MANUFACTURED UNITS

- A. GENERAL: Frames shall be prefinished type designed for installation at rough wall openings over prefinished walls. frames shall be designed for installation by sleeving the frame over the finish wall and placing screws through the face of the frame; then the casing is snapped in place to conceal the fasteners.
- B. MANUFACTURERS ACCEPTABLE: DUNBARTON OR USA FIRE DOOR F20 STEEL DOOR FRAMES. 16 GA STANDARD FRAME PROFILE WITH UNIVERSAL STRIKE.
- A. 16-GAUGE, A-40 GALVANIZED.
 - 4. FRAMES SHALL BE REDIFRAME DW HOLLOW METAL DRYWALL FRAME:4
 - A. 18 OR 16-GAUGE, A-40 GALVANIZED.
 - B. KNOCK-DOWN DESIGN.
 - C. WELDED-IN COMPRESSION ANCHORS.
 - D. NON-KERF FRAME: 5-1/2 INCHES TO 10 INCHES (140 MM TO 254 MM).
 - F. HINGE PREPS: 4 INCHES X 1/4 INCH (102 MM X 6 MM) RADIUS, 4 INCHES X 5/8 INCH (102 MM X 16 MM) RADIUS.
 - G. STRIKE PREPARATION: T-STRIKE.
 - H. BUILT-IN STRIKE DUST BOXES (STANDARD).
 - 1. FRAMES shall be rated as level for physical endurance (1,000,000 cycles).
 - 2. APPLICATION: Refer to door and frame types in the drawings.
 - 3. PROFILE: DOUBLE RABBET JAMB PROFILE.
 - 4. THROAT DEPTH: Refer to door schedule and door elevations in the drawings. Field measure all conditions applicable.
 - 5. PROVIDE accessories and fasteners necessary for field assembly and installation in accordance with frame manufacturer's standards.
 - 6. Prepare for and provide reinforcements in accordance with manufacturers' standards as required to receive finished hardware.

B. DOOR FRAMES:

1. CONSTRUCT jamb members to interlock and align with header members to form a strong joint.
2. FORM fixed glazing stops integral with frame members. provide removable metal stops with pre-punched screw holes complete with installation screws.

D. HARDWARE PREPARATIONS:

1. IN accordance with an approved hardware schedule, ANSI/BHMA A156.115 and manufacturer's recommendations:
 - A. Mortise frames for hinges and strikes.
 - B. Drill and tap or reinforce frames for mortised or surface mounted hardware.

1.3 FINISHES

A. FRAMES AND BORROWED LITES FINISH:

1. PRIME PAINTED.
5. STANDARD COLOR: PRIME GREY.

1.4 MATERIALS

A. Header and jamb members: form interior door frames of ASTM A1008/A1008M commercial quality cold rolled steel. form exterior door frames of galvanized steel (a40) PER ASTM A653. provide frames in the following gauges: Warnock Hersey labeled fire door frames are of a type that has been tested in accordance with CSFM 43.7, UL 10B AND UL 10c for up to 90 minute rated assemblies.

1. 1-3/4 INCHES (44 MM) 90-MINUTE fire rated door frames: 16 GAUGE.
2. BORROWED LITE FRAMES: 16 GAUGE.

B. HINGE REINFORCEMENTS: 14 Gauge hot dipped galvanized (g60) steel to ASTM A653 (10-gauge equivalent number of threads, sdi-107).

C. Strikes and dust box: 18-gauge commercial quality cold rolled steel to ASTM A1008/A1008M.

D. DOOR CLOSER REINFORCEMENT: Steel in accordance with manufacturer's standard.

1. STANDARD ARM MOUNTING: ALuminum extrusion 6063-t5 alloy in accordance with manufacturer's standard.

A. DOOR GUARD: Aluminum extrusion 6063-t5 alloy in accordance with manufacturer's standard.

2. PARALLEL ARM MOUNTING: 16 gauge galvanized (a40) steel per ASTM A653.

E CASING CORNER ALIGNMENT CLIPS: pre-painted 22 GAGE ASTM A1008/A1008M Commercial quality cold rolled steel.

F. SMOKE GASKETING (standard profile): in accordance with manufacturer's standard.

2. FIRE-RATED FRAMES: Smoke gasket material to seal opening. material shall compress to 1/16 inch (2 mm). ultra ws176, pemko s88 and pemko s44 shall be minimum acceptable standard.

G. Removable glazing bead for side lite and borrowed lite frames:

1. 18 gauge galvanized (a60) steel to ASTM A653, 3/4 inch x 5/8 inch (19.1 x 15.9 mm).
2. PRE-punched for no. 6 x 1-1/4 inches (32 mm) bugle-head self-tapping screws.

H. FASTENERS: in accordance with manufacturer's standards, to comply with labeling agency for fire-rated frames.

1. FASTENER shall be a minimum of 1/2 inch (12.7 mm) longer than combined thickness of drywall.

B. Fastener: 1-1/4 inches (32 mm) minimum drywall screws (coarse thread).

J. PAINT: FRAME Manufacturer's standard baked-on synthetic enamel, applied over a cleaned and phosphate coated surface.

1. APPLICATION shall be by electrostatic method.

2. Finish paint dry film thickness on doors panels shall be approximately 1 mil (0.03 mm) for finished paint.

3. PRIME painted frames shall be field painted within 30 days of installation with a high-quality water base latex. A flash rust inhibitor shall be used with water base latex method.

PART 3 EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

A. COMPLIANCE: comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.

3.2 EXAMINATION

A. Site verification of conditions: verify that conditions of substrates previously installed under other sections are acceptable for product installation in accordance with manufacturer's instructions.

B. Do not begin installation until substrates have been properly prepared.

C. If substrate preparation is the responsibility of another installer, notify architect of unsatisfactory preparation before proceeding.

3.3 INSTALLATION

A. PREFINISHED STEEL DOOR FRAMES:

1. Install frames plumb and square, in accordance with shop drawings and manufacturer's instructions. Verify opening and dimensions with shop drawings. Use door as a template to ensure proper alignment and clearances.

2. Attach hinges and hang door in frame. Adjust frame to door for equal and uniform clearance between top and sides of door and frame.

3. Secure frame to wall with the appropriate type fasteners.

4. INSTALL casing on frame.

5. INSTALL silencers on interior door frames.

7. ADJUST strike plate to hold door tight to stops when closed.

8. INSTALL smoke gaskets as required.

9. INSTALL fire-rated door frames in accordance with nfpa 80.

3.4 CLEANING

A. CLEANING: remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance. Remove construction debris from project site and legally dispose of debris.

3.5 PROTECTION

- a. Protection: protect installed products and finish surfaces from damage during construction.
 - 1. Repair or replace damaged or defective frames.
 - 2. Touch up damaged areas of factory-applied finishes with aerosol spray cans of same paint as used in factory.

END OF SECTION

SECTION 087100 - DOOR HARDWARE**PART 1 - GENERAL****2.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

2.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
 - 1. Swinging doors.
 - 2. Sliding doors.
 - 3. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
 - 2. Electromechanical door hardware.
 - 3. Cylinders specified for doors in other sections.
- C. Related Sections:
 - 1. Division 08 Section "Hollow Metal Doors and Frames".
 - 2. Division 08 Section "Aluminum-Framed Entrances and Storefronts".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC - International Building Code.
 - 3. NFPA 70 - National Electrical Code.
 - 4. NFPA 80 - Fire Doors and Windows.
 - 5. NFPA 101 - Life Safety Code.
 - 6. NFPA 105 - Installation of Smoke Door Assemblies.
 - 7. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards:
 - 1. ANSI/BHMA Certified Product Standards - A156 Series
 - 2. UL10C – Positive Pressure Fire Tests of Door Assemblies

2.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions, and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication, and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."

2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - h. Warranty information for each product.
 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Shop Drawings: Details of electrified access control hardware indicating the following:
1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
 - a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
 - b. Complete (risers, point-to-point) access control system block wiring diagrams.
 - c. Wiring instructions for each electronic component scheduled herein.
 2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.
- D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- E. Informational Submittals:
1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer, and witnessed by a qualified independent testing agency.

- F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

2.4 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- D. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
 - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
 - 2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- E. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- F. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
 - 1. Function of building, purpose of each area and degree of security required.
 - 2. Plans for existing and future key system expansion.
 - 3. Requirements for key control storage and software.
 - 4. Installation of permanent keys, cylinder cores and software.
 - 5. Address and requirements for delivery of keys.
- G. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
 - 1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include

- the use of installation manuals, hardware schedules, templates and physical product samples as required.
 - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
 - 3. Review sequence of operation narratives for each unique access controlled opening.
 - 4. Review and finalize construction schedule and verify availability of materials.
 - 5. Review the required inspecting, testing, commissioning, and demonstration procedures
- H. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

2.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software, or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software, and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

2.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

2.7 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - 1. Structural failures including excessive deflection, cracking, or breakage.
 - 2. Faulty operation of the hardware.

3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.
- C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
 1. Five years for standard duty cylindrical (bored) locks and latches.
 2. Five years for exit hardware.
 3. Twenty five years for manual overhead door closer bodies.
 4. Two years for electromechanical door hardware.

2.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.
- B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
 1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

- A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
 1. Quantity: Provide the following hinge quantity:
 - a. Two Hinges: For doors with heights up to 60 inches.
 - b. Three Hinges: For doors with heights 61 to 90 inches.
 - c. Four Hinges: For doors with heights 91 to 120 inches.
 - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
 - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
 4. Hinge Options: Comply with the following:
 - a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
 5. Manufacturers:
 - a. Hager Companies (HA) - CB Series.
- B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
1. Manufacturers:
 - a. Hager Companies (HA).

2.3 3 POWER TRANSFER DEVICES

- A. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
1. Manufacturers:
 - a. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE) – EL-CEPT Series.
 - b. Securitron (SU) - EL-CEPT Series.
 - c. Von Duprin (VD) - EPT-10 Series.

2.4 4 DOOR OPERATING TRIM

- A. Door Push Plates and Pulls: ANSI/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.

2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
5. Manufacturers:
 - a. Hiawatha, Inc. (HI).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - c. Trimco (TC).

2.5 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
- C. Cylinders: Original manufacturer cylinders complying with the following:
 1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
 2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
 4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 5. Keyway: Match Facility Standard.
- D. Keying System: Each type of lock and cylinders to be factory keyed.
 1. Conduct specified "Keying Conference" to define and document keying system instructions and requirements.
 2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
 3. Existing System: Field verify and key locks to match Owner's existing system.
- E. Key Quantity: Provide the following minimum number of keys:
 1. Change Keys per Cylinder: Two (2)
 2. Master Keys (per Master Key Level/Group): Five (5).
 3. Construction Keys (where required): Ten (10).
- F. Construction Keying: Provide construction master keyed cylinders.

2.6 MECHANICAL LOCKS AND LATCHING DEVICES

- A. Cylindrical Locksets, Grade 2 (Standard Duty): ANSI/BHMA A156.2, Series 4000, Grade 2 certified.
 1. Locks are to be non-handed and fully field reversible.
 2. Manufacturers:
 - a. Schlage (SC) - AL Series.

B. Narrow Stile Interconnected Locksets:

1. Interconnected locksets designed with a mortise case which contains both a latchbolt and deadbolt and allows simultaneous retraction of both the latchbolt and deadbolt with a single motion turning of the lever handle.
2. Locksets to be non-handed and available with a 1 1/8" or 1 1/2" standard backset.
3. Latchbolt and deadbolt shall be fabricated of wrought brass and bronze with a minimum 3/4" latchbolt throw and 1" deadbolt throw.
4. Manufacturers:
 - a. Adams Rite (AD) – 2190/2290 Series.

2.7 AUXILIARY LOCKS

- A. Cylindrical Deadlocks: ANSI/BHMA A156.36, Grade 1, cylindrical type deadlocks to fit standard ANSI 161 preparation and 1 3/8" to 1 3/4" thickness doors. Provide tapered collars to resist vandalism and 1" throw solid steel bolt with hardened steel roller pins. Deadlocks to be products of the same source manufacturer and keyway as other locksets.
1. Manufacturers:
 - a. Schlage (SC) - B600 Series.

2.8 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
 4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
1. Strikes for Mortise Locks and Latches: BHMA A156.13.
 2. Strikes for Bored Locks and Latches: BHMA A156.2.
 3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
 4. Dustproof Strikes: BHMA A156.16.

2.9 CONVENTIONAL EXIT DEVICES

- A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:
1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
 2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.

3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
 4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
 5. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
 - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
 - b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
 6. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
 7. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
 8. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
 9. Rail Sizing: Provide exit device rails factory sized for proper door width application.
 10. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.
1. Manufacturers:
 - a. Von Duprin (VD) - 35A/98 XP Series.

2.10 0 DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:
1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.
 2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
 3. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.
 4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.
 5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.

6. Closers shall not be installed on exterior or corridor side of doors, where possible install closers on door for optimum aesthetics.
 7. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.
- B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.
1. Manufacturers:
 - a. Norton Door Controls (NO) - 7500 Series.

2.11 1 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
1. Manufacturers:
 - a. Hiawatha, Inc. (HI).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - c. Trimco (TC).

2.12 2 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
 - 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
 - 1. National Guard Products (NG).
 - 2. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
 - 3. Reese Enterprises, Inc. (RE).

2.13 ELECTRONIC ACCESSORIES

- A. Switching Power Supplies: Provide power supplies with either single or dual voltage configurations at 12 or 24VDC. Power supplies shall have battery backup function with an integrated battery charging circuit and shall provide capability for power distribution, direct lock control and Fire Alarm Interface (FAI) through add on modules. Power supplies shall be expandable up to 16 individually protected outputs. Output modules shall provide individually protected, continuous outputs and/or individually protected, relay controlled outputs.
 - 1. Manufacturers:
 - a. Securitron (SU) - AQD Series.

2.14 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.15 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings, and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
 - 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 - 4. Provide blocking in drywall partitions where wall stops, or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Section "Closeout Procedures" for project punch and reporting requirements including compliance with approved submittals and verification door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

- 1. Quantities listed are for each pair of doors, or for each single door.
- 2. The supplier is responsible for handing and sizing all products.
- 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate selection for the material and application.

- B. Manufacturer's Abbreviations:

- 1. MK McKinney
- 2. HA Hager
- 3. PE Pemko
- 4. VD Von Duprin
- 5. SC Schlage

6.	AD	Adams Rite
7.	SA	SARGENT
8.	KA	Kaba Ilco
9.	RO	Rockwood
10.	NO	Norton
11.	SU	Securitron
12.	AL	Allegion
13.	IV	Ives
14.	OT	Other

Hardware Sets**Set: 1.0:** Doors: 01, 08 (General Office and Vocational/Training Room)

1	Continuous Hinge	780-112HD (verify w/ door mtl.)	Clear	HA
1	Narrow Stile Lock (with trim)	2190-303-303 (Square)	Match Door	AD
1	Cylinder	26-098	Match Door	SC
1	Thumbturn Cylinder	ADA7161	Match Door	KA
1	Door Closer	LCN 4040 XP-72MC	Satin Nickel	AL
1	Doorstop	471 EXP	Satin Nickel	RO
1	Threshold	Per Detail x FHSL14		PE
1	Gasket	By Door Manufacturer		
1	Sweep	18100CNB	Match Door	PE

Set: 2.0: Doors: 02, 07 (Office, Vocational/Training Room)

3	Hinge	5BB1	Satin Nickel	IV
1	Entrance/Office Lock	ND SERIES Rhodes (RHO)	Satin Nickel	SC
1	Wall Stop	WS406/407CVX	Satin Nickel	IV
3	Silencer	608		RO

Set: 3.0: Doors: 03 (Storage)

3	Hinge	5BB1	Satin Nickel	IV
1	Storeroom Lock	ND Rhodes (RHO)	Satin Nickel	SC
1	Door Closer	LCN 4040 XP-72MC	Satin Nickel	AL
1	Wall Stop	WS406/407CVX	Satin Nickel	IV
3	Silencer	608		RO

Set: 4.0: 05, 06 (Restrooms)

1	Continuous Hinge	780-112HD (verify w/ door mtl.)	Clear	HA
1	Privacy Lock w/ Status Indicator	ND Rhodes (RHO)	Satin Nickel	SC
1	Door Closer	LCN 4040 XP-72MC	Satin Nickel	AL
1	Wall Stop	WS406/407CVX	Satin Nickel	IV
1	Kickplate	K1050 10" High x CSK	Satin Nickel	RO
3	Silencer	608		RO

Set: 5.0: 04 (Break Room)

1	Continuous Hinge	780-112HD (verify w/ door mtl.)	Clear	HA
1	Entrance/Office Lock	ND SERIES Rhodes (RHO)	Satin Nickel	SC
1	Door Closer	LCN 4040 XP-72MC	Satin Nickel	AL
1	Wall Stop	WS406/407CVX	Satin Nickel	IV
3	Silencer	608		RO

END OF SECTION

SECTION 092900 – GYPSUM BOARD**GENERAL****1.1 RELATED DOCUMENTS**

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

1.2 SUMMARY

Section Includes:

- i. Interior gypsum board.

1.3 ACTION SUBMITTALS

Product Data: For each type of product.

- ii. Product Certificates: For indigenous materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include distance to Project, means of transportation, and cost for each indigenous material.
- iii. Laboratory Test Reports: For ceiling and wall materials, indicating compliance with requirements for low-emitting materials ASHRAE 189.1.

1.4 DELIVERY, STORAGE AND HANDLING

Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.5 FIELD CONDITIONS

Environmental Limitations: Comply with ASTM C840 requirements or gypsum board manufacturer's written instructions, whichever are more stringent.

Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

Do not install panels that are wet, moisture damaged, and mold damaged.

- iv. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
- v. Indications that panels are mold damaged include, but are not limited to, fuzzy or blotchy surface contamination and discoloration.

2.0 PRODUCTS**PERFORMANCE REQUIREMENTS**

Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated in accordance with ASTM E119 by an independent testing agency.

Ceiling and wall materials shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers." Formaldehyde emissions shall not exceed 16.5 mcg/cu. m or 13.5 ppb, whichever is less.

Ceiling and wall materials shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

2.1 GYPSUM BOARD, GENERAL**2.2 INTERIOR GYPSUM BOARD**

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide National Gypsum Company; Gold Bond BRAND Gypsum Board or comparable product by one of the following:
CertainTeed Gypsum.

Georgia-Pacific Gypsum LLC.

USG Corporation.

Or equal.

- vi. Core: 5/8 inch (15.9 mm), Type X as required by fire-resistance-rated assembly indicated on Drawings or in field verified conditions.
- vii. Core: 1" Type X liner panels with moisture and mold resistance for use in shaft wall and area separation wall systems.

2.3 TRIM ACCESSORIES

Interior Trim: ASTM C1047.

- viii. Material: Galvanized or aluminum-coated steel sheet, rolled zinc,
- ix. Shapes:
 - Cornerbead.
 - Bullnose bead.
 - LC-Bead: J-shaped; exposed long flange receives joint compound.
 - L-Bead: L-shaped; exposed long flange receives joint compound.
 - U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - Expansion (control) joint.
 - Curved-Edge Cornerbead: With notched or flexible flanges.

2.3 JOINT TREATMENT MATERIALS

General: Comply with ASTM C475/C475M.

Joint Tape:

- 2. Basis-of-Design Product: Subject to compliance with requirements, provide National Gypsum Company; ProForm Tapes or comparable product.
- x. Interior Gypsum Board: Paper.

Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

- 3. Basis-of-Design Product: Subject to compliance with requirements, provide National Gypsum Company; ProForm Joint Compounds or comparable product.
- xi. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
- xii. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.
Use setting-type compound for installing paper-faced metal trim accessories.
- xiii. Fill Coat: For second coat, use drying-type, all-purpose compound.
- xiv. Finish Coat: For third coat, use drying-type, all-purpose compound.
- xv. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.

2.4 AUXILIARY MATERIALS

General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.

Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

- xvi. Adhesive shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

Steel Drill Screws: ASTM C1002 unless otherwise indicated.

- xvii. Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick.
- Acoustical Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies in accordance with ASTM E90.
- xviii. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - Accumetric LLC.
 - Everkem Diversified Products, Inc.
 - Franklin International.
 - Grabber Construction Products.
 - Hilti, Inc.
 - Pecora Corporation.
 - Specified Technologies, Inc.
 - USG Corporation.
 - Or equal.
- xix. Sealant shall have a VOC content of 250 g/L or less.
- xx. Sealant shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

3.0 EXECUTION

3.1 EXAMINATION

Examine areas and substrates including welded hollow-metal frames and support framing, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

Comply with ASTM C840.

Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.

Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

Form control and expansion joints with space between edges of adjoining gypsum panels.

Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

- xxi. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
- xxii. Fit gypsum panels around ducts, pipes, and conduits.
- xxiii. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.

Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C919 and with manufacturer's written instructions for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

3.3 APPLYING INTERIOR GYPSUM BOARD

Install interior gypsum board in the following locations:

- xxiv. Type X: Where required for fire-resistance-rated assembly on vertical surfaces
- xxv. Ceiling Type: Ceiling surfaces.
- xxvi. Skim-Coated Type: As indicated on Drawings

Single-Layer Application:

- xxvii. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.

Stagger abutting end joints not less than one framing member in alternate courses of panels.
- xxviii. Fastening Methods: Fasten base layers and face layers separately to supports with screws.

3.4 INSTALLING TRIM ACCESSORIES

General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim in accordance with manufacturer's written instructions.

Control Joints: Install control joints in accordance with ASTM C840.

Interior Trim: Install in the following locations:

- xxix. Cornerbead: Use at outside corners
- xxx. Bullnose Bead: Use at outside corner.
- xxxi. LC-Bead: Use at exposed panel edges.
- xxxii. L-Bead: Use where required.

- xxxiii. U-Bead: Use where required
- xxxiv. Curved-Edge Cornerbead: Use at curved openings.

Exterior Trim: Install in the following locations:

- xxxv. Cornerbead: Use at outside corners.
- xxxvi. LC-Bead: Use at exposed panel edges.

3.5 FINISHING GYPSUM BOARD

General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

Prefill open joints damaged surface areas.

Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

Gypsum Board Finish Levels: Finish panels to levels indicated below and in accordance with ASTM C840:

- xxxvii. Level 1: Ceiling plenum areas, concealed areas.
- xxxviii. Level 2: where existing finish adjacent is finished to match.
- xxxix. Level 3: where existing finish adjacent is finished to match.
- xl. Level 4: Where existing finish adjacent is finished to match.
Primer and its application to surfaces are specified in Section 099000 "Interior Painting."
- xli. Level 5: where existing finish adjacent is finished to match.
Primer and its application to surfaces are specified in Section 099000 "Interior Painting."

4.0 PROTECTION

Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

Remove and replace panels that are wet, moisture damaged, and mold damaged.

- xl. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
- xlii. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

SECTION 095100 – ACOUSTICAL CEILINGS**PART 1 – General****1.1 RELATED DOCUMENTS**

Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section.

1.2 SUMMARY**A. Section Includes**

1. Acoustical ceiling panels
2. Exposed grid suspension system
3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings
4. Perimeter Trim

B. Related Sections

1. Divisions 23 - HVAC Air Distribution
2. Division 26 - Electrical
3. Division 28 – Fire Detection and Alarm: Fire alarm components

C. Alternates

1. Prior Approval: Unless otherwise provided for in the Contract documents, proposed product substitutions may be submitted no later than TEN (10) working days prior to the date established for receipt of bids. Acceptability of a proposed substitution is contingent upon the Architect's review of the proposal for acceptability and approved products will be set forth by the Addenda. If included in a Bid are substitute products that have not been approved by Addenda, the specified products shall be provided without additional compensation.
2. Submittals that do not provide adequate data for the product evaluation will not be considered. The proposed substitution must meet all requirements of this section, including but not necessarily limited to, the following: Single source materials suppliers (if specified in Section 1.5); Underwriters' Laboratories Classified Acoustical performance; Panel design, size, composition, color, and finish; Suspension system component profiles and sizes; Compliance with the referenced standards.

1.3 REFERENCES**A. American Society for Testing and Materials (ASTM):**

- ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
- ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire
- ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
- ASTM B209/B209M - Standard Specification for Aluminum and

Aluminum-Alloy Sheet and Plate; 2021a.

ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method

- ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
- ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels
- ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
- ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials
- ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Material
- ASTM E 580 Installation of Metal Suspension Systems in Areas Requiring Moderate Seismic Restraint
- ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems
- ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum
- ASTM E 1264 Classification for Acoustical Ceiling Products

B. International Building Code

C. ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality

D. NFPA 70 National Electrical Code

E. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures

F. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components

G. International Code Council-Evaluation Services Report - Seismic Engineer Report

1. ESR 1308 - Armstrong Suspension Systems

H. International Association of Plumbing and Mechanical Officials - Seismic Engineer Report

1. 0244 - Armstrong Single Span Suspension System

I. California Department of Public Health CDPH/EHLB Emission Standard Method Version 1.1 2010

J. U.S. Department of Agriculture BioPreferred program (USDA BioPreferred).

1.4 SYSTEM DESCRIPTION: 24X48 ACOUSTICAL TILES.

1.5 SUBMITTALS

- A. PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL DATA FOR EACH TYPE OF ACOUSTICAL CEILING UNIT AND SUSPENSION SYSTEM REQUIRED.
- B. Samples: Minimum 6 inch x 6 inch samples of specified acoustical panel; 8 inch long samples of exposed wall molding and suspension system, including main runner and 4 foot cross tees.
- C. Shop Drawings: Layout and details of acoustical ceilings show locations of items that are to be coordinated with or supported by the ceilings.
- D. Acoustical Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards. For acoustical performance, each carton of material must carry an approved independent laboratory classification of NRC, CAC, and AC.

1. If the material supplied by the acoustical subcontractor does not have an Underwriter's Laboratory classification of acoustical performance on every carton, subcontractor shall be required to send material from every production run appearing on the job to an independent or NVLAP approved laboratory for testing, at the architect's or owner's discretion. All products not conforming to manufacturer's current published values must be removed, disposed of and replaced with complying product at the expense of the Contractor performing the work.

1.6 QUALITY ASSURANCE

- A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.
 1. Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.
 2. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 Classification.
 3. Fire Resistance: As follows tested per ASTM E119 and listed in the appropriate floor or roof design in the Underwriters Laboratories Fire Resistance Directory
- B. Acoustical Panels: As with other architectural features located at the ceiling, may obstruct or skew the planned fire sprinkler water distribution pattern through possibly delay or accelerate the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from the device. Designers and installers are advised to consult a fire protection engineer, NFPA 13, or their local codes for guidance where automatic fire detection and suppression systems are present.
- C. Coordination of Work: Coordinate acoustical ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical ceiling units carefully to avoid chipping edges or damaged units in any way.

1.8 PROJECT CONDITIONS

A. Space Enclosure:

Standard Ceilings: Do not install interior ceilings until space is enclosed and weatherproof; wet work in place is completed and nominally dry; work above ceilings is complete; and ambient conditions of temperature and humidity are continuously maintained at values near those intended for final occupancy. Building areas to receive ceilings shall be free of construction dust and debris.

1.9 ALTERNATE CONSTRUCTION WASTE DISPOSAL

A. Ceiling material being reclaimed must be kept dry and free from debris.

1. For existing ceiling tiles or systems to be removed: Contact the manufacturers Recycle Center. A consultant will verify the condition of the material and that it meets the Manufacturers requirements for recycling. The consultant will provide assistance to facilitate the recycling of the ceiling.

1.10 WARRANTY

A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:

1. Acoustical Panels: Sagging and warping
2. Grid System: Rusting and manufacturer's defects

B. Warranty Period:

1. Acoustical panels: Thirty (30) years from date of substantial completion
2. Suspension: Thirty (30) years from date of substantial completion
3. Ceiling System: Thirty (30) years from date of substantial completion

C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.11 MAINTENANCE

A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.

1. Acoustical Ceiling Units: Furnish quantity of full-size units equal to 5 percent of amount installed. Verify with facilities personnel prior to finalizing order to confirm this amount is able to be stored on site and confirm quantity is adequate for ongoing maintenance.
2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 0.5 percent of ceiling area in area of work.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Ceiling Panels:

1. USG Inc.
2. CertainTeed Inc.

3. Armstrong World Industries
4. Or equal

B. Suspension Systems:

1. USG Inc.
2. CertainTeed Inc.
3. Armstrong World Industries
4. Or equal

C: Perimeter Systems

1. USG Inc.
2. CertainTeed Inc.
3. Armstrong World Industries
4. Or equal

2.2 ACOUSTICAL CEILING UNITS

A. ACOUSTICAL PANELS

1. Surface Texture: Fine
2. Composition: Mineral Fiber
3. Color: white
4. Size: 24 in x 48 in
5. Edge Profile: Angled Tegular 15/16.
6. PANEL THICKNESS: 3/4"
7. Noise Reduction Coefficient(NRC): ASTM C 423; Classified with UL label on product carton: 0.55
8. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton 35
9. Flame Spread: ASTM E 1264; Class A(UL)
10. Light Reflectance (LR) White Panel: ASTM E 1477; 82%
11. Product: Armstrong Fine Fissured Second Look 1761 or equal
12. Dimensional Stability: HumiGuard Plus, or equal
13. High Recycled Content Product: Classified as containing greater than 50% total recycled content. Total recycled content is based on product composition of post-consumer and pre-consumer post-industrial recycled content per FTC guidelines.
14. VOC Emissions: Meets CA Specification 01350, GreenGuard Gold Low VOC ClimaPlus™ 30 year Warranty Performance: Contains a broad spectrum antimicrobial additive on the face and back of the panel that provides resistance against the growth of mold and mildew. Includes sag resistance performance

2.3 METAL SUSPENSION SYSTEMS

2.3.1 CEILING COMPONENT PRODUCTS

A. Suspension Systems:

1. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with wall angles and moldings, curtain pockets, and splices as required.

a. Stabilizer Bars: Manufacturer's standard bars designed to provide system rigidity in large module applications.

- 1) Lengths: As applicable to module dimensions, main tee spacing, and panel sizes of ceiling assemblies specified.
- b. Materials:
 - 1) Steel Grid: ASTM A653/A653M G30 coating, unless otherwise indicated.
 2. Exposed Acoustical Suspension System: Hot-dipped galvanized steel grid and cap.
 - a. Application(s): Fire-resistance-rated assemblies.
 - b. Structural Classification: Heavy-duty, when tested in accordance with ASTM C635/C635M.
 - c. Recycled Materials Content: Classified as containing greater than 50 percent total recycled content. Available for specific sizes and lengths.
 - d. Profile: Tee; 15/16 inch (24 mm) face width.
 - e. Finish: Baked enamel.
 - f. Color: Flat White 050.
 - g. Products:
 - 1) USG Corporation; [DX] 15/16 Inch Suspension System.
- 2.2 ACCESSORIES
 - A. Support Channels, Plates, Clips and Molding:
 1. US28 10' x 1-11/16" x 1/2" x 1" U-Molding
 2. SB48 Locking 48" Stabilizer Bar
 3. C-8 Wall Spring Clip
 4. E10 11" Flat Spline
 5. BPC234 23" x 1-1/2" Closing Spline
 6. BPC116 1" x 11" Closing Spline
 7. BPA424 4" x 1-1/2" Access Spline, for use with BPC234
 - B. Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.
 - C. Suspension Wire: Size and type as required for application, seismic requirements, and ceiling system flatness requirement specified.
 1. Concealed Suspension:
 - a. Suspension Wire: Steel, annealed, galvanized finish, 12 gauge, 0.0808 (2.05 mm) diameter, complying with ASTM A641/A641M.
 2. Exposed (To View) Suspension:
 - a. Suspension Wire: Stainless steel, 18 gauge, 0.0403 (1.02 mm) diameter, complying with ASTM A580/A580M.
 - b. Suspension Rope: 1/32 inch (0.8 mm) stainless steel rope wire complying with ASTM A492, with turnbuckle connection, see A3.01.01 details 10A and 10B.
 - D. Hold-Down Clips: Manufacturer's standard clips to suit application.
 - E. Seismic Clips: Manufacturer's standard clips for seismic conditions and to suit application.
 - F. Unopposed Tee Attachment Clip: Manufacturer's standard clip designed to create code-compliant cross tee connections when a cross tee is installed in a main tee without another cross tee directly opposite ("ashlar" installations).
 - G. Touch-Up Paint For Concealed Items: Zinc rich type, as recommended by ceiling system manufacturer.

PART 3 – EXECUTION

3.1 EXAMINATION

4. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless

expressly permitted by manufacturer's printed recommendations.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders, and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.
- B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.

3.3 INSTALLATION

- A. Follow manufacturer installation instructions.
- B. Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.
- C. Suspend main beam from overhead construction with hanger wires spaced 4'-0" on center along the length of the main runner. Install hanger wires plumb and straight.
- D. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.
- E. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.
- F. Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.

3.4 ADJUSTING AND CLEANING

- A. Replace damaged and broken panels.
- B. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove any ceiling products that cannot be successfully cleaned and or repaired. Replace with attic stock or new product to eliminate evidence of damage.
- C. Recycle building waste including ceiling tiles per local ordinances and construction waste demolition plans.

END OF SECTION

SECTION 099000 – PAINT**PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Commercial painting, including surface preparation
 - 1. Interior painting.

1.2 RELATED SECTIONS - INTERIOR

- A. Division 9 - Drywall - (Walls, Ceilings, Gypsum Board and similar items).

1.3 REFERENCES

- A. Green Seal Standard GS-11; May 20, 1993.
- B. Occupational Safety and Health Act (OSHA) - Safety Standards.
- C. American National Standards Institute (ANSI) - Performance Standards.
- D. Paint Decorating Contractors of America (PDCA) - Application Standard.
- E. National Paint and Coatings Association (NPCA) - Gloss Standard.
- F. American Society for Testing Materials (ASTM) - Testing Methods.
- G. Master Paint Institute (MPI #) - Established paint categories and standards.
- H. Ozone Transmission Commission (OTC) - Established levels of Volatile Organic Compounds.
- I. SCAQMD 1168 - South Coast Air Quality Management District Rule #1168; October 3, 2003.
- J. SSPC (PM1) - Steel Structures Painting Manual, Vol. 1, Good Painting Practice; Society for Protective Coatings; 1993, Third Edition.
- K. SSPC (PM2) - Steel Structures Painting Manual, Vol. 2, Systems and Specifications; Society for Protective Coatings; 1995, Seventh Edition.
- L. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

1.4 DEFINITIONS

- A. Commercial as used in this Section refers to a product well suited for a commercial application.
- B. DFT as used in this Section refers to the Dry Film Thickness of the coating.
- C. Enamel refers to any acrylic or alkyd (oil) base paint which dries leaving an eggshell, pearl, satin, semi-gloss or high gloss enamel finish.
- D. DTM as used in this Section refers to paint that is applied Direct To Metal.
- E. Premium as used in this Section refers to the best quality product "top of the line".
- F. VOC as used in this Section refers to Volatile Organic Compounds found in primers, paints, sealers and stains. The level of VOCs appears after each product listed in the Schedule in grams per liter (g/L).
- G. Paints are available in a wide range of sheens or glosses, as measured by a gloss meter from a 60 and/or 85 degree angle from vertical, as a percentage of the amount of light that is reflected. The following terms are used to describe the gloss of our products. The list below is provided for general guidance; refer to the technical data sheet for the actual gloss/sheen level for each product.
 - 1. Flat - Less than 5 Percent.

2. Eggshell - 5 - 20 Percent.
3. Satin - 20 - 35 Percent.
4. Semi-Gloss - 30 - 65 Percent.
5. Gloss - Over 65 Percent.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300 - Administrative Requirements.
- B. Product Data: Provide a complete list of all products to be used, with the following information for each:
 1. Manufacturer's name, product name and/or catalog number, and general product category.
 2. Cross-reference to specified paint system(s) that the product is to be used in; include description of each system.
- C. Samples: Submit three paper samples, 5 inches by 7 inches (127mm x 178mm) in size, illustrating selected colors for each color and system selected with specified coats cascaded.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures.
- E. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten years experience.
- B. Installer Qualifications: All products listed in this section are to be applied by a Painting Contractor with a minimum of five years demonstrated experience in surface preparation and field application of the same type and scope as specified.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- C. Disposal:
 1. Never pour leftover coating down any sink or drain. Use up material on the job or seal can and store safely for future use.
 2. Do not incinerate closed containers.
 3. For specific disposal or recycle guidelines, contact the local waste management agency or district. Recycle whenever possible.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.9 WARRANTY

- A. Inspection of all surfaces to be coated must be done by the manufacturer's representative to insure proper preparation prior to application. All thinners, fillers, primers and finish coatings shall be from the same manufacturer to support a product warranty. Products other than those submitted shall be accompanied by a letter stating its fitness for use and compatibility.

- B. At project closeout, provide to the Owner or owner's representative an executed copy of the Manufacturer's standard form outlining the terms and conditions of and any exclusions to their Limited Warranty against Manufacturing Defect.

1.10 EXTRA MATERIALS

- A. At project closeout, supply the Owner or owner's representative one gallon of each product for touch-up purposes. Cans shall be clearly marked with color name, number and type of paint.
- B. At project closeout, provide the color mixture name and code to the Owner or owner's representative for accurate future color matching.

PART 2 PRODUCTS

- 1. For touch up at ceiling locations where lighting replacement requires skim coat or patch and repair of existing ceiling finish.

1st Coat: Benjamin Moore Interior ECO SPEC® INTERIOR LATEX PRIMER N372, 0 g/L, 50, 50 X-Green™, 149, 149 X-Green™, Qualifies for CHPS low emitting credits

2nd Coat: Benjamin Moore Interior Eco Spec® Eggshell N374, color tbd , 0 g/L, 52, 52 X-Green™, 139 , Eligible for LEED® v4 Credit, Eligible for CHPS Low Emitting Credit, Certified Asthma & Allergy Friendly®

3rd Coat: Benjamin Moore Interior Eco Spec® Eggshell N374, color tbd , 0 g/L, 52, 52 X-Green™, 139 , Eligible for LEED® v4 Credit, Eligible for CHPS Low Emitting Credit, Certified Asthma & Allergy Friendly®

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Benjamin Moore and Co., which is located at: 101 Paragon Dr Montvale, NJ 07645; Toll Free Tel: 866-708-9181; Email: info@benjaminmoore.com; Web: www.benjaminmoore.com
- B. Or equal

2.2 MATERIALS - GENERAL

- A. Volatile Organic Compound (VOC) Content:
 - 1. Provide coatings that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D-National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- B. Compatibility: Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

2.3 MIXING AND TINTING

- A. Except where specifically noted in this section, all paint shall be ready-mixed and pre-tinted. Agitate all paint prior to and during application to ensure uniform color, gloss, and consistency.
- B. Thinner addition shall not exceed manufacturer's printed recommendations. Do not use kerosene or other organic solvents to thin water-based paints.
- C. Where paint is to be sprayed, thin according to manufacturer's current guidelines.

PART 3 EXECUTION

3.1 EXAMINATION

- A. The Contractor shall review the product manufacturer's special instructions for surface preparation, application, temperature, re-coat times, and product limitations.
- B. The Contractor shall review product health and safety precautions listed by the manufacturer.
- C. The Contractor shall be responsible for enforcing on site health and safety requirements associated with the Work.
- D. Do not begin installation until substrates have been properly prepared.
- E. Ensure that surfaces to receive paint are dry immediately prior to application.
- F. Ensure that moisture-retaining substrates to receive paint have moisture content within tolerances allowed by coating manufacturer. Where exceeding the following values, promptly notify Architect and obtain direction before beginning work.
 - 1. Concrete and Masonry: 3-5 percent. Allow new concrete to cure a minimum of 28 days.
 - 2. Exterior Wood: 17 percent.
 - 3. Interior Wood: 15 percent.
 - 4. Interior Finish Detail Woodwork, Including Trim, and Casework: 10 percent.
 - 5. Plaster and Gypsum: 15 percent.
 - 6. Concrete Slab-On-Grade: Perform calcium chloride test over 24 hour period or other acceptable test to manufacturer. Verify acceptable moisture transmission and pH levels.
- G. Examine surfaces to receive coatings for surface imperfections and contaminants that could impair performance or appearance of coatings, including but not limited to, loose primer, rust, scale, oil, grease, mildew, algae, or fungus, stains or marks, cracks, indentations, or abrasions.
- H. Correct conditions that could impair performance or appearance of coatings in accordance with specified surface preparation procedures before proceeding with coating application.

3.2 PREPARATION - GENERAL

- A. Clean surfaces thoroughly prior to coating application.
- B. Do not start work until surfaces to be finished are in proper condition to produce finished surfaces of uniform, satisfactory appearance.
- C. Stains and Marks: Remove completely, if possible, using materials and methods recommended by coating manufacturer; cover stains and marks which cannot be completely removed with isolating primer or sealer recommended by coating manufacturer to prevent bleed-through.
- D. Remove Mildew, Algae, and Fungus using materials and methods recommended by coating manufacturer.
- E. Remove dust and loose particulate matter from surfaces to receive coatings immediately prior to coating application.
- F. Remove or protect adjacent hardware, electrical equipment plates, mechanical grilles and louvers, lighting fixture trim, and other items not indicated to receive coatings.
- G. Move or protect equipment and fixtures adjacent to surfaces indicated to receive coatings to allow application of coatings.
- H. Protect adjacent surfaces not indicated to receive coatings.
- I. Prepare surfaces in accordance with manufacturer's instructions for specified

coatings and indicated materials, using only methods and materials recommended by coating manufacturer.

3.3 SURFACE PREPARATION

A. Architectural Coatings

1. Interior

a. New Drywall

- 1) When joint cement and/or patching materials are thoroughly dry, lightly sand any rough areas with a fine grit paper (180-220 grit)
- 2) Wipe as much surface dust as possible – best achieved with a soft sponge and warm water

b. New Plaster

- 1) New plaster should be allowed to fully cure – 30 days on average
 - a) Cured plaster should be hard, have a slight sheen and maximum pH of 10; Soft, porous or powdery plaster indicates improper cure.
- 2) Using a putty knife, carefully scrape off any surface protrusions
- 3) Clean surfaces – best achieved with a mild cleaner mixed with warm water and a soft sponge

c. Previously Painted Surfaces

- 1) Wash off dirt, grease and oil buildup with a mild cleaner mixed with warm water and a soft sponge. Rinse thoroughly with warm water. Remove loose paint and powdery substances by scraping or sanding**. Patch holes and cracks with spackling or patching compound. Allow to dry, then sand smooth. For ***glossy or non-porous surfaces***, lightly sand to a dull finish or use an abrasive cleanser. Remove sanding dust or cleanser residue.

Temperature, Humidity, and Dew Point

The temperature of the surface that you wish to paint, the ambient temperature, as well as the temperature of the coating, can influence the overall color and performance. It only takes a 10° change to alter many properties of the coating.

Cold Temperatures	Hot Temperatures
- dry and cure times are extended - peeling, poor film integrity, blushing, and color changes may occur (10°F colder) - inability for latex paint to form a film - epoxies require you to double the induction time for every 10°F drop from the recommended temperature (usually 77°F) - paint thickens making application more difficult - mud cracking may occur	- paint may not flow and level properly - paint may wrinkle (dry on surface while wet underneath) - paint film formation may be affected - touch up issues - blistering and peeling may occur because paint does not have a chance to “bite in” and adhere to substrate - the induction time and pot life of epoxies will be cut in half for every 10°F raise from the recommended temperature (usually 77°F)

During high levels of humidity, the ambient air becomes saturated with water molecules. For example, at 50% humidity, the air is saturated with 50% moisture. This saturation inhibits the evaporation of solvents, which causes the coating to dry improperly when compared to lower levels of humidity. Once the humidity is high enough (depending on temperature), dew will start

to form.

Dew point is the temperature at which moisture in the air starts to condense as water on the surface. The industry standard is to avoid painting on a surface temperature equal to or less than 5°F above the dew point. For example, if the dew point is 37°F avoid painting if the surface temperature is 40°F or below for the first 24 hours for latex paints, and 48-72 hours for alkyd paints.

Plastic Sheet: Tape to the concrete an 18 x18-inch sheet of clear polyethylene plastic, approximately 4 mils thick, and allow it to remain in place for at least 16 hours. Be sure to seal all edges (ASTM D4263-83). If moisture collects under the plastic in any amount, then the Calcium Chloride test should be performed, which will give a measurable result, before a coating is

Calcium Chloride: To measure the rate of moisture-vapor emission from the concrete, place a measured amount of anhydrous calcium chloride in a dish inside a transparent plastic cover that is sealed to the floor. Pre-measured kits with instructions for the test are often sold by Corotech retailers and big box home improvement retailers. After 60 to 72 hours, weigh the calcium chloride and perform calculations to determine the amount of water absorbed (ASTM F1869-11). The moisture-vapor emission rate is calculated in pounds of water per 1,000 square feet per a 24-hour period. Rates below 3-5 pounds are generally recommended to avoid possible coating failure due to moisture.

Moisture Meter: Use a moisture meter to determine a percent reading of moisture present in the concrete. Less than 3-5% is generally recommended before proceeding with application of a coating. Moisture is often present from the preparation of the concrete or from water used later to clean or wash off various residues.

3.4 APPLICATION - GENERAL

- A. Application of primers, paints, stains or coatings, by the Contractor, will serve as acceptance that surfaces were properly prepared in accordance with the manufacturer's recommendation.
- B. Apply each coat to uniform coating thickness in accordance with manufacturer's instructions, not exceeding manufacturer's specified maximum spread rate for indicated surface; thins, brush marks, roller marks, orange-peel, or other application imperfections are not permitted.
- C. Allow manufacturer's specified drying time, and ensure correct coating adhesion, for each coat before applying next coat.
- D. Inspect each coat before applying next coat; touch-up surface imperfections with coating material, feathering, and sanding if required; touch-up areas to achieve flat, uniform surface without surface defects visible from 5 feet (1.5 m).
- E. Remove dust and other foreign materials from substrate immediately prior to applying each coat.
- F. Where paint application abuts other materials or other coating color, terminate coating with a clean sharp termination line without coating overlap.
- G. Where color changes occur between adjoining spaces, through framed openings that are of same color as adjoining surfaces, change color at outside stop corner nearest to face of closed door.
- H. Re-prepare and re-coat unsatisfactory finishes; refinish entire area to corners or other natural terminations.

3.5 CLEANING

- A. Clean excess coating materials, and coating materials deposited on surfaces not indicated to receive coatings, as construction activities of this section progress; do not allow to dry.
- B. Re-install hardware, electrical equipment plates, mechanical grilles and louvers, lighting fixture trim, and other items that have been removed to protect from contact with coatings.
- C. Reconnect equipment adjacent to surfaces indicated to receive coatings.
- D. Relocate to original position equipment and fixtures that have been moved to allow application of coatings.
- E. Remove protective materials.

3.6 PROTECTION AND REPAIR

- A. Protect completed coating applications from damage by subsequent construction activities until completion of painting project.
- B. Touch-up coatings damaged by subsequent construction activities.

END OF SECTION

SECTION 200100 - GENERAL MECHANICAL PROVISIONS**GENERAL****1.1 GENERAL CONDITIONS**

- A. The preceding General Conditions shall form a part of this Section with the same force and effect as though repeated here. The provisions of this Section shall also apply to the following Divisions 21, 22, 23 and 25 of these Specifications and shall be considered a part of those Divisions.

1.2 CODES AND REGULATIONS

- A. All work and materials shall be in accordance with current rules and regulations of applicable codes. Nothing in these Drawings or Specifications is to be construed to permit work not conforming to these codes. Should the Drawings or Specifications call for material or methods of construction of a higher quality or standard than required by these codes, the Drawings and Specifications shall govern. Applicable codes and regulations include, but are not necessarily limited to, the following:

California Building Code CCR Title 24, Part 2
California Electrical Code CCR Title 24, Part 3
California Mechanical Code CCR Title 24, Part 4
California Plumbing Code CCR Title 24, Part 5
California Energy Code CCR Title 24, Part 6
California Fire Code CCR Title 24, Part 9
Local Codes

1.3 DEFINITIONS

- A. Provide: The term "provide" as used in these specifications or on the drawings shall mean furnish and install.
- B. Piping: The term "piping" as used in these specifications or on the drawings shall mean all pipe, fittings, valves, hangers, insulation, etc. as may be required for a complete and functional system.
- C. Ductwork: The terms "duct" or "ductwork" as used in these specifications or on the drawings shall mean all ducts, fittings, joints, dampers, hangers, insulation, etc. as may be required for a complete and functional system.
- D. Wiring: The term "wiring" as used in these specifications or on the drawings shall mean all wiring, conduit, boxes, connections, transformers, relays, switches etc. as may be required for a complete and functional system.

1.4 PERMITS AND FEES

- A. The Contractor shall take out all permits and arrange for all tests in connection with his work as required. All charges are to be included in the work.

1.5 COORDINATION OF WORK

- A. Examination: Before starting work, thoroughly examine existing and newly completed underlying and adjoining work and conditions on which the installation of this work depends. Report to the Engineer in writing all conditions which might adversely affect this work.
- B. Layout: Layout of materials, equipment and systems is generally diagrammatic unless specifically dimensioned. Some work may be shown offset for clarity. The actual locations of all materials, piping, ductwork, fixtures, equipment, supports, etc. shall be carefully planned prior to installation of any work in order to avoid all interference with each other, or with structural, electrical, architectural or other elements.
- C. Verification: If discrepancies are discovered between drawing and specification requirements, the more stringent requirement shall apply. All conflicts shall be called to the attention of the Engineer prior to the installation of any work or the ordering of any equipment. No work shall be prefabricated or installed prior to this coordination. No costs will be allowed to the Contractor for any prefabrication or installation performed prior to this coordination. Verify the proper voltage and phase of all equipment with the electrical plans.
- D. Location of Utilities Prior to Trenching or Earthwork: The Contractor shall notify the Owner a minimum of two business days prior to beginning trenching or earthwork. Prior to this notification, the Contractor shall have marked all proposed trenches with paint and shall have contacted a utility locating company and have had this company mark all found underground utilities with paint. The Contractor shall then coordinate and arrange for a site visit with the Owner to review the proposed trenching and/or earthwork areas. Trenching and/or earthwork shall not begin until the Owner agrees. Repair and/or compensation for repair of marked utilities is the responsibility of the Contractor. The Owner retains the right to either self-perform the repair or require the Contractor to complete the repair, as directed by the Owner. If while performing the work, the Contractor discovers utilities that have not been marked, the Contractor shall immediately notify the Owner verbally and in writing.

1.6 GUARANTEE

- A. Guarantee shall be in accordance with the General Conditions. The Contractor shall repair any defects due to faulty materials or workmanship and pay for any resulting damage to other work which appears within the guarantee period. These Specifications may extend the period of the guarantee for certain items. Where such extensions are called for, or where items are normally provided with guarantee periods in excess of that called for in the General Conditions, the certificate of guarantee shall be furnished to the Owner through the Engineer.

1.7 QUIETNESS

- A. Piping, ductwork and equipment shall be arranged and supported so that vibration is a minimum and is not transmitted to the structure.

1.8 DAMAGES BY LEAKS

- A. The Contractor shall be responsible for damages caused by leaks in the temporary or permanent piping systems prior to completion of work and during the period of the guarantee, and for damages caused by disconnected pipes or fittings, and the overflow of equipment prior to completion of the work.

1.9 EXAMINATION OF SITE

- A. The Contractor shall examine the site, compare it with Plans and Specifications, and shall have satisfied himself as to the conditions under which the work is to be performed. No allowance shall subsequently be made in his behalf for any extra expense to which he may be put due to failure or neglect on his part to make such an examination.

1.10 COMPATIBILITY WITH EXISTING SYSTEMS

- A. Any work which is done as an addition, expansion or remodel of an existing system shall be compatible with that system.

1.11 MATERIALS AND EQUIPMENT

- A. Materials and equipment shall be new unless otherwise noted. Materials and equipment of a given type shall be by the same manufacturer. Materials and equipment shall be free of dents, scratches, marks, shipping tags and all defacing features at time of project acceptance. Materials and equipment shall be covered or otherwise protected during construction as required to maintain the material and equipment in new factory condition until project acceptance. All HVAC equipment and ductwork shall be covered, sealed and protected per CGBSC Section 5.504.3 from delivery on site until final start-up.

1.12 SUBMITTALS

- A. Shop Drawings: Within 30 days of contract award, the Contractor shall submit six copies of shop drawings for all materials, equipment, etc. proposed for use on this project. Material or equipment shall not be ordered or installed until written review is processed by the Engineer.

All shop drawings must comply with the following:

1. Shop drawings are required for all material and equipment items and shall include manufacturer's name and catalog numbers, dimensions, capacities, performance curves, and all other characteristics and accessories as listed in the specifications or on the drawings. Descriptive literature shall be current factory brochures and submittal sheets. Capacities shall be certified by the factory. FAX submittals are not acceptable.
2. All shop drawings shall be submitted at one time in a neat and orderly fashion in a suitable binder with title sheet including Project, Engineer and Contractor, table of contents, and indexed tabs dividing each group of materials or item of equipment. All items shall be identified by the specification paragraph number for which they are proposed. All equipment

shall also be identified by the mark number as indicated on drawings.

3. All capacities, characteristics, and accessories called for in the specifications or on the drawings shall be high-lighted, circled or underlined on the shop drawings. Calculations and other detailed data indicating how the item was selected shall be included for items that are not scheduled. Data must be complete enough to permit detailed comparison of every significant characteristic which is specified, scheduled or detailed.
4. Electronic Submittals: Where allowed by Division 01, electronic submittals are acceptable providing the following requirements are met. Electronic submittals which do not comply with these requirements will be rejected.
 - a. Submittal shall be a single file in PDF format, with bookmarks for table of contents and each tab, and sub-bookmarks for each item.
 - b. All text shall be searchable (except text that is part of a graphic).
 - c. Submittal shall include all items noted in 1 through 3 above, except a binder is not required.
 - d. Electronic submittals shall be processed through normal channels. Do not submit directly to the Engineer unless the Engineer is the prime consultant for the project.
 - e. Contractor shall provide Owner and Owner's Representative with hard copies of the final submittal. Coordinate exact number required with Owner through Architect/Engineer.
- B. Substitutions: Manufacturers and model numbers listed in the specifications or on the drawings represent the standard of quality and features desired. Proposed substitutions shall comply with the Owner's General Requirements. Calculations and other detailed data indicating how the item was selected shall be included. The Contractor shall assume full responsibility that substituted items or procedures will meet the specifications and job requirements and shall be responsible for the cost of redesign and modifications to the work caused by these items. At the Engineer's request, furnish locations where equipment similar to the substituted equipment is installed and operating along with the user's phone numbers and contact person. Satisfactory operation and service history will be considered in the acceptance or rejection of the proposed substitution.
- C. Review: Submittals will be reviewed for general conformance with the design concept, but this review does not guarantee quantity shown, nor does it supersede the responsibility of the Contractor to provide all materials, equipment and installation in accordance with the drawings and specifications. The Contractor shall agree that shop drawing submittals processed by the Engineer are not Change Orders; that the purpose of shop drawing submittals by the Contractor is to demonstrate to the Engineer that the Contractor understands the design concept, that he demonstrates his understanding by indicating which equipment and material he intends to furnish and install and by detailing the fabrication and installation methods he intends to use. The Contractor shall agree that if deviations, discrepancies or conflicts between shop drawings and design drawings and

specifications are discovered either prior to or after shop drawing submittals are processed by the Engineer, the design drawings and specifications shall control and shall be followed. If a resubmittal is required, submit a complete copy of the Engineer's review letter requiring such with the resubmittal.

1.13 MANUFACTURER'S RECOMMENDATIONS

- A. All material, equipment, devices, etc., shall be installed in accordance with the recommendations of the manufacturer of the particular item. The Contractor shall be responsible for all installations contrary to the manufacturer's recommendations. The Contractor shall make all necessary changes and revisions to achieve such compliance. Manufacturer's installation instructions shall be delivered to and maintained at the job site through the construction of the project.

1.14 SCHEDULING OF WORK

- A. All work shall be scheduled subject to the review of the Engineer and the Owner. No work shall interfere with the operation of the existing facilities on or adjacent to the site. The Contractor shall have at all times, as conditions permit, a sufficient force of workmen and quantity of materials to install the work contracted for as rapidly as possible consistent with good work, and shall cause no delay to other Contractors engaged upon this project or to the Owner. HVAC equipment and functions, whether existing or new, shall be maintained in operating condition whenever the facility is occupied, unless otherwise approved by the Owner.

1.15 DEMOLITION

- A. Existing equipment, ducts, piping, etc. noted for removal shall be removed and delivered to the Owner at a location to be determined by the Owner. Those items determined by the Owner to be of no value shall become the property of the Contractor and shall be removed from the job site by the Contractor at the Contractor's expense. Existing piping, ducts, services, etc. requiring capping shall be capped below floors, behind walls, above ceilings or above roof unless otherwise noted. Where items are removed, patch the surfaces to match the existing surfaces.

1.16 HAZARDOUS MATERIAL REMOVAL

- A. All hazardous material removal will be by the contractor. Hazardous material is to be removed before the work is started.

1.17 OPENINGS, CUTTING AND PATCHING

- A. The locations and dimensions for openings through walls, floors, ceilings, foundations, footings, etc. required to accomplish the work under this Specification Division shall be provided under this Division. Except as noted below, the actual openings and the required cutting and patching shall be provided by other Divisions. Coring through existing concrete or masonry walls, floors, ceilings, foundations, footings, etc., and saw cutting of concrete floors or asphaltic concrete required to accomplish the work under this Specification Division shall be provided under this Division. Patching of these surfaces shall be provided by other Divisions. Cutting or coring shall not impair the strength of the structure. Any damage resulting from this work shall be repaired at the Contractor's expense to the satisfaction of the

Engineer.

1.18 EXCAVATION AND BACKFILL

- A. General: Barrel of pipe shall have uniform support on sand bed. Sand shall be free from clay or organic material, suitable for the purpose intended and shall be of such size that 90 percent to 100 percent will pass a No. 4 sieve and not more than 5 percent will pass a No. 200 sieve. Unless otherwise noted, minimum earth cover above top of pipe or tubing outside building walls shall be 24", not including base and paving in paved areas.
- B. Excavation: Width of trench at top of pipe shall be minimum of 16", plus the outside diameter of the pipe. Provide all shoring required by site conditions. Where over excavation occurs, provide compacted sand backfill to pipe bottom. Where groundwater is encountered, remove to keep excavation dry, using well points and pumps as required.
- C. Backfill:
 - 1. 6" Below, Around, and to 12" Above Pipe: Material shall be sand. Place carefully around and on top of pipe, taking care not to disturb piping, consolidate with vibrator.
 - 2. One Foot Above Pipe to Grade: Material shall be sandy or silty loam, free of lumps, laid in 6" layers, uniformly mixed to proper moisture and compacted to required density. If backfill is determined to be suitable and required compaction is demonstrated by laboratory test, water compaction in 6" layers may be used, subject to review by Engineer.
- D. Compaction: Compact to density of 95% within building and under walkways, driveways, traffic areas, paved areas, etc. and to 90% elsewhere. Demonstrate proper compaction by testing at top, bottom and one-half of the trench depth. Perform these tests at three locations per 100' of trench.

1.19 CONTINUITY OF SERVICES

- A. Existing services and systems shall be maintained except for short intervals when connections are made. The Contractor shall be responsible for interruptions of services and shall repair damage done to any existing service caused by the work. If utilities not indicated on the drawings are uncovered during excavation, the Contractor shall notify the Engineer immediately.

1.20 PROTECTIVE COATING FOR UNDERGROUND PIPING

- A. All ferrous pipe below grade (except cast iron) shall have a factory applied protective coating of extruded high density polyethylene, 35 to 70 mils total thickness, X-Tru-Coat, Scotchkote. All fittings and areas of damaged coating shall be covered with two layer double wrap of 10 mil polyvinyl tape to total thickness of 40 mils. John-Mansville. Protective coating shall be extended 6" above surrounding grade.

1.21 ACCESS DOORS

- A. Provide access doors as required where equipment, piping, valves, ductwork, etc. are not otherwise accessible. Access doors shall match the wall or ceiling finish and fire rating as indicated on the Architectural drawings. 16-gage steel frame and 14-gage steel door with paintable finish, except in ceramic tile, where door shall be 16-gage stainless steel with satin finish. Continuous hinge. Deliver doors to the General Contractor for installation. Milcor. Unless otherwise noted, the minimum sizes shall be as follows:

1 valve up to 1-1/2"	12" x 12"
1 valve up to 3"	16" x 16"

1.22 HOUSEKEEPING PAD

- A. Housekeeping pads shall be 6" high concrete, 3000 PSI strength, unless otherwise noted. Pad shall extend 6" beyond the largest dimensions of the equipment, unless otherwise noted. The top edge of the pad shall have a 3/4" chamfer. Unless otherwise noted, the pad shall have #4 reinforcing bars at 12" on center, each way, located at mid-depth of the pad. If not poured at the same time as the slab with pad rebar tied to slab rebar, the pad shall be anchored as follows: Drill 5/8" diameter, 3" deep hole in slab. Install 7" long, #4 rebar with Simpson Set epoxy system. Provide a minimum of 4 of these anchors per pad, but no more than 4 feet apart in either direction. Anchor points shall be 12" from the edge of the pad.

1.23 CONCRETE ANCHORS

- A. Steel bolt with expansion anchor requiring a drilled hole - powder driven anchors, adhesive anchors and concrete screws are not acceptable. Re-use of screw anchor holes shall not be permitted. Minimum concrete embedment shall be 4-1/2 diameters. Minimum spacing shall be 12 diameters center to center and 6 diameters center to edge of concrete. Post-installed anchors in concrete used for component anchorage shall be pre-qualified for seismic application in accordance with ACI 355.2 and ICC-ES AC193. Post-installed anchors in masonry used for component anchorage shall be pre-qualified for seismic applications in accordance with ICC-ES AC01. Maximum allowable loads for tension and shear shall be as determined by Calculation in compliance with ACI 318-14, Chapter 17, and the anchor's ICC or IAPMO evaluation report. Hilti, Powers, Red Head.

1.24 EQUIPMENT ANCHORING AND OTHER SUPPORTS

- A. Mechanical systems (equipment, ductwork, piping, conduit, etc.) shall be anchored in accordance with the CBC. All systems mounted on concrete shall be secured with a concrete anchor at each mounting point. All air handlers shall be mounted on spring isolators. Secure base plate as indicated above. Attachment of equipment, ductwork, piping, conduit, etc. supported on curbs or platforms shall be made to the side of curbs and platforms, where possible. Where screws or lag bolts must be installed through the top of a sheet metal cap, the installation shall be as follows. Pre-drill pilot hole. Fill pilot hole with polyurethane sealant. Install screw or lag bolt with a flat washer and an EPDM washer adjacent to the sheet metal.

1.25 SUPPORTS AND SEISMIC RESTRAINTS

- A. Any structural element required to hang or support piping, ducts or equipment provided under this Division and not shown on other drawings shall be provided under this Division.
- B. Mechanical systems (equipment, ductwork, piping, etc.) shall be provided with supports and seismic restraints in accordance with the CBC. Submit anchorage calculations and details stamped and signed by a structural engineer registered in the State of California. Submit shop drawings showing location, type and detail of restraints. Submit manufacturer's data for restraints. Restraint system shall be Mason West, Inc. (HCAI OPM 0043-13), or other HCAI preapproved system.

1.26 PAINTING

- A. Paint all black iron supports, hangers, anchors, etc. with two coats of rust resisting primer. Also paint all uninsulated black iron piping exposed to weather with two coats of rust resisting primer.

1.27 ROOF PENETRATIONS AND PATCHING

- A. Whenever any part of the mechanical systems penetrates the roof or exterior wall, the openings shall be flashed and counter-flashed water tight with minimum 22 gauge galvanized sheet metal. Flashing shall extend not less than eight inches from the duct, pipe, or supporting member in all directions unless detailed otherwise. All roof penetrations and patching shall be in accordance with the recommendations of the National Roofing Contractor's Association and the Owner's roofing standards.

1.28 SYSTEM IDENTIFICATION

- A. Above Grade Piping: Provide markers on piping which is either exposed or concealed in accessible spaces. For piping systems, other than drain and vent lines, indicate the fluid conveyed or its abbreviation, either by pre-printed markers or stenciled marking, and include arrows to show direction of flow. Pre-printed markers shall be the type that wrap completely around the pipe, requiring no other means of fastening such as tape, adhesive, etc. Comply with ANSI A13.1 for colors. Locate markers at ends of lines, near major branches and other interruptions including equipment in the line, where lines pass through floors, walls or ceilings or otherwise pass into inaccessible spaces, and at 50' maximum intervals along exposed portions of lines. Marking of short branches and repetitive branches for equipment connections is not required.
- B. Below Grade Piping: Bury a continuous, pre-printed, bright-colored, metallic ribbon marker capable of being located with a metal detector with each underground pipe. Locate directly over buried pipe, 6" to 8" below finished grade.
- C. Equipment: All equipment shall be identified with a plastic laminated, engraved nameplate which bears the unit mark number as indicated on the drawings (e.g. AC-4) and identifies the area or space served by the equipment. Provide 1/2" high lettering - white on black background. Nameplates shall be permanently secured to the exterior of the unit.

- D. Valves: Provide stamped brass valve tags with brass hooks or chains on all valves of each piping system, excluding check valves, valves within equipment, faucets, stops and shut-off valves at fixtures and other repetitive terminal units. Prepare and submit a tagged-valve schedule, listing each valve by tag number, location and piping service.

1.29 CLEANING

- A. Progressively and at completion of the job, the Contractor shall thoroughly clean all of his work, removing all debris, stain and marks resulting from his work. This includes but is not limited to building surfaces, piping, equipment and ductwork, inside and out. Surfaces shall be free of dirt, grease, labels, tags, tape, rust, and all foreign material.
- B. At the end of each work day, the Contractor shall cover all open ends of piping and ductwork with protective plastic.

1.30 OPERATION AND MAINTENANCE INSTRUCTIONS

- A. Printed: Three copies of Operation and Maintenance Instructions and Wiring Diagrams for all equipment and parts list for all faucets, trim, valves, etc. shall be submitted to the Engineer. All instructions shall be clearly identified by marking them with the same designation as the equipment item to which they apply (e.g. AC-3). All Wiring Diagrams shall agree with reviewed Shop Drawings and indicate the exact field installation. All instructions shall be submitted at the same time and shall be bound in a suitable binder with tabs dividing each type of equipment (e.g. Pumps, Fans, Motors, etc.). Each binder shall be labeled indicating "Operating and Maintenance Instructions, Project Title, Contractor, Date" and shall have a Table of Contents listing all items included.
- B. Verbal: The Contractor shall verbally instruct the Owner's maintenance staff in the operation and maintenance of all equipment and systems. The controls contractor shall present that portion of the instructions that apply to the control system. The Engineer's office shall be notified 48 hours prior to this meeting.
- C. Acknowledgment: The Contractor shall prepare a letter indicating that all operation and maintenance instructions (printed and verbal) have been given to the Owner, to the Owner's satisfaction. This letter shall be acknowledged (signed) by the Owner and submitted to the Engineer.

1.31 RECORD DRAWINGS

- A. The Contractor shall obtain one set of prints for the project, upon which a record of all construction changes shall be made. As the work progresses, the Contractor shall maintain a record of all deviations in the work from that indicated on the drawings. Final location of all underground work shall be recorded by depth from finished grade and by offset distance from permanent surface structures, i.e. building, curbs, walks. In addition, the water, gas, sewer, under floor duct, etc. within the building shall be recorded by offset distances from building walls. An electronic copy of the original drawings will be made available to the Contractor. The Contractor shall transfer the changes, notations, etc. from the marked-up prints to the electronic copy. The record drawings (marked-up prints, electronic drawings disc and a hard copy) shall be

submitted to the Engineer for review.

1.32 ACCEPTANCE TESTING

- A. All acceptance testing as required by California Code of Regulations, Title 24, and as noted on the Certificate of Compliance form, (where applicable), shall be performed and documented by an Acceptance Test Technician (ATT). These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). The Contractor shall submit a copy of the documentation to the Engineer for review (hardcopy or electronic), prior to submitting to Administrative Authority.

END OF SECTION 20 01 00

SECTION 210000 – FIRE SPRINKLER SYSTEM**PART 1 - GENERAL****1.1 GENERAL PROVISIONS FOR FIRE SPRINKLERS:**

- A. The General Mechanical Provisions, Section 20 01 00, shall form a part of this Section with the same force and effect as though repeated here.

1.2 SCOPE:

- A. General: Provide all labor, materials and services necessary for complete, lawful and operating systems as shown or noted on the drawings or as specified here. The entire facility shall be fire sprinklered.
- B. Design/Calculations: The sprinkler system has been designed and sized by hydraulic calculations in accordance with 2016 NFPA No. 13 and fire authority requirements. Calculations have been included in submittals. Provide current fire flow information from flow test at nearest fire hydrant. Fire flow test shall be done within 6 months of installation of sprinkler system.
- C. Preparation of Drawings and Material Data Sheets: The fire sprinkler modification is a deferred approval. The contractor shall prepare fire sprinkler submittal (drawings, specifications, materials and hydraulic calculations) for the Fresno Fire Department Deferred Submittal and obtain the necessary separate fire sprinkler permit to the modifications to the existing fire sprinkler system. Hydraulic calculations shall conform to 2025 NFPA 13, paragraph 23.3.5 in all respects.

1.3 WORK SPECIFIED ELSEWHERE:

- A. Electrical wiring.
- B. Fire alarm system.

1.4 DESIGN CHANGES/SUBSTITUTIONS:

- A. General: Design changes or substitutions of fire sprinkler system shall be submitted to Engineer for review.
- B. Significant changes in design or substitution of materials may require a change order, requiring resubmission to fire authority, as determined by the Architect, Engineer and/or Inspector. Contractor shall bear all expenses incurred due to preparation and processing of design substitutions, up to and including submission to, and obtaining approval from, fire authority. Refer to Specification Section 20 01 00, 1.12, B.
- C. Any substitution of "Flexible" type piping in lieu of "Rigid" pipe or any changes to size, manufacturer or lengths of "Flexible" type piping will require resubmittal of piping plans, product data sheets and hydraulic calculations to fire authority for review and approval.

PART 2 - PRODUCTS

2.1 STANDARDS:

- A. All materials shall be in accordance with 2022 NFPA No.13 "Standard for the Installation of Sprinkler Systems". Underground mains shall be in accordance with 2019 NFPA No. 24 "Standard for the Installation of Private Fire Service Mains and Their Appurtenances".

2.2 PIPING MATERIALS:

- A. General: The pressure rating of all piping, valves, flanges and other piping accessories shall be in accordance with code and fire authority requirements. Pressure ratings shall exceed the highest possible working pressure.
- B. Piping:
 - 1. Underground: Polyvinyl chloride, Class 200, DR 14, AWWA C900, with rubber ring joints, ASTM D1869. Cast or ductile iron fittings, AWWA C110 or C153, Class 250 or higher, with rubber ring joints, ASTM D1869.
 - 2. Above Grade:
 - a. 2" and Smaller: Threaded black steel pipe, ASTM A53, schedule 40. 175 psi WOG (min.) black cast iron threaded fittings, ANSI B16.4, UL listed. Unions shall be Class 150 malleable iron threaded, ANSI B16.3.
 - b. 2-1/2" and Larger: Welded black steel pipe, ASTM A53, schedule 10. Standard weight carbon steel welding fittings, ANSI B16.9. Flanges shall be steel, ANSI B16.5. Roll grooved pipe couplings may be used for assembling welded sections, Victaulic, Grinnell, Gruvlok.
- C. Gate Valve:
 - 1. 2" and Smaller: All bronze, rising stem. UL listed.
 - 2. 2-1/2" and Larger: Iron body, bronze mounted, outside screw and yoke. UL listed. (UL listed butterfly valves may be substituted for 4" and larger gate valves above grade.)
- D. Check Valve:
 - 1. 2" and Smaller: All bronze swing check. UL listed.
 - 2. 2-1/2" and Larger: Iron body, bronze mounted swing check. UL listed.
- E. Drain Valve: All bronze angle globe valve. UL listed.
- F. Anchors and Hangers: Shall comply with 2016 NFPA No. 13.

2.3 SPRINKLER HEAD:

- A. Automatic sprinkler head, concealed type in areas with finished ceilings and recessed or suspended lighting, semi-recessed in areas with finished ceilings and surface lighting, upright or pendent heads elsewhere (as allowed by NFPA 13). Heads in finished areas shall be Victaulic FireLock V38 quick response concealed, Tyco RFI quick response concealed, or Globe Fire Sprinkler Corp., Quick Response GL Series Concealed Pendent, with chrome-finish metal cover plate. Heads elsewhere shall be quick response, Victaulic FireLock V27, Tyco, Model TY-FRB or Globe Fire Sprinkler Corp., Model GL Quick Response, with standard finish. UL listed. Temperature ratings shall be in accordance with NFPA No. 13. Provide extra heads (of each type installed) in accordance with code requirements. Exposed heads installed with deflector lower than 7'-6" above floor shall have wire guards.

2.4 ALARM VALVE ASSEMBLY:

- A. Standard wet type alarm valve assembly complete with trim as required by the authority having jurisdiction. Provide flow switch and Electric Bell for connection to alarm system. Provide tamper switch. UL listed. Coordinate Electric Bell with Division 28.

2.5 POST INDICATOR VALVE:

- A. UL listed valve with lockable operating handle, tamper switch and target visible through a glass covered post, reading either "OPEN" or "SHUT".

PART 3 - EXECUTION

3.1 PIPING INSTALLATION:

- A. General: Piping shall be concealed in walls, above the ceilings or below grade unless otherwise noted. Exposed piping shall run parallel to room surfaces; location shall be approved by the Architect. No structural member shall be weakened by cutting, notching, boring or otherwise, unless specifically allowed by structural drawings and/or specifications. Where such cutting is required, reinforcement shall be provided as specified or detailed. Depth of cover in traffic areas shall be 36 inches (minimum).
 - 1. Installer Certification: Installation shall be performed by certified fire sprinkler fitter(s) as required by CCR, Title 19, Divisions 1, Chapter 5.5. See CAL FIRE – Office of the State Fire Marshall Information Bulletin 17-002 for more information. The Bulletin can be downloaded from the following:
http://osfm.fire.ca.gov/informationbulletin/pdf/2017/IB_AESCert_final_05_25_17.pdf
- B. Standards: All piping shall be installed in accordance with 2022 NFPA No. 13 "Standard for the Installation of Sprinkler Systems". Underground mains shall be installed in accordance with 2019 NFPA No. 24 "Standard for the Installation of Private Fire Service Mains and Their Appurtenances".
- C. Miscellaneous:
 - 1. Escutcheons: Provide chrome plated metal escutcheons where piping

penetrates walls, ceilings or floors in finished areas.

2. Pattern: Sprinklers shall be installed in a symmetrical pattern with lighting fixtures and with ceiling pattern. Heads located in lay-in ceilings shall be centered in panel, unless shown otherwise on drawings.
3. Pipe Sleeves: All piping passing through concrete shall be provided with pipe sleeves. Allow 1" annular clearance between sleeve and pipe for piping 3" and smaller and 2" annular clearance for piping 4" and larger.
4. Access: Provide access doors as required for all valves, devices, etc.
5. Pipes Passing through Fire Rated Surfaces: Pipes passing through fire rated walls, floors, ceilings, partitions, etc. shall have the annular space surrounding the pipe, or pipe insulation sealed with fire rated materials in accordance with the requirements of 2022 CBC Section 714.
6. Concrete Thrust Blocks: Shall be constructed at all valves, tees, elbows, bends, crosses, reducers and dead ends in loose-joint pipe. Blocks shall cure a minimum of 7 days before pressure is applied. Concrete shall be 3000 psi mix.
7. Electrical Equipment: Piping shall not be run over electrical panels, motor control centers or switchboards, except where specifically allowed by CEC.

3.2 IDENTIFICATION:

- A. All controls, piping, valves and equipment shall be labeled for function and service in accordance with 2022 NFPA No. 13 and 2019 NFPA No. 24.

3.3 TESTS AND ADJUSTMENTS:

- A. Unless otherwise directed, tests shall be witnessed by a representative of the Architect and an inspector of the authority having jurisdiction. Contractor shall notify fire authority at least 48 hours prior to testing. At various stages and upon completion, the system must be tested in the presence of the enforcing agency. Work to be concealed shall not be enclosed until prescribed tests are made. Should any work be enclosed before such tests, the Contractor shall, at his expense, uncover, test and repair all work to original conditions. Leaks and defects shown by tests shall be repaired and the entire work retested. Test all systems in accordance with fire authority requirements and 2022 NFPA No. 13 and 2019 NFPA No. 24.
- B. Backflow Preventer: All backflow preventers shall be tested according to manufacturer's recommendations and the USC Cross Connection Control and Hydraulic Research Manual (8th Edition). Testing shall be performed by an AWWA Certified Backflow Prevention Assembly Tester. Contractor shall certify in writing to the Architect the date which backflow preventers were tested and by whom test was witnessed.

3.4 CERTIFICATION:

- A. At completion of the project, a Contractor's Material and Test Certificate, indicating

installation and testing in accordance with referenced standards, shall be completed. Copies shall be prepared by Contractor for the approving authorities, Owner and Contractor. Deliver certificates to Owner through Architect.

END OF SECTION

SECTION 220400 – PLUMBING**PART 1 - GENERAL****1.1 GENERAL MECHANICAL PROVISIONS**

- A. The General Mechanical Provisions, Section 20 01, 00, shall form a part of this Section with the same force and effect as though repeated here.

1.2 SCOPE:

- A. Included: Provide all labor, materials, and services necessary for complete, lawful and operating systems as shown or noted on the drawings or as specified here. The work includes, but is not necessarily limited to, the following:
1. Sanitary sewer system.
 2. Domestic water system.
 3. Drain system (including condensate drain).
 4. Storm drain system.
 5. All equipment as shown or noted on the drawings or as specified.
 6. Demolition as indicated on drawings. Where demolition is called for, remove all equipment, piping, braces, housekeeping pads, supports and related items no longer required.
 7. Lead Free: All equipment, fixtures, valves and fixture stops providing water for human consumption installed after January 1, 2010, must meet the "Lead Free" requirements for the State of California.
- B. Work Specified Elsewhere:
1. Line voltage power wiring, disconnect switches and installation of all starters are included in the Electrical Section unless otherwise noted.
 2. Access doors.
 3. Concrete and reinforcing steel unless specifically called for on the drawings or specifications.
 4. Painting unless specifically called for in the drawings or specifications.
 5. Carpentry.
 6. Control of circulating pumps, etc.

PART 2 - PRODUCTS**2.1 PIPING MATERIALS:**

- A. Sanitary Sewer:
1. Soil, Waste and Vent Piping (Non-Pressurized):
 - a. Inside Building and Within Five Feet of Building Walls: Standard weight coated cast iron pipe and fittings. Plain end, CISPI 301, ASTM A888, or hub end with rubber gaskets, ASTM A74, ASTM C564. ABI, Tyler, Charlotte. Couplings shall be heavy-duty shielded couplings. Type 304 stainless steel, with neoprene gasket, ASTM C1540. Husky HD 2000, Clamp-All 80, Mission HeavyWeight. MG Couplings are also acceptable. 2" and smaller exposed to view shall be galvanized steel, ASTM A53, with coated cast iron recessed drainage fittings, ANSI B16.12.
Where required by soil conditions, as determined by the method described in ASTM A74-09, Appendix X2, below grade cast iron pipe and fittings shall have 8 mil (minimum)

Polyethylene Encasement (Poly Wrap), Per ANSI/AWWA C105/A21.5.

2. Cleanouts: Comparable models of Josam, Wade, Mifab or Zurn are acceptable. Grease plug prior to installation. Floor Cleanouts: Smith 4023 with nickel bronze top in finished areas; Smith 4223 in utility areas. Wall Cleanouts: Smith 4532 with stainless steel cover and screw. Pipe Cleanouts: Iron body with threaded brass plug. Site cleanouts more than 5' outside building may be PVC with PVC plug.
 3. Cleanout Box: Precast reinforced concrete. Cast iron lid marked for service. Christy F8 in foot traffic areas; G5 in roadways. Provide with PVC pipe extension down to top of pipe.
- B. Storm Drain (Including Rain Water Leader, RWL) - Inside Building and Within Five Feet of Building Walls: Same as Soil, Waste and Vent Piping, except as otherwise noted on drawings. Where exposed to view on exterior of building, piping shall be galvanized steel with recessed drainage fittings.
- C. Water:
1. Hot and Cold Water Piping: Materials used in the water system, except valves and similar devices, shall be of like material, except where otherwise approved by Engineer and Authority Having Jurisdiction, prior to start of work.
 - a. Inside Building, Within Five Feet of Building Walls, and All Above Grade:
 - 1) Hard temper seamless copper, ASTM B88. Wrought copper fittings, ANSI B16.22. Type L with brazed joints (1100F, min.). 1-1/2" and smaller above grade may be soldered, lead-free solder. All nipples shall be lead-free red brass (85% copper). Branch piping from the cold water main above the ceiling to roof mounted hose bibbs shall be type "K" copper. Above grade fittings may be copper press fittings, ASME B16.18 or ASME B16.22. EPDM O-rings. Installation shall be in accordance with the manufacturer's installation instructions. ProPress, Apollo, Mueller Streamline.
 2. Valves and Specialties:
 - a. Valves:
 - 1) General: Manufacturer's model numbers are listed to complete description. Equivalent models of Crane, Kitz, Milwaukee, Nibco, Stockham, Walworth or Watts are acceptable. All valves of a particular type or for a particular service shall be by the same manufacturer. Butterfly valves may be substituted for 2-1/2" and larger gate valves above grade; see specification below. Provide a minimum of two operating "T" handles for underground valves for each underground system where valves are required. The lengths of the handles are dependent upon the depth of the valves and the ability of the handles to fully open and/or close the valves. At least one "T" handle for each system shall be on site at the beginning of the installation of a particular system for emergencies, and the

- Construction Manager shall have access to these "T" handles and valves.
- 2) Gate Valve: 2" and Smaller: All bronze. Non-rising stem. Threaded bonnet. Wedge disk. Malleable iron handwheel. 200 psi CWP. Nibco T-113-LF. 2-1/2" and Larger: Iron body, bronze mounted. Non-rising stem. Resilient wedge disk. 200 psi CWP. Flanged or AWWA hub end as applicable. Nibco F-619-RWS. Underground valves shall have square operating nut.
 - 3) Butterfly Valve: Ductile iron threaded lug body. Aluminum bronze disk. EPDM molded-in liner and seals. 416 stainless steel shaft. 6" and smaller valves shall have multi-position lever handle. 8" and larger valves shall have gear operator. Provide 2" extension neck at insulated pipes. Nibco LD-2000.
 - 4) (4) free bronze swing check, regrinding. 200 psi CWP. Nibco T-413-Y-LF. For vertical applications use lead-free bronze, spring-loaded, lift-type. Nibco T-480-Y-LF.
 - 5) Ball Valve: Full port. Lead free brass body, cap, stem, disk and ball. Screwed connection. Lever handle. PTFE seat and stem packing. Min. 400 psi CWP. CSA-US and UL listed. Nibco T-FP-600A-LF.
 - 6) Valve Box: Precast reinforced concrete. Cast iron lid marked for service. Christy F8 in foot traffic areas; G5 in roadways. Provide with PVC pipe extension down to top of pipe.
- b. Instruments:
- 1) Thermometer: 3" dial. Stainless steel case. Back or bottom connected as required. 1/2" NPT. 20F-240F, 2F divisions for hot water. 25F-125F, 2F divisions for chilled water. 2" insertion length. Allowance to be made for insulation thickness. For installations over 7 feet above finish floor, provide digital thermometer with remote reader. Marshalltown, Moeller, Taylor, Tel Tru, Winters.
 - 2) Thermometer Well: Brass well. Suitable for thermometer above. Provide 2" extension at insulated pipes.
- c. Miscellaneous Specialties:
- 1) Temperature and Pressure Relief Valve: ASME rated fully automatic, reseating combination temperature and pressure relief valve sized in accordance with energy input. Sensing element immersed within upper 6" of tank. Watts.
 - 2) Union: 2" and Smaller: AAR malleable iron, bronze to iron ground seat. 300 psi. Unions for copper piping shall be copper or lead free cast bronze. Anvil. Size 2-1/2" and Larger: Grooved pipe, synthetic gasket, malleable iron housing. EPDM gasket, NSF 61 rated. Victaulic Style 77, Gruvlok.
 - 3) Dielectric Coupling: Insulating union or flange rated for 250 psig. Wilkins DUXL Series.
 - 4) Shock Absorber: Multiple bellows. All stainless steel construction. Designed and applied in accordance with PDI WH201. Amtrol, Smith, Wade, Zurn.

- D. Drain Piping (including Condensate): Same as inside building cold water piping.
- E. Miscellaneous Piping Items:
 - 1. Pipe Support:
 - a. Pipe Hanger: Steel "J" hanger with side bolt for piping 4" and smaller; steel clevis hanger for piping 5" and larger. Load and jam nuts. Size and maximum load per manufacturer's recommendation. Felt liner for copper piping. Hanger and rod shall have galvanized finish. B-Line, Anvil, Unistrut.
 - b. Isolating Shield: Galvanized steel shell and reinforcing ribs. 1/4" non-conducting hair felt pad. Pipe hanger in accordance with paragraph above. Increase hanger size per manufacturer's recommendation. B-Line, Semco, Superstrut.
 - c. Construction Channel: 12-gage, 1-5/8" x 1-5/8" galvanized steel channel. Single or multiple section. Self-locking nuts and fittings. B-Line, Anvil, Unistrut.
 - 2. Flashing: Vent flashing shall be 4 lb/ft² lead, 16" sq. flange, length sufficient to be turned down 2" into vent. Oatey. Flashing for other piping through roof shall be prefabricated galvanized steel roof jacks with 16" sq. flange. Provide clamp-on storm collar and seal watertight with mastic. For cold process built-up roof, material shall be 4 lb/ft² lead instead of galvanized steel. For single-ply roofing, use the roofing manufacturer's recommended flashing material.

2.2 PIPING INSULATION MATERIALS:

- A. General: All piping insulation materials shall have fire and smoke hazard ratings as tested under ASTM E-84 and UL 723 not exceeding a flame spread of 25 and smoke developed of 50.
- B. Pre-Molded Fiberglass: Heavy density sectional pre-molded fiberglass with vapor barrier laminated all service jacket and pressure sealing vapor barrier lap. Thermal conductivity shall not exceed 0.25 Btu-in/hr-ft²-F at a mean temperature of 50F. Perm rating 0.02, ASTM E96. Puncture rating 50 Beach units, ASTM D781. Provide 3" (min.) wide tape of same material as lap for butt joints. For hot water piping to 140°F, thickness shall be 1" for pipe sizes less than 1"; 1-1/2" thickness for pipe sizes 1" and 1-1/2"; 2" thickness for 2" and larger. See Title 24, Part 6 "California Energy Code" for temperatures above 140°F. Knauf, Johns-Manville, Owens-Corning.
- C. Fiberglass Blanket: Unfaced. Thermal conductivity shall not exceed 0.25 Btu-in/hr-ft²-F at a mean temperature of 50F. 1-1/2" thickness. Knauf, Johns-Manville, Owens-Corning.
- D. PVC Jacket (for pipe, fittings and valves): Pre-molded polyvinyl chloride (PVC) jackets, 0.020" thickness. Size to match application. Provide solvent weld adhesive and PVC vapor barrier pressure sealing tape by same manufacturer. Zeston.
- E. Stretchable Glass Fabric: Reinforcing mesh. 10 x 20 continuous filament glass yarns per inch. Johns-Manville.
- F. Vapor Barrier Coating: Childers CP-30, Foster 30-25.
- G. Lagging Adhesive: Childers CP-50A, Foster 30-36.
- H. Aluminum Jacketing: Aluminum pipe and fitting jacketing. 0.016" thickness for straight pipe. 0.024" thickness for fittings. Stucco-embossed finish. Integral

moisture barrier. Provide pre-fabricated aluminum strapping and seals by same manufacturer. Childers.

- I. Outdoor Mastic: Childers CP-10, Foster 65-05.
- J. Insulating Tape: Ground virgin cork and synthetic elastomeric. Black, odorless, and non-toxic. K factor 0.43 Btu-in/hr-ft²-F or less. Non-shrinking. For outdoor use, provide protective finish by same manufacturer. Halstead.
- K. Molded Closed Cell Vinyl (Piping Insulation Under Lavatories and Sinks): Fully molded closed cell vinyl, 1/8" thick, minimum. Thermal conductivity shall not exceed 1.17 BTU-in/hr-ft²-°F at an average temperature of 73°F. Weep hole in cleanout nut enclosure. Hinged cap over valve to allow access for servicing. Out of sight nylon fastening system and internal ribs on drain insulation to provide air gap (Lav-Guard Only). Truebro Lav-guard, McGuire Pro Wrap, Plumberex.

2.3 FIXTURES:

- A. General: Provide rough-in for and install all plumbing fixtures shown on drawings. Except in equipment rooms, all trim, valves, and piping not concealed in wall structure, above ceiling or below floors, shall be brass with polished chrome plate finish, unless noted otherwise. All enameled fixtures shall be acid resisting. Standard color is white unless otherwise noted.
- B. Schedule: Refer to Plumbing Fixture Schedule on the drawings for list of fixtures and trim. Manufacturer's model numbers are listed to complete description. Equivalent models of American Standard, Eljer, Elkay, Haws, Just, Kohler, Moen, T&S Brass, Willoughby or Zurn are acceptable. For drainage fixtures, equivalent models of Josam, Mifab, Smith, Wade or Zurn are acceptable.
- C. Stops and P-Traps: All fixtures shall be provided with stops and P-Traps as applicable. Wall mounted faucets, valves, etc. shall have integral stops or wall mounted stops.
 - 1. Stops: All hot and cold water supplies shall be 1/2" I.P.S. inlet angle stops with stuffing box, loose key lock shield, and brass riser (3/8" for 2-1/2 gpm and less, otherwise 1/2"). 1/4 turn ball stops do not require stuffing box. Dahl, McGuire, Speedway.
 - 2. P-Traps: Semi-cast brass, ground joint. 17-gage. Clean-out plug. Unobstructed waterway. California Tubular, McGuire.
- D. Caulking: Caulk fixtures with white G.E. "Sanitary SCS1700", mildew resistant silicone sealant with EPA listed anti-microbial.

2.4 EQUIPMENT:

- A. General Requirements:
 - 1. Capacity: Capacities shall be in accordance with schedules shown on drawings. Capacities are to be considered minimum.
 - 2. Dimensions: Equipment must conform to space requirements and limitations as indicated on drawings and as required for operation and maintenance. Equipment will not be accepted that does not readily conform to space conditions. Prepare and submit layout drawings for all proposed equipment (different than scheduled units) showing actual job conditions, required clearances for proper operation, maintenance, etc.
 - 3. Ratings -Electrical: Electrical equipment shall be in accordance with NEMA standards and UL or ETL listed where applicable standards have been established.

4. Piping: Each item or assembly of items shall be furnished completely piped for connection to services. Control valves and devices shall be provided. Equipment requiring domestic water for non-potable use shall be provided with backflow preventer acceptable for intended use by local
5. Electrical:
 - a. General: Each item or assembly of items shall be furnished completely wired to individual terminal blocks for connection to single branch electrical circuit. All electrical accessories and controls required by equipment shall be furnished. Provide terminal blocks for controls and interlocks not included in equipment package. Manual and magnetic starters shall have ambient compensating running overcurrent protection in all ungrounded conductors. Magnetic starters shall be manual reset and shall have H-O-A switches and auxiliary contacts. Controllers and other devices shall be in NEMA 1 or 3R enclosures as applicable.
 - b. Wiring: Conductors, conduit, and wiring shall be in accordance with Electrical Specifications. Individual items within assembly shall be separately protected with dead front, fused disconnect, fuse block, or circuit breaker for each ungrounded conductor, all accessible on operating side of equipment. Switches, contacts, and other devices shall be in ungrounded conductors.
 - c. Motors: Shall be rated, constructed, and applied in accordance with NEMA and ANSI Standards without using service factor. Single-phase motor shall be of type to suit application. Motors exposed to weather shall be TEFC. Vertical motors with exposed fans shall have rain caps.
 - d. Starters: Motor starters shall be furnished for all equipment except where starter is in a motor control center as designated on the electrical drawings. Deliver starter to Electrical Contractor for installation and wiring.
 - e. Control Voltage: Equipment connected to greater than 240 volts shall be provided with 120 volt control circuit from integral protected transformer if separate source is not indicated on plans. 240 volt control is acceptable if confined within control panel.
 - f. Submittals: Included in shop drawings shall be internal wiring diagrams and manufacturer's recommended external wiring.
- B. Water Heater: Electric. Glass lined tank with magnesium anode protection. 150 psi working pressure. Fully insulated. Automatic temperature control. High limit control. Provide ASME rated temperature and pressure relief valve sized in accordance with energy input, dielectric couplings and drain cock. UL listed. A.O. Smith, American Appliance, Bradford-White, Rheem, Ruud, State Industries.
- C. C. Free bronze body, brass impeller. Mechanical seals. Bronze sleeve bearings. Integral thermal overload protection. Bell and Gossett/Xylem, Taco. -OR- Body: Aluminum housing. All parts exposed to fluid, stainless steel. Water lubricated ceramic shaft and bearings. Epoxy encapsulated windings. Grundfos.
- D. Electric Drinking Fountain: Wall hung. Provide steel mounting brackets. Stainless steel basin. Removable grid drain. Chrome plated brass bubbler with automatic flow regulator and self-closing valve. Non-ferrous evaporator. Lead solder shall not be used. Hermetic compressor with automatic reset overload protection. Air cooled

condenser. Adjustable thermostat. UL listed. ARI certified. Elkay, Halsey-Taylor, Haws, Sunroc.

PART 3 - EXECUTION

3.1 PIPING INSTALLATION:

A. General:

1. Piping Layout: Piping shall be concealed in walls, above the ceilings, or below grade unless otherwise noted. Exposed piping shall run parallel to room surfaces; location to be approved by Architect. No structural member shall be weakened by cutting, notching, boring or otherwise, unless specifically allowed by structural drawings and/or specifications. Where such cutting is required, reinforcement shall be provided as specified or detailed. All piping shall be installed in a manner to ensure unrestricted flow, eliminate air pockets, prevent any unusual noise, and permit complete drainage of the system. All piping shall be installed to permit expansion and contraction without strain on piping or equipment. Vertical lines shall be installed to allow for building settlement without damage to piping. Pipe sizes indicated on the drawings are nominal sizes unless otherwise noted.
2. Joints:
 - a. Threaded: Pipe shall be cut square and reamed to full size. Threads shall be in accordance with ANSI B2.1. Joint compound or tape suitable for conveyed fluid shall be applied to male thread only. Joints shall be made with three threads exposed.
 - b. Brazed: Filler rod shall be of suitable or the same alloy as pipe. Brazing filler metal shall have a minimum melting point of 1100F. Brazing shall be performed by a Certified Brazer as certified by an organization/institution that uses standards recognized by the American Welding Society (AWS) and meets the requirements of the ASME Boiler and Pressure Vessels Code, Section 9.
 - c. Open Ends: Open ends of piping shall be capped during progress of work to preclude foreign matter.
 - d. Electrical Equipment: Piping shall not be run over electrical panels, motor control centers or switchboards.
3. Fittings and Valves:
 - a. Standard Fittings: All joints and changes in direction shall be made with standard fittings. Close nipples shall not be used.
 - b. Reducers: Pipe size reduction shall be made with bell reducer fittings. Bushings shall not be used.
 - c. Unions: A union shall be installed on the leaving side of each valve, at all sides of automatic valves, at equipment connections, and elsewhere as necessary for assembly or disassembly of piping.
 - d. Valves: All valves shall be full line size. Provide shut-off valve for each building and each equipment connection. Provide shut-off valve at each point of connection to existing piping. At equipment connections, valves shall be full size of upstream piping, except that gas valves within 18" of the point of connection to the equipment may be the same size as the equipment connection.

- e. Valve Accessibility: All valves shall be located so that they are easily accessible. Valves located above ceilings shall be installed within 24" of the ceiling. For situations where this is not practical or where valves are greater than 10' above the floor, chain wheel operators shall be provided. Chain shall extend down to 7' above the floor. All such installations must have prior review by the Engineer.

4. Pipe Support:

- a. General: Hangers shall be placed to support piping without strain on joints or fittings. Maximum spacing between supports shall be as specified below. Actual spacing requirements will depend on structural system. Side beam clamps shall be provided with retaining straps to secure the clamp to the opposite side of the beam. Vertical piping shall be supported with riser clamp at 20' on center (maximum). Support pipe within 12" of all changes in direction. Support individual pipes with pipe hanger. Copper piping systems which protrude through a surface for connection to a fixture stop or other outlet shall be secured with a drop ell, Nibco 707-3-5, to a Holdrite Model #SB1 bracket; nipple through surface shall be threaded brass.

1) Pressure Pipe:

Pipe Size (Inches)	Maximum Spacing* Between Supports (ft.)	
	Copper	Sch. 40 steel
1/2	6	6
3/4	6	8
1	6	8
1-1/4	6	10
1-1/2	6	10
2	10	10
2-1/2	10	10
3	10	10
4	10	10
6	10	10

*Based on straight lengths of pipe with couplings only. Provide additional supports for equipment, valves, or other fittings. Seismic requirements may reduce maximum spacing.

- 2) Gravity Drain Pipe: Piping shall be supported at each length of pipe or fitting, but in no case at greater spacing than indicated above for pressure pipe.

- b. Hot and Cold Water Piping: All hot and cold water piping shall have isolating shield; no portion of this piping shall touch the structure without an isolating shield except at anchor points for fixture rough-in.
- c. Trapeze: Trapeze hangers of construction channel and pipe clamps may be used. Submit design to Engineer for review.

5. Miscellaneous:

- a. Escutcheons: Provide chrome plated metal escutcheons where piping penetrates walls, ceilings, or floors in finished areas.

- b. Pipe Sleeves: All piping passing through concrete shall be provided with pipe sleeves. Allow 1" annular clearance between sleeve and pipe for piping 3" and smaller, otherwise 2" annular clearance. Piping through walls or footings below grade shall be sealed with Link-Seal.
 - c. Pipes Passing through Fire Rated Surfaces: Pipes passing through fire rated walls, floors, ceilings, partitions, etc. shall have the annular space surrounding the pipe or pipe insulation sealed with fire rated materials in accordance with the requirements of 2022 CBC Section 714.
 - d. Thermometer Gage Tap: Provide tee for instrument well. Minimum size of pipe surrounding well shall be 1-1/2". Mount on side of pipe.
 - e. Dielectric Couplings: Dielectric couplings shall be installed wherever piping of dissimilar metals are joined, except that bronze valves may be installed in ferrous piping without dielectric couplings.
- B. Sanitary Sewer Piping:
- 1. General: Where inverts are not indicated, sanitary sewer piping shall be installed at 1/4" per foot pitch. Piping 4" and larger may be installed at 1/8" per foot pitch where structural or other limitations prevent installation at a greater pitch. Bell and spigot piping shall be installed with barrel on sand bed; excavate hole for bell.
 - 2. Cleanouts: Install cleanouts at ends of lines, at changes of direction greater than 45 degrees, and at not greater than 100 foot intervals. Locate interior cleanouts in accessible locations and bring flush to finished surface.
 - 3. Vents: Vents shall terminate not less than 6" above the roof nor less than 12" from any vertical surface nor within 10' of any outside air intake. Install horizontal vent lines at 1/4" per foot pitch. Offset vents 2' minimum from gutters, parapets, ridges and roof flashing.
- C. Storm Drain (Including Rain Water Leader, RWL): Similar to Sanitary Sewer. Piping with less than 24" of cover outside building walls shall be cast iron.
- D. Water Piping: Connections to branches and risers shall be made from top of main. Supply header in fixture battery shall be full size to last fixture, reducing in size only on individual connections to each fixture in battery. Minimum pipe size shall be 1/2", unless otherwise noted. Exposed fixture stops and flush valves shall be installed with brass nipples for copper piping and galvanized nipples for galvanized piping. Nipples are to extend from outside of wall to fitting at header or drop behind finish wall surfaces. Pipe nipples shall be same size as stop or flush valve. Provide shut off for each building and each connection to equipment. Shock absorbers shall be installed in a vertical position as indicated on drawings. Only equipment mounted on vibration isolators shall be connected with flexible connections. Underground hot water and cold water piping which run parallel to each other shall be installed a minimum of 3 feet apart.
- E. Drain Piping (Including Condensate): Install with constant pitch to receptacle, 1/4" per foot where possible, otherwise 1/8" per foot minimum. Provide TEE with clean-out plug at all changes of direction. Provide trap at each air handling unit to prevent air leakage. Only equipment mounted on vibration isolators shall be connected with flexible connection. Piping not concealed in wall structure, above

ceilings or below floors shall be chrome plated brass, except in equipment rooms, piping shall be galvanized steel. P&T relief and water heater drain piping shall be galvanized steel. Provide secondary drain piping where required.

3.2 PIPING INSULATION INSTALLATION:

A. Domestic Hot Water:

1. General: All domestic hot water piping, fittings and accessories shall be insulated.
2. Pipe: Apply pre-molded fiberglass sections to pipe using integral pressure sealing lap adhesive in accordance with manufacturer's recommendations. Stagger longitudinal joints. Seal butt joints with factory supplied pressure sealing tape.
3. Fittings and Valves:
 - a. Wrap all fittings and valves with pre-cut fiberglass blanket to thickness matching adjoining insulation. Cover blanket with PVC jacket in accordance with manufacturer's recommendations. Solvent weld. Seal all joints with factory supplied pressure sealing vapor barrier tape with 1-1/2" (min.) overlap on both sides of joint. Insulate valves to stem. Do not insulate unions, flanges or valves unless water temperature exceeds 140F or the piping is exposed to weather.
 - b. For miscellaneous fittings and accessories for which PVC jackets are not available or where proximity of fittings precludes a neat-appearing installation, the Contractor may cover the fiberglass blanket with stretchable glass fabric, one coat of lagging adhesive and a final coat of vapor barrier coating. All exposed ends of insulation shall be adequately sealed.
4. Additional Finish for Exposed Piping and Equipment: All piping and equipment exposed to view but protected from the weather shall be given an additional finish of PVC jackets.

B. Cold Water Piping-Freeze Protection: All cold water piping exposed to weather or other areas subject to freezing (i.e. ventilated attics, uninsulated exterior soffits, etc.) shall be insulated same as hot water piping. Cover with aluminum jacketing where exposed to weather. Short lengths of pipe and valves may be wrapped with insulating tape, 50% overlap. Cover valves to stem. Apply at least two coats of protective finish where exposed to weather.

C. Piping Insulation Under Lavatories and Sinks: Exposed water piping, water stops and drain piping under lavatories and sinks shall be insulated with 1/8" thick molded closed cell vinyl. Installation shall be in accordance with manufacturer's instructions.

3.3 FIXTURE INSTALLATION:

- A. Fixture Height: Shall be as indicated on Architectural drawings.
- B. Floor Drains or Floor Sinks: Shall be placed parallel to room surfaces, set level, flush with floor, and adjusted to proper height to drain. Cover openings during construction to keep all foreign matter out of drain line.
- C. Wall Hung Fixtures: Shall be provided with proper backing and hanger plates secured to wall. Fixtures mounted on carriers shall bear against stop nuts, clear of wall surface. Caulk fixtures against walls with white G.E. "Sanitary SCS1700"

silicone sealant. Caulking shall be smooth and flush with fixture surface (not concave).

- D. Floor Mounted Fixtures: Shall be provided with proper support plates. Caulk floor mounted fixtures with white G.E. "Sanitary SCS1700" silicone sealant. Caulking shall be smooth and flush with fixture surface (not concave).
- E. Other Connections: Rough-in and connection for trim or fixtures supplied by others shall be included in this specification section.

3.4 EQUIPMENT INSTALLATION:

- A. General: It shall be the responsibility of the equipment installer to insure that no work done under other specification sections shall in any way block, or otherwise hinder the equipment. All equipment shall be securely anchored in place.
- B. Connections to Equipment: Where size changes are required for connections to equipment, they shall be made immediately adjacent to the equipment and, if possible, inside the equipment cabinet.

3.5 TESTS AND ADJUSTMENTS:

- A. General: Unless otherwise directed, tests shall be witnessed by a representative of the Architect. Work to be concealed shall not be enclosed until prescribed tests are made. Should any work be enclosed before such tests, the Contractor shall, at his expense, uncover, test, and repair all work to original conditions. Leaks and defects shown by tests shall be repaired and entire work retested. Tests may be made in sections, however, all connections between sections previously tested and new section shall be included in the new test.
- B. Gravity Systems:
 - 1. Sanitary Sewer: All ends of the sanitary sewer system shall be capped and lines filled with water to the top of the highest vent, 10' above grade minimum. This test shall be made before any fixtures are installed. Test shall be maintained until all joints have been inspected, but no less than 2 hours.
 - 2. Drains (Including Condensate): Similar to Sanitary Sewer.
- C. Pressure Systems:
 - 1. General: There shall be no drop in pressure during test except that due to ambient temperature changes. All components of system not rated for test pressure shall be isolated from system before test is made.
 - 2. Domestic Hot and Cold Water Piping: Maintain 100 psig water pressure for 4 hours.
 - 3. Storm Drain: Similar to Sanitary Sewer.
- D. Fixtures: Provide torque testing of water closet carrier anchor bolts in presence of Inspector. If Inspector is not available, a testing agency shall handle the inspection.

3.6 DISINFECTION:

- A. Disinfect all domestic water piping in accordance with 2016 CPC Section 609.9, and in accordance with administrative authority. Disinfection process shall be performed in cooperation with health department having jurisdiction and witnessed by a representative of the Architect. During procedure signs shall be posted at each water outlet stating, "Chlorination - Do Not Drink". After disinfection, one set of water samples shall be collected by Contractor for bacteriological analysis in presence of Inspector. If the water fails the bacteriological test, Contractor shall

disinfect the piping again and pay for any retesting required, at no additional cost to owner. Bacteriological testing results shall be obtained by Contractor and delivered to the Owner through the Architect before project completion. Contractor shall include copy of Bacteriological Test Results at closeout with operation and maintenance manuals.

END OF SECTION

SECTION 260000 - GENERAL ELECTRICAL REQUIREMENTS**PART 1 – GENERAL****1.1 SECTION INCLUDES**

This section includes general requirements specifically applicable to Divisions 26, 27, & 28; including requirements from Division 1.

1.2 RELATED SECTIONS

- A All included sections under Division 1
- B All included sections under Division 26
- C All included sections under Division 27
- D All included sections under Division 28
- E Plans
- F Manufacturers' manuals, product bulletins, etc.

1.3 REFERENCE STANDARDS AND CODES

- A Standards
 - 1 AEIC – Association of Edison Illuminating Companies
 - 2 ANSI – American National Standards Institute
 - 3 ASTM – American Society of Testing and Materials
 - 4 CBM – Certified Ballast Manufacturers Association
 - 5 EIA – Electronic Industry Association
 - 6 ICEA – Insulated Cable Engineers Association
 - 7 IEEE – Institute of Electrical and Electronics Engineers
 - 8 NEMA – The Association of Electrical and Medical Imaging Equipment Manufacturers
 - 9 FM - Factory Mutual
 - 10 UL – Underwriter's Laboratory's, Inc., Standards for Safety
- B Local codes and authorities having jurisdiction
 - 1 City codes
 - 2 County codes
 - 3 Local fire department
- C State codes and authorities having jurisdiction
 - 1 CBC – California Building Code
 - 2 CEC – California Electrical Code
 - 3 State of California Codes
- D National codes and authorities having jurisdiction
 - 1 NESC – National Electrical Safety Code
 - 2 OSHA – Occupational Safety and Health Act
- E Utilities
 - 1 Local cable company
 - 2 Local electrical company
 - 3 Local telephone company
- F Code compliance
 - 1 All work and materials shall comply with the latest rules, codes and regulations, including, but not limited to the following:
 - a Occupational Safety and Health Act Standards (OSHA).
 - b CCR, Title 24, Part 3: California Electrical Code (CEC)
 - c All other applicable Federal, State and Local laws and regulations.
 - 2 Code compliance is mandatory. Nothing in these Drawings and Specifications permits work not conforming to National, State, and Local electrical and building

codes. Where work is shown to exceed minimum code requirements, comply with Drawings and Specifications.

- 3 No work shall be concealed until after inspection and approval by proper authorities. If work is concealed without inspection and approval, the Contractor shall be responsible for opening the concealed areas, making any required corrections and/or modifications to his work, and restoring the area to its previous condition.

1.4 DEFINITIONS (APPLICABLE TO DRAWINGS AND SPECIFICATIONS)

- A Provide: To supply, install and connect complete and ready for safe and regular operation of particular work referred to unless specifically otherwise noted.
- B Install: To erect, mount and connect complete with related accessories.
- C Supply: To purchase, procure, acquire and deliver complete with related accessories.
- D Work: Labor, materials, equipment, apparatus, controls, accessories and other items required for proper and complete installation.
- E Wiring: Raceway, fittings, wire, boxes, related items and connection.
- F Concealed: Embedded in masonry or other construction, installed in furred spaces, within double partitions or hung ceilings, in trenches, in crawl spaces or in enclosures.
- G Exposed: Either visible or subject to mechanical or weather damage, indoors or outdoors, including areas such as mechanical and storage rooms. In general, any item that is directly accessible without removing panels, walls, ceiling or other parts of structure.
- H Indicated, Shown, or Noted: As indicated, shown or noted on Drawings or Specifications.
- I Above Grade: Not buried in ground and not embedded in concrete slab on ground.
- J Below Grade: Buried in ground or embedded in concrete slab on ground.
- K Underground: Buried in ground, including under building slabs.
- L Connect: Complete hookup of item with required services, including conduit, wire and other accessories.
- M Furnish: Supply and deliver complete.
- N Similar or Equal: Of base bid manufacturer, equal in materials, weight, size, design, and efficiency of specified product, equivalent to Base Bid Manufacturer's product.
- O Reviewed, Satisfactory, Accepted, or Directed: As reviewed, satisfactory, accepted or directed by or to engineer.
- P Motor Controllers: Manual or magnetic starters (with or without switches), individual pushbuttons, or hand-off-automatic (HOA) switches controlling the operation of motors.
- Q Control Devices: Automatic sensing and switching devices such as thermostats, pressure, float, electro-pneumatic switches and electrodes controlling operation of equipment.
- R Contractor: Electrical Sub Contractor unless stated otherwise.
- S Use (verb): Furnish and install as defined above.

1.5 LICENSES, FEES AND PERMITS

Pay for all City, County or State electrical licenses, fees and permits. Arrange for all required inspections by agencies or authorities having local jurisdiction. The owner shall pay for all inspection fees and permits.

1.6 CONDITIONS AT SITE

- A A visit to the site is required of all bidders prior to submission of bid. All will be held to have familiarized themselves with all discernible conditions and no extra payment will be allowed for work required because of these conditions, whether specifically mentioned or not.

- B Underground or overhead lines or other services that are damaged as a result of this work shall promptly be repaired at no expense to the Owner and to complete satisfaction of the Owner.

1.7 DRAWINGS AND SPECIFICATIONS

- A All Drawings and all Divisions of these Specifications shall be considered as a whole and work of this Division shown anywhere therein shall be furnished under this Division.
- B The Contract Drawings are diagrammatic and indicate the general arrangement of equipment and wiring. Most direct routing of conduit and wiring is not assured. Exact requirements shall be governed by architectural, structural and mechanical conditions of the job. Consult all other Drawings in preparation of the bid. Extra lengths of wiring or addition of pull or junction boxes, etc., necessitated by such conditions shall be included in the bid. Check all information and report any apparent discrepancies before submitting bid.
- C Right is reserved to make change up to ten (10) feet in location of any outlet, device, or equipment prior to roughing in without increasing contract cost.
- D Equipment and fixtures shall be connected to provide circuit continuity in accordance with applicable codes, whether or not each piece of conductor, conduit or protective device is shown between items of equipment or fixtures and the point of circuit origin.

1.8 SAFETY AND INDEMNITY

- A Safety: The Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours.
- B No act, service, Drawing review or construction review by Owner, the Architect, the Engineers or their Consultants, is intended to include review of the adequacy of the Contractor's safety measures, in on or near the construction site.

1.9 RECORD DRAWINGS

- A Submit record Drawings under provisions of Section 013000.
- B Submit prior to final acceptance inspection, one complete marked-up set of reproducible engineering design Drawings.
 - 1 Fully illustrate revisions made by crafts in course of work.
 - 2 Include field changes, adjustments, variances, substitutions and deletions, including Change Orders.
 - 3 Indicate exact location of raceways, equipment, and devices.
 - 4 Indicate exact size and location of underground and under floor raceways, grounding conductors, and duct banks.
 - 5 The record Drawings shall show all the work actually constructed and originally shown on the Drawing based upon the field construction by the Contractor.
- C These Drawings shall be for record purposes for Owner's use and are not considered Shop Drawings.

1.10 MANUFACTURER'S INSTRUCTIONS

- A Where the Specifications call for an installation to be made in accordance with manufacturer's recommendations, a copy of such recommendations shall at all times be kept in the job superintendent's office and shall be available to the Owner's representative.
- B Follow manufacturer's instructions where they cover points not specifically indicated on Drawings and Specifications. If they are in conflict with the Drawings and Specifications, obtain clarification from the Architect or Engineer before starting work.

- C One (1) set of equipment manufacturer's Drawings shall be submitted to the Engineer for their record.

1.11 OPERATING AND MAINTENANCE MANUALS

- A Operating and maintenance manuals and close-out documents are used interchangeably
- B Submit operating and maintenance manuals of equipment in the following format. Owner shall decide which format they prefer.
 - 1 Three (3) hardcopy sets
 - 2 PDF format
- C For specific requirements, see the sections in which the equipment is specified.

1.12 QUALITY ASSURANCE

- A Provide a meaningful quality assurance program. To assist the Contractor in this program, the Specifications contained herein are set forth as the minimum acceptable requirements. This does not relieve the Contractor from executing other quality assurance measures to obtain a complete operating facility within the scope of this project.
- B The Contractor shall insure that workmanship, materials employed, required equipment and the manner and method of installation conforms to accepted construction and engineering practices, and that each piece of equipment is in satisfactory working condition to satisfactorily perform its functional operation.

1.13 GUARANTEE

Guarantee the installation free from defects of workmanship and materials for a period of one (1) year after Date of Certificate of final payment and promptly remedy any defects developing during this period, without charge.

1.14 BIDDING

- A The contractor shall bid on the plans, specifications, etc. that constitute the contract documents.
- B The contractor shall not attempt to modify the contract documents without the approval of the electrical engineer.
- C All "value engineering" proposals shall be submitted in to the electrical engineer writing.
- D If the contractor makes changes to the contract documents not approved by the electrical engineer, the contractor will still be responsible for installing all devices, conductors, conduits, etc. the contract documents call for.

1.15 ABBREVIATIONS

AIC	Amps interrupting capability
ANSI	American National Standards Institute
ASTM	ASTM International, formerly American Society for Testing and Materials
ATC	Astronomical time clock
ATS	Automatic transfer switch
CAD	Computer aided design
CATV	Cable television
CBC	California Building Code
CCTV	Closed circuit television
CEC	California Electrical Code
CFC	California Fire Code
CFR	Code of Federal Regulations
CMC	California Mechanical Code

CPC	California Plumbing Code
CSFM	California State Fire Marshal
DPDT	Double pole, double throw
DPST	Double pole, single throw
DVR	Digital video recorder
EIA	Electronic Industries Association
EMT	Electrometallic conduit
EOR	Engineer of record
EPA	Effective projected area
FACP	Fire alarm control panel
FMC	Flexible metallic conduit
GRS	Galvanized, rigid steel conduit
HVR	Hybrid video recorder
ICC-ES	International Code Council Evaluation Service
IDF	Intermediate data frame
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society of North America
IMC	Intermediate metallic conduit
I/O	Input/output
IOR	Inspector of record
IP	Internet protocol
ISO	International Organization for Standardization
LAN	Local area network
LCD	Liquid crystal display
LCP	Lighting control panel/lighting relay panel
LED	Light emitting diodes
LPI	Lightning Protection Institute
MDF	Main data frame
NEC	National Electrical Code
NEMA	Association of Electrical Equipment and Medical Imaging Manufacturers
NETA	National Electrical Testing Association
NFPA	National Fire Protection Association
NIST	National Institute of Standards and Technology
OCPD	Overcurrent protection device
PDF	Portable document format
PG&E	Pacific Gas and Electric
PTZ	Pan, tilt, zoom
SCCR	Short circuit current rating
SPD	Surge protective device
SPDT	Single pole, double throw
SPST	Single pole, single throw
THD	Total harmonic distortion
TIA	Telecommunications Industries Association
UL	Underwriters' Laboratories
USB	Universal series bus
UPS	Uninterruptable power supply
VFD	Variable frequency drive
VOIP	Voice over Internet protocol
VPN	Virtual private network
WAN	Wide area network

PART 2 – PRODUCTS

2.1 MATERIAL APPROVAL

- A All materials must be new and bear Underwriters' Laboratories label. Materials that are not covered by UL testing standards shall be tested and approved by an independent testing laboratory or a governmental agency.
- B Material not in accordance with these Specifications may be rejected either before or after installation.
- C Materials or equipment specified by:
 - 1 Name of manufacturer.
 - 2 Brand or trade name.
 - 3 Catalog reference.

2.2 SUBSTITUTIONS

- A Base the bid on use of materials specified.
- B Equipment other than specified will be considered for approval provided it meets previous items A through C and the following is submitted in writing by the Contractor to the Engineer to allow approval at least 14 days before the bid date:
 - 1 The request for permission to substitute shall be accompanied with a statement of the amount of money to be returned to the contract if the substitution is permitted.
 - 2 Return a completed request for substitution form.
- C The engineer is the sole judge of acceptability of preferred substitutions.
- D If a substitute is permitted, and any re design effort is thereby necessitated, the required re design shall be at the Contractor's expense.

2.3 SUBMITTALS

Submit to architect, or engineer if no architect is involved, seven (7) copies of complete Shop Drawings and materials lists, as noted below, for review within thirty (35) days after award of contract. All proposed deviations from Specifications must be clearly listed and submitted separately under a prominent heading entitled "Substitutions."

- A Fire Alarm Systems
- B Communication Systems
- C Pull Boxes and Cabinets
- D Conduit and Wire
- E Service and distribution
- F Transformers

2.4 OPERATING AND MAINTENANCE MANUALS

Submit Operating and Maintenance Manuals of equipment as specified under Division 1. Verify exact quantity with architect, or engineer if no architect is involved.

2.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A Equipment shall be shipped in its original packages, to prevent damaging or entrance of foreign matter. Handling and shipping shall be performed in accordance with manufacturer's recommendations. Provide protective covering during construction.
- B Replace at no expense to Owner, equipment or material damaged during the storage or handling, as directed by the engineer.
- C Equipment shall be tagged with a weatherproof tag identifying equipment by name and purchase order number. Packing and shipping lists shall be included.

PART 3 – EXECUTION

3.1 CLEARANCE

Minimum code required clearances for electrical equipment shall not be violated.

3.2 WORKMANSHIP AND CONTRACTOR'S QUALIFICATIONS

- A Only quality workmanship will be accepted. Haphazard or poor installation practice will be cause for rejection of work.
- B The Electrical Contractor shall provide a Superintendent in charge of this work at all times to direct the quality of the installation.

3.3 COORDINATION

- A Coordinate work with other trades to avoid conflict and to provide correct rough in and connection for equipment furnished under other trades and requiring electrical connections. Inform Contractors of other trades of the required access to and clearances around electrical equipment to maintain serviceability and code compliance.
- B Verify equipment dimensions and requirements with provisions specified under this Section. Check actual job conditions before fabricating work. Report necessary changes in time to prevent needless work. Changes or additions subject to additional compensation and agreed price shall be at Contractor's risk and expense.
- C Provide temporary feeds and connections to areas and equipment as required to allow phased construction and operation.

3.4 CUTTING AND PATCHING

All cutting and patching required for work of this Division is included herein. Coordination with General Contractor and other trades is imperative. Contractor shall bear the responsibility for and bear the added expense of adjusting for improper holes, supports, etc.

END OF SECTION

SECTION 260500 - BASIC ELECTRICAL MATERIALS AND METHODS**PART 1 – GENERAL****1.1 SECTION INCLUDES**

Materials, equipment fabrication, installation and tests in conformity with applicable codes and authorities having jurisdiction, for the following:

- A Conduit and raceways
- B Wire and cables
- C Outlet boxes
- D Junction boxes
- E Pull boxes
- F Grounding

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A Division 1
 - 1 Section 013000: Administrative Requirements
 - 2 Section 013300: Submittal Procedures
 - 3 Section 014000: Quality Requirements
 - 4 Section 016000: Product Requirements
 - 5 Section 017000: Execution and Closeout Requirements
 - 6 All other included sections under Division 1
- B All included sections under Division 26
- C All included sections under Division 27
- D All included sections under Division 28
- E Plans
- F Manufacturers' manuals, product bulletins, etc.

1.3 REFERENCE STANDARDS AND CODES

Published specification standards, tests or recommended methods of trade, industry or government organizations apply to work in this section as cited in Section 260000.

- A American Society for Testing and Materials
 - 1 ASTM B3: Standard Specification for Soft or Annealed Copper Wire
 - 2 ASTM B33: Standard Specification for Tin-Coated or Annealed Copper Wire for Electrical Purposes
 - 3 ASTM B738: Standard Specification for Fine-Wire Bunch-Stranded and Rope-Lay Bunch-Stranded Copper Conductors for Use as Electrical Conductors
 - 4 ASTM B355: Standard Specification for Nickel-Coated, Soft or Annealed Copper Wire
 - 5 ASTM D412: Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension
- B California Electrical Code (CEC)
- C Institute of Electrical and Electronic Engineers (IEEE)
 - 1 IEEE 81: Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System Part 1: Normal Measurements

- 2 IEEE 82: Standard Test Procedure for Impulse Voltage Tests on Insulated Conductors
- 3 IEEE 95: Standard Test Procedure for Impulse Voltage Tests on Insulated Conductors
- 4 IEEE 141: Recommended Practice for Electric Power Distribution for Industrial Plants
- 5 IEEE 142: IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems
- 6 IEEE 241: Recommended Practice for Electric Power Systems in Commercial Buildings
- 7 IEEE 242: Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems (IEEE Buff Book)
- 8 IEEE 399: Recommended Practice for Industrial and Commercial Power Systems Analysis (Brown Book)
- 9 IEEE 442: Guide for Soil Thermal Resistivity Measurements
- 10 IEEE 576: Recommended Practice for Installation, Termination, and Testing of Insulated Power Cable as Used in Industrial and Commercial Applications
- 11 IEEE 1185: Recommended Practice for Cable Installation in Generating Stations and Industrial Facilities
- 12 IEEE 1584: Guide for Performing Arc Flash Hazard Calculations
- 13 IEEE 1584a: Guide for Performing Arc-Flash Hazard Calculations--Amendment 1
- 14 IEEE 1584b: Guide for Performing Arc-Flash Hazard Calculations--Amendment 2: Changes to Clause 4
- D Underwriters' Laboratories
 - 1 UL 1: Flexible Metal Conduits
 - 2 UL 4: Armored Cable
 - 3 UL 6: Electrical Rigid Metal Conduit – Steel
 - 4 UL 13: Power Limited Circuit Cables
 - 5 UL 83: Thermoplastic Insulated Wires and Cables
 - 6 UL 310: Electrical Quick-connect Terminals
 - 7 UL 360: Liquid Tight Flexible Steel Conduit
 - 8 UL 444: Communications Cables
 - 9 UL 467: Grounding and Bonding Equipment
 - 10 UL 486A: Wire Connectors
 - 11 UL 486B: Wire Connectors
 - 12 UL 486C: Splicing Wire Connectors
 - 13 UL 486D: Sealed Wire Connector Systems
 - 14 UL 486E: Equipment Wiring Terminals for Use with Aluminum and/or Copper Conductors
 - 15 UL 493: Thermoplastic Insulated Underground Feeder and Branch Circuit Cables
 - 16 UL 510: Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape
 - 17 UL 514A: Metallic Outlet Boxes
 - 18 UL 514B: Conduit, Tubing, and Cable Fittings
 - 19 UL 514C: Nonmetallic Outlet Boxes, Flush-device Boxes, and Covers
 - 20 UL 514D: Cover Plates for Flush-mounted Wiring Devices
 - 21 UL 568: Nonmetallic Cable Tray System
 - 22 UL 635: Insulating Bushings
 - 23 UL 651: Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings

- 24 UL 797: Electrical Metallic Tubing – Steel
- 25 UL 854: Service Entrance Cables
- 26 UL 870: Wireways, Auxiliary Gutters, and Associated Fittings
- 27 UL 969: Marking and Labeling Systems
- 28 UL 1242: Standard for Electrical Intermediate Metal Conduit - Steel
- 29 UL 1332: Organic Coatings for Steel Enclosures for Outdoor Use
Electrical Equipment
- 30 UL 1446: Systems of Insulating Materials – General
- 31 UL 1479: Fire Tests of Through Penetration Firestops
- 32 UL 1565: Position Devices (includes cable ties and clamps)
- 33 UL 1581: Reference Standard for Electrical Wires, Cables, and Flexible
Cords
- 34 UL 1652: Flexible Metallic Tubing
- 35 UL 1685: Vertical-tray Fire Propagation and Smoke Release Test for
Electrical and Optical Fiber Cables
- 36 UL 1773: Standard for Termination Boxes
- 37 UL 1977: Component Connectors for Use in Data, Signal, Control, and
Power Applications
- 38 UL 2024: Standard for Signaling, Optical Fiber and Communications
Raceways and Cable Routing Assemblies
- 39 UL 2196: Test for Fire Resistive Cables
- 40 UL 2239: Hardware for the Support of Conduit, Tubing, and Cable
- 41 UL 2256: Nonmetallic Sheathed Cable Interconnects
- 42 UL 2257: Identification Tests for Jacket and Insulation Materials Used in
Plenum Cables
- 43 UL 2277: Flexible Motor Supply Cable and Wind Turbine Tray Cable
- 44 UL 2459: Insulated Multi-pole Splicing Wire Connectors
- 45 UL 2556: Wire and Cable Test Methods

1.4 QUALITY ASSURANCE

- A Equipment and accessories shall be the product of a manufacturer regularly engaged in its manufacture.
- B Supply equipment and accessories new, free from defects.
- C Equipment and accessories in compliance with the applicable standards listed in Article 1.3 of this section and with applicable national, state and local codes.
- D Items of a given type shall be the products of the same manufacturer.
- E Deliver, store and protect products under provisions of Section 016000.
- F Ship equipment in its original packages, to prevent damaging or entrance of foreign matter. Perform handling and shipping in accordance with manufacturer's recommendations. Provide protective covering during construction.
- G Replace at no expense to Owner, equipment or material damaged during storage or handling, as directed by the engineer.
- H Tag items with a weatherproof tag identifying equipment by name and purchase order number. Include packing and shipping lists.

1.5 SUBMITTALS

- A Submit under provisions of Section 013000 or 013300.
- B Submittals shall include the following:
 - 1 Table of contents
 - 2 A complete set of detailed manufacturer's specifications describing and illustrating all standard and special components and materials
 - 3 Part numbers
 - 4 Evidence of compliance with the applicable standards listed under Article 1.3 of this section
 - 5 Maintenance instructions and intervals
 - 6 Calibration procedures and intervals
 - 7 A complete set of drawings for any special items
 - 8 Wiring diagrams
- C Electronic submittals shall be searchable
- D Seismic Restraint and Anchorage: Provide complete seismic anchorage and bracing for the lateral and vertical support of conduit and electrical equipment in accordance with CBC, Title 24, Part 2, Section 1616A.1 and ASCE 7-10 Section 13.6, and all provisions of this Section.
 - 1 Submit calculations prepared and signed by a Structural Engineer licensed in the State of California, showing compliance with the above for all electrical equipment weighing more than 50 pounds, excepting items corresponding exactly in configuration and weight to those specified and detailed. Where anchorage details are not shown on drawings, the field installation shall be subject to the approval of the Electrical Engineer.
 - 2 All equipment mounted on concrete shall be secured with post-installed concrete requiring a drilled hole. Power driven anchors are not acceptable. Minimum spacing shall be 10 diameter center to center and 5 diameters center to edge of concrete. Maximum allowable loads for tension and shear shall be as determined in compliance with ACI 318-14 Chapter 17 and the anchor's ICC or IAPMO evaluation report. Acceptable manufacturers are Hilti, Red Head, and Simpson Strong Tie.
 - 3 Conduit and suspended equipment shall be provided with supports and seismic restraints in accordance with Unistrut, Inc. Seismic Bracing Guide, or Super Strut Inc., Seismic Restraint System guide. Support requirements shall be based upon similar equipment; i.e., water piping as equivalent to conduit with wire fill. A copy of the guide shall be on the job site during construction.
- E The submittal shall be substantially complete for all items and equipment furnished under this section.
- F Individual drawings and data sheets submitted at random intervals will not be accepted for review.
- G Substitutions: Items of same function and performance shall be submitted in conformance with Division 1.

1.6 OPERATION AND MAINTENANCE MANUALS

- A Submit operation and maintenance manuals in accordance with Section 260000.
- B The manuals shall, at minimum, include the following:
 - 1 Table of contents
 - 2 Manufacturer (including contact information)
 - 3 Model number
 - 4 Voltage ratings

- 5 Current ratings
- 6 List of capabilities
- 7 Environmental ratings
- 8 NEMA enclosure type
- 9 Maintenance instructions and intervals
- 10 Calibration procedures and intervals
- 11 Installation instructions
- 12 Repair instructions (where applicable)
- 13 As-built drawings
- C Provide manuals in one of the following formats
 - 1 Three hardcopies
 - 2 PDF

PART 2 – PRODUCTS

2.1 CONDUIT AND OTHER RACEWAYS

- A Rigid Conduit, also referred to as Galvanized Rigid Steel Conduit (GRS)
 - 1 Material: High strength steel
 - 2 Coating
 - a All uses: hot-dipped galvanized
 - b Underground or corrosive areas
 - 1 40-mil, UV stabilized PVC coated
 - 2 Coating shall conform to NEMARN-1
 - 3 Fittings shall be threaded.
 - 4 Conduit shall be UL-6 listed.
- B Intermediate Metal Conduit (IMC)
 - 1 Material: Steel
 - 2 Coating
 - a All uses: hot-dipped galvanized
 - b Underground or corrosive areas
 - 1 40-mil, UV stabilized PVC coated
 - 2 Coating shall conform to NEMARN-1
 - 3 Conduit shall be UL-1242 listed.
- C Electrical Metallic Tubing (EMT)
 - 1 Material: Steel
 - 2 Coating
 - a All uses: hot-dipped galvanized
 - b Underground or corrosive areas
 - 1 40-mil, UV stabilized PVC coated
 - 2 Coating shall conform to NEMARN-1
 - 3 Fittings shall be threaded.
 - 4 Connectors and couplings
 - a Water tight, steel compression type exterior and in wet locations.
Use ETP Fittings InspectoRidge or approved equal when possible.
 - b Steel set screw type in interior, dry locations.
- D Non-metallic conduit
 - 1 Conduit shall be schedule 40 PVC (minimum)
 - 2 Approved for use as non-metallic raceway with 90°C conductors
 - 3 Comply with NEMA TC-2 and NEMA TC-3

- E Flexible Metallic Conduit
 - 1 Material: High strength, hot-dipped galvanized steel
 - 2 Construction: Interlocked
 - 3 Conduits in damp, wet, or corrosive areas shall be liquid tight type with PVC jacket extruded over the steel conduit.
- F Fittings and accessories
 - 1 Fittings and accessories for all conduit types shall be approved for the purpose and equal in all respects to the conduit or raceway.
 - 2 Fittings and accessories for metallic conduits shall be made of ferrous metal and galvanized after fabrication.
- G Pull lines
 - 1 Pull line shall be 1/8 inch diameter, yellow color.
 - 2 Pull lines shall be Tubbs Cordage "Polyline" or approved equal.
- H Wireways
 - 1 NEMA type
 - a NEMA-1 for dry locations
 - b NEMA-3R or NEMA-4 for damp and wet locations
 - c NEMA-4X for corrosive locations
 - 2 Metal type
 - a Non-corrosive locations: mild steel
 - b Corrosive locations: stainless steel
 - 3 Thicknesses
 - a 6"x6" cross-section and smaller: 16 gauge
 - b 8"x8" cross-section and larger: 14 gauge
 - 4 Finish: The entire enclosure shall be finished as follows:
 - a Degreasing
 - b Cleaning
 - c Phosphatizing
 - d Electrostatic deposition of polymer polyester powder coating followed by baking to produce a hard durable finish.
 - 1 The average thickness of the paint film shall be 2.0 mils.
 - 2 Paint film shall be uniform in color and free from blisters, sags, flaking and peeling
 - e Finish shall conform to UL 50 and UL 50E.
 - f Color shall match surrounding area.
 - 5 Covers
 - a Wireways shall have hinged covers.
 - b NEMA 3R, 4 and 4X wireways shall be a gasket on the inside of the cover to seal the wireway when cover is closed.
 - c Covers shall have latches to secure the cover in the closed position.
 - 6 Wireways shall be UL listed.
- I Raceways shall be UL listed.

2.2 WIRE AND CABLE

- 1 Conductors for power and lighting systems 600V or less:
 - a Conductors shall be 90°C rated.
 - b Conductors size #12 AWG and larger shall be stranded copper.
 - c Type:
 - 1 THWN for wet or underground locations
 - 2 THHN for dry locations.

- 3 90°C rated
- d Minimum conductor size for voltage drop:
 - 1 Minimum size #12 AWG for runs 50 feet or less for 208/120V systems or 100 feet or less for 480/277V systems
 - 2 Increase conductor by one size by one method below:
 - 1 For each additional 50 feet for 208/120V systems or 100 feet for 480/277V systems.
 - 2 Calculate voltage drop and size as directed by CEC Voltage Drop Restrictions.
 - 3 Underground circuits shall be #8 AWG minimum wire, unless otherwise noted.
 - 4 Once the contractor has determined conductors' route, calculate the minimum size to meet maximum voltage drop allowed per CEC using $D_{min} = C * L * I / (V_D * N)$.
 - 1 D_{min} is the minimum diameter (circular mills)
 - 2 $C = 24$ for copper, $C = 39$ for aluminum
 - 3 L is conductor length (feet)
 - 4 I is the current (amps)
 - 5 V_D is the maximum allowable voltage drop (volts)
 - 6 N is the quantity of parallel conductors per phase
- e Minimum size conductors for OCPD shall be determined from CEC Table 310.16 with ampacity corrected for 115°F.
- f Conductor size shall be the largest size to meet maximum voltage drop (2.2 A 4) and to meet CEC ampacity requirements (2.2 A 5).
- 2 For Signal and Communication Circuits:
 - a Special Cables: As specified on Drawings.
 - b Conductors for general communications use: Stranded copper conductor, #16 AWG minimum, with THWN insulation for underground or wet locations and THHN insulation for dry locations.
 - c Ends of stranded conductors shall be tinned.

2.3 OUTLET BOXES, JUNCTION BOXES, AND PULL BOXES

- 1 Above ground locations
 - a Outlet Boxes
 - 1 Hot-dipped galvanized after fabrication
 - 2 Of required size, minimum 4 inches square, for flush mounted devices and lighting fixtures
 - 3 Cast type with gasketed covers for outdoor or wet locations.
 - 4 Device and fixture back boxes shall be 2-1/4" deep, minimum.
 - b Junction and Pull Boxes
 - 1 Use outlet boxes with appropriate covers as junction boxes wherever possible.
 - 2 Larger junction and pull boxes
 - 1 Sheet steel, hot dipped galvanized after fabrication, finished gray baked enamel
 - 2 Sized according to code
 - 3 Screw-on covers.
- 2 In-ground pull boxes, handholes, and manholes
 - a Precast concrete type with required extension collars.
 - b Covers

- 1 Lids shall be steel or reinforced concrete, as shown on plans. Pull box lids in traffic areas or large grassy areas subject to mowing by riding mowers shall traffic rated.
- 2 Covers shall include hold down bolts.
- 3 Top of cover shall be flush with top of box.
- 4 Covers shall be identified as ELECTRICAL, SIGNAL, or COMMUNICATIONS unless otherwise specified.
- c Size boxes as indicated on Drawings. If size is not indicated on Drawings, use CEC as a minimum requirement.
- d Boxes shall have 2" thick (minimum), reinforced concrete bottoms with 1" diameter drain hole over 12" of crushed rock.
- e Boxes shall have approved cable supports.
- f Concrete encased stubs for handholes extending five (5) feet beyond handhole.
- g All pull boxes shall be no smaller than a ChristyN-9.
- h All pull boxes shall be set flush to finished grade and shall have an 8-inch wide by 3-inch thick concrete mow strip poured around it.
- i Manufacturer shall be Brooks Products, Oldcastle Enclosure Solutions (Christy), Jensen Precast, or approved equal.
- j All sections between box, extension rings, etc. and penetrations shall be sealed with mortar.
- 3 Floor Boxes
 - 1 Provide Walker or equal Modulink non-metallic floor box for concrete areas.
 - 2 Provide quantity of boxes required to accommodate each device.
 - c Provide Walker Wood Floor Boxes at wood floors provide quantity required to accommodate each device.
 - d Provide brass flip cover lids.
- 4 Outlet boxes, junction boxes, pull boxes, etc. recessed in a concrete wall shall be deep masonry boxes.

2.4 CONDUIT AND EQUIPMENT SUPPORTS

- 1 Conduit supports
 - a For Individual conduit runs not directly fastened to the structure: Rod hangers
 - b For multiple conduit runs: Trapeze type conduit support designed for maximum loading deflection not exceeding manufacturer's recommendations.
- 2 Materials
 - a All materials not otherwise noted:
 - 1 Steel with the finished part hot dipped galvanized
 - 2 Stainless steel for corrosive or damp environments
 - b All bolts and nuts shall be stainless steel.
- 3 Supports anchored to earth shall be anchored in a concrete base per details.
- 4 Manufacturers shall be Caddy, Unistrut, Powerstrut, or approved equal.
- 5 All exposed channels shall have end caps made by the channel manufacturer and designed for use with the channel.

2.5 WIRE CONNECTORS

- 1 For wire size #8 AWG and smaller: Insulated, screw type, rated 105°C, 600V for building wiring and 1000V for fixtures; Scotchlok, Ideal, or approved equal.
- 2 For wire size #6 AWG and larger: T&B or approved equal screw type with 3M "#33+" or Plymouth "Slipknot Gray" tape insulation.
- 3 Underground wire splices
 - a Connect ends of conductors with copper compression connectors, 3M Scotchlok or approved equal.
 - b Seal splice with inline resin splice kit approved for weather exposure, direct burial, and wet locations, 3M Scotchcast or approved equal.
- 4 Only set screw, compression type connectors may be used for MC cables. Fish hook/open tang connectors are prohibited.

2.6 GROUNDING

- 1 Ground Rods
 - a 3/4 inch diameter
 - b Copper weld type
 - c 10 feet in length.
- 2 Ground Wire: Conductors shall be medium-hard drawn, copper, and stranded, with sizes as shown on drawings.
- 3 Utilize CADWELD Multi-System Exothermic Welding for below grade ground connections.
- 4 Bolts, nuts, and washers shall be bronze, cadmium plated steel, or other corrosion resistant material approved for the purpose.

2.7 MISCELLANEOUS MATERIALS

- 1 All screws, bolts, nuts, and washers on equipment outdoors or in wet or corrosive environments shall be stainless steel.

2.8 SEALANTS

- 1 General purpose sealant: One part polysulfide or polyurethane, Federal Standard TT-S-00230c or two-part polyurethane, Federal Standard TT-SS-227E of Mameco Vulkem 116 or 227 or approved equal product manufactured by Products Research and Chemical Corporation. Pecora, Sika, Sonneborn, or Tremco may be substituted under provisions of Section 016000.
- 2 Conduit sealant
 - a Two part, self curing urethane
 - b Non-sagging
 - c Liquid and gas tight
 - d Chemically stable once cured
 - e Compatible with conduit and conductormaterials
 - f Designed for use as conduit seal
- 3 Fire retardant sealant: Dow Corning Company, Type 3-6548 silicone RTV foam sealant, closed cell, 18 lb. density, 2-part system with UL certification. Type 96-081 one-part sealant shall be used for small spaces and cracks. 3M Fire Barrier Caulk CP25 is also acceptable.

2.9 IDENTIFICATION

- 1 Nameplates:
 - a White, acrylic plastic suitable for indoor or outdoor use
 - b Face colored as below with engraved, white, 3/16" minimum, Arial or similar font characters
 - 1 Equipment on normal systems: Black face
 - 2 Equipment on emergency systems: Red face
 - c Clear plastic overlay suitable for indoor or outdoor use that can be replaced if vandalized.
 - d Sign shall include device name, voltage, and size.
 - e Outdoor nameplates shall be UV stable and faderesistant.
- B Pull line identification tags:
 - 1 Aluminum plate
 - 2 1/8" tall (minimum), Arial (or similar) font, identifying text stamped on plate
 - 3 Tags shall describe conduit's length, source, and destination.

PART 3 – EXECUTION

3.1 GENERAL

- A Electric system layouts indicated on the Drawings are generally diagrammatic but shall be followed as closely as actual construction and work of other trades will permit. Govern exact routing of cable and wiring and the locations of outlets by the structure and equipment served. Dimensions shall be taken from Architectural Drawings.
- B Consult all other Drawings. Verify scales and report any dimensional discrepancies or other conflicts to architect, or engineer if no architect is involved, before submitting bid.
- C Home runs to panelboards are indicated as starting from the outlet nearest the panel and continuing in the general direction of that panel. Continue such circuits to the panel as though the routes were completely indicated. Terminate homeruns of signal, alarm, and communications system in a similar manner.
- D Avoid cutting and boring holes through structure or structural members wherever possible. Obtain prior approval of Architect and conform to structural requirements when cutting or boring the structure is necessary or permitted.
- E Furnish and install necessary hardware, hangers, blocking, brackets, bracing, runners, required for equipment specified under this section.
- F Provide necessary backing required to insure rigid mounting of outlet boxes.
- G Install pull line in all conduits to remain that will have their conductors removed.

3.2 INSTALLATION OF CONDUIT

- A Run conduit concealed unless otherwise noted or shown on Drawings.
- B Run exposed conduit parallel to or at right angles to center lines of columns and beams.
- C Run no conduit in concrete slabs or floors except at point of penetration. Penetrations shall be at right angles to slab surfaces.
- D Install conduit above ceilings to avoid obstructing removal of ceiling tiles, lighting fixtures, air diffusers, etc.
- E Conduit shall not cross any duct shaft or area designated as future duct shaft. Coordinated with mechanical work to avoid any conflict.

- F Install pull line in empty conduit installed under this contract. Provide and install labels as describe in "Identification" sub-section.
- G Spare conduits shall be capped to prevent intrusion of moisture and foreign objects.
- H Minimum conduit size shall be 1/2 inches when installed above ground and 3/4 inches when installed underground or under building slabs. Increase conduit size as required for wiring. Size for conduit, unless specifically shown otherwise, shall be determined from Table 3 for all conductors, Chapter 9 of latest National Electric Code.
- I Conduit shall be rigid conduit, IMC, EMT, or plastic as follows:
- 1 Above ground and dry locations: Use rigid conduit, IMC or EMT.
 - a Wet locations: Rigid conduit, IMC.
 - b Locations subject to mechanical injury: Rigid conduit or IMC only.
 - c In concrete walls or block walls: Rigid steel conduit or IMC only.
 - d Dry locations and not subject to mechanical injury: EMT (interior locations only), IMC, or rigid conduit.
 - 2 Underground: Use wrapped rigid steel or plastic.
 - a Schedule 40 PVC: For use underground where protected by concrete slabs, asphaltic pavement, or concrete walkways. Use steel elbows for plastic conduit runs penetrating floor slabs. Bends in plastic conduit other than normal long sweeps shall be made only with factory formed ells or curved segments. Heat bending may not be used. Sections of rigid steel conduit runs are required where direction changes. In all cases where use of plastic conduit is allowed or specified, Contractor may, at his option, use rigid steel conduit.
 - b Underground conduits shall have red 4" wide identifying caution tape reading "CAUTION ELECTRICAL LINE BELOW", length as required and installed 12" above all conduits runs.
 - c Do not install plastic conduit in rock base.
 - d Underground conduit entering building shall be provided with one (1) 10 foot section of rigid steel conduit at point of penetration of foundation, footing or basement wall, with approximately equal lengths inside and outside building line, unless otherwise noted.
 - 3 Bends
 - a Make risers to grade with rigid steel long radius sweep conduit and rigid steel elbow fittings only.
 - b Minimum radius of sweeps shall be 24 inches.
- J Burial depth of conduit shall be as follows:
- 1 Concrete encased: 24 inch minimum for 600V or lower systems to top of concrete encasement.
 - 2 Conduit without concrete encasement or cap: 24 inch minimum to top of conduit.
 - 3 When installed under buildings, the above minimum depth shall be 18 inches below bottom of floor slab.
- K Use flexible steel conduit in the following applications:
- 1 Recessed lighting fixtures.
 - 2 Motor connections.
 - 3 Connection between fan plenum and structure.
 - 4 At expansion joints.
 - 5 At transformers and other equipment which produce vibration.

- L Provide junction boxes/pull boxes as required to limit any power system conduit run to a maximum of four (4) 90 degree bends (two (2) 90 degree bends for signal communication system conduit runs) or to avoid "U" bends.
- M Conduit Supports:
- 1 Support conduit with Underwriters' Laboratories listed conduit support intervals required by the California Electric Code.
 - 2 Wire or sheet metal strips are not acceptable for conduit not directly fastened to structure or for multiple conduit runs.
 - 3 Individual conduit 1/2 inch and 3/4 inch size may be supported from ceiling support wire with Caddy clips only if acceptable to local code. Only one conduit is permitted to be attached to any ceiling support wire. Hang such conduit so as not to affect level of ceiling.
 - 4 Avoid attaching conduit to fan plenums. When it is necessary to support conduit from fan plenum, provide a length of flexible conduit between the section attached to the fan plenum and other sections. Provide a length of flexible conduit between the portion attached to the building to minimize transmission of vibration to the building structure.
- N Conduit penetration of roof, walls, floors and ceilings shall be sealed to preserve the integrity of waterproofing, fire rating and soundproofing for which the roof, wall, floor or ceiling is designed. Materials and methods used shall conform to that specified under Architectural sections.
- O Underground conduit and ducts 2 inches and larger shall be proven clear by pulling through a mandrel 1/4 inch smaller than the inside diameter.
- P Where flush branch circuit panelboards or terminal cabinets are shown on walls, stub a minimum of four (4) 1 inch empty conduit into overhead ceiling spaces and four (4) 1 inch empty conduit into space below floor (if any) in addition to conduit required for circuit wiring.
- Q Paint all exposed conduit to match its surroundings.
- R Plastic conduits exposed to sun light shall be UV stabilized.
- S Where rigid steel conduit runs in direct contact with the earth, conduit shall be wrapped with 10-mil PVC tape to form 40 mil of protection, or shall have factory applied PVC coating.
- T Label all conduits at each terminus, pull box, and junction box.
- U All conduits shall have a minimum of one pull line.
- V All pull lines shall be tagged at both ends so as to indicate the length of the conduit run, source, and the destination.

3.3 INSTALLATION OF WIRE

- A Install all wiring in raceway unless specifically shown or noted otherwise.
- B Pull no wire into any portion of the conduit system until construction work which may damage the wire has been completed.
- C Install wire continuous from outlet to outlet or terminal to terminal. Splices in cables when required shall be made in handholes, pull boxes or junction boxes. Make branch circuit splices in outlet boxes with 8 inches of correctly color-coded tails left in the box.
- D Make splices in wires and cables utilizing specified materials and methods.
- E Cables and wires passing through handholes shall be full looped inside the handhole (360 degree) and supported on galvanized steel racks, beginning 10" above the bottom of the handhole. Leave handhole in clean condition with debris removed.

- F Make ground, neutral, and line connections to receptacle and wiring device terminals as recommended by manufacturer. Provide ground jumper from outlet box to ground terminal of devices when the device is not approved for grounding through the mounting screws.
- G Provide Brady wire markers where number of conductors in a box exceed four (4).
- H Wiring shall be tested for continuity (600V and below). All systems shall be entirely free from grounds, short circuits, and any or all defects.
- I Measure and record the insulation resistance of 600 volt insulated conductors size #4/0 AWG and larger using a 500 volt megger for one minute. Make tests with circuits isolated from source and load.
- J All conductor bends must have a radius greater than or equal to the manufacturer's listed bending radius.
- K Label all conductors at each terminus, pull box, and junction box.

3.4 WIRE COLOR CODE

- A Color code conductors. Wire sized #8 AWG and smaller shall have integral color coded insulation. Wire sizes #6 AWG and larger may have black insulation but shall be identified by color coded electrical tape at junction, splice, pull and termination points. Apply color tape with 1/2 lap to at least 6 inches of the conductor.
- B Color code wire as follows:

Conductors	208/120V	480/277V
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White	White or Gray (consistent throughout facility)
Ground	Green	Green

3.5 CONNECTIONS TO EQUIPMENT

- A General:
 - 1 Furnish and install required power supply conduit and wiring to equipment. See below for other wiring required.
 - 2 Furnish and install a disconnect switch immediately ahead of and adjacent to each magnetic motor starter or appliance unless the motor or appliance is located adjacent to and within sight of the serving panelboard, circuit breaker or switch. Verify equipment nameplate current ratings prior to installation.
 - 3 Mount motor starters including those furnished under other sections or specifications and provide power wiring to them.
 - 4 Install rough-in work for equipment from approved shop drawings to suit the specific requirements of the equipment.
 - 5 Furnish and install magnetic motor starters that are shown on the Drawings or specified under other divisions to be furnished under this division of work. Verify equipment nameplate ratings prior to installation and furnish adequately rated starters for the loads.
 - 6 Furnish and install manual thermal protection for motors not integrally equipped with thermal protection.

- 7 Furnish and install 120V power to each control panel and time switch requiring a source of power to operate.
- B Heating, ventilating, and air conditioning equipment:
 - 1 Coordinate with mechanical contractor for sizes, locations and details of motors, heating units, and control requirements.
 - 2 Provide required power supply conduit and wiring to equipment.
 - 3 Provide a suitable means of disconnect switch immediately ahead of and adjacent to each motor and appliance unless the motor or appliance is located adjacent and within sight of the service panelboard, circuit breaker or switch at a distance allowed by codes. Verify equipment nameplate current ratings prior to installation. Provide a disconnect means at each magnetic motor starter.
 - 4 Provide magnetic motor starters required under this division of work.
 - 5 Provide manual thermal protection for motors not integrally equipped with thermal protection.
 - 6 Line and low voltage temperature control and interlock wiring, conduit, and required connections are a part of other divisions unless specifically shown or noted on the Drawings as to be furnished under this section.
 - 7 Provide 120V power supply to control panels, time switch furnished and installed under other divisions of work.
 - 8 Furnish and install 120V power to each duct detector scheduled for operation of fire dampers or shut down of mechanical equipment. Coordinate the exact quantity and locations with the mechanical drawings.
- C Plumbing and other contractor-furnished and Owner-furnished equipment:
 - 1 Required power and control conduit, wiring and connections are included under this section of the work. Control sensing and alarm devices will be furnished under the respective section of the contract supplying the equipment unless noted otherwise. These devices will be located in pipes, ducts, vessels, tanks, etc., and will be mounted in a place by the Contractor furnishing the devices. Other devices shall be mounted under this section of the work.
 - 2 Control panels for packaged equipment will be furnished under the respective section of the contract supplying the equipment unless otherwise noted. Installation and connection of the control panels are under this section of the work.

3.6 SYSTEM NEUTRAL GROUND

- A Ground the neutral conductor of each transformer to limit the maximum potential above ground due to normal operating voltage and limit the voltage level due to abnormal conditions.
- B Ground transformers with secondary voltage 600V class or less as follows: 3 phase, 4 wire wye connected: ground neutral point.
- C For transformers 75kVA size or lower with primary voltage 480V or lower, the primary equipment ground conductor may be used for grounding the secondary neutral provided it is adequately sized in accordance with CEC system ground conductor size.

3.7 EQUIPMENT GROUND

- A Ground non-current carrying metal parts of electrical equipment enclosures, frames, or conductor raceways to provide a low impedance path for line to ground fault current and to bond all non current carrying metal parts together. Install a ground conductor in each raceway system. Equipment ground conductor shall be electrically and mechanically continuous from the electrical circuit source to the equipment to be grounded. Size ground conductors per CEC 250.95 unless otherwise shown on drawings.
- B Grounding conductors shall be identified with green insulation. Where green insulation is not available, on larger sizes, black insulation shall be used and suitably identified with green tape at each junction box or enclosure device.
- C Install metal raceway couplings, fittings and terminations secure and tight to insure good ground continuity. Provide grounding bushing and bonding jumper where metal raceway is not directly attached to equipment metal enclosure and at concentric knockouts.
- D Lighting fixtures shall be securely connected to equipment ground conductors. Outdoor lighting standards shall have a factory installed ground for terminating the ground wire.
- E Motors shall be connected to equipment ground conductors with a conduit grounding bushing and with a bolted solderless lug connection on the metal frame.

3.8 STRUCTURAL GROUND

- A Concrete encased electrode shall be 2 inches above the bottom of concrete footing where shown on drawings. See drawings for details.
- B Domestic, chilled and hot water mains and fire protection metallic water pipes shall be connected to the ground bus with #4/0 AWG bare copper conductor at a minimum of two points.
- C Miscellaneous metal objects including piping, vessels and structural shapes within six feet of metallic objects connected to the ground system and which are not interconnected mechanically with the grounding system, shall be interconnected with a minimum #6 AWG bare copper conductor.

3.9 IDENTIFICATION

- A Provide and install nameplates on all switchboards, distribution boards, panels, motor starters, VFDs, transformers, safety switches/disconnects, push buttons, selector switches, pilot lights, and other similar devices. Fasten nameplates to equipment with one sheet metal screw at each corner.
- B Provide and install labels on lighting switches and convenience and special purpose receptacles to show panel and circuit number to which the device is connected.
- C Provide and install identification tags on all conduit pull.
- D Provide label meeting ANSI Z535 standards on motors reading:

WARNING
AUTOMATIC EQUIPMENT
MAY START AT ANY TIME

3.10 CIRCUIT BREAKER ELECTRICAL COORDINATION STUDY

- A Contractor shall provide a coordination study to determine trip settings of circuit breakers. Provide an electric copy of the studies to the Electrical Engineer of Record in EasyPower.

3.11 ARC FLASH STUDY

- A Contractor shall provide a study to determine potential arc flash energy. Provide an electric copy of the studies to the Electrical Engineer of Record in EasyPower.

END OF SECTION

SECTION 260526 - GROUNDING**PART 1 – GENERAL****1.1 SECTION INCLUDES**

Materials, equipment fabrication, installation and tests in conformity with equipment applicable to this project, applicable codes and authorities having jurisdiction, for grounding

1.2 RELATED SECTIONS

- A All included sections under Division 1
- B All included sections under Division 26
- C Plans
- D Manufacturers' manuals, product bulletins, etc.

1.3 REFERENCE STANDARDS

Published specifications standards, tests or recommended methods of trade, industry or government organizations apply to work in this section as cited in Section 16000.

1.4 QUALITY ASSURANCE

- A Equipment and accessories shall be the product of a manufacturer regularly engaged in its manufacture.
- B Supply equipment and accessories new, free from defects.
- C Supply equipment and accessories in compliance with the applicable standards listed in Article 1.3 of this section and with applicable national, state and local codes.
- D Items of a given type shall be the products of the same manufacturer.

1.5 SUBMITTALS

- A Submit under provisions of Section 01330. Provide detailed description of items supplied, including specifications, performance characteristics, materials, wiring diagrams and schedules.
 - 1 Submit evidence that products satisfy seismic requirements for the State of California.
 - 2 Submit evidence of compliance with the applicable standards listed under Article 1.3 of this section.
- B Manufacturer's Instructions: Submit manufacturer's installation instructions.
- C Product Data: Submit manufacturer's descriptive literature.
- D Shop Drawings: Submit complete fabrication details, elevations and sections of switchboard, dimensions, space available for conduit, rating, short circuit withstand ability of bus and lowest rated device, circuit schedule showing circuit number, device description, device frame ampere rating and trip, fuse clip ampere rating, termination lug size, feeder and circuit identification, conductor ratings and one-line and wiring diagrams. Include both elementary diagram and terminal to terminal wiring diagrams.
- E Substitutions: Items of same function and performance shall be in conformance with Division 1.

- F Submit field test and operations check report for circuit breakers and motor starters under provisions of Section 16080.

1.6 OPERATION AND MAINTENANCE DATA

- A Submit operation instructions, maintenance and repair data under provisions of Division 1.
- B Ship equipment in its original packages to prevent damaging or entrance of foreign matter. Perform handling and shipping in accordance with manufacturer's recommendations. Provide protective covering during construction.
- C Replace at no expense to Owner, equipment or material damaged during storage or handling, as directed by the engineer.
- D Tag items with a weatherproof tag identifying equipment by name and purchase order number. Include packing and shipping lists.

PART 2 – PRODUCTS

2.1 GROUND RODS

Ground rods shall be:

- A. 3/4 inch diameter
- B. Copper weld type
- C. 10 feet in length.
- D. Ground rings

2.2 BARE COPPER GROUND WIRE

Conductors shall be medium-hard drawn, copper, and stranded, with sizes as shown on drawings.

2.3 BELOW GRADE GROUND CONNECTIONS

Utilize CADWELD Multi-System Exothermic Welding.

2.4 HARDWARE

Bolts, nuts and washers shall be bronze, cadmium plated steel, or other non-corrosive material, approved for the purpose.

PART 3 – EXECUTION

3.1 SYSTEM NEUTRAL GROUND

- A Ground the neutral conductor of each transformer to limit the maximum potential above ground due to normal operating voltage and limit the voltage level due to abnormal conditions.
- B Ground transformers with secondary voltage 600V class or less as follows: 3-phase, 4-wire wye connected: ground neutral point.
- C For transformers 75kVA size or lower with primary voltage 480V or lower, the primary equipment ground conductor may be used for grounding the secondary

neutral provided it is adequately sized in accordance with CEC system ground conductor size.

3.2 EQUIPMENT GROUND

- A Ground non-current carrying metal parts of electrical equipment enclosures, frames, or conductor raceways, structural metal supports for the mechanical and plumbing equipment to provide a low impedance path for line-to-ground fault current and to bond all non-current carrying metal parts together. Install a ground conductor in each raceway system. Equipment ground conductor shall be electrically and mechanically continuous from the electrical circuit source to the equipment to be grounded. Size ground conductors per CEC 250-95 unless otherwise shown on drawings.
- B Grounding conductors shall be identified with green insulation. Where green insulation is not available, on larger sizes, black insulation shall be used and suitably identified with green tape at each junction box or enclosure device.
- C Install metal raceway couplings, fittings and terminations secure and tight to insure good ground continuity. Provide grounding bushing and bonding jumper where metal raceway is not directly attached to equipment metal enclosure and at concentric knockouts.
- D Lighting fixtures shall be securely connected to equipment ground conductors. Outdoor lighting standards shall have a factory installed ground for terminating the ground wire.
- E Motors shall be connected to equipment ground conductors with a conduit grounding bushing and with a bolted solderless lug connection on the metal frame.

3.3 STRUCTURAL GROUND

- A Concrete encased electrode shall be 2 inches above the bottom of concrete footing where shown on drawings. See drawings for details.
- B Domestic, chilled and hot water mains and fire protection metallic water pipes shall be connected to the ground bus with #3/0 AWG bare copper conductor at a minimum of two points.
- C Miscellaneous metal objects including piping, vessels and structural shapes within six feet of metallic objects connected to the ground system and which are not interconnected mechanically with the grounding system, shall be interconnected with a minimum #3/0 AWG bare copper conductor.

3.4 GROUND RESISTANCE TEST

- A Building ground electrode resistance testing shall be accomplished with a ground resistance, direct reading, single test meter utilizing the Fall-of-Potential method and two (2) referenced electrodes. Perform test prior to interconnection to other grounding system. Orient the concrete encased ground electrode to be tested and the two referenced electrodes in straight line spaces fifty (50) feet apart. Drive the two (2) reference electrodes ten (10) feet deep.
- B Test results shall be in writing, and shall show temperature, humidity and condition of the soil at the time of the tests. In the case where the ground resistance exceeds 25 ohms, add an additional ground rod and retest. Add additional ground rods when necessary in order to bring the ground resistance below 25 Ohms. All testing shall be done prior to concrete pour and in the presence of the inspector of record. Provide test results for engineer review.

END OF SECTION

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Hangers and supports for electrical equipment and systems.
- B. Construction requirements for concrete bases.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A Division 1
 - 1 Section 013000: Administrative Requirements
 - 2 Section 013300: Submittal Procedures
 - 3 Section 014000: Quality Requirements
 - 4 Section 016000: Product Requirements
 - 5 Section 017000: Execution and Closeout Requirements
 - 6 All other included sections under Division 1
- B All included sections under Division 26
- C All included sections under Division 27
- D All included sections under Division 28
- E Plans
- F Manufacturers' manuals, product bulletins, etc.

1.3 REFERENCE STANDARDS AND CODES

- A Published specifications standards, tests or recommended methods of trade, industry or government organizations apply to work in this section as cited in Section 260000.
- B American Society for Testing and Materials (ASTM)
 - 1 ASTM A36/A36M: Standard Specification for Carbon Structural Steel
 - 2 ASTM A167: Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
 - 3 ASTM A276: Standard Specification for Stainless Steel Bars and Shapes
 - 4 ASTM A325: Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 KSI Minimum Tensile Strength
 - 5 ASTM A563: Standard Specification for Carbon and Alloy Steel Nuts
 - 6 ASTM B221: Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
 - 7 ASTM B632: Standard Specification for Aluminum-Alloy Rolled Tread Plate
 - 8 ASTM B633: Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel
 - 9 ASTM E488: Standard Test Methods for Strength of Anchors in Concrete Elements
 - 10 ASTM F594: Standard Specification for Stainless Steel Nuts
- C American Welding Society (AWS)
 - 1 AWS D1.1: Structural Welding Code - Steel
- D California Building Safety Codes (CBSC)
 - 1 California Building Code (CBC)
 - 2 California Electrical Code (CEC)

- E General Services Administration
 - 1 FF-S-325
 - 2 W-C-582: Conduit, Raceway, Metal and Fittings: Surface
 - 3 WW-H-171: Hanger and Support, Pipe
- F ICC Evaluation Service (ICC-ES)
 - 1 ESR-1917
- G Manufacturers Standardization Society (MSS)
 - 1 MSS SP-58: Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application, and Installation
 - 2 MSS SP-69: Pipe Hangers and Supports – Selection and Application
- H Metal Framing Manufacturers' Association
 - 1 MFMA-4: Metal Framing Standard Publication
 - 2 MFMA-101: Guidelines for the Use of Metal Framing
- I National Electrical Contractors Association
 - 1 NECA 1: Standard Practice of Good Workmanship in Electrical Construction
 - 2 NECA 101: Standard for Installing Steel Conduits (Rigid, IMC, EMT)
- J Underwriters' Laboratories
 - 1 UL 2239: Hardware for the Support of Conduit, Tubing, and Cable

1.4 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Comply with latest editions of the California Building Code and California Electric Code

1.5 SUBMITTALS

- A. Submit under provisions of Section 013000 or 013300.
- B. Submittals shall include the following:
 - 1. Table of contents
 - 2. A complete set of detailed manufacturer's specifications describing and illustrating all standard and special components and materials
 - 3. Part numbers
 - 4. Evidence of compliance with the applicable standards listed under Article 1.3 of this section
 - 5. Maintenance instructions and intervals
 - 6. A complete set of drawings for any special items
- C. Electronic submittals shall be searchable
- D. Shop drawings shall be stamped and signed by a licensed structural engineer. Show fabrication and installation details and include calculations for the following:
 - 1. Trapeze hangers: include product data for components
 - 2. Steel slotted channel systems: include product data for components
 - 3. Equipment supports
- E. Welding certificates
- F. The submittal shall be substantially complete for all items and equipment furnished under this section.
- G. Individual drawings and data sheets submitted at random intervals will not be accepted for review.

- H. Substitutions: Items of same function and performance shall be submitted in conformance with Division 1.

1.6 OPERATION AND MAINTENANCE MANUALS

- A Submit manuals at close out.
- B The manuals shall, at minimum, include the following:
 - 1 Manufacturer (including contact information)
 - 2 Model number
 - 3 Load ratings
 - 4 Material type(s)
 - 5 Environmental ratings
 - 6 Maintenance requirements
 - 7 Installation instructions
 - 8 Repair instructions (where applicable)
- C Provide manuals in one of the following formats
 - 1 Three hardcopies
 - 2 PDF

1.7 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- C. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

PART 2 – PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems
 - 1. Comply with MFMA-4, factory-fabricated components for field assembly.
 - 2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
 - 3. Nonmetallic Coatings:
 - a. PVC, polyurethane, or polyester coating applied according to MFMA-4.
 - b. Minimum thickness shall be 40 mils.
 - 4. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
 - 5. Channel Dimensions: Selected for applicable load criteria.
 - 6. Manufacturers:
 - a. Cooper B-Line, Inc.
 - b. ERICO International Corporation

- c. Hilti Corporation
 - d. Thomas & Betts Corporation
 - e. Unistrut
 - f. Approved equal
- B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- C. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.
- E. Structural Steel for Fabricated Supports and Restraints: ASTM A36/A36M, steel plates, shapes, and bars; black and galvanized.
- F. Mounting, Anchoring, and Attachment Components:
 - 1. General:
 - a. Anchors shall be steel with corrosion resistant, durable coating or stainless steel
 - b. Select anchors with strength required for anchor and as tested according to ASTM E488.
 - c. Minimum length shall be eight times diameter.
 - d. Tension, shear, and pullout capacities shall be appropriate for supported loads and building materials used
 - e. Post installed anchors must be listed in a current evaluation report issued by one of the following:
 - 1. International Code Council Evaluation Service (ICC-ES)
(<http://www.icc-es.org/reports/index.cfm?search=search>)
 - 2. City of Los Angeles Research Report
 - 2. Powder-Actuated Fasteners:
 - a. Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood
 - b. Manufacturers:
 - 1. Hilti Corporation
 - 2. Simpson Strong-Tie Co., Inc.
 - 3. Approved equal
 - 3. Mechanical-Expansion Anchors:
 - a. Insert-wedge-type, stainless steel, for use in hardened portland cement
 - b. Anchors shall meet the descriptive part of Federal Specifications FF-S-325 Group II, Type 2, Class 2, Style 1.
 - c. Anchors shall be equivalent to Hilti Kwik-Bolt TZ.
 - 4. Concrete inserts shall be steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58
 - 5. Clamps for attachment to steel structural elements: MSS SP-58, type suitable for attached structural element
 - 6. Through bolts shall be structural type, hex head, high strength and comply with ASTM A325
 - 7. Toggle Bolts: All-steel springhead type
 - 8. Hanger Rods: Threaded steel

2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.
- B. Materials:
 - 1. Comply with requirements with ASTM A36 (ferrous metals), ASTM A167 and ASTM A276 (stainless steel), and ASTM B221 and B632 (aluminum) for shapes and plates.
 - 2. Hot dipped galvanized steel
 - 3. Stainless steel for corrosive areas

2.3 CONCRETE BASES

- A. Concrete Pad
 - 1. Concrete shall have strength of 3000 PSI within 28 days.
 - 2. The pad shall be large enough to achieve the following:
 - a. Edge of anchor bolt holes shall be a minimum of 10 times the bolt diameter from edge of pad.
 - b. Edge of equipment shall be a minimum of 8 inches from edge.
 - 3. Minimum thickness shall be 12 inches with 3 inch deep by 12 inch wide footing around perimeter
 - 4. Bottom of footings shall be a minimum of 8" below finished grade.
 - 5. Pad shall include #4 rebar at 10 inch intervals in both x direction and y direction.
- B. Concrete Pole Bases: Refer to Typical Details

PART 3 – EXECUTION

3.1 APPLICATION

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
- B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by California Electrical Code. Minimum rod size shall be 1/4 inch (6 mm) in diameter.
- C. Multiple Raceways or Cables:
 - 1. Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
 - 2. Secure raceways and cables to these supports with two-bolt conduit clamps
- D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch (38-mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.

3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- B. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, as permitted in California Electric Code.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (890 N).
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code.
 - 1. Wood framing: Fasten with lag screws or through bolts.
 - 2. Light gauge steel framing: self tapping screws
 - 3. Steel beams: beam clamps
 - 4. Concrete: expansion fasteners

3.3 CONDUIT SUPPORTS

- A. Conduit supports
 - 1. For Individual conduit runs not directly fastened to the structure: Rod hangers
 - 2. For multiple conduit runs: Trapeze type conduit support designed for maximum loading deflection not exceeding manufacturer's recommendations.
 - 3. Wire or sheet metal strips are not acceptable for conduit not directly fastened to structure or for multiple conduit runs.
- B. Support conduit with Underwriters' Laboratories listed conduit support intervals required by the California Electric Code.
- C. Individual conduit 1/2 inch and 3/4 inch size may be supported from ceiling support wire with Caddy clips only if acceptable to local code. Only one conduit is permitted to be attached to any ceiling support wire. Hang such conduit so as not to affect level of ceiling.
- D. Avoid attaching conduit to fan plenums. When it is necessary to support conduit from fan plenum, provide a length of flexible conduit between the section attached to the fan plenum and other sections. Provide a length of flexible conduit between the portion attached to the building and the rest of the conduit run to minimize transmission of vibration to the building structure.
- E. Supports anchored to earth shall be anchored in a concrete base per details.

3.4 INSTALLATION OF POST-INSTALLED ANCHORS

- A. Minimum distances
 - 1. Bolt hole edge to edge of concrete: 10 times bolt diameter
 - 2. Bolt center to bolt center: 12 times bolt diameter
- B. Expansion type anchors
 - 1. Anchor shall be installed and torque per manufacturer's recommendations.
 - 2. Setting verification:
 - a. Torque-controlled anchors: Following attainment of 10% of the required torque, torque-controlled anchors shall not require more than six (6) additional complete turns of the nut during installation to

- achieve the manufacturer's specified installation torque. The extent of bolt projection after installation shall be measured to confirm that this requirement has been met.
- b. Displacement-controlled anchors: The position of the plug in the anchor shell shall be checked with the manufacturer-supplied installation tool or other appropriate device. The position of the plug shall conform to the manufacturer's specifications.
3. Allowable loads
- a. Anchors not installed in underside of beam/slab:
 - 1. When tested in accordance with AC01, Section 5.6: Values listed in ICC-ES report
 - 2. When not tested in accordance with AC01, Section 5.6: 80% of values listed in ICC-ES report
 - b. Anchors installed in underside of beam/slab:
 - 1. When tested in accordance with AC01, Section 5.6: Values for anchor without special inspection or in cracked concrete in ICC-ES report
 - 2. When not tested in accordance with AC01, Section 5.6: 80% of values for anchor without special inspection or in cracked concrete in ICC-ES report
- C. Epoxy-type (adhesive) Anchors
- 1. Allowable loads: values from ICC-ES report when compliant with AC58.
- D. Anchors must receive special inspection per CBC Section 1704.15.

3.5 TESTING AND INSPECTION OF POST-INSTALLED ANCHORS

- A. General
- 1. Post-installed anchors shall be tested in accordance with the provisions of 2001 California Building Code Section 1923A.3.5, by an authority having jurisdiction accepted testing facility, unless approval of an alternative individual is obtained in advance from the authority having jurisdiction.
 - 2. If any anchor fails testing, test all anchors of the same type, not previously tested until twenty (20) consecutive anchors pass, then resume the initial test frequency. If the anchors are used for the support and bracing of non-structural components (pipe, duct or conduit), the twenty (20) shall be only those anchors installed by the same trade.
 - 3. Test equipment (including torque wrenches) is to be calibrated by an approved testing laboratory in accordance with standard recognized procedures.
 - 4. Regardless of which test method is chosen, test values and all appropriate criteria shall be shown on the contract documents.
 - 5. Anchor diameter refers to the thread size for the wedge and sleeve categories, and to the anchor outside diameter for the sleeve category.
 - 6. Apply proof test loads to wedge and sleeve anchors without removing the nut if possible. If not, remove nut and install a threaded coupler to the same tightness as the original nut using a torque wrench to apply the test load.
 - 7. For sleeve/shell internally threaded categories, verify that the anchor is not prevented from withdrawing by a baseplate or other fixtures. If restraint is found, loosen and shim or remove fixture(s) prior to testing.

8. Reaction loads from test fixtures may be applied close to the anchor being tested, provided the anchor is not restrained from withdrawing by the fixture(s).
9. Alternate torque test procedures and test values for shell type anchors may be submitted to the enforcement agency for review and approval on a case-by-case basis when test procedures are submitted and approved by the enforcement agency.
10. Required test loads may be determined by either of the following methods:
 - a. Twice the allowable tension load from Part 3.4.
 - b. Tension or torque test values from the table and procedures.

Test Values (Hardrock or Lightweight Concrete)							
Anchor	Wedge		Sleeve		Shell		Screw
Diameter (in)	Load (lbs)	Torque (ft. lbs)	Load (lbs)	Torque (ft. lbs)	Load (lbs)	Torque (ft. lbs)	Torque (ft. lbs)
1/4	800	10	400	4	1000	-	-
5/16	-	-	400	5	1400	-	-
3/8	1100	25	700	10	1800	-	10
1/2	2000	50	900	20	2700	-	10
5/8	2300	80	1100	45	3700	-	10
3/4	3700	150	1400	90	5400	-	20
1	5800	250	-	-	-	-	-

11. If the manufacturer's recommended installation torque is less than the test torque noted in the table, the manufacturer's recommended installation torque should be used in lieu of the tabulated values.

B. Expansion-type Anchors

1. The test load may be applied by any method that will effectively measure the tension in the anchor, such as direct pull with a hydraulic jack, calibrated spring-loaded devices, or a calibrated torque wrench. Displacement-controlled anchors such as drop-ins shall not be tested using a torque wrench.
2. Anchors tested with a hydraulic jack should exhibit no discernable movement during the tension test, e.g., as evidenced by loosening of the washer under the nut.
3. Anchors tested with a calibrated torque wrench must attain the specified torque within 1/2 turn of the nut.
4. Exceptions: Undercut anchors that are so designed to allow visual confirmation of full set, need not be tension or torque tested. If the manufacturer's installation torque is less than the specified test torque, use the manufacturer's specified installation torque for testing the anchor.
5. Apply proof test loads to wedge and sleeve anchors without removing the nut if possible. If not, remove nut and install a threaded coupler to the same tightness as the original nut using a torque wrench to apply the testload.
6. For sleeve/shell internally threaded categories, verify that the anchor is not prevented from withdrawing by a baseplate or other fixtures. If restraint is found, loosen and shim or remove fixture(s) prior to testing.
7. Reaction loads from test fixtures may be applied close to the anchor being tested, provided the anchor is not restrained from withdrawing by the fixture(s).
8. Shell type anchors should be tested as follows:

- a. Visually inspect 25% for full expansion as evidenced by the location of the expansion plug in the anchor body. Plug location of a fully expanded anchor should be as recommended by the manufacturer, or, in the absence of such recommendation, as determined on the job site following the manufacturer's installation instructions. At least 5% of the anchors shall be proof loaded as indicated in the table above, but not less than three anchors per day for each different person or crew installing anchors, or;
 - b. Test installed anchors per current edition of the CBC Section 1913A.7.
- C. Epoxy-type (adhesive) Anchors
 1. Epoxy-type (adhesive) anchors shall be tension tested per current edition of the CBC Section 1913A.7. The tension test load shall equal twice the allowable load for the specific location of the anchor to be tested (i.e., accounting for edge distance) or 80% of the yield strength of the bolt ($0.8A_bF_y$), whichever is less. The test procedures for expansion-type anchors in the attached table shall also be used for epoxy-type (adhesive) anchors. Torque testing of epoxy-type (adhesive) anchors is not permitted.
 2. Where epoxy-type (adhesive) anchors are used as shear dowels across cold joints in slabs on grade and the slab is not part of the structural system, testing of those dowels is not required.
 3. Anchors shall exhibit no discernible movement during the tension test.
- D. Screw-type Anchors
- E. The following criteria apply for the acceptance of installed anchors:
 1. Hydraulic ram method: The anchor should have no observable movement at the applicable test load. For wedge and sleeve type anchors, a practical way to determine observable movement is that the washer under the nut becomes loose.
 2. Torque wrench method: The applicable test torque must be reached within the following limits:
 - a. Wedge or Sleeve type: One-half (1/2) turn of the nut.
 - b. One-quarter (1/4) turn of the nut for the 3/8 in. sleeve anchor only.

3.6 PAINTING

- A. Touchup:
 1. Clean field welds and abraded areas of shop paint.
 2. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting.
 3. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).
 4. Comply with the following requirements
 - a. Architectural painting specifications
 - b. SSPC-PA 1 requirements for touching up field-painted surfaces.
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A780.

END OF SECTION

SECTION 260548 - VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL SYSTEMS**PART 1 – GENERAL****1.1 SECTION INCLUDES**

Anchoring and vibration isolation equipment for electrical equipment:

- A. Isolation pads
- B. Spring isolators
- C. Restrained spring isolators
- D. Channel support systems
- E. Restraint cables
- F. Hanger rod stiffeners
- G. Anchorage bushings and washers

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A Division 1
 - 1 Section 013000: Administrative Requirements
 - 2 Section 013300: Submittal Procedures
 - 3 Section 014000: Quality Requirements
 - 4 Section 016000: Product Requirements
 - 5 Section 017000: Execution and Closeout Requirements
 - 6 All other included sections under Division 1
- B All included sections under Division 26
- C All included sections under Division 27
- D All included sections under Division 28
- E Plans
- F Manufacturers' manuals, product bulletins, etc.

1.3 REFERENCE STANDARDS AND CODES

- A Published specifications standards, tests or recommended methods of trade, industry or government organizations apply to work in this section as cited in Section 260000.
- B American Society for Testing and Materials (ASTM)
 - 1 ASTM A36/A36M: Standard Specification for Carbon Structural Steel
 - 2 ASTM A325: Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 KSI Minimum Tensile Strength
 - 3 ASTM A563: Standard Specification for Carbon and Alloy Steel Nuts
 - 4 ASTM B633: Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel
 - 5 ASTM E488: Standard Test Methods for Strength of Anchors in Concrete Elements
 - 6 ASTM F594: Standard Specification for Stainless Steel Nuts
- C American Welding Society (AWS)
 - 1 AWS D1.1: Structural Welding Code - Steel
- D California Building Safety Codes (CBSC)
 - 1 California Building Code (CBC)
 - 2 California Electrical Code (CEC)

- E General Services Administration
 - 1 FF-S-325
 - 2 W-C-582: Conduit, Raceway, Metal and Fittings: Surface
 - 3 WW-H-171: Hanger and Support, Pipe
- F ICC Evaluation Service (ICC-ES)
 - 1 ESR-1917
- G National Electrical Contractors Association
 - 1 NECA 1: Standard Practice of Good Workmanship in Electrical Construction
- H Underwriters' Laboratories

1.4 QUALITY ASSURANCE

- A. Comply with seismic-restraint requirements in the IBC unless requirements in this Section are more stringent.
- B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- C. Seismic-restraint devices shall have horizontal and vertical load testing and analysis and shall bear anchorage preapproval OPA number from OSHPD, preapproval by ICC-ES, or preapproval by another agency meeting requirements of Part 1.6, showing maximum seismic-restraint ratings. Ratings based on independent testing are preferred to ratings based on calculations. If preapproved ratings are not available, submittals based on independent testing are preferred. Calculations (including combining shear and tensile loads) to support seismic-restraint designs must be signed and sealed by a qualified professional engineer.
- D. Comply with latest editions of the California Building Code and California Electric Code

1.5 SUBMITTALS

- A. Submit under provisions of Section 013000 or 013300.
- B. Submittals shall include the following:
 - 1. Table of contents
 - 2. A complete set of detailed manufacturer's specifications describing and illustrating all standard and special components and materials
 - 3. Part numbers
 - 4. Evidence of compliance with the applicable standards listed under Article 1.3 of this section
 - 5. Maintenance instructions and intervals
 - 6. A complete set of drawings for any special items
 - 7. Include rated load, rated deflection, and overload capacity for each vibration isolation device.
 - 8. Illustrate and indicate style, material, strength, fastening provision, and finish for each type and size of seismic-restraint component used.
 - a. Tabulate types and sizes of seismic restraints, complete with report numbers and rated strength in tension and shear as evaluated by an agency meeting requirements of Part 1.6.
 - b. Annotate to indicate application of each product submitted and compliance with requirements.

9. Restrained-Isolation Devices: Include ratings for horizontal, vertical, and combined loads.
- C. Electronic submittals shall be searchable
- D. Delegated-Design Submittal: For vibration isolation and seismic-restraint details indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified licensed structural engineer responsible for their preparation.
 1. Design Calculations:
 - a. Calculate static and dynamic loading due to equipment weight and operation, seismic forces required to select vibration isolators and seismic restraints.
 - b. Coordinate design calculations with wind-load calculations required for equipment mounted outdoors. Comply with requirements in other electrical Sections for equipment mounted outdoors.
 2. Indicate materials and dimensions and identify hardware, including attachment and anchorage devices.
 3. Field-fabricated supports.
 4. Seismic-Restraint Details:
 - a. Design Analysis: To support selection and arrangement of seismic restraints. Include calculations of combined tensile and shear loads.
 - b. Details: Indicate fabrication and arrangement. Detail attachments of restraints to the restrained items and to the structure. Show attachment locations, methods, and spacing. Identify components, list their strengths, and indicate directions and values of forces transmitted to the structure during seismic events. Indicate association with vibration isolation devices.
 - c. Preapproval and Evaluation Documentation: By an agency meeting requirements of Part 1.6, showing maximum ratings of restraint items and the basis for approval (tests or calculations).
- E. Welding certificates.
- F. Field quality-control test reports.
- G. The submittal shall be substantially complete for all items and equipment furnished under this section.
- H. Individual drawings and data sheets submitted at random intervals will not be accepted for review.
- I. Substitutions: Items of same function and performance shall be submitted in conformance with Division 1.

1.6 OPERATION AND MAINTENANCE MANUALS

- A Submit manuals at close out.
- B The manuals shall, at minimum, include the following:
 - 1 Manufacturer (including contact information)
 - 2 Model number
 - 3 Load ratings
 - 4 Material type(s)
 - 5 Environmental ratings
 - 6 Maintenance requirements
 - 7 Installation instructions

- 8 Repair instructions (where applicable)
- C Provide manuals in one of the following formats
 - 1 Three hardcopies
 - 2 PDF

1.7 PERFORMANCE REQUIREMENTS

Seismic-Restraint Loading:

- A. Site Class as Defined in the CBC: Refer to structural plans
- B. Assigned Seismic Use Group or Building Category as Defined in the CBC: Refer to structural plans
 - 1. Component Importance Factor: Refer to structural plans
 - 2. Component Response Modification Factor: Refer to structural plans
 - 3. Component Amplification Factor: Refer to structural plans
- C. Mapped Spectral Acceleration for Short Period (0.2 Second): S_s Refer to structural plans
- D. Site Coefficient for Short Period: F_a Refer to structural plans
- E. Maximum Spectral Response Acceleration for Short Period: S_{MS} Refer to structural plans
- F. Design Spectral Response Acceleration for Short Period: S_{DS} Refer to structural plans
- G. Mapped Spectral Acceleration for 1 Second Period: S_1 Refer to structural plans
- H. Site Coefficient for 1 Second Period: F_v Refer to structural plans
- I. Maximum Spectral Response Acceleration for 1 Second Period: S_{M1} Refer to structural plans
- J. Design Spectral Response Acceleration for 1 Second Period: S_{D1} Refer to structural plans

1.8 QUALIFICATIONS OF TESTING AGENCY

The testing agency shall meet the following requirements:

- A. Federal OSHA criteria for accreditation of testing laboratories, Standard Number 1910.7 (Definition and Requirements for a nationally recognized testing laboratory). Membership in the National Electrical Testing Association constitutes proof of meeting such criteria.
- B. Acceptable to authorities having jurisdiction.

PART 2 – PRODUCTS

2.1 VIBRATION ISOLATORS

- A. Pads:
 - 1. Arrange in single or multiple layers of sufficient stiffness for uniform loading over pad area, molded with a nonslip pattern and galvanized-steel baseplates, and factory cut to sizes that match requirements of supported equipment.
 - 2. Resilient Material: Oil and water resistant, waffle embossed neoprene.
- B. Spring Isolators: Freestanding, laterally stable, open-spring isolators.
 - 1. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.

2. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 3. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 4. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
 5. Baseplates: Factory drilled for bolting to structure and bonded to 1/4-inch- (6-mm-) thick, rubber isolator pad attached to baseplate underside. Baseplates shall limit floor load to 500 psig (3447 kPa).
 6. Top Plate and Adjustment Bolt: Threaded top plate with adjustment bolt and cap screw to fasten and level equipment.
- C. Restrained Spring Isolators: Freestanding, steel, open-spring isolators with seismic or limit-stop restraint.
1. Housing: Steel with resilient vertical-limit stops to prevent spring extension due to weight being removed; factory-drilled baseplate bonded to 1/4-inch- (6-mm-) thick, neoprene or rubber isolator pad attached to baseplate underside; and adjustable equipment mounting and leveling bolt that acts as blocking during installation.
 2. Restraint: Seismic or limit-stop as required for equipment and authorities having jurisdiction.
 3. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
 4. Minimum Additional Travel: 50 percent of the required deflection at rated load.
 5. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 6. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.

2.2 SEISMIC-RESTRAINT DEVICES

- A. General Requirements for Restraint Components: Rated strengths, features, and application requirements shall be as defined in reports by an agency meeting requirements of Part 1.6.
- B. Structural Safety Factor: Allowable strength in tension, shear, and pullout force of components shall be at least four (verify with structural engineer) times the maximum seismic forces to which they will be subjected.
- C. Channel Support System: MFMA-3, shop- or field-fabricated support assembly made of slotted steel channels with accessories for attachment to braced component at one end and to building structure at the other end and other matching components and with corrosion-resistant coating; and rated in tension, compression, and torsion forces.
- D. Restraint Cables: ASTM A 492 stainless-steel cables with end connections made of steel assemblies with thimbles, brackets, swivels, and bolts designed for restraining cable service; and with a minimum of two clamping bolts for cable engagement.
- E. Hanger Rod Stiffener: Steel tube or steel slotted-support-system sleeve with internally bolted connections or reinforcing steel angle clamped to hanger rod. Do not weld stiffeners to rods.
- F. Bushings for Floor-Mounted Equipment Anchor: Neoprene bushings designed for rigid equipment mountings and matched to type and size of anchors and studs.

- G. Bushing Assemblies for Wall-Mounted Equipment Anchorage: Assemblies of neoprene elements and steel sleeves designed for rigid equipment mountings and matched to type and size of attachment devices.
- H. Resilient Isolation Washers and Bushings: One-piece, molded, oil- and water-resistant neoprene, with a flat washer face.
- I. Mounting, Anchoring, and Attachment Components: Refer to Section 260529.
- J. Steel parts shall be hot dipped galvanized after fabrication for dry areas or stainless steel for damp or wet locations.

PART 3 – EXECUTION

3.1 APPLICATIONS

- A. Multiple Raceways or Cables: Secure raceways and cables to trapeze member with clamps approved for application by an agency meeting requirements of Part 1.6.
- B. Hanger Rod Stiffeners: Install hanger rod stiffeners where indicated or scheduled on Drawings to receive them and where required to prevent buckling of hanger rods due to seismic forces.
- C. Strength of Support and Seismic-Restraint Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static and seismic loads within specified loading limits.

3.2 SEISMIC-RESTRAINT DEVICE INSTALLATION

- A. Equipment and Hanger Restraints:
 - 1. Install restrained isolators on electrical equipment.
 - 2. Install resilient, bolt-isolation washers on equipment anchor bolts where clearance between anchor and adjacent surface exceeds 0.125 inch (3.2 mm).
 - 3. Install seismic-restraint devices using methods approved by an agency meeting requirements of Part 1.6 providing required submittals for component.
- B. Install bushing assemblies for mounting bolts for wall-mounted equipment, arranged to provide resilient media where equipment or equipment-mounting channels are attached to wall.
- C. Attachment to Structure: If specific attachment is not indicated, anchor bracing to structure at flanges of beams, at upper truss chords of bar joists, or at concrete members.
- D. Drilled-in Anchors:
 - 1. Identify position of reinforcing steel and other embedded items prior to drilling holes for anchors. Do not damage existing reinforcing or embedded items during coring or drilling. Notify the structural engineer if reinforcing steel or other embedded items are encountered during drilling. Locate and avoid prestressed tendons, electrical and telecommunications conduit, and gas lines.
 - 2. Do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength.

3. Wedge Anchors: Protect threads from damage during anchor installation. Heavy-duty sleeve anchors shall be installed with sleeve fully engaged in the structural element to which anchor is to be fastened.
4. Adhesive Anchors: Clean holes to remove loose material and drilling dust prior to installation of adhesive. Place adhesive in holes proceeding from the bottom of the hole and progressing toward the surface in such a manner as to avoid introduction of air pockets in the adhesive.
5. Set anchors to manufacturer's recommended torque, using a torque wrench.
6. Install zinc-coated steel anchors for interior and stainless-steel anchors for exterior applications.

3.3 ACCOMMODATION OF DIFFERENTIAL SEISMIC MOTION

Install flexible connections in runs of raceways, cables, wireways, cable trays, and busways where they cross seismic joints, where adjacent sections or branches are supported by different structural elements, and where they terminate with connection to equipment that is anchored to a different structural element from the one supporting them as they approach equipment.

3.4 FIELD QUALITY CONTROL

Tests and Inspections:

- A. Obtain Architect's approval before transmitting test loads to structure. Provide temporary load-spreading members.
- B. Test at least 10% of each type and size of installed anchors and fasteners selected by Architect.
- C. Test to 90 percent of rated proof load of device.
- D. Measure isolator restraint clearance.
- E. Measure isolator deflection.
- F. Verify snubber minimum clearances.
- G. If a device fails test, modify all installations of same type and retest until satisfactory results are achieved.
- H. Remove and replace malfunctioning units and retest as specified above.
- I. Prepare test and inspection reports.

3.5 ADJUSTING

- A. Adjust isolators after isolated equipment is at operating weight.
- B. Adjust limit stops on restrained spring isolators to mount equipment at normal operating height. After equipment installation is complete, adjust limit stops so they are out of contact during normal operation.
- C. Adjust active height of spring isolators.
- D. Adjust restraints to permit free movement of equipment within normal mode of operation.

3.6 ELECTRICAL VIBRATION-CONTROL AND SEISMIC-RESTRAINT DEVICE SCHEDULE

- A. Provide the owner with a schedule of all major supported or suspended electrical equipment. Include the following.
 - 1. Equipment Location
 - 2. Pads:
 - a. Material
 - b. Thickness
 - c. Durometer
 - d. Number of Pads
 - 3. Isolator Type
 - 4. Component Importance Factor
 - 5. Component Response Modification Factor
 - 6. Component Amplification Factor
- B. Provide the owner with cut sheets for all other support equipment.

END OF SECTION

SECTION 260800 - COMMISSIONING OF ELECTRICAL SYSTEMS**PART 1 – GENERAL****1.1 SECTION INCLUDES**

- A Testing in conformity with equipment applicable to this project, applicable codes and authorities having jurisdiction
- B Test equipment requirements listed in this section shall apply to testing required by all other sections in Division 26, Division 27, and Division 28.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A Division 1
 - 1 Section 013000: Administrative Requirements
 - 2 Section 013300: Submittal Procedures
 - 3 Section 014000: Quality Requirements
 - 4 Section 016000: Product Requirements
 - 5 Section 017000: Execution and Closeout Requirements
 - 6 All other included sections under Division 1
- B All included sections under Division 26
- C All included sections under Division 27
- D All included sections under Division 28
- E Plans
- F Manufacturers' manuals, product bulletins, etc.

1.3 REFERENCE STANDARDS AND CODES

- A Published specifications standards, tests or recommended methods of trade, industry or government organizations apply to work in this section as cited in Section 260000.
- B California Electrical Code
- C International Electrical Testing Association (NETA)
 - 1 NETA ATS: for Acceptance Testing Specifications for Electrical Power Equipment and Systems
- D Institute of Electrical and Electronic Engineers
 - 1 IEEE 81: Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System Part 1: Normal Measurements
 - 2 IEEE 82: Standard Test Procedure for Impulse Voltage Tests on Insulated Conductors
 - 3 IEEE 95: Standard Test Procedure for Impulse Voltage Tests on Insulated Conductors
 - 4 IEEE 112: Standard Test Procedure for Polyphase Induction Motors and Generators
 - 5 IEEE 114: Standard Test Procedure for Single-Phase Induction Motors
 - 6 IEEE 115: IEEE Guide for Test Procedures for Synchronous Machines Part I—Acceptance and Performance Testing Part II—Test Procedures and Parameter Determination for Dynamic Analysis
 - 7 IEEE 141: Recommended Practice for Electric Power Distribution for Industrial Plants

- 8 IEEE 142: Recommended Practice for Grounding of Industrial and Commercial Power Systems
- 9 IEEE 241: Recommended Practice for Electric Power Systems in Commercial Buildings
- 10 IEEE 242: Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems (IEEE Buff Book)
- 11 IEEE 252: Standard Test Procedure for Polyphase Induction Motors Having Liquid in the Magnetic Gap
- 12 IEEE 259: Standard Test Procedure for Evaluation of Systems of Insulation for Dry-Type Specialty and General-Purpose Transformers
- 13 IEEE 389: Recommended Practice for Testing Electronics Transformers and Inductors
- 14 IEEE 393: Test Procedures for Magnetic Cores
- 15 IEEE 399: Recommended Practice for Industrial and Commercial Power Systems Analysis (Brown Book)
- 16 IEEE 400: Guide for Field Testing and Evaluation of the Insulation of Shielded Power Cable Systems Rated 5 kV and Above
- 17 IEEE 442: Guide for Soil Thermal Resistivity Measurements
- 18 IEEE 495: Guide for Testing Faulted Circuit Indicators
- 19 IEEE 576: Recommended Practice for Installation, Termination, and Testing of Insulated Power Cable as Used in Industrial and Commercial Applications
- 20 IEEE 1188: Recommended Practice for Maintenance, Testing, and Replacement of Valve-Regulated Lead-Acid (VRLA) Batteries for Stationary Applications
- 21 IEEE 1234: Guide for Fault Locating Techniques on Shielded Power Cable Systems
- 22 IEEE 1415: Guide for Induction Machinery Maintenance Testing and Failure Analysis
- 23 IEEE 1458: Recommended Practice for the Selection, Field Testing, and Life Expectancy of Molded Case Circuit Breakers for Industrial Applications
- E National Institute of Standards and Technology (NIST)
- F Underwriters' Laboratories
- 1 UL 1244: Electrical and Electronic Measuring and Testing Equipment
- 2 UL 1436: Outlet Circuit Testers and Similar Indicating Devices
- 3 UL 61010-2-030: Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-030: Particular requirements for testing and measuring circuits
- 4 UL 61010B-1: Electrical Measuring and Test Equipment – Part 1: General Requirements
- 5 UL 61010B-2-031: Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2: Particular Requirements for Hand-Held Probe Assemblies for Electrical Measurement and Test
- 6 UL 61010B-2-032: Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2: Particular Requirements for Hand-Held Current Clamps for Electrical Measurement and Test

1.4 QUALITY ASSURANCE

- A The Contractor shall engage and pay for the services of a recognized independent testing laboratory for the purpose of performing inspections and tests as herein specified.
- B The testing laboratory shall provide all material, equipment, labor and technical supervision to perform switch tests and inspections.
- C It is the intent of these tests to assure that all electrical equipment, both Contractor and Owner supplied, is operational within industry and manufacturer's tolerances and is installed in accordance with design specifications.
- D The tests and inspections shall determine the suitability for energizing.
- E Schedule tests and give a minimum of two weeks advance notice to the Owner.

1.5 SUBMITTALS

- A List of tests performed
- B Test procedures
- C Test results
- D The submittal shall be substantially complete for all items and equipment furnished under this section.
- E Individual drawings and data sheets submitted at random intervals will not be accepted for review.

1.6 QUALIFICATIONS OF TESTING AGENCY

The testing agency shall meet federal OSHA criteria for accreditation of testing laboratories, Standard Number 1910.7 (Definition and Requirements for a nationally recognized testing laboratory). International Electrical Testing Association (NETA) accreditation constitutes proof of meeting such criteria.

1.7 TEST INSTRUMENT TRACEABILITY

- A The testing laboratory shall have a calibration program which maintains all applicable test instrumentation within rated accuracy.
- B The accuracy shall be traceable to the National Institute of Standards and Technology (NIST) in an unbroken chain.
- C Instruments shall be calibrated in accordance with the following frequency schedule:
 - 1 Field instruments: 6 months maximum.
 - 2 Laboratory instruments: 12 months.
 - 3 Leased specialty equipment: 12 months
- D Dated calibration labels shall be visible on all test equipment.

1.8 FINAL SETTINGS

- A The test report shall include the following: summary of project, description of equipment tested, description of test, list of test equipment used in calibration and calibration date, test results, conclusions and recommendations, and appendix, including appropriate test forms.
- B The test report shall be bound and its contents certified.
- C Submit three copies of the completed report to the architect, or engineer if no architect is involved, no later than fifteen (15) days after completion of test, unless otherwise directed.

1.9 FAILURE TO TEST

- A Any system material or workmanship which is found defective on the basis of acceptance tests shall be reported directly to the architect or engineer if no architect is involved.
- B Contractor shall replace the defective material or equipment and have test repeated until test proves satisfactory without additional cost to the Owner.

PART 2 – PRODUCTS: [NOT USED]

PART 3 – EXECUTION

3.1 GROUND RESISTANCE TEST

- A Building ground electrode resistance testing shall be accomplished with a ground resistance, direct-reading, single test meter utilizing the Fall-of-Potential method and two (2) referenced electrodes. Perform test prior to interconnection to other grounding system. Orient the concrete-encased ground electrode to be tested and the two referenced electrodes in straight line spaces fifty (50) feet apart. Drive the two (2) reference electrodes ten (10) feet deep.
- B Test results shall be in writing, and shall show temperature, humidity and condition of the soil at the time of the tests. In the case where the ground resistance exceeds 25 ohms, add an additional ground rod and retest. Add additional ground rods when necessary in order to bring the ground resistance below 25 Ohms. All testing shall be done prior to concrete pour and in the presence of the inspector of record. Provide test results for engineer review.

3.2 MISCELLANEOUS TESTING

- A Functional and operational testing to the fire alarm, security system, telephone system, paging/intercom system, and all electrical components upon completion of electrical work.
- B Perform an insulation resistance test on all switchboard busses, bus ducts; feeder conductors, including neutrals, using a megohmmeter. Minimum value for each conductor shall be 20 megohms.

3.3 ELECTRICAL DISTRIBUTION EQUIPMENT OPERATIONAL CHECK

- A Electrical distribution equipment operational check includes main switchboards, distribution boards, panelboards, panels, switchgear, etc.
- B Verify proper operating condition of all equipment mechanically and electrically including, but not limited to verifying operation of each circuit breaker trip device with a rating of 100A or more using an accurately metered timed instrument (by passing 300% rated current through each pole).
- C If any equipment is found defective during operational check, it shall be replaced by the Contractor without cost to the Owner. The tests shall be repeated by the Contractor without cost to the owner until satisfactory results are obtained.

END OF SECTION

SECTION 262416 - PANELBOARDS**PART 1 – GENERAL****1.1 SECTION INCLUDES**

Lighting and Appliance Panelboards

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A Division 1
 - 1 Section 013000: Administrative Requirements
 - 2 Section 013300: Submittal Procedures
 - 3 Section 014000: Quality Requirements
 - 4 Section 016000: Product Requirements
 - 5 Section 017000: Execution and Closeout Requirements
 - 6 All other included sections under Division 1
- B All included sections under Division 26
- C All included sections under Division 27
- D All included sections under Division 28
- E Plans
- F Manufacturers' manuals, product bulletins, etc.

1.3 REFERENCE STANDARDS AND CODES

- A Published specifications standards, tests or recommended methods of trade, industry or government organizations apply to work in this section as cited in Section 260000.
- B California Electrical Code
- C California Building Code
- D Institute of Electrical and Electronic Engineers (IEEE)
 - 1 IEEE 81: Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System
 - 2 IEEE 100: The Authoritative Dictionary of IEEE Standards Terms
 - 3 IEEE C2 National Electrical Safety Code
 - 4 IEEE C12.16: Solid-State Electricity Meters
 - 5 IEEE C37.13: Standard for Low-Voltage AC Power Circuit Breakers Used in Enclosures
 - 6 IEEE C37.20.1: Standard for Metal-Enclosed Low-Voltage Power Circuit-Breaker Switchgear
 - 7 IEEE C37.90.1: Standard for Surge Withstand Capability (SWC) Tests for Relays and Relay Systems Associated with Electric Power Apparatus
 - 8 IEEE C57.12.28: Standard for Pad-Mounted Equipment - Enclosure Integrity
 - 9 IEEE C57.13: Standard Requirements for Instrument Transformers
- E National Electrical Manufacturers' Association
 - 1 NEMA 250: Enclosures for Electrical Equipment (1000 Volts Maximum)
 - 2 NEMA PB 2: Deadfront Distribution Switchboards
 - 3 NEMA PB 2.1: General Instructions for Proper Handling, Installation, Operation and Maintenance of Deadfront Distribution Switchboards Rated 600 V or Less

- 4 NEMA ST 20: Standard for Dry-Type Transformers for General Applications
- 5 NEMA 12.10: Physical Aspects of Watthour Meters - Safety Standards
- F National Electrical Testing Association (NETA)
 - 1 NETA ATS: Standard for Acceptance Testing Specifications for Electrical Power Equipment and Systems
- G Underwriters' Laboratories (UL)
 - 1 UL 50: Enclosures for Electrical Equipment, Non-environmental Considerations
 - 2 UL 50E: Enclosures for Electrical Equipment, Environmental Considerations
 - 3 UL 467: Grounding and Bonding Equipment
 - 4 UL 486A: Wire Connectors
 - 5 UL 486B: Wire Connectors
 - 6 UL 486E: Equipment Wiring Terminals for Use with Aluminum and/or Copper Conductors
 - 7 UL 489: Molded Case Circuit Breakers, Molded Case Switches, and Circuit Breaker Enclosures
 - 8 UL 891: Switchboards
 - 9 UL 1053: Ground-fault Sensing and Relaying Equipment
 - 10 UL 1059: Terminal Blocks
 - 11 UL 1558: Standard for Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear
 - 12 UL 2735: Electric Utility Meters
 - 13 UL 60947-1: Low-Voltage Switchgear and Controlgear – Part 1: General Rules
 - 14 UL 60947-7-1: Low-voltage switchgear and controlgear – Part 7-1: Ancillary equipment - Terminal blocks for copper conductors
 - 15 UL 60947-7-2: Low-Voltage Switchgear and Controlgear - Part 7-2: Ancillary Equipment - Protective Conductor Terminal Blocks for Copper Conductors

1.4 QUALITY ASSURANCE

- A Equipment and accessories shall be the product of a manufacturer regularly engaged in its manufacture.
- B Supply equipment and accessories new, free from defects.
- C Supply equipment and accessories in compliance with the applicable standards listed in Article 1.3 of this section and with applicable national, state and local codes.
- D Items of a given type shall be the products of the same manufacturer.
- E Ship equipment in its original packages to prevent damaging or entrance of foreign matter. Perform handling and shipping in accordance with manufacturer's recommendations. Provide protective covering during construction.
- F Replace at no expense to Owner, equipment or material damaged during storage or handling, as directed by the engineer.
- G Tag items with a weatherproof tag identifying equipment by name and purchase order number. Include packing and shipping lists.

1.5 SUBMITTALS

- A Submit under provisions of Section 013000 or 013300.
- B Submittals shall include the following:
 - 1 Table of contents
 - 2 A complete set of detailed manufacturer's specifications describing and illustrating all standard and special components and materials
 - 3 Part numbers
 - 4 Evidence of compliance with the applicable standards listed under Article 1.3 of this section
 - 5 Maintenance instructions and intervals
 - 6 Calibration procedures and intervals
- C Submit shop drawings that include:
 - 1 Complete fabrication details
 - 2 Elevations and sections of enclosure(s)
 - 3 Dimensions of enclosure(s)
 - 4 Space available for conduits
 - 5 Voltage, ampacity, short circuit, and enclosure ratings
 - 6 Short circuit withstand ability of bus and lowest rated device,
 - 7 Circuit schedule showing circuit number, device description, circuit breaker frame ampere rating and trip or fuse clip ampere rating
 - 8 Termination lug size
 - 9 Feeder identification
 - 10 Single line diagram
 - 11 Include both elementary diagram and terminal to terminal wiring diagrams.
- D Electronic submittals shall be searchable
- E The submittal shall be substantially complete for all items and equipment furnished under this section.
- F Individual drawings and data sheets submitted at random intervals will not be accepted for review.
- G Substitutions: Items of same function and performance shall be in conformance with Division 1. The Contractor shall provide a comparison of the proposed substitute with the specified equipment for review by the Engineer.
- H Submit field test and operations check report for circuit breakers under provisions of Section 260500.

1.6 OPERATION AND MAINTENANCE MANUALS

- A Submit operation and maintenance manuals in accordance with Section 260000.
- B The manuals shall, at minimum, include the following:
 - 1 Manufacturer (including contact information)
 - 2 Model number
 - 3 Manufacturer's data sheets – When data sheets include more than one model the model(s) used shall be noted
 - 4 Manufacturer's user and maintenance manual(s), including trouble-shooting guidelines
 - 5 Configuration settings
 - 6 Wiring diagrams
 - 7 Voltage ratings
 - 8 Current ratings
 - 9 List of capabilities
 - 10 Environmental ratings

- 11 NEMA enclosure type
- 12 Maintenance requirements
- 13 Installation instructions
- 14 Repair instructions
- C Provide manuals in one of the following formats
 - 1 Three hardcopies
 - 2 PDF

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A Square D Company
 - 1 I-LINE
 - 2 NQ
 - 3 NF
- B Equals
 - 1 General Electric
 - 2 Eaton/Cutler-Hammer
 - 3 Approved equal

2.2 TYPE NQ PANELBOARD

- A Interior
 - 1 Shall be type NQ panelboard or approved equal rated for 240V_{AC}/48V_{DC} maximum. Continuous main current ratings, as indicated on associated schedules, not to exceed 600 amperes maximum.
 - 2 Minimum short circuit current rating: 22000AIC as indicated in rms symmetrical amperes at 240V_{AC}.
 - 3 Provide one (1) continuous bus bar per phase. Each bus bar shall have sequentially phased branch circuit connectors suitable for plug-on or bolt-on branch circuit breakers. The bussing shall be fully rated. Panelboard bus current ratings shall be determined by heat-rise tests conducted in accordance with UL 67. Bussing rated 100-400 amperes shall be copper. Bussing shall be copper as standard construction.
 - 4 Interior trim shall be of dead-front construction to shield user from energized parts. Dead-front trim shall have pre-formed twistouts covering unused mounting space.
- B Main Circuit Breaker
 - 1 Main circuit breakers shall have an over-center, trip-free, toggle mechanism which will provide quick-make, quick-break contact action. Circuit breakers shall have a permanent trip unit with thermal and magnetic trip elements in each pole. Each thermal element shall be true rms sensing and be factory calibrated to operate in a 40°C ambient environment. Thermal elements shall be ambient compensating above 40°C.
 - 2 Two- and three-pole circuit breakers shall have common tripping of all poles. Circuit breakers frame sizes above 100 amperes shall have a single magnetic trip adjustment located on the front of the circuit breaker which allows the user to simultaneously select the desired trip level of all

- poles. Circuit breakers shall have a push-to-trip button for maintenance and testing purposes.
- 3 Breaker handle and faceplate shall indicate rated ampacity. Standard construction circuit breakers shall be UL Listed for reverse connection without restrictive line or load markings.
 - 4 Lugs shall be UL Listed to accept solid or stranded copper and aluminum conductors 90°C rated wire, sized according to the 75°C temperature rating per CEC Table 310-16.
- C Enclosures
- 1 Type 1 Boxes
 - a Boxes shall be galvanized steel constructed in accordance with UL 50 requirements.
 - b Boxes shall have removable end walls with knockouts located on one end. Boxes shall have welded interior mounting studs. Interior mounting brackets are not required.
 - c Box width shall be 20 in wide.
 - 2 Type 1 Fronts
 - a Front shall meet strength and rigidity requirements per UL 50 standards.
 - b Front shall have cylindrical tumbler type lock with catch and spring-loaded stainless steel door pull. All lock assemblies shall be keyed alike. Two (2) keys shall be provided with each lock. A clear plastic directory card holder shall be mounted on the inside of door.
 - c All electrical busses shall be copper.
 - 3 Type 3R, 5, and 12
 - a Enclosures shall be constructed in accordance with UL 50 requirements
 - b All doors shall be gasketed and equipped with a tumbler type vault lock. All lock assemblies shall be keyed alike. One (1) key shall be provided with each lock. A clear plastic directory card holder shall be mounted on the inside of door.
 - c Maximum enclosure dimensions shall not exceed 20 in wide and 6.5 in deep.

2.3 TYPE NF PANELBOARD

- A Interior
- 1 Shall be type NF panelboard for 480Y/277V_{AC} maximum. Continuous main current ratings, as indicated on associated schedules, not to exceed 600 amperes maximum.
 - 2 Minimum Short Circuit Rating: 14000 as indicated rms symmetrical amperes at 480Y/277V_{AC}.
 - 3 Provide one (1) continuous bus bar per phase. Each bus bar shall have sequentially phased branch circuit connectors limited to bolt-on branch circuit breakers. The bussing shall be fully rated. Panelboard bus current ratings shall be determined by heat-rise tests conducted in accordance with UL 67. Bussing rated 100-400 amperes shall be copper. Bussing rated for 600 amperes shall be copper as standard construction.

- 4 Interior trim shall be of dead-front construction to shield user from energized parts. Dead-front trim shall have pre-formed twistouts covering unused mounting space.
- B Main Circuit Breaker
 - 1 Main circuit breakers shall have an over-center, trip-free, toggle mechanism which will provide quick-make, quick-break contact action. Circuit breakers shall have a permanent trip unit with thermal and magnetic trip elements in each pole. Each thermal element shall be true rms sensing and be factory calibrated to operate in a 40°C ambient environment. Thermal elements shall be ambient compensating above 40°C.
 - 2 Two- and three-pole circuit breakers shall have common tripping of all poles. Circuit breakers frame sizes above 100 amperes shall have a single magnetic trip adjustment located on the front of the breaker which allows the user to simultaneously select the desired trip level of all poles. Circuit breakers shall have a push-to-trip button for maintenance and testing purposes.
 - 3 Circuit breaker handle and faceplate shall indicate rated ampacity. Standard construction circuit breakers shall be UL Listed for reverse connection without restrictive line or load markings.
 - 4 Lugs shall be UL Listed to accept solid or stranded copper and aluminum conductors. Lugs shall be suitable for 90°C rated wire, sized according to the 75°C temperature rating per CEC Table 310-16.
- C Enclosures
 - 1 Type 1 Boxes
 - a Boxes shall be galvanized steel constructed in accordance with UL 50 requirements.
 - b Boxes shall have removable end walls with knockouts located on one end. Boxes shall have welded interior mounting studs. Interior mounting brackets are not required.
 - 2 Type 1 Fronts
 - a Front shall meet strength and rigidity requirements per UL 50 standards.
 - b Front shall have flat latch type lock with catch and spring loaded stainless steel door pull. All lock assemblies shall be keyed alike. One (1) key shall be provided with each lock. A clear plastic directory card holder shall be mounted on the inside of door.
 - 3 Type 3R, 5, and 12
 - a Enclosures shall be constructed in accordance with UL 50 requirements
 - b All doors shall be gasketed and equipped with a tumbler type vault lock and two (2) additional trunk type latches. All lock assemblies shall be keyed alike. One (1) key shall be provided with each lock. A clear plastic directory card holder shall be mounted on the inside of door.
 - c Maximum enclosure dimensions shall not exceed 21 inches wide and 8 inches deep.

2.4 ENCLOSURE FINISH

- A The completed enclosure shall be degreased and cleaned.
- B After the cleaning process is finished, the enclosure shall be phosphatized.
- C After the phosphatizing, the enclosure shall receive an electrostatic deposition of polyester powder coating followed by baking to produce a hard durable finish.
 - 1 The minimum thickness of the paint film shall be 2.0 mils.
 - 2 For the exterior of transformer tank, interior and exterior of primary and secondary cable compartments the minimum total dry film thickness shall be 3.5 mils.
 - 3 Paint film shall be uniform in color and free from blisters, sags, flaking and peeling
- D Finish shall conform to UL 50 and UL 50E.
- E Color shall be ANSI 61 Gray.
- F Coat underside surfaces of equipment outdoors or in damp locations with a corrosion resistant coating.

2.5 NAMEPLATES

Provide and install nameplates per Section 260500.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install all equipment per manufacturers' instructions.
- B. Test all equipment per manufacturer's instructions.
- C. Mount panelboards with center of top circuit breaker handle no higher than 78" above finished floor. Install flush mounted panelboards as indicated on architectural interior elevation drawings. Provide all necessary blocking, channels and other hardware for securing panelboards to wall, column or other parts of building structure.
- D. Submit three copies of the certified list for permanent record to be referenced to in the event of failure of any motor either within or beyond expiration of the warranty period.

3.2 GROUNDING

- A. Ground equipment per manufacturer's instructions, Section 260500, and applicable codes.
- B. Minimize resistance from device to ground.
- C. Resistance from device to ground shall not exceed 25 ohms.

3.3 LOAD BALANCING

If the contractor changes circuiting from the panel schedule on the approved plans, the contractor shall be responsible to ensure that the loads on any two phases differ by no more than 5%.

3.4 IDENTIFICATION

- A Provide nameplate identifying panel on exterior of panel per requirements in Section 260500.
- B Provide type written panel schedule on interior of door.

END OF SECTION

SECTION 265000 - LIGHTING**PART 1 – GENERAL****1.1 SECTION INCLUDES**

This section includes materials, equipment fabrication, installation and tests in conformity with applicable codes and authorities having jurisdiction, for lighting fixtures and installation.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A Division 1
 - 1 Section 013000: Administrative Requirements
 - 2 Section 013300: Submittal Procedures
 - 3 Section 014000: Quality Requirements
 - 4 Section 016000: Product Requirements
 - 5 Section 017000: Execution and Closeout Requirements
 - 6 All other included sections under Division 1
- B All included sections under Division 26
- C All included sections under Division 27
- D All included sections under Division 28
- E Plans
- F Manufacturers' manuals, product bulletins, etc.

1.3 REFERENCE STANDARDS AND CODES

- A. Published specifications standards, tests or recommended methods of trade, industry or government organizations apply to work in this section as cited in Section 260000.
- B. California Electrical Code
- C. Illuminating Engineering Society: The Lighting Handbook
- D. Underwriters' Laboratories
 - 1. UL 50: Enclosures for Electrical Equipment, Non-environmental Considerations
 - 2. UL 50E: Enclosures for Electrical Equipment, Environmental Considerations
 - 3. UL 924: Emergency Lighting and Power Equipment
 - 4. UL 1598: Luminaires
 - 5. UL 2575: Standard for Lithium Ion Battery Systems for Use in Electric Power Tool and Motor Operated, Heating and Lighting Appliances
 - 6. UL 8750: Light Emitting Diode Equipment for Use in Lighting Products

1.4 QUALITY ASSURANCE

- A. Equipment and accessories shall be the product of a manufacturer regularly engaged in its manufacture.
- B. Supply equipment and accessories new, free from defects.
- C. Supply equipment and accessories in compliance with the applicable standards listed in Article 1.3 of this section and with applicable national, state and local codes.

- D. Items of a given type shall be the products of the same manufacturer.
- E. Ship equipment in its original packages to prevent damaging or entrance of foreign matter. Perform handling and shipping in accordance with manufacturer's recommendations. Provide protective covering during construction.
- F. Replace at no expense to Owner, equipment or material damaged during storage or handling, as directed by the engineer.
- G. Tag items with a weatherproof tag identifying equipment by name and purchase order number. Include packing and shipping lists.

1.5 SUBMITTALS

- A. Submit under provisions of Section 013000 or 013300.
- B. Submittals shall include the following:
 - 1. Table of contents
 - 2. A complete set of detailed manufacturer's specifications describing and illustrating all standard and special components and materials
 - 3. Part numbers
 - 4. Evidence of compliance with the applicable standards listed under Article 1.3 of this section
 - 5. Maintenance instructions and intervals
 - 6. Calibration procedures and intervals
 - 7. A complete set of drawings for any special items
 - 8. Wiring diagrams
 - 9. Drawings shall include designations, dimensions, operating controls, instruments, riser diagrams, routing diagrams etc.
- C. Electronic submittals shall be searchable
- D. The submittal shall be substantially complete for all items and equipment furnished under this section.
- E. Individual drawings and data sheets submitted at random intervals will not be accepted for review.
- F. Substitutions: Items of same function and performance shall be submitted in conformance with Division 1.
- G. Pole mounted fixtures, including complete data on the pole material, finish, handholes, anchoring and attachment. Support method shall be submitted for interior fixtures weighing more than fifty (50) pounds.

1.6 OPERATION AND MAINTENANCE MANUALS

- A. Submit operation and maintenance manuals in accordance with Section 260000.
- B. The manuals shall, at minimum, include the following:
 - 1. Manufacturer (including contact information)
 - 2. Model number
 - 3. Programming manual (where applicable)
 - 4. Wiring diagrams
 - 5. Trouble-shooting guidelines (where applicable)
 - 6. Voltage ratings
 - 7. Current ratings
 - 8. Calibrated range (where applicable)
 - 9. List of capabilities
 - 10. Environmental ratings
 - 11. NEMA enclosure type

- 12 Maintenance requirements
- 13 Installation instructions
- 14 Repair instructions (where applicable)
- C Provide manuals in one of the following formats
 - 1 Three hardcopies
 - 2 PDF

PART 2 – PRODUCTS

2.1 GENERAL

- A. Furnish and install all fixtures complete, whips, conductors, etc. and ready for service.
- B. Fixture Designation: Fixtures are designated on Drawings by means of letters. See Lighting Fixture Schedule. Where only one (1) fixture designation appears in a room or area, that designation applies to all fixtures in that room or area.
- C. Tandem wired units acceptable where appropriate.
- D. Manufacturers and models for fixtures shall be as shown on the fixture schedule or approved equal.

2.2 FIXTURES

- A Linear fixtures
 - 1 Fixture housings shall be steel.
 - 2 Housing shall be painted after fabrication with white, electro-statically deposited paint. Housing shall be completely covered with paint to prevent corrosion.
- B All lenses shall be clear, prismatic, 0.125", K12 pattern, acrylic lenses.
- C Louvers shall be semi-specular aluminum.
- D Open can light reflectors shall be semi-specular aluminum.
- E Fixtures installed in gyms and similar rooms, locker rooms, storage rooms, and warehouses shall include stainless steel wireguards to protect fixture from damage.
- F Fixtures shall direct a minimum of 75% of light within zone below 30 degrees below horizontal.

2.3 DRIVERS

- A. Total harmonic distortion
- B. Dimming
- C. Lumens/watt
- D. Emergency drivers
 - 1. Minimum output of 10 Watts
 - 2. Indoor: Nickel-cadmium battery with operating range of 32°F to 131°F
 - 3. Outdoor: Nickel metal hydride with operating range of -4°F to 140°F

2.4 LED ARRAY

- A. All LEDs shall have a color rendering index (CRI) of 0.8 unless otherwise noted.

- B. All LEDs shall have a corrected color temperature (CCT) of 4000K unless otherwise noted.
- C. The minimum L70 life shall 60,000 hours. The reported L70 life shall not exceed 6 times the LM-80 test period. Testing, calculations, and reports shall comply with IES LM-80, TM-21, and TM-28.

2.5 EXIT SIGNS

- A. All exit signs shall be connected to an unswitched source.
- B. Colors
 - 1. Face shall be white.
 - 2. Letters and arrows shall be green.
- C. Exit signs shall have arrows to indicate direction of exit where necessary.
- D. All exit signs shall include batteries to provide 90 minutes of illumination in the event of a power outage.

2.6 FIXTURE HANGERS AND SUPPORTS

- A. Provide proper supports and mounting accessories, such as hangers, stems, yokes, plaster frames, etc., as required by the type of ceiling installed.
- B. Where pendant mounted fixtures with stems are specified, provide swivel canopies or ball aligners in order to hang plumb regardless of ceiling slope.
- C. Entire assemblies shall comply with state earthquake resistance/ bracing guidelines.

2.7 POLES

- A. The minimum pole shall be capable of supporting the weights and effective projected areas listed below in 100 MPH winds:
 - 1. 20 foot tall: $W_{MAX}=390\text{lbs}$, $EPA_{MAX}=15.6\text{FT}^2$
 - 2. 25 foot tall: $W_{MAX}=495\text{lbs}$, $EPA_{MAX}=19.8\text{FT}^2$
 - 3. 30 foot tall: $W_{MAX}=550\text{lbs}$, $EPA_{MAX}=22.0\text{FT}^2$
 - 4. 35 foot tall: $W_{MAX}=363\text{bs}$, $EPA_{MAX}=14.5\text{FT}^2$
 - 5. 39 foot tall: $W_{MAX}=475\text{lbs}$, $EPA_{MAX}=19.0\text{FT}^2$
 - 6. 45 foot tall: $W_{MAX}=475\text{lbs}$, $EPA_{MAX}=19.0\text{FT}^2$
 - 7. 50 foot tall: $W_{MAX}=340\text{lbs}$, $EPA_{MAX}=13.6\text{FT}^2$
- B. Anchoring
 - 1. Concrete base depth and anchor bolt length shall be as shown on plans.
 - 2. In no case shall the concrete base embedment depth be less than 20% of the pole height.
 - 3. Minimum anchor bolt length is 10% of the pole height.
 - 4. Minimum anchor bolt diameter is 1 inch.
- C. Coordinate with architect for pole color.
- D. Poles shall be made of ATSM A595, Grade A steel.

2.8 GROUNDING

- A. Fixtures shall have factory installed grounding studs.
- B. All fixtures shall be capable of being grounded.

2.9 LIGHTING CONTROLS

Refer to Section 265700.

PART 3 – EXECUTION

3.1 GENERAL

- A. Verify ceiling type and conditions. Order fixtures designed for conditions and the type of ceiling installed.
- B. Architectural reflected ceiling plans shall be used to determine exact locations of lighting fixtures.
- C. Determine exact location and height of fixtures by the structural and mechanical limitations of the building. Install fixtures in such a manner as to avoid such obstructions and to give proper illumination result. Verify layouts with architect.
- D. All recessed lighting fixtures shall be wired from adjacent junction boxes utilizing 6' flexible metal conduit to permit future fixture relocation. Outlet box for surface or stem mounted fixtures shall be provided with fixture stud as well as tapped and drilled canopy covers. All outlets shall finish flush with walls or ceiling except where in ceiling tiles, locate these in the center of a tile or at the intersection of four (4) tiles.
- E. All building mounted fixtures shall be supported from the building structural members. Provide all necessary blocking and hardware so that fixtures installed suspended below grid type ceiling shall be supported independently of the grid system at a minimum of four (4) points per 4' long fixture.
- F. Minimum mounting provisions for closed ceiling (surface) mounted fluorescent lighting fixtures in ceilings other than grid type shall be as follows:
 - 1. 4' long fixture body: By a pair of 3/8" machine bolts separated by a maximum distance possible and located 4 inches in from each end of fixture - total of four (4) bolts per fixture.
- G. Support for fixtures installed in suspended ceilings shall conform to Section 4701 of Title 24, Part 2.
- H. When installed in grid type ceiling, a slack #12 gauge galvanized tie wire permanently attached to the structure shall be provide at four (4) corners of each 4' long fixture.
- I. At fire rated ceiling, provide sheet rock at top and at all sides of recessed mounted lighting fixtures.
- J. Ground all fixtures.

END OF SECTION

**PAYMENT BOND - PUBLIC WORK
SECTIONS 3247 - 3252, CIVIL CODE
(CALIFORNIA)**

NATIONWIDE MUTUAL
INSURANCE COMPANY **SURETY COMPANY**

Bond No. 7901171570
Premium: Included in Conjunction with
Performance Bond

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, The COUNTY OF FRESNO has awarded to BETTER ENTERPRISES, INC.

as Contractor, a contract for the work described as follows: Central Library Ceiling and Lighting Upgrades Contract No. 25-S-01

AND WHEREAS, Said Contractor is required to furnish a bond in connection with said contract, to secure the payment of claims of laborers, mechanics, materialmen, and other persons as provided by law.

NOW, THEREFORE, We the undersigned Contractor and Surety are held and firmly bound unto the County of Fresno in the amount required by law, the sum of \$ **4,660,300.00**, for which payment well and truly to be made we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That if said Contractors shall fail to pay (1) Any of the persons named in Civil Code Section 3181, (2) amounts due under the Unemployment Insurance Code for work or labor performed in connection with said contract by any such claimant, or (3) any amounts required to be deducted, withheld and paid over to the Employment Development Department and to the Franchise Tax Board from wages of the employees of Contractor and his sub-contractors with respect to such work and labor, pursuant to Section 13020 of the Unemployment Insurance Code, then the Surety or Sureties herein will pay for the same in an aggregate amount not exceeding the sum specified in this bond, and also in case suit is brought upon the bond, a reasonable attorney's fee, to be fixed by the court, otherwise the above obligation shall be void.

This bond shall inure to the benefit of any of the persons named in Civil Code Section 3181 so as to give a right of action to such persons or their assigns in any suit brought upon this bond.

This bond is executed and filed to comply with the provisions of the act of Legislature of the State of California as designated in Civil Code, Sections 3247 - 3252 inclusive, and all amendments thereto.

IN WITNESS WHEREOF, We have hereunto set our hands and seals on this 11th day of February, 2026.

BETTER ENTERPRISES, INC.
Marc Kerhachian, President
Contractor

NATIONWIDE MUTUAL INSURANCE
COMPANY **SURETY COMPANY**

By [Signature]
Karen Amin, Attorney-In-Fact

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of Fresno

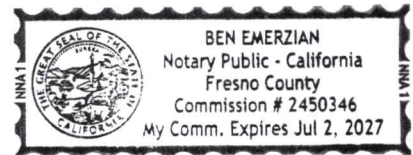
On 02-12-2026 before me, Ben Emerzian, Notary Public
(insert name of the officer)

personally appeared Marc Kerkochian,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are
subscribed to the within instrument and acknowledged to me that he/she/they executed the same in
his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing
paragraph is true and correct.

WITNESS my hand and official seal.

Signature Ben Emerzian (Seal)



ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of San Joaquin

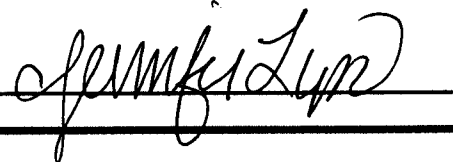
On February 11, 2026 before me, Jennifer Loper, Notary Public
(insert name and title of the officer)

personally appeared Karen Amin
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~
subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in
his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

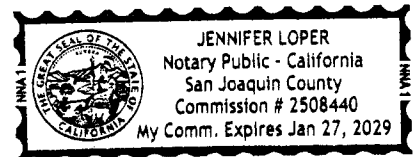
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature



(Seal)



Bond No. 7901171570

Premium: \$44,702.00

Document A312™ – 2010

Conforms with The American Institute of Architects AIA Document 312

Performance Bond

CONTRACTOR:

(Name, legal status and address)

BETTER ENTERPRISES, INC.
1148 N. Cypress Avenue
Fresno, CA 93727

SURETY:

(Name, legal status and principal place of business)

NATIONWIDE MUTUAL INSURANCE COMPANY
1100 Locust Street - Dept. 2006
Des Moines, IA 50391-2006

Mailing Address for Notices

101 California St., Ste. 900
San Francisco, CA 94111

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:

(Name, legal status and address)

COUNTY OF FRESNO
2220 Tulare St., 7th Floor
Fresno, CA 93721

CONSTRUCTION CONTRACT

Date: February 10, 2026

Amount: \$ 4,660,300.00

Description:

(Name and location)

Central Library Ceiling and Lighting Upgrades
Contract No. 25-S-01

BOND

Date: February 11, 2026

(Not earlier than Construction Contract Date)

Amount: \$ 4,660,300.00

Modifications to this Bond:

☒ None

☐ Sec Section 16

CONTRACTOR AS PRINCIPAL

Company:

(Corporate Seal)

BETTER ENTERPRISES, INC.

Signature:

Name

and Title:

Marc Kerhachian, President

SURETY

Company:

(Corporate Seal)

NATIONWIDE MUTUAL INSURANCE COMPANY

Signature:

Name

and Title:

Karen Amin

Attorney-in-Fact

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

ALLIANT INSURANCE SERVICES, INC.
641 S. Ham Ln., Ste. B
Lodi, CA 95242
(209) 333-1136

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company: _____
(Corporate Seal)

SURETY

Company: _____
(Corporate Seal)

Signature: _____
Name and Title: _____
Address _____

Signature: _____
Name and Title: _____
Address _____

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of Fresno)

On 02-12-2026 before me, Ben Emerzian, Notary Public
(insert name of the officer)

personally appeared Marc Kerkochian,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are
subscribed to the within instrument and acknowledged to me that he/she/they executed the same in
his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing
paragraph is true and correct.

WITNESS my hand and official seal.

Signature Ben Emerzian (Seal)



ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

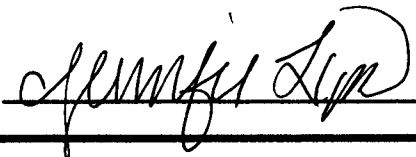
County of San Joaquin

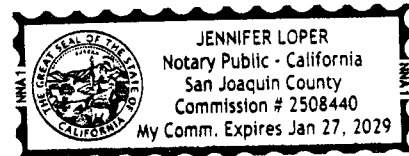
On February 11, 2026 before me, Jennifer Loper, Notary Public
(insert name and title of the officer)

personally appeared Karen Amin
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~
subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in
~~his~~/her/~~their~~ authorized capacity(~~ies~~), and that by ~~his~~/her/~~their~~ signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature  (Seal)



Power of Attorney

KNOW ALL MEN BY THESE PRESENTS THAT:

Nationwide Mutual Insurance Company, an Ohio corporation

hereinafter referred to severally as the "Company" and collectively as "the Companies" does hereby make, constitute and appoint:
DANIEL M. CONNOLLY; JENNIFER LOPER; KAREN AMIN

each in their individual capacity, its true and lawful attorney-in-fact, with full power and authority to sign, seal, and execute on its behalf on the date thereof any and all: (i) bonds and undertakings; (ii) Proposal Bonds; (ii) Letters of Surety; (iv) Consent of Surety; and (v) other obligatory instruments of similar nature, in penalties not exceeding the sum of

UNLIMITED

and to bind the Company thereby, as fully and to the same extent as if such instruments were signed by the duly authorized officers of the Company; and all acts of said Attorney pursuant to the authority given are hereby ratified and confirmed.

This power of attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the board of directors of the Company:

"RESOLVED, that the president, or any vice president be, and each hereby is, authorized and empowered to appoint attorneys-in-fact of the Company, and to authorize them to execute and deliver on behalf of the Company any and all bonds, forms, applications, memorandums, undertakings, recognizances, transfers, contracts of indemnity, policies, contracts guaranteeing the fidelity of persons holding positions of public or private trust, and other writings obligatory in nature that the business of the Company may require; and to modify or revoke, with or without cause, any such appointment or authority; provided, however, that the authority granted hereby shall in no way limit the authority of other duly authorized agents to sign and countersign any of said documents on behalf of the Company."

"RESOLVED FURTHER, that such attorneys-in-fact shall have full power and authority to execute and deliver any and all such documents and to bind the Company subject to the terms and limitations of the power of attorney issued to them, and to affix the seal of the Company thereto; provided, however, that said seal shall not be necessary for the validity of any such documents."

This power of attorney is signed and sealed under and by the following bylaws duly adopted by the board of directors of the Company.

Execution of Instruments. Any vice president, any assistant secretary or any assistant treasurer shall have the power and authority to sign or attest all approved documents, instruments, contracts, or other papers in connection with the operation of the business of the company in addition to the chairman of the board, the chief executive officer, president, treasurer or secretary; provided, however, the signature of any of them may be printed, engraved, or stamped on any approved document, contract, instrument, or other papers of the Company.

IN WITNESS WHEREOF, the Company has caused this instrument to be sealed and duly attested by the signature of its officer the 23rd day of October, 2025.



Antonio C. Albanese, Vice President of Nationwide Mutual Insurance Company

ACKNOWLEDGMENT

STATE OF OHIO COUNTY OF FRANKLIN: ss

On this 23rd day of October, 2025, before me came the above-named officer for the Company aforesaid, to me personally known to be the officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, deposes and says, that he is the officer of the Company aforesaid, that the seal affixed hereto is the corporate seal of said Company, and the said corporate seal and his signature were duly affixed and subscribed to said instrument by the authority and direction of said Company.

Karen L. Kam
Notary Public, State of Ohio
No. 2018-RE-719796
Commission Expires July 7, 2028



Notary Public
My Commission Expires
July 7, 2028

CERTIFICATE

I, Lezlie F. Chimienti, Assistant Secretary of the Company, do hereby certify that the foregoing is a full, true and correct copy of the original power of attorney issued by the Company; that the resolution included therein is a true and correct transcript from the minutes of the meetings of the boards of directors and the same has not been revoked or amended in any manner; that said Antonio C. Albanese was on the date of the execution of the foregoing power of attorney the duly elected officer of the Company, and the corporate seal and his signature as officer were duly affixed and subscribed to the said instrument by the authority of said board of directors; and the foregoing power of attorney is still in full force and effect.

IN WITNESS WHEREOF, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of said Company this 11th day of February, 2026.



Assistant Secretary



Nationwide Mutual Insurance Company

Home Office: Columbus, Ohio
Surety Administrative Office:
1100 Locust Street – Dept. 2006
Des Moines, IA 50391-2006

MAINTENANCE BOND

Bond No.: 7901171570

KNOW ALL MEN BY THESE PRESENTS, That we, BETTER ENTERPRISES, INC., as Principal, and Nationwide Mutual Insurance Company, a corporation duly organized under and by the virtue of the laws of the State of Ohio and authorized to become sole surety on bonds in the State of Ohio, as Surety, are held and firmly bound unto the COUNTY OF FRESNO, hereinafter called Obligee, in the just and penal sum of **FOUR HUNDRED SIXTY SIX THOUSAND THIRTY DOLLARS AND NO/100** Dollars (\$**466,030.00**), lawful money of the United States of America, to the payment of which well and truly to be made the Principal binds itself, its successors and assigns, and the Surety binds itself, its successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has by means of a written agreement, dated February 10, 2026, contracted with the Obligee aforesaid, for furnishing all materials and performing all of the work in connection with Central Library Ceiling & Lighting Upgrades Contract No. 25-S-01

as specifically set forth in said contract for said work, and

WHEREAS, the Principal has completed the said contract in accordance with the plans and specifications thereof, and

WHEREAS, the Obligee has requested the Principal to guarantee said work against defective workmanship or faulty materials for a period of One (1) year(s) from date of acceptance of said work Central Library Ceiling & Lighting Upgrades Contract No. 25-S-01, and

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the Principal shall well and truly make good any defects in material or workmanship which may arise in said work within One (1) year(s) from the date of acceptance of said work, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

Claim notices should be sent via e-mail to bondclms@nationwide.com or via mail to the address above attention Surety Claims Manager. All other notices should be sent via e-mail to bondcomm@nationwide.com or via mail to the address above to the attention of the Surety Underwriting Department.

IN WITNESS WHEREOF, we have set our hands and seals this 24th day of February, 2026.

BETTER ENTERPRISES, INC.

Principal Name

Principal Signature

(Seal)

Nationwide Mutual Insurance Company

(Surety)

(Seal)

By: [Signature]

Karen Amin, Attorney-in-Fact

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of Fresno

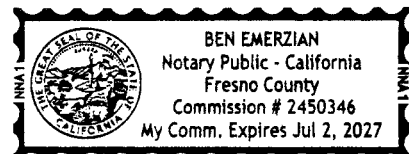
On 02-25-2025 before me, Ben Emerzian, Notary Public
(insert name of the officer)

personally appeared Marc Kerkochian,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are
subscribed to the within instrument and acknowledged to me that he/she/they executed the same in
his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing
paragraph is true and correct.

WITNESS my hand and official seal.

Signature Ben Emerzian (Seal)



ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

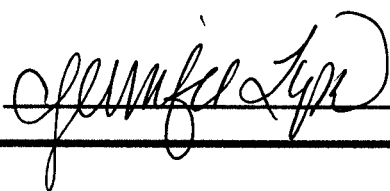
County of San Joaquin)

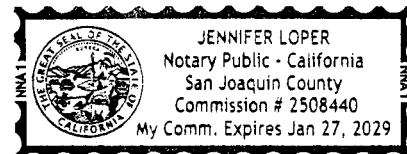
On February 24, 2026 before me, Jennifer Loper, Notary Public
(insert name and title of the officer)

personally appeared Karen Amin
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~
subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in
~~his~~/her/~~their~~ authorized capacity(~~ies~~), and that by ~~his~~/her/~~their~~ signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature  (Seal)



Power of Attorney

KNOW ALL MEN BY THESE PRESENTS THAT:

Nationwide Mutual Insurance Company, an Ohio corporation

hereinafter referred to severally as the "Company" and collectively as "the Companies" does hereby make, constitute and appoint:
DANIEL M CONNOLLY; JENNIFER LOPER; KAREN AMIN

each in their individual capacity, its true and lawful attorney-in-fact, with full power and authority to sign, seal, and execute on its behalf on the date thereof any and all: (i) bonds and undertakings; (ii) Proposal Bonds; (ii) Letters of Surety; (iv) Consent of Surety; and (v) other obligatory instruments of similar nature, in penalties not exceeding the sum of

UNLIMITED

and to bind the Company thereby, as fully and to the same extent as if such instruments were signed by the duly authorized officers of the Company; and all acts of said Attorney pursuant to the authority given are hereby ratified and confirmed.

This power of attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the board of directors of the Company:

"RESOLVED, that the president, or any vice president be, and each hereby is, authorized and empowered to appoint attorneys-in-fact of the Company, and to authorize them to execute and deliver on behalf of the Company any and all bonds, forms, applications, memorandums, undertakings, recognizances, transfers, contracts of indemnity, policies, contracts guaranteeing the fidelity of persons holding positions of public or private trust, and other writings obligatory in nature that the business of the Company may require; and to modify or revoke, with or without cause, any such appointment or authority; provided, however, that the authority granted hereby shall in no way limit the authority of other duly authorized agents to sign and countersign any of said documents on behalf of the Company."

"RESOLVED FURTHER, that such attorneys-in-fact shall have full power and authority to execute and deliver any and all such documents and to bind the Company subject to the terms and limitations of the power of attorney issued to them, and to affix the seal of the Company thereto; provided, however, that said seal shall not be necessary for the validity of any such documents."

This power of attorney is signed and sealed under and by the following bylaws duly adopted by the board of directors of the Company.

Execution of Instruments. Any vice president, any assistant secretary or any assistant treasurer shall have the power and authority to sign or attest all approved documents, instruments, contracts, or other papers in connection with the operation of the business of the company in addition to the chairman of the board, the chief executive officer, president, treasurer or secretary; provided, however, the signature of any of them may be printed, engraved, or stamped on any approved document, contract, instrument, or other papers of the Company.

IN WITNESS WHEREOF, the Company has caused this instrument to be sealed and duly attested by the signature of its officer the 23rd day of October, 2025.



Antonio C. Albanese, Vice President of Nationwide Mutual Insurance Company

ACKNOWLEDGMENT

STATE OF OHIO COUNTY OF FRANKLIN: ss

On this 23rd day of October, 2025, before me came the above-named officer for the Company aforesaid, to me personally known to be the officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, deposes and says, that he is the officer of the Company aforesaid, that the seal affixed hereto is the corporate seal of said Company, and the said corporate seal and his signature were duly affixed and subscribed to said instrument by the authority and direction of said Company.



Karen L. Kam
Notary Public, State of Ohio
No. 2018-RE-719796
Commission Expires July 7, 2028

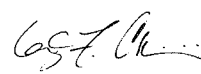

Notary Public
My Commission Expires
July 7, 2028

CERTIFICATE

I, Lezlie F. Chimienti, Assistant Secretary of the Company, do hereby certify that the foregoing is a full, true and correct copy of the original power of attorney issued by the Company; that the resolution included therein is a true and correct transcript from the minutes of the meetings of the boards of directors and the same has not been revoked or amended in any manner; that said Antonio C. Albanese was on the date of the execution of the foregoing power of attorney the duly elected officer of the Company, and the corporate seal and his signature as officer were duly affixed and subscribed to the said instrument by the authority of said board of directors; and the foregoing power of attorney is still in full force and effect.

IN WITNESS WHEREOF, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of said Company this 24th day of

February, 2026



Assistant Secretary

Bid Summary
Fresno County Department of Public Works and Planning

Project: Central Library Ceiling and Lighting Upgrades
Contract No.: 25-S-01

Bid Opening: 01/23/26
 Scheduled Award Date: 02/10/26

Bidders

1. Better Enterprises, Inc.
 1148 N Cypress Ave, Fresno, CA 93727-6871

2. Davis Moreno Construction, Inc.
 4720 N. Blythe Ave, Fresno, CA 93722

3. Ardent General, Inc.
 2960 N Burl Ave, Fresno, CA 93727-0832

4. Katch Environmental, Inc. dba Katch General
 929 L St, Fresno, CA 93721-2616

5. Fortune-Ratliff General Contractors, Inc.
 352 West Bedford Suite 107, Fresno, CA 93711

6. GCB1 Inc. dba GC Builders
 3003 N Monroe Ave, Fresno, CA 93723-9661

7. BDM Inc.
 240 N 12th Ave # 306, Hanford, CA 93230-5995

Subcontractors

Cencal Services, Inc., Best Fire Protection, Gridiron Services, Inc., KC&S Construction Specialties, Inc., Tarlton & Son, Inc., Western Building Materials Co., Frontline Plastering, Inc., American Incorporated, Infinity Power Solutions, Inc.

Cencal, KC&S Construction Specialties, Inc., Frontline Plastering, Inc., Western Building Materials Co., Ro's Precise Paint, Presidential Fire Protection, American Incorporated, Westech Systems

Cencal, KC&S Construction Specialties Inc, Frontline Plastering, Western Building Materials, Ro's Precise Painting, Nolte Sheet Metal, Presidential Fire Protection, Westech Systems LLC

American Incorporated, Ceiling Experts, Stedman's Plumbing, Johnson Fire Suppression, Infinity Power Solutions, Inc., Frontline Plastering Inc., KC&S, Ro's Precise Painting, Cencal Services

Gridiron Services, Central Valley Environmental, KC&S Construction Specialties, Ro's Precise Painting & Powder Coating, Frontline Plastering, Ceiling Experts, Presidential Fire Protection, American Incorporated, Infinity Power Solutions

Central Valley Environmental, CORE, Ceiling Experts, Meta Drywall, Infinity Power Solutions Inc, Nolte Sheet Metal, JND Drywall Inc., KC&S Construction, San Joaquin Fire Protection Inc

Gridiron Services, Inc., CVE Contracting Group Inc. dba Central Valley Environmental, KC&S Construction Specialties, Inc., Frontline Plastering Inc., Western Building Materials Co., Crew Installations Inc., Ro's Precise Painting Inc., Stedman's Plumbing, C3 Electric Inc., Presidential Fire Protection Inc.

	Total Bid
Architect's Construction Estimate	\$5,970,000.00
1. Better Enterprises, Inc.	\$4,660,300.00
2. Davis Moreno Construction, Inc.	\$4,759,000.00
3. Ardent General, Inc.	\$4,935,000.00
4. Katch Environmental, Inc. dba Katch General	\$5,315,014.00
5. Fortune-Ratliff General Contractors, Inc.	\$5,783,120.00
6. GCB1 Inc. dba GC Builders	\$5,798,200.00
7. BDM Inc.	\$6,199,875.00



BETTFOLO-01

KSOLARI

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

4/17/2026

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Lodi-Alliant Insurance Services, Inc. 641 South Ham Ln Ste A Lodi, CA 95242	CONTACT NAME: Kristen Solari	
	PHONE (A/C, No, Ext): E-MAIL ADDRESS: ksolari@alliant.com	
INSURED Better Enterprises, Inc. 1148 N. Cypress Ave Fresno, CA 93727	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : Gemini Insurance Company	10833
	INSURER B : American Guarantee and Liability Insurance Company	26247
	INSURER C : Upland Specialty Insurance Company	16988
	INSURER D : Zurich American Insurance Company	16535
	INSURER E : Hanover American Insurance Company	36064
	INSURER F :	

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY	X	X	VCGP035583	4/1/2026	4/1/2027	EACH OCCURRENCE \$ 1,000,000
	☐ CLAIMS-MADE ☒ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 50,000
	☒ Owner's & Contractor						MED EXP (Any one person) \$ 5,000
	GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☒ PROJECT ☐ LOC OTHER:						PERSONAL & ADV INJURY \$ 1,000,000
							GENERAL AGGREGATE \$ 2,000,000
							PRODUCTS - COMP/OP AGG \$ 2,000,000
							\$
B	☒ AUTOMOBILE LIABILITY	X	X	BAP8693578-00	4/1/2026	4/1/2027	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000
	☒ ANY AUTO OWNED AUTOS ONLY ☐ SCHEDULED AUTOS						BODILY INJURY (Per person) \$
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						BODILY INJURY (Per accident) \$
							PROPERTY DAMAGE (Per accident) \$
							\$
C	☐ UMBRELLA LIAB ☒ OCCUR			USXSL0221326	4/1/2026	4/1/2027	EACH OCCURRENCE \$ 5,000,000
	☒ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE \$ 5,000,000
	DED ☐ RETENTION \$						\$
D	☒ WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	N/A	X	WC 8693581-00	4/1/2026	4/1/2027	☒ PER STATUTE ☐ OTH-ER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) ☐ Y / N						E.L. EACH ACCIDENT \$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
							E.L. DISEASE - POLICY LIMIT \$ 1,000,000
E	Builders Risk			IHF M358609 00	4/20/2026	4/20/2027	Limit 4,660,300
C	Excess			USXSL0221326	4/1/2026	4/1/2027	Limit 5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Central Library Ceiling and Lighting Upgrades, Contract No. 25-S-01.

County of Fresno, its officers, agents, employees, and volunteers, individually and collectively are additional insureds as respects General Liability & Auto Liability per attached endorsement. Coverage is primary. GL, Auto & WC waiver of subrogation apply per attached endorsement. 30-day Notice of Cancellation notice applies. Per project aggregate applies.

CERTIFICATE HOLDER

CANCELLATION

County of Fresno 2220 Tulare Street, Sixth Floor Fresno, CA 93721	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT— CALIFORNIA

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

You must maintain payroll records accurately segregating the remuneration of your employees while engaged in the work described in the Schedule.

The additional premium for this endorsement shall be _____ of the California workers' compensation pre-mium otherwise due on such remuneration.

Schedule

Person or Organization

ALL PERSONS AND/OR
ORGANIZATIONS THAT
ARE REQUIRED BY
WRITTEN CONTRACT OR
AGREEMENT WITH THE
INSURED, EXECUTED
PRIOR TO THE
ACCIDENT OR LOSS,
THAT WAIVER OF
SUBROGATION BE
PROVIDED UNDER THIS
POLICY FOR WORK
PERFORMED BY YOU
FOR THAT PERSON
AND/OR ORGAIZATION

Job Description

ALL CA OPERATIONS

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US

This endorsement modifies insurance provided under the following:

Commercial General Liability Coverage Part

SCHEDULE

Name Of Person Or Organization: Any person or organization when you and such person or organization have agreed in writing in a contract, prior to an occurrence that causes "bodily injury", "property damage" or "personal and advertising injury", that you would provide such person or organization a waiver of transfer of rights of recovery against others to us on your policy.

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

The following is added to Paragraph **8. Transfer Of Rights Of Recovery Against Others To Us** of **Section IV** ☐ **Conditions:**

We waive any right of recovery we may have against the person or organization shown in the Schedule above because of payments we make for injury or damage arising out of your ongoing operations or "your work" done under a contract with that person or organization and included in the "products-completed operations hazard". This waiver applies only to the person or organization shown in the Schedule above.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**DESIGNATED CONSTRUCTION PROJECT(S)
GENERAL AGGREGATE LIMIT ☐ SUBJECT TO A
MAXIMUM AGGREGATE**

This endorsement modifies insurance provided under the following:

Commercial General Liability Coverage Part

SCHEDULE

Designated Construction Project(s): All construction projects for which you have agreed in writing in a contract, prior to an occurrence that causes "bodily injury", "property damage" or "personal and advertising injury", to provide project specific limits.

- A.** For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section I ☐ Coverage **A**, and for all medical expenses caused by accidents under Section I ☐ Coverage **C**, which can be attributed only to ongoing operations at a single designated construction project shown in the Schedule above:
1. A separate Designated Construction Project General Aggregate Limit applies to each designated construction project, and that limit is equal to the amount of the General Aggregate Limit shown in the Declarations.
 2. The Designated Construction Project General Aggregate Limit is the most we will pay for the sum of all damages under Coverage **A**, except damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard", and for medical expenses under Coverage **C** regardless of the number of:
 - a. Insureds;
 - b. Claims made or "suits" brought; or
 - c. Persons or organizations making claims or bringing "suits".
 3. Any payments made under Coverage **A** for damages or under Coverage **C** for medical expenses shall reduce the Designated Construction Project General Aggregate Limit for that designated construction project. Such payments shall not reduce the General Aggregate Limit shown in the Declarations nor shall they reduce any other Designated Construction Project General Aggregate Limit for any other designated construction project shown in the Schedule above.

4. The limits shown in the Declarations for Each Occurrence, Damage To Premises Rented To You and Medical Expense continue to apply. However, instead of being subject to the General Aggregate Limit shown in the Declarations, such limits will be subject to the applicable Designated Construction Project General Aggregate Limit.

5. All payments under this endorsement are subject to the Maximum Aggregate Limit of:

\$ 5,000,000 Policy Cap

The Maximum Aggregate Limit is the most we will pay under this endorsement regardless of the number of Designated Construction Project General Aggregate Limits. The Maximum Aggregate Limit is not available to pay for damages or expenses other than as set forth in the endorsement.

B. For all sums which the insured becomes legally obligated to pay as damages caused by "occurrences" under Section I ☐ Coverage A, and for all medical expenses caused by accidents under Section I ☐ Coverage C, which cannot be attributed only to ongoing operations at a single designated construction project shown in the Schedule above:

1. Any payments made under Coverage A for damages or under Coverage C for medical expenses shall reduce the amount available under the General Aggregate Limit or the Products-completed Operations Aggregate Limit, whichever is applicable; and

2. Such payments shall not reduce any Designated Construction Project General Aggregate Limit.

C. When coverage for liability arising out of the "products-completed operations hazard" is provided, any payments for damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard" will reduce the Products-completed Operations Aggregate Limit, and not reduce the General Aggregate Limit nor the Designated Construction Project General Aggregate Limit.

D. If the applicable designated construction project has been abandoned, delayed, or abandoned and then restarted, or if the authorized contracting parties deviate from plans, blueprints, designs, specifications or timetables, the project will still be deemed to be the same construction project.

E. The provisions of Section III ☐ Limits Of Insurance not otherwise modified by this endorsement shall continue to apply as stipulated.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED ☐ OWNERS, LESSEES OR
CONTRACTORS-SCHEDULED PERSON
OR ORGANIZATION**

This endorsement modifies insurance provided under the following:

**COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART**

SCHEDULE

Name of Person Or Organization:

For Non-Residential and Non-Mixed use projects only. Any person or organization when you and such person or organization have agreed in writing in a contract, prior to an occurrence that causes "bodily injury", "property damage" or "personal and advertising injury", that such person or organization be added as an additional insured on your policy For Non-Residential and Non-Mixed use projects only. All locations for which you and the additional insured have agreed in writing in a contract prior to an occurrence that causes "bodily injury", "property damage" or "personal and advertising injury".

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. Section II ☐ Who is An Insured is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of your ongoing operations performed for that insured.

B. With respect to the insurance afforded to these additional insureds, the following exclusion is added:

2. Exclusions

This insurance does not apply to ☐ bodily injury ☐ or ☐ property damage ☐ occurring after;

(1) All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the site of the covered operations has been completed; or

(2) That portion of ☐ your work ☐ out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the

same project.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

**ADDITIONAL INSURED ☐ OWNERS, LESSEES OR
CONTRACTORS ☐ COMPLETED OPERATIONS**

This endorsement modifies insurance provided under the following:

**COMMERCIAL GENERAL LIABILITY COVERAGE PART
SCHEDULE**

Name of Person or Organization:

For Non-Residential and Non-Mixed use projects only. Any person or organization when you and such person or organization have agreed in writing in a contract, prior to an occurrence that causes "bodily injury", "property damage" or "personal and advertising injury", that such person or organization be added as an additional insured on your policy.

Location And Description of Completed Operations:

For Non-Residential and Non-Mixed use projects only. All locations and completed operations for which you and the additional insured have agreed in writing in a contract prior to an occurrence that causes "bodily injury", "property damage" or "personal and advertising injury".

Additional Premium:

Included

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

Section II ☐ Who Is An Insured is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" at the location designated and described in the schedule of this endorsement performed for that insured and included in the "products-completed operations hazard"☐

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**PRIMARY AND NONCONTRIBUTORY ☐
OTHER INSURANCE CONDITION**

This endorsement modifies insurance provided under the following:

Commercial General Liability Coverage Part

The following is added to the **Other Insurance** Condition and supersedes any provision to the contrary:

Primary And Noncontributory Insurance

This insurance is primary to and will not seek contribution from any other insurance available to an additional insured under your policy provided that:

- (1) The additional insured is a Named Insured under such other insurance; and
- (2) You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to the additional insured.

Coverage Extension Endorsement



Policy No.	Eff. Date of Pol.	Exp. Date of Pol.	Eff. Date of End.	Producer No.	Add'l. Prem	Return Prem.
BAP8693578-00	4/1/2026	4/1/2026		15203000	INCL	

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

This endorsement modifies insurance provided under the:

Business Auto Coverage Form
Motor Carrier Coverage Form

A. Amended Who Is An Insured

1. The following is added to the **Who Is An Insured** Provision in **Section II – Covered Autos Liability Coverage**:

The following are also "insureds":

- a. Any "employee" of yours is an "insured" while using a covered "auto" you don't own, hire or borrow for acts performed within the scope of employment by you. Any "employee" of yours is also an "insured" while operating an "auto" hired or rented under a contract or agreement in an "employee's" name, with your permission, while performing duties related to the conduct of your business.
- b. Anyone volunteering services to you is an "insured" while using a covered "auto" you don't own, hire or borrow to transport your clients or other persons in activities necessary to your business.
- c. Anyone else who furnishes an "auto" referenced in Paragraphs **A.1.a.** and **A.1.b.** in this endorsement.
- d. Where and to the extent permitted by law, any person(s) or organization(s) where required by written contract or written agreement with you executed prior to any "accident", including those person(s) or organization(s) directing your work pursuant to such written contract or written agreement with you, provided the "accident" arises out of operations governed by such contract or agreement and only up to the limits required in the written contract or written agreement, or the Limits of Insurance shown in the Declarations, whichever is less.

2. The following is added to the **Other Insurance** Condition in the Business Auto Coverage Form and the **Other Insurance – Primary and Excess Insurance Provisions Condition** in the Motor Carrier Coverage Form:

Coverage for any person(s) or organization(s), where required by written contract or written agreement with you executed prior to any "accident", will apply on a primary and non-contributory basis and any insurance maintained by the additional "insured" will apply on an excess basis. However, in no event will this coverage extend beyond the terms and conditions of the Coverage Form.

B. Amendment – Supplementary Payments

Paragraphs **a.(2)** and **a.(4)** of the **Coverage Extensions** Provision in **Section II – Covered Autos Liability Coverage** are replaced by the following:

- (2) Up to \$5,000 for the cost of bail bonds (including bonds for related traffic law violations) required because of an "accident" we cover. We do not have to furnish these bonds.
- (4) All reasonable expenses incurred by the "insured" at our request, including actual loss of earnings up to \$500 a day because of time off from work.

C. Fellow Employee Coverage

The **Fellow Employee** Exclusion contained in **Section II – Covered Autos Liability Coverage** does not apply.

D. Driver Safety Program Liability and Physical Damage Coverage

1. The following is added to the **Racing** Exclusion in **Section II – Covered Autos Liability Coverage**:

This exclusion does not apply to covered "autos" participating in a driver safety program event, such as, but not limited to, auto or truck rodeos and other auto or truck agility demonstrations.

2. The following is added to Paragraph **2.** in the **Exclusions** of **Section III – Physical Damage Coverage** of the Business Auto Coverage Form and Paragraph **2.b.** in the **Exclusions** of **Section IV – Physical Damage Coverage** of the Motor Carrier Coverage Form:

This exclusion does not apply to covered "autos" participating in a driver safety program event, such as, but not limited to, auto or truck rodeos and other auto or truck agility demonstrations.

E. Lease or Loan Gap Coverage

The following is added to the **Coverage** Provision of the **Physical Damage Coverage** Section:

Lease Or Loan Gap Coverage

In the event of a total "loss" to a covered "auto", we will pay any unpaid amount due on the lease or loan for a covered "auto", less:

- a. Any amount paid under the **Physical Damage Coverage** Section of the Coverage Form; and
- b. Any:
 - (1) Overdue lease or loan payments at the time of the "loss";
 - (2) Financial penalties imposed under a lease for excessive use, abnormal wear and tear or high mileage;
 - (3) Security deposits not returned by the lessor;
 - (4) Costs for extended warranties, credit life insurance, health, accident or disability insurance purchased with the loan or lease; and
 - (5) Carry-over balances from previous leases or loans.

F. Towing and Labor

Paragraph **A.2.** of the **Physical Damage Coverage** Section is replaced by the following:

We will pay up to \$75 for towing and labor costs incurred each time a covered "auto" of the private passenger type is disabled. However, the labor must be performed at the place of disablement.

G. Extended Glass Coverage

The following is added to Paragraph **A.3.a.** of the **Physical Damage Coverage** Section:

If glass must be replaced, the deductible shown in the Declarations will apply. However, if glass can be repaired and is actually repaired rather than replaced, the deductible will be waived. You have the option of having the glass repaired rather than replaced.

H. Hired Auto Physical Damage – Increased Loss of Use Expenses

The **Coverage Extension** for **Loss Of Use Expenses** in the **Physical Damage Coverage** Section is replaced by the following:

Loss Of Use Expenses

For Hired Auto Physical Damage, we will pay expenses for which an "insured" becomes legally responsible to pay for loss of use of a vehicle rented or hired without a driver under a written rental contract or written rental agreement. We will pay for loss of use expenses if caused by:

- (1) Other than collision only if the Declarations indicate that Comprehensive Coverage is provided for any covered "auto";
 - (2) Specified Causes Of Loss only if the Declarations indicate that Specified Causes Of Loss Coverage is provided for any covered "auto"; or
 - (3) Collision only if the Declarations indicate that Collision Coverage is provided for any covered "auto".
- However, the most we will pay for any expenses for loss of use is \$100 per day, to a maximum of \$3000.

I. Personal Effects Coverage

The following is added to the **Coverage** Provision of the **Physical Damage Coverage** Section:

Personal Effects Coverage

- a. We will pay up to \$750 for "loss" to personal effects which are:
 - (1) Personal property owned by an "insured"; and
 - (2) In or on a covered "auto".
- b. Subject to Paragraph a. above, the amount to be paid for "loss" to personal effects will be based on the lesser of:
 - (1) The reasonable cost to replace; or
 - (2) The actual cash value.
- c. The coverage provided in Paragraphs a. and b. above, only applies in the event of a total theft of a covered "auto". No deductible applies to this coverage. However, we will not pay for "loss" to personal effects of any of the following:
 - (1) Accounts, bills, currency, deeds, evidence of debt, money, notes, securities, or commercial paper or other documents of value.
 - (2) Bullion, gold, silver, platinum, or other precious alloys or metals; furs or fur garments; jewelry, watches, precious or semi-precious stones.
 - (3) Paintings, statuary and other works of art.
 - (4) Contraband or property in the course of illegal transportation or trade.
 - (5) Tapes, records, discs or other similar devices used with audio, visual or data electronic equipment.

Any coverage provided by this Provision is excess over any other insurance coverage available for the same "loss".

J. Tapes, Records and Discs Coverage

1. The Exclusion in Paragraph **B.4.a.** of **Section III – Physical Damage Coverage** in the Business Auto Coverage Form and the Exclusion in Paragraph **B.2.c.** of **Section IV – Physical Damage Coverage** in the Motor Carrier Coverage Form does not apply.
2. The following is added to Paragraph **1.a. Comprehensive Coverage** under the **Coverage** Provision of the **Physical Damage Coverage** Section:

We will pay for "loss" to tapes, records, discs or other similar devices used with audio, visual or data electronic equipment. We will pay only if the tapes, records, discs or other similar audio, visual or data electronic devices:

- (a) Are the property of an "insured"; and
- (b) Are in a covered "auto" at the time of "loss".

The most we will pay for such "loss" to tapes, records, discs or other similar devices is \$500. The **Physical Damage Coverage Deductible** Provision does not apply to such "loss".

K. Airbag Coverage

The Exclusion in Paragraph **B.3.a.** of **Section III – Physical Damage Coverage** in the Business Auto Coverage Form and the Exclusion in Paragraph **B.4.a.** of **Section IV – Physical Damage Coverage** in the Motor Carrier Coverage Form does not apply to the accidental discharge of an airbag.

L. Two or More Deductibles

The following is added to the **Deductible** Provision of the **Physical Damage Coverage** Section:

If an accident is covered both by this policy or Coverage Form and by another policy or Coverage Form issued to you by us, the following applies for each covered "auto" on a per vehicle basis:

1. If the deductible on this policy or Coverage Form is the smaller (or smallest) deductible, it will be waived; or
2. If the deductible on this policy or Coverage Form is not the smaller (or smallest) deductible, it will be reduced by the amount of the smaller (or smallest) deductible.

M. Physical Damage – Comprehensive Coverage – Deductible

The following is added to the **Deductible** Provision of the **Physical Damage Coverage** Section:

Regardless of the number of covered "autos" damaged or stolen, the maximum deductible that will be applied to Comprehensive Coverage for all "loss" from any one cause is \$5,000 or the deductible shown in the Declarations, whichever is greater.

N. Temporary Substitute Autos – Physical Damage

1. The following is added to **Section I – Covered Autos**:

Temporary Substitute Autos – Physical Damage

If Physical Damage Coverage is provided by this Coverage Form on your owned covered "autos", the following types of vehicles are also covered "autos" for Physical Damage Coverage:

Any "auto" you do not own when used with the permission of its owner as a temporary substitute for a covered "auto" you do own but is out of service because of its:

1. Breakdown;
 2. Repair;
 3. Servicing;
 4. "Loss"; or
 5. Destruction.
2. The following is added to the Paragraph **A. Coverage** Provision of the **Physical Damage Coverage** Section:

Temporary Substitute Autos – Physical Damage

We will pay the owner for "loss" to the temporary substitute "auto" unless the "loss" results from fraudulent acts or omissions on your part. If we make any payment to the owner, we will obtain the owner's rights against any other party.

The deductible for the temporary substitute "auto" will be the same as the deductible for the covered "auto" it replaces.

O. Amended Duties In The Event Of Accident, Claim, Suit Or Loss

Paragraph **a.** of the **Duties In The Event Of Accident, Claim, Suit Or Loss** Condition is replaced by the following:

- a. In the event of "accident", claim, "suit" or "loss", you must give us or our authorized representative prompt notice of the "accident", claim, "suit" or "loss". However, these duties only apply when the "accident", claim, "suit" or "loss" is known to you (if you are an individual), a partner (if you are a partnership), a member (if you are a limited liability company) or an executive officer or insurance manager (if you are a corporation). The failure of any

agent, servant or employee of the "insured" to notify us of any "accident", claim, "suit" or "loss" shall not invalidate the insurance afforded by this policy.

Include, as soon as practicable:

- (1) How, when and where the "accident" or "loss" occurred and if a claim is made or "suit" is brought, written notice of the claim or "suit" including, but not limited to, the date and details of such claim or "suit";
- (2) The "insured's" name and address; and
- (3) To the extent possible, the names and addresses of any injured persons and witnesses.

If you report an "accident", claim, "suit" or "loss" to another insurer when you should have reported to us, your failure to report to us will not be seen as a violation of these amended duties provided you give us notice as soon as practicable after the fact of the delay becomes known to you.

P. Waiver of Transfer Of Rights Of Recovery Against Others To Us

The following is added to the **Transfer Of Rights Of Recovery Against Others To Us** Condition:

This Condition does not apply to the extent required of you by a written contract, executed prior to any "accident" or "loss", provided that the "accident" or "loss" arises out of operations contemplated by such contract. This waiver only applies to the person or organization designated in the contract.

Q. Employee Hired Autos – Physical Damage

Paragraph **b.** of the **Other Insurance** Condition in the Business Auto Coverage Form and Paragraph **f.** of the **Other Insurance – Primary and Excess Insurance Provisions** Condition in the Motor Carrier Coverage Form are replaced by the following:

For Hired Auto Physical Damage Coverage, the following are deemed to be covered "autos" you own:

- (1) Any covered "auto" you lease, hire, rent or borrow; and
- (2) Any covered "auto" hired or rented under a written contract or written agreement entered into by an "employee" or elected or appointed official with your permission while being operated within the course and scope of that "employee's" employment by you or that elected or appointed official's duties as respect their obligations to you.

However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto".

R. Unintentional Failure to Disclose Hazards

The following is added to the **Concealment, Misrepresentation Or Fraud** Condition:

However, we will not deny coverage under this Coverage Form if you unintentionally:

- (1) Fail to disclose any hazards existing at the inception date of this Coverage Form; or
- (2) Make an error, omission, improper description of "autos" or other misstatement of information.

You must notify us as soon as possible after the discovery of any hazards or any other information that was not provided to us prior to the acceptance of this policy.

S. Hired Auto – World Wide Coverage

Paragraph **7a.(5)** of the **Policy Period, Coverage Territory** Condition is replaced by the following:

- (5) Anywhere in the world if a covered "auto" is leased, hired, rented or borrowed for a period of 60 days or less,

T. Bodily Injury Redefined

The definition of "bodily injury" in the **Definitions** Section is replaced by the following:

"Bodily injury" means bodily injury, sickness or disease, sustained by a person including death or mental anguish, resulting from any of these at any time. Mental anguish means any type of mental or emotional illness or disease.

U. Expected Or Intended Injury

The **Expected Or Intended Injury** Exclusion in Paragraph **B. Exclusions** under **Section II – Covered Auto Liability Coverage** is replaced by the following:

Expected Or Intended Injury

"Bodily injury" or "property damage" expected or intended from the standpoint of the "insured". This exclusion does not apply to "bodily injury" or "property damage" resulting from the use of reasonable force to protect persons or property.

V. Physical Damage – Additional Temporary Transportation Expense Coverage

Paragraph **A.4.a.** of **Section III – Physical Damage Coverage** is replaced by the following:

4. Coverage Extensions

a. Transportation Expenses

We will pay up to \$50 per day to a maximum of \$1,000 for temporary transportation expense incurred by you because of the total theft of a covered "auto" of the private passenger type. We will pay only for those covered "autos" for which you carry either Comprehensive or Specified Causes of Loss Coverage. We will pay for temporary transportation expenses incurred during the period beginning 48 hours after the theft and ending, regardless of the policy's expiration, when the covered "auto" is returned to use or we pay for its "loss".

W. Replacement of a Private Passenger Auto with a Hybrid or Alternative Fuel Source Auto

The following is added to Paragraph **A. Coverage** of the **Physical Damage Coverage** Section:

In the event of a total "loss" to a covered "auto" of the private passenger type that is replaced with a hybrid "auto" or "auto" powered by an alternative fuel source of the private passenger type, we will pay an additional 10% of the cost of the replacement "auto", excluding tax, title, license, other fees and any aftermarket vehicle upgrades, up to a maximum of \$2500. The covered "auto" must be replaced by a hybrid "auto" or an "auto" powered by an alternative fuel source within 60 calendar days of the payment of the "loss" and evidenced by a bill of sale or new vehicle lease agreement.

To qualify as a hybrid "auto", the "auto" must be powered by a conventional gasoline engine and another source of propulsion power. The other source of propulsion power must be electric, hydrogen, propane, solar or natural gas, either compressed or liquefied. To qualify as an "auto" powered by an alternative fuel source, the "auto" must be powered by a source of propulsion power other than a conventional gasoline engine. An "auto" solely propelled by biofuel, gasoline or diesel fuel or any blend thereof is not an "auto" powered by an alternative fuel source.

X. Return of Stolen Automobile

The following is added to the **Coverage Extension** Provision of the **Physical Damage Coverage** Section:

If a covered "auto" is stolen and recovered, we will pay the cost of transport to return the "auto" to you. We will pay only for those covered "autos" for which you carry either Comprehensive or Specified Causes of Loss Coverage.

All other terms, conditions, provisions and exclusions of this policy remain the same.

General Info

Total:

\$4,660,300.00

Number	Description
25-S-01	Central Library Ceiling and Lighting Upgrades
Deadline 01/23/2026 02:00 PM PST	The work to be done consists of, in general, the demolition of existing ceilings for the basement, first floor, and second floor of the Fresno County Central Library and fire sprinkler modifications in the basement. Ceilings for the first and second floor will be replaced with new T-bar, and some new ceilings will be installed in the basement and mechanical ducts will be extended to the new ceiling levels. Existing lighting fixtures will be replaced with new lighting fixture components and a new lighting system in the basement, first floor, and second floor with the addition of power circuits to two (2) break rooms and installation of new electrical panels.
Vendor Better Enterprises, Inc.	
Submitted 01/23/2026 01:53 PM PST	
Signed by Marc Kerkochian	
Account Holder Susan Waide	
Opened 01/23/2026 02:07 PM PST	Allows zero unit prices and labor No
By jgeddert@fresnocountyca.gov	Allows negative unit prices and labor No

Attachment List

County of Fresno - Project Website
RFC form, bid opening details, any Supplemental Information
including RFC responses, Pre-bid Conference information, etc.

Project Manual (5.5 MB)
Specifications

Plans (81 MB)
Drawings

Instructions to Bidders
Instructions for Completing the Bid Book within the Specifications

Addendum 1
Addendum 1

Addendum 2
Addendum 2

Addendum 3
Addendum 3

Addendum 3 - Plan Sheet M1.02.02
Addendum 3 - Plan Sheet M1.02.02

Proposal Form Section 004213 - 1

PROPOSAL TO THE COUNTY OF FRESNO

Contract Name: **CENTRAL LIBRARY CEILING AND LIGHTING UPGRADES**

Contract No.: **25-S-01**

Fund / Subclass / Org / Account / Program or Memo No.: **0400 / 8868 / 8150 / 92037**

Work to be performed: The work to be done consists, in general, of the demolition of existing ceilings and replacement of new T-bar in the basement, first floor, and second floor of the Central Library. A new ceiling will be constructed in the basement, where indicated in the plans, with extensions to mechanical ducts. Replacement of existing lighting fixtures with new lighting fixture components and lighting system will be done in the basement, first floor, and second floor with the addition of power circuits to two (2) break rooms and installation of new electrical panels. Fire sprinkler modifications will be done in the basement, per the performance specifications.

The work to be done is shown on a set of Plans, entitled "Fresno County Central Library Ceiling & Lighting Upgrades"

Building No.: **#800**

Project Address:

2420 Mariposa St.

Fresno, CA 93721

If this proposal shall be accepted and the undersigned shall fail to contract, as aforesaid, and to give the two bonds in the sums to be determined as aforesaid, each issued by a surety satisfactory to the Awarding Authority, within ten (10) days after the award of the contract, the Awarding Authority, at its option, may determine that the bidder has abandoned the contract, and thereupon this proposal and the acceptance thereof shall be null and void, and the forfeiture of such security accompanying this proposal shall operate and the same shall be the property of the County.

The undersigned, as bidder, declares that all addenda issued with respect to this bid have been received and incorporated into this Proposal. The bidder's signature on this Proposal also constitutes acknowledgement of all addenda.

The undersigned, as bidder, declares that the only persons, or parties interested in this proposal as principals are those named herein; that this proposal is made without collusion with any other person, firm or corporation; that the bidder has carefully examined the annexed proposed form of contract, and the plans therein referred to; and the bidder proposes and agrees if this proposal is accepted, that the bidder will contract with the County of Fresno to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the contract in the manner and time therein prescribed, and according to the requirements of the County as therein set forth, and that the bidder will take in full payment therefor the following lump sum price, to-wit:

Proposal Form Section 004213 - 2 Bid Sheet

\$4,660,300.00

Item No.	Item Description	Item Price	Extension
1	Base Bid	\$4,660,300.00	\$4,660,300.00
			Total: \$4,660,300.00

Proposal Form Section 004213 - 2 Acknowledgement of Addendum

Type N/A if no addenda were issued. Click "+" to add additional fields.

Addendum No. *

01

Dated *

01/09/2026

Type N/A if no addenda were issued. Click "+" to add additional fields. 1

Addendum No. *

02

Dated *

01/14/2026

Type N/A if no addenda were issued. Click "+" to add additional fields. 2

Addendum No. *

03

Dated *

01/20/2026

Bid Security Form Section 004313 - 1

Accompanying this proposal is security (check one only) in an amount equal to at least ten percent (10%) of the total amount of the bid:

Bond Percentage

10.00%

Guarantee Method *

Paper Bid Bond, Certified
Check, Cashier's Check,
Cash, Scan of Paper Bid
Bond

Paper Bid Bond, Certified Check, Cashier's Check, Cash, Scan of Paper Bid Bond

Confirmation *

I have provided a Paper Bid Bond for 10.00% of the bid total amount, to the public works office, prior to the solicitation deadline.

If Cash Security, Enter Amount

You must either attach an electronic bid bond here or provide an original bid bond (or other form of bid security authorized by Public Contract Code Section 20129(a)), **prior to** the bid opening.

Bid Security Form Section 004313 - 2

Business Name *

Better Enterprises, Inc.

Note: If bidder or other interested person is a corporation, state legal name of corporation. If bidder is a co-partnership, state true name of firm.

Type of Business *

Corporation - list Officers

Business Owners and Officers Names *

Marc Kerkochian - President/Manager
Susan Waid - Secretary
Ben Emerzian - Treasurer

List majority owners of your firm. If multiple owners, list all. (SB1439)

Note: If bidder or other interested person is:

- a corporation, list names of the president, secretary, treasurer and manager thereof*
- a partnership, list names of all individual co-partners composing firm.*
- an individual, state first and last name in full.*

Licensed in accordance with an act providing for the registration of Contractors,

Class *

B, C8, C33

Contractor License No. * Expires *

1012660 04/30/2026

DIR Registration Number *

1000565193

Business Address *

1148 N Cypress Ave, Fresno, CA 93727-6871

Mailing Address *

1148 N Cypress Ave, Fresno, CA 93727-6871

Business Phone *

(559) 233-2225 x1007

Fax Number

(559) 233-2850

E-mail Address *

susan@betterenterprisesinc.com

Signature of Bidder *

Better Enterprises, Inc., a California Corporation by Marc Kerkochian, President

Dated *

01/23/2026

NOTE: If bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation; if bidder is a co-partnership, the true name of the firm shall be set forth above together with the signature of the partner or partners authorized to sign contracts on behalf of the co-partnership; and if bidder is an individual, bidder signature shall be placed above. If signature is by an agent, other than an officer of a corporation or a member of a partnership, a Power of Attorney must be on file with the Owner prior to opening bids or submitted with the bid; otherwise, the bid will be disregarded as irregular and unauthorized.

Subcontractors List Section 004336 - 1

SUBCONTRACTORS

The following named subcontractor(s) will perform with labor, or otherwise render services to the general contractor in or about the construction of the work or improvement in an amount in excess of one-half of one percent of the total bid presented herewith. Please fill out as completely as possible when submitting your bid. Use subcontractor's business name style as registered with the License Board. Submission of subcontractor's name, location of business and description of work, California contractor's license number and public works contractor registration number issued pursuant to Section 1725.5 of the Labor Code, all are REQUIRED, by Section 4104 of the California Public Contract Code, to be submitted prior to bid opening. (The "location of business" must specify the city in which the subcontractor's business is located, and the state if other than California.) All other requested information shall be submitted, either with the bid or within 24 hours after bid opening.

Please fill out as completely as possible when submitting your bid. Use subcontractor's business name style as registered with the License Board.

FAILURE TO LIST SUBCONTRACTORS AS DIRECTED MAY RENDER THE BID NON-RESPONSIVE, OR MAY RESULT IN ASSESSMENT OF A PENALTY AGAINST THE BIDDER IN ACCORDANCE WITH SECTION 4110 OF THE CALIFORNIA PUBLIC CONTRACT CODE.

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields.

Subcontractor: *

Cencal Services, Inc.

Business Address *

3299 S. Cedar Avenue, Fresno, CA 93725

Class

A, B, C21, C22, C-8

License No. *

976935

DIR Registration No. *

1000002906

Item No. or Description of Work *

Abatement and Selective Demolition

Dollar Amount:

OR

Percentage of Total Bid:

17.27%

Email Address:

jamesd@cencaldemo.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 1

Subcontractor: *

Best Fire Protection

Business Address *

1201 24th St, Ste B110-334, Bakersfield CA 93301

Class

C16

License No. *

1054075

DIR Registration No. *

1000580773

Item No. or Description of Work *

Fire Sprinklers

Dollar Amount:

OR

Percentage of Total Bid:

.36%

Email Address:

chris@bestfire.us

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 2

Subcontractor: *

Grid Iron Services, Inc.

Business Address *

6077 Coffee Road, Suite 4 PMB37. Bakersfield, CA 93308

Class

C-61/D63

License No. *

1035685

DIR Registration No. *

1000055894

Item No. or Description of Work *

Construction Clean Up

Dollar Amount:

OR

Percentage of Total Bid:

.92%

Email Address:

steve@gridironservicesinc.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 3

Subcontractor: *

KC&S Construction Specialties, Inc.

Business Address *

432 Bitritto Way, Unit 3, Modesto, CA 95356

Class

B, C-61/D28, C-61/D34, C28

License No. *

1048604

DIR Registration No. *

1000063244

Item No. or Description of Work *

Hm Doors, HM Frames and Finish Hardware

Dollar Amount:

OR

Percentage of Total Bid:

.88%

Email Address:

a.landingham@kcsconstructionspecialties.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 4

Subcontractor: *

Tarlton & Son, Inc.

Business Address *

3562 S. Elm Avenue, Fresno, CA 93706

Class

B, C-2, C-9, C35, C33, C-61/
D28

License No. *

342341

DIR Registration No. *

1000004368

Item No. or Description of Work *

Painting

Dollar Amount:

OR

Percentage of Total Bid:

3.05%

Email Address:

randyt@tarltonandson.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 5

Subcontractor: *

Western Building Materials Co.

Business Address *

4620 E. Olive Avenue, Fresno, CA 93702

Class

B, C-2, C-61/D28

License No. *

248608

DIR Registration No. *

1000003005

Item No. or Description of Work *

Suspended Acoustical Ceilings

Dollar Amount:

OR

Percentage of Total Bid:

6.27%

Email Address:

brian@wbmco.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 6

Subcontractor: *

Frontline Plastering, Inc.

Business Address *

2549 N. Bundy Drive, Fresno, CA 93727

Class

C35, C-9

License No. *

1017354

DIR Registration No. *

1000055393

Item No. or Description of Work *

Metal Framing & Gypsum Board

Dollar Amount:

OR

Percentage of Total Bid:

5.14%

Email Address:

paul@frontlineplasteringinc.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 7

Subcontractor: *

American Incorporated

Business Address *

1345 N. American Street, Visalia, CA 93291

Class

A, B, C10, C43, C-4, C20,
C36, C38, C-7, C21, C-61/
D06

License No. *

292529

DIR Registration No. *

1000000369

Item No. or Description of Work *

HVAC

Dollar Amount:

OR

Percentage of Total Bid:

15.49%

Email Address:

tsardinha@aminc.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 8

Subcontractor: *

Infinity Power Solutions, Inc.

Business Address *

3001 N. Miami Ave., Fresno, CA 93727

Class

C10

License No. *

1080287

DIR Registration No. *

1000817136

Item No. or Description of Work *

Electrical and Low Voltage

Dollar Amount:

OR

Percentage of Total Bid:

41.39%

Email Address:

chad@infinity-psi.com

Subcontractors List Section 004336 - 2

Optional: Vendor is not required to complete.

SUBCONTRACTORS

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields.

Subcontractor: *

No bid

Business Address *

No bid

Class

No bid

License No. *

No bid

DIR Registration No. *

No bid

Item No. or Description of Work *

No bid

Dollar Amount:

OR

Percentage of Total Bid:

No bid

No bid

Email Address:

No bid

Non-Collusion Declaration Section 004519 - 1

CONTRACT: CENTRAL LIBRARY CEILING AND LIGHTING UPGRADES

CONTRACT NO.: 25-S-01

To the County of Fresno:

NON-COLLUSION DECLARATION TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID *

The undersigned declares:

I am the (Choose one of the following options): *

Corporate Officer

If Corporate Officer please list Title:

President

of (Business Name): *

Better Enterprises, Inc.

the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, and has not paid, and will not pay, any person or entity for that purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on

Date: *

01/23/2026

at City, State: *

Fresno, California

Signature: *

Marc Kerkochian

(See Title 23 United States Code Section 112; Calif Public Contract Code Section 7106)

*NOTE: Completing, signing, and returning the Non-collusion Declaration is a required part of the Proposal. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Title 13 CARB Certification Section 004556 - 1

TITLE 13, CALIFORNIA CODE OF REGULATIONS § 2449(I) GENERAL REQUIREMENTS FOR IN-USE OFF-ROAD DIESEL-FUELED FLEETS

In conformance with Title 13 § 2449(i), bidders will be required to attach copies of valid Certificates of Reported Compliance for the fleet selected for the contract and their listed subcontractors.

Before May 15th of each year, the prime contractor must collect a new valid Certificate of Reported Compliance for the current compliance year, as defined in section 2449(n), from all fleets that have an ongoing contract with the prime contractor as of March 1 of that year. Prime contractors must not write contracts to evade this requirement. Annual renewals must be provided to the Resident Engineer at least one week prior to the expiration date of the current certificate.

<https://ww2.arb.ca.gov/resources/fact-sheets/fact-sheet-contracting-requirements>

Choose all that apply:

- ☐ Bidder’s Certificate of Reported Compliance has been attached to the bid.
- ☒ Bidder does not have a fleet subject to this regulation as outlined in Section 2449(i)(1)-(4).
- ☒ Listed subcontractors’ certificates have been attached or will be submitted within five (5) calendar days of the bid opening.
- ☒ The following subcontractors do not have a fleet subject to this regulation as outlined in Section 2449(i)(1)-(4):

Subcontractors

Cencal Services, Inc., Best Fire Protection, Grid Iron Services, Inc., KC&S Construction Specialities, Inc., Tarlton & Son, Inc., Western Building Materials Co., Frontline Plastering, Inc., American Incorporated, and Infinity Power Solutions, Inc.

FAILURE TO PROVIDE THE CERTIFICATES OF REPORTED COMPLIANCE AS DIRECTED MAY RENDER THE BID NON-RESPONSIVE.

Guaranty Section 006536 - 1

Optional: Vendor is not required to complete.

CENTRAL LIBRARY CEILING AND LIGHTING UPGRADES
CONTRACT NO: 25-S-01

This guaranty shall be executed by the successful bidder in accordance with Section 2.32 of the General Conditions. The bidder may execute the guaranty on this page at the time of submitting the bid or may, in the alternative, submit it with the insurance certificates and bonds within ten (10) days after award.

G U A R A N T Y

To the Owner: County of Fresno

The undersigned guarantees the construction and installation of the following work included in this project:

ALL WORK

Should any of the materials or equipment prove defective or should the work as a whole prove defective, due to faulty workmanship, material furnished or methods of installation, or should the work or any part thereof fail to operate properly as originally intended and in accordance with each individual Work Order Detailed Scope of Work and specifications, due to any of the above causes, all within 365 calendar days after the date on which the Work under this contract is accepted by the Owner, the undersigned agrees to reimburse the Owner, upon demand, for its expenses incurred in restoring said work to the condition contemplated in said project, including the cost of any such equipment or materials replaced and the cost of removing and replacing any other work necessary to make such replacement or repairs, or, upon demand by the Owner, to replace any such material and to repair said work completely without cost to the Owner so that said work will function successfully as originally contemplated.

The Owner shall have the unqualified option to make any needed replacement or repairs itself or to have such replacements or repairs done by the undersigned. In the event the Owner elects to have said work performed by the undersigned, the undersigned agrees that the repairs shall be made and such materials as are necessary shall be furnished and installed within a reasonable time after the receipt of demand from the Owner. If the undersigned shall fail or refuse to comply with his or her obligations under this guaranty, the Owner shall be entitled to all costs and expenses reasonably incurred by reason of said failure or refusal.

Date: *

01/23/2026

Name (Printed): *

Marc Kerkochian

Signature: *

Marc Kerkochian

Title: *

President

Contractor: *

Better Enterprises, Inc.

Upload Required Documents

Name	Omission Terms	Submitted File
Electronic Bid Bond - Scan of Bid Bond Scan of Notarized Paper Bid Bond with original due by 4pm on the 5th calendar day after the bid opening.	I have already provided a bid bond, i.e. through an electronic Surety above or to the public works office prior to the deadline.	Bid Bond - CoF Central Library Ceiling & Lighting Upgrades.pdf
CARB Certification of Reported Compliance - Bidder Valid CARB Certification of Reported Compliance - Bidder	Does not have a fleet subject to this regulation.	I am not enclosing this document because the omission terms have been met.
CARB Certification(s) of Reported Compliance - Subcontractors Valid CARB Certification(s) of Reported Compliance - Subcontractors	Due by 4pm on the 5th calendar day after bid opening or no listed subcontractors have a fleet subject to this regulation.	I am not enclosing this document because the omission terms have been met.
3 Required Documents		

Additional Documents (use if needed)

Name	Omission Terms	Submitted File
Not Required - Extra Space if needed Not Required - Extra Space if needed	Not Required - Extra Space if needed	I am not enclosing this document because the omission terms have been met.
Not Required - Extra Space if needed Not Required - Extra Space if needed	Not Required - Extra Space if needed	I am not enclosing this document because the omission terms have been met.
Not Required - Extra Space if needed Not Required - Extra Space if needed	Not Required - Extra Space if needed	I am not enclosing this document because the omission terms have been met.
3 Required Documents		



Nationwide Mutual Insurance Company

Home Office: Columbus, Ohio
Surety Administrative Office:
1100 Locust Street – Dept. 2006
Des Moines, IA 50391-2006

BID BOND

Nationwide Mutual Insurance Company vouches that this document conforms to
American Institute of Architects Document A310, 2010 Edition.

CONTRACTOR: (Name, legal status and address)

BETTER ENTERPRISES, INC.

1148 N. Cypress Avenue

Fresno, CA 93727

SURETY: (Name, legal status and principal place of business)

Nationwide Mutual Insurance Company

1100 Locust Street – Dept. 2006

Des Moines, IA 50391-2006

OWNER: (Name, legal status and address)

COUNTY OF FRESNO

2220 Tulare St., 7th Floor

Fresno, CA

93721

BOND AMOUNT: **TEN PERCENT (10%) OF AMOUNT BID**

PROJECT: (Name, location or address, and Project number, if any) Central Library Ceiling and Lighting

Upgrades Contract Number: 25-S-01

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed, and sealed this 6th day of January, 2026

(Witness to Principal)

(Principal's Signature)

(Seal)

(Title)

(Witness to Surety)

Nationwide Mutual Insurance Company

(Surety)

(Seal)

By:

Karen Amin, Attorney-in-Fact

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of Fresno

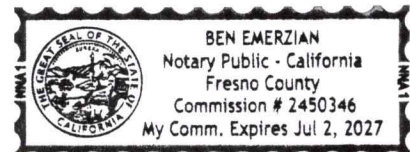
On 01-07-2026 before me, Ben Emerzian, Notary Public
(insert name of the officer)

personally appeared Marc Kerkochian,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are
subscribed to the within instrument and acknowledged to me that he/she/they executed the same in
his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing
paragraph is true and correct.

WITNESS my hand and official seal.

Signature Ben Emerzian (Seal)



ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Joaquin

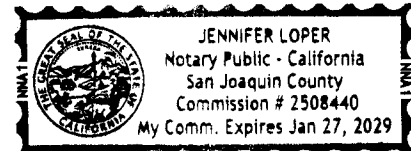
On January 6, 2026 before me, Jennifer Loper, Notary Public
(insert name and title of the officer)

personally appeared Karen Amin
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~
subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in
~~his~~/her/~~their~~ authorized capacity(~~ies~~), and that by ~~his~~/her/~~their~~ signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature *Jennifer Loper* (Seal)



Power of Attorney

KNOW ALL MEN BY THESE PRESENTS THAT:

Nationwide Mutual Insurance Company, an Ohio corporation

hereinafter referred to severally as the "Company" and collectively as "the Companies" does hereby make, constitute and appoint:
DANIEL M CONNOLLY; JENNIFER LOPER; KAREN AMIN

each in their individual capacity, its true and lawful attorney-in-fact, with full power and authority to sign, seal, and execute on its behalf on the date thereof any and all: (i) bonds and undertakings; (ii) Proposal Bonds; (ii) Letters of Surety; (iv) Consent of Surety; and (v) other obligatory instruments of similar nature, in penalties not exceeding the sum of

UNLIMITED

and to bind the Company thereby, as fully and to the same extent as if such instruments were signed by the duly authorized officers of the Company; and all acts of said Attorney pursuant to the authority given are hereby ratified and confirmed.

This power of attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the board of directors of the Company:

"RESOLVED, that the president, or any vice president be, and each hereby is, authorized and empowered to appoint attorneys-in-fact of the Company, and to authorize them to execute and deliver on behalf of the Company any and all bonds, forms, applications, memorandums, undertakings, recognizances, transfers, contracts of indemnity, policies, contracts guaranteeing the fidelity of persons holding positions of public or private trust, and other writings obligatory in nature that the business of the Company may require; and to modify or revoke, with or without cause, any such appointment or authority; provided, however, that the authority granted hereby shall in no way limit the authority of other duly authorized agents to sign and countersign any of said documents on behalf of the Company."

"RESOLVED FURTHER, that such attorneys-in-fact shall have full power and authority to execute and deliver any and all such documents and to bind the Company subject to the terms and limitations of the power of attorney issued to them, and to affix the seal of the Company thereto; provided, however, that said seal shall not be necessary for the validity of any such documents."

This power of attorney is signed and sealed under and by the following bylaws duly adopted by the board of directors of the Company.

Execution of Instruments. Any vice president, any assistant secretary or any assistant treasurer shall have the power and authority to sign or attest all approved documents, instruments, contracts, or other papers in connection with the operation of the business of the company in addition to the chairman of the board, the chief executive officer, president, treasurer or secretary; provided, however, the signature of any of them may be printed, engraved, or stamped on any approved document, contract, instrument, or other papers of the Company.

IN WITNESS WHEREOF, the Company has caused this instrument to be sealed and duly attested by the signature of its officer the 23rd day of October, 2025.



Antonio C. Albanese, **Vice President** of Nationwide Mutual Insurance Company

ACKNOWLEDGMENT

STATE OF OHIO COUNTY OF FRANKLIN: ss

On this 23rd day of October, 2025, before me came the above-named officer for the Company aforesaid, to me personally known to be the officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, deposes and says, that he is the officer of the Company aforesaid, that the seal affixed hereto is the corporate seal of said Company, and the said corporate seal and his signature were duly affixed and subscribed to said instrument by the authority and direction of said Company.

Karen L. Kam
 Notary Public, State of Ohio
 No. 2018-RE-719796
 Commission Expires July 7, 2028


 Notary Public
 My Commission Expires
 July 7, 2028

CERTIFICATE

I, Lezlie F. Chimienti, Assistant Secretary of the Company, do hereby certify that the foregoing is a full, true and correct copy of the original power of attorney issued by the Company; that the resolution included therein is a true and correct transcript from the minutes of the meetings of the boards of directors and the same has not been revoked or amended in any manner; that said Antonio C. Albanese was on the date of the execution of the foregoing power of attorney the duly elected officer of the Company, and the corporate seal and his signature as officer were duly affixed and subscribed to the said instrument by the authority of said board of directors; and the foregoing power of attorney is still in full force and effect.

IN WITNESS WHEREOF, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of said Company this 6th day of

January, 2026.


 Assistant Secretary



County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

April 22, 2026

Marc Kerkochian, President
Better Enterprises, Inc.
1148 N Cypress Ave
Fresno, CA 93727-6871

Transmitted by email to: susan@betterenterprisesinc.com

**Subject: Notice of Approval, Central Library Ceiling and Lighting Upgrades
Contract No. 25-S-01**

Dear Marc Kerkochian:

A Conditional Notice of Approval was issued on March 25, 2026, pending purchase of Builder's Risk insurance. We have now received satisfactory evidence of the purchase of Builder's Risk insurance.

This letter notifies you that the contract between your firm and the County of Fresno for the referenced project is now fully operative. This is not a Notice to Proceed.

If you have any questions, contact Jennica Geddert at jgeddert@fresnocountyca.gov or (559) 353-4919.

Sincerely,

Joseph C. Harrell, PE
Interim Division Manager

cc: Financial Services
Construction Management
Design Division – Design Services

25-S-01 Notice of Approval

Final Audit Report

2026-04-22

Created:	2026-04-22
By:	Iliana Martinez (ilianamartinez@fresnocountyca.gov)
Status:	Signed
Transaction ID:	CBJCHBCAABAAOf2WzUasiXrU3epIYJiE66oxAwZnWoUs

"25-S-01 Notice of Approval" History

-  Document created by Iliana Martinez (ilianamartinez@fresnocountyca.gov)
2026-04-22 - 9:48:38 PM GMT
-  Document emailed to Joseph C. Harrell (jharrell@fresnocountyca.gov) for signature
2026-04-22 - 9:48:42 PM GMT
-  Email viewed by Joseph C. Harrell (jharrell@fresnocountyca.gov)
2026-04-22 - 9:51:27 PM GMT
-  Document e-signed by Joseph C. Harrell (jharrell@fresnocountyca.gov)
Signature Date: 2026-04-22 - 10:10:47 PM GMT - Time Source: server
-  Agreement completed.
2026-04-22 - 10:10:47 PM GMT