General Info

Alt Total: $568,980.60

Total:

$3,057,510.40

Number

25-04-PR

Deadline

07/02/2025 02:00 PM PDT

Vendor

Harris Development Corp

Submitted

07/02/2025 01:57 PM PDT

Signed by

Rob Harris
Account Holder Robert Harris

Opened

07/02/2025 02:10 PM PDT
By
hdhah@fresnocountyca.gov

Description

Kearney Park Improvements

The work to be done consists, in general, of improvements to Kearney Park, located at 6725 W. Kearney Blvd. in Fresno, CA, including the installation of a new County-furnished prefabricated restroom and connecting it to utilities, demolishing two septic tanks at existing restrooms and connecting those restrooms to an existing City of Fresno sewer trunk, removing the old playground and installing three new County-furnished playground structures, installing a County-furnished premanufactured steel shelter, constructing a multi-purpose court (tennis, basketball and pickleball courts), reconstructing a parking lot, installing additional lighting throughout the park, and other miscellaneous work such as clearing and grubbing, grading, parking lot striping, installation of speed bumps and wheel stops. Additive items include fog sealing some of the existing parking lots and the replacement/repair of existing decorative rock walls throughout the park.

Allows zero unit prices and labor

Yes

Allows negative unit prices and labor

Yes

Attachment List

Project Website
RFC form, bid opening details, any Supplemental Information including RFC responses, prebid conference information, etc.

Specifications (3.97 MB)
Specifications (3.97 MB)

Plans (51.72 MB)
Plans (51.72 MB)

Instructions for Completing the Bid Book
Instructions for Completing the Bid Book

Addendum 1
Addendum 1 (1.3 MB)

Proposal to the County of Fresno - Proposal 1

PROPOSAL TO THE COUNTY OF FRESNO

hereinafter called the Owner

KEARNEY PARK IMPROVEMENTS

6725 W. KEARNEY BLVD., FRESNO, CA 93706

The work embraced herein shall be done in accordance with the 2023 Standard Specifications and with the 2023 Standard Plans, of the State of California, Department of Transportation insofar as the same may apply and in accordance with these special provisions.

Except to the extent that they may conflict with these special provisions, revised Standard Specifications apply to the extent included in the section entitled “Project Details” of the book entitled “Specifications."

The work to be done is shown on a set of Plans, Department File No. 11338, entitled: “Kearney Park Improvements”.

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 they have carefully examined the location of the proposed work, the annexed proposed form of contract, and the plans therein referred to; and they propose and agree if this proposal is accepted, that they will contract with the Owner 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 Engineer as therein set forth, and that they will take in full payment therefor the following unit prices, to-wit:

Bid Item List - Base Bid - Proposal 2

$2,488,529.80

Item No.	Quantity	Unit	Item Description	Item Price	Extension
1	50,000	$	SUPPLEMENTAL WORK	$1.00	$50,000.00
2	1	LS	MOBILIZATION & DEMOBILIZATIO N	$108,550.00	$108,550.00
3	1	LS	JOB SITE MANAGEMENT	$36,225.00	$36,225.00
4	1	LS	PREPARE AND IMPLEMENT STORM WATER POLLUTION PREVENTION PLAN (SWPPP)	$30,300.00	$30,300.00
5	1,500	$	STATE WATER RESOURCES CONTROL BOARD NOI FILING FEE	$1.00	$1,500.00
6	5,000	$	COUNTY PERMIT FEES	$1.00	$5,000.00
7	1	LS	TRAFFIC CONTROL SYSTEM	$16,125.00	$16,125.00
8	1	LS	CLEARING AND GRUBBING	$19,500.00	$19,500.00
9	1	LS	DEMOLISH AND DISPOSE OF EXISTING ROCK WALL AND CONCRETE SLAB AT MULTI PURPOSE COURT	$14,250.00	$14,250.00
10	1	LS	DEMO EXISTING PLANTER AT MLTI PURPOSE COURT PARKING LOT "G"	$4,395.00	$4,395.00
					Total: $2,488,529.80

Item No.	Quantity	Unit	Item Description	Item Price	Extension
11	1	LS	DEMO EXISTING CONCRETE WALKWAY, VALLEY GUTTER AND STRIP PARKING LOT "G"	$3,735.00	$3,735.00
12	1	LS	REMOVE AND DISPOSE EXISTING PLAYGROUND	$18,590.00	$18,590.00
13	2	EA	DEMO OF EXISTING SEPTIC TANK PER PLAN	$5,480.00	$10,960.00
14	1	LS	EARTHWORK (ROUGH AND FINE GRADING)	$40,250.00	$40,250.00
15	1,321	LF	FURNISH AND INSTALL 6" DIA. SDR 35 SEWER PIPE	$46.20	$61,030.20
16	221	LF	FURNISH AND INSTALL 8" DIA. SDR 35 SEWER PIPE	$66.00	$14,586.00
17	10	EA	FURNISH AND INSTALL 4" SEWER CLEANOUT	$330.00	$3,300.00
18	3	EA	FURNISH AND INSTALL 48" DIA SEWER MANHOLE	$11,000.00	$33,000.00
19	370	LF	PERMANENT TRENCH RESURFACING	$31.20	$11,544.00
20	1	EA	FURNISH AND INSTALL BACKFLOW PREVENTION DEVICE	$6,832.00	$6,832.00
21	580	LF	FURNISH AND	$7.05	$4,089.00
					Total: $2,488,529.80

Item No.	Quantity	Unit	Item Description	Item Price	Extension
			INSTALL 2" PVC SCHED. 80 WATER PIPE		
22	7,611	SY	PULVERIZE IN PLACE/GRADE AND COMPACT SUBGRADE (MULTIPURPOSE COURT & PARKING LOT G)	$10.45	$79,534.95
23	634	CY	CLASS II AGGREGATE BASE (MULTI PURPOSE COURTS & PARKING LOT G) - FINAL PAY ITEM	$57.70	$36,581.80
24	2,000	SF	CONSTRUCT 6" THICK REINFORCED CONCRETE PARKING STALLS (PARKING LOT G)	$23.15	$46,300.00
25	569	LF	CONSTRUCT REINFORCED CONCRETE VALLEY GUTTER (PARKING LOT G)	$39.90	$22,703.10
26	1,011	TON	1/2" HOT MIX ASPHALT TYPE A (PARKING LOT G)	$125.85	$127,234.35
27	350	LF	PLACE HMA DIKE TYPE A (PARKING LOT G)	$26.15	$9,152.50
28	112	LF	CONCRUCT 4 FOOT WIDE SWALE FILLED W/ 3/4 INCH CHRUSHED GRAVEL	$40.00	$4,480.00
					Total: $2,488,529.80

Item No.	Quantity	Unit	Item Description	Item Price	Extension
29	1	LS	SIGNAGE AND STRIPING FOR PARKING LOT "G"	$7,325.00	$7,325.00
30	461	TON	HOT MIX ASPHALT (MULTI PURPOSE COURTS)	$149.60	$68,965.60
31	23,598	SF	MULTI-PURPOSE COURT SURFACING	$1.65	$38,936.70
32	641	LF	FURNISH AND INSTALL 12' TALL CHAINLINK FENCE	$151.60	$97,175.60
33	96	LF	FURNISH AND INSTALL 10' TALL CHAINLINK FENCE	$216.40	$20,774.40
34	104	LF	FURNISH AND INSTALL 3' TALL CHAINLINK FENCE	$154.80	$16,099.20
35	6	EA	FURNISH AND INSTALL 4' WIDE CHAINLINK GATE	$1,505.00	$9,030.00
36	641	LF	CONSTRUCT 6 INCH x 20 INCH CONCRETE MOWSTRIP	$17.90	$11,473.90
37	2	EA	FURNISH AND INSTALL BASKETBALL HOOPS COMPLETE	$12,100.00	$24,200.00
38	2	EA	FURNISH AND INSTALL TENNIS NET SET COMPLETE	$3,900.00	$7,800.00
39	1	LS	MULTI-	$10,535.00	$10,535.00
					Total: $2,488,529.80

Item No.	Quantity	Unit	Item Description	Item Price	Extension
			PURPOSE COURT STRIPING		
40	7,360	SF	CONSTRUCT 4 INCH THICK CONCRETE SIDEWALK/ LANDING	$11.75	$86,480.00
41	1,985	SF	CONSTRUCT 6 INCH THICK REINFORCED CONCRETE PAD	$20.50	$40,692.50
42	1	LS	IRRIGATION WORK	$146,200.00	$146,200.00
43	1	LS	INSTALL COUNTY FURNISHED PLAYGROUND (Playground 1)	$43,680.00	$43,680.00
44	1	LS	INSTALL COUNTY FURNISHED PLAYGROUND (Playground 2)	$43,680.00	$43,680.00
45	1	LS	INSTALL COUNTY FURNISHED PLAYGROUND (Playground 3)	$39,200.00	$39,200.00
46	2	EA	FURNISH AND INSTALL BENCH W/ CONCRETE PAD	$3,285.00	$6,570.00
47	1	EA	PREFRABRICATED RESTROOM WORK - COUNTY FURNISHED	$15,550.00	$15,550.00
48	1	EA	INSTALL COUNTY FURNISHED SHELTER STRUCTURE	$61,600.00	$61,600.00
					Total: $2,488,529.80

Item No.	Quantity	Unit	Item Description	Item Price	Extension
49	360	EA	FURNISH AND INSTALL 4' LONG PRECAST CONCRETE WHEELSTOPS	$84.75	$30,510.00
50	22	EA	INSTALL SPEED BUMPS PAINTED WHITE	$1,020.00	$22,440.00
51	1	LS	RESTRIPE PARKING LOTS INCLUDING ADA PARKING STALL, AISLE, AND CROSSING	$11,400.00	$11,400.00
52	6	EA	ADA PARKING STALL SIGN ASSEMBLY	$584.00	$3,504.00
53	90	SF	DETECTABLE WARNING SURFACES (ADA DOMES)	$44.00	$3,960.00
54	1	LS	ELECTRICAL AND LIGHTING	$801,000.00	$801,000.00
					Total: $2,488,529.80

Bid Item List - Additive 1 - Fog Seal - Proposal 2

$11,300.00

Item No.	Quantity	Unit	Item Description	Item Price	Extension
Alternate: Owner-agency may award independently from entire bid.					
55	10	TON	ASPHALTIC EMULTION (FOG SEAL COAT)	$1,130.00	$11,300.00
					Alternate Total: $11,300.00
					Total: $11,300.00

Bid Item List - Additive 2 - Rock Wall Repair - Proposal 2

$557,680.60

Item No.	Quantity	Unit	Item Description	Item Price	Extension
Alternate: Owner-agency may award independently from entire bid.					
56	638	LF	FURNISH AND INSTALL MISSING LAYER/ PARTIAL REPAIR OF RIVER ROCK WALL	$155.20	$99,017.60
57	440	LF	FURNISH AND INSTALL FULL HEIGHT OF RIVER ROCK WALL	$175.00	$77,000.00
58	1,032	LF	FURNISH AND INSTALL MISSING LAYER/ PARTIAL REPAIR OF SLATE ROCK WALL	$239.80	$247,473.60
59	298	LF	FURNISH AND INSTALL FULL HEIGHT OF SLATE ROCK WALL	$450.30	$134,189.40
				Alternate Total:	**$557,680.60**
				Total:	**$557,680.60**

Evaluation of Bid Item List - Proposal 3

Abbreviations used in the bid proposal sheet are identified in Section 1-1.06, “Abbreviations,” of these special provisions.

Bids are required for the entire work. Bids will be compared on the basis indicated in the Notice to Bidders. The bidder shall set forth for each unit basis item of work a unit price and a total for the item, and for each lump sum item a total for the item, all in clearly legible figures in the respective spaces provided for that purpose. In the case of unit basis items, the amount set forth under the "Item Total" column shall be the product of the unit price bid and the estimated quantity for the item.

In case of discrepancy between the unit price and the total set forth for a unit basis item, the unit price shall prevail, except as provided in (a) or (b), as follows:

(a) If the amount set forth as a unit price is unreadable or otherwise unclear, or is omitted, or is the same as the amount as the entry in the item total column, then the amount set forth in the item total column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price;

(b) (Decimal Errors) If the product of the entered unit price and the estimated quantity is exactly off by a factor of ten, one hundred, etc., or one-tenth, or one-hundredth, etc. from the entered total, the discrepancy will be resolved by using the entered unit price or item total, whichever most closely approximates percentage-wise the unit price or item total in the Owner's Final Estimate of cost.

If both the unit price and the item total are unreadable or otherwise unclear, or are omitted, the bid may be deemed irregular. Likewise, if the item total for a lump sum item is unreadable or otherwise unclear, or is omitted, the bid may be deemed irregular unless the project being bid has only a single item and a clear, readable total bid is provided.

Symbols such as commas and dollar signs will be ignored and have no mathematical significance in establishing any unit price or item total or lump sums. Written unit prices, item totals and lump sums will be interpreted according to the number of digits and, if applicable, decimal placement. Cents symbols also have no significance in establishing any unit price or item total since all figures are assumed to be expressed in dollars and/or decimal fractions of a dollar. Bids on lump sum items shall be item totals only; if any unit price for a lump sum item is included in a bid and it differs from the item total, the items total shall prevail.

The foregoing provisions for the resolution of specific irregularities cannot be so comprehensive as to cover every omission, inconsistency, error or other irregularity which may occur in a bid. Any situation not specifically provided for will be determined in the discretion of the Owner, and that discretion will be exercised in the manner deemed by the Owner to best protect the public interest in the prompt and economical completion of the work. The decision of the Owner respecting the amount of a bid, or the existence or treatment of an irregularity in a bid, shall be final.

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, with surety satisfactory to the Owner, within eight (8) days not including Saturdays, Sundays and legal holidays, after the bidder has received notice of award of the contract, the Owner, 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 Owner.

Bid Security - Proposal 4

Bond Percentage

10.00%

Guarantee Method *

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

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

Confirmation *

I have provided a Paper Bid Bond for the Bid Security Amount above prior to the solicitation deadline.

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)) to the office location according to the instructions in the Notice to Bidders ***prior to*** the bid opening.

Addendum Acknowledgement - Proposal 4

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:**

(Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging)

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

Addendum No. *

1

Dated *

6/27/2025

Bidder Signature - Proposal 4

Business Name *

Harris Development Corp dba HBC Enterprises

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

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.*

Business Owners and Officers Names *

Rob Harris-President
Josh Bowman-Director

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

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

Class *

A, B, C-8, C12, C13, C27,C29, C33, C-61/D03, C-61/D06,
C-61/D28, C-61/D49, C-61/D56, C-61/D63

Contractor License No. *	**Expires ***
976218	08/31/2025

DIR Registration Number *

1000061989

Business Address *

2743 E. Shaw Ave. Ste. 105-08 Clovis, CA

Zip Code *

93611

Mailing Address *

2743 E. Shaw Ave Ste. 103 Fresno, CA

Zip Code *

93710

Business Phone *

(559) 575-3000

Fax Number

(559) 775-5194

E-mail Address *

Robathbc@gmail.com

Signature of Bidder *

Rob Harris

Dated *

6/30/2025

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.

Non-Collusion Declaration - Proposal 5

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): *

Owner

If Corporate Officer please list Title:

President

of (Business Name): *

Harris Development Corp dba HBC Enterprises

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: *

06/30/2025

at City, State: *

Fresno, California

Signature: *

Rob Harris

(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.

Public Contract Code - Proposal 6-7

Public Contract Code Section 10285.1 Statement - Proposal 6

In conformance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder

Choose an option: *

Has not been convicted

within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

The above Statement is part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Public Contract Code Section 10162 Questionnaire - Proposal 7

In conformance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Choose an option: *

No

If the answer is No, please type N/A. If the answer is Yes, explain the circumstances in the following space. *

N/A

Public Contract Code Section 10232 Statement - Proposal 7

In conformance with Public Contract Code Section 10232, the Contractor hereby states under penalty of perjury, that no more than

one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two-years period because of the Contractor's failure to comply with an order of the National Labor Relations Board.

Note: The above Statement and Questionnaire are part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Statement and Questionnaire. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Subcontractors - Proposal 8(a)

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. Each listed subcontractor's name, location of business and description of work, and both their contractor's license number and public works contractor registration number, issued pursuant to Section 1725.5 of the Labor Code, 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: *

HBC Enterprises-JV

Business Address *

1840 Shaw Ave. Ste. 105-08 Clovis, CA 93611

Class

A, B, C-8,C12, C13,C27,
C29, C33, C-61//D06, C-61/
D56

License No. *

1044524

DIR Registration No. *

1000062361

Item No. or Description of Work *

Traffic Control, Fencing, Underground

Dollar Amount: **OR** **Percentage of Total Bid:**

Email Address:

Robathbc@gmail.com

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

Subcontractor: *

Juarez Brothers General Engineering

Business Address *

17244 El Dorado, Madera, CA 93636

Class

License No. *

956804

DIR Registration No. *

1001118160

Item No. or Description of Work *

HMA/excavation & grading, clear & grub

Dollar Amount: **OR** **Percentage of Total Bid:**

Email Address:

estimating@jb-enginc.com

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

Subcontractor: *

Beynon

Business Address *

4668 N. Sonora Ave Suite 101, Fresno, CA 93722

Class

A, C-15, C-61 / D12

License No. *

883198

DIR Registration No. *

1000004698

Item No. or Description of Work *

Court Surfacing/Striping

Dollar Amount: **OR** **Percentage of Total Bid:**

Email Address:

info@beynonsports.com

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

Subcontractor: *

T&T Pavement Markings & Products Inc.

Business Address *

3276 W. Sussex Way Fresno, CA 93722

Class

License No. *

687921

DIR Registration No. *

1000046338

Item No. or Description of Work *

Striping/Signage/Wheel stops

Dollar Amount: **OR** **Percentage of Total Bid:**

Email Address:

tandtpavemark@gmail.com

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

Subcontractor: *

King Khan Drilling & Constructions Inc.

Business Address *

9315 N Fowler Ave Clovis, CA 93619

Class

License No. *

833691

DIR Registration No. *

1000003324

Item No. or Description of Work *

Equipment Installation

Dollar Amount: **OR** **Percentage of Total Bid:**

Email Address:

kingkhandrilling@aol.com

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

Subcontractor: *

Epic Land Surveying Inc.

Business Address *

1473 E. G Street, Ste. B Oakdale CA 95361

Class

License No. *

PLS# 8366

DIR Registration No. *

1000013102

Item No. or Description of Work *

Surveying

Dollar Amount: **OR** **Percentage of Total Bid:**

Email Address:

info@epicsurveying.com

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

Subcontractor: *

Signature Touch Landscape

Business Address *

2379 S Helm, Fresno, CA 93725

Class

License No. *

1110332

DIR Registration No. *

1001154251

Item No. or Description of Work *

Landscape & Irrigations

Dollar Amount: **OR** **Percentage of Total Bid:**

Email Address:

David.g@signaturetouchlandscapes.com

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

Subcontractor: *

Griffin Soil LLC

Business Address *

248 Industrial Dr. Stockton CA 95206

Class

License No. *

791232

DIR Registration No. *

2000012215

Item No. or Description of Work *

Pulverizing

Dollar Amount: **OR** **Percentage of Total Bid:**

Email Address:

Sharon@GriffinSoil.com

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

Subcontractor: *

Standard Emulsions Co

Business Address *

6630 Ave 304 Visalia, CA 93291

Class

License No. *

2031421

DIR Registration No. *

PW-LR-1001004519

Item No. or Description of Work *

Fog Seal

Dollar Amount: **OR** **Percentage of Total Bid:**

Email Address:

cliff@standardemulsions.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 9

Subcontractor: *

Harmonson Construction

Business Address *

7257 N Maple Avenue Suite 108, Fresno CA 93720

Class

License No. *

1057285

DIR Registration No. *

1000455319

Item No. or Description of Work *

Pavilion Installation

Dollar Amount: **OR** **Percentage of Total Bid:**

Email Address:

bids@harmonsonconstruction.com

Subcontractor: To add more subcontractor listings, click the "+" to add additional fields. 10

Subcontractor: *

CVE Demolition

Business Address *

35500 S. Welty Rd., Vernalis, Ca. 95385

Class

License No. *

905631

DIR Registration No. *

1000008301

Item No. or Description of Work *

Demo

Dollar Amount: **OR** **Percentage of Total Bid:**

Email Address:

chuckj@cvecorp.com

Subcontractors - Proposal 8(b)

Optional: Vendor is not required to complete.

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

Subcontractor: *

AMI

Business Address *

PO Box 26505 Fresno CA 93729

Class

License No. *

996712

DIR Registration No. *

1000062233

Item No. or Description of Work *

Masonry

Dollar Amount: **OR** **Percentage of Total Bid:**

Email Address:

aminc.office@gmail.com

California Code of Regulations: General Requirements for In-Use Off-Road Diesel-Fueled Fleets - Proposal 9

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' Certificate of Reported Compliance have been attached.**

☑ **The following subcontractors do not have a fleet subject to this regulation as outlined in Section 2449(i)(1)-(4):**

Subcontractors

HBC Enterprises-JV
T&T Pavement Markings and Products Inc.
Beynon

☑ **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.

Proposal 10-18

NOT USED

Guaranty - Proposal 19

Optional: Vendor is not required to complete.

(This guaranty shall be executed by the successful bidder in accordance with instructions in the special provisions. The bidder may execute the guaranty on this page at the time of submitting their bid.)

G U A R A N T Y

To the Owner: County of Fresno

CONTRACT NUMBER 25-04-PR

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 the plans and specifications, due to any of the above causes, all within twelve (12) months after date on which 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.

Date: *

July 1, 2025

Name (Printed): *

Rob Harris

Signature: *

Rob Harris

Title: *

President

Contractor: *

Harris Development Corp. dba HBC Enterprises

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.	Signed Bid Bond.pdf
CARB Certification of Reported Compliance - Bidder Valid CARB Certification of Reported Compliance - Bidder	Does not have a fleet subject to this regulation.	Harris Dev. Corp-CARB.pdf
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.	Subcontractors-CARB.pdf
3 Required Documents		

Additional Documents (Use if needed)

Name	Omission Terms	Submitted File
Optional: Vendor is not required to complete.		
Not Required Extra Space if needed	Extra space not needed	Signed bid forms.pdf
Not Required Extra Space if needed	Extra space not needed	I am not enclosing this document because the omission terms have been met.
Not Required Extra Space if needed	Extra space not needed	I am not enclosing this document because the omission terms have been met.
3 Required Documents		



UNITED FIRE & CASUALTY COMPANY
118 Second Avenue SE, PO Box 73909
Cedar Rapids, Iowa 52407-3909 319-399-5700
(A Stock Company)

BID BOND

KNOW ALL BY THESE PRESENTS, that we

Harris Development Corp DBA HBC Enterprises

as Principal, hereinafter called the Principal, and the UNITED FIRE & CASUALTY COMPANY, a corporation duly organized under the laws of the State of IOWA, as Surety, hereinafter called the Surety, are held and firmly bound unto **County of Fresno**

as Obligee, hereinafter called the Obligee, in the sum of **10% of the bid amount** Dollars ($**10% of the bid amount**), for the payment of which sum well and truly to be made, the said principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for
Kearney Park Improvements- 6725 Kearney Blvd Fresno, CA 93706

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or contract documents with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee 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.

Signed and sealed this **13th** day of **June**, 20 **25**.

Harris Development Corp DBA HBC Enterprises

By _____ (Seal)
(PRINCIPAL)

PRESIDENT
(TITLE)

_____
(WITNESS)

UNITED FIRE & CASUALTY COMPANY (Seal)
(SURETY)

By Angelina B. Alvarez Attorney In Fact
(ATTORNEY-IN-FACT)

_____
(WITNESS)

Angelina B Alvarez Attorney In Fact
HUB International (Agent Address)
548 W Cromwell Ave Suite 101 Fresno, CA 93711

United Fire & Casualty Company(Surety Address)
118 Second Ave SE Cedar Rapids, IA 52407

CONT 0001 0899

UNITED FIRE & CASUALTY COMPANY, CEDAR RAPIDS, IA
UNITED FIRE & INDEMNITY COMPANY, WEBSTER, TX
FINANCIAL PACIFIC INSURANCE COMPANY, LOS ANGELES, CA
CERTIFIED COPY OF POWER OF ATTORNEY
(original on file at Home Office of Company – See Certification)

Inquiries: Surety Department
118 Second Ave SE
Cedar Rapids, IA 52401

KNOW ALL PERSONS BY THESE PRESENTS, That United Fire & Casualty Company, a corporation duly organized and existing under the laws of the State of Iowa; United Fire & Indemnity Company, a corporation duly organized and existing under the laws of the State of Texas; and Financial Pacific Insurance Company, a corporation duly organized and existing under the laws of the State of California (herein collectively called the Companies), and having their corporate headquarters in Cedar Rapids, State of Iowa, does make, constitute and appoint

JENNIFER WHEELER; LORI L. ENDSLEY, VERITY RACHT, RONALD D. OSBORN, CAROL BURNS, ANGELINA B. ALVAREZ, EACH INDIVIDUALLY

their true and lawful Attorney(s)-in-Fact with power and authority hereby conferred to sign, seal and execute in its behalf all lawful bonds, undertakings and other obligatory instruments of similar nature provided that no single obligation shall exceed $10,000,000.00 and to bind the Companies thereby as fully and to the same extent as if such instruments were signed by the duly authorized officers of the Companies and all of the acts of said Attorney, pursuant to the authority hereby given and hereby ratified and confirmed.

The Authority hereby granted shall expire the 1st day of October, 2025 unless sooner revoked by United Fire & Casualty Company, United Fire & Indemnity Company, and Financial Pacific Insurance Company.

This Power of Attorney is made and executed pursuant to and by authority of the following bylaw duly adopted by the Boards of Directors of United Fire & Casualty Company, United Fire & Indemnity Company, and Financial Pacific Insurance Company.

"Article VI – Surety Bonds and Undertakings"

Section 2, Appointment of Attorney-in-Fact. "The President or any Vice President, or any other officer of the Companies may, from time to time, appoint by written certificates attorneys-in-fact to act in behalf of the Companies in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. The signature of any officer authorized hereby, and the Corporate seal, may be affixed by facsimile to any power of attorney or special power of attorney or certification of either authorized hereby; such signature and seal, when so used, being adopted by the Companies as the original signature of such officer and the original seal of the Companies, to be valid and binding upon the Companies with the same force and effect as though manually affixed. Such attorneys-in-fact, subject to the limitations set of forth in their respective certificates of authority shall have full power to bind the Companies by their signature and execution of any such instruments and to attach the seal the Companies thereto. The President or any Vice President, the Board of Directors or any other officer of the Companies may at any time revoke all power and authority previously given to any attorney-in-fact.

IN WITNESS WHEREOF, the COMPANIES have each caused these presents to be signed by its vice president and its corporate seal to be hereto affixed this 1st day of October, 2023

UNITED FIRE & CASUALTY COMPANY
UNITED FIRE & INDEMNITY COMPANY
FINANCIAL PACIFIC INSURANCE COMPANY

By: Kyanna M Saylor
Vice President

State of Iowa, County of Linn, ss:

On 1st day of October, 2023, before me personally came Kyanna M. Saylor to me known, who being by me duly sworn, did depose and say; that she resides in Cedar Rapids, State of Iowa; that she is a Vice President of United Fire & Casualty Company, a Vice President of United Fire & Indemnity Company, and a Vice President of Financial Pacific Insurance Company the corporations described in and which executed the above instrument; that she knows the seal of said corporations; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporations and that she signed her name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporations.

Patti Waddell
Iowa Notarial Seal
Commission number 713274
My Commission Expires 10/26/2025

Patti Waddell
Notary Public
My commission expires: 10/26/2025

I, Mary A. Bertsch, Assistant Secretary of United Fire & Casualty Company and Assistant Secretary of United Fire & Indemnity Company, and Assistant Secretary of Financial Pacific Insurance Company, do hereby certify that I have compared the foregoing copy of the Power of Attorney and affidavit, and the copy of the Section of the bylaws and resolutions of said Corporations as set forth in said Power of Attorney, with the ORIGINALS ON FILE IN THE HOME OFFICE OF SAID CORPORATIONS, and that the same are correct transcripts thereof, and of the whole of the said originals, and that the said Power of Attorney has not been revoked and is now in full force and effect.

In testimony whereof I have hereunto subscribed my name and affixed the corporate seal of the said Corporations this 13th day of June, 2025.

By: Mary A Bertsch
Assistant Secretary,
UF&C & UF&I & FPIC

BPOA0045 122017

CALIFORNIA ACKNOWLEDGMENT **CIVIL CODE § 1189**

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 06/13/2025 before me, C Parra, Notary Public,
Date *Here Insert Name and Title of the Officer*

personally appeared Angelina B. Alvarez
Name(s) of Signer(s)

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.

C. PARRA
Notary Public - California
Fresno County
Commission # 2507576
My Comm. Expires Dec 21, 2028

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 C Parra
Signature of Notary Public

Place Notary Seal and/or Stamp Above

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document
Title or Type of Document: Bid Bond
Document Date: 06/13/2025 Number of Pages: 2
Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Angelina B. Alvarez	Signer's Name: _____
☐ Corporate Officer – Title(s): _____	☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General	☐ Partner – ☐ Limited ☐ General
☐ Individual ☑ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other: _____	☐ Other: _____
Signer is Representing: _____	Signer is Representing: _____

©2019 National Notary Association

California Environmental Protection Agency

Air Resources Board

January 1, 2025

CERTIFICATE OF REPORTED COMPLIANCE
OFF-ROAD DIESEL VEHICLE REGULATION

is issued to

HARRIS DEVELOPMENT CORP.

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

251600

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

HBC ENTERPRISES

1840 Shaw Ave. 105-08
Clovis, CA 93611
559-575-3000 office
559-775-5194 fax
CSLB# 1044524

March 5, 2025

To Whom It May Concern:

HBC Enterprises-JV does not currently operate any diesel vehicles (on either an Interstate or Intrastate basis) with a gross vehicle weight rating over 14,000 pounds. The GVWR of our Light-Duty diesel vehicles negates the requirement to participate in C.A.R.B compliance programs at this time. Our customers will be notified in advance of such a time we plan to incorporate Heavy-Duty diesel vehicles into our fleet and be provided all necessary compliance documentation once it becomes available.

Please reach out to our office with any questions or concerns.

Thank you,

Dallanara Miguel
Office Manager



California Environmental Protection Agency

Air Resources Board

January 1, 2025

CERTIFICATE OF REPORTED COMPLIANCE
OFF-ROAD DIESEL VEHICLE REGULATION

is issued to

JUAREZ BROTHERS GENERAL ENGINEERING, 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

70919

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

BEYNON®
A Tarkett Sports Company



7/2/2025

Re: CA CARB Compliance

To Whom It May Concern:

Beynon Sports Surfaces, Inc. is not required to report to CARB and is aware of the compliance requirements of the engine model year schedules of its vehicles for the Truck and Bus regulation per Title 13, California Code of Regulations, Section 2025.

Regards,

Jason Paul,
Sales & Project Manager

T&T PAVEMENT MARKINGS AND PRODUCTS INC.

3276 W. Sussex Way
Fresno, CA 93722

O: 559-275-2879
tandtpavemark@gmail.com

TIN #81-4165560
Cont. License #687921

7/2/2025

To Whom It May Concern,

T&T Pavement Markings and Products, Inc. does not currently operate any diesel/off-road vehicles.

Currently, we are exempt from the CARB Compliance Program.

Please contact us if you have any questions.

Sin[redacted]ly,

Jes[redacted] Walker
559[redacted]-2879

FLEET COMPLIANCE CERTIFICATION

Bidder hereby acknowledges that they have reviewed the California Air Resources Board's policies, rules and regulations and are familiar with the requirements of Title 13, California Code of Regulations, Division 3, Chapter 9, effective on January 1, 2024 (the "Regulation"). Bidder hereby certifies, subject to penalty for perjury, that the option checked below relating to the Bidder's fleet, and/or that of their subcontractor(s) ("Fleet") is true and correct:

- ☐ The Fleet is subject to the requirements of the Regulation, and the appropriate Certificate(s) of Reported Compliance have been attached hereto.
- ☐ The Fleet is exempt from the Regulation under section 2449.1(f)(2), and a signed description of the subject vehicles, and reasoning for exemption has been attached hereto.
- ☐ Bidder and/or their subcontractor is unable to procure R99 or R100 renewable diesel fuel as defined in the Regulation pursuant to section 2449.1(f)(3). Bidder shall keep detailed records describing the normal refueling methods, their attempts to procure renewable diesel fuel and proof that shows they were not able to procure renewable diesel (i.e. third party correspondence or vendor bids).
- ☐ The Fleet is exempt from the requirements of the Regulation pursuant to section 2449(i)(4) because this Project has been deemed an Emergency, as defined under section 2449(c)(18). Bidder shall only operate the exempted vehicles in the emergency situation and records of the exempted vehicles must be maintained, pursuant to section 2449(i)(4).
- ☒ The Fleet does not fall under the Regulation or are otherwise exempted and a detailed reasoning is attached hereto.

Name of Bidder: Epic Land Surveying, Inc.

Signature: S. Schiess

Name: Shannon Schiess

Title: Secretary Officer

Date: 8/9/2024

END OF FLEET CERTIFICATION COMPLIANCE

Shannon Schiess

From: ARB 8666Diesel <8666Diesel@arb.ca.gov>
Sent: Tuesday, August 13, 2024 2:19 PM
To: Shannon Schiess
Subject: Re: CARB question

You don't often get email from 8666diesel@arb.ca.gov. Learn why this is important

Hello,

If these vehicles are not over 14,000 lbs. GVWR, they will not be subject to CARB heavy-duty vehicle regulations.

Please be aware that, in addition to Truck and Bus, diesel vehicles being operated in California must comply with many other regulations and different programs by several different agencies. Information on addition CARB mobile source programs may include:

Clean Truck Check program information can be found here: https://ww2.arb.ca.gov/our-work/programs/heavy-duty-inspection-and-maintenance-program.

Clean Truck Check Motorhome Fact sheet can be found here: Motorhome Fact Sheet – Clean Truck Check (July 11, 2024) | California Air Resources Board

If you want to sign up for Clean Truck Check email updates you can do that here: https://public.govdelivery.com/accounts/CARB/subscriber/new?topic_id=hdim.

Advanced Clean Fleets program information can be found here: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets

If you want to sign up for Advanced Clean Fleets email updates you can do that here: https://public.govdelivery.com/accounts/CARB/subscriber/new?topic_id=zevfleet

Diesel Enforcement Programs can be found online at: https://www.arb.ca.gov/enf/diesel.htm

If you have further questions or concerns, please call us toll free at (866) 634-3735, email us, or visit: www.arb.ca.gov/truckstop

The responses provided by 8666Diesel@arb.ca.gov in this email are based on the fleet information provided by the emailer. If the fleet information provided is incomplete or inaccurate it may affect the accuracy of these responses.

Carolina
Compliance & Reporting Assistance Section
California Air Resources Board

From: Shannon Schiess <sschiess@epicsurveying.com>
Sent: Friday, August 9, 2024 9:48 AM
To: ARB 8666Diesel <8666Diesel@arb.ca.gov>
Subject: CARB question

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello,
If we drive 2021 GMC Sierra's and newer do these need to have a CARB cert?
I am being asked to state that we have this or that we do not fall under the regulation.

Please advise.
Thank you,

Shannon Schiess
Secretary | Contracts
EPIC LAND SURVEYING, INC.
PO Box 11930 Oakdale CA 95361 | Ph: 209-845-2594 Ext. 102 | Fax: 209-845-2555
www.epicsurveying.com

DIR # 1000013102 Exp 06/30/2026

"Honesty pays, but it doesn't seem to pay enough to suit some people."

This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed. If you have received this email in error please notify the system manager. This message contains confidential information and is intended only for the individual named. If you are not the named addressee you should not disseminate, distribute or copy this email. Please notify the sender immediately by email if you have received this email by mistake and delete this email from your system. If you are not the intended recipient you are notified that disclosing, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited. If you have received this electronic transmission in error, please notify us by telephone at 209-845-2594

5731 N Briarwood Ave | Fresno, CA 93711
(559) 515-3298 | david.g@signaturetouchlandscapes.com
License No. 1110332 | DIR No. 1001154251

Regarding CARB Compliance for Construction:

California Air Resources Board (CARB) Regulation changes as of January 1, 2024 require all Public Works Contactors to provide a valid Certificate of Reported Compliance (CRC) for In-Use Off-Road Diesel-Fueled Fleets that are used on a construction site, under section 2449 (i)(1) and (j)(1). Contractors that do not utilize fleets that require these certifications must indicate that CARB Compliance does not apply to the particular subcontractor and provide a detailed reasoning for said exemption.

Check box that applies:

___ **Contractor is in compliance and I have attached our CRCs identifying that my fleet is in compliance.**

__X__ **Contractor is exempt from fleet compliance for the following reasons:**

Our company does not utilize use of Off-Road Diesel-Fueled Fleets .

Project: Kearney Park Improvements

Project Owner: City of Fresno

Contractor: Signature Touch Landscapes

Authorized Signature: DAVID GILSTRAP

Name (Printed): David Gilstrap

Date: 07/02/2025

California Environmental Protection Agency

Air Resources Board

January 1, 2025

CERTIFICATE OF REPORTED COMPLIANCE
OFF-ROAD DIESEL VEHICLE REGULATION

is issued to

GRIFFIN SOIL

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

2100

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

Affirmation of Fleet Wide Compliance

Certification ID: 180854

This certificate affirms that

Entity ID: E64129
Standard Emulsions Holdings LLC
1326 Jason Way
Santa Maria, CA 93455-1000

has attested in the Clean Truck Check electronic reporting system to report a complete list of vehicles subject to Heavy-Duty Inspection and Maintenance (HD I/M) Regulation and the California Air Resources Board (CARB) hereby verifies that as of 5/21/2025, all of the attested vehicles are compliant with the Clean Truck Check.*

A complete list of the attested vehicles is listed in the following page(s).

*This Affirmation of Fleet Wide Compliance shall be used for the fleet's purposes of proving their fleet compliance status with their freight contractors and brokers. This Affirmation of Fleet Wide Compliance shall not constitute proof of a vehicle compliance with the Clean Truck Check beyond the issued date.

S.No	VIN Numbers
1	1XKYA48X2LJ415378
2	1XPTD49XXED221595
3	1M1AN4GY9MM022537
4	5KKHAXDV7JPJZ1907
5	2NP3LJ9X0MM702315



California Environmental Protection Agency

Air Resources Board

January 1, 2025

CERTIFICATE OF REPORTED COMPLIANCE
OFF-ROAD DIESEL VEHICLE REGULATION

is issued to

CVE DEMOLITION, 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

140564

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



CALIFORNIA
AIR RESOURCES BOARD

Certificate of Reported Compliance With:

Advanced Clean Fleets Regulation

Truck and Bus Regulation

Issued to: CVE Demolition Inc

This certificate confirms that the fleet owner has attested under penalty of perjury that the statements and information they provided to the California Air Resources Board (CARB) are true, accurate, and complete regarding all relevant vehicles in the fleet required to show compliance. CARB hereby finds that the fleet listed has reported compliance with:

Title 13 CCR sections 2013 - 2016 (Advanced Clean Fleets Regulation)

Title 13 CCR 2025 (Truck and Bus Regulation)

If CARB subsequently finds that the statements and information that have been provided are not true, accurate, and complete, this certificate shall be effectively revoked and the fleet subject to noncompliance penalties.

This certificate is valid until **December 31, 2025**

Jack Kitowski

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

Printed on 2025-01-14

17 Vehicles

TRUCRS Fleet Identification
228423

To verify the authenticity of this certificate, visit
www.arb.ca.gov/msprog/onrdiesel/tblookup.php

California Environmental Protection Agency

Air Resources Board

January 1, 2025

CERTIFICATE OF REPORTED COMPLIANCE
OFF-ROAD DIESEL VEHICLE REGULATION

is issued to

HARMONSON CONSTRUCTION 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

264367

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

BID SECURITY AND SIGNATURE

Bid Security

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

Bid Bond (✓); Certified Check ( ); Cashier's Check ( ); Cash ($)

Addenda Acknowledgement

Bidder has and acknowledges the following addenda: 1

Bidder Signature

Business Name Harris Development Corp. dba HBC Enterprises

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 S-Corp

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.*

Business Owners and Officers Names Rob Harris - President & Josh Bowman - Director

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

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

Class See *** Contractor License No. 976218 Expires 08/31/2025

DIR Registration Number 1000061989

Business Address: 2743 E. Shaw Ave Ste. 103, Fresno, CA 93710
Zip Code

Mailing Address: 1840 Shaw Ave. Ste. 105-08 Clovis, CA 93611
Zip Code

Business Phone: (559) 575-3000 Fax Number: (559) 775- 5194

Email Address Robathbc@gmail.com

Signature of Bidder: Dated: 06/30/2025

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, his or her 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.

***A, B, C-8, C12, C13, C27,C29, C33, C-61/D03, C-61/D06, C-61/D28, C-61/D49, C-61/D56, C-61/D63

To the County of Fresno:

NON-COLLUSION DECLARATION

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID*

The undersigned declares:

I am the President of
(Owner, Partner, Corporate Officer (list title), Co-Venturer)

Harris Development Corp. dba HBC Enterprises, 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

June 30, 2025 [date] at Fresno [city], California [state].

[Signature]

(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.

PUBLIC CONTRACT CODE

Public Contract Code Section 10285.1 Statement

In conformance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder has ___ , has not X been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Note: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Public Contract Code Section 10162 Questionnaire

In conformance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes _____ No X

If the answer is yes, explain the circumstances in the following space.

Public Contract Code 10232 Statement

In conformance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two-year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

Note: The above Statement and Questionnaire are part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Statement and Questionnaire.

Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

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' Certificate of Reported Compliance have been attached.

☐ The following subcontractors do not have a fleet subject to this regulation as outlined in Section 2449(i)(1)-(4):

_____

_____

_____

_____

_____

☑ 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.

SPECIFICATIONS

KEARNEY PARK IMPROVEMENTS

6725 W. KEARNEY BLVD., FRESNO, CA 93706

BUDGET / ACCOUNT: 8870 / 0000/ 08400 / 91771

Department of Public Works and Planning

Contract Number 25-04-PR

June 27, 2025 Contract No. 25-04-PR

ADDENDUM NO. 1 to KEARNEY PARK IMPROVEMENTS, revising the Bidding and Contract Documents/Plans/Bid Opening as follows:

TABLE OF CONTENTS

No changes

NOTICE TO BIDDERS

No changes

BID ITEMS AND APPLICABLE SECTIONS

No changes

SPECIAL PROVISIONS

No changes

TECHNICAL SPECIFICATIONS

Removed restroom and shelter procurement instructions to contractor as they are County furnished.

Section 01 25 00 Substitution Procedures
Part 2 - PRODUCTS

DELETE:

C. Public Interest Findings: The Department has made a public interest finding and has determined that the following items shall be used for the project, and no substitution therefor shall be allowed:

1. CXT Incorporated Prefabricated Public Restroom Model# S-301 “Santiago”
2. ICON Shelter Systems Incorporated 30’ x 40’ x 8.5’ Rectangular Gable Shelter

FEDERAL & STATE REQUIREMENTS

No changes

PROJECT DETAILS / DRAWINGS

No changes

PROPOSAL/BID BOOK: PAPER

No changes

PROPOSAL/BID BOOK: BID EXPRESS

No changes

AGREEMENT

DELETE:

ARTICLE V. To the fullest extent permitted by law with respect to any work required to be done under this Contract, the Contractor will indemnify and hold harmless the Owner, Borelli & Associates, Inc., and all other participating public agencies, whether or not said agencies are named herein, who have jurisdiction within the areas in which the work is to be performed, and all officers and employees of the Owner, the State, the United States and said other participating agencies, from any and all costs and expenses, attorney fees and court costs, damages, liabilities, claims and losses occurring or resulting to Owner 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.

REPLACE with:

ARTICLE V. To the fullest extent permitted by law with respect to any work required to be done under this Contract, the Contractor will indemnify and hold harmless the Owner, State of California, Borelli & Associates, Inc., and all other participating public agencies, whether or not said agencies are named herein, who have jurisdiction within the areas in which the work is to be performed, and all officers and employees of the Owner, the State, the United States and said other participating agencies, from any and all costs and expenses, attorney fees and court costs, damages, liabilities, claims and losses occurring or resulting to Owner 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.

PLANS

DELETE: Sheet No. E1.04

REPLACE with: Sheet No. E1.04A

END OF ADDENDUM NO. 1

Please attach this Addendum to the inside cover of the Specifications booklet. If you have given the Bidding and Contract Documents to someone else, please forward this Addendum.

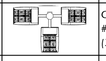
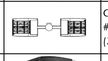
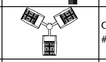
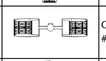
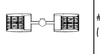


6/27/25
Date Signed

Supervising Engineer: _____
Sebastian Artal, PE C76724

FRESNO COUNTY
Department of Public Works and Planning
m/a 2220 Tulare Street, Suite 720
Fresno, CA 93721-2106

LIGHTING FIXTURE SCHEDULE (#)

TYPE	LIGHTS	MANUFACTURER AND MODEL	LAMPS	REMARKS	WATTS	LBS
E1		B-K LIGHTING #S-TY2-LED-X51-NFL-10-D57-RO	LED	5,571 LUMENS (NOMINAL) LED FIXTURE FLOOR MOUNTED. INSTALL SO IT AIMS TOWARD THE FLAG. LIGHT FIXTURE SHALL HAVE 0-10V DIMMING DRIVER.	57	26
E2		EVERGREEN #104340L-40LED-3000K-DIM	LED	4,000 LUMEN, LED FIXTURE WET RATED. LIGHT FIXTURE SHALL HAVE 0-10V DIMMING DRIVER.	40	20
S1		COOPER OR EQUAL GARDCO ECOFORM #GLEON-SA1B-740-U-T3-EA-AHD145	LED	5,986 LUMENS, POLE MOUNTED LED FIXTURE. FIXTURE SHALL BE MOUNTED ON A 25-FOOT HIGH, 5-INCH SQUARE STEEL POLE. FIXTURE SHALL HAVE AFTER HOURS DIMMING OPTION CAPABLE OF TWO NIGHTTIME MODES WITH AT LEAST 50% DIMMING. LIGHT FIXTURE SHALL HAVE PHOTOCELL.	44	33
S2		COOPER OR EQUAL GARDCO ECOFORM #GLEON-SA1B-740-U-T3-EA-AHD145 (2) LIGHT FIXTURES AT 90 DEGREES APART	LED	(2) 5,986 LUMENS, POLE MOUNTED LED FIXTURE AT 90 DEGREES APART. FIXTURES SHALL BE MOUNTED ON A 25-FOOT HIGH, 5-INCH SQUARE STEEL POLE. FIXTURES SHALL HAVE AFTER HOURS DIMMING OPTION CAPABLE OF TWO NIGHTTIME MODES WITH AT LEAST 50% DIMMING. LIGHT FIXTURES SHALL HAVE PHOTOCELL.	TWO LIGHT FIXTURES 44W EACH	TWO LIGHT FIXTURES 33 LBS EACH
S3		COOPER OR EQUAL GARDCO ECOFORM #GLEON-SA1B-740-U-T4FT-EA-AHD145 (3) LIGHT FIXTURES AT 90 DEGREES APART	LED	(3) 6,019 LUMENS, POLE MOUNTED LED FIXTURES AT 90 DEGREES APART. FIXTURES SHALL BE MOUNTED ON A 25-FOOT HIGH, 5-INCH SQUARE STEEL POLE. FIXTURES SHALL HAVE AFTER HOURS DIMMING OPTION CAPABLE OF TWO NIGHTTIME MODES WITH AT LEAST 50% DIMMING. LIGHT FIXTURES SHALL HAVE PHOTOCELL.	THREE LIGHT FIXTURES 44W EACH	THREE LIGHT FIXTURES 33 LBS EACH
S4		COOPER OR EQUAL GARDCO ECOFORM #GLEON-SA1B-740-U-T4FT-EA-AHD145 (2) LIGHT FIXTURES AT 180 DEGREES APART	LED	(2) 6,019 LUMENS, POLE MOUNTED LED FIXTURES AT 180 DEGREES APART. FIXTURES SHALL BE MOUNTED ON A 25-FOOT HIGH, 5-INCH SQUARE STEEL POLE. FIXTURES SHALL HAVE AFTER HOURS DIMMING OPTION CAPABLE OF TWO NIGHTTIME MODES WITH AT LEAST 50% DIMMING. LIGHT FIXTURES SHALL HAVE PHOTOCELL.	TWO LIGHT FIXTURES 44W EACH	TWO LIGHT FIXTURES 33 LBS EACH
S5		COOPER OR EQUAL GARDCO ECOFORM #GLEON-SA6B-740-U-T4FT-EA-AHD145	LED	34,384 LUMENS, POLE MOUNTED LED FIXTURE. FIXTURE SHALL BE MOUNTED ON A 25-FOOT HIGH, 5-INCH SQUARE STEEL POLE. FIXTURE SHALL HAVE AFTER HOURS DIMMING OPTION CAPABLE OF TWO NIGHTTIME MODES WITH AT LEAST 50% DIMMING. LIGHT FIXTURE SHALL HAVE PHOTOCELL.	249	44
S6		COOPER OR EQUAL GARDCO ECOFORM #GLEON-SA6B-740-U-T4FT-EA-AHD145-MS/DIM-L40W	LED	34,384 LUMENS, POLE MOUNTED LED FIXTURE. FIXTURE SHALL BE MOUNTED ON A 25-FOOT HIGH, 5-INCH SQUARE STEEL POLE. FIXTURE SHALL HAVE AFTER HOURS DIMMING OPTION CAPABLE OF TWO NIGHTTIME MODES WITH AT LEAST 50% DIMMING AND WITH MOTION RESPONSE OVERRIDE DURING THE PROGRAMMED 50% DIMMED PERIOD. LIGHT FIXTURE SHALL HAVE PHOTOCELL.	249	44
S7		COOPER OR EQUAL GARDCO ECOFORM #GAN-SA1B-740-U-T4FT-ADJS-AHD145-MA1197-XX	LED	(3) 6,019 LUMENS, POLE MOUNTED FLOOD LED FIXTURES. FIXTURES SHALL BE TENON MOUNTED ON A 25-FOOT HIGH, 5-INCH SQUARE STEEL POLE AT 120 DEGREES. FIXTURES SHALL HAVE AFTER HOURS DIMMING OPTION CAPABLE OF TWO NIGHTTIME MODES WITH AT LEAST 50% DIMMING. LIGHT FIXTURE SHALL HAVE PHOTOCELL. LIGHT FIXTURE SHALL BE MOUNTED AT 45 DEGREES FROM HORIZONTAL. REFER TO PLANS FOR AIMING REQUIRMENT.	THREE LIGHT FIXTURES 44W EACH	THREE LIGHT FIXTURES 34 LBS EACH
S8		COOPER OR EQUAL GARDCO ECOFORM #GAN-SA1B-740-U-T4FT-ADJS-AHD145-MA1037-XX	LED	(2) 6,019 LUMENS, POLE MOUNTED FLOOD LED FIXTURES. FIXTURES SHALL BE TENON MOUNTED ON A 25-FOOT HIGH, 5-INCH SQUARE STEEL POLE AT 180 DEGREES. FIXTURES SHALL HAVE AFTER HOURS DIMMING OPTION CAPABLE OF TWO NIGHTTIME MODES WITH AT LEAST 50% DIMMING. LIGHT FIXTURE SHALL HAVE PHOTOCELL. LIGHT FIXTURE SHALL BE MOUNTED AT 30-DEGREES FROM HORIZONTAL.	TWO LIGHT FIXTURES 44W EACH	TWO LIGHT FIXTURES 34 LBS EACH
S9		COOPER OR EQUAL GARDCO ECOFORM #GAN-SA6B-740-U-T4FT-ADJS-AHD145-MA1036-XX	LED	34,384 LUMENS, POLE MOUNTED FLOOD LED FIXTURE. FIXTURE SHALL BE TENON MOUNTED ON A 25-FOOT HIGH, 5-INCH SQUARE STEEL. FIXTURE SHALL HAVE AFTER HOURS DIMMING OPTION CAPABLE OF TWO NIGHTTIME MODES WITH AT LEAST 50% DIMMING. LIGHT FIXTURE SHALL HAVE PHOTOCELL. LIGHT FIXTURE SHALL BE MOUNTED AT 45-DEGREES FROM HORIZONTAL AND AIM TOWARDS THE PERFORMANCE STAGE AREA.	249	45
S10		COOPER OR EQUAL GARDCO ECOFORM #GAN-SA6B-740-U-T4FT-ADJS-AHD145-MS/DIM-L40W	LED	34,384 LUMENS, POLE MOUNTED FLOOD LED FIXTURE. FIXTURE SHALL BE TENON MOUNTED ON EXISTING ROUND POLE. FIXTURE SHALL HAVE AFTER HOURS DIMMING OPTION CAPABLE OF TWO NIGHTTIME MODES WITH AT LEAST 50% DIMMING. LIGHT FIXTURE SHALL HAVE PHOTOCELL. LIGHT FIXTURE SHALL BE MOUNTED AT 45-DEGREES FROM HORIZONTAL AND AIM TOWARDS THE PERFORMANCE STAGE AREA.	249	45
S11		COOPER OR EQUAL GARDCO ECOFORM #GAN-SA1B-740-U-T4FT-ADJS-AHD145-MA1036-XX	LED	6,019 LUMENS, POLE MOUNTED FLOOD LED FIXTURE. FIXTURE SHALL BE TENON MOUNTED ON A 25-FOOT HIGH, 5-INCH SQUARE STEEL POLE AT 180 DEGREES. FIXTURE SHALL HAVE AFTER HOURS DIMMING OPTION CAPABLE OF TWO NIGHTTIME MODES WITH AT LEAST 50% DIMMING. LIGHT FIXTURE SHALL HAVE PHOTOCELL. LIGHT FIXTURE SHALL BE MOUNTED AT 30-DEGREES FROM HORIZONTAL.	44	34
S12		EVERGREEN #104340L-40LED-3000K-DIM POLE: MILLERBEND BEMIDJI #DBA-E-070-120-PT1-H	LED	4,000 LUMEN, LED FIXTURE WET RATED. FIXTURES SHALL BE POST TOP MOUNTED ON A 12-FOOT HIGH, STEEL POLE. LIGHT FIXTURE SHALL HAVE 0-10V DIMMING DRIVER. CONTRACTOR TO COORDINATE FITTER ADAPTER.	40	20
S13		EVERGREEN #104340L-40LED-3000K-DIM POLE: MILLERBEND BEMIDJI #DBA-E-070-120-PT1-H	LED	4,000 LUMEN, LED FIXTURE WET RATED. FIXTURES SHALL BE POST TOP MOUNTED ON A 12-FOOT HIGH, STEEL POLE. LIGHT FIXTURE SHALL HAVE 0-10V DIMMING DRIVER. CONTRACTOR TO COORDINATE FITTER ADAPTER.	40	20
S14		COOPER OR EQUAL GARDCO ECOFORM (FIXTURES AT 180 DEGREES APART) #GLEON-SA6B-740-U-T4FT-EA-AHD145-MS/DIM-L40W (THIS LIGHT SHALL BE FACING THE SPORT AREA) #GLEON-SA1B-740-U-T3-EA-AHD145 (THIS LIGHT SHALL BE FACING THE PARKING LOT)	LED	ONE 249W,44LBS, 34,384 LUMENS, POLE MOUNTED LED FIXTURE. FIXTURE SHALL HAVE AFTER HOURS DIMMING OPTION CAPABLE OF TWO NIGHTTIME MODES WITH AT LEAST 50% DIMMING AND WITH MOTION RESPONSE OVERRIDE DURING THE PROGRAMMED 50% DIMMED PERIOD. LIGHT FIXTURE SHALL HAVE PHOTOCELL. LIGHT SHALL BE FACING THE SPORT AREA, REFER TO PLANS. ONE 44W, 33LBS, 5,986 LUMENS, POLE MOUNTED LED FIXTURE FIXTURE SHALL HAVE AFTER HOURS DIMMING OPTION CAPABLE OF TWO NIGHTTIME MODES WITH AT LEAST 50% DIMMING. LIGHT FIXTURE SHALL HAVE PHOTOCELL. LIGHT SHALL BE FACING THE PARKING LOT, REFER TO PLANS. FIXTURES SHALL BE MOUNTED ON A 25-FOOT HIGH, 5-INCH SQUARE STEEL POLE. FIXTURE	293	77

SCHEDULES NOTES

1. COORDINATE ALL COLORS WITH OWNER/ARCHITECT PRIOR TO ORDERING. CONTRACTOR SHALL PROVIDE COLOR SAMPLES DURING SUBMITTAL STAGE
2. ALL CLEAR, ACRYLIC, PRISMATIC LENSES ARE TO BE MINIMUM 0.125" PATTERN K12, U.O.N
3. ALL LEDS SHALL HAVE A CRI OF 0.8 AND COLOR TEMPERATURE OF 4000K.
4. ALL DRIVERS SHALL HAVE LESS THAN 10% THD.
5. FIXTURE TYPE IS SHOWN WITHIN MOST FIXTURES.
6. PRIOR TO ORDERING FIXTURES REFER TO THE LIGHTING PLAN FOR THE CORRECT VOLTAGES TO BE UTILIZED FOR THE FIXTURES.
7. CONTRACTOR TO BUY (2) FSIR-100 PROGRAMMING TOOL AND GIVE THEM TO THE COUNTY AFTER LIGTHING HAS BEEN PROGRAMMED.

Borrelli & Associates, Inc.
Consulting Electrical Engineers
2032 N. Gateway Boulevard
Fresno, CA. 93727
Phone: 559-233-4138
http://www.borrelliengineering.com/
ca-bai@borrelliengineering.com
BAI Project #24120

SCAN ME

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#	DATE	DESCRIPTION
1	06-25-25	CLARIFICATIONS

	DATE	RECORD DRAWING	DATE
DESIGNED: BAI		RESIDENT ENGINEER	
DRAWN: BAI			
CHECKED: JB			

FOR RIGHT OF WAY DATA AND ACCURATE ACCESS DETERMINATION, SEE DOCUMENTS IN THE DEPARTMENT OF PUBLIC WORKS AND PLANNING.

SCALE: INDICATED ON PLANS

DESIGN ENGINEER — DATE

REGISTERED PROFESSIONAL ENGINEER — JOHN BORRELLI — No. E16390 — EXP. 6/30/27 — ELECTRICAL — CALIFORNIA

PROJECT

ARPA - KEARNEY PARK IMPROVEMENTS

ROAD NO. N/A BRIDGE NO. N/A

THE COUNTY OF FRESNO 1856

DEPARTMENT OF PUBLIC WORKS AND PLANNING

LIGHTING FIXTURE SCHEDULE

DRAWING NO. 11338 SHEET NO. E1.04A TOTAL TBD

T A B L E O F C O N T E N T S

COVER SHEET

COUNTY ADOPTION AND ACKNOWLEDGMENT

Engineer's Signature
Consultant's Signature

NOTICE TO BIDDERS

BID ITEMS AND APPLICABLE SECTIONS

SPECIAL PROVISIONS

TECHNICAL SPECIFICATIONS

FEDERAL & STATE REQUIREMENTS

Federal Requirements for ARPA Construction Projects
ARPA Contract Provisions

PROJECT DETAILS / DRAWINGS

Project Drawings/Details
Self-Dealing Transactions Disclosure Form

BID BOOK

Instructions for Completing the Bid Book
Bidder's Declaration
Bid Form
Evaluation of Bid Item List
Bid Security and Signature
Non-Collusion Declaration
Public Contract Code
Subcontractor List
General Requirements for In-Use Off-Road Diesel-Fueled Fleets
Certifications
Bidder's List of Subcontractors
Guaranty

AGREEMENT

Agreement

PLANS

COUNTY ADOPTION AND ACKNOWLEDGEMENT
PROJECT: KEARNEY PARK IMPROVEMENTS
CONTRACT NUMBER: 25-04-PR

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

Paul Nerland, County Administrative Officer

Steve White Digitally signed by Steve White Date: 2025.06.05 13:34:44 -07'00'

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

REGISTERED PROFESSIONAL ENGINEER
SEBASTIAN T. ARTAL
No. C76724
CIVIL
STATE OF CALIFORNIA

Date Signed: 6/5/25

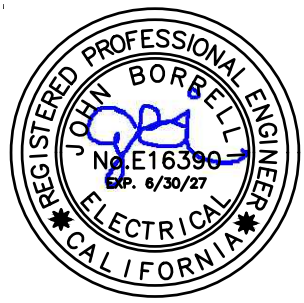
Supervising Engineer: _____
Sebastian Artal, PE 76724

FRESNO COUNTY
Department of Public Works and Planning
m/a 2220 Tulare Street, Suite 720
Fresno, CA 93721-2106

In responsible charge of the Special Provisions, Technical Specifications except Division 26, and Plans pages 1 through 28

COUNTY ADOPTION AND ACKNOWLEDGEMENT
PROJECT: KEARNEY PARK IMPROVEMENTS
CONTRACT NUMBER: 25-04-PR

Date Signed: 06/05/25



Consultant Engineer: _____

John Borrelli, PE E16390

Borrelli & Associates, Inc.
2032 N. Gateway Boulevard
Fresno, CA 93727

In responsible charge of the Technical Specifications Division 26 and Plans pages 29 through 42

COUNTY OF FRESNO **STATE OF CALIFORNIA**

NOTICE TO BIDDERS

Contract Name:	**KEARNEY PARK IMPROVEMENTS**
Project Address / Location:	**6725 W. KEARNEY BLVD., FRESNO, CA 93706**
Contract Number:	**25-04-PR**
Bid Opening Date & Time:	Wednesday, July 2, 2025 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, in general, of improvements to Kearney Park, located at 6725 W. Kearney Blvd. in Fresno, CA, including the installation of a new County-furnished prefabricated restroom and connecting it to utilities, demolishing two septic tanks at existing restrooms and connecting those restrooms to an existing City of Fresno sewer trunk, removing the old playground and installing three new County-furnished playground structures, installing a County-furnished premanufactured steel shelter, constructing a multi-purpose court (tennis, basketball and pickleball courts), reconstructing a parking lot, installing additional lighting throughout the park, and other miscellaneous work such as clearing and grubbing, grading, parking lot striping, installation of speed bumps and wheel stops. Additive items include fog sealing some of the existing parking lots and the replacement/repair of existing decorative rock walls throughout the park.

Pre-bid Conference:	Not Mandatory 10:00 A.M. on Wednesday, June 18, 2025 6725 W. Kearney Blvd., Fresno, CA 93727
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/25-04-PR-Kearney-Park-Improvements/Request-for-Clarification-Form no later than 2:00 p.m. on the seventh (7th) 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
Engineer's Estimate Range:	$2,800,000 - $3,100,000

Working Days (Subsection 8-1.04B): All work within eighty (80) working days
If additive bids awarded, an additional twenty (20) working days

Required Valid California Contractor's License:
Class A (General Engineering)

Basis of Bid: Bids are required for the entire work described herein, including a bid for the base bid and a bid for each of the additive bids. The total amount of the base bid and additive bid is the cumulative sum of the bid amounts listed for the individual line items. Bids will be compared, for purposes of identifying the apparent low bidder for proposed award of the project, on the basis of the total of the base bid plus the total of all additive bids; provided however, that the ultimate scope of the project, as subsequently determined by the Board of Supervisors at the time of award, may or may not include all or any of the additive bids.

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 State and Local Fiscal Recovery Funds (SLFRF) under the American Rescue Plan Act (ARPA).

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) & Addenda: All questions regarding this project shall be in writing and shall be received by the Department of Public Works and Planning (Department), no later than the deadline listed above and shall be submitted on the "Request for Clarification Form" provided on our website above. Any questions received after this deadline may not receive a response. In the event that the bid opening date is revised, the deadline for questions 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."

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.

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.

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.

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.

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

The successful bidder shall furnish a faithful performance bond in the amount of one hundred percent (100%) of the contract amount and a payment bond in the amount of one hundred percent (100%) of the contract amount. Each bond specified in this Notice (bid bond, faithful performance bond and payment 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: June 3, 2025

Special Provisions

DIVISION I GENERAL PROVISIONS

1 GENERAL

1-1.01 GENERAL

Add to the beginning of Section 1:

The work is done in accordance with the 2023 *Standard Specifications*, 2023 *Standard Plans* and the following special provisions.

Where these special provisions indicate to replace, add to, delete, delete from, or otherwise modify a "section," or a portion thereof, the section or portion thereof to which such modification is to be applied is the section or portion thereof with the corresponding numbering in the 2023 *Standard Specifications*.

Revised standard plans apply if listed on the "List of Revised Standard Plans," if any, in these special provisions; or if shown or referenced on the project plans or in the project details section of the book entitled "Specifications."

In case of conflict between the *Standard Specifications* and these special provisions, the special provisions shall take precedence over and be used in lieu of such conflicting portions.

Add to the end of Section 1-1.01:

Refer to DIVISION 34 00 00 BID ITEM DESCRIPTION

Add to the 1st table of Section 1-1.06:

SJVAPCD	San Joaquin Valley air pollution control district
METS	Caltrans Material Engineering and Testing Services

Add to Section 1-1.06:

Abbreviations in the Bid Items and Applicable Sections are also used in the Bid Item List - Proposal 2.

Add or Replace items in Section 1-1.07 with:

Authorized Facility Audit List: Caltrans-developed list of facilities. For the Authorized Facility Audit List, go the METS website.

Authorized Material List: Caltrans-developed list of authorized materials. For the Authorized Material List go to the METS website.

Authorized Material Source List: Caltrans-developed list of authorized source materials. For the Authorized Material Source List go to the METS website.

Bid Item List: List of bid items, units of measure, and the associated quantities. The verified Bid Item List is the Bid Item List with verified prices. The Contract Proposal (Proposal 2) of Low Bidder at the Department's website is the verified Bid Item List. After contract award, interpret a reference to the Bid Item List as a reference to the verified Bid Item List.

Board of Supervisors: The Board of Supervisors of the County of Fresno, State of California. The governing board for the agency having jurisdiction over the work being done under this contract.

California Test: State of California, Department of Transportation developed test for determining work quality. For California Tests, go to the METS Web site.

Caltrans: State of California Department of Transportation

County: The County of Fresno

Department: The Fresno County Board of Supervisors and its authorized representatives.

District Office: County of Fresno Department of Public Works and Planning

Director: Department's Chairman.

Engineer: The County's Director of Public Works and Planning, acting through their authorized designees.

federal-aid contract: Contract that has a federal-aid project number on the cover of the *Specifications*.

holiday: Holiday shown in the following table:

Holidays

Holiday	Date observed
Every Sunday	Every Sunday
New Year's Day	January 1st
Birthday of Martin Luther King, Jr.	3rd Monday in January
Presidents' Day	3rd Monday in February
Cesar Chavez Day	March 31st
Memorial Day	Last Monday in May
Juneteenth	June 19th
Independence Day	July 4th
Labor Day	1st Monday in September
Veterans Day	November 11th
Thanksgiving Day	4th Thursday in November
Day after Thanksgiving Day	Day after Thanksgiving Day
Christmas Day	December 25th

If January 1st, March 31st, June 19th, July 4th, November 11th, or December 25th fall on a Sunday, the Monday following is a holiday. If January 1st, March 31st, June 19th, July 4th, November 11th, or December 25th fall on a Saturday, the preceding Friday is a holiday.

Labor Surcharge and Equipment Rental Rates: Caltrans publication that lists labor surcharge and equipment rental rates.

Laboratory: Laboratories authorized by the Engineer to test materials and work involved in the contract.

material source facility audit: Self-audit and a Caltrans audit evaluating a facility's capability to consistently produce materials that comply with Caltrans standards.

Office engineer: The Director of Public Works and Planning for the County of Fresno

permanent erosion control establishment period: Number of working days shown in Section 8-1.04 for permanent erosion control establishment work.

plans: Standard plans, revised standard plans, and project plans.

1. **standard plans:** Drawings standard to Department construction projects. These plans are in a book titled *Standard Plans*.
2. **revised standard plans:** New or revised standard plans. These plans are listed in the *List of Revised Standard Plans* in a book titled *Specifications*.
3. **project plans:** Drawings specific to the project, including authorized shop drawings. These plans also include a section titled *Project Details* of a book titled *Specifications*.

specifications: Standard specifications, revised standard specifications, and special provisions.

1. **standard specifications:** Specifications standard to Department construction projects. These specifications are in a book titled *Standard Specifications*.

2. **special provisions:** Specifications specific to the project. These specifications are in a section titled *Special Provisions* of a book titled *Specifications*.

State: The County of Fresno, State of California including its agencies, departments or divisions whose conduct or action is related to the work, unless used to reference a State of California agency, form, document, or procedure.

Replace Section 1-1.08 with:

1-1.08 DISTRICTS

Not Used

Add to the end of Section 1-1.09

This project is in a freeze-thaw area.

This project is not in a freeze-thaw area.

Replace Section 1-1.10 with:

1-1.10 PAVEMENT CLIMATE REGIONS

To help account for the effects of various climatic conditions on pavement performance, the State has been divided into 9 climate regions. The project's pavement climate region is in land valley.

Replace Section 1-1.11 with:

1-1.11 WEBSITES, ADDRESSES, AND TELEPHONE NUMBERS

Websites, Addresses, and Telephone Numbers

Reference or agency or department unit	Website	Address	Telephone no.
Authorized Material Lists Authorized Material Source Lists	https://dot.ca.gov/programs/engineering-services/authorized-materials-lists	--	--
CA Unified Certification Program's list of certified DBEs	https://californiaucp.dbesystem.com/	--	--
California MUTCD	https://dot.ca.gov/programs/safety-programs/camutcd	--	--
Department	https://www.fresnocountyca.gov/	2220 Tulare Street Design Division – Seventh Floor Fresno, CA 93721	(559) 600-9908
Department of Conservation, Office of Mine Reclamation	http://www.conservation.ca.gov/dmr/	--	--
Department of Industrial Relations	http://www.dir.ca.gov	455 Golden Gate Ave San Francisco CA 94102	--
Design Services - Contract Administration, Planholders, Bid Results	https://www.fresnocountyca.gov/planholders	2220 Tulare Street Design Division – Seventh Floor Fresno, CA 93721	Tel: (559) 353-4919 Fax:(559) 455-4609 Email: DesignServices@fresnocountyca.gov
Division of Accounting, Office of External Accounts Payable	https://dot.ca.gov/programs/accounting	Major Construction Payment and Information Unit Office of External Accounts Payable Division of Accounting Department of Transportation P.O. Box 168043 Sacramento, CA 95816-8043	(916) 227-9013
Division of Construction	http://www.dot.ca.gov/hq/construc/	--	--
Geotechnical Services	https://dot.ca.gov/programs/engineering-services	Geotechnical Services Department of Transportation 5900 Folsom Blvd Sacramento, CA 95819-4612	(916) 227-7000
METS	https://dot.ca.gov/programs/engineering-services	Materials Engineering and Testing Services Department of Transportation 5900 Folsom Blvd Sacramento, CA 95819-4612	(916) 227-7000
MPQP	https://dot.ca.gov/programs/construction/material-plant-quality-program	--	--

Office Engineer	--	Director of Public Works & Planning Fresno County 2220 Tulare St, 8th Floor Fresno, CA 93721	(559) 600-4078
Office of Electrical Systems Regional Transportation Management Center	--	Office of Electrical Systems Regional Transportation Management Center 3165 Gold Valley Dr Rancho Cordova, CA 95742	
Offices of Structure Design, Documents Unit	--	MSC 9-4/4I Documents Unit Offices of Structure Design Department of Transportation 1801 30th St Sacramento, CA 95816-7006	(916) 227-0716
Publication Distribution Unit	--	Publication Unit Department of Transportation 1900 Royal Oaks Dr Sacramento, CA 95815-3800	--

Replace Section 1-1.12 with:

1-1.12 MISCELLANY

Make checks and bonds payable to the County of Fresno.

2 BIDDING

Replace Section 2-1.04 with:

2-1.04 PREBID OUTREACH MEETING

Section 2-1.04 applies if a mandatory prebid meeting is shown on the Notice to Bidders.

The Department may conduct a meeting to provide access to the site and/or discuss the project in the presence of County staff.

Each bidder must attend the meeting. The bidder's representative must be a company officer, project superintendent, or project estimator. For a joint venture, one of the parties must attend the mandatory prebid meeting.

The Department does not accept a bid from a bidder who did not attend the meeting.

A sign-in will be used to identify the attendees. Each bidder must include the name and title of the company representative attending the meeting.

The Department may hold a single prebid meeting for more than one contract. Sign in for the contract you intend to bid on. If you are bidding on multiple contracts, sign-in for each contract you intend to bid on. The sign-in lists, with the names of all companies in attendance at each prebid meeting, will be made available at the website shown on the Notice to Bidders for bidder inquiries.

Replace Section 2-1.06 with:

2-1.06 BID DOCUMENTS

2-1.06A General

The *Bid* book includes bid forms and certifications and are available online at http://www.BidExpress.com and in the *Specifications*.

The *Specifications* includes the *Notice to Bidders*, project details, special provisions, *Bid* book, and agreement.

The *Specifications*, project plans, and any addenda to these documents may be accessed at the planholders website at https://www.fresnocountyca.gov/planholders.

The *Standard Specifications* and *Standard Plans* may be accessed online at https://www.fresnocountyca.gov/files/sharedassets/county/v/2/public-works-and-planning/design/construction-bidding-opportunities/2023-standard-specs.pdf

2-1.06B Supplemental Project Information

The Department makes the following supplemental project information available:

Supplemental Project Information

Where Available	Description
Included in Project Details	• Location map • Construction Funding Signs • Coring data of Parking Lot G and Multipurpose Courts
Included with the project plans	• None

If as-built drawings are available, they may not show existing dimensions and conditions. Where new construction dimensions are dependent on existing bridge dimensions, verify the field dimensions and adjust the dimensions of the work to fit the existing conditions.

Replace Section 2-1.12 with:

2-1.12 RESERVED

Replace Section 2-1.15 with:

2-1.15 RESERVED

Replace Section 2-1.18 with:

2-1.18 RESERVED

Replace Section 2-1.27 with:

2-1.27 RESERVED

Replace Section 2-1.33 with:

2-1.33 BID DOCUMENT COMPLETION AND SUBMITTAL

2-1.33A General

Complete forms in the *Bid* book.

Certain bid forms must be submitted with the bid and properly executed.

Certain other forms and information must be submitted either with the bid or within the prescribed period after bid opening as specified elsewhere in these special provisions.

Failure to submit the forms and information as specified results in a nonresponsive bid.

If an agent other than the authorized corporation officer or a partnership member signs the bid, file a Power of Attorney with the Department either before opening bids or with the bid. Otherwise, the bid may be nonresponsive.

Electronic Bids: Electronic versions of the bid book documents are available online at http://www.BidExpress.com and may be submitted through that website. Complete and submit the bid online at http://www.BidExpress.com. Your electronic signature is your confirmation of an agreement to all certifications and statements contained in the Bid book. On forms and certifications that you submit through the electronic bidding service, you agree that each form and certification where a signature is required is deemed as having your signature.

Hardcopy Bid: Submit a hardcopy bid:

1. Under sealed cover
2. Marked as a bid
3. Identifying the contract number and the bid opening date
4. Use ink or typewriter

2-1.33B Bid Item List and Bid Comparison

Submit a bid based on the bid item quantities the Department shows on the Bid Item List (Proposal 2). Bids will be evaluated and the low bidder determined as indicated in the *Notice to Bidders.*

Do not submit an unbalanced bid. An unbalanced is a bid is one in which one or more bid items is/are considered by the Department to have been bid at an amount that is unreasonably high or unreasonably low. A bid may be considered to be non-responsive and may be rejected if it is considered by the Department to be unbalanced.

2-1.33C Bid Document Completion

Proposal items are identified by title and by the word “Proposal” followed by the number assigned to the proposal item in question. Proposal items are included in the *Bid Book.*

2-1.33C(1) Proposal 1 - Proposal to the Board of Supervisors of Fresno County

2-1.33C(2) Proposal 2 - Bid Item List

One or more sheet(s) or list(s) upon which the bidder completes the bid.

Fill out completely including a unit price and total for each unit price-based item and a total for each lump sum item.

Do not make any additions such as “plus tax”, “plus freight”, or conditions such as “less 2% if paid by 15th”.

Use ink or typewriter for paper bids.

2-1.33C(3) Proposal 3 - Evaluation of Bid Item List

Describes how inconsistences and irregularities are evaluated and corrected when Design Services reviews the Bid Item List.

2-1.33C(4) Proposal 4 - Bid Security and Signature

Submit one of the following forms of bidder's security equal to at least 10 percent of the bid:

- Cash
- Cashier's check
- Certified check
- Signed bidder's bond by an admitted surety insurer

Indicate type of bid security provided.

- Cash – Acceptable but 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 – This type of security is held until the bid is no longer under consideration. If submitted by a potential awardee, they will be returned when the contract is fully executed by the bidder and bonds and insurance have been approved.
- Bid Bonds – Must be signed by the bidder and by the attorney-in-fact for the bonding company. Provide notarized signature of attorney-in-fact accompanied by bonding company's affidavit authorizing attorney-in-fact to execute bonds. An unsigned bid bond will be cause for rejection.

Bonding companies may provide their own bid bond forms. Bid Security and Signature sections must be completed by the bidder and submitted with their bid.

Provide contractor's license information.

State business name and if business is a:

- Corporation - list officers
- Partnership - list partners
- Joint Venture - list members; if members are corporations or partnerships, list their officers or partners.
- Individual - list Owner's name and firm name style

Signature of Bidder - the following lists types of companies and corresponding authorized signers.

- 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 the bid in question or to sign bids more generally, otherwise the bid may be rejected.

Business Address - Firm's Street Address

Mailing Address - P.O. Box or Street Address

Complete, sign, and return with bid.

2-1.33C(5) Proposal 5 - Non-Collusion Declaration

Must be completed, signed, and returned with bid.

2-1.33C(6) Proposal 6 - Public Contract Code Section 10285.1 Statement

Select "has" or "has not" in accordance with instructions on form, return with completed for with bid. Note that signing the bid constitutes signing this statement.

2-1.33C(7) Proposal 7 - Public Contract Code Section 10162 Questionnaire And Public Contract Code 10232 Statement

Select: "yes" or "no" accordance with instructions on form, include explanation if "yes" is selected. Return completed form with bid. Note that signing the bid constitutes signing this questionnaire and statement.

2-1.33C(8) Proposal 8 - Subcontractors

Sheet(s) or spaces where bidders list subcontractors. List each subcontractor to perform work in an amount in excess of 1/2 of 1 percent of the total bid (Pub Cont Code § 4100 et seq.).

The *Subcontractor List* submitted with the bid must show the name, location of business, work portions to be performed, Department of Industrial Relations registration number, and the contractor's license number for each subcontractor listed.

- Use subcontractor's business name style as registered with the License Board.
- Specify the city in which the subcontractor's business is located and the state if other than California.
- Description of the work to be performed by the subcontractor. Indicate with bid item numbers from the bid item list and/or work descriptions similar to those on bid item list.
- List contractor's license number and Department of Industrial Relations registration number for each subcontractor.

Upon request from Design Services, provide the following additional information within 24 hours of bid opening if not included on the *Subcontractor List* submitted with the bid:

- Complete physical address for each subcontractor listed.
- Percentage of the total bid or dollar amount associated with each subcontractor listed.

2-1.33C(9) Proposal 9 -Title 13, California Code of Regulations § 2449(i) General Requirements for In-Use Off-Road Diesel-Fueled Fleets

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

2-1.33C(10) through 2-1.33C(18) NOT USED

2-1.33C(19) Guaranty – Proposal 19

Does not need to be signed with the bid. Part of the contract which must be signed by the contractor when contract is executed.

Replace Section 2-1.34 with:

2-1.34 BIDDER'S SECURITY

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.

Submit one of the following forms of bidder's security equal to at least 10 percent of the bid:
1. Cash
2. Cashier's check
3. Certified check
4. Signed bidder's bond by an admitted surety insurer

An electronic bid bond may be submitted either:
1. As an electronic bidder's bond by an admitted surety insurer submitted using an electronic registry service approved by the Department (SurePath or Tinubu).
2. As a scanned attachment of a notarized paper bid with 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.

Cash, cashier's check, certified check, or paper bidder's bonds should be sent in a sealed envelope in accordance with the labeling and address instructions listed on the Notice to Bidders.

Replace Section 2-1.40 with:

2-1.40 BID WITHDRAWAL

1. An authorized agent may withdraw a paper bid before the bid opening date and time by submitting a written bid withdrawal request at the location where the bid was submitted. Withdrawing a bid does

not prevent you from submitting a new bid. An authorized agent is an individual authorized to submit a bid.
2. A bidder may withdraw or revise a bid after it has been submitted to the electronic bidding service if this is done before the bid opening date and time.
3. After the bid opening time, you cannot withdraw a bid.

Replace Section 2-1.47 with:

2-1.47 BID RELIEF

The Department may grant bid relief under Pub Cont Code § 5100 et seq. Submit any request for bid relief via email to Design Services at the address listed in the table in Section 1-1.11.

Add Section 2-1.51:

2-1.51 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 this 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. 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 which is included in *Project Details* of these special provisions.

In the event that the Contractor (to whom the project is awarded) is operating as a corporation or incorporates during the course of the construction contract, and any member of its board of directors is engaged or intends to become engaged in self-dealing transaction(s), each member of its board of directors who is engaged or intends to become engaged in a self-dealing transaction or transactions must complete and submit to the County a completed Self-Dealing Transaction Disclosure Form (in Project Details) for each such transaction prior to engaging therein or immediately thereafter.

3 CONTRACT AWARD AND EXECUTION

Replace Section 3 with:

3-1.01 GENERAL

Section 3 includes specifications related to contract award and execution.

3-1.02 CONSIDERATION OF BIDS

3-1.02A General

Bids will be compared on the basis listed in the Notice to Bidders.

3-1.02B Tied Bids

The Department breaks a tied bid with a coin toss.

3-1.03 CONTRACTOR REGISTRATION

No contractor or subcontractor may be awarded a contract for public work on a public works project (awarded on or after April 1, 2015) unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5.

3-1.04 CONTRACT AWARD

3-1.04A BID PROTEST PROCEDURES

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 bid opening for any issues found within the bid itself, or 5:00 p.m. of the third (3rd) 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:

a. 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.

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

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

d. 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.

e. 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.

f. 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.

3-1.04B AWARD PERIOD

If the Department awards the contract, the award is made to the lowest responsible bidder within 68 calendar days after bid opening.

The Department may extend the specified award period if the bidder agrees.

You may request to extend the award period by e-mailing a request to DesignServices@fresnocountyca.gov before 4:00 p.m. on or before the last day of the award period. If you do not make this request, after the specified award period:

1. Your bid becomes invalid
2. You are not eligible for the award of the contract

3-1.05 CONTRACT BONDS (PUB CONT CODE §§ 10221 AND 10222)

The successful bidder must furnish 2 bonds conforming to the requirements in the *Agreement* of these special provisions.

3-1.06 CONTRACTOR LICENSE

For a federal-aid contract, the Contractor must be properly licensed as a contractor from contract award through Contract acceptance (Pub Cont Code § 10164).

For a non-federal-aid contract:

1. Contractor must be properly licensed as a contractor from bid opening through Contract acceptance (Bus & Prof Code § 7028.15)
2. Joint venture bidders must obtain a joint venture license before contract award (Bus & Prof Code § 7029.1)

3-1.07 INSURANCE POLICIES

The successful bidder must submit copies of its insurance policies conforming to the requirements in the *Agreement* of these special provisions.

3-1.08 –3-1.10 RESERVED

3-1.11 PAYEE DATA RECORD

Complete and deliver to the Engineer a Payee Data Record form when requested by the Engineer.

3-1.12 RESERVED

3-1.14–3-1.17 RESERVED

3-1.18 CONTRACT EXECUTION

The successful bidder must sign the *Agreement*.

Deliver to Design Services:

1. Signed *Agreement*
2. Contract bonds
3. Documents identified in Section 3-1.07

Design Services must receive these documents before the 10th business day after the bidder receives the contract.

The bidder's security may be forfeited for failure to execute the contract within the time specified (Pub Cont Code §§ 10181, 10182, and 10183).

3-1.19 BIDDERS' SECURITIES

The Department keeps the securities of the 1st, 2nd, and 3rd low bidders until the contract has been executed. The other bidders' securities, other than bidders' bonds, are returned upon determination of the 1st, 2nd, and 3rd low bidders, and their bidders' bonds are of no further effect (Pub Cont Code § 10184).

4 SCOPE OF WORK

Replace Section 4-1.02 with:

4-1.02 INTENT

The Contract intent is to provide for work completion using the best general practices.

Nothing in the specifications, special provisions, Standard Specifications, or in any other Contract document voids the Contractor's public safety responsibilities.

Replace Section 4-1.07D with:

4-1.07D Reserved

Replace the last paragraph of Section 4-1.13 with:

Remove warning, regulatory, and guide signs when directed by the Engineer.

5 CONTROL OF WORK

Delete the last paragraph of Section 5-1.01

Add the following before the last sentence in Section 5-1.02:

Caltrans Standard Plans, County of Fresno Standard Drawings, and any other other-agency Standard Drawings included in the “Project Details” section of the book entitled “Specifications” have the same ranking as Standard Plans.”

All other drawings in the “Project Details” section of the book entitled “Specifications” have the same ranking as Project Plans.

Tables and other documents in the “Project Details” section of the book entitled “Specifications” have the same ranking as Special Provisions. If a portion of a document in the Project Details section conflicts with the Special Provisions, the Special Provisions shall prevail.

Replace Section 5-1.09 with:

5-1.09 RESERVED

Replace Section 5-1.12 with:

5-1.12 ASSIGNMENT

The performance of the Contractor or any Contract part may be assigned only with prior written consent from the Department. To request consent, submit a Contractor Action Request – Assignment of Contract Performance form. The Department does not consent to any requested assignment that would relieve you of your surety of the responsibility to complete the work or any part of the work. No third-party agreement relieves you or your surety of the responsibility to complete the work. Do not sell, transfer, or otherwise dispose of any Contract part without prior written consent from the Department.

If you assign the right to receive Contract payments, the Engineer accepts the assignment upon the Engineer's receipt of a Contractor Action Request – Assignment of Contract Monies, Assignee Change of Name/Address form. Assigned payments remain subject to deductions and withholds described in the Contract. The Department may use withheld payments for work completion whether payments are assigned or not.

A pending or disapproved request for assignment does not relieve you of the responsibility to commence and pursue work timely and in strict accordance with contract documents.

Replace Section 5-1.13C with:

5-1.13C RESERVED

Replace Section 5-1.13D with:

5-1.13D RESERVED

Add the following paragraph to the end of Section 5-1.16:

Submit Daily Log records to the Engineer weekly for the entire course of work unless the Engineer requests another interval.

Replace Section 5-1.20B(4) with:

5-1.20B(4) Contractor–Property Owner Agreement

Before procuring material from or disposing or stockpiling of material on non-highway property:

1. Provide proof that the property where materials are to be stockpiled or equipment parked/stored is appropriately zoned and/or permitted for the use proposed by the Contractor.
2. Obtain written authorization from each and every owner of the property where materials are to be stockpiled or equipment parked/stored.
3. Provide proof that the signor(s) of the authorization are the owners of the property.

4. Provide an executed release from the property owner(s) absolving the Department from any and all responsibility in connection with the stockpiling of materials or parking/storage of equipment on said property.
5. Obtain written permission from the Engineer to stockpile materials or park/store equipment at the location designated in said authorization.

Before Contract acceptance, submit a document signed by the owner of the material source or disposal site stating that the Contractor has complied with the Contractor-owner agreement.

Failure by the Contractor to provide written authorization shall result in the withholding of all funds due to the Contractor until said authorization is received by the County.

Replace Section 5-1.20C with:

5-1.20C Permits

Contractor shall be required to obtain permits from County of Fresno Building Department. Permit required are, but not limited to, demolition of septic system, new shelter, prefabricated restroom, playground structures, electrical and grading. Refer to Section 34 00 00 Bid item Description for payment.

Replace Section 5-1.23A with:

5-1.23A General

Section 5-1.23 includes specifications for action and informational submittals. Refer to Section 01 33 00 of the Technical Specifications

Any submittal not specified as an informational submittal is an action submittal.

Submit action and informational submittals to the Engineer. Unless otherwise specified in these Specifications, submittals shall be provided via email in .pdf format.

Each submittal must have a cover sheet that must include:

1. Contract number
2. Project Name
3. Date
4. Submittals (and resubmittals if applicable) must be numbered sequentially
5. Structure number if applicable
6. Contractor
7. Person responsible for submitting the submittal
8. Signature of Contractor’s representative sending submittal
9. Section number and/or item submittal is referencing
10. Pages of submittal, excluding cover sheet

The Department rejects a submittal if it has any error or omission.

If the last day for submitting a document falls on a Saturday or holiday, it may be submitted on the next business day with the same effect as if it had been submitted on the day specified.

Documents must be submitted in the English language.

Convert documents to US customary units.

Replace the first paragraph of Section 5-1.23B(2)(b) with:

If specified, email electronic shop drawing and calculation sheet submittals to the Engineer.

Replace Section 5-1.24 with:

5-1.24 CONSTRUCTION SURVEYS

The Engineer places stakes and/or marks as the Engineer determines to be necessary to establish the lines and grades required for the work.

Submit your request for Engineer-furnished stakes:

1 Once staking area is ready for stakes
2. On a Request for Construction Stakes form

After your submittal, the Engineer starts staking within 2 working days.

Preserve stakes and marks placed by the Engineer. If the stakes or marks are destroyed, the Engineer replaces them at the Engineer's earliest convenience and deducts the cost.

Replace Section 5-1.27E with:

5-1.27E CHANGE ORDER BILLS

Maintain separate records for change order work costs.

Replace Section 5-1.32 with:

5-1.32 AREAS FOR USE

Occupy the highway only for purposes necessary to perform the work.

Defend, indemnify, and hold the Department harmless to the same extent as under Section 7-1.05.

The Department does not allow temporary residences within the County right-of-way.

Replace Section 5-1.43A with:

5-1.43A General

Minimize and mitigate the impacts of work or events for which you will make a potential claim.

For each potential claim assign an identification number determined by chronological sequencing and the 1st date of the potential claim.

Use the identification number for each potential claim on the:

1. Initial Potential Claim Record form
2. Supplemental Potential Claim Record form
3. Full and Final Potential Claim Record form

Failure to comply with this procedure is:

1. Waiver of the potential claim and a waiver of the right to a corresponding claim for the disputed work in the administrative claim procedure
2. Bar to arbitration (Pub Cont Code § 10240.2)

Replace the word "State" with "Department" in the 3rd paragraph of Section 5-1.43D.

Replace the word "Department's" with "Caltrans" in the 6th paragraph of Section 5-1.43E(1)(a).

Replace the word "Department" with "Caltrans" where it appears in Section 5-1.43E(2)(a).

Replace the word "Department" with "Caltrans" where it appears in Section 5-1.43E(3)(a).

6 CONTROL OF MATERIALS

Replace Section 6-1.05 with:

6-1.05 SPECIFIC BRAND OR TRADE NAME AND SUBSTITUTION

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.

Submit a substitution request with a time period that:

1. Follows Contract award
2. Allows 30 days for review
3. Causes no delay

Include substantiating data with the substitution request that proves that substitution:

1. Causes no delay
2. Is of equal or better quality and suitability

If the special provisions disallow substitution of a particular item, provide the specified item and do not propose substitution.

Replace Section 6-1.06 with:

6-1.06 RESERVED

7 LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

Add after the last paragraph of Section 7-1.02C:

The following information is provided for the Contractor's information, and nothing herein or elsewhere within these special provisions shall be construed as limiting the Contractor's responsibility for complying with all applicable rules and regulations. In conformance with Title 13 § 2449(i), between March 1 and June 1 of each year, new valid Certificates of Reported Compliance for the current compliance year, as defined in Section 2449(n) for the Contractor and all applicable subcontractors must be submitted. Submit new valid Certificates of Reported Compliance to the Engineer at least one week prior to the expiration date of the current certificate.

Replace the 2nd Paragraph of Section 7-1.02K(2) with:

The general prevailing wage rates and any applicable changes to these wage rates are available:

1. From Design Services
2. From the Department of Industrial Relations' Web site

Add to the list in the second paragraph of Section 7-1.02K(3) with:

1.10. Fringe Benefits

Replace the 4th paragraph of Section 7-1.02K(6)(j)(ii) with:

Submit the lead compliance plan as an informational submittal.

Place the contents of Section 7-1.04 under the heading:

7-1.04 PUBLIC SAFETY

7-1.04A General

Replace the 7th paragraph in Section 7-1.04A with:

Provide flaggers whenever necessary to ensure that the public is given safe guidance through the work zone.

Replace the 11th paragraph in Section 7-1.04A with:

Cover signs that direct traffic to a closed area.

Add to the end of Section 7-1.04A:

Where 2 or more lanes in the same direction are adjacent to the area where the work is being performed, including shoulders, the adjacent lane must be closed under any of the following conditions:

1. Work is off the traveled way but within 6 feet of the edge of the traveled way, and the approach speed is greater than 45 miles per hour
2. Work is off the traveled way but within 3 feet of the edge of the traveled way, and the approach speed is less than 45 miles per hour

Closure of the adjacent traffic lane is not required when performing any of the following:

1. Working behind a barrier
2. Paving, grinding, or grooving
3. Installing, maintaining, or removing traffic control devices except Type K temporary railing

Do not reduce an open traffic lane width to less than 10 feet. When traffic cones or delineators are used for temporary edge delineation, the side of the base of the cones or delineators nearest to traffic is considered the edge of the traveled way.

Add the following to the end of Section 7-1.04:

7-1.04B WORK ZONE SAFETY AND MOBILITY

7-1.04B(1) POLICY

In order to ensure safe and efficient flow of traffic through work zones, the County of Fresno, via its General Plan, Transportation and Circulation Element, Policy TRA-1, has adopted the use of AASHTO Standards as supplemented by Caltrans and County Department of Public Works and Planning Standards.

7-1.04B(2)TRAFFIC MANAGEMENT PLAN

Perform traffic management shall be in accordance with Section 12, “TEMPORARY TRAFFIC CONTROL,” of these special provisions.

7-1.04B(3)TEMPORARY TRAFFIC CONTROL PLAN

Prepare traffic control plan(s) in accordance with Section 12, “TEMPORARY TRAFFIC CONTROL,” of these special provisions.

7-1.04B(4)PUBLIC INFORMATION

Provide notice to public agencies and others to the extent required, if any, elsewhere in these special provisions. The Engineer provides other noticing not identified to be performed by the Contractor.

Replace the word “State” with “County” where it occurs in Section 7-1.05C.

Replace the word “State” with “Department” in the 1st paragraph of Section 7-1.06B.

Replace the word “State” with “County” in the 5th paragraph of Section 7-1.06C.

Replace the word “State” with “the Department” in Section 7-1.06D(1).

Replace Section 7-1.06D(2) with:

7-1.06D(2) Liability Limits/Additional Insureds

Refer to the *Agreement* of these special provisions

Additional insured coverage must be provided by a policy provision or by an endorsement providing coverage at least as broad as *Additional Insured* (Form B) endorsement form CG 2010 and CG 2037 (for completed operations), as published by the Insurance Services Office (ISO), or equivalent form as approved by the Department.

Replace the word “State” with “County” in Section 7-1.06D(3).

Replace the word “State” with “County” in Section 7-1.06D(4).

Replace Section 7-1.06E with:

7-1.06E Automobile Liability Insurance

Comply with requirements in the *Agreement* of these special provisions.

Replace Section 7-1.06G with:

7-1.06G NOT USED

Replace Section 7-1.06H with:

7-1.06H Enforcement

The Department may assure your compliance with your insurance obligations. 30 days before an insurance policy lapses, expires, or is canceled during the Contract period you must submit to the Department evidence of renewal or replacement of the policy.

If you fail to maintain any required insurance coverage, the Department may maintain this coverage and withhold or charge the expense to you or terminate your control of the work.

Any failure to comply with the reporting provisions of your policy shall not affect coverage provided to the Department, including its officers, directors, agents (excluding agents who are design professionals), and employees.

You are not relieved of your duties and responsibilities to indemnify, defend, and hold harmless the County, its officers, agents, and employees by the Department's acceptance of insurance policies and certificates.

Minimum insurance coverage amounts do not relieve you for liability in excess of such coverage, nor do they preclude the County from taking other actions available to it, including the withholding of funds under this Contract.

Replace Section 7-1.06I with:

7-1.06I Self-Insurance

Comply with the *Agreement* of these special provisions.

Add to the beginning of Section 7-1.07B:

This section applies to seal coat projects.

Add Section 7-1.07C:

7-1.07C Claims

This section applies to non-seal coat projects which involve asphalt concrete paving. Pay for claims for personal property damage caused by your work. Claims are limited to:

1. 10 percent of the total bid

Within 30 days of the last working day placement of hot mix asphalt, do the following:

1. Process and resolve all claims reported or submitted to you by the public as follows:
   1.1. Within 3 business days of receipt of a claim, submit to the Department a copy of the claim, a written analysis of the claim, and a statement indicating whether or not you will pay the claim. If you reject a claim, provide the reasons for rejection in writing.
   1.2. If the claimant becomes dissatisfied with your handling of the claim, immediately refer the claimant to the local district claims office for assistance in resolving the claim.
2. Submit to the Department evidence of your paid claims.

All claims presented to the Department, (Govt Code § 900 et seq.) are processed and resolved by the Department as follows:

1. The claims are processed as formal government claims subject to all laws and policies and are resolved as the Department determines including referring the claim to you for handling.
2. If the Department approves settlement of a claim or is ordered to pay pursuant to a court order, the claim is paid from funds withheld from you.
3. Within 3 business days of the Department’s determination that you are responsible for resolving the claim, the Department sends a copy of the claim to you for resolution or notifies you of the Department’s decision to resolve the claim.

The Department withholds an amount not to exceed 5 percent of the total bid to resolve all claims. The amount is held no longer than 60 days following the last working day so that the Department has ample time to resolve any pending claims. After 60 days, any remaining amount withheld is returned to you.

If no withheld funds remain or have been returned, the Department may pay any claims and seek reimbursement from you through an offset or any other legal means. Any reimbursement or offset to be recovered from you, including all other paid claims, is limited to 10 percent of the total bid.

Section 7-1.07C does not limit your obligation to defend and indemnify the Department.

8 PROSECUTION AND PROGRESS

Replace Section 8-1.01 with:

8-1.01 GENERAL

Section 8 includes specifications related to prosecuting the Contract and work progress.

8-1.01A Work Hours

Perform all work on working days during daytime.

You may request approval to work on a holiday or on a non-working day. If, pursuant to such request, the Engineer authorizes you to work on a holiday or on a non-working day, you pay the actual cost incurred by the Department to perform all inspection, surveying, testing, and all other project-related work by the Department on such holiday or non-working day. Such payment will be deducted from monies due or which may become due to the Contractor.

Plan work so that all construction operations performed each day, including cleanup of the project site, establishment of appropriate traffic control and any other work necessary for the safety of the public shall be completed within the daytime hours.

Do not perform work during nighttime unless approved by the Engineer

Request approval to work during nighttime in writing and include the appropriate traffic control plan(s) and work plan(s) which clearly identify all provisions for illuminating all portions of the work site, including any flagging operations.

If you fail to complete work during the daytime hours, the Engineer may stop all work upon the onset of nighttime and order you to perform any and all work the Engineer deems necessary to ensure the safety of the public during the nighttime hours.

You are not entitled to any additional compensation or extension of the contract time as a result of the Engineer stopping the work due to the onset of nighttime.

Replace the 1st paragraph of Section 8-1.02B(1) with:

No pay item is provided for Level 1 Critical Path Project Schedule. Payment is considered to be included in the various items of work including revisions and time analysis.

Add to the end of the list in the 4th paragraph of Section 8-1.02B(3) with:

3. Time Impact Analysis (Refer to Section 8-1.02C(8)(b) for description)

Replace Section 8-1.02C with:

8-1.02C Reserved except for 8-1.02C(8)(b)

Replace Section 8-1.04 with:

8-1.04 START OF JOB SITE ACTIVITIES

8-1.04A General

Provide signed contracts, bonds, and evidence of insurance timely as required.

This section, 8-1.04, “Start of Job Activities,” does not modify remedies available to the Department should you fail to provide signed contracts bonds and insurance timely.

Submit a notice 72 hours before starting job site activities. If the project has more than 1 location of work, submit a separate notice for each location.

You may start job site activities before receiving notice of Contract approval if you:

1. Deliver the signed Contract, bonds, and evidence of insurance to the Department
2. Submit 72-hour notice

3. Are authorized by the Department to start
4. Perform work at your own risk
5. Perform work under the Contract

If the Contract is approved, work already performed that complies with the Contract is authorized.

If the Contract is not approved, leave the job site in a neat condition. If a facility has been changed, restore it to its former condition or an equivalent condition. The Department does not pay for the restoration.

8-1.04B Standard Start

Be prepared to begin work at the project site no later than the 20th business day after award of the Contract by the Department.

The Engineer may issue a notice to proceed as soon as the Contracts, including bonds and insurance certificates, have been approved.

Start work on the day shown in the notice to proceed, unless an early start has been approved.

The Engineer may issue a notice of commencement of contract time if you fail to provide Contracts, including bonds and insurance certificates or other required documents timely.

A notice of commencement of contract time does not authorize you to start work on the project site, but contract time begins to elapse on the date shown in the notice of commencement of contract time.

Complete the first order of work within the number of working days specified in the Notice to Bidders. Start the first order of work from the date shown in said Notice to Proceed, or in the Notice of Commencement of Contract Time, whichever was issued first.

Complete all work, including corrective work and punch list work, prior to the expiration of the allotted working days. Working days continue to accrue until corrective work and punch list work is completed and accepted.

In the event that additive bid(s) are awarded, additional working days will be granted in accordance with the table shown in the Notice to Bidders

Additive Bids if Awarded	Number of Additional Working Days
1	**10**
2	**10**

Pay to the County of Fresno the sum of

TWO THOUSAND ($2,000.00)

per day for each and every calendar day's delay in finishing the work, including corrective work and punch list work, in excess of the total number of working days prescribed above.

8-1.05 TIME

Replace the 1st paragraph in Section 8-1.05 with:

Contract time starts on the day specified in the notice to proceed or in the notice of commencement of contract time as described in Section 8-1.04 or on the day you start job site activities, whichever occurs first.

Replace the 3rd and 4th paragraph including the table in Section 8-1.10A with:

Liquidated damages are specified in Section 8-1.04.

Replace the word "State's" with "County's" in Section 8-1.14A.

9 PAYMENT

Add Section 9-1.01A:

9-1.01A COMPENSATION

The bid items shown in the bid item list represent full compensation for performing all work. Full compensation for any work for which there is no bid item shall be considered to be included in the various items of work.

Delete paragraphs 11-14 of Section 9-1.03.

Add after the 6th paragraph of Section 9-1.03:

Notwithstanding anything to the contrary in these special provisions, full compensation for performing all work as shown, as specified, and as directed by the Engineer is considered to be included in the various bid items, and no additional payment will be made, except pursuant to a contract change order to perform work not shown and/or specified.

If one or more bid item(s) is/are not included, perform the work as shown and as specified and payment therefor is considered to be included in the various items of work.

Replace the last paragraph of Section 9-1.03 with:

Pay your subcontractors within 10 days of receipt of each progress payment under Pub Cont Code §§ 10262 and 10262.5.

Replace the word "Department's" with "Caltrans" in the 5th paragraph of Section 9-1.07A.

Replace Section 9-1.16F with:

9-1.16F Retentions

The Department, once in each month, shall cause an estimate in writing to be made by the Engineer. The estimate shall include the total amount of work done and acceptable materials furnished, provided the acceptable materials are listed as eligible for partial payment as materials in the special provisions and are furnished and delivered by the Contractor on the ground and not used or are furnished and stored for use on the contract, if the storage is within the State of California and the Contractor furnishes evidence satisfactory to the Engineer that the materials are stored subject to or under the control of the Department, to the time of the estimate, and the value thereof. The estimate shall also include any amounts payable for mobilization. Daily extra work reports furnished by the Contractor less than 5 calendar days, not including Saturdays, Sundays and legal holidays, before the preparation of the monthly progress estimate shall not be eligible for payment until the following month's estimate.

The amount of any material to be considered in making an estimate will in no case exceed the amount thereof which has been reported by the Contractor to the Engineer on State-furnished forms properly filled out and executed, including accompanying documentation as therein required, less the amount of the material incorporated in the work to the time of the estimate. Only materials to be incorporated in the work will be considered. The estimated value of the material established by the Engineer will in no case exceed the contract price for the item of work for which the material is furnished.

The Department shall retain 5 percent of the estimated value of the work done and 5 percent of the value of materials so estimated to have been furnished and delivered and unused or furnished and stored as aforesaid as part security for the fulfillment of the contract by the Contractor. The Department will not hold retention for mobilization or demobilization.

The Department shall pay monthly to the Contractor, while carrying on the work, the balance not retained, as aforesaid, after deducting therefrom all previous payments and all sums to be kept or retained under

the provisions of the contract. No monthly estimate or payment shall be required to be made when, in the judgment of the Engineer, the work is not proceeding in accordance with the provisions of the contract.

No monthly estimate or payment shall be construed to be an acceptance of any defective work or improper materials.

Attention is directed to the prohibitions and penalties pertaining to unlicensed contractors as provided in Business and Professions Code Sections 7028.15(a) and 7031.

Add Section 9-1.23:

9-1.23 RESOLUTION OF CONTRACT CLAIMS

Public works contract claims of three hundred seventy-five thousand dollars ($375,000) or less which arise between a Contractor and a local public agency shall be resolved in accordance with the provisions of California Public Contract Code Sections 20104-20104.6, inclusive. In addition, California Public Contract Code Section 9204 requires that the procedure established therein shall apply to all claims (as therein defined) filed by a contractor in connection with a public works project. Accordingly, this contract expressly incorporates all of the terms and conditions of those statutory provisions, which are as follows:

California Public Contract Code Section 9204

(a) The Legislature finds and declares that it is in the best interests of the state and its citizens to ensure that all construction business performed on a public works project in the state that is complete and not in dispute is paid in full and in a timely manner.

(b) Notwithstanding any other law, including, but not limited to, Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2, Chapter 10 (commencing with Section 19100) of Part 2, and Article 1.5 (commencing with Section 20104) of Chapter 1 of Part 3, this section shall apply to any claim by a contractor in connection with a public works project.

(c) For purposes of this section:

(1) “Claim” means a separate demand by a contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:

(A) A time extension, including, without limitation, for relief from damages or penalties for delay assessed by a public entity under a contract for a public works project.

(B) Payment by the public entity of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public works project and payment for which is not otherwise expressly provided or to which the claimant is not otherwise entitled.

(C) Payment of an amount that is disputed by the public entity.

(2) “Contractor” means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who has entered into a direct contract with a public entity for a public works project.

(3) (A) “Public entity” means, without limitation, except as provided in subparagraph (B), a state agency, department, office, division, bureau, board, or commission, the California State University, the University of California, a city, including a charter city, county, including a charter county, city and county, including a charter city and county, district, special district, public authority, political subdivision, public corporation, or nonprofit transit corporation wholly owned by a public agency and formed to carry out the purposes of the public agency.

(B) “Public entity” shall not include the following:

(i) The Department of Water Resources as to any project under the jurisdiction of that department.

(ii) The Department of Transportation as to any project under the jurisdiction of that department.

(iii) The Department of Parks and Recreation as to any project under the jurisdiction of that department.
(iv) The Department of Corrections and Rehabilitation with respect to any project under its jurisdiction pursuant to Chapter 11 (commencing with Section 7000) of Title 7 of Part 3 of the Penal Code.
(v) The Military Department as to any project under the jurisdiction of that department.
(vi) The Department of General Services as to all other projects.
(vii) The High-Speed Rail Authority.

(4) “Public works project” means the erection, construction, alteration, repair, or improvement of any public structure, building, road, or other public improvement of any kind.
(5) “Subcontractor” means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who either is in direct contract with a contractor or is a lower tier subcontractor.

(d) (1) (A) Upon receipt of a claim pursuant to this section, the public entity to which the claim applies shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide the claimant a written statement identifying what portion of the claim is disputed and what portion is undisputed. Upon receipt of a claim, a public entity and a contractor may, by mutual agreement, extend the time period provided in this subdivision.

(B) The claimant shall furnish reasonable documentation to support the claim.
(C) If the public entity needs approval from its governing body to provide the claimant a written statement identifying the disputed portion and the undisputed portion of the claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the public entity shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide the claimant a written statement identifying the disputed portion and the undisputed portion.
(D) Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. If the public entity fails to issue a written statement, paragraph (3) shall apply.

(2) (A) If the claimant disputes the public entity’s written response, or if the public entity fails to respond to a claim issued pursuant to this section within the time prescribed, the claimant may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the public entity shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(B) Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the public entity shall provide the claimant a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. Any disputed portion of the claim, as identified by the contractor in writing, shall be submitted to nonbinding mediation, with the public entity and the claimant sharing the associated costs equally. The public entity and claimant shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside this section.

(C) For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.
(D) Unless otherwise agreed to by the public entity and the contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.
(E) This section does not preclude a public entity from requiring arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program, if mediation under this section does not resolve the parties' dispute.

(3) Failure by the public entity to respond to a claim from a contractor within the time periods described in this subdivision or to otherwise meet the time requirements of this section shall result in the claim being deemed rejected in its entirety. A claim that is denied by reason of the public entity's failure to have responded to a claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of the claimant.

(4) Amounts not paid in a timely manner as required by this section shall bear interest at 7 percent per annum.

(5) If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a public entity because privity of contract does not exist, the contractor may present to the public entity a claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that the contractor present a claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the claim be presented to the public entity shall furnish reasonable documentation to support the claim. Within 45 days of receipt of this written request, the contractor shall notify the subcontractor in writing as to whether the contractor presented the claim to the public entity and, if the original contractor did not present the claim, provide the subcontractor with a statement of the reasons for not having done so.

(e) The text of this section or a summary of it shall be set forth in the plans or specifications for any public works project that may give rise to a claim under this section.

(f) A waiver of the rights granted by this section is void and contrary to public policy, provided, however, that (1) upon receipt of a claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable; and (2) a public entity may prescribe reasonable change order, claim, and dispute resolution procedures and requirements in addition to the provisions of this section, so long as the contractual provisions do not conflict with or otherwise impair the timeframes and procedures set forth in this section.

(g) This section applies to contracts entered into on or after January 1, 2017.

(h) Nothing in this section shall impose liability upon a public entity that makes loans or grants available through a competitive application process, for the failure of an awardee to meet its contractual obligations.

(i) This section shall remain in effect only until January 1, 2027, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2027, deletes or extends that date.

California Public Contract Code Sections 20104 – 20104.6

Section 20104

(a)(1) This article applies to all public works claims of three hundred seventy-five thousand dollars ($375,000) or less which arise between a contractor and a local agency.

(2) This article shall not apply to any claims resulting from a contract between a contractor and a public agency when the public agency has elected to resolve any disputes pursuant to Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2.

(b)(1) "Public work" means "public works contract" as defined in Section 1101 but does not include any work or improvement contracted for by the state or the Regents of the University of California.

(2) "Claim" means a separate demand by the contractor for (A) a time extension, (B) payment of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public work and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or (C) an amount the payment of which is disputed by the local agency.

(c) The provisions of this article or a summary thereof shall be set forth in the plans or specifications for any work which may give rise to a claim under this article.

(d) This article applies only to contracts entered into on or after January 1, 1991.

Section 20104.2

For any claim subject to this article, the following requirements apply:

(a) The claim shall be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment. Nothing in this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims.

(b) (1) For claims of less than fifty thousand dollars ($50,000), the local agency shall respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.

(3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the claimant in producing the additional information, whichever is greater.

(c) (1) For claims of over fifty thousand dollars ($50,000) and less than or equal to three hundred seventy-five thousand dollars ($375,000), the local agency shall respond in writing to all written claims within 60 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.

(3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the claimant in producing the additional information or requested documentation, whichever is greater.

(d) If the claimant disputes the local agency's written response, or the local agency fails to respond within the time prescribed, the claimant may so notify the local agency, in writing, either within 15 days of receipt of the local agency's response or within 15 days of the local agency'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 local agency shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(e) Following the meet and confer conference, if the claim or any portion remains in dispute, the claimant may file a claim as provided in 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 or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

(f) This article does not apply to tort claims and nothing in this article is intended nor shall be construed to change the time periods for filing tort claims or actions specified by 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.

Section 20104.4

The following procedures are established for all civil actions filed to resolve claims subject to this article:

(a) Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

(b) (**1)** 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 that code. The Civil Discovery Act (Title 4 (commencing with Section 2016.010) of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

(2) Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this article shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event shall these fees or expenses be paid by state or county funds.

(3) In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo but

does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, pay the attorney's fees of the other party arising out of the trial de novo.

(c) The court may, upon request by any party, order any witnesses to participate in the mediation or arbitration process.

Section 20104.6

(a) No local agency shall fail to pay money as to any portion of a claim which is undisputed except as otherwise provided in the contract.

(b) In any suit filed under Section 20104.4, the local agency shall pay interest at the legal rate on any arbitration award or judgment. The interest shall begin to accrue on the date the suit is filed in a court of law.

Add Section 9-1.25:

9-1.25 SUPPLEMENTAL WORK

The Supplemental Work bid item is provided to compensate the Contractor for new and unforeseen work necessary to construct the project as designed and intended. Supplemental Work is not for design changes. Supplemental Work will be classed as extra work in accordance with the provisions of Section 4-1.05, "Changes and Extra Work," of the Standard Specifications. The dollar amount for supplemental work shown in the Proposal is an estimate only, and shall be included in each bidder's proposal.

Supplemental work shall be performed only upon direct written authorization from the Engineer and daily extra work reports shall be submitted to and approved by the Engineer. The contractor shall maintain separate records for extra work performed in accordance with the provisions of Section 5-1.27," Records," of the Standard Specifications and these special provisions.

Payment will be based on the total amount of authorized Supplemental Work actually performed. The provisions in Section 9-1.06, "Changed Quantity Pay Adjustments" of the Standard Specifications shall not apply to the item "Supplemental Work."

DIVISION II GENERAL CONSTRUCTION

10 GENERAL

Add to the end of Section 10-1.02C(2):

Protect any irrigation component to be relocated before performing any other construction activity in the area.

12 TEMPORARY TRAFFIC CONTROL

Replace section 12-2 with:

12-2 CONSTRUCTION PROJECT FUNDING INFORMATION SIGNS

12-2.01 GENERAL

Details for construction project information signs are in *Project Details*.

Keep construction project information signs clean and in good repair at all times.

12-2.02 MATERIALS

Provide Construction project information signs, posts, and mounting hardware.

Construction project information signs must be wood post signs complying with section 82-3 of the Standard Specifications. Each sign shall be supported by two 16-feet tall 4x4 smooth wood posts, painted white.

Sign panels for construction project information signs must be 4 feet tall by 6 feet wide and made of 3/4 inch thick exterior grade plywood.

The background on construction project information signs must be painted white.

Text shall be black on a white background.

The size of the text and logos on construction project information signs must be as described in the Project Details. Do not add any additional information unless authorized.

12-2.03 CONSTRUCTION

Provide and Install a total of 1 construction project information signs at the location designated by the Engineer before starting major work activities visible to highway users.

The Contractor shall construct and maintain signage meeting the guidelines specified in the Project Details insert. The sign shall be prominently displayed in a location visible to the public.

Upon completion and acceptance of the work, the signs shall be removed and become the property of the Contractor.

12-2.02D PAYMENT

The Department pays you for Construction Funding Signs upon installation of each sign

The Department does not adjust the unit price for an increase or decrease in the construction funding sign quantity.

Replace the 3rd paragraph of Section 12-3.01C with:

If ordered, furnish and place additional temporary traffic control devices. This work is not change order work if:

1. Required to conform with your traffic control plan
2. Required to conform with the MUTCD
3. Necessary for public safety or convenience as determined by the Engineer
4. Required to perform staged construction shown on the plans

Add to the end of Section 12-3.01D:

If there are no bid items for traffic control devices, payment is considered to be included in the bid item for Traffic Control System.

Replace the last paragraph of Section 12-3.03C with:

Moving plastic traffic drums from location to location if ordered after initial placement is not change order work if:

1. Required to conform with your traffic control plan
2. Required to conform with the MUTCD

3. Necessary for public safety or convenience as determined by the Engineer
4. Required to perform staged construction shown on the plans

Replace the last paragraph of Section 12-3.10C with:

Moving a barricade from location to location is change order work if ordered after initial placement of the barricade unless.

1. Required to conform with your traffic control plan
2. Required to conform with the MUTCD
3. Necessary for public safety or convenience as determined by the Engineer
4. Required to perform staged construction shown on the plans

Replace Section 12-3.11B(5)(b) with:

12-3.11B(5)(b) Construction Project Funding Identification Signs

Reserved

Replace the word "Department's" with the word "Caltrans" in the 1st paragraph of Section 12-3.20A(4)(a).

Replace the last paragraph of Section 12-3.20C(1) with:

If the Engineer orders a lateral move of temporary barrier system and repositioning is not shown, the lateral move is change order work unless:

1. Required to conform with your traffic control plan
2. Required to conform with the MUTCD
3. Necessary for public safety or convenience as determined by the Engineer
4. Required to perform staged construction shown on the plans

Replace the 2nd paragraph of Section 12-3.20C(2)(c) with:

Install K rail as shown in the project plans.

Replace the last paragraph of Section 12-3.31C with:

Moving portable flashing beacons from location to location if ordered after initial placement is change order work unless:

1. Required to conform with your traffic control plan
2. Required to conform with the MUTCD
3. Necessary for public safety or convenience as determined by the Engineer
4. Required to perform staged construction shown on the plans

Replace the 2nd paragraph of Section 12-3.35B(6) with:

Provide any software on a CD or other Engineer-authorized data-storage device to the Engineer.

Add before the 1st paragraph of Section 12-3.41A(1):

Section 12-3.41 is used when shown in the Bid Item List.

Replace Section 12-4.02A(3)(a) with:

12-4.02A(3)(a) General

The Contractor shall prepare and submit to the County Construction Engineer for approval, a traffic control system plan indicating the means and methods he will employ to institute and maintain traffic control for all phases of the work within the project. The traffic control system plan shall be submitted to the County Construction Engineer as early as possible, preferably **five (5) working days** prior to pre-

construction meeting. The Engineer will require five (5) working days to review the initial submittal of the traffic control system plan and an additional five (5) working days for each successive review.

No work at the project site whatsoever, including preparatory work such as the installation of construction project funding signs, shall commence until the traffic control system plan has been approved in writing by the Engineer. In the event that the traffic control system plan is not submitted timely, the Engineer may issue a notice of commencement of contract time prior to approval of the traffic control system plan, and working days will begin to accrue against the allotted contract time.

Late submittal of the traffic control plan or revisions thereafter required, due to the inadequacy of the plan, shall not be accepted as justification for the delay in the start of the working days for the project.

It shall be the Contractor's responsibility to provide, install, maintain, and remove any and all detour signage and traffic control devices and to obtain all permits, including permits from Caltrans, as may be necessary to establish detours as part of the contractor's traffic control plan.

Traffic will not be allowed to be limited to one direction when construction activities are not actively in progress. Providing, installing, maintaining, and removing all traffic control, including portable changeable message signs if required, obtaining and complying with all permits, and providing all traffic control operations shall be the responsibility of the contractor, and no additional compensation will be allowed therefor.

Replace Section 12-4.02A(3)(b) with:

12-4.02A(3)(b) Closure Schedules

One-way traffic shall be controlled through the project in accordance with the California Manual MUTCD and Caltrans Standard Plans T-11 and T-13 entitled "Traffic Control System for Lane Closure on Multilane Conventional Highways" and "Traffic Control System for Lane Closure on Two Lane Conventional Highways," and these special provisions. Night closure will not be permitted.

When traffic is under one way control on unpaved areas, the cones shown along the centerline on the plan need not be placed.

Every Monday by noon, submit a closure schedule request for planned closures for the next week.

The next week is defined as Sunday at noon through the following Sunday at noon.

Submit a closure schedule request 5 days before the anticipated start of any job site activity that reduces:

1. Horizontal clearances of traveled ways, including shoulders, to 2 lanes or fewer due to activities such as temporary barrier placement and paving
2. Vertical clearances of traveled ways, including shoulders, due to activities such as pavement overlays, overhead sign installation, or falsework girder erection

Submit closure schedule changes, including additional closures, by noon at least 3 business days before a planned closure.

Cancel closure requests at least 48 hours before the start time of the closure.

The Department notifies you of unauthorized closures or closures that require coordination with other parties as a condition for authorization.

Replace Section 12-4.02A(3)(d) with:

12-4.02A(3)(d) Traffic Break Schedule

Not Used.

Replace Section 12-4.02C(1) with:

12-4.02C(1) General

Work that interferes with traffic is limited to the hours when closures are allowed.

Do not reduce an open traffic lane width to less than 10 feet. If traffic cones or delineators are used for temporary edge delineation, the side of the base of the cones or delineators nearest to traffic is considered the edge of the traveled way.

Discuss the contingency plan for any activity that could affect the closure schedule with the Engineer at least 5 business days before starting the activity requiring the plan.

The Engineer may reschedule a closure that was canceled due to unsuitable weather.

Traffic will be controlled by flagmen by eyesight, radio (walkie talkie) or baton. In the event these methods do not work satisfactorily, as determined by the Engineer, a pilot car will be required.

The Engineer may require a pilot car to be used during earthwork operations in preparation of the grading plane or other operations when the Contractor's operations cover an area beyond the line of sight, or beyond the range of radios or when the baton method does not function satisfactorily.

You may use automated flagger assistance devices to enhance the traffic control system for a lane closure on a two-lane convention highway, except if a bid item for automated flagger assistance devices is shown in the Bid Item List, the use of AFADs is required.

Do not use automated flagger assistance devices:

1. On multi-lane highways
2. As a substitute or a replacement for a temporary traffic control signal
3. If the devices impair access for pedestrians and bicycles, unless alternate access is provided
4. If the usable shoulder area is not wide enough to place a trailer mounted device
5. If the distance between the devices is more than 800 feet, except when each device is controlled by a separate operator and radio communication is available between the AFAD operators

Replace Section 12-4.02C(2) with:

12-4.02C(2) Not Used

Replace Section 12-4.02C(3) with:

12-4.02C(3) Closure Requirements and Charts

12-4.02C(3)(a) General

Where 2 or more lanes in the same direction, including the shoulders, are adjacent to the area where the work is being performed, close the adjacent lane under any of the following conditions:

1. Work is off the traveled way but within 6 feet of the edge of the traveled way, and the approach speed is greater than 45 mph
2. Work is off the traveled way but within 3 feet of the edge of the traveled way, and the approach speed is less than 45 mph

Closure of the adjacent traffic lane is not required during any of the following activities:

1. Work behind a barrier
2. Paving, grinding, or grooving
3. Installation, maintenance, or removal of traffic control devices except for temporary railing

12-4.02C(3)(b) - 12-4.02C(3)(n)

Reserved

12-4.02C(3)(o) Closure of Conventional County Roads

The type and location of signs, lights, flags, flagmen, and other traffic control and safety devices shall be in accordance with the current edition of the California Manual on Uniform Traffic Control Devices (MUTCD) issued by the State of California, Department of Transportation (Caltrans).

Allow public traffic to pass through construction at all times unless otherwise specified herein.

Provide access to properties abutting the project site at all times.

When directed by the Engineer, traffic shall be routed through the work under one-way control.

Under one-way reversing traffic control operations, public traffic may be stopped in one direction for periods not to exceed 10 minutes.

Lane closure is defined as the closure of a traffic lane or lanes within a single traffic control system.

Provide a minimum of one paved traffic lane, not less than 11 feet wide, to be open for use by public traffic at all times.

The full width of the traveled way shall be open for use by public traffic when construction operations are not actively in progress.

Keep access roads accessible at all times.

Maintain vehicular access to the park at all times.

Personal vehicles of the Contractor's employees shall not be parked on the traveled way or shoulders including sections closed to public traffic.

When work vehicles or equipment are parked on the shoulder within 6 feet of a traffic lane, the shoulder area shall be closed as shown on standard plan T-11.

The Contractor's equipment and materials shall not remain in a lane except when such lane is closed to traffic and the lane is being used for contract operations.

12-4.02C(3)(p)–12-4.02C(3)(s) Reserved

Replace Section 12-4.02C(7)(d) with:

12-4.02C(7)(d) Reserved

Replace the word “Department’s” with “Caltrans” in Section 12-4.02C(9)(a)(iv).

Replace Section 12-4.02C(9)(d) with:

12-4.02C(9)(d) Payment

You pay the cost of furnishing all flaggers, including transporting flaggers and furnishing stands and towers for flaggers to provide for the passage of traffic through the work as specified in Sections 7-1.03 and 7-1.04.

Add before the 1st paragraph of Section 12-4.02C(10):

Section 12-4.02C(10) is used when Pickup Truck Mounted Changeable Message Sign is shown in the Bid Item List.

Replace item 3.6.1 in the list in Section 12-4.02C(11)(a)(iii)(B) with:

Not Used

Replace item 5 in the list in Section 12-4.02C(11)(a)(iv)(C) with:

Not Used

Replace Section 12-4.02C(11)(d) with:

12-4.02C(11)(d) Payment

Full payment for conforming to the requirements of this section shall be considered to be included in the Traffic Control Plan item on the Bid Items List.

Replace Section 12-4.02C(14) with:

12-4.02C(14) Failure to Provide Traffic Control.

If you do not provide the traffic control and it becomes necessary for the Engineer to notify you of your duties according to the Standard Specifications and these special provisions, you will pay $200 per 15-minute period or portion thereof to the County for all the time required to acquire the traffic control, including pilot car.

Such payment shall commence at the time notice of the improper traffic control condition is given to you or your authorized representative by the Engineer and shall terminate when the condition is corrected. Such payment will be deducted from your payment.

In addition, when it is necessary for the Engineer to perform the work, you will pay the actual cost for the performance thereof. Such amount will be deducted from your payment. This will be in addition to any penalties imposed in these special provisions.

The provisions in this section will not relieve you from your responsibility to provide such additional devices or take such measures as may be necessary to comply with the provisions in Section 7-1.04, "Public Safety," of the Standard Specifications.

Replace Section 12-4.02D with:

12-4.02D Payment

The Department pays for change order work for a traffic control system by force account for increased traffic control and uses a force account analysis for decreased traffic control.

Traffic control system for lane closure is paid for as traffic control system. Flagging costs are paid for as specified in Section 12-1.04.

The requirements in Section 4-1.05 for payment adjustment do not apply to traffic control system.

Adjustments in compensation for traffic control system will be made for an increase or decrease in traffic control work if ordered.

A traffic control system required by change order work is paid for as a part of the change order work.

Full compensation for furnishing and operating the pilot car, (including driver, radios, and any other equipment and labor required) shall be considered as included in the contract lump sum price paid for traffic control system and no further payment will be made.

13 WATER POLLUTION CONTROL

Add to Section 13-1.01:

STATE WATER RESOURCES CONTROL BOARD (SWRCB) NOTICE OF INTENT FILING (NOI) FEE

Complete the NOI filing process started by the County on the SWRCB website using information available in the contract, field and website. The Engineer will link your plan to the project on the SWRCB website.

The SWRCB NOI bid item is specifically provided to reimburse Contractor for payment of NOI filing fee charged by the SWRCB and paid by the Contractor after the Contractor has completed the NOI filing process started by the County.

The amount paid will be the amount of the fee only. No payment will be made for overhead or processing costs. Full compensation for any overhead and processing costs will be considered to be included in the various items of work, and no separate compensation will be made therefor.

The provisions of Section 9-1.06 for increased or decreased quantities shall not apply to the "State Water Resources Control Board Notice of Intent" bid item.

The SWRCB website can be found at:

https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.xhtml

The dollar amount shown in the Proposal is an estimate only and shall be included in each bidder's proposal.

Replace the word "Department" with "Caltrans" where it occurs in Section 13-1.01A.

Replace the 1st paragraph of Section 13-1.01D(2) with:

13-1.01D(2) Regulatory Requirements

Comply with the discharge requirements in the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities; Order No. 2009-000 9-DWQ, CAS000002 (Construction General Permit) and any amendments thereto issued by the SWRCB. The Construction General Permit may be found at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Add to the end of Section 13-1.01D(2):

This Project disturbs 3.6 acres of soil.

Replace Section 13-1.01D(4)(b) with:

13-1.01D(4)(b) Qualifications

The WPC manager must:

1. Comply with the requirements provided in the Construction General Permit for:
   1.1. QSP if the project requires a WPCP
   1.2. QSD if the project requires a SWPPP
2. Complete the stormwater management training described at the Stormwater and Water Pollution Control Information link at the Caltrans Division of Construction website

Replace Section 13-2.04:

13-2.04 PAYMENT

The Department pays for prepare water pollution control program as follows:

1. Total of 50 percent of the item total upon authorization of the WPCP
2. Total of 90 percent of the item total upon work completion
3. Total of 100 percent of the item total upon Contract acceptance

Add to Section 13-3.01A:

This project's risk level is 1.

Add between the 4th and 5th paragraphs of Section 13-3.01C(2)(a):

The Central Valley Regional Water Quality Control Board will review the authorized SWPPP.

Replace the 1st paragraph of Section 13-3.01C(2)(b)(iv) with:

If a sampling and analysis plan is required, submit a sampling and analysis plan that complies with the Caltrans *Construction Site Monitoring Program Guidance Manual*.

Add Section 13-3.01C(5):

13-3.01C(5) Annual Certification

Submit an annual certification of compliance as described in the Caltrans *Stormwater Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual* before July 15th of each year.

Replace Section 13-3.04:

13-3.04 PAYMENT

For a project with 60 original working days or less, the Department pays for prepare stormwater pollution prevention plan as follows:

1. Total of 75 percent of the item total upon authorization of the SWPPP, and the completed N.O.I has been posted in the SMARTS public access database for the project.
2. Total of 100 percent of the item total upon Contract acceptance, and the completed N.O.I has been posted in the SMARTS public access database for the project.

For a project with more than 60 original working days, the Department pays for prepare stormwater pollution prevention plan as follows:

1. Total of 50 percent of the item total upon authorization of the SWPPP, and the completed N.O.I has been listed in the SMARTS public access database for the project.
2. Total of 90 percent of the item total upon work completion
3. Total of 100 percent of the item total upon Contract acceptance, and N.O.T has been closed in the SMARTS public access database for the project.

The Department does not pay for the preparation, collection, laboratory analysis, and reporting of stormwater samples for nonvisible pollutants if WPC practices are not implemented before precipitation or if you fail to correct a WPC practice before precipitation.

The Department pays:

1. $500 for each authorized rain event action plan
2. $2,000 for each authorized stormwater annual report upon acceptance by RWQCB

The Department does not adjust the unit price for an increase or decrease in the quantity of:

1. Rain event action plan
2. Storm water sampling and analysis day
3. Storm water annual report

Replace Section 13-4.03G with:

13-4.03G Dewatering

Dewatering consists of discharging accumulated stormwater, groundwater, or surface water from excavations or temporary containment facilities.

If dewatering is required, perform dewatering work as specified for the work items involved, such as a temporary ATS or dewatering and discharge.

If dewatering and discharging activities are not specified for a work item and you perform dewatering activities:

1. Conduct dewatering activities under the Caltrans *Field Guide for Construction Site Dewatering*.
2. Ensure any dewatering discharge does not cause erosion, scour, or sedimentary deposits that could impact natural bedding materials.
3. Discharge the water within the project limits. Dispose of the water if it cannot be discharged within project limits due to site constraints or contamination.
4. Do not discharge stormwater or non-stormwater that has an odor, discoloration other than sediment, an oily sheen, or foam on the surface. Immediately notify the Engineer upon discovering any such condition.

Replace the 2nd paragraph of Section 13-5.04 with:

If there is no bid item for temporary soil stabilization measures, payment therefor is considered to be included in the bid item for prepare and implement water pollution control program or in the bid item for prepare and implement stormwater pollution prevention plan, as applicable.

Replace Section 13-6.04 with:

13-6.04 PAYMENT

The payment quantity for temporary sediment control bid items paid for by the length is the length measured along the centerline of the installed material.

The payment quantity, if any, for temporary fiber roll does not include the additional quantity used for overlaps.

The Department does not pay for the relocation of temporary drainage inlet protection during work progress.

If there are no bid items for installing or maintaining temporary sediment control measures, payment therefor is considered to be included in the bid item for prepare and implement water pollution control program or in the bid item for prepare and implement stormwater pollution prevention plan, as applicable.

Replace Section 13-7.03D with:

13-7.03D Payment

The Department does not pay for the relocation of temporary construction entrances or roadways during work progress.

If there are no bid items for installing or maintaining temporary construction entrances or roadways, payment therefor is considered to be included in the bid item for prepare and implement water pollution control program or in the bid item for prepare and implement stormwater pollution prevention plan, as applicable.

Replace the 1st paragraph and the 1st line of the 2nd paragraph of Section 13-8.01C(2) with:

Within 20 days of Contract approval, submit 3 copies of the ATS plan if an ATS plan is required for the project.

The plan, if required, must include:

Replace the word "Department's" with "Caltrans" in items 3 and 4 of the list in Section 13-8.01C(2).

14 ENVIRONMENTAL STEWARDSHIP

Add after the 3rd paragraph of Section 14-10.01:

Food scraps, paper wrappers, food containers, cans, bottles and all food related trash and litter must be removed from the project site at the end of each working day.

Replace the 8th paragraph of Section 14-10.01 with:

Furnish and use closed-lid trash containers in the job-site yard, field trailers, and locations where workers gather for lunch and breaks.

Replace Section 14-12.04 with:

14-12.04 RELATIONS WITH SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT (SJVAPCD)

You are responsible for compliance with all applicable SJVAPCD regulations and requirements. This section is provided for your information, and nothing herein or elsewhere within these special provisions shall be construed as limiting your responsibility for complying with all applicable rules and regulations.

In accordance with SJVAPCD Regulation VIII – Fugitive PM10 Prohibitions: Rule 8021, implementation of an SJVAPCD-approved dust control plan is not required prior to commencement of any dust generating activities. You must file Construction Notification with SJVAPCD 48 hours prior to starting work.

Pursuant to section 6.4 of District Rule 8021 – Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities, the owner or operator of a construction project of at least 1.0 acre in size shall provide written notification to the District at least 48 hours prior to his/her intent to commence any earthmoving activities. Use the first two pages of this form to submit a written Construction Notification. There are no fees for filing a construction notification.

It is your responsibility to be fully informed of the requirements of all rules, regulations, plans and conditions that may govern your operations and to conduct the work accordingly.

DIVISION III EARTHWORK AND LANDSCAPE

17 GENERAL

Replace the 4th paragraph in Section 17-2.03A with:

Clear and grub vegetation only within the area of work.

Replace the 1st sentence in the 2nd paragraph in Section 17-2.03B with:

Cut tree branches that extend over the roadway and hang within 20 feet of finished grade and as directed by the engineer.

Add to end of Section 17-2.03C:

Any trees with a trunk diameter greater than or equal to 4" will constitute as a "tree removal" and will have separate bid item. Any tree or shrub less than 4" shall be considered in the bid item for "clearing and grubbing".

19 EARTHWORK

Replace the first paragraph of Section 19-5.03B with:

Compact earthwork to a relative compaction of at least 95 percent for at least a depth of:

1. 0.5 foot below the grading plane for the width between the outer edges of shoulders on excavation and embankments smaller than 2.5 feet above original grade.
2. 2.5 feet below the finished grade for the width of the traveled way plus 3 feet on either side (6 feet wider) on embankments.

Add to the list in the first paragraph of Section 19-9.02:

1. Import Borrow
2. Native Soil

Add after the 5th paragraph of Section 19-9.02:

When native soil or import borrow is used, material shall be readily compactable, shall not contain deleterious materials, shall pass 100% through a 2-inch sieve, 20% to 40% passing the #200 sieve, a Plasticity Index less than 10, and shall provide a stable surface and uniform appearance as determined by the engineer.

20 LANDSCAPE

Replace Section 20-1.02B with:

20-1.02B Water

Make arrangements for supplying water. Water must be of a quality that promotes plant growth.

22 FINISHING ROADWAY

DIVISION V SURFACINGS AND PAVEMENTS

36 GENERAL

Replace Section 36-3 with:

36-3 PAVEMENT SMOOTHNESS

36-3.01 GENERAL

36-3.01A Summary

Section 36-3 includes specifications for measuring the smoothness of pavement surfaces.

36-3.01B Definitions

Reserved

36-3.01C Submittals

36-3.01C(1) General

Reserved

36-3.01C(2) Reserved

36-3.01C(3) Reserved

36-3.01C(4) Straightedge Measurements

Within 2 business days of measuring smoothness with a straightedge, submit a list of the areas requiring smoothness correction. Identify the areas by:

1. Location number
2. District-County-Route
3. Beginning station or post mile to the nearest 0.01 mile
4. For correction areas within a traffic lane:
   4.1. Lane direction, *NB, SB, EB*, or *WB*
   4.2. Lane number from left to right in the direction of travel
   4.3. Wheel path, *L* for left, *R* for right, or *B* for both
5. For correction areas not within a traffic lane:
   5.1. Identify the pavement area, such as shoulder, weigh station, or turnout
   5.2. Direction and distance from the centerline, *L* for left or *R* for right
6. Estimated size of correction area

36-3.01D Quality Assurance

36-3.01D(1) General

Reserved

36-3.01D(2) Reserved

36-3.01D(3) Quality Control

36-3.01D(3)(a) General

Reserved

36-3.01D(3)(b) Smoothness

36-3.01D(3)(b)(i) General

Test pavement smoothness using a 12-foot straightedge for the pavement at:

1. Traffic lanes less than 1,000 feet in length, including ramps, turn lanes, and acceleration and deceleration lanes
2. Areas within 15 feet of manholes
3. Shoulders
4. Weigh-in-motion areas
5. Miscellaneous areas such as medians, gore areas, turnouts, and maintenance pullouts
6. Any other areas selected by the Engineer

36-3.01D(3)(b)(ii) Reserved

36-3.01D(3)(b)(iii) Reserved

36-3.01D(4) Department Acceptance

The Department accepts pavement surfaces for smoothness based on compliance with the smoothness specifications for the type of pavement surface specified.

For areas that require pavement smoothness determined using a 12-foot straightedge, the pavement surface must not vary from the lower edge of the straightedge by more than:

1. 0.01 foot when the straightedge is laid parallel with the centerline
2. 0.02 foot when the straightedge is laid perpendicular to the centerline and extends from edge to edge of a traffic lane
3. 0.02 foot when the straightedge is laid within 24 feet of a pavement conform

36-3.02 MATERIALS

Not Used

36-3.03 CONSTRUCTION

Perform pavement smoothness testing in areas selected by the Engineer in the presence of the Engineer.

36-3.04 PAYMENT

Not Used

37 SEAL COATS

Replace the word "Department's" with "Caltrans" where it appears in the 1st paragraph of Section 37-1.01D(1).

Replace Item 1 in the list of Section 37-2.01A(3) with:

1. Samples for:
   - 1.1. Asphaltic emulsion chip seal, six 1-quart wide mouth plastic containers with screw top lid of asphaltic emulsion
   - 1.2. Polymer modified asphaltic emulsion chip seal, six 1-quart wide mouth plastic containers with screw top lid of polymer modified asphaltic emulsion
   - 1.3. Asphalt rubber binder chip seal, two 1-quart cans of base asphalt binder
   - 1.4. Asphalt rubber binder chip seal, five 1-quart cans of asphalt rubber binder

Replace Section 37-2.01A(4)(b)(ii) with:

37-2.01A(4)(b)(ii) Aggregate

All tests must be performed on uncoated aggregate except for film stripping which must be performed on precoated aggregate.

For aggregate, the authorized laboratory must perform sampling and testing at the specified frequency and location for the following quality characteristics:

Aggregate Quality Control Requirements

Quality characteristic	Test method	Minimum sampling and testing frequency	Location of sampling
Los Angeles Rattler loss (max, %) At 100 revolutions At 500 revolutions	California Test 211	1st day of production	See California Test 125
Percent of crushed particles Coarse aggregate (min, %) One-fractured face Two-fractured faces Fine aggregate (min, %) (Passing No. 4 sieve and retained on No. 8 sieve) One fractured face	AASHTO T 335	1st day of production	See California Test 125
Flat and elongated particles (max by weight at 3:1, %)	ASTM D4791	1st day of production	See California Test 125
Film stripping (max, %)	California Test 302	1st day of production	See California Test 125
Durability (min)	California Test 229	1st day of production	See California Test 125
Gradation (% passing)	California Test 202	2 per day	See California Test 125
Cleanness value (min)	California Test 227	2 per day	See California Test 125

Replace the 9th paragraph of Section 37-2.01A(4)(c) with:

If test results for the aggregate gradation do not comply with specifications, you may remove the chip seal represented by these tests or request that it remain in place with a payment deduction. The deduction is $1.75 per ton for the aggregate represented by the test results.

Replace the 3rd paragraph of Section 37-2.01B(3)(a) with:

The authorized laboratory must conduct the Vialit test using the proposed asphaltic emulsion or asphalt binder and aggregate for compliance with the requirements shown in the following table:

Add to the end of Section 37-2.01C(3):

Vegetation removal within the pavement and heavy soil removal is change order work.

Replace the 1st paragraph of Section 37-2.01C(4)(d)(iii) with:

Sweeping must be performed after the chip seal has set and there is no damage or dislodging of aggregate from the chip seal surface. In addition to previous sweeping, perform final sweeping immediately before opening any lane to public traffic, not controlled with pilot cars.

Replace the word “Department” with “Caltrans” in the 1st paragraph of Section 37-2.01B(3)(b).

Replace the 2nd paragraph of Section 37-2.03B(2) with:

A polymer modified asphaltic emulsion must be either Grade PMCRS-2 or PMCRS-2h.

Add to the end of Section 37-2.03B(3):

Aggregate for a polymer modified asphaltic emulsion chip seal must comply with the 3/8” gradation.

Replace item 1 in the list in the 1st paragraph of Section 37-3.01A(3) with:

1. Samples for:
   1.1. Asphaltic emulsion slurry seal, six 1-quart samples of asphaltic emulsion
   1.2. Polymer modified asphaltic emulsion slurry seal, six 1-quart samples of polymer modified asphaltic emulsion
   1.3. Micro-surfacing, two 1-quart samples of micro-surfacing emulsion

Add to Section 37-3.01B(2):

Aggregate for slurry seal must be Type II.

Add to the end of Section 37-3.01C(4):

Vegetation removal within the pavement and heavy soil removal is change order work.

Replace Section 37-3.02A(3) with:

37-3.02A(3) Submittals

Immediately after sampling, submit six 1-quart wide mouth plastic containers of asphaltic emulsion or polymer modified asphaltic emulsion taken in the presence of the Engineer. Samples must be submitted in insulated shipping containers.

Replace Section 37-3.02A(4)(b)(i) with:

37-3.02A(4)(b)(i) General

Take samples of asphaltic emulsion and polymer modified asphaltic emulsion from the tank truck at mid load or from a sampling tap or thief. Before taking samples, draw and dispose of 1 gallon. In the presence of the Engineer take two 1-quart samples in wide mouth plastic containers with lined, sealed lids for acceptance testing.

Replace Section 37-3.02B(2) with:

37-3.02B(2) Asphaltic Emulsions

Reserved

Replace item 1 in the list in Section 37-4.01A(3) with:

1. Four 1-quart samples of asphaltic emulsion that is uncut from the plant.

Add to Section 37-4.02A(1):

Use either CQS-1H or CSS-1H asphaltic emulsion for flush coat.

Replace Section 37-4.02A(3) with:

37-4.02A(3) Submittals

Immediately after sampling, submit four 1-quart plastic container of asphaltic emulsion taken in the presence of the Engineer. Samples must be submitted in insulated shipping container.

Replace 1st paragraph of Section 37-4.02A(4)(b)(ii) with:

Take two 1-quart samples from the plant that are uncut for Department acceptance testing.

Replace Section 37-4.03C(1) with:

Do not track asphaltic emulsion on existing pavement surfaces.

Apply sand immediately after applying asphaltic emulsions.

The sand moisture content is not more than the sand SSD (Saturated Surface Dry) plus one percent.

No tires are allowed on asphaltic emulsions (fog seal coat) before sand aggregate has been placed.

Spread sand aggregate with the chipping machine (self-propelled aggregate spreaders) as described in Section 37-2.01C(2) that spreads sand at a uniform rate over the full width of a traffic lane in a single application. Spread sand at a rate from 2 to 6 lb./sq yd. You determine the application rates for sand and the Engineer authorizes the application rate.

Replace the last paragraph of Section 37-5.01C with:

37-5.01C Submittals

Immediately after sampling, submit two 1-quart plastic containers of parking area seal taken in the presence of the Engineer. Samples must be submitted in insulated shipping containers.

Add to Section 37-6.02B:

Crack treatment material must be Type 2 for INLAND VALLEY and Type 5 for LOW and HIGH MOUNTAIN pavement regions.

Crack treatment must be **hot**-applied.

Delete the 3rd paragraph of Section 37-6.03

Add to Section 37-6.03:

Fill the crack overband not more than 3 inches wide.

39 ASPHALT CONCRETE

Replace the list in the second paragraph of Section 39-2.01A(1) with:

1. Type A HMA
2. Minor HMA

Add to the end of the list in Section 39-2.01A(2):

8. Driveways and driveway approaches

Replace the 1st sentence of Section 39-2.01A(3)(b)(i) with:

Except for the HMA to be used in miscellaneous areas, dikes, and berms, submit your proposed JMF for each type of HMA to be used.

Replace the 2nd paragraph of Section 39-2.01A(3)(b)(i) with:

The Contractor Hot Mix Asphalt Design Data form must show documentation on aggregate quality.

Replace the 3rd paragraph of Section 39-2.01A(3)(b)(i) with:

If you cannot submit a Department-verified or Caltrans-verified JMF on a Caltrans Hot Mix Asphalt Verification form dated within 24 months before HMA production, the Engineer verifies the JMF.

Replace the 1st paragraph of Section 39-2.01A(3)(c) with:

With your proposed JMF submittal, submit a QC plan for HMA.

Add after the 4th paragraph of Section 39-2.01A(3)(c):

The QC Plan must include action and suspension limits and details of corrective action to be taken if any process is outside of those limits. Suspension limits must not exceed specified acceptance criteria.

The QC plan must describe how test results will be submitted including times for sampling and testing for each quality characteristic.

Replace Section 39-2.01A(3)(d) with:

39-2.01A(3)(d) Test Results

If ordered, submit QC results within 3 business days of a request.

For mix design, JMF verification, production start-up, and each 10,000 tons, submit AASHTO T 283 and AASHTO T 324 (Modified) test results to the Engineer.

Submit all QC test results, except AASHTO T 283 and AASHTO T 324 (Modified), within 3 business days of a request. Submit AASHTO T 283 QC tests within 15 days of sampling.

For tests performed under AASHTO T 324 (Modified), submit test data and 1 tested sample set within 5 business days of sampling.

If coarse and fine durability index tests are required, submit test results within 2 business days of sampling.

If a tapered notched wedge is used, submit compaction test result values within 24 hours of testing.

Replace the 1st sentence of the 2nd paragraph of Section 39-2.01A(3)(f) with:

For each delivery of liquid antistrip to the HMA production plant, submit a 1 pt sample to the Engineer.

Replace the 1st sentence of the 3rd paragraph of Section 39-2.01A(3)(f) with:

At the end of each day's production shift, submit production data in electronic media.

Replace the 1st sentence in the last paragraph of Section 39-2.01A(3)(g) with:

Each day during lime treatment, submit the treatment data log on electronic media in tab delimited format.

Replace the 1st sentence in the last paragraph of Section 39-2.01A(3)(h) with:

At the end of each day's production shift, submit electronic media from the HMA plant process controller.

Replace Section 39-2.01A(4)(a) with:

39-2.01A(4)(a) General

Take samples under California Test 125. Reduce samples of HMA to testing size under AASHTO R47.

AASHTO T 324 (Modified) is AASHTO T 324 with the following parameters:

1. Target air voids must equal 7.0 ± 1.0 percent
2. Specimen height must be 60 ± 1 mm
3. Number of test specimens must be 4 to run 2 tests
4. Do not average the 2 test results
5. Test specimen must be a 150 mm gyratory compacted specimen
6. Test temperature must be set at:
   - 6.1. 113 ± 2 degrees F for PG 58
   - 6.2. 122 ± 2 degrees F for PG 64
   - 6.3. 131 ± 2 degrees F for PG 70 and above
7. Measurements for impression must be taken at every 100 passes along the total length of the sample
8. Inflection point is the number of wheel passes at the intersection of the creep slope and the stripping slope at maximum rut depth
9. Testing shut off must be set at 25,000 passes
10. Submersion time for samples must not exceed 4 hours

If a WMA technology is used, a technical representative for the WMA technology must attend the preconstruction meeting.

Replace item 2 in the list in the 2nd paragraph of Section 39-2.01A(4)(b) with:

2. Asphalt binder. Take at least four 1 qt samples. Each sample must be in a cylindrical-shaped can with an open top and friction lid. If the asphalt binder is modified or rubberized, the asphalt binder must be sampled with the components blended in the proportions to be used.

Add the following item to the list in the 5th paragraph of Section 39-2.01A(4)(b):

4. Voids in mineral aggregate on laboratory-produced HMA

Replace the word "Caltrans" with "Department" in the 10th paragraph of Section 39-2.01A(4)(b).

Replace item 2 in the list in the 1st paragraph of Section 39-2.01A(4)(d) with:

2. Asphalt binder. Take at least four 1 qt samples. Each sample must be in a cylindrical-shaped can with an open top and friction lid. If the asphalt binder is modified or rubberized, the asphalt binder must be sampled with the components blended in the proportions to be used.

Replace the word "Department's" with "Caltrans" in Section 39-2.01A(4)(f)(i).

Replace the word "Department's" with "Caltrans" in Section 39-2.01A(4)(f)(ii).

Add the following to the end of Section 39-2.01A(4)(h)(i):

You are not entitled to compensation for the suspension of work resulting from noncompliance with quality control requirements, including those identified in the QC Plan.

Replace the 2nd paragraph of Section 39-2.01A(4)(h)(v) with:

Within the first 750 tons produced on the 1st day of HMA production, in the Engineer's presence, and from the same production run, take samples of:

1. Aggregates. Coarse, fine, and supplemental fine aggregates must be taken from the combined cold-feed belt or the hot bins. If lime treatment is required, samples must be taken from individual stockpiles before lime treatment. Samples must be at least 120 lb. for each coarse aggregate, 80 lb. for each fine aggregate, and 10 lb. for each type of supplemental fines. For hot-bin samples, the Department combines these aggregate samples to verify the TV submitted on a Contractor Job Mix Formula Proposal form.
2. Asphalt binder. Take at least two 1 qt samples. Each sample must be in a cylindrical-shaped can with an open top and friction lid. If the asphalt binder is modified or rubberized, the asphalt binder must be sampled with the components blended in the proportions to be used.
3. RAP. Samples must be at least 50 lb. from each fractionated stockpile.
4. Plant-produced HMA. The HMA samples must be at least 250 lb.

Delete the 6th paragraph of Section 39-2.01A(4)(h)(v).

Replace Section 39-2.01A(4)(h)(vii) with:

39-2.01A(4)(h)(vii) RESERVED

Replace Section 39-2.01A(4)(i)(iii) with:

39-2.01A(4)(i)(iii) Pavement Smoothness

For HMA pavement within 3 feet from and parallel to the construction joint formed between curbs, gutters, or existing pavement, test pavement smoothness using a 12-foot straightedge.

Replace the word "Department" with "Caltrans" in the 2nd paragraph of Section 39-2.01A(4)(i)(iv).

Replace the word "Department" with "Caltrans" in the 4th paragraph of Section 39-2.01B(4)(c)(ii).

Replace the word "Department's" with "Caltrans'" where it occurs in Section 39-2.01B(8)(a).

Replace Section 39-2.01B(11) with:

39-2.01B(11) Miscellaneous Areas, Dikes, & Berms

For miscellaneous areas, dikes, and berms:

1. Use Minor HMA.
2. Choose the aggregate gradation from:
   2.1. 3/8-inch Type A HMA aggregate gradation
   2.2. 1/2-inch Type A HMA aggregate gradation
   2.3. dike mix aggregate gradation
3. Choose asphalt binder Grade PG 64-10, PG 64-16 or PG 70-10.
4. Minimum asphalt binder content must be:
   4.1. 6.40 percent for 3/8-inch Type A HMA aggregate gradation
   4.2. 5.70 percent for 1/2-inch Type A HMA aggregate gradation
   4.3. 6.00 percent for dike mix aggregate gradation

If you request and the Engineer authorizes, you may reduce the minimum asphalt binder content.

Aggregate gradation for dike mix must be within the TV limits for the specified sieve size shown in the following table:

Dike Mix Aggregate Gradation
(Percentage Passing)

Sieve size	Target value limit	Allowable tolerance
1/2"	100	--
3/8"	---	95 - 100
No. 4	73–77	TV ± 10
No. 8	58–63	TV ± 10
No. 30	29–34	TV ± 10
No. 200		0 - 14

For HMA used in miscellaneous areas, dikes, and berms, Sections 39-2.01A(3), 39-2.01A(4), 39-2.01B(2), 39-2.01B(4)(c), and 39-2.01B(5)–(10) do not apply.

Replace the 2nd paragraph of 39-2.01C(3)(g) with:

Before placing the interlayer or asphalt binder, clean the pavement of loose and extraneous material.

Replace Section 39-2.01C(4)(b) with:

39-2.01C(4)(b) Tapered Notched Wedge

Not used

Add the following after the last paragraph of Section 39-2.01C(5):

The test section:

1. Must not be less than 0.1 mile in length.
2. Must have a width equal to the width of the pavement and tapered edge to be paved in one pass during production.
3. Locations shall be proposed by the Contractor and approved by the Engineer.

The test section must be constructed with asphalt paver fitted with one of the following FHWA-approved tapered edge devices:

1. **"Shoulder Wedge Maker"** manufactured by Transtech Systems, Inc.,1594 State Street, Schenectady, NY 12304, Telephone 1-800-724-6306 or 518-370-5558

2. **"Advant-Edger"** manufactured by Advant-Edge Paving Equipment LLC, 33 Old Niskayuna Road, Loudonville, NY 12211, Telephone 814-422-3343

3. **"Ramp Champ"** manufactured by Advant-Edge Paving Equipment LLC, 33 Old Niskayuna Road, Loudonville, NY 12211, Telephone 814-422-3343

4. **"SafeTSlope"** manufactured by Troxler Electronic Laboratories, Inc., 3008 E. Cornwallis Rd. Research Triangle Park, NC 27709, Telephone 877-876-9537

Comply with manufacturer's instructions for attaching the device(s) to the paver. The Engineer accepts the use of selected tapered edge device when edge shape and compaction of the test section are in compliance with plans and specifications. No further paving operations which include the construction of the tapered edge shall commence unless means and methods for constructing the tapered edge are approved by the Engineer.

Add to the end of Section 39-2.01C(7):

New paving shall tie smoothly into previously resurfaced mats, existing pavement and to private drives. Place additional HMA along the pavement's edge to conform to private drives and private road connections as shown in the Project Details.

Hand rake, if necessary, and compact the additional HMA to form a smooth conform taper.

Feather down the HMA to zero thickness at the approximate rate of 20 feet per 0.08-foot thickness at all match lines across the travel lanes including the beginning and end of construction and at all intersections unless otherwise shown or described in the Project Details and as directed by the Engineer.

Replace Section 39-2.01C(9) with:

39-2.01C(9) Miscellaneous Areas , Dikes, & Berms

Prepare the area to receive HMA for miscellaneous areas, dikes, and berms, including excavation and backfill as needed.

Spread the HMA in miscellaneous areas in 1 layer and compact to the specified lines and grades.

In median areas adjacent to slotted median drains, each layer of HMA must not exceed 0.20 foot maximum compacted thickness.

The finished surface must be:

1. Textured uniformly
2. Compacted firmly
3. Without depressions, humps, and irregularities

Add to the list in the 1st paragraph of Section 39-2.01C(15)(b):

5. HMA overlays over existing pavement

Replace the 2nd paragraph in Section 39-2.01D with:

Except for when a bid item for tack coat is specified, payment for tack coat is included in the payment for hot mix asphalt.

Replace the 5th paragraph in Section 39-2.01D with:

The payment quantity for place hot mix asphalt dike or berm of the type shown on the Bid Item List is the length measured from end to end. Payment for the HMA used to construct the dike or berm is not included in the payment for place hot mix asphalt dike or berm.

Replace Section 39-2.02A(4)(b)(ii) with:

39-2.02A(4)(b)(ii) Aggregates

Test the quality characteristics of aggregates under the test methods and frequencies shown in the following table:

Aggregate Testing Frequencies

Quality characteristic	Test method	Minimum testing frequency
Gradation[a]	AASHTO T 27	1 per 750 tons and any remaining part
Sand equivalent[b, c]	AASHTO T 176	
Moisture content[d]	AASHTO T 255	
Crushed particles	AASHTO T 335	1 per 10,000 tons or 2 per project whichever is greater
Los Angeles Rattler	AASHTO T 96	
Flat and elongated particles	ASTM D4791	
Fine aggregate angularity	AASHTO T 304 Method A	
Coarse durability index	AASHTO T 210	1 per 3,000 or 1 per paving day, whichever is greater
Fine durability index	AASHTO T 210	

[a]If RAP is used, test the combined aggregate gradation under California Test 384.
[b]Reported value must be the average of 3 tests from a single sample.
[c]Use of a sand reading indicator is required as shown in AASHTO T 176, Figure 1. Sections 4.7, "Manual Shaker," 7.1.2, "Alternate Method No. 2," and 8.4.3, "Hand Method," do not apply. Prepare the stock solution as specified in Section 4.8.1, "Stock solution with formaldehyde," except omit the addition of formaldehyde.
[d]Test at continuous mixing plants only. If RAP is used, test the RAP moisture content at continuous mixing plant and batch mixing plant.

For lime treated aggregate, test aggregate before treatment and test for gradation and moisture content during HMA production.

Replace Section 39-2.02A(4)(b)(iii) with:

39-2.02A(4)(b)(iii) Reclaimed Asphalt Pavement

Sample and test processed RAP at a minimum frequency of 1 sample per 1,000 tons with a minimum of 6 samples per fractionated stockpile. If the fractionated stockpile has not been augmented, the 3 RAP samples taken and tested for mix design can be part of this minimum sample requirement. If a processed RAP stockpile is augmented, sample and test processed RAP quality characteristics at a minimum frequency of 1 sample per 500 tons of augmented RAP.

The combined RAP sample when tested under AASHTO T 164 must be within ±2.00 percent of the average asphalt binder content reported on page 4 of your Contractor Hot Mix Asphalt Design Data form. If a new processed RAP stockpile is required, the average binder content of the new processed RAP stockpile must be within ±2.00 percent of the average binder reported on page 4 of your Contractor Hot Mix Asphalt Design Data form.

The combined RAP sample when tested under AASHTO T 209 must be within ±0.06 of the average maximum specific gravity reported on page 4 of your Contractor Hot Mix Asphalt Design Data form.

During Type A HMA production, sample RAP twice daily and perform QC testing for:

1. Aggregate gradation at least once a day under California Test 384
2. Moisture content at least twice a day

Replace Section 39-2.02A(4)(b)(ix) with:

39-2.02A(4)(b)(ix) Type A Hot Mix Asphalt Production

Test the quality characteristics of Type A HMA under the test methods and frequencies shown in the following table:

Type A HMA Production Testing Frequencies

Quality characteristic	Test method	Minimum testing frequency
Asphalt binder content	AASHTO T 308, Method A	1 per 750 tons and any remaining part
HMA moisture content	AASHTO T 329	1 per 2,500 tons but not less than 1 per paving day
Air voids content	AASHTO T 269	1 per 4,000 tons or 2 every 5 paving days, whichever is greater
Voids in mineral aggregate	MS-2 Asphalt Mixture Volumetrics	1 per 10,000 tons or 2 per project whichever is greater
Dust proportion	MS-2 Asphalt Mixture Volumetrics	
Hamburg wheel track	California Test 389	1 per 10,000 tons or 1 per project, whichever is greater
Moisture susceptibility	AASHTO T 283	3 per 250 tons or 3 per paving day, whichever is greater

Replace the 1st table in the 1st paragraph of Section 39-2.02A(4)(e) with:

39-2.02A(4)(e) Department Acceptance

The Department accepts Type A HMA based on compliance with:

1. Aggregate quality requirements shown in the following table:

Aggregate Quality

Quality characteristic	Test method	Requirement
Aggregate gradation[a]	AASHTO T 27	JMF ± Tolerance
Percent of crushed particles Coarse aggregate (min, %) One-fractured face Two-fractured faces Fine aggregate (min, %) (Passing No. 4 sieve and retained on No. 8 sieve.) One-fractured face	AASHTO T 335	 95 90 70
Los Angeles Rattler (max, %) Loss at 100 Rev. Loss at 500 Rev.	AASHTO T 96	 12 40
Sand equivalent (min.)[b, c]	AASHTO T 176	47
Flat and elongated particles (max, % by weight at 5:1)	ASTM D4791	10
Fine aggregate angularity (min, %)[d]	AASHTO T 304, Method A	45
Coarse durability index (D_c, min)	AASHTO T 210	65
Fine durability index (D_f, min)	AASHTO T 210	50

[a]The Engineer determines combined aggregate gradations containing RAP under California Test 384.
[b]Reported value must be the average of 3 tests from a single sample.
[c]Use of a sand reading indicator is required as shown in AASHTO T 176, Figure 1. Sections 4.7, "Manual Shaker," 7.1.2, "Alternate Method No. 2," 8.4.2 Manual Shaker Method, and 8.4.3, "Hand Method," do not apply. Prepare the stock solution as specified in Section 4.8.1, "Stock solution with formaldehyde," except omit the addition of formaldehyde.
[d]The Engineer waives this specification if HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

Replace the 1st sentence in the 2nd paragraph of Section 39-2.02B(2) with:

For Type A HMA mixtures using RAP, the maximum allowed binder replacement is 25.0 percent.

Replace Section 39-2.02B(3) with:

39-2.02B(3) Asphalt Binder

The grade of asphalt binder for Type A HMA must be PG 64-10.

Replace Section 39-2.02B(4)(a) with:

39-2.02B(4)(a) General

Before the addition of asphalt binder and lime treatment, the aggregates must comply with the requirements shown in the following table:

Aggregate Quality

Quality characteristic	Test method	Requirement
Percent of crushed particles: Coarse aggregate (min, %) One-fractured face Two-fractured faces Fine aggregate (min, %) (Passing No. 4 sieve and retained on No. 8 sieve.) One-fractured face	AASHTO T 335	 95 90 70
Los Angeles Rattler (max, %) Loss at 100 Rev. Loss at 500 Rev.	AASHTO T 96	 12 40
Sand equivalent (min)[a]	AASHTO T 176	47
Flat and elongated particles (max, % by weight at 5:1)	ASTM D4791	10
Fine aggregate angularity (min, %)[b]	AASHTO T 304, Method A	45
Coarse durability index (Dc, min)	AASHTO T 210	65
Fine durability index (Df, min)	AASHTO T 210	50

[a]The reported value must be the average of 3 tests from a single sample. Use of a sand reading indicator is required as shown in AASHTO T 176, Figure 1. Sections 4.7, "Manual Shaker," 7.1.2, "Alternate Method No. 2," 8.4.2 Manual Shaker Method, and 8.4.3, "Hand Method," do not apply. Prepare the stock solution as specified in Section 4.8.1, "Stock solution with formaldehyde," except omit the addition of formaldehyde.

[b]The Engineer waives this specification if the Type A HMA contains 10 percent or less of nonmanufactured sand by weight of total aggregate. Manufactured sand is fine aggregate produced by crushing rock or gravel.

Replace Section 39-2.02B(5) with:

39-2.02B(5) Reclaimed Asphalt Pavement

You may substitute RAP for part of the virgin aggregate in a quantity up to 15 percent of the aggregate blend.

Provide enough space at your plant for complying with all RAP handling requirements. Provide a clean, graded base, well drained area for stockpiles.

If RAP is from multiple sources, blend the RAP thoroughly and completely before fractionating.

For RAP substitution of 15 percent of the aggregate blend or less, fractionation is not required.

Isolate the processed RAP stockpiles from other materials. Store processed RAP in conical or longitudinal stockpiles. Processed RAP must not be agglomerated or be allowed to congeal in large stockpiles.

Replace Section 39-2.02B(11) with:

39-2.02B(11) Type A Hot Mix Asphalt Production

If RAP is used, the asphalt plant must automatically adjust the virgin asphalt binder to account for RAP percentage and RAP binder.

During production, you may adjust hot- or cold-feed proportion controls for virgin aggregate and RAP. RAP must be within ±3 of RAP percentage described in your Contractor Job Mix Formula Proposal form without exceeding 15 percent.

Add to the beginning of Section 39-2.02C:

Place Type A HMA in lifts if shown in the project details.

Replace Section 39-3.02C with:

Where replace asphalt concrete surfacing is shown, remove the asphalt concrete surfacing and, if necessary, base to a depth of 6 inches below the grade of the existing surfacing and replace with HMA. The Engineer determines the exact limits of asphalt concrete surfacing to be replaced.

The width of each removal shall be a minimum of four feet wide or as determined by the Engineer.

Use cold planed material for shoulder backing inside the project limits, as per these specifications and as directed by the Engineer.

Replace asphalt concrete in a lane before the lane is specified to be opened to traffic.

Before removing asphalt concrete, outline the replacement area and cut neat lines with a saw or grind to a depth of 6 inches below the grade of the existing surfacing. Do not damage any asphalt concrete and base remaining in place.

If you excavate the base beyond the specified plane, replace it with HMA.

Do not use a material transfer vehicle for replacing asphalt concrete surfacing.

Before placing HMA, apply a tack coat as specified in Section 39-2.01C(3)(f).

Place HMA using method compaction as specified in Section 39-2.01C(2)(c).

The contract price paid per unit shown on the Bid Item List for Replace Asphalt Concrete Pavement shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in repairing pavement, complete in place, including disposal of removed material, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The quantity of Replace Asphalt Concrete Pavement to be paid for will be the actual volume repaired.

Add to Section 39-2.07 MINOR HOT MIX ASPHALT (MULTI PURPOSE COURTS):

39-2.07 (1) Summary

Section applies for producing and placement of hot mix asphalt at the multi-purpose courts (Tennis/Basketball Courts).

Contractor shall review and follow “Section 13 03 00 Multipurpose Court Surfacing” and court surfacing manufacturer’s recommendation to prepare an acceptable HMA surface for the application of the surfacing product within the tolerances accepted by the American Sports Builders Association (A.S.B.A.).

39-2.07B Materials

A surface course of a hot plant mix having a maximum aggregate size of 3/8” and a minimum aggregate size of 1/4″ should be constructed over the hot mix intermediate course to a compacted thickness of not less than shown in the plans.

Required Mix Design:

Screen	% Passing
1/2	100

3/8	90-100
#4	55-85
#8	32-67
#50	7-23
#200	2-10

Liquid Asphalt Bitumen: Minimum 5.5% by weight.

Asphalt Binder for this HMA mix shall be PG-64-10

Voids content shall not exceed 7%

39-2.07C Construction

All work shall be done in accordance with American Sports Builders Association (A.S.B.A.).
Surface of the base course (Ag Base) as compacted should not vary more than 1/2" from the true plane of the court.

Placement of HMA shall be performed by a contractor with experience in building tennis courts. The HMA shall be spread and compacted by methods and in a manner that produces a uniform density and thickness. Compaction method will be accepted unless the Engineer decides the Contractor has not met the minimum desired compaction.

The finished surface of the HMA court shall not vary more than 1/8″ in 10′ when measured in any direction. Cure Time: Minimum 14 days before application of playing surface. Contractor shall meet these tolerances and tolerances required by the surfacing manufacturer. If Contractor cannot attain these tolerances will be require to remove and replace HMA or add a new leveling layer.

Replace Section 39-3.03 with:

39-3.03 REMOVE ASPHALT CONCRETE DIKES & BERMS

39-3.03A General

Section 39-3.03 applies to removing asphalt concrete dikes and berms outside the limits of excavation.

39-3.03B Materials

Not Used

39-3.03C Construction

Reserved

39-3.03D Payment

Not Used

Add to the end of Section 39-3.04C(3):

Use cold planed material for shoulder backing. Refer to Shoulder Backing section for further information.

DIVISION VIII MISCELLANEOUS CONSTRUCTION

78 INCIDENTAL CONSTRUCTION

Add to the end of Section 78-2.01:

Damaged or destroyed survey monuments shall be replaced with new survey monuments.

Survey monuments shall be constructed or adjusted, as applicable, in accordance with Standard Drawing A-74 Type D.

Survey control for the reestablishment of survey monuments will be provided by the Department.

DIVISION IX TRAFFIC CONTROL DEVICES

82 SIGNS AND MARKERS

Replace the word "Department's" with "Caltrans" in the 2nd paragraph of Section 82-1.01.

Replace Item 1 of the 2nd paragraph of Section 82-2.02A with:

1. Phrase *Property of The County of Fresno*

Add to Section 82-2.02B:

Signs must be 0.080 inch thick aluminum alloy and street name signs must be 0.125 inch thick alloy faced on both sides.

Replace the 2nd paragraph of Section 82-2.02C with:

Reflective sheeting on all signs shall be 3M Diamond Grade DG3 Series 4000 or equal and must meet ASTM Type XI specifications.

Add to Section 82-2.02D:

All signs must have the 3M 1160 graffiti resistant clear overlay film or equal.

Replace Section 82-2.04 with:

82-2.04 PAYMENT

Not Used

Add to the end of Section 82-3.02A:

All new roadside signs must be mounted to steel square posts.

Add to the end of Section 82-3.02B:

All post for traffic signs must be 2”X2”X10’ square by 14 gauge steel.

Welded Anchor (2 ¼”X2 ¼”X30”) and sleeve (2 ½”X2 ½”X18”) shell be used as a base to anchor post in the ground. Hole size and placement must be the same as the metal post.

All mounting hardware shall be either galvanized or stainless steel. Banding shall be 3/4 inch wide stainless steel with flare leg sign brackets. Hose clamps are not permitted. All signs shall be mounted using 3/8” aluminum drive rivets. Nuts and bolts are not permitted.

Replace the 1st paragraph of Section 82-3.02D with:

Furnish a laminated wood box post with an attached metal cap at the top of each post.

Replace the last paragraph of Section 82-3.04 with:

Full compensation for furnishing sign panels is included in the bid item price per each Roadside Sign - One Post and Roadside Sign - Two Post. One or more sign panels furnished and installed on a single post will be counted as (1) one Roadside Sign - One Post. One or more sign panels furnished and installed on two posts will be counted as (1) one Roadside Sign - Two Post.

84 MARKINGS

Replace Section 84-1.03 with:

84-1.03 Construction

Before obliterating any pavement delineation (traffic stripes, pavement markings) that is to be replaced on the same alignment and location, as determined by the Engineer, the pavement delineation shall be referenced by the Contractor, with a sufficient number of control points to reestablish the alignment and location of the new pavement delineation. The references shall include the limits or changes in striping pattern, including one- and 2-way barrier lines, limit lines, crosswalks and other pavement markings. Full compensation for referencing existing pavement delineation shall be considered as included in the contract prices paid for various items of work and no additional compensation will be allowed.

The Contractor shall protect pedestrian crosswalks, stop bars, rumble bars, and rumble Botts’ dots from damage or displacement, unless otherwise directed by the Engineer.

Replace or repair facilities, which are damaged with your operation, at your expense.

Replace the 2nd paragraph of Section 84-2.01D(3) with:

The thermoplastic test stripe will be tested for yellow color, daytime luminance factor, and yellowness index requirements.

Delete the 1st & 2nd paragraph of Section 84-2.03B(2)(a)

Replace the 2nd paragraph of Section 84-2.03B(2)(b) with:

Apply extruded thermoplastic for a traffic stripe at a rate of at least 0.37 lb. of thermoplastic per foot of 4-inch-wide solid stripe. The applied thermoplastic traffic stripe must be at least 0.100 inch thick.

Replace the 2nd paragraph of Section 84-2.03B(2)(c) with:

Apply sprayable thermoplastic at a rate of at least 0.29 lb. of thermoplastic per foot of 4-inch-wide solid stripe. The applied sprayable thermoplastic material must be 0.08 inch (80 mil) thick.

Replace *Reserved* in Section 84-9.03B with:

84-9.03B Remove Traffic Stripes and Pavement Markings Containing Lead

Residue from the removal of painted or thermoplastic traffic stripes and pavement markings contains lead from the paint or thermoplastic. The average lead concentrations are less than 1,000 mg/kg total lead and 5 mg/L soluble lead. This residue:

1. Is a nonhazardous waste
2. Does not contain heavy metals in concentrations exceeding the thresholds established by the Health and Safety Code and 22 CA Code of Regs
3. Is not regulated under the Federal Resource Conservation and Recovery Act (RCRA), 42 USC § 6901 et seq.

Management of this material exposes workers to health hazards that must be addressed in your lead compliance plan.

Replace the 1st paragraph of Section 84-9.04 with:

The payment quantity for remove traffic stripe is the measured length of the stripe removed independent of width. Double or triple stripes are paid the same as a single stripe.

DIVISION XI MATERIALS

90 CONCRETE

Replace the 1st sentence of the 3rd paragraph of Section 90-1.01D(3) with:

Shrinkage test data authorized by the Department or Caltrans no more than 3 years before the 1st day of the Contract is authorized for entire Contract.

Add to the end of item 3.3 in the list in the 7th paragraph of Section 90-1.02G(3):

Max.

Replace the word "Department" with "Caltrans" in the 2nd paragraph of Section 90-2.02E.

Replace the 3rd sentence of Item 3 of the list in the 3rd paragraph of Section 90-4.02 with:

Test data authorized by the Department or Caltrans no more than 3 years before the 1st day of the Contract is authorized for the entire Contract.

92 ASPHALT BINDERS

Replace the word "Department" with "Caltrans" in the 1st sentence of Section 92-1.01D(2).

Replace the word "Department" with "Caltrans" in footnote 'b' of the 1st table in Section 92-1.02B.

Replace the word "Department" with "Caltrans" in the 5th paragraph of Section 92-1.02B.

94 ASPHALTIC EMULSIONS

Replace Section 94-1.02E with:

94-1.02E Cationic Emulsified recycling Agent
Not Used

Replace Section 94-1.02G with:

94-1.02G Bonded Wearing Course Asphaltic Emulsions
Not Used

Replace Section 94-1.02H with:

94-1.02H Rapid Setting Polymer Modified Rejuvenating Asphaltic Emulsions
Not Used

Replace Section 94-1.02K with:

94-1.02K Micro-Surfacing Emulsions
Not Used

FRESNO COUNTY
DEPARTMENT OF PUBLIC WORKS AND PLANNING

TECHNICAL SPECIFICATIONS FOR

KEARNEY PARK IMPROVEMENTS

FRESNO COUNTY
DEPARTMENT OF PUBLIC
WORKS AND PLANNING

KEARNEY PARK IMPROVEMENTS
TECHNICAL SPECIFICATIONS
DIVISIONS AND SECTIONS

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SECTION 01 10 00
SUMMARY

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:

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: Kearney Park

1. Project Location: 6725 W Kearney Blvd, Fresno, CA 93706-9519

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. Expansion and construction of improvements for park:

a. Drainage & Grading
b. Concrete Paving
c. Site Lighting
d. Site Furnishings
e. Soil Preparation/Finish Grading

f. Prefabricated Restroom
g. Prefabricated Playground
h. Pavilions/shelter
i. Multipurpose court

B. Type of Contract:

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

1.5 WORK REQUIRED BUT NOT SHOWN

A. 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: Special Provisions Section 1 through 14
4. Fourth: Technical Specifications
5. Fifth: Special Provisions Section 14 through 92
6. Sixth: Plans
7. Seventh: General Requirements, Division 1
8. Ninth: 2023 State Standard Specifications
9. Tenth: 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. On-Site Work Hours: Refer to Section 8-1.01A of the Special Provisions

C. 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.

D. 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.

E. 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 01 25 00
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.

B. Section 6-1.05 of the Special Provisions

C. General Provisions of the Contract Section 1-1.3, EQUALS AND APPROVALS and Section 4-1.6, TRADE NAMES OR EQUALS apply to this section with regard to substitutions made after Notice to Proceed.

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 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.

e. Requested substitution will not delay Contractor's construction schedule.
f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the Work.
h. Requested substitution has been coordinated with other portions of the Work.
i. Requested substitution provides specified warranty.
j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Not allowed.

C. Public Interest Findings: The Department has made a public interest finding and has determined that the following items shall be used for the project, and no substitution therefor shall be allowed:

1. CXT Incorporated Prefabricated Public Restroom Model# S-301 “Santiago”
2. ICON Shelter Systems Incorporated 30’ x 40’ x 8.5’ Rectangular Gable Shelter

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01 31 00
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:

1. General coordination procedures.
2. Coordination drawings.
3. Requests for Information (RFIs).
4. Project meetings.

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

C. Related Requirements:

1. Section 01 73 00 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
2. Section 01 77 00 "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 according to Section 8-1.07 and Section 9 of the Special Provisions.

        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 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.

E. 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 01 33 00
SUBMITTALS PROCEDURES

PART 1 - GENERAL

1.1 STANDARD SPECIFICATIONS:

A. The provisions of the Standard Specifications shall apply, except as modified herein. Refer to Section 5-1.23A of the Special Provisions.

1.2 SCOPE:

A. The Work of this Section shall consist of furnishing all labor, materials, equipment, appliances, and services necessary for the execution and completion of all Submittals Work as shown on the Plans and as described in the Specifications including, but not necessarily limited to, the following:

1. Preparation of Submittals Schedule; Submittals Planning;
2. Submittals Preparation, Distribution and Transmittal, to include all of the following:

    a. Existing static water pressure tests and meter size verification; Dig Alert compliance and Site investigation certification; Materials Lists;
    b. Product Data (Catalog Cuts); Material Samples;
    c. Record Drawings; Irrigation Controller Charts; Turn-over Items;
    d. Submittals Schedule updating and distribution;

1.3 RELATED WORK:

A. Shop Drawing Submittals

B. Contractor's Construction Schedule- Updated and revised as required;

1.4 SUBMITTAL PLANNING:

A. Processing Lead Time: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.

1. Allow **two (2)** weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Engineer will promptly advise Contractor when a submittal being processed must be delayed for coordination.

2. If a resubmittal is necessary due to corrections or revisions, process the resubmittal in the same manner as the initial submittal.

3. Allow **two (2)** weeks for processing each resubmittal.

4. No extension of Contract Time will be authorized because of failure to transmit

submittals to the Construction Manager sufficiently in advance of the Work to provide the two-week processing time specified.

1.5 Coordination and Completeness:

A. Each submittal must have a cover sheet that must include:

1. Contract number
2. Project name
3. Date
4. Submittals (and resubmittals if applicable) must be numbered sequentially
5. Structure number if applicable
6. Contractor
7. Person responsible for submitting the submittal
8. Signature of Contractor's representative sending submittal
9. Section number and/or item submittal is referencing
10. Pages of submittal, excluding cover sheet

B. Contractor shall coordinate preparation and processing of submittals with the performance of the related Work. Transmit each submittal allowing sufficient lead time to obtain appropriate reviews and approvals and to avoid delays in the related Work.

C. Coordinate the submittal date for each submittal with the lead time needed for fabrication, purchasing, testing, delivery, review of other related submittals, and related Work that require sequential processing/completion.

D. Coordinate the transmittal dates for each different type of submittal so processing will not be delayed. Ensure concurrent transmittal of submittals for related portions of the Work that need concurrent review to allow the Engineer to verify that a coordinated work effort is being provided. Agency and Engineer each reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

E. Contractor is responsible to verify completeness of all submittals. Incomplete submittals will be rejected.

1.6 ELECTRONIC SUBMITTAL:

A. Electronic Procedures Summary

1. Shop drawing and product data submittals shall be transmitted to Engineer in electronic (PDF) format.
2. The intent of electronic submittals is to expedite the construction process by reducing paperwork, improving information flow, and decreasing turnaround time.
3. The electronic submittal process is not intended for color samples, color charts, or physical material samples.

B. Procedures:

1. Submittal Preparation - Contractor may use any or all of the following options:

    a. Subcontractors and Suppliers provide electronic (PDF) submittals to Contractor via email.
    b. Subcontractors and Suppliers provide paper submittals to General Contractor who electronically scans and converts to PDF format.
    c. Subcontractors and Suppliers provide paper submittals to Scanning Service which electronically scans and converts to PDF format.

2. Contractor shall review and apply electronic stamp certifying that the submittal complies with the requirements of the Contract Documents including verification of manufacturer / product, dimensions and coordination of information with other parts of the work.
3. Contractor shall transmit each submittal to Engineer.
4. Architect / Engineer review comments will be made available.
5. Distribution of reviewed submittals to subcontractors and suppliers is the responsibility of the Contractor.
6. Submit paper copies of reviewed submittals at project closeout for record purposes at project closeout.

1.7 Submittal Schedule:

A. Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Engineer and Construction Manager and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with startup construction schedule. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Name of subcontractor.
    d. Description of the Work covered.
    e. Scheduled date for Architect's and Construction Manager's final release or approval.
    f. Scheduled date of fabrication.

g. Scheduled dates for purchasing.
h. Scheduled dates for installation.
i. Activity or event number.

B. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 workdays for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect or Construction Manager will advise Contractor when a submittal being processed must be delayed for coordination.

    a. Engineer and Construction Manager reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 workdays for review of each resubmittal.
4. Transmittal Form for Electronic Submittals: Use numbering as required in the special provisions. Use electronic form acceptable to Owner, containing the following information:

    a. Project name.
    b. Date.
    c. Name of Contractor.
    d. Name of firm or entity that prepared submittal.
    e. Names of subcontractor, manufacturer, and supplier.
    f. Category and type of submittal.
    g. Submittal purpose and description.
    h. Specification Section number and title.
    i. Specification paragraph number or drawing designation and generic name for each of multiple items.
    j. Drawing number and detail references, as appropriate.
    k. Location(s) where product is to be installed, as appropriate.
    l. Related physical samples submitted directly.
    m. Indication of full or partial submittal.
    n. Transmittal number, numbered consecutively.
    o. Submittal and transmittal distribution record.
    p. Other necessary identification.
    q. Remarks.
    r. Deviations and Additional Information:

        1) On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer and Construction Manager on previous

submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

1.8 RFI'S:

A. Contractor shall submit Request for Information (RFIs) via Submittal Exchange upon immediate discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the format acceptable by the Construction Manager.

1. Engineer will return RFIs submitted 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.
3. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

a. Project name.
b. Project number.
c. Date.
d. Name of Contractor.
e. Name of Engineer and Construction Manager.
f. RFI number, numbered sequentially.
g. RFI subject.
h. Specification Section number and title and related paragraphs, as appropriate.
i. Drawing number and detail references, as appropriate.
j. Field dimensions and conditions, as appropriate.
k. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
l. Contractor's physical or digital signature.
m. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

1.9 SAMPLES:

A. General: Submit full-size, fully fabricated Samples cured and finished as specified, in the quantity specified in the respective Technical Specification section, and physically identical with the material or product proposed. Where quantities are not specified in the Technical Specification, submit a minimum of three samples, one will be returned marked with the action taken. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.

1. Mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. Prepare Samples Submittals to match the Architect's Sample when available. Include the following:

a. Generic description of the Sample.
b. Sample source.
c. Product name or name of manufacturer.
d. Certification of compliance with the specified standards.
e. Availability and delivery time.

2. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3), that show approximate limits of the variations.
3. Preliminary submittals: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product. Preliminary submittals will be reviewed and returned with the appropriate Designer's mark indicating selection and other action.
4. Maintain appropriately marked sets of Samples, as returned by County, at the Project site for quality comparisons throughout the course of construction.

B. Distribution of Samples: If additional sets of samples are needed for distribution to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work, Contractor shall submit samples in sufficient quantities for such distribution. Do not distribute unmarked copies of sample to others involved in the Work.

1.10 MATERIALS LISTS:

A. Submittal Requirements: Submitting a catalog number and manufacturer's name as a materials list stating that the items will be furnished to meet the Specifications will not be acceptable. Contractor shall submit a complete materials list for approval by The Construction Manager prior to performing any Work. Catalog data and full descriptive literature must be submitted whenever the use of items different than those specified is requested. Notarized certificate must be submitted by plastic pipe and fitting manufacturer indicating that material complies with the Project Specifications, unless material has been previously approved and used on other projects by Agency.

B. Material list shall be submitted in a format similar to the following:

	Item Description	Manufacturer	Model No.
1.	Pressure Supply Line	Lasco	Sch. 40
2.	Faucet Valve	HAWS	6252EHLF
etc.	etc.	etc.	etc.

1.11 "RECORD" PRINTS:

A. Changes: Record accurately on one set of plans all changes in the Work constituting departures from the original Contract Plans. For example, changes in pressure and non-

pressure irrigation line locations.

B. Legibility and Approval: The changes and dimensions shall be recorded in a legible and workmanlike manner to the satisfaction of the Agency. Prior to final inspection of the Work, submit "record" prints to The Construction Manager for approval.

C. Reference Points: Dimension from two permanent points of reference (buildings, monuments, sidewalks, curbs, pavement, etc.). Data to be shown on "record" prints shall be recorded day-to-day as the project is being installed.

D. As-built Items: Show locations and depths of the following types of underground items:

1. Point(s) of connection for domestic water, gas, sewer, electric and similar underground utilities.
2. Routing of underground conduits, and utility lines (dimension maximum 100 feet on center along routing).
3. All types of valves in various piping systems, including gate valves, quick coupler and remote- control valves.
4. Related equipment (as may be directed).

E. Maintain record prints on site at all times.

1.12 SOIL REPORTS:

A. Submittal:

1. Contractor to inform the County upon the completion of Fine Grading and sampling at various locations as directed by County Representative. Testing and reports shall be by the County.

1.13 EXISTING STATIC WATER PRESSURE/ WATER METER SIZE VERIFICATION:

A. Submittal:

1. Static water pressure on site shall be recorded with an accurate liquid filled gauge capable of measuring 0-200 PSI (Winters PFQ806LF or equal). Measurements shall be taken as early as possible per available source and at a time no other distribution devices are actively running. Contractor to document readings in writing on Contractors form that list time & date, reading in PSI, location, and type of gauge used in addition to date stamped photographs of readings. Contractor to document all points of service including both potable and recycled.

1.14 DIG ALERT COMPLIANCE AND SITE INVESTIGATION VERIFICATION:

A. Submittal:

1. Contractor to submit and keep active Tickets open with ‘DIG Alert’ throughout the duration of the project. Contractor to print out all tickets and updates/renewals and

submit copies upon start and monthly thereafter. Any lapse in active DIG Alert tickets resulting in any damages will be the sole responsibility of the contractor. Contractor to also Verify in a written report all steps taken to investigate the site for existing buried utilities and or other underground structures that may be present. Contractor to list all visible structures that can be seen/assumed to have or be serviced by underground utilities and or structures and what steps were taken to investigate possible utilities and locations. Any failure by the Contractor to complete this required due diligence and resulting damages will be the sole responsibility of said Contractor.

PART 2 – MATERIALS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01 40 00
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 01 50 00
TEMPORARY FACILITIES AND CONTROLS

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 requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:

1. Section 01 10 00 "Summary" for work restrictions and limitations on utility interruptions.

C. Protect all areas contractor is performing work from general public

1.3 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Engineer, testing agencies, and authorities having jurisdiction.

B. Sewer Service: Pay sewer-service use charges for sewer usage by all entities for construction operations.

C. Water Service: Pay water-service use charges for water used by all entities for construction operations.

D. Electric Power Service: Pay electric-power-service use charges for electricity used by all entities for construction operations.

1.4 INFORMATIONAL SUBMITTALS

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

B. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8- inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top rails.

B. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8- inch-OD top and bottom rails. Provide galvanized-steel bases for supporting posts.

C. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.

2.2 TEMPORARY FACILITIES

A. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Section 01 10 00 "Summary."

B. Provide each facility ready for use when needed to avoid delay. 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: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

C. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

E. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Install temporary electric power service overhead unless otherwise indicated.

F. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
2. Install lighting for Project identification sign.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary shops and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136.

Comply with NFPA 241.

2. Maintain support facilities until agency inspector schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings.

1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

C. Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.

1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
2. Prepare subgrade and install subbase and base for temporary roads and paved areas.
3. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Section 32 12 16 "Asphalt Paving."

D. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

E. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

F. Waste Disposal Facilities: Comply with requirements specified in Section 01 74 19 "Construction Waste Management and Disposal."

G. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 01 73 00 "Execution."

H. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Section 01 10 00 "Summary."

C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to the SWPPP Site Plan.

1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

E. Tree and Plant Protection: Comply with requirements specified in Section 01 56 39 "Temporary Tree and Plant Protection."

F. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

G. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.

H. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.

1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.

I. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.

J. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

K. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

L. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking in construction areas.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

C. Operate Project-identification-sign lighting daily from dusk until 12:00 midnight.

D. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

E. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with 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 Contractor. Owner reserves right to take possession of Project identification signs.
2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01 77 00 "Closeout Procedures."

END OF SECTION

SECTION 01 56 39
TEMPORARY TREE AND PLANT PROTECTION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes general protection and pruning of existing trees, bushes, and plants that are affected by execution of the Work, whether temporary or permanent construction.

B. Related Requirements:

1. Section 01 50 00 "Temporary Facilities and Controls" for temporary site fencing.
2. Section 31 10 00 "Site Clearing" for removing existing trees and shrubs.

1.3 DEFINITIONS

A. Caliper: Diameter of a trunk measured by a diameter tape at a height 6 inches above the ground for trees up to and including 4-inch size at this height and as measured at a height of 12 inches above the ground for trees larger than 4-inch size.

B. Caliper diameter breast height (DBH): diameter of a trunk as measured by a diameter tape at a height 54 inches above the ground line.

C. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction and indicated on Drawings. Plant-protection zones shall be set as required by the Engineer.

D. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and [indicated on Drawings] [defined by a circle concentric with each tree with a radius 1.5 times the diameter of the drip line unless otherwise indicated] defined by a circle concentric with each tree with a radius 12 times the tree's caliper size and with a minimum radius of 96 inches unless otherwise indicated. Tree -protection zones shall be set as required by the Engineer.

E. Vegetation: Trees, bushes, shrubs, groundcovers, grass, and other plants.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:

a. personnel and equipment needed to make progress and avoid delays.
b. Trenching by hand or with air spade within protection zones.
c. Field quality control.

1.5 ACTION SUBMITTALS

A. NOT USED

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Contractor.

B. Certification: From Contractor, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.

C. Maintenance Recommendations: As required by the Engineer, for care and protection of trees affected by construction during and after completing the Work.

1.7 QUALITY ASSURANCE

A. The Contractor's crew used for the trimming of existing trees and shrubs shall have successful experience in tree trimming or a scope similar to that required for the Work.

1.8 FIELD CONDITIONS

A. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Moving or parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

B. Do not direct vehicle or equipment exhaust toward protection zones.

C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Backfill Soil: Planting soil of suitable moisture content and granular texture for placing around tree; free of stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth.

B. Organic Mulch: Free from deleterious materials and suitable as a top dressing for trees and shrubs, consisting of one of the following:

1. Type: Ground or shredded bark.
2. Size Range: 3 inches maximum, 1/2 inch minimum.
3. Color: Natural.

C. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements:

1. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch maximum opening in pattern and weighing a minimum of 0.4 lb./ft.; remaining flexible from minus 60 to plus 200 deg F; inert to most chemicals and acids; minimum tensile yield strength of 2000 psi and ultimate tensile strength of 2680 psi; secured with plastic bands or galvanized-steel or stainless-steel wire ties; and supported by tubular or T-shape galvanized-steel posts spaced not more than 96 inches apart.

a. Height: 48 inches.
b. Color: High-visibility orange, nonfading.

D. Protection-Zone Signage: Shop-fabricated, rigid plastic or metal sheet with attachment holes prepunched and reinforced; legibly printed with nonfading lettering and as follows:

1. Lettering: 3-inch-high minimum, black characters on white background.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

3.2 PREPARATION

A. All tree/bush trimming shall conform to the guidelines of the most recent edition of the American National Standard for Tree Care Operations Pruning Standards and Best Management Practices
B. All existing trees, bushes, and plants shall be protected in place unless otherwise specified.
C. Use machinery that is in good condition with minimum tolerances between cutting blades.

Ensure blades are true to their designed spade and free of bends which could interfere with operation.

D. Locate and clearly identify trees, shrubs, and other vegetation to remain that will require pruning to complete the Work. Tie a 1-inch blue vinyl tape around each tree trunk at 54 inches above the ground.

E. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.

F. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas indicated. Do not exceed indicated thickness of mulch.

1. Apply 2-inch uniform thickness of organic mulch unless otherwise indicated. Do not place mulch within 6 inches of tree trunks.

3.3 PROTECTION ZONES

A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people and animals from easily entering protected areas except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.

1. Chain-Link Fencing: Install to comply with ASTM F 567 and with manufacturer's written instructions.
2. Posts: Set or drive posts into ground one-third the total height of the fence without concrete footings. Where a post is located on existing paving or concrete to remain, provide appropriate means of post support acceptable to Engineer.
3. Access Gates: Install where necessary; adjust to operate smoothly, easily, and quietly; free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Protection-Zone Signage: Install protection-zone signage in visibly prominent locations in a manner approved by Engineer. Install one sign spaced approximately every 35 feet on protection-zone fencing, but no fewer than four signs with each facing a different direction.

C. Maintain protection zones free of weeds and trash.

D. Maintain protection-zone fencing and signage in good condition as acceptable to Engineer and remove when construction operations are complete and equipment has been removed from the site.

1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
2. Temporary access is permitted subject to preapproval in writing by the Engineer if a root buffer effective against soil compaction is constructed as directed by the Engineer. Maintain root buffer so long as access is permitted.

3.4 EXCAVATION

A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Section 31 20 00 "Earth Moving" unless otherwise indicated.

B. Trenching within Protection Zones: Where utility trenches are required within protection zones, excavate under or around tree roots by hand or with air spade, or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots.

C. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches back from new construction and as required for root pruning.

D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.5 ROOT PRUNING

A. Prune tree roots that are affected by temporary and permanent construction. Prune roots as follows:

1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
2. Cut Ends: As directed and recommended by the Engineer.
3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
4. Cover exposed roots with burlap and water regularly.
5. Backfill as soon as possible according to requirements in Section 31 20 00 "Earth Moving."

B. Root Pruning at Edge of Protection Zone: Prune tree roots 12 inches outside of the protection zone by cleanly cutting all roots to the depth of the required excavation.

C. Root Pruning within Protection Zone: Clear and excavate by hand or with air spade to the depth of the required excavation to minimize damage to tree root systems. If excavating by hand, use narrow-tine spading forks to comb soil to expose roots. Cleanly cut roots as close to excavation as possible.

3.6 CROWN PRUNING

A. The Contractor shall cut or limb up tree branches up to clear 10’ from the ground including removal and disposal of dead branches if protruding into proposed improvements.

B. Unless otherwise directed by the Engineer and acceptable to Engineer, do not cut tree leaders.

C. Cut branches with sharp pruning instruments; do not break or chop.

D. Do not paint or apply sealants to wounds.

E. Provide subsequent maintenance pruning during Contract period as required bythe Engineer.

F. Chip removed branches and dispose of off-site.

3.7 REGRADING

A. Lowering Grade within Protection Zone: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by Engineer unless otherwise indicated.

1. Root Pruning: Prune tree roots exposed by lowering the grade. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots as required for root pruning.

B. Minor Fill within Protection Zone: Where existing grade is 2 inches or less below elevation of finish grade, fill with backfill soil. Place backfill soil in a single uncompacted layer and hand grade to required finish elevations.

3.8 FIELD QUALITY CONTROL

A. Inspections: Engage the Engineer to direct plant-protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare inspection reports.

3.9 REPAIR AND REPLACEMENT

A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or to be relocated that are damaged by construction operations, in a manner approved by Engineer.

1. Submit details of proposed pruning and repairs.
2. Perform repairs of damaged trunks, branches, and roots within 24 hours according to the Engineer’s written instructions.
3. Replace trees and other plants that cannot be repaired and restored to full- growth status, as determined by Engineer.

B. Trees: Remove and replace trees indicated to remain that are more than 25 percent dead or in an unhealthy condition before the end of the corrections period or are damaged during construction operations that Engineer determines are incapable of restoring to normal growth pattern. Dead tree stumps shall be ground down to 12” below the adjacent ground level. All debris generated shall be disposed of properly.

C. Excess Mulch: Rake mulched area within protection zones, being careful not to injure roots. Rake to loosen and remove mulch that exceeds a 2-inch uniform thickness to remain.

D. Soil Aeration: Where directed by Engineer, aerate surface soil compacted during construction. Aerate 10 feet beyond drip line and no closer than 36 inches to tree trunk. Drill 2-inch-diameter holes a minimum of 12 inches deep at 24 inches o.c. Backfill holes with an equal mix of augered soil and sand.

3.10 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove excess excavated material, displaced trees, trash, and debris and legally dispose of them off Owner's property. Remove equipment, unused materials, deleterious material, and surplus excavated material. Fine grade all disturbed areas to provide a neat and uniform site. All damaged existing structures, as a result of the Work, shall be corrected.

END OF SECTION

SECTION 01 71 13
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 01 73 00
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 00 "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.
e. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.5 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 01 74 19
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, Section 14 of Caltrans Standard Specifications and Special provisions, 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. Section 31 10 00 "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 01 77 00
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, Section 22 of the Standard Specifications 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 contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.
5. Repair of the Work.

B. Related Requirements:

1. Section 01 73 00 "Execution" for progress cleaning of Project site.
2. Section 01 78 39 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 ACTION SUBMITTALS

A. Product Data: For cleaning agents.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

C. Field Report: For pest control inspection.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Engineer. Label with manufacturer's name and model number where applicable.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
6. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
7. Complete final cleaning requirements, including touchup painting.
8. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Certified List of Incomplete Items: Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
2. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
3. Submit pest-control final inspection report.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order.

2. Include the following information at the top of each page:

a. Project name.
b. Date.
c. Name of Engineer.
d. Name of Contractor.
e. Page number.

3. Submit list of incomplete items in the following format:

a. MS Excel electronic file. Engineer will return annotated file.
b. PDF electronic file. Engineer will return annotated file.

1.9 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose- leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark 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 Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide a bookmarked table of contents at the beginning of the document.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Pest Control: Comply with pest control requirements in Section 01 50 00 "Temporary Facilities and Controls." Prepare written report.

C. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 74 19 "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs and bulbs noticeably dimmed by hours of use.

END OF SECTION

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

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 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 00 "Closeout Procedures" for general closeout procedures.

1.3 CLOSEOUT SUBMITTALS

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.

C. 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 02 41 13
SITE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Demolition and removal as indicated on Drawings and as required to accommodate new work, including, but not limited to:

1. Saw-cutting and removal of asphalt concrete, concrete paving and footings.
2. Removal and capping of existing underground utilities.
3. Existing selective vegetation removal
4. Fencing/Gating and associated footings removal and/or adjustments
5. Removing existing playground
6. Removing existing septic tanks

B. Salvage of existing materials, products, and equipment as indicated on Drawings.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Section 15 of Caltrans Standard Specifications

B. Division 31 Section "Site Clearing".

C. Division 31 Section "Grading".

D. Division 31 Section "Excavation and Fill for Utilities".

E. Division 31 Section "Excavation and Fill for Structures".

F. Division 32 Section "Site Concrete Work".

G. Division V Section 39 “Asphalt Concrete” of the Special Provisions.

1.4 PROJECT CONDITIONS

A. Dust control:

1. Use all means necessary to prevent spread of dust during performance of work. Thoroughly allay dust at all times.

2. Use of reclaimed water shall conform to requirements and guidelines of governing health authorities and be specifically approved by Agency Representative.

B. Burning on-site: Not permitted.

C. Protection: Use all means necessary to protect existing objects designated to remain, including structures, utilities, flora, and trees. In the event of damage to existing objects designated to remain, repair or replace objects to the satisfaction of Agency Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide materials, equipment, shoring, and appurtenances of every kind required for completion of demolition work, including barricades, handrails, and waste receptacles.

B. Explosives: Not permitted.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine surfaces for conditions that will adversely affect execution, permanence, and quality of work.

B. Do not proceed with work until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Job site examination:

1. Prior to commencing work, examine entire job site for objects designated to be removed and protected, and limits of demolition.
2. Locate existing active utility lines and provide for their protection.

B. Clarification:

1. Drawings do not indicate all objects existing on job site.
2. Before commencing work, verify with Owner which objects are to be removed by Contractor, which objects are to be removed by Owner, and which objects are to be preserved.

C. Scheduling: Contractor to avoid interference with use of, and passage to and from, adjacent buildings and facilities. Contractor to avoid interference with use of the public sidewalk and street traveled way.

D. Protection of utilities:

1. Preserve and maintain in operating condition all active utilities traversing site. Reroute, or remove and cap those which interfere with work of this Project. Coordinate extent of work with Agency Representative.
2. Expeditiously repair damaged utilities at no cost to the Agency.

E. Protection of flora:

1. Construct a physical barrier between existing flora to remain and area of new construction. See Tree Protection notes on planting plans and in specifications.
2. Protect existing trees, not otherwise indicated to be removed, against unnecessary cutting, or breaking, skinning, or bruising of bark. All trees to remain are required to have a protective fence around the tree at the drip line. Smothering of trees with stockpiled building materials or excavated materials within the drip line is not allowed. Pedestrian or vehicular traffic and parking of vehicles within drip line is not allowed.
3. Refer to Tree Notes on Demolition Plans.

3.3 DEMOLITION AND REMOVAL

A. Demolition and removal of materials shall be by skilled and properly equipped workers. Materials and equipment to be salvaged shall be removed under the direction of or by crafts persons who would normally install such items.

B. Cut concrete and asphalt concrete slabs, walks, pavement, and curbs with a concrete saw to a 2 inch depth along all joint lines before breaking out the portion to be removed.

C. Demolish and remove all foundations, walls, concrete slabs, asphalt concrete pavement, footings and other items designated for removal, or which are necessary to be removed to make way for new construction work.

3.4 SALVAGE

A. All materials removed shall become the property of Contractor to dispose of or salvage, with the exception of items designated on Drawings to be subsequently reinstalled or returned to County or items "tagged" as salvage for return to County and not previously removed by County.

B. Identify (tag or similarly mark indelibly in an inconspicuous location) each salvage item, including detached component parts, with an extensive description of salvage item or component part's use, installed location, date of removal, and similar pertinent information as may be required for reinstallation or future reference by Agency. For salvage items not reinstalled in the Work, box, package or otherwise protect, and transport to Agency-designated locations.

C. Dispose of all materials.

D. Do not sell salvage materials to the general public at job site. This shall not preclude sale to and removal from job site of salvage materials to duly licensed salvage companies.

E. Temporarily store removed materials for subsequent reinstallation at confined areas designated by Agency Representative. Carefully handle removed materials to prevent damage to areas outside immediate locations of the Work.

3.5 DISPOSAL

A. Except as specified otherwise, load debris resulting from demolition and removal as it accumulates, haul away from site promptly, and dispose of in a legal manner.

B. Prevent debris from migrating outside of construction areas. Use County-approved methods and materials to confine debris to construction areas. Failure to contain demolition debris is not permitted.

C. In lieu of disposal off-site, asphalt concrete paving debris, resulting from the work of this Project only, may be crushed for limited use as recycled fill and asphalt concrete paving base course materials as specified in Division 31 Section "Grading". Imported asphalt concrete debris may not be broken, crushed, or otherwise processed on-site nor added to on-site asphalt concrete paving debris. Asphalt concrete paving debris used as recycled fill and asphalt concrete paving base course materials shall conform to SSPWC Section 200-2.4, except as follows:

1. Gradation shall conform to Fine Gradation per Table 200-2.4.2 (A).
2. Permission for on-site crushing operations is at Agency discretion. Where on-site crushing is permitted, conform to Agency noise and dust control requirements, including scheduling of crushing operations.
3. Additionally, perform tests and submit records of test results for crushed asphalt concrete paving used as recycled fill materials in accord with SSPWC Section 203-7.2.2.

3.6 SPECIAL CONSIDERATION FOR SEPTIC TANKS DEMOLITION (BOTH SEPTIC TANKS)

A. Contractor shall obtain invert elevations at the point of connection of the new sewer pipe and verify they match with the assumed elevations and bring it to the attention of the Engineer.

B. Schedule the work in such a manner that the septic system (specially for the Mansion) be operational for the majority of the time the new sewer will be installed. Contractor will be required to install majority of the new sewer pipe before starting demolition of the septic system.

C. Contractor shall inform Engineer at least 1 week in advance prior to starting demolition of the septic for Park operator to provide proper notice to the general public.

D. Protect existing facilities to be protected

E. Pump existing sewage and dispose of it at an approved facility to receive sewage and pay the necessary fees. Avoid any spillage during pumping and transportation.

F. Wash the interior of the septic tanks as stated in the plans prior to start partial demolition

G. Remove and cap existing sewage pipe as shown on the plans.

H. Backfill and compact septic tank as shown on the plans.

END OF SECTION

SECTION 03 20 00
CONCRETE REINFORCING

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 work of this section.

1.2 DESCRIPTION OF WORK

A. The work of this section includes labor, materials, hardware, equipment, transportation and services required to fabricate and place all reinforcement for cast-in-place concrete including bars, welded wire fabric, ties and supports shown on the drawings and as specified. Prestressing reinforcement is specified in Post-Tensioned Concrete and/or Precast Concrete sections of the specifications.

1.3 QUALITY CONTROL

A. The Contractor is responsible for management of quality control on the project, including verification of the compliance of the workmanship and materials furnished by his subcontractors and suppliers.

B. Codes and Standards: Comply with all provisions of the following codes, specifications and standards except where more stringent requirements are shown or specified:

1. ACI 301 - "Specifications for Structural Concrete for Buildings".
2. ACI 117 - 'Specifications for Tolerances for Concrete Construction and Materials."
3. Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice".
4. ANSI/AWS D1.4 “Structural Welding Code – Reinforcing Steel”

1.4 SUBMITTALS

A. Shop Drawings: Submit shop drawings for all reinforcing steel and related accessories for the Engineer's approval. Shop drawings shall show arrangement and layout, bending and assembly diagrams, bar schedules, stirrup spacing, splicing of bars, laps of bars, and layout/configuration of all necessary miscellaneous support bars in accordance with CRSI Standards.

B. Mill Certificates: Submit, for record, mill certificates and/or test results signed by Contractor and Producer, for all reinforcement.

C. Product Data: Submit manufacturer’s product data with application and installation instructions for proprietary materials and items, including mechanical splices, hooked anchorage systems, large-headed stud punching shear reinforcement, dowel bar substitute systems, and dowel bar sleeves.

D. International Code Council (ICC) Evaluation Service Reports: Submit evaluation service reports of approval from ICC Evaluation Service, Inc. for mechanical splice, hooked anchorage systems, large-headed stud punching shear reinforcement and dowel bar substitute systems.

1.5 PREINSTALLATION CONFERENCE

A. The Reinforcing-Placing subcontractor shall attend the Pre-Concrete Conference conducted by the Concrete Contractor as described in Specification Section “Cast-in- Place Concrete”.

1.6 TESTING AND INSPECTION

A. In advance of fabrication and shipment to the project, the fabricator shall have performed all tests and inspections of reinforcing steel as specified herein.

B. Any testing laboratory retained to run tests required by this specification shall meet the basic requirements of ASTM E 329.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Reinforcement:

1. Reinforcing materials shall be delivered from the mill in bundles that are identified as to heat number and manufacturer and accompanied with mill and analysis test reports and an affidavit from the fabricator/supplier stating that the material conforms to the requirements of the governing ASTM specification listed herein.
2. Deformed bar material that is not identifiable according to the criteria listed above shall be tested for tensile strength and bend tests according to ASTM A 615 on a sample of 2 bars for each ten tons or fraction thereof of unidentified material for each bar size. The bars shall be a minimum of 24 inches long. Bend tests are not required for #14 and # 18 bars. Fabricator/supplier shall submit the results of such tests for record.
3. Reinforcing Bars: Reinforcing bars shall conform to ASTM A 615 Grade 60 as noted on the drawings.
4. Special Requirements for Grade 60 Reinforcing Bars: ASTM A 615 Grade 60 Reinforcing bars used as longitudinal reinforcing in locations as noted on the drawings shall additionally comply with the following requirements.

    a. The actual yield strength based on mill tests shall not exceed the nominal yield strength fy by more than 18,000 psi.
    b. The ratio of the actual tensile strength to the actual yield strength is not less than 1.25.

5. Reinforcing Bars: Reinforcing bars used as longitudinal reinforcing in locations as noted on the drawings shall conform to ASTM A 706.

6. Reinforcing Steel: Reinforcing steel used as transverse reinforcing or as spiral reinforcing as noted on the drawings shall conform to ASTM A 1035.
7. Weldable Reinforcing Bars: All reinforcing bars noted on the drawings as being required to be welded shall conform to ASTM A 706.
8. Galvanized Reinforcing Steel: Provide galvanized reinforcing bars at the locations indicated on the drawings. Galvanized reinforcing bars shall conform to ASTM A 767 Class II (2.0 oz. zinc PSF), hot dipped galvanized after fabrication and bending. Bars that are to be galvanized shall conform to the type of steel required for the given situation as noted on the drawings.
9. Epoxy-Coated Reinforcing Steel: Provide epoxy coated reinforcing bars at the locations indicated on the drawings. Epoxy coated reinforcing bars shall conform to ASTM A 775. Bars that are to be epoxy coated shall conform to the type of steel required for the given situation as noted on the drawings.
10. Epoxy-Coated Fabricated Reinforcing Steel: Provide reinforcing bars that are epoxy-coated after fabrication at the locations indicated on the drawings. Reinforcing bars that are epoxy-coated after fabrication shall conform to ASTM A 934. Bars that are to be epoxy-coated shall conform to the type of steel required for the given situation as noted on the drawings.
11. Plain Steel Welded Wire Reinforcement: ASTM A 185 with a yield strength of 65,000 PSI. Provide in flat sheets only.
12. Deformed-Steel Welded Wire Reinforcement: ASTM A 497 with a yield strength of 70,000 PSI. Provide in flat sheets only.
13. Galvanized Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from galvanized steel wire into flat sheets.
14. Epoxy Coated Plain-Steel Welded Wire Reinforcement: ASTM A 884, Class A, plain steel.
15. Epoxy Coated Deformed-Steel Welded Wire Reinforcement: ASTM A 884, Class A, deformed steel.
16. Strands: Uncoated seven wire, one half inch diameter, stress relieved 270 ksi strand low relaxation type, ASTM A 416 "Specification for Uncoated Seven Wire Stress Relieved Strand for Prestressed Concrete" and "Specification for Unbonded Single Strand Tendons" as published by the Post-Tensioning Institute.
17. Prestressing Bars: All prestressing bars shall be deformed threadbars conforming to ASTM A 722 "Specification for Uncoated High Strength Steel Bar for Prestressing Concrete", with a minimum ultimate tensile strength of 150 KSI and other properties as specified on page 11-21 of the PCI Design Handbook, fifth edition. Threadbars, plate anchorages and couplings shall be furnished by Dywidag Systems International or Williams unless approved otherwise in writing by the Engineer.
18. Wire: Smooth wire for spiral reinforcement shall conform to ASTM A 82 with a minimum yield strength of 70,000 PSI.
19. Epoxy-Coated Plain-Steel Wire: ASTM A 884, Class A, plain-steel wire.
20. Joint Dowel Bars: Smooth bars used to dowel across slab-on-grade construction joints shall conform to ASTM A 615, Grade 40 or ASTM A 36, plain-steel bars. Cut bars true to length with ends square and free of burrs
21. Epoxy-Coated Joint Dowel Bars: Smooth epoxy-coated bars used to dowel across slab-on-grade construction joints shall conform to ASTM A 775 with ASTM A 615, Grade 40 or ASTM A 36 plain-steel bars. Cut bars true to length with ends square and free of burrs.

22. Dowel Bar Sleeves: Plastic or gage metal (26 ga. min.) sleeves with an inside diameter of 1/16 inch greater than the dowel bar that it encases, that have the strength, durability, and design to provide free movement of the dowel relative to the concrete slab and that are specifically manufactured for this purpose.
23. Alternate Slab-on-Grade Joint Load Transfer Systems: A system that consists of flat, ASTM A 36 plate that is saw cut into a square or rectangular shape and is embedded into or encased by a plastic sleeve that allows movement in both lateral directions but not in the vertical direction. Acceptable systems are manufactured by PNA Construction Technologies with products known by the names “Diamond Dowel System” and “PD3 Basket” and Greenstreak Group Inc. with products known as “Speed Plate’ and “Double-Tapered Basket”.
24. Tie Wire: Tie wire shall be annealed steel tie wire, minimum 16 gauge.

    a. Tie wire in architecturally exposed concrete shall be plastic coated or stainless steel.
    b. Tie wire for epoxy-coated reinforcement shall be epoxy-coated.
    c. Tie wire for galvanized reinforcement shall be galvanized.

25. Headed Steel Stud Punching Shear Reinforcement: Punching shear reinforcement using headed studs welded to flat bars shall be manufactured in conformance with ASTM A1044 and approved by the ICC Evaluation Service, Inc. as expressed in an ICC Evaluation Report for use as punching shear reinforcement for slabs and footings designed in accordance with ACI 421.1. The following are acceptable products: “Decon Studrails”, Decon “Dayton Shear Resistance System (DSR) D-140”, Dayton Superior Corporation “Suncoast Stud Reinforcement System”, Suncoast Post-Tension, Ltd.
26. Supports for Reinforcement: Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying with CRSI recommendations.

    a. Slabs-on-Grade: Use precast concrete bar supports (dobies) or supports with sand plates or horizontal runners designed for use on ground.
    b. Spread Footing Bottom Reinforcement: Use precast concrete bar supports (dobies) or chairs designed for soil-supported slabs.
    c. Mat Foundation: Use precast concrete bar supports (dobies), chairs designed for soil-supported slabs, or poured-in-place concrete curbs.
    d. Exposed to View Concrete: Provide supports with legs which are plastic protected stainless steel protected (CRSI, Class 2).
    e. Support of Epoxy-Coated Reinforcement: Provide epoxy-coated or other dielectric-polymer-coated wire bar supports to support epoxy-coated reinforcement.
    f. Support of Galvanized Reinforcement: When NOT exposed to view, provide galvanized wire bar supports to support galvanized reinforcement. In all exposed to view conditions provide supports with legs which are plastic protected stainless steel protected (CRSI, Class 2).

B. Coating Repair Materials: Repair damaged areas of epoxy-coated or galvanized reinforcement using the following products.

1. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating compatible with epoxy coating on reinforcement and complying with ASTM A 775.

C. Zinc Repair Material: ASTM A 780, zinc-based solder, paint containing zinc dust, or sprayed zinc shall be used to repair damaged areas of galvanized reinforcement.

2.2 SPLICES

A. End Bearing Compression Splices: Members with end bearing compression splices shall have vertical bars saw cut or otherwise finished for true bearing. Bar ends shall terminate in flat surfaces within 1 1/2 degrees of a right angle to the axis of the bars and shall be fitted within 3 degrees of full bearing after assembly. Splice bars shall be held in concentric contact by a suitable device. The following are acceptable end bearing compression devices:

1. "Speed Sleeve", Erico Products, Inc. "G-Loc", BarSplice Products, Inc.
2. or other Engineer-approved product.

B. Mechanical Tension Splices:

1. Mechanical splices shall conform to Type 1 and Type 2 splices.

   a. Type 1 splice shall develop 1.25 times the specified yield strength of the splice bar.
   b. Type 2 splice shall meet the requirements of Type 1 splice and, in addition, develop the full tensile strength of the splice bar.

2. Splices shall be approved by the ICC-Evaluation Service, Inc and shall have the Evaluation Report submitted for Engineer review.
3. The bar ends that are to attach to the splice shall be prepared and installed in accordance with the manufacturer's requirements.
4. The following are acceptable mechanical tension splices (splices qualified for use with grade 75 bars are parenthetically noted): "BarLock, S-Series", Dayton Superior."US/MC-SAE Mechanical Coupler", Dayton/Richmond, Inc. "DB Grout Sleeve", Dayton/Richmond "ZAP Screwlok", BarSplice Products, Inc. (qualified for use with grade 75 bars) "BPI Grip XL System", Barsplice Products, Inc. "Taper Threaded Grip Twist System", Barsplice Products, Inc. "Lenton Coupler", Erico Products, Inc. (for grade 75 bars, use only "Standard Coupler") "NMB Splice Sleeve", Splice Sleeve North America" (qualified for grade 75 #7 bars and higher) "BarLock, L-Series", Dayton Superior "Taperlok Couplers", Dayton Superior "Lenton Interlok", Erico Products, Inc. "Griptec", Dextra Manufacturing Co. or other Engineer-approved product.

C. Dowel Bar Replacement: All grade 60 reinforcing steel dowel bars shown on the drawings crossing concrete construction joint surfaces with inserts cast flush against the form and having reinforcing bars connected to the insert in a subsequent concrete pour shall conform to the following:

1. Splice connection to the insert shall develop the 1.25 times the specified yield strength and the full tensile strength of the spliced bar.
2. Splices shall be approved by the ICC Evaluation Service, Inc. as expressed in an ICC Evaluation Service Report which shall be submitted for review.
3. The following are acceptable products (for use only with grade 60 bars):

    a. "Lenton Form Saver", Erico Products, Inc. "DB-SAE Dowel Bar Splicer", Dayton/Richmond, Inc. or other Engineer-approved product.

D. Hooked Anchorage Replacement: Reinforcing bar terminations shall be manufactured out of ASTM A 576 material and shall develop the full tensile strength of the bar when installed at the manufacturer's recommended depth.

1. The anchorage shall be approved by the ICC Evaluation Service Inc. as expressed in an ICC Evaluation Service Report which shall be submitted for review.
2. The following are acceptable products (for use only with grade 60 bars): "Lenton Terminator", Erico Products, Inc. or other Engineer-approved product.

PART 3 - EXECUTION

3.1 FABRICATION AND DELIVERY

A. Bending and Forming: Fabricate bars of indicated sizes and accurately form to shapes and lengths indicated and required, by methods not injurious to materials. Do not heat reinforcement for bending. Bars shall be free from injurious defects, have a workman-like finish with no excessive rust and/or pitting and have no unusual kinks or bends.

B. Marking and Shipping: Bundle reinforcement and tag in accordance with Section 7.4.5 of the CRSI "Manual of Standard Practice". Transport and store at site so as not to damage material. Keep sufficient supply of tested, approved and proper reinforcement at the site to avoid delays. Maintain reinforcing bars free of mud, dirt, grease, or other coating.

C. Repair of Epoxy-Coated Reinforcing: Repair cut and damaged epoxy coatings on fabricated reinforcing before delivery with epoxy repair coating according to ASTM D 3963

3.2 PLACING REINFORCEMENT

A. Comply with CRSI recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports and as herein specified.

B. Before placing reinforcement and again before concrete is placed, clean reinforcement of loose rust and mill scale, earth, ice and other materials which reduce or destroy bond with concrete.

C. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by chairs,

runners, bolsters, spacers or hangers, as required. Exercise particular care to maintain proper distance and clearance between parallel bars and between bars and forms. Provide spreaders and spacers to hold steel in position. Support steel at proper height upon approved chairs.

D. Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set tie wires so ends are directed into concrete, not toward exposed concrete surfaces.

E. Support of Spread Footing Reinforcing Steel

1. Bottom Steel: Support bottom reinforcing mat to provide the specified clearance to the bars. Spacing between supports shall not exceed 4'-0" centers each way.
2. Top Steel: Support top reinforcing on steel angle frames braced in both directions or on special standee support bars. Spacing between supports shall not exceed 4'-0" centers each way. The depth of the supports shall provide the specified clearance from the bars to the top of the concrete. The design of the support steel shall be the responsibility of the Contractor in accordance with Concrete Reinforcing Steel Institute (CRSI), “Manual of Standard Practice”.

F. Support of Mat Foundation Reinforcing Steel

1. Bottom Steel: Support bottom reinforcing mat to provide the specified clearance to the bars. Spacing between supports shall not exceed 4'-0" centers each way.
2. Top Steel: Support top reinforcing on steel angle frames braced in both directions or on special standee support bars. Spacing between supports shall not exceed 4'-0" centers each way. The depth of the supports shall provide the specified clearance from the bars to the top of the concrete. The design of the support steel shall be the responsibility of the Contractor in accordance with Concrete Reinforcing Steel Institute (CRSI), “Manual of Standard Practice”.

G. Install welded wire reinforcement in as long lengths as practicable. Lap adjoining pieces at least one full mesh plus two inches and lace splices with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

H. Coordinate with other trades and expedite materials and labor to avoid omissions and delay.

I. Install waterproof membrane or vapor barrier as specified prior to placing steel for concrete slabs-on-grade.

J. Extend reinforcement continuous through construction joints unless otherwise shown on the drawings.

K. Slab-on-Grade Joint Dowel Bars: Support slab-on-grade joint dowel bars independently of support for slab reinforcement on soil supported slab bolsters or specially manufactured cradles such that dowel bar remains parallel to slab surface and at right angles to joint

during concreting operations. Lightly coat the exposed end of the dowel with a paraffin-base lubricant, asphalt emulsion, form oil, or grease or use a dowel bar sleeve.

L. Alternate Slab-on-Grade Joint Load Transfer Systems: Install the alternate load transfer system in accordance with the manufacturer's instructions such that the largest plane of the flat plate is parallel to the plane of the subgrade on which the slab is bearing.

M. Provide and place additional reinforcing steel at all sleeves and openings in beams, slabs and walls as specified on the drawings. Where sleeves or openings not shown on the drawings interrupt the reinforcement, consult with Engineer for instructions for placing and splicing of bars. Provide required additional reinforcing steel at no additional cost to the Owner.

N. Epoxy-Coated Reinforcement: Use epoxy-coated steel tie wires to fasten epoxy-coated reinforcement. Repair cut and damaged epoxy coatings with epoxy repair coating according to ASTM D 3963.

O. Galvanized Reinforcement: Use galvanized steel tie wires to fasten galvanized reinforcement. Repair cut and damaged zinc coatings with zinc repair material.

3.3 SPLICING REINFORCING STEEL

A. Provide splice as indicated on the drawings. Splice reinforcing bars only at locations shown on the structural drawings and approved shop drawings. Unauthorized or unscheduled splices not approved by the Engineer in writing will not be accepted.

B. All lap splices in reinforcing steel shall be contact lap splices unless detailed otherwise on the drawings.

C. Maintain proper cover between reinforcing bars at splices.

D. Lap unscheduled reinforcing bars not otherwise specified a minimum of 30 bar diameters at splices. Lap welded wire fabric a minimum of one full wire mesh plus two inches.

E. Reinforcing Steel Placement in Mat Foundations

1. Size, length, spacing, and location of all mat reinforcing steel is shown on the mat plans and details. See details on the drawings for required stagger pattern of top and bottom bar splices and for sequence of placing mat reinforcing steel layers.
2. The number of splices shall be minimized by using bar runs of 60'-0" as much as possible. Unless noted otherwise, continuous top reinforcing bars shall be spliced along column centerlines. Continuous bottom reinforcing bars shall be spliced mid-way between columns.
3. Provide Class B tension lap splices for all bars #11 and smaller. Stagger splices as shown in the typical details.
4. Avoid splices of #14 and #18 bars where possible. Where required, a mechanical tension splice as specified shall be provided. No more that 50% of such bars shall be spliced in any 5'-0" width of mat cross-section. Spliced bars shall be staggered with un-spliced bars.

F. Manufacturer of mechanical tension splice shall be present for first day's installation.

3.4 WELDING REINFORCING STEEL

A. Welding reinforcing steel is permitted only where specifically shown on the drawings. All welding shall conform to AWS D1.4. Only weldable reinforcing steel conforming to ASTM A 706 or deformed bar anchors conforming to ASTM A 496 shall be permitted. ASTM A 615 bars may not be welded for structural use.

B. Tack welding of reinforcement shall only be allowed for preassembled mats and cages.

3.5 SHRINKAGE AND TEMPERATURE REINFORCEMENT

A. Provide shrinkage and temperature reinforcement as indicated on the drawings at right angles to main top and bottom bars for all structural slabs unless detailed otherwise on the drawings.

3.6 PLACEMENT OF WELDED WIRE REINFORCEMENT

A. Wherever welded wire reinforcement is specified as reinforcement in pan-formed beams or slabs, it shall be continuous and properly lapped one full wire spacing plus 2" across the entire concrete surface and not interrupted by beam or girders.

3.7 REINFORCEMENT IN JOIST DISTRIBUTION RIBS

A. Provide reinforcement in ribs, minimum one - #5 continuous top and bottom unless indicated otherwise on the drawings.

3.8 REINFORCEMENT IN COMPOSITE METAL DECK SLAB

A. Composite metal deck slabs shall be reinforced as indicated on the drawings.

B. Extra Reinforcement Over Girders: Provide additional reinforcing steel over interior girders as shown on the drawings.

C. Placement of Slab Reinforcement: Provide bolsters, high chairs, and/or additional reinforcing as shown in details on the drawings to support the reinforcing with the clear cover shown on the drawings.

3.9 FIBER-REINFORCED CONCRETE IN TOPPING SLABS, SIDEWALKS, AND DRIVEWAYS

A. Provide fibers of the type and at the dosage rate shown on the drawings.

B. The fiber-reinforced concrete shall be produced in accordance with ASTM C 1116 and have a residual strength of 80 psi when tested in accordance with ASTM C 1399.

3.10 REINFORCEMENT AROUND OPENINGS IN COMPOSITE METAL DECK SLABS

A. For all openings in metal deck not framed with structural steel and greater than 10" in width in either direction, provide additional reinforcing steel as shown in details on the drawings.

3.11 REINFORCEMENT IN PAN-FORMED BEAM SLABS

A. Reinforcement: Provide reinforcing in pan-formed beam slabs as shown on the drawings.

B. Placement of Slab Reinforcement: Provide required bar supports and additional reinforcing as shown in details on the drawings to support slab reinforcing with the clear cover shown on the drawings.

3.12 REINFORCEMENT IN GRADE BEAMS

A. Provide reinforcing in grade beams as shown on the drawings.

B. Bar Support for Grade Beam Cages: Grade beam bottom steel shall be supported at 5'- 0" maximum centers using beam bolsters that provide 3" bottom cover to the reinforcing steel. Beam bolsters used shall be designed and manufactured for support on soil.

3.13 REINFORCEMENT IN TOPPING SLABS

A. In addition to fiber reinforcing, provide welded smooth wire reinforcement minimum 6 x 6 W1.4 x W1.4 in all topping slabs unless specified otherwise on the drawings.

3.14 REINFORCEMENT IN HOUSEKEEPING PADS

A. In addition to fiber reinforcing, provide welded smooth wire reinforcement 6 x 6 W2.9 x W2.9 minimum in all housekeeping pads supporting mechanical equipment unless detailed otherwise on the drawings.

3.15 MECHANICAL AND PLUMBING REQUIREMENTS

A. Refer to Mechanical and Plumbing Drawings for concrete requiring reinforcing steel. Such reinforcement shall be furnished as part of the work of this section.

3.16 QUALITY ASSURANCE TESTING AND INSPECTION DURING CONSTRUCTION

A. See Testing Laboratory Services section of these Specifications for reinforcing inspection and testing requirements.

END OF SECTION

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

B. Division 3 “Concrete Reinforcing”

C. Division 32 “Site Concrete Work”

D. Division XI Section 90 “Concrete” of the Special Provisions and Standard Specifications

1.2 DESCRIPTION OF WORK

A. Extent of concrete work is shown on drawings, including schedules, notes and details which show size and location of members and type of concrete to be poured. Furnish all labor, materials, services, equipment and hardware required in conjunction with or related to the forming, delivery and pouring of all cast-in-place concrete Work.

1.3 QUALIFICATIONS

A. The concrete supplier shall have a minimum of five years’ experience in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment. The supplier must be certified according to the National Ready Mixed Concrete Association’s Certification of Ready Mixed Concrete Production Facilities.

B. The concrete contractor shall have a minimum of five years’ experience with installation of concrete similar in material, design and extent to that indicated for this Project and whose work has resulted in construction with a record of successful –service performance.

C. Any testing laboratory retained by the Contractor or Subcontractor to run tests required by this specification but not performed by the Owner’s testing laboratory shall meet the basic requirements of ASTM E 329.

1.4 QUALITY CONTROL

A. The Contractor is responsible for control of quality, including workmanship and materials furnished by his subcontractors and suppliers.

B. Codes and Standards: Comply with provisions of following codes, specifications and standards, except where more stringent requirements are shown or specified:

1. ACI 301 – “Specifications for Structural Concrete for Buildings”.
2. ACI 117 – ‘Specifications for Tolerances for Concrete Construction and Materials.”

3. ACI 318 – “Building Code Requirements for Reinforced Concrete”.
4. Concrete Reinforcing Steel Institute (CRSI), “Manual of Standard Practice”.
5. Steel Construction Manual, latest edition, American Institute of Steel Construction

C. Document Conflict and Precedence: In case of conflict among Contract Documents and Contract Specifications, request clarification from the Engineer through “Request for Information” (RFI) process before proceeding with the Work. In case of a conflict between and/or among the structural drawings and specifications, the strictest interpretation shall govern, unless specified otherwise in writing by the Engineer.

D. Inspection and Testing of the Work: Materials and installed work may require testing and retesting, as directed by the governing building code, the Engineer, or the Owner at any time during progress of work.

1. The Contractor shall provide forty-eight (48) hours notification to the Owner’s Testing Laboratory of construction operations including the project schedule to allow the Testing Laboratory to schedule inspections. Failure to sufficiently notify may result in additional costs incurred by the Testing Laboratory that may be back-charged to the Contractor by the Owner.
2. The Contractor shall cooperate with laboratory personnel and provide access to the work.
3. The Contractor shall make arrangements with and for the Owner’s Testing Laboratory for off-site inspection of material stockpiles, concrete delivery vehicles, concrete material storage facilities, and concrete-batching facilities.
4. If required, the Contractor shall furnish casual labor, equipment, and facilities as required for sampling and testing by the laboratory and otherwise facilitate the required inspections and tests.
5. Inspection or testing by the Owner does not relieve the Contractor of his responsibility to perform the Work in accordance with the Contract Documents. Tests not specifically indicated to be done at the Owner’s expense, including retesting of rejected materials and installed work, shall be done at the Contractor’s expense.

E. Acceptance Criteria for Concrete Strength: A strength test is defined as the average strength of two 6” x 12” cylinder breaks or three 4” x 8” cylinder breaks tested at the strength age indicated on the drawings for that class of concrete. The strength level of an individual class of concrete shall be considered satisfactory when both of the following requirements are met:

1. The average of all sets of three consecutive strength tests equal or exceed the required f’c.
2. No individual strength test falls below the required f’c by more than 0.1 f’c or 500 psi, whichever is greater.

F. Responsibility for Selection and use of concrete admixtures and chemical treatments: The Contractor shall be responsible for selecting admixtures and surface treatments that are compatible with the intended use of the concrete including all final surface treatments called for within this or other specifications or on the Contract Drawings. The Contractor is responsible for following the manufacturer’s instructions for the use of their product

including abiding by any limitations placed by the manufacturer on the use of any of its products.

G. Survey for Anchor Rods and Reinforcing Steel Dowels: The Contractor shall use a qualified and experienced field engineer (construction surveyor), having a minimum of three years of experience as "lead" field engineer on projects of similar type, lay out the proper location of all embedded anchor rods, embedded connection plates for structural steel columns and beams, tension rods for structural precast, and correct location and elevation of concrete column dowels before they are encased in concrete.

H. Manufacturer Representative Presence:

1. Post-installed anchors: The manufacturer's representative for each post-installed anchor product (adhesive, expansion, undercut, screw, or insert anchor) shall be present during the first day's installation of the product to observe whether the anchors are installed according to manufacturer's instructions.
2. Fiber-reinforced concrete: The manufacturer's representative for each fiber type shall be present during the first pour in which the fiber is used to observe whether the dosage rate and placing and finishing method is in accordance with the specifications and the manufacturer's instruction.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's product data with application and installation instructions for proprietary materials and items, including admixtures, patching compounds, epoxies, grouts, waterstops, joint systems, fiber reinforcement, curing compounds, dry-shake finish materials, hardeners, sealers mechanical splices, hooked anchorage systems, dowel bar substitute systems, dowel bar sleeves, joint fillers, and others as requested by the Engineer.

B. Samples: Submit samples of materials specified if requested by the Engineer, including names, sources and descriptions.

C. Mix Designs: Submit mix designs as specified herein.

D. Material and Mill Certificates: Provide material and mill certificates as specified herein and in the Testing Laboratory section of the Specifications. The Manufacturer and Contractor shall sign the material and mill certificates certifying that each material item complies with specified requirements. Provide certification from admixture manufacturers that chloride ion content complies with specified requirements.

E. Construction Joints: Submit drawing of proposed construction joint locations in concrete for slab on grade, mat foundations, structural floors, roofs and walls. Submit any additional or changed reinforcing that is required at construction joints that differs from that shown on the drawings.

F. Pour Sequence for Mat Foundation: Submit proposed pour sequence for mat foundations.

G. Industrial Slabs: Submit proposed pour sequence and procedure for protecting concrete during placement, finishing, and curing.

H. Minutes of preconstruction conference.

1.6 PROVISION FOR OTHER WORK

A. Provide for installation of inserts, hangers, metal ties, anchors, bolts, angle guards, dowels, thimbles, slots, nailing strips, blocking, grounds and other fastening devices required for attachment of work. Properly locate in cooperation with other trades and secure in position before concrete is poured. Do not install sleeves or blockouts in any concrete slabs, beams or columns except where shown on the drawings or upon written approval of the Engineer.

B. Protect adjacent finish materials against damage and spatter during concrete placement.

C. To maintain location accuracy, the General Contractor's field engineer shall furnish building control lines and elevation benchmarks for the use of all trades.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

A. Refer to the drawings for classes and strengths of concrete required.

B. Hydraulic Cement:

1. Use ASTM C 150, Type I or Type III, or ASTM C 1157, Type GU or HE unless otherwise specified. Do not use Type III cement in slabs on grade unless approved in advance by the Engineer.
2. Concrete exposed to sulfates in soil or water

    a. Exposure class S1: For areas designated on the drawings as exposure class S1, use ASTM C 150, Type II or ASTM C 1157, Type MS.
    b. Exposure class S2: For areas designated on the drawings as exposure class S2, use ASTM C 150, Type V or ASTM C 1157, Type HS.
    c. Alternate cement types for exposure classes and S2: ASTM C 150, Type I or III cement may be used for concrete exposed to exposure S1 or S2 if the tricalcium aluminate (C3A) content is less than 8 percent for S1 exposure or 5 percent for S2 exposure ASTM C 150, Type I or III cement may be used for exposure to seawater if the tricalcium aluminate content does not exceed 10 percent and the w/cm ratio of the concrete mix does not exceed 0.40.
    d. Exposure class S3: For areas designated on the drawings as exposure class S3, use ASTM C 150, Type V plus pozzolan or slag or ASTM C 1157, Type HS plus pozzolan or slag or ASTM C 595, Type IP (HS) or Type IS (HS). The amount of pozzolan or slag added or in a blended mix shall be such that has been determined by service record to improve sulfate resistance when used with

Type V cement or the amount that when tested according to ASTM C 1012 meets the criteria of table 4.5.1 in ACI 318-08.

3. Use one brand of cement, for each class of concrete, throughout the project, unless approved otherwise by the Engineer and the Owner's Testing Laboratory. Submit mill certificates certifying conformance to this specification for each brand and type of cement. Documentation of design mix strength history must match the cement brand used.
4. Testing of cement in lieu of mill certificate submittal will be required if:

    a. The cement has been in storage at the mixing site for over 30 days
    b. It is suspected by the Owner, Architect, Engineer or Owner's Testing Laboratory that the cement has been damaged in storage or in transit or is in any way defective.

C. Low-alkali cement: Cement that has the additional requirement that equivalent alkalis (Na2 O + 0.658K2 O) do not exceed 0.60% according to ASTM C 150-00, Table 2.

D. Expansive Cement: ASTM C 845, Type K.

E. Fly Ash: ASTM C 618, Class C or F.

F. Silica Fume: ASTM C 1240, Amorphous Silica.

G. Slag Cement: ASTM C 989, Grade 100 or 120 or ASTM C 595, Type IS or Type S.

H. Normal weight Aggregates: ASTM C 33, and as herein specified. Submit material certificates from aggregate supplier or test results from an independent testing Laboratory certifying conformance to this specification for each source of aggregate.

1. For concrete identified on the drawings as exposed to exposure classes C1 and C2, submit certification that aggregate does not contain any deleterious materials that react with alkalis in the concrete mix to cause excessive expansion of the concrete for concrete that is exposed to wetting, has extended exposure to humid atmosphere, or is in contact with moist ground unless low-alkali cement is used.

I. Lightweight Aggregates: ASTM C 330. Submit material certificates from aggregate supplier or test results from an independent testing Laboratory certifying conformance to this specification for each source of aggregate.

J. Water: Comply with the requirements of ASTM C 1602

K. Cementitious materials, aggregate, and water must be extracted or recovered as well as manufactured within 500 miles of the project site.

L. Air-Entraining Admixture: ASTM C 260.

1. Subject to compliance with requirements, provide one of the following products and manufacturers:

    a. "Darex" or "Daravair" series; W. R. Grace & Co.
    b. “MB-VR”, "MB-AE90" or "Micro-Air”, BASF Admixtures, Inc
    c. "Sika AER”, Sika Corporation
    d. "Air Mix" or "AEA-92”, the Euclid Chemical Company
    e. Eucon Air 30” or “Eucon Air 40”, the Euclid Chemical Company.

2. Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all other admixtures to be used.

M. Water-Reducing Admixture: ASTM C 494, Type A. See maximum permissible chloride ion content in concrete specified below.

1. Subject to compliance with requirements, provide one of the following products and manufacturers:

    a. "Pozzolith" series; BASF Construction Chemicals
    b. "Plastocrete 161”, Sika Chemical Corp.
    c. "Eucon WR-75 or WR-91”, the Euclid Chemical Company.
    d. "WRDA “, series W.R. Grace & Co.
    e. “Eucon NW” or “Eucon LW”, the Euclid Chemical Company

2. Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all other admixtures to be used.

N. Mid-Range Water-Reducing Admixture: ASTM C 494, Type A and Type F. See maximum permissible chloride ion content in concrete specified below.

1. Subject to compliance with requirements, provide one of the following products and manufacturers:

    a. “Polyheed” series; BASF Construction Chemicals
    b. “Eucon MR”, the Euclid Chemical Company
    c. “Sikament HP”, Sika Chemical Corp.
    d. “Daracem” or “Mira” series; W.R. Grace & Co.
    e. “Eucon X15” or “Eucon X20” ; the Euclid Chemical Company

2. Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all other admixtures to be used.

O. High-Range Water-Reducing Admixture (superplasticizer): ASTM C 494, Type F or Type G. See maximum permissible chloride ion content in concrete specified below.

1. Subject to compliance with requirements, provide one of the following products and manufacturers:

a. "ADVA" or "Daracem" Series; W.R. Grace & Co.
b. "Rheobuild 1000" or "Glenium" series; BASF Construction Chemicals
c. "Sikament", Sika Chemical Corp.
d. "Eucon 37/1037" or "Plastol" series; the Euclid Chemical Company
e. "Euconl SP" or "Eucon RD" ; the Euclid Chemical Company

2. Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all other admixtures to be used.

P. Water-Reducing, Accelerator Admixture (Non-Corrosive, Non-Chloride): ASTM C 494, Type C or E. See maximum permissible chloride ion content in concrete specified below.

1. Subject to compliance with requirements, provide one of the following products and manufacturers:

a. "Polarset","Gilco", "Lubricon NCA" or "DCI", W.R. Grace & Co.
b. "Pozzutec 20+", BASF Construction Chemicals
c. "Accelguard 80/90", "NCA", or "AcN", the Euclid Chemical Company
d. "Plastocrete 161FL", Sika Chemical Co.
e. "Eucon AcN", the Euclid Chemical Company

2. Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all other admixtures to be used.

Q. Water-Reducing, Retarding Admixture: ASTM C 494, Type D.See maximum permissible chloride ion content in concrete specified below.

1. Subject to compliance with requirements, provide one of the following products and manufacturers:

a. "Daratard" series; W.R. Grace & Co.
b. "Pozzolith" series or "DELVO" series; BASF Construction Chemicals
c. "Plastiment", Sika Chemical Co.
d. "Eucon Retarder", Series, the Euclid Chemical Company

2. Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all other admixtures to be used.

R. Viscosity Modifying Admixture: Used to enhance plastic concrete properties such as workability, pumpability, and stability for "self-consolidating concrete"

1. Subject to compliance with requirements, provide one of the following products and manufacturers:

a. "Rheomac VMA" series; BASF Construction Chemicals
b. "Eucon SL" or "Visctrol", the Euclid Chemical Company
c. "VisoCrete" series; Sika Chemical Co.
d. "VMAR" series, W.R. Grace & Co.

S. Shrinkage Reducing Admixture: An admixture that reduces drying shrinkage by reducing the capillary tension of pore water.

1. Subject to compliance with requirements, provide one of the following products and manufacturers:

a. For Air-Entrained Concrete:

1) "Eclipse Plus"'; Grace Construction Products
2) "Eucon SRA", the Euclid Chemical Company

b. For Non Air-Entrained Concrete:

1) "Eclipse Floor", Grace Construction Products
2) "Tetraguard AS20", BASF Construction Chemicals

T. Corrosion Inhibitor: 30% calcium nitrite

1. Products: Subject to compliance with requirements, provide the following at dosage rates per Engineer of Record from manufacturer's recommendation based on design life, application, clear cover and other products in concrete mix:

a. "Eucon CIA" or "Eucon BCN", the Euclid Chemical Company
b. "DCI" or "DCI-S", W.R. Grace & Co.
c. "Rheocrete CNI", BASF Construction Chemicals
d. "Sika CNI", Sika Chemical Co.

U. Corrosion Inhibitor: Amine-Ester type

1. Products: Subject to compliance with requirements, provide the following at dosage rates per manufacturer's recommendation:

a. "Rheocrete 222+", BASF Construction Chemicals

V. Crystalline-forming Waterproofing Admixture: A powder admixture capable of producing concrete that is watertight under hydrostatic pressure up to 7 atmospheres when tested in accordance with Corps of Engineers test CRD-C48 and capable of sealing cracks up to 0.4mm.

1. Products: Subject to compliance with requirements, provide the following at dosage rates per manufacturer's recommendation:

a. "Penetron Admix", ICS/Penetron International/Ltd.
b. "Krystol Internal Membrane", Kryton International, Inc
c. "Xypex C series", Xypex Chemical Corporation
d. "Rheomac 300D", BASF Construction Chemicals

W. Calcium Chloride and Chloride Ion Content: Calcium chloride or admixtures containing more than 0.5% chloride ions by weight of the admixture are not permitted. For concrete exposed to sulfate exposure class S2 or S3 as noted on the drawings, admixtures must be completely free of chloride ions.

X. Certification: Written conformance to all the above-mentioned requirements and the chloride ion content of the admixture as tested by an accredited laboratory will be required from the admixture manufacturer at the time of mix design review by the Engineer.

2.2 RELATED MATERIALS

A. Waterstops: Provide waterstops at all construction joints and other joints in all foundation walls below grade and where shown on the drawings. Size to suit joints. Provide flat, dumbbell type or center bulb type where shown on drawings.

1. ADCOR ES waterstops: W.R. Grace & Co.
2. Polyvinyl chloride (PVC) waterstops: Corps of Engineers CRD-C 572.
3. Preformed Plastic Waterstops: Federal Specifications SS-S-210A "Sealing Compound for Expansion Joints".
4. Manufacturers: Synko-Flex Products, Inc.
5. Bentonite Waterstop RX manufactured by American Volclay Products.

B. Vapor Retarder: Provide vapor retarder cover chosen from products specified below over prepared base material where indicated.

1. Plastic Vapor Retarder Provide a flexible preformed sheet membrane conforming to ASTM E 1745 with the following properties.

a. Class A material
b. Minimum of 15 mils thick
c. Maximum water vapor permeance rating of 0.01 Perms after mandatory conditioning as tested by ASTM E 96
d. Acceptable products include the following:

1) "Stego Wrap Vapor Barrier (15 mil)", Stego Industries, LLC
2) “Ecoshield-E” (15 mil), Pero
3) “Monarflex Reflex Super, Monarflex

2. Tape for Plastic Vapor Retarders: High-density polyethylene tape with pressure sensitive adhesive having a minimum width of 4 inches having a maximum water vapor transmission rate of .3 perms.

C. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.

D. Moisture-Retaining Cover: One of the following, complying with ANSI/ASTM C 171:

1. Waterproof paper.

2. Polyethylene film.
3. Polyethylene-coated burlap.
4. Polyethylene-coated natural cellulose fabric such as “Aquacure” by Greenstreak Group, Inc.
5. Cover for Industrial Slab: Provide a low permeance moisture-retaining cover that allows a moisture loss of no more than 1 lb./sq. yd. in 72 h when tested in accordance with ASTM C 156 for industrial slabs. The material shall be non- staining with a tensile strength meeting ASTM D 882 and a minimum retention capacity of 6.5 g.

E. Slip-resistant Emery Aggregate or Aluminum Granule Finish: Provide fused aluminum- oxide granules, or crushed emery, as abrasive aggregate for slip-resistant finish. The emery aggregate shall contain not less than 50% aluminum oxide and not less than 20% ferric oxide. The aluminum aggregate material shall contain not less than 95% fused aluminum-oxide granules. Use material that is factory-graded, packaged, rust-proof and non-glazing, and is unaffected by freezing, moisture and cleaning materials.

1. Subject to compliance with requirements, provide one of the following:

    a. "Emery Tuff Non-Slip", Dayton-Superior
    b. "Grip-It" or “Grip-It AO”, L&M Construction Chemicals, Inc
    c. “Frictex NS”, Sonneborn-ChemRex

F. Colored, Mineral Aggregate, Dry Shake Surface Hardener: Packaged, dry, combination of materials, consisting of portland cement, graded quartz aggregate, coloring pigments (if required) and plasticizing admixtures. Use coloring pigments that are finely ground, non-fading mineral oxides, interground with cement. Color, as selected by Architect, unless otherwise indicated. Products:

1. Subject to compliance with requirements, provide one of the following:

    a. "Surflex”, the Euclid Chemical Company
    b. "Quartz Plate”, L & M Const. Chemical Co.
    c. “Lithochrome”, LM Scofield Construction Chemical Co.
    d. "Mastercron”, BASF Building Systems
    e. "Quartz-Tuff“, Dayton Superior
    f. “US Spec Dense Top”, US Mix Co.

2. Submit manufacturer's certification that product conforms to the requirements specified.

G. Metallic Aggregate Hardener Finish: Packaged dry, combination of materials consisting of Portland Cement, specially processed and graded iron aggregate, coloring pigments (if required) and plasticizing admixtures. The hardener shall be formulated, processed and packaged under stringent quality control. Use coloring pigments that are finely ground, non-fading mineral oxides inter-ground with cement. Color as selected by Architect unless otherwise indicated.

1. "Euco-Plate HD”, the Euclid Chemical Company

2. "Masterplate 200", BASF Building Systems
3. "Ferro Tuff," Dayton-Superior

H. Non-Oxidizing Metallic Floor Hardener: Packaged dry, combination of materials consisting of portland cement, non-rusting aggregate and plasticizing admixtures.

1. "Diamond Plate," the Euclid Chemical Company
2. "Lumiplate," BASF Building Systems

I. Liquid Membrane-Forming Curing and Curing and Sealing Compounds:

1. Water-Based Dissipating Resin Type Curing Compound: Curing Compound shall be a dissipating resin type, which chemically breaks down after approximately 4 weeks. Membrane forming compound shall meet ASTM C 309, Types 1 or 1D, Class B with VOC content less than 350 g/L.

    a. Products: Subject to compliance with requirements, provide one of the following:

        1) "Kurez DR Vox", the Euclid Chemical Company
        2) "L&M Cure R", L&M Construction Chemicals
        3) "Hydro Cure 309", Unitex
        4) "Sealtight 1100-Clear", W. R. Meadows
        5) "US Spec Maxcure Resin Clear", US Mix Co.

    b. Submit manufacturer's certification that product conforms to the requirements specified and is compatible with any covering or surface treatments to be applied. Submit any instructions that must be followed prior to any subsequent surface treatments and floor coverings.

2. High Solids, Water-Based Acrylic Curing and Sealing Compound with Moderate Yellowing Characteristics: Water-Based membrane-forming curing and sealing compound conforming to ASTM C 1315, Type 1, Class B, classified as low odor with a VOC content less than 350 g/L. Product shall provide a maximum moisture loss of 0.030 Kg/m^2 in 72 hours when applied at a coverage rate of 300 sf/gallon. Do not apply to surfaces that are to receive subsequent cementitious toppings, sealers, hardeners, ceramic tile, resilient flooring, vinyl-backed carpet, wood, or terrazzo, epoxy overlays or adhesives, or other coating or finishing products.

    a. Products: Subject to compliance with above requirements, provide one of the following products or equivalent products:

        1) "Safe Cure and Seal (J-19)", Dayton Superior Corp.
        2) "Super Aqua-Cure VOX", the Euclid Chemical Company
        3) "Dress & Seal, 30 WB", L & M Construction Chemicals, Inc.
        4) "Masterkure 200W", BASF Building Systems "Hydro 18", Unitex

b. Submit manufacturer's certification that product conforms to the requirements specified and is compatible with any covering or surface treatments to be applied. Submit any instructions that must be followed prior to any subsequent surface treatments.

3. High Solids, Water-Based, Non-Yellowing Curing and Sealing Compound: Water based membrane-forming curing and sealing compound, acrylic type, complying with ASTM C 1315, Type 1, Class A classified as low odor with a VOC content less than 350 g/L. Do not apply to surfaces that are to receive subsequent cementitious toppings, sealers, hardeners, ceramic tile resilient flooring, vinyl- backed carpet, wood, terrazzo, epoxy overlays or adhesives, or other coating or finishing products.

   a. Products: Subject to compliance with requirements, provide one of the following:

      1) "Super Diamond Clear Vox", the Euclid Chemical Company
      2) "Lumiseal 30 WB", L&M Construction Chemicals
      3) “Kure 1315”, BASF Building Systems
      4) “Hydro Seal 30”, Unitex
      5) “Vocomp 30”, W. R. Meadows
      6) “US Spec Radiance UV-25”, US Mix Co.

   b. Submit manufacturer's certification that product conforms to the requirements specified and is compatible with any covering or surface treatments to be applied. Submit any instructions that must be followed prior to any subsequent surface treatments.

J. Evaporation Control: Monomolecular film forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss in hot weather conditions.

   1. Products: Subject to compliance with requirements, provide one of the following:

      a. "Eucobar”, the Euclid Chemical Company
      b. "E-Con”, L & M Construction Chemical, Inc.
      c. "Confilm”, BASF Building Systems
      d. "Sure Film (J-74)", Dayton Superior
      e. "SikaFilm", Sika Chemical Co.
      f. “Pro-Film”, Unitex “Sealtight Evapre”, W. R. Meadows
      g. “US Spec Monofilm ER”, US Mix Co.

   2. Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all coverings and surface treatments to be applied. Submit any instructions that must be followed prior to any subsequent surface treatments.

K. Chemical Curing/Floor Hardener Compound: Sodium silicate based compound which reacts with concrete constituents to harden the surface, resulting in a surface having a maximum abrasion coefficient of 0.25 cm3/cm2 when tested in accordance with ASTM C 418.

1. Products: Subject to compliance with requirements, provide one of the following:

    a. "Eucosil," the Euclid Chemical Company
    b. "Sonosil," BASF Building Systems
    c. "Day-Chem S.1-Cure (J-13), Dayton Superior
    d. "Chem Hard;" L & M Construction Co.
    e. “Uni Cure HD”, Unitex
    f. “Med-Cure”, W. R. Meadows
    g. “US Spec Permasil”, US Mix Co.

2. Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all coverings and surface treatments to be applied. Submit any instructions that must be followed prior to any subsequent surface treatments.

L. Chemical Hardener: Colorless aqueous solution containing a blend of magnesium fluosilicate and zinc fluosilicate combined with a wetting agent, containing not less than 2 lbs. of fluosilicates per gal.

1. Products: Subject to compliance with requirements, provide one of the following:

    a. "Surfhard”, the Euclid Chemical Company
    b. "Lapidolith”, BASF Building Systems
    c. "Day-Chem Hardener (J-15)," Dayton Superior
    d. “Fluohard”, L & M Construction Chemical, Inc.
    e. “Penalith”, W. R. Meadows

2. Submit manufacturer's certification that product conforms to the requirements specified and is compatible with all coverings or surface treatments to be received. Submit any instructions that must be followed prior to any subsequent surface treatments.

M. Liquid sealer/densifier: High performance, deeply penetrating concrete densifier that is an odorless, colorless, VOC-compliant, non-yellowing siliconate-based solution containing a minimum solids content of 20%, 50% of which is siliconate.

1. Products: Subject to compliance with requirements, provide one of the following:

    a. “Euco Diamond Hard”, the Euclid Chemical Company
    b. ”Seal Hard”, L & M Construction Chemical, Inc.
    c. “Luqui-Hard”, W.R. Meadows

N. Water and Chloride Ion Repelling Penetrating Sealer: Clear, solvent based silane or siloxane penetrating sealer which reacts chemically with the concrete surface to function as a Chloride Ion screen with a minimum 90% factor when tested in accordance with NCHRP #244, Series II, 100% solids, and applied in accordance with the manufacturer's recommendation.

1. Products: Subject to compliance with requirements, provide one of the following:

    a. “Hydrozo 100”, BASF Building Systems.
    b. “Iso-flex 618-100 CRS”, Lymtal International, Inc.
    c. “Protectosil Chem-Trete BSM-400”, Evonik Industries

O. Water and Chloride Ion Repelling Penetrating Sealer: Clear, solvent free, silane penetrating sealer which reacts chemically with the concrete surface to function as a Chloride Ion screen with a minimum 83% factor when tested in accordance with NCHRP #244, Series II and applied in accordance with the manufacturer's recommendation.

1. Products: Subject to compliance with requirements, provide one of the following:

    a. 40% solids:

        1) "Enviroseal 40" –BASF Building Systems
        2) “Iso-flex 618-40 WB”, Lymtal International, Inc.

    b. 100% solids:

        1) “Protectosil BH-N”, Evonik Industries

P. Bonding Compound: Polyvinyl acetate or acrylic base, for use in cosmetic and/or nonstructural repairs.

1. Products: Subject to compliance with requirements, provide one of the following:

    a. Acrylic or Styrene Butadiene:

        1) "Day-Chem Ad Bond (J-40)”, Dayton Superior
        2) "SBR Latex”, the Euclid Chemical Company
        3) "Daraweld C”, W. R. Grace
        4) "Acrylic Additive" BASF Building Systems
        5) "SikaLatex", Sika Chemical Co.
        6) “Intralok”, W. R. Meadows
        7) “US Spec Acrylcoat”, US Mix Co.
        8) “Akkro 7-T”, the Euclid Chemical Company

    b. Polyvinyl Acetate (Interior Use Only):

        1) "Tammseld”, the Euclid Chemical Company
        2) "Everweld”, L & M Construction Chemicals, Inc.
        3) "Superior Concrete Bonder (J-41),"Dayton Superior
        4) “US Spec Bondcoat”, US Mix Co.

Q. Epoxy Products: Two component material suitable for use on dry or damp surface, complying with ASTM C 881.

1. Products for Crack Repair:

    a. "Sikadur 35 Hi Mod LV", Sika Chemical Company – injection type
    b. "Sikadur 52", Sika Chemical Company – injection type
    c. "Sikadur 55 SLV", Sika Chemical Company – gravity feed
    d. "Eucopoxy Injection Resin," the Euclid Chemical Company
    e. "Sure-Inject (J-56)," Dayton Superior
    f. "Epofil SLV", BASF Building Systems
    g. "ETI-LV" or "ETI-GV", Simpson Strong-Tie Co., Inc. – injection type
    h. "Pro-Poxy 100 LV" or "Pro-Poxy 50", Unitex
    i. "Crackbond", U.S. Anchor Corp.
    j. "Rezi-Weld LV", W. R. Meadows
    k. "US Spec Maxibond" US Mix Co. – injection or gravity feed
    l. "US Spec Eposeal LVS", US Mix Co. – gravity feed
    m. "Duralcrete LV", the Euclid Chemical Company

2. Products for Epoxy Mortar Patches:

    a. "Sikadur Lo-Mod LV", Sika Chemical Corporation
    b. "Duracrete", the Euclid Chemical Company
    c. "Sure Grip Epoxy Grout (J-54)," Dayton-Superior
    d. "Epofil", BASF Building Systems
    e. "Pro-Poxy 2500", Unitex
    f. "Rezi-Weld 1000", W. R. Meadows
    g. "US Spec EPM 3000", US Mix Co.
    h. "Duralcrete LV", the Euclid Chemical Company

3. Products for Epoxying steel plates to concrete: conform to ASTM C 881-90, Type IV, Grade 3, Class A, B, & C except gel times.

    a. "Sikadur 31 Hi-Mod Gel", Sika Corporation
    b. "Sure Anchor I (J-S1),"Dayton Superior
    c. "Epo Gel" or "Rapid Gel", BASF Building Systems
    d. "Pro-Poxy 300", Unitex
    e. "US Spec Gelbond NS" US Mix Co.
    f. "Duralcrete Gel", the Euclid Chemical Company

4. Products for Adhesive Anchors or Reinforcing Steel in Normal weight Concrete: Product that conforms to ASTM C 881-02, Type IV, Grade 3, Class A, B, & C except gel times, and that is dispensed from a two-component cartridge system through a mixing nozzle that thoroughly mixes the two components as it is injected into the hole.

    a. ICC Approval: Only anchors evaluated by the ICC Evaluation Service, Inc. (ICC-ES) with a published, currently valid, Evaluation Report showing it as having passed Acceptance Criteria 308 shall be approved for use.

b. Consult with the manufacturer for the minimum temperature of the concrete substrate allowed.
c. All anchors installed upwardly inclined require continuous inspection unless an exception to the continuous special inspection for upwardly inclined installation is noted on the drawings.
d. Normal weight Concrete:

1) “HIT-RE 500-SD”, Hilti Fastening Systems (periodic inspection unless anchors are installed upwardly inclined)
2) “SET-XP” Adhesive”, Simpson Strong-tie (periodic inspection unless higher factors are used in design requiring continuous inspection as noted on the drawings or anchors are installed upwardly inclined)
3) “PE 1000+”, Powers Fasteners, Inc. (periodic inspection unless anchors are installed upwardly inclined)
4) “HIT-HY 150 MAX-SD”, Hilti Fastening Systems (periodic inspection unless anchors are installed upwardly inclined)

e. Lightweight Concrete:

1) No approved products

f. These products may not be used in concrete cast over corrugated deck.
g. Install only anchors identified on the drawings by manufacturer and product. Substitutions using products approved by this Specification may be permitted provided complete design calculations, as required by and in accordance with the proposed product’s current and valid ICC Evaluation Service Report (ESR) and ACI 318 Appendix D, are signed and sealed by a professional engineer licensed in the state where the project is located and furnished to the Engineer for review and approval prior to commencement of work. The contractor shall request design criteria for all conditions where a product substitution is considered. Failure to obtain approval for an anchor substitution may result in the request by the Engineer to remove installed anchors and replace with the product specified on the drawings at the Contractor’s expense.

R. Self-Leveling Mortars, Underlayment Compound: Free flowing, self-leveling, pumpable cementitious base compound. Follow manufacturer’s instruction regarding the use of a bonding agent.

1. Products: Unless specified otherwise, provide one of the following:

a. "Sonoflow", BASF Building Systems
b. "Sikatop 111”, Sika Chemical Co.
c. "Flo-Top" or "Super Flo-Top”, the Euclid Chemical Company
d. "Levelayer I", Dayton Superior
e. “US Spec Self-leveling Underlayment”, US Mix Co.
f. “Level Magic”, the Euclid Chemical Company

S. Polymer Patching Mortar: Polymer and microsilica modified cementitious based compounds.

1. Products:

a. Horizontal Application

1) "Thin Top Supreme, Concrete Top Supreme," the Euclid Chemical Company
2) "Sikatop 121 or 122," Sika Chemical
3) "Emaco R310 CI," BASF Building Systems
4) “Sonopatch 100 or 200”, BASF Building Systems
5) “US Spec H2 or NuTop”, US Mix Co.
6) “Speed Crete PM”, the Euclid Chemical Company

b. Upwardly Inclined Application

1) "Verticoat/Verticoat Supreme," the Euclid Chemical Company
2) "Sikatop 123," Sika Chemical
3) "Emaco R350 CI," BASF Building Systems
4) “Sonopatch 200”, BASF Building Systems
5) “US Spec V/O Patch”, US Mix Co.
6) “Speed Crete PM”, the Euclid Chemical Company

T. High Strength Flowing Repair Mortar: For forming and pouring structural members, or large horizontal repairs, provide flowable one-part, high strength microsilica polymer modified repair mortar with 3/8" aggregate. The product shall achieve 9000 psi @ 28- days at a 9-inch slump.

1. Products:

a. “Road Patch”, BASF Building Systems
b. “US Spec STR Mortar”, US Mix Co.
c. “Eucocrete”, the Euclid Chemical Company
d. “Form and Pour”, the Euclid Chemical Company

U. Anti-Corrosive Epoxy/Cementitious Adhesive: Water-based epoxy/cementitious compound for adhesion and corrosion protection or reinforcing members (20 hour maximum open time).

1. Products:

a. "Duralprep A.C", the Euclid Chemical Company
b. "Armatec 110," Sika Chemical Co.
c. “Sonoprep Plus”, BASF Building Systems

V. Expansion and Undercut Anchors in Concrete:

1. ICC Approval: Only anchors evaluated by the ICC Evaluation Service, Inc. (ICC- ES) with a published, currently valid, Evaluation Report showing it as having passed Acceptance Criteria 193 and approval for use in cracked concrete and resisting wind and seismic loads shall be approved for use.
2. Type: All expansion and undercut anchors in concrete shall be only wedge type expansion, sleeve-type expansion, or undercut type anchors.
3. Interior Use: All anchors, nuts and washers for use in interior conditioned environments free of potential moisture shall be manufactured from carbon steel zinc plated in accordance with Federal Specification QQ-Z-325C, Type II, Class 3.
4. Exterior or Exposed Use: All anchors, nuts and washers for use in exposed or potentially wet environments, or for attachment of exterior cladding materials shall be galvanized or stainless steel. Galvanized anchors, nuts and washers shall conform to ASTM A 153. Stainless steel anchors shall be manufactured from 300 series stainless steel and nuts and washers from 300 series or Type 18-8 stainless steel.
5. Nuts and Washers: Nuts and washers shall be furnished from the manufacturer and used with the anchors.
6. Acceptable Products and Manufacturers – Normal and Lightweight Concrete:

    a. “Kwik Bolt TZ”, Hilti Fastening Systems (periodic inspection)
    b. “HDA Undercut Anchor” Hilti Fastening Systems (continuous inspection)
    c. “HSL-3 Heavy Duty Sleeve Anchor”, Hilti Fastening Systems (continuous inspection)
    d. “Strong-Bolt Wedge Anchor”, Simpson Strong-Tie, Co., Inc. (continuous inspection)
    e. “Red Head Trubolt + Wedge Anchor”, TW Red Head (periodic inspection)
    f. “DUC Undercut Anchor”, USP Structural Connectors (continuous inspection)
    g. “Power Stud + SD1”, Powers Fasteners, Inc (periodic inspection)
    h. “Power Stud + SD2”, Powers Fasteners, Inc (periodic inspection)
    i. “SRS TZ Carbon Steel Anchor”, MKT Metal-Kunststoff-Technik (continuous inspection)

7. Acceptable Products and Manufacturers – Normal and Light Weight Concrete on Corrugated Deck:

    a. “Kwik Bolt TZ”, Hilti Fastening System (periodic inspection)
    b. “Strong-Bolt Wedge-Anchor”, Simpson Strong-Tie, Co, Inc. (continuous inspection)
    c. “Power Stud + SD2”, Powers Fasteners, Inc. (periodic inspection)

8. Install only anchors identified on the drawings by manufacturer and product. Substitutions using products approved by this Specification may be permitted provided complete design calculations, as required by and in accordance with the proposed product’s current and valid ICC Evaluation Service Report (ESR) and ACI 318 Appendix D, are signed and sealed by a professional engineer licensed in the state where the project is located and furnished to the Engineer for review and approval prior to commencement of work. The contractor shall request design criteria for all conditions where a product substitution is considered. Failure to obtain approval for an anchor substitution may result in the request by the Engineer to remove installed

anchors and replace with the product specified on the drawings at the Contractor's expense.

W. Screw and Insert Anchors in Concrete

1. Approvals: Only anchors evaluated by the ICC Evaluation Service, Inc. (ICC-ES) with a published, currently valid, Evaluation Report showing it as having passed Acceptance Criteria 193 and approved for use in cracked concrete and resisting wind and seismic loads shall be approved for use.
2. Interior Use: All screw anchors for use in interior conditioned environments free of potential moisture shall be manufactured from carbon steel zinc plated in accordance with Federal Specification QQ-Z-325C, Type II, Class 3.
3. Exterior or Exposed Use: All screw anchors for use in exposed or potentially wet environments, or for attachment of exterior cladding materials shall be galvanized or stainless steel. Galvanized anchors shall conform to ASTM A 153. Stainless steel anchors shall be manufactured from 300 series stainless steel.
4. Acceptable Products and Manufacturers – All Conditions:

    a. "Titen HD", Simpson Strong-Tie Co., Inc (continuous inspection)
    b. "Snake+Anchor" Powers Fasteners, Inc. (periodic inspection)
    c. "Wedge-Bolt+", Powers Fasteners, Inc. (greater than ¼ in. diameter) (periodic inspection)

5. Install only anchors identified on the drawings by manufacturer and product. Substitutions using products approved by this Specification may be permitted provided complete design calculations, as required by and in accordance with the proposed product's current and valid ICC Evaluation Service Report (ESR) and ACI 318 Appendix D, are signed and sealed by a professional engineer licensed in the state of California and furnished to the Engineer for review and approval prior to commencement of work. The contractor shall request design criteria for all conditions where a product substitution is considered. Failure to obtain approval for an anchor substitution may result in the request by the Engineer to remove installed anchors and replace with the product specified on the drawings at the Contractor's expense.

X. Threaded Rods Chemically Anchored in Concrete

1. Type: Threaded rods installed in holes using a chemical anchoring process shall have a 45º chiseled end on one end.
2. Interior and Exterior Application: Meet the requirements of ASTM A 153 galvanized steel, or F 593, Group 1 or 2, condition CW stainless steel.

Y. Anchor Rods:

1. All anchor rods shall conform to the ASTM designation and shall be of the yield strength as specified below as appropriate for the types and at the locations as specified on the drawings:

    a. ASTM F 1554, Grade 36 (1/4 inch to 4 inches in diameter).

b. ASTM F 1554, Grade 55 (1/4 inch to 4 inches in diameter). (Also comply with Supplementary Requirement S1 of ASTM F 1554)
c. ASTM F 1554, Grade 105 (1/4 inch to 3 inches in diameter.
d. ASTM A 588 (corrosion resistant).
e. ASTM A 354 Grade BD, 130 ksi (to 2 ½ inches in diameter).
f. ASTM A 354 Grade BD, 115 ksi (greater than 2 ½ inches to 4 inches in diameter).
g. ASTM A 354 Grade BC, 109 ksi (to 2 ½ inches in diameter).
h. ASTM A 354 Grade BC, 99 ksi (greater than 2 ½ inches to 4 inches in diameter).

2. Anchor rods used with ASTM A 588 base plates shall be threaded round stock conforming to ASTM A 588, grade 50.
3. Anchor rods used with ASTM A 588 base plates shall be threaded round stock conforming to ASTM A 588, grade 50.
4. Anchor rods used with galvanized base plates shall be galvanized.
5. Nuts: All nuts with anchor rods shall be heavy hex head conforming to ASTM A 563.
6. Washers: Unless noted otherwise on the drawings, washer size and thickness for all anchor rods shall conform to Table 14-2 of AISC “Steel Construction Manual” with holes 1/16” greater than the anchor rod diameter. Washers shall conform to ASTM A 36 steel.

Z. Non-Shrink Grout:

1. Type: Grout for base plates, bearing plates and grouting under precast or tilt-up wall panels shall be a non-metallic, shrinkage resistant, premixed, non-corrosive, non-staining product containing Portland cement, silica sands, shrinkage compensating agents and fluidity improving compounds.
2. Specifications: Non-shrink grout shall conform to ASTM C 1107.
3. Compressive Strength: Provide the minimum strength as shown below as determined by grout cube tests at 28 days:

   a. 6,000 PSI for supporting concrete 3000 psi and less.
   b. 8,000 PSI for supporting concrete greater than 3000 psi and less than or equal to 4000 psi.
   c. Unless noted otherwise on the drawings, grout strength on supporting concrete greater than 4000 psi shall be 8000 psi.

4. Products: Acceptable non-shrink grouts are listed below:

   a. "Crystex”, L & M Construction Chemicals, Inc.
   b. "Masterflow 713 Plus”, BASF Building Systems
   c. "Set Grout," BASF Building Systems.
   d. "Five Star Grout”, U. S. Grout Corp.
   e. "Sonogrout 10K”, BASF Building Systems
   f. "NS Grout”, the Euclid Chemical Company
   g. "Sure-Grip High Performance Grout”, Dayton Superior Corp.
   h. "CG 200 PC", Hilti, Inc.
   i. “CG-86 Grout”, W. R. Meadows

j. “US Spec GP Grout”, US Mix Co.

5. High Flow, Non-Metallic Grout: Use high-flow grout where high fluidity and/or increased placing time is required and for base plates that are larger than 10 square feet. The factory pre-mixed grout shall conform to ASTM C 1107, "Standard Specification for Packages Dry, Hydraulic-Cement Grout (Non- Shrink)." In addition, the grout manufacturer shall furnish test data from an independent laboratory indicating that the grout when placed at a fluid consistency shall achieve 95% bearing under a 18" x 36" base plate. Provide one of the following:

a. "Hi-Flow Grout," the Euclid Chemical Company
b. "Masterflow 928," BASF Building Systems.
c. "14K Hy Flow," BASF Building Systems
d. “588 Grout”, W. R. Meadows
e. “US Spec MP Grout”, US Mix Co.

AA. Frictionless Bearing Pads:

1. Types:

a. Frictionless bearing pads shall be a nominal 3/32" glass filled virgin Tetrafluoroethylene (TFE) conforming to ASTM D 4745 with a 10 gauge A36 steel backing plate factory bonded with a tested epoxy performed in a heated bonding process under a controlled pressure. Provide one sliding pad tack welded to the lower supporting surface and one tack welded to the upper surface. Unless detailed otherwise on the drawings, the upper element shall be larger than the lower element on all sides by the amount of the expansion joint width shown on the drawings.
b. The lower frictionless bearing pads shall be a nominal 1/16" glass filled virgin Tetrafluoroethylene (TFE) conforming to ASTM D 4745 with a 10 gauge A36 steel backing plate factory bonded with a tested epoxy performed in a heated bonding process under a controlled pressure. The upper frictionless bearing pad shall be a 20 gauge stainless steel sheet (RMS<20) resistance welded to a 10 gauge A36 steel backing plate. The lower sliding pad shall be tack welded to the lower supporting surface and the upper pad tack welded to the upper surface. Unless detailed otherwise on the drawings, the upper element shall be larger than the lower element on all sides by the amount of the expansion joint width shown on the drawings.

2. Design: The pad size and design shall conform to 1998 AASHTO "LRFD Bridge Design Specifications," Section 14. Design bearing pressure under total service load shall not exceed the manufacturer’s recommendation. If Neoprene is used the compressive load shall be limited to 800 psi.
3. Corrosion Resistance: Frictionless bearing pads for exterior or exposed usage shall be manufactured for use in an exposed climate of heat, cold, moisture, and ultraviolet rays. All backing steel in an exposed or open environment shall be shop painted with a zinc rich paint or field painted with "ZRC Cold Galvanizing Compound".
4. Acceptable Manufacturers: The following manufacturers are acceptable:

a. Con-Serv, Inc., Georgetown, SC
b. Seismic Energy Co., Athens, TX

5. Other manufacturers will be acceptable only with Engineer approval prior to submit material.

BB. Steel Fibers: Provide deformed cold-drawn wire or modified cold-drawn steel fibers meeting the requirements of ASTM A 820, types I or V, and that are listed as an acceptable product for use in the D900 series of UL Fire Rating Assemblies. The fibers shall have a minimum tensile strength of 145,000 psi when tested in accordance with ASTM A 370. The fibers shall have a minimum aspect ratio of 48. Acceptable products include:

1. "Dramix RC-65/60-BN" (Type 1),"Dramix RL45/50BN" (Type I), Dramix ZL60/1.05" (Type 1), Bekaert Corp.
2. "Novocon 1050" (Type I), Novocon 1050 HE" (Type I), or "Novomesh 850" (Type I), Propex Concrete Systems, Corp.
3. "MasterFiber FF or FS" series, BASF Construction Chemicals

CC. Synthetic Micro Fiber Reinforcement: Collated, fibrillated, or monofilament polypropylene, cellulose, or multi-filament nylon fibers conforming to ASTM C 1116, Type III or Type IV.

1. Products:

a. "Fiberstrand", the Euclid Chemical Company
b. "Econo-Mono" or "Econo-Net", Forta Corp.
c. "Fibermesh 300", Propex Concrete Systems, Corp.
d. "Grace Microfibers" or "Grace Fibers", W.R. Grace & Co.
e. "Caprolan-RC", Honeywell Nylon Inc.
f. "Nycon RC", Nycon, Inc.
g. "UltraFiber 500", Buckeye Technologies, Inc.
h. "MasterFiber M or F" series, BASF Construction Chemicals

DD. Synthetic Macro Fiber Reinforcement: Monofilament polypropylene/polyethylene fibers conforming to ASTM C 1116, Type III having an aspect ratio between 50 and 90 and a minimum tensile strength of 90 ksi. The fiber lengths shall be between 1.5 and 2 inches long.

1. Products:

a. "Tuf-Strand S.F.", the Euclid Chemical Company
b. "Forta-Ferro", Forta Corp.
c. "Strux 90/40", W.R. Grace
d. "Fibermesh 650", Propex Concrete Systems, Corp.
e. "Synmix", Bekaert Corp.
f. "MasterFiber MAC" series, BASF Construction Chemicals

EE. Reglets: Where resilient or elastomeric sheet flashing or bituminous membranes are terminated in reglets, provide reglets of not less than 26 gage galvanized sheet steel. Fill reglet or cover face opening to prevent intrusion of concrete or debris.

FF. Carton Forms: Carton forms shall be manufactured using corrugated paper material with a moisture resistant exterior surface and specifically designed for foundation support. Carton forms shall be designed to support the wet weight of the concrete that is shown by the details to be poured on top of the form but not less than 600 psf. Refer to the Reinforced Concrete General Notes for the restriction on horizontal construction joints. The forms shall be designed in such a way that the bottom of the form will collapse when acted upon by upward movement of the soil.

1. Form Configuration: Carton forms shall be of a vertical cellular configuration only, except as permitted by item 4 below, and shall be rectangular as shown on the details. The depth of the carton forms is shown on the details. Forms shall be manufactured to fit snugly against round piers and shall be baffled in such a way as to prevent concrete from flowing back into the form during the concrete pour. The Contractor shall use expandable foam to fill all gaps and holes between carton forms and at intersections with foundations.
2. Carton forms shall be kept dry and protected until concrete is poured. Wet, compressed, or deteriorated carton forms shall not be used. Do not wrap or cover carton forms with polyethylene sheets or permanent waterproof cover as that will prevent proper deterioration of the forms.
3. Technical data and brochures on carton forms shall be submitted for Engineer's review.
4. Other types of forms using different types of paper and different configurations will be accepted if it can be shown by independent tests that the form will properly function and will deteriorate due to moisture in an appropriate time frame.
5. For slab conditions, cover carton forms with a 1/4 inch masonite protection cover board to prevent puncture and other damage during construction.
6. Products: Subject to requirements, acceptable manufacturers include but are not limited to the following:

    a. SureVoid Products, Inc., Englewood, CO

GG. Contraction and Construction Joint-Filler Material for Slabs-on-Grade: Provide a 2-component semi-rigid, 100% solids epoxy having a minimum shore A hardness of 80 when tested in accordance with ASTM D 2240 and an elongation below 25% when measured in accordance with ASTM D 638.

1. Products: Subject to compliance with requirements, provide one of the following:

    a. "Euco 700", the Euclid Chemical Company
    b. "Spec-Joint CJ", Conspec Marketing and Manufacturing Co., Inc.
    c. "Masterfill 300 I", BASF Building Systems
    d. "MM-80", Metzger/McGuire Co.
    e. "Rezi-Weld Flex", W. R. Meadows
    f. "US Spec SR-50 EJF", US Mix Co.

HH. Bond breaker for Construction Joints in Slabs-on-Grade: A dissipating bond breaking compound containing no silicones, resins, or waxes, and that conforms to ASTM C 309.

1. Products: Subject to compliance with requirements, acceptable manufacturers include the following:

a. “Sure-Lift”, Dayton Superior Corporation, Inc.
b. “Tilt-Eez”, Conspec Marketing and Manufacturing Co., Inc.

II. Joint-Filler Strips for Isolation Joints in Slabs-on-Grade: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork. In post-tensioned slabs or shrinkage-compensated slabs, use compressible isolation-joint filler material that does not develop a stress greater than 25 psi at 50% strain when tested in accordance with ASTM D 1621 or D 3575.

JJ. Rigid-Cellular-Polystyrene Boards use as Fill under Topping Slabs or Slabs-on-Grade: Provide rigid, expanded (EPS) or extruded (XPS) cellular polystyrene boards that conform to ASTM D 6817 or ASTM C 578 with a minimum density of [Polystyrene Density] kg/m^3.

1. Products: Subject to compliance with requirements, acceptable manufacturers include the following:

a. “STYROFOAM Brand” Dow Chemical Company
b. “R-Control EPS Geofoam” - All grades, R-Control Building Systems
c. “EPS Geofoam”, Carpenter Co.
d. “Knauf Geofoam”, Knauf Polystyrene
e. “Insulfill”, Premier Industries

2.3 PROPORTIONING AND DESIGN OF CONCRETE MIXES

A. The Contractor shall submit concrete mix designs and the Concrete Mix Design Submittal Form located at the end of this specification section for each class of concrete indicated on the structural drawings and in the Specifications for approval by the Engineer and Owner's Testing Laboratory at least 15 working days prior to the start of construction. If required, the Contractor shall engage the services of an independent Testing Laboratory to assist in preparing the mix design. The Contractor shall not begin work with a particular mix until that mix design has been approved.

B. Mix Design Conference: See the PREINSTALLATION CONFERENCES section of this specification.

C. The Contractor, acting in conjunction with his Concrete Supplier and his Testing Laboratory, shall submit in writing, with his mix designs, the method used to select mix proportions. Either of the following methods, as outlined in ACI 301, may be used.

1. Field Experience Method
2. Laboratory Trial Mixture Method

D. Required types of concrete and compressive strengths shall be as indicated on the Structural Drawings.

E. All mix designs shall state the following information:

1. Mix design number or code designation by which the Contractor shall order the concrete from the Supplier.
2. Structural slab or member for which the concrete is designed (i.e., columns, shear walls, footings, slab on grade, etc.).
3. Wet and dry unit weight.
4. 28-day compressive strength.
5. Aggregate type, source, size, gradation, fineness modulus.
6. Cement type and brand.
7. Fly ash or other pozzolan type and brand (if any).
8. Admixtures including air entrainment, water reducers, high-range water reducers, accelerators, and retarders.
9. Design Slump or Slump/Flow.
10. Proportions of each material used.
11. Water/cementitious ratio and maximum allowable water content.
12. Method by which the concrete is intended to be placed (bucket, chute, or pump).
13. Required average strength qualification calculations per ACI 301 4.2.3.3a and 4.2.3.3b. Submit separate qualification calculations for each production facility that will supply concrete to the project.
14. Documentation of Average strength (trial mix data or field test data) per ACI 301: When field test data is used to qualify average strength, submit separate documentation for each production facility that will supply concrete to the project.
15. Field test data submitted for qualification of average strength under ACI 301 shall include copies of the Concrete Testing Labratory's reports from which the data was compiled.
16. All other information requested in the Concrete Mix Design Submittal Form located at the end of this specification section.

F. Low Alkali Concrete: For concrete identified on the drawings as exposed to exposure classes C1 and C2, the total alkali contribution from cementitious materials in the concrete mix shall not exceed 4.0 pounds per cubic yd of concrete unless the aggregate used is certified to contain no deleterious materials that react with alkalis in the concrete mix as defined in ASTM C 33. This requirement may be met by the use of low-alkali cement.

G. Supplementary Cementitious Materials: Fly ash and/or ground granulated blast-furnace slag replacement of Portland cement shall be within percentage replacement levels listed on the drawings unless noted otherwise. Every effort should be made to reduce the amount of cement to the minimum practical amount, and still achieve performance requirements contained in the Contract Documents.

1. Cement replacement shall not exceed a percentage level that has been shown by experience on other projects to exhibit satisfactory performance using materials from identical sources as proposed for this project. As an alternate, trial concrete batches

can be performed to identify mix designs that maximize cement replacement while meeting strength requirements per ACI 318 Section 5.3 and finishability criteria.

2. The use of fly ash or slag in architecturally exposed structural concrete shall be coordinated with the Architect, Engineer of Record, and Contractor.
3. If fly ash is used, it must be at a minimum replacement percentage of 15%.
4. Overall replacement percentages with combined fly ash and slag shall not exceed the maximum identified with slag or be less than the minimum identified with fly ash for each type of element. In addition, the replacement percentage of fly ash within the combined mix shall not exceed the maximum identified with fly ash alone.
5. Replacement percentages exceeding the maximum may be permitted at the discretion of the Architect, Engineer of Record, and Contractor.
6. For concrete identified on the drawings as being subject to Exposure Class F3, the maximum amount of supplementary cementitious materials shall not exceed the limits noted in table 4.4.2 of ACI 318-08
7. Except for Mass Concrete, the Contractor may submit for approval a revised mix design with lower supplementary cementitious material percentages than herein specified should finishability or other issues arise due to changing weather conditions.

H. Aggregate: Comply with the following special requirements:

1. For exposed concrete, provide aggregates from a single source.
2. For exposed surfaces subject to Exposure Class C1 or C2, do not use aggregates containing spalling-causing deleterious substances.
3. For slabs and other designated concrete, combined aggregate gradation shall be 8% - 18% for large top size aggregates (1 1/2 in.) or 8% - 22% for smaller top size aggregates (1 in. or 3/4 in.) retained on each sieve below the top size and above the No. 100. Deviations from this gradation may be allowed upon the approval of the Engineer subject to the following limitations:

    a. The percent retained on two adjacent sieves shall be not less than 5%.
    b. The percent retained on three adjacent sieves shall be not less than 8%
    c. If the percent retained on two adjacent sieves is less than 8%, the total percent retained on either of those sieves and the adjacent outside sieve shall be not less than 13 %

I. Admixtures:

1. Admixtures to be used in concrete shall be subject to the approval of the Engineer and Owner's Testing Laboratory and shall be used for the purpose intended by the manufacturer to produce concrete to meet the specified requirements.
2. Quantities of admixtures to be used shall be in strict accordance with the manufacturer’s instructions.
3. Air Content Requirements: For concrete subject to Exposure Class F1, F2 or F3 as noted on the drawings, use air-entrainment admixtures to provide concrete such that the air content at the point of delivery shall conform to the requirements of Table 4.4.1.of ACI 318-08 within plus or minus 1.5%. Required air content levels may be reduced by 1.0 percent for concrete strengths above 5000 psi.

a. Interior steel troweled surfaces subjected to vehicular traffic shall not have more than 3% entrained air.
b. Surfaces scheduled to receive hardeners shall not have more than 3% entrained air.
c. Air-entraining admixtures are not permitted in industrial slabs.

4. Self-consolidating Concrete (SCC): Use where shown on the drawings. Proportion SCC mix with specified admixtures to produce a concrete having properties that allow it to flow freely into all spaces of the formwork, through tight openings under its own weight and is resistant to segregation during transport and placing. Flowable spread shall be between 20 to 30 inches and shall show no evidence of segregation, mortar halo, or aggregate pile, although some slight bleeding is acceptable. Workability, pumpability, finish, and setting time of the proposed mix design must be demonstrated by a successful trial placement onsite.

J. Lightweight Structural Concrete:

1. Comply with the requirements of ACI 211 and ACI 301.
2. Provide concrete with a dry unit weight of not more than 116 pounds per cubic foot and not less than 110 pounds per cubic foot. Design mix to produce strengths as indicated on the drawings with a split cylinder strength factor (fct/(f'c)0.5) of not less than 5.7.

K. Adjustments of Concrete Mixes: Mix design adjustments may be requested by the Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant. Such mix design adjustments shall be provided at no additional cost to the Owner. Any adjustments in approved mix designs including changes in admixtures shall be submitted in writing with the specified Concrete Mix Design Submittal Form to the Engineer and Owner's Testing Laboratory for approval prior to field use.

L. Shrinkage: Concrete so identified on the drawings shall be proportioned for maximum allowable unit shrinkage as noted on the drawings, measured at 28 days after curing in lime water as determined by ASTM C 157 (using air storage). Submit results of test for each class of applicable concrete after every 500 CY placed.

M. Chloride Ion Content:

1. Unless noted otherwise, The maximum water soluble chloride ion concentration in hardened concrete measured at ages from 28 to 42 days contributed from all ingredients including water, aggregates, cementitious materials, and admixtures shall not exceed the limits specified in ACI 318-08 Table 4.3.1 depending on to which Corrosion Exposure Class (CO, C1 or C2) the concrete is subject as noted on the drawings. Water-soluble chloride ion tests shall conform to ASTM C 1218. One test shall be run for each class of concrete before the mix design submittal and each time a change is made to the mix design (such as change in aggregate type or source).
2. The chloride ion content in all concrete used for prestressed or post-

tensioned concrete shall not exceed .06 percent by weight of cement.

3. The Concrete Supplier shall certify on the Mix Design Submittal Form that the chloride ion content in all concrete mix designs used on the project does not exceed the limits stated above.

2.4 CONCRETE MIXING

A. Ready-Mix Concrete: Comply with requirements of ANSI/ASTM C 94, "Ready Mixed Concrete" and Testing Laboratory section of the specifications this specification .

PART 3 - EXECUTION

3.1 SLUMP LIMIT

A. The slump, as measured in the field where concrete cylinders are taken, shall be within plus or minus 1 inch of the design slump noted on the Mix Design Submittal Form. Self-consolidating concrete shall have a slump/flow of plus or minus 2 inches of the design slump noted on the Mix Design Submittal Form. Water may be added to the concrete in the field only to the extent that the prescribed water/cementitious ratio noted in the Mix Design Submittal Form is not exceeded.

3.2 VAPOR RETARDER INSTALLATION

A. Install vapor retarder in accordance with ASTM E 1643 and manufacturer’s instructions.

B. Lap all seams 6” and seal all joints in the field with the specified pressure sensitive tape. Heat-welded joints done in a shop prior to delivery is an acceptable method to minimize the number of field joints.

C. Seal all pipe penetrations through the vapor retarder with a boot made from the vapor retarder material and tape.

3.3 JOINTS IN CONCRETE

A. Construction Joints: Locate and install construction joints as indicated on the drawings or if not shown on drawings, located so as not to impair strength and appearance of the structure, as acceptable to Architect/Engineer.

1. Keyways: Provide continuous keyways with a depth of one tenth of the member thickness (1 1/2" minimum or as shown on the drawings) in construction joints only where shown on the drawings.
2. Joint Construction: Place construction joints in the center one third of suspended spans and grade beams and as shown on the drawings for slabs-on-grade and walls unless shown otherwise. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise shown on the drawings. Dowels that cross construction joints shall be supported

during concreting operations so as to remain parallel with the slab or wall surface and at right angles to the joint. Submit all construction joint locations as a shop drawing submittal.

3. Waterstops: Provide waterstops in construction joints as indicated on the Architectural and Structural Drawings. Install waterstops to form continuous diaphragm in each joint. Make provisions to support and protect exposed waterstops during progress of work. Fabricate field joints in waterstops in accordance with manufacturer's printed instructions.
4. Isolation Joints in Slabs-on-Ground: Construct isolation joints (without dowels) in slabs-on-ground at points of contact between slabs on ground and vertical surfaces only where specifically detailed on the drawings. Install joint-filler strips at joints where indicated. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated on the drawings. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together. Provide construction joints with dowels at all locations unless isolation joints are detailed.
5. Contraction joints in slabs-on-grade and unbonded topping slabs: Maximum joint spacing shall be 36 times the slab thickness or 20 feet, whichever is less and at a minimum on column lines unless otherwise noted on the drawings. Use one of the two following methods (sawed or formed) to create the joints. Do not use the formed joint in areas subject to vehicular traffic or in industrial slabs.

    a. Sawed Joints

        1) Primary Method: Early-Entry, dry-cut method, by Soff-Cut International, Corona, CA (800) 776-3328. Finisher must have documented successful experience in the use of this method prior to this project. Install cuts within 1 to 4 hours, depending on air temperature, after final finish as soon as the concrete surface is firm enough to not be torn or damaged by the blade at each saw cut location. Use 1/8 inch thick blade, cutting 1 1/4” inch into the slab.
        2) Optional Method (where Soff-Cut System method equipment is not available, subject to limitations): This method may not be used when there is no dowel passing through the contraction joint. Use a conventional saw to cut joints within 4 to 12 hours after finishing as soon as the concrete has hardened sufficiently to prevent aggregates from being dislodged by the saw. Complete cutting before shrinkage stresses become sufficient to produce cracking. Use 1/8 inch thick blade, cutting to a depth of 1/4 of the slab thickness but not less than 1 inch. Cut to a depth of 1/3 slab thickness for slabs reinforced with steel fibers.

    b. Formed Joints: Form contraction joints by inserting premolded plastic hardboard or fiberboard strip into fresh concrete until top surface of strip is flush with slab surface. The depth is to be 1/4 the slab thickness, but not less than 1 inch. Tool slab edges round on each side of insert. After concrete has cured, remove inserts and clean groove of loose debris.
    c. Joint Filler: Provide in both contraction and saw-cut construction joints when specified.

1) Remove dirt and debris from the joint by vacuuming immediately prior to filling the joint. Clean the joint of curing compounds and sealers.
2) Filler material shall be applied to the joints when the building is under permanent temperature control, but no less than 90 days after slab construction.
3) Follow the manufacturer's recommended procedure for installing filler material. The joint filler must be flush with the adjacent concrete. A concave profile on the top of the joint filler is unacceptable and will be grounds for removal and replacement.

d. The Contractor shall protect the joints from damage caused by wheeled traffic or other sources during construction until a joint-filler material (if specified) has been installed.

3.4 INSTALLATION OF EMBEDDED ITEMS

A. General: Set and build into work anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions and directions provided by suppliers of items to be attached thereto unless directed otherwise by these specifications. Install reglets to receive top edge of foundation sheet waterproofing where specified by the Architect, and to receive thru-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, relieving angles and other conditions.

B. Anchor Rods: Furnish anchor rods and other connectors required for securing structural steel to foundations and other in-place work as shown on the drawings. Furnish 1/8" minimum steel templates for presetting rods and other anchors to accurate locations as shown on the drawings in keeping with the tolerances noted in ACI 117 for embedded anchor rods. Steel template shall be clearly marked with the following information:

1. Grid line intersection where template is to be used.
2. Orientation of the plate relative to the building grid lines.
3. “Top of Template” elevation.
4. Anchor rod projection above top of template.

C. Edge Forms and Screed Strips for Slabs: Set edge forms or bulkheads and intermediate screed strips for slabs to obtain required elevations and contours in finished slab surface. Provide and secure units sufficiently strong to support types of screed strips by use of strike-off templates or accepted compacting type screeds.

D. Do not install sleeves and blockouts in concrete slabs, pier caps, footings or walls except where shown on the structural drawings or approved by the Architect and Engineer.

E. Securely fasten embedded plates, angles, anchor rods and other items to be built into the concrete to the formwork or hold in place with templates. Insertion of these items into concrete after casting is prohibited.

3.5 CONCRETE PLACEMENT

A. Pre-placement Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used.

B. Coordinate the installation of joint materials and vapor retarders with placement of forms and reinforcing steel.

C. Comply with ACI 301 and as herein specified.

1. Concrete Temperature: The maximum acceptable concrete temperature at the truck discharge point shall be 95 °F.
2. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation. Spread concrete using short-handled, square-ended shovels, or come-alongs.
3. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 24" and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
4. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use internal vibrators of the largest size and power that can properly be used in the work as described in the table entitled “Range of characteristics, performance, and applications of internal vibrators” found in ACI 301.
5. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6" into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.
6. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed. Place concrete for beams, girders, brackets, column capitals, haunches, and drop panels at the same time as concrete for slabs. Do not place concrete over columns and walls until concrete in columns and walls is no longer plastic and has been in place at least one hour.
7. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners of forms, eliminating air and stone pockets that may cause honeycombing, pitting, or planes of weakness.
8. Bring slab surfaces to correct level with straightedge and strikeoff. Use highway straightedges, bull floats or darbies to smooth surface free of humps or hollows

before excess moisture or bleedwater appears on the surface. Do not disturb slab surfaces prior to beginning finishing operations.

9. Maintain reinforcing in proper position during concrete placement operations.
10. Placing Concrete by Pump: If concrete is placed by using a pump, the grout used for pump priming must not become a part of the completed structure unless an engineered grout design mix and grout location are approved in advance by the Engineer.

3.6 FINISH OF FORMED SURFACES

A. General: Formed surfaces shall have the finishes as described below and as shown on the drawings after formwork is removed and repairs made.

B. Matching Sample Finish: Finish on surfaces at locations noted on drawings shall match sample panel furnished to Contractor. Reproduce finish on a 100 square foot mock-up panel in a location designated by Architect/Engineer. Protect mock-up from damage for the duration of project. Approval of mock-up by Engineer is required before proceeding with application of finish in project.

C. Definitions and Finish Requirements

1. Surface Finish 1.0 (SF-1.0):

    a. No formwork facing material is specified
    b. Patch voids larger than 1-1/2 in. wide or 1/2 in. deep
    c. Remove projections larger than 1.0 inch.
    d. Provide surface tolerance Class D as specified in ACI 117
    e. Tie holes need not be patched

2. Surface Finish 1.1 (SF-1.1):

    a. No formwork facing material is specified
    b. Patch voids larger than 1 in. wide or 1/2 in. deep
    c. Remove projections larger than 1/2 inch.
    d. Provide surface tolerance Class C as specified in ACI 117
    e. Tie holes need not be patched

3. Surface Finish 2.0 (SF-2.0):

    a. Provide specified formwork-facing material
    b. Patch voids larger than 3/4 in. wide or 1/2 in. deep
    c. Patch tie holes
    d. Remove projections larger than 1/4 in.
    e. Provide surface tolerance Class B as specified in ACI 117
    f. Provide mock-up of concrete surface appearance.

4. Surface Finish 2.1 (SF-2.1):

a. Provide specified formwork-facing material
b. Patch voids larger than 3/4 in. wide or 1/2 in. deep
c. Patch tie holes
d. Remove projections larger than 1/4 in.
e. Provide surface tolerance Class B as specified in ACI 117
f. Provide specified rubbed finish after formwork removal
g. Provide mock-up of concrete surface appearance.

5. Surface Finish 2.2 (SF-2.2):

a. Provide specified formwork-facing material
b. Patch voids larger than 3/4 in. wide or 1/2 in. deep
c. Patch tie holes
d. Remove projections larger than 1/4 in.
e. Provide surface tolerance Class B as specified in ACI 117

6. Surface Finish 2.3 (SF-2.3):

a. No formwork-facing material is specified
b. Patch voids larger than 3/4 in. wide or 1/2 in. deep
c. Patch tie holes
d. Remove projections larger than 1/4 in.
e. Provide surface tolerance Class B as specified in ACI 117

7. Surface Finish 3.0 (SF-3.0):

a. Provide specified formwork facing material
b. Patch voids larger than 3/4 in. wide or 1/2 in. deep
c. Remove projections larger than 1/8 inch.
d. Patch tie holes
e. Provide surface tolerance Class A as specified in ACI 117
f. Provide mock-up of concrete surface appearance.

8. Surface Finish 3.1 (SF-3.1):

a. Provide specified formwork-facing material
b. Patch voids larger than 3/4 in. wide or 1/2 in. deep
c. Patch tie holes
d. Remove projections larger than 1/8 in.
e. Provide surface tolerance Class A as specified in ACI 117
f. Provide specified rubbed finish after formwork removal
g. Provide mock-up of concrete surface appearance.

9. Surface Finish 3.2 (SF-3.2):

a. Provide specified formwork-facing material
b. Patch voids larger than 3/4 in. wide or 1/2 in. deep
c. Patch tie holes

d. Remove projections larger than 1/8 in.
e. Provide surface tolerance Class A as specified in ACI 117

10. Surface Finish 3.3 (SF-3.3):

a. No formwork-facing material is specified
b. Patch voids larger than 3/4 in. wide or 1/2 in. deep
c. Patch tie holes
d. Remove projections larger than 1/8 in.
e. Provide surface tolerance Class A as specified in ACI 117

D. Standard Finish: Provide SF-1.0 on all concrete surfaces not exposed to view in the final condition unless otherwise specified.

E. Exposed Finishes: Provide SF-2.0 on all concrete surfaces exposed to view in final condition unless otherwise specified.

F. Rubbed Finishes: Remove forms as early as permitted by these specifications and perform any necessary repairs and patches.

1. Smooth Rubbed Finish: Provide smooth rubbed finish to scheduled or specified concrete surfaces which have received smooth-form finish treatment, not later than one day after form removal. Moisten concrete surfaces and rub with carborundum brick or other abrasive until a uniform color and texture is produced. Do not apply cement grout other than that created by the rubbing process.

2. Grout Cleaned Finish: Provide grout cleaned finish to scheduled or specified concrete surfaces that have received smooth-form finish treatment.

a. Combine one part portland cement to 1-1/2 parts sand meeting the requirements of ASTM C144 and C404 by volume, and 50:50 mixture of acrylic or styrene butadiene based bonding admixture and water to consistency of thick paint. Proprietary additives may be used at Contractor's option. Blend standard portland cement and white portland cement, amounts determined by trial patches, so that final color of dry grout will closely match adjacent surfaces.
b. Thoroughly wet concrete surfaces and apply grout to coat surfaces and fill small holes. Remove excess grout by scraping and rubbing with clean burlap. Keep damp by fog spray for at least 36 hours after rubbing.

3. Cork-floated Finish: Provide cork-floated finish to scheduled or specified concrete surfaces that have received smooth-form finish treatment.

a. Combine one part portland cement to one part sand meeting the requirement of ASTM C144 or C404, by volume and water and mix to a to consistency of thick paint. Apply stiff to a wet surface, compressing the grout into all voids.
b. Produce the final finish with a cork float using a swirling motion.

G. Self-Consolidating Concrete Architectural Finish: Use self-consolidating concrete where shown on the plans to produce a smooth, uniform finish upon form removal with no patching, stoning, rubbing or other form of repair, except washing, permitted. The surface shall match the approved jobsite test panel.

H. Related Unformed Surfaces: At tops of walls, horizontal offsets and similar unformed surfaces occurring adjacent to formed surfaces, strike-off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.7 MONOLITHIC SLAB FINISHES

A. Place, consolidate, strike off, and level concrete, eliminating high spots and low spots, before proceeding with any other finish operation. Do not add water to the surface of the concrete during finishing operation.

1. Scratch Finish: Apply scratch finish to monolithic slab surfaces that are to receive concrete floor topping or mortar setting beds for tile, portland cement terrazzo and other bonded applied cementitious finish flooring material, and as otherwise indicated. After placing slabs, plane surface to tolerance specified below. Slope surfaces uniformly to drains where required. After leveling, roughen surface before final set, with stiff brushes, brooms or rakes.

2. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as hereinafter specified, and slab surfaces which are to be covered with membrane or elastic waterproofing, membrane or elastic roofing, or sand-bed terrazzo, and as otherwise indicated. After screeding, consolidating and leveling concrete slabs, do not work surface until ready for floating. Begin floating, using a hand float, a bladed power float equipped with float shoes, or a powered disk float, when the bleed water sheen has disappeared and the concrete surface has stiffened sufficiently to permit the operation. Check and level surface plane to a tolerance as specified below. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

B. Trowel Finish: Apply trowel finish to monolithic slab surfaces to be exposed-to-view, and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint or other thin film finish coating system. After floating, begin first trowel finish operation by hand or power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand- troweling operation, free of trowel marks, uniform in texture and appearance, and with a level surface to a tolerance as specified below. Grind smooth surface defects which would telegraph through applied floor covering system.

C. Trowel and Fine Broom Finish: Where ceramic or quarry tile is to be installed with thin- set mortar, apply initial trowel finish as specified above, then immediately follow with slightly scarifying surface by fine brooming.

D. Slip-Resistive Broom Finish: Apply slip-resistive broom finish to garage floors and ramps less than 6% slope, exterior concrete platforms, steps and ramps and elsewhere as indicated. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

E. Roller-Bug Finish: Provide a roller-bug finish with minimum ¼" amplitude to all ramps exceeding a 6% slope. Extend the finish as least 12 feet beyond the beginning and ending of the greater-than-6% ramp. The finish shall be imprinted on the concrete by the use of a roller-bug tamper.

F. Chemical-Hardener Finish: Apply chemical-hardener finish to interior concrete floors where indicated. Apply liquid chemical-hardener after complete curing and drying of the concrete surface. Apply proprietary chemical hardeners, in strict accordance with manufacturer's printed instructions.

1. After final coat of chemical-hardener solution is applied and dried, remove surplus hardener by scrubbing and mopping with water.

G. Liquid Sealer/Densifier Finish: Apply liquid sealer/densifier finish to exposed interior concrete floors where indicated. Apply liquid sealer/densifier after complete curing and drying of the concrete surface and in strict accordance with manufacturer's printed instructions.

H. Penetrating Sealer Finish: Apply a chloride-and-water-repelling-penetrating-sealer finish to surfaces as described below and where indicated on the drawings. Apply liquid penetrating sealer after complete curing and drying of the concrete surface. Apply proprietary sealers in strict accordance with manufacturer's printed instructions. The Contractor shall verify the compatibility of the sealer product with the paint used to stripe parking decks and coordinate the sequencing of the sealing and striping operations. Apply to the following surfaces:

1. Sloping and horizontal surfaces of parking garages
2. Top surfaces of exposed exterior balconies

I. Slip-Resistive Aggregate Finish: Apply slip-resistive aggregate finish to concrete stair treads, platforms, ramps and elsewhere as indicated on the Architect's or Structural Drawings.

1. After completion of float finishing, and before starting trowel finish, uniformly spread 25 lbs. of dampened slip-resistive aggregate per 100 sq. ft. of surface. Tamp aggregate flush with surface using a steel trowel, but do not force below surface. After broadcasting and tamping, apply trowel finishing as herein specified.
2. After curing, lightly work surface with a steel wire brush, or an abrasive stone, and water to expose slip-resistive aggregate.

J. Colored, Mineral Aggregate Surface Hardener: Provide colored, mineral aggregate surface hardener to monolithic slab surface indicated.

1. Apply dry shake materials for colored wear-resistant finish at rate of not less than 100 lbs. per 100 sq. ft., unless greater amount is recommended by material manufacturer.
2. Cast a trial slab approximately 20 feet square to determine actual application rate, color and finish as acceptable to Architect/Engineer.
3. Immediately following first floating operation, uniformly distribute approximately 2/3 of required weight of dry shake material over concrete surface, and embed by means of power floating. Follow floating operation with second shake application, uniformly distributing remainder of dry shake material at right angles to first application, and embed by power floating.
4. After completion of broadcasting and floating, apply trowel finish as herein specified. Cure slab surface with curing compound recommended by dry shake hardener manufacturer. Apply curing compound immediately after final finishing.

K. Non-Oxidizing Metallic Floor Hardener: Slabs in areas noted on the drawings shall receive an application of the non-oxidizing, metallic floor hardener applied at the rate of 150 lbs. Per 100 sq. ft. Immediately following the first floating operation, uniformly distribute approximately 2/3 of the required weight of the hardener over the concrete surface by mechanical spreader and embedded by means of power floating. The hardener shall be floated in and the second application made. The surface shall be floated again to properly bond the hardener to the base concrete slab. The surface shall then be troweled at least twice to a smooth dense finish.

L. Metallic Aggregate Floor Hardener: Slabs in areas noted on the drawings shall receive an application of the metallic aggregate floor hardener applied at the rate of 150 lbs. Per 100 sq. ft. Immediately following the first floating operation, uniformly distribute approximately 2/3 of the required weight of the hardener over the concrete surface by mechanical spreader and embedded by means of power floating. The hardener shall be floated in and the second application made. The surface shall be floated again to properly bond the hardener to the base concrete slab. The surface shall then be troweled at least twice to a smooth dense finish.

M. Finish of Top of Spread Footings and/or Mat Foundations:

1. Top Surface below Finished Slab: The top of the footing or mat shall be screeded level and smooth with a flatness F-number, FF15 (overall), FF10 (minimum local) and a levelness F-number, FL12 (overall), FL10 (minimum local).

2. Top Surface as Finished Slab: The top surface of a footing or mat that is to serve as the finished slab in the building shall be leveled cured, and surface prepared as specified for the finished floor construction appropriate to the space usage as defined in the Architectural Drawings.

3.8 CONCRETE FINISH MEASUREMENT AND TOLERANCES

A. Testing Procedure: ASTM E 1155

B. Tolerance on Floor Elevations: Construction tolerance on absolute floor elevation from the specified elevation as shown on the drawings shall be as specified below, taken from ACI 117:

1. Slab-on-Grade Construction - ± 3/4".
2. Top surfaces of formed slabs measured prior to removal of supporting shores ± 3/4".
3. Top surfaces of all other slabs - ± 3/4".

C. Random Traffic Floor Finish Tolerances:

1. Specified overall values for flatness (SOFF) and levelness (SOFL) shall conform to the values listed below for the floor surface classification noted for each slab category noted.

a.

Floor Surface Classification	SOFF	SOFL
Conventional	20	15
Moderately Flat	25	20
Flat	35	25
Very Flat	45	35
Super Flat	60	40

2. Minimum local values for flatness (MLFF) and levelness (MLFL) shall equal 3/5 of the SOFF and SOFL values, respectively, unless noted otherwise. The MLFF and MLFL values shall apply to the minimum areas bounded by the column lines and half-column lines, or the minimum areas bounded by the construction and contraction joints, whichever are the smaller areas.
3. The SOFL and MFLL tolerance values shall apply only to level slabs-on-ground or to level, uncambered suspended slabs that are shored such that it cannot deflect from the time the floor is placed to the time it is measured.
4. Slabs specified to slope shall have a tolerance from the specified slope of 3/8" in 10 feet at any point.

D. Construction Requirements to Achieve Specified Floor Finish Tolerances:

1. Forms shall be properly leveled, in good condition and securely anchored including special attention to ends and transitions.
2. Bearing surfaces for straightedges such as form edges or previously poured slabs shall be kept clean of laitance, sand, gravel, or other foreign elements.
3. Screeds shall be maintained in good condition with true round rolling wheels and level cutting edges. The use of optical sighting equipment such as lasers is recommended for checking levelness and straightness. The Contractor shall promptly adjust or replace equipment when test results indicate substandard work.
4. Highway straightedges are recommended for use in lieu of bullfloats for all slab placement and finishing operations.

E. Contractor Responsibility for Concrete Floor Finish Requirements: Floor finish requirements shown below (flatness and levelness tolerances) are minimum requirements that apply

unless stricter requirements are contained in instructions for installation of applied floor products in which case the Contractor is responsible for attaining the values prescribed by the manufacturer of such products.

F. Concrete Floor Finish Tolerance for Slab-on-Grade Construction:

1. Concrete Placement: Concrete shall be placed and screeded to predetermined marks set to elevations prescribed on the drawings.
2. Finish Tolerances of Random Traffic Floor Surfaces:

    a. Slabs in nonpublic areas, mechanical rooms, surfaces to received raised computer flooring, surfaces to have thick-set tile or a topping, and parking structures: Conventional
    b. Carpeted Areas: Moderately Flat
    c. Industrial Slabs: Moderately Flat
    d. Exposed slabs in public spaces, slabs to receive thin-set flooring: Flat
    e. Ice or Roller rinks: Very Flat
    f. Movie or Television studios: Super Flat
    g. Gymnasium Floors Scheduled to Receive Wood Playing Floor: Very Flat

G. Concrete Floor Finish Tolerance for Shored, Cast-in-Place Suspended Slab Construction:

1. Concrete Placement: Formwork shall be set and securely braced so that soffits are positioned to allow scheduled concrete member sizes and thicknesses within tolerances specified in ACI 117. Concrete shall be placed and screeded to predetermined marks on the form surface conforming to elevations prescribed on the drawings.
2. Camber: Formwork camber, as indicated on the drawings, shall be set to provide a uniform, smooth soffit profile in each direction. Minimum slab thickness, as specified on the drawings, shall be maintained throughout the slab surface to a tolerance as specified in ACI 117. Tolerance on camber shall be $\pm$ 1/4". Levelness F-Number tolerances specified below does not apply to areas of the floor where camber or intentional slope is shown.
3. Finish Tolerances of Random Traffic Floor Surfaces:

    a. Slabs in nonpublic areas, mechanical rooms, surfaces to received raised computer flooring, surfaces to have thick-set tile or a topping, and parking structures: Conventional
    b. Carpeted Areas: Moderately Flat
    c. Exposed slabs in public spaces, slabs to receive thin-set flooring: Flat
    d. Movie or Television studios: Super Flat

4. Extra Concrete: The contractor shall include in his bid any additional concrete required to achieve the specified slab surface finish tolerance.
5. Concrete Placement at Column Bays Supported by unshored transfer girders: Concrete in floor areas supported by unshored transfer girders shall be placed and screeded to predetermined marks placed over the slab conforming to elevations as specified on the drawings. At least the minimum slab thickness, as specified on the

drawings, shall be maintained throughout the slab surface. The Contractor shall conform to the FF values specified above.

H. Concrete Floor Finish Tolerance - Unshored Metal Deck on Shored or Unshored Steel Beam or Open-Web Joist Floor Construction:

1. Concrete Placement: Concrete over metal deck shall be placed and screeded level and flat to the tolerance specified below, maintaining at least the minimum slab thickness at all locations as specified on the drawings. The Contractor shall increase the slab thickness as required to compensate for metal deck deflection, and in unshored beam construction, residual beam camber and beam deflection in order to achieve a level and flat floor within specified tolerances.
2. Finish Tolerance of Random Traffic Floor Surfaces:

    a. Slabs in nonpublic areas, mechanical rooms, surfaces to received raised computer flooring, surfaces to have thick-set tile or a topping, and parking structures: Conventional
    b. Carpeted Areas: Moderately Flat
    c. Exposed slabs in public spaces, slabs to receive thin-set flooring: Flat
    d. Movie or Television studios: Super Flat
    e. Eighty percent (80%) of the final floor surface shall fall within an envelope of 0.75" centered about the mean elevation of all the readings. (± 0.375 about mean). The mean elevation of all readings shall not deviate from the specified design grade by more than ± 0.375".

3. Extra Concrete: The contractor shall include in his bid any additional concrete required to achieve the specified slab surface finish tolerance and to compensate for metal deck deflection, beam camber and beam deflection.
4. Concrete Placement at Column Bays Supported on Transfer Girders or Trusses: Concrete in floor areas supported by transfer girders or trusses shall be placed and screeded to predetermined marks placed over the metal deck slab conforming to elevations as specified on the drawings. At least the minimum slab thickness, as specified on the drawings, shall be maintained throughout the slab surface. The Contractor shall conform to the FF values specified above.

I. Remedial Measures for Slab Finish Construction Not Meeting Specified Tolerances:

1. Application of Remedial Measures. Remedial measures specified herein are required whenever either or both of the following occur:

    a. The composite overall values of FF or FL of the entire floor installation measure less than specified values.
    b. Any individual test section measures less than the specified absolute minimum FF or FL value.

2. Modification of Existing Surface:

a. If, in the opinion of the Architect/Engineer or Owner's Representative, all or any portion of the substandard work can be repaired without sacrifice to the appearance or serviceability of the area, then the Contractor shall immediately undertake the approved repair method.
b. The Contractor shall submit for review and approval a detailed work plan of the proposed repair showing areas to be repaired, method of repair and time to affect the repair.
c. Repair method(s), at the sole discretion of the Architect/Engineer or Owner's Representative, may include grinding (floor stoning), planing, retopping with self leveling underlayment compound or repair topping, or any combination of the above.
d. The Architect/Engineer or Owner's Representative maintains the right to require a test repair section using the approved method of repair for review and approval to demonstrate a satisfactory end product. If, in the opinion of the Architect/Engineer or Owner's Representative, the repair is not satisfactory an alternate method of repair shall be submitted or the defective area shall be replaced.
e. The judgment of the Architect/Engineer or Owner's Representative on the appropriateness of a repair method and its ability to achieve the desired end product shall be final.
f. All repair work shall be performed at no additional cost to the Owner and with no extension to the construction schedule.

3. Removal and Replacement:

a. If, in the opinion of the Architect/Engineer or Owner's Representative, all or any portion of the substandard work cannot be satisfactorily repaired without sacrifice to the appearance or serviceability of the area, then the Contractor shall immediately commence to remove and replace the defective work.
b. Replacement section boundaries shall be made to coincide with the test section boundaries as previously defined.
c. Sections requiring replacement shall be removed by sawcutting along the section boundary lines to provide a neat clean joint between new replacement floor and existing floor.
d. The new section shall be reinforced the same as the removed section and doweled into the existing floor as required by the Engineer. No existing removed reinforcing steel may be used. All reinforcing steel shall be new steel.
e. Replacement sections may be retested for compliance at the discretion of the Architect/Engineer or Owner's Representative.
f. The judgment of the Architect/Engineer or Owner's Representative on the need for replacement shall be final.
g. All replacement work shall be performed at no additional cost to the Owner and with no extension to the construction schedule.

3.9 CONCRETE CURING AND PROTECTION

A. General:

1. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Maintain concrete with minimal moisture loss at a relatively constant temperature for the period necessary for hydration of the cement and hardening of concrete. Limit moisture loss to a maximum of 0.05 lb. /sq. ft – hr. for concrete containing silica fume and 0.2 lb. /sq. ft. - hr. for all other concrete before and during finishing operations. If using an evaporation retarder, apply in accordance with manufacturer's instructions after screeding and bull floating, but before power floating and troweling.
2. Curing shall commence as soon as free water has disappeared from the concrete surface after placing and finishing. The curing period shall be 7 days for all concrete except high early strength concrete which shall be cured for 3 days minimum.
3. Alternatively, curing times may be reduced if either of the following provisions is complied with:

    a. If tests are made of cylinders kept adjacent to the structure and cured by the same methods, curing measures may be terminated when the average compressive strength has reached 70% of the specified 28 day compressive strength.
    b. If the temperature of the concrete is maintained at a minimum of 50°F for the same length of time required for laboratory cured cylinders of the same concrete to reach 85% of the 28 day compressive strength, then curing may be terminated thereafter.

4. Curing shall be in accordance with ACI 301 procedures. Avoid rapid drying at the end of the curing period.

B. Curing Formed Surfaces: Where wooden forms are used, cure formed concrete surfaces, including undersides of beams, supported slabs and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed. When forms are removed, continue curing by one or a combination of the methods specified below, as applicable.

1. Columns and shearwalls that are not exposed to view: Moist cure in forms or by one or a combination of methods 1, 2, or 3 specified below. Use a high –solids, liquid membrane-forming curing and sealing compound conforming to ASTM C 1315, type I, Class A or B for method 3.
2. Columns and shearwalls that are exposed to view: Moist cure in forms or by one or a combination of methods 1, 2 or 3 specified below. Use a high-solids, non- yellowing, liquid membrane-forming curing and sealing compound conforming to ASTM C 1315, type 1, class A for method 3.
3. Sides and Soffits of Beams and Pan-Joist Ribs, Soffits of Slabs: Moist cure in forms or by one or a combination of methods 1, 2 or 3 specified below. Use a liquid membrane-forming dissipating resin curing compound conforming to ASTM C 309, type 1, class A or B for method 3.
4. Basement Walls, Sides of Exterior Retaining Walls: Moist cure in forms or by one or a combination of methods 1, 2 or 3 specified below. Use a liquid membrane- forming dissipating resin curing compound conforming to ASTM C 309, type 1, class A or B for method 3.

C. Curing Unformed Surfaces: Cure unformed surfaces, such as slabs, floor topping and other flat surfaces by one or a combination of the methods specified below, as applicable. The Contractor shall choose a curing method that is compatible with the requirements for subsequent material usage on the concrete surface.

1. Ramps and Horizontal Surfaces of Parking Areas, Exposed Exterior Balconies: Cure using only methods 1 or 2 as specified below.
2. Floors Directly Exposed to Vehicular or Foot Traffic not in Parking Areas and not otherwise receiving a chemical hardener or penetrating sealer finish: Apply two coats of a high-solids, water-based, non-yellowing, liquid membrane-forming curing and sealing compound conforming to ASTM C 1315, type 1, Class A in accordance with method 3 as specified below.
3. Floors in Non-Public spaces that are left exposed to view and not receiving sealers or hardeners, floors involved in under-floor air distribution systems: Apply one coat of a high-solids, water-based, non-yellowing, liquid membrane- forming curing and sealing compound conforming to ASTM C 1315, type 1, Class A or B in accordance with method 3 as specified below.
4. Floors that are to receive subsequent cementitious toppings, sealers, hardeners, ceramic tile, acrylic terrazzo, vinyl composition tile, sheet vinyl, linoleum, vinyl-backed carpet, rubber, athletic flooring, synthetic turf, wood, epoxy overlay or adhesive, or other coating or finishing products: Cure using methods 2 or 3 as specified below. Use a water-based dissipating resin type curing compound conforming to ASTM C 309, type 1, class A or B for method 3.
5. Industrial Slabs: Cure using methods 1 or 2 as specified below for 7 days. The temperature of applied water shall be with 10◦ F of concrete surface temperature.
6. All Other Surfaces: Cure using methods 1, 2 or 3 as specified below. Use a water-based dissipating resin type curing compound conforming to ASTM C 309, type 1, class A or B for method 3.

D. Curing Methods:

1. Method 1 - Moisture Curing: Provide moisture curing by one of the following methods:

    a. Keep concrete surface continuously wet by covering with water.
    b. Continuous water-fog spray.
    c. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4" lap over adjacent absorptive covers.

2. Method 2 - Moisture-Retaining Cover Curing: Provide moisture-retaining cover curing as follows:

    a. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape or adhesive. Immediately repair any holes or tears

during curing period using cover material and waterproof tape. Water may be added to concrete surface to prevent drying before the cover is installed, but the surface shall not be flooded with water if a non-absorptive cover is used.

3. Method 3 – Curing or Curing and Sealing Compound: Provide curing, curing/hardener, liquid membrane-forming curing, or curing and sealing compound as follows:

    a. Apply specified compound to concrete slabs as soon as final finishing operations are complete (within 2 hours and after surface water sheen has disappeared). Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Do not allow to puddle. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period. Apply second coat for sealing 2 to 3 hours after the first coat was applied.
    b. Do not use membrane-forming curing and sealing compounds on surfaces which are to be covered with coating material applied directly to concrete, liquid floor hardener, waterproofing, dampproofing, membrane roofing, flooring (such as ceramic or quarry tile, glued-down carpet, vinyl composition tile, linoleum, sheet vinyl, rubber, athletic flooring, synthetic turf, or wood), paint or other coatings and finish materials. Dissipating resin type cures are acceptable in these locations.

3.10 HOT WEATHER CONCRETING

A. Definition:

1. Conditions warranting hot weather concreting practices are defined as any combination of high air temperature, low relative humidity and wind velocity tending to impair the quality of fresh or hardened concrete or otherwise result in abnormal properties. If conditions cause an evaporation rate of 0.2 lb. /sq. ft. /hr. as calculated by Figure 2.1.5 in ACI 305R-99, then precautions shall be taken to prevent plastic shrinkage cracks from occurring.

B. Specification: Follow hot weather concreting practices specified below when required to limit the concrete temperature at the truck discharge point to the stated maximum acceptable temperature.

C. Records: Under hot weather conditions, the Contractor shall keep records of outside air temperature, concrete temperature at truck discharge and general weather conditions.

D. Hot Weather Concreting Requirements: The following items, all or in part as required, shall be followed to limit the concrete temperature to the stated maximum acceptable temperature and to minimize the possibility of plastic shrinkage cracks from developing.

1. Design the concrete mixes specifically for hot weather conditions replacing some cement with fly ash or other pozzolan and using a water reducing retarding admixture (ASTM C 494 Type D).
2. Use the largest size and amount of coarse aggregate compatible with the job.

3. Use sunshades and/or windbreaks.
4. Delay construction of indoor slabs-on-grade until the walls and roof are constructed.
5. Cool and shade aggregate stockpiles.
6. Use ice as part of the mixing water or cool the water with liquid nitrogen.
7. Limit the number of revolutions at mixing speed to 125 maximum.
8. Reduce time between mixing and placing as much as possible.
9. Do not add water to ready-mixed concrete at the job site unless it is part of the amount required initially for the specified water-cement ratio and the specified slump.
10. Schedule concrete placement for early morning, late afternoon, or night.
11. Have all forms, equipment and workers ready to receive and handle concrete.
12. Maintain one standby vibrator for every three vibrators used.
13. Keep all equipment and material cool by spraying with water including exteriors of forms, reinforcing steel, subgrade, chutes, conveyors, pump lines, tremies, and buggies.
14. Protect slab concrete at all stages against undue evaporation by applying a fog spray or mist above the surface or applying a monomolecular film. Where high temperatures and/or placing conditions dictate, use water-reducing retarding admixture (Type D) in lieu of the water-reducing admixture (Type A) as directed by the Owner's Testing Laboratory.
15. Provide continuous curing, preferably with water, during the first 24 hours using wet burlap, cotton mats, continuous spray mist, or by applying a curing compound meeting ASTM C 1315. Continue curing for 3 days minimum.
16. Cover reinforcing steel with water soaked burlap so that steel temperature will not exceed ambient air temperature immediately before placement of concrete.
17. As soon as possible, loosen forms and run water down the inside. When forms are removed, provide a wet cover to newly exposed surfaces.

3.11 COLD WEATHER CONCRETING

A. Definition:

1. Concrete shall not be placed when the outside air temperature is 40°F or less unless cold weather concreting practices are followed as specified below.
2. Cold weather concreting practices should also be followed whenever the average daily air temperature is expected to be less than 40°F for more than three successive days. The average daily air temperature is the average of the highest and lowest temperature occurring during the period from midnight to midnight. The requirement for adhering to these cold-weather concreting practices may be terminated when the air temperature is above 50º F for more than half of any 24 hour duration.
3. Cold-weather concreting practices invoked shall keep the temperature of the concrete immediately after placing within the following temperature ranges:

    a. 55º to 75º F for sections less than 12 in. in the least dimension
    b. 50º to 70º F for sections 12 to 36 in. in the least dimension
    c. 45º to 65º F for sections 36 to 72 in. in the least dimension
    d. 40º to 60º F for sections greater than 72 in. in the least dimension

4. Concrete Protection: Protect the concrete immediately after placing and during the defined protection period such that the concrete does not freeze nor fall below the temperature levels stated in the above paragraph. For concrete not loaded during construction the protection period shall be for a minimum of three days if cold-weather conditions persist. The time period may be reduced to a minimum of two days if Type III cement or an accelerating admixture is used or if an additional 100 pounds of cement per cubic yard is added to the concrete mix. Concrete fully loaded during construction shall be protected during cold weather conditions for whatever time period is required to obtain the required strength as determined by nondestructive strength tests (Windsor probe, Swiss Hammer Test) on the in-place concrete. Protect concrete surfaces from freezing for the first 24 hours even if cold-weather conditions do not officially exist due to high volatility in ambient temperatures.
5. Protection Deficiency: If the temperature requirements during any portion of the protection period are not met but the concrete surface did not freeze, the protection period shall be extended until twice the deficiency expressed in degree-hours is made up. Deficiency degree-hours are defined as the average deficiency in temperature below the required value times the number of hours the deficiency persisted. Make-up degree hours are the average increase in temperature above the minimum value times the hours required to make up twice the deficiency degree-hours. Contact the Architect/Engineer if the concrete surface was allowed to freeze during the protection period.
6. Protection Removal: As the protection is being removed the decrease in temperature measured at the surface of the concrete in a 24 hour period shall not exceed the following:

    a. 50º F for sections less than 12 in. in the least dimension
    b. 40º F for sections 12 to 36 in. in the least dimension
    c. 30º F for sections 36 to 72 in. in the least dimension
    d. 20º F for sections greater than 72 in. in the least dimension

7. The maximum concrete temperature heated by artificial means at point of placement shall not exceed 90°F.

B. Records: Under cold weather conditions, the Contractor shall keep records of outside air temperature, concrete temperature as placed and general weather conditions. The temperature record shall be taken no less than 2 times per 24 hour duration.

C. Cold Weather Concreting Requirements: The following items, all or in part as required, should be followed to assure acceptable concrete in cold weather conditions:

1. Design the concrete mix to obtain high early strength by using higher cement content, a high early strength cement (Type III), or a specified non-chloride accelerator (ASTM C 494 Type C or E).
2. Protect the concrete during curing period using insulating blankets, insulated forms, enclosures and/or heaters.
3. Concrete cured in heated enclosures shall have heaters vented to prevent exposure of concrete and workmen to noxious gases.

4. Frozen subgrade shall be thawed prior to concrete placement and snow and ice shall be removed from forms.
5. Temperature of embedments in concrete must be heated to above 32° F prior to placing concrete
6. Heat the mixing water and then blend hot and cold water to obtain concrete no more than 10°F above the required temperature.
7. Heat the aggregates by circulating steam in pipes placed in the storage bins for air temperatures consistently below 32°F. When either water or aggregate is heated to over 140°F combine them in the mixer first to obtain a maximum temperature of the mixture not to exceed 140°F in order to prevent flash set of the concrete.
8. Uniformly thaw aggregates far in advance of batching to prevent moisture variations in the stockpile.
9. Cover warmed stockpiles with tarps to retain heat.
10. Place air entraining admixture in the batch after the water temperature has been reduced by mixing with cooler solid materials.
11. Use wind screens to protect concrete from rapid cooling.
12. Place vertical pump lines inside the building, if possible, for concrete being pumped.
13. Maintain artificial heat as low as possible to reduce temperature stresses during cooling.
14. Avoid water curing of concrete except for parking garage structures. Apply the required curing compound to unformed surfaces as soon as possible to prevent drying of concrete from heated enclosures.
15. Delay form stripping as long as possible to help prevent drying from heated enclosures and to reduce damage to formed surfaces caused by premature stripping.
16. Provide triple thickness of insulating materials at corners and edges vulnerable to freezing.
17. Wrap protruding reinforcing bars with insulation to avoid heat drain from the warm concrete.
18. Gradually reduce the heat at the end of the heating period to reduce likelihood of thermal shock.

3.12 MISCELLANEOUS CONCRETE ITEMS

A. Filling-In: Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel-troweling surfaces to a hard, dense finish with corners, intersections and terminations slightly rounded.

C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations, as shown on drawings. Set anchor rods for machines and equipment to template at correct elevations, complying with certified diagrams or templates of manufacturer furnishing machines and equipment.

D. Grout base plates and foundations as indicated, using specified non-shrink, non-metallic grout. Use high-flow grout where high fluidity and/or increased placing time are required. This grout shall be used for all base plates larger than 10 square feet.

E. Steel Pan Stairs: Provide concrete fill for steel pan stair treads and landings and associated items. Cast-in safety inserts and accessories as shown on drawings. Screed, tamp and finish concrete surfaces as scheduled.

F. Installation of adhesive anchors using injectable epoxy or adhesive: A representative of the adhesive manufacturer shall be present for the first day that adhesive anchors are installed. After drilling the hole to the diameter and depth recommended by the manufacturer, clean the hole with a wire or nylon brush. Blow the dust out of the hole using compressed air with a nozzle that reaches to the bottom of the hole. When using adhesive from a new pack, the adhesive that is discharged from the mixing nozzle should be a uniform gray color before any adhesive is installed in the hole. Fill the hole with adhesive starting from the very bottom of the hole until the hole is about 2/3 full. Do not leave an air pocket at the bottom of the hole. Insert the anchor rod or dowel by slowly twisting it into the hole.

3.13 CONCRETE SURFACE REPAIRS

A. Definition - Defective Areas:

1. Formed Surfaces: Concrete surfaces requiring repairs shall include all cracks in excess of 0.01" and any other defects that affect the durability or structural integrity of the concrete. Voids, including honeycombing and rock pockets, and tie holes shall be repaired as required by the specified Surface Finish.
2. Unformed Surfaces: Concrete surfaces requiring repair shall include all surface defects such as crazing, cracks in excess of 0.01" wide or cracks which penetrate to reinforcement or through the member, popouts, spalling and honeycombs.

B. Classification:

1. Structural Concrete Repair: Major defective areas in concrete members that are load carrying (such as shear walls, beams, joists and slabs), are highly stressed, and are vital to the structural integrity of the structure shall require structural repairs. Structural concrete repairs shall be made using a two-part epoxy bonder, epoxy mortar or specified polymer repair mortar. The Engineer shall determine the locations of required structural concrete repairs.
2. Cosmetic Concrete Repair: Defective areas in concrete members that are non- load carrying and minor defective areas in load carrying concrete members shall require cosmetic concrete repair when exposed to view and not covered up by architectural finishes. Cosmetic concrete repairs may be made using a polymer repair mortar and compatible bonding agent. The Architect/Engineer shall determine the locations of required cosmetic concrete repairs. Stains and other discolorations that cannot be removed by cleaning and are exposed to view will require cosmetic repair. Cosmetic concrete repair in exposed-to-view surfaces will require Architect's approval prior to patching operation.

3. Slab Repairs: High and low areas in concrete slabs shall be repaired by removing and replacing defective slab areas unless an alternate method, such as grinding and/or filling with self-leveling underlayment compound or repair mortar is approved by the Architect/Engineer. Repair of slab spalls and other surface defects shall be made using epoxy products as specified above and as determined by the Engineer. The high strength flowing repair mortar may be used for areas greater than 1 inch in depth.

3.14 QUALITY ASSURANCE TESTING AND INSPECTION DURING CONSTRUCTION

A. See Testing Laboratory Services section of these Specifications for concrete materials and cast-in-place concrete inspection and test requirements.

END OF SECTION

SECTION 04 01 00
DECORATIVE ROCK WALL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Retain or delete this article in all Sections of Project Manual.

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

B. Section 15 of standard Specifications

C. Section 02 41 13 Site Demolition

1.2 SUMMARY

A. Contractor is responsible to repair existing decorative rock walls throughout the park. Repair shall be done in a manner to preserve the existing appearance of the wall. Furnish all labor, materials, services, equipment and hardware required in conjunction with or related to the construction/repair of the existing rock wall to match existing condition.

B. Each section of walls needing repair shall be evaluated based on structural integrity, aesthetics, plumbness to determine the extent of repair (partial vs full height replacement). Contractor and Engineer shall agree to the extent of repair of the wall before commencing.

1.3 PREINSTALLATION MEETINGS

Retain "Preinstallation Conference" Paragraph below if Work of this Section is extensive or complex enough to justify a conference.

A. Preinstallation Conference: Conduct conference at project site.

If needed, insert list of conference participants not mentioned in Section 013100 "Project Management and Coordination."

Retain subparagraph below if additional requirements are necessary; include information about conference.

1. Review methods and procedures related to stone repair including, but not limited to, the following:

    a. Verify stone repair specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
    b. Materials, material application, sequencing, tolerances, and required clearances.
    c. Quality-control program.

d. Walk the entire site with Engineer, identify and mark extent of the reconstruction and type of reconstruction: partial or full

1.4 SEQUENCING AND SCHEDULING

Procedure in first paragraph below may be required to ensure consistency of sand and gray portland cement, if any, throughout Project. Coordinate use of gray portland cement with "Mortar Materials" Article. Gray portland cement can vary more than white portland cement from plant to plant and from batch to batch.

A. Order sand, portal cement. Take delivery of and store at Project site enough quantity to complete Project.

"Work Sequence" Paragraph below is an example only; revise to suit Project or delete if not prescribing a work sequence. This sequence assumes that cleaning, if required, precedes repairs. For this, stone and joints must be sound enough to prevent water and chemicals from penetrating into building.

B. Work Sequence: Perform stone repair work in the following sequence, which includes work specified in this and other Sections:

Retain and revise subparagraphs below, and insert others to suit Project. Insert other sequences for different areas of building if needed.

1. Remove plant growth.
2. Inspect masonry for open mortar joints and permanently or temporarily point them before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
3. Clean stone.
4. Rake out mortar from joints surrounding stone to be replaced and from joints adjacent to stone repairs along joints.
5. Repair stonework, including replacing existing stone with new stone.
6. Rake out mortar from joints to be repointed.
7. Point mortar and sealant joints.
8. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.

Retain subparagraph below if water repellents are part of Project; revise if water-repellent, graffiti-resistant coating is required.

If windows are to be replaced, insert subparagraph into the above sequence for the timing of window replacement.

Retain paragraph below if scaffolding anchor holes in stonework and patching them are required and acceptable; revise to suit Project.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Submit samples of typical rock and slate planned to be used.

Retain "Samples for Initial Selection" and "Samples for Verification" paragraphs below for two-stage Samples.

1.6 INFORMATIONAL SUBMITTALS

Coordinate "Qualification Data" Paragraph below with qualification requirements in Section 014000 "Quality Requirements" and as may be supplemented in "Quality Assurance" Article.

A. Qualification Data: For stone repair specialist

1.7 QUALITY ASSURANCE

A. Stone Repair Specialist Qualifications: Engage an experienced stone repair firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance.

1. Field Supervision: Stone repair specialist firms shall maintain experienced full-time supervisors on Project site during times that stone repair work is in progress.

Retain "Stone Repair Worker Qualifications" Subparagraph below if required; option is an example only.

Retain required mockups in "Mockups" Paragraph below; insert others to suit Project. Test areas that were prepared or are required as part of a separate contract to evaluate and establish stone repair materials and processes are not mockups.

B. Mockups: using one of the sections to be repaired for each type of application (full, partial, river rock and slate), prepare mockups of stone repair to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.

1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Engineer specifically approves such deviations in writing.

Retain subparagraph below if the intention is to make an exception to the default requirement in Section 014000 "Quality Requirements" for demolishing and removing mockups. These mockups are typically installed as part of building rather than erected separately.

2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 DELIVERY, STORAGE, AND HANDLING

Retain paragraphs below that are applicable to products retained in Part 2.

A. Deliver stone units to Project site at location approved by Engineer. Storage areas shall be secured to avoid general public to access the rocks. The County will not be responsible for rocks being stolen from the project site.

B. Handle stone to prevent overstressing, chipping, defacement, and other damage.

1.9 FIELD CONDITIONS

Usually retain this article; revise to suit Project.

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit stone repair work to be performed according to product manufacturers' written instructions and specified requirements.

Retain "Temperature Limits, General" or "Cold-Weather Requirements" Paragraph below. Retain second if cold-weather construction is permitted for repair work.

B. Temperature Limits, General: Repair stone units only when air temperature is between 40 and 90 deg F (4 and 32 deg C) and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.

C. Cold-Weather Requirements: Comply with the following procedures for stone repair unless otherwise indicated:

1. When air temperature is below 40 deg F (4 deg C), heat mortar ingredients, repair materials, and existing stone to produce temperatures between 40 and 120 deg F (4 and 49 deg C).
2. When mean daily air temperature is below 40 deg F (4 deg C), provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for seven days after repair.

D. Hot-Weather Requirements: Protect stone repairs when temperature and humidity conditions produce excessive evaporation of water from mortar and patching materials. Provide artificial shade and wind breaks, and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F (32 deg C) and above unless otherwise indicated.

E. For manufactured repair materials, perform work within the environmental limits set by each manufacturer.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Source Limitations: Obtain each type of material for repairing stone (stone, cement, sand, etc.) from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 STONE MATERIALS

Retain "Stone Matching Existing" Paragraph below. Insert other materials and properties to suit Project.

Retain first option in "Stone Matching Existing" Paragraph below, revising percentage if required, if properties are unknown. Retain second option if required properties are known.

A. Stone Matching Existing: Natural stone of variety, color, texture, grain, veining, finish, size, and shape that match existing stone and with physical properties.

1. For existing stone that exhibits a range of colors, texture, grain, veining, finishes, sizes, or shapes, provide stone that proportionally matches that range rather than stone that matches an individual color, texture, grain, veining, finish, size, or shape within that range.

Retain "Quarry" Subparagraph below only if a quarry is known to have stone that meets appearance and other requirements. Often, original quarries cannot match original stone due to natural variations in the geologic deposit.

Retain "Cutting New Stone" Paragraph below if required.

B. Cutting New Stone: Cut each new stone so that, when it is set in final position, the rift or natural bedding planes will match the rift orientation of existing stones.

2.3 MORTAR MATERIALS

Retain one or more paragraphs in this article to suit Project. Delete masonry cement and mortar cement if not allowed by "Mortar Mixes" Article. See Evaluations for discussion of masonry cement and mortar cement.

In "Portland Cement" Paragraph below, gray portland cement is sometimes used to help obtain correct mortar color.

A. Portland Cement: ASTM C 150/C 150M, Type I or Type II, except Type III may be used for cold-weather construction; white or gray, or both where required for color matching of mortar.

Retain subparagraph below if required.

1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C 114.
2. Hydrated Lime: ASTM C 207, Type S.
3. Mortar Cement: ASTM C 1329/C 1329M
4. Mortar Sand: ASTM C 144.

Retain "Exposed Mortar" Subparagraph below if required; revise to suit Project.

5. Exposed Mortar: Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.

Revise "Colored Mortar" Subparagraph below to produce exposed mortar quality and appearance

required for Project.

Retain "Mortar Pigments" Paragraph below for pigmented mortar.

B. Mortar Pigments: ASTM C 979/C 979M, compounded for use in mortar mixes, and having a record of satisfactory performance in stone mortars

2.4 MORTAR MIXES

A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.

B. Do not use admixtures in mortar unless otherwise indicated.

C. Mixes: Mix mortar materials in the following proportions:

Retain "Rebuilding (Setting) Mortar by Volume," "Rebuilding (Setting) Mortar by Type," or "Rebuilding (Setting) Mortar by Property" Subparagraph below, or revise to indicate specific requirements for each type of stone indicated. Consider revising portland cement to white portland cement if exposed, light-colored mortar is required.

The volumetric proportion in "Rebuilding (Setting) Mortar by Volume" Subparagraph below is an example only; revise to suit Project.

1. Rebuilding (Setting) Mortar by Type: ASTM C 270, Proportion Specification, Type N unless otherwise indicated

PART 3 – EXECUTION

3.1 PROTECTION

A. Prevent mortar from staining face of surrounding stone and other surfaces.

1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
2. Keep wall area wet below rebuilding and repair work to discourage mortar from adhering.
3. Immediately remove mortar splatters in contact with exposed stone and other surfaces.

Retain paragraph below if applicable; insert other items that may interfere with execution of this work.

3.2 STONE REPAIR, GENERAL

Retain this article to control overall appearance from a distance.

A. Appearance Standard: Repaired surfaces are to have a uniform appearance as viewed from

20 feet away by Engineer.

3.3 STONE REMOVAL AND REPLACEMENT

Copy this article and re-edit for significantly different shapes and sizes of stone to be removed and replaced.

Insert drawing designation. Use these designations on Drawings to identify locations. See "Delineating the Work" Article in the Evaluations for discussion of these designations.

A. At locations indicated, remove stone that has deteriorated or is damaged beyond repair or is to be reused. Carefully remove entire units from joint to joint, without damaging surrounding stone, in a manner that permits replacement with full-size units.

B. Support and protect remaining stonework that surrounds removal area.

Retain option in first paragraph below if applicable; revise to suit Project.

C. Notify Engineer of unforeseen detrimental conditions including voids, cracks, bulges, and loose units in existing stone or unit masonry backup

D. Remove in an undamaged condition as many whole stone units as possible.

1. Remove mortar, loose particles, and soil from stone by cleaning with hand chisels, brushes, and water.
2. Remove sealants by cutting close to stone with utility knife and cleaning with solvents.
3. Store stone for reuse. Store off ground, on skids, and protected from weather.
4. Deliver cleaned stone not required for reuse to Owner unless otherwise indicated.

E. Clean stone surrounding removal areas by removing mortar, dust, and loose particles in preparation for stone replacement.

F. Replace removed damaged stone with other removed stone in good condition, where possible, or with new stone matching existing stone, including direction of rift or natural bedding planes. Do not use broken units unless they can be cut to usable size.

G. Install replacement stone into bonding and coursing pattern of existing stone. If cutting is required, use a motor-driven saw designed to cut stone with clean, sharp, unchipped edges. Finish edges to blend with appearance of edges of existing stone.

1. Maintain joint width for replacement stone to match existing joints.

Retain subparagraph below especially for narrow joints.

2. Use setting buttons or shims to set stone accurately spaced with uniform joints.

H. Set replacement stone with rebuilding (setting) mortar and with completely filled bed, head,

and collar joints. Butter vertical joints for full width before setting, and set units in full bed of mortar unless otherwise indicated.

Retain one of first two subparagraphs below. Coordinate with mortar mixes in Part 2. First subparagraph assumes that laying, setting, and repointing are done at same time; second assumes that joints are repointed separately.

1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing stonework.
2. Rake out mortar used for laying stone before mortar sets
3. When mortar is hard enough to support units, remove shims and other devices interfering with pointing of joints.

I. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.

Revise subparagraph below to suit Project.

1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.4 PARTIAL STONE REPLACEMENT

Copy this article and re-edit for significantly different shapes and sizes of partial stone replacement (dutchman repair).

Insert drawing designation. Use these designations on Drawings to identify locations. See "Delineating the Work" Article in the Evaluations for discussion of these designations.
If Project involves thin stone cladding, revise first paragraph below to require full-depth removal, and revise remaining paragraphs as necessary.

A. Remove defective portion of existing stone unit (backing stone). Carefully remove defective portion of stone by making vertical and horizontal saw cuts at face of backing stone and removing defective material to depth required for fitting partial replacement (dutchman).

1. Make edges of backing stone at cuts smooth and square to each other and to finished surface; essentially rectangular. Make back of removal area flat and parallel to stone face.
2. Do not overcut at corners and intersections. Hand trim to produce clean sharp corners with no rounding and no damage to existing work to remain.
3. If backing stone becomes further damaged, remove damaged area and enlarge partial replacement as required.

B. Remove mortar from joints that abut area of stone removal to same depth as stone was removed. Remove loose mortar particles and other debris from surfaces to be bonded and surfaces of adjacent stone units that will receive mortar by cleaning with stiff-fiber brush.

Retain last option in first paragraph below for stone having bedding planes, usually sedimentary stone

such as limestone and sandstone, unless this degree of control is considered unnecessary for dutchmen.

C. Cut and trim partial replacement to accurately fit area where material was removed from backing stone. Fabricate to size required to produce joints between partial replacement and backing stone to produce joints between partial replacement and other stones that match existing joints between stones. Cut partial replacement so that, when it is set in final position, natural bedding planes will match the orientation of bedding planes of the backing stone unless otherwise indicated.

Retain "Pinning" or "Concealed Pinning" Paragraph below if large partial replacements that can accommodate pinning are required. Method in second paragraph might be required for noticeably patterned stones close to view, but it is more difficult. Revise pin diameter, length, or spacing if required. Consider deleting third option in either paragraph and detailing pin layout on Drawings. If retaining either paragraph, verify that method is appropriate to type of stone.

D. Apply stone-to-stone adhesive according to adhesive manufacturer's written instructions. Coat bonding surfaces of backing stone and partial replacement, completely filling all crevices and voids.

E. Apply partial replacement while adhesive is still tacky and hold securely in place until adhesive has cured. Use shims, clamps, wedges, or other devices as necessary to align face of partial replacement with face of backing stone.

Retain option in paragraph below if retaining "Pinning" Paragraph.

3.5 FINAL CLEANING

Retain this article only if overall cleaning of existing stonework occurs before repair work is completed.

Revise first paragraph below if chemical cleaning of repaired stonework is required; delete if overall cleaning of repaired stonework is included in another Section.

A. After mortar has fully hardened, thoroughly clean exposed stone surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low-pressure spray.

1. Do not use metal scrapers or brushes.
2. Do not use acidic or alkaline cleaners.

Paragraphs below are examples only; revise to suit Project.

B. Clean adjacent nonstone surfaces. Use detergent and soft brushes or cloths.
C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.
D. Remove masking materials, leaving no residues that could trap dirt.

3.6 FIELD QUALITY CONTROL

Retain "Testing Agency" Paragraph below if Owner retains full-time inspectors, or retain "Architect's

Project Representatives" Paragraph below if Architect's representatives will be on-site daily to make observations.

A. Engineer's Project Representatives: Engineer will be observing progress and quality of portion of the Work completed.

3.7 STONE WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess stone materials are Contractor's property.

B. Stone Waste: Remove stone waste and legally dispose of off Owner's property.

END OF SECTION

SECTION 10 73 60
SITE SHELTER

PART 1 - GENERAL

1.1 SUMMARY

A. County of Fresno will furnish 1 shelter structure to be installed by contractor. Contractor shall be responsible for the coordination with the vendor, the installation of the structure, foundation, concrete slab and any other necessary work to have fully installed shelter per plan.

B. Pre-engineered Site Shelter package has been purchased by the County and will be shipped as a pre-cut and pre- fabricated package that will include the structural frame members, roof panels, fasteners, and installation instructions. The structures will be shipped knocked down for minimum shipping charges. No onsite welding will be required or shall be allowed.

C. Shelter manufacturer has a 6 month lead time from time of execution of contract. The shelter structure is expected to be delivered by October/November 2025; however, it is outside County's control. Contractor cannot claim delay should manufacturing of the shelter is delayed. The shelter manufacturer will only store the structure once manufactured for 30 days without charge. Contractor shall be ready to receive, offload and store at a safe location or immediately install the shelter structure when manufacturer is ready to ship. If Contractor causes delay, and shelter manufacturer charges storage fee, Contractor shall be responsible for the storage fee. The charge will be deducted from the shelter installation bid item.

D. The items covered in this Specification include the following:

1. Custom ICON Gable Shelter

E. Section Includes:

1. Under this item, the Contractor shall furnish all labor, materials, equipment and perform all operations necessary for the completion of the work as shown on the drawings and shop drawings by Manufacturer. This includes all excavation, concrete footings, backfill, in accordance with the plans, manufacturer's shop drawings, specifications and directions of the Owner's Representative.

F. Related Sections:

1. Section 31 22 00 – Grading
2. Section 31 23 02 – Excavating and Fill for Utilities
3. Section 32 13 13 – Site Concrete Work

1.2 SYSTEM DESCRIPTION

A. Site Shelters are prefabricated tubular steel structures with metal roofs coverings.

B. Design Loads: All structures are being designed and fabricated to the 2022 California Building Code with standard load designs of 20# per S.F. minimum live load, 95mph wind load and the applicable seismic loads.

C. Foundation design: as designed by shelter manufacturer.

D. Design Method: per applicable building code.

E. The plans show a general description of the shelter and its foundation. The plans are not meant to be considered a design plans of the shelter. County will provide shop drawing for construction.

1.3 REFERENCES

A. American Society of Testing of Materials (ASTM)

B. International Organization for Standardization (ISO)

C. Occupational Safety and Health Administration (OSHA)

D. American Institute of Steel Construction (AISC)

E. American Iron and Steel Institute (AISI)

F. American Welding Society (AWS)

1.4 QUALITY ASSURANCE:

A. Provide evidence of commitment of quality craftsmanship as demonstrated by the following:

1. It shall be the obligation of the Contractor to ensure that all criteria are satisfied and the burden of proof of conformance shall rest with the contractor. The Owner's Representative shall be the sole judge of conformance, and the Contractor is cautioned that he will be required to Bid and provide a finished product meeting all stated criteria. It is recommended that the contractor or project manager follow an inspection and approval process, as provided by manufacturer.

B. Contractor's Qualifications:

1. Full time on-staff quality control manager.
2. Contractor shall have at least 5 years of experience installing these types of shelters
3. Published quality assurance manual.
4. Utilizing AWS certified welding inspectors.
5. Contractor shall use extreme caution to avoid damages to the shelter during offloading and installation

C. Shipping Protection:

1. Remove the packaging wrap upon receipt of order and verify components and conditions. Contractor shall be responsible for verifying that all components and material is not damaged

D. Product Delivery:

1. Offloading of the material is responsibility of the contractor. Unload materials with necessary equipment, store covered out of weather, and keep out of direct sun. Inspect parts of delivery, compare with manufacturer's bill of material, and report any missing or non-conforming parts to manufacturer within this time.
2. Inspect all items for abraded surfaces and other unacceptable deliver conditions. Return damaged or non-conforming items to manufacturer for replacement.

1.5 WARRANTY

A. Columns and frames will have a factory applied powder coat finish which shall be protected against damage during shipping and installation. Touch up paint shall be provided to be applied by the installer for minor blemishes only. Powder coat paint shall be provisionally warranted for ten (10) years after acceptance from owner against peeling, flaking, and rusting. Warranty does not cover damage caused from erection of structure, lack of touchup and maintenance.

PART 2 - PRODUCTS

2.1 PREFABRICATED STEEL GABLE SHELTER STRUCTURES

A. The prefabricated steel shelter structures will be manufactured by "ICON Shelter Systems" 1455 Lincoln Avenue, Holland, MI 49423. Information for the shelter is available from Park Planet, Red Bluff, CA 96080, Phone 530-244-6116 The following model will be provided:

1. 1 each, Custom ICON model, 50' x 30' rectangular shelter as shown on the plans.4:12 roof pitch, 8'-4 1/2" eave height, 24 ga. Trim fascia, 8 columns, surface mounted, TGIC poly powder coat, with zinc rich primer. All roofing shall be McElroy Metal , Inc. 24 gauge Zincalume / Galvalume coated steel panels. "Multi-Rib" panels, shall be 36" wide with 1 3/16" high ribs @12" o.c. All roofing shall be pre-finished with PVF2 (Polyvinylidene Fluoride) Kynar 500. All roof panels shall be pre-cut with ribs running with the slope of the roof. Fascia trim shall be 24 gauge Zincalume / Galvalume coated and pre-finished to match the roof color. Screws & rivets shall match roof color. No exceptions will be allowed. All frame members shall be one piece structural steel tube with a minimum .188 (3/16") wall thickness, sized according to engineering. All frame members shall be bolted together with bolts totally concealed. Compression rings shall be fabricated from structural steel tube or flat plate steel and shall have all connections concealed from view. All tubing for frame members shall be ASTM 500 grade B/C. Beam end plates shall be ASTM A36 fy=36,000 psi UNO. Bolts shall be 5/8" x 2" unless noted otherwise. "I" beams, Angle iron, "C", "Z" or "S"

purlins or beams, open or closed, shall not be allowed.

2.2 DESIGN CRITERIA:

A. All structures will be designed and fabricated to the CBC 2022 (Latest Edition) with standard load designs of 20# per S.F. minimum live load, 95mph wind load and the applicable seismic loads.

2.3 STEEL MEMBERS:

A. All members will be designed according to the “American Institute of Steel Construction (AISC) specifications and the American Iron and Steel Institute (AISA) specifications for cold-formed members.

2.4 WELDING:

A. All fabrication welds will be in strict accordance with the structural welding code of the American Welding Society (AWS) specifications. All structural welds shall be in compliance with the requirements of “Pre-qualified” welded joints. All welding shall conform to ASTM A-233 series E-70XX electrodes - low hydrogen. Field welding shall not be required or permitted.

2.5 FRAME MEMBERS AND COMPRESSION RING:

A. All frame members shall be one piece hollow steel shape (HSS) tube, sized according to engineering. All frame members shall be bolted together with bolts totally concealed. Compression rings shall be fabricated from hollow steel shape tube, or flat plate steel and shall have all connections concealed from view. All tubing for frame members shall be ASTM 500 grade B/C. Beam end plates shall be ASTM A36 fy=36,000 psi UNO. Bolts shall be 5/8” x 2” unless noted otherwise in the structural engineering calculations. Main roof beam extensions at each corner shall be miter cut at 45 degrees. Capped with a 16 gage plate welded and ground smooth on all edges. All Mid-beams/purlins shall have no exposed “tek” screws. Mid-beams shall be graduated in size as required by engineering. Columns shall be cluster columns per the plan. “I” beams, Angle iron, “C”, “Z” or “S” purlins or beams, open or closed, shall not be allowed.

2.6 ROOFING AND TRIM:

A. All “ICON” model roofing shall be McElroy Metal 24 gauge Zincalume / Galvalume coated steel panels. “Multi-Rib” panels, shall be 36” wide with 1 3/16” high ribs @12” o.c. All roofing shall be pre-finished with PVF2 (Polyvinylidene Fluoride) Kynar 500. All roof panels shall be pre-cut with ribs running with the slope of the roof. Fascia trim shall be 24 gauge Zincalume / Galvalume coated and pre-finished to match the roof color. Screws & rivets shall match roof color. No exceptions will be allowed.

2.7 POWDER COATING:

A. All frame members shall be media blasted to a white finish removing all rust, scale, oil and

grease. Powder coating for all frame members shall be provisionally warranted for (5) five years with TRUZINC 7520-70138 primer with a Dry Film Thickness of (2.0 - 6.0 mils) & hardness of 2H-3H with a Salt Spray Resistance of 6000 hours and Super Durable Gloss Polyester 9000 series finish paint (2.5-3.5 mils) with a hardness of H-H2 & has 1000 hour salt spray resistance. Total of primer & finish paint shall be 4.5-9.5 mils of paint. Finish shall be a smooth uniform surface with no pits, runs or sags. All bent plate which accepts the roof screws shall be powder coated on both sides to prevent rusting. All powder coating shall be performed by the structure manufacturer in his own facility under his direct supervision. Out-sourcing of powder coating shall not be allowed.

2.8 FOOTINGS & COLUMNS:

A. No soil report is available. The manufacturer will design footings according to allowable bearing capacity from the California Building Code, latest edition (Sample footing in drawings shall not represent the foundation design). Anchor bolts will be supplied by the manufacturer. Contractor shall be responsible for concrete footing rebar shall be ASTM A-615 grade 40 #4 bars & smaller, grade 60 #5 bars & larger. Concrete shall be 6 sack mix "Portland" cement. Maximum slump shall not exceed 4". Compressive strength: 3500 psi @ 28 days.

PART 3 - EXECUTION

3.1 GENERAL:

A. Install according to manufacturer's plans installation instructions and these specifications.
B. When unloading, use precautions to protect finished materials. (Do not use chains or buckets to move materials.) Field-handle carefully to avoid scratching.

3.2 FOOTINGS & CONCRETE SLAB:

A. No soil report is available. The Contractor shall be responsible for the installation of foundation and concrete slab. The soil underneath the slab shall be compacted to 90% of optimum density in accordance with ASTM D1557.

3.3 ERECTION:

A. Manufacturer will supply complete layout and detail plans with installation instructions for the structure prior to installation. The structure shall be erected in a work-man-like manner with framing, roofing and trim installed according to the manufacturers' installation instructions. Care shall be taken to avoid damaging the structure during installation.

END OF SECTION

SECTION 12 93 00
SITE ELEMENTS

PART 1- GENERAL

1.1 SCOPE

A. Furnish and install all site elements as shown on the drawings and as specified herein including but not limited to the following:

1. Park Benches
2. Basketball Hoops
3. Tennis nets and anchors

B. Install County furnished material as shown on the manufacturer drawings and as specified herein including but not limited to the following:

1. Prefabricated Restroom
2. Picnic Pavilion (Gable Shelter)
3. Playground structures (x3)
4. Playground surfacing tiles and installation

1.2 GENERAL REQUIREMENTS

A. This work shall be coordinated with all associated work that will ensure that all items are located properly per drawings, complete in the proper sequence, and accomplished efficiently so that no work will be delayed because of associated items or parts of items.

B. If more than one subcontractor is to perform various items or parts of items detailed by this section, specific responsibility shall be defined by the General Contractor.

C. Contractor to apply sacrificial graffiti coating to new furnishings.

D. **Site Furnishing Schedule of items below is NOT inclusive of all site elements to be installed.** The schedule is intended to provide assistance in quantities and contact information for select custom furnishings.

1.3 SHOP DRAWINGS SUBMITTALS

A. Section 01000 – General Requirements and Submittal List

1. Product Data: Indicate materials, construction, configuration, dimensions, and finishes.
2. Assurance/Control Submittals:

a. Certificates: Manufacturer’s certificate that Products meet or exceed specified requirements.

1.4 DELIVERY, STORAGE AND HANDLING

A. Section 01600 – Product Requirements: Transport, handle, store and protect Products

PART 2- PRODUCTS

2.1 SITE ELEMENTS SCHEDULE

A. See plans for installation details. Furnish these materials or approved equal.

DESCRIPTION/MANUFACTURER
Basketball Hoop, By Bison, Mega-duty steel Contact: B.A.S.E. 661-832-3200, as shown in plans
Tennis court nets: By Bison, contact: B.A.S.E.661-832-3200 ● Tennis poles Model TN10 or approved equal ● Floorplate and net strap ● Tennis net Model TN10N or approved equal
Park Benches as shown on plans

B. County will furnish the following items to be installed by Contractor. The plans provided show approximate installation details. County will furnish final plans from manufacturer once received.

PREFABRICATED RESTROOM: by CXT Precast Products, contact: Manuel Alvarado, (254) 479-4792. Refer to Section 13 00 00, Prefabricated Restroom. • Model: Santiago Building Number S-301
PICNIC PAVILION: by ICON Shelter Systems. Purchased from Park Planet, (559) 341-5768**,** Office 877-473-7619 contact: Kasanna Coulter. Refer to Section 10 73 60, Site Shelters. ● Model: Rectangular Gable Shelter, 30’ x 50’ x 8.5’ ● Column Color: To be determined by owner ● Fascia Color: To be determined by owner ● Metal Roof Color: To be determined by owner
PLAYGROUND STRUCTURES: by Playcraft Systems. Purchased from Park Planet, (559) 341-5768**,** Office 877-473-7619 contact: Kasanna Coulter. Refer to Section 13 01 00 for playground structures. ● Models: As shown in the plans ● Color pattern: To be determined by owner
PLAYGROUND SURFACING TILES AND INSTALLATION: by sofsurfaces. Purchased from sofsurfaces, (303) 931 4218 contact: Peter Druck. Refer to Section 13 02 00 for playground surfacing tiles.

PART 3 – EXECUTION

3.1 GENERAL:

A. Assembly, construction, and installation of all items shall be of the highest craftsmanship and in accordance with manufacturer's recommendations and details on the drawings. All construction shall be accurately fitted, set plumb and level, free from surface blemishes.

B. Contractor shall review the manufacturer's shop drawings and complete any additional shop drawings necessary for approval prior to installation.

C. Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.

3.2 PICNIC PAVILIONS

A. Contractor shall install Picnic Pavilion at location shown on the drawings.

B. Contractor shall review the manufacturer's shop drawings and complete any additional shop drawings necessary for approval prior to installation.

C. Refer to Section 10 73 60, Site Shelters.

3.3 PREFABRICATED RESTROOM

A. Contractor shall coordinate the installation of the Prefabricated restroom at location shown on the drawings.

B. Contractor shall review the manufacturer's shop drawings that will be provided by County and complete any additional necessary for approval prior to installation.

C. Refer to Section 13 00 00, prefabricated restroom.

3.4 72” BENCHES

A. Bench shall be installed per manufacturer’s specifications.

B. Contractor shall review the manufacturer's shop drawings and complete any additional shop drawings necessary for approval prior to installation.

C. Refer to Section 12 93 43, Site Furnishings.

3.5 PLAYGROUND STRUCTURES

A. Contractor shall install Play Structures at location shown on the drawings and Manufacturer’s recommendations.

B. Contractor shall protect Structures from discoloration and damage during the construction period until approved and accepted. Any damage occurring shall be the contractor’s responsibility and shall be repaired or replaced as directed by the Engineer.

3.6 BASKETBALL HOOPS

A. Contractor shall install Basketball Hoops as shown on the drawings and manufacturer's recommendations.

B. Contractor shall protect Basketball Hoops from discoloration and damage during the construction period until approved and accepted. Any damage occurring shall be the contractor's responsibility and shall be repaired or replaced as directed by the Engineer.

3.7 TENNIS NETS

A. Contractor shall install Tennis as shown on the drawings and manufacturer's recommendations.

B. Contractor shall protect Tennis nets from discoloration and damage during the construction period until approved and accepted. Any damage occurring shall be the contractor's responsibility and shall be repaired or replaced as directed by the Engineer.

END OF SECTION

SECTION 12 93 43
SITE FURNISHINGS

PART 1 – GENERAL

1.1 SUMMARY

A. This section includes the following:

1. Benches (Belson Outdoors.)
2. Basketball hoop
3. Tennis set: poles, net, floorplate

1.2 QUALITY ASSURANCE

A. Installer Qualification: An experienced installer who has completed installation of site furnishings and whose work has resulted in construction with a record of successful in-service performance.

B. Manufacturer Qualifications: Experienced site furniture manufacturer.

1.3 SUBMITTALS

A. Product Data: Include physical characteristics such as shape, dimensions and finish for each furnishing.

B. Shop Drawings: Provide installation details for each product.

C. Samples for Verification: For all products, show the color of the powder coat finish.

D. Maintenance Data: For each product.

1. Provide recommended methods for repairing damage and abrasions to the powder coat finish.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Store products in original undamaged packaging in a dry location until ready for installation.

B. Handle powder coated products carefully to prevent any damage to the finish.

1.5 WARRANTY

A. All products to be warrantied against defect in materials and/or workmanship and in accordance. Additional warrants as follows:

1. Limited ten-year warranty against destructive vandalism of concrete picnic tables. It is

further warranted that product shall be free of workmanship and material defects for a period of one year after date of invoice.

2. Limited five-year warranty against defects in materials and workmanship under normal use.
3. Limited one-year warranty on any item not specifically discussed above.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Provide products from a singular manufacturer, such as: Belson Outdoors

2.2 BENCHES – Belson Outdoors. (Model No. 940SM-P6)

A. Materials:

1. Seat & Back: 11 gauge die formed angle frame 1”x1-7/8” with 3” radius corners. Seat and back plates are fabricated from a 12ga plate. Holes are precision punched at 5/8” diameter. 7 gauge x 1-1/2” flat bar center support and mounting bracket understructure. Electrically MIG welded.
2. Coating: Oven fused functionalized polyethylene copolymer-based thermoplastic. Fluidized bed coating application with superior mechanical performance, impact resistance and UV-stability.
3. Frame: 2-3/8” O.D. x 12 gauge pre-galvanized structural steel tubing. Seat/back support is bent over a mandrel through the bend radius producing a wrinkle free bend. Tube ends are pre-galvanized steel capped. Seat mounting points are 7 gauge x 1-1/2” die stamped steel flat bar. A 6” x 6” steel plate makes up the surface mount footing. The surface mount plate has four holes for stable mounting, and clipped corners for a more finished look. All electrically MIG welded.
4. Frame Coating: Electrostatic powder coated application oven cured.
5. Hardware: All stainless steel hardware fasteners. Dimensions: 6’ bench surface mount with back.
6. Seats and back are 12” wide x 72” long. Seat height is 18- 1/4”, seat back height is 35-5/16”. Total depth of seat with back is 22-5/16”Anchoring:

    a. Bench has cast in threaded inserts in bottom of each leg for mounting.
    b. Two 3/4” x 8” coilrods are provided for mounting
    c. Bench must be mechanically attached
    d. Bench requires epoxy applied to cover bottom of entire leg.

2.3 TENNIS SET. - (Bison or approved equal)

A. Materials:

1. TENNIS POLES – MODEL TN10

    a. System shall include two posts, net tensioning winch, competition net, side

lacing ropes, center court hold down strap, and anchor. Posts shall be constructed of specially designed 3” diameter aluminum extrusion to maximize strength and eliminate rust. Posts shall also feature top cable pulleys, 1/2" diameter permanently fixed net side lacing bars, and a dark green powder coated finish. One pole shall include a brass internal top net cable tensioning device with removable handle.

b. Posts shall be designed to install directly into concrete footing.

2. TENNIS NET – MODEL TN10N

a. Tennis net shall be constructed of 3mm black braided polyethylene knotted to create 1 3/4"squares. Top tape shall be white coated tarpaulin, and bottom and side tapes shall be black coated tarpaulin material. Top cable shall be 4mm, vinyl coated stainless steel, 49' long. Side tapes shall be grommeted to attach net to post loops with included lacing ropes. Net shall be official 42' long and 42" tall allowing the top of the net to be official 36" from the playing surface at the center

2.4 BASKETBALL HOOP SET. - (Bison PR87 MEGA DUTY or approved equal)

A. Materials:

1. Pole shall be constructed of 5 9/16" outside diameter schedule 40 structural pipe and have a hot dipped galvanized finish. Design shall be a bent gooseneck style and allow for a 48" bury into the ground and a 72" extension from the front of the pole to the face of the backboard. Two 1 5/8" diameter, 13 ga. flow coated galvanized tubular braces shall support the top of the backboard and connect directly to the pole. Pole shall be designed so that the rim mounts directly to the horizontal pole section through the backboard to eliminate stress on the backboard during play. Pole systems without backboard support braces shall not be considered equal. Pole shall carry a limited lifetime warranty. Backboard shall be 42" x 72" rectangular steel. Skin shall be 12 ga. and rear structure shall be 7 ga. and 10 ga. mild steel. All skin edges shall be safety rolled to eliminate sharp edges and increase strength and rigidity. Structure on the rear shall allow mounting to common 36" x 62" fan style supports. The backboard shall be coated with a white powder coated finish and have an official-sized orange shooter's square. Backboard shall accept rims with a 5" x 4" hole pattern and be manufactured in the USA. Backboard shall carry a 10-year limited warranty. Rim shall consist of two 5/8" diameter AISI 1018 cold drawn carbon steel rings welded together at a minimum of six places. Back and side plates shall be 3/16" thick and be continuously welded. The net attachment system shall be of a continuous type constructed of 3/16" x 1" steel with punched net attachment slots suitable for chain nets. Individual or continuous wire formed netlocks are not an acceptable equal. Rim shall be punched to mount on any front mount backboard, have an unconditional lifetime warranty and orange powder coated finish. Mounting hardware shall be included. Rim shall be made in the USA. Installation to be completed in accordance with manufacturer's instructions.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Handle and install furnishings according to manufacturer's recommendations and installation instructions.

B. Some assembly may be required.

END OF SECTION

SECTION 13 00 00
PREFABRICATED RESTROOM

PART 1 – GENERAL

1.1 SCOPE

A. Install prefabricated concrete wall public restroom at the location shown in the provided plans (CXT Model# S-301 “Santiago”).

B. County has prepurchased the restrooms. Plans are being prepared by the manufacturer specifically for the subject restroom. The drawings depict general layout of the purchased restroom, including anticipated plumbing and electrical layout; however, final design may differ from the drawings included in the plans.

C. Restroom manufacturer has a 6 month lead time from time of execution of contractor. The restroom is expected to be delivered by October/Novemeber 2025; however, it is outside County’s control. Contractor cannot claim delay should manufacturing of the restroom is delayed. The restroom manufacturer will only store the restroom once manufactured for 30 days without charge. Contractor shall have the site ready for restroom manufacturer by the expected delivery date. If site is not ready and Restroom manufacturer cannot deliver and install the restroom, Contractor shall be responsible for the storage fee. The charge will be deducted from the restroom bid item.

1.2 RELATED DOCUMENTS

A. Related Sections:

1. Section 31 22 00, Grading: Grading of site.
2. Section 31 23 02, Excavate and Fill for Structures: Excavation for utilities.
3. Section 31 23 04, Excavate and Fill for Structures: Excavation for footings.
4. Section 32 13 13, Site Concrete Work: All concrete, forms and reinforcing steel shall be furnished by contractor.
5. Section 33 30 00, Sewage System
6. Sections 26 00 00, Electrical General Requirements and 26 05 00 Electrical Service and Distribution

1.3 GENERAL CONTRACTOR COORDINATION WITH DESIGN/BUILD SUPPLIER

A. The specified prefabricated public restroom building requires coordination between the General Contractor (who prepares the site pad and delivery access for the prefabricated storage building) and the prefabricated restroom building Supplier (who completes the architectural design, engineering, off-site building construction, delivery and installation on site.) The specified prefabricated restroom building specifications include unique components/systems which are custom to the restroom building supplier.

1.4 GENERAL CONTRACTOR GENERAL SCOPE OF WORK:

A. The General Contractor for this project is responsible for coordinating the site survey with County surveyor and staking of the building location, to obtain finished slab elevations and marking on site, construction and compaction of the required building pad (Sub-surface and base); access to the site for a large crane and tractor trailers delivering the prefabricated building; providing water, sewer, and power stub-ups within the restroom pad at the depth and layout required by the building manufacturer to fit the sub-ups at different blockouts that come with the restroom. The installation shall be installed per local code. Installation of any sidewalks outside the building footprint is also responsibility of the General contractor. Restroom manufacturer will set prefabricated restroom on building pad and make connections from stub-ups to restroom utilities

1. The General Contractor is responsible for verification to the building supplier that there are no unanticipated site delivery issues such as overhead wires, trees, tree roots, or existing grade changes and that prevent a clear path of travel between a roadway and the final site exists for a tractor trailer and crane to expedite delivery. The supplier requires that the general contractor certify that the required delivery crane must be able to set the building module/modules within 35' distance from the center of the building to the center of the crane hoist.

B. Supplier/Prefabricated Buildings, General Scope of Work

1. The prefabricated restroom building specialist will provide to the Owner or their General Contractor final building design, architectural drawings, and engineering calculations under the responsibility of a licensed structural engineer, in compliance with all local, state and federal codes. The supplier will construct the building offsite as a permanently relocatable building, transport it to the final required destination, and set the building on general contractor prepared pad per the supplier final drawings (final drawings will be provided from the owner to the Contractor once finalized). For bid purposes the drawing included in the plans shall be used Contractor is hereby notified that he/she shall not use the drawings included in the plans for the construction of the utilities as they may slightly differ. Contractor shall request final plans from the owner.

1.5 CERTIFICATION OF OFF-SITE INSPECTION AND CONSTRUCTION COMPLIANCE

A. The off-site restroom construction requires that a licensed third party inspection firm provide the owner and the local building official with certification and compliance for the building with the approved plans and specifications. A certificate of compliance shall be issued by this inspector to the local building official to provide certification that the building meets and or exceeds the approve plans and applicable codes.

PART 2 - PRODUCTS

2.1 PREFABRICATED RESTROOM

A. The Agency has evaluated several prefabricated building suppliers. This contract requires such a building be used in lieu of site built traditional construction because of the unique

built-in advantages guaranteed by the design/build firm. This technology includes many new innovations such as non-absorbent concrete; built in vandal resistance design; lowered maintenance and warranties that reduce owner risk for failure. The specifications below are written around this technology.

2.2 MAT ENGINEERED CONCRETE BUILDING SLAB/FOUNDATION

A. The building system has been designed for placement on a compacted class II aggregate base and/or footings as required by code, per the contract drawings. The ag base shall be compacted to 95% of optimum density in accordance with ASTM D1557

2.3 PLUMBING FOR RESTROOM BUILDING

A. Building shall be fully compliant with the following codes:

1. All applicable State of California Building Codes. Latest edition applicable.
2. California Plumbing Code. Latest edition applicable.

B. GENERAL: All components and fabrications have been designed to reduce life cycle maintenance. Here are the materials being used in the prepurchase restroom

C. WATER PIPING: type L copper above grade and soft annealed type K with silver solder below grade. All water piping are designed and constructed with high and low point drain fittings. All piping shall be mounted on Uni-strut wall brackets with neoprene isolators, to code.

D. WATER PRESSURE GAUGE/VALVE COMBO: Install three commercial grade industrial water pressure gauges, isolation ball valves, 10 micron water filter with clear canister and check valve.

E. PLUMBING FAUCETS, ISOLATION VALVES AND ACTUATORS: All fixtures except those with flush valves will be isolated with ball valves for each fixture, concealed hydraulic button-type flush valves, and metered push-button type lavatory faucets.

F. DWV PIPING: DWV piping will be concealed behind the wall. DWV piping shall be PVC DWV, solvent welded, for all concealed piping. A cast iron no hub DWV vent pipe with a cast iron roof mounted vandal cap vent shall be required, through the roof.

G. REMOVABLE PIPE TRAPS: All floor drain, sink drain, and waste traps shall be removable for maintenance. Floor drains shall be trapped behind the wall in the utility chase using a combination waste and vent system. Floor drains shall be increased two pipe sizes over standard to allow code use. All surface mounted utility chase piping shall be mounted on Uni-strut with plastic isolators to code. Sink drain traps shall be concealed behind the utility chase walls where maintenance staff can access all plumbing.

H. PLUMBING FIXTURES: Plumbing fixtures shall be constructed of vitreous china, manufactured by American Standard. Toilets shall be wall hung, rear discharge, with concealed lever- type flush valves. Toilet seats shall be heavy duty solid core plastic with an open front, non-flammable construction with continuous stainless steel concealed self-

checking hinges. Lavatories shall have concealed remote traps behind the mechanical wall. Schedule of fixtures:

1. Water Closets: American Standard, 2634.101
2. Water Closet Flush Valve: Sloan " Royal", 952-1.6
3. Urinal: American Standard, 6515.001
4. Urinal Flush Valve: Sloan "Royal", 995-1
5. Lavatories: American Standard, SLS-7000

I. FLOOR GRATES: Removable 350 lbs. per square foot pultruded fiberglass non-skid floor grates shall be installed over every opening in the utility chase for OSHA protection/compliance.

J. HOSE BIB: There shall be one Woodford B65 hose bib provided in the utility chase.

2.4 ELECTRICAL

A. GENERAL: Electrical system and components shall be commercial grade or better and piping conduits shall be installed on commercial Uni-strut wall hangers. Interior and exterior electrical lighting fixtures in public areas shall provide lifetime manufacturer's warranty.

B. PANEL/WIRING: One 200 amp main industrial grade Panel Board, Square "D" QO series, shall be mounted in the utility chase in the restroom building. All breakers shall be plug- on type, minimum 22,000 A.I.C. RMS (Sym) at 120/240 vac. Wiring shall be stranded copper wire #12 min in EMT piping with screw fittings.

C. PIPING: All piping shall be surface mounted to the masonry block walls with minimum of 2" fastener penetration. EMT conduit shall be compression type. Main panel shall maintain a 30" X 36" safety code required clear space, floor to 6' above finished floor.

D. EXTERIOR LIGHTING: Swoop 610, LED, vandal resistant, wall mounted, 14 watt, clear prismatic lens with built in photoelectric control.

E. INTERIOR LIGHTING: Luminaire VPF84, LED, vandal resistant surface mounted, LED Lamp, wrap around lens, low temperature driver, built-in occupancy sensor activated with additional occupancy sensor for fan control.

F. CHASE LIGHTING: Luminaire VPF84, LED, vandal resistant surface mounted, LED Lamp, wrap around lens, low temperature driver, built-in occupancy sensor activated with wall switch override.

G. LIGHTING CONTROL: All exterior restroom lighting shall be controlled occupancy sensor.

H. ELECTRICAL OUTLETS: (2) commercial spec grade dedicated GFI duplex in the men's and women's restrooms.

2.5 CERTIFICATIONS

A. Building will be certified in compliance with the plan approved by the State of California, Department of Housing and Community Development and will be delivered with an applied insignia in compliance with all State regulations. The local building authority shall provide site inspections for the underground mechanical piping and final connections, footings, and access issues outside the restroom footprint. Restroom building subcontractor shall also furnish 1 year warranty, certifications for the concrete slabs, specification compliance, and maintenance manuals for the building and components.

PART 3 - EXECUTION

3.1 SITE SCOPE OF WORK BY OWNER OR GENERAL CONTRACTOR

A. The general contractor shall prepare the restroom building sub grade pad to receive the prefabricated building in accordance with the final drawings that will be provided to the Contract. The drawings included in the construction plan are draft provided by manufacturer are generally accurate for bidding purposes. However, the Contractor shall not build the pad and underground utilities until final set is provided.

1. The building pad shall be excavated to 17" deep from the final building concrete slab elevation in accordance with the drawing titled "restroom foundation."
2. The building pad shall meet a 95% compaction in lifts using class II base for the first six inches and compacted native soil for the final six inches, leaving the finished sub base pad elevation at finished floor, minus 5".
3. The General Contractor shall provide water, sewer and electrical at different stub-ups/blockout locations required by the manufacturer.
4. General Contractor shall coordinate with restroom supplier to provide full site delivery access for a 70' tractor-trailer and hydro crane to the final building site.
5. If the final site access is over existing sidewalks, utilities, or landscaping, the general contractor shall be responsible for plating and or tree trimming, utility line removal, or other to protect any existing conditions.
6. The hydro crane must be able to locate no greater than 35' from the center point of the building to the center point of the crane.
7. The utilities shall be furnished per bid site plans. Final stub-ups locations shall be per final restroom manufacturer that will be provided to the Contractor
8. General contractor shall furnish and install final grading, landscaping and sidewalks.

3.2 CONNECTION TO UTILITIES

A. The Contractor shall furnish Electrical, Water, and Sewer at the proper stub-ups, for this project. Restroom manufacturer will provide final hook up of the water, sewer, and electrical inside the building only. Final utility connections shall be by general contractor. General contractor shall flush the water lines thoroughly before making final water connection to the building.

END OF SECTION

SECTION 13 01 00
PLAYGROUND STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

A. County of Fresno will furnish 3 playground structures to be installed by contractor. Contractor shall be responsible for the coordination with the vendor, the installation of the structures, foundation, curbing, concrete slab and any other necessary work to have fully operational play structures.

B. Each of the pre-engineered playground package will be shipped as a pre-cut and pre-fabricated package that will include the structural frame members, components, fasteners, and installation instructions.

C. Playground structure manufacturer has a 5 month lead time from time of execution of contract. The playground structures are expected to be delivered by October 2025; however, it is outside County's control. Contractor cannot claim delay should manufacturing of the playground is delayed. The playground manufacturer will only store the playground structures once manufactured for 30 days without charge. Contractor shall be ready to receive, offload and store at a safe location or immediately install the playground structures when manufacturer is ready to ship. If Contractor causes delay, and playground manufacturer charges storage fee, Contractor shall be responsible for the storage fee. The charge will be deducted from the playground installation bid item.

D. The items covered in this Specification include the following:

1. Custom Playground structures

E. Section Includes:

1. Under this item, the Contractor shall furnish all labor, materials, equipment and perform all operations necessary for the completion of the work as shown on the drawings. This includes all excavation, drainage trench construction, concrete footings, backfill, hardware, assembling the structure, fittings, and accessories, in accordance with the drawings, specifications and directions of the Owner's Representative.

F. Related Sections:

1. Section 01 50 00 - Temporary Facilities and Controls
2. Section 31 22 00 – Grading
3. Section 31 23 02 – Excavating and Fill for Utilities
4. Section 32 13 13 – Site Concrete Work
5. Section 13 02 00 – Playground tile surfacing
6. Section 03 20 00 – Concrete Reinforcing

7. Section 03 30 00 – Cast-in-place concrete

1.2 SYSTEM DESCRIPTION

A. Playground are prefabricated tubular steel structures.

B. The plans show a general description of the playground dimensions, layout, minimum required pad area. The plans are not to be considered a design plans of the playground. Contractor shall be responsible for reviewing the provided manufacturer drawing, calculations as required to complete the installation.

1.3 QUALITY ASSURANCE:

A. Provide evidence of commitment of quality craftsmanship as demonstrated by the following:

1. It shall be the obligation of the Contractor to ensure that all criteria are satisfied and the burden of proof of conformance shall rest with the contractor. The Owner's Representative shall be the sole judge of conformance, and the Contractor is cautioned that he will be required to Bid and provide a finished product meeting all stated criteria. It is recommended that the contractor or project manager follow an inspection and approval process, as provided by manufacturer.

B. Shipping Protection:

1. Protect prefinished metal from abrasion during shipping.
2. Remove the packaging wrap upon receipt of order.

C. Product Delivery:

1. Verify that delivered materials to job site are in an undamaged condition. Contractor is responsible for offloading the material on site. The manufacturer requires a forklift with extended forks and a capacity of greater than 5,000 lbs. to offload the pallets. Shipping pallet dimensions can reach upwards of 4'Wx8'Hx 18'L and will be delivered on a 53' dry-van without a liftgate. Unload materials with necessary equipment, store covered out of weather, and keep out of direct sun. Inspect parts upon delivery, compare with manufacturer's bill of material, and report any missing or non-conforming parts to manufacturer within this time.
2. Inspect all items for abraded surfaces and other unacceptable deliver conditions. Return damaged or non-conforming items to manufacturer for replacement.

PART 2 – PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL:

A. Install according to manufacturer's plans installation instructions and these specifications.

B. When unloading, use precautions to protect finished materials. (Do not use chains or buckets to move materials.) Field-handle carefully to avoid scratching.

3.2 FOOTINGS & CONCRETE SLAB:

A. No soil report is available. The manufacturer will design footings. Concrete footing shall be responsibility of the Contractor

3.3 ERECTION:

A. The structure shall be erected in a work-man-like manner, installed according to the manufacturers' installation instructions. Care shall be taken to avoid damaging the structure during installation.

3.4 FENCING AND PROTECTION:

A. Refer to Section 01 50 00 Temporary Facilities and Controls. Contractor shall ensure the area of the playground is secured with a temporary 6 foot tall fence and locked to prevent from general public access. The site shall be fenced for the duration of the installation of the playground and surface tiles until Engineer allows removing it from site.

3.5 CERTIFICATION:

A. Contractor shall obtain certification from manufacturer that the installation has been completed per manufacturer's recommendation.

END OF SECTION

SECTION 13 02 00
PLAYGROUND SURFACING TILES

PART 1 GENERAL

2.1 SECTION INCLUDES

A. Resilient, interlocking, playground safety surfacing tiles.

2.2 RELATED SECTIONS

A. Section 13 01 00 – Playground Structure.

B. Section 03300 (03 30 00) – Cast-in-Place Concrete: Concrete subsurface.

2.3 REFERENCES

A. ASTM C 67 – Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.

B. ASTM C 501 – Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abrader.

C. ASTM D 412 – Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension.

D. ASTM D 573 – Standard Test Method for Rubber-Deterioration in an Air Oven.

E. ASTM D 624 – Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.

F. ASTM D 2047 – Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.

G. ASTM D 2859 – Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials.

H. ASTM D 3676 – Standard Specification for Rubber Cellular Cushion Used for Carpet or Rug Underlay.

I. ASTM E 303 – Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.

J. ASTM F 1292 – Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment.

K. US Consumer Product Safety Commission (CPSC) Handbook for Playground Safety.

2.4 QUALITY ASSURANCE

A. Installer's Coordination and certification:

1. Contractor shall coordinate final dimensions of concrete slab, curbing prior to forming and pouring concrete.
2. Follow tile installer requirements per these specification and manufacturer’s recommendations
3. Once concrete is poured, send pictures to tile manufacturer as required per these specifications

2.5 ENVIRONMENTAL REQUIREMENTS

A. Tile Temperature: Ensure surface temperature of playground safety surfacing tiles is a minimum of 50 degrees F (10 degrees C) at time of installation.

B. Air Temperature: Ensure air temperature is a minimum of 40 degrees F (4 degrees C) for a minimum of 24 hours before and during installation.

C. Tile or Air Temperatures: Consult manufacturer's installation instructions for modified installation procedure when tile or air temperatures are above 85 degrees F (29 degrees C).

PART 2 – PRODUCTS

2.1 MANUFACTURER

A. SofSURFACES, Inc., 4393 Discovery Line, PO Box 239, Petrolia, Ontario N0N 1R0, Canada. Toll Free (800) 263-2363. Phone (519) 882-8799. Fax (519) 882-2697. Website www.sofsurfaces.com. E-mail info@sofsurfaces.com.

B. Contact: Peter Druck, cell 303-93-4218

2.2 PLAYGROUND SURFACING TILES

A. Tiles furnished by County: SofTILE DuraSAFE Series

1. Series: Plus
2. Description: Resilient, interlocking, playground safety surfacing tiles.
3. Compliance: Meet and exceed CPSC guidelines for impact attenuation.
4. Material: Compression-molded, recycled rubber and binding agents.
5. Tile Locking: U-shaped male and female configuration on all 4 sides to lock tiles to adjacent tiles.
6. Top Edges: Chamfered.
7. Tile Bottom: Hollow core stanchion pattern.
8. Wear Layer:

a. Plus Series: Combination of elongated SBR rubber and granulated crumb

rubber. Pigmentation used to achieve color. Minimum 0.375 inch thick.

9. Size: 24 1/8” X 24 1/8” Nominal.

    a. Installed size: 24” X 24”

10. Thickness:

    a. The thickness was selected based on manufacturer’s recommendation for the critical fall height of each specific playground. Contractor shall be aware that each of the 3 playground have different tile thickness. The Curbing height shall match the tile thickness. will be required to provide thickness one more level higher than minimum required thickness by manufacturer.

    b. Based on Manufacturer’s recommendation (CONTRACTOR TO CONFIRM THESE THICKNESSES BEFORE POURNG CONCRETE):

        1) Model R5044C65A Max fall height = 96 inches / 8 feet. Use 4.25 inches

        2) Model R3550DE6A Max fall height = 72 inches / 6 feet. Use 3.25 inches

        3) Model R50DDF20A Max fall height = 96 inches / 8 ft. Use 4.25 inches

11. Minimum Weight Each Tile:

    a. Tiles shall have the following minimum weight of each tile for the required thickness
    b. Plus Series:

        1) 2.00-Inch Thickness: 23.00 pounds.
        2) 2.25-Inch Thickness: 24.50 pounds.
        3) 2.75-inch Thickness: 27.50 pounds.
        4) 3.25-Inch Thickness: 29.00 pounds.
        5) 3.75-Inch Thickness: 31.00 pounds.
        6) 4.25-Inch Thickness: 33.00 pounds.
        7) 4.75-Inch Thickness: 35.50 pounds
        8) 5.00-Inch Thickness: 38.00 pounds
        9) 5.25-Inch Thickness: 39.00 pounds

12. Colors:

    a. Plus Series: Turf Green. Color shall be confirmed by owner prior to ordering tiles

B. Test Results:

1. Impact Attenuation, ASTM F 1292:

a. g-max Score: Less than 125.
b. Head Injury Criteria (HIC) Score: Less than 700.

2. Freeze Thaw, ASTM C 67: No deterioration.
3. Rubber Deterioration/Air Oven, ASTM D 573: No deterioration.

4. Slip Resistance:

a. ASTM E 303:

1) Dry: 51 minimum.
2) Wet: 44 minimum.

b. ASTM D 2047:

1) Plus: 0.533.
2) Premium: 0.601.

5. Tensile Strength, ASTM D 412:

a. Plus Series: .661 Mpa.

6. Elongation at Break, ASTM D 412:

a. Plus Series 68.5 percent.

7. Tear Strength, ASTM D 624:

a. Plus Series: 2.2 kNm

8. Flammability:

a. Burning Pill, ASTM D 2859: Pass.

9. Density, ASTM D 3676:

a. Plus Series: 817 kg/m3.

10. Taber Abrasion, Wear index, ASTM C 501:

a. Plus Series: 205

2.3 ACCESSORIES

A. Corners:

1. Prefabricated outside and inside corners.
2. Material: Same as playground safety surfacing tiles.

B. Ramps:

1. Prefabricated Ramps: “SofRAMP Jr.”.
2. Prefabricated ADA-Compliant Ramps: “SofRAMP ADA”.
3. Material: Same as playground safety surfacing tiles.

C. Adhesive: Furnished by manufacturer.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine areas to receive playground safety surfacing tiles. Coordinate with vendor’s representative and Engineer. Notify Engineer if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

3.2 PREPARATION

A. Prepare subsurface in accordance with manufacturer's instructions to ensure proper slope, support and drainage for playground safety surfacing tiles.

B. Concrete Subsurface:

1. Concrete subsurface shall be as specified in Section 03 30 00.
2. Concrete surface shall be smooth (fine to medium broom finish) with no undulations.
3. If concrete has undulations deeper than ¼ inch when measured with a straight edge, contractor shall use concrete or cement type patching material to eliminate undulations.
4. Apply light broom finish.
5. Ensure concrete is sound with no loose material or cracks over 1/8 inch wide.
6. Ensure concrete is a minimum of 10 days old.
7. Test concrete for moisture in accordance with manufacturer's instructions to ensure it has sufficiently cured and is dry.
8. Power wash existing concrete in accordance with manufacturer's instructions.
9. Build cut out as shown in the plans
10. Contractor shall coordinate with duraSAFE installer and advise when the concrete was poured has been completed and a photo sent showing completion.
11. Site shall be clean and ready when the tile installer arrives.
12. Contractor to verify that no concrete residue is left on the equipment posts. Posts to be clean prior to arrival of the installer and the tile installation.
13. Curbs have to be designed around the thickness of tile and they need to be consistent in height and width with no greater than a 1/8 inch variance in height. Installer will NOT trim the pedestals (support of the tiles) as that affects fall height protection.
14. The curb edge against the tile shall have a maximum rounded edge of 0 inch (as square as possible).

15. The edge of the concrete curb or sidewalk shall be poured at 90 degrees to the surface. The concrete curb shall not be wider at the base where it meets the pad.

3.3 INSTALLATION

A. Tile vendor will Install playground safety surfacing tiles in accordance with manufacturer's instructions at locations indicated on the Drawings.

B. Ensure prepared subsurface and tiles are dry and clean.

C. Coordinate layout tile surface in accordance with manufacturer's instructions. Tile are 2'x2'. The distance from face of curb to face of curb SHALL NOT be larger than shown in the plans. It is preferred that the face to face of curb distance be slightly shorter (- ½") than shown in the plans so a full tile fits at the edge.

D. Apply adhesive in accordance with manufacturer's instructions for tile-to-tile as well as tile-to-base for all keystone and strategic tile rows. (By OTHER)

E. Installation to be completed by a factory trained and certified installer.(BY OTHER)

3.4 FIELD QUALITY CONTROL (BY OTHER)

A. Installed Surface Performance Test: ASTM F1292

1. Perform impact attenuation testing according to ASTM F1292 in presence of Owner's representative within 30 days of installation.

a. Confirm Impact Attenuation Performance of Surfacing Tiles:

1) g-max Score: Less than 125
2) Head Injury Criteria (HIC) Score: Less than 700

2. Test Equipment Operator Qualifications:

a. National Recreation and Parks Association/National Playground Safety Institute (NRPA/NPSI) Certified Playground Safety Inspector (CPSI).
b. Trained in the proper operation of Triax test equipment by competent agency.

3. Determine compliance with ASTM F 1292, unless otherwise specified in this section.

3.5 CLEANING (BY OTHER)

A. Remove adhesive spills from playground safety surfacing tiles in accordance with manufacturer's instructions.

B. Clean tiles in accordance with manufacturer's instructions.

3.6 PROTECTION BY CONTRACTOR

A. Protect playground safety surfacing tiles from foot traffic for a minimum of 12 hours after installation.

B. Protect completed tiles from damage during construction

C. Contractor to enclose the area to prevent from general public until the playground is acceptable and safe to be used.

END OF SECTION

SECTION 13 03 00
MULTIPURPOSE COURT SURFACING

PART 1 - GENERAL

1.1 SUMMARY

A. This section is a part of the entire set of Contract Documents and shall be coordinated with the applicable provisions of the other parts.

B. Related Sections:

1. STANDARDS

a. All work shall be done in accordance with American Sports Builders Association (A.S.B.A.).

1.2 SCOPE OF WORK

A. This specification covers the construction and installation for: *Multipurpose* courts at *Kearney Park*.

B. Courts shall be cleaned using a stiff bristle broom and gas powered blower or water based pressure spray unit capable of generating 2500 psi at the nozzle tip, to remove all dirt and debris.

C. The work to be performed under this specification includes all labor, equipment, materials and supplies necessary for the installation of the tennis courts included in this contract.

PART 2 – PRODUCTS

2.1 COURT SURFACE MATERIAL

A. Court Surfacing Materials shall be:

1. Acrylic, as manufactured by Nova Sports U.S.A., 6 Industrial Rd., Bldg. #2., Milford, MA 01757. 800-USA-NOVA
2. Approved equal

B. All coatings shall be pure acrylic, containing no asphaltic or tar emulsions, nor any vinyl, alkyd or non-acrylic resins. The color system shall be factory-mixed compounds requiring only the addition of water at the jobsite except for the addition of sand to Novasurface. All materials shall be delivered to the jobsite in sealed containers with the manufacturer's label affixed.

PART 3 – EXECUTION

3.1 APPLICATION

A. New asphalt pavement shall cure for 14 days prior to application of any surfacing materials.

B. Contractors must notify the Engineer of all applications, 48 hours prior to installation.

C. The surface to be coated shall be inspected and made sure to be free of grease, oil, dust, dirt and other foreign matter before starting work.

D. The surface shall be flooded. Any ponding water remaining that is deep enough to cover the thickness of a five-cent piece shall be corrected using a patch mix consisting of Novabond, 50-mesh sand and Portland cement, as per manufacturers' directions. Depressions must be primed with a 50% dilution of Novabond and water prior to patching.

E. Application shall proceed only if the surface is dry and clean and the temperature is at least fifty degrees (50°F) and rising, and the surface temperature is not in excess of one hundred forty degrees (140°F). Do not apply coatings when rain is imminent.

F. Each coat in this system must dry completely before next application. Between each coat, inspect entire surface. Any defects should be repaired. Scrape surface to remove any lumps, and broom or blow off all loose matter.

G. Using a neoprene rubber squeegee, apply one (1) coat of Novasurface acrylic resurfacer, diluted with one (1) part clean water, to two (2) parts Novasurface. Clean, bagged sand shall be incorporated into the diluted Novasurface at the rate of five (5) to ten (10) Lbs. per gallon. Sand gradation shall be 50 to 60-mesh. Allow application to dry thoroughly.

H. Using a neoprene rubber squeegee, apply two (2) coats of Novaplay (colors to be designated by owner). Allow each application to dry thoroughly. A small (not to exceed 8 fl. oz per gal.) quantity of water may be used in diluting these coatings, only if coatings are drying too rapidly. Permission of the owner shall be obtained before adding additional water.

3.2 LINE MARKINGS

A. Upon completion and acceptance of the tennis surface, this Contractor shall prepare and paint lines for tennis.

B. All lines are to be applied by painting between masking tape with a paintbrush or roller, according to U.S.T.A specifications.

C. Prime masked lines with Seal-A-Line. Allow application to dry.

D. Paint lines with Novatex textured line paint. Allow application to dry.

E. Remove masking tape immediately after lines are dry.

F. Protect adjacent areas and structures (fences, posts, sidewalks, buildings, etc.), which are not to be coated. In the event that coatings are applied to above, remove immediately before drying is complete.

3.3 COMPLETION

A. Upon completion, the contractor shall insure proper removal of all construction debris, surplus materials, empty containers and wash water, and shall leave the site in a condition acceptable to the owner. The court is to be left secure so as to prevent vandalism.

3.4 LIMITATIONS

A. Apply coatings only when ambient temperature is fifty degrees (50°F) and rising, and the surface temperature is not in excess of one hundred forty degrees (140°F).

B. All NOVACRYLIC coatings are waterborne and cannot cure in cold temperatures or when subject to moisture. Care should be taken not to apply coatings when rain is forecast or sudden drop of temperature is expected. Climatic conditions such as very cool evenings and high dew points dictate that work should be completed early in the day so the coatings can be exposed to enough warm sunlight to form a film before sunset. The opposite applies during times of high heat, low humidity and drying breezes: under these conditions, work very early in the morning or very late in the day. If the product seems to be drying too fast in hot weather, mist the pavement with water to make the application easier. Care must be taken to allow each application to dry thoroughly prior to recoating.

END OF SECTION

SECTION 26 00 00
GENERAL ELECTRICAL REQUIREMENTS

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. This section includes general requirements specifically applicable to Divisions 26, 27, & 28; including requirements form 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

H. accessible without removing panels, walls, ceiling or other parts of structure.

I. Indicated, Shown, or Noted: As indicated, shown or noted on Drawings or Specifications.

J. Above Grade: Not buried in ground and not embedded in concrete slab on ground.

K. Below Grade: Buried in ground or embedded in concrete slab on ground.

L. Underground: Buried in ground, including under building slabs.

M. Connect: Complete hookup of item with required services, including conduit, wire and other accessories.

N. Furnish: Supply and deliver complete.

O. 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.

P. Reviewed, Satisfactory, Accepted, or Directed: As reviewed, satisfactory, accepted or directed by or to engineer.

Q. Motor Controllers: Manual or magnetic starters (with or without switches), individual pushbuttons, or hand-off-automatic (HOA) switches controlling the operation of motors.

R. Control Devices: Automatic sensing and switching devices such as thermostats, pressure, float, electro-pneumatic switches and electrodes controlling operation of equipment.

S. Contractor: Electrical Subcontractor unless stated otherwise.

T. Use (verb): Furnish and install as defined above.

1.5 LICENSES, FEES AND PERMITS

A. 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

A. 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

A. 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."

1. Fire Alarm Systems
2. Communication Systems
3. Pull Boxes and Cabinets
4. Conduit and Wire
5. Service and distribution
6. Transformers

2.4 OPERATING AND MAINTENANCE MANUALS

A. 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

A. 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

A. 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 26 05 00
BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Materials, equipment fabrication, installation and tests in conformity with applicable codes and authorities having jurisdiction, for the following:

1. Conduit and raceways
2. Wire and cables
3. Outlet boxes
4. Junction boxes
5. Pull boxes
6. 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

A. Published specification 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

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

C. California Electrical Code (CEC)

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 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

E. 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

1.1 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 NEMA RN-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 NEMA RN-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 NEMA RN-1

3. Fittings shall be threaded.
4. Connectors and couplings

    a. Watertight, 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

A. Conductors for power and lighting systems 600V or less:

1. Conductors shall be 90°C rated.
2. Conductors size #12 AWG and larger shall be stranded copper.
3. Type:

a. THWN for wet or underground locations
b. THHN for dry locations.
c. 90°C rated

4. Minimum conductor size for voltage drop:

a. Minimum size #12 AWG for runs 50 feet or less for 208/120V systems or 100 feet or less for 480/277V systems
b. 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.

c. Underground circuits shall be #8 AWG minimum wire, unless otherwise noted.
d. 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) VD is the maximum allowable voltage drop (volts)
6) N is the quantity of parallel conductors per phase

5. Minimum size conductors for OCPD shall be determined from CEC Table 310.16 with ampacity corrected for 115°F.

6. Conductor size shall the largest size to meet maximum voltage drop (2.2 A 4) and to meet CEC ampacity requirements (2.2 A 5).

B. For Signal and Communication Circuits:

1. Special Cables: As specified on Drawings.
2. 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.
3. Ends of stranded conductors shall be tinned.

2.3 OUTLET BOXES, JUNCTION BOXES, AND PULL BOXES

A. Above ground locations

1. Outlet Boxes

a. Hot-dipped galvanized after fabrication
b. Of required size, minimum 4 inches square, for flush mounted devices and lighting fixtures
c. Cast type with gasketed covers for outdoor or wet locations.
d. Device and fixture back boxes shall be 2-1/4” deep, minimum.

2. Junction and Pull Boxes

a. Use outlet boxes with appropriate covers as junction boxes wherever possible.
b. 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.

B. In-ground pull boxes, handholes, and manholes

1. Precast concrete type with required extension collars.
2. Covers

a. 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.

b. Covers shall include hold down bolts.
c. Top of cover shall be flush with top of box.
d. Covers shall be identified as ELECTRICAL, SIGNAL, or COMMUNICATIONS unless otherwise specified.

3. Size boxes as indicated on Drawings. If size is not indicated on Drawings, use CEC as a minimum requirement.
4. Boxes shall have 2” thick (minimum), reinforced concrete bottoms with 1” diameter drain hole over 12” of crushed rock.
5. Boxes shall have approved cable supports.
6. Concrete encased stubs for handholes extending five (5) feet beyond handhole.
7. All pull boxes shall be no smaller than a Christy N-9.
8. 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.
9. Manufacturer shall be Brooks Products, Oldcastle Enclosure Solutions (Christy), Jensen Precast, or approved equal.
10. All sections between box, extension rings, etc. and penetrations shall be sealed with mortar.

C. 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.
3. Provide Walker Wood Floor Boxes at wood floors provide quantity required to accommodate each device.
4. Provide brass flip cover lids.

D. Outlet boxes, junction boxes, pull boxes, etc. recessed in a concrete wall shall be deep masonry boxes.

2.5 CONDUIT AND EQUIPMENT 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.

B. Materials

1. All materials not otherwise noted:

a. Steel with the finished part hot dipped galvanized
b. Stainless steel for corrosive or damp environments

2. All bolts and nuts shall be stainless steel.

C. Supports anchored to earth shall be anchored in a concrete base per details.
D. Manufacturers shall be Caddy, Unistrut, Powerstrut, or approved equal.
E. All exposed channels shall have end caps made by the channel manufacturer and designed for use with the channel.

2.5 WIRE CONNECTORS

A. 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.
B. For wire size #6 AWG and larger: T&B or approved equal screw type with 3M "#33+" or Plymouth "Slipknot Gray" tape insulation.
C. Underground wire splices

1. Connect ends of conductors with copper compression connectors, 3M Scotchlok or approved equal.
2. Seal splice with inline resin splice kit approved for weather exposure, direct burial, and wet locations, 3M Scotchcast or approved equal.

D. Only set screw, compression type connectors may be used for MC cables. Fishhook/open tang connectors are prohibited.

2.6 GROUNDING

A. Ground Rods:

1. 3/4 inch diameter
2. Copper weld type
3. 10 feet in length.

B. Ground Wire: Conductors shall be medium-hard drawn, copper, and stranded, with sizes as shown on drawings.

C. Utilize CADWELD Multi-System Exothermic Welding for below grade ground connections.

D. Bolts, nuts, and washers shall be bronze, cadmium plated steel, or other corrosion resistant material approved for the purpose.

2.7 MISCELLANEOUS MATERIALS

A. All screws, bolts, nuts, and washers on equipment outdoors or in wet or corrosive environments shall be stainless steel.

2.8 SEALANTS

A. 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.

B. Conduit sealant

1. Two part, self curing urethane
2. Non-sagging
3. Liquid and gas tight
4. Chemically stable once cured
5. Compatible with conduit and conductor materials
6. Designed for use as conduit seal

C. 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

A. Nameplates:

1. White, acrylic plastic suitable for indoor or outdoor use
2. Face colored as below with engraved, white, 3/16" minimum, Arial or similar font characters

a. Equipment on normal systems: Black face
b. Equipment on emergency systems: Red face

3. Clear plastic overlay suitable for indoor or outdoor use that can be replaced if vandalized.
4. Sign shall include device name, voltage, and size.
5. Outdoor nameplates shall be UV stable and fade resistant.

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-mill 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 26 05 26
GROUNDING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. 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

A. 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

A. Ground rods shall be:

1. 3/4 inch diameter
2. Copper weld type
3. 10 feet in length.
4. Ground rings

2.2 BARE COPPER GROUND WIRE

A. Conductors shall be medium-hard drawn, copper, and stranded, with sizes as shown on drawings.

2.3 BELOW GRADE GROUND CONNECTIONS

A. Utilize CADWELD Multi-System Exothermic Welding.

2.4 HARDWARE

A. 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 26 08 00
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 preformed

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

3.1 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 megohmeter. 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 26 24 16
PANELBOARDS

PART 1 – GENERAL

1. SECTION INCLUDES

   A. Lighting and Appliance Panelboards

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.

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

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.

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.

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 240VAC/48VDC 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 240VAC.
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/277VAC 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/277VAC.
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

A. 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

A. 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 26 27 00
LOW VOLTAGE (0-600V) DISTRIBUTION EQUIPMENT

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Materials, equipment fabrication, installation and tests in conformity with applicable codes and authorities having jurisdiction, for the following:

1. Wiring devices
2. Terminal cabinets
3. Power distribution terminal blocks

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

A. Published specification standards, tests or recommended methods of trade, industry or government organizations apply to work in this section as cited in Section 260000.

1. California Building Code
2. California Electrical Code
3. Underwriters' Laboratories

a. UL 20: General Use Snap Switches
b. UL 50: Enclosures for Electrical Equipment, Non-environmental Considerations
c. UL 50E: Enclosures for Electrical Equipment, Environmental Considerations

d. UL 111: Multi-Outlet Assemblies
e. UL 231: Power Outlets
f. UL 486A: Wire Connectors
g. UL 486B: Wire Connectors
h. UL 486E: Equipment Wiring Terminals for Use with Aluminum and/or Copper Conductors
i. UL 498: Attachment Plugs and Receptacles
j. UL 514A: Metallic Outlet Boxes
k. UL 514C: Nonmetallic Outlet Boxes, Flush-device Boxes, and Covers
l. UL 514D: Cover Plates for Flush-mounted Wiring Devices
m. UL 917: Clock Operated Switches
n. UL 943: Ground Fault Circuit Interrupters
o. UL 1681: Wiring Devices Configurations
p. UL 1773: Standard for Termination Boxes
q. UL 1953: Power Distribution Terminal Blocks
r. UL 2255: Standard for Receptacle Closures
s. UL 2682: Switch Rated Plugs and Receptacles

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 016200.

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. A single line block diagram showing exactly the manner in which the contractor proposes to layout the system.
9. Wiring diagrams
10. Illustrations and scale drawing of the racks, equipment layouts etc.
11. Drawings shall include designations, dimensions, operating controls, instruments, riser diagrams, routing diagrams etc.
12. The contractor shall also submit a copy of his valid state contractor's license and show proof that he is a distributor of the submitted equipment.

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.

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 WIRING DEVICES

A. Wall (Local) Switches

1. Totally enclosed
2. AC rated
3. 20A rated
4. Silent type, unless noted otherwise on the plans
5. Manufacturers

    a. Hubbell Premise Wiring
    b. Leviton

6. Specification Grade

B. Receptacles

1. Duplex receptacles shall be 20A, 125VAC rated, 3-wire, grounded
2. Receptacle shall include a LED that indicates it has power.
3. Receptacles shall be tamperproof.
4. Manufacturers

    a. Hubbell Premise Wiring
    b. Leviton

5. Specification Grade
6. Exterior receptacle plates shall have steel, weatherproof, vandal-resistant while-in-use cover with key lockable/locking cover with keys to match owner standards.
7. All automatically switched receptacles shall be marked per 2016 CEC 406.3(E).

C. Other special purpose receptacles shown on Drawings shall be of same quality.

D. GFI receptacles shall self test every 3 seconds and indicate if the GFI protection has passed or failed the test.

E. Wall Plates:

1. Commercial: Satin finish stainless steel
2. Educational and medical: Satin finish stainless steel
3. Medical: Satin finish stainless steel
4. Residential:

    a. Material: Nylon
    b. Color: Match wall color

F. Switch and receptacle colors shall be as noted below unless otherwise specified.

1. Job type dependent:

a.	Educational and medical:	Gray
b.	Commercial:	White
c.	Residential:	Match wall color

2. Feature type dependent (not job type dependent):

a.	Isolated Ground (IG) receptacle:	Orange
b.	Equipment on emergency system:	Red
c.	Receptacle with surge suppression:	Blue

d. Isolated ground receptacles with feature dependent color (other than orange) shall have orange triangle.

3. Follow the facility has a color code scheme if the facility has one. Verify with owner.

1.2 TERMINAL CABINETS

A. Construction
    1. Fabricated from code gauge steel, size as indicated on drawings, with flush latch and concealed hinges and mounting screws.
    2. Enclosure for flush mounted cabinets shall be designed for flush mounting.
    3. Enclosure for surface mounted cabinets shall be designed for surface mounting.

B. Where size is not indicated, the minimum size shall be 24 inches wide x 30 inches high x 4 inches deep.

C. Cabinet shall be Square D “Mono-Flat Fronts”, or approved equal.

D. Terminal cabinets shall include a backboard at inside back of cabinet.
    1. The backboard shall be 3/4" inch thick plywood
    2. Paint backboard with 3 coats of fire retardant paint.

E. Provide and install one terminal point for each wire within the terminal cabinet.

F. NEMA type:
    1. Interior, non-corrosive, non-hazardous (classified) locations: NEMA 1
    2. Exterior locations with vents: NEMA 3R
    3. Cooled enclosures: NEMA 4
    4. Enclosures containing electronics in dusty areas or outdoors: NEMA 4
    5. Enclosures in hazardous (classified) locations: NEMA 4 or 4X (corrosive locations) listed for hazardous classification

6. Enclosure in corrosive locations: NEMA 4X
7. All seams on NEMA 3R, 4, and 4X enclosures shall be continuously welded with welds ground smooth.

G. Coating

1. The completed enclosure shall be degreased and cleaned.
2. After the cleaning process is finished, the enclosure shall be phosphatized.
3. After the phosphatizing, the enclosure shall receive an electrostatic deposition of polyester powder coating followed by baking to produce a hard durable finish.
    a The minimum thickness of the paint film shall be 2.0 mils.
    b 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.
    c Paint film shall be uniform in color and free from blisters, sags, flaking and peeling
4. Finish shall conform to UL 50 and UL 50E.
5. Color shall be ANSI 61 Gray.
6. Coat underside surfaces of equipment outdoors or in damp locations with a corrosion resistant coating.

1.3 POWER DISTRIBUTION TERMINAL BLOCKS

A. Power distribution terminal blocks (PDTB) shall be finger-safe, NEMA 1 type.

B. Conducting material shall be copper.

C. Current rating and short circuit rating of PDTBs shall be no lower than upstream overcurrent protective device.

D. Terminals

1. Each terminal shall be screw type and be designed for wire size connecting to it.
2. PDTB shall have one terminal for each wire connected to it on both load and line sides.

E. Load wire sizes and OCPD shall comply with CEC 240.21(B) and 240.92(B) as well as all other applicable codes.

F. PDTBs shall have provisions for panel or DIN rail mounting.

G. PDTBs shall be mounted within enclosure unless otherwise noted.

1.4 NAMEPLATES

3.1 Provide and install nameplates per Section 260500.

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. Outlet boxes shall be plumb.

H. Back of wall plates shall be flush with wall finish. Gaps between wall plates and wall or wall plates not parallel to wall are not acceptable.

3.2 CONNECTIONS TO EQUIPMENT

A. General:

1. Furnish and install required power supply conduit and wiring to equipment. See below for other wiring required.
2. Install rough-in work for equipment from approved shop drawings to suit the specific requirements of the equipment.
3. 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.
4. Furnish and install manual thermal protection for motors not integrally equipped with thermal protection.
5. 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.

3.3 IDENTIFICATION

A. Refer to Section 260500.

END OF SECTION

SECTION 26 28 00
LOW VOLTAGE (0-600V) CIRCUIT PROTECTIVE DEVICES

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Materials, equipment fabrication, installation and tests in conformity with applicable codes and authorities having jurisdiction, for overcurrent protective devices

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 specification standards, tests or recommended methods of trade, industry or government organizations apply to work in this section as cited in Section 260000.

1. California Building Code
2. California Electrical Code
3. Institute of Electrical and Electronic Engineers

a. IEEE 1015: Recommended Practice for Applying Low-Voltage Circuit Breakers Used in Industrial and Commercial Power Systems
b. IEEE 1458: Recommended Practice for the Selection, Field Testing, and Life Expectancy of Molded Case Circuit Breakers for Industrial Applications

4. Underwriters' Laboratories

a. UL 50: Enclosures for Electrical Equipment, Non-environmental Considerations
b. UL 50E: Enclosures for Electrical Equipment, Environmental Considerations
c. UL 98: Enclosed and Dead-front Switches
d. UL 244A: Solid-state Controls for Appliances
e. UL 363: Knife Switches
f. UL 489: Molded-case Circuit Breakers, Molded-case Switches, and Circuit Breaker Enclosures
g. UL 1066: Standard for Low-Voltage AC and DC Power Circuit Breakers Used in Enclosures
h. UL 2367: Standard for Solid State Overcurrent Protectors
i. UL 60947-7-3: Low-Voltage Switchgear and Controlgear - Part 7-3: Ancillary Equipment - Safety Requirements for Fuse Terminal Blocks

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 016200.

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. A complete set of drawings for any special items
7. Wiring diagrams

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.

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 programming, user, and maintenance manual(s), including trouble-shooting guidelines
5. Configuration settings
6. Wiring diagrams
7. Voltage ratings
8. Current ratings
9. Calibrated range
10. List of capabilities
11. Environmental ratings
12. NEMA enclosure type
13. Maintenance requirements
14. Installation instructions
15. Repair instructions

C. Provide manuals in one of the following formats

1. Three hardcopies
2. PDF

PART 2 – PRODUCTS

2.1 CIRCUIT BREAKERS

A. Circuit breakers shall be constructed in accordance with the following standards:

1. UL 489 or UL 1066
2. Federal Specification W-C-375B/GEN
3. NEMA AB1
4. CSA 22.2, No. 5-M91
5. IEC 157-1
6. BS 4752

B. Construction

1. Circuit breakers shall be constructed using glass reinforced polyester insulating material providing superior dielectric strength.
2. Current-carrying components shall be completely isolated from the handle and the accessory mounting area.
3. Breaker contact material shall be a non-weldable silver alloy.
4. Breakers shall have arc-extinguishing chutes.
5. Circuit breakers shall have an over-center, trip-free, toggle operating mechanism which will provide quick-make, quick-break contact action.
6. Multiple pole breakers shall have a common trip element and a single operating handle.
7. Circuit breakers for branch circuits shall be molded case
8. Circuit breakers shall have bolt-on/plug-on type bus connectors.

C. Trip type

1. Circuit breakers having a frame size of 150 amperes or less shall have thermal magnetic non-interchangeable, trip-free sealed trip units.
2. Circuit breakers with a frame size of 175 amperes to 1200 amperes shall have interchangeable thermal and adjustable magnetic trip elements.

D. There shall be two forms of visible trip indication.

1. The breaker handle shall reside in a position between ON and OFF.
2. In addition, there shall be a red trip indicator appearing in the clear window of the circuit breaker housing.

E. Circuit breakers shall be UL Listed with amperage ratings, interrupting ratings, and number of poles as indicated on the panelboard schedules.

F. Circuit breakers faceplates shall be marked with the following:

1. Rated ampacity
2. UL and IEC certification standards
3. Applicable voltage systems and corresponding AIR ratings

G. 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.

H. Branch circuit breakers rated 30 amperes and below shall be UL Listed to accept 60°C rated wire.

I. The interrupting capacity of all main and feeder branch circuit breakers shall be a minimum of 42,000ARMS symmetrical amperes.

J. All circuit breakers feeding HVAC units, motors, or circuit breakers supplying loads other than convenience receptacles or lights shall have lockout devices.

K. Standard circuit breakers up to 250A at 600VAC shall be UL Listed with HACR ratings.

L. All circuit breakers feeding 120V, 15A and 20A branch circuits in dwellings shall be AFCI.

M. Circuit breakers with shunt-trip or low voltage release shall be switch duty rated.

N. All fixed trip circuit breakers 1200A or greater and adjustable trip circuits breakers with a maximum rating 1200A or greater shall be equipped with one of the following methods to reduce arc flash energy.

1. Zone selective interlocking
2. Differential relaying
3. Arc flash detection and mitigation system in panel/board with the 1200A circuit breaker, refer to Section 260930

2.2 SAFETY SWITCHES (DISCONNECTS)

A. Switches shall be heavy duty type

B. Minimum voltage rating shall be 600V.

C. Minimum Size

1. Switches for disconnecting motors shall be sized for the horsepower of for motor(s).
2. All switches shall be sized per the overcurrent protective device protecting the switch.

D. Construction

1. NEMA 1 for indoors
2. NEMA 3R or NEMA 4 for outdoors
3. Handle shall be lockable in the off/disconnected/open position.

E. The switch shall include a barrier between the fuse section and the switch section with separate doors for each section. The entire fuse section shall be de-energized when the switch is in the off position.

F. Switch shall be equivalent to Square D H-rated series.

G. Finish: The entire enclosure shall be finished as follows.

1. Degreasing
2. Cleaning
3. Phosphatizing
4. Electrostatic deposition of polymer polyester powder coating followed by baking to produce a hard, durable finish.

    a. The minimum thickness of the paint film shall be 2.0 mils.
    b. Paint film shall be uniform in color and free from blisters, sags, flaking and peeling

5. Finish shall conform to UL 50 and UL 50E.
6. Color shall be ANSI 61 Gray.
7. Coat underside surfaces of equipment outdoors or in damp locations with a corrosion resistant coating

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. Furnish and install necessary hardware, hangers, blocking, brackets, bracing, runners, required for equipment specified under this section.

3.2 OVER CURRENT PROTECTION DEVICE COORDINATION STUDY

A. Contractor shall provide a coordination study to determine trip settings of circuit breakers and/or appropriate fuse types. Provide an electric copy of the study to the electrical engineer in EasyPower.

B. Fault, circuit overload, etc. shall only trip closest circuit breaker or melt closest fuse. No other circuits shall be affected.

3.3 ARC ENERGY REDUCTION

A. The contractor shall have an arc flash study performed. The study shall be conducted per IEEE 1584 by an electrical engineer licensed in California.

B. The contractor shall have a selective coordination study performed.

C. The Non-inhibited trip settings shall be from the arc flash study, NFPA 70E, OSHA requirements, local and state requirements, and the owner.

D. The inhibited trip settings shall be from the selective coordination study.

E. Provide an electric copy of the studies to the Electrical Engineer of Record in EasyPower.

END OF SECTION

SECTION 26 50 00
LIGHTING

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. 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: WMAX=390lbs, EPAMax=15.6FT2
2. 25 foot tall: WMAX=495lbs, EPAMax=19.8FT2
3. 30 foot tall: WMAX=550lbs, EPAMax=22.0FT2
4. 35 foot tall: WMAX=363bs, EPAMax=14.5FT2
5. 39 foot tall: WMAX=475lbs, EPAMax=19.0FT2
6. 45 foot tall: WMAX=475lbs, EPAMax=19.0FT2
7. 50 foot tall: WMAX=340lbs, EPAMax=13.6FT2

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

A. 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

SECTION 31 10 00
SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Clearing of site.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Division 31 Section "Grading".

B. Division 31 Section "Excavation and Fill for Utilities".

C. Division 31 Section "Excavation and Fill for Structures".

D. Division 32 Section “Site Concrete Work”.

1.4 DEFINITIONS

A. Clearing: Removal of trees, shrubs, bushes, and other organic matter found at or above original ground level.

B. Grubbing: Removal of stumps, roots, boards, logs, and other organic matter found at or below original ground level.

C. Topping: Removal of those portions of trees, bushes, and shrubs projecting above an elevation or plane shown or indicated on Drawings.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide all materials, equipment, and appurtenances required for completion of clearing work.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces for conditions that will adversely affect execution, permanence, and quality of work of this Section.

B. Do not proceed with work until unsatisfactory conditions have been corrected.

3.2 PROTECTION

A. Public and Adjacent Properties: Protect in accordance with applicable laws and ordinances. Existing on-site features, including flora scheduled to remain: Protect from damage at all times.

1. Do not allow earth-moving equipment within the branch spread perimeter (drip line) of existing trees which are to remain.
2. Do not impact, trespass upon, or otherwise violate areas designated on Drawings as easements, buffer zones, wetlands, or similar environmentally-sensitive areas.
3. Protect existing piezometers and monitoring wells located on-site which have been identified and flagged by Owner.

B. Utilities:

1. Protect all active utility lines on-site.
2. Remove from site abandoned lines encountered during clearing and grubbing operations.
3. Capping and/or rerouting of active utility lines encountered during clearing and grubbing operations shall be performed as part of the work of other Sections.
4. Expeditiously repair damaged utilities at no cost to Owner.

C. Dust control:

1. Throughout entire construction period, effectively dust-palliate working area, unpaved roads, and involved portions of the site.
2. Palliation: Intermittently water and sprinkle with such frequency as will satisfactorily allay dust at all times. Chemical treatment of any type is not permitted.
3. Use of reclaimed water shall conform to requirements and guidelines of governing health authorities and be specifically approved by Owner.

D. Soil redistribution: Do not redistribute existing soils beyond immediate area of origin.

3.3 CLEARING

A. Limit of Clearing: Areas indicated on Drawings. Clearing limits shall be approved by Owner prior to starting clearing operations.

B. Remove trees, saplings, shrubs, bushes, vines, and undergrowth within limits of clearing.

3.4 GRUBBING

A. Limits of grubbing: As specified for clearing.

B. Remove tree stumps and root systems completely, unless removal damages roots of plants to remain. Refer to Division 31 Section "Excavation and Fill for Utilities" for protection of existing plants to remain.

C. For vegetation other than trees, remove stumps, roots, and matted roots to depths specified below:

1. Under footings: 18 inches.
2. Under walks: 12 inches.
3. Under roads: 18 inches.
4. Under parking areas: 12 inches.
5. Under planting areas: 12 inches. Under fills: 8 inches.
6. Where footings, roads, walks, and other construction is on fill, the greater depth applies.

3.5 DISPOSAL

A. Burning of materials on-site is not permitted.

B. Removal:

1. Remove materials resulting from clearing and grubbing operations from site daily as they accumulate.
2. When work continues beyond normal working hours, do not allow materials to accumulate on-site for more than 48 hours.

3.6 TREE REMOVAL, RELOCATION, OR SALVAGE

A. Protect trees to remain from damage (see tree preservation notes on demolition plan).

B. Cut and remove other trees including stumps, from site unless designated on Drawings to remain or be relocated.

C. Verify with Owner which trees are to be salvaged, removed, or relocated.

END OF SECTION

SECTION 31 22 00
GRADING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Site grading, including:

1. Site stripping.
2. Removal of organic soils.
3. Import or export of soils as required to complete grading.
4. Rough grading and shaping of site.
5. Final finish grading and shaping of site.
6. Groundwater control and dewatering of excavations.
7. Removal from site and proper disposition of all debris and excess material resulting from the work.
8. Fill and compact holes resulting from removals.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Geotechnical Report (Supplemental Information).

B. Division 31 Section "Site Demolition".

C. Division 31 Section "Excavation and Fill for Utilities".

D. Division 31 Section "Excavation and Fill for Structures".

E. Division 31 Section "Erosion and sedimentation controls".

F. Division 32 Section “Site Concrete Work”.

1.4 DEFINITIONS

A. Dewatering: Control of surface water runoff and ground water accumulation.

1.5 QUALITY ASSURANCE

A. Tests and Inspections:

1. Procedure: In accordance with Division 01 Sections.

2. Required tests:

    a. Fill material: Determine suitability of fill material not previously evaluated.
    b. Maximum density tests: Determine optimum moisture content and maximum dry density of fill materials placed and compacted in accord with ASTM D 1557, Procedure A.
    c. Field density tests: Determine in-place density of fill materials placed and compacted in accord with ASTM D 1556, ASTM D 2922, or ASTM D 2937. Provide one test for every 10,000 sq. ft. per lift.
    d. Certification of all subgrade improvements and engineered fills and subgrades with respect to their adequacy and suitability values for intended uses.
    e. Suitability and classification testing for all soils of unknown characteristics prior to use as compacted fills.
    f. Other tests as may be required by Owner.

3. Required inspections and controls:

    a. General inspection of stripping of surfaces and removal of root mat, peat, organic soils (muck), clay, and other unsuitable material.
    b. Detailed inspection of exposed subgrades prior to finishing or placing fill materials.
    c. Continuous control of placing and compacting of all engineered fills.
    d. Continuous inspection and monitoring during placing and compacting operations.
    e. Observation and consultation in processes of bank shaping, safety in excavations, dewatering, and identification of materials encountered.

B. Requirements of regulatory agencies: In addition to complying with other legal requirements, comply with the following.

1. Code of Federal Regulations Title 29 CFR Part 1926, Subpart P, Excavations.
2. Occupational Safety and Health Administration Document 2226.

C. Reference specifications and standards:

1. ASTM: D 1556 Density and Unit Weight of Soil in Place by the Sand-Cone Method.
2. ASTM: D 1557 Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft.-lbf/ft3).
3. ASTM: D 2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
4. ASTM: D 2937 Density of Soil In-Place by the Drive-Cylinder Method.
5. CFR: Title 29 CFR Part 1926 Safety and Health Regulations for Construction.
6. OSHA: Document 2226 Excavations.

D. Allowable tolerances:

1. Grading elevations and contours: Accuracy of final grading elevations be the responsibility of the general contractor

2. Grade (cut or fill) site to the elevations indicated on Drawings within the following tolerances:

    a. All cuts and fills: Within a tolerance ±0.10 feet for grades indicated on Drawings.
    b. Structures at or on grade: Within 0.02 feet (including hardscape).

PART 2 - PRODUCTS

2.1 MATERIALS

A. On-site and borrow fill:

1. Non-expansive, predominantly granular material:

    a. Particles less than 2 inch in any dimension;
    b. Free of organic and inorganic debris;
    c. Not more than 12 percent by weight passing the No. 200 sieve.

2. Top soil: All soil above the lower root line of fine vegetation (grasses and sod).
3. Borrow site: At location approved by Owner.

B. Recycled fill: Refer to Division 02 Section "Selective Site Demolition". Limit use as follows:

1. Not more than 10 percent (by volume, compacted) of total fill.
2. Not less than 2 feet below bottom of concrete foundations.
3. Imported, recycled fill is not acceptable.

PART 3 - EXECUTION

3.1 PROTECTION

A. Public and adjacent properties: Protect in accord with applicable laws and ordinances.

B. Existing on-site features, plant life, including trees, scheduled to remain:

1. Protect from damage at all times.
2. Do not allow earth-moving equipment within the branch spread perimeter (drip line) of existing trees.

C. Utilities:

1. When utility line excavation occurs near existing utilities, whether or not indicated on Drawings, maintain existing utility services fully operational. Protect and support utility lines in a manner to prevent damage. Method of protection is subject to Owner's approval.

2. Expeditiously repair damaged utilities at no cost to Owner.
3. Remove abandoned lines encountered during excavating and dispose of off-site. Report unidentified lines to Owner prior to removal.
4. Capping and rerouting of indicated active utility lines encountered during Work of this Section will be performed as part of the work of section pertaining to utility encountered.

D. Dust control:

1. Throughout entire construction period, effectively dust-palliate working area, unpaved roads, and involved portions of site.
2. Palliation: Intermittently water and sprinkle with such frequency as will satisfactorily allay dust at all times. Chemical treatment of any type is not permitted. Use of reclaimed water shall conform to requirements and guidelines of governing health authorities and be specifically approved by Owner.

3.2 STRIPPING AND CLEARING

A. Strip dry ground areas of all top soil, surface vegetation, muck, roots, organic material, and debris to result in a uniform surface of exposed clean, natural sand or soils.

B. Except as directed otherwise by Owner, dispose of all waste materials to legal off-site disposal areas.

C. Soil redistribution: Do not redistribute existing soils beyond immediate area of origin

3.3 EXCAVATIONS

A. Excavate materials of every nature to dimensions and elevations indicated. Use equipment of suitable type for materials and conditions involved.

B. Where additional excavation is required to remove unsatisfactory materials encountered, such additional work shall be paid for by means consistent with terms of the Contract.

C. Remove from site materials not approved for use as topsoil or fill and excess excavated materials.

3.4 FILLING, COMPACTING, AND GRADING

A. Filling:

1. Place fill in uniform lifts not exceeding 8 inches in loose thickness that will uniformly compact to the required densities.
2. Bring each layer to between ±2 percent of optimum moisture content before compaction. Add water by uniform sprinkling and mixing with soils. Add or blend additional fill materials or dry out existing materials as required.
3. When moisture content and condition of each layer is satisfactory, compact to specified density. Compact areas not accessible to motor-driven equipment with

mechanical or heavy hand tampers.

4. Rework compacted areas failing to meet specified density as determined by tests. Recompact and retest as required or directed to achieve proper density.
5. Correct unauthorized excavation made below depth indicated, as acceptable to geotechnical engineer retained by Owner, at no additional cost to Owner.
6. Do not place fill materials until subgrade is acceptable to geotechnical engineer retained by Owner, nor until preceding fill layer is acceptable.
7. Prior to placing fill material on existing surfaces, scarify to a depth of 6 inches and recompact to same degree of compaction as overlying fill material.

B. Compacting:

1. Parking and pavement areas: Compact soils below all parking areas, slabs, and asphalt pavement to 95 percent of the Modified Proctor maximum dry density for full depth of fill.
2. Sidewalk/walkways areas: Compact soils below all sidewalk/walkways areas to 90 percent of the Modified Proctor maximum dry density for full depth of fill.
3. Landscape areas: Compact soils below all landscape, planting ,and sod areas to 85 percent of the Modified Proctor maximum dry density for the full depth of fill.
4. Building areas: Compact soils below all buildings and for a distance of 5 feet beyond perimeter footing to at least 95 percent of the Modified Proctor maximum dry density for the full depth of fill.
5. Minor structures: Support catch basins and other minor structures on bottom and all sides by soils compacted to 90 percent of the Modified Proctor maximum dry density for full depth of fill.

C. Grading:

1. Grade (cut or fill) site to the elevations indicated on Drawings within the following tolerances:

    a. All cuts and fills: Within a tolerance ±0.05 feet for grades indicated on Drawings.
    b. Structures at or on grade: Within 0.02 feet (including hardscape).

2. Elevations and contours indicated on Drawings are to finish grade unless otherwise indicated. Make allowances for pavement thickness, bases, and sod material where applicable.

3.5 DEWATERING

A. Drain excavations and other prepared work areas occurring below groundwater level and maintain in a dewatered condition while performing work at those elevations.

B. Prevent surface water drainage from entering excavations, and ponding on subgrades and other prepared work areas.

C. Maintain dry excavations and subgrades by whatever means necessary while working in each area.

1. Reduce groundwater level to a sufficient depth to ensure that bottom soils are not saturated or develop a "quick" condition.
2. Reroute surface water drainage away from excavations, prepared subgrades, and other work areas.
3. Prevent excessive rainwater, to the extent that detrimental softening, undermining, washout, and similar damage would occur, from accumulating in excavations, upon subgrades, and at other prepared work areas.
4. Do not use excavations as temporary drainage.

D. Dewatering methods selected by Contractor shall be subject to approval by Owner.

END OF SECTION

SECTION 31 23 02
EXCAVATION AND FILL FOR UTILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Dewatering, excavating, shoring, sheeting, bracing, trenching, backfilling, and all other earthwork operations required for utility and other underground lines and appurtenances.

B. Providing access to open trenches after utility lines have been installed and bedded, but prior to backfilling being commenced for inspection purposes.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Geotechnical Report (Supplemental Information).

B. Division 31 Section “Site Demolition”.

C. Division 31 Section "Excavation and Fill for Structures".

D. Division 33 Section "Underground Utilities Marking".

E. Division 33 Section “Site Water Distribution System”.

F. Division 33 Section “Septic Sewer System”.

1.4 QUALITY ASSURANCE

A. Tests and inspections:

1. Procedure: In accordance with Division 01 Sections.

2. Test methods:

a. Maximum dry density of backfill materials shall be determined by ASTM D 1557, Procedure A.
b. Field density tests shall be determined by ASTM D 1556, ASTM D 2922, or ASTM D 2937.

3. Required tests:

a. Backfill material: Determine suitability of backfill and bedding material not previously evaluated.
b. Maximum density tests: Determine optimum moisture content and maximum dry density of backfill and bedding materials placed and compacted.
c. Field density tests: Determine in-place density of backfill materials placed and compacted. Conduct one test for every 100 linear feet of trench and one test for each 1 foot vertical lift.
d. Other tests as may be required by Owner.

4. Required inspections:

a. Excavation inspection: Detailed inspection of exposed excavations prior to placing bedding and backfill material.
b. Bedding conditions: Determine and evaluate condition of bedding to receive utility lines.

B. Requirements of regulatory agencies: In addition to complying with other legal requirements, comply with the following.

1. Code of Federal Regulations Title 29 CFR Part 1926, Subpart P, Excavations.
2. Occupational Safety and Health Administration Document 2226.

C. Reference specifications and standards:

1. ASTM: D 1556 Density and Unit Weight of Soil in Place by the Sand-Cone Method.
2. ASTM: D 1557 Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft.-lbf/ft3).
3. ASTM: D 2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
4. ASTM: D 2937 Density of Soil In-Place by the Drive-Cylinder Method.
5. CFR: Title 29 CFR Part 1926 Safety and Health Regulations for Construction.
6. OSHA: Document 2226 Excavations.

1.5 SUBMITTALS

A. Procedures: In accordance with Division 01 Sections.

B. Drawings and engineering design calculations: Signed and sealed engineering drawings and calculations for required shoring, sheeting, or cribbing for approval prior to starting installation of shoring, sheeting, or cribbing.

PART 2 - PRODUCTS

2.1 MATERIALS

A. On-site materials: Materials obtained by selective stockpiling of excavated soils.

1. Bedding: Unless indicated otherwise on Drawings, conform to the following.

    a. Clean sand and native free-draining granular materials, free from all vegetation and debris or as indicated on Drawings.
    b. Bedding shall meet gradation requirements when tested in accord with ASTM D 422 and have a minimum sand equivalent of 30 as determined by ASTM D 2419.

Sieve Size	% Passing Sieve by Weight
1/2 in.	100
No. 4	70 - 100
No. 16	50 - 90
No. 50	10 - 50
No. 200	0 - 10

2. Backfill: Clean material, free from all vegetation and debris. Do not use rocks or lumps larger than 2 inches in any dimension.

B. Borrow fill:

1. Non-expansive, predominantly granular material:

    a. Particles less than 2 inches in any dimension;
    b. Free of organic and inorganic debris;
    c. Not more than 12 percent by weight passing the No. 200 sieve behind retaining walls and 25 percent elsewhere.

2. Acceptable to geotechnical engineer retained by Owner.

PART 3 - EXECUTION

3.1 PROTECTION

A. Public and adjacent properties: Protect in accord with applicable laws and ordinances.

B. Existing on-site features, plant life, including trees, scheduled to remain:

1. Protect from damage at all times.
2. Do not allow earth-moving equipment within the branch spread perimeter (drip line) of existing trees.
3. Do not cut tree roots over 2 inches in diameter without prior approval from Owner.
4. Support trees during excavation in an approved manner.
5. When excavation adjacent to existing trees is necessary, use all possible care to avoid injury to trees and tree roots. Excavate by hand all areas where 2 inch and larger roots occur. Tunnel under and heavily wrap with burlap roots 2 inches and larger in diameter, except directly in the path of pipe or conduit, to prevent scarring or

excessive drying. When a trenching machine runs close to trees having roots smaller than 2 inches in diameter, hand trim wall of trench adjacent to tree, making clean cuts through roots. Paint roots 1 inch and larger in diameter with two coats of Tree Seal, or Owner-approved equivalent. Close trenches adjacent to trees within 24 hr.; when this is not possible, shade side of trench adjacent to tree with burlap or canvas.

6. All work around and adjacent to existing trees, including inspection prior to backfill, shall be approved by Engineer. Obtain Engineer's approval in writing for all procedures prior to commencement of work. Trees that die due to damage or unacceptable work shall be back-charged to Contractor.

C. Where utility line excavation occurs in lawn, grassed, or landscaped areas, carefully remove and stockpile sod and plants to preserve for transplanting.

1. Place excavated material from trenches on lawn or grass, provided a drop cloth or other approved method is employed to protect lawn or grass from permanent damage. Do not keep stockpiled materials on lawn or grass for more than 72 hr.
2. Immediately after completion of backfilling and testing of utility lines, replace sod and replant plants in a manner to restore lawn, grass, and landscaping to its original condition within practical limits. Replace damaged landscaping at no cost to Owner as part of the work of this Section.

D. Where utility line excavation occurs in paved areas, saw-cut existing pavement along straight, uniform lines such that the amount of pavement cut and removed shall be the minimum consistent with safe excavation practices.

1. Do not use removed pavement as backfill material.
2. Replace removed pavement with new pavement to match existing in accord with Project Specifications.

E. Open trenches: Barricade all open trenches during work hours and cover at the close of each day’s work.

F. Utilities:

1. When utility line excavation occurs near existing utilities, whether or not indicated on Drawings, maintain existing utility services fully operational. Protect and support utility lines in a manner to prevent damage. Method of protection is subject to Owner's approval.
2. Expeditiously repair damaged utilities at no cost to Owner.
3. Remove abandoned lines encountered during excavating and dispose of off-site. Report unidentified lines to Owner prior to removal.
4. Capping and rerouting of indicated active utility lines encountered during Work of this Section will be performed as part of the work of section pertaining to utility encountered.

G. Dust control:

1. Throughout entire construction period, effectively dust-palliate working area, unpaved roads, and involved portions of site.
2. Palliation: Intermittently water and sprinkle with such frequency as will satisfactorily allay dust at all times. Chemical treatment of any type is not permitted.
3. Use of reclaimed water shall conform to requirements and guidelines of governing health authorities and be specifically approved by Owner.

H. Water control:

1. Maintain trenches and other excavations free of water while lines are being placed and until backfill has been completed and approved.
2. Maintain adequate pumping equipment at all times to provide for emergencies.
3. Dispose of water in such a manner as not to create a nuisance, cause damage to property, or interfere with activities of other contractors. Prevent water from migrating outside of construction areas. Use Owner-approved methods and materials to confine water to construction areas. Failure to contain water is not permitted.
4. Dewater as required to maintain site in a relatively dry condition, including well point dewatering.
5. Methods of dewatering and disposal of water are subject to Owner's approval.

I. Bracing and shoring:

1. Support excavations in accord with all legal requirements.
2. Set and maintain sheet piling and shoring timbers in a manner that will prevent caving of walls of excavations or trenches and not impose other loads or surcharges on lines.
3. When it is impractical to remove shoring and bracing, obtain approval from Owner to leave in place. Record locations of such "in-place" shoring and bracing on Project Record Documents.

J. Stockpiled excavated materials: Confine excavated materials to immediate area of stockpiled location.

K. Soil redistribution: Do not redistribute any existing soils beyond the immediate area of origin.

3.2 EXCAVATION

A. General: Include removal of materials and obstructions that interfere with the execution of the Work.

1. Unless indicated otherwise, excavation for utilities lines shall be by open trench.
2. Sides of trenches shall be as nearly vertical as practicable.
3. Obtain prior approval from Owner for use of tunneling.

B. Trench widths:

1. Lines less than 6 inches outside diameter: 18 inches minimum.

2. Larger lines: Clear distance on each side of line of not less than 8 inches or more than 1/2 of outside diameter of line.

C. Trench depth: Excavate trenches to lines and grades as necessary for construction of utility lines indicated.

D. Over-excavation: Backfill over-depth excavations to required grade with specified bedding and backfill material. Compact bedding and backfill material to specified density.

E. Perform any dewatering and pumping required to keep excavations free of standing water.

F. Refer to geotechnical reports (Supplemental Information) for seasonal high groundwater table elevation estimates. It is the sole responsibility of contractor to make its own judgments as to the actual conditions, and to draw its own conclusions as to means and methods required for performance of the work. Provide dewatering, if required, at whatever elevation groundwater is actually encountered.

G. A plan for any proposed dewatering shall be submitted for approval prior to commencement of any such work. Any permitting for dewatering which may be required shall be the responsibility of Contractor.

H. Sequence, schedule, coordinate, and perform the work so as to maintain safe, unobstructed passage as required for emergency egress and general site access. Provide any and all bridging of trenches of work, barricades, etc., that may be required to comply with this requirement.

3.3 BACKFILL

A. General: Backfill consists of bedding, backfill, and restoration of surface.

B. Bedding: Bedding is defined as material supporting, surrounding, and extending to 12 inches above the top of utility line. Bedding shall not be required under or around structures, except at utility lines.

1. Do not cover lines until they have been inspected and approved for alignment and grade and recording of record or "as-built" survey information has been performed.
2. Commence bedding immediately after approval and survey information recording, to preclude damage to utility lines.
3. Carefully place bedding around utility lines so as not to displace or damage line, and fill symmetrically on each side of line to 12 inches above top of line.
4. Compact bedding to 90 percent of the maximum dry density in accord with ASTM D 1557 using mechanical equipment.

C. Backfill: Backfill includes material from 12 inches above the lines to, and including, surface restoration.

1. Do not backfill against structures until concrete has attained sufficient strength to withstand loads, and structures have been approved.

2. Place backfill in loose uniform lifts not exceeding 8 inches.
3. Use mechanical compactors for compaction of backfill.

D. Coordinate and ensure installation of underground utilities marking in accord with Division 33 Section "Underground Utilities Marking".

E. Compacting:

1. Walways areas: Compact soils below walks, slabs, and other areas where vehicles are not expected to drive over to 90 percent of the maximum dry density in accord with ASTM D 1557 for full depth of fill.
2. Parking and pavement areas: Compact soils below parking areas, and asphalt concrete pavement to 95 percent of the maximum dry density in accord with ASTM D 1557 for full depth of fill.
3. Landscape areas: Compact soils below landscape, planting, or sod areas to 85 percent of the maximum dry density in accord with ASTM D 1557 for full depth of fill.
4. Building areas: Compact soils below all buildings and for a distance of 5 feet beyond perimeter footing to at least 90 percent of the maximum dry density in accord with ASTM D 1557 for full depth of fill.
5. Minor structures: Support catch basins and other minor structures on bottom and all sides by soils compacted to 95 percent of the maximum dry density in accord with ASTM D 1557 for full depth of fill.

3.4 ADJUST AND CLEAN

A. Surface restoration:

1. Restore surface areas over trenches equivalent to conditions which existed prior to start of work.

B. Reconstruct surfaces in accord with applicable Sections of the Specifications.

C. Disposal:

1. Debris:

a. Remove and dispose of all rubbish, debris, and vegetation as it accumulates.
b. Dispose of debris off-site or at an on-site disposal area designated by Owner.

2. Excess soil: Stockpile at an on-site area designated by Owner.

END OF SECTION

SECTION 31 23 04
EXCAVATION AND FILL FOR STRUCTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Excavating, backfilling, and compacting for structures.
B. Restore grades to required elevations.
C. Remove excess materials from site.
D. Pumping and dewatering.
E. Support of excavations.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Geotechnical Report (Supplemental Information).
B. Division 03 Section "Cast-In-Place Concrete".
C. Division 31 Section “Site Demolition”.
D. Division 31 Section "Excavation and Fill for Utilities".

1.4 QUALITY ASSURANCE

A. Tests and inspections:

1. Procedure: In accordance with Division 01 Sections.
2. Test methods:

a. Maximum dry density of backfill materials shall be determined by ASTM D 1557, Procedure A.
b. Field density tests shall be determined by ASTM D 1556, ASTM D 2922, or ASTM D 2937.

3. Required tests:

a. Backfill material: Determine suitability of backfill material not previously evaluated.
b. Maximum density tests: Determine optimum moisture content and maximum dry density of backfill materials placed and compacted.
c. Field density tests: Determine in-place density of backfill materials placed and compacted. one test for every 100 cu. yd. of material placed and one test for each 1 foot vertical lift.
d. Other tests as may be required by Owner.

4. Required inspections:

    a. Excavation inspection: Detailed inspection of exposed excavations prior to placing backfill material.
    b. Placement and compaction inspection: Continuous inspection and monitoring.

B. Requirements of regulatory agencies: In addition to complying with other legal requirements, comply with the following.

1. Code of Federal Regulations Title 29 CFR Part 1926, Subpart P, Excavations.
2. Occupational Safety and Health Administration Document 2226.

C. Reference specifications and standards:

1. ASTM: D 1556 Density and Unit Weight of Soil in Place by the Sand-Cone Method.
2. ASTM: D 1557 Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft.-lbf/ft3).
3. ASTM: D 2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
4. ASTM: D 2937 Density of Soil In-Place by the Drive-Cylinder Method.
5. CFR: Title 29 CFR Part 1926 Safety and Health Regulations for Construction.
6. OSHA: Document 2226 Excavations.

1.5 SUBMITTALS

A. Procedures: In accordance with Division 01 Sections.
B. Drawings and engineering design calculations: Signed and sealed engineering drawings and calculations for required shoring, sheeting, or cribbing for approval prior to start of installation of shoring, sheeting, or cribbing.

PART 2 - PRODUCTS

2.1 MATERIALS

A. On-site materials and borrow fill:

1. Non-expansive, predominantly granular material:

    a. Particles less than 2 inches in any dimension.
    b. Free of organic and other deleterious materials.
    c. Not more than 12 percent by weight passing the No. 200 sieve behind retaining walls and 25 percent elsewhere.

2. Sand Fill compliant with USAV Standards
3. Acceptable to a geotechnical engineer retained by Owner.
4. Top soil: All soil above the lower root line of fine vegetation (grasses and sod).

5. Borrow site: At location approved by Owner.

PART 3 - EXECUTION

3.1 PROTECTION

A. Public and adjacent properties: Protect in accord with applicable laws and ordinances.

1. Existing on-site features, plant life, including trees, scheduled to remain: Protect from damage at all times.
2. Do not allow earth-moving equipment within the branch spread perimeter (drip line) of existing trees.
3. Do not cut tree roots over 2 inches in diameter without prior approval from Owner.
4. Support trees during excavation in an approved manner.
5. When excavating adjacent to existing trees is necessary, use all possible care to avoid injury to trees and tree roots. Excavate by hand areas where 2 inch and larger roots occur. Tunnel under and heavily wrap with burlap roots 2 inches and larger in diameter, except directly in the path of pipe or conduit, to prevent scarring or excessive drying. When a trenching machine runs close to trees having roots smaller than 2 inches in diameter, hand trim wall of trench adjacent to tree, making clean cuts through roots. Paint roots 1 inch and larger in diameter with two coats of Tree Seal, or Owner-approved equivalent. Close trenches adjacent to trees within 24 hr.; when this is not possible, shade side of trench adjacent to tree with burlap or canvas.
6. All work around and adjacent to existing trees, including inspection prior to backfill, shall be approved by Owner. Obtain Owner's approval in writing for all procedures prior to commencement of work. Trees that die due to damage or unacceptable work shall be back-charged to Contractor.

B. Utilities:

1. When utility line excavation occurs near existing utilities, whether or not indicated on Drawings, maintain existing utility services fully operational. Protect and support utility lines in a manner to prevent damage. Method of protection is subject to Owner's approval.
2. Expeditiously repair damaged utilities at no cost to Owner.
3. Remove abandoned lines encountered during excavating and dispose of off-site. Report unidentified lines to Owner prior to removal.
4. Capping and rerouting of indicated active utility lines encountered during Work of this Section will be performed as part of the work of section pertaining to utility encountered.

C. Dust control:

1. Throughout entire construction period, effectively dust-palliate working area, unpaved road, and involved portions of site.
2. Palliation: Intermittently water and sprinkle with such frequency as will satisfactorily allay dust at all times. Chemical treatment of any type is not permitted.

3. Use of reclaimed water shall conform to requirements and guidelines of governing health authorities and be specifically approved by Owner.

D. Water control:

1. Maintain excavation free of water while foundations are being placed and until backfill has been completed and approved.
2. Maintain adequate pumping equipment at all times to provide for emergencies.
3. Dispose of water in such a manner as not to create a nuisance, cause damage to property, or interfere with activities of other contractors. Prevent water from migrating outside of construction areas. Use Owner-approved methods and materials to confine water to construction areas. Failure to contain water is not permitted.
4. Dewater as required to maintain site in a relatively dry condition, including well point dewatering.
5. Methods of dewatering and disposal of water is subject to Owner's approval.

E. Cribbing and shoring:

1. Provide temporary or permanent cribbing, sheeting, and shoring as necessary to safely retain earth banks and protect excavations from caving or other damage.
2. Design, install, and maintain cribbing, sheeting, and shoring and remove after use.

F. Stockpiled excavated materials: Confine excavated materials to immediate area of stockpiled location.

G. Soil redistribution: Do not redistribute existing soils beyond immediate area of origin.

3.2 STRIPPING

A. Stockpile materials from excavations suitable for use in fill and backfill.

B. Remove from site materials not approved for use as topsoil, fill or backfill, and excess excavated materials.

3.3 EXCAVATING

A. Excavate materials of every nature to dimensions and elevations indicated on Drawings. Use equipment of suitable type for materials and conditions involved.

B. Extend excavation a sufficient distance from walls to allow for forming and shoring, application of waterproofing, installation of services, and approvals. Do not excavate below indicated depths.

C. Foundations: Excavations may be made to net sizes plus 2 inches for casting concrete directly against earth banks, provided, in the opinion of the Agency’s inspector of record or geotechnical engineer, earth banks are sufficiently stable to remain in position until concrete has been placed.

1. If, in the opinion of Engineer, earth banks are not stable enough for concrete placement, excavate additional width necessary to provide space for formwork, and backfill after forms have been removed.
2. All trenches shall be formed.

D. Correct unauthorized excavation made below depths indicated on Drawings, as recommended by geotechnical engineer retained by Owner, at no additional cost to Owner.

E. Where additional excavation is required to remove unsatisfactory materials encountered, such additional work shall be paid for by means consistent with terms of Contract.

3.4 FILL, BACKFILL, AND COMPACTION

A. Fill and backfill:

1. Place earth fill and backfill in layers that will uniformly compact to required densities, but in loose layers not more than 8 inches thick.

    a. Place backfill only after walls have been supported by completion of interior floor systems or have been sufficiently braced to resist imposed loading.
    b. Place backfill against walls below grade after waterproofing systems have been completed and approved.
    c. Protect waterproofing systems during backfill operations. If waterproofing is damaged, do not continue backfilling until membrane damage is repaired as approved by Owner.
    d. Restore grades to indicated elevations.

2. Slurry cement (lean concrete) backfill:

    a. Where specifically indicated on Drawings, slurry cement backfill consisting of a fluid, workable mixture of aggregate, cement, and water shall be used as foundation structure backfill.
    b. Cement shall be Portland cement conforming to provisions in Division 03 Section "Cast-In-Place Concrete", except that testing will not be required.
    c. Water used for slurry cement backfill shall be free from oil, salts, and other impurities which would have an adverse effect on quality of backfill material.
    d. At Contractor's option, aggregate shall be either 1) material selected from excavation, imported material, or a combination thereof, which is free of organic material and other deleterious substances, or 2) commercial quality concrete sand. Material selected from excavation, imported material, or a combination thereof shall meet the following grading:

Sieve Sizes	Percentage Passing
1-1/2 in.	100
1 in.	80-100
3/4 in.	60-100
3/8 in.	50-100
No. 4	40-80
No. 100	10-40

e. Aggregate, cement, and water shall be proportioned either by weight or by volume. Not less than 188 lb. of cement shall be used for each cu. yd. of material produced. Water content shall be sufficient to produce a fluid, workable mix that will flow and can be pumped without segregation of aggregate while being placed.

f. Materials for slurry cement backfill shall be thoroughly machine-mixed in a pugmill, rotary drum, or other approved mixer. Mixing shall continue until cement and water are thoroughly dispersed throughout material. Slurry cement backfill shall be placed in the Work within 1 hr. after mixing.

g. Slurry cement backfill shall be placed in a uniform manner that will prevent voids in, or segregation of, backfill and will not float or shift foundation structures. Foreign materials which fall into trench prior to or during placing of slurry cement backfill shall be immediately removed.

h. Placing material over slurry cement backfill shall not commence less than 4 hours after slurry cement backfill has been placed.

B. Compaction:

1. Bring each layer to with ±2 percent of optimum moisture content before compaction. Add water by uniform sprinkling. Jetting and flooding are prohibited. Add and blend additional fill materials or dry out existing materials as required.
2. When moisture content and condition of each layer is satisfactory, compact to not less than 90 percent of maximum dry density in accord with ASTM D 1557.
3. Compact areas not accessible to motor-driven equipment with mechanical or heavy hand tampers.
4. Rework compacted areas failing to meet specified maximum dry density, as determined by tests. Recompact and retest as required to achieve 90 percent of the maximum dry density in accord with ASTM D 1557.

C. Grading:

1. Build compacted backfills to indicated or required finish grades, less allowances for thickness of slabs, paving, and required base courses.
2. Rough grade backfilled surfaces smooth, level to within 0.10 foot of intended surface. Compact loose material and maintain in a moist condition until covered.

END OF SECTION

SECTION 31 25 00
EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Erosion, sedimentation and water pollution control features in place or relocated as indicated on Drawings, prior to start of all grading or construction.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Temporary facilities and controls.

B. Division 31 Section "Grading".

1.4 DEFINITIONS

A. Control features: Includes, but not limited to berms, erosion control blankets, gravel bags, sand bags, silt barriers, silt fences, swales, and other features in accord with referenced specifications and standards.

1.5 QUALITY ASSURANCE

A. Performance criteria: Prevention, control and abatement of erosion, sedimentation and water pollution shall be in accord:

1. As indicated on Drawings.
2. As called for in the Agency's Storm Water Pollution Prevention Plan (SWPPP).

    a. Contractor shall be responsible for implementing the approved SWPPP and all water board online reporting required by the SWPPP, which will be provided by the Agency.

3. As established under the accepted Contractor's Stormwater Management Plan (CSMP):

    a. Contractor shall prepare a comprehensive plan for the management of incident and transient storm water within the limits of work or such larger area as may be indicated on the plans.

b. Contractor’s plan shall indicate all measures required to comply with the applicable requirements of the SWPPP as relates to the Work and the situation within limits of work during the Contract Time.

4. Reference specifications and standards: Agency’s approved Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall conform to the requirements in these Technical Specifications, and the California Stormwater Best Management Practice Handbook for Construction.

1.6 SUBMITTALS

A. Procedures: In accordance with Division 01 Sections.

B. Shop drawings: Plans and details, including layout and locations of erosion and sedimentation control features. Indicate dimensions, materials, and anchorage underlying substrates.

C. Product data:

1. Manufacturer's detailed technical materials and application data.
2. Submit filter fabric material specifications and installation configuration prior to start of construction.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials for control features: In accord with referenced specifications, standards, and approved submittals.

PART 3 - EXECUTION

3.1 ERECTION

A. General: Erect and maintain control features in accord with Drawings and referenced specifications, standards, and approved submittals.

B. Maintenance:

1. Inspect control features immediately after each rainfall and similar event, and at least once a day during periods of prolonged rainfall and similar events. Immediately repair control features to maintain intended function and performance.
2. Replace sandbags and other materials that exhibit damage, decomposition, or are otherwise ineffective.
3. Prevent excessive accumulation of sediment deposits. Remove sediment deposits at a frequency of not less than after each rainfall and similar event.

3.2 REMOVAL OF CONTROL FEATURES

A. Remove control features when directed by Owner.

END OF SECTION

SECTION 32 13 13
SITE CONCRETE WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Site concrete work, including subgrade preparation, formwork, reinforcing steel, concrete, and accessory materials for:

1. Pavement.
2. Footings for fence posts, and similar work of other trades.
3. Thrust blocks for pressure piping systems.
4. Mechanical and electrical equipment pads.
5. Other site concrete work as indicated on Drawings.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Geotechnical Report (Supplemental Information).

B. Division 31 Section “Site Demolition”.

C. Division 31 Section "Grading".

D. Division 32 Section "Concrete Paving Joint Sealants".

E. Division 33 Section "Sewerage System".

F. Precast concrete and other use concrete specified as part of Division 22 Plumbing and Division 26 Electrical and Lighting.

1.4 DEFINITIONS

A. Slip resistance: Slip index of not less than 0.5 when tested dry and wet (with an unbroken film of pure water) in accord with ASTM F 1677 or ASTM F 1679, using a Neolite test pad.

1.5 QUALITY ASSURANCE

A. Geotechnical data: Refer to Geotechnical Report (Supplemental Information).

B. Tests and inspections:

1. Testing laboratory services: Refer to Division 01 Sections. Soil bearing and compaction:

    a. Test methods:

        1) Maximum dry density of backfill materials shall be determined by ASTM D 1557, Procedure A.
        2) Field density tests shall be determined by ASTM D 1556, ASTM D 2922, or ASTM D 2937.

    b. Required tests:

        1) Backfill material: Determine suitability of backfill material not previously evaluated.
        2) Maximum density tests: Determine optimum moisture content and maximum dry density of backfill materials placed and compacted.
        3) Field density tests: Determine in-place density of backfill materials placed and compacted. one test for every 1000 cubic yard of material placed and one test for each 1 foot vertical lift.
        4) Other tests as may be required by Owner.

    c. Required inspections:

        1) Excavation inspection: Detailed inspection of exposed excavations prior to placing backfill material.
        2) Placement and compaction inspection: Continuous inspection and monitoring.

2. Concrete: In accord with SSPWC Section 201-1.1.4 and as specified herein.

    a. Portland cement: Furnish cement mill test reports and manufacturer's certification that cement complies with specification requirements.
    b. Required tests:

        1) Aggregate:

            a) Hardrock aggregate: Test in accord with ASTM C 33.
            b) Do not deliver aggregates to site or ready-mix plant until pit source has been approved, and plant, capacity, and ability to produce a uniform and continuous product has been verified.
            c) Take samples from aggregate stockpiles assigned to project.

        2) Slump tests: Make one slump test in accord with ASTM C 143 for each set of test cylinders: Make additional tests as may be ordered by Owner.

            a) Make and keep an accurate record of all tests.
            b) Maximum slumps: As specified hereinafter.

3) Test cylinders: Take one sample of four cylinders from each day's placement of 100 cubic yards or fractional part thereof of each mix design in accord with ASTM C 172. Take samples at evenly spaced intervals as concrete is deposited in forms. Mark cylinders with date, sample number, and location in structure from which sample was taken. Do not take more than one sample of four cylinders from any location or batch of concrete.

a) Make and store cylinders in accord with ASTM C 31. Curing: At the end of 24 hours, take cylinders to laboratory and store under moist curing conditions at approximately 70°F until tested.
b) Testing: Test cylinders in accord with ASTM C 39. Test one cylinder at age of 7 days for information and two cylinders at 28 days for acceptance. Maintain one cylinder in reserve.
c) Seven-day strength: Not less than 60 percent of specified ultimate 28-day strength.
d) Mix adjustment: Should test results indicate concrete strength below specified 7-day or 28-day minimum requirements, decrease water/cement ratio and adjust mix proportions as necessary to achieve specified minimum strengths.
e) Concrete failures: Should test results indicate that concrete strength requirements for any portion of work does not conform to 28-day minimum requirements, secure core or prism specimens of hardened concrete and test in accord with ACI 301 and ASTM C 42.
f) Laboratory shall secure and test specimens under Owner's direction.

c. Ready-mix plant inspections:

1) Testing laboratory shall provide and maintain continuous inspection at plant to check sieve analysis for quality and moisture content of aggregates, check mix with design mixes, check cement being used with test reports, check loading of mixer trucks, and certify quantities of materials loaded in each mixer truck.
2) Certification: Provide batch tickets signed by dispatcher and testing laboratory inspector at ready-mix plant. Each batch ticket shall state batch quantities of cement, water, fine aggregates, coarse aggregates, and admixture contained in each truck load.
3) Deliver to Owner's representative on job site a properly signed ticket with each load of ready-mix concrete.

3. Reinforcing steel:

a. Quality control of identifiable steel:

1) Submit to laboratory copies of mill certificates for all types, sizes, and heats of reinforcing steel intended for use in the work. Include the following information:

a) Source of steel.
b) Description.
c) Heat number.
d) Yield point.
e) Ultimate tensile strength.
f) Elongation percentage in 8 in. length.
g) Bend test results.

2) Chemical analysis, including carbon equivalent (CE) of ASTM A 615 bars to be welded. All costs in connection with tests and inspections of identifiable steel will be paid by Owner.

b. Quality control of unidentifiable steel:

1) When steel cannot be identified, testing laboratory shall make one series of tensile tests and one series of bend tests in accord with ASTM A 370 or ASTM A 615, for each 5 tons or fractional part thereof of each size and kind of reinforcing steel. Make tests using a minimum of two separate samples. Test full sections of bars as rolled.
2) All costs in connection with tests and inspections of unidentifiable steel will be paid by Contractor.

c. Field quality control for welding:

1) Inspection and tests of welds shall be made by testing laboratory for reinforcing bar welds, as follows:

a) Certification of welders engaged in electric-arc welding of reinforcing.
b) Inspection of reinforcing bar welds.
c) X-ray test of one of the first arc-welds made by each welder; full penetration splice welds.
d) Two tensile tests of sample welds of the largest size bar for each type of welding.

2) Owner will pay all costs in connection with tests and inspections for welding of reinforcing steel splices when such welding is indicated on Drawings.

3) All costs in connection with tests and inspections for welding of reinforcing steel splices not indicated on Drawings will be paid by Contractor.

4. Payment:

a. Owner will pay all costs for all tests and inspections except retests and reinspections required because of failures.
b. All costs incurred for retests and reinspections required because of failure of original tests will be paid by Contractor.

C. Reference specifications and standards:

1. ACI: 301 Specifications for Structural Concrete for Buildings.
2. ACI: 305 Hot Weather Concreting.
3. ACI: 306 Cold Weather Concreting.
4. ASTM: A 370 Mechanical Testing of Steel Products.
5. ASTM: A 615 Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
6. ASTM: C 31 Making and Curing Concrete Test Specimens in the Field.
7. ASTM: C 33 Concrete Aggregates.
8. ASTM: C 39 Compressive Strength of Cylindrical Concrete Specimens.
9. ASTM: C 42 Drilled Cores and Sawed Beams of Concrete, Obtaining and Testing.
10. ASTM: C 143 Slump of Hydraulic Cement Concrete.
11. ASTM: C 172 Sampling Freshly Mixed Concrete.
12. ASTM: C 1107 Packaged Dry, Hydraulic-Cement Grout (Non-Shrink).
13. ASTM: D 1556 Density of Soil in Place by the Sand-Cone Method.
14. ASTM: D 1557 Moisture-Density Relations of Soils Using 10 lb. Rammer and 18 in. Drop.
15. ASTM: D 2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
16. ASTM: D 2937 Density of Soil In-Place by the Drive-Cylinder Method.
17. ASTM: E 1155 Determining Floor Flatness and Levelness Using the F-Number System
18. ASTM: F 609 Using a Horizontal Pull Slipmeter (HPS).
19. ASTM: F 1677 Using a Portable Inclineable Articulated Strut Slip Tester, (PIAST).
20. ASTM: F 1679 Using a Variable Incidence Tribometer, (VIT).
21. SSPWC: Standard Specifications for Public Works Construction ("Green Book").

1.6 SUBMITTALS

A. Procedure: In accordance with Division 01 Sections.

B. Shop drawings: Plans, elevations, sections, and details, including layout of components and accessories. Indicate dimensions, clearances required, utility service requirements, materials, and finishes.

C. Manufacturer's detailed technical materials data, including technical bulletins, drawings, guides, and manuals, as applicable to the work of this Project, for the following:

1. Admixtures.
2. Curing materials.
3. Joint materials.
4. Waterstops.
5. Metallic aggregate topping.

6. Nonshrink grout, including test data.

D. Certifications:

1. Cement mill test reports and certification.
2. Admixture certification, including chloride ion content.
3. Ready-mix batch plant tickets.
4. Reinforcing steel mill certifications.
5. Reinforcing steel welder's certifications.

E. Concrete mix designs: Submit, for approval, certified concrete mix designs for initial and any subsequent changes in mix designs.

1.7 PROJECT CONDITIONS

A. Existing conditions:

1. Do not conceal or cover any work until required tests and inspections have been performed and accepted.

B. Do not fabricate items which require fitting to other building elements or into building spaces, until dimensions have been verified at the site. Environmental requirements: Unless otherwise recommended by product or system manufacturer or reference specifications or standards, conform to the following:

1. Do not place concrete when the ambient temperature is 35°F or lower or is expected to go below that temperature within 24 hours.
2. Do not place concrete during rain that will cause surface damage to concrete.
3. Hot weather concreting procedures: In accord with ACI 305.
4. Cold weather concreting procedures: In accord with ACI 306.

C. Traffic control:

1. Maintain vehicular and pedestrian traffic control during concrete operations.
2. Provide flagmen, barricades, warning signs, and warning lights for movement of traffic and safety, and to cause the least interruption of work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Concrete: In accord with SSPWC Section 201-1, Portland Cement Concrete, type as indicated on Drawings.

1. Cement: Conform to SSPWC Section 201-1.2.1.
2. Admixtures: Conform to SSPWC Section 201-1.2.4.
3. Fine aggregates: Conform to SSPWC Section 200 1.5.3

4. Coarse aggregates: Conform to SSPWC Section 200 1.4.
5. Design slumps and mix proportioning: SSPWC Sections 201-1.1.2 and 201-1.1.3 except as follows.

    a. Provide concrete which will develop the following minimum 28-day ultimate compressive strengths.

        1) Retaining walls and similar structural uses: 4000 psi.

B. Formwork: Wood or equivalent metal, conforming to SSPWC Section 303-1.3.

C. Reinforcement: Conform to SSPWC Section 201-2.

D. Curing materials: Liquid or equivalent sheet membrane, conforming to SSPWC Section 201-4, except as specified herein.

E. Joint materials:

1. Construction joints: Preformed galvanized steel sheet or resawn wood.
2. Expansion joints: Premolded resilient filler, conforming to SSPWC Sections 201-3, except as specified herein.

F. Waterstops: Unless otherwise indicated on Drawings, provide extruded dumbbell type, spliced by thermal butt fusion.

G. Borrow material (for fill): Nonexpansive, predominantly granular material:

1. Particles less than 2 inches in any dimension;
2. Free of organic and inorganic debris;
3. Not more than 12 percent by weight passing the No. 200 sieve.
4. Acceptable to a geotechnical engineer retained by Owner.

H. Non-shrink grout: Prepackaged, nonshrink, nonmetallic, natural aggregate grout conforming to ASTM C 1107, with minimum 28-day compressive strength of 5000 psi.

1. Hi-Flow or NS Grout by Euclid Chemical Company.
2. Five Star Grout by Five Star Products.
3. Master Flo 713 or 928 by Master Builders, Inc.

I. Integral mineral coloring pigments: Provide pure synthetic or natural mineral oxide colors as selected by Architect.

1. Chromix by L.M. Scofield Co., Longwood, FL, Los Angeles, CA.
2. Davis Colors, Beltsville, MD, Los Angeles, CA.
3. Lambco Colors by Lambert Corp. of Florida, Orlando, FL.
4. Landers-Segal Color Co., Inc., Passaic, NJ.
5. Solomon Colors, Springfield, IL.

PART 3 - EXECUTION

3.1 PREPARATION

A. Compact top 6 inches subgrade to 95 percent of the Modified Proctor maximum dry density.
B. Do not allow traffic over prepared subgrade.
C. Uniformly moisten subgrade at time concrete is placed. Uniformly apply water immediately prior to concrete placement.
D. Accurately trim to required elevations, allowing for full thickness concrete.

3.2 WALKS AND SLABS

A. Construct in accord with SSPWC Section 303-5, except finishing and curing of integral color concrete shall be as follows.

1. Finishing:

a. Tamp freshly placed concrete with approved metal grid tampers not less than 12 inches by 12 inches in size so as to bring fines to top, then rod to uniform surfaces at required levels.

1) Float and trowel finish as soon as surface becomes workable.
2) Provide slopes as indicated on Drawings, or as directed by Architect.

b. During finishing maintain adequate surface moisture and reduce plastic shrinkage as recommended by integral color manufacturer.

1) Immediately after fresh concrete has been brought to a flat surface, a shiny film of moisture on top surface shall not be permitted to evaporate or as soon as the shiny surface disappears, it shall be restored and maintained until troweling.
2) Maintain surface moisture film as specifically recommended by integral color manufacturer applying evaporation retarder/finishing aids, frequent, light, fine spray applications of water rather than excessive wetting. Adjust extent of water spray in accord with temperature, humidity, and wind conditions.

c. Work concrete flatwork to achieve the following tolerances when measured in accord with ASTM E 1155.

1) Trowel finished surfaces: FF25/FL20 with minimum FF20/FL15.
2) Float and broom finished surfaces: FF20/FL17 with minimum FF15/FL10.

d. Surface finish textures:

1) Provide float, trowel, brush/broom, and/or abrasive-blasted surface textures to match Architect-approved sample panels.

2) Perform slip resistance testing to ensure that slip resistance of exposed concrete walking surface finishes is maintained. Follow testing procedures required for slip resistance testing of mock-up sample panels.

2. Curing: Cure, harden, and seal colored concrete flat slabs with compound(s) recommended by manufacturer of integral color concrete pigments. Curing, hardening, and sealing compound(s) shall not discolor, lighten, darken, stain, or impart other unsightly characteristics to colored concrete and shall be compatible with Owner's maintenance sealer.

B. Dumpster and compactor equipment pads and similar heavy-duty use areas indicated on Drawings: Apply bonding agent as recommended by topping manufacturer. Mix and apply extra heavy-duty, metallic-aggregate topping in accord with manufacturer's recommendations; unless indicated otherwise, provide minimum 1 inch topping thickness.

3.3 CURBS AND GUTTERS

A. Construct concrete curbs, gutters, and other similar structures in accord with SSPWC Section 303-5, except finishing and curing of integral color concrete shall be as specified herein for walks and slabs.

3.4 SITE STRUCTURES

A. Construct retaining walls, catch basins, manholes, valve and sump pits, thrust blocks, ductbanks, and similar structures to conform to requirements of SSPWC Section 303-1, Concrete Structures.

1. Formwork: Conform to SSPWC Section 303-1.3.
2. Placing reinforcing steel: Conform to SSPWC Section 303.17.
3. Placing concrete: Conform to SSPWC Section 303-1.8.
4. Consolidating (mechanically vibrating) concrete: Conform to SSPWC Section 303-1.8.4.
5. Waterstops:

    a. Install accurately in the formwork. Securely fasten in place as recommended by manufacturer to prevent displacement during concrete placement.
    b. Use full manufactured length to avoid joints as much as possible.
    c. Thermally weld all joints and intersections in accord with manufacturer's instructions. Joints shall develop 85 percent (minimum) of tensile strength of section.

6. Construction joints: Unless indicated otherwise on Drawings, keyed type, conforming to SSPWC Section 303-1.8.6 and as specified herein.
7. Expansion joints: Unless indicated otherwise on Drawings, premolded resilient filler, conforming to SSPWC Sections 303-1.8.6.
8. Form removal: Conform to SSPWC Section 303-1.4.
9. Finishing: Conform to SSPWC Section 303-1.9.

10. Curing: Conform to SSPWC Section 303-1.10.

B. Additionally construct thrust blocks, ductbanks, and similar concrete structures related to other Divisions of work, in accord with requirements specified in applicable Sections and as indicated on Drawings.

3.5 JOINTS

A. Construction (pour) joints:

1. Place construction joints at all breaks in concrete placement lasting more than 1 hour and at color changes.
2. Unless otherwise indicated on Drawings, key construction joints for slabs 6 inches or more in thickness, except at expansion joints.

B. Expansion joints: Construct expansion joints with preformed resilient filler compatible with joint sealant materials, including joint backing, specified in Division 32 Section "Concrete Paving Joint Sealants".

C. Control joints:

1. Place control joints in all exterior flat concrete work, and other locations as indicated on Drawings.
2. Where control joints are not indicated on Drawings, verify specific types and layout with Architect prior to placing concrete. Size and shape of layout is dependent on specific areas, but do not space control joints farther apart than 10 feet o.c. in a square pattern (e.g., if a concrete walk is 4 feet wide, control joint should occur at equal spacing of approximately 4 feet o.c. along length).
3. Control joints may be one of two types, as indicated on Drawings: Saw-cut or hand-tooled.

    a. Saw-cut:

        1) Use at slabs on grade only. Make saw-cuts 1/8 inch wide. Do not cut through steel bar reinforcing. Depth of all saw-cuts shall not be less than 1/4 of slab thickness.
        2) Verify hardness condition of concrete before commencing saw-cutting to ensure that saw will not fret, ravel, or spall edges of cuts nor dislodge aggregate. Use saw-cutting equipment appropriate for the hardness condition of concrete

    b. Hand tooled: Make control joints with a "V" shaped jointing tool with rounded edges and a 3/4 inch deep keel.
    c. Whether saw-cut or hand-tooled, accurately lay out areas and make control joints straight and true, with clearly defined angles.

4. Construction (pour) joints may be substituted for control joints where specifically approved by Architect.

3.6 PROTECTION OF COMPLETED WORK

A. During curing period, protect concrete from damaging mechanical disturbances, water flow, loading shock, and vibration.

END OF SECTION

SECTION 32 31 13
CHAIN LINK FENCES AND GATES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Related Requirements:

1. Section 033000 "Cast-in-Place Concrete" for cast-in-place concrete and post footings.
2. Section 80-3 of 2023 Standard Specifications

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:

a. Fence and gate posts, rails, and fittings.
b. Chain-link fabric, reinforcements, and attachments.
c. Gates and hardware.

B. Shop Drawings: For each type of fence and gate assembly.

1. Include plans, elevations, sections, details, and attachments to other work.
2. Include accessories, hardware, gate operation, and operational clearances.

1.4 INFORMATIONAL SUBMITTALS

A. Product Certificates: For each type of chain-link fence and gate.

B. Product Test Reports: For framework strength according to ASTM F 1043, for tests performed by manufacturer.

C. Field quality-control reports.

D. Sample Warranty: For special warranty.

1.5 FIELD CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.6 WARRANTY

A. Special Warranty: Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure to comply with performance requirements.
b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
c. Faulty operation of gate operators and controls.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Chain-link fence and gate frameworks shall withstand the design wind loads and stresses for fence height(s) and under exposure conditions indicated according to ASCE/SEI 7.

B. Lightning Protection System: Maximum resistance-to-ground value of 25 ohms at each grounding location along fence under normal dry conditions.

2.2 CHAIN-LINK FENCE FABRIC

A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to "CLFMI Product Manual" and requirements indicated below:

2.3 FENCE FRAMEWORK

A. Posts and Rails ASTM F 1043 for framework, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 based on the following:

1. Fence Height: As indicated on Drawings.

2. Light-Industrial-Strength Material: Group IC-L, round steel pipe, electric-resistance-welded pipe.

3. Heavy-Industrial-Strength Material: Group IA, round steel pipe, Schedule 40 Group IC, round steel pipe, electric-resistance-welded pipe.

4. Horizontal Framework Members: Intermediate, top, and bottom rails according to ASTM F 1043.

5. Brace Rails: ASTM F 1043.
6. Metallic Coating for Steel Framework:

    a. Type A: Not less than minimum 2.0-oz./sq. ft. average zinc coating according to ASTM A 123/A 123M or 4.0-oz./sq. ft. zinc coating according to ASTM A 653/A 653M.

2.4 TENSION WIRE

A. Metallic-Coated Steel Wire: 0.177-inch- diameter, marcelled tension wire according to ASTM A 817 or ASTM A 824

2.5 SWING GATES

A. General: ASTM F 900 for gate posts and single swing gate types.

1. Gate Leaf Width: As indicated.

2. Framework Member Sizes and Strength: Based on gate fabric height of 72 inches.

B. Pipe and Tubing:

1. Zinc-Coated Steel: ASTM F 1043 and ASTM F 1083;

2. Gate Posts: Round tubular steel
3. Gate Frames and Bracing: Round tubular steel

C. Frame Corner Construction: Welded or assembled with corner fittings

D. Hardware:

1. Hinges 360-degree inward and outward swing.

2. Latch: Permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.
3. Lock: Manufacturer's standard internal device.

4. Padlock and Chain:
5. Closer: Manufacturer's standard

2.6 FITTINGS

A. Provide fittings according to ASTM F 626.

B. Post Caps: Provide for each post.

1. Provide line post caps with loop to receive tension wire or top rail.

C. Rail and Brace Ends: For each gate, corner, pull, and end post.

D. Rail Fittings: Provide the following:

1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.
2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate and bottom rails to posts.

E. Tension and Brace Bands: Pressed steel

F. Tension Bars: Steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.

G. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.

H. Tie Wires, Clips, and Fasteners: According to ASTM F 626.

1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, according to the following:

a. Hot-Dip Galvanized Steel:0.106-inch-diameter wire galvanized coating thickness matching coating thickness of chain-link fence fabric.

I. Finish:

1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz./sq. ft. of zinc.

a. Polymer coating over metallic coating.

2.7 GROUT AND ANCHORING CEMENT

A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107/C 1107M. Provide grout, recommended in writing by manufacturer, for exterior applications.

B. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating, and that is recommended in writing by manufacturer for exterior applications.

2.8 GROUNDING MATERIALS

A. Comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."

B. Connectors and Grounding Rods: Listed and labeled for complying with UL 467.

1. Connectors for Below-Grade Use: Exothermic welded type.
2. Grounding Rods: Copper-clad steel, 5/8 by 96 inches.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.

1. Do not begin installation before final grading is completed unless otherwise permitted by Engineer.
2. Coordinate the work with court surfacing material installation to complete a neat job

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

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 CHAIN-LINK FENCE INSTALLATION

A. Install chain-link fencing according to ASTM F 567 and more stringent requirements specified.

1. Install fencing on established boundary lines inside property line.

B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.

C. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.

2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or

tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

a. Exposed Concrete: Extend 2 inches above grade; shape and smooth to shed water.
b. Concealed Concrete: Place top of concrete 2 inches below grade as indicated on Drawings to allow covering with surface material.

D. Terminal Posts: Install terminal end, corner, and gate posts according to ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more. For runs exceeding 500 feet, space pull posts an equal distance between corner or end posts.

E. Line Posts: Space line posts uniformly at 10 feet o.c.

F. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.

1. Locate horizontal braces at midheight of fabric 72 inches or higher, on fences with top rail, and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.

G. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch-diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric. Provide horizontal tension wire at the following locations:

1. Extended along top and bottom of fence fabric. Install top tension wire through post cap loops. Install bottom tension wire within 6 inches of bottom of fabric and tie to each post with not less than same diameter and type of wire.

2. Extended along top of extended posts and top of fence fabric to support barbed tape.

H. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.

I. Intermediate and Bottom Rails: Secure to posts with fittings.

J. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 1-inch bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

K. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate

posts, with tension bands spaced not more than 15 inches o.c.

L. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric according to ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.

1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.

M. Fasteners: Install nuts for tension bands and carriage bolts on the side of fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.4 GATE INSTALLATION

A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation.

3.5 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Lubricate hardware and other moving parts.

END OF SECTION

SECTION 33 05 28
UNDERGROUND UTILITIES MARKING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Underground warning tape for:

1. Electrical power duct banks.
2. Common user duct banks.
3. Potable and nonpotable water.
4. Reclaimed water.
5. Septic sewer force mains.
6. Compressed air.
7. Chilled water.
8. Irrigation mainline piping.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Division 31 Section "Excavation and Fill for Utilities".
B. Division 33 Section “Site Water Distribution System”.
C. Division 33 Section “Septic Sewer System”.

1.4 QUALITY ASSURANCE

A. Reference specifications and standards:

1. ANSI: Z53.1 Safety Color Code for Marking Physical Hazards.

1.5 SUBMITTALS

A. Procedures: In accordance with Division 01 Sections.

B. Product data:

1. Manufacturer's detailed technical materials data, including technical bulletins, drawings, guides, and manuals, as applicable to the work of this Project.
2. For color coding of specific utilities not indicated on Drawings or not specified herein, submit samples of color coding tape markings for selection by Owner.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Marking tape:

1. Empire Level Manufacturing Corporation (Thor Enterprises), Mukwonago, WI. Tel: (800) 558-0722.
2. Mutual Industries North, Inc., Philadelphia, PA. Tel: (215) 927-6000, (800) 523-0888.
3. Reef Industries, Inc., Houston, TX. Tel: (713) 507.4250, (800) 231-6074.
4. Stranco Inc., Michigan City, IN. Tel: (219) 874-5221, (800) 348-3217.
5. T. Christy Enterprises, Inc. 655 E. Ball Road, Anaheim, CA. Tel: (714) 507-3300, (800) 258-4583.

2.2 MATERIALS

A. Marking tape: Reinforced or unreinforced type, 6 inches wide, inert, virgin resin, plastic film formulated for extended use underground, imprinted with an appropriate legend to define type of utility line it identifies.

1. Nondetectable: Minimum 4 mils overall thickness.

a. DuraTec or ShieldTec by Empire Level Manufacturing Corporation (Thor Enterprises).
b. Underground Tape (UT series) by Harris Industries, Inc.
c. Non-Detectable Underground Marking Tape (No. 17783) by Mutual Industries North, Inc.
d. Underground Warning Tape (PUWT-XXX series) by Stranco, Inc.
e. Underground marking tape (No. TA-ND-6-GI) 6 inches non-detectable green irrigation marking tape by T. Christy Enterprises.

2. Detectable: Double-lamination/sandwich with continuous aluminum core, minimum 5 mils overall thickness. Provide manufacturer's splice clips or other accessory materials to maintain conductivity throughout entire length of tape installation.

a. ThorTec or MagnaTec by Empire Level Manufacturing Corporation (Thor Enterprises).
b. Underground Tape (DU series) by Harris Industries, Inc.
c. Underground Detectable Tape (No. 17774) by Mutual Industries North, Inc.
d. Detect-A-Line Detectable Underground Warning Tape (PUWT-XXXD series) by Stranco, Inc.
e. Terra Tape Sentry Line 1350 by Reef Industries, Inc.

3. Color code: Black lettering on color backgrounds in accord with APWA/ULCC Uniform Color Code and ANSI Z53.1, except as follows.

a. Red: Electric power ductbanks other than high voltage (e.g., 12 kV) electric power ductbanks.

b. Yellow: Natural gas distribution and transmission.
c. Orange: Common user ductbanks.
d. Black or white lettering on blue background: Potable water systems.
e. Yellow lettering on purple background: Reclaimed water lines. Black lettering on green background: Irrigation mainline piping reading "CAUTION IRRIGATION LINE BELOW".

PART 3 – EXECUTION

3.1 INSTALLATION

A. Marking tape:

1. Nondetectable tape: Install over metallic utility lines.
2. Detectable tape: Install over nonmetallic utility lines.
3. For trenches which contain only one utility line, install one marking tape directly on top of each utility line (at the 12 o'clock position), install one additional tape 12 inches above the centerline of the utility line, and install one additional marking tape 18 inches to each side of centerline of utility line, a total of four utility marking tapes for a single common utility line in a single trench.
4. For trenches in common which contain more than one utility line, install one marking tape directly on top of each utility line (at the 12 o'clock position), install one additional tape for the proper utility 12 inches above the center of the utility line, and one additional marking tape for each utility in the common trench, installed 18 inches to each side of the edge of each of the outboard utility lines, a total of 8 utility marking tapes for 2 utility lines in a single common trench; a total of 12 utility marking tapes for 3 utility lines in a single common trench; a total of 16 utility marking tapes for 4 utility lines in a single common trench, etc.

END OF SECTION

SECTION 33 1000
SITE WATER DISTRIBUTION SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. On-site potable water, fire water and reclaimed water distribution systems, including connections to existing systems, sterilization, testing of water mains, and all appurtenances required for the complete systems. Contractor shall ensure all material in direct contact with water shall be NFF61 certified.

B. Systems design pressure is 125 psig.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Division 03 Section "Cast-In-Place Concrete".

B. Division 09 Section "Painting (Professional Line Products)".

C. Division 31 Section "Excavation and Fill for Utilities".

D. Division 33 Section "Underground Utilities Marking".

1.4 REQUIREMENTS

A. Comply with all requirements of the governing authority, including:

1. No connection shall be made to potable, fire and industrial water lines without written approval from the governing authority.
2. When construction water is needed by Contractor, no connection to the existing main shall be used until an approved backflow prevention device is installed by Contractor.
3. Valves of existing public systems shall not be operated by any person other than Water Department personnel.
4. No connections will be allowed from new to existing water mains until pressure test has been accomplished.
5. All new potable water and/or fire systems shall be sterilized (chlorinated) by Contractor.

1.5 SUBMITTALS

A. Procedures: In accordance with Division 01 Sections.

B. Submit brochures and shop drawings with such promptness as will allow ample time for review and corrections procedures.

1. Approval will not relieve Contractor of the sole responsibility for the correctness of the work.

C. Shop drawings: Shop drawings and detailed descriptions for items which are not manufactured and which have to be specially fabricated for work of this Contract.

D. Product data: Give name or other identification of each item to be provided as part of work of this Contract. The assembled brochures shall show cuts and fully detailed descriptions of all manufactured items furnished.

1. Presentation: Arrange materials in the same sequence as the Specifications and mark each item in the lower right-hand corner with Section, Article, and Sub-Article number.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Ductile Iron Pipe: US pipe as specified or equivalent by American.

B. Shut-off valves: Mueller as specified or equivalent by Clow, Dresser, Kennedy or Stockham.

2.2 MATERIALS AND METHODS

A. Water piping:

1. 4 inches and larger: Polyvinyl chloride (PVC) pipe in conformance with all requirements of AWWA C900, Class 200; use purple pigmented for reclaimed water.
2. 3 inches and smaller: Schedule 80 PVC conform to requirements of ASTM D 1785, Type 1, Grade 1.
3. Annealed Type K soft copper for restroom connections as required by restroom manufacturer

B. Fittings:

1. For all ductile iron pipe and PVC pipe 4 inches and larger: Cement-lined ductile or cast iron, 250 lb.

a. Use tapped tees or flanged adapters at connections of copper piping to ductile iron or PVC piping.

2. For PVC pipe 3 inches and smaller: PVC socket fittings for solvent welding.
3. For copper use acceptable fittings

C. Joints for pipe and fittings:

1. PVC piping:

a. 4 inches and larger: Integral bell containing a lock-in ring and spigot.

1) Pipe joints shall be push on as specified in ASTM D 3139.
2) Provide each joint connection with an elastomeric gasket suitable for the bell or coupling installation.
3) Gaskets for push on joints for pipe shall conform to ASTM F 477.
4) Gaskets for push on joints and compression type joints or mechanical joints for connections between pipes and metal fittings, valves, and other accessories shall be as specified in AWWA C111/A21.11.

b. Poly Vinyl Chloride (PVC) Water Main Fittings shall be gray-iron or ductile iron conforming to AWWA C110/A21.10 or AWWA C153/A21.53 and shall have cement mortar lining conforming to AWWA C104/A21.4, standard thickness unless otherwise indicated on Drawings. Fittings shall be mechanical joints.
c. 3 inches and smaller: Solvent welded per manufacturers recommendations.

D. Flanges:

1. For ductile iron pipe: 125 lb., ductile or cast iron, threaded, ASTM A 126 and ANSI B16.1.
2. Gaskets: Non-asbestos type composition, 1/16 inch thick, equivalent to Garlock Style 3000.
3. Bolting materials: Carbon steel Heavy Hex bolts and nuts, ASTM A 307, Type B.

E. Valves, hydrants, and accessories:

1. Shut-off valves: Mueller as specified or equivalent by Clow, Dresser, Kennedy, or Stockham.

a. Valves 4 inches and larger: AWWA approved, 200 lb.
b. Valves 14 inches and larger: AWWA approved, 150 lb.

1) Buried: Mueller #A-2360-23, with 2-inch square operating nut, and mechanical joint ends provided with retainer glands as specified under paragraph "Joints" for ductile iron piping. Provide concrete support block under buried valve.

a) Provide Bingham and Tylor or equivalent by Alhambra foundry - cast iron adjustable type valve box with proper extension to 6 inches below bottom of grade and cast-iron collar and cover. Cast "WATER" in cover.

2) Above grade: Mueller #A-2380-6, with wheel handles and flanged ends.

c. Valves less than 4 inches size: Federal Specifications WW-V-54, Class A, Type III, bronze, double wedge, non-rising stem, screwed bonnet, 200 psi W.O.G. working pressure, stuffing box repackable under pressure, all parts renewable, ends as indicated.

2. Backflow preventers: Provide where indicated on the plans.
3. Pressure regulating valve: Pressure reducing, pressure sustaining and check valve. Size 8-inch, 125 lb. Class, flanged, ratings: Downstream 15 to 75 psi, upstream 20 to 200 psi, equivalent to G.A. Industries Figure No. 4700.

F. Pipe guards: Provide where indicated. Guards shall be 4-inch Schedule 40 galvanized steel pipe filled with concrete. Guards shall be 7 feet long, extending 4 feet above finished grade and set in a concrete footing (1 foot - 6 inches diameter by 3 feet - 6 inches deep).

G. Corrosion protection: All buried uncoated and/or otherwise unprotected valves, clamps, flanges, bolts, nuts, etc., shall be cleaned, primed and coated with a coal tar base protective coating (1/32 inch thick) equivalent to Carboline (Kop-Coat) Bitumastic 50. Apply in accord with manufacturer's instructions.

H. Pipe wrapping where indicated: Polyethylene wrap, ANSI A21.5 (AWWA C105) 8 mils thick.

PART 3 - EXECUTION

3.1 EXCAVATING, TRENCHING, BACKFILLING, AND COMPACTING

A. Perform in accord with requirements of Division 31 Section "Excavation and Fill for Utilities".

3.2 INSTALLATION

A. Coordinate the installation of this part of the work with the overall construction schedule.

B. Provide concrete thrust blocks at all buried fittings and stub ends on 4 inch and larger PVC lines, and as indicated on Drawings.

C. Repair all damaged lining according to AWWA C104 and according to

D. Connect to existing system where indicated.

E. Tests: In accord with the following:

1. Test entire system at 1.5 times system design pressure. Maintain test pressure for at least 4 hours or longer as directed by Owner to prove tightness without leaks.

F. Install pipes and fittings in accordance with restroom manufacturer's recommendations. Provide 30 inches cover from top of pipe to finish grade.

G. Install water service line to restroom at the location required by restroom manufacturer

3.3 DISINFECTION

A. Thoroughly clean, chlorinate, drain, and flush all pipe, fittings, valves, and appurtenances which have been exposed to contamination by the construction, in accord with the AWWA Specification C601-68.

B. Owner should be notified 24 hr. in advance of disinfection of all new potable water lines.

1. Flush line prior to disinfection. Flushing shall produce minimum velocity of 2.5 feet per second in pipe.
2. Disinfect pipe using sodium hypochlorite to produce a dosage of 50 mg/l for a 24-hr. contact period.
3. Open and close all valves several times during disinfection period.
4. After 24-hour retention period, flush chlorinated water from the line until chlorine concentration of water leaving the main is no higher than that generally prevailing in the existing system, or less than 1.0 mg/l.
5. Provide corporation stop or similar connection and obtain sample for bacteriological analysis.
6. Repeat disinfection procedure until bacteriological analysis results are acceptable to Owner.

3.4 CLEANING

A. Restoration: Any settlement of pavement or backfill, or erosion over or in the trenches shall be replaced or repaired by Contractor and the surface brought to grade. Special precautions shall be taken to prevent storm water erosion of trenching. Storm water culverts and structures shall be kept clean of mud, debris, and silt caused by the construction.

3.5 PIPELINE IDENTIFICATION

A. Provide in accord with Division 33 Section "Underground Utilities Marking".

END OF SECTION

SECTION 33 30 00
SEWAGE SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

A. Gravity sewerage collection system including:

1. Gravity sewer pipe.
2. Manholes
3. Clean out

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Division 03 Section "Cast-In-Place Concrete".

B. Division 31 Section "Excavation and Fill for Utilities".

C. Division 33 Section “Underground Utilities Marking”.

D. Division 33 Section “Site Water Distribution System”.

1.4 QUALITY ASSURANCE

A. Tests and inspections:

1. Procedure: In accordance with Division 01 Sections.
2. Required tests:

a. After alignment tests have been completed, and before flows are allowed in the line, conduct leakage tests.
b. Test entire system for exfiltration in presence of engineer. Limit leakage to 100 gallons per inch of pipe diameter per mile of length per 24 hours.
c. Limit leakage to stated maximum limit, except that an allowance of an additional 10 percent of gallonage will be allowed for each additional 2 feet of head over a basic 2 feet minimum above all pipe soffits.
d. Pay for all leakage tests and required repairs and reconstruction.

B. Reference specifications and standards shall include but are not limited to:

1. California Code of Regulations

a. Title 8, Industrial Relations
b. Title 17, Public Health
c. Title 19, Public Safety
d. Title 21, Public Works
e. Title 24, Energy Regulations

2. California Building Code
3. California Mechanical Code
4. California Plumbing Code
5. Local Code and Ordinances
6. AASHTO: Specifications for Highway Bridges.
7. AASHTO: M 198 Joints for Circular Concrete Sewer and Culvert Pipe Using Flexible Watertight Gaskets
8. ASTM: A 48 Gray Iron Castings.
9. ASTM: A 746 (ANSI/AWWA C151/21.51) Ductile Iron Pipe.
10. ASTM: C 94 Ready-Mix Concrete.
11. ASTM: C 150 Portland Cement.
12. ASTM: C 443 Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
13. ASTM: C 478 Precast Reinforced Concrete Manhole Sections.
14. ASTM: C 923 Watertight Resilient Connectors for Manhole to Pipe Seal.
15. ASTM: D 1248 Polyethylene Plastics Molding and Extrusion Materials.
16. ASTM: D 1784 Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds.
17. ASTM: D 2122 Determining Dimension of Thermoplastic Pipe and Fittings.
18. ASTM: D 2321 Underground Installation of Flexible Thermoplastic Sewer Pipes.
19. ASTM: D 2412 Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading.
20. ASTM: D 3034 Type PSM Polyvinyl Chloride (PVC) Sewer Pipe and Fittings.
21. ASTM: D 3212 Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
22. ASTM: F 477 Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
23. ANSI/AWWA: C105/A21.5 Polyethylene Encasement for Ductile-Iron Piping for Water and Other Liquids.
24. ANSI/AWWA: C111/A21.11 Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
25. ANSI/AWWA: C150/A21.50 Thickness Design of Ductile-Iron Pipe.
26. ANSI/AWWA: C151/A21.51 Ductile-Iron Pipe, Centrifugally Cast for Water or Other Liquids.

C. Allowable tolerances for manhole frames/drainage inlets and cleanouts:

1. Horizontal location: Within ±3 inches, in any direction, of horizontal location indicated on Drawings.
2. Vertical alignment: Not greater than 1/8-inch maximum tolerance for 6 feet of depth.

1.5 SUBMITTALS

A. Procedure: In accordance with Division 01 Sections.

B. Product data: Manufacturer's detailed technical materials, fabrication, and installation data, including technical bulletins, drawings, guides, and manuals, as applicable to the work of this Project.

C. Certifications: Manufacturer's certification that pipe and fittings have been inspected and tested at the point of origin and are in compliance with specified requirements.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Pipe and fittings:

1. Solid Wall Polyvinyl Chloride (PVC) pipe and fittings for mainlines 15 inches and smaller: Conform to ASTM D 3034, SDR 35.

a. Manufacture pipe from approved, Type 1, Grade 1, PVC 12454-C conforming to ASTM D 1784 and meeting requirements of ASTM D 2122, ASTM D 2412 and ASTM D 2729. Pipe shall have integral wall thickened bells or extruded couplings with gasket seals. Solvent weld joints will not be permitted.
b. Pipe joints shall be gasket push-on type complying with ASTM D 3212 and ASTM F 477.
c. Pipe shall be UL/FM approved.
d. Fittings shall conform to the same specifications as pipe in which they are to be installed.
e. Pipe shall be identified on the exterior of the pipe with the following information:

1) Nominal pipe size and o.d. base.
2) Material code designation number (i.e. 12454C).
3) Dimension ratio number (i.e. SDR 35).
4) Pipe Stiffness Designation (i.e. PS46).
5) ANSI/ASTM Designation (i.e. D3034).
6) Pipe manufacturer's name and production code.

f. The Contractor shall furnish and use, for grade and alignment control, a laser beam system which complies with OSHA requirements. The laser system shall have good visibility when used with suitable target material. The laser system must be of the self-leveling type so that the laser beam is automatically compensated for minute grade disturbances.
g. The laser system must also have an early warning system that instantly warns the pipe layer when the laser is off grade. The laser system is to be provided by the Contractor and shall have a minimum accuracy of ±0.01 foot per one hundred feet (100') on line; and a minimum visible range of one thousand feet

(1000'). When conditions are such that this method is impractical, such as on short pipe runs, the Contractor shall have an engineer on the ground to set grade of each joint of pipe by means of an engineer's level.

B. Manholes

1. Manholes shall be complete structures in place and backfilled including the furnishing and placing of all materials involved. Precast concrete pipe manholes shall consist of a poured in place concrete base section, reinforced concrete pipe section(s), cast iron frame and cover and a poured in place concrete collar with paving patch. Invert channels shall be smooth and semicircular in shape conforming to the inside of the adjacent pipe invert, or flow channels may be provided by use of the bottom half of the specified main pipe. The floor and wall of the manhole outside the channels shall be smooth and shall slope minimum 1:12 towards the channels.
2. The top of the manhole base section shall be keyed to receive the tongue end of the riser section. The key shall be formed in the freshly poured concrete by using a template manufactured to the dimensions of the riser section. If the riser is cast in-place monolithically with the base section by using a slip form or other means, the key may be omitted between the base and riser. If the base and riser sections are not poured monolithically, but separately, a key shall be provided in the base section. In either case, a key will be required in the top of the riser section to receive the tongue end of the tapered cone.
3. The joints between the base and all precast elements of the manhole, including adjustment rings and manhole frame, shall be filled with cement mortar, or approved equal, prior to joining the elements.
4. The interior of the manhole shall be troweled smooth with a wooden trowel, removing excess mortar extruded out of joints for the entire height of the manhole, from the manhole frame to the floor. All excess mortar and any other debris shall be removed from the manhole.
5. Materials

    a. Pre-cast concrete pipe manholes shall consist of a poured in-place concrete base section, reinforced-concrete pipe section(s), a reinforced concrete taper section, grade rings and cast-iron frame and cover. Precast sections shall be manufactured in conformity to ASTM Designation: C-478 (Latest Revision) for their respective diameters.
    b. Elliptical single-line reinforcement will not be permitted. Single line circular reinforcement will be permitted and the minimum steel area shall equal the minimum steel area required for the inter-cage reinforcement.
    c. Tapered sections shall conform to the requirements for pipe of the size equal to the largest internal diameter of the tapered sections.
    d. Concrete for the base section shall be 6 sack. Precast manhole bases are not allowed.
    e. Unless specified otherwise, manholes on sewer mains 12 inches in diameter or larger, or on any size sewer mains within 600 feet of and connected to sewer mains 30 inches in diameter or larger shall be coated with one of the following: Raven 400 or Raven 405, products of RLS solutions; Neopoxy 5304 OR 5305 series, products of Neopoxy International; or Quadex Structure Guard, a

product of Quadex. Approved products shall be applied per manufacturer specifications. No substitutions are acceptable.

6. Installation

   a. The inside of the manhole shall be formed to the flow line of the Sewer. The formed flow channel depth shall extend above spring line up to half of the pipe. The bench shall slope a minimum 1:12.
   b. Changes in direction of flow shall be made with a smooth curve of as large a radius as the size of the manhole will permit. Changes in grade of the channels shall be made gradually and evenly. Where the pipe size of the entering and leaving pipe is different, the larger diameter must be maintained in the manhole.
   c. A channel shall be formed in the bottom of all new starting manholes (a terminal manhole at the upstream end of a sewer main) and it shall extend completely through the manhole. The upstream end of the new flow channel shall terminate at the manhole wall, and the end of the flow channel shall be vertical with no fillet between the flow channel bottom and the manhole wall.
   d. Stub-outs shall be installed in manholes at the locations and sizes shown on the Plans. All stub-outs shall be sealed with a plug of a type approved by the manufacturer of the pipe. When connecting to the existing stub-outs and the plug is removed, a new square cut shall be done to the existing stub-out prior to connection on the new sewer main.
   e. All manholes shall be completed to finish grade with concrete collar and paving patches (where indicated) as shown on the plans and as herein specified. In undeveloped areas where no Street surfacing is to be done in conjunction with or immediately after Utility installation, the manhole cover shall be finished off to a level 1 inch (25mm) above ground elevation and shall be provided with 12 inches (300mm) of grade rings. In existing Street areas where surfacing exists and no new Street regrading is contemplated in conjunction with or immediately after Utility installation, such as new subdivisions, manholes shall initially terminate with the top of the cone 6 inches (150mm) below subgrade and shall be brought to Street surface with grade adjustment rings and completed after Street paving is accomplished. Unless specifically otherwise indicated in the Specifications, it will be the responsibility of the Sewer Contractor to return and install the manhole covers to finish grade as specified and shown on the City Standard Drawings.
   f. The Contractor is aware that connections to existing Sewers will be “wet” and the Contractor shall make whatever arrangements are necessary to complete the manhole connections under the “wet” conditions.
   g. Where necessary, manholes shall be equipped with an approved water-tight insert placed under the manhole cover to prevent rainwater or other inflow.

7. No steps shall be installed in manholes unless otherwise noted on the Plans.

PART 3 - EXECUTION

3.1 INSTALLATION/PERFORMANCE

A. Excavating, trenching, backfilling, and compacting: In accord with Division 31 Section "Excavation and Fill for Utilities".

B. In hard pan excavations it is necessary that the rock or hard pan be removed so that it will not be closer than 4 inches to the bottom and sides of the pipe for sizes up to 24 inches in diameter.

C. In addition to, and consistent with public safety considerations, every precaution for safety must be provided for the workers at the Site. Shoring must comply with Cal-OSHA Standards

D. As indicated on Drawings, as specified herein, and in compliance with applicable portions of ASTM D 2321.

1. Grade trench bottom to indicated elevation of pipeline and shape bottom to fit lower quadrant of pipe. Excavate holes at each bell hub such that pipe will be uniformly supported along entire length of barrel only.
2. Pipe installation and jointing shall be in accord with pipe manufacturer's specifications and instructions for type of pipe used and applicable requirements specified herein. All pipe having a defective joint, bell, or spigot is unacceptable, shall be rejected, removed from site, and replaced with an acceptable unit.
3. Commence pipe laying in finished trench at lowest point, or from a point designated by Owner, and lay upgrade from point of connection with all bell ends forward.
4. Install pipe to homing mark on spigot. On field cut pipe, provide a homing mark on spigot end in accord with manufacturer's recommendations.
5. Maintain pipe alignment and joint closure until sufficient haunching and backfill is in place to adequately hold pipe in position.
6. Prevent foreign materials from entering pipe while it is being placed in trench. Do not place debris, tools, articles of clothing, or other materials in pipe at any time.
7. As each length of pipe is placed in trench, assemble joints and bring pipe to intended line and grade. Bed and secure pipe in place. When pipe laying is delayed for 10 min. or more, close open ends of pipe using a watertight plug or other approved means to ensure that absolute cleanliness is maintained inside pipe.
8. At penetrations of manhole and similar structures, smoothly cut penetrating ends of pipe parallel to interior surface of structure. Maximum interior protrusion of pipe shall be the minimum necessary for proper sealing of pipe connection to structure. Use resilient connector when indicated on Drawings.
9. Coordinate waste pipe layout with final drawings provided by restroom manufacturer
10. Verify grades elevation/invert elevation prior to laying any pipe

E. Pipe jointing:

1. Pipe installation and jointing shall be in accord with pipe manufacturer's specifications and instructions for type of pipe used and applicable requirements specified herein.
2. Ensure that interior of pipe and jointing seal is free of sand, dirt, trash, or other foreign materials before installation. All pipe or fitting that has been installed

containing dirt or other deleterious material shall be removed, cleaned, and re-laid. Extreme care shall be taken to keep bells of pipe free from sand, dirt, or rocks so that joints may be properly assembled without overstressing bells.

3.2 FIELD QUALITY CONTROL

A. Alignment: Inspect septic sewerage lines to determine if displacement of pipe has occurred during backfilling and compaction.

B. Correct, at no additional cost, sections of piping that are deficient in material, alignment, grade, or joints.

3.3 DEFLECTION TEST OF PVC SEWER LINES

A. PVC Sewer pipe, which is designated as flexible in nature, shall be tested for excessive deflection. This test shall be performed after backfilling and compaction but prior to the placement of aggregate base or asphalt-concrete surfacing, and prior to television inspection

B. The Contractor shall demonstrate that the maximum pipe deflection does not exceed 5 percent by pulling a properly sized rigid ball or a mandrel through the main line pipe. A “rubber flush ball” does not meet this requirement for deflection testing.

C. Failure of the deflection test shall be grounds for rejection of the section tested, until correction of the reason for the failure and successful retesting of the section.

3.4 LEAKAGE TEST OF SEWER LINES

A. After completing the installation, backfill and compaction of a section of Sewer line with service laterals, and after all other underground Utilities (including gas, electric, telephone, cable television, water and Storm Drain) are in and compacted, but prior to the placement of aggregate base or asphalt-concrete pavement, the Contractor shall, at his/her expense, conduct a leakage test using low pressure air. The test shall be performed using the following procedures and under the Supervision of the inspecting Engineer.

B. Each section of Sewer between two successive manholes shall be tested by plugging all pipe outlets with suitable test plugs.

C. All pneumatic plugs shall be seal tested before being used in the actual test installation. One length of pipe shall be laid on the ground and sealed at both ends with the pneumatic plugs to be checked. Air shall be introduced into the plugs to 170 MPa (25 pounds per square inch) gauge pressure. The sealed pipe shall be pressurized to 35 MPa (5 psig). The plugs shall hold against this pressure without bracing and without movement of the plugs out of the pipe.

D. To commence the leakage test, air shall be slowly added until the internal pressure is raised to 27 MPa (4.0 psig). The compressor used to add air to the pipe shall have a blow- off valve set at 35 MPa (5 psig) to assure that at no time the internal pressure in the pipe exceeds 35 MPa (5 psig). The internal pressure of 27 MPa (4 psig) shall be maintained for at least two

minutes to allow the air temperature to stabilize after which the airsupply shall be disconnected and the pressure reduced to 24 MPa (3.5 psig). The time in minutes that is required for the internal air pressure to drop from 24 MPa (3.5 psig) to the lower pressure indicated in the appropriate table below shall be measured and the results compared with the values tabulated below.

E. Gauges used to measure test pressures shall read from 0 MPa (0 psig) to 69 MPa (10 psig) maximum with 3.5 MPa (½ psig) increments. If required, the Contractor shall supply necessary fittings to accept a City supplied gauge.

F. All gauging and testing shall be done outside the manholes and no one shall be allowed to enter the manholes while the line is pressurized.

G. PVC Gravity Sewer Pipe

1. Minimum Acceptable Time Required for Pressure decrease from 24 MPa (3.5 psig) to 20 MPa (3.0 psig):

Pipe Diameter	Test Time (Minutes)	(Seconds)
4” (100 mm)	2	32
6” (150 mm)	3	50
8” (200 mm)	5	6
10” (250 mm)	6	22
12” (300 mm)	7	39
15” (380 mm)	9	30

2. The above-tabulated values shall be used for the respective diameter pipes except where the distance between successive manholes is less than the above-tabulated values, in which case, the following formula will be used to determine the test time.

T = KL
T = test time in seconds
K = value from table
L = distance between successive manholes in feet

3. Failure of the leakage test will be grounds for rejection of the section tested, until discovery and correction of the reason for the failure and successful retesting of the section.

3.5 TELEVISION INSPECTION OF INTERIOR OF INSTALLED PIPE

A. The Contractor shall furnish closed circuit television inspection for an interior inspection of

the newly installed Sewer mains. The television check of the Sewer mains shall be made after leakage and deflection tests have been performed and prior to placing of Street aggregate base or asphalt paving. Any broken pipe, separation of joints, or any pipe exceeding the permitted tolerances for line and grade shall be replaced or repaired.

B. Any pipe repaired or replaced as a result of television inspection shall be retested for leakage and deflection. An electronic copy of the television inspection (standard DVD or in Mpeg file format) shall be provided the Engineer at no additional cost to the County. The Contractor shall be responsible for all costs associated with furnishing the television inspection and making final repairs to the Sewer mains and reinspection utilizing the closed circuit television equipment.

C. At the request of the Contractor, the City may at its option perform the closed circuit television inspection or re-inspection on the Contractor's installation at a cost designated in the City's Master Fee Resolution for such Television Inspection work.

END OF SECTION

SECTION 34 00 00
BID ITEM DESCRITPTIONS

The unit prices paid for the items listed in the Contractor's Proposal as defined herein shall be considered full compensation for furnishing all labor, materials, tools, and equipment, and doing all work involved in furnishing and installing the materials complete and in place, in accordance with the details shown on the Plans, as specified herein, and directed by the Engineer.

All incidental work which is neither shown on the Plans nor otherwise specified, and which is necessary to complete the improvements as shown on the Plans and as specified in the Contract Documents (defined in the Contract/Agreement), shall be furnished and installed as though such work were shown on the Plans or specified in the Contract Documents, and no additional compensation shall be allowed therefore.

The scope of work includes but is not limited to, each bid item listed in the Contractor's Proposal and as described in the following.

GENERAL

1. SUPPLEMENTAL WORK

   The Supplemental Work bid item is provided to compensate the Contractor for new and unforeseen work necessary to construct the project as designed and intended.
   Supplemental Work is not for design changes. Supplemental Work will be classed as extra work in accordance with the provisions of Section 4-1.05, "Changes and Extra Work," of the Standard Specifications. The dollar amount for supplemental work shown in the Proposal is an estimate only, and shall be included in each bidder's proposal.
   Supplemental work shall be performed only upon direct written authorization from the Engineer and daily extra work reports shall be submitted to and approved by the Engineer.
   The contractor shall maintain separate records for extra work performed in accordance with the provisions of Section 5-1.27," Records," of the Standard Specifications and these special provisions.
   Payment will be based on the total amount of authorized Supplemental Work actually performed. The provisions in Section 9-1.06, "Changed Quantity Pay Adjustments" of the Standard Specifications shall not apply to the item "Supplemental Work."

2. MOBILIZATION & DEMOBILIZATION

   The work under this item shall conform to the provisions of Section 01 71 13 "Mobilization, Site Maintenance, Demobilization" of these Specifications, the Standard Specifications and as directed by the Engineer.

   Payment for Mobilization, Demobilization, Insurance, Bonds, and Project Funding Sign will be made at the lump sum price.

3. JOB SITE MANAGEMENT

   This bid item is a lump sum bid item for the cost of all work involved with job site management and includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in spill prevention and control, material management, waste management, non-stormwater management, and dewatering and

identifying, sampling, testing, handling, and disposing of hazardous waste resulting from your activities, as specified in Section 01 74 19 Construction Waste Management Disposal and Section 14 of the Standard Specifications and these Special Provisions, and as ordered by the Engineer.

4. PREPARE AND IMPLEMENT STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

   This bid item is a lump sum bid to prepare and implement a Storm Water Pollution Prevention Plan ("SWPPP") by a qualified SWPPP developer (QSD), and includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in reviewing, implementing, maintaining, monitoring, inspecting, and removing water pollution control practices in accordance with the approved SWPPP as specified in Section 13 of the Standard Specifications and these special provisions, and as directed by the Engineer.

   This bid item shall be paid at the lump sum price bid. Payment will be prorated based on the percentage of contract work completed.

5. STATE WATER RESOURCES CONTROL BOARD NOTICE OF INTENT FILING FEE

   This bid item is specifically provided to reimburse the Contractor for payment of the NOI filing fee charged by the SWRCB and paid by the Contractor after the Contractor has completed the NOI filing process. The amount paid for this bid item will be the fee only. No payment will be made for overhead or processing costs. Full compensation for any overhead and processing costs will be considered to be included in the various items of work, and no separate compensation will be made therefor.

   The dollar amount shown in the Proposal is an estimate only and shall be included in each bidder's proposal. Payment for this bid item will be adjusted based on the actual fee paid. The provisions of Section 9-1.06 for increased or decreased quantities shall not apply to the "State Water Resources Control Board – Notice of Intent" bid item.

6. COUNTY PERMIT FEES

   This bid item is specifically provided to reimburse the Contractor for payment of the different fees charged by the County Building Department and paid by the Contractor after the Contractor has obtained permits started by the County. Contractor shall be required to obtain permit for the playground structures, restroom, shelter, grading, electrical and plumbing, demolition and septic demolition. The amount paid for this bid item will be the fee only. No payment will be made for overhead or processing costs. Full compensation for any overhead and processing costs will be considered to be included in the various items of work, and no separate compensation will be made therefor.

   The dollar amount shown in the Proposal is an estimate only and shall be included in each bidder's proposal. Payment for this bid item will be adjusted based on the actual fee paid. The provisions of Section 9-1.06 for increased or decreased quantities shall not apply to this bid item.

7. TRAFFIC CONTROL SYSTEM

   This bid item is a lump sum bid for all materials, labor and appurtenances required to maintain traffic control measures within the project limits in accordance with Section 12 of the Standard Specifications and Special Provisions and as directed by the Engineer.

The California Manual on Uniform Traffic Control Devices (MUTCD), latest edition, is hereby referred to and incorporated herein as though set forth in full. The Contractor shall be responsible for providing all necessary traffic control facilities, 24 hours per day, 7 days per week for the entire duration of the project.
The Contractor shall strictly comply with, and will be solely responsible for, all required traffic control and devices as per approved plan and any revisions thereof.
The Contractor shall provide safe access for General public and County's representatives inspection staff at all times.

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved for the sole convenience, direction and safety of traffic shall be included in this bid item. This bid item shall be paid at the lump sum price bid. Contractor shall provide a Schedule of Values for this service to support the lump sum price.

8. CLEARING, & GRUBBING

The work under this item shall conform to the provisions of Sections 31 10 00 "Site Clearing" of these Specifications and Section 17 of the Standard Specifications.

The work shall consist of the removal and disposal of all soil spoil, roots, stumps, limbs, buried logs, tree/bush pruning, and all other obstructing materials encountered during the preparation of the areas for the installation of the proposed improvements, as shown on the Plans in conformance with the provisions in these Specifications and as directed by the Engineer.

Payment for this item will be made at the lump sum price, and no additional payment will be made therefore.

9. DEMOLISH AND DISPOSE OF EXISTING ROCK WALL AND CONCRETE SLAB AT MULTI PURPOSE COURT

The work under this item shall conform to the provisions of Sections 02 41 13 "Site Demolition" of these specifications and Section 15 "Existing facilities" of the Standard Specifications.

The work shall consist of the removal and disposal of all existing rock wall and concrete slab around the existing multi-purpose court to prepare the area for the installation of the multi-purpose courts, as shown on the Plans in conformance with the provisions in these Specifications and as directed by the Engineer.

Payment for this item will be made at the lump sum price, and no additional payment will be made therefore.

10. DEMO EXISTING PLANTER AT MULTIPURPOSE COURT PARKING LOT "G"

The work under this item shall conform to the provisions of Sections 02 41 13 "Site Demolition" of these specifications and Section 15 "Existing facilities" of the Standard Specifications.

The work shall consist of the removal and disposal of the existing rock wall and planter, tree and tree stump inside the planter, cap any potential irrigation line that may exist and any other appurtenant item to clear the area for the installation of the new parking lot, as shown on the

Plans in conformance with the provisions in these Specifications and as directed by the Engineer.

Payment for this item will be made at the lump sum price, and no additional payment will be made therefore.

11. DEMO EXISTING CONCRETE WALKWAY, VALLEY GUTTER AND STRIP (PARKING LOT G)

The work under this item shall conform to the provisions of Sections 02 41 13 "Site Demolition" of these specifications and Section 15 "Existing facilities" of the Standard Specifications.

The work shall consist of the removal and disposal of the existing section of concrete walkway by the restroom, existing concrete valley gutter, existing concrete strip on the NW corner of the parking lot and any other section of concrete within parking lot "G" to clear the area for the installation of the new parking lot, as shown on the Plans in conformance with the provisions in these Specifications and as directed by the Engineer.

Payment for this item will be made at the lump sum price, and no additional payment will be made therefore.

12. REMOVE AND DISPOSE EXISTING PLAYGROUND

The work under this item shall conform to the provisions of Sections 02 41 13 "Site Demolition" of these specifications and Section 15 "Existing facilities" of the Standard Specifications.

The work shall consist of the removal and disposal of the existing playground, foundation, concrete curbing, mulch, section of concrete walkway, and any other appurtenant item to clear the area for the installation of the new playground, as shown on the Plans in conformance with the provisions in these Specifications and as directed by the Engineer.

Payment for this item will be made at the lump sum price, and no additional payment will be made therefore.

13. DEMO OF EXISTING SEPTIC TANK PER PLAN

The work under this item shall conform to the provisions of Sections 02 41 13 "Site Demolition" of these specifications and Section 15 "Existing facilities" of the Standard Specifications.

The work shall consist of coordinating with County Engineer for the time the restrooms can be put offline, pumping and disposing existing sewage that may be in the tanks, disinfect walls, partially demo and dispose the walls, drill holes, backfill and compact, remove and cap existing sewage pipe, and any other appurtenant item to clear the area for the installation of the new sewer pipe, as shown on the Plans in conformance with the provisions in these Specifications and as directed by the Engineer.

Payment for this item will be made per each septic tank being removed, and no additional payment will be made therefore.

14. EARTHWORK (ROUGH AND FINE GRADING)

The work under this item shall conform to the provisions of Section 31 22 00 "Grading" of these Specifications and as directed by the Engineer.

Payment for this item will be made at the lump sum price. This includes full compensation for all labor, materials, tools, equipment, and for performing all work necessary for rough and fine grading including, but not limited to, all daylighting, construction of the playground pads, restroom pad, shelter pad and walkways pad as shown on the Plans. No additional payment shall be made therefore. Contractor shall remove excess material or move material from different areas as needed to meet the slope and grades as shown on the plans. Material can be disposed on site, south side of the park in areas directed by Engineer.

The grading work for the new multipurpose court and parking lot "G" by the multipurpose court shall be included in the Bid Item "PULVERIZE IN PLACE/GRADE AND COMPACT SUBGRADE (MULTIPURPOSE COURT AND PARKING LOT G)"

15. FURNISH AND INSTALL 6" DIA. SDR 35 SEWER PIPE

This bid item includes the unit bid price for furnishing and installing PVC 6" SDR 35, fittings, and appurtenances as shown on Plans to the lines and grades shown on the plans, including but not limited to, pavement removal, performing excavation and over excavation, stockpiling and disposal of unacceptable backfill material, placing pipe bedding, furnishing and installing 6" diameter PVC SDR 35 and fittings, caution tape, import sand for pipe zone, backfill and compaction, restoration of unpaved surfaces, pressure testing, acquisition and disposal of water used during testing.

The bid item lineal foot price shall include full compensation for furnishing all labor, tools, equipment and materials, along with all associated appurtenances required to complete the work under this bid item, in conformance with the plans and specifications, and as directed by the Engineer. This is a unit price bid item and will be paid per lineal foot of pipe installed.

16. FURNISH AND INSTALL 8" DIA. SDR 35 SEWER PIPE

This bid item includes the unit bid price for furnishing and installing PVC 8" SDR 35, fittings, and appurtenances as shown on Plans to the lines and grades shown on the plans, including but not limited to, pavement removal, performing excavation and over excavation, stockpiling and disposal of unacceptable backfill material, placing pipe bedding, furnishing and installing 8" diameter PVC SDR 35 and fittings, caution tape, import sand for pipe zone, backfill and compaction, restoration of unpaved surfaces, pressure testing, acquisition and disposal of water used during testing.

The bid item lineal foot price shall include full compensation for furnishing all labor, tools, equipment and materials, along with all associated appurtenances required to complete the work under this bid item, in conformance with the plans and specifications, and as directed by the Engineer. This is a unit price bid item and will be paid per lineal foot of pipe installed

17. FURNISH AND INSTALL 4" DIA. SEWER CLEANOUT

This bid item includes the unit bid price for furnishing and installing sewer cleanout, fittings, and appurtenances as shown on Plans at the location shown on the plans, including but not limited to, pavement removal, performing excavation and over excavation, stockpiling and disposal of unacceptable backfill material, furnishing and installing necessary fittings and pipes, plug, concrete box with lid, concrete ring, backfill and compaction, for a clean out complete in place.

The bid item per each price shall include full compensation for furnishing all labor, tools, equipment and materials, along with all associated appurtenances required to complete the

work under this bid item, in conformance with the plans and specifications, and as directed by the Engineer. This is a unit price bid item and will be paid per each of the clean out installed

18. FURNISH AND INSTALL 48" DIA. SEWER MANHOLE

This bid item includes the unit bid price for furnishing and installing sewer manhole, fittings, and appurtenances as shown on Plans at the location shown on the plans, including but not limited to, pavement removal, performing excavation and over excavation, stockpiling and disposal of unacceptable backfill material, furnishing and installing necessary concrete base, rings, traffic rated lid, concrete ring, backfill and compaction, testing, for a complete manhole in place.

The bid item per each price shall include full compensation for furnishing all labor, tools, equipment and materials, along with all associated appurtenances required to complete the work under this bid item, in conformance with the plans and specifications, and as directed by the Engineer. This is a unit price bid item and will be paid per each of the manhole installed

19. PERMANENT TRENCH RESURFACING

This work includes placement within paved roadways permanent trench resurfacing of asphalt concrete pavement for new sewer line and manhole trenches and any other appurtenant locations over compacted trench backfill with the asphalt concrete to be placed and compacted as depicted in the construction drawings and as directed in Section 39 of the Special provisions and Standard Specifications.

This item is bid and payable on lineal foot basis of trench resurfaced with permanent HMA placed as specified in Section 39 of the Specifications and thickness shown in the plans. Cost of Tack cost shall be included in the cost per lineal foot of trench resurfacing.

20. FURNISH AND INSTALL BACKFLOW PREVENTION DEVICE

This bid item is a unit price bid, per each, for furnishing and installing backflow prevention device at the location shown on the plans except where specifically included in another bid item, including but not limited to, the installation of the valves, fittings, enclosure, concrete pad, thrust blocks, testing, disinfection and any other appurtenances required for a fully operational system.

The bid item price shall include full compensation for furnishing all labor, tools, equipment and materials, along with all associated appurtenances required to complete the installation, construction and testing of the described improvements in fully functional order, in conformance with the plans and specifications, and as directed by the Engineer. This is a unit price bid item and will be paid per each backflow prevention device installed

21. FURNISH AND INSTALL 2" DIA. PVC SCH 80 WATER PIPE

This bid item includes the unit bid price for furnishing and installing PVC 2” diameter PVC Sch 80, fittings, and appurtenances as shown on Plans to the lines and grades shown on the plans, including but not limited to, performing excavation and over excavation, stockpiling and disposal of unacceptable backfill material, placing pipe bedding, furnishing and installing 2” diameter PVC Sch 80 and fittings, caution tape, import sand for pipe zone, backfill and compaction, restoration of disturbed surfaces, pressure testing, purging, disinfecting, flushing, acquisition and disposal of water used during testing.

The bid item lineal foot price shall include full compensation for furnishing all labor, tools, equipment and materials, along with all associated appurtenances required to complete the work under this bid item, in conformance with the plans and specifications, and as directed by the Engineer. This is a unit price bid item and will be paid per lineal foot of pipe installed.

22. PULVERIZE IN PLACE/GRADE AND COMPACT SUBGRADE (MULTIPURPOSE COURT AND PARKING LOT G)

This item is bid per square yard for all work to pulverize, recycle, grade and compact the existing asphalt concrete (including existing HMA dikes) and base in place in accordance with the plans, these special provisions, and Section 25 the 2023 edition of the Caltrans Standard Specifications.

This item consists of grinding the full depth of existing asphalt concrete and aggregate base (approximately 6 inches at existing parking lot and 7 inches at existing multipurpose courts, refer to coring information included in Project Details), grading the material per the grades/slopes on the construction plans, and compacting it in place to create the aggregate subbase compacted to 95% at the locations shown on the Construction Plans and as directed by the Engineer. The work shall include grinding the full depth of existing asphalt concrete to meet the gradation specifications for Class III aggregate subbase per Section 25 in the 2023 edition of Caltrans Standard Specifications with the modification of allowing 100% recycled material. The contractor shall mix the grinding material to create a subgrade material as indicated on the plans. Additional material shall be mixed with the subbase or material shall be removed if necessary to meet the gradation requirements per section 25 of the Caltrans Standard Specifications. The contractor shall grade the pulverized material to meet the grades and slopes as indicated on the plans including the daylight slopes. The top of the pulverized and compacted material shall be achieved so that the new section of HMA + Class II AB placed on top will achieve the finished pavements lines, grades and slope shown in the plans. Contractor shall remove excess material as needed to meet the slope parameters as shown on the plans. Material can be disposed on site, south side of the park in areas directed by Engineer.

Full compensation for Bid Item – Pulverize in Place/Grade & Recompact subbase shall be included in the bid and no separate payment will be made therefor. Payment will be made at the contract price, which shall be full compensation for the work as described herein, complete in place, including all labor, materials, tools, equipment, and incidentals.

23. CLASS II AGGREGATE BASE (MULTIPURPOSE COURTS & PARKING LOT G)

This item shall conform to the Plans, these Specifications, and Section 26-1.02B “Class 2 Aggregate Base” of the 2023 Caltrans Standard Specifications.

This item shall be paid for at the Contract unit price per cubic yard of placed material. Said price includes full compensation for furnishing all labor, materials, tools, equipment and for doing all the work involved in constructing the class II aggregate base complete and in place at new multipurpose court and parking lot “G”, as shown on the Plans and specified herein. No additional payment will be made therefore. This is a final pay bid item.

24. CONSTRUCT 6 INCH THICK REINFORCED CONCRETE PARKING STALLS (PARKING LOT G)

The work under this item shall conform to the provisions of Section 03 30 00 “Cast-In-Place Concrete” of these Specifications and Section 90 of the Standard Specifications.

Payment for this item shall be made per square footage. This includes full compensation for all labor, materials, tools, and equipment necessary to construct the reinforced concrete parking as shown on plans and specifications. No additional payment shall be made therefore.

25. CONSTRUCT REINFORCED CONCRETE VALLEY GUTTER

The work under this item shall conform to the provisions of Section 03 30 00 "Cast-In-Place Concrete" of these Specifications and Section 90 of the Standard Specifications.

Payment for this item shall be made per lineal foot of valley gutter installed. This includes full compensation for all labor, materials, tools, and equipment necessary to construct the reinforced concrete valley gutter as shown on plans and specifications. No additional payment shall be made therefore.

26. ½" HOT MIX ASPHALT TYPE A (PARKING LOT G)

The work under this item shall conform to the provisions of Section 39 of the Special Provisions.

This item includes, but is not limited to, furnishing and placing the new HMA per plans and specifications at parking lot G including overlay and the transition grind at each end of the overlay limits per plan. Tack coat shall be included in this bid item.

This item shall be paid for at the Contract unit price per ton of HMA placed

27. PLACE HMA DIKE TYPE A (PARKING LOT G)

The work under this item shall conform to the provisions of Section 39 of the Special Provisions.

This item includes, but is not limited to, placing the new HMA Dike type A per plans and specifications at parking lot G. The material shall be included in the ½" HMA Type A bid item

This item shall be paid for at the Contract unit price per lineal foot of HMA dike placed

28. CONSTRUCT 4 FOOT WIDE SWALE FILLED W/ ¾ INCH CRUSHED GRAVEL

Payment for this item shall be made per lineal foot of swale constructed. This includes full compensation for all labor, materials, tools, and equipment necessary to dig swale to the dimensions and grades as shown on plans and fill them with ¾" crushed gravel. No additional payment shall be made therefore.

29. SIGNAGE AND STRIPING FOR PARKING LOT G

Payment for this item shall be made as lump sum price to install all signs and striping parking lot including ADA striping at Parking Lot "G", and includes full compensation for all labor, materials, tools, and equipment required to prepare the newly installed asphalt, stripe existing parking stalls, diagonal no parking areas, stripe new ADA stalls, aisle, crosswalk, installing ADA signage (mounted on chain-link fence and pole and footing) as shown in the plans. All striping shall have 2 coats of paint. No additional payment shall be made therefore.

30. HOT MIX ASPHALT (MULTI-PURPOSE COURTS)

The work under this item shall conform to the provisions of Section 39-2.07 of the Special Provisions.

This item includes, but is not limited to, furnishing and placing the new HMA per plans and specifications within the tolerance specified. Tack coat shall be included in this bid item.

This item shall be paid for at the Contract unit price per ton of HMA placed

31. MULTI PURPOSE COURTS SURFACING

This item shall conform to the Plans, Section 13 03 00 Multipurpose Court Surfacing of these Specifications and surfacing manufacturer.

This item shall be paid for at the Contract unit price per square feet of area covered. The cost per square feet shall include the entire process and multiple coats (including preparation for both colors as indicated in the plans) required per manufacturer and specifications. Said price includes full compensation for furnishing all labor, materials, tools, equipment and for doing all the work involved in obtaining a finish surfacing material at the multipurpose court, as shown on the Plans, specified herein, and required by surfacing manufacturer. No additional payment will be made therefore.

32. FURNISH AND INSTALL 12’ TALL CHINLINK FENCE

This bid item includes furnishing for all labor, materials, tools, and equipment necessary for furnishing and installing a permanent 12-foot tall chain link fence as indicated in the Plans and specifications. Permanent fence installation includes, but is not limited to, forming and pouring concrete foundation and installation of poles, chainlink material, grounding, and all appurtenances required to properly enclose the multipurpose courts. This bid item will be paid for by lineal foot of fence installed.

33. FURNISH AND INSTALL 10’ TALL CHINLINK FENCE

This bid item includes furnishing for all labor, materials, tools, and equipment necessary for furnishing and installing a permanent 10-foot tall chain link fence as indicated in the Plans and specifications. Permanent fence installation includes, but is not limited to, forming and pouring concrete foundation and installation of poles, chainlink material, grounding, and all appurtenances required to properly separate the courts. This bid item will be paid for by lineal foot of fence installed.

34. FURNISH AND INSTALL 3’ TALL CHINLINK FENCE

This bid item includes furnishing for all labor, materials, tools, and equipment necessary for furnishing and installing a permanent 3-foot tall chain link fence as indicated in the Plans and specifications. Permanent fence installation includes, but is not limited to, forming and pouring concrete foundation and installation of poles, chainlink material, grounding, and all appurtenances required to properly separate the courts. This bid item will be paid for by lineal foot of fence installed.

35. FURNISH AND INSTALL 4’ WIDE CHINLINK GATE

This bid item includes furnishing for all labor, materials, tools, and equipment necessary for furnishing and installing a permanent 4-foot wide chain link gate as indicated in the Plans and

specifications. Permanent gate installation includes, but is not limited to, forming and pouring concrete foundation and installation of all appurtenances required to properly operate the gates. This bid item will be paid for by each gate installed.

36. CONSTRUCT 6 INCH X 20 INCH CONCRETE MOWSTRIP

    This bid item includes furnishing for all labor, materials, tools, and equipment necessary for furnishing and installing reinforced concrete mowstrip as indicated in the Plans and specifications. Construction of mowstrip includes, but is not limited to, forming, expansion material, placing rebar and pouring concrete to the grades shown in the plans and any other work to properly construct the mowstrip. This bid item will be paid for by lineal foot of mowstrip installed measured along the center line of the concrete.

37. FURNISH AND INSTALL BASKETBALL HOOP COMPLETE

    Payment for this item shall be made per each basketball hoop and includes full compensation for all labor, materials, tools, and equipment required to install the basketball hoops as shown in plans and specifications. This includes, but is not limited to, the installation of the anchor system, construction of concrete footings, rebar, pole, brackets, backboards, rims, chain nets and any other requirement from manufacturer's recommendation. No additional payment shall be made therefore.

38. FURNISH AND INSTALL TENNIS NET SET COMPLETE

    Payment for this item shall be made per each tennis net set and includes full compensation for all labor, materials, tools, and equipment required to install the tennis net set as shown in plans and specifications. This includes, but is not limited to, the installation of the anchor system, construction of concrete footings, poles (2 poles per set), net, center strap anchor, strap, and any other requirement from manufacturer's recommendation. No additional payment shall be made therefore.

39. MULTI PURPOSE COURT STRIPING

    Payment for this item shall be a lump sum price and includes full compensation for all labor, materials, tools, and equipment required to stripe both tennis courts, basketball court and four (4) pickleball courts as shown in plans and specifications section 13 03 00. This includes, but is not limited to, the prep work, multiple coats and other requirement from the plans, specifications and manufacturer's recommendations. No additional payment shall be made therefore.

40. CONSTRUCT 4 INCH THICK CONCRETE SIDEWALK/LANDING

    The work under this item shall conform to the provisions of Section 03 30 00 "Cast-In-Place Concrete" of these Specifications and Section 90 of the Standard Specifications.

    Payment for this item shall be made per square footage. This includes full compensation for all labor, materials, tools, and equipment necessary to construct the sidewalk at the locations specified in the Plans including, but not limited to, the playgrounds, restrooms, landings at multipurpose court, shelter (except shelter concrete pad) and walkway by existing restroom Parking lot G. No additional payment shall be made therefore.

41. CONSTRUCT 6 INCH THICK REINFORCED CONCRETE PADS

The work under this item shall conform to the provisions of Section 03 30 00 “Cast-In-Place Concrete” of these Specifications and Section 90 of the Standard Specifications.

Payment for this item shall be made per square footage. This includes full compensation for all labor, materials, tools, and equipment necessary to construct the reinforced concrete pad at shelter as shown on plans and specifications. No additional payment shall be made therefore.

42. IRRIGATION WORK

The work under this item shall conform to the provisions of Section 33 05 28 of these Specifications and Section 20-2 of the Standard Specifications.

Payment for this item shall be made a lump sum cost. This includes full compensation for all labor, materials, tools, and equipment necessary to intercept existing irrigation lines and sprinkler system at the new playground #1, new playground #2 and new playground #3, shelter and restroom area. Contractor shall install new sprinkler system in a manner to properly irrigate the remaining landscaped areas avoiding irrigating the new sidewalks, and new structures. No additional payment shall be made therefore.

43. INSTALL COUNTY FURNISHED PLAYGROUND (PLAYGROUND 1)

Payment for this item shall be lump sum and includes full compensation for all labor, materials, tools, and equipment required for the installation of the County Furnished playground structure shown at location 1 as specified in the Plans, specifications and recommended by playground manufacturer. This includes, but is not limited to, temporary fencing, coordinating with building department to obtain permit, coordinating with manufacturer, offloading from shipping truck, inventorying material delivered and checking for damage, pouring footing as designed by playground manufacturer, constructing drain trench underneath slab, installing playground sign furnished by County, assembling playground structure delivered at the site, pouring 4-inch thick reinforced concrete slab, pouring concrete perimeter curbing and preparing the slab surface to receive the fall tiles. Tiles and tile installation are County furnished. No additional payment shall be made therefore. Contractor shall provide a Schedule of Values for this item to support the lump sum price

44. INSTALL COUNTY FURNISHED PLAYGROUND (PLAYGROUND 2)

Payment for this item shall be lump sum and includes full compensation for all labor, materials, tools, and equipment required for the installation of the County Furnished playground structure shown at location 2 as specified in the Plans, specifications and recommended by playground manufacturer. This includes, but is not limited to, temporary fencing, coordinating with building department to obtain permit, coordinating with manufacturer, offloading from shipping truck, inventorying material delivered and checking for damage, pouring footing as designed by playground manufacturer, constructing drain trench underneath slab, installing playground sign furnished by County, assembling playground structure delivered at the site, pouring 4-inch thick reinforced concrete slab, pouring concrete perimeter curbing and preparing the slab surface to receive the fall tiles. Tiles and tile installation are County furnished. No additional payment shall be made therefore. Contractor shall provide a Schedule of Values for this item to support the lump sum price

45. INSTALL COUNTY FURNISHED PLAYGROUND (PLAYGROUND 3)

Payment for this item shall be lump sum and includes full compensation for all labor, materials, tools, and equipment required for the installation of the County Furnished playground structure shown at location 3 as specified in the Plans, specifications and recommended by playground manufacturer. This includes, but is not limited to, temporary fencing, coordinating with building department to obtain permit, coordinating with manufacturer, offloading from shipping truck, inventorying material delivered and checking for damage, pouring footing as designed by playground manufacturer, constructing drain trench underneath slab, installing playground sign furnished by County, assembling playground structure delivered at the site, pouring 4-inch thick reinforced concrete slab, pouring concrete perimeter curbing and preparing the slab surface to receive the fall tiles. Tiles and tile installation are County furnished. No additional payment shall be made therefore. Contractor shall provide a Schedule of Values for this item to support the lump sum price

46. FURNISH AND INSTALL BENCH WITH CONCRETE PAD

Payment for this item shall be made per each bench, and includes full compensation for all labor, materials, tools, and equipment required to furnish and install the benches at the locations specified in the Plans including the concrete pad and footing. No additional payment shall be made therefore.

47. PREFABRICATED RESTROOM WORK – COUNTY FURNISHED

The work under this item shall conform to the provisions of Section 13 00 00 “Prefabricated Restroom” of these Specifications and the Manufacturer’s Specifications.

This item includes, but is not limited to, the installation of the County furnished “CXT Incorporated” Prefabricated Restroom, coordinating with building department to obtain permit, coordinating with manufacturer, construction of 6 inch layer of crushed rock, the installation of all required underground water and sewer plumbing underneath the restroom pad to 5 feet off the building, leaving the stub-up at the proper location for manufacturer to set the restroom at the time of delivery, installation of shut off valve inside the building, and installation of all electrical underground, as shown on the Plans. Manufacturer will set the restroom on the Contractor provided pad and make the connections from stab-ups to utilities inside restroom. Contractor shall be responsible for connection on-site, making sure all the work required by manufacturer is ready at the time restroom is delivered.

Payment for this item will be made at the lump sum price. No additional payment shall be made therefore.

48. INSTALL COUNTY FURNISHED SHELTER

Payment for this item shall be made per each and includes full compensation for all labor, materials, tools, and equipment required for the installation of the County Furnished shelter structure shown in the Plans, specifications and recommended by shelter manufacturer. This includes, but is not limited to, coordinating with building department to obtain permit, coordinating with manufacturer, offloading from shipping truck, inventorying material delivered and checking for damage, forming and pouring footings as designed by shelter manufacturer, assembling structure delivered at the site. No additional payment shall be made therefore.

49. FURNISH AND INSTALL 4 FEET LONG PRECAST CONCRETE WHEELSTOPS

Payment for this item shall be made per each wheel stop installed and includes full compensation for all labor, materials, tools, and equipment required to install the wheel stop "American precast concrete inc or approved equal" as shown in plans and specifications. No additional payment shall be made therefore.

50. FURNISH AND INSTALL SPEED BUMPS PAINTED WHITE

Payment for this item shall be made per each speed bump installed and includes full compensation for all labor, materials, tools, and equipment required to grind existing asphalt, place the HMA bumps as shown in the plans at the location shown in the plans, paint the newly installed bumps with 2-coat of white paint. No additional payment shall be made therefore.

51. RESTRIPE PARKING LOTS INCLUDING ADA PARKING STALL, AISLE, AND CROSSING

Payment for this item shall be made as lump sum price to restripe parking lots including ADA parking stalls, aisle and crossings at Parking Lots "A", "B" and "E" and includes full compensation for all labor, materials, tools, and equipment required to prepare the existing asphalt, restripe existing parking stalls, re-stripe and stripe new ADA stalls, aisle, crosswalk as shown in the plans. All striping shall have 2 coats of paint. No additional payment shall be made therefore. The cost of striping parking Lot "G" shall be included in the bid item for parking lot "G"

52. ADA PARKING STALL SIGN ASSEMBLY

Payment for this item shall be made per each ADA sign assembly installed and includes full compensation for all labor, materials, tools, and equipment required to excavate foundation, pour concrete, place pole and signs (entire assembly) as shown in the plans at the location shown in the plans, and specified in these specifications. These are signs assembly at Parking lot "A", "B", and "E". The cost of the signage at parking Lot "G" shall be included in the bid item for parking lot "G". No additional payment shall be made therefore.

53. ADA DETECTABLE WARNING SURFACES (ADA DOMES)

Payment for this item shall be made per square foot of ADA detectable warning surface installed and includes full compensation for all labor, materials, tools, and equipment required to install detectable warning surfaces as shown in the plans at the location shown in the plans, and specified in these specifications. Measurement will be on square foot installed. Excess material due to spoilage, cutting surface to fit, etc. shall be included in the cost per square foot and no additional payment shall be made therefore.

54. ELECTRICAL AND LIGHTING

The work under this item shall conform to the provisions of Section 26 of these Specifications.

This item includes, but is not limited to, locating the point of connection as shown on the Plans, trenching, installing all necessary conduits and wiring, permanent trench resurfacing, panels, unistrut and foundation, pull boxes, light fixtures and their foundation, mounting brackets, grounding, and any other appurtenant work required to have fully operational electrical system. No additional payment shall be made therefore.

ADDITIVE 1

55. ASPHALTIC EMULSION (FOG SEAL COAT)

The work under this item shall conform to the provisions of Section 37-4 of the Special Provisions and Standard Specifications.

This item includes, but is not limited to, furnishing and placing the new FOG SEAL COAT per plans and specifications at parking lot A, B and E as designated in plan sheet 4.

This item shall be paid for at the Contract unit price per TON of FOG SEAL COAT placed. Spread rate per Standard Specifications Section 37-4.

ADDITIVE 2

56. FURNISH AND INSTALL MISSING LAYER/PARTIAL REPAIR OF RIVER ROCK WALL

This bid item includes furnishing for all labor, materials, tools, and equipment necessary for furnishing, installing and repairing rock wall as indicated in the Plans and specifications. Partial rock wall includes, but is not limited to, preparing the surface, removing and disposing broken rocks, loose rocks and/or mortar, smoothening the existing mortar, cleaning the mortar, placing new river rock matching existing, placing mortar cap on top (only for sections of wall that has mortar cap) and all appurtenances required to properly repair the walls. This bid item will be paid for by lineal foot of river rock wall repair. For the purpose of measurement, partial repair or installation of missing layer shall be considered any wall that is not built from the ground up. This bid item is applicable to rock wall Type A and Type C as identified in Construction Plan sheet 18. The plans show approximate locations of existing rock wall needing repair.

The amount in this item may be increased or decreased depending on the length of wall needing partial repair and, agreed and authorized by the Engineer. The provisions in Section 9-1.06, “Changed Quantity Pay Adjustments” of the Standard Specifications shall not apply to this bid item. The Contractor shall have no claim for anticipated overhead or profit should the County fail to authorize performing this work or should the value of authorized work be less than anticipated by the Contractor.

57. FURNISH AND INSTALL FULL HEIGHT OF RIVER ROCK WALL

This bid item includes furnishing for all labor, materials, tools, and equipment necessary for furnishing, installing and repairing rock wall as indicated in the Plans and specifications. Full height rock wall includes, but is not limited to, preparing the surface at each end, removing and disposing section of existing wall, compacting the native soil/ base, placing new river rock matching existing, placing mortar cap on top (only for sections of wall that has mortar cap) and all appurtenances required to properly rebuild the walls. This bid item will be paid for by lineal foot of rock wall repair. For the purpose of measurement, full height shall be considered any wall that is built from the ground up. This bid item is applicable to rock wall Type A and Type C as identified in Construction Plan sheet 18. The plans show approximate locations of existing rock wall needing repair.

The amount in this item may be increased or decreased depending on the length of wall needing partial repair and, agreed and authorized by the Engineer. The provisions in Section

9-1.06, “Changed Quantity Pay Adjustments” of the Standard Specifications shall not apply to this bid item. The Contractor shall have no claim for anticipated overhead or profit should the County fail to authorize performing this work or should the value of authorized work be less than anticipated by the Contractor.

58. FURNISH AND INSTALL MISSING LAYER/PARTIAL REPAIR OF SLATE ROCK WALL

This bid item includes furnishing for all labor, materials, tools, and equipment necessary for furnishing, installing and repairing rock wall as indicated in the Plans and specifications. Partial rock wall includes, but is not limited to, preparing the surface, removing and disposing broken rocks, loose rocks and/or mortar, smoothening the existing mortar, cleaning the mortar, preparing existing CMU block to adhere the slate (at locations with CMU), placing new river rock matching existing, placing mortar cap on top (only for sections of wall that has mortar cap) and all appurtenances required to properly repair the walls. This bid item will be paid for by lineal foot of slate rock wall repair. For the purpose of measurement, partial repair or installation of missing layer shall be considered any wall that is not built from the ground up. This bid item is applicable to rock wall Type B and Type D as identified in Construction Plan sheet 18. The plans show approximate locations of existing rock wall needing repair.

The amount in this item may be increased or decreased depending on the length of wall needing partial repair and, agreed and authorized by the Engineer. The provisions in Section 9-1.06, “Changed Quantity Pay Adjustments” of the Standard Specifications shall not apply to this bid item. The Contractor shall have no claim for anticipated overhead or profit should the County fail to authorize performing this work or should the value of authorized work be less than anticipated by the Contractor.

59. FURNISH AND INSTALL FULL HEIGHT OF RIVER ROCK WALL

This bid item includes furnishing for all labor, materials, tools, and equipment necessary for furnishing, installing and repairing rock wall as indicated in the Plans and specifications. Full height rock wall includes, but is not limited to, preparing the surface at each end, removing and disposing section of existing wall, compacting the native soil/ base, placing new river rock matching existing, placing mortar cap on top (only for sections of wall that has mortar cap) and all appurtenances required to properly rebuild the walls. This bid item will be paid for by lineal foot of rock wall repair. For the purpose of measurement, full height shall be considered any wall that is built from the ground up. This bid item is applicable to rock wall Type B and Type D as identified in Construction Plan sheet 18. The plans show approximate locations of existing rock wall needing repair.

The amount in this item may be increased or decreased depending on the length of wall needing partial repair and, agreed and authorized by the Engineer. The provisions in Section 9-1.06, “Changed Quantity Pay Adjustments” of the Standard Specifications shall not apply to this bid item. The Contractor shall have no claim for anticipated overhead or profit should the County fail to authorize performing this work or should the value of authorized work be less than anticipated by the Contractor.

Federal & State Requirements

FEDERAL & STATE REQUIREMENTS FOR ARPA CONSTRUCTION PROJECTS

General

The work will be financed in whole or in part with Federal funds, and therefore all of the Federal statutes, rules, regulations, and provisions applicable to work financed in whole or in part with Federal funds will apply.

In addition to the provisions in the Agreement, the Contractor shall comply with the following:

Performance Of Previous Contracts

The bidder shall execute the “Certification with Regard to the Performance of Previous Contracts or Subcontracts Subject to the Equal Opportunity Clause and the Filing of Required Reports” located in the proposal. No request for subletting or assigning any portion of the contract in excess of $10,000 will be considered under the provisions of Section VII of the required contract provisions unless such request is accompanied by the Certification referred to above, executed by the proposed subcontractor.

Non-Collusion Provision

The provisions in this section are applicable to all contracts except contracts for Federal Aid Secondary projects. Title 23, United States Code, Section 112, requires as a condition precedent to approval by the Federal Highway Administrator of the contract for this work that each bidder file a sworn statement executed by, or on behalf of, the person, firm, association, or corporation to whom such contract is to be awarded, certifying that such person, firm, association, or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the submitted bid. A form to make the non-collusion affidavit statement required by Section 112 as a certification under penalty of perjury rather than as a sworn statement as permitted by 28, USC, Sec. 1746, is included in the proposal.

Contracting with Small and Minority Businesses, Women's Business Enterprises, and Labor Surplus Area Firms

Conducting the following steps to ensure the use of small and minority businesses, women’s business enterprises, and labor surplus area firms when possible:

- Place such organizations that are qualified on solicitation lists;
- Ensure such organizations are solicited whenever they are potential sources;
- Divide total requirements, when economically feasible, into smaller tasks or quantities;
- Establish delivery schedules, where the requirement permits, which encourage their participation;
- Use the services and assistance, as appropriate, of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and
- Require prime contractor to conduct the above steps if subcontracting.

Prohibition of Certain Telecommunications and Video Surveillance Equipment and Services

In response to significant national security concerns, the agency shall check the prohibited vendor list before making any telecommunications and video surveillance purchase because recipients and subrecipients of federal funds are prohibited from obligating or expending loan or grant funds to:

- Procure or obtain;
- Extend or renew a contract to procure or obtain; or
- Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

The prohibited vendors (and their subsidiaries or affiliates) are:

- Huawei Technologies Company;
- ZTE Corporation;
- Hytera Communications Corporation;
- Hangzhou Hikvision Digital Technology Company;
- Dahua Technology Company; and
- Subsidiaries or affiliates of the above-mentioned companies.

In implementing the prohibition, the agency administering loan, grant, or subsidy programs shall prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered communications equipment and services, to procure replacement equipment and services, and to ensure that communications service to users and customers is sustained.

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).

ARPA CONTRACT PROVISIONS

The Contract may be funded in part by the federal grant funding received by the COUNTY from the American Rescue Plan Act ("ARPA"). Therefore, CONTRACTOR must comply with all federal laws and regulations applicable to the receipt of ARPA grants, including, but not limited to, the contractual provision set forth in 2 CFR, Part 200, in connection with the CONTRACTOR's performance of the work or services covered by the Contract (the "Project"). All such federal laws and regulations shall be deemed to be inserted in the Contract and the Contract shall be read and enforced as though such federal laws and regulations were included therein. In addition, the CONTRACTOR agrees to the following specific provisions:

Equal Employment Opportunity

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action 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 in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

Rights and Remedies

(1) 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.

(2) No action or failure to act by or on behalf of the Owner 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.

Termination of Convenience

Under circumstances other than those set forth in Section IV of the Agreement governing termination of this Contract for cause, this Contract may be terminated by the County, with no liability to the contractor accruing to the County based solely upon the County's exercise of such right, upon the giving of thirty (30) days advance written notice of an intention to terminate to the contractor. In the event of such termination, the contractor shall cease work on such date as is specified by the County in that notice, and the contractor shall be entitled to payment for all work performed through and including that date. The County and the contractor shall meet and confer in an effort to resolve any and all remaining issues relating to completion of the work, payment to the contractor of any incurred and unpaid costs to which the contractor may claim to be entitled under the Contract, and any other issues pertaining to final resolution of the contractual relationship. In the event of any remaining disputes after the parties have met and conferred, they shall be resolved in accordance with 9-1.23 RESOLUTION OF CONTRACT CLAIMS of the Special Provisions.

Copeland Anti-Kickback Act

(1) The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract. Each contractor or subrecipient is prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled.

(2) The contractor or subcontractor shall insert in any subcontracts the above clause in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.

(3) A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a contractor or subcontractor as provided in 29 CFR 5.12.

Contract Work Hours and Safety Standards Act

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in

paragraph (b)(1) of this section, in the sum of $27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The County of Fresno shall, upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

Clean Air Act and the Federal Water Pollution Control Act

The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq., and the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

(1) The contractor agrees to report each violation to the County and understands and agrees that the County will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

(2) The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by ARPA.

Suspension and Debarment

(1) This contract is a covered transaction for purposes of 2 CFR, part 180 and 2 CFR, part 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 CFR § 180.995) or its affiliates (defined at 2 CFR § 180.905) are excluded (defined at 2 CFR § 180.940) or disqualified (defined at 2 CFR § 180.935).

(2) The contractor must comply with 2 CFR, part 180, subpart C and 2 CFR, part 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

(3) This certification is a material representation of fact relied upon by the County. If it is later determined that the contractor did not comply with 2 CFR, part 180, subpart C and 2 CFR, part 3000, subpart C, in addition to remedies available to the County, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

(4) The bidder or proposer agrees to comply with the requirements of 2 CFR, part 180, subpart C and 2 CFR, part 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

ARPA CONTRACT PROVISIONS

Byrd Anti-Lobbying Amendment

Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

Access to Records

(1) The Contractor agrees to provide the County of Fresno, the US Department of Treasury, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

(2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

Buy USA - Domestic Preference for Certain Procurements Using Federal Funds

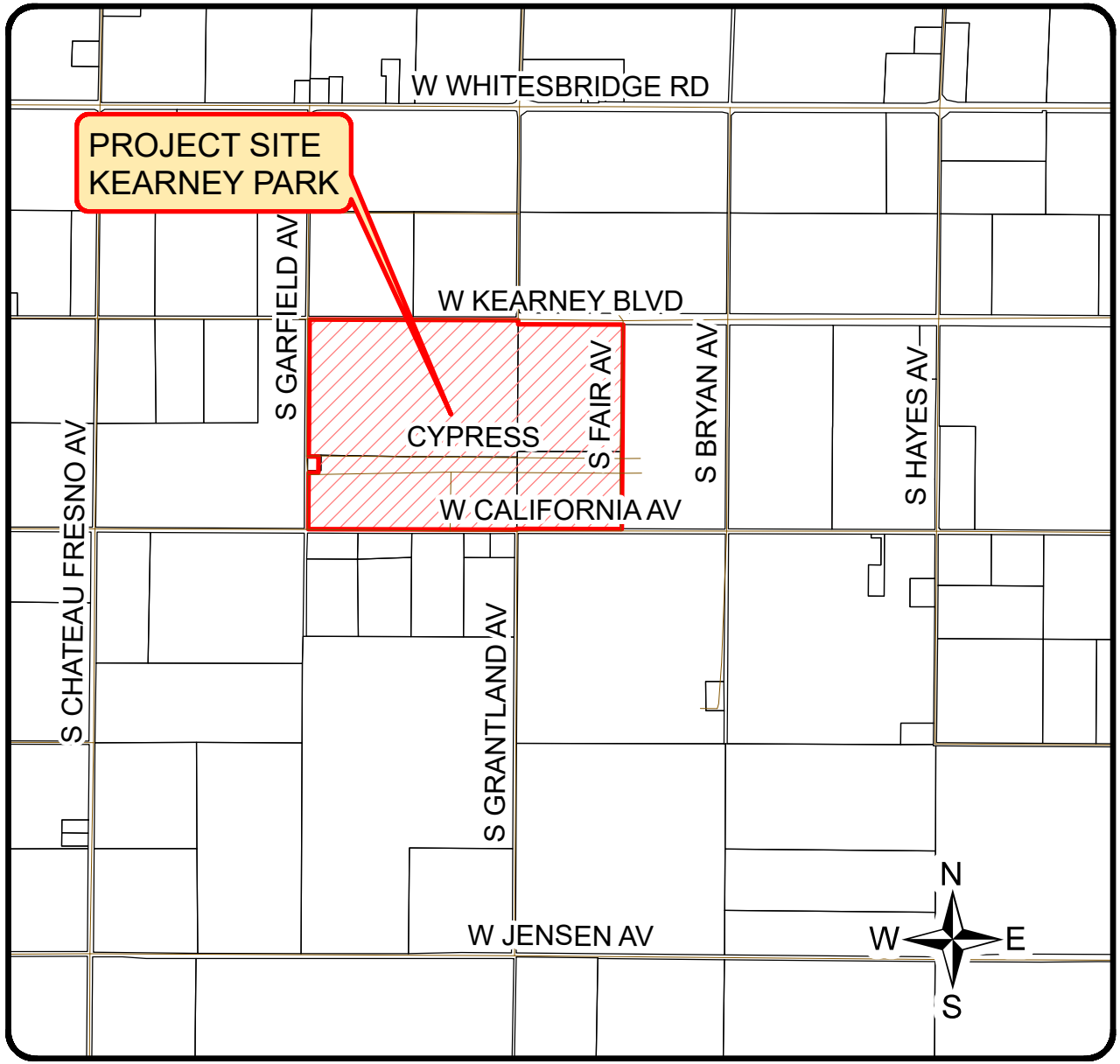
Contractor should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award. For purposes of this section:

(1) “Produced in the United States” means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

(2) “Manufactured products” means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymerbased products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

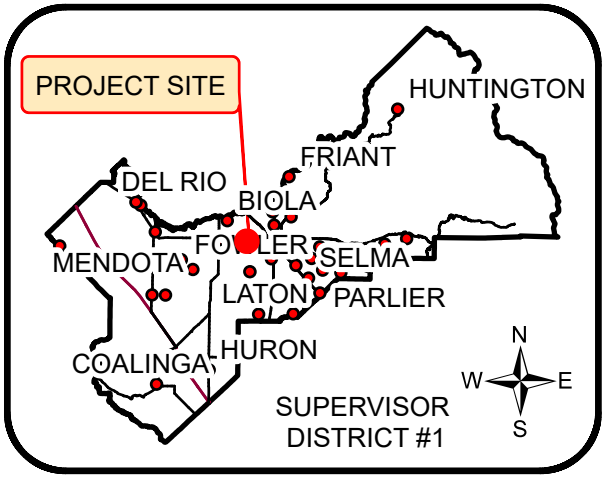
Project Details

LOCATION MAP - KEARNEY PARK IMPROVEMENT PROJECT



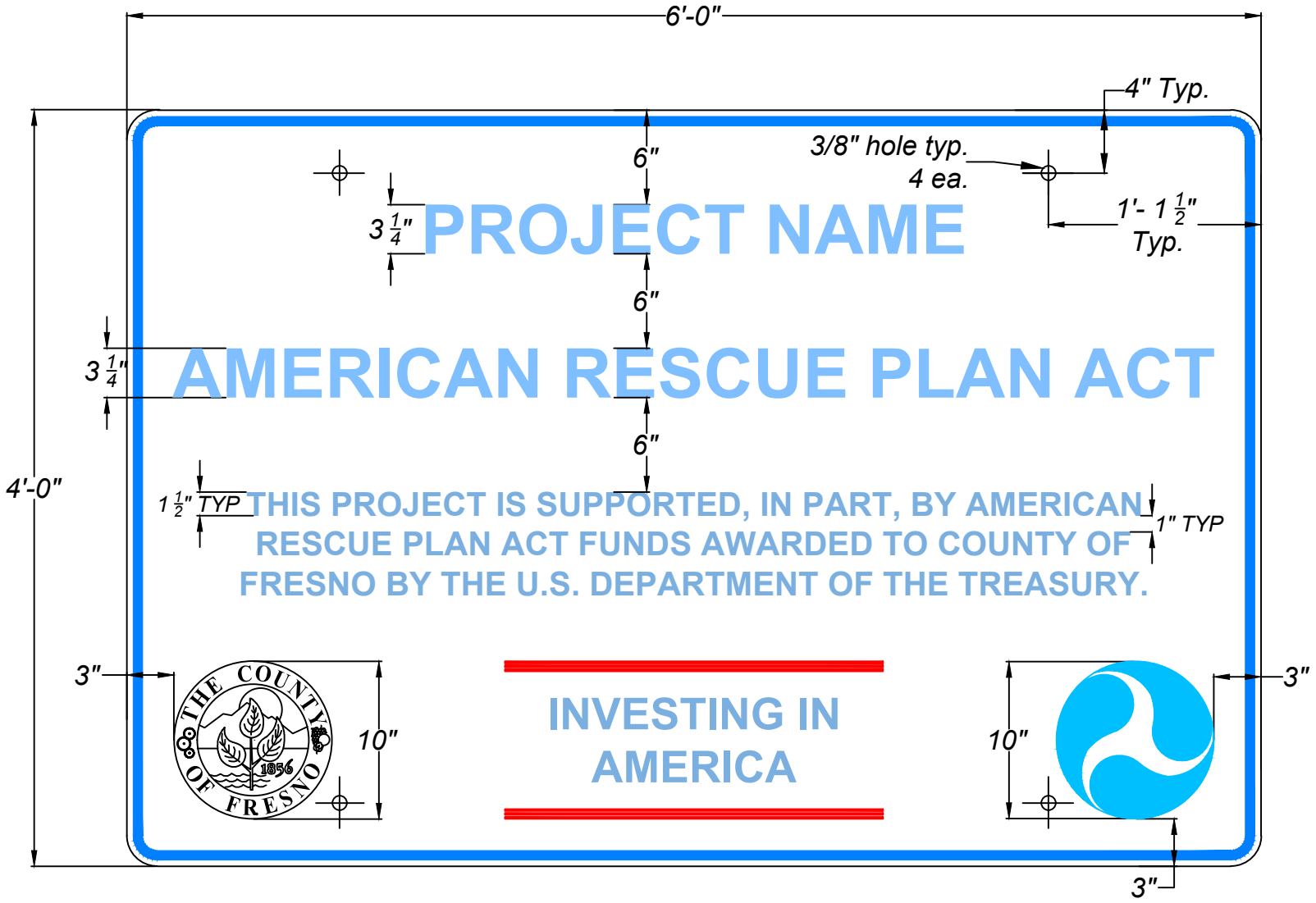
SCALE: 0 0.25 0.5 1 Miles

VICINITY MAP



DEPARTMENT OF PUBLIC WORKS AND PLANNING

THE COUNTY OF FRESNO 1856



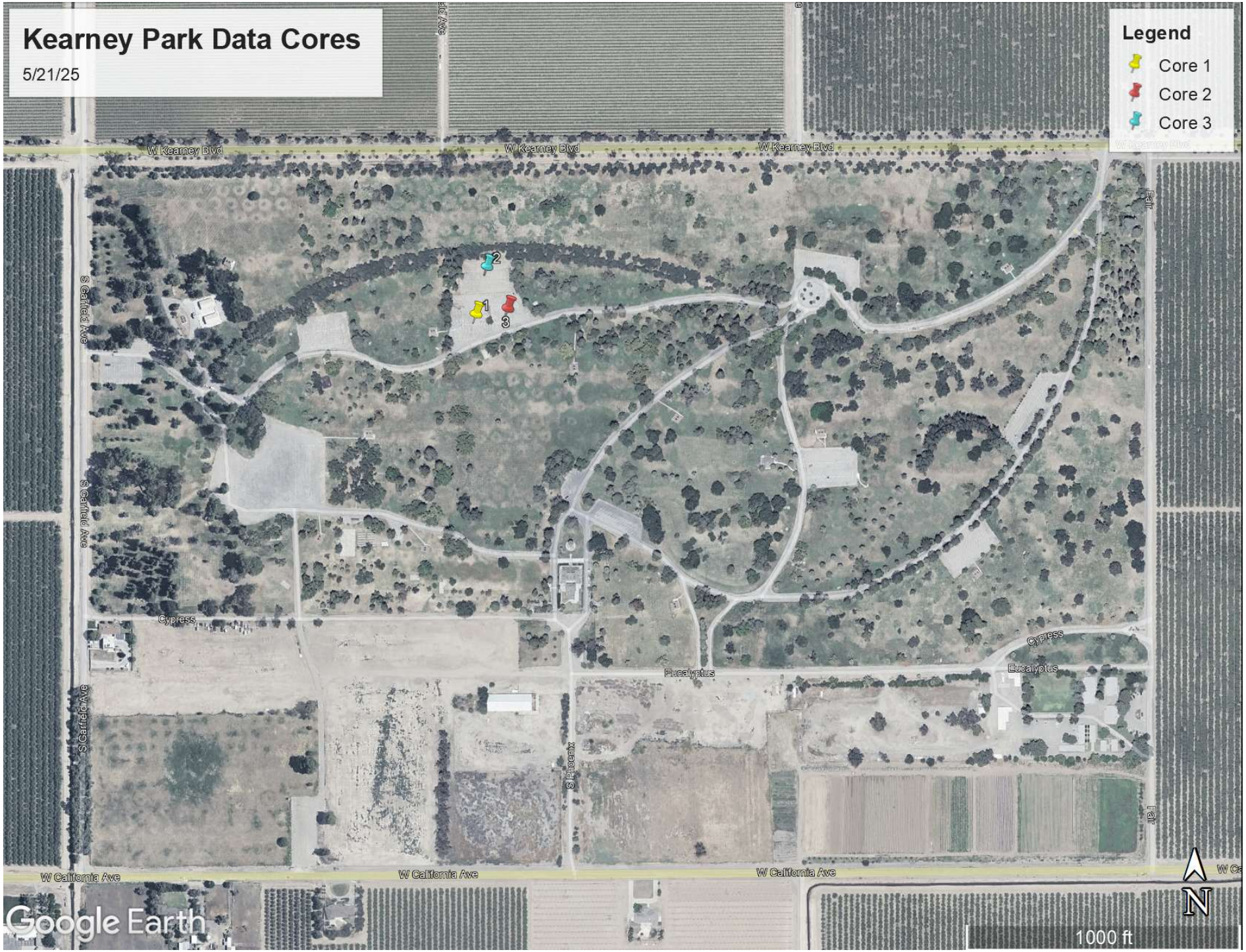
	DATE:	SCALE: NONE		DEPARTMENT OF PUBLIC WORKS AND PLANNING
DESIGNED: N/A		DRAWING NO. XX		CONSTRUCTION PROJECT FUNDING SIGN
DRAWN: R.O.J.				
CHECKED: S.A.				

CORING LOG

PROJECT:	Kearney Park Improvements	DATE:	5/21/2025
LOCATION:	Disc golf course parking lot	TESTED BY:	Prabhjot Parhar
COMMENT:	Existing thicknesses	CHECKED BY:	Rajdeep Singh

Location*	Coordinates	Pavement		
		AC (in)	AB (in)	RMS/SB/Native
1	36.726283, -119.920597	4.0	1.5	Native
2	36.726757, -119.920463	4.5	2.5	Native
3	36.726341, -119.920200	4.0	1.5	Native

**See coring map (next page)*


Kearney Park Data Cores
5/21/25
Legend
Core 1
Core 2
Core 3
W Kearney Blvd
W Kearney Blvd
W Kearney Blvd
S Garfield Ave
S Garfield Ave
S Garfield Ave
S Phoenix
Cypress
Eucalyptus
Cypress
Eucalyptus
W California Ave
W California Ave
W California Ave
Google Earth
1000 ft
N

SELF-DEALING TRANSACTION DISCLOSURE FORM

(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: _____

SELF-DEALING TRANSACTION DISCLOSURE FORM INSTRUCTIONS

In order to conduct business with the County of Fresno (hereinafter referred to as "County"), members of a contractor's board of directors (hereinafter referred to as "County 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 which one or more of its directors has a material financial interest."

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

(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 Codes.

(5) Form must be signed by the board member that is involved in the self-dealing transaction described in Sections (3) and (4).

BID BOOK

KEARNEY PARK IMPROVEMENTS

6725 W. KEARNEY BLVD., FRESNO, CA 93706

BUDGET / ACCOUNT: 8870 / 0000/ 08400 / 91771

Department of Public Works and Planning

CONTRACT NUMBER 25-04-PR

B I D B O O K T A B L E O F C O N T E N T S

KEARNEY PARK IMPROVEMENTS
CONTRACT NUMBER 25-04-PR

PROPOSAL NUMBER	TITLE
NOT APPLICABLE	INSTRUCTIONS FOR COMPLETING THE BID BOOK
1	PROPOSAL TO THE COUNTY OF FRESNO
2	BID ITEM LIST / BID SHEET
3	EVALUATION OF BID ITEM LIST
4	BID SECURITY / SIGNATURE
5	NON-COLLUSION DECLARATION
6	PUBLIC CONTRACT CODE SECTION 10285.1 STATEMENT
7	PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE AND PUBLIC CONTRACT CODE 10232 STATEMENT
8	SUBCONTRACTORS
9	TITLE 13, CALIFORNIA CODE OF REGULATIONS § 2449(l) GENERAL REQUIREMENTS FOR IN-USE OFF-ROAD DIESEL-FUELED FLEETS
10-18	NOT USED
19	GUARANTY

INSTRUCTIONS FOR COMPLETING THE BID BOOK

General

Complete forms in the Bid Book.

Submit an electronic bid online at http://www.BidExpress.com (Section 2-1.33A) or submit a hardcopy bid:

1. Under sealed cover addressed to the Department and labeled with the name of the bidder, the name of the project and the statement 'Do Not Open Until The Time Of Bid Opening.'
2. Marked as a bid
3. Identifying the contract number and the bid opening date

Certain bid forms must be submitted with the bid and properly executed.

Certain other forms and information must be submitted either with the bid or within the prescribed period after bid opening as specified elsewhere in these special provisions.

Failure to submit the forms and information as specified results in a nonresponsive bid.

If an agent other than the authorized corporation officer or a partnership member signs the bid, file a Power of Attorney with the Department either before opening bids or with the bid. Otherwise, the bid may be nonresponsive.

For more information regarding bidding, refer to Section 2 Bidding in the Special Provisions and Standard Specifications.

Bid Item List and Bid Comparison

Submit a bid based on the bid item quantities the Department shows on the Bid Item List. Bids will be evaluated and the low bidder determined as indicated in the *Notice to Bidders.*

Bid Document Completion

Proposal items are identified by title and by the word “Proposal” followed by the number assigned to the proposal item in question. Proposal items are included in the *Bid Book.*

Proposal to the Board of Supervisors of Fresno County – Proposal 1

Provided for information.

Bid Proposal Sheet – **Proposal 2**

One or more sheet(s) or list(s) upon which the bidder completes the bid.

Fill out completely including a unit price and total for each unit price-based item and a total for each lump sum item.

Do not make any additions such as “plus tax”, “plus freight”, or conditions such as “less 2% if paid by 15th”.

Use ink or typewriter for paper bids.

Evaluation of Bid Proposal Sheet – Proposal 3

Describes how inconsistences and irregularities are evaluated and corrected when Design Services reviews the Bid Item List.

Bid Security and Signature – Proposal 4

Submit one of the following forms of bidder's security equal to at least 10 percent (10%) of the bid:

- Cash
- Cashier's check
- Certified check

- Signed bidder's bond by an admitted surety insurer

Indicate type of bid security provided.

- Cash – Acceptable but 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. This type of security is held until the bid is no longer under consideration. If submitted by a potential awardee, they will be returned when the contract is fully executed by the bidder and bonds and insurance have been approved.
- Bid Bonds - Must be signed by the bidder and by the attorney-in-fact for the bonding company. Provide notarized signature of attorney-in-fact accompanied by bonding company's affidavit authorizing attorney-in-fact to execute bonds. An unsigned bid bond will be cause for rejection. If providing electronically, the bid must either be verified via Tinubu or Surety2000 through BidExpress, or a scanned copy must be attached to the electronic bid with an original notarized hardcopy and received by Design Services before 4:00PM on the fifth (5th) calendar day after the bid opening.

Bonding companies may provide their own bid bond forms. The Bid Security and Signature sections must be completed by the bidder and submitted with their bid.

Electronic bids, if not accompanied by an electronic bid bond, may provide one of the listed types of bidder's security in a sealed envelope in accordance with the labeling and address instructions listed in the Notice to Bidders prior to the bid opening.

Acknowledge Addenda

Provide contractor's license information.

State business name and if business is a:

- Corporation - list officers
- Partnership - list partners
- Joint Venture - list members; if members are corporations or partnerships, list their officers or partners.
- Individual - list Owner's name and firm name style

Signature of Bidder - the following lists types of companies and corresponding authorized signers.

- 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 the bid in question or to sign bids more generally, otherwise the bid may be rejected.

- Business Address - Firm's Street Address
- Mailing Address - P.O. Box or Street Address
- Complete, sign, and return with bid.

Non-Collusion Declaration – Proposal 5

Must be completed, signed, and returned with bid.

Public Contract Code Section 10285.1 Statement – Proposal 6

Select "has" or "has not" in accordance with instructions on form, return with completed for with bid. Note that signing the bid constitutes signing this statement.

Public Contract Code Section 10162 Questionnaire And Public Contract Code 10232 Statement – Proposal 7

Select “yes” or “no” accordance with instructions on form, include explanation if “yes” is selected. Return completed form with bid. Note that signing the bid constitutes signing this questionnaire and statement.

Subcontractors – Proposal 8

Sheet(s) or spaces where upon which bidders list subcontractors. List each subcontractor to perform work in an amount in excess of 1/2 of 1 percent of the total bid (Pub. Contract Code § 4100 et seq.).

The *Subcontractor List* submitted with the bid must show the name, location of business, work portions to be performed, Department of Industrial Relations registration number, and the contractor’s license number for each subcontractor listed.

- Use subcontractor's business name style as registered with the License Board.
- Specify the city in which the subcontractor’s business is located and the state if other than California.
- Description of the work to be performed by the subcontractor. Indicate with bid item numbers from the bid item list and/or work descriptions similar to those on bid item list.
- List Department of Industrial Relations number and license number for each subcontractor.

Upon request from Design Services, provide the following additional information within 24 hours of bid opening if not included on the *Subcontractor List* submitted with the bid:

- Complete physical address for each subcontractor listed.
- Percentage of the total bid or dollar amount associated with each subcontractor listed.

Title 13, California Code of Regulations § 2449(i) General Requirements for In-Use Off-Road Diesel-Fueled Fleets – Proposal 9

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 (5^{th}) calendar day after the bid opening if not submitted with the bid.

Proposal 10 - Proposal 18 – Not Used

Guaranty – Proposal 19

Does not need to be signed with the bid. Part of the contract which must be signed by the contractor when contract is executed.

General Info

Alt Total: $568,980.60

Total:

$3,057,510.40

Number

25-04-PR

Deadline

07/02/2025 02:00 PM PDT

Vendor

Harris Development Corp

Submitted

07/02/2025 01:57 PM PDT

Signed by

Rob Harris
Account Holder Robert Harris

Opened

07/02/2025 02:10 PM PDT
By
hdhah@fresnocountyca.gov

Description

Kearney Park Improvements

The work to be done consists, in general, of improvements to Kearney Park, located at 6725 W. Kearney Blvd. in Fresno, CA, including the installation of a new County-furnished prefabricated restroom and connecting it to utilities, demolishing two septic tanks at existing restrooms and connecting those restrooms to an existing City of Fresno sewer trunk, removing the old playground and installing three new County-furnished playground structures, installing a County-furnished premanufactured steel shelter, constructing a multi-purpose court (tennis, basketball and pickleball courts), reconstructing a parking lot, installing additional lighting throughout the park, and other miscellaneous work such as clearing and grubbing, grading, parking lot striping, installation of speed bumps and wheel stops. Additive items include fog sealing some of the existing parking lots and the replacement/repair of existing decorative rock walls throughout the park.

Allows zero unit prices and labor

Yes

Allows negative unit prices and labor

Yes

Attachment List

Project Website
RFC form, bid opening details, any Supplemental Information including RFC responses, prebid conference information, etc.

Specifications (3.97 MB)
Specifications (3.97 MB)

Plans (51.72 MB)
Plans (51.72 MB)

Instructions for Completing the Bid Book
Instructions for Completing the Bid Book

Addendum 1
Addendum 1 (1.3 MB)

Proposal to the County of Fresno - Proposal 1

PROPOSAL TO THE COUNTY OF FRESNO

hereinafter called the Owner

KEARNEY PARK IMPROVEMENTS

6725 W. KEARNEY BLVD., FRESNO, CA 93706

The work embraced herein shall be done in accordance with the 2023 Standard Specifications and with the 2023 Standard Plans, of the State of California, Department of Transportation insofar as the same may apply and in accordance with these special provisions.

Except to the extent that they may conflict with these special provisions, revised Standard Specifications apply to the extent included in the section entitled “Project Details” of the book entitled “Specifications."

The work to be done is shown on a set of Plans, Department File No. 11338, entitled: “Kearney Park Improvements”.

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 they have carefully examined the location of the proposed work, the annexed proposed form of contract, and the plans therein referred to; and they propose and agree if this proposal is accepted, that they will contract with the Owner 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 Engineer as therein set forth, and that they will take in full payment therefor the following unit prices, to-wit:

Bid Item List - Base Bid - Proposal 2

$2,488,529.80

Item No.	Quantity	Unit	Item Description	Item Price	Extension
1	50,000	$	SUPPLEMENTAL WORK	$1.00	$50,000.00
2	1	LS	MOBILIZATION & DEMOBILIZATIO N	$108,550.00	$108,550.00
3	1	LS	JOB SITE MANAGEMENT	$36,225.00	$36,225.00
4	1	LS	PREPARE AND IMPLEMENT STORM WATER POLLUTION PREVENTION PLAN (SWPPP)	$30,300.00	$30,300.00
5	1,500	$	STATE WATER RESOURCES CONTROL BOARD NOI FILING FEE	$1.00	$1,500.00
6	5,000	$	COUNTY PERMIT FEES	$1.00	$5,000.00
7	1	LS	TRAFFIC CONTROL SYSTEM	$16,125.00	$16,125.00
8	1	LS	CLEARING AND GRUBBING	$19,500.00	$19,500.00
9	1	LS	DEMOLISH AND DISPOSE OF EXISTING ROCK WALL AND CONCRETE SLAB AT MULTI PURPOSE COURT	$14,250.00	$14,250.00
10	1	LS	DEMO EXISTING PLANTER AT MLTI PURPOSE COURT PARKING LOT "G"	$4,395.00	$4,395.00
					Total: $2,488,529.80

Item No.	Quantity	Unit	Item Description	Item Price	Extension
11	1	LS	DEMO EXISTING CONCRETE WALKWAY, VALLEY GUTTER AND STRIP PARKING LOT "G"	$3,735.00	$3,735.00
12	1	LS	REMOVE AND DISPOSE EXISTING PLAYGROUND	$18,590.00	$18,590.00
13	2	EA	DEMO OF EXISTING SEPTIC TANK PER PLAN	$5,480.00	$10,960.00
14	1	LS	EARTHWORK (ROUGH AND FINE GRADING)	$40,250.00	$40,250.00
15	1,321	LF	FURNISH AND INSTALL 6" DIA. SDR 35 SEWER PIPE	$46.20	$61,030.20
16	221	LF	FURNISH AND INSTALL 8" DIA. SDR 35 SEWER PIPE	$66.00	$14,586.00
17	10	EA	FURNISH AND INSTALL 4" SEWER CLEANOUT	$330.00	$3,300.00
18	3	EA	FURNISH AND INSTALL 48" DIA SEWER MANHOLE	$11,000.00	$33,000.00
19	370	LF	PERMANENT TRENCH RESURFACING	$31.20	$11,544.00
20	1	EA	FURNISH AND INSTALL BACKFLOW PREVENTION DEVICE	$6,832.00	$6,832.00
21	580	LF	FURNISH AND	$7.05	$4,089.00
					Total: $2,488,529.80

Item No.	Quantity	Unit	Item Description	Item Price	Extension
			INSTALL 2" PVC SCHED. 80 WATER PIPE		
22	7,611	SY	PULVERIZE IN PLACE/GRADE AND COMPACT SUBGRADE (MULTIPURPOSE COURT & PARKING LOT G)	$10.45	$79,534.95
23	634	CY	CLASS II AGGREGATE BASE (MULTI PURPOSE COURTS & PARKING LOT G) - FINAL PAY ITEM	$57.70	$36,581.80
24	2,000	SF	CONSTRUCT 6" THICK REINFORCED CONCRETE PARKING STALLS (PARKING LOT G)	$23.15	$46,300.00
25	569	LF	CONSTRUCT REINFORCED CONCRETE VALLEY GUTTER (PARKING LOT G)	$39.90	$22,703.10
26	1,011	TON	1/2" HOT MIX ASPHALT TYPE A (PARKING LOT G)	$125.85	$127,234.35
27	350	LF	PLACE HMA DIKE TYPE A (PARKING LOT G)	$26.15	$9,152.50
28	112	LF	CONCRUCT 4 FOOT WIDE SWALE FILLED W/ 3/4 INCH CHRUSHED GRAVEL	$40.00	$4,480.00
					Total: $2,488,529.80

Item No.	Quantity	Unit	Item Description	Item Price	Extension
29	1	LS	SIGNAGE AND STRIPING FOR PARKING LOT "G"	$7,325.00	$7,325.00
30	461	TON	HOT MIX ASPHALT (MULTI PURPOSE COURTS)	$149.60	$68,965.60
31	23,598	SF	MULTI-PURPOSE COURT SURFACING	$1.65	$38,936.70
32	641	LF	FURNISH AND INSTALL 12' TALL CHAINLINK FENCE	$151.60	$97,175.60
33	96	LF	FURNISH AND INSTALL 10' TALL CHAINLINK FENCE	$216.40	$20,774.40
34	104	LF	FURNISH AND INSTALL 3' TALL CHAINLINK FENCE	$154.80	$16,099.20
35	6	EA	FURNISH AND INSTALL 4' WIDE CHAINLINK GATE	$1,505.00	$9,030.00
36	641	LF	CONSTRUCT 6 INCH x 20 INCH CONCRETE MOWSTRIP	$17.90	$11,473.90
37	2	EA	FURNISH AND INSTALL BASKETBALL HOOPS COMPLETE	$12,100.00	$24,200.00
38	2	EA	FURNISH AND INSTALL TENNIS NET SET COMPLETE	$3,900.00	$7,800.00
39	1	LS	MULTI-	$10,535.00	$10,535.00
					Total: $2,488,529.80

Item No.	Quantity	Unit	Item Description	Item Price	Extension
			PURPOSE COURT STRIPING		
40	7,360	SF	CONSTRUCT 4 INCH THICK CONCRETE SIDEWALK/ LANDING	$11.75	$86,480.00
41	1,985	SF	CONSTRUCT 6 INCH THICK REINFORCED CONCRETE PAD	$20.50	$40,692.50
42	1	LS	IRRIGATION WORK	$146,200.00	$146,200.00
43	1	LS	INSTALL COUNTY FURNISHED PLAYGROUND (Playground 1)	$43,680.00	$43,680.00
44	1	LS	INSTALL COUNTY FURNISHED PLAYGROUND (Playground 2)	$43,680.00	$43,680.00
45	1	LS	INSTALL COUNTY FURNISHED PLAYGROUND (Playground 3)	$39,200.00	$39,200.00
46	2	EA	FURNISH AND INSTALL BENCH W/ CONCRETE PAD	$3,285.00	$6,570.00
47	1	EA	PREFRABRICATED RESTROOM WORK - COUNTY FURNISHED	$15,550.00	$15,550.00
48	1	EA	INSTALL COUNTY FURNISHED SHELTER STRUCTURE	$61,600.00	$61,600.00
					Total: $2,488,529.80

Item No.	Quantity	Unit	Item Description	Item Price	Extension
49	360	EA	FURNISH AND INSTALL 4' LONG PRECAST CONCRETE WHEELSTOPS	$84.75	$30,510.00
50	22	EA	INSTALL SPEED BUMPS PAINTED WHITE	$1,020.00	$22,440.00
51	1	LS	RESTRIPE PARKING LOTS INCLUDING ADA PARKING STALL, AISLE, AND CROSSING	$11,400.00	$11,400.00
52	6	EA	ADA PARKING STALL SIGN ASSEMBLY	$584.00	$3,504.00
53	90	SF	DETECTABLE WARNING SURFACES (ADA DOMES)	$44.00	$3,960.00
54	1	LS	ELECTRICAL AND LIGHTING	$801,000.00	$801,000.00
					Total: $2,488,529.80

Bid Item List - Additive 1 - Fog Seal - Proposal 2

$11,300.00

Item No.	Quantity	Unit	Item Description	Item Price	Extension
Alternate: Owner-agency may award independently from entire bid.					
55	10	TON	ASPHALTIC EMULTION (FOG SEAL COAT)	$1,130.00	$11,300.00
					Alternate Total: $11,300.00
					Total: $11,300.00

Bid Item List - Additive 2 - Rock Wall Repair - Proposal 2

$557,680.60

Item No.	Quantity	Unit	Item Description	Item Price	Extension
Alternate: Owner-agency may award independently from entire bid.					
56	638	LF	FURNISH AND INSTALL MISSING LAYER/ PARTIAL REPAIR OF RIVER ROCK WALL	$155.20	$99,017.60
57	440	LF	FURNISH AND INSTALL FULL HEIGHT OF RIVER ROCK WALL	$175.00	$77,000.00
58	1,032	LF	FURNISH AND INSTALL MISSING LAYER/ PARTIAL REPAIR OF SLATE ROCK WALL	$239.80	$247,473.60
59	298	LF	FURNISH AND INSTALL FULL HEIGHT OF SLATE ROCK WALL	$450.30	$134,189.40
				Alternate Total:	**$557,680.60**
				Total:	**$557,680.60**

Evaluation of Bid Item List - Proposal 3

Abbreviations used in the bid proposal sheet are identified in Section 1-1.06, “Abbreviations,” of these special provisions.

Bids are required for the entire work. Bids will be compared on the basis indicated in the Notice to Bidders. The bidder shall set forth for each unit basis item of work a unit price and a total for the item, and for each lump sum item a total for the item, all in clearly legible figures in the respective spaces provided for that purpose. In the case of unit basis items, the amount set forth under the "Item Total" column shall be the product of the unit price bid and the estimated quantity for the item.

In case of discrepancy between the unit price and the total set forth for a unit basis item, the unit price shall prevail, except as provided in (a) or (b), as follows:

(a) If the amount set forth as a unit price is unreadable or otherwise unclear, or is omitted, or is the same as the amount as the entry in the item total column, then the amount set forth in the item total column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price;

(b) (Decimal Errors) If the product of the entered unit price and the estimated quantity is exactly off by a factor of ten, one hundred, etc., or one-tenth, or one-hundredth, etc. from the entered total, the discrepancy will be resolved by using the entered unit price or item total, whichever most closely approximates percentage-wise the unit price or item total in the Owner's Final Estimate of cost.

If both the unit price and the item total are unreadable or otherwise unclear, or are omitted, the bid may be deemed irregular. Likewise, if the item total for a lump sum item is unreadable or otherwise unclear, or is omitted, the bid may be deemed irregular unless the project being bid has only a single item and a clear, readable total bid is provided.

Symbols such as commas and dollar signs will be ignored and have no mathematical significance in establishing any unit price or item total or lump sums. Written unit prices, item totals and lump sums will be interpreted according to the number of digits and, if applicable, decimal placement. Cents symbols also have no significance in establishing any unit price or item total since all figures are assumed to be expressed in dollars and/or decimal fractions of a dollar. Bids on lump sum items shall be item totals only; if any unit price for a lump sum item is included in a bid and it differs from the item total, the items total shall prevail.

The foregoing provisions for the resolution of specific irregularities cannot be so comprehensive as to cover every omission, inconsistency, error or other irregularity which may occur in a bid. Any situation not specifically provided for will be determined in the discretion of the Owner, and that discretion will be exercised in the manner deemed by the Owner to best protect the public interest in the prompt and economical completion of the work. The decision of the Owner respecting the amount of a bid, or the existence or treatment of an irregularity in a bid, shall be final.

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, with surety satisfactory to the Owner, within eight (8) days not including Saturdays, Sundays and legal holidays, after the bidder has received notice of award of the contract, the Owner, 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 Owner.

Bid Security - Proposal 4

Bond Percentage

10.00%

Guarantee Method *

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

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

Confirmation *

I have provided a Paper Bid Bond for the Bid Security Amount above prior to the solicitation deadline.

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)) to the office location according to the instructions in the Notice to Bidders ***prior to*** the bid opening.

Addendum Acknowledgement - Proposal 4

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:**

(Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging)

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

Addendum No. *

1

Dated *

6/27/2025

Bidder Signature - Proposal 4

Business Name *

Harris Development Corp dba HBC Enterprises

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

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.*

Business Owners and Officers Names *

Rob Harris-President
Josh Bowman-Director

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

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

Class *

A, B, C-8, C12, C13, C27,C29, C33, C-61/D03, C-61/D06,
C-61/D28, C-61/D49, C-61/D56, C-61/D63

Contractor License No. *	**Expires ***
976218	08/31/2025

DIR Registration Number *

1000061989

Business Address *

2743 E. Shaw Ave. Ste. 105-08 Clovis, CA

Zip Code *

93611

Mailing Address *

2743 E. Shaw Ave Ste. 103 Fresno, CA

Zip Code *

93710

Business Phone *

(559) 575-3000

Fax Number

(559) 775-5194

E-mail Address *

Robathbc@gmail.com

Signature of Bidder *

Rob Harris

Dated *

6/30/2025

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.

Non-Collusion Declaration - Proposal 5

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): *

Owner

If Corporate Officer please list Title:

President

of (Business Name): *

Harris Development Corp dba HBC Enterprises

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: *

06/30/2025

at City, State: *

Fresno, California

Signature: *

Rob Harris

(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.

Public Contract Code - Proposal 6-7

Public Contract Code Section 10285.1 Statement - Proposal 6

In conformance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder

Choose an option: *

Has not been convicted

within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

The above Statement is part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Statement. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

Public Contract Code Section 10162 Questionnaire - Proposal 7

In conformance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Choose an option: *

No

If the answer is No, please type N/A. If the answer is Yes, explain the circumstances in the following space. *

N/A

Public Contract Code Section 10232 Statement - Proposal 7

In conformance with Public Contract Code Section 10232, the Contractor hereby states under penalty of perjury, that no more than

one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two-years period because of the Contractor's failure to comply with an order of the National Labor Relations Board.

Note: The above Statement and Questionnaire are part of the Bid. Signing this Bid on the signature portion thereof shall also constitute signature of this Statement and Questionnaire. Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

BIDDER: Harris Development Corp. dba HBC Enterprises

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**.** Each listed subcontractor's name, location of business and description of work, and both their contractor's license number and public works contractor registration number, issued pursuant to Section 1725.5 of the Labor Code, 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: HBC Enterprises-JV

Business Address: 1840 Shaw Ave. Ste. 105-08 Clovis, CA 93611

Class See** License No. 1044524 DIR Registration No. 1000062361

Item No. or Description of Work: Traffic Control, Fencing, Underground

Dollar Amount _____ **OR** Percentage of Total Bid 10%

Email Address: Robathbc@gmail.com

SUBCONTRACTOR: Juarez Brothers General Engineering

Business Address: 17244 El Dorado, Madera, CA 93636

Class A License No. 956804 DIR Registration No 1001118160

Item No. or Description of Work: HMA/excavation & grading, clear & grub

Dollar Amount _____ **OR** Percentage of Total Bid 20%

Email Address: estimating@jb-enginc.com

**A, B, C-8,C12, C13,C27, C29, C33, C-61//D06, C-61/D56

SUBCONTRACTOR: Beynon

Business Address: 4668 N. Sonora Ave Suite 101, Fresno, CA 93722

**A, C-15, C-61 / D12

Class See** License No. 883198 DIR Registration No 1000004698

Item No. or Description of Work: Court Surfacing/Striping

Dollar Amount _____ **OR** Percentage of Total Bid 2%

Email Address: info@beynonsports.com

SUBCONTRACTOR: T&T Pavement Markings & Products Inc.

Business Address: 3276 W. Sussex Way Fresno, CA 93722

Class C32 License No. 687921 DIR Registration No. 1000046338

Item No. or Description of Work: Striping/Signage/Wheel stops

Dollar Amount _____ **OR** Percentage of Total Bid 2%

Email Address: tandtpavemark@gmail.com

SUBCONTRACTOR: King Khan Drilling & Constructions Inc.

Business Address: 9315 N Fowler Ave Clovis, CA 93619

Class A License No. 833691 DIR Registration No 1000003324

Item No. or Description of Work: Equipment Installation

Dollar Amount _____ **OR** Percentage of Total Bid 5%

Email Address: kingkhandrilling@aol.com

SUBCONTRACTOR: Epic Land Surveying Inc.

Business Address: 1473 E. G Street, Ste. B Oakdale CA 95361

Class PLS License No. PLS# 8366 DIR Registration No. 1000013102

Item No. or Description of Work: Surveying

Dollar Amount _____ **OR** Percentage of Total Bid 1%

Email Address: info@epicsurveying.com

SUBCONTRACTOR: Signature Touch Landscape

Business Address: 2379 S Helm, Fresno, CA 93725

Class C27 License No. 1110332 DIR Registration No 1001154251

Item No. or Description of Work: Landscape & Irrigations

Dollar Amount _____ **OR** Percentage of Total Bid 5%

Email Address: David.g@signaturetouchlandscapes.com

SUBCONTRACTOR: Griffin Soil LLC

Business Address: 248 Industrial Dr. Stockton CA 95206

Class C12 License No. 791232 DIR Registration No. 2000012215

Item No. or Description of Work: Pulverizing

Dollar Amount _____ **OR** Percentage of Total Bid 1%

Email Address: Sharon@GriffinSoil.com

SUBCONTRACTOR: Standard Emulsions Co

Business Address: 6630 Ave 304 Visalia, CA 93291

**A, B, & E

Class see ** License No. 2031421 DIR Registration No PW-LR-1001004519

Item No. or Description of Work: Fog Seal

Dollar Amount _____ **OR** Percentage of Total Bid 1%

Email Address: cliff@standardemulsions.com

SUBCONTRACTOR: Harmonson Construction

Business Address: 7257 N Maple Avenue Suite 108, Fresno CA 93720

**B,C-7,C10

Class see ** License No. 1057285 DIR Registration No. 1000455319

Item No. or Description of Work: Pavilion Installation

Dollar Amount _____ **OR** Percentage of Total Bid 2%

Email Address: bids@harmonsonconstruction.com

SUBCONTRACTOR: CVE Demolition

Business Address: 35500 S. Welty Rd., Vernalis, Ca. 95385

**C21,B,A,C22

Class see ** License No. 905631 DIR Registration No 1000008301

Item No. or Description of Work: Demo

Dollar Amount _____ **OR** Percentage of Total Bid 2%

Email Address: chuckj@cvecorp.com

SUBCONTRACTOR: AMI

Business Address: PO Box 26505 Fresno CA 93729

**C29,C12,C27

Class see ** License No. 996712 DIR Registration No. 1000062233

Item No. or Description of Work: Masonry

Dollar Amount _____ **OR** Percentage of Total Bid 18%

Email Address: aminc.office@gmail.com

California Code of Regulations: General Requirements for In-Use Off-Road Diesel-Fueled Fleets - Proposal 9

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' Certificate of Reported Compliance have been attached.**

☑ **The following subcontractors do not have a fleet subject to this regulation as outlined in Section 2449(i)(1)-(4):**

Subcontractors

HBC Enterprises-JV
T&T Pavement Markings and Products Inc.
Beynon

☑ **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.

California Environmental Protection Agency

Air Resources Board

January 1, 2025

CERTIFICATE OF REPORTED COMPLIANCE
OFF-ROAD DIESEL VEHICLE REGULATION

is issued to

HARRIS DEVELOPMENT CORP.

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

251600

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

HBC ENTERPRISES

1840 Shaw Ave. 105-08
Clovis, CA 93611
559-575-3000 office
559-775-5194 fax
CSLB# 1044524

March 5, 2025

To Whom It May Concern:

HBC Enterprises-JV does not currently operate any diesel vehicles (on either an Interstate or Intrastate basis) with a gross vehicle weight rating over 14,000 pounds. The GVWR of our Light-Duty diesel vehicles negates the requirement to participate in C.A.R.B compliance programs at this time. Our customers will be notified in advance of such a time we plan to incorporate Heavy-Duty diesel vehicles into our fleet and be provided all necessary compliance documentation once it becomes available.

Please reach out to our office with any questions or concerns.

Thank you,

Dallanara Miguel
Office Manager

Proposal 10-18

NOT USED

Guaranty - Proposal 19

Optional: Vendor is not required to complete.

(This guaranty shall be executed by the successful bidder in accordance with instructions in the special provisions. The bidder may execute the guaranty on this page at the time of submitting their bid.)

G U A R A N T Y

To the Owner: County of Fresno

CONTRACT NUMBER 25-04-PR

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 the plans and specifications, due to any of the above causes, all within twelve (12) months after date on which 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.

Date: *

July 1, 2025

Name (Printed): *

Rob Harris

Signature: *

Rob Harris

Title: *

President

Contractor: *

Harris Development Corp. dba HBC Enterprises

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.	Signed Bid Bond.pdf
CARB Certification of Reported Compliance - Bidder Valid CARB Certification of Reported Compliance - Bidder	Does not have a fleet subject to this regulation.	Harris Dev. Corp-CARB.pdf
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.	Subcontractors-CARB.pdf
3 Required Documents		

Additional Documents (Use if needed)

Name	Omission Terms	Submitted File
Optional: Vendor is not required to complete.		
Not Required Extra Space if needed	Extra space not needed	Signed bid forms.pdf
Not Required Extra Space if needed	Extra space not needed	I am not enclosing this document because the omission terms have been met.
Not Required Extra Space if needed	Extra space not needed	I am not enclosing this document because the omission terms have been met.
3 Required Documents		

A G R E E M E N T

THIS AGREEMENT made at Fresno, in Fresno County, California, by and between Harris Development Corp., hereinafter called the Contractor, and the County of Fresno hereinafter called the Owner, both of whom may be referred to individually as a Party, or jointly as Parties.

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

ARTICLE I. The Contractor agrees to furnish all labor and materials, including tools, implements, and appliances required, but excluding such materials as are mentioned in the specifications to be furnished by the Owner, and to perform all the work in a good and workmanlike manner, free from any and all liens and claims of mechanics, materialmen, teamsters, subcontractors, artisans, machinists, and laborers required for:

KEARNEY PARK IMPROVEMENTS

6725 W. KEARNEY BLVD., FRESNO, CA 93706

CONTRACT NUMBER: 25-04-PR

all in strict compliance with the plans, drawings, specifications, and other contract documents prepared by the Owner relating thereto.

ARTICLE II. The Contractor and the Owner agree that the Notice to Bidders and Special Provisions, the Wage Scale (Prevailing Wages), the Plans and Drawings, Addenda and Bulletins thereto, and the Proposal (Bid Book) hereto attached, together with this Agreement, form the Contract, and they are as fully a part of the Contract as if hereto attached or herein repeated.

All portions of the Standard Specifications of the State of California, Department of Transportation, dated 2023, which are not in conflict with this Contract shall be deemed a part of the Specifications as though fully therein set forth; provided, however, that revisions to the said Standard Specifications shall apply only to the extent, if any, included in the Project Details of these Specifications or as otherwise incorporated directly herein. No part of said Specifications which is in conflict with any portion of this Agreement, or which is not actually descriptive of the work to be done thereunder, or of the manner in which said work is to be executed, shall be considered as any part of this Agreement, but shall be utterly null and void.

ARTICLE III. The Owner agrees to pay the Contractor in current funds for the performance of the Contract the sum of **TWO MILLION FOUR HUNDRED NINETY-NINE THOUSAND EIGHT HUNDRED TWENTY-NINE DOLLARS AND 80/100 ($2,499,829.80)** it being understood that said price is based upon the estimated quantities of materials to be used as set forth in the Proposal, except where provisions are made in the Contract documents whereby the estimated quantities shall constitute the final quantity; that upon completion of the Project the final Contract prices shall be revised by change order, if necessary, to reflect the true quantities used at the stated unit price thereof as contained in the Contractor's Proposal hereto attached. Payments on account thereof will be made as set forth in the Special Provisions.

ARTICLE IV. If the Contractor should be adjudged a bankrupt, or if he or she should make a general assignment for the benefit of his or her creditors, or if a receiver should be appointed on account of his or her insolvency, or if he or she or any of his or her subcontractors should persistently violate any of the provisions of the Contract, or if he or she 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 materials, or if he or she should fail to make prompt payment to subcontractors or for material or

labor, or persistently disregard laws, ordinances or the instructions of the Engineer (as defined in California Department of Transportation Standard Specifications 1-107, and as modified by Owner's Special Provisions), then the Owner may, upon certificate of the Engineer, serve written notice upon the Contractor and their surety of its 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 their 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 of the work and necessary therefor. 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 exceeds the expenses of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense exceeds 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 Engineer.

ARTICLE V. To the fullest extent permitted by law with respect to any work required to be done under this Contract, the Contractor will indemnify and hold harmless the Owner, State of California, Borelli & Associates, Inc., and all other participating public agencies, whether or not said agencies are named herein, who have jurisdiction within the areas in which the work is to be performed, and all officers and employees of the Owner, the State, the United States and said other participating agencies, from any and all costs and expenses, attorney fees and court costs, damages, liabilities, claims and losses occurring or resulting to Owner 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 Owner for Federal, State of California and/or local audit exceptions resulting from non-compliance herein on the part of Contractor.

Contractor agrees to indemnify, save, hold harmless, and at Owner's request, defend the Owner, its officers, agents, and employees from any and all costs and expenses, damages, liabilities, claims, and losses occurring or resulting to Owner 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, 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.

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.

In the event Contractor fails to keep in effect at all times insurance coverage as herein provided, the Owner may, in addition to other remedies it may have, suspend or terminate this Agreement upon the occurrence of such event.

All policies shall be with admitted insurers licensed to do business in the State of California. Insurance purchased shall be purchased from companies possessing a current A.M Best Company rating of A FSC VII or better.

Without limiting the Owner's right to obtain indemnification from Contractor or any third parties, Contractor, at its sole expense, shall maintain in full force and effect, the following insurance policies or a program of self-insurance, including but not limited to, an insurance pooling arrangement or Joint Powers Agreement (JPA) throughout the term of the Agreement:

A. Commercial General Liability

Commercial General Liability Insurance with limits not less than those shown in the following table:

Liability Insurance Requirements

Total bid	For each occurrence[a]	Aggregate for products/completed operation	General aggregate[b]	Umbrella or excess liability[c]
≤ $1,000,000	$1,000,000	$2,000,000	$2,000,000	$5,000,000
> $1,000,000 ≤ $10,000,000	$1,000,000	$2,000,000	$2,000,000	$10,000,000
> $10,000,000 ≤ $25,000,000	$2,000,000	$2,000,000	$4,000,000	$15,000,000
> $25,000,000	$2,000,000	$2,000,000	$4,000,000	$25,000,000

[a]Combined single limit for bodily injury and property damage.
[b]This limit must apply separately to your work under this Contract.
[c]The umbrella or excess policy must contain a clause stating that it takes effect (drops down) in the event the primary limits are impaired or exhausted.

This policy shall be issued on a per occurrence basis. Owner may require specific coverages including completed operations, products liability, contractual liability, Explosion-Collapse-Underground, fire legal liability, or any other liability insurance deemed necessary because of the of the nature of this Contract.

Such Commercial General Liability insurance shall 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 and Contract are concerned. 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. This insurance shall not be cancelled or changed without a minimum of thirty (30) days advance written notice given to Owner. Contractor shall obtain endorsements to the Commercial General Liability insurance policy naming the County of Fresno as an additional insured and providing for a thirty (30) day prior written notice of cancellation or change in terms or coverage.

Within eight (8) days from date Contractor executes this Agreement, Contractor shall provide certificates of insurance and endorsement as stated above with the applicable contract number for all of the foregoing policies, as required herein, to the County of Fresno, or to designservices@fresnocountyca.gov, stating that such insurance coverages have been obtained and are in full force; that the County of Fresno, its officers, agents and employees will not be responsible for an premiums on the policies; that such Commercial General Liability insurance names the County of Fresno, its officers, agents, and employees, individually and collectively, as additional insured, but only

insofar as the operations under this Agreement and Contract are concerned; that such coverage for additional insured shall apply as primary insurance an any other insurance, or self- insurance shall not be cancelled or changed without a minimum of thirty (30) days advance, written notice given to Owner.

Contractor shall obtain endorsements to the Commercial General Liability insurance naming the County of Fresno, its officers, agents, and employees, individually and collectively, as additional insured, but only insofar as the operations under this Agreement and Contract are concerned. 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. This insurance shall not be cancelled or changed without a minimum or thirty (30) days advance written notice given to Owner.

B. Automobile Liability

Comprehensive Automobile Liability Insurance with limits of not less than One Million Dollars ($1,000,000) per accident for bodily injury and property damage. Coverage must include any auto used in connection with this Agreement and Contract.

C. Professional Liability

If Contractor is a licensed professional or employs professional staff, (e.g., Architect, Engineer, Surveyor, etc.) in providing services, Professional Liability Insurance with limits of not less than One Million Dollars ($1,000,000.00) per occurrence, Three Million Dollars ($3,000,000.00) annual aggregate with a provision for three (3) year tail coverage.

D. Worker's Compensation

A policy of Worker's Compensation insurance as may be required by the California Labor Code.

ARTICLE VI. Contractor represents that he or she has secured the payment of Worker's Compensation in compliance with the provisions of the Labor Code of the State of California and during the performance of the work contemplated herein will continue to comply with said provisions of said Code. Contractor shall supply the Owner with certificates of insurance evidencing that Worker's Compensation Insurance is in effect and providing that the Owner will receive ten (10) days' notice of cancellation. If Contractor self-insures Worker's Compensation, Certificate of Consent to Self-insure should be provided the Owner.

ARTICLE VII. The Contractor shall forthwith furnish a faithful performance bond in an amount equal to one hundred percent (100%) of the Contract price and a payment bond in an amount equal to one hundred percent (100%) of the Contract price, both bonds to be written by a surety company acceptable to the Owner and in the form prescribed by law.

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.

ARTICLE VIII. This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

Except as provided in Labor Code section 1725.5(f), 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)].

Except as provided in Labor Code section 1725.5(f), no contractor or subcontractor may be awarded a contract for public work on a public works project or engage in the performance of work on any public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5.

Contractor shall comply with all applicable laws and regulations relating to wages and employment, including all requirements imposed by the California Department of Industrial Relations (DIR). Contractor shall cooperate with Owner to furnish timely all information necessary for Owner's completion of the form required to be submitted by Owner when registering the Project on the DIR website; and Owner thereafter shall provide to Contractor the "Project ID Number" assigned by DIR in order to facilitate Contactor's submission to DIR of its certified payrolls for the Project, in the manner required and using such form as may be prescribed by DIR, in accordance with the provisions of Labor Code section 1771.4(a)(3).

ARTICLE IX: Governing Law – Venue for any action arising out of or relating to this Agreement and Contract shall be in Fresno County, California. This Agreement and Contract shall be governed by the laws of the State of California.

ARTICLE X: 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).

This Contract, **25-04-PR**, was awarded by the Board of Supervisors on August 19, 2025. 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 15th day of September, 2025

Harris Development Corp. dba HBC Enterprises
(CONTRACTOR)

By _____

Title President

COUNTY OF FRESNO
(OWNER)

By _____
Ernest "Buddy" Mendes, 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

Bid Summary
Fresno County Department of Public Works and Planning

Project: Kearney Park Improvements
Contract No.: 25-04-PR

Bid Opening: 07/02/25
Scheduled Award Date: 08/19/25

Bidders

1 Harris Development Corp dba HBC Enterprises, 2743 E. Shaw Ave. Ste. 105-08 Clovis, CA 93611
2 Avison Construction, Inc., 40434 Brickyard Dr, Madera, CA 93636
3 Caliber Contracting Services, Inc., 5191 East Dakota Ave, Fresno, CA 93727
4 Cal Valley Construction, Inc., 5125 N Gates Avenue #102, Fresno, CA 93722
5 American Paving Co., 525 W. Alluvial Avenue, Fresno, CA 93711
6 Granite Construction Company, 2716 S Granite Ct, Fresno, CA 93706

Harris Development Corp dba HBC Enterprises — Subcontractors
HBC Enterprises-JV
Juarez Brothers General Engineering
Beynon
T&T Pavement Markings & Products Inc.
King Khan Drilling & Constructions Inc.
Epic Land Surveying Inc.
Signature Touch Landscape
Griffin Soil LLC
Standard Emulsions Co
Harmonson Construction
CVE Demolition
AMI

Avison Construction, Inc. — Subcontractors
Dorfmeir Masonry
King Khan Drilling & Construction
Pacific Steel Group
Fresno Seal & Stripe
Beynon
Ace Fence Copmany
Haydon Construction
C3 Electric
CVE Demolition

Caliber Contracting Services, Inc. — Subcontractors
C3 Electric
CVE
HVC
National Fence
Juarez Brothers
Harmenson
Beynon
T&T

Cal Valley Construction, Inc. — Subcontractors
National Guardrail & Fence, Inc.
Dorfmeier Masonry, Inc.
Fresno Concrete Const., Inc.
King Khan Drilling & Construction, Inc.
Cve Demolition, Inc.
T & T Pavement Markings and Products, Inc.
Valley Unique Electric, Inc.

American Paving Co. — Subcontractors
Asphalt Impressions
CVE Demolition
C3 Electric
National Guardrail and Fence, Inc.
Dorfmeir Masonry, Inc.
King Khan Drilling and Construction, Inc.
T&T Pavement Markings and Products, Inc.
Haydon Construction, Inc.
Pacific Steel Group
New England Sheet Metal and Mechanical Co.

Granite Construction Company — Subcontractors
T & T Pavement Markings and Products, Inc.
Ace Fence Company
King Khan Drilling & Construction, Inc.
First Serve Productions, Inc.
Dorfmeier Masonry, Inc.
Valley Unique Electric, Inc. dba Valley Unique Electric

BASE BID ITEMS

ITEM NO.	QUANTITY	UNIT OF MEASURE	ITEM DESCRIPTION	Engineer's Estimate ITEM PRICE (IN FIGURES)	Engineer's Estimate TOTAL PRICE (IN FIGURES)	1 ITEM PRICE (IN FIGURES)	1 TOTAL PRICE (IN FIGURES)	2 ITEM PRICE (IN FIGURES)	2 TOTAL PRICE (IN FIGURES)	3 ITEM PRICE (IN FIGURES)	3 TOTAL PRICE (IN FIGURES)	4 ITEM PRICE (IN FIGURES)	4 TOTAL PRICE (IN FIGURES)	5 ITEM PRICE (IN FIGURES)	5 TOTAL PRICE (IN FIGURES)	6 ITEM PRICE (IN FIGURES)	6 TOTAL PRICE (IN FIGURES)
1	50,000	$	SUPPLEMENTAL WORK	$ 1.00	$ 50,000.00	$ 1.00	$ 50,000.00	$ 1.00	$ 50,000.00	$ 1.00	$ 50,000.00	$ 1.00	$ 50,000.00	$ 1.00	$ 50,000.00	$ 1.00	$ 50,000.00
2	1	LS	MOBILIZATION & DEMOBILIZATION	$ 200,000.00	$ 200,000.00	$ 108,550.00	$ 108,550.00	$ 135,000.00	$ 135,000.00	$ 50,000.00	$ 50,000.00	$ 300,000.00	$ 300,000.00	$ 350,000.00	$ 350,000.00	$ 370,000.00	$ 370,000.00
3	1	LS	JOB SITE MANAGEMENT	$ 50,000.00	$ 50,000.00	$ 36,225.00	$ 36,225.00	$ 1,000.00	$ 1,000.00	$ 75,000.00	$ 75,000.00	$ 5,000.00	$ 5,000.00	$ 252,700.00	$ 252,700.00	$ 5,000.00	$ 5,000.00
4	1	LS	PREPARE AND IMPLEMENT STORM WATER POLLUTION PREVENTION PLAN (SWPPP)	$ 10,000.00	$ 10,000.00	$ 30,300.00	$ 30,300.00	$ 5,000.00	$ 5,000.00	$ 16,000.00	$ 16,000.00	$ 5,000.00	$ 5,000.00	$ 15,000.00	$ 15,000.00	$ 5,000.00	$ 5,000.00
5	1,500	$	STATE WATER RESOURCES CONTROL BOARD NOI FILING FEE	$ 1.00	$ 1,500.00	$ 1.00	$ 1,500.00	$ 1.00	$ 1,500.00	$ 1.00	$ 1,500.00	$ 1.00	$ 1,500.00	$ 1.00	$ 1,500.00	$ 1.00	$ 1,500.00
6	5,000	$	COUNTY PERMIT FEES	$ 1.00	$ 5,000.00	$ 1.00	$ 5,000.00	$ 1.00	$ 5,000.00	$ 1.00	$ 5,000.00	$ 1.00	$ 5,000.00	$ 1.00	$ 5,000.00	$ 1.00	$ 5,000.00
7	1	LS	TRAFFIC CONTROL SYSTEM	$ 20,000.00	$ 20,000.00	$ 16,125.00	$ 16,125.00	$ 5,000.00	$ 5,000.00	$ 25,000.00	$ 25,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 40,000.00	$ 40,000.00
8	1	LS	CLEARING AND GRUBBING	$ 50,000.00	$ 50,000.00	$ 19,500.00	$ 19,500.00	$ 62,000.00	$ 62,000.00	$ 21,177.00	$ 21,177.00	$ 100,000.00	$ 100,000.00	$ 50,000.00	$ 50,000.00	$ 144,300.00	$ 144,300.00
9	1	LS	DEMOLISH AND DISPOSE OF EXISTING ROCK WALL AND CONCRETE SLAB AT MULTI PURPOSE COURT	$ 17,000.00	$ 17,000.00	$ 14,250.00	$ 14,250.00	$ 18,000.00	$ 18,000.00	$ 15,295.00	$ 15,295.00	$ 12,960.00	$ 12,960.00	$ 13,000.00	$ 13,000.00	$ 10,000.00	$ 10,000.00
10	1	LS	DEMO EXISTING PLANTER AT MLTI PURPOSE COURT PARKING LOT "G"	$ 6,000.00	$ 6,000.00	$ 4,395.00	$ 4,395.00	$ 6,000.00	$ 6,000.00	$ 4,706.00	$ 4,706.00	$ 3,996.00	$ 3,996.00	$ 4,000.00	$ 4,000.00	$ 7,000.00	$ 7,000.00
11	1	LS	DEMO EXISTING CONCRETE WALKWAY, VALLEY GUTTER AND STRIP PARKING LOT "G"	$ 4,000.00	$ 4,000.00	$ 3,735.00	$ 3,735.00	$ 5,000.00	$ 5,000.00	$ 4,000.00	$ 4,000.00	$ 3,396.00	$ 3,396.00	$ 3,600.00	$ 3,600.00	$ 6,000.00	$ 6,000.00
12	1	LS	REMOVE AND DISPOSE EXISTING PLAYGROUND	$ 20,000.00	$ 20,000.00	$ 18,590.00	$ 18,590.00	$ 25,000.00	$ 25,000.00	$ 20,000.00	$ 20,000.00	$ 16,900.00	$ 16,900.00	$ 18,000.00	$ 18,000.00	$ 25,000.00	$ 25,000.00
13	2	EA	DEMO OF EXISTING SEPTIC TANK PER PLAN	$ 18,000.00	$ 36,000.00	$ 5,480.00	$ 10,960.00	$ 7,000.00	$ 14,000.00	$ 5,883.00	$ 11,766.00	$ 9,966.00	$ 19,932.00	$ 5,300.00	$ 10,600.00	$ 25,000.00	$ 50,000.00
14	1	LS	EARTHWORK (ROUGH AND FINE GRADING)	$ 50,000.00	$ 50,000.00	$ 40,250.00	$ 40,250.00	$ 80,000.00	$ 80,000.00	$ 43,530.00	$ 43,530.00	$ 521,000.00	$ 521,000.00	$ 160,000.00	$ 160,000.00	$ 55,000.00	$ 55,000.00
15	1,321	LF	FURNISH AND INSTALL 6" DIA. SDR 35 SEWER PIPE	$ 120.00	$ 158,520.00	$ 46.20	$ 61,030.20	$ 110.00	$ 145,310.00	$ 90.00	$ 118,890.00	$ 50.00	$ 66,050.00	$ 92.00	$ 121,532.00	$ 120.00	$ 158,520.00
16	221	LF	FURNISH AND INSTALL 8" DIA. SDR 35 SEWER PIPE	$ 130.00	$ 28,730.00	$ 66.00	$ 14,586.00	$ 130.00	$ 28,730.00	$ 107.00	$ 23,647.00	$ 100.00	$ 22,100.00	$ 110.00	$ 24,310.00	$ 180.00	$ 39,780.00
17	10	EA	FURNISH AND INSTALL 4" SEWER CLEANOUT	$ 2,000.00	$ 20,000.00	$ 330.00	$ 3,300.00	$ 3,000.00	$ 30,000.00	$ 2,353.00	$ 23,530.00	$ 1,000.00	$ 10,000.00	$ 2,500.00	$ 25,000.00	$ 2,200.00	$ 22,000.00
18	3	EA	FURNISH AND INSTALL 48" DIA SEWER MANHOLE	$ 11,000.00	$ 33,000.00	$ 11,000.00	$ 33,000.00	$ 13,000.00	$ 39,000.00	$ 9,804.00	$ 29,412.00	$ 12,000.00	$ 36,000.00	$ 11,000.00	$ 33,000.00	$ 12,000.00	$ 36,000.00
19	370	LF	PERMANENT TRENCH RESURFACING	$ 30.00	$ 11,100.00	$ 31.20	$ 11,544.00	$ 40.00	$ 14,800.00	$ 128.00	$ 47,360.00	$ 50.00	$ 18,500.00	$ 97.00	$ 35,890.00	$ 80.00	$ 29,600.00
20	1	EA	FURNISH AND INSTALL BACKFLOW PREVENTION DEVICE	$ 4,500.00	$ 4,500.00	$ 6,832.00	$ 6,832.00	$ 16,000.00	$ 16,000.00	$ 15,295.00	$ 15,295.00	$ 12,000.00	$ 12,000.00	$ 13,000.00	$ 13,000.00	$ 7,000.00	$ 7,000.00
21	580	LF	FURNISH AND INSTALL 2" PVC SCHED. 80 WATER PIPE	$ 45.00	$ 26,100.00	$ 7.05	$ 4,089.00	$ 70.00	$ 40,600.00	$ 41.00	$ 23,780.00	$ 50.00	$ 29,000.00	$ 56.00	$ 32,480.00	$ 80.00	$ 46,400.00
22	7,611	SY	PULVERIZE IN PLACE/GRADE AND COMPACT SUBGRADE (MULTIPURPOSE COURT & PARKING LOT G)	$ 7.00	$ 53,277.00	$ 10.45	$ 79,534.95	$ 4.00	$ 30,444.00	$ 12.00	$ 91,332.00	$ 2.00	$ 15,222.00	$ 5.40	$ 41,099.40	$ 7.00	$ 53,277.00
23	634	CY	CLASS II AGGREGATE BASE (MULTI PURPOSE COURTS & PARKING LOT G) - FINAL PAY ITEM	$ 90.00	$ 57,060.00	$ 57.70	$ 36,581.80	$ 100.00	$ 63,400.00	$ 64.00	$ 40,576.00	$ 80.00	$ 50,720.00	$ 85.00	$ 53,890.00	$ 150.00	$ 95,100.00
24	2,000	SF	CONSTRUCT 6" THICK REINFORCED CONCRETE PARKING STALLS (PARKING LOT G)	$ 25.00	$ 50,000.00	$ 23.15	$ 46,300.00	$ 16.00	$ 32,000.00	$ 14.00	$ 28,000.00	$ 11.00	$ 22,000.00	$ 12.00	$ 24,000.00	$ 18.00	$ 36,000.00
25	569	LF	CONSTRUCT REINFORCED CONCRETE VALLEY GUTTER (PARKING LOT G)	$ 50.00	$ 28,450.00	$ 39.90	$ 22,703.10	$ 67.00	$ 38,123.00	$ 27.00	$ 15,363.00	$ 42.00	$ 23,898.00	$ 12.00	$ 6,828.00	$ 95.00	$ 54,055.00
26	1,011	TON	1/2" HOT MIX ASPHALT TYPE A (PARKING LOT G)	$ 160.00	$ 161,760.00	$ 125.85	$ 127,234.35	$ 120.00	$ 121,320.00	$ 135.00	$ 136,485.00	$ 150.00	$ 151,650.00	$ 125.00	$ 126,375.00	$ 170.00	$ 171,870.00
27	350	LF	PLACE HMA DIKE TYPE A (PARKING LOT G)	$ 10.00	$ 3,500.00	$ 26.15	$ 9,152.50	$ 26.00	$ 9,100.00	$ 29.00	$ 10,150.00	$ 40.00	$ 14,000.00	$ 22.00	$ 7,700.00	$ 15.00	$ 5,250.00
28	112	LF	CONCRUCT 4 FOOT WIDE SWALE FILLED W/ 3/4 INCH CHRUSHED GRAVEL	$ 30.00	$ 3,360.00	$ 40.00	$ 4,480.00	$ 54.00	$ 6,048.00	$ 44.00	$ 4,928.00	$ 50.00	$ 5,600.00	$ 25.00	$ 2,800.00	$ 45.00	$ 5,040.00
29	1	LS	SIGNAGE AND STRIPING FOR PARKING LOT "G"	$ 7,000.00	$ 7,000.00	$ 7,325.00	$ 7,325.00	$ 8,000.00	$ 8,000.00	$ 7,648.00	$ 7,648.00	$ 6,481.00	$ 6,481.00	$ 7,000.00	$ 7,000.00	$ 6,481.00	$ 6,481.00
30	461	TON	HOT MIX ASPHALT (MULTI PURPOSE COURTS)	$ 370.00	$ 170,570.00	$ 149.60	$ 68,965.60	$ 125.00	$ 57,625.00	$ 161.00	$ 74,221.00	$ 150.00	$ 69,150.00	$ 125.00	$ 57,625.00	$ 165.00	$ 76,065.00
31	23,598	SF	MULTI-PURPOSE COURT SURFACING	$ 2.00	$ 47,196.00	$ 1.65	$ 38,936.70	$ 2.00	$ 47,196.00	$ 2.00	$ 47,196.00	$ 2.00	$ 47,196.00	$ 2.30	$ 54,275.40	$ 2.24	$ 52,859.52
32	641	LF	FURNISH AND INSTALL 12' TALL CHAINLINK FENCE	$ 90.00	$ 57,690.00	$ 151.60	$ 97,175.60	$ 120.00	$ 76,920.00	$ 157.00	$ 100,637.00	$ 131.00	$ 83,971.00	$ 136.00	$ 87,176.00	$ 105.00	$ 67,305.00
33	96	LF	FURNISH AND INSTALL 10' TALL CHAINLINK FENCE	$ 70.00	$ 6,720.00	$ 216.40	$ 20,774.40	$ 160.00	$ 15,360.00	$ 246.00	$ 23,616.00	$ 188.00	$ 18,048.00	$ 194.00	$ 18,624.00	$ 151.00	$ 14,496.00

Bid Summary
Fresno County Department of Public Works and Planning

BASE BID ITEMS				Engineer's Estimate		1		2		3		4		5		6	
ITEM NO.	QUANTITY	UNIT OF MEASURE	ITEM DESCRIPTION	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)
34	104	LF	FURNISH AND INSTALL 3' TALL CHAINLINK FENCE	$ 35.00	$ 3,640.00	$ 154.80	$ 16,099.20	$ 90.00	$ 9,360.00	$ 170.00	$ 17,680.00	$ 134.00	$ 13,936.00	$ 139.00	$ 14,456.00	$ 88.00	$ 9,152.00
35	6	EA	FURNISH AND INSTALL 4' WIDE CHAINLINK GATE	$ 2,500.00	$ 15,000.00	$ 1,505.00	$ 9,030.00	$ 5,000.00	$ 30,000.00	$ 1,177.00	$ 7,062.00	$ 1,466.00	$ 8,796.00	$ 1,500.00	$ 9,000.00	$ 4,940.00	$ 29,640.00
36	641	LF	CONSTRUCT 6 INCH x 20 INCH CONCRETE MOWSTRIP	$ 60.00	$ 38,460.00	$ 17.90	$ 11,473.90	$ 65.00	$ 41,665.00	$ 65.00	$ 41,665.00	$ 27.00	$ 17,307.00	$ 34.00	$ 21,794.00	$ 65.00	$ 41,665.00
37	2	EA	FURNISH AND INSTALL BASKETBALL HOOPS COMPLETE	$ 8,500.00	$ 17,000.00	$ 12,100.00	$ 24,200.00	$ 15,000.00	$ 30,000.00	$ 13,530.00	$ 27,060.00	$ 9,500.00	$ 19,000.00	$ 11,000.00	$ 22,000.00	$ 15,000.00	$ 30,000.00
38	2	EA	FURNISH AND INSTALL TENNIS NET SET COMPLETE	$ 4,500.00	$ 9,000.00	$ 3,900.00	$ 7,800.00	$ 14,000.00	$ 28,000.00	$ 11,765.00	$ 23,530.00	$ 11,000.00	$ 22,000.00	$ 12,000.00	$ 24,000.00	$ 9,500.00	$ 19,000.00
39	1	LS	MULTI-PURPOSE COURT STRIPING	$ 4,000.00	$ 4,000.00	$ 10,535.00	$ 10,535.00	$ 8,000.00	$ 8,000.00	$ 10,589.00	$ 10,589.00	$ 4,000.00	$ 4,000.00	$ 10,000.00	$ 10,000.00	$ 1.00	$ 1.00
40	7,360	SF	CONSTRUCT 4 INCH THICK CONCRETE SIDEWALK/LANDING	$ 12.00	$ 88,320.00	$ 11.75	$ 86,480.00	$ 12.00	$ 88,320.00	$ 28.00	$ 206,080.00	$ 6.00	$ 44,160.00	$ 6.00	$ 44,160.00	$ 13.00	$ 95,680.00
41	1,985	SF	CONSTRUCT 6 INCH THICK REINFORCED CONCRETE PAD	$ 20.00	$ 39,700.00	$ 20.50	$ 40,692.50	$ 16.00	$ 31,760.00	$ 22.00	$ 43,670.00	$ 9.00	$ 17,865.00	$ 11.00	$ 21,835.00	$ 18.00	$ 35,730.00
42	1	LS	IRRIGATION WORK	$ 15,000.00	$ 15,000.00	$ 146,200.00	$ 146,200.00	$ 25,000.00	$ 25,000.00	$ 23,530.00	$ 23,530.00	$ 25,000.00	$ 25,000.00	$ 5,000.00	$ 5,000.00	$ 25,000.00	$ 25,000.00
43	1	LS	INSTALL COUNTY FURNISHED PLAYGROUND (Playground 1)	$ 160,000.00	$ 160,000.00	$ 43,680.00	$ 43,680.00	$ 105,000.00	$ 105,000.00	$ 60,000.00	$ 60,000.00	$ 70,000.00	$ 70,000.00	$ 74,000.00	$ 74,000.00	$ 85,000.00	$ 85,000.00
44	1	LS	INSTALL COUNTY FURNISHED PLAYGROUND (Playground 2)	$ 120,000.00	$ 120,000.00	$ 43,680.00	$ 43,680.00	$ 88,000.00	$ 88,000.00	$ 56,471.00	$ 56,471.00	$ 60,000.00	$ 60,000.00	$ 65,000.00	$ 65,000.00	$ 75,000.00	$ 75,000.00
45	1	LS	INSTALL COUNTY FURNISHED PLAYGROUND (Playground 3)	$ 120,000.00	$ 120,000.00	$ 39,200.00	$ 39,200.00	$ 88,000.00	$ 88,000.00	$ 47,059.00	$ 47,059.00	$ 60,000.00	$ 60,000.00	$ 63,000.00	$ 63,000.00	$ 70,000.00	$ 70,000.00
46	2	EA	FURNISH AND INSTALL BENCH W/ CONCRETE PAD	$ 4,500.00	$ 9,000.00	$ 3,285.00	$ 6,570.00	$ 3,000.00	$ 6,000.00	$ 4,706.00	$ 9,412.00	$ 2,000.00	$ 4,000.00	$ 2,000.00	$ 4,000.00	$ 5,500.00	$ 11,000.00
47	1	EA	PREFRABRICATED RESTROOM WORK - COUNTY FURNISHED	$ 50,000.00	$ 50,000.00	$ 15,550.00	$ 15,550.00	$ 35,000.00	$ 35,000.00	$ 15,295.00	$ 15,295.00	$ 25,000.00	$ 25,000.00	$ 45,000.00	$ 45,000.00	$ 19,000.00	$ 19,000.00
48	1	EA	INSTALL COUNTY FURNISHED SHELTER STRUCTURE	$ 60,000.00	$ 60,000.00	$ 61,600.00	$ 61,600.00	$ 60,000.00	$ 60,000.00	$ 50,589.00	$ 50,589.00	$ 55,000.00	$ 55,000.00	$ 56,000.00	$ 56,000.00	$ 55,000.00	$ 55,000.00
49	360	EA	FURNISH AND INSTALL 4' LONG PRECAST CONCRETE WHEELSTOPS	$ 150.00	$ 54,000.00	$ 84.75	$ 30,510.00	$ 130.00	$ 46,800.00	$ 89.00	$ 32,040.00	$ 75.00	$ 27,000.00	$ 80.00	$ 28,800.00	$ 75.00	$ 27,000.00
50	22	EA	INSTALL SPEED BUMPS PAINTED WHITE	$ 1,000.00	$ 22,000.00	$ 1,020.00	$ 22,440.00	$ 1,500.00	$ 33,000.00	$ 1,123.00	$ 24,706.00	$ 2,000.00	$ 44,000.00	$ 1,000.00	$ 22,000.00	$ 2,000.00	$ 44,000.00
51	1	LS	RESTRIPE PARKING LOTS INCLUDING ADA PARKING STALL, AISLE, AND CROSSING	$ 12,000.00	$ 12,000.00	$ 11,400.00	$ 11,400.00	$ 8,000.00	$ 8,000.00	$ 12,942.00	$ 12,942.00	$ 10,161.00	$ 10,161.00	$ 11,000.00	$ 11,000.00	$ 10,161.00	$ 10,161.00
52	6	EA	ADA PARKING STALL SIGN ASSEMBLY	$ 700.00	$ 4,200.00	$ 584.00	$ 3,504.00	$ 800.00	$ 4,800.00	$ 608.00	$ 3,648.00	$ 514.00	$ 3,084.00	$ 600.00	$ 3,600.00	$ 514.00	$ 3,084.00
53	90	SF	DETECTABLE WARNING SURFACES (ADA DOMES)	$ 30.00	$ 2,700.00	$ 44.00	$ 3,960.00	$ 45.00	$ 4,050.00	$ 79.00	$ 7,110.00	$ 35.00	$ 3,150.00	$ 50.00	$ 4,500.00	$ 55.00	$ 4,950.00
54	1	LS	ELECTRICAL AND LIGHTING	$ 450,000.00	$ 450,000.00	$ 801,000.00	$ 801,000.00	$ 840,000.00	$ 840,000.00	$ 882,353.00	$ 882,353.00	$ 725,000.00	$ 725,000.00	$ 720,000.00	$ 720,000.00	$ 725,000.00	$ 725,000.00
TOTAL BASE BID ITEMS (ITEMS 1-54)				$2,742,053.00		$2,488,529.80		$2,843,231.00		$2,807,531.00		$3,009,729.00		$2,980,149.80		$3,165,961.52	

Additive 1 - Fog Seal				Engineer's Estimate		1		2		3		4		5		6	
ITEM NO.	ESTIMATED QUANTITY	UNIT OF MEASURE	ITEM DESCRIPTION	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)
55	10	TON	ASPHALTIC EMULTION (FOG SEAL COAT)	$ 2,000.00	$ 20,000.00	$ 1,130.00	$ 11,300.00	$ 1,500.00	$ 15,000.00	$ 2,500.00	$ 25,000.00	$ 1,000.00	$ 10,000.00	$ 1,730.00	$ 17,300.00	$ 1,400.00	$ 14,000.00
TOTAL ADDITIVE 1 (ITEM 55)				$20,000.00		$11,300.00		$15,000.00		$25,000.00		$10,000.00		$17,300.00		$14,000.00	

Additive 2 - Rock Wall Repair				Engineer's Estimate		1		2		3		4		5		6	
ITEM NO.	ESTIMATED QUANTITY	UNIT OF MEASURE	ITEM DESCRIPTION	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)	ITEM PRICE (IN FIGURES)	TOTAL PRICE (IN FIGURES)
56	638	LF	FURNISH AND INSTALL MISSING LAYER/PARTIAL REPAIR OF RIVER ROCK WALL	$ 70.00	$ 44,660.00	$ 155.20	$ 99,017.60	$ 185.00	$ 118,030.00	$ 207.00	$ 132,066.00	$ 175.00	$ 111,650.00	$ 184.00	$ 117,392.00	$ 175.00	$ 111,650.00
57	440	LF	FURNISH AND INSTALL FULL HEIGHT OF RIVER ROCK WALL	$ 140.00	$ 61,600.00	$ 175.00	$ 77,000.00	$ 220.00	$ 96,800.00	$ 225.00	$ 99,000.00	$ 190.00	$ 83,600.00	$ 228.00	$ 100,320.00	$ 190.00	$ 83,600.00
58	1,032	LF	FURNISH AND INSTALL MISSING LAYER/ PARTIAL REPAIR OF SLATE ROCK WALL	$ 50.00	$ 51,600.00	$ 239.80	$ 247,473.60	$ 250.00	$ 258,000.00	$ 293.00	$ 302,376.00	$ 248.00	$ 255,936.00	$ 261.00	$ 269,352.00	$ 248.00	$ 255,936.00
59	298	LF	FURNISH AND INSTALL FULL HEIGHT OF SLATE ROCK WALL	$ 140.00	$ 41,720.00	$ 450.30	$ 134,189.40	$ 550.00	$ 163,900.00	$ 547.00	$ 163,006.00	$ 460.00	$ 137,080.00	$ 512.00	$ 152,576.00	$ 460.00	$ 137,080.00
TOTAL ADDITIVE 2 (ITEMS 56-59)				$199,580.00		$557,680.60		$636,730.00		$696,448.00		$588,266.00		$639,640.00		$588,266.00	

TOTAL BASE BID + ADDITIVES 1 THROUGH 2 (BID ITEMS 1 THROUGH 59)	$2,961,633.00	$3,057,510.40	$3,494,961.00	$3,528,979.00	$3,607,995.00	$3,637,089.80	$3,768,227.52

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

September 17, 2025

Robert Harris, President
Harris Development Corp.
2743 E. Shaw Ave., Ste. 103
Fresno, CA 93710

Transmitted by email to: robathbc@gmail.com; hbcoffice03@gmail.com

Subject: Notice of Approval, Kearney Park Improvements
Contract No. 25-04-PR

Dear Robert:

The contract between your firm and the County of Fresno for the referenced project became operative on September 15, 2025. A copy of the executed contract is enclosed.

DIR Project ID **20250600006** is assigned to Contract No. **25-04-PR**

The enclosed copy of Section 41 of the Charter of the County of Fresno is for your reference and compliance. If you have any questions, contact Jennica Geddert at jgeddert@fresnocountyca.gov or (559) 353-4919.

Sincerely,

Mohammad Alimi, Ph.D., P.E.
Design Division Engineer

Jennica Geddert
Senior Staff Analyst

Enclosures

cc: Board of Supervisors
Auditor – Controller
Financial Services
Construction Management
Design Division – Design Services

HBCENTE-01 AALVAREZ1

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 9/11/2025

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 License # 0757776 HUB International Insurance Services Inc. 548 W Cromwell Avenue Suite 101 Fresno, CA 93711	CONTACT NAME: Angie Alvarez PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS: angie.alvarez@hubinternational.com
INSURED Harris Development Corp and H B C Enterprises 1840 Shaw Ave #103 and #111 Clovis, CA 93611	INSURER A : Financial Pacific Insurance Company — NAIC # 31453 INSURER B : CM Vantage Specialty Insurance Company — NAIC # 15872 INSURER C : INSURER D : INSURER E : 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	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY X PRO-JECT LOC OTHER:	X	X	60513968	3/1/2025	3/1/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 2,000,000 $ 100,000 $ 5,000 $ 2,000,000 $ 4,000,000 $ 4,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY / SCHEDULED AUTOS X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY	X	X	60513968	3/1/2025	3/1/2026	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000
A	UMBRELLA LIAB X OCCUR X EXCESS LIAB CLAIMS-MADE DED RETENTION $			60513968	3/1/2025	3/1/2026	EACH OCCURRENCE AGGREGATE	$ 5,000,000 $ 5,000,000
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N / A					PER STATUTE / OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ $ $
B	Excess Liability			CMV-EXL-0065753-01	9/11/2025	3/1/2026		5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Re: Project Name and Location: Kearney Park Improvements | Contract No. 25-04-PR | 6725 Kearney Blvd Fresno, CA 93706
County of Fresno, its officers, agents, and employees, individually and collectively as additional insured, but only insofar as the operations under this agreement and contract are concerned.
30-day notice of cancellation

CERTIFICATE HOLDER

County of Fresno
Department of Public Works and Planning
Design Division
2220 Tulare St 6th Floor
Fresno, CA 93721

CANCELLATION

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



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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

BUSINESS AUTO ULTRA ENDORSEMENT

This endorsement modifies insurance provided under the following:
BUSINESS AUTO COVERAGE FORM
COMMON POLICY CONDITIONS

COVERAGE INDEX

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The COVERAGE INDEX set forth above is informational only and grants no coverage.
Terms set forth in ***(Bold Italics)*** are likewise for information only and by themselves shall be deemed to grant no coverage.

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(Temporary Substitute Auto Physical Damage)

A. TEMPORARY SUBSTITUTE AUTO PHYSICAL DAMAGE

SECTION I – COVERED AUTOS, paragraph C. Certain Trailers, Mobile Equipment and Temporary Substitute Autos is amended by adding the following at the end of the existing language:

If Physical Damage Coverage is provided under this Coverage form for an "auto" you own, the Physical Damage coverages provided for that owned "auto" are extended to any "auto" you do not own while used with the permission of its owner as a temporary substitute for the covered "auto" you own that is out of service because of its breakdown, repair, servicing, "loss", or destruction

B. BROADENED LIABILITY COVERAGES

SECTION II – LIABILITY COVERAGE in Paragraph **A. Coverage** at **1. Who Is An Insured** is amended to include the following:

(Broad Form Insured)

d. Any legally incorporated subsidiary in which you own more than 50% of the voting stock on the effective date of the Coverage Form. However, the Named Insured does not include any subsidiary that is an "insured" under any other automobile policy or would be an "insured" under such a policy but for its termination or the exhaustion of its Limit of Insurance.

e. Any organization that is acquired or formed by you, during the term of this policy and over which you maintain majority ownership. However, the Named Insured does not include any newly formed or acquired organization:

(1) That is a joint venture or partnership,

(2) That is an "insured" under any other policy,

(3) That has exhausted its Limits of Insurance under any other policy, or

(4) 180 days or more after its acquisition or formation by you, unless you have given us notice of the acquisition or formation

Coverage does not apply to "bodily injury" or "property damage" that results from an accident that occurred before you formed or acquired the organization.

(Employee as Insureds)

f. Any employee of yours while acting in the course of your business or your personal affairs while using a covered "auto" you do not own, hire or borrow.

(Additional Insured Status by Contract, Agreement or Permit)

g. Any person or organization whom you are required to add as an additional insured on this policy under a written contract or agreement; but the written contract or agreement must be:

(1) Currently in effect or becoming effective during the term of this policy; and

(2) Executed prior to the "bodily injury" or "property damage."

The additional insured status will apply only with respect to your liability for "bodily injury" or "property damage" which may be imputed to that person(s) or organization(s) directly arising out of the ownership, maintenance or use of the covered "autos" at the location(s) designated, if any.

Coverage provided by this endorsement will not exceed the limits of liability required by the written contract or written agreement even if the limits of liability stated in the policy exceed those limits. This endorsement shall not increase the limits stated in **Section II. C. Limits of Insurance.**

For any covered "auto" you own this Coverage Form provides primary coverage.

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C. BROADENED SUPPLEMENTARY PAYMENTS

SECTION II. LIABILITY A. Coverage 2. Coverage Extensions a. Supplementary Payments (2) and **(4)** are replaced by the following:

(Bail Bond Coverage)

(2) Up to $5,000 for cost of bail bonds (including bonds for related traffic violations) required because of an "accident" we cover. We do not have to furnish these bonds.

(Loss of Earnings Coverage)

(4) All reasonable expenses incurred by the "insured" at our request, including actual loss of earning up to $500 a day because of time off from work.

(Amended Fellow Employee Exclusion)

D. AMENDED FELLOW EMPLOYEE EXCLUSION

Only with respect to your "employees" who occupy positions which are supervisory in nature, **SECTION II. LIABILITY B. Exclusion 5. Fellow Employee** is replaced by:

5. Fellow Employee

"Bodily Injury":

a. To you, or your partners or members (if you are a partnership or joint venture), or to your members (if you are a limited liability company);

b. To your "executive officers" and directors (if you are an organization other than a partnership, joint venture, or limited liability company) but only with respect to performance of their duties as your officers or directors;

c. For which there is an obligation to share damages with or repay someone else who must pay damages because of the injury described in paragraph a and b above; or

d. Arising out of his or her providing or failing to provide professional health care services.

For purposes of this endorsement, a position is deemed to be supervisory in nature if that person performs principle work which is substantially different from that of his or her subordinates and has authority to hire, transfer, direct, discipline or discharge.

E. BROADENED PHYSICAL DAMAGE COVERAGES

SECTION III – PHYSICAL DAMAGE COVERAGE A. Coverage is amended as follows:

(Towing and Labor)

2. Towing is deleted and replaced with the following:

2. Towing and Labor

We will pay towing and labor costs incurred, up to the limits shown below, each time a covered "auto" is disabled:

a. For private passenger type vehicles we will pay up to $100 per disablement.

b. For all other covered "auto's" we will pay up to $500 per disablement

However, the labor must be performed at the place of disablement.

(Physical Damage Additional Transportation Expense Coverage)

4. Coverage Extensions

a. Transportation Expenses is amended to provide the following limits:

We will pay up to $60 per day to a maximum of $1,800. All other terms and provisions of this section remain applicable.

The following language is added to **4. Coverage Extensions:**

(Extra Expense – Theft)

c. Theft Recovery Expense

If you have purchased Comprehensive Coverage on an "auto" that is stolen, we will pay the expense of returning that stolen auto to you. The limit for this coverage extension is $5,000.

(Rental Reimbursement and Additional Transportation Expense)

d. Rental Reimbursement

We will provide Rental Reimbursement and Additional Expense coverage only for those Physical Damage coverages for which a premium is shown in the Declarations or schedule pages. Coverage applies only to a covered "auto".

(1) We will pay for auto rental expense and the expense incurred by you because of "loss" to remove and transfer your materials and equipment from a covered "auto" to a covered "auto." Payment applies in addition to the otherwise applicable coverage you have on a covered "auto." No deductible applies to this coverage.

(2) We will pay only for expenses incurred during the policy period and beginning 24 hours after the "loss" and ending, regardless of the policy's expiration, with the lesser of the following number of days:

(a) The number of days reasonably required to repair or replace the covered "auto." If "loss" is caused by theft, this number of days is added to the number of days it takes to locate the covered "auto" and return it to you, or

(b) 30 days.

(3) Our payment is limited to the lesser of the following amounts:

(a) Necessary and actual expenses incurred; or

(b) $75 per day.

(c) This coverage does not apply while there are spare or reserve "autos" available to you for your operations.

(d) If "loss" results from the total theft of a covered "auto" of the private passenger or light truck type, we will pay under this coverage only that amount of your rental reimbursement expense which is not already provided for under the **SECTION III – PHYSICAL DAMAGE COVERAGE, A. Coverage, 4. Coverage Extensions, a. Transportation Expenses.**

(Personal Effects Coverage)

e. Personal Effects

If you have purchased Comprehensive Coverage on this policy for an "auto" you own and that "auto" is stolen, we will pay, without application of a deductible, up to $500 for Personal Effects stolen with the "auto". The insurance provided under this provision is excess over any other collectible insurance. For this coverage extension, Personal Effects means tangible property that is worn or carried by an "insured".

(Personal Property of Others)

f. Personal Property of Others

We will pay up to $500 for loss to personal property of others in or on your covered "auto." This coverage applies only in the event of "loss" to your covered "auto" caused by fire, lightning, explosion, theft, mischief or vandalism, the covered "auto's" collision with another object, or the covered "auto's" overturn. No deductibles apply to this coverage.

(Locksmith Coverage)

g. Locksmith Coverage

We will pay up to $250 per occurrence for necessary locksmith services for keys locked inside a covered private passenger "auto". The deductible is waived for these services.

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(Vehicle Wrap Coverage)

h. Vehicle Wrap Coverage

If you have Comprehensive or Collision coverage on an "auto" that is a total loss, in addition to the actual cash value of the "auto", we will pay up to $1,000 for vinyl vehicle wraps which are displayed on the covered "auto" at the time of total loss. Regardless of the number of autos deemed a total loss, the most we will pay under this Vehicle Wrap Coverage for any one "loss" is $5,000. For purposes of this coverage provision, signs or other graphics painted or magnetically affixed to the vehicle are not considered vehicle wraps.

(Airbag Accidental Discharge)

F. SECTION III – PHYSICAL DAMAGE COVERAGE, B. Exclusions is amended at **3.** to include the following language:

If you have purchased Comprehensive or Collision Coverage under this policy, this exclusion does not apply to mechanical breakdown relating to the accidental discharge of an air bag. This coverage applies only to a covered auto you own and is excess of any other collectible insurance or warranty. No deductible applies to this coverage.

G. BROADENED LIMITS OF INSURANCE

(Audio, Visual and Data Electronic Equipment Coverage)

SECTION III – PHYSICAL DAMAGE COVERAGE – C. Limit of Insurance at **1.b.** is amended to provide the following limits:

b. Limits of $1,000 per "loss" is increased to $5,000 per "loss". All other terms and provisions of this section remain applicable.

(Auto Loan/Lease Total Loss Protection)

SECTION III – PHYSICAL DAMAGE COVERAGE – C. Limit of Insurance is amended by adding the following language:

4. In the event of a total "loss" to a covered "auto" shown in the Schedule pages, subject at the time of the "loss" to a loan or lease, we will pay any unpaid amount due including up to a maximum of $500 for early termination fees or penalties on the lease or loan for a covered"auto" less:

a. The amount paid under the Physical Damage Coverage Section of the policy; and

b. Any:

(1) Overdue lease / 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 loans or leases.

(Glass Repair – Deductible Amendment)

H. GLASS REPAIR – DEDUCTIBLE

SECTION III – PHYSICAL DAMAGE COVERAGE – D. Deductible is amended by adding the following:

Any deductible shown in the Declarations as applicable to the covered "auto" will not apply to glass breakage if the damaged glass is repaired, rather than replaced.

(Amended Duties in the Event of Accident, Claim, Suit or Loss)

I. AMENDED DUTIES IN THE EVENT OF ACCIDENT, CLAIM, SUIT OR LOSS

Under **SECTION IV – BUSINESS AUTO CONDITIONS, A. Loss Conditions** , the following is added to paragraph **2. Duties In The Event of Accident, Suit or Loss:**

d. Knowledge of any "accident", "claim", "suit" or "loss" will be deemed knowledge by you when notice of such "accident", "claim", "suit" or "loss" has been received by:

(1) You, if you are an individual;

(2) Any partner or insurance manager if you are a partnership;

(3) An executive officer or insurance manager, if you are a corporation;

(4) Your members, managers or insurance manager, if you are a limited liability company; or

(5) Your officials, trustees, board members or insurance manager, if you are a not-for-profit organization.

(Waiver of Subrogation by Contract)

J. WAIVER OF SUBROGATION REQUIRED BY CONTRACT

Under **SECTION IV**, **BUSINESS AUTO CONDITIONS, A. Loss Conditions 5. Transfer of Rights of Recovery Against Others to Us** the following language is added:

However, we waive any rights of recovery we may have against the person or organization with whom you have agreed in writing in a contract, agreement or permit, to provide insurance such as is afforded under the policy to which this endorsement is attached. This provision does not apply unless the written contract or written agreement has been executed, or permit has been issued, prior to the "bodily injury" or "property damage."

(Unintentional Failure to Disclose)

K. UNINTENTIONAL FAILURE TO DISCLOSE

Under SECTION IV – BUSINESS AUTO CONDITIONS, B. General Conditions , the following is added to **2. Concealment, Misrepresentation Or Fraud**:

Your unintentional error in disclosing, or failing to disclose, any material fact existing at the effective date of this Coverage Form, or during the policy period in connection with any additional hazards, will not prejudice your rights under this Coverage Form.

(Hired, Leased, Rented or Borrowed Auto Physical Damage)

L. HIRED, LEASED, RENTED OR BORROWED AUTO PHYSICAL DAMAGE

Under SECTION IV – BUSINESS AUTO CONDITIONS B. General Conditions 5. Other Insurance Paragraph **5.b.** is replaced by the following:

b. **(1)** For "Comprehensive" and "Collision" Auto Physical Damage coverage provided by this endorsement, the following are deemed to be covered "autos" you own:

(a) Any Covered "auto" you lease, hire, rent or borrow; and

(b) Any Covered "auto" hired or rented by your "employee" under a contract in that individual "employee's" name, with your permission, while performing duties related to the conduct of your business.

However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto"

(2) Limit of Insurance For This Section

The most we will pay for any one "loss" is the lesser of the following:

(a) $75,000 per accident, or

(b) actual cash value at the time of loss, or

(c) cost of repair.

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Minus a $500 deductible. An adjustment for depreciation and physical condition will be made in determining actual cash value in the event of a total loss. No deductible applies to "loss" caused by fire or lightning.

(3) This Hired Auto Physical Damage coverage is excess over any other collectible insurance.

(4) Definitions For This Section

(a) Comprehensive Coverage: from any cause except the covered "auto's" collision with another object or the covered "auto's" overturn. We will pay glass breakage, "loss" caused by hitting a bird or animal and, "loss" caused by falling objects or missiles.

(b) Collision Coverage: caused by the covered "auto's" collision with another object or by the covered "auto's" overturn.

(Mental Anguish)

M. MENTAL ANGUISH

Under **SECTION V – DEFINITIONS, C.** is replaced by the following:

C. "Bodily injury" means bodily injury, sickness or disease sustained by a person including mental anguish or death resulting from bodily injury, sickness, or disease.

(Extended Cancellation Condition)

N. EXTENDED CANCELLATION CONDITION

Under **CANCELLATION,** of the **COMMON POLICY CONDITIONS** form, item **2.b.** is replaced by the following:

b. 60 days before the effective date of cancellation if we cancel for any other reason.

NOTIFICATION ENDORSEMENT FOR CANCELLATION/NON-RENEWAL or MATERIAL CHANGE IN COVERAGE

THIS ENDORSEMENT SUPPLEMENTS THE TERMS OF THE POLICY. PLEASE READ IT CAREFULLY.

COMMERCIAL AUTO
GENERAL LIABILITY
COMMERCIAL PROPERTY
COMMERCIAL UMBRELLA
COMMERCIAL INLAND MARINE

1. If the Schedule below indicates "**Cancellation/Non-Renewal Notification".** we agree to provide written notice to the person(s) or organization(s) shown in the Schedule due to a cancellation or non-renewal of the policy to which this form is endorsed. The number of days' notice we will provide is indicated in the Schedule.

2. If the Schedule below indicates "**Material Change in Coverage Notification",** we agree to provide written notice to the person(s) or organization(s) shown in the Schedule due to a material change in the policy to which this form is endorsed. For purposes of this endorsement a material change is a change:

   a. that is initiated by us; and
   b. in which the First Named Insured is provided written notification by us.

   The number of days' notice we will provide is indicated in the Schedule.

SCHEDULE

Name of Person(s) or Organization(s) and Mailing Address :

County of Fresno
Department of Public Works and Planning
2220 Tulare St 6th Floor
Fresno, CA 93721

Cancellation/Non-renewal Notification. Number of Days: 30

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as

applicable to this endorsement.)

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
LIQUOR LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS 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.

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ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):	Location And Description Of Completed Operations
County of Fresno **Department of Public Works and Planning, its officers, agents, and employees, indi idually and collecti ely are additional insureds** **c o Design Di ision** **2220 Tulare St 6th Floor** **Fresno, CA 93721**	**Kearney Park Impro ements** **672 W Kearney Bl d Fresno, CA 93706** **Contract umber 2 0 PR** **Concrete Work**
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard".

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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

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):	Location(s) Of Covered Operations
County of Fresno Department of Public Works and Planning, its officers, agents, and employees, individually and collectively are additional insureds c/o Design Division 2220 Tulare St 6th Floor Fresno, CA 93721	**Kearney Park Improvements 6725 W Kearney Blvd. Fresno, CA 93706 Contract Number: 25-04-PR Concrete Work**
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. **Section II – Who Is An Insured** is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

B. With respect to the insurance afforded to these addtional insureds, the following additional exclusions apply:

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 location 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.

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

AUTO DEALERS COVERAGE FORM
BUSINESS AUTO COVERAGE FORM
MOTOR CARRIER COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by the endorsement.

A. The following is added to the **Other Insurance** Condition in the Business Auto Coverage Form and the **Other Insurance – Primary And Excess Insurance Provisions** in the Motor Carrier Coverage Form and supersedes any provision to the contrary:

This Coverage Form's Covered Autos Liability Coverage is primary to and will not seek contribution from any other insurance available to an "insured" under your policy provided that:

1. Such "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 such "insured".

B. The following is added to the **Other Insurance** Condition in the Auto Dealers Coverage Form and supersedes any provision to the contrary:

This Coverage Form's Covered Autos Liability Coverage and General Liability Coverages are primary to and will not seek contribution from any other insurance available to an "insured" under your policy provided that:

1. Such "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 such "insured".

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

DESIGNATED CONSTRUCTION PROJECT(S) GENERAL AGGREGATE LIMIT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Designated Construction Project(s):
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

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.

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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.

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ULTRA LIABILITY PLUS ENDORSEMENT

COMMERCIAL GENERAL LIABILITY EXTENSION ENDORSEMENT SUMMARY OF COVERAGES

This is a summary of the various additional coverages and coverage modifications provided by this endorsement. No coverage is provided by this summary.

* Extended Property Damage
* Expanded Fire Legal Liability to include Explosion, Lightning and Sprinkler Leakage
* Coverage for non-owned watercraft is extended to 51 feet in length
* Property Damage - Borrowed Equipment
* Property Damage Liability - Elevators
* Coverage D - Voluntary Property Damage Coverage
  $5,000 Occurrence with a $10,000 Aggregate
* Coverage E - Care, Custody and Control Property Damage Coverage
  $25,000 Occurrence with a $100,000 Aggregate - $500 Deductible
* Coverage F - Electronic Data Liability Coverage - $50,000
* Coverage G - Product Recall Expense
  $25,000 Each Recall Limit with a $50,000 Aggregate - $1,000 Deductible
* Coverage H - Water Damage Legal Liability - $25,000
* Increase in Supplementary Payments: Bail Bonds to $1,000
* Increase in Supplementary Payments: Loss of Earnings to $500
* For newly formed or acquired organizations - extend the reporting requirement to 180 days
* Broadened Named Insured
* Automatic Additional Insured - Owners, Lessees or Contractors - Automatic Status When Required in Construction Agreement With You – Including Upstream Parties
* Automatic Additional Insured - Vendors
* Automatic Additional Insured - Lessor of Leased Equipment Automatic Status When Required in Lease Agreement With You
* Automatic Additional Insured - Managers or Lessor of Premises
* Additional Insured - Engineers, Architects or Surveyors Not Engaged by the Named Insured
* Additional Insured - Employee Injury to Another Employee
* Automatically included - Aggregate Limits of Insurance (per location)
* Automatically included - Aggregate Limits of Insurance (per project)
* Knowledge of occurrence - Knowledge of an "occurrence", "claim or suit" by your agent, servant or employee shall not in itself constitute knowledge of the named insured unless an officer of the named insured has received such notice from the agent, servant or employee
* Blanket Waiver of Subrogation
* Liberalization Condition
* Unintentional failure to disclose all hazards. If you unintentionally fail to disclose any hazards existing at the inception date of your policy, we will not deny coverage under this Coverage Form because of such failure. However, this provision does not affect our right to collect additional premium or exercise our right of cancellation or non-renewal.
* Mobile equipment to include snow removal, road maintenance and street cleaning equipment less than 1,000 lbs GVW
* Bodily Injury Redefined

REFER TO THE ACTUAL ENDORSEMENT FOLLOWING ON PAGES 2 THROUGH 12 FOR CHANGES AFFECTING YOUR INSURANCE PROTECTION

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ULTRA LIABILITY PLUS ENDORSEMENT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SECTION I - COVERAGES

A. The following changes are made at **COVERAGE A - BODILY INJURY AND PROPERTY DAMAGE LIABILITY**

1. Extended Property Damage

At **2. Exclusions** exclusion **a. Expected or Intended Injury** is replaced with the following:

"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.

2. Expanded Fire Legal Liability

At **2. Exclusions** the last paragraph is deleted and replaced by the following:

Exclusions **c.** through **n.** do not apply to damage by fire, explosion, lightning, smoke resulting from such fire, explosion, or lightning or sprinkler leakage to premises while rented to you or temporarily occupied by you with permission of the owner. A separate limit of insurance applies to this coverage as described in **SECTION III - LIMITS OF INSURANCE.**

3. Non-Owned Watercraft

At **2. Exclusions** exclusion **g. Aircraft, Auto Or Watercraft (2) (a)** is deleted and replaced by the following:

(a) Less than 51 feet long;

4. Property Damage – Borrowed Equipment

At **2. Exclusions** the following is added to paragraph **(4)** of exclusion **j. Damage To Property**:

This exclusion does not apply to "property damage" to borrowed equipment while at a jobsite and while not being used to perform operations. The most we will pay for "property damage" to any one piece of borrowed equipment under this coverage is $25,000 per occurrence. The insurance afforded under this provision is excess over any valid and collectible property insurance (including deductible) available to the insured, whether primary, excess, contingent or on any other basis.

5. Property Damage Liability – Elevators

At **2. Exclusions** the following is added to paragraphs **(3), (4)** and **(6)** of exclusion **j. Damage To Property**:

This exclusion does not apply to "property damage" resulting from the use of elevators. However, any insurance provided for such "property damage" is excess over any valid and collectible property insurance (including deductible) available to the insured, whether primary, excess, contingent or on any other basis.

B. The following coverages are added:

1. COVERAGE D - VOLUNTARY PROPERTY DAMAGE COVERAGE

"Property damage" to property of others caused by the insured:

a. While in your possession; or

b. Arising out of "your work".

Coverage applies at the request of the insured, whether or not the insured is legally obligated to pay.

For the purposes of this **Voluntary Property Damage Coverage** only:

Exclusion **j. Damage to Property** is deleted and replaced by the following:

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j. Damage to Property

"Property damage" to:

(1) Property held by the insured for servicing, repair, storage or sale at premises you own, rent, lease, operate or use;

(2) Property transported by or damage caused by any "automobile", "watercraft" or "aircraft" you own, hire or lease;

(3) Property you own, rent, lease, borrow or use.

The amount we will pay is limited as described below in **SECTION III - LIMITS OF INSURANCE**

For the purposes of this Voluntary Property Damage Coverage, our right and duty to defend ends when we have paid the Limit of Liability or the Aggregate Limit for each coverage, and we are granted discretion in making payments under this coverage.

2. COVERAGE E - CARE, CUSTODY AND CONTROL PROPERTY DAMAGE COVERAGE

For the purpose of this **Care, Custody and Control Property Damage Coverage** only:

a. Item **(4)** of exclusion **j.** does not apply.

The amount we will pay is limited as described below in **SECTION III - LIMITS OF INSURANCE**

For the purposes of this Care, Custody and Control Property Damage Coverage, our right and duty to defend ends when we have paid the Limit of Liability or the Aggregate Limit for each coverage, and we are granted discretion in making payments under this coverage.

3. COVERAGE F - ELECTRONIC DATA LIABILITY COVERAGE

For the purposes of this **Electronic Data Liability Coverage** only:

a. Exclusion **p.** of **Coverage A – Bodily Injury And Property Damage Liability** in **Section I – Coverages** is replaced by the following:

2. Exclusions

This insurance does not apply to:

p. Electronic data

Damages arising out of the loss of, loss of use of, damage to, corruption of, inability to access, or inability to manipulate "electronic data" that does not result from physical injury to tangible property.

However, this exclusion does not apply to liability for damages because of "bodily injury"

b. "Property damage" means:

(1) Physical injury to tangible property, including all resulting loss of use of that property. All such loss of use shall be deemed to occur at the time of the physical injury that caused it; or

(2) Loss of use of tangible property that is not physically injured. All such loss of use shall be deemed to occur at the time of the "occurrence" that caused it; or

(3) Loss of, loss of use of, damage to, corruption of, inability to access or inability to properly manipulate "electronic data", resulting from physical injury to tangible property. All such loss of "electronic data" shall be deemed to occur at the time of the "occurrence" that caused it.

For the purposes of this **Electronic Data Liability Coverage**, "electronic data" is not tangible property.

The amount we will pay is limited as described below in **SECTION III - LIMITS OF INSURANCE**

4. COVERAGE G - PRODUCT RECALL EXPENSE

a. Insuring Agreement

(1) We will pay 90% of "product recall expense" you incur as a result of a "product recall" you initiate during the coverage period.

(2) We will only pay for "product recall expense" arising out of "your products" which have been physically relinquished to others.

The amount we will pay is limited as described below in **SECTION III - LIMITS OF INSURANCE**

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b. Exclusions

This insurance does not apply to "product recall expense" arising out of:

(1) Any fact, circumstance or situation which existed at the inception date of the policy and which you were aware of, or could reasonably have foreseen that would have resulted in a "product recall".

(2) Deterioration, decomposition or transformation of a chemical nature, except if caused by an error in the manufacture, design, processing, storage, or transportation of "your product".

(3) The withdrawal of similar products or batches that are not defective, when a defect in another product or batch has been found.

(4) Acts, errors or omissions of any of your employees, done with prior knowledge of any of your officers or directors.

(5) Inherent vice, meaning a natural condition of property that causes it to deteriorate or become damaged.

(6) "Bodily injury" or "property damage".

(7) Failure of "your product" to accomplish its intended purpose, including any breach of warranty of fitness, quality, efficacy or efficiency, whether written or implied.

(8) Loss of reputation, customer faith or approval, or any costs incurred to regain customer market, or any other consequential damages.

(9) Legal fees or expenses.

(10) Damages claimed for any loss, cost or expense incurred by you or others for the loss of use of "your product".

(11) "Product recall expense" arising from the "product recall" of any of "your products" for which coverage is excluded by endorsement.

(12) Any "product recall" initiated due to the expiration of the designated shelf life of "your product".

5. COVERAGE H - WATER DAMAGE LEGAL LIABILITY

The Insurance provided under **Coverage H (Section I)** applies to "property damage" arising out of water damage to premises that are both rented to and occupied by you.

The Limit under this coverage shall not be in addition to the Damage To Premises Rented To You Limit.

The amount we will pay is limited as described below in **SECTION III - LIMITS OF INSURANCE**

C. SUPPLEMENTARY PAYMENTS - COVERAGES A AND B is amended:

1. To read **SUPPLEMENTARY PAYMENTS**

2. Bail Bonds

Item **1.b.** is amended as follows:

b. Up to $1,000 for cost of bail bonds required because of accidents or traffic law violations arising out of the use of any vehicle to which the Bodily Injury Liability Coverage applies. We do not have to furnish these bonds.

3. Loss of Earnings

Item **1.d.** is amended as follows:

d. All reasonable expenses incurred by the insured at our request to assist us in the investigation or defense of the claim or "suit", including actual loss of earnings up to $500 a day because of time off from work.

4. The following language is added to Item **1.**

However, we shall have none of the duties set forth above when this insurance applies only for **Voluntary Property Damage Coverage** and/or **Care, Custody or Control Property Damage Coverage** and we have paid the Limit of Liability or the Aggregate Limit for these coverages.

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SECTION II - WHO IS AN INSURED

A. The following change is made:

Extended Reporting Requirements

Item **3.a.** is deleted and replaced by the following:

a. Coverage under this provision is afforded only until the 180th day after you acquire or form the organization or the end of the policy period, whichever is earlier.

B. The following provisions are added:

4. BROAD FORM NAMED INSURED

Item **1.f.** is added as follows:

f. Any legally incorporated entity of which you own more than 50 percent of the voting stock during the policy period only if there is no other similar insurance available to that entity. However:

(1) **Coverage A** does not apply to "bodily injury" or "property damage" that occurred before you acquired more than 50 percent of the voting stock; and

(2) **Coverage B** does not apply to "personal and advertising injury" arising out of an offense committed before you acquired more than 50 percent of the voting stock.

5. Additional Insured - Owners, Lessees or Contractors-Automatic Status When Required in Construction or Service Agreement With You – Including Upstream Parties

a. Any person or organization for whom you are performing operations when you and such person or organization have agreed in writing in a contract or agreement that such person or organization be added as an additional insured on your policy;

b. Any other person or organization you are required to add as an additional insured under the contract or agreement described in Paragraph a. above.

Such person(s) or organization(s) is an additional insured only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" which may be imputed to that person or organization directly arising out of:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured.

However, the insurance afforded to such additional insured:

1. Only applies to the extent permitted by law; and
2. Will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

c. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to:

1. "Bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of, or the failure to render, any professional architectural, engineering or surveying services, including:
   a. The preparing, approving, or failing to prepare or approve, maps, shop drawings, opinions, reports, surveys, field orders, change orders or drawings and specifications; or
   b. Supervisory, inspection, architectural or engineering activities.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of or the failure to render any professional architectural, engineering or surveying services.

2. "Bodily injury" or "property damage" occurring after:
   a. 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 location of the covered operations has been completed; or
   b. 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.

6. **Additional Insured - Vendors**
   a. Any person(s) or organization(s) (referred to throughout this additional coverage as vendor), but only with respect to "bodily injury" or "property damage", which may be imputed to that person(s) or organization(s) arising out of "your products" shown with the Schedule which are distributed or sold in the regular course of the vendor's business is an insured.

      However:

      (1) The insurance afforded to such vendor only applies to the extent permitted by law; and

      (2) If coverage provided to the vendor is required by a contract or agreement, the insurance afforded to such vendor will not be broader than that which you are required by the contract or agreement to provide for such vendor.

   b. With respect to the insurance afforded to these vendors, the following additional exclusions apply:

      (1) This insurance afforded the vendor does not apply to:

         (a) "Bodily injury" or "property damage" for which the vendor is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that the vendor would have in the absence of the contract or agreement;

         (b) Any express warranty unauthorized by you;

         (c) Any physical or chemical change in the product made intentionally by the vendor;

         (d) Repackaging, except when unpacked solely for the purpose of inspection, demonstration, testing, or the substitution of parts under instructions from the manufacturer, and then repackaged in the original container.

         (e) Any failure to make such inspections, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business, in connection with the distribution or sale of products.

         (f) Demonstration, installation, servicing or repair operations, except such operations performed at the vendor's premises in connection with the sale of the product.

         (g) Products which, after distribution or sale by you, have been labeled or relabeled or used as a container, part or ingredient of any other thing or substance by or for the vendor.

         (h) "Bodily injury" or "property damage" arising out of the sole negligence of the vendor for its own acts or omissions or those of its employees or anyone else acting on its behalf. However, this exclusion does not apply to:

            i. The exceptions contained in Sub-paragraphs d. or f.; or

            ii. Such inspections, adjustments, tests or servicing as the vendor has agreed to make or normally undertakes to make in the usual course of business, in connection with the distribution or sale of the products.

      (2) This insurance does not apply to any insured person or organization, from whom you have acquired such products, or any ingredient, part or container, entering into, accompanying or containing such products.

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7. **Additional Insured – Lessor of Leased Equipment – Automatic Status When Required in Lease Agreement With You**

   a. Any person(s) or organization(s) from whom you lease equipment when you and such person(s) or organization(s) have agreed in writing in a contract or agreement that such person(s) or organization(s) be added as an additional insured on your policy. Such person(s) or organization(s) is an insured only with respect to your liability for "bodily injury", "property damage" or "personal and advertising injury" directly arising out of the maintenance, operation or use of equipment leased to you, which may be imputed to such person or organization as the lessor of equipment.

   However, the insurance afforded to such additional insured:

   (1) Only applies to the extent permitted by law; and

   (2) Will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

   A person's or organization's status as an additional insured under this endorsement ends when their contract or agreement with you for such leased equipment ends.

   b. With respect to the insurance afforded to these additional insureds, this insurance does not apply to any "occurrence" which takes place after the equipment lease expires.

8. **Additional Insured – Managers or Lessors of Premises**

   a. Any person(s) or organization(s), but only with respect to liability arising out of the ownership, maintenance or use of that part of the premises leased to you and subject to the following additional exclusions:

   This insurance does not apply to:

   (1) Any "occurrence" which takes place after you cease to be a tenant in that premises.

   (2) Structural alterations, new construction or demolition operations performed by or on behalf of the person(s) or organization(s) shown in the Schedule.

   However:

   (1) The insurance afforded to such additional insured only applies to the extent permitted by law; and

   (2) If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

9. **Additional Insured - Engineers, Architects or Surveyors Not Engaged by the Named Insured**

   a. Any architects, engineers or surveyors who are not engaged by you are insureds, but only with respect to liability for "bodily injury" or "property damage" or "personal and advertising injury" which may be imputed to that architect, engineer or surveyor arising out of:

   (1) Your acts or omissions; or

   (2) Your acts or omissions of those acting on your behalf;

   in the performance of your ongoing operations performed by you or on your behalf.

   But only if such architects, engineers or surveyors, while not engaged by you, are contractually required to be added as an additional insured to your policy.

   However, the insurance afforded to such additional insured:

   (1) Only applies to the extent permitted by law; and

   (2) Will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

   b. With respect to the insurance afforded to these additional insureds, the following additional exclusion applies:

   This insurance does not apply to "bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of or failure to render any professional services, including:

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(1) The preparing, approving, or failing to prepare or approve, maps, drawings, opinions, reports, surveys, change orders, designs or specifications; or

(2) Supervisory, inspection or engineering services.

This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage", or the offense which caused the "personal and advertising injury", involved the rendering of or the failure to render any professional services.

10. Additional Insured- Employee Injury to Another Employee

With respect to your "employees" who occupy positions which are supervisory in nature:

Paragraph **2.a.(1)** of **SECTION II – WHO IS AN INSURED** is amended to read:

a. "Bodily injury" or "personal and advertising injury"

(1) To you, to your partners or members (if you are a partnership or joint venture), or to your members (if you are a limited liability company);

(2) For which there is any obligation to share damages with or repay someone else who must pay damages because of the injury described in paragraph **(1)(a)** above; or

(3) Arising out of his or her providing or failing to provide professional healthcare services. Paragraph **3.a.** is deleted.

For the purpose of this Item **10** only, a position is deemed to be supervisory in nature if that person performs principle work which is substantially different from that of his or her subordinates and has authority to hire, direct, discipline or discharge.

SECTION III - LIMITS OF INSURANCE

A. The following Items are deleted and replaced by the following:

2. The General Aggregate Limit is the most we will pay for the sum of:

a. Medical expenses under **Coverage C;**

b. Damages under **Coverage A,** except damages because of "bodily injury" or "property damage" included in the "products-completed operations hazard"; and

c. Damages under **Coverage B;** and

d. Damages under **Coverage H.**

3. The Products-Completed Operations Aggregate Limit is the most we will pay under **Coverage A** for damages because of "bodily injury" and "property damage" included in the "products-completed operations hazard" and **Coverage G.**

6. Subject to **5.** above, the Damage to Premises Rented to You Limit is the most we will pay under **Coverage A** for damages because of "property damage" to any one premises, while rented to you, or in the case of damage by fire, explosion, lightning, smoke resulting from such fire, explosion, or lightning or sprinkler leakage while rented to you or temporarily occupied by you with permission of the owner.

B. The following are added:

8. Subject to Paragraph **5.** of **SECTION III – LIMITS OF INSURANCE** $25,000 is the most we will pay under **Coverage H** for **Water Damage Legal Liability.**

Coverage G - Product Recall Expense

9. Aggregate Limit $50,000

Each Product Recall Limit $25,000

a. The Aggregate Limit shown above is the most we will pay for the sum of all "product recall expense" you incur as a result of all "product recalls" you initiate during the endorsement period.

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b. The Each Product Recall Limit shown above is the most we will pay, subject to the Aggregate and $1,000 deductible, for "product recall expense" you incur for any one "product recall" you initiate during the endorsement period.

We will only pay for the amount of "product recall expenses" which are in excess of the deductible amount. The deductible applies separately to each "product recall". The limits of insurance will not be reduced by the amount of this deductible.

We may, or will if required by law, pay all or any part of any deductible amount. Upon notice of our payment of a deductible amount, you shall promptly reimburse us for the part of the deductible amount we paid.

10. **Aggregate Limits of Insurance (Per Location)**

The General Aggregate Limit applies separately to each of your "locations" owned by or rented to you or temporarily occupied by you with the permission of the owner.

"Location" means premises involving the same or connecting lots, or premises whose connection is interrupted only by a street, roadway, waterway or right-of-way of a railroad.

11. **Aggregate Limits of Insurance (Per Project)**

The General Aggregate Limit applies separately to each of your projects away from premises owned by or rented to you.

12. With respects to the insurance afforded to additional insureds afforded coverage by items **5** through **10** of **SECTION II – WHO IS AN INSURED** above, the following is added:

The most we will pay on behalf of the additional insured is the amount of insurance:

a. Required by the contract or agreement;

b. Available under the applicable Limits of Insurance shown in the Declarations;

Whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

13 Subject to **5.** of **SECTION III – LIMITS OF INSURANCE**, a $5,000 "occurrence" limit and a $10,000 "aggregate" limit is the most we will pay under Coverage **A** for damages because of "property damage" covered under **Coverage D - Voluntary Property Damage Coverage**.

For the purposes of this Voluntary Property Damage Coverage, our right and duty to defend ends when we have paid the Limit of Liability or the Aggregate Limit for each coverage, and we are granted discretion in making payments under this coverage.

14. Subject to **5.** of **SECTION III – LIMITS OF INSURANCE**, a $25,000 "occurrence" limit and a $100,000 "aggregate" limit is the most we will pay under **Coverage E - Care, Custody and Control Coverage** regardless of the number of:

a. Insureds;

b. Claims made or "suits" brought; or

c. Persons or organizations making claims or bringing "suits".

Deductible - Our obligation to pay damages on your behalf applies only to the amount of damages in excess of $500.

This deductible applies to all damages because of "property damage" as the result of any one "occurrence" regardless of the number of persons or organizations who sustain damages because of that "occurrence".

We may pay any part or all of the deductible amount to effect settlement of any claim or "suit" and upon notification of the action taken, you shall promptly reimburse us for such part of the deductible amount as has been paid by us.

As respects this coverage "aggregate" is the maximum amount we will pay for all covered "occurrences" during one policy period.

For the purposes of this Care, Custody and Control Property Damage Coverage, our right and duty to defend ends when we have paid the Limit of Liability or the Aggregate Limit for each coverage, and we are granted discretion in making payments under this coverage.

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15. Subject to **5.** of **SECTION III – LIMITS OF INSURANCE**, the most we will pay for "property damage" under **Coverage F - Electronic Data Liability Coverage** for loss of "electronic data" is $50,000 without regard to the number of "occurrences".

SECTION IV - COMMERCIAL GENERAL LIABILITY CONDITIONS

A. The following conditions are amended:

1. Knowledge of Occurrence

a. Condition **2.**, Items **a.** and **b.** are deleted and replaced by the following:

(1) Duties In The Event Of Occurrence, Offense, Claim Or Suit

(a) You must see to it that we are notified as soon as practicable of an "occurrence" or an offense which may result in a claim. Knowledge of an "occurrence" by your agent, servant or employee shall not in itself constitute knowledge of the named insured unless an officer of the named insured has received such notice from the agent, servant or employee. To the extent possible, notice should include:

i. How, when and where the "occurrence" took place;

ii. The names and addresses of any injured persons and witnesses, and

iii. The nature and location of any injury or damage arising out of the "occurrence" or offense.

(b) If a claim is made or "suit" is brought against any insured, you must:

i. Immediately record the specifics of the claim or "suit" and the date received; and

ii. Notify us as soon as practicable.

You must see to it that we receive written notice of the claim or "suit" as soon as practicable. Knowledge of a claim or "suit" by your agent, servant or employee shall not in itself constitute knowledge of the named insured unless an officer of the named insured has received such notice from the agent, servant or employee.

2. Where **Broad Form Named Insured** is added in **SECTION II – WHO IS AN INSURED** of this endorsement, Condition **4. Other Insurance b. Excess Insurance (1).(a)** is replaced by the following:

(a) Any of the other insurance, whether primary, excess, contingent or on any other basis, that is available to an insured solely by reason of ownership by you of more than 50 percent of the voting stock, and not withstanding any other language in any other policy. This provision does not apply to a policy written to apply specifically in excess of this policy.

B. The following are added:

10. Condition **(5) of 2. "Duties in the event Occurrence, Offense, Claim or Suit" c.** You or any other involved insured must:

(5) Upon our request, replace or repair the property covered under **Voluntary Property Damage Coverage** at your actual cost, excluding profit or overhead.

11. Blanket Waiver Of Subrogation

We waive any right of recovery we may have against any person or organization because of payments we make for injury or damage arising out of: premises owned or occupied by or rented or loaned to you, ongoing operations performed by you or on your behalf, done under a contract with that person or organization, "your work", or "your products". We waive this right where you have agreed to do so as part of a written contract, executed by you before the "bodily injury" or "property damage" occurs or the "personal and advertising injury" offense is committed.

12. Liberalization

If a revision to this Coverage Part, which would provide more coverage with no additional premium becomes effective during the policy period in the state designated for the first Named Insured shown in the Declarations, your policy will automatically provide this additional coverage on the effective date of the revision.

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13. **Unintentional Failure to Disclose All Hazards**

Based on our reliance on your representations as to existing hazards, if you unintentionally should fail to disclose all such hazards at the inception date of your policy, we will not deny coverage under this Coverage Part because of such failure. However, this provision does not affect our right to collect additional premium or exercise our right of cancellation or non-renewal.

14. The following conditions are added in regard to **Coverage G - Product Recall Expense**

In event of a "product recall", you must

a. See to it that we are notified as soon as practicable of a "product recall". To the extent possible, notice should include how, when and where the "product recall" took place and estimated "product recall expense".

b. Take all reasonable steps to minimize "product recall expense". This will not increase the limits of insurance.

c. If requested, permit us to question you under oath at such times as may be reasonably required about any matter relating to this insurance or your claim, including your books and records. Your answers must be signed.

d. Permit us to inspect and obtain other information proving the loss. You must send us a signed, sworn statement of loss containing the information we request to investigate the claim. You must do this within 60 days after our request.

e. Cooperate with us in the investigation or settlement of any claim.

f. Assist us upon our request, in the enforcement of any rights against any person or organization which may be liable to you because of loss to which this insurance applies.

SECTION V – DEFINITIONS

A. At item 12. "Mobile equipment" the wording at **f.(1)** is deleted and replaced by the following:

f.(1) Equipment designed primarily for:

(a) Snow removal;

(b) Road maintenance, but not construction or resurfacing; or

(c) Street cleaning;

except for such vehicles that have a gross vehicle weight less than 1,000 lbs which are not designed for highway use.

B. Item 3. "bodily injury" is deleted and replaced with the following:

3. "Bodily injury" means physical injury, sickness or disease sustained by a person. This includes mental anguish, mental injury, shock, fright or death that results from such physical injury, sickness or disease.

C. The following definitions are added for this endorsement only:

23. "Electronic data" means information, facts or programs stored as or on, created or used on, or transmitted to or from computer software, including systems and applications software, hard or floppy disks, CD-ROMS, tape drives, cells, data processing devices or any other media which are used with electronically controlled equipment.

24. "Product recall" means a withdrawal or removal from the market of "your product" based on the determination by you or any regulatory or governmental agency that:

a. The use or consumption of "your product" has caused or will cause actual or alleged "bodily injury" or "property damage"; and

b. Such determination requires you to recover possession or control of "your product" from any distributor, purchaser or user, to repair or replace "your product", but only if "your product" is unfit for use or consumption, or is hazardous as a result of:

(1) An error or omission by an insured in the design, manufacturing, processing, labeling, storage, or transportation of "your product"; or

(2) Actual or alleged intentional, malicious or wrongful alteration or contamination of "your product" by someone other than you.

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25. "Product recall expense" means reasonable and necessary expenses for:
    a. Telephone, radio and television communication and printed advertisements, including stationery, envelopes and postage.
    b. Transporting recalled products from any purchaser, distributor or user, to locations designated by you.
    c. Remuneration paid to your employees for overtime, as well as remuneration paid to additional employees or independent contractors you hire.
    d. Transportation and accommodation expense incurred by your employees.
    e. Rental expense incurred for temporary locations used to store recalled products.
    f. Expense incurred to properly dispose of recalled products, including packaging that cannot be reused.
    g. Transportation expenses incurred to replace recalled products.
    h. Repairing, redistributing or replacing covered recalled products with like products or substitutes, not to exceed your original cost of manufacturing, processing, acquisition and/or distribution.

    These expenses must be incurred as a result of a "product recall".

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CERTIFICATE OF LIABILITY INSURANCE

Acct#: 2937459

DATE (MM/DD/YYYY): 8/25/2025

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 USI Insurance Services, LLC 2502 N Rocky Point Drive Tampa, FL 33607	**CONTACT NAME:** **PHONE (A/C, No, Ext):** 844-290-4908 **FAX (A/C, No):** **E-MAIL ADDRESS:** bbsicerts@locktonaffinity.com
INSURED **HARRIS DEVELOPMENT CORP DBA: HBC ENTERPRISES** **2743 E SHAW AVE # 103,** **FRESNO, CA 93710**	**INSURER(S) AFFORDING COVERAGE** / **NAIC #** **INSURER A :** Ace American Insurance Company / 22667 **INSURER B :** **INSURER C :** **INSURER D :** **INSURER E :** **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	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	$
	OTHER:							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
								$
	UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A	X	C58898429	5/1/2025	5/1/2026	X PER STATUTE ☐ OTH-ER	
							E.L. EACH ACCIDENT	$ 2,000,000
							E.L. DISEASE - EA EMPLOYEE	$ 2,000,000
							E.L. DISEASE - POLICY LIMIT	$ 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Policy State = CA

Waiver of Subrogation in favor of certificate holder when required by written contract

Project Name and Location: Kearney Park Improvements | Contract No. 25-04-PR | 6725 Kearney Blvd Fresno, CA 93706

County of Fresno, its officers, agents, and employees, individually and collectively

CERTIFICATE HOLDER

County Of Fresno Department Of Public Works And Planning Design Division
2220 Tulare St 6th Floor
Fresno, CA 93721

CANCELLATION

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

Lisa Abernathy

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Workers' Compensation and Employers' Liability Policy

Named Insured	Endorsement Number
HARRIS DEVELOPMENT CORP DBA: HBC ENTERPRISES 2743 E SHAW AVE # 103, FRESNO, CA 93710	Policy Number Symbol: WLR Number: C58898429
Policy Period 5/1/2025 TO 5/1/2026	Effective Date of Endorsement 8/25/2025

Issued By (Name of the Insurance Company)
Ace American Insurance Company

Insert the policy number. The remainder of the information is to be completed only when this endorsement is issued subsequent to the preparation of the policy. This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

CALIFORNIA WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

This endorsement applies only to the insurance provided by the policy because California is shown in Item 3.A. of the Information Page.

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, but this waiver applies only with respect to bodily injury arising out of the operations described in the Schedule, where you are required by a written contract to obtain this waiver from us.

You must maintain payroll records accurately segregating the remuneration of your employees while engaged in the work described in the Schedule.

Schedule

1. ( ) Specific Waiver
   Name of person or organization:

   (X) Blanket Waiver
   Any person or organization for whom the Named Insured has agreed by written contract to furnish this waiver.

2. Operations:
   ALL CALIFORNIA OPERATIONS

3. Premium:
   The premium charge for this endorsement shall be 1.0 percent of the California premium developed on payroll in connection with work performed for the above person(s) or organization(s) arising out of the operations described.

4. Minimum Premium: $0

Patti D. Stamer
Authorized Agent

WC 90 03 75 (05/18)

PAYMENT BOND - PUBLIC WORK
SECTIONS 3247 - 3252, CIVIL CODE
(CALIFORNIA)

SURETY COMPANY
United Fire & Casualty Company
118 Second Ave SE
Cedar Rapids, IA 52401
Bond No. 54-263233
Premium: Included on Performance Bond
Executed Original 2 of 3

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, The County of Fresno has awarded to Harris Development Corp HBC Enterprises.

as Contractor, a contract for the work described as follows: Kearney Park Improvements Contract No. 25-04-PR.

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 $*, 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.
* Two Million Four Hundred Ninety- Nine Thousand Eight Hundred Twenty-Nine Dollars and 80/100 ($2,499,829.80)
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 25th day of August, 2025.

Harris Development Corp DBA HBC Enterprises

2743 E Shaw Ave Suite 103 Fresno, CA 93710

Contractor

United Fire & Casualty Company
118 Second Ave SE Cedar Rapids, IA 52401

SURETY COMPANY

By Angelina B. Alvarez
Angelina B Alvarez Attorney In Fact

S-2061-B (07-97)

UNITED FIRE & CASUALTY COMPANY, CEDAR RAPIDS, IA
UNITED FIRE & INDEMNITY COMPANY, WEBSTER, TX
FINANCIAL PACIFIC INSURANCE COMPANY, LOS ANGELES, CA
CERTIFIED COPY OF POWER OF ATTORNEY
(original on file at Home Office of Company – See Certification)

Inquiries: Surety Department
118 Second Ave SE
Cedar Rapids, IA 52401

KNOW ALL PERSONS BY THESE PRESENTS, That United Fire & Casualty Company, a corporation duly organized and existing under the laws of the State of Iowa; United Fire & Indemnity Company, a corporation duly organized and existing under the laws of the State of Texas; and Financial Pacific Insurance Company, a corporation duly organized and existing under the laws of the State of California (herein collectively called the Companies), and having their corporate headquarters in Cedar Rapids, State of Iowa, does make, constitute and appoint

JENNIFER WHEELER, LORI L. ENDSLEY, RONALD D. OSBORN, ANGELINA B. ALVAREZ, SHELLY RECEK, KEVIN FROST, NANCY LYNN STERN, EACH INDIVIDUALLY

their true and lawful Attorney(s)-in-Fact with power and authority hereby conferred to sign, seal and execute in its behalf all lawful bonds, undertakings and other obligatory instruments of similar nature provided that no single obligation shall exceed $10,000,000.00 and to bind the Companies thereby as fully and to the same extent as if such instruments were signed by the duly authorized officers of the Companies and all of the acts of said Attorney, pursuant to the authority hereby given and hereby ratified and confirmed.

The Authority hereby granted shall expire the 19th day of August, 2027 unless sooner revoked by United Fire & Casualty Company, United Fire & Indemnity Company, and Financial Pacific Insurance Company.

This Power of Attorney is made and executed pursuant to and by authority of the following bylaw duly adopted by the Boards of Directors of United Fire & Casualty Company, United Fire & Indemnity Company, and Financial Pacific Insurance Company.

"Article VI – Surety Bonds and Undertakings"

Section 2, Appointment of Attorney-in-Fact. "The President or any Vice President, or any other officer of the Companies may, from time to time, appoint by written certificates attorneys-in-fact to act in behalf of the Companies in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. The signature of any officer authorized hereby, and the Corporate seal, may be affixed by facsimile to any power of attorney or special power of attorney or certification of either authorized hereby; such signature and seal, when so used, being adopted by the Companies as the original signature of such officer and the original seal of the Companies, to be valid and binding upon the Companies with the same force and effect as though manually affixed. Such attorneys-in-fact, subject to the limitations set of forth in their respective certificates of authority shall have full power to bind the Companies by their signature and execution of any such instruments and to attach the seal the Companies thereto. The President or any Vice President, the Board of Directors or any other officer of the Companies may at any time revoke all power and authority previously given to any attorney-in-fact.

IN WITNESS WHEREOF, the COMPANIES have each caused these presents to be signed by its vice president and its corporate seal to be hereto affixed this 19th day of August, 2025

UNITED FIRE & CASUALTY COMPANY
UNITED FIRE & INDEMNITY COMPANY
FINANCIAL PACIFIC INSURANCE COMPANY

By: Kyanna M. Saylor
Vice President

State of Iowa, County of Linn, ss:

On 19th day of August, 2025, before me personally came Kyanna M. Saylor to me known, who being by me duly sworn, did depose and say; that she resides in Cedar Rapids, State of Iowa; that she is a Vice President of United Fire & Casualty Company, a Vice President of United Fire & Indemnity Company, and a Vice President of Financial Pacific Insurance Company the corporations described in and which executed the above instrument; that she knows the seal of said corporations; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporations and that she signed her name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporations.

Judith A. Jones
Iowa Notarial Seal
Commission number 173041
My Commission Expires 04/23/2027

Judith A. Jones
Notary Public
My commission expires: 04/23/2027

I, Mary A. Bertsch, Assistant Secretary of United Fire & Casualty Company and Assistant Secretary of United Fire & Indemnity Company, and Assistant Secretary of Financial Pacific Insurance Company, do hereby certify that I have compared the foregoing copy of the Power of Attorney and affidavit, and the copy of the Section of the bylaws and resolutions of said Corporations as set forth in said Power of Attorney, with the ORIGINALS ON FILE IN THE HOME OFFICE OF SAID CORPORATIONS, and that the same are correct transcripts thereof, and of the whole of the said originals, and that the said Power of Attorney has not been revoked and is now in full force and effect.

In testimony whereof I have hereunto subscribed my name and affixed the corporate seal of the said Corporations this 25th day of August, 2025.

By: Mary A. Bertsch
Assistant Secretary,
UF&C & UF&I & FPIC

CALIFORNIA ACKNOWLEDGMENT CIVIL CODE § 1189

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 08/25/2025 before me, C Heath, notary public,
Date *Here Insert Name and Title of the Officer*

personally appeared Angelina R. Alvarez,
Name(s) of Signer(s)

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.

C. HEATH
Notary Public - California
Fresno County
Commission # 2507576
My Comm. Expires Dec 21, 2028

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 C Heath
Signature of Notary Public

Place Notary Seal and/or Stamp Above

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: Payment Bond

Document Date: 08/25/2025 Number of Pages: 32

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Angelina B. Alvarez	Signer's Name: _____
☐ Corporate Officer – Title(s): _____	☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General	☐ Partner – ☐ Limited ☐ General
☐ Individual ☑ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other: _____	☐ Other: _____
Signer is Representing: _____	Signer is Representing: _____

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Bond No. 54-263233
Premium: $28,498.00

Document A312™ – 2010

Conforms with The American Institute of Architects AIA Document 312

Performance Bond

CONTRACTOR:
(Name, legal status and address)
Harris Development Corp
DBA: HBC Enterprises
2743 E Shaw Ave Suite 103
Fresno, CA 93710

SURETY:
(Name, legal status and principal place of business)
United Fire & Casualty Company

Mailing Address for Notices
Inquiries: Surety Department
118 Second Ave SE
Cedar Rapids, IA 52401

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 6th Floor
Fresno, CA 93721

CONSTRUCTION CONTRACT
Date: August 21, 2025

Amount: $ Two Million Four Hundred Ninety-Nine Thousand Eight Hundred Twenty-Nine Dollars and 80/100
$2,499,829.80

Description:
(Name and location)
Kearney Park
6725 Kearney Blvd,
Fresno, CA 93706

Kearney Park Improvements Contract No. 25-04-PR: Park Improvement, installation of county-furnished pre- fabricated restroom, play structure, installing additional lighting throughout park, miscellaneous work such as clearing and grubbing, grading, parking lot stripping, installation of speed bumps

BOND 54-263233
Date: August 25th, 2025

(Not earlier than Construction Contract Date)

Amount: $ Two Million Four Hundred Ninety-Nine Thousand Eight Hundred Twenty-Nine Dollars and 80/100
$2,499,829.80

Modifications to this Bond: [X] None [ ] See Section 16

CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*
Harris Development Corp DBA: HBC Enterprises
2743 E Shaw Ave Suite 103
Fresno, CA 93710

Signature: _____

Name Rob Harris
and Title: President

SURETY

Company: *(Corporate Seal)*
United Fire & Casualty Company
118 Second Ave SE
Cedar Rapids, IA 52401

Signature: Angela B. Alvarez

Name
and Title: Attorney-in-Fact
Angelina B Alvarez 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:

HUB International Insurance Services
548 W Cromwell Ave Suite 101
Fresno, CA 93711

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)
Department of Construction Division
Oleg Savelyev
2220 Tulare Street Sixth Floor
Fresno, CA 93721

§ 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 N/A		SURETY N/A	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature: _____		Signature: _____	
Name and Title:		Name and Title:	
Address		Address	

UNITED FIRE & CASUALTY COMPANY, CEDAR RAPIDS, IA
UNITED FIRE & INDEMNITY COMPANY, WEBSTER, TX
FINANCIAL PACIFIC INSURANCE COMPANY, LOS ANGELES, CA
CERTIFIED COPY OF POWER OF ATTORNEY
(original on file at Home Office of Company – See Certification)

Inquiries: Surety Department
118 Second Ave SE
Cedar Rapids, IA 52401

KNOW ALL PERSONS BY THESE PRESENTS, That United Fire & Casualty Company, a corporation duly organized and existing under the laws of the State of Iowa; United Fire & Indemnity Company, a corporation duly organized and existing under the laws of the State of Texas; and Financial Pacific Insurance Company, a corporation duly organized and existing under the laws of the State of California (herein collectively called the Companies), and having their corporate headquarters in Cedar Rapids, State of Iowa, does make, constitute and appoint

JENNIFER WHEELER, LORI L. ENDSLEY, RONALD D. OSBORN, ANGELINA B. ALVAREZ, SHELLY RECEK, KEVIN FROST, NANCY LYNN STERN, EACH INDIVIDUALLY

their true and lawful Attorney(s)-in-Fact with power and authority hereby conferred to sign, seal and execute in its behalf all lawful bonds, undertakings and other obligatory instruments of similar nature provided that no single obligation shall exceed $10,000,000.00 and to bind the Companies thereby as fully and to the same extent as if such instruments were signed by the duly authorized officers of the Companies and all of the acts of said Attorney, pursuant to the authority hereby given and hereby ratified and confirmed.

The Authority hereby granted shall expire the 19th day of August, 2027 unless sooner revoked by United Fire & Casualty Company, United Fire & Indemnity Company, and Financial Pacific Insurance Company.

This Power of Attorney is made and executed pursuant to and by authority of the following bylaw duly adopted by the Boards of Directors of United Fire & Casualty Company, United Fire & Indemnity Company, and Financial Pacific Insurance Company.

"Article VI – Surety Bonds and Undertakings"

Section 2, Appointment of Attorney-in-Fact. "The President or any Vice President, or any other officer of the Companies may, from time to time, appoint by written certificates attorneys-in-fact to act in behalf of the Companies in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. The signature of any officer authorized hereby, and the Corporate seal, may be affixed by facsimile to any power of attorney or special power of attorney or certification of either authorized hereby; such signature and seal, when so used, being adopted by the Companies as the original signature of such officer and the original seal of the Companies, to be valid and binding upon the Companies with the same force and effect as though manually affixed. Such attorneys-in-fact, subject to the limitations set of forth in their respective certificates of authority shall have full power to bind the Companies by their signature and execution of any such instruments and to attach the seal the Companies thereto. The President or any Vice President, the Board of Directors or any other officer of the Companies may at any time revoke all power and authority previously given to any attorney-in-fact.

IN WITNESS WHEREOF, the COMPANIES have each caused these presents to be signed by its vice president and its corporate seal to be hereto affixed this 19th day of August, 2025

UNITED FIRE & CASUALTY COMPANY
UNITED FIRE & INDEMNITY COMPANY
FINANCIAL PACIFIC INSURANCE COMPANY

By: Kyanna M. Saylor
Vice President

State of Iowa, County of Linn, ss:

On 19th day of August, 2025, before me personally came Kyanna M. Saylor to me known, who being by me duly sworn, did depose and say; that she resides in Cedar Rapids, State of Iowa; that she is a Vice President of United Fire & Casualty Company, a Vice President of United Fire & Indemnity Company, and a Vice President of Financial Pacific Insurance Company the corporations described in and which executed the above instrument; that she knows the seal of said corporations; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporations and that she signed her name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporations.

Judith A. Jones
Iowa Notarial Seal
Commission number 173041
My Commission Expires 04/23/2027

Judith A. Jones
Notary Public
My commission expires: 04/23/2027

I, Mary A. Bertsch, Assistant Secretary of United Fire & Casualty Company and Assistant Secretary of United Fire & Indemnity Company, and Assistant Secretary of Financial Pacific Insurance Company, do hereby certify that I have compared the foregoing copy of the Power of Attorney and affidavit, and the copy of the Section of the bylaws and resolutions of said Corporations as set forth in said Power of Attorney, with the ORIGINALS ON FILE IN THE HOME OFFICE OF SAID CORPORATIONS, and that the same are correct transcripts thereof, and of the whole of the said originals, and that the said Power of Attorney has not been revoked and is now in full force and effect.

In testimony whereof I have hereunto subscribed my name and affixed the corporate seal of the said Corporations this 25th day of August, 2025.

By: Mary A. Bertsch
Assistant Secretary,
UF&C & UF&I & FPIC

CALIFORNIA ACKNOWLEDGMENT CIVIL CODE § 1189

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 08/25/2025 (Date) before me, C Heath, Notary public (Here Insert Name and Title of the Officer),

personally appeared Angelina B. Alvarez (Name(s) of Signer(s)),

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.

C. HEATH
Notary Public - California
Fresno County
Commission # 2507576
My Comm. Expires Dec 21, 2028

Place Notary Seal and/or Stamp Above

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 _____
Signature of Notary Public

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document
Title or Type of Document: Performance Bond
Document Date: 08/25/2025 Number of Pages: 60
Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Angelina B. Alvarez	Signer's Name: _____
☐ Corporate Officer – Title(s): _____	☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General	☐ Partner – ☐ Limited ☐ General
☐ Individual ☑ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other: _____	☐ Other: _____
Signer is Representing: _____	Signer is Representing: _____

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