

CONTRACT DOCUMENTS SPECIFICATIONS AND STANDARD DRAWINGS

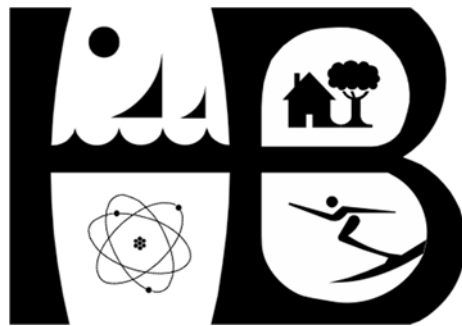
for the construction of

## **LeBARD PARK IMPROVEMENTS**

**CC No. 1668**

in the

**C I T Y   O F   H U N T I N G T O N   B E A C H**



**2000 MAIN STREET  
HUNTINGTON BEACH, CALIFORNIA 92648  
(714) 536-5431**

**BIDS ELECTRONICALLY DUE:**

**XXXX XX, 2022**

**NO LATER THAN 2:00 PM**

**SEAN CRUMBY, DIRECTOR  
DEPARTMENT OF PUBLIC WORKS**

**CITY OF HUNTINGTON BEACH**

**PLANS, SPECIFICATIONS, AND CONTRACT DOCUMENTS**

for the construction of

**LeBARD PARK IMPROVEMENTS**

**CC No. 1668**

**Prepared Under the Supervision of:**

---

**Terry Matthew Evans, Architect, No. C33095**

**Date**

**Approved by:**

---

**Thomas M. Herbel, P.E., City Engineer, No. 53300**

**Date**

**NOTE:** *If there are any questions relative to this project, please call **Brian Polivka** at:  
[brian.polivka@surfcity-hb.org](mailto:brian.polivka@surfcity-hb.org)*

**CITY OF HUNTINGTON BEACH  
DEPARTMENT OF PUBLIC WORKS  
2000 MAIN STREET  
HUNTINGTON BEACH, CALIFORNIA 92648  
(714) 536-5431**

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# SECTION A

## NOTICE INVITING ELECTRONIC BIDS

for the construction of

### LeBARD PARK IMPROVEMENTS

CC No. 1668

in the

### CITY OF HUNTINGTON BEACH

**PUBLIC NOTICE IS HEREBY GIVEN** that the **CITY OF HUNTINGTON BEACH**, as AGENCY, invites electronic bids for the above stated project and will receive such bids prior to **2:00 PM on DAY, MONTH DATE, 2022**, on the City's Planet Bids System Vendor Portal, at which time or thereafter bids will be opened and made available online. Bids received after this time will be considered non-responsive. Prospective bidders must first register as a vendor and then bid on this project via the City's Planet Bids System Vendor Portal website at:  
<https://www.planetbids.com/portal/portal.cfm?CompanyID=15340>

Copies of the bid documents, including instructions to bidders, bidder proposal form, and specifications may be downloaded free at:  
<https://www.planetbids.com/portal/portal.cfm?CompanyID=15340>. Bidders must first register as a vendor on the City of Huntington Beach Planet Bids system to view and download the Contract Documents, to be added to the prospective bidders list, and to receive addendum notifications when issued.

Any contract entered into pursuant to this notice will incorporate the provisions of the State Labor Code. Pursuant to the provisions of the Labor Code of the State of California, the minimum prevailing rate of per diem wages for each craft, classification or type of workman needed to execute the contract shall be those determined by the Director of Industrial Relations of the State of California, which are available online at [www.dir.ca.gov/DLSR](http://www.dir.ca.gov/DLSR) and also on file at the Office of the Director of Public Works, 2000 Main Street, Huntington Beach, CA 92648.

The AGENCY will deduct 5% retention from all progress payments. The Contractor may substitute an escrow holder surety of equal value to the retention in accordance with the provisions of the Public Contract Code, Section 10263. The Contractor shall be beneficial owner of the surety and shall receive any interest thereon.

The AGENCY hereby affirmatively ensures that minority business enterprises will be afforded full opportunity to submit bids in response to this notice and will not be discriminated against on the basis of race, color, national origin, ancestry, sex, or religion in any consideration leading to the award of contract.

No bid shall be considered unless it is prepared on the approved Proposal forms in conformance with the Instructions to Bidders as determined by the AGENCY. The bid must be accompanied by a

certified check, cashier's check, or bidder's bond made payable to the AGENCY for an amount no less than 10% of the amount bid. For electronic submittal of bids, the bid security must be received at the City of Huntington Beach Public Works Office, 2000 Main Street, no later than the bid opening date and time. The bid security must be submitted in a sealed envelope bearing the name and address of the bidder, and the outside of the envelope must read as follows:

**OFFICIAL BID SECURITY - DO NOT OPEN**

**Project Name: LeBard Park Improvements**

**CC #: 1668**

**Bid Opening Date: MONTH DATE, 2022 at 2:00 PM.**

The successful bidder shall be licensed in accordance with provisions of the Business and Professions Code and shall possess a State Contractor's License Class A and B, at the time of the bid opening.

The successful Contractor and his subcontractors will be required to possess business licenses from the AGENCY. All extension of unit prices will be subject to verification by the AGENCY. In case of a variation between the unit price and the extension, the unit price will govern.

**Project Description:**

Removal of existing tennis court pavement and installation of new post-tension concrete court. Installation of new tennis court post and nets, wind screens, surfacing, striping, chain link gates, painting existing chain link fence and installation of benches. Demolition of existing clubhouse and installing new concrete patio with picnic tables and trash receptacles. Installation of new electrical pedestal box with new electrical panel, meter and irrigation controller. Installation of new electrical panel box at tennis courts. Removal of several existing trees and shrubs. Installation of new sod and landscaping. Installation of new lodge pole fencing.

The contract shall allow the Contractor **70** working days to complete the contract.

All questions related to this bid solicitation must be submitted through the City's Planet Bids System Vendor Portal per the information provided in the Instructions to Bidders. Any other contact to City staff regarding this bid solicitation will be referred back to the Planet Bids system.

The AGENCY reserves the right to reject any or all bids, to waive any irregularity and to take all bids under advisement for a maximum period of **60** days.

BY ORDER of the CITY COUNCIL of the CITY OF HUNTINGTON BEACH, CALIFORNIA, the **29th** day of June **2020**, by Resolution No. **2020-39**.

Attest:

/s/ Robin Estanislau  
CITY CLERK OF THE CITY OF HUNTINGTON BEACH

# **SECTION B**

## **INSTRUCTIONS TO BIDDERS**

### **1. Proposal Forms**

Contract documents may be downloaded, at no cost, from the City's Planet Bids System Vendor Portal website at: <https://www.planetbids.com/portal/portal.cfm?CompanyID=15340>. Bidders must first register as a vendor on the City of Huntington Beach Planet Bids system to view and download the Contract Documents, to be added to the prospective bidders list, and to receive addendum notifications when issued.

Bids will only be received electronically through the City's Planet Bids System Vendor Portal website at: <https://www.planetbids.com/portal/portal.cfm?CompanyID=15340>. Bids will not be accepted after the specified Bid Opening date and time. The bidder shall have the sole exclusive responsibility for ensuring that the bid is received by the specified bid opening date and time. For technical support with the electronic bidding system, please click the Help Center icon from any Planet Bids screen to be directed to the technical support help desk.

Electronic bids shall be submitted and uploaded on the Proposal forms provided by the AGENCY. All information requested therein must be clearly and legibly set forth in the manner and form indicated. The AGENCY may reject any proposal not meeting these requirements. Unauthorized conditions, limitations, or provisions attached to a proposal will render it informal and may cause its rejection. The complete proposal forms shall be without interlineations, alterations or erasures. Alternative proposals will not be considered unless requested. No oral, telegraphic, or telephonic proposals or modifications will be considered. Any bidder may personally withdraws his bid from the City's Planet Bids system prior to the bid opening date and time stated in the Notice Inviting Bids. Any request to withdraw a bid after bid opening shall meet all requirements of Public Contract Code section 5100 et seq. and must be submitted in writing within five (5) working days, excluding Saturdays, Sundays and State holidays, specifying in detail the mistake.

### **2. Proposal Guarantee**

Proposals must be accompanied by a proposal guarantee consisting of a certified or cashier's check or bid bond payable to the AGENCY in the amount not less than 10% of the total amount named in the proposal. Any proposal not accompanied by such a guarantee will not be considered. Said check or bond shall be made payable to the AGENCY, and shall be given as a guarantee that the bidder, if awarded the Work, will enter into a contract within 10 working days after the award and will furnish the necessary bonds as hereinafter provided. In the case of refusal or failure to enter into said contract, the check or bond, as the case may be, shall be forfeited to the AGENCY.

For electronic submittal of proposals, the certified cashier's check or bid bond (bid security), must be received at the City of Huntington Beach Public Works office, 2000 Main Street, Huntington Beach, CA 92648 no later than the bid opening date and time. The bid security must be submitted in a sealed envelope bearing the name and address of the bidder, and the outside envelope must read as follows:

**OFFICIAL BID SECURITY - DO NOT OPEN**

**Project Name: LeBard Park Improvements**

**CC #: 1668**

**Bid Opening Date: MONTH DATE, 2022 at 2:00 PM.**

### **3. Proposal Signature**

If the proposal is made by an individual, it shall be signed and his full name with his address shall be given; if it is made by a firm, it shall be signed with the co partnership name by a member of the firm who shall sign his own name and the name and address of each member shall be given; and if it is made by a corporation, the name of the corporation shall be signed by its duly authorized officer or officers attested by the corporate seal, and the names and titles of all officers of the corporation shall be given.

### **4. Delivery Of Proposal**

Bids will only be received electronically through the City's Planet Bids System Vendor Portal website at: <https://www.planetbids.com/portal/portal.cfm?CompanyID=15340>. Bids will not be accepted after the specified Bid Opening date and time. The bidder shall have the sole exclusive responsibility for ensuring that the bid is received by the specified bid opening date and time. For technical support with the electronic bidding system, please click the Help Center icon from any Planet Bids screen to be directed to the technical support help desk.

Any bidder may personally withdraws his bid from the City's Planet Bids system prior to the bid opening date and time stated in the Notice Inviting Bids. Any request to withdraw a bid after bid opening shall meet all requirements of Public Contract Code section 5100 et seq. and must be submitted in writing within five (5) working days, excluding Saturdays, Sundays and State holidays, specifying in detail the mistake.

### **5. Return Of Proposal Guarantees**

The proposal guarantees of the second and third lowest bidders will be held until the awarded bidder has properly executed all contract documents. Within 10 working days after the award of contract, the remaining proposal guarantees accompanying all other proposals will become null and void and returned to the unsuccessful bidders.

### **6. Taxes**

No mention shall be made in the proposal of Sales Tax, Use Tax or any other tax, as all amounts bid will be deemed and held to include any such taxes which may be applicable.

### **7. Disqualification Of Bidders**

In the event that any bidder acting as a prime contractor has an interest in more than one proposal, all such proposals will be rejected and the bidder will be disqualified. This restriction does not apply to subcontractors or suppliers who may submit quotations to more than one bidder, and while doing so, may also submit a formal proposal as a prime contractor.

### **8. Contractor's License Requirement**

This project requires the Contractor to possess a valid State of California contractor's license of the



proper classification in accordance with the provisions of Public Contract Code Section 10164.

## **9. References**

All reference information called for in the bid proposal must be submitted with the bid proposal. Failure to provide reference information of history of similar work and experience with the bid proposal at the time of bid opening may lead to rejection of such proposal as non-responsive.

## **10. Listing Of Subcontractors**

Bidders shall list in the bid proposal the name and place of business of each subcontractor who will perform work or labor or render services for the Contractor in an amount in excess of one-half of one percent of the Contractor's total bid or \$10,000, whichever is greater.

## **11. Discrepancies And Misunderstandings**

Bidders must satisfy themselves by personal examination of the work site, plans, specifications and other contract documents, and by any other means as they may believe necessary, as to the actual physical conditions, requirements and difficulties under which the Work must be performed. No bidder shall at any time after submission of a proposal make any claim or assertion that there was any misunderstanding or lack of information regarding the nature or amount of work necessary for the satisfactory completion of the job. Should a bidder find any errors, omissions, or discrepancies in the plans, specifications, and other contract documents or should he be in doubt as to their meaning, he shall notify the AGENCY. Such notification must be submitted, if any, must be submitted no later than 2:00 PM on MONDAY, **MONTH DATE, 2022**. Any inquiries received after this deadline will not be accepted. Questions must be submitted electronically through the City's Planet Bids system. Emails, phone calls, and faxes will not be accepted. Questions submitted to City staff will not be addressed and bidder will be directed to the Planet Bids system.

If the City determines that the point in question is substantive and is not clearly and fully set forth in the Contract Documents, the City will issue a written addendum clarifying the matter which will be posted on the City's Planet Bids System Vendor Portal website at:

<https://www.planetbids.com/portal/portal.cfm?CompanyID=15340>. Any interpretation of the Contract Documents will be made only by written addenda on the City's Planet Bids system. City will not be responsible for any explanations or interpretations provided in any other manner. No person is authorized to make any oral interpretation of any provision in the Contract Documents to any bidder, and no bidder should rely on any such oral interpretation. Any addenda issued during the bidding period shall form a part of the contract and shall be included with the proposal.

## **12. Equivalent Materials**

Requests for the use of equivalents to those specified, must be submitted to the AGENCY 10 working days prior to the need of such materials unless otherwise specified in the Special Provisions. Within that time, the AGENCY will issue a written response indicating approval or disapproval of such request. It is the sole responsibility of the successful bidder to prove to the AGENCY that such a material is truly an equivalent.

## **13. Legal Responsibilities**

All proposals must be submitted, filed, made and executed in accordance with State and Federal laws relating to bids for contracts of this nature whether the same or expressly referred to herein or

not. Any bidder submitting a proposal shall by such action thereby agree to each and all of the terms, conditions, provisions and requirements set forth, contemplated and referred to in the Plans, Specifications and other contract documents, and to full compliance therewith. Additionally, any bidder submitting a proposal shall, by such action thereby, agree to pay at least the minimum prevailing per diem wages as provided in Section 1773, et. seq. of the labor code for each craft, classification or type of workman required as set forth by the Director of Industrial Relations of the State of California.

#### **14. Award Of Contract**

The award of contract, if made, will be to the lowest responsive and responsible bidder as determined solely by the AGENCY. The AGENCY reserves the right to reject any or all proposals, to waive any irregularity, and to take the bids under advisement for a maximum period of 60 days. In no event will an award be made until all necessary investigations are made to the responsibility and qualifications of the bidder to whom the award is contemplated.

#### **15. Material Guarantee**

The successful bidder may be required to furnish a written guarantee covering certain items of work for varying periods of time from the date of acceptance of the work by the AGENCY. The work to be guaranteed, the form, and the time limit of the guarantee will be specified in the special provisions. Said guarantee shall be signed and delivered to the AGENCY before acceptance of the contract by the AGENCY. Upon completion of the contract, the amounts of the two contract bonds required in Section 2-4, "CONTRACT BONDS," of the Standard Specifications for Public Works Construction, may be reduced to conform to the total amount of the contract bid prices for the items of work to guaranteed, and this amount shall continue in full force and effect for the duration of the guarantee period. However, the Labor and Material Bond can not be reduced until the expiration of 35 days after the date of recordation of the Notice of Completion.

#### **16. Execution Of Contract**

**The successful bidder shall execute a written contract with the AGENCY on the form of agreement provided, and shall secure all insurance and bonds required by the Specifications within 10 working days from the date of the award.** Failure to enter into a contract shall be just cause for the annulment of the award and the forfeiture of the proposal guarantee. If the successful bidder fails to execute the contract, the AGENCY may award the contract to the second lowest responsible bidder. If the second lowest responsible bidder fails to execute the contract, the AGENCY may award the contract to the third lowest bidder. On the failure of such second or third lowest responsible bidder to execute the contract, such bidder's guarantees shall be likewise forfeited to the AGENCY. The work may then be re-advertised.

#### **17. Submission Of Bonds And Insurance**

The successful bidder will be required to furnish the necessary bonds and insurance to the AGENCY within 10 working days from the award of contract. See **Appendix F** for the City approved Payment and Performance Bond Forms. The Contractor may use any standard form for the Bid Bond. The successful bidder shall provide a certificate stating that the bonding company is admitted to do business in the State of California. This certification may be obtained from the Executive Officer and Clerk of the Superior Court at the following address & phone:

Orange County Superior Court  
Probate Court Operations  
341 The City Drive  
P.O. Box 14171  
Orange, CA 92613-1571  
(714) 935-6061, Contact Linda C. Wallace

Prior to the issuance of the Notice to Proceed, the AGENCY must be furnished with a *Policy Endorsement*, from the successful bidder's insurance company, naming the AGENCY as an additional insured.

## **18. Addenda**

Substantive City changes to the requirements contained herein will be made by written addendum to this Invitation for Bids. Any written addenda issued pertaining to this Invitation for Bids will be posted on the City's Planet Bids System Vendor Portal website at: <https://www.planetbids.com/portal/portal.cfm?CompanyID=15340>, and will be incorporated into the terms and conditions of any resulting Purchase Order and/or Contract as appropriate. The City shall not be bound to any modifications to or deviations from the requirements set forth in this Instructions to Bidders as the result of oral instruction or communication.

The effect of all addenda to the contract documents shall be considered in the bid package and said addenda shall be made part of the contract documents and shall be returned with the bid package. Failure to submit any such addenda with the bid package may render the bid irregular and may result in its rejection by the AGENCY.

## **19. Bid Protest**

To be considered timely, a bid protest must be filed within the following time limits:

- (a) Protests based upon alleged defects or improprieties in the bid documents shall be filed prior to the date of bid opening.
- (b) All other protests must be filed within five calendar days after the protester knew or should have known the basis of the protest, but no later than five calendar days after the date of when the Bids were due to the AGENCY.

## **20. Questions to the Engineer**

Questions regarding the bid documents (i.e. plans, specifications, contract documents, bid forms, etc.) will be received by the Engineer up to five working days prior to the bid opening as specified in SECTION A. Questions asked of the Engineer after this time will not be addressed.

# **SECTION C**

## **PROPOSAL**

for the construction of

### **LeBARD PARK IMPROVEMENTS**

**CC No. 1668**

in the

### **CITY OF HUNTINGTON BEACH**

#### **TO THE HONORABLE MAYOR AND MEMBERS OF THE COUNCIL OF HUNTINGTON BEACH:**

In compliance with the Notice Inviting Electronic Bids, the undersigned hereby proposes and agrees to perform all the work therein described, and to furnish all labor, material, equipment and incident insurance necessary therefor, in accordance with the plans and specifications on file in the office of the City Engineer of the City of Huntington Beach. The undersigned agrees to perform the work therein to the satisfaction of and under the supervision of the City Engineer of the City of Huntington Beach, and to enter into a contract at the following prices. The undersigned agrees to complete the work within **70** working days, starting from the date of the Notice to Proceed.

BIDDER declares that this proposal is based upon careful examination of the work site, plans, specifications, Instructions to Bidders and all other contract documents. If this proposal is accepted for award, BIDDER agrees to enter into a contract with AGENCY at the unit and/or lump sum prices set forth in the following Bid Schedule. BIDDER understands that failure to enter into a contract in the manner and time prescribed will result in forfeiture to AGENCY of the guaranty accompanying this proposal.

BIDDER understands that a bid is required for the entire work, that the estimated quantities set forth in the Bid Schedule are solely for the purpose of comparing bids and that final compensation under the contract will be based upon the actual quantities of work satisfactorily completed. THE AGENCY RESERVES THE RIGHT TO DELETE ANY ITEM FROM THE CONTRACT. It is agreed that the unit and/or lump sum prices bid include all appurtenant expenses, taxes, royalties, fees, etc., and will be guaranteed for a period of sixty days from the bid opening date. If at such time the contract is not awarded, the AGENCY will reject all bids and will readvertise the project. In the case of discrepancies in the amounts bid, unit prices shall govern over extended amounts, and words shall govern over figures.

If awarded the Contract, the undersigned agrees that in the event of the BIDDER'S default in executing the required contract and filing the necessary bonds and insurance certificates within 10 working days after the date of the AGENCY'S notice of award of contract to the BIDDER, the proceeds of the security accompanying this bid shall become the property of the AGENCY and this bid and the acceptance hereof may, at the AGENCY'S option, be considered null and void.

Accompanying this proposal of bid, find \_\_\_\_\_ in the amount of \_\_\_\_\_ which said amount is not less than 10% of the aggregate of the total bid price, as required by the Notice Inviting ELECTRONIC Bids, payable to the AGENCY. (Please insert the words "Cash", "Certified Check", or "Bidder's Bond for \_\_\_% ", as the case may be) Any standard Surety Bid Bond form is acceptable.

Bidder shall signify receipt of all Addenda here, if any:

<i>Addenda No.</i>	<i>Date Received</i>	<i>Bidder's Signature</i>

## SECTION C

### PROJECT BID SCHEDULE A LeBard PARK IMPROVEMENTS CC1668

#### BASE BID ITEMS

Item No.	Description	Quantity	Unit	Unit Cost	Total Cost (Extension)
1	Mobilization, Overhead & Profit	1	LS	\$_____	\$ _____
	<b>Site Demolition</b>				
2	Miscellaneous Debris	1	LS	\$_____	\$ _____
3	Concrete Paving	370	SF	\$_____	\$ _____
4	Asphalt Tennis Court Paving including Hazmat	14,364	SF	\$_____	\$ _____
5	Building Demolition Including Hazmat	1,125	SF	\$_____	\$ _____
6	Concrete steps	115	SF	\$_____	\$ _____
7	Wood Deck and Steps	67	LF	\$_____	\$ _____
8	Turf and Shrubs	2,109	SF	\$_____	\$ _____
9	Building Site Utilities - Water/Sewer/Electrical	1	LS	\$_____	\$ _____
10	Tennis Court Gates and area of existing fencing for new gate	2	EA	\$_____	\$ _____
11	Tennis court bench	1	EA	\$_____	\$ _____
12	Tennis court lighting panel enclosure	1	EA	\$_____	\$ _____
13	Tennis Court Netting/ Posts/Windscreen	1	LS	\$_____	\$ _____
14	Wood Bollards	1	LS	\$_____	\$ _____
	<b>Earthwork</b>				
15	Fine Grading	20,477	SF	\$_____	\$ _____
	<b>Site Hardscape</b>				
16	4" Thick Concrete Pavement Broom Finish	216	SF	\$_____	\$ _____
17	18" Wide Concrete Banding	483	LF	\$_____	\$ _____
18	Tennis court Post Tension Slab	14,364	SF	\$_____	\$ _____
19	6" Mow Strip	133	LF	\$_____	\$ _____
	<b>Site Amenities</b>				
20	Tennis court Nets and Posts	2	SETS	\$_____	\$ _____

## SECTION C

### PROJECT BID SCHEDULE A LeBard PARK IMPROVEMENTS CC1668

Item No.	Description	Quantity	Unit	Unit Cost	Total Cost (Extension)
21	Tennis Court Surfacing/Striping	14,364	SF	\$_____	\$_____
22	Tennis Court Benches	4	EA	\$_____	\$_____
23	Tennis Court Wind Screen	484	LF	\$_____	\$_____
24	Hi-Lo Drinking Fountain and Sump	1	EA	\$_____	\$_____
25	Bike Rack	1	EA	\$_____	\$_____
26	Trash Receptacles	2	EA	\$_____	\$_____
	<b>Electrical</b>				
27	Tennis Court S.S. Electrical Panel Enclosure	1	EA	\$_____	\$_____
28	Electrical Meter Pedestal and Concrete Pad	1	EA	\$_____	\$_____
	<b>Fencing</b>				
29	84" Tennis Court Gates, Posts and Footings	4	EA	\$_____	\$_____
30	Remove and Reinstall Tennis Court Fencing Prime and Paint	5,808	SF	\$_____	\$_____
31	New C.L.F. at Tennis Courts Gates	1	Allow	\$_____	\$_____
	<b>Landscape</b>				
32	Soil Amendments	5,417	SF	\$_____	\$_____
33	5 Gal. Shrubs	113	EA	\$_____	\$_____
34	Sod	4,578	SF	\$_____	\$_____
35	2" Layer of Mulch	839	SF	\$_____	\$_____
	<b>Irrigation Modifications</b>				
36	Irrigation System	1	Allow	\$_____	\$_____
37	Irrigation Controller, Enclosure and Concrete Pad	1	EA	\$_____	\$_____
38	Adjustment Existing Irrigation Heads for Head to Head Coverage. Replace Rainbird 8005 heads, as required per City Representative. (58,293 s.f.)	36	EA	\$_____	\$_____

## SECTION C

### PROJECT BID SCHEDULE A LeBard PARK IMPROVEMENTS CC1668

Item No.	Description	Quantity	Unit	Unit Cost	Total Cost (Extension)
<b>TOTAL BID AMOUNT (BASIS OF AWARD) – SCHEDULE A</b>				\$ _____	

#### ADD ALTERNATE NO. 1

Item No.	Description	Quantity	Unit	Unit Cost	Total Cost (Extension)
1	Mobilization, Overhead & Profit	1	LS	\$ _____	\$ _____
	<b>Site Demolition</b>				
2	Trees	3	EA	\$ _____	\$ _____
	<b>Site Hardscape</b>				
3	4" Thick Concrete Paving Broom Finish	147	SF	\$ _____	\$ _____
4	4" Thick Concrete w/ Troweled Joints	352	SF	\$ _____	\$ _____
5	18" Wide Concrete Banding	90	LF	\$ _____	\$ _____
	<b>Site Amenities</b>				
6	Picnic Tables	2	EA	\$ _____	\$ _____
7	Trash Receptacles	3	EA	\$ _____	\$ _____
	<b>Landscape</b>				
8	Trees	2	EA	\$ _____	\$ _____
	<b>Irrigation</b>				
9	Irrigation System-Adjustment of Irrigation Heads and Pipe	7	EA	\$ _____	\$ _____
<b>TOTAL BID AMOUNT (BASIS OF AWARD) – SCHEDULE A</b>				\$ _____	

#### ADD ALTERNATE NO. 2

Item No.	Description	Quantity	Unit	Unit Cost	Total Cost (Extension)
----------	-------------	----------	------	-----------	------------------------



## SECTION C

### PROJECT BID SCHEDULE A LeBard PARK IMPROVEMENTS CC1668

1	Mobilization, Overhead & Profit	1	LS	\$ _____	\$ _____
	<b>Site Demolition</b>				
2	Wood Bollards	1	LS	\$ _____	\$ _____
	<b>Fencing</b>				
3	48" Lodge Pole Fencing	95	LF	\$ _____	\$ _____
<b>TOTAL BID AMOUNT (BASIS OF AWARD) – SCHEDULE A</b>				<b>\$ _____</b>	

TOTAL BID AMOUNT IN WORDS: (BASE BID ITEMS)

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---

TOTAL BID AMOUNT IN WORDS: (ADD ALTERNATE NO. 1)

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TOTAL BID AMOUNT IN WORDS: (ADD ALTERNATE NO. 2)

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Note: All extensions of unit prices will be subject to verification by Owner. In case verification is required between the unit price and the extension, the unit price will govern. The Owner reserves the right to reject any or all proposals and bid items.

# SECTION C

## PROJECT BID SCHEDULE

LeBard Park Improvements

CC-1668

### PROJECT BASIS OF AWARD:

LeBard Park Improvements

ITEM 1. Base Bid Items

\$ \_\_\_\_\_  
IN FIGURES

ITEM 2. Add Alternate # 1

\$ \_\_\_\_\_  
IN FIGURES

ITEM 3. Add Alternate # 2

\$ \_\_\_\_\_  
IN FIGURES

### BASE BID TOTAL AMOUNT LUMP SUM BID (TOTAL FOR ITEMS 1,2,3)

\$ \_\_\_\_\_  
BASIS OF AWARD    IN FIGURES

## LIST OF SUBCONTRACTORS

In accordance with Government Code Section 4104, the Bidder shall set forth the name and business address of each subcontractor who will perform work or render service to the bidder on said contract in an amount in excess of one-half of one percent of the total bid or \$10,000, whichever is greater, and the portion of the work to be done by such subcontractor.

<i><b>Bid Item(s)</b></i>	<i><b>Name and Address of Subcontractor</b></i>	<i><b>State License Number</b></i>	<i><b>Class</b></i>	<i><b>DIR PWC Registration #</b></i>	<i><b>Dollar Amount</b></i>	<i><b>% of Contract</b></i>

By submission of this proposal, the Bidder certifies:

1. That he is able to and will perform the balance of all work which is not covered in the above subcontractors listing.
2. That the AGENCY will be furnished copies of all subcontracts entered into and bonds furnished by subcontractor for this project

**NONCOLLUSION AFFIDAVIT  
TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID**

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 \_\_\_\_\_, at \_\_\_\_\_, \_\_\_\_\_  
*Date**City**State*

\_\_\_\_\_, being first duly sworn, deposes and says that he or she is \_\_\_\_\_ of \_\_\_\_\_ the party making the foregoing bid that the bid is not made in the interest of, or on the behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price, or that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that 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, or paid, and will not pay fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Name of Bidder

\_\_\_\_\_  
Signature of Bidder

\_\_\_\_\_  
Address of Bidder

# UTILITY AGREEMENT

## HONORABLE MAYOR AND CITY COUNCIL CITY OF HUNTINGTON BEACH, CALIFORNIA

Gentlemen:

The undersigned hereby promises and agrees that in the performance of the work specified in the contract, known as the **LeBARD PARK IMPROVEMENTS**, (I)(we)(it) will employ and utilize only qualified persons, as hereinafter defined, to work in proximity to any electrical secondary or transmission facilities. The term "Qualified Person" is defined in Title 8, California Administrative Code, Section 2700, as follows:

**"Qualified Person:** *A person who, by reason of experience or instruction, is familiar with the operation to be performed and the hazards involved."*

The undersigned also promised and agrees that all such work shall be performed in accordance with all applicable electrical utility company's requirements, Public Utility Commission orders, and State of California Cal-OSHA requirements.

The undersigned further promises and agrees that the provisions herein shall be and are binding upon any subcontractor or subcontractors that may be retained or employed by the undersigned, and that the undersigned shall take steps as are necessary to assure compliance by any said subcontractor or subcontractors with the requirements contained herein.

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
By

\_\_\_\_\_  
Title

Date:\_\_\_\_\_

## DISQUALIFICATION QUESTIONNAIRE

In accordance with Government Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire.

## 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

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

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

**Note:** This questionnaire constitutes a part of the Proposal, and a signature portion of the Proposal shall constitute signature of this questionnaire.

## COMPENSATION INSURANCE CERTIFICATE

Pursuant to Section 1861 of the State Labor Code, each contractor to whom a public works contract has been awarded shall sign the following certificate.

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.

---

Contractor

---

By

---

Title

Date: \_\_\_\_\_

## BIDDER'S INFORMATION

BIDDER certifies that the following information is true and correct:

\_\_\_\_\_  
Bidder Name

\_\_\_\_\_  
Business Address

\_\_\_\_\_  
City,

\_\_\_\_\_  
State

\_\_\_\_\_  
Zip

\_\_\_\_\_  
( )

\_\_\_\_\_  
Telephone Number

\_\_\_\_\_  
Email Address

\_\_\_\_\_  
State Contractor's License No. and Class

\_\_\_\_\_  
Original Date Issued

\_\_\_\_\_  
Expiration Date

The work site was inspected by \_\_\_\_\_ of our office on \_\_\_\_\_, 20 .

The following are persons, firms, and corporations having a principal interest in this proposal:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The undersigned is prepared to satisfy the Council of the City of Huntington Beach of its ability, financially or otherwise, to perform the contract for the proposed work and improvements in accordance with the plans and specifications set forth.

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Signature of Bidder

\_\_\_\_\_  
Printed or Typed Signature



## NOTARY CERTIFICATE

Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 202\_ .

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 \_\_\_\_\_ )

County of \_\_\_\_\_ )

On \_\_\_\_\_ before me, \_\_\_\_\_  
Month, Day, and Year Insert Name and Title of Notary

personally appeared \_\_\_\_\_  
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.

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 (PLACE NOTARY SEAL ABOVE)

## Bidder's Project History

For the purposes of this project the contractor and subcontractor must have, in the last five years, constructed at least five (5) projects of similar work specifically referencing the construction of **{Describe specific work and experience necessary for project, for example “Reconstruction or rehabilitation of existing public park facilities including tennis courts”**. Bidders are encouraged to submit supplemental relevant project history in addition to the projects listed herein.

The following list of projects meet the requirements of above:

1. \_\_\_\_\_  
Name and Address of Reference

Name and Telephone No. of Project Manager: \_\_\_\_\_

Contract Amount	Type of Work	Date Completed
-----------------	--------------	----------------

Provide additional project description to show similar work:

\_\_\_\_\_  
\_\_\_\_\_

2. \_\_\_\_\_  
Name and Address of Reference

Name and Telephone No. of Project Manager: \_\_\_\_\_

Contract Amount	Type of Work	Date Completed
-----------------	--------------	----------------

Provide additional project description to show similar work:

\_\_\_\_\_  
\_\_\_\_\_

3. \_\_\_\_\_  
Name and Address of Reference

Name and Telephone No. of Project Manager: \_\_\_\_\_

Contract Amount	Type of Work	Date Completed
-----------------	--------------	----------------

Provide additional project description to show similar work:

\_\_\_\_\_  
\_\_\_\_\_

4. \_\_\_\_\_  
Name and Address of Reference  
Name and Telephone No. of Project Manager: \_\_\_\_\_  
\_\_\_\_\_  
Contract Amount                      Type of Work                      Date Completed  
Provide additional project description to show similar work:  
\_\_\_\_\_  
\_\_\_\_\_

5. \_\_\_\_\_  
Name and Address of Reference  
Name and Telephone No. of Project Manager: \_\_\_\_\_  
\_\_\_\_\_  
Contract Amount                      Type of Work                      Date Completed  
Provide additional project description to show similar work:  
\_\_\_\_\_  
\_\_\_\_\_

## Bidder's Critical Staff

Listed below are the names of the bidders proposed Construction Project Manager, and Superintendent. For each of these critical positions, please list at least three projects for which the critical staff has performed similar work within the last five years. These projects do not have to be under the employment of the bidder of this project. Bidders are encouraged submit supplemental relevant project history in addition to the projects listed herein.

1. \_\_\_\_\_  
Name of proposed Project Manager

\_\_\_\_\_  
Telephone No. of proposed Project Manager

Project Name & Contract Amount	Type of Work	Date Completed
--------------------------------	--------------	----------------

Project Name & Contract Amount	Type of Work	Date Completed
--------------------------------	--------------	----------------

Project Name & Contract Amount	Type of Work	Date Completed
--------------------------------	--------------	----------------

2. \_\_\_\_\_  
Name of proposed Superintendent

\_\_\_\_\_  
Telephone No. of proposed Superintendent

Project Name & Contract Amount	Type of Work	Date Completed
--------------------------------	--------------	----------------

Project Name & Contract Amount	Type of Work	Date Completed
--------------------------------	--------------	----------------

Project Name & Contract Amount	Type of Work	Date Completed
--------------------------------	--------------	----------------

# CONTRACTOR REGISTRATION WITH CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) CERTIFICATE

Pursuant to SB 854 (citing Labor Code Section 1771.1(a)), passed by the California State Senate on June 20, 2014, established a new public works Contractor Registration Program, which requires all contractors and subcontractors bidding and performing work on Public Works Projects to register on an annual basis (each July 1 through June 30 state fiscal year) with the California Department of Industrial Relations (DIR). Currently the annual non-refundable registration fee for Contractors is \$300. Each contractor to whom a public works contract has been awarded shall sign the following certificate.

DIR FACT SHEET on SB 854

[http://www.dir.ca.gov/DLSE/PublicWorks/SB854FactSheet\\_6.30.14.pdf](http://www.dir.ca.gov/DLSE/PublicWorks/SB854FactSheet_6.30.14.pdf)

DIR's Contractor Registration Link – Call (844) 522-6734

<https://efiling.dir.ca.gov/PWCR/ActionServlet?action=displayPWCRegistrationForm>

DIR's Contractor Registration searchable database:

<https://efiling.dir.ca.gov/PWCR/Search.action>

I am aware and will comply with the provisions of Labor Code Section 1771.1(a) which states:

“A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.”

I furthermore will comply by providing proof of registration with DIR as the primary contractor, as well as for ALL subcontractors at the time of submitting the bid.

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
By

\_\_\_\_\_  
Email

\_\_\_\_\_  
Title

Date: \_\_\_\_\_

PWC Registration #: \_\_\_\_\_

## **SECTION D**

### **SAMPLE CONTRACT**

CITY FUNDED CONSTRUCTION CONTRACT BETWEEN  
THE CITY OF HUNTINGTON BEACH AND

FOR

THIS AGREEMENT ("Agreement") is made and entered into by and between the City of Huntington Beach, a municipal corporation of the State of California, hereinafter referred to as "CITY," and \_\_\_\_\_, a \_\_\_\_\_ corporation, hereinafter referred to as "CONTRACTOR."

WHEREAS, CITY has solicited bids for a public works project, hereinafter referred to as "PROJECT," more fully described as \_\_\_\_\_  
\_\_\_\_\_ in the City of Huntington Beach; and

CONTRACTOR has been selected to perform said services,

NOW, THEREFORE, in consideration of the promises and agreements hereinafter made and exchanged the parties covenant and agree as follows:

1. STATEMENT OF WORK; ACCEPTANCE OF RISK

CONTRACTOR shall complete and construct the PROJECT pursuant to this Agreement and the Contract Documents (as hereinafter defined) and furnish, at its own cost and expense, all labor, plans, tools, equipment, supplies, transportation, utilities and all other items, services and facilities necessary to complete and construct the PROJECT in a good and workmanlike manner.

CONTRACTOR agrees to fully assume the risk of all loss or damage arising out of the nature of the PROJECT, during its progress or prior to acceptance by CITY, from the action of the elements, from any unforeseen difficulties which may arise or be encountered in the

prosecution of work, and for all other risks of any description in connection with the work, including, but not limited to, all expenses incurred by or in consequence of the suspension or discontinuance of work, except such as are herein expressly stipulated to be borne by CITY, and for well and faithfully completing the work within the stipulated time and in the manner shown and described in this Agreement, and in accordance with the requirements of CITY for the compensation set forth in the accepted bid proposal.

2. ACCEPTANCE OF CONDITIONS OF WORK; PLANS AND SPECIFICATIONS

CONTRACTOR acknowledges that it is fully familiar with all the terms, conditions and obligations of this Agreement and the Contract Documents (as defined below in this Section), has inspected the location of the job site, and the conditions under which the work is to be performed, and that it enters into this Agreement based upon its thorough investigation of all such matters and is relying in no way upon any opinions or representations of CITY.

It is agreed that the Contract Documents are incorporated into this Agreement by this reference, with the same force and effect as if the same were set forth at length herein, and that CONTRACTOR and its subcontractors, if any, shall be bound by the Contract Documents insofar as they relate in part or in any way, directly or indirectly, to the work covered by this Agreement.

"Contract Documents" as defined herein mean and include:

- A. This Agreement;
- B. Bonds covering the work herein agreed upon;
- C. The CITY's standard Plans and Specifications and special contractual provisions, including those on file in the office of the Department of Public Works of CITY, and any revisions, amendments or addenda thereto;



- D. The edition of *Standard Specifications for Public Works Construction*, published by Builders' News, Inc., 10801 National Boulevard, Los Angeles, CA 90064, and all amendments thereto, written and promulgated by the Southern California chapter of the American Public Works Association and the Southern California District Associated General Contractors of the California Joint Cooperative Committee as specified in the particular Plans, Specifications, Special Provisions and Addendum applicable to the Project;
- E. Bid documents including the Notice Inviting Bids, the Special Instructions to Bidders and the CONTRACTOR's proposal, (which is attached hereto as **Exhibit "A"** and incorporated herein by this reference);
- F. The particular Plans, Specifications, Special Provisions and Addenda applicable to the PROJECT. Anything mentioned in the Specifications and not indicated in the Plans or indicated in the Plans and not mentioned in the Specifications, shall be of like effect as if indicated and mentioned in both. In case of a discrepancy between any Plans, Specifications, Special provisions, or Addenda, the matter shall be immediately submitted by CONTRACTOR to the Director of Public Works of CITY or his or her written designee (hereinafter referred to as "DPW"), and CONTRACTOR shall not attempt to resolve or adjust the discrepancy without the decision of DPW, save only at its own risk and expense.

Should there be any conflict between the terms of this Agreement and the bid or proposal of CONTRACTOR, then this Agreement shall control and nothing herein shall be considered as an acceptance of the terms of the bid or proposal which is in conflict herewith.

3. COMPENSATION

CITY agrees to pay and CONTRACTOR agrees to accept as full compensation for the faithful performance of this Agreement, subject to any additions or deductions made under the provisions of this Agreement or the Contract Documents, a sum not to exceed \_\_\_\_\_ Dollars (\$\_\_\_\_\_), as set forth in the Contract Documents, to be paid as provided in this Agreement.

4. COMMENCEMENT OF PROJECT

CONTRACTOR agrees to commence the PROJECT within ten (10) working days after the Notice To Proceed is issued and diligently prosecute the PROJECT to completion within \_\_\_\_\_ (\_\_\_\_\_) consecutive Working days from the day the Notice to Proceed is issued by DPW, excluding delays provided for in this Agreement.

5. TIME OF THE ESSENCE

The parties hereto recognize and agree that time is of the essence in the performance of this Agreement and each and every provision of the Contract Documents.

CONTRACTOR shall prepare and obtain approval as required by the Contract Documents for all shop drawings, details and samples, and do all other things necessary and incidental to the prosecution of its work in conformance with the progress schedule set forth in the Contract Documents. CONTRACTOR shall coordinate its work with the work of all other contractors, subcontractors, and CITY forces working on the PROJECT in a manner that will facilitate the efficient completion of the PROJECT and in accordance with the terms and provisions of this Agreement. CITY shall have complete control of the premises on which the work is to be performed and shall have the right to decide the time and order in which the various portions of the work shall be performed and the priority of the work of other contractors,

subcontractors and CITY forces and, in general, all matters concerning the timely and orderly conduct of the work of CONTRACTOR on the premises.

6. CHANGES

CONTRACTOR shall adhere strictly to the plans and specifications set forth in the Contract Documents unless a change therefrom is authorized in writing by DPW. CONTRACTOR agrees to make any and all changes, furnish materials and perform all work necessary within the scope of the PROJECT as DPW may require in writing. Under no condition shall CONTRACTOR make any changes without the prior written order or acceptance of DPW, and CITY shall not pay any extra charges made by CONTRACTOR that have not been agreed upon in writing by DPW.

When directed to change the work, CONTRACTOR shall submit immediately to DPW a written cost proposal reflecting the effect of the change. Should DPW not agree to such cost proposal, the work shall be performed according to the changes ordered in writing by DPW and the proper cost thereof shall be negotiated by the parties upon cost and pricing data submitted by CONTRACTOR; thereupon, CITY will promptly issue an adjusted change order to CONTRACTOR and the contract price will be adjusted upward or downward accordingly.

7. NOTICE TO PROCEED

No work, services, material, or equipment shall be performed or furnished under this Agreement unless and until a Notice to Proceed has been given to CONTRACTOR by CITY. CITY does not warrant that the work will be available on the date the Notice to Proceed is issued. In the event of a delay in commencement of the work due to unavailability of the job site, for any reason, relief to CONTRACTOR shall be limited to a time extension equal to the delay due to such unavailability.

8. BONDS

Only bonds issued by California admitted sureties will be accepted. CONTRACTOR shall, prior to its performance of this Agreement, furnish the following two (2) bonds approved by the City Attorney: One in the amount of one hundred percent (100%) of the contract price to guarantee the CONTRACTOR's faithful performance of the work, and one in the amount of one hundred percent of the contract price to guarantee payment of all claims for labor and materials furnished.

In addition, CONTRACTOR shall submit to CITY a bond in the amount of one hundred percent (100%) of the final contract price, including all change orders, to warrant such performance for a period of one (1) year after CITY's acceptance thereof within ten (10) days of filing of the Notice of Completion.

9. WARRANTIES

CONTRACTOR unconditionally guarantees all work done under this Agreement including, but not limited to, any workmanship, installation, fabrication, material or structural facilities constructed. CONTRACTOR, within ten (10) days after notice by CITY of any defect in the work, shall have the option to make appropriate repairs or replace the defective item or items. Upon expiration of such ten (10) day period, CITY may then make appropriate repair or replacement at CONTRACTOR's risk and own cost and expense.

10. INDEPENDENT CONTRACTOR

It is understood and agreed that CONTRACTOR is, and shall be, acting at all times hereunder as an independent contractor and not an employee of CITY. CONTRACTOR shall secure at its own cost and expense, and be responsible for any and all payment of all taxes, social security, state disability insurance compensation, unemployment compensation and other payroll

deductions for CONTRACTOR and its officers, agents and employees and all business licenses, if any, in connection with the PROJECT and/or the services performed hereunder.

11. LIQUIDATED DAMAGES/DELAYS

It is agreed by the parties hereto that in case the total work called for hereunder is not in all parts and requirements finished or completed within the number of calendar days as set forth herein, damage will be sustained by CITY; and that it is, and would be, impractical and extremely difficult to ascertain and determine the actual damage which CITY would sustain in the event of and by reason of such delay. It is, therefore, agreed that CONTRACTOR will pay to CITY, as liquidated damages and not as a penalty, the sum of \_\_\_\_\_ (\$\_\_\_\_\_) per each calendar day's delay in completing the work in excess of the number of working/calendar days set forth herein, which represents a reasonable endeavor by the parties hereto to estimate a fair compensation for the foreseeable damages CITY would sustain in the event of and by reason of such delay; and CONTRACTOR agrees to pay these damages herein provided, and further agrees that CITY may deduct the amount thereof from any monies due or that may become due to CONTRACTOR hereunder.

CONTRACTOR will be granted an extension of time and will not be assessed damages for any portion of the delay in the completion of the work due to unforeseeable causes beyond the control and without the fault or negligence of CONTRACTOR, including, but not limited to, acts of God or of the public enemy, fire, floods, epidemics, quarantine restrictions, strikes, unsuitable weather, or delays of subcontractors due to such causes.

CONTRACTOR shall, within fifteen (15) days from the beginning of any such delay (unless DPW shall grant a further period of time), notify DPW in writing of the cause of the

delay and CITY shall extend the time for completing the work if, in its judgment, the findings of fact thereon justify the delay; and the decision of DPW shall be conclusive on the parties hereto.

Should CONTRACTOR be delayed in the prosecution or completion of the work by the act, neglect or default of CITY, or should CONTRACTOR be delayed by waiting for materials required by this Agreement to be furnished by CITY, or by damage caused by fire or other casualty at the job site for which CONTRACTOR is not responsible, or by the combined action of the workers, in no way caused by or resulting from default or collusion on the part of CONTRACTOR, or in the event of a lockout by CITY, then the time herein fixed for the completion of the work shall be extended by the number of days CONTRACTOR has thus been delayed, but no allowance or extension shall be made unless a claim therefor is presented in writing to CITY within fifteen (15) days of the commencement of such delay.

No claims for additional compensation or damages for delays, irrespective of the cause thereof, and including without limitation the furnishing of materials by CITY or delays by other contractors or subcontractors will be allowed and an extension of time for completion shall be the sole remedy of CONTRACTOR.

12. DEMANDS FOR ADDITIONAL TIME OR MONEY.

A. Definitions.

(1) “Change Order” means a document signed by the CONTRACTOR and CITY which authorizes an addition, deletion or revision in the work, or an adjustment in the Compensation under Section 3, or the Completion Time specified at Section 4.

(2) “Demand” means a written demand for a Change Order by the CONTRACTOR for any of the following:

(a) A time extension;

(b) Payment of money or damages arising from work done by, or on behalf of, the CONTRACTOR pursuant to this Agreement and payment of which is not expressly permitted pursuant to Section 3 of this Agreement;

(c) Payment of an amount the CITY disputes;

(d) Any disputes and other matters relating to the acceptability of the work performed or the interpretation of the Contract Documents;

(e) A request for a time extension or additional payment based upon differing site conditions, such as subsurface or latent physical conditions at the job site differing materially from those indicated in this Agreement or the Contract Documents, or unknown physical conditions at the job site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent to work of the PROJECT; or

(f) A request for a time extension or additional payment based upon acts of neglect by CITY or due to fires, floods, labor disputes, epidemics, abnormal weather conditions or acts of God.

B. A Demand for a time extension or payment of money or damages may only be granted by a Change Order.

C. No Change Order may be granted except where the Contractor has submitted a Demand to the DPW (or his or her written designee). All Demands shall be submitted promptly, but in no event later than thirty (30) days after the occurrence of the event giving rise to the Demand. The Demand shall be in writing and include all documents necessary to substantiate the Demand. The DPW shall act on the Demand within fifteen (15) days after receipt, including by requesting additional information from the CONTRACTOR to determine whether to approve the Change Order the Demand seeks. The DPW shall act on the Demand within fifteen (15) days

after receipt of the additional information or within a period of time no greater than the time the CONTRACTOR took to produce the additional information requested, whichever is greater.

D. Notwithstanding the thirty (30) days to submit a Demand under Subparagraph C, in the case of differing or unknown site conditions, immediately upon encountering the conditions, CONTRACTOR shall notify the DPW in writing of the conditions, so that the CITY may promptly investigate the conditions.

E. If the CONTRACTOR disputes the DPW's written response on the Demand, or the CITY fails to respond within the time prescribed, the CONTRACTOR may so notify the City Engineer, in writing, either within fifteen (15) days of receipt of the City Engineer's response or within fifteen (15) days of the DPW's failure to respond within the time prescribed, respectively, and request an informal conference to meet and confer for settlement of the Demand. Upon the CONTRACTOR's request, the DPW shall schedule a meet and confer conference within thirty (30) days to seek to resolve.

F. CITY and CONTRACTOR shall execute appropriate Change Orders covering changes to the time or price by executing the Change Order by mutual agreement. If the CITY and CONTRACTOR are unable to reach a mutual agreement, then the City Engineer shall issue a written decision on the claim within a reasonable time.

G. Following the meet and confer conference, if the Demand remains in dispute, the CONTRACTOR may file a claim with the City 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 CONTRACTOR submits his



or her Demand until the Demand is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

13. VARIATIONS IN ESTIMATED QUANTITIES

The quantities listed in the bid schedule will not govern final payment. Payment to CONTRACTOR will be made only for the actual quantities of contract items used in construction of the PROJECT, in accordance with the plans and specifications. Upon completion of the PROJECT, if the actual quantities used are either more than or less than the quantities listed in the bid schedule, the bid price shall prevail subject to the provisions of this Section. DPW may, at its sole discretion, when warranted by the facts and circumstances, order an equitable adjustment, upwards or downwards, in payment to CONTRACTOR where the actual quantities used in construction of the PROJECT are in variation to the quantities listed in the bid schedule. No claim by CONTRACTOR for an equitable adjustment in price or time for completion shall be allowed if asserted after final payment under this Agreement. If the quantity variation is such as to cause an increase in the time necessary for completion, DPW shall ascertain the facts and circumstances and make such adjustment for extending the completion date as in its sole judgment the findings warrant.

14. PROGRESS PAYMENTS

Each month DPW will make an estimate in writing of the work performed by CONTRACTOR and the value thereof. From each progress estimate, five percent (5%) will be deducted and retained by CITY and the remainder of the progress estimate, less the amount of all previous payments since commencement of the work, will be paid to CONTRACTOR.

When CONTRACTOR has, in the judgment of DPW, faithfully executed fifty percent (50%) or more of the value of the work as determined from the bid schedule, and if DPW finds that satisfactory progress has been and is being made, CONTRACTOR may be paid such

sum as will bring the payments of each month up to one hundred percent (100%) of the value of the work completed since the commencement of the PROJECT, as determined in its sole discretion by DPW, less all previous payments and less all previous retained amounts. CITY's final payment to CONTRACTOR, if unencumbered, or any part thereof unencumbered, shall be made thirty-five (35) days after the acceptance of the work and the filing of a Notice of Completion by CITY. Provided, however, that in the event of a dispute between CITY and CONTRACTOR, CITY may withhold from the final payment an amount not to exceed 150 percent of the value of any disputed amount of work. Payments shall be made on demands drawn in the manner required by law, each payment to be accompanied by a certificate signed by DPW, affirming that the work for which payment is demanded has been performed in accordance with the terms of the Agreement and that the amount stated in the certificate is due under the terms of the Agreement. Partial payments on the contract price shall not be considered as an acceptance of any part of the work.

15. WITHHELD CONTRACT FUNDS, SUBSTITUTION OF SECURITIES

At the request and at the sole cost and expense of CONTRACTOR, who shall retain beneficial ownership and receive interest, if any thereon, CITY shall permit the substitution and deposit therewith of securities equivalent to the amount of any monies withheld by CITY to ensure performance under the terms of this Agreement.

16. AFFIDAVITS OF SATISFACTION OF CLAIMS

After the completion of the work contemplated by this Agreement, CONTRACTOR shall file with DPW its affidavit stating that all workers and persons employed, all firms supplying materials and all subcontractors working upon the PROJECT have been paid in full and that there are no claims outstanding against the PROJECT for either labor or material, except certain items, if any, to be set forth in CONTRACTOR's affidavit covering disputed claims,

or items in connection with Notices to Withhold, which have been filed under the provisions of the statutes of the State of California.

17. WAIVER OF CLAIMS

The acceptance by CONTRACTOR of the payment of the final certificate shall constitute a waiver of all claims against CITY under or arising out of this Agreement.

A. The CITY has ascertained from the Director of Industrial Relations of the State of California the general prevailing rate of per diem wages and the general prevailing rate for legal holiday and overtime work in the locality in which the work is to be performed for each craft or type of work needed to execute this Agreement, and the same has been set forth by resolution on file in the office of the City Clerk of CITY. CONTRACTOR and any subcontractor under it shall pay not less than said prevailing wage rates to all workers employed on this public works Agreement, as required by California Labor Code Sections 1771 and 1774. In accordance with the provisions of Section 3700 of the California Labor Code, CONTRACTOR agrees to secure payment of compensation to every employee.

B. Pursuant to this Agreement and in accordance with Section 1774 and 1775 of the California Labor Code, CONTRACTOR shall, as penalty to CITY, forfeit twenty-five dollars (\$25) for each calendar day or portion thereof for each worker paid (either by CONTRACTOR or any of its subcontractors) less than the prevailing wage rate established for that particular craft or type of work.

18. CALIFORNIA PREVAILING WAGE LAW

A. The CITY has ascertained from the Director of Industrial Relations of the State of California the general prevailing rate of per diem wages and the general prevailing rate for legal holiday and overtime work in the locality in which the work is to be performed for each craft or type of work needed to execute this Agreement, and the same has been set forth by

resolution on file in the office of the City Clerk of CITY. CONTRACTOR and any subcontractor under it shall pay not less than said prevailing wage rates to all workers employed on this public works Agreement, as required by California Labor Code Sections 1771 and 1774. In accordance with the provisions of Section 3700 of the California Labor Code, CONTRACTOR agrees to secure payment of compensation to every employee.

B. Pursuant to this Agreement and in accordance with Section 1774 and 1775 of the California Labor Code, CONTRACTOR shall, as penalty to CITY, forfeit twenty-five dollars (\$25) for each calendar day or portion thereof for each worker paid (either by CONTRACTOR or any of its subcontractors) less than the prevailing wage rate established for that particular craft or type of work.

19. CALIFORNIA EIGHT-HOUR LAW

A. California Labor Code, Sections 1810 *et seq*, shall apply to the performance of this Agreement; thereunder, not more than eight (8) hours shall constitute one day's work and CONTRACTOR and each subcontractor employed by its hereunder, shall not require more than eight (8) hours of labor per day or forty (40) hours per week from any one person employed by it hereunder, except as stipulated in California Labor Code Section 1815. CONTRACTOR and each subcontractor employed by it hereunder shall, in accordance with California Labor Code Section 1812, keep an accurate record, open to inspection at all reasonable hours, showing the name and actual hours worked each calendar day and each calendar week by each worker employed in connection with the PROJECT.

B. Pursuant to this Agreement and in accordance with California Labor Code Section 1813, CONTRACTOR shall, as a penalty to CITY, forfeit twenty-five dollars (\$25) for each worker employed hereunder by CONTRACTOR or any subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one

(1) calendar day or forty (40) hours in any one (1) calendar week in violation of California Labor Code Section 1815.

20. PAYMENT OF TRAVEL AND SUBSISTENCE ALLOWANCE

Section 1773.8 of the California Labor Code, regarding the payment of travel and subsistence allowance is applicable to this PROJECT.

21. EMPLOYMENT OF APPRENTICES

Section 1777.5 of the California Labor Code, regarding the employment of apprentices is applicable to this PROJECT.

22. PAYROLL RECORDS

CONTRACTOR agrees to keep accurate payroll record showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice or worker employed by it in connection with the PROJECT and agrees to require each of its subcontractors to do the same. CONTRACTOR further agrees that its payroll records and those of its subcontractors, if any, shall be available at all reasonable times to the CITY, and the employee or his representative, and the Division of Labor Standards Enforcement and the Division of Apprenticeship Standards, and to comply with all of the provisions of California Labor Code Section 1776, in general.

23. INDEMNIFICATION, DEFENSE, HOLD HARMLESS

CONTRACTOR hereby agrees to protect, defend, indemnify and hold harmless CITY, its officers, elected or appointed officials, employees, agents, and volunteers from and against any and all claims, damages, losses, expenses, judgments, demands, defense costs, and consequential damage or liability of any kind or nature, however caused, including those resulting from death or injury to CONTRACTOR's employees and damage to CONTRACTOR's property,

arising directly or indirectly out of the obligations or operations herein undertaken by CONTRACTOR, caused in whole or in part by any negligent act or omission of the CONTRACTOR, any subcontractors, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, including but not limited to concurrent active or passive negligence, except where caused by the active negligence, sole negligence, or willful misconduct of the CITY, its officers, elected or appointed officials, employees, agents, and volunteers. CONTRACTOR will conduct all defense at its sole cost and expense and CITY shall approve selection of CONTRACTOR's counsel. This indemnity shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by CONTRACTOR.

24. WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY  
INSURANCE

Pursuant to California Labor Code Section 1861, CONTRACTOR acknowledges awareness of Section 3700 *et seq.* of this Code, which requires every employer to be insured against liability for workers' compensation; CONTRACTOR covenants that it will comply with such provisions prior to commencing performance of the work hereunder.

CONTRACTOR shall obtain and furnish to City workers' compensation and employer's liability insurance in an amount of not less than the State statutory limits.

CONTRACTOR shall require all subcontractors to provide such workers' compensation and employer's liability insurance for all of the subcontractors' employees. CONTRACTOR shall furnish to CITY a certificate of waiver of subrogation under the terms of the workers' compensation and employer's liability insurance and CONTRACTOR shall similarly require all subcontractors to waive subrogation.

25. INSURANCE

In addition to the workers' compensation and employer's liability insurance and CONTRACTOR's covenant to defend, hold harmless and indemnify CITY, CONTRACTOR shall obtain and furnish to CITY, a policy of general public liability insurance, including motor vehicle coverage covering the PROJECT. This policy shall indemnify CONTRACTOR, its officers, employees and agents while acting within the scope of their duties, against any and all claims arising out or in connection with the PROJECT, and shall provide coverage in not less than the following amount: combined single limit bodily injury and property damage, including products/completed operations liability and blanket contractual liability, of One Million Dollars (\$1,000,000) per occurrence. If coverage is provided under a form which includes a designated general aggregate limit, the aggregate limit must be no less than One Million Dollars (\$1,000,000) for this PROJECT. This policy shall name CITY, its officers, elected or appointed officials, employees, agents, and volunteers (the "Additionally Insured Parties") as Additional Insureds, and shall specifically provide that any other insurance coverage which may be applicable to the PROJECT shall be deemed excess coverage and that CONTRACTOR's insurance shall be primary and non-contributory with any other valid and collectible insurance or self-insurance available to the Additionally Insured Parties. Any available insurance proceeds in excess of the minimum coverage amount specified herein shall be available to the Additionally Insured Parties. All coverage available to CONTRACTOR shall also be available to the Additionally Insured Parties. Under no circumstances shall said above-mentioned insurance contain a self-insured retention without the express written consent of CITY; however an insurance policy "deductible" of Five Thousand Dollars (\$5,000.00) is permitted.

CONTRACTOR shall be responsible for causing all Subcontractors to maintain the same types and limits of insurance coverage as that required of CONTRACTOR by this Agreement.

26. CERTIFICATES OF INSURANCE; ADDITIONAL INSURED  
ENDORSEMENTS

Prior to commencing performance of the work hereunder, CONTRACTOR shall furnish to CITY certificates of insurance subject to approval of the City Attorney evidencing the foregoing insurance coverages as required by this Agreement; the certificates shall:

1. Provide the name and policy number of each carrier and policy;
2. State that the policy is currently in force; and
3. Promise to provide that such policies will not be canceled or modified without thirty (30) days' prior written notice of CITY.

CONTRACTOR shall maintain the foregoing insurance coverages in force until the work under this Agreement is fully completed and accepted by CITY.

The requirement for carrying the foregoing insurance coverages shall not derogate from the CONTRACTOR's defense, hold harmless and indemnification obligations as set forth under this Agreement. CITY or its representative shall at all times have the right to demand the original or a copy of all the policies of insurance. CONTRACTOR shall pay, in a prompt and timely manner, the premiums on all insurance hereinabove required.

CONTRACTOR shall provide a separate copy of the additional insured endorsement to each of CONTRACTOR's insurance policies, naming CITY, its officers, elected and appointed officials, employees, agents and volunteers as Additional Insureds, to the City Attorney for approval prior to any payment hereunder.

27. NOTICE OF THIRD PARTY CLAIM

Pursuant to Public Contracts Code §9202, CITY shall provide notice to CONTRACTOR of receipt of any claim filed with CITY or a court of competent jurisdiction which arises out of performance of this agreement within ten (10) days of receipt of such claim or claims.



28. DEFAULT AND TERMINATION

If CONTRACTOR fails or refuses to prosecute the work hereunder with diligence, or fails to complete the work within the time specified, or is adjudged bankrupt or makes an assignment for the benefit of creditors or becomes insolvent, or violates any provision of this Agreement or the Contract Documents, CITY may give CONTRACTOR notice in writing of its intention to terminate this Agreement. Unless the violation is cured within ten (10) days after such Notice of Intention has been served on CONTRACTOR, CITY may, without prejudice to any other remedy it may have, terminate this Agreement upon the expiration of that time. Upon such default by CONTRACTOR, CITY may elect not to terminate this Agreement; in such event CITY may make good the deficiency in which the default consists and deduct the resulting costs from the progress payments then or to become due to CONTRACTOR.

If it is subsequently determined by a court of competent jurisdiction that CITY's termination of this Agreement under this Section was wrongful, such termination shall be converted to a termination for convenience under Section 29 and any damages shall be assessed as set forth in Section 29.

29. TERMINATION FOR CONVENIENCE

CITY may terminate this Agreement for convenience at any time with or without cause, and whether or not PROJECT is fully complete upon seven (7) calendar days written notice to CONTRACTOR. In the event of termination, under this Section CITY shall pay CONTRACTOR for value of work in place on the PROJECT through the termination period less all such payments already made. In case of such termination for convenience, the CONTRACTOR shall be entitled to receive payment for work executed, and costs incurred by reason of such termination. In no event shall CONTRACTOR be entitled to recover overhead, profit or CONTRACTOR's fee on work not performed. Such payment by CITY shall be CONTRACTOR's

sole and exclusive remedy for termination by CITY for its convenience and CITY shall have no further obligation to CONTRACTOR.

30. DISPOSITION OF PLANS, ESTIMATES AND OTHER DOCUMENTS

CONTRACTOR agrees that upon completion of the work to be performed hereunder, or upon expiration or earlier termination of this Agreement, all original plans, specifications, drawings, reports, calculations, maps and other documents pertaining to this Agreement shall be delivered to CITY and become its sole property at no further cost.

31. NONASSIGNABILITY

CONTRACTOR shall not sell, assign, transfer, convey or encumber this Agreement, or any part hereof, or any right or duty created herein, without the prior written consent of CITY and the surety.

32. CITY EMPLOYEES AND OFFICIALS

CONTRACTOR shall employ no CITY official nor any regular CITY employee in the work performed pursuant to this Agreement. No officer or employee of CITY shall have any financial interest in this Agreement in violation of the California Government Code.

33. STOP NOTICES; RECOVERY OF ADMINISTRATIVE COSTS

CITY shall be entitled to all reasonable administrative costs and necessary disbursements arising out of the processing of Stop Notices, Notices to Withhold, or any similar legal document. This obligation shall be provided for in the labor and materials payment bond required of CONTRACTOR. CITY may charge an administrative fee of One Hundred Dollars (\$100) for every Stop Notice filed in excess of two (2), regardless of whether or not CITY is named in an action to enforce such stop notices. CITY may set off any unreimbursed cost or expense so incurred against any sum or sums owed by CITY to CONTRACTOR under this Agreement.

34. NOTICES

Any notices, certificates, or other communications hereunder shall be given either by personal delivery to CONTRACTOR's agent (as designated in Section 1 hereinabove) or to CITY as the situation shall warrant, or by enclosing the same in a sealed envelope, postage prepaid, and depositing the same in the United States Postal Service, to the addresses specified below; provided that CITY and CONTRACTOR may designate different addresses to which subsequent notices, certificates or other communications will be sent by notifying the other party via personal delivery, reputable overnight carrier or U. S. certified mail-return receipt requested:

TO CITY:

City of Huntington Beach

ATTN: \_\_\_\_\_, Public Works

2000 Main Street

Huntington Beach, CA 92648

TO CONTRACTOR:

\_\_\_\_\_  
ATTN: \_\_\_\_\_

35. SECTION HEADINGS

The titles, captions, section, paragraph and subject headings, and descriptive phrases at the beginning of the various sections in this Agreement are merely descriptive and are included solely for convenience of reference only and are not representative of matters included or excluded from such provisions, and do not interpret, define, limit or describe, or construe the intent of the parties or affect the construction or interpretation of any provision of this Agreement.

36. IMMIGRATION

CONTRACTOR shall be responsible for full compliance with the immigration and naturalization laws of the United States and shall, in particular, comply with the provisions of United States Code Section 1324a regarding employment verification.

37. LEGAL SERVICES SUBCONTRACTING PROHIBITED

CONTRACTOR and CITY agree that CITY is not liable for payment of any subcontractor work involving legal services, and that such legal services are expressly outside the scope of services contemplated hereunder. CONTRACTOR understands that pursuant to Huntington Beach City Charter Section 309, the City Attorney is the exclusive legal counsel for CITY; and CITY shall not be liable for payment of any legal services expenses incurred by CONTRACTOR.

38. ATTORNEY'S FEES

In the event suit is brought by either party to construe, interpret and/or enforce the terms and/or provisions of this Agreement or to secure the performance hereof, each party shall bear its own attorney's fees, such that the prevailing party shall not be entitled to recover its attorney's fees from the non-prevailing party.

39. INTERPRETATION OF THIS AGREEMENT

The language of all parts of this Agreement shall in all cases be construed as a whole, according to its fair meaning, and not strictly for or against any of the parties. If any provision of this Agreement is held by an arbitrator or court of competent jurisdiction to be unenforceable, void, illegal or invalid, such holding shall not invalidate or affect the remaining covenants and provisions of this Agreement. No covenant or provision shall be deemed dependent upon any other unless so expressly provided here. As used in this Agreement, the masculine or neuter gender and singular or plural number shall be deemed to include the other whenever the

context so indicates or requires. Nothing contained herein shall be construed so as to require the commission of any act contrary to law, and wherever there is any conflict between any provision contained herein and any present or future statute, law, ordinance or regulation contrary to which the parties have no right to contract, then the latter shall prevail, and the provision of this Agreement which is hereby affected shall be curtailed and limited only to the extent necessary to bring it within the requirements of the law.

40. GOVERNING LAW

This Agreement shall be governed and construed in accordance with the laws of the State of California.

41. DUPLICATE ORIGINAL

The original of this Agreement and one or more copies hereto have been prepared and signed in counterparts as duplicate originals, each of which so executed shall, irrespective of the date of its execution and delivery, be deemed an original. Each duplicate original shall be deemed an original instrument as against any party who has signed it.

42. CONSENT

Where CITY's consent/approval is required under this Agreement, its consent/approval for one transaction or event shall not be deemed to be consent/approval to any subsequent occurrence of the same or any other transaction or event.

43. SURVIVAL

Terms and conditions of this Agreement, which by their sense and context survive the expiration or termination of this Agreement shall so survive.

44. MODIFICATION

No waiver or modification of any language in this Agreement shall be valid unless in writing and duly executed by both parties.

45. SIGNATORIES

Each undersigned represents and warrants that its signature hereinbelow has the power, authority and right to bind their respective parties to each of the terms of this Agreement, and shall indemnify CITY fully for any injuries or damages to CITY in the event that such authority or power is not, in fact, held by the signatory or is withdrawn.

46. ENTIRETY

The parties acknowledge and agree that they are entering into this Agreement freely and voluntarily following extensive arm's length negotiation, and that each has had the opportunity to consult with legal counsel prior to executing this Agreement. The parties also acknowledge and agree that no representations, inducements, promises, agreements or warranties, oral or otherwise, have been made by that party or anyone acting on that party's behalf, which are not embodied in this Agreement, and that that party has not executed this Agreement in reliance on any representation, inducement, promise, agreement, warranty, fact or circumstance not expressly set forth in this Agreement. This Agreement, and the attached **Exhibit "A"**, contain the entire agreement between the parties respecting the subject matter of this Agreement, and supersede all prior understandings and agreements whether oral or in writing between the parties respecting the subject matter hereof.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed  
by and through their authorized officers on \_\_\_\_\_, 20\_\_\_\_.

CONTRACTOR:

CITY OF HUNTINGTON BEACH, a municipal  
corporation of the State of California

By: \_\_\_\_\_

\_\_\_\_\_  
(print name)

\_\_\_\_\_  
Mayor

**ITS:** Chairman / President / Vice-President  
(circle one)

\_\_\_\_\_  
City Clerk

**AND**

INITIATED AND APPROVED:

By: \_\_\_\_\_

\_\_\_\_\_  
Director of Public Works

\_\_\_\_\_  
(print name)

**ITS:** Secretary / Chief Financial Officer / Asst.  
Secretary / Treasurer  
(circle one)

REVIEWED AND APPROVED:

\_\_\_\_\_  
City Manager

APPROVED AS TO FORM:

\_\_\_\_\_  
City Attorney

# SECTION E

## SPECIAL PROVISIONS

All the Work to be done under this contract shall be in accordance with these Special Provisions and the **“GREENBOOK” Standard Specifications for Public Works Construction, 2021 edition**, as written and promulgated by the Joint Cooperative Committee of the Southern California Chapter of the American Public Works Association and the Southern California District of Associated General Contractors of California. Copies of the Standard Specifications are available from the publisher:

*BNi Publications, Inc.  
990 Park Center Drive, Suite E  
Vista, CA 92081  
760-734-1113*

*or*

*1612 S. Clementine St.  
Anaheim, CA 92802  
714-517-0971*

The Standard Specifications set forth above, referred hereinafter as Standard Specifications, will control the general provisions, construction materials, and construction methods for this contract except as amended by the Plans, Special Provisions, or other contract documents.

The section numbers of these Special Provisions coincide with those of the said Standard Specifications. Only those sections requiring amendment, elaboration, or specifying options, are called out.



# **PART 1**

## **GENERAL PROVISIONS**

### **SECTION 1 – GENERAL**

#### **1-2 TERMS AND DEFINITIONS.**

[Add the following:].

**AGENCY.....**The City of Huntington Beach.

**Board.....** The City Council of the City of Huntington Beach.

**County.....** The County of Orange.

**Engineer.....** The City Engineer of the City of Huntington Beach or his authorized representative.

**Specifications ..** Includes the Greenbook Standard Specifications, Special Provisions, Addenda, and other contract documents, collectively.

#### **1-7 AWARD AND EXECUTION OF THE CONTRACT.**

##### **1-7.1 General.**

[Replace with the following:].

Within 10 working days after the date the AGENCY'S award of contract, the Contractor shall execute and return all contract documents required by the AGENCY. The AGENCY reserves the right to terminate the award if the above requirement is not met. Such termination will result in the forfeiture of the Proposal Guarantee.

The Contract Agreement shall not be considered binding upon the AGENCY until executed by the authorized AGENCY officials.

A corporation to which an award is made may be required, before the Contract Agreement is executed by the AGENCY, to furnish evidence of its corporate existence, of its right to enter into contracts in the State of California, and that the officers signing the contract and bonds for the corporation have the authority to do so.

##### **1-7.2 CONTRACT BONDS.**

[Add the following:].

The “Performance Bond” shall remain in force until the date of recordation of the Notice of Completion. The “Payment Bond” (Material and Labor Bond) shall remain in force until 35 days after the date of recordation of the Notice of Completion.

In conformance with the State of California Government Code, Chapter 13, Section 4590, the Contractor may substitute securities for any monies withheld by the City to endurance under the contract.

At the request and expense of the Contractor, securities equivalent to the amount withheld shall be deposited with the AGENCY, or with a state or federally chartered bank as the escrow

agent, who shall pay such monies to the Contractor upon notification by AGENCY of Contractor's satisfactory completion of the contract.

The type of securities deposited and the method of release shall be approved by AGENCY.

## **SECTION 2 - SCOPE OF THE WORK**

### **2-2 PERMITS.**

[Delete the entire subsection and replace with the following:].

Prior to the start of any work, the CONTRACTOR shall acquire applicable AGENCY permits and arrange for AGENCY inspections. The AGENCY will issue the permits at no charge to the CONTRACTOR. The CONTRACTOR and all subcontractors shall each obtain an AGENCY business license, and shall be licensed in accordance with State Business and Professions Code. The Contractor, at no additional cost to the AGENCY, shall also obtain any and all other permits, licenses, inspections, certificates, or authorizations required by any governing body or entity.

The CONTRACTOR may also be required to be permitted by (Other) AGENCY'S (Not City) to perform work in and around their facilities or is within their reviewing authority (ex. OCFCD, CF&G, ACE). The City (AGENCY) will be required to secure the permit from these (Other) AGENCY'S, however, the Contractor shall not be responsible for the initial permit fees, but, the Contractor shall be responsible for any additional fees assessed to that permit specific to its usage.

The CONTRACTOR and all subcontractors shall each obtain an AGENCY (City) business license, and shall be licensed in accordance with State Business and Professions Code.

The CONTRACTOR is responsible for managing the construction site in accordance with the City's NPDES Permit and Municipal Code Chapter 14.25 - Stormwater and Urban Runoff Management ordinance. The purpose of the NPDES permit and ordinance is the improvement of water quality through the control of pollutants. Without exception, discharges of stormwater from a construction site into the storm drain system (gutter) or a receiving waterbody are prohibited if the discharge contains pollutants that have not been reduced to the maximum extent practicable through the implementation of BMPs. It is the CONTRACTOR's responsibility to implement a combination of BMPs to control erosion and sediment transport, and pollutants from materials and waste management storage and other construction related activities. Refer to Appendix J for additional information.

When the contract does not include a pay item for the full compensation for obtaining and conforming to the requirements of this section, the requirements of this section shall be included in other items of work and no additional compensation will be made therefor. No separate or additional compensation will be made for AGENCY permit and inspections, nor permits, licenses, inspections, certificates, or authorizations required by any other governing body or entity.

### **2-5 THE CONTRACTOR'S EQUIPMENT AND FACILITIES.**

#### **2-5.1 General.**

[Add the following:].

A noise level limit of 95 dB. at a distance of 50' shall apply to all construction equipment on or related to the job whether owned by the Contractor or not. This requirement in no way relieves the Contractor from responsibility for complying with local ordinances regulating noise level.

Contractor shall comply with the California Air Resource Board's regulations for off-road diesel vehicles, including but not limited to its idling policies.

## **SECTION 3 – CONTROL OF THE WORK**

### **3-4 AUTHORITY OF BOARD AND THE ENGINEER.**

[Add the following].

The Contractor shall give at least 24 hours advance notice when he or his subcontractor will start or resume the work.

The above notice is to be given during working hours, exclusive of Saturday, Sunday or AGENCY holidays for the purpose of permitting the Engineer to make necessary assignments of his representatives.

### **3-7 CONTRACT DOCUMENTS.**

#### **3-7.1 General.**

[Add the following:].

**Only written authorization from the AGENCY shall be binding over any deviation or change in the Plans and Specifications. Please refer to SECTION 3 - CHANGES IN WORK for further explanation.** The Contractor shall maintain a control set of Plans and Specifications on the project site at all times. All final locations determined in the field, and any deviations from the Plans and Specifications, shall be marked in red on this control set to show the as-built conditions. Upon completion of all Work, the Contractor shall return the control set to the Engineer. Final payment will not be made until this requirement is met. Reference in the Special Provisions to "State Standard Specifications" shall mean the Standard Specifications, latest edition, of the State of California, Department of Transportation. Copies of these specifications may be obtained from:

*State of California - Department of General Services  
Publications Distribution Unit  
P.O. Box 1015  
North Highlands, California 95660*

Reference in the Special Provisions to Standard Plans shall mean the Standard Plans of the City of Huntington Beach, and where applicable, the following:

**“Greenbook” Standard Plans for Public Works Construction**, published by the American Public Works Association, **2021 edition**.

**Standard Plans**, published by the Orange County Public Works, latest edition.

**Standard Plans**, published by the “Caltrans” California Department of Transportation, **latest edition**.

Applicable Standard Plans for this project are contained in **Appendix I** of these Special Provisions.

**3-7.1.1.1 Agency Supplied Plans and Specifications.**

[Add the following:].

The City shall supply no more than 5 sets of plans and specifications for the Contractor’s use. Additional copies are the responsibility of the Contractor. The Contractor may elect to reproduce existing sets, or purchase additional sets directly through the City’s reprographics company.

**3-8 Submittals.**

[Add the following:].

The contractor shall submit the names and addresses of all suppliers of mineral construction materials, and the mine from which the materials were obtained, along with a copy of the Office of Mine Reclamation AB3098 List showing that the mining operation is listed, prior to delivering any mineral construction materials to the project site. This documentation regarding the AB3098 List shall be made a part of every submittal required on the project that includes mineral construction materials. Failure to identify the supplier and the mine may result in rejection of the submittal.

**3-8.4 Supporting Information.**

[Add the following:].

14.) The Contractor shall submit at the Pre-construction meeting, prior to notice-to-proceed, the following lists with information to be reviewed and accepted by the City;

- a. List of all Construction Technical Equipment (ex. pumps, generators, temporary electrical).
- b. List of all Contractors’ Manpower (by category, including hourly rates).
- c. List of all Contractors’ Equipment (ex. Description and Model -backhoe, loader, truck etc.).

The Contractor is responsible for keeping these lists current throughout the duration of the project.

### **3-10 SURVEYING.**

#### **3-10.1 General.**

The Contractor shall notify the Engineer, or the owner on a Private Contract, at least 7 days before starting work to allow for the preservation of survey monuments, property line and corner survey markers and bench marks. The Contractor at their cost, shall file a Corner Record referencing survey monuments subject to disturbance in the office of the County Surveyor prior to the start of construction and also prior to the completion of construction for the replacement of survey monuments. The Contractor shall not disturb survey monuments, property line and corner survey markers, or bench marks without the consent of the Engineer or the owner on Private Contracts.

When the contract does not include a pay item for the adjustment of monuments to finished grade and unless otherwise provided for in the specifications, full compensation for said adjusting shall be included in the price bid for other items of work and no additional compensation will be allowed therefor.

The contractor shall be responsible for the replacement of any survey benchmark, monument or property line and corner survey marker that is destroyed as a result of their operations.

A survey benchmark is defined as any permanent point used by the National Geodetic Survey (NGS), National Oceanic and Atmospheric Administration (NOAA), California Department of Transportation (Caltrans), Orange County Surveyors (OCS), the City of Huntington Beach Public Works Department, or by any other public agency to establish or perpetuate a vertical datum; said point is typically a 3 3/4" aluminum disk with said agency's stamping. Datum information for public viewing is on file at said agency.

A survey monument is defined as any permanent point as shown on file at the NGS, NOAA, Caltrans, OCS, the City of Huntington Beach Public Works Department or any other public agency; said point being used to establish or perpetuate horizontal control. These points include but are not limited to centerline street monuments or accessories to said centerline street monuments (i.e. tie points), property corners or accessories to said corners, or monuments established in connection with the Orange County Geodetic Control Network or accessories to said monuments.

These points shall be tied out and replaced by a licensed Land Surveyor or a licensed Civil Engineer authorized to practice land surveying pursuant to sections 8700 to 8806 of the Business and Professions code of the State of California (Land Surveyors Act). The Corner Records produced from said tie-out and replacement survey shall be furnished to the City of Huntington Beach Public Works Department as well as filed with the office of the County Surveyor indicating responsible charge (stamped), within 60 days of the final survey.

### **3-10.1.1 Survey Service.**

Except for private contracts, the Contractor will be responsible for the accuracy of surveying adequate for construction, in addition the task of surveying itself shall be performed under the direction of a licensed Land Surveyor or Professional Engineer, whom is authorized to practice land surveying, retained or provided for by the Contractor.

All construction surveying will be performed by or under the direction of a licensed Land Surveyor or Professional Engineer, whom is authorized to practice land surveying, retained or provided for by the Contractor.

Monument preservation surveying necessary to complete the work shown on the plans and provided for in these contract documents and specifications shall be accomplished by or under the direction of a licensed Land Surveyor or Professional Engineer, whom is authorized to practice land surveying, retained or provided for by the Contractor. The AGENCY reserves the right to direct additional construction survey to be performed when it feels it is required to adequately construct the work.

All costs to the Contractor for protecting, removing, restoring, repairing, replacing, or reestablishing monuments or accessories to monuments or costs associated with the preparation or filing of Corner Records pursuant to sections 8700 to 8806 of the Business and Professions Code shall be included in the bid item for survey monument preservation.

Payment for survey monument preservation shall be per the contract lump sum bid price and no additional compensation will be allowed therefor. When the contract does not include a pay item for monument preservation and unless otherwise provided in the specifications, full compensation for all monument preservation required to complete the work shall be included in the price bid for other items of work and no additional compensation will be allowed therefor.

### **3-11 CONTRACT INFORMATIONAL SIGNS.**

[Replace first paragraph with the following:].

The names, addresses of the Contractor or Subcontractor shall be displayed on the project construction sign standard included in the Agency Standards Appendix I. The placement of the sign will be determined by City Staff at the pre-construction meeting, and shall be placed at this location prior to the start of work.

Full compensation for the Project Construction Sign and placement thereof shall be included in the contract price for mobilization, and no other compensation will be allowed therefor.

### **3-12 WORK SITE MAINTENANCE.**

#### **3-12.1 General.**

[Replace the first and second paragraphs with the following:].

The City of Huntington Beach Municipal Code Section 8.21.020 specifies that the collection of refuse and recyclable waste material shall be performed exclusively by the City Refuse Collector. The AGENCY has granted exclusive franchise for solid waste removal to

Rainbow Disposal Co., Inc. Rainbow Disposal (714-847-3581) is the only refuse hauling company authorized to provide trash bins, drop-off boxes, and roll-off containers for construction and demolition disposal in Huntington Beach.

The construction companies that generate construction and demolition waste and have their own manpower and equipment to safely convey it to a permitted and approved landfill or recycling site and all hazardous waste are excluded from this provision. Any such companies providing the own manpower and equipment for construction and demolition waste removal must clearly mark the equipment used in Huntington Beach with their company name and telephone number.

Unless directed otherwise by the Engineer, the Contractor shall furnish and operate a self-loading motor sweeper with spray nozzles at least once each working day to keep paved areas acceptably clean wherever construction, including restoration, is incomplete.

**3-12.5.3 Spill Prevention and Emergency Response Plan.**  
[Add the following:].

Secondary containment shall be provided with portable toilets.

**3-14 CLAIM RESOLUTION.**  
[Add the following:].

This project shall incorporate Claim Resolution procedures as prescribed by the Public Contract Code Section 9204 (AB-626).

## **SECTION 4 - CONTROL OF MATERIALS**

**4-1 General.**  
[Add the following:].

The Contractor and all subcontractors, suppliers, and vendors, shall guarantee that the entire Work will meet all requirements of this contract as to the quality of materials, equipment, and workmanship. The Contractor, at no cost to the AGENCY, shall make any repairs or replacements made necessary by defects in materials, equipment, or workmanship that become evident within one year after the date of recordation of the Notice of Completion. Within this one-year period, the Contractor shall also restore to full compliance with requirements of this contract any portion of the Work which is found to not meet those requirements. The Contractor shall hold the AGENCY harmless from claims of any kind arising from damages due to said defects or noncompliance.

Security of this guarantee shall be in the form of a Maintenance Bond furnished to the AGENCY by the Contractor. There shall be specific wording in the Maintenance Bond that includes the guarantee or warranty of the labor and materials for a one-year period, commencing

from the recording date of the Notice of Completion by the County Recorder. The guaranteed amount shall be for 100 percent of the total amount earned to date as indicated on the final progress payment. The AGENCY reserves the right to withhold the retention until the Maintenance Bond has been accepted by the AGENCY.

The Contractor shall make all repairs, replacements, and restorations covered by the Maintenance Bond within 10 working days after the date of the Engineer's written notice. Failure to comply with such notice will cause the AGENCY to file claim against the bond.

Excepted from the Maintenance Bond will be defects caused by acts of God, acts of the AGENCY, acts of vandals, or by acts of others outside or beyond the control of the Contractor.

#### **4-3 INSPECTION.**

##### **4-3.1 General.**

[Add the following.]

**The Contractor shall notify the Engineer 48 hrs before inspection is required.** If the Contractor requests to work under this contract more than 8 hrs. /day or more than 40 hrs. /week, Saturday, Sunday, or AGENCY holidays, then the following will apply. The inspector's hourly overtime rate will vary depending on if the work is on a weekend or a holiday. The Contractor shall arrange requested overtime inspection services, 24 hours in advance, with the Public Works Inspector and Contract Administrator. The Contractor will fill out and submit the "Request For After Hours Inspection" form along with a check. The check payment amount shall be based on 4-hour increments of \$484, which reflects time and a half.

If the Contractor is directed by the AGENCY to work under this contract more than 8 hrs. /day or more than 40 hrs. /week, the Special Inspection fee requirements will be waived.

#### **4-4 TESTING.**

[Replace the third sentence of the first paragraph with the following:].

Unless otherwise provided, all testing shall be performed under the direction of the Engineer and the AGENCY will bear the cost of initial testing of material and workmanship which are required by the Standard Specifications and the Special Provisions. The cost of all other tests, including the retesting of material or workmanship that fails to pass the first test, shall be borne by the Contractor.

#### **4-6 TRADE NAMES.**

[Replace the last two sentences of the first paragraph with the following:].

Approval of equipment and materials offered as equivalents to those specified must be obtained as set forth in the Instructions to Bidders.



## **SECTION 5 – LEGAL RELATIONS AND RESPONSIBILITIES**

### **5-3 LABOR.**

#### **5-3.2 Prevailing Wages.**

[Add the following:].

The Contractor, and all subcontractors, suppliers and vendors, shall comply with all AGENCY, State and Federal orders regarding affirmative action to ensure equal employment opportunities and fair employment practices. Failure to file any report due under said orders will result in suspension of periodic progress payments.

### **5-4 INSURANCE.**

[Delete the entire subsection and replace with the following:].

Contractor shall, prior to execution of an Agreement with the AGENCY, comply with the provisions of AGENCY's Resolution Number 2008-63 and any amendments thereto, contained in **Appendix E** of these Special Provisions and incorporated herein as if fully set forth.

Except as provided in 6-10, Contractor hereby agrees to protect, defend indemnify and hold harmless AGENCY, its officers, elected or appointed officials, employees, agents, and volunteers from and against any and all, claims, damages, losses, expenses, judgments, demands defense costs, and consequential damage or liability of any kind or nature, however caused, including those resulting from death or injury to Contractor's employees and damage to Contractor's property, arising directly or indirectly out of the obligations or operations herein undertaken by Contractor, caused in whole or in part by any negligent act or omission of the Contractor, any subcontractors, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, including but not limited to concurrent active or passive negligence, except where caused by the active negligence, sole negligence, or willful misconduct of the AGENCY. Contractor will conduct all defense at its sole cost and expense and AGENCY shall approve selection of Contractor's counsel. City shall be reimbursed for all costs and attorney's fees incurred by the AGENCY in enforcing this obligation. This indemnity shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by Contractor. The AGENCY will not be liable for any accident, loss or damage to the Work prior to its completion and acceptance, except as provided in 6-10.

The cost of this insurance shall be included in the Contractor's Bid.

### **5-7 SAFETY.**

[Add the following Subsection:].

#### **5-7.7 Security and Protective Devices.**

##### **5-7.7.1 General.**

[Add the following:].

It is part of the service required of the Contractor to make whatever provisions are necessary to protect the public. The Contractor shall use foresight and shall take such steps and precautions as his operations warrant to protect the public from danger, loss of life or loss of property, which would result from interruption or contamination of public water supply, interruption of other public service,

or from the failure of partly completed work or partially removed facilities. Unusual conditions may arise on the work which will require that immediate and unusual provisions be made to protect the public from danger or loss, or damage to life and property, due directly or indirectly to prosecution of work under this contract.

Whenever, in the opinion of the Engineer, an emergency exists against which the Contractor has not taken sufficient precaution for the public safety, protection of utilities and protection of adjacent structures or property, which may be damaged by the Contractor's operations and when, in the opinion of the Engineer, immediate action shall be considered necessary in order to protect the public or property due to the Contractor's operations under this contract, the Engineer will

order the Contractor to provide a remedy for the unsafe condition. If the Contractor fails to act on the situation, the Engineer may provide suitable protection to said interests by causing such work to be done and material to be furnished as may be necessary.

The cost and expense of said labor and material, together with the cost and expense of such repairs as are deemed necessary, shall be borne by the Contractor. All expenses incurred by the AGENCY for emergency repairs will be deducted from the progress payments and the final payment due to the Contractor. However, if the AGENCY does not take such remedial measures, the Contractor is not relieved of the full responsibility for public safety.

#### **5-7.9 Work Area Traffic Control.**

[Add the following section:].

##### **5-7.9.1 General.**

All traffic control shall be in accordance with the following documentation: **Caltrans California Manual on Uniform Traffic Control Devices (MUTCD), latest edition; California Coded Sign Specifications, 2010 edition; Caltrans Standard Plans, latest edition; Caltrans Standard Specifications, latest edition; American Public Works Association Southern California Chapter – Work Area Traffic Control Handbook, latest edition (i.e. WATCH Manual).**

Upon approval of the Traffic Control Plan by the City, approval of the Contractor's schedule by the City and execution of the Contract documents by both parties, the City will issue a Notice to Proceed specifying the Contract start date (first day of work).

Full compensation for conforming to this requirement shall be included in the price bid for mobilization and no additional compensation will be allowed therefor.

The Contractor shall provide, to the Engineer, a telephone number at which the Contractor's representatives can be reached, at any hour, should an emergency occur requiring replacement or relocation of the required traffic control devices.

Prior to the start of construction, the Contractor shall inform the AGENCY's Police and Fire departments of the project location, approximate starting date, completion date, and the name and telephone number of contractor representatives who may be contacted at any hour in the event of an emergency.

**POLICE DEPARTMENT:** *Watch Commander at (714) 960-8800*

**FIRE DEPARTMENT:** *Battalion Chief/Development at (714) 536-5406*

The Contractor shall adhere to applicable sections of California Administrative Code, Title 8, concerning electrical and construction safety standards and practices.

Contractor shall require that an approved safety vest be worn by all personnel who are working at this project site. Any worker without a vest may be ordered off the job by the Inspector until such apparel is acquired. Questions as to approved vests shall be directed to the Engineer.

Prior to the beginning of work, the Contractor shall execute the provided construction traffic control plan prepared per current AGENCY guidelines to safely prosecute the construction work involved with a minimum of inconvenience to the motoring public.

Any relocation of travel lanes longer than three calendar days shall be delineated by removing the existing striping and legends by wet sandblasting and placing new striping and legends as required. Upon completion of the work and the restoration of the road surface to its final condition, the Contractor shall remove temporary striping by wet sandblasting.

If the traffic cones or portable delineators are damaged, displaced or are not in an upright position, for any reason, the contractor shall immediately replace or restore to their original location, in an upright position, the cones or portable delineators.

The Contractor shall provide and maintain all signs, barricades, flashers, delineators, temporary fencing and other necessary facilities for the protection of the motoring public and pedestrians within the limits of the construction area including removing graffiti from the material and equipment. He shall also post proper signs to notify the public regarding detours and conditions of the roadway, all in accordance with the provisions of the current State of California Department of Transportation "Manual of Traffic Controls for Construction and Maintenance Work Zones", **2010 edition**; and the State of California Department of Transportation

Standard Plans, **2015 edition**; and the Work Area Traffic Control Handbook (a.k.a the WATCH Manual), **2016 edition**.

The Contractor shall furnish such flagmen and equipment as are necessary to give adequate warning to traffic or to the public of any dangerous conditions in accordance with the current Department of Transportation "Instructions to Flagmen".

All existing traffic signs and street signs shall be maintained in visible locations during construction. Signs designated for removal shall be salvaged and delivered to the AGENCY Yard or disposed of as directed by the AGENCY.

## **SECTION 6 – PROSECUTION AND PROGRESS OF THE WORK**

### **6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK.**

[Replace entire section with the following:].

#### **6-1.1 Construction Schedule.**

The Contractor's proposed construction schedule shall be submitted to the Engineer within 10 working days after the City awards the contract to the Contractor. The schedule shall be

supported by written statements from each supplier of materials or equipment indicating that all orders have been placed and acknowledged and setting forth the dates that each item will be delivered. Prior to issuing the Notice to Proceed, the Engineer will schedule a preconstruction meeting with the Contractor to review the proposed construction schedule and delivery dates, arrange utility coordination, discuss construction methods, and clarify inspection procedures. The construction schedule shall be prepared to the satisfaction of the Engineer and revisions will be made at no cost to the AGENCY. The Contractor shall submit progress reports to the Engineer on a bi-weekly basis. The report shall include an updated Construction Schedule. Any deviations from the original schedule shall be explained. Progress payments will be withheld pending receipt of any outstanding reports.

#### **6-1.2 Commencement of Work.**

Progress schedules will be required for this contract and shall conform to the requirements of these special provisions. Progress schedules shall utilize the Critical Path Method (CPM).

The scheduling software to be utilized for the project shall be Primavera's P3 for Windows or SureTrak for Windows, or equal if approved by the AGENCY. An electronic copy of both the baseline schedule and any subsequent updates will be supplied to the AGENCY.

The Contractor will be responsible for any additional costs associated with an AGENCY's request, at anytime during the contract period, to further define an element of the work by inserting activities, coding or logic ties that will assist the

AGENCY in understanding the intent of execution of the scope of work.

#### **6-1.3 Not used**

#### **6-1.4 Not used**

#### **6-1.5 Schedule Updates.**

1. Twice each month, or as specified by the AGENCY, the Contractor shall meet with the Public Works Inspector and Engineer to review/approve contract progress prior to updating the schedule (as a minimum - actual starts, finishes, percent completes and remaining durations).
2. The data date, for progress cut-offs, will be determined and approved by the Engineer at the Pre-Construction Conference. The Contractor will submit, to the Engineer, an update of the project schedule that reflects the approved progress – previously agreed to between the Contractor and Public Works Inspector.
3. Remaining duration of an activity shall be calculated by the contractor and not by the reported percent complete – a default calculation made by a Primavera auto-cost rule when remaining

4. duration and reported percent complete are linked. That default setting must be de-activated (box not checked) prior to the initial schedule update.
5. The baseline schedule or most currently approved target schedule will be shown with each of the current schedule updates.
6. The Contractor will submit, each week, a two-week “look ahead” schedule of the work to be completed.
7. Rejected schedule updates will be re-submitted within 2 days, at which time a new review period of 2 days will begin.

#### **6-1.6 Schedule Revisions.**

1. Schedule revisions will be considered when:
  - a. Requested by the Engineer or AGENCY.
  - b. Contractor or the Engineer believes that an approved or anticipated change order will impact the critical, near critical path, contract progress or completion date
  - c. There is a significant change in the Contractor’s operations that affects the critical or near critical path(s).
  - d. The schedule variance between planned vs. actual progress to date, of the updated CPM schedule, indicates that it is 10 days or more behind the current accepted schedule.
2. If a schedule revision meets one of the above criteria:
  - a. Contractor shall request a revision in writing with specific detail, within 5 days of a delay, and;
  - b. Contractor shall submit, for review, a Time Impact Analysis (TIA), that consists of the following:
    1. Affected activities in the schedule, including impact(s) on the entire project.
    2. A schedule update (fragnet), with the current data date, to reflect the project condition just prior to and including the requested change.
    3. Contractor shall submit, within 10 days of approval, a revised CPM network for final approval.
3. The Engineer will accept or reject a TIA within 5 days after receipt of the analysis.
4. The difference between the scheduled completion dates of the last approved schedule update and the, agreed to, TIA schedule shall be equal to the approved adjustment in time.
5. The Contractor may give Notice Of Potential Claim (NOPC), if both parties cannot reach agreement.

#### **6-1.6.1 Events That May Trigger a Schedule Revision.**

##### **6-1.6.1.1 AGENCY Request.**

These events can translate into project delays, which by contract, allows the contractor to be compensated. A change order may be issued to cover, either or both, time and money.

- Site access delay(s)
- Changed condition(s)
- Utility interference(s)
- Late submittal review(s)
- Design change(s) (errors / omissions)

#### **6-1.6.1.2 Contractor Request.**

These events can translate into project delays, which, by contract, are the contractors' responsibility to mitigate with a recovery schedule, or may be faced with liquidated damages.

- Labor Problems
- Material Delays
- Equipment Breakdowns
- Administrative Requirements (late submittals, permits etc)

#### **6-1.6.2 Schedule Revision Process.**

The schedule revision process that addresses incorporating change order(s) into the schedule are as follows:

##### **6-1.6.2.1 Change Order Process.**

1. For each change order, the new work, that is a change to the latest approved scope of work, is identified.
2. The contractor provides a cost estimate, if required, for performing the new work for each change order.
3. The contractor provides the amount of time required, if any, to perform the new work for each change order.
4. If the change order will impact the Critical Path, the contractor shall submit a revised construction schedule showing the impact of the change order on the overall project schedule.

##### **6-1.6.2.2 Time Impact Analysis (TIA).**

1. The contractor performs a TIA for each change order, separately, that exposes the effects of that change order work on the project schedule.
2. The contractor submits, for review and approval, the TIA schedule for each change order proposed for the project schedule.
3. Owner approves/rejects the schedule TIA for each change order.

##### **6-1.6.2.3 Schedule Revision.**

1. Contractor submits a revised schedule reflecting the approved time impact.
2. This becomes the new baseline, when approved, for tracking the contractor's work performance.

#### **6-1.8 As-Built Schedule.**

The Contractor shall submit an As-Built Schedule covering Work performed under this contract within 10 calendar days after final completion. The As-Built Schedule shall be certified by the Construction Manager as being the manner in which the contract was executed. This submittal shall be a condition precedent to the release of retention money at the end of the project.

## **6-2 PROSECUTION OF THE WORK.**

[Add the following].

The Contractor shall provide the Engineer with a written explanation, at least 24 hours in advance of any working day(s) when the Work will not be performed at the Project site. The written

notice shall also state when the Contractor or his subcontractor will start or resume the Work.

The above notice is to be given to the Engineer during working hours, exclusive of Saturday, Sunday or AGENCY holidays, for the purpose of permitting the Engineer to make necessary assignments of his representatives.

**6-3 TIME OF COMPLETION.**

**6-3.1 General.**

[Add the following:].

The time within which the Work must be completed by the Contractor is fixed at **70** working days, including pipe delivery, starting from and after the date in the Notice to Proceed with the Work, issued by the AGENCY to the Contractor, exclusive of maintenance periods.

The Contractor's activities shall be confined to the hours between 7:00 A.M. to 4:00 P.M., Monday through Friday, excluding holidays. Deviation from these hours will not be permitted without the prior consent of the Engineer, except in emergencies involving immediate hazard to persons or property. In the event of either a requested or emergency deviation, inspection service fees will be charged against the Contractor. The service fees will be calculated at overtime rates including benefits, overhead, and travel time. The service fees will be deducted from any

amounts due the Contractor.

Parking prohibitions on all roadways, where parking is currently permitted, shall be confined to the hours between 7:00 AM and 5:00 PM.

The following roadways are considered arterials for purposes of this project:

**6-9 LIQUIDATED DAMAGES**

[Replace the liquidated damage amount to the following:].

\$1,000.00 per calendar days.

## **SECTION 7 - MEASUREMENT AND PAYMENT**

**7-3 PAYMENT.**

**7-3.1 General.**

[Replace the last paragraph with the following:].

Compensation for items of work not specifically identified in these Special Provisions shall include all labor, materials, tools, equipment, safety measures, and supervision required to complete the work to grades and dimensions shown on the Plans or staked in the field. There shall be no compensation except for the bid items specified in the Proposal. The cost of all work shown in the Plans and Specifications but not specifically identified as a bid item or described within a bid item shall be included in related bid items, and no additional compensation shall become due the Contractor by nature of compliance with the Plans and Specifications except as provided in Sections 3, "Changes in Work" of the Greenbook, as modified in these Special Provisions.

At the expiration of 35 days from the filing and recording of the Notice of Completion of the Work, the amount deducted from the final estimate and retained by the AGENCY will be paid to the Contractor except such amounts as required to be withheld by properly executed and filed to stop payment, or as may be authorized by the contract.

**7-3.2 Partial and Final Payment.**

[Replace the first and second paragraphs with the following:].

The closure date for the purpose of making partial progress payments will be the last day of each month. The Contractor may request, in writing, that such monthly closure date be changed. The Engineer may approve such request when it is compatible with the AGENCY'S payment procedure.

Each month, the Contractor shall meet with the Engineer, a minimum of three working days prior to the submittal of the progress payment to the AGENCY, to finalize and receive approval regarding the measurement of the Work performed through the closure date and the estimated value of the progress payment based on the contract Unit Prices or as provided for in Section 9-2. Any progress payment submitted without such approval will be considered incomplete and returned to the

Contractor and no payment shall be considered until such approval is obtained.

Payments will be withheld pending receipt of any outstanding reports required by the contract documents. In addition, the final progress payment will not be released until the Contractor returns the control set of specifications and plans indicating the as-built conditions.

At the request and expense of the Contractor, who shall retain beneficial ownership and receive interest, if any thereon, the AGENCY shall permit the substitution and deposit therewith of securities equivalent to the amount of any monies withheld by the AGENCY.

**PAYMENT FOR EXTRA WORK.**

**7-4.2 Basis for Establishing Costs.**

[Add the Following:]

No Markups are permitted for sales tax paid on materials and equipment.

**7-4.2.1 Labor.**

[Add the Following:]

AGENCY must approve in advance all straight-time and overtime wages salaries for employees employed in the performance of Extra Work.

Labor data shall in accordance with each craft and classification consistent with California Department of Industrial Relations wage rates applicable for the construction period of the Extra Work.

To the sum of the costs and markups provided for in the subsection, 1 percent shall be added as compensation for bonding.



### 7-4.2.3 Tool and Equipment Rental.

[Replace entire subsection with the following:]

Equipment rental rates shall be per Section 9, Sub-section 9-1.04D “Equipment Rental”, of Caltrans Standard Specifications (latest edition), using the Caltrans current “Labor Surcharge and **Equipment Rental Rates**” book at the time the Extra Work is being performed.

The link to the latest “Labor Surcharge and **Equipment Rental Rates**” is as follows:  
<http://www.dot.ca.gov/hq/construc/equipmnt.html>

### 7-4.3 Markup.

[Replace 7-4.3.1 Work by the Contractor and 7-4.3.2 Work by a Subcontractor with the following:]

The maximum Markup to the Contractor, its Subcontractors, their Sub-Subcontractors, or additional tiers of subcontracting shall be compensated per the table below pertaining to labor, materials, tools and equipment, and other item costs directly allocable to the Extra Work. Compounding of Markup shall not be allowed. See **Appendix G** for AGENCY approved forms to calculate Extra Work.

	Labor	Materials	Tool & Equipment Rental	Other Items
Contractor Self-Performing (Prime)	20%	15%	15%	15%
Contractor Subcontracting	5%	5%	5%	5%
Subcontractor (Tier 1) *	20%	15%	15%	15%
Sub-Subcontractor (Tier 2 and Subordinate Level)	*	*	*	*

\* Tier 2 and Subordinate Level Subcontractors shall share and not exceed allowed markup with Tier 1 Subcontractor

## SECTION 8 -FACILITIES FOR AGENCY PERSONNEL

### 8-1 GENERAL.

[Add the following:].

No field offices for AGENCY personnel will be required, however, the

AGENCY personnel shall have the right to enter upon the project at all times and shall be admitted to the offices of the Contractor, at any time during the operation of the Work.

## **PART 2**

### **CONSTRUCTION MATERIALS**

#### **SECTION 201- CONCRETE, MORTAR, AND RELATED MATERIALS**

##### **201-1 PORTLAND CEMENT CONCRETE.**

###### **201-1.2 Materials.**

- 201-1.2.4 Chemical Admixtures.  
[Replace Subsection in total with the following:].  
Admixtures will not be permitted.

## **PART 3**

### **CONSTRUCTION METHODS**

#### **SECTION 300 - EARTHWORK**

##### **300-1 CLEARING AND GRUBBING.**

###### **300-1.1 General.** [Add the following:].

No burning will be permitted.

No accumulation of flammable material shall remain on or adjacent to the right-of-way. The roadway and adjacent areas shall be left with a neat and finished appearance.

In order to protect the public streets from deterioration due to hauling of materials, the Contractor shall submit, prior to the pre-job meeting, for approval a proposed route for hauling of materials for disposal. Upon approval, the Contractor shall strictly adhere to that route, unless written permission from the Engineer is obtained to change the route.

The use of a “Stomper” is prohibited for any use unless directed otherwise by the Engineer.

###### **300-1.4 Payment.** [Add the following:].

Full compensation for any necessary clearing and grubbing required to perform the construction operations specified shall be included in the price bid for other items of work and no additional compensation will be allowed therefor.

##### **300-2 UNCLASSIFIED EXCAVATION.**

###### **300-2.1 General.** [Add the following:].

Unclassified excavation shall include excavating, removing, hauling, and disposal of all material including asphalt concrete pavement **and pavement fabric, if present**, to the subgrade elevations indicated on the plans as required to construct the new improvements.

Removal of asphalt concrete, aggregate base and native soil shall be made at the locations shown on the plans, or as specified in the field by the Engineer. Asphalt pavement shall be removed to clean straight lines by saw cutting.

The areas and quantities shown on the plans are given only for the Contractor's aid in planning the Work and preparing bids. The Engineer shall designate the limits to be removed and these designated areas shall be considered to take precedent over the areas shown on the plans. No guarantee is made that areas or quantities shown will equal the areas or quantities designated by the Engineer.

**300-2.9 Payment.**

[Add the following:].

Unless directed otherwise by the Engineer, stockpiling of any material will not be allowed in or around the project site.

Said payment shall also include full compensation for all required saw cutting of removal areas.

## **SECTION 301 - SUBGRADE PREPARATION, TREATED MATERIALS, AND PLACEMENT OF BASE MATERIALS**

### **301-1 SUBGRADE PREPARATION**

**300-1.1 General**

[Add the following:].

Said payment for Subgrade preparation shall be included in the bid item for sawcut and excavate existing A.C. and A.B. and shall be considered full compensation for all required material and labor and miscellaneous materials.

## **SECTION 303 - CONCRETE AND MASONRY CONSTRUCTION**

**303-5 CONCRETE CURBS, WALKS, GUTTERS, CROSS GUTTERS, ALLEY INTERSECTIONS, ACCESS RAMPS, AND DRIVEWAYS.**

**303-5.5 Finishing**

When curb is constructed and no markings are on the existing curb, the Agency will mark sewer locations in the street and the Contractor will add a chiseled "S" on the curb for this sewer location. The Contractor will add a chiseled "S" and "W" to new curb at locations that have an existing chiseled "S" and "W" for these sewer and water locations. Also new curb construction shall include replacement of existing curb lot drains and the repainting of curb addresses per agency standards.

#### **303-5.5.4 Gutter**

[Add the following:].

When gutter is constructed at a rate of grade less than 0.30% it shall be water tested. If any portion of the newly constructed gutter is shown to pond water, that portion, including curb if applicable, shall be removed, reconstructed, and retested by the Contractor at no additional cost to the AGENCY. The exact limits of removal will be determined based on a survey conducted by AGENCY, unless otherwise directed by the Engineer.

#### **303-5.5.5 Not Used**

#### **303-5.9 Measurement and Payment.**

[Add the following:].

Payment for the construction or removal, respectively, of concrete curbs, gutters, curb ramps, cross gutters, v-gutters, driveway approaches, alley approaches, and sidewalk shall be made as shown on the Bid. Such price shall constitute full compensation for all equipment, materials, labor, and incidentals necessary for the construction or removal of said item, and shall include, but not be limited to: slot paving, any required saw cutting, removal and disposal of said items, the reconstruction of curb drains, the removal of any interfering tree roots, repainting curb addresses, the replacement of water meter boxes damaged during the removal of existing improvements and/or the construction of proposed improvements, and the adjustment of existing utilities and other improvements located within the area of work in order to match the proposed finished surfaces and grades as indicated in the Project Plans and/or Specifications. Additionally, all depressed curb and gutter, and concrete sidewalk located within the limits of the new curb ramp, cross gutter, or driveway/alley approach shall be considered as part of said ramp, cross gutter, or approach and shall be paid for at the contract unit price bid for each item, respectively.

### **SECTION 306 – OPEN TRENCH CONDUIT CONSTRUCTION**

#### **306-3 TRENCH EXCAVATION**

##### **306-3.1 General.**

[Add the following:].

Upon approval by the Engineer, when backfilling operation of an excavation in the travel way, whether transverse or longitudinal cannot be properly completed within a work day, steel plate bridging with a nonskid surface and shoring may be required to preserve unobstructed traffic flow. In such cases, the following shall apply:

1. Steel plate used for bridging must extend a minimum of twelve (12) inches (300 mm) beyond the edge of the trench.
2. Steel plate bridging shall be installed to operate with minimum noise.
3. The trench shall be adequate to support the bridging and the traffic load. Contractor shall be responsible for determining whether shoring is necessary.
4. Temporary paving with cold asphalt concrete shall be used to feather the edges of the plate.

5. Bridging shall be secured against displacement by adjustable cleats, shims, or other
6. devices.

Approaches plate and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of two (2) dowels pre-drilled into the corners of the plate and drilled two (2) inches (53 mm) into the pavement. Subsequent plates are butted to each other. Fine graded asphalt concrete shall be compacted to form ramps, maximum slope of 8.5% with a minimum of twelve (12) inches (300 mm) taper to cover all edges of the steel plates. When steel plates are removed, the dowel holes in the pavement shall be backfilled with either fines of asphalt concrete mix, concrete slurry or equivalent slurry satisfactory to the Engineer.

The Contractor shall be responsible for maintenance of the steel plates, shoring, and asphalt concrete ramps.

Unless specified, use of steel plate bridging at any given location should not exceed four (4) consecutive working days in any given week. Trench plates need to be set flush with pavement and secured in place as noted above for any durations over (4) days upon approval of the engineer. Backfilling of excavation shall be covered with a minimum of three (3") inches (78 mm) of temporary layer of cold asphalt concrete.

The following table shows the required minimal thickness of steel plate bridging for a given trench width:

<u>Trench Width</u>	<u>Minimum Plate Thickness</u>
1.0 foot (300 mm)	½ inch (13 mm)
1.5 foot (450 mm)	¾ inch (19 mm)
2.0 feet (600 mm)	7/8 inch (22 mm)
3.0 feet (900 mm)	1 inch (27 mm)
4.0 feet (1200 mm)	1 ¼ inch (35 mm)

For spans greater than four (4) feet (1200 mm), a structural design for the steel plate bridging shall be prepared by a registered civil engineer and approved by the Engineer. Steel plate bridging shall be designed for HS20-44 truck loading per Caltrans Bridge Design Specifications Manual. The Contractor shall maintain steel plates with a non-skid surface having a minimum coefficient of friction equivalent to 0.35 as determined by California Test Method 342. The Contractor may use standard steel plate with known coefficient of friction equal or exceeding 0.35.

Payment for steel plate bridging shall be included in the other items of work involved and no additional payment will be allowed therefore.

### **306-3 SHORING AND BRACING.**

[Add the following:].

Payment for trench shoring shall be considered to be included in the other items of work, which shall include full payment for furnishing shop drawings, all labor and materials, and performing all work as specified to brace excavations or provide an equivalent method for protection of workers per Section 6707 of the California Labor Code, and in accordance with these Plans and Special Provisions and no other measurement or additional compensation will be allowed therefor.

**306-4        DEWATERING.**  
[Add the following:]

If groundwater is encountered, the Contractor shall dispose of it by any method acceptable to the Engineer. The trench shall be dewatered to a minimum depth of 12 inches below trench bottom. The cost of any dewatering shall be included in the cost of pipe construction and no additional compensation will be allowed therefor.

**306-6        BEDDING.**

**306-6.1      General.**  
[Add to the last sentence of the fourth paragraph with the following:].

Additional bedding ordered by the Engineer, over the amount indicated on the plans due to unsuitable material, shall be paid for per Subsection 3-3.

[Add the following:].

Bedding for pipe, including sewer main and/or storm drain pipe, shall conform to AGENCY Standard Plans, **edition 2008**.

One or two foot standard lengths of pipe shall be used for inlet and outlet connection to the manhole assemblies.

**306-6.5      Placement and Compaction.**

**306-6.5.1    General.**  
[Replace entire subsection with the following:].

The material in the bedding zone shall be placed and compacted mechanically. Water densified backfill will not be permitted. Unless the sheeting or shoring is to be cut off and left in place, compaction of bedding material for pipe shall be performed after the sheeting or shoring has been removed from the bedding zone, and prior to the placement of backfill.

Mechanical compaction shall conform to 306-12.3.

**306-15      PAYMENT.**

**306-15.1    General.**  
[Replace entire subsection with the following:].

Payment for pipe and conduit will be made at the Contract Unit Price per linear foot (m). The Contract unit price shall include payment for

- a) all wyes, tees, bends, monolithic catch basin connections, and specials shown on the Plans;
- b) the removals of interfering portions of existing pipelines, sewers, storm drains, and improvements;
- c) the closing or removing of abandoned conduit and structures;
- d) the excavation of the trench;

- e) the control of ground and surface water;
- f) the preparation of subgrade;
- g) placing and joining pipe;
- h) pressure testing;
- i) video inspection;
- j) disinfection sample collection and delivery;
- k) backfilling the trench;
- l) temporary and permanent resurfacing;
- m) and all other work necessary to install the pipe or conduit, complete in place.

No additional compensation will be allowed therefor.

In addition, no separate or additional payment will be made for additional bedding or higher strength of pipe necessitated by the Contractor exceeding the maximum trench width.

## **PART 4**

### **EXISTING IMPROVEMENTS**

#### **SECTION 400 –PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS**

##### **400-1       General.**

[Replace the second and last paragraphs with the following:].

The Contractor shall relocate, repair, replace or reestablish all existing improvements within the project limits which are not designated for removal (e.g., curbs, gutters, sidewalks, driveways, fences, landscaping, walls, sprinkler systems, signs, utility installations, pavements, and structures.) which are damaged or removed as a result of his operations.

Where existing traffic striping, pavement markings and curb markings are damaged or their reflectivity reduced by the Contractor's operations, such striping or markings shall also be considered as existing improvements and the Contractor shall repaint or replace such improvements.

Relocations, repairs, replacements or reestablishments shall be equal to the existing improvements and shall match such improvements in finish and dimensions unless otherwise specified.

All cost to the Contractor for protecting, removing, restoring, repairing, replacing, or reestablishing existing improvements shall be included in the bid in other items of work unless otherwise specified.

## **SECTION 402 – UTILITIES**

### **402-1 LOCATION.**

[Add the following:].

The location and existence of any underground utility or substructure was obtained from a search of available records. No guarantee is made or implied that the information is complete or accurate.

It shall be the Contractor's responsibility alone to determine the location of underground utilities or substructures of every nature and to protect them from damage.

The Contractor shall pothole all utilities, including service connections, which have been marked by the respective owners and which may affect or be affected by the Work.

The Contractor is required to pothole utility conduit crossings at all water mains and required to coordinate with the City's Water Utility Locator staff to verify and visualize that the utility conduit has a minimum 12" separation from the existing water main and that the water main is backfilled with minimum of 12" of sand. Water Utility Locator must be onsite to visualize the horizontal boring clearance of the water main and verify backfill material. If a pothole needs to be closed and reopened for the horizontal boring, it is the Contractor's responsibility to reopen the crossing for separation clearance and backfill. Full compensation for pothole work shall be included in the price bid for other items of work and no additional compensation will be allowed.

### **402-2 PROTECTION.**

[Replace the last sentence of the third paragraph with the following:].

Payment support or protection of such utility shall be considered as included in the bid for other items of work.

### **402-4 RELOCATION.**

[Replace the second sentence of the last paragraph with the following:].

When not otherwise required by the plans and specifications and when directed by the Engineer, the Contractor shall arrange for the relocation of service connections, as necessary, between the meter and property line, or between the meter and limits of construction.

### **402-5 DELAYS DUE TO UTILITY CONFLICTS**

[Add the following paragraph:].

All notification to utility companies insofar as the relocation or removal of a utility shall be made by the Engineer based on Contractor's request as submitted to the Engineer at least 48 hours in advance of the needed work. Any costs for delay of the Contractor of utility companies in this regard shall be assigned to the Contractor, if these costs are a result of the Contractor's request being untimely in any respect excepting thereof any delay cost incurred as a result of the utility company not responding at their agreed time.



# **PART 8**

## **LANDSCAPING AND IRRIGATION**

### **SECTION 800 – MATERIALS**

#### **800-1 LANDSCAPING MATERIALS.**

[Add the following:].

Unless otherwise indicated on the Plans, the landscape and maintenance *requirements contained in Appendix I*, and the following requirements of these Special Provisions shall govern this section. In the case of any discrepancy, the more stringent requirement shall apply as determined by the Engineer.

Due to the scale of drawings, it is not possible to indicate all offsets, fittings, sleeves, etc. which may be required. The contractor shall carefully investigate the structural and finished conditions affecting all of his work and plan his work accordingly, furnishing such fittings, etc., as may be required to meet such conditions. Drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting, and architectural features.

The Contractor shall not willfully install the irrigation systems as shown on the drawings when it is obvious in the field that unknown obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences should be brought to the attention of the AGENCY's authorized representative. In the event this notification is not performed, the irrigation contractor shall assume full responsibility for any revision necessary.

The Contractor shall obtain and pay for any and all permits and all inspections as required.

Permission to shut off any water lines must be obtained from the AGENCY Inspector, who will make the necessary arrangements with the AGENCY. Disruption of existing systems shall be kept to a minimum.

Any disruptions in irrigation for periods longer than 7 days will require the contractor to provide manual watering.

The Contractor shall verify and be familiar with the location, size and detail of stubouts, provided as the source of water supply to the sprinkler system, as shown on plans.

The Contractor shall provide Submittals and follow the material list below:

1. The Contractor shall furnish the articles, equipment, materials, or processes specified by name in the drawings and specifications. No substitution will be allowed without prior written approval by the AGENCY.
2. Complete material list shall be submitted prior to performing any work. Material list shall include the manufacturer, model number and description of all materials and equipment to be used.
3. Equipment or materials installed or furnished without prior approval of the AGENCY may be rejected and the Contractor required to remove such materials from the site at his own expenses.
4. Approval of any item, alternate or substitute indicates only that the product or products apparently meet the requirements of the drawings and specifications on the basis of the information or samples submitted.
5. Manufacturer's warranties shall not relieve the Contractor of his liability under the guarantee. Such warranties shall only supplement the guarantee.

#### **800-1.1.1 General.**

[Add the following:].

The following shall be added follow paragraph 1:

Topsoil material unless otherwise designated shall be Class C.

Prior to amending the areas where severe compaction exists, the subsurface soil should be ripped or tilled to a 9 inch depth. Uniformly broadcast and blend the materials and quantities listed below with existing soil to a 6 inch depth in all planting and turf areas. Remove all existing weeds from the surface. Remove all roots and nodes or nuts of Bermuda-Johnson Grass, Nut Grass and dispose off site. Initial irrigations should be especially thorough to provide some additional leaching.

The Contractor shall have a soil analysis made after completion of the rough grading. Site to be rough graded by Landscape Contractor to within 0.1 foot plus or minus by the City based upon Plans. The materials and quantities listed below are provided for bidding purposes only. Soil test (Agronomy Report) recommendations shall supersede the following required applications, ratios, and materials as approved by the AGENCY:

##### AMOUNT PER 1000 SQ. FT. OF PLANTING OR TURF AREA

4 cu. yds. nitrogen fortified organic amendment

(compost\* or redwood or fir sawdust)

15 lbs. 6-20-20 XB<sup>®</sup> w/ micronutrients

20 lbs. soil sulfur

100 lbs. agricultural gypsum

\*Rates and fertilizers may have to be adjusted depending on analysis of the selected compost.

Shape mounds as shown on plans. Contractor to import soil as necessary and have approval by City prior to delivery to the site. Any import will have a City Approved Agricultural Suitability Report to attain design grades and berms. All import shall be free of weeds and debris. Contractor shall dispose of buried debris and deleterious materials found upon any excavation, to any convenient dump or off site location at no expense to City.

#### **800-1.1.2 Class A Topsoil..**

[Paragraph 2 shall be deleted and the following paragraphs inserted in the place thereof]

At least 15 days before scheduled use, the proposed source of import soil must be submitted to the Soils Engineer for approval. The Contractor shall submit a written request for approval, which shall be accompanied by a written report of a testing agency registered by the State for agricultural soil evaluation, which states that the proposed source complies with these specifications. Class A import soil shall consist of a natural, fertile, friable, sandy loam soil possessing the characteristics of representative soils in the vicinity which produce heavy growth of crops, grasses, or other vegetation and shall be obtained from a natural, well-drained area. Before removal of the topsoil, the surface at the source of supply is to be stripped to a depth of two inches in order to remove weed seeds, roots, etc. The source of the imported soil shall be free from Bermuda grass, crab grass, and all noxious weeds, sticks, brush, litter, and other deleterious substances. In no case shall there be more than five percent by volume of the following: stones smaller than one inch, coarse sand, and small clay lumps. It shall not be infested with nematodes or other undesirable insects or plant disease organisms.

The soil shall be free from insoluble carbonates and shall have the following analysis, which shall be verified by a soil analysis made by the City.

pH - maximum of 7.0; minimum of 6.0

ECo - zero to three maximum (electrical conductivity)

ESp - zero to twelve maximum (exchangeable sodium percentage)

The soil shall be subject to inspection at the source of supply prior to delivery.

**800-1.2 Soil Fertilizing and Conditioning Materials.**

**800-1.2.1 General.**

[Add the following:].

For maintenance fertilization of all turf, groundcover, and mass planting areas, uniformly broadcast sulfur coated urea at the rate of 5 lbs. per 1000 sq. ft. The first application should occur approximately 30 days after planting, with repeat applications every 60-90 days or as growth and color dictate. In early fall and spring, substitute a complete fertilizer such as 16-6-8, or equal, for the sulfur coated urea at the rate of 6 lbs. per 1000 sq. ft. to ensure continuing supplies of phosphorus and potassium. Tree and shrub plantings can be maintained with the above fertilizers; however, the frequency between applications should be every 120 days, with the first application 90 days after planting. Follow each fertilization with a thorough irrigation. When plants have become well established, fertilizer applications can be less frequent.

Apply systemic weed killer 'Round-up' to all planting areas per manufacturer's specifications as required for weed control/removal.

**800-1.21 General.**

[The following paragraphs shall be added following paragraph 2]

Organic Fertilizers and Soil Conditioners shall comprise decomposed animal and vegetable matter having been processed and composed to support bacterial culture. A bacterial stimulator shall be included. A guaranteed analysis shall contain 5% Nitrogen, 3% Phosphate, 1% Potash, 50% Humus, 15% Humic Acid. No fertilizer or conditioner, etc., shall contain any unprocessed poultry, animal or human waste.

**800-1.2.3 Commercial Fertilizer**

[Add the following paragraphs]

Commercial Fertilizers shall be delivered in sacks with the manufacturer's label showing weight and analysis attached to each sack.

The following commercial fertilizer shall be used for bidding purposes only. Exact quantities and recommendations shall be determined by the soil fertility and agricultural suitability test to be prepared by Waypoint Analytical, Inc. (714) 282-8777. Contractor shall conduct an agronomic soil report on all imported soil at no additional cost to the City, and shall be included in the base bid. Contractor shall obtain city approval of imported soil prior to delivery.

Uniformly spread and cultivate amendments thoroughly by means of mechanical tiller into top 6" of soil in all planting areas. Application rate per 1,000 square feet:

Commercial Fertilizer 6-20-20	20 pounds
Soil Sulfur	10 pounds
Nitrogen stabilized sawdust (derived from 6 cubic yards	
Redwood, fir or cedar)	

Planting Tablets: Provide slow-release type with potential acidity of not more than 5 percent by weight containing the following percents by weight of nutrients listed; 20-nitrogen, 10- phosphoric acid, 5-potash, 2.6 combined calcium, 1.6-combined sulphur 0.35-iron (elemental) from ferrous sulfate. Provide in 21 gram tablets manufactured by Agriform, or other approved.

#### **800-1.2.4 Organic Soil Amendment.**

[Paragraph 1 shall be deleted and replaced with the following]

Organic Soil amendment material shall conform to Type 1 unless otherwise designated. Delete paragraph references to Type 2 and Type 3 soil amendments.

#### **800-1.2.5 Mulch.**

[Sentence one of paragraph one shall be deleted and replaced with the following]

Mulch material shall be Type 5 mulch and replaced with the following:

Mulch: Provide medium grind bark such as supplied by Blue Ribbon Landscape Supplies, (714) 633-3666, consisting of fibrous, woody bark mixture of varied particle size such that 90 to 100 percent passes 1 inch sieve, 80 to 100 percent passes 1/2 inch sieve, and 20 to 60 percent passes 1/4 inch sieve, or approved equal. Submit sample for review.

[The following subsection shall be added]

#### **800-1.2.6 Soil Herbicide.**

A commercially manufactured non-selective herbicide for total control of vegetation products shall meet all federal and state regulations pertaining to the use of such substances. Application and rate of application shall follow manufacturer's recommendation. Application shall not be made until obtaining written approval from the City. Following City approval of Contractor herbicide, Contractor shall apply herbicide to all landscape areas. Such application shall be performed in consideration of overall construction schedule and operation so as not to disrupt or interfere with the project schedule and time line.

### **800-1.4 Plants**

#### **800-1.4.1 General.**

[Subsection 800-1.4.1 shall be deleted and replaced with the following]

A representative number of plants shall be inspected and approved at the nursery by the Engineer prior to shipment to the planting site. Prior to such visit, Contractor shall submit 3" x 5" color photographs of all proposed tree and shrub material for City's review. Photos shall be submitted seven (7) calendar days prior to specified plant material review at nursery site. Plants shall be inspected for size and condition of root growth, insects, injuries and latent defects. The City reserves the right to reject entire lots for plants represented by defective samples. Plant condition shall be in accordance with the California State Department of Agriculture's regulations for nursery inspections, rules and grading. All plants shall have a growth habit normal to the species and shall be sound, healthy, vigorous and free from insect pest, plant diseases, sunscalds, fresh bark abrasions, excessive abrasions, or other objectionable disfigurements. Tree trunks shall be sturdy and well hardened off. All plants shall have normal well-developed branch systems, and vigorous and fibrous root systems which are neither root nor pot-bound and are free of kinked or girdling roots. Other than the normal side pruning during the growth period, no pruning shall be done prior to inspection at the nursery. The size of the plants will correspond with that normally expected for species and variety of commercially available nursery stock, or as specified in the drawings. The minimum acceptable size of all plants, measured before pruning with the branches in normal position, shall conform with the measurements, if any, specified on the drawings in the list of plants to be furnished. Plants larger in size than specified may be used with the approval of the City, but the use of larger plants will make no change in contract price. Bare root plantings in publicly maintained areas shall be done only with special approval of City.

Quantities and Types. Plant materials shall be furnished in the quantities and/or spacing as shown or noted for each location, and shall be of the species, kinds, sizes, etc., as symbolized, and/or described in the Plant Legend, as indicated on the drawings. The landscape contractor is to verify all sizes and

quantities on plans. Installation and use of substitute items shall not be made until the Contractor is in receipt of written approval from the City. Substitution Proposals for plant material must be accompanied by substantive written proof of non-availability of material originally specified prior to bid opening.

[Add the following subsection]

**800-1.4.2.1.9 Fertilizer.**

- A. Root Growth Stimulant: Stimulant shall be Vitamin B-1 as manufactured by Cal-Liquid, Cooke, Chican, Otiho, or other approved equal.
- B. Fertilizer will not be used at time of planting. After four months, use a light application of 20:10:5 approximately 1/2 lb. nitrogen per tree cultivated into soil.

**800-1.5.3 Tree Stakes.**

[The first paragraph shall be replaced with the following]

Tree stakes shall be sharpened 2" diameter lodgepole pine, treated in accordance with Section 204-2.2. Stake shall be free from splits.

[The third paragraph shall be replaced with the following]

Deadman stakes shall be duckbills or 2x4 inch redwood 18 inches long. Covers for wire shall be 3/4-inch Class 200 PVC pipe - 3 feet long.

[The following paragraph shall be added at the end of the subsection]

A minimum of two (2) supporting tree ties or three (3) guy anchors shall be used for each tree. Tree ties shall be V.I.T. "Twist Brace" Model TB24.

**800-1.5.5 Root Barriers**

Root barriers shall be 36" deep and as provided by DeepRoot Corp. (800) 458-7668, or approved equal. Installation shall be per manufacturer's specifications.

**800-2 Irrigation System Materials**

**800-2.1.1 General.**

[The following paragraph shall be added at the end of the subsection]

The manufacturer's directions and detail drawings shall be followed unless directed by the City Representative or shown differently in the plans and specifications.

**800-2.1.3 Plastic Pipe for Use With Solvent Weld Socket or Threaded Fillings.**

[Add the following before the first paragraph]

General. Use only new materials of brands and types noted on drawings specified herein, or approved equals.

[Paragraph 2 shall be deleted and replaced with the following]

PVC Pressure Main Line Pipe and Fittings shall be Class 315 PVC with bell and gasket-type pipe for pressure main pipes 2 inches and larger.

PVC schedule 40 with solvent welded joints for pressure main piping of lesser diameter. PVC schedule 40 solvent welded piping shall be used for all non-pressure lateral line piping.

The following paragraphs shall be added at the end of the subsection:

All PVC pipe must bear the following markings:

1. Manufacturer's name
2. Nominal pipe size
3. Schedule or class
4. Pressure rating in P.S.I.
5. NSF (National Sanitation Foundation) approval
6. Date extrusion
7. U.P.C. shield logo (IAPMO approval)

All fittings shall bear the manufacturer's name or trademark, material designation, size, applicable I.P.S. schedule and NSF seal of approval

Solvent cement and primer for PVC solvent-weld pipe and fittings shall be of type recommended by the manufacturer, and shall follow installation methods prescribed by the pipe manufacturer.

**800-2.2.2 Gate Valves.**

[The text of this subsection shall be deleted and replaced with the following]

All valves shall be as identified on the Construction Documents and per City review and approval.

**800-2.2.4 Remote Control Valves.**

[Add the following after paragraph number one:]

Remote control valve manufacturer and sizes shall be as indicated in plans and legend.

**800-2.2.6 Quick-Coupling Valves and Assemblies.**

[The text of this subsection shall be deleted and replaced with the following Paragraph]

Quick-coupling valves shall have a brass two-piece body designed for working pressure of 150 PSI. The quick-coupling valve shall have a built-in flow control and self-closing valve and shall be supplied in 3/4-inch (19) size unless otherwise required. The valve shall be equipped with a locking rubber or vinyl cover. When a quick-coupler assembly is specified, it shall consist of the valve, quick-coupler connection, and hose swivel.

**800-2.2.7 Valve Boxes.**

[Delete the first paragraph and replace with the following]

Valve boxes and lids shall be as detailed on the Plans. The boxes shall be covered with an etched polyethylene face with an ultraviolet inhibitor. The lid shall be plastic, lockable, and embossed with the valve station number on its topside. Sizes and manufacturer of the valve boxes and lids shall be as indicated on the Standard Drawings.

### **800-2.2.8 Master Control Valves.**

The master control valve manufacturer and size shall be as indicated on plan and legend.

### **800-2.3.1 Backflow Preventer Assembly**

[Add the following after paragraph number one]

Unless otherwise instructed by the City Inspector, backflow assemblies shall consist of a brass reduced pressure/backflow prevention device with “Wye” strainer and 60 mesh screen as detailed and called out on the Project Plans.

### **800-2.4 Sprinkler Equipment**

[The text of this subsection shall be deleted and replaced with the following]

Irrigation bodies and nozzles shall be as indicated on plan and legend. Substitutions shall not be allowed unless by written authorization from the City.

Irrigation bodies and nozzles shall feature low head drainage, pressure regulating, and pressure compensating features. Unless otherwise approved, all pop-ups and fixed riser assemblies shall consist of plastic and stainless steel materials.

Smaller radii turf irrigation equipment shall consist of 6-inch pop-ups. All smaller radii shrub and groundcover irrigation equipment shall consist of 12-inch pop-ups, unless otherwise approved by the City. Smaller radii equipment are those components which irrigate within and under a radius of 22 feet.

## **800-3 ELECTRICAL MATERIALS**

### **800-3.2.1 Conduit.**

[Replace paragraph with the following]

Conduit shall be Schedule 40 PVC pipe as called out on the plans. Install per plans. Conduit shall conform to the applicable provisions of subsection 800-2.1.3.

### **800-3.2.2 Conductors**

[Add the following paragraph]

The electrical system shall be installed in accordance with the National Electrical Code most recently adopted by the City. Connections between the automatic controllers and the electric control valves shall be made with direct burial copper wire AWG-U.F. 600 volt. Pilot wires shall be a different color wire for each automatic controller. Common wires shall be white with a different color stripe for each automatic controller. Install in accordance with valve manufacture's specifications and wire chart. In no case shall wire size be less than #14.

Wiring shall occupy the same trench and shall be installed along the same route as pressure supply or lateral lines wherever possible. Install wires inside Schedule 40 Conduit anywhere it is not possible to place in pipe trench, or where wires must go under pavement. Conduit size shall be large enough to contain all necessary wires. Minimum conduit size shall be 2”.

Where more than one (1) wire is placed in a trench, the wiring shall be taped together at intervals of ten (10) feet.

An expansion curl should be provided within three (3) feet of each wire connection and at least every one hundred (100) feet of wire length on runs more than one hundred (100) feet in length and also at each change of direction. Expansion curls shall be formed by wrapping at least five (5) turns of wire around a one-inch diameter pipe, then withdrawing the pipe.

All splices shall be made with 3M - DBY wire connector, or approved equal. Use one splice per connector sealing pack.

Field splices between the automatic controller and electrical control valves will not be allowed without prior approval of the City.

## **SECTION 801 - LANDSCAPE & IRRIGATION INSTALLATION**

### **801-1 GENERAL**

[The following paragraphs shall be added at the end of the subsection:]

Inspection will be required for the following parts of the work:

- a. At completion of rough grade prior to incorporation of soil amendments.
- b. Irrigation coverage test prior to initiating planting operations.
- c. At completion of incorporation of soil amendments and fine grading.
- d. Prior to digging plant pits for trees and shrubs.
- e. During backfilling of plant pits with amended backfill.

f. Maintenance period shall not begin until final installation inspection is made, and establishment is verified. City inspector shall approve commencement date of maintenance prior to the commencement of said maintenance.

- g. Final review and acceptance at the end of the maintenance period.

### **801-2 EARTHWORK AND TOPSOIL PLACEMENT**

#### **801-2.1 General.**

[The following paragraph shall be added at the end of the subsection:]

The Contractor shall apply water as necessary to provide ideal moisture content for tilling and for planting as, herein specified.

#### **801-2.2 Trench Excavation and Backfill.**

[The second and last paragraph shall be deleted and the following added:]

The depth of cover over pipelines and conduits shall be per Drawings.

The trenches shall not be backfilled until all required tests are performed. A fine granular material used for bedding and backfill will be placed on all lines. Trenches shall be carefully backfilled with the excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand, or other approved materials, free from large clods of earth or stones.

The finished surface shall be restored to the grade established prior to excavation. All mounding and divots shall be graded smooth to the satisfaction of the City Representative.

If settlement occurs, and subsequent adjustments in pipe, valves, valve/utility boxes, sprinkler heads, lawn or planting, or other construction are necessary, the Contractor shall make all required adjustments.



### **801-2.2.1 Trenching and Backfilling Under Paving.**

[The following subsection shall be added:]

Where irrigation lines are called for on the plans to be placed within a sleeve the PVC sleeve to be provided for such work shall be Schedule 40 PVC sleeve.

### **801-2.2.2 Trenching Adjacent to Existing Trees.**

[The following subsection shall be added:]

Where it is necessary to excavate adjacent to existing trees, the Contractor shall use all possible care to avoid injury to trees and tree roots. Excavation in areas where two (2) inch and larger roots occur shall be done by hand. All roots two (2) inches and larger in diameter, except directly in the path of pipe or conduit, shall be tunneled under and shall be heavily wrapped with burlap, to prevent scarring or excessive drying. Where a ditching machine is run close to trees having roots smaller than two (2) inches in diameter the wall of the trench adjacent to the tree shall be hand trimmed, making clean cuts through. Trenches adjacent to trees should be closed within twenty-four(24) hours; and where this is not possible, the side of the trench adjacent to the tree shall be kept shaded with burlap or canvas.

## **801-2.3 Topsoil Preparation and Conditioning**

### **801-2.3.2 Fertilizing and Conditioning Procedures.**

[The first paragraph of the subsection shall be deleted and replaced with the following:]

The planting areas shall be brought to rough grade whereupon Fertilizer and Soil Conditioning required for the native soils for the intended landscape planting shall be added based upon the recommendations of Soils Fertility and Agricultural Suitability Report. (See Section 212) The Contractor, at no additional cost to the City, shall make two additional soils tests for agricultural fertility and suitability and fertilizer and amendment recommendations of all planting areas upon completion of excavation, topsoil backfilling, and grading. The Contractor shall amend it as necessary to comply with the soils test report at no additional cost to the City.

### **801-2.3.3 Weed Control.**

[The following subsection shall be added:]

Kill and remove all existing weeds from site areas utilizing post-emergent herbicide.

Upon completion of the irrigation system and after all designated shrub and ground covers, existing weeds and growth have been removed from the planting areas, the Contractor shall apply by spray a mixture of Commercial Fertilizer 12-12-12 to be applied at a rate of 400 lbs/per acre.

Thereafter, all areas shall be watered four (4) times daily until weed seeds have germinated, approximately 21 days or unless otherwise directed by the Engineer. Thereafter, watering shall cease for three (3) days to be followed by the spraying of a systemic herbicide containing the active ingredient glyphosate (Roundup-Pro, or approved equal). Spraying shall be at the labeled rate compatible with the eradication rate for the target weed species and shall be performed under the direction of a registered pest control advisor. After allowing sufficient time for the herbicide to kill all remaining weeds (2 weeks minimum), the areas to be landscaped shall be raked or hoed as directed by the Engineer to remove any remaining weed stubble. All areas shall be watered for an additional 14 (fourteen) day period and then an additional application of the systemic herbicide per manufacturer's recommendation.

## **801-2.4 Finish Grading.**

[The following shall be added to the last sentence of the second paragraph.]

...except where water is designed to flow over the same.

[The following paragraphs shall be added following paragraph two:]

Finish grades shall be those indicated on the drawings or as may be controlled by existing installations. Grades not otherwise indicated shall be uniform, and straight graded between points where elevations are noted. Minor modeling of the ground surface may be required.

Grading shall provide for the natural run-off of water without low spots or pockets. Flow lines shall be set by instrument and shall be the maximum gradient possible.

### **801-3            HEADER INSTALLATION**

[The following subsection shall be added:]

#### **801-3.1        Concrete Headers.**

Concrete headers shall be constructed where shown on the plans and specifications. All concrete work shall conform to the requirements of subsections 201-1 and 301-1 and per Project Plans.

### **801-4            PLANTING.**

#### **801-4.1        General.**

[Add the following:].

City may request inspection of delivery slips for planting materials to verify specified quantities of bulk deliveries. Close supervision of these items will be strictly adhered to.

Substitutions for the indicated plant materials will be permitted provided the substitute materials are approved in advance by the AGENCY and the substitutions made at no additional cost. Except for the variations so authorized, all substitute plant materials shall conform to the requirements of these specifications. If accepted substitute materials are of less value than those indicated or specified, the contract price will be adjusted in accordance with provisions of contract.

All plants shall have a habit of growth that is normal to the species, be sound, healthy, vigorous, and free from weeds, insect pests, plant diseases, sun scalds, fresh abrasions of the bark, excessive abrasions or other objectionable disfigurements. Tree trunks shall be sturdy and well "hardened off". The plants shall have normally well-developed branch systems and vigorous and fibrous root systems which are not root or pot bound. Plants shall be grown in nurseries which have been inspected by the State Department of Agriculture and have complied with its regulations. AGENCY shall have the right to reject plants which do not meet the specified conditions or accepted standards of the trade.

#### **801-1.4.5      Tree and Shrub Planting**

[Replace the fifth item in fifth paragraph with the following.]

5) A circular water basin slightly larger than the planting hole, 4 inches high for trees and 2 inches high for shrubs, shall be left around the plant. The bottom of the basin shall be at approximate finish grade or slightly lower. Engineered Wood Fiber (EWF) Manufactured softwoods and /or hardwoods blunt or soft chopped ends, controlled size average 1" to 2" in length containing a maximum 15% fine pine needles to aid in knitting, non-toxic free of paint, chemicals, additives or metals or AGENCY approved equal shall be spread at least 3 inches thick in the basin.

[Add the following to fifth paragraph.]

h) The top of the shrub root ball should be at or slightly above final grade, and trees 1½" above finish grade.

i) To improve soil chemistry, uniformly blend 2 lbs. of iron sulfate and agricultural gypsum per cubic yard of backfill soil. Handle iron sulfate with caution since it will severely stain moist concrete.

j) Organic material is not required in the backfill; however, the amended surface soil or a soil blend consisting of no more than 10% by volume organic matter can be placed in the upper 12 inches of backfill only. Soil below this depth should not contain any added organic matter because of the threat of plant disease and/or anaerobic soil conditions developing.

k) Place slow release fertilizer tablets in the upper 12 inches of backfill at manufacturer's recommended rates. If fertilizer amended soil is used as a backfill the addition of slow release fertilizer tablets is not necessary.

l) Do not cover the original root ball with other soil. A temporary soil berm shall be constructed around the outer edge of the root ball to help channel water into the root ball and then into surrounding soil until roots are established in the backfill and the root ball is no longer the sole source of water for the plant.

m) A weed and turf free zone, 3 feet in diameter, shall be maintained just around the tree. A 3 inch deep layer of Engineered Wood Fiber (EWF) Manufactured softwoods and /or hardwoods blunt or soft chopped ends, controlled size average 1" to 2" in length containing a maximum 15% fine pine needles to aid in knitting, non-toxic free of paint, chemicals, additives or metals or agency approved equal shall be placed around the tree or shrub; mulch shall be kept a minimum 4-6 inches from the trunk.

n) Planting shall not commence until all construction work, grading, soil improvements, and irrigation except for tree irrigation laterals has been completed.

#### **801-4.6 Plant Staking and Guying.**

##### **801-4.6.1 Method "A" Tree Staking.**

[Delete Subsection in total].

##### **801-4.6.2 Method "B" Tree Staking.**

[Replace entire Subsection with the following:].

**801-4.6.2 Method "C" Tree Staking.** The tree shall be staked with 2 inch diameter lodge pole pine, copper naphthenate treated 10 feet long driven 36 inches into the ground. The stakes shall be 18 inches from each side of the tree trunk, and stakes and tree shall be in a plane parallel to the street centerline. Ties shall be made of 1 inch or wider by 32 inches long (min) 'gro-straight' rubber type. Two tie locations shall be used; one at 2 inches from the top of each stake and one at 36 inches above the ground. Ties shall be loops secured to the stake on both ends and shall be long enough to provide for 3 inches of slack to permit the tree trunk limited movement in any direction. Anchor ties to stakes at both sides with 4D galvanized roofing nails bent over back of post. Pre Drill all holes. Refer to City Std. Plan No. 714.

#### **801-4.8 Sod.**

Sod shall be laid with longer seams perpendicular to the slope, and in a staggered pattern to minimize erosion. Sod panels shall be a minimum of 24" wide.

#### **801-4.10 Wood Mulch Installation**

Mulch installation shall consist of placing 2-1/2" thick layer 'ES-2 Mulch' material equal to or supplied by Agromin, (800) 247-6646 over designated planter areas. See plans for areas of installation. Submit sample prior to purchase and/or placement for approval.

## **801-5 IRRIGATION SYSTEM INSTALLATION.**

### **801-5.1 General.**

[Add the following:].

The Contractor shall furnish all necessary materials, labor, and equipment required to complete the work of installing the irrigation system in accordance with the Plans and Specifications.

Trenches through paved areas shall be resurfaced in accordance with 306-1.5.

After completing the irrigation system, the Contractor shall submit drawings showing the location of pull boxes, pipe, valves, tubing, wiring, controllers, and electrical services as constructed. The drawings submitted shall be noted as "Record Drawings" and shall be completed on copy-pressed Mylar's (4 mil. min.). The Contractor shall indicate all irrigation equipment locations by dimension. Each valve, mainline pipe, sleeve, meter, backflow preventer, controller wire, automatic controller and electrical service shall be located and dimensioned from two points of architectural permanence, e.g., curbs, walls, or buildings. The record drawings shall be prepared by a competent draftsman using reproducible Mylar originals supplied by the City. Final record drawings will be approved by the AGENCY Representative prior to preparing the irrigation controller charts and Mylar's. Copy-pressed Mylar's (4 mil. min.) shall be provided as final record drawings in 24" x 36" and 11" x 17" formats. Record drawings shall be of the complete construction plan set.

Contractor shall provide all labor, materials, and equipment necessary to furnish and install the irrigation system as shown on the plans and as specified herein, including but not limited to irrigation materials and related appurtenances, water meter assembly(ies), connections to water and electrical utilities, excavation and backfill of pipe, trenches, temporary and permanent trench resurfacing and grinding, record drawings, guarantees, permits and licenses, testing and inspections and clean-up operations.

Controller Charts: The Contractor shall prepare an irrigation controller chart indicating the Record Drawing serviced by that particular controller. All valves shall be numbered to match the actual field operation schedules. Only those areas controlled by that controller shall be shown. This chart shall be made from the irrigation system record drawings, entire or partial, showing buildings, walks, roads, parking, and walls. A photo static print of this plan, reduced as necessary, and legible in all details, shall be made to a size as directed by the AGENCY. Do not prepare controller charts until record drawings have been approved by the AGENCY's representative. Provide one chart for each automatic controller installed. Identify the area of coverage of each remote control valve, using a distinctly different pastel color, drawn over the entire area of coverage. Charts must be completed and approved prior to final review and acceptance of the irrigation system. This chart shall be approved by the AGENCY representative and shall be hermetically sealed in 20 mil. plastic. This shall then be secured to the inside of each automatic controller. Show controller designation on each chart.

[The following paragraphs shall be added after paragraph three]

Contractor shall be responsible to notify the City prior to start of construction to coordinate on-site inspections.

Due to the scale of drawings, it is not possible to indicate all offsets, fittings, sleeves, etc., which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of his work and plan his work accordingly, furnishing such fittings, etc., as may be required to meet such conditions.

The work shall be installed in such a manner as to avoid conflicts between planting and architectural features, etc.

All work called for in the drawings by notes or details shall be furnished and installed whether or not specifically mentioned in the specifications.

The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that unknown obstructions, grade differences, or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences should be brought to the attention of the City Representative. In the event this notification is not performed, the Irrigation Contractor shall assume full responsibility for any revisions necessary and shall perform such at his own expense.

[The fourth paragraph shall be deleted and replaced with the following paragraphs:]

The location of connection points shown is approximate. The Contractor shall contact the utility companies and coordinate the installation of the required electrical and water services. Following coordination with the utility companies, the Contractor shall make all necessary provisions to make the service connections called for on the plans at the places indicated or to the nearest acceptable point thereto as approved by the utility companies and the City Representative. Verification of the point of connections with the utility companies and the City Representative shall be obtained by the Contractor prior to the start of work.

All costs for making the service connections shall be paid for by the Contractor, with the exception of any utility company fees and permit fees which are reimbursable by the City, as per Section 7-3 "Permits" of the General Provisions.

[The following paragraph shall be added at the end of the subsection]

Temporary Repairs. The City reserves the right to make temporary repairs as necessary to keep the irrigation system in operating condition. The exercise of this right by the City shall not relieve the Contractor of his responsibilities under the terms of the guarantee as herein specified.

#### **801-5.2 Trench Excavation and Backfill.**

[Replace the second paragraph with the following:]

Unless otherwise specified, the minimum depth of cover over pipelines and conduit shall be as follows:

- a) Electrical conduit –36 inches (36 inches under roadways).
- b) Waterlines continuously pressurized –24 inches (36 inches under roadways).
- c) Lateral sprinkler lines –18 inches.

[Replace the fourth paragraph with the following:]

Trenches and excavations shall be backfilled so that the specified thickness of topsoil is restored to the upper part of the trench. Trenches for pipe shall be cut to required grade lines, and compacted to provide an accurate grade and uniform bearing for the full length of the line.

Where it is necessary to excavate adjacent to existing trees, the Contractor shall use all possible care to avoid injury to trees and tree roots. Excavation in areas where 2 inch and larger roots occur, shall be done by hand. All roots 2 inches and larger in diameter, except directly in the path of pipe or conduit, shall be tunneled under and shall be heavily wrapped with burlap, to prevent scarring or excessive drying. Where a ditching machine is run close to trees having roots smaller than 2 inches in diameter, any exposed roots shall be protected and if any are damaged, they shall be trimmed clean with a hand pruning saw only. The walls of the trench adjacent to the tree shall be closed within 24-hours and where this is not possible the side of the trench adjacent to the tree shall be kept shaded with burlap or canvas.

#### **Backfilling:**

- 1. Backfill shall not be placed until the installed sprinkler irrigation system has been inspected and approved by the AGENCY's representative.
- 2. Backfill material shall be approved soil. Unsuitable material, including clods and rocks over 1 inch in size, shall be removed from the premises and disposed of legally at no cost to the AGENCY.
- 3. All backfilling shall be done carefully and shall be properly tamped. Sandy soil only shall be tamped and inundated with water to eliminate any voids.
- 4. Surplus earth remaining after backfilling shall be disposed of on the premises as directed by the AGENCY's representative.

5. Where excavating or "jacking" is required under asphalt pavement, sidewalks, roads, etc. care shall be taken in backfilling with sand, tamping, and inundating with water.
6. Sand backfill, where required shall be per detail(s) on plan.

### **801-5.3 Irrigation Pipeline Installation.**

#### **801-5.3.1 General.**

[Add the following:].

Changes in pipeline size shall be accomplished with reducer fittings.

The AGENCY reserves the right to make temporary repairs as necessary to keep the sprinkler system equipment in operating condition. The exercise of this right by the AGENCY shall not relieve the Contractor of his responsibilities under the terms of the guarantee as herein specified.

[The following sentences shall be added at the end of paragraph four:]

A minimum of twelve (12) inches clearance shall be maintained between "recycled" irrigation pipelines and non-irrigation pipelines/conduits.

[The following paragraphs shall be added at the end of the subsection]

PVC Sleeves shall be required under areas where all hardscape materials shall be installed. Sleeving shall be done per detail on Project Plans (Minimum sleeve dimension shall be twice the diameter of pipe size.

#### **801-5.2.3 Plastic Pipeline.**

[The following shall be added to the end of paragraph one]

PVC to metal connections shall only be accomplished by PVC male adapters screwed into metal fittings. Teflon tape shall be used on all threaded PVC to PVC, and on all threaded PVC to metal joints.

[The following paragraph shall be added following paragraph four]

Handling of PVC Pipe and Fittings. The Contractor is cautioned to exercise care in handling, loading, unloading, and storing of PVC pipe and fittings. All PVC pipe are to lie flat and not to be subjected to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged will be discarded and, if installed, shall be replaced with new piping. Pipe and fittings shall not be stored in direct sunlight.

### **801-5.4 Installation of Valves, Valve Boxes, and Special Equipment.**

[Add the following:].

Thrust Blocking of main irrigation lines shall be provided at all directional changes when PSI exceeds 65 PSI.

All isolation valves 2 inches or larger shall be supplied with service handles and supported with 1 foot square depth concrete footing below waterline.

[Paragraphs three, four, five, and six shall be deleted.]

**801-5.5            Sprinkler Head Installation and Adjustment.**

**801-5.5.2        Location, Elevation, and Spacing.**

[The third paragraph shall be amended to read as follows]

Sprinkler heads shall be installed 6 inches from the adjacent vertical elements projecting above grade such as walls, planter boxes, curbs, and fences in shrub areas. Sprinkler heads shall be installed 4 inches from adjacent vertical elements projecting above grade such as walkways, walls, planter boxes, curbs, and fences in turf areas.

**801-5.6            Flushing and Testing.**

**801-5.6.1        General.**

[The following paragraph shall preface the subsection]

Flushing of the lines shall be done before quick coupling valves and remote control valves are in place. All open ends shall be piped (temporarily to exhaust flushing water up and out of the trenches.)

No water will be permitted to fall into the trench. Flushing procedure will be to first open the ports nearest the source, then recap, and move progressively towards the end of the line, with only one open port flushing at any one time.

Amend the last sentence of the first paragraph by adding “and approved in writing” by the Senior Landscape Planner at the end of the sentence.

[Add the following paragraph to the end of the subsection]

When the irrigation system is completed, a coverage test shall be performed by City Staff to determine if the water coverage for planting areas is complete, adequate, and avoids overspray onto walks, roadways, and buildings as much as possible. The Contractor shall furnish all materials and perform all work required to correct any inadequacies of coverage due to deviations from the Drawings, or where the system has been willfully installed as indicated on the Drawings when it is obviously inadequate, without bringing this to the attention of the City inspector. This test shall be accomplished before any ground cover is planted.

The Contractor shall request the presence of the City in writing at least forty-eight (48) hours in advance of testing. The Contractor shall flush and adjust all sprinkler heads for optimum performance and to prevent overspray onto walks, roadways, and buildings as much as possible.

**801-5.6.2        Mainline and Lateral Pipeline Pressure Test.**

Pressure test at the end of the first paragraph shall be amended to read: Mains 6 hrs at 150 PSI. Laterals 2 hours at 100 PSI.

**801-6            MAINTENANCE AND PLANT ESTABLISHMENT.**

[Replace the first paragraph with the following:]

The Contractor shall maintain all planted areas on a continuous basis as they are completed during the progress of the work and for an additional 365 days after AGENCY acceptance.

[Add the following:]

Maintenance includes the following:

- A. At the completion of each day's work and prior to the check inspection, the Contractor shall legally dispose of trash, refuse, debris, containers, etc., off the premises. All scars, ruts, or mars in the area cause by Contractor's work shall be repaired at Contractor's expense.
- B. After all work indicated on the drawings or herein specified has been completed, inspected and approved by the AGENCY, the Contractor shall maintain all planted areas by means of continuous watering and weeding, following mowing, edging and/or other operations necessary for their care and upkeep for a period of not less than 365 days. At the end of the maintenance period, all plant materials shall be in a healthy, growing condition.
- C. All planted areas shall be fertilized as follows: Apply 16-20-0 commercial fertilizer at 10lbs/1000sq ft on the 28<sup>th</sup>, 58<sup>th</sup>, 88<sup>th</sup>, 118<sup>th</sup>, 148<sup>th</sup>, 178<sup>th</sup>, 208<sup>th</sup>, 238<sup>th</sup>, 268<sup>th</sup>, 298<sup>th</sup>, 328<sup>th</sup>, 358<sup>th</sup> day.
- D. At the end of the maintenance period, lawn area will be cut to specified height and neatly trimmed and edged; all sprinklers and appurtenances, risers, valves, etc.) in operating condition; controller programmed according to sprinkler plan: "As-Built" sprinkler drawings completed in a legible manner; and total plant counts verified.
- E. All paved areas shall be kept continuously clear of mud, debris, and puddles
- F. All seeded turf and/or slope areas must be fully germinated displaying a vigorous, healthy cover of specified varieties with no "bare" areas.
- G. Hoses, maintenance equipment and materials shall be neatly stored when not in use in an area authorized by the AGENCY.
- H. Maintenance foreman on the job shall be competent English-speaking supervisor, experienced in landscape and maintenance and capable of discussing matters with the Landscape Architect on the site.
- I. Workmen shall present a neat appearance at all times and shall conduct all work operations and dealings with the public in a diplomatic and courteous manner. Workmen shall be fully clothed at all times in a dress suitable for the job.
- J. The Contractor shall be responsible for notifying the City Public Works Department 48 hours (two working days) in advance for the following inspections:
  - a) Pre job meeting on site
  - b) Inspect Irrigation sleeving
  - c) Inspect forming, pouring, and finishing of concrete
  - d) Inspect rough grade
  - e) Inspect removal of street and base material
  - f) Inspect all delivery receipts @ time of delivery prior to acceptance
  - g) Inspect trees, shrubs, and groundcovers @ delivery
  - h) Inspect soil preparation
  - i) Inspect trenching for irrigation and drainage
  - j) Inspect valves, backflow device, quick couplers, controller and head locations
  - k) Inspect irrigation coverage
  - l) Inspect planting process
  - m) Inspect herbicide, fertilization or pre-emergent applications
  - n) Inspect tree staking and tying
  - o) Inspect final installation
  - p) Monthly maintenance walk
- K. In the event that the Contractor requests inspection of the work and it is substantially incomplete, the Contractor maybe responsible for inspection costs.

[The following paragraph shall be added following paragraph six]

The Contractor shall be responsible for detecting diseases and pests (including rabbits, gophers, groundhogs, rodents) as soon as they are present and shall take immediate action to identify, control, and remove the disease or pest. Pest control programs of all mammals shall be done without extermination and as approved by the City's Authorized Representative. Plants shall be maintained in a disease and pest free condition. A licensed pest control operator shall be maintained to recommend and apply pesticide, herbicides,



and fungicides. Contractor shall be responsible for removal of gophers and moles from site and repair any and all damage attributed to their presence. Damaged plant material due to vertebrate pests (rabbits, gophers, groundhogs, etc.) shall be replaced immediately by Contractor at no cost to City. Dead dying and damaged plant material shall be removed at no cost to the City.

Maintain all planting starting with the planting operations and continuing for 90 calendar days after all planting is complete and approved by the City in writing. The maintenance period will not commence until all planting has been approved in writing by the City.

Maintenance shall include, but not be limited to, all watering, irrigation repair, weeding, mowing, edging, cultivating, spraying, and pruning necessary to keep the plant materials in a healthy growing condition and to keep the planted areas neat and attractive throughout the maintenance period

The lump sum price paid for the maintenance period shall include all costs for water (from the new water meter installed only), watering, irrigation repair, weeding, mowing, edging, cultivating, spraying, and pruning necessary to keep the plant materials in a healthy growing condition and to keep the plant areas neat and attractive throughout the maintenance period. Upon the 60th day or thereafter, dirt berms around trees and shrubs shall be leveled

Provide all equipment and means for proper application of water to those planted areas not equipped with an irrigation system.

Protect all planted areas against damage, including erosion and trespassing, by providing and maintaining proper safeguards.

During the maintenance period, all plants and planted areas shall be kept properly watered and weed-free at all times. Irrigation schedule shall comply with AB1881 and Certified Irrigation Auditor's parameters.

In order to expedite the plant establishment work, the Contractor shall maintain a sufficient number of men and adequate equipment to perform the work herein specified from the time any planting is done until the end of the final maintenance period.

The Contractor will be relieved from maintenance work when the plant establishment and maintenance work has been completed to the satisfaction of the City.

Damage to planting areas shall be replaced immediately when seen by Contractor. Damage observed by the City shall be replaced within 24 hours of notification to the Contractor.

Depressions caused by vehicles, bicycles, or foot traffic, are to be filled and leveled. Replant damaged areas.

Apply a pelletized fertilizer blend of 15-15-15 at the beginning and at every 30-day maintenance interval at the rate 350 lbs. per acre until the designated end of the maintenance period. A 90-day maintenance program shall consist of three fertilizer periods.

Apply 25 lbs Gro-Power Plus per 1,000 square feet at 25th and 55th day of 90 day maintenance period.

Contractor shall be responsible for removal of rodents, slugs, snails, and cutworms from site as required and repair damage as above.

All paved areas will be broom cleaned and/or washed and maintained in a neat and clean condition at all times, as directed by the City. AQMD and WQMP practices shall be observed. Air blowers shall not be allowed.

Replacements. At the end of the maintenance period, all plant material shall be in a healthy growing condition.

During the maintenance period, should the appearance of any plant indicate weakness and probability of dying, immediately replace that plant with a new and healthy plant of the same type and size without additional cost to the City.

All trees shall be guaranteed by the Contractor to live and grow in an acceptable upright position for a period of one year after completion and final acceptance by the City.

The Contractor, within ten (10) days of notification by the City, shall remove and replace all guaranteed plant materials which for any reason fail to meet the requirements of the guarantee. Replacement shall be made with plant materials as indicated or specified for the original planting,

and all such replacement materials shall be guaranteed as specified for the original guaranteed materials.

Clean-Up. Upon completion of the work in this section, the Contractor shall clean-up and remove from the area all unused materials and debris resulting from the performance of the work as directed by the City.

#### **801.6.2 Charts, Manuals, and Drawings**

[Subsection is hereby added to subsection 801-6 of the Standard Specifications as follows]

##### **801-6.2.1 As-Built Drawings**

Contractor shall provide City Representative with Landscape Architect signed project construction document plans, reflecting all “as-built” conditions for all project elements with two (2) sets of edge bound plots at the completion of the project at no additional cost to the City.

Contractor shall provide PDF set of electronic files, delivered to the City’s Senior Landscape Planner for permanent recordkeeping purposes.

Contractor shall dimension from two (2) permanent points of reference, building corners, sidewalk or road intersections, etc., the location of the following items;

1. Gate valves
2. Sprinkler control valves
3. Routing of control wiring
4. Rain gauge
5. Quick coupling valves
6. Point of connection components (meters, backflow preventers, etc.)
7. Other related equipment as directed by the City
8. Significant changes in routing of lateral lines from those indicated on the plans

Delivery. On or before the date of the final inspection, the Contractor shall deliver the corrected and completed design documents to the City. Delivery will not relieve the Contractor of the responsibility of furnishing required information that maybe omitted from the prints.

#### **801-6.2.2      Controller Charts**

As-built drawings shall be approved by the City before the Contractor prepares the controller charts.

Provide two (2) controller charts for each controller supplied. In the case that no controller is provided, the Contractor shall prepare a new controller chart utilizing any existing system that is being protected, as well as any new systems on line, for the existing controller(s)

The chart shall show the area controlled by the automatic controller and shall be the maximum size which the controller door will allow.

The chart is to be a reduced drawing of the actual “as-built” system. However, in the event the controlled sequence is not legible when the drawing is reduced, it shall be enlarged to a size that will be readable when reduced.

The chart shall be a blackline or blue line print and a different color shall be used to indicate the area of coverage for each station

When completed and approved, the Contractor shall hermetically seal the chart between two pieces of plastic, each piece being a minimum of 10 mils thick.

These charts shall be completed and approved prior to final inspection of the irrigation system.

#### **801-6.2.3 Manuals of all Equipment and Certificate of Substantial Completion**

Operation and Maintenance Manuals. Prepare and deliver to the City within ten calendar days after substantial completion of the project, three hard cover binders with three rings containing the following information:

1. Index sheet stating Contractor's and subcontractor's license numbers, address, and telephone number and list of equipment with name and address of all local supplier's and manufacturer's representatives.

2. Catalog and specification ‘cut’ sheets materials for all hardscape and softscape and equipment installed under this contract.

3. Guarantee statement. The guarantee for the sprinkler irrigation system shall be made in accordance with the enclosed form. The Contractor shall file a complete copy of all substantial completion forms and irrigation guarantee prior to the acceptance of project by the City.

The guarantee shall be included in the operations and maintenance manual of all equipment throughout the park.

The guarantee shall be typed onto the Contractor's letterhead.

4. Complete operating and maintenance instructions on all major equipment.

In addition to the above mentioned maintenance manuals, provide the City's maintenance personnel with instructions for major equipment and show evidence in writing to the City at the conclusion of the project that this service has been rendered.

## **801-6.3 EQUIPMENT**

### **801-6.3.1 Loose Equipment to be Furnished.**

[The following subsection shall be added] (confirm each item with the City Inspector prior to actual turn-over):

The Contractor shall supply as a part of this contract the following tools:

1. Two (2) sets of special tools required for removing, disassembling and adjusting each type of sprinkler and valve supplied on this project.
2. Two (2) five foot valve keys for operation of gate valves.
3. One (1) quick coupler key and matching hose swivel for every five (5) of each type of quick coupling valve installed.
4. Six (6) spray nozzles of each type specified on the legend.
5. One case of spray bodies of each manufacturer specified on the legend.
6. One case of rotors of each manufacturer specified on the legend.
7. Two (2) gate valves - line sized - as specified on the legend.
8. Two (2) keys each for controller and controller enclosure doors.
  - a. One remote for each controller

The above-mentioned equipment shall be turned over to the City at the conclusion of the project. Before final inspection can occur, evidence that the City has received material must be shown to the City Representative.

## **801-8 PAYMENT.**

[Replace the entire subsection with the following:]

The lump sum or unit prices shown in the Bid shall include full compensation to complete and maintain the landscape and irrigation work shown on the Plans or in the Specifications.

Payment for the furnishing and installation of the root barrier, weed control barrier, and the removal of soil to a depth of 36" below adjacent finished grade within six (6) feet of each side of the affected tree trunk for the full width of the planter shall be included in the price bid for the corresponding tree. Payment for the water system connection, record drawings, and controller charts shall be included in the price bid for the Mainline, Laterals and Heads. Payment for backflow certification shall be included in the price bid for the 2" backflow w/ cage. Unless otherwise specified, payment for all plant establishment and landscape maintenance work, including the additional 1-year tree/palm guarantee period, shall be included in the lump sum price bid for Landscape Installation, and no additional compensation will be allowed therefor.

Payment for all items of the Bid Schedule whether lump sum or Unit Price shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidental appurtenant to the items of work being described, as necessary to complete the various items of the WORK all in accordance with the requirements of the Contract Documents, and including all costs of permits and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the California Division of Industrial Safety and the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA).

No separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs shall be included in the prices named in the Bid Schedule for the various appurtenant items of work and no additional compensation will be allowed therefore.

Payment for Unit Price work shall be made for the actual quantities of Contract Items removed, constructed, or disposed of in accordance with the Plans and these Specifications. Measurement of Unit Price work shall be as specified in 2021 SSPWC, Section 7-1 "Measurement of Quantities for Unit Price Work" or as indicated in these Specifications. Payment for Lump Sum work shall be paid for in accordance with the Approved Schedule of Values per Section 00432, at the price indicated in the Bid, and in accordance with 2021 SSPWC, Section 7-2 "Lump Sum Work".

**801-9 GUARANTEE.**

[Add the entire subsection:]

The entire irrigation control system shall be guaranteed against defects in materials and workmanship for a period of 1 year from the date of acceptance. Contractor shall furnish a faithful performance bond in the amount specified in the Contract Documents to cover the guarantee. If, within one year from the date of acceptance, settlement occurs and adjustments in pipes, valves and sprinkler heads, sod or paving is necessary to bring the system, sod or paving to the proper level of the permanent grades, the Contractor, as part of the work under his contract, shall make all adjustments without extra cost to the AGENCY, including the complete restoration of all damaged planting, paving, or other improvements of any kind. Should any operational difficulties in connection with the sprinkler system develop within the specified guarantee period which in the opinion of the AGENCY may be due to inferior material and/or workmanship, said difficulties shall be immediately corrected by the Contractor to the satisfaction of the AGENCY at no additional cost to the AGENCY including any and all other damage caused by such defects. Guarantees include the following:

- A. The Contractor, in protecting his own interests, is obligated to periodically check work areas during his guarantee period to insure proper maintenance procedures are being implemented.
- B. In case of negligent or improper maintenance, the Contractor shall state in writing to the AGENCY his observations and recommendations. Any claims not in writing will not be considered.
- C. All cutting, sod, and container plants up to and including 15 gallon size shall be guaranteed by the Contractor as to growth and health for a period of ninety (90) days after completion of maintenance period and final acceptance.
- D. Boxed and field-grown trees shall be guaranteed by the Contractor to "live and grow" in an "Acceptable, upright position" for a period of one (1) year after completion of the specified maintenance period and/or final acceptance. Definition of "live and grow" and "Acceptable, upright position" shall mean that the tree must, during the guarantee period, sustain a healthy, vigorous appearance. It shall not defoliate more than 30% nor shall 30% of the foliage be dried and unhealthy in appearance. If the tree, during the guarantee period does not sustain this specified appearance, it shall be removed and replaced by a tree equal to the original specification. Any damage to contiguous planting, structure, lighting or sprinklers during replacement operations shall be replaced and/or repaired at the Contractor's expense.
- E. The Contractor shall, within fifteen (15) days of written notification by AGENCY, remove and replace all guaranteed plant materials which for any reason fail to meet the requirements of the guarantee. Replacement shall be made with plan materials originally specified and shall meet original guarantees.

# **TECHNICAL SPECIFICATIONS AND PROVISIONS**

## **PBLA TECHNICAL SPECIFICATIONS**

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## SECTION 011000 - SUMMARY

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Work under separate contracts.
5. Contractor's use of site and premises.
6. Coordination with occupants.
7. Work restrictions.
8. Specification and Drawing conventions.

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

#### 1.2 PROJECT INFORMATION

A. Project Identification: LeBard Park Improvements.

1. Project Location: 20461 Cramer Lane Huntington Beach CA 92646.

B. Owner: City of Huntington Beach 2000 Main Street, Huntington Beach, CA 92648

1. Owner's Representative: Brian Polivka

C. Architect: PBLA Engineering Inc., 1481 Ford Street, Suite 201, Redlands, CA 92373.

1. Architect's Representative: Matt Evans. P: (909) 888-9642. E: [mevans@pbla.biz](mailto:mevans@pbla.biz).

#### 1.3 WORK COVERED BY CONTRACT DOCUMENTS

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

1. Removal of existing tennis court pavement and installation of new post-tension concrete court. Installation of new tennis court post and nets, wind screens, surfacing, striping, chain link gates, painting existing chain link fence and installation of benches. Demolition of existing clubhouse and installing new concrete patio with picnic tables and trash receptacles. Installation of new electrical pedestal box with new electrical panel, meter and irrigation controller. Installation of new electrical panel box at tennis courts. Removal of several existing trees and shrubs. Installation of new sod and landscaping. Installation of new lodge pole fencing.



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B. Type of Contract:

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

1.4 PHASED CONSTRUCTION

- A. The Work shall be conducted in one phase with add alternates.
- B. Before commencing Work, submit an updated copy of Contractor's construction schedule showing the sequence, commencement and completion dates for the Work.

1.5 WORK UNDER SEPARATE CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying Work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.

1.6 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Unrestricted Use of Site: 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. Limits on Use of Site: Limit use of Project site to Work in areas 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 for storage of materials.
- C. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.7 COORDINATION WITH OCCUPANTS

- A. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.

1.8 WORK RESTRICTIONS

- A. Comply with restrictions on construction operations.
  1. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Comply with requirements of authorities having jurisdiction.

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- C. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet (8 m) of entrances, operable windows, or outdoor-air intakes.
- D. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances on Project site is not permitted.

1.9 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. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.
  - 3. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.
  - 4. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.
- C. 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 01100

## SECTION 012500 - SUBSTITUTION PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
  - 1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

#### 1.2 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
  - 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 advantage to Contractor or Owner.

#### 1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit three 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, "Substitution Request", or Contractor's comparable form.
  - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.
    - b. Coordination of 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 substitutions 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 as well as names and addresses of architects 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 substitutions 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. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor 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 Architect's Supplemental Instructions for minor changes in the Work.
  - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

#### 1.4 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.

#### 1.5 PROCEDURES

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

#### 1.6 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not less than 15 days prior to time required for preparation and review of related submittals.
  - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
    - a. Requested substitution does not require extensive revisions to the Contract Documents.

- b. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  - c. Requested substitution provides sustainable design characteristics that specified product provided for compliance with CGBC requirements.
  - d. Substitution request is fully documented and properly submitted.
  - e. Requested substitution will not adversely affect 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: Architect will consider requests for substitution if received within 30 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.
1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
- a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
  - b. Requested substitution does not require extensive revisions to the Contract Documents.
  - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  - d. Requested substitution provides sustainable design characteristics that specified product provided for compliance with CGBC requirements.
  - e. Substitution request is fully documented and properly submitted.
  - f. Requested substitution will not adversely affect Contractor's construction schedule.
  - g. Requested substitution has received necessary approvals of authorities having jurisdiction.
  - h. Requested substitution is compatible with other portions of the Work.
  - i. Requested substitution has been coordinated with other portions of the Work.
  - j. Requested substitution provides specified warranty.
  - k. 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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

## SECTION 013300 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

#### 1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect'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."

#### 1.3 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit, as an action submittal, a list 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 Architect and additional time for handling and reviewing submittals required by those corrections.

#### 1.4 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Contractor.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
8. Category and type of submittal.
9. Submittal purpose and description.
10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
11. Drawing number and detail references, as appropriate.

12. Indication of full or partial submittal.
13. Location(s) where product is to be installed, as appropriate.
14. Other necessary identification.
15. Remarks.
16. Signature of transmitter.

B. Options: Identify options requiring selection by Architect.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. Paper Submittals:

1. Place a permanent label or title block on each submittal item for identification; include name of firm or entity that prepared submittal.
2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
4. Action Submittals: Submit not less than five paper copies of each submittal unless otherwise indicated. Architect will return not less than two copies.
  - a. Submit two additional copies to Owner's Commissioning Authority when required by Contract Documents.
5. Informational Submittals: Submit not less than five paper copies of each submittal unless otherwise indicated. Architect will return not less than two copies.
  - a. Submit two additional copies to Owner's Commissioning Authority when required by Contract Documents.
6. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using AIA Document G810, "Transmittal Letter", CSI Form 12.1A, "Submittal Transmittal", or Contractor's comparable form.
7. Annotate and retain one copy of file as a Project Record Document file.

E. PDF Submittals:

1. Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.
2. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
3. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
4. Action Submittals: Architect will return annotated file.
  - a. Submit additional copy to Owner's Commissioning Authority when required by Contract Documents.

5. Informational Submittals: Architect will return annotated file.
  - a. Submit additional copy to Owner's Commissioning Authority when required by Contract Documents.
6. Transmittal for PDF Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using AIA Document G810, "Transmittal Letter", CSI Form 12.1A, "Submittal Transmittal", or Contractor's comparable form.
7. Annotate and retain one copy of file as a digital Project Record Document file.

#### 1.5 SUBMITTAL PROCEDURES

- A. General: Contractor may provide paper submittals or PDF submittals at his option.
- B. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
  1. Paper Submittals: Prepare submittals in paper form, and deliver to Architect. Include paper transmittal form.
  2. PDF Submittals: Prepare submittals as PDF package, and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Architect.
- C. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
- D. 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 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
  2. Resubmittal Review: Allow 15 days for review of each resubmittal.
- E. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
- F. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- G. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.



1.6 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
  2. Mark each copy of each submittal to show which products and options are applicable.
  3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.
    - e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
    - h. Availability and delivery time information.
  4. For equipment, include the following in addition to the above, as applicable:
    - a. Wiring diagrams that show factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.
    - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
  5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Architect's digital data drawing files is otherwise permitted.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
    - f. Relationship and attachment to adjoining construction clearly indicated.
    - g. Seal and signature of professional engineer if specified.
  2. Paper Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets not less than 8-1/2 by 11 inches (215 by 280 mm), and not more than 30 by 42 inches (750 by 1067 mm).
    - a. Submit not less than five opaque (bond) copies of each submittal. Architect will return not less than two copies.
- C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.

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1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
    - a. Project name and submittal number.
    - b. Generic description of Sample.
    - c. Product name and name of manufacturer.
    - d. Sample source.
    - e. Number and title of applicable Specification Section.
    - f. Specification paragraph number and generic name of each item.
  3. Paper Transmittal: Include paper transmittal including complete submittal information indicated.
  4. PDF Transmittal: Include digital image file illustrating Sample characteristics, and identification information for record.
  5. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
  6. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    - a. Number of Samples: Submit not less than two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
  7. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
    - a. Number of Samples: Submit not less than five sets of Samples. Architect will retain two Sample sets; remainder will be returned.
      - 1) Submit not less than one Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit not less than five sets of paired units that show approximate limits of variations.
    - b. Mark up and retain one returned Sample set as a project record Sample.
- D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location.

- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- G. Certificates:
1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
  2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
  3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
  4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
  5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
  6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- H. Test and Research Reports:
1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for substrate preparation and primers required.
  2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
  3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
  4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
  5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
  6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
    - a. Name of evaluation organization.

- b. Date of evaluation.
- c. Time period when report is in effect.
- d. Product and manufacturers' names.
- e. Description of product.
- f. Test procedures and results.
- g. Limitations of use.

#### 1.7 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file and not less than five paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

#### 1.8 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
  - 1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.
  - 2. Architect will return without review or discard submittals received from Contractor that do not have Contractor's review and approval.

#### 1.9 ARCHITECT'S REVIEW

- A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return it.
  - 1. Paper Submittals: Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
  - 2. PDF Submittals: Architect will insert an action stamp in each submittal and will mark stamp appropriately to indicate action

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- B. Informational Submittals: Architect will review each submittal, indicate if it does or does not comply with requirements, and return it.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, will not be reviewed, and will be returned by Architect without action or will be discarded.
- E. Submittals received from sources other than Contractor will not be reviewed, and will be returned by Architect without action or will be discarded.
- F. Submittals not required by the Contract Documents will not be reviewed, and will be returned by Architect without action or will be discarded.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

## SECTION 014000 - QUALITY REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection 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. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
  - 2. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, Commissioning Authority, or authorities having jurisdiction are not limited by provisions of this Section.

#### 1.2 DEFINITIONS

- A. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed not less than 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.
- B. Field Quality-Control Tests and Inspections: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- C. 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, assembly, and similar operations.
  - 1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).
- D. Mockups: Full-size physical assemblies that are constructed on-site either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and 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 and tested at testing facility to verify performance characteristics.
  - 2. Integrated Exterior Mockups: Mockups of the exterior envelope constructed on-site as freestanding temporary built elements or as indicated in-place portions of permanent construction, consisting of multiple products, assemblies, and subassemblies, with cutaways enabling inspection of concealed portions of the Work.

- a. Include each system, assembly, component, and part of the exterior wall and roof to be constructed for the Project. Colors of components shall be those selected by the Architect for use in the Project.
  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.
  4. Product Mockups: Mockups that may include multiple products, materials, or systems specified in a single Section.
  5. In-Place Mockups: Mockups constructed on-site in their actual final location as part of permanent construction.
- E. 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. Unless otherwise indicated, copies of reports of tests or inspections performed for other than the Project do not meet this definition.
- F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- G. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall have the same meaning as testing agency.
- I. 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.
- J. 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. Contractor's quality-control services do not include contract administration activities performed by Architect.
- 1.3 DELEGATED-DESIGN SERVICES
- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Statement: Submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

#### 1.4 CONFLICTING REQUIREMENTS

- A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Architect regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Architect for clarification 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 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 Architect for a decision before proceeding.

#### 1.5 ACTION SUBMITTALS

- A. Mockup Shop Drawings: For mockups.
  - 1. Include plans, sections, elevations, and details, indicating materials and size of mockup construction.
  - 2. Indicate manufacturer and model number of individual components.
  - 3. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:
  - 1. Seismic-force-resisting system, designated seismic system, or component listed in the Statement of Special Inspections.
  - 2. Main wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.
- B. 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.
- C. Permits, Licenses, and Certificates: For Owner's record, 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.

#### 1.7 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, telephone number, and email address 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 inspection.
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, telephone number, and email address 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. 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, telephone number, and email address 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. Other required items indicated in individual Specification Sections.

## 1.8 QUALITY ASSURANCE

A. 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. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

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/Applicator/Erector Qualifications: A firm or individual experienced in installing, applying, 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 and Inspecting Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E329; and with additional qualifications specified in individual Sections
  - 1. Testing and inspecting agency shall be acceptable to authorities having jurisdiction when required by authorities having jurisdiction.
- 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, demonstrate, repair, and perform service on installations 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. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
    - d. When testing is complete, remove test specimens and test assemblies, mockups, and laboratory mockups unless otherwise indicated; 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 Architect and Commissioning Authority, 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.
- K. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups of size indicated or, if not indicated, as directed by Architect.
2. Build mockups in location indicated or, if not indicated, as directed by Architect.
3. Notify Architect not less than seven days in advance of dates and times when mockups will be constructed.
4. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed to perform same tasks during the construction at Project.
5. Demonstrate the proposed range of aesthetic effects and workmanship.
6. Obtain Architect's approval of mockups prior to starting corresponding work, fabrication, or construction.

a. Allow seven days for initial review and each re-review of each mockup.

7. Promptly correct unsatisfactory conditions noted by Architect's preliminary review, to the satisfaction of the Architect, before completion of final mockup.
8. Approval of mockups by the Architect does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
9. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
10. Demolish and remove mockups when directed unless otherwise indicated.

L. Integrated Exterior Mockups: Construct integrated exterior mockup as required in individual Specification Sections. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials. Comply with requirements in "Mockups" Paragraph.

1. Coordinate construction of the mockup to allow observation of air barrier installation, flashings, air barrier integration with fenestration systems, and other portions of the building air/moisture barrier and drainage assemblies, prior to installation of veneer, cladding elements, and other components that will obscure the work.

## 1.9 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
2. Costs for retesting and reinspecting construction that replaces or is necessitated by Work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.

1. Engage a qualified testing agency to perform quality-control services.
  - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agencies not less than 24 hours in advance of time when Work that requires testing or inspection will be performed.
  3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  4. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. 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.
- D. Testing Agency Responsibilities: Cooperate with Architect, Commissioning Authority, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect, Structural Engineer, Commissioning Authority, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Determine the locations 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 to Architect, Structural Engineer, Commissioning Authority, and Contractor.
    - a. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
  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 duties of Contractor.
  7. Retest and reinspect corrected work.
- E. 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 013300 "Submittal Procedures."
- F. 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.
- G. Contractor's Associated Requirements and Services: Cooperate with agencies and representatives 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 inspection. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Preliminary design mix proposed for use for material mixes that require control by testing agency.

6. Security and protection for samples and for testing and inspection equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

#### 1.10 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency and special inspector(s) to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner. Testing agency and special inspector(s) shall:

1. Verify that manufacturer maintains detailed fabrication and quality-control procedures and review the completeness and adequacy of those procedures to perform the Work.
2. Notify Architect, Structural Engineer, Commissioning Authority, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submit a certified written report of each test, inspection, and similar quality-control service to Architect, Structural Engineer, Commissioning Authority, and Contractor.
  - a. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
4. Submit a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies to Architect, Structural Engineer, Commissioning Authority, and Contractor.
  - a. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
5. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retest and reinspect 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 Architect, Structural Engineer, Commissioning Authority, Contractor, and authorities having jurisdiction.
4. Identification of testing agency or special inspector conducting test or inspection.

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- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's, Structural Engineer's, Commissioning Authority's, and authorities' having jurisdiction reference during normal working hours.

- 1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. 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 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
  - 1. Definitions.
  - 2. Industry Standards.
  - 3. Abbreviations and Acronyms.

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Contract Documents": Documents that are a legal part of the contract and describe the Work. They include, but are not limited to, the Agreement (Contract), General Conditions of the Contract, Supplementary Conditions of the Contract, Addenda, Change Orders, Specifications, and Drawings. They are intended to be complimentary, what is required by one is as binding as if required by all. What is shown or required, or may be reasonably inferred to be required, or which is usually and customarily provided for similar work, shall be included in the Work.
- D. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- E. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- F. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- G. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- H. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- I. "Provide": Furnish and install, complete and ready for the intended use.
- J. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

### 1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
  - 1. For standards referenced by applicable building codes, comply with dates of standards as listed in building codes.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

### 1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Abbreviations and acronyms not included in this list shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States." The information in this list is subject to change and is believed to be accurate as of the date of the Contract Documents.
  - 1. AABC - Associated Air Balance Council; [www.aabc.com](http://www.aabc.com).
  - 2. AAMA - American Architectural Manufacturers Association; [www.aamanet.org](http://www.aamanet.org).
  - 3. AAPFCO - Association of American Plant Food Control Officials; [www.aapfco.org](http://www.aapfco.org).
  - 4. AASHTO - American Association of State Highway and Transportation Officials; [www.transportation.org](http://www.transportation.org).
  - 5. AATCC - American Association of Textile Chemists and Colorists; [www.aatcc.org](http://www.aatcc.org).
  - 6. ABMA - American Bearing Manufacturers Association; [www.americanbearings.org](http://www.americanbearings.org).
  - 7. ABMA - American Boiler Manufacturers Association; [www.abma.com](http://www.abma.com).
  - 8. ACI - American Concrete Institute; (Formerly: ACI International); [www.concrete.org](http://www.concrete.org).
  - 9. ACPA - American Concrete Pipe Association; [www.concrete-pipe.org](http://www.concrete-pipe.org).
  - 10. AEIC - Association of Edison Illuminating Companies, Inc. (The); [www.aeic.org](http://www.aeic.org).
  - 11. AF&PA - American Forest & Paper Association; [www.afandpa.org](http://www.afandpa.org).
  - 12. AGA - American Gas Association; [www.aga.org](http://www.aga.org).
  - 13. AHAM - Association of Home Appliance Manufacturers; [www.aham.org](http://www.aham.org).
  - 14. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); [www.ahrinet.org](http://www.ahrinet.org).
  - 15. AI - Asphalt Institute; [www.asphaltinstitute.org](http://www.asphaltinstitute.org).
  - 16. AIA - American Institute of Architects (The); [www.aia.org](http://www.aia.org).
  - 17. AISC - American Institute of Steel Construction; [www.aisc.org](http://www.aisc.org).
  - 18. AISI - American Iron and Steel Institute; [www.steel.org](http://www.steel.org).
  - 19. AITC - American Institute of Timber Construction; [www.aitc-glulam.org](http://www.aitc-glulam.org).
  - 20. AMCA - Air Movement and Control Association International, Inc.; [www.amca.org](http://www.amca.org).
  - 21. ANSI - American National Standards Institute; [www.ansi.org](http://www.ansi.org).
  - 22. AOSA - Association of Official Seed Analysts, Inc.; [www.aosaseed.com](http://www.aosaseed.com).



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23. APA - APA - The Engineered Wood Association; [www.apawood.org](http://www.apawood.org).
24. APA - Architectural Precast Association; [www.archprecast.org](http://www.archprecast.org).
25. API - American Petroleum Institute; [www.api.org](http://www.api.org).
26. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
27. ARI - American Refrigeration Institute; (See AHRI).
28. ARMA - Asphalt Roofing Manufacturers Association; [www.asphaltroofing.org](http://www.asphaltroofing.org).
29. ASCE - American Society of Civil Engineers; [www.asce.org](http://www.asce.org).
30. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
31. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; [www.ashrae.org](http://www.ashrae.org).
32. ASME - ASME International; (American Society of Mechanical Engineers); [www.asme.org](http://www.asme.org).
33. ASSE - American Society of Sanitary Engineering; [www.asse-plumbing.org](http://www.asse-plumbing.org).
34. ASSP - American Society of Safety Professionals (The); [www.assp.org](http://www.assp.org).
35. ASTM - ASTM International; [www.astm.org](http://www.astm.org).
36. ATIS - Alliance for Telecommunications Industry Solutions; [www.atis.org](http://www.atis.org).
37. AVIXA - Audiovisual and Integrated Experience Association; (Formerly: Infocomm International); [www.soundandcommunications.com](http://www.soundandcommunications.com).
38. AWEA - American Wind Energy Association; [www.awea.org](http://www.awea.org).
39. AWI - Architectural Woodwork Institute; [www.awinet.org](http://www.awinet.org).
40. AWMAC - Architectural Woodwork Manufacturers Association of Canada; [www.awmac.com](http://www.awmac.com).
41. AWPA - American Wood Protection Association; [www.awpa.com](http://www.awpa.com).
42. AWS - American Welding Society; [www.aws.org](http://www.aws.org).
43. AWWA - American Water Works Association; [www.awwa.org](http://www.awwa.org).
44. BHMA - Builders Hardware Manufacturers Association; [www.buildershardware.com](http://www.buildershardware.com).
45. BIA - Brick Industry Association (The); [www.gobrick.com](http://www.gobrick.com).
46. BICSI - BICSI, Inc.; [www.bicsi.org](http://www.bicsi.org).
47. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); [www.bifma.org](http://www.bifma.org).
48. BISSC - Baking Industry Sanitation Standards Committee; [www.bissc.org](http://www.bissc.org).
49. BWF - Badminton World Federation; (Formerly: International Badminton Federation); [www.bissc.org](http://www.bissc.org).
50. CDA - Copper Development Association; [www.copper.org](http://www.copper.org).
51. CE - Conformite Europeenne; <http://ec.europa.eu/growth/single-market/ce-marking/>.
52. CEA - Canadian Electricity Association; [www.electricity.ca](http://www.electricity.ca).
53. CFFA - Chemical Fabrics and Film Association, Inc.; [www.chemicalfabricsandfilm.com](http://www.chemicalfabricsandfilm.com).
54. CFSEI - Cold-Formed Steel Engineers Institute; [www.cfsei.org](http://www.cfsei.org).
55. CGA - Compressed Gas Association; [www.cganet.com](http://www.cganet.com).
56. CIMA - Cellulose Insulation Manufacturers Association; [www.cellulose.org](http://www.cellulose.org).
57. CISCA - Ceilings & Interior Systems Construction Association; [www.cisca.org](http://www.cisca.org).
58. CISPI - Cast Iron Soil Pipe Institute; [www.cispi.org](http://www.cispi.org).
59. CLFMI - Chain Link Fence Manufacturers Institute; [www.chainlinkinfo.org](http://www.chainlinkinfo.org).
60. CPA - Composite Panel Association; [www.compositepanel.org](http://www.compositepanel.org).
61. CRI - Carpet and Rug Institute (The); [www.carpet-rug.org](http://www.carpet-rug.org).
62. CRRC - Cool Roof Rating Council; [www.coolroofs.org](http://www.coolroofs.org).
63. CRSI - Concrete Reinforcing Steel Institute; [www.crsi.org](http://www.crsi.org).
64. CSA - CSA Group; [www.csa-group.org](http://www.csa-group.org).
65. CSI - Construction Specifications Institute (The); [www.csiresources.org](http://www.csiresources.org).
66. CSSB - Cedar Shake & Shingle Bureau; [www.cedarbureau.org](http://www.cedarbureau.org).
67. CTA - Consumer Technology Association; [www.cta.tech](http://www.cta.tech).
68. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); [www.coolingtechnology.org](http://www.coolingtechnology.org).
69. CWC - Composite Wood Council; (See CPA).
70. DASMA - Door and Access Systems Manufacturers Association; [www.dasma.com](http://www.dasma.com).

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71. DHA - Decorative Hardwoods Association; (Formerly: Hardwood Plywood & Veneer Association); [www.decorativehardwoods.org](http://www.decorativehardwoods.org).
72. DHI - Door and Hardware Institute; [www.dhi.org](http://www.dhi.org).
73. ECA - Electronic Components Association; (See ECIA).
74. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
75. ECIA - Electronic Components Industry Association; [www.eciaonline.org](http://www.eciaonline.org).
76. EIA - Electronic Industries Alliance; (See TIA).
77. EIMA - EIFS Industry Members Association; [www.eima.com](http://www.eima.com).
78. EJMA - Expansion Joint Manufacturers Association, Inc.; [www.ejma.org](http://www.ejma.org).
79. EOS/ESD Association; (Electrostatic Discharge Association); [www.esda.org](http://www.esda.org).
80. ESTA - Entertainment Services and Technology Association; (See PLASA).
81. ETL - Intertek (See Intertek); [www.intertek.com](http://www.intertek.com).
82. EVO - Efficiency Valuation Organization; [www.evo-world.org](http://www.evo-world.org).
83. FCI - Fluid Controls Institute; [www.fluidcontrolsinstitute.org](http://www.fluidcontrolsinstitute.org).
84. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); [www.fiba.com](http://www.fiba.com).
85. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); [www.fivb.org](http://www.fivb.org).
86. FM Approvals - FM Approvals LLC; [www.fmglobal.com](http://www.fmglobal.com).
87. FM Global - FM Global; (Formerly: FMG - FM Global); [www.fmglobal.com](http://www.fmglobal.com).
88. FRSA - Florida Roofing, Sheet Metal Contractors Association, Inc.; [www.floridarooft.com](http://www.floridarooft.com).
89. FSA - Fluid Sealing Association; [www.fluidsealing.com](http://www.fluidsealing.com).
90. FSC - Forest Stewardship Council U.S.; [www.fscus.org](http://www.fscus.org).
91. GA - Gypsum Association; [www.gypsum.org](http://www.gypsum.org).
92. GANA - Glass Association of North America; (See NGA).
93. GS - Green Seal; [www.greenseal.org](http://www.greenseal.org).
94. HI - Hydraulic Institute; [www.pumps.org](http://www.pumps.org).
95. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
96. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
97. HPVA - Hardwood Plywood & Veneer Association; (See DHA).
98. HPW - H. P. White Laboratory, Inc.; [www.hpwhite.com](http://www.hpwhite.com).
99. IAPSC - International Association of Professional Security Consultants; [www.iapsc.org](http://www.iapsc.org).
100. IAS - International Accreditation Service; [www.iasonline.org](http://www.iasonline.org).
101. ICBO - International Conference of Building Officials; (See ICC).
102. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
103. ICEA - Insulated Cable Engineers Association, Inc.; [www.icea.net](http://www.icea.net).
104. ICPA - International Cast Polymer Alliance; [www.icpa-hq.org](http://www.icpa-hq.org).
105. ICRI - International Concrete Repair Institute, Inc.; [www.icri.org](http://www.icri.org).
106. IEC - International Electrotechnical Commission; [www.iec.ch](http://www.iec.ch).
107. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); [www.ieee.org](http://www.ieee.org).
108. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); [www.ies.org](http://www.ies.org).
109. IESNA - Illuminating Engineering Society of North America; (See IES).
110. IEST - Institute of Environmental Sciences and Technology; [www.iest.org](http://www.iest.org).
111. IGMA - Insulating Glass Manufacturers Alliance; [www.igmaonline.org](http://www.igmaonline.org).
112. IGSHPA - International Ground Source Heat Pump Association; [www.igshpa.org](http://www.igshpa.org).
113. II - Infocomm International; (See AVIXA).
114. ILI - Indiana Limestone Institute of America, Inc.; [www.iliai.com](http://www.iliai.com).
115. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); [www.intertek.com](http://www.intertek.com).
116. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); [www.isa.org](http://www.isa.org).
117. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).

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118. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); [www.isfanow.org](http://www.isfanow.org).
119. ISO - International Organization for Standardization; [www.iso.org](http://www.iso.org).
120. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
121. ITU - International Telecommunication Union; [www.itu.int/home](http://www.itu.int/home).
122. KCMA - Kitchen Cabinet Manufacturers Association; [www.kcma.org](http://www.kcma.org).
123. LMA - Laminating Materials Association; (See CPA).
124. LPI - Lightning Protection Institute; [www.lightning.org](http://www.lightning.org).
125. MBMA - Metal Building Manufacturers Association; [www.mbma.com](http://www.mbma.com).
126. MCA - Metal Construction Association; [www.metalconstruction.org](http://www.metalconstruction.org).
127. MFMA - Maple Flooring Manufacturers Association, Inc.; [www.maplefloor.org](http://www.maplefloor.org).
128. MFMA - Metal Framing Manufacturers Association, Inc.; [www.metalframingmfg.org](http://www.metalframingmfg.org).
129. MHIA - Material Handling Industry of America; [www.mhia.org](http://www.mhia.org).
130. MIA - Marble Institute of America; (See NSI).
131. MMPA - Moulding & Millwork Producers Association; [www.wmmpa.com](http://www.wmmpa.com).
132. MPI - Master Painters Institute; [www.paintinfo.com](http://www.paintinfo.com).
133. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; [www.mss-hq.org](http://www.mss-hq.org).
134. NAAMM - National Association of Architectural Metal Manufacturers; [www.naamm.org](http://www.naamm.org).
135. NACE - NACE International; (National Association of Corrosion Engineers International); [www.nace.org](http://www.nace.org).
136. NADCA - National Air Duct Cleaners Association; [www.nadca.com](http://www.nadca.com).
137. NAIMA - North American Insulation Manufacturers Association; [www.naima.org](http://www.naima.org).
138. NALP - National Association of Landscape Professionals; [www.landscapeprofessionals.org](http://www.landscapeprofessionals.org).
139. NBGQA - National Building Granite Quarries Association, Inc.; [www.nbgqa.com](http://www.nbgqa.com).
140. NBI - New Buildings Institute; [www.newbuildings.org](http://www.newbuildings.org).
141. NCAA - National Collegiate Athletic Association (The); [www.ncaa.org](http://www.ncaa.org).
142. NCMA - National Concrete Masonry Association; [www.ncma.org](http://www.ncma.org).
143. NEBB - National Environmental Balancing Bureau; [www.nebb.org](http://www.nebb.org).
144. NECA - National Electrical Contractors Association; [www.necanet.org](http://www.necanet.org).
145. NeLMA - Northeastern Lumber Manufacturers Association; [www.nelma.org](http://www.nelma.org).
146. NEMA - National Electrical Manufacturers Association; [www.nema.org](http://www.nema.org).
147. NETA - InterNational Electrical Testing Association; [www.netaworld.org](http://www.netaworld.org).
148. NFHS - National Federation of State High School Associations; [www.nfhs.org](http://www.nfhs.org).
149. NFPA - National Fire Protection Association; [www.nfpa.org](http://www.nfpa.org).
150. NFPA - NFPA International; (See NFPA).
151. NFRC - National Fenestration Rating Council; [www.nfrc.org](http://www.nfrc.org).
152. NGA - National Glass Association (The); (Formerly: Glass Association of North America); [www.glass.org](http://www.glass.org).
153. NHLA - National Hardwood Lumber Association; [www.nhla.com](http://www.nhla.com).
154. NLGA - National Lumber Grades Authority; [www.nlga.org](http://www.nlga.org).
155. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
156. NOMMA - National Ornamental & Miscellaneous Metals Association; [www.nomma.org](http://www.nomma.org).
157. NRCA - National Roofing Contractors Association; [www.nrca.net](http://www.nrca.net).
158. NRMCA - National Ready Mixed Concrete Association; [www.nrmca.org](http://www.nrmca.org).
159. NSF - NSF International; [www.nsf.org](http://www.nsf.org).
160. NSI - National Stone Institute; (Formerly: Marble Institute of America); [www.naturalstoneinstitute.org](http://www.naturalstoneinstitute.org).
161. NSPE - National Society of Professional Engineers; [www.nspe.org](http://www.nspe.org).
162. NSSGA - National Stone, Sand & Gravel Association; [www.nssga.org](http://www.nssga.org).
163. NTMA - National Terrazzo & Mosaic Association, Inc. (The); [www.ntma.com](http://www.ntma.com).
164. NWFA - National Wood Flooring Association; [www.nwfa.org](http://www.nwfa.org).
165. PCI - Precast/Prestressed Concrete Institute; [www.pci.org](http://www.pci.org).

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166. PDI - Plumbing & Drainage Institute; [www.pdionline.org](http://www.pdionline.org).
167. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); [www.plasa.org](http://www.plasa.org).
168. RCSC - Research Council on Structural Connections; [www.boltcouncil.org](http://www.boltcouncil.org).
169. RFCI - Resilient Floor Covering Institute; [www.rfci.com](http://www.rfci.com).
170. RIS - Redwood Inspection Service; [www.redwoodinspection.com](http://www.redwoodinspection.com).
171. SAE - SAE International; [www.sae.org](http://www.sae.org).
172. SCTE - Society of Cable Telecommunications Engineers; [www.scte.org](http://www.scte.org).
173. SDI - Steel Deck Institute; [www.sdi.org](http://www.sdi.org).
174. SDI - Steel Door Institute; [www.steeldoor.org](http://www.steeldoor.org).
175. SEFA - Scientific Equipment and Furniture Association (The); [www.sefalabs.com](http://www.sefalabs.com).
176. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
177. SIA - Security Industry Association; [www.siaonline.org](http://www.siaonline.org).
178. SJI - Steel Joist Institute; [www.steeljoist.org](http://www.steeljoist.org).
179. SMA - Screen Manufacturers Association; [www.smainfo.org](http://www.smainfo.org).
180. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; [www.smacna.org](http://www.smacna.org).
181. SMPTE - Society of Motion Picture and Television Engineers; [www.smpte.org](http://www.smpte.org).
182. SPFA - Spray Polyurethane Foam Alliance; [www.sprayfoam.org](http://www.sprayfoam.org).
183. SPIB - Southern Pine Inspection Bureau; [www.spib.org](http://www.spib.org).
184. SPRI - Single Ply Roofing Industry; [www.spri.org](http://www.spri.org).
185. SRCC - Solar Rating & Certification Corporation; [www.solar-rating.org](http://www.solar-rating.org).
186. SSINA - Specialty Steel Industry of North America; [www.ssina.com](http://www.ssina.com).
187. SSPC - SSPC: The Society for Protective Coatings; [www.sspc.org](http://www.sspc.org).
188. STI - Steel Tank Institute; [www.steeltank.com](http://www.steeltank.com).
189. SWI - Steel Window Institute; [www.steelwindows.com](http://www.steelwindows.com).
190. SWPA - Submersible Wastewater Pump Association; [www.swpa.org](http://www.swpa.org).
191. TCA - Tilt-Up Concrete Association; [www.tilt-up.org](http://www.tilt-up.org).
192. TCNA - Tile Council of North America, Inc.; [www.tileusa.com](http://www.tileusa.com).
193. TEMA - Tubular Exchanger Manufacturers Association, Inc.; [www.tema.org](http://www.tema.org).
194. TIA - Telecommunications Industry Association (The); (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); [www.tiaonline.org](http://www.tiaonline.org).
195. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
196. TMS - The Masonry Society; [www.masonrysociety.org](http://www.masonrysociety.org).
197. TPI - Truss Plate Institute; [www.tpinst.org](http://www.tpinst.org).
198. TPI - Turfgrass Producers International; [www.turfgrasssod.org](http://www.turfgrasssod.org).
199. TRI - Tile Roofing Institute; [www.tilerroofing.org](http://www.tilerroofing.org).
200. UL - Underwriters Laboratories Inc.; [www.ul.com](http://www.ul.com).
201. UNI - Uni-Bell PVC Pipe Association; [www.uni-bell.org](http://www.uni-bell.org).
202. USAV - USA Volleyball; [www.usavolleyball.org](http://www.usavolleyball.org).
203. USGBC - U.S. Green Building Council; [www.usgbc.org](http://www.usgbc.org).
204. USITT - United States Institute for Theatre Technology, Inc.; [www.usitt.org](http://www.usitt.org).
205. WA - Wallcoverings Association; [www.wallcoverings.org](http://www.wallcoverings.org).
206. WASTEC - Waste Equipment Technology Association; [www.wastec.org](http://www.wastec.org).
207. WCLIB - West Coast Lumber Inspection Bureau; [www.wclib.org](http://www.wclib.org).
208. WCMA - Window Covering Manufacturers Association; [www.wcmanet.org](http://www.wcmanet.org).
209. WDMA - Window & Door Manufacturers Association; [www.wdma.com](http://www.wdma.com).
210. WI - Woodwork Institute; [www.wicnet.org](http://www.wicnet.org).
211. WSRCA - Western States Roofing Contractors Association; [www.wsrca.com](http://www.wsrca.com).
212. WWPAA - Western Wood Products Association; [www.wwpa.org](http://www.wwpa.org).

- B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.

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1. DIN - Deutsches Institut für Normung e.V.; [www.din.de](http://www.din.de).
  2. IAPMO - International Association of Plumbing and Mechanical Officials; [www.iapmo.org](http://www.iapmo.org).
  3. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
  4. ICC-ES - ICC Evaluation Service, LLC; [www.icc-es.org](http://www.icc-es.org).
- C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.
1. COE - Army Corps of Engineers; [www.usace.army.mil](http://www.usace.army.mil).
  2. CPSC - Consumer Product Safety Commission; [www.cpsc.gov](http://www.cpsc.gov).
  3. DOC - Department of Commerce; National Institute of Standards and Technology; [www.nist.gov](http://www.nist.gov).
  4. DOD - Department of Defense; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
  5. DOE - Department of Energy; [www.energy.gov](http://www.energy.gov).
  6. EPA - Environmental Protection Agency; [www.epa.gov](http://www.epa.gov).
  7. FAA - Federal Aviation Administration; [www.faa.gov](http://www.faa.gov).
  8. FG - Federal Government Publications; [www.gpo.gov/fdsys](http://www.gpo.gov/fdsys).
  9. GSA - General Services Administration; [www.gsa.gov](http://www.gsa.gov).
  10. HUD - Department of Housing and Urban Development; [www.hud.gov](http://www.hud.gov).
  11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; [www.eetd.lbl.gov](http://www.eetd.lbl.gov).
  12. OSHA - Occupational Safety & Health Administration; [www.osha.gov](http://www.osha.gov).
  13. SD - Department of State; [www.state.gov](http://www.state.gov).
  14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; [www.trb.org](http://www.trb.org).
  15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; [www.ars.usda.gov](http://www.ars.usda.gov).
  16. USDA - Department of Agriculture; Rural Utilities Service; [www.usda.gov](http://www.usda.gov).
  17. USDOJ - Department of Justice; Office of Justice Programs; National Institute of Justice; [www.ojp.usdoj.gov](http://www.ojp.usdoj.gov).
  18. USP - U.S. Pharmacopeial Convention; [www.usp.org](http://www.usp.org).
  19. USPS - United States Postal Service; [www.usps.com](http://www.usps.com).
- D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. CFR - Code of Federal Regulations; Available from Government Printing Office; [www.govinfo.gov](http://www.govinfo.gov).
  2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
  3. DSCC - Defense Supply Center Columbus; (See FS).
  4. FED-STD - Federal Standard; (See FS).
  5. FS - Federal Specification; Available from DLA Document Services; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
    - a. Available from Defense Standardization Program; [www.dsp.dla.mil](http://www.dsp.dla.mil).
    - b. Available from General Services Administration; [www.gsa.gov](http://www.gsa.gov).
    - c. Available from National Institute of Building Sciences/Whole Building Design Guide; [www.wbdg.org](http://www.wbdg.org).
  6. MILSPEC - Military Specification and Standards; (See DOD).
  7. USAB - United States Access Board; [www.access-board.gov](http://www.access-board.gov).
  8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).

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- E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. CBHF; State of California; Department of Consumer Affairs; Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation; [www.bearhfti.ca.gov](http://www.bearhfti.ca.gov).
  2. CBSC - California Building Standards Code; California Code of Regulations; Title 24; [www.bsc.ca.gov](http://www.bsc.ca.gov).
    - a. CAC - California Administrative Code, California Code of Regulations, Title 24, Part 1.
    - b. CBC - California Building Code, California Code of Regulations, Title 24, Part 2.
    - c. CEC - California Electrical Code, California Code of Regulations, Title 24, Part 3.
    - d. CMC - California Mechanical Code, California Code of Regulations, Title 24, Part 4.
    - e. CPC - California Plumbing Code, California Code of Regulations, Title 24, Part 5.
    - f. CEC - California Energy Code, California Code of Regulations, Title 24, Part 6.
    - g. CFC - California Fire Code, California Code of Regulations, Title 24, Part 9.
    - h. CGBC - California Green Building Standards Code (CALGreen), California Code of Regulations, Title 24, Part 11.
    - i. CRSC - California Referenced Standards Code, California Code of Regulations, Title 24, Part 12.
  3. CDHS; California Department of Health Services; (See CDPH).
  4. CDPH; California Department of Public Health; Indoor Air Quality Program; [www.cal-iaq.org](http://www.cal-iaq.org).
  5. CPUC; California Public Utilities Commission; [www.cpuc.ca.gov](http://www.cpuc.ca.gov).
  6. SCAQMD; South Coast Air Quality Management District; [www.aqmd.gov](http://www.aqmd.gov).
  7. TFS; Texas A&M Forest Service; Sustainable Forestry and Economic Development; [www.txforestservation.tamu.edu](http://www.txforestservation.tamu.edu).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

- A. Installation, removal, and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, testing agencies, and authorities having jurisdiction.

1.3 INFORMATIONAL SUBMITTALS

- A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.
- B. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.
- C. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
- D. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- E. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold. Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.
  - 1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and requirements for replacing water-damaged Work.
  - 2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
  - 3. Indicate methods to be used to avoid trapping water in finished work.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with CEC and 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.

1.5 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 TEMPORARY FACILITIES

- A. Field Offices: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
  - 1. Secure Owner's approval for location of field offices prior to placement.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly.

2.2 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 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities 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.

3.2 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.
- 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.



### 3.3 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. Sanitary Facilities: Provide temporary toilets, wash facilities, safety shower and eyewash 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.
- C. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
  - 1. Install electric power service overhead unless otherwise indicated.
- D. 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.

### 3.4 SUPPORT FACILITIES INSTALLATION

- A. Comply with the following:
  - 1. Provide construction for temporary field offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines that is noncombustible according to ASTM E136. Comply with NFPA 241.
  - 2. Maintain support facilities until Architect 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. 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.
- C. Parking: Provide temporary parking areas for construction personnel.
- D. Storage and Staging: Use designated areas of Project site for storage and staging needs.
- 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.
- F. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
  - 1. Identification Signs: Provide Project identification signs as indicated on Drawings.
  - 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals

seeking entrance to Project.

- G. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

### 3.5 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.
- 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 erosion- and sedimentation-control Drawings, requirements of EPA Construction General Permit, or authorities having jurisdiction, whichever is more stringent. Comply with requirements specified in Section 311000 "Site Clearing."
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. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people 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.
- F. 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.
- G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- H. 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. Comply with additional limits on smoking specified in other Sections.
  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.

3.6 MOISTURE AND MOLD CONTROL

- A. Moisture and Mold Protection: Protect stored materials and installed Work in accordance with Moisture and Mold Protection Plan.
- B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
  - 1. Protect porous materials from water damage.
  - 2. Protect stored and installed material from flowing or standing water.
  - 3. Keep porous and organic materials from coming into prolonged contact with concrete.
  - 4. Remove standing water from decks.
  - 5. Keep deck openings covered or dammed.

3.7 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.
  - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. 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. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

## SECTION 016000 - PRODUCT REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
  - 1. Section 012500 "Substitution Procedures" for requests for substitutions.

#### 1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycled content materials are considered new products, unless indicated otherwise.
  - 3. Comparable Product: Product that is demonstrated and approved through the comparable product submittal process described in Part 2 "Comparable Products" Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
  - 4. Equal Product: Product that is demonstrated and approved through the comparable product submittal process described in Part 2 "Comparable Products" Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. Published attributes and characteristics of basis-of-design product establish salient characteristics of products.
  - 1. Evaluation of Comparable Products: In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers.
- C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified

under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another product or product from another manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.

- D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:
  - 1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
  - 2. Data indicating compliance with the requirements specified in Part 2 "Comparable Products" Article.
- E. Equal Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:
  - 1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
  - 2. Data indicating compliance with the requirements specified in Part 2 "Comparable Products" Article.
- F. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Section 013300 "Submittal Procedures."
- G. Substitution: Refer to Section 012500 "Substitution Procedures" for definition and limitations on substitutions.

### 1.3 ACTION SUBMITTALS

- A. Comparable Product Request Submittal: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Submittal Form: Use CSI Form 13.1A "Substitution Request - After the Bidding/Negotiating Stage" or Contractor's comparable form.
  - 2. Include data to indicate compliance with the requirements specified in Part 2 "Comparable Products" Article.
  - 3. Architect's Action on Comparable Product Submittal: If necessary, Architect will request additional information or documentation for evaluation, as specified in Section 013300 "Submittal Procedures."
    - a. Form of Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
    - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Equal Product Request Submittal: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
  - 1. Submittal Form: Use CSI Form 13.1A "Substitution Request - After the Bidding/Negotiating Stage" or Contractor's comparable form.
  - 2. Include data to indicate compliance with the requirements specified in Part 2 "Comparable Products" Article.

3. Architect's Action on Equal Product Submittal: If necessary, Architect will request additional information or documentation for evaluation, as specified in Section 013300 "Submittal Procedures."
  - a. Form of Approval of Submittal: As specified in Section 013300 "Submittal Procedures."
  - b. Use product specified if Architect does not issue a decision on use of an equal product request within time allocated.

#### 1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

#### 1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products, using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

#### 1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
  1. Manufacturer's Warranty: Written standard warranty form furnished by individual manufacturer for a particular product and issued in the name of the Owner or endorsed by manufacturer to Owner.
  2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of the Owner or endorsed by manufacturer to Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
  1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
  2. Specified Form: When specified forms are included in the Project Manual, prepare a written document, using indicated form properly executed.
  3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

### PART 2 - PRODUCTS

#### 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," "or approved equal," or "or approved," comply with requirements in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.
  - a. Submit additional documentation required by Architect in order to establish equivalency of proposed products. Unless otherwise indicated, evaluation of "or equal" product status is by the Architect, whose determination is final.

B. Product Selection Procedures:

1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  - a. Sole product may be indicated by the phrase "Subject to compliance with requirements, provide the following."
2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  - a. Sole manufacturer/source may be indicated by the phrase "Subject to compliance with requirements, provide products by the following."
3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  - a. Limited list of products may be indicated by the phrase "Subject to compliance with requirements, provide one of the following."
4. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed or an unnamed product that complies with requirements.
  - a. Non-limited list of products is indicated by the phrase "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following."
  - b. Provision of an unnamed product is not considered a substitution, if the product complies with requirements.
  - c. Comply with requirements in Part 2 "Comparable Products" Article for consideration of an unnamed product.

5. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
  - a. Limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, provide products by one of the following."
6. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed or a product by an unnamed manufacturer that complies with requirements.
  - a. Non-limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following."
  - b. Provision of products by an unnamed manufacturer is not considered a substitution, if the product complies with requirements.
  - c. Comply with requirements in Part 2 "Comparable Products" Article for consideration of a product by an unnamed manufacturer.
7. Basis-of-Design Product:
  - a. Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications may additionally indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.
    - 1) Comply with requirements in Part 2 "Comparable Products" Article for consideration of an unnamed product by one of the named manufacturers.
    - 2) For approval of a product by an unnamed manufacturer, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.
  - b. Where Specifications name a product, or refer to a product indicated on Drawings, and do not include a list of manufacturers, provide the specified or indicated product or a comparable product by an unnamed manufacturer. Drawings and Specifications may additionally indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.
    - 1) For approval of a product by an unnamed manufacturer, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.
- C. Visual Matching Specification: Where Specifications require the phrase "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
  1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or a similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.



## 2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements. Show compliance with requirements for comparable products including, but not limited to, the following, as applicable:
1. Comparable product submittal is fully documented and properly submitted.
  2. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work, and has been coordinated with other portions of the Work.
    - a. Provide coordination information, including, but not limited to, a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed comparable product.
  3. Detailed comparison of significant qualities of proposed product with those of the product named in the Specifications or on the Drawings. Significant product qualities include attributes, such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, sustainable design characteristics, warranty, and other specific features and requirements. Provide the following:
    - a. Annotated copy of applicable specification section.
    - b. Indicate deviations, if any, from the Work specified.
    - c. Evidence that proposed product provides specified warranty.
    - d. List of similar installations for completed projects, with project names and addresses and names and addresses of architects and owners, if requested.
    - e. Samples, if requested.
  4. Product Data: Including drawings and descriptions of products and fabrication and installation procedures.
  5. Certificates and qualification data.
  6. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
  7. Research reports evidencing compliance with building code in effect for Project, from ICC-ES or another model code organization acceptable to authorities having jurisdiction.
  8. Evidence that the proposed comparable product has received necessary approvals of authorities having jurisdiction.
  9. Evidence that the use of proposed comparable product will not adversely affect Contractor's construction schedule.
    - a. Detailed comparison of Contractor's construction schedule using proposed comparable product with products specified for the Work, including effect on the overall Contract Time.
    - b. 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.
  10. Cost information, including a proposal of change, if any, in the Contract Sum.
  11. Contractor's certification that proposed comparable product complies with requirements in the Contract Documents, is compatible with related materials, and is appropriate for applications indicated.

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12. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed comparable product to produce indicated results.
  13. If use of proposed comparable product involves more than one contractor, evidence that use of proposed comparable product 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. Submittal Requirements, Two-Step Process: Approval by the Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 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 surveying.
  - 3. Installation.
  - 4. Cutting and patching.
  - 5. Coordination of Owner's portion of the Work.
  - 6. Progress cleaning.
  - 7. Starting and adjusting.
  - 8. Protection and repair of installed construction.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for coordination of Owner's separate contracts, and limits on use of Project site.
  - 2. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.

1.2 DEFINITIONS

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

1.3 INFORMATIONAL SUBMITTALS

- A. Certified Surveys: Submit five copies signed by land surveyor.
- B. Certificates: Submit certificate signed by land surveyor, certifying that location and elevation of improvements comply with requirements.

1.4 CLOSEOUT SUBMITTALS

- A. Final Property Survey: Submit 10 copies showing the Work performed and record survey data.

## 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. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
  - 2. 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.
  - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
  - 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Comply with requirements specified in other Sections.
  - 1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.
- 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 Architect for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.
- C. 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 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, mechanical and electrical systems, and other construction affecting the Work.
  - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas service piping, 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.
  - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. 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, including Specification Section number and paragraph, and Drawing sheet number and detail, where applicable.
  - 2. List of detrimental conditions, including substrates.
  - 3. List of unacceptable installation tolerances.
  - 4. Recommended corrections.
- D. 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 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, submit a request for information or interpretation to Architect in accordance with requirements in Section 013100 "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 property survey and existing benchmarks and existing conditions. If discrepancies are discovered, notify Architect promptly.
- B. Engage a land surveyor experienced in laying out the Work, using the following accepted surveying practices:
  - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
  - 2. Establish limits on use of Project site.
  - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  - 4. Inform installers of lines and levels to which they must comply.
  - 5. Check the location, level and plumb, of every major element as the Work progresses.
  - 6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
  - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

### 3.4 FIELD ENGINEERING AND SURVEYING

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
  - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
  - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

- C. Benchmarks: Establish and maintain not less than two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
  - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
  - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
  - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.
- E. Final Property Survey: Engage a land surveyor to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
  - 1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
  - 2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

### 3.5 INSTALLATION

- A. 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.
  - 4. Maintain headroom clearance of not less than 96 inches (2440 mm) in occupied spaces and not less than 90 inches (2300 mm) in unoccupied spaces, unless otherwise indicated on Drawings.
- 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 satisfactory results as judged by Architect. 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 of type expected for Project.
- 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: Select tools or equipment that minimize production of excessive 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 portions of the 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 with manufacturer.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building 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, as judged by Architect. Fit exposed connections together to form hairline joints.
- J. Repair or remove and replace damaged, defective, or nonconforming Work.
  - 1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

### 3.6 CUTTING AND PATCHING

- A. 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. 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.
- F. 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, as judged by Architect. 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 eliminate 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.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.
  4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- G. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.
- 3.7 COORDINATION OF OWNER'S PORTION OF THE WORK
- A. Site Access: Provide access to Project site for Owner's construction personnel and Owner's separate contractors.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel and Owner's separate contractors.
1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.

3.8 PROGRESS CLEANING

- A. 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 (27 deg C).
  - 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.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. 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.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. 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 017419 "Construction Waste Management and Disposal."
- H. 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.
- I. 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.
- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9        STARTING AND ADJUSTING

- A.    Coordinate startup and adjusting of equipment and operating components with requirements in Section 019113 "General Commissioning Requirements."
- B.    Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C.    Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D.    Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E.    Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.10      PROTECTION AND REPAIR 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.    Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.
- C.    Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- D.    Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

## SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

### PART 1 - GENERAL

#### 1.1 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.

#### 1.2 DEFINITIONS

- A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.
- C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner's property.
- 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.

#### 1.3 PREINSTALLATION MEETINGS

- A. Waste Management Conference(s): Conduct conference(s) at Project site to comply with requirements in Section 013100 "Project Management and Coordination."

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Waste Management Plan: Submit plan within seven days of date established for the Notice to Proceed.
  - 1. Use CGBC form "Construction Waste Management (CWM) Plan" or Contractor's comparable form.

- B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Include the following information:
  - 1. Material category.
  - 2. Generation point of waste.
  - 3. Total quantity of waste in tons (tonnes).
  - 4. Quantity of waste salvaged, both estimated and actual in tons (tonnes).
  - 5. Quantity of waste recycled, both estimated and actual in tons (tonnes).
  - 6. Total quantity of waste recovered (salvaged plus recycled) in tons (tonnes).
  - 7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
  - 8. Use CGBC form "Construction Waste Management (CWM) Worksheet" or Contractor's comparable form.
- C. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- D. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- E. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- F. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- G. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

#### 1.5 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Experienced firm, or individual employed and assigned by General Contractor, with a record of successful waste management coordination of projects with similar requirements.
- B. Refrigerant Recovery Technician Qualifications: Universal certified by EPA-approved certification program.

#### 1.6 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing, and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General: Achieve end-of-Project rates for salvage/recycling of 50 percent by weight of total nonhazardous solid waste generated by the Work. Facilitate recycling and salvage of materials.

### 2.2 REGULATORY REQUIREMENTS

- A. Comply with transportation and disposal regulations of authorities having jurisdiction.
- B. Comply with applicable provisions in California Integrated Waste Management Act of 1989 (AB939).
- C. Comply with applicable provisions in California Code of Regulations Title 14, Section 18700 et seq.
- D. Comply with applicable provisions in "California Green Building Standards Code", California Code of Regulations Title 24, Part 11, Section 5.408.

## 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.
- B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1. Distribute waste management plan to everyone concerned within three days of submittal return.
2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. 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 and recycled.
2. Comply with Section 015000 "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:

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:

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 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. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.

C. 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.

D. 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 as often as required to prevent overfilling bins.

### 3.4 RECYCLING DEMOLITION WASTE

- A. Asphalt Paving: Break up and transport paving to asphalt-recycling facility.
- B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
  1. Pulverize concrete to maximum 1-1/2 inch (38 mm) size.
- C. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
  1. Pulverize masonry to maximum 1-1/2 inch (38 mm) size.
  2. Clean and stack undamaged, whole masonry units on wood pallets.
- D. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- E. 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.
- F. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
- G. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
- H. Metal Suspension System: Separate metal members, including trim and other metals from acoustical panels and tile, and sort with other metals.
- I. Carpet: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.
  1. Store clean, dry carpet in a closed container or trailer provided by carpet reclamation agency or carpet recycler.
- J. Carpet Tile: Remove debris, trash, and adhesive.
  1. Stack tile on pallet and store clean, dry carpet in a closed container or trailer provided by carpet reclamation agency or carpet recycler.



- K. Piping: Reduce piping to straight lengths and store by material and size. Separate supports, hangers, valves, sprinklers, and other components by material and size.
- L. Conduit: Reduce conduit to straight lengths and store by material and size.
- M. Lamps: Separate lamps by type and store according to requirements in 40 CFR 273.

### 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.
- C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.
  - 1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.
- D. Paint: Seal containers and store by type.

### 3.6 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged or recycled, 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.

### 3.7 ATTACHMENTS

- A. Appendix A - Sample form "Construction Waste Management (CWM) Plan."
- B. Appendix B - Sample form "Construction Waste Management (CWM) Worksheet."

END OF SECTION 017419

## SECTION 017700 - CLOSEOUT PROCEDURES

### PART 1 - GENERAL

#### 1.1 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. List of incomplete items (punch list).
  - 4. Submittal of Project warranties.
  - 5. Final cleaning.
- B. Related Requirements:
  - 1. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
  - 2. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
  - 3. Section 017900 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of cleaning agent.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

#### 1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest-control inspection.

#### 1.4 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 not less than 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, damage or settlement surveys, property surveys, 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 Owner. Label with manufacturer's name and model number.
  5. Submit testing, adjusting, and balancing records.
  6. Submit sustainable design submittals not previously submitted.
  7. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following not less than 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. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
  6. Advise Owner of changeover in utility services.
  7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
  8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  9. Complete final cleaning requirements.
  10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion not less than 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect 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 Architect, that must be completed or corrected before certificate will be issued.

#### 1.5 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:
1. Submit a final Application for Payment in accordance with Section 012900 "Payment Procedures."

2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  4. Submit pest-control final inspection report.
- B. Inspection: Submit a written request for final inspection to determine acceptance not less than 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

#### 1.6 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. Use CSI Form 14.1A, "Punch List", or Contractor's comparable form.
1. Organize list of spaces in sequential order, listed by room or space number, starting with exterior areas first, and proceeding from lowest floor to highest floor.
  2. Organize items applying to each space by major element, including categories for ceilings, individual walls, floors, equipment, and building systems.
  3. Include the following information at the top of each page:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Page number.
  4. Submit list of incomplete items (punch list) in the following format:
    - a. MS Excel Electronic File: Architect will return annotated file.
    - b. Five paper copies.

#### 1.7 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, 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.
- C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1. Submit on digital media acceptable to Owner.

D. Warranties in Paper Form:

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 (215 by 280 mm) paper.

E. 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. 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. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
    - a. Clean Project site of rubbish, waste material, litter, and other foreign substances.
    - b. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - c. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    - d. Clean flooring, removing debris, dirt, and staining; clean according to manufacturer's recommendations.
    - e. Vacuum and mop concrete.
    - f. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
    - g. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.

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- h. Remove labels that are not permanent.
  - i. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - j. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
  - k. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  - l. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
    - 1) Clean HVAC system in compliance with NADCA ACR.
  - m. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
  - n. Clean strainers.
  - o. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste-disposal requirements in Section 017419 "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations required by Section 017300 "Execution" 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.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
  - 1. Operation and maintenance documentation directory manuals.
  - 2. Emergency manuals.
  - 3. Systems and equipment operation manuals.
  - 4. Systems and equipment maintenance manuals.
  - 5. Product maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

- A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
  - 1. Architect and Commissioning Authority will comment on whether content of operation and maintenance submittals is acceptable.
  - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operation and maintenance manuals in the following format:
  - 1. Initial Manual Submittal:
    - a. Submit draft copy by email to Architect and Commissioning Authority. Enable reviewer comments on draft submittals.
  - 2. Final Manual Submittal:
    - a. Submit draft copy by email to Architect and Commissioning Authority. Enable reviewer comments on draft submittals.
    - b. Submit corrected copy on digital media acceptable to Owner.
- C. Initial Manual Submittal: Submit draft copy of each manual not less than 30 days before commencing demonstration and training. Architect and Commissioning Authority will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit draft copy of each manual in final form prior to requesting inspection for Substantial Completion and not less than 15 days before commencing demonstration and training. Architect and Commissioning Authority will return copy with comments.

1. Correct or revise each manual to comply with Architect's and Commissioning Authority's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's and Commissioning Authority's comments and prior to commencing demonstration and training.

- E. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

### 1.3 FORMAT OF OPERATION AND MAINTENANCE MANUALS

- A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

### 1.4 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

- B. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name and contact information for Contractor.
6. Name and contact information for Architect.
7. Name and contact information for Commissioning Authority.
8. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
9. Cross-reference to related systems in other operation and maintenance manuals.

- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

- D. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no



designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

#### 1.5 EMERGENCY MANUALS

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Content: Organize manual into a separate section for each of the following:
  - 1. Type of emergency.
  - 2. Emergency instructions.
  - 3. Emergency procedures.
- C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
  - 1. Fire.
  - 2. Flood.
  - 3. Gas leak.
  - 4. Water leak.
  - 5. Power failure.
  - 6. Water outage.
  - 7. System, subsystem, or equipment failure.
  - 8. Chemical release or spill.
- D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- E. Emergency Procedures: Include the following, as applicable:
  - 1. Instructions on stopping.
  - 2. Shutdown instructions for each type of emergency.
  - 3. Operating instructions for conditions outside normal operating limits.
  - 4. Required sequences for electric or electronic systems.
  - 5. Special operating instructions and procedures.

#### 1.6 SYSTEMS AND EQUIPMENT OPERATION MANUALS

- A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.
- B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
  - 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
  - 2. Performance and design criteria if Contractor has delegated design responsibility.

3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

## 1.7 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.
- B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds, as described below.
- C. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
    - a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
  2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
  3. Identification and nomenclature of parts and components.
  4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
  2. Troubleshooting guide.
  3. Precautions against improper maintenance.
  4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  5. Aligning, adjusting, and checking instructions.
  6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.
- H. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
- 1.8 PRODUCT MAINTENANCE MANUALS
- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
  - B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

- C. Product Information: Include the following, as applicable:
  - 1. Product name and model number.
  - 2. Manufacturer's name.
  - 3. Color, pattern, and texture.
  - 4. Material and chemical composition.
  - 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
  - 1. Inspection procedures.
  - 2. Types of cleaning agents to be used and methods of cleaning.
  - 3. List of cleaning agents and methods of cleaning detrimental to product.
  - 4. Schedule for routine cleaning and maintenance.
  - 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
  - 1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017823

## SECTION 017839 - PROJECT RECORD DOCUMENTS

### PART 1 - GENERAL

#### 1.1 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.
- B. Related Requirements:
  - 1. Section 017300 "Execution" for final property survey.
  - 2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

#### 1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit copies of Record Drawings as follows:
    - a. Initial Submittal:
      - 1) Submit one paper-copy set(s) of marked-up record prints.
      - 2) Architect 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 of file prints.
      - 2) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and Contract modifications.
- C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.
  - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.
  - 2. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

#### 1.3 RECORD DRAWINGS

- A. Record Drawings: Maintain one set of paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued, for Project Record Document purposes. Post changes

and revisions to record drawings as they occur; do not wait until end of Project.

1. Preparation: Mark record drawings 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 drawings.
  - 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 drawings to corresponding 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. Depths of foundations.
  - d. Locations and depths of underground utilities.
  - e. Revisions to routing of piping and conduits.
  - f. Revisions to electrical circuitry.
  - g. Actual equipment locations.
  - h. Duct size and routing.
  - i. Locations of concealed internal utilities.
  - j. Changes made by Change Order or Construction Change Directive.
  - k. Changes made following Architect's written orders.
  - l. Details not on the original Contract Drawings.
  - m. Field records for variable and concealed conditions.
  - n. 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 drawings.
4. Mark record drawings 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.

#### 1.4 RECORD SPECIFICATIONS

- A. Record Specifications: Maintain one copy of Project Manual, incorporating new and revised Specifications as modifications are issued, for Project Record Document purposes. Post changes and revisions to record specifications as they occur; do not wait until end of Project.
  1. Preparation: Mark record specifications to indicate the actual product installation, where installation varies from that indicated in specifications, addenda, and Contract modifications.
    - a. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
    - b. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
    - c. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.

- d. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
- e. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

1.5 RECORD PRODUCT DATA

- A. Record Product Data: Maintain one copy of each submittal for Project Record Document purposes. Post changes and revisions to record product data as they occur; do not wait until end of Project.
  - 1. Preparation: Mark record product data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
    - a. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
    - b. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
    - c. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

1.6 MAINTENANCE OF RECORD DOCUMENTS

- A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use 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 Record Documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017839

## SECTION 024119 - SELECTIVE DEMOLITION

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.
4. Hazardous materials.

#### 1.2 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

#### 1.3 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Engineering Survey: Submit engineering survey of condition of building.
- B. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control, and for noise control. Indicate proposed locations and construction of barriers.
- C. Schedule of selective demolition activities with starting and ending dates for each activity.
- D. Predemolition photographs.
- E. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Inventory of items that have been removed and salvaged.



1.6 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.7 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials:
  - 1. Hazardous materials will be removed by the contractor before start of the demolition Work.
  - 2. Refer to Asbestos and Lead-Based Paint survey report in the contract specifications.
  - 3. Dispose of hazardous materials per abatement specification of the contract specifications.
- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1.8 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Standards: Comply with ASSE A10.6 and NFPA 241.

2.2 REGULATORY REQUIREMENTS

- A. Comply with governing EPA notification regulations before beginning selective demolition.
- B. Comply with hauling and disposal regulations of authorities having jurisdiction.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Inventory and record the condition of items, selected by the city for salvage, to be removed and salvaged.

#### 3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction, if applies.

#### 3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to be relocated: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
  - 1. Arrange to shut off utilities with utility companies.
  - 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems.
  - 3. Disconnect, demolish, and remove fire-suppression systems (if applies), plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
    - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
    - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
    - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
    - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.

3.4 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.5 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Maintain portable fire-suppression devices during demolition operations.
  - 2. Maintain fire watch during demolition operations.
  - 3. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  - 4. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Salvaged Items:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers.
  - 3. Store items in a secure area until delivery to Owner.
  - 4. Transport items to Owner's storage area designated by Owner.
  - 5. Protect items from damage during transport and storage.

- E. Existing Site Items to Remain: Protect construction indicated to remain against damage during selective demolition. When permitted by the City, any removable site items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

### 3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."
  - 1. Do not allow demolished materials to accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
  - 4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.

### 3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 033000 - CAST-IN-PLACE CONCRETE

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 cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
  - 1. Footings.
  - 2. Slabs

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
  - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
- C. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
  - 1. Location of construction joints is subject to approval of the Structural Engineer.

INFORMATIONAL SUBMITTALS

- D. Qualification Data: For Installer, manufacturer and testing agency.
- E. Welding certificates.
- F. Material Certificates: For each of the following, signed by manufacturers:
  - 1. Cementitious materials.
  - 2. Admixtures.
  - 3. Form materials and form-release agents.
  - 4. Steel reinforcement and accessories.
  - 5. Curing compounds.

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6. Floor and slab treatments.
7. Bonding agents.
8. Adhesives.
9. Joint-filler strips.
10. Repair materials.

- G. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.
- H. Floor surface flatness and levelness measurements indicating compliance with specified tolerances.
- I. Field quality-control reports.
- J. Minutes of preinstallation conference.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
  2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.
- D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- E. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M, "Structural Welding Code - Reinforcing Steel."
- F. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
1. ACI 301, "Specifications for Structural Concrete, Sections 1 through 5 and Section 7, "Lightweight Concrete."
  2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- G. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- H. Preinstallation Conference: Conduct conference at Project site.

1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
  - a. Contractor's superintendent.
  - b. Independent testing agency responsible for concrete design mixtures.
  - c. Ready-mix concrete manufacturer.
  - d. Concrete subcontractor.
  - e. Special concrete finish subcontractor.
2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semirigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

### PART 2 - PRODUCTS

#### 2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
  1. Plywood, metal, or other approved panel materials.
  2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
    - a. High-density overlay, Class 1 or better.
    - b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
    - c. Structural 1, B-B or better; mill oiled and edge sealed.
    - d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Pan-Type Forms: Glass-fiber-reinforced plastic or formed steel, stiffened to resist plastic concrete loads without detrimental deformation.
- D. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.
- E. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch.
- F. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.
- G. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

H. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
  2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.

## 2.2 STEEL REINFORCEMENT

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of pre-consumer recycled content not less than 25 percent.
- B. Reinforcing Bars: See Reinforcing Steel section in structural plan general notes.

## 2.3 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: see typical details on structural plans.
- B. Zinc Repair Material: ASTM A 780, zinc-based solder, paint containing zinc dust, or sprayed zinc.
- C. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
  1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
  2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
  3. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.

## 2.4 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
  1. Portland cement: ASTM C 150, Type II, gray unless noted otherwise. Supplement with the following:
    - a. Fly Ash: ASTM C 618, Class F or C.
    - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Silica Fume: ASTM C 1240, amorphous silica.
- C. Normal-Weight Aggregates: ASTM C 33, coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
  1. Maximum Coarse-Aggregate Size: per structural drawings, nominal.
  2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.



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D. Lightweight Aggregate: ASTM C 330

E. Water: ASTM C 94/C 94M and potable.

## 2.5 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
7. Shrinkage-Reducing Admixture: ASTM C494, Type S

## 2.7 GRANULAR FILL

A. Granular Fill: Clean mixture of crushed stone or crushed or uncrushed gravel; ASTM D 448, Size 57, with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.

B. Fine-Graded Granular Material: Clean mixture of crushed stone, crushed gravel, and manufactured or natural sand; ASTM D 448, Size 10, with 100 percent passing a 3/8-inch sieve, 10 to 30 percent passing a No. 100 sieve, and at least 5 percent passing No. 200 sieve; complying with deleterious substance limits of ASTM C 33 for fine aggregates.

## 2.8 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

1. Products: Subject to compliance with requirements, provide the following:

- a. BASF Construction Chemicals - Building Systems; Confilm.
- b. Conspec by Dayton Superior; Aquafilm.
- c. Dayton Superior Corporation; Sure Film (J-74).
- d. Edoco by Dayton Superior; BurkeFilm.
- e. Euclid Chemical Company (The), an RPM company; Eucobar.
- f. L&M Construction Chemicals, Inc.; E-CON.
- g. Meadows, W. R., Inc.; EVAPRE.
- h. Sika Corporation; SikaFilm.
- i. Symons by Dayton Superior; Finishing Aid.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

D. Water: Potable.

- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
1. Products: Subject to compliance with requirements, provide one of the following:
    - a. BASF Construction Chemicals - Building Systems; Kure 200.
    - b. ChemMasters; Safe-Cure Clear.
    - c. Conspec by Dayton Superior; W.B. Resin Cure.
    - d. Dayton Superior Corporation; Day-Chem Rez Cure (J-11-W).
    - e. Edoco by Dayton Superior; Res X Cure WB.
    - f. Euclid Chemical Company (The), an RPM company; Kurez W VOX; TAMMSCURE WB 30C.
    - g. L&M Construction Chemicals, Inc.; L&M Cure R.
    - h. Meadows, W. R., Inc.; 1100-CLEAR.
    - i. Symons by Dayton Superior; Resi-Chem Clear.
- F. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, nondissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.
1. Products: Subject to compliance with requirements, provide the following:
    - a. BASF Construction Chemicals - Building Systems; Kure-N-Seal WB.
    - b. ChemMasters; Safe-Cure & Seal 20.
    - c. Conspec by Dayton Superior; Cure and Seal WB.
    - d. Dayton Superior Corporation; Safe Cure and Seal (J-18).
    - e. Edoco by Dayton Superior; Spartan Cote WB II.
    - f. Euclid Chemical Company (The), an RPM company; Aqua Cure VOX; Clearseal WB 150.
    - g. L&M Construction Chemicals, Inc.; Dress & Seal WB.
    - h. Meadows, W. R., Inc.; Vocomp-20.
    - i. Symons by Dayton Superior; Cure & Seal 18 Percent E.
- G. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, 18 to 25 percent solids, nondissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.
1. Products: Subject to compliance with requirements, provide one of the following:
    - a. BASF Construction Chemicals - Building Systems; Kure-N-Seal W.
    - b. ChemMasters; Safe-Cure Clear.
    - c. Conspec by Dayton Superior; High Seal.
    - d. Dayton Superior Corporation; Safe Cure and Seal (J-19).
    - e. Edoco by Dayton Superior; Spartan Cote WB II 20 Percent.
    - f. Euclid Chemical Company (The), an RPM company; Diamond Clear VOX; Clearseal WB STD.
    - g. L&M Construction Chemicals, Inc.; Dress & Seal WB.
    - h. Meadows, W. R., Inc.; Vocomp-20.
    - i. Symons by Dayton Superior; Cure & Seal 18 Percent E.
- H. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
1. Products: Subject to compliance with requirements, provide one of the following:
    - a. BASF Construction Chemicals - Building Systems; Kure-N-Seal 25 LV.
    - b. ChemMasters; Spray-Cure & Seal Plus.
    - c. Conspec by Dayton Superior; Sealcure 1315.
    - d. Dayton Superior Corporation; Day-Chem Cure and Seal (J-22UV).
    - e. Edoco by Dayton Superior; Cureseal 1315.

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- f. Euclid Chemical Company (The), an RPM company; Super Diamond Clear; LusterSeal 300.
  - g. L&M Construction Chemicals, Inc.; Lumiseal Plus.
  - h. Meadows, W. R., Inc.; CS-309/30.
2. VOC Content: Curing and sealing compounds shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- I. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
1. Products: Subject to compliance with requirements, provide one of the following:
- a. BASF Construction Chemicals - Building Systems; Kure 1315.
  - b. ChemMasters; Polyseal WB.
  - c. Conspec by Dayton Superior; Sealcure 1315 WB.
  - d. Edoco by Dayton Superior; Cureseal 1315 WB.
  - e. Euclid Chemical Company (The), an RPM company; Super Diamond Clear VOX; LusterSeal WB 300.
  - f. L&M Construction Chemicals, Inc.; Lumiseal WB Plus.
  - g. Meadows, W. R., Inc.; Vocomp-30.
  - h. Symons by Dayton Superior; Cure & Seal 31 Percent E.
2. VOC Content: Curing and sealing compounds shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.9 RELATED MATERIALS

- A. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 per ASTM D 2240.
- B. Bonding Agent: ASTM C 1059/C 1059M, Type II, non-redispersible, acrylic emulsion or styrenebutadiene.
- C. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
  - 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
- D. Reglets: Fabricate reglets of not less than 0.022-inch-thick, galvanized-steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

2.10 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
  - 1. Cement Binder: ASTM C 150, Portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
  - 2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
  - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
- 4. Compressive Strength: Not less than 4100 psi at 28 days when tested according to ASTM C 109/C 109M.

- B. Repair Overlay: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.
1. Cement Binder: ASTM C 150, Portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
  2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
  3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
  4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

## 2.11 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than Portland cement in concrete as follows:
1. Fly Ash: Shall not be used
- C. Admixtures: Use admixtures according to manufacturer's written instructions.
1. Use water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
  2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
  3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

## 2.12 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. See Structural Concrete section in structural plan general notes.

## 2.13 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

### 2.14 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
2. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd.
3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixture time, quantity, and amount of water added. Record approximate location of final deposit in structure.

### PART 3 - EXECUTION

#### 3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
  1. Class A, 1/8 inch for smooth-formed finished surfaces.
  2. Class B, 1/4 inch for rough-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
  1. Install keyways, reglets, recesses, and the like, for easy removal.
  2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- I. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- J. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- K. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

### 3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
  - 2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.
  - 3. Install dovetail anchor slots in concrete structures as indicated.

### 3.3 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
  - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
  - 1. Weld reinforcing bars according to AWS D1.4/D 1.4M, where indicated.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

### 3.4 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Structural Engineer.
  - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
  - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
  - 3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
  - 4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
  - 5. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
  - 6. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

- C. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

### 3.5 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
  - 1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
  - 1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
  - 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
  - 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
  - 1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
  - 2. Maintain reinforcement in position on chairs during concrete placement.
  - 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
  - 4. Slope surfaces uniformly to drains where required.
  - 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
  - 1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
  - 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
  - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- G. Hot-Weather Placement: Comply with ACI 301 and as follows:

1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

### 3.6 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces not exposed to public view.

### 3.7 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
1. Apply a trowel finish to surfaces exposed to view or to be covered with specialty floor finish.
  2. Finish surfaces to the following tolerances, according to ASTM E 1155, for a randomly trafficked floor surface.
    - a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 17; and of levelness, F(L) 15.

### 3.8 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

### 3.9 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.



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- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
  2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
    - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
    - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
    - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.
  3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
    - a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.
  4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.10 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
1. Defer joint filling until concrete has aged at least **six** months. Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.11 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one-part Portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete. Limit cut depth to 3/4 inch. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
  2. Repair defects on surfaces exposed to view by blending white Portland cement and standard Portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
  3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Engineer.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01-inch-wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
  2. After concrete has cured at least 14 days, correct high areas by grinding.
  3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
  4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
  5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
  6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
  7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Engineer's approval.

### 3.12 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage a special inspector and qualified testing and inspecting agency to

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perform field tests and inspections and prepare test reports.

B. Testing and Inspecting: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

C. Inspections:

1. Steel reinforcement placement.
2. Steel reinforcement welding.
3. Headed bolts and studs.
4. Verification of use of required design mixture.
5. Concrete placement, including conveying and depositing.
6. Curing procedures and maintenance of curing temperature.
7. Verification of concrete strength before removal of shores and forms from beams and slabs.

D. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Samples for strength tests of each class of concrete placed each day shall be taken not less than once a day, or not less than once for each 50 cubic yards of concrete, or not less than once for each 2,000 square feet of surface area for slabs or walls. Additional samples for seven-day compressive strength tests shall be taken for each class of concrete at the beginning of the concrete work or whenever the mix or aggregate is changed.
  - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173/C 173M, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
6. Compression Test Specimens: ASTM C 31/C 31M.
  - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
7. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
  - a. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
8. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
9. Strength of each concrete mixture will be satisfactory if every average of any three-consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
10. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48

hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

11. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
12. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M.
13. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
14. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

E. Measure floor and slab flatness and levelness according to ASTM E 1155 within 24 hours of finishing.

END OF SECTION 033000

SECTION 099113 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and the application of paint systems on exterior substrates.
  - 1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

1.2 DEFINITIONS

- A. Flat: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. Velvet: 5 to 10 units at 60 degrees and 10 to 15 units at 85 degrees, according to ASTM D 523.
- C. Eggshell: 10 to 15 units at 60 degrees and 15 to 30 units at 85 degrees, according to ASTM D 523.
- D. Low-Luster (Low-Sheen): 20 to 25 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- E. Semigloss: 35 to 70 units at 60 degrees, according to ASTM D 523.
- F. Full Gloss (Gloss): More than 75 units at 60 degrees, according to ASTM D 523.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
  - 1. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.
    - a. VOC Content: Include VOC content for each product.
- B. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

1.4 MOCKUPS

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - 1. Architect will select one surface to represent surfaces and conditions for application of each paint system.
    - a. Vertical and Horizontal Surfaces: Provide samples of not less than 50 sq. ft. (4.6 sq. m).

- b. Other Items: Architect will designate items or areas required.
- 2. Final approval of color selections will be based on mockups.
  - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
- 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
- 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers Names: Shortened versions (shown in parentheses) of the following manufacturers names are used in other Part 2 articles:
  - 1. Behr Process Corporation (Behr).
  - 2. Dunn-Edwards Corporation (Dunn-Edwards).
  - 3. PPG Paints (PPG)
  - 4. Sherwin-Williams Company (The) (Sherwin-Williams).
  - 5. Vista Paint (Vista).
- B. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles for the paint category indicated.
- C. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.

### 2.2 SUSTAINABILITY REQUIREMENTS

- A. Comply with applicable provisions in the CGBC.

### 2.3 PAINT, GENERAL

- A. Material Compatibility:
  - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- B. Colors: As indicated on Drawings or, if not indicated, as selected by Architect from manufacturer's full range.

## 2.4 PRETREATMENT FOR GALVANIZED METAL

- A. Galvanized Metal Pretreatment: Factory-formulated galvanized metal pretreatment for exterior and interior application.
1. Behr: Krud Kutter; Metal Clean & Etch.
  2. Dunn-Edwards: Supreme Chemical; Metal Clean and Etch (SCME-01).
  3. PPG: Duraprep Concentrated Multi-Purpose Cleaner Prep120.
  4. Sherwin-Williams: DTM Wash Primer B71Y1.
  5. Vista: Krud Kutter; Metal Clean & Etch.
  6. Rust Oleum: Metal Clean & Etch.

## 2.5 METAL PRIMERS

- A. Exterior Galvanized Metal Primer: Factory-formulated galvanized metal primer for exterior application.
1. Behr: Premium Plus Exterior Multi-Surface Primer & Sealer (436): Applied at a dry film thickness of not less than 1.8 mils (0.0457 mm).
  2. Dunn-Edwards: Provide one of the following:
    - a. ULTRASHIELD Galvanized Metal Primer (ULGM00): Applied at a dry film thickness of not less than 2.0 mils (0.0508 mm).
    - b. ULTRA-GRIP Premium Interior/Exterior Multi-Surface Primer UGPR00: Applied at a dry film thickness of not less than 2.0 mils (0.0508 mm).
  3. PPG: Provide one of the following:
    - a. Pitt-Tech Plus DTM Industrial Primer 4020: Applied at a dry film thickness between 2.0 and 4.0 mils (0.0508 and 0.1016 mm).
    - b. Seal Grip Acrylic Universal Primer/Sealer 17-921: Applied at a dry film thickness of not less than 1.6 mils (0.0406 mm).
  4. Sherwin-Williams: Pro Industrial Pro-Cryl Primer, B66-310 Series: Applied at a dry film thickness between 2.0 and 4.0 mils (0.0508 and 0.1016 mm).
  5. Vista: 4800 Metal Pro Primer: Applied at a dry film thickness between 1.2 and 2.5 mils (0.0305 and 0.0635 mm).
  6. Rust Oleum High Performance ROC Primer: Applied at a dry film thickness of 1.8 mils (0.0457 mm).

## 2.6 WATER-BASED PAINTS

- A. Exterior Semigloss Acrylic Enamel: Factory-formulated semigloss waterborne acrylic-latex enamel for exterior application. 35 to 70 units at 60 degrees, according to ASTM D 523.
1. Behr: Premium Plus Exterior Semi-Gloss (5050): Applied at a dry film thickness of not less than 1.4 mils (0.0356 mm).
  2. Dunn-Edwards: SPARTASHIELD (SSHL50): Applied at a dry film thickness of not less than 1.5 mils (0.0381 mm).
  3. PPG: Speedhide Exterior 100% Acrylic Latex Semi-Gloss 6900 Series: Applied at a dry film thickness of not less than 1.4 mils (0.0356 mm).
  4. Sherwin-Williams: Provide one of the following:

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- a. Sonoran Int/Ext Acrylic Latex Semi-Gloss, B40WJ9850 Series: Applied at a dry film thickness of not less than 1.5 mils (0.0381 mm).
  - b. Solo 100% Acrylic Int/Ext S/G A76 Series: Applied at a dry film thickness of not less than 1.5 mils (0.0381 mm).
5. Vista: 7000 Acriglo Semigloss: Applied at a dry film thickness of not less than 1.6 mils (0.0406 mm).
6. Rust Oleum 3800 Acrylic Latex Gloss: Applied at a dry film thickness of not less than 1.5 mils (0.0381 mm)

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
  1. Application of coating indicates acceptance of surfaces and conditions.

#### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations applicable to substrates and paint systems indicated.

#### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations applicable to substrates and paint systems indicated.
- B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

#### 3.4 CLEANING AND PROTECTION

- A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

#### 3.5 EXTERIOR PAINTING SCHEDULE



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- A. Zinc-Coated Metal: Provide the following finish systems over exterior zinc-coated metal surfaces:
  - 1. Semigloss Acrylic-Enamel Finish: Two finish coats over a galvanized metal primer.
    - a. Pretreatment: Exterior galvanized metal pretreatment. Required even if not recommended.
    - b. Primer: Exterior galvanized metal primer.
    - c. Finish Coats: Exterior gloss acrylic enamel.

**END OF SECTION 099113**

## 1. PART 1 GENERAL REQUIREMENTS

### 1.1 SCOPE OF WORK

- A. The work covered by this section consists of furnishing and installing all I, materials, equipment, fixtures and performing all labor and operations for complete and operable systems.
- B. Provide all new materials, unless noted otherwise, of the best quality, and in perfect condition, and materials of the same make and quality throughout the work and as hereinafter specified. Comply with the requirements of ASTM, NEMA, U.L., and NBFM for materials and equipment.
- C. The intent of these specifications is to establish a standard of quality of materials installed. Include materials as specified without exception in the Base Bid. Submit for approval any proposed substitution, complete descriptive, technical, and cost comparison data and test reports. Do not furnish or install any substitute items without written approval at the time of contract signing. Reimburse the Owner for any additional engineering charges and for any changes in the work of other trades resulting from substitutions. List proposed substitutions on the Bid Form, stating the reasons for substitution. When requested by the Architect or Electrical Engineer, samples, electrically wired at 120V. with plug, or system demonstrations of both specified and proposed items will be submitted for inspection at the Electrical Engineer's office and at a time convenient to all concerned parties.
- D. Where a substitution alters the design or space requirements indicated on the plans, Contractor is responsible for all additional cost for Engineering to revise plans.
- E. Verifying Drawings and Job Conditions:
  - 1. Examine all drawings and specifications in a manner to be fully familiar of all work required.
  - 2. Visit the site and verify existing conditions. Where existing conditions differ from drawings, make adjustments and allowances for all necessary equipment to complete all parts of the drawings and specifications.
- F. Shop Drawings:
  - 1. Submit drawings in six sets accompanied by letter of transmittal listing the number and dates of the drawings submitted.
  - 2. Mark the drawings submitted with the name of the project, numbered consecutively, and bearing approval as evidence that the drawings have been checked. Any drawings submitted without this approval will be returned for resubmission.

3. Submit Shop drawings on, but not limited to, the following:

- a. Meter Pedestal
- b. Tennis Court Enclosure
- c. Product List

G. Drawings of Record:

Provide and keep up-to-date, a complete record set of blue line prints. Show every change from the original drawings. Keep this set of prints on the job site, and use only as a record set. Do not make changes in the layout without definite instruction in each case. Obtain a set of Contract Drawings from Architect and incorporate all changes as noted on the record set of prints. Deliver this set to the Architect upon completion and acceptance of work.

H. Accuracy of Plans and Specifications:

Plans and/or specifications showing deviation from standard practice methods or from compliance with codes, and/or any omissions, does not relieve the responsibility of furnishing, making or installing all items required by code and/or intended for the function of the system.

I. Permits, Fees and Insurance:

Obtain and pay for all insurance, permits, etc. necessary for this Contract.

J. Codes and Regulations:

All work performed under this Section of the Specifications complies with the rules and regulations of the Division of Industrial Safety, State of California, as set forth in the latest edition of the Electrical Safety Orders, the National Electrical Code, NFPA, and all rules and regulations of local codes having jurisdiction, including the presently adopted edition Title 21 and 24 California Administrative Code.

K. Testing and Adjustment:

Test all circuits, outlets, switches, lights, motors, circuit breakers and any other electrical equipment, upon completion of all electrical work.

L. Guarantees of Materials and Workmanship:

Furnish and install all materials under this Contract, new and free from all defects, and guaranteed for a period of two years from the date of acceptance of the work. Should any trouble develop during this period due to defective material or faulty workmanship, furnish all necessary labor and materials to correct the trouble without additional cost to the Contract. Correct any defective material or inferior workmanship noticed at the time of installation immediately, to the satisfaction of the Architect.

M. Removal of Rubbish:

Remove rubbish, excess materials, tools or equipment related to this portion of the work, frequently during construction and upon completion of the work.

N. Drawings and Specifications:

1. The electrical description document is considered as part of these specifications, and any work or materials shown on the drawings and not mentioned in the specifications, or vice versa, shall be as if specifically mentioned in both.
2. The data herein specified and shown on the drawings is as exact as could be prepared, but their extreme accuracy is not guaranteed. The description document and these specifications are for assistance and guidance. The installation is essentially as shown and specified. The exact location of the equipment, material, apparatus and devices as well as the distances and levels, are more or less governed by the physical conditions and arrangements in the field. Accept this Contract with this understanding.
3. Make minor changes, when ordered by the Architect, accommodating the installation of the work with other sections of the Contract without additional cost to the Contract.

O. Safety Conditions:

It is the Contractor's responsibility to prevent any damages to personnel and/or property resulting from contact with new or existing energized circuits, switches, circuit breakers, or other electrical apparatus. All electrical work to be constructed with electrical systems de-energized in the area of work.

P. Final Inspection and Acceptance:

After all requirements of the specifications and drawings have been fully completed, a representative of the Owner will inspect the work. Provide competent personnel to demonstrate the operation of any item or system involved to the complete satisfaction of each representative.

## 2. PART 2. PRODUCTS

### 2.1 METER PEDESTAL:

Metered pedestal shall be provided with ratings, components, and features in strict accordance with the serving utilities and code enforcing agency and specifications. The metered pedestal distribution panels consist of a completely enclosed self-supporting, floor standing structure, of the required number of formed vertical panel sections. Provide bolted frames and insulating block to support the main horizontal bus for short circuit stress as indicated on the drawings. All bussing shall be 100% rated made with copper having a current density of 1,000 amps per square inch, metering pedestal ventilated enclosure with NEMA 3R stainless steel exterior enclosure and vandalproof locking pad lock cover

### 2.2 CIRCUIT BREAKERS:

Provide circuit breakers with inverse time characteristic thermal and magnetic tripping elements, with an interrupting capacity of not less than 10,000 amperes, UL labeled, NEMA rated, molded case type. Use common trip single handle multi-pole breakers. Handle extensions are not permitted. All circuit breakers will have covers sealed on non-interchangeable trip breakers and trip unit covers sealed in interchangeable trip breakers to prevent tampering. Be sure the circuit breaker current rating markings clearly visible after breaker is installed. One manufacturer for all circuit breakers for a given panel. Provide bolt-on circuit breakers unless specifically noted on electrical drawings.

## 2.3 CONDUIT AND FITTINGS:

- A. Rigid Conduit (RGS): Hot dipped galvanized or sherardized steel. Republic Steel Co. or approved equal. Intermediate metal conduit may be used, where CEC allows, in lieu of RGS.
- B. Electrical metallic tubing (EMT): Welded, electro-galvanized thin wall steel tubing. All couplings are gland compression type.
- C. Non-metallic conduit (PVC): Polyvinyl chloride Schedule 40 or 80. Install a copper ground wire, sized per National Electrical Code, in all non-metallic conduit power raceways. Use PVC in underground installations only.
- D. Liquidtight Flexible Metal Electrical Conduit: Hot-dipped galvanized steel with exterior, molded polyvinyl jacket. Use for all final connections to all vibrating equipment, transformers and the like. 18" maximum. Provide a code sized ground wire.
- E. Flexible metallic steel tubing: Liquid tight without a nonmetallic jacket. Use as allowed by code and where permitted by this Specification, section 3.06.C. Provide a code sized ground conductor.
- F. Condulet Type Fittings: As manufactured by Crouse Hinds Company, Appleton Electric Company or Pyle National or approved equal, smooth inside and out, taper threaded with integral bushings.

## 2.4 CONDUCTORS:

- A. Provide copper conductors, 600 volt A.C. unless noted otherwise. Aluminum conductors are not permitted.
- B. Use THWN conductors for underground and damp locations, THHN for dry areas.
- C. Deliver conductors to the site in unbroken packages, marked with the manufacturer's name, date of manufacture, voltage and classification letters. Use only wire recently manufactured (10 months or less).
- D. Provide signal service and low voltage control conductors as specified or noted on the drawings.
- E. No conductor supplying 120 volts or more will be smaller than No. 12 AWG unless otherwise noted on the drawings.

- F. Fixture wire to comply with latest requirements of the National Board of Fire Underwriters. The carrying capacity of the wire as per the latest requirements of the National Electrical Code. No fixture wire may be smaller than #18 gauge. Protect wiring with tape or tubing at all points where abrasion is likely to occur.
- G. Install all conductors of each electrical system in an approved raceway. Factory assemblies, non-metallic/pliable/corrugated raceways, type UF cable or multi-conductor assemblies are not approved.
- H. Use solid conductor, size #10 AWG and smaller, stranded for #8 AWG and larger.

#### 2.5 JUNCTION AND PULL BOXES:

Above grade level, provide galvanized junction and pull boxes with removable covers, secured with machine screws. The sizes of all boxes determined by the number and size of conductors entering the box, and by the sizes of conduit terminating in the box. All boxes conform to the applicable Electrical Safety Orders, State of California. Pullboxes flush with grade shall be concrete, with bolt down concrete or steel covers, per plans, with engraved or beadweld identification.

#### 2.6 OUTLET BOXES:

- A. Provide galvanized outlet boxes and covers, one piece pressed steel, knockout fixture outlets equipped with 3/8" fixture studs and plaster rings.
- B. Where standard boxes are not suitable, provide boxes of special design to fit space.
- C. Cast aluminum or cast iron for outlet boxes exposed to weather, in damp locations, or surface mounted with threaded hubs for conduit connections; cover made watertight with gasket and non-ferrous screws.
- D. Provide outlet boxes in plaster covered walls with raised covers or plaster rings to finish flush with plaster.

#### 2.7 NAMEPLATES:

Shall be micarta or lamacoid plate, 1/8" thick and have approved size, with beveled edges and engraved white letters on black background. Provide nameplates for all items of electrical equipment as well as circuits in the service distribution and power distribution panelboards; lighting distribution panelboards; separately mounted motor starting switches; disconnect switches; motor control pushbutton stations and other similar devices. Each nameplate as approved by the Architect. Use two machine screws for attachment. Cement/adhesive is not approved.

### 3. PART 3. EXECUTION

- 3.1 If construction of building reveals that any part of the Electrical Work would not be readily accessible

if installed according to drawings, notify the Architect before proceeding with such installation.

3.2 All concrete work such as pull boxes, raised pads, conduit envelopes and other areas where affecting Electrical Work are the responsibility of the Electrical Contractor.

3.3 Coordinate layout and installation of electrical work with the overall construction schedule and work schedules of various trades to prevent delay in completion of the project.

A. Verify dimensions and information regarding accurate location of equipment, structural limitations, and finish with other affected sections.

B. Job Conditions:

The drawings do not always show offsets, bends, special fittings or junctions or pull boxes necessary to meet job conditions. Provide the items as required at no cost to the Owner.

C. Weatherproof Equipment:

Use weather resistant electrical devices or equipment located in damp, semi-exposed areas. Comply with NEMA Type 3R requirements for enclosures.

D. Where devices are shown diagrammatically in the same location, neatly group them together in a reasonable manner. Provide one-piece plate where such is manufactured.

3.4 Equipment requiring electrical under other sections is part of the Contract. Work includes all necessary connections.

3.5 EXCAVATION AND BACKFILLING:

Excavate and backfill in accordance with section in these documents covering that work.

3.6 CONDUIT:

A. Use rigid galvanized steel or I.M.C. for all exposed conduit below 8'-0". with all required mounting accessories. Paint with two coats to match adjacent surroundings.

B. Use electrical metallic tubing (EMT), for all exposed conduit above 8'-0". with compression fittings and all required mounting accessories. Paint with two coats to match adjacent surroundings.

C. Cut the ends of all conduit square and carefully ream out to full size, and shoulder in fitting.

D. No running threads will be permitted in locations exposed to the weather. Use special watertight union fittings in these locations.

E. Use PVC Schedule 40 or 80 for all underground conduits. Install all underground conduit at a depth of not less than 30 inches below the final finish grade, unless under concrete slabs or otherwise noted and/or specified. Provide metallic high voltage tape buried 12" above conduit, except under floor slab or under concrete walk, in which case, install 6" below

bottom of slab. Use IMC for all horizontal and vertical sweeps or risers with factory applied PVC coating. Schedule 80 PVC sweeps are permitted for conduits 4" diameter and greater.

- F. Cut and patch all pavements, curbs, sidewalks and gutters, whenever necessary for laying conduit, or whenever damaged by the operations of this trade. Replace materials with quality and finish equal to that removed or damaged.
- G. Support all exposed conduit in intervals not less than 10'-0" and within 36 inches from any outlet and at each side of bends and elbows. On exposed conduit supports, use two hole clamps with screws, or galvanized steel framed channels secured by screws may be used for conduit supports. Perforated iron for supporting conduit is not permitted.
- H. Install new exposed conduit parallel or perpendicular to structural members or intersection of vertical plan. Avoid field made bends and offsets where possible. Do not install crushed or deformed raceways.
- I. Use factory-manufactured ells, except where noted otherwise. Field bends are permitted for EMT conduit less than 1 1/4" diameter.
- J. Use watertight gland compression type connectors and couplings on fittings for thin wall metallic conduit. Screw type or crimp type are not permitted.
- K. Use approved type-bending machines for PVC conduits. Use of blow torch is prohibited.
- L. Seal or cap all conduit at conclusion of project for a watertight installation.

### 3.7 INSTALLATION OF CONDUCTORS:

- A. Unless otherwise indicated or specified, do not install conductors of less than No. 12 AWG size. For control conductors protected by 15 ampere or lower overcurrent protection, No. 14 AWG conductors will be installed. Where approved by Code, remote control and signal circuits utilize No. 18 or No. 16 AWG sizes. Increase No. 12 to No. 10 AWG for 120 volt home runs exceeding 75 feet.
- B. Color code power wire and cable for feeders and branch circuits.
- C. Install all electrical conductors, including signal and communications circuits in an approved raceway.
- D. Neatly group conductors in panels, switchgear and terminal cabinets, etc., and form in a manner to fan into terminals with regular spacing. Lace formed groups of conductors with No. 12 waxed twine, or Panduit Co. Nylon Straps Numbers "SST-4-H" or "SST-2". Lace larger conductors with marlin and secure with cleats, or Panduit Co. Nylon Sta-Straps Numbers "SSC-4-H" and tie anchors ETA-1, TA-2 or TM-1-2-3.
- E. Install U.L. approved covered wire from all lighting fixture lamp sockets into outlet or junction box.



3.9 WIRING COLOR CODE

A. 240/120 Volt System

Phase A - Black.

Phase B - Red.

Neutral - White.

Equipment Ground - Green.

B. Provide identification tags on each conductor entering panel, switch, junction box and pull box to identify conductor.

3.10 UNDERGROUND PULL BOXES:

A. Set underground pull boxes at +3" above highest adjacent grade level.

B. Size per NEC.

C. Provide nameplate on all covers.

"ELEC"

3.11 CONDUCTOR JOINTS AND TAPING:

Make joints in conductors smaller than No. 6 AWG with solderless, tapeless, wing nut type pressure cable connector. Join conductors No. 6 AWG and larger together with approved type or pressure connector and tape to provide insulation not less than that of the conductor. Make connections to switch or bus bar with one-piece copper lugs for conductors No. 8 AWG or larger.

3.12 GROUNDING:

Provide grounding for entire electrical installation as required by the serving utility and codes mentioned in these specifications. Including:

A. Conduit.

B. Neutral or identified conductor of interior wiring system.

C. Power and lighting panelboards.

D. Non-current carrying metal parts or fixed equipment.

END OF SECTION

## SECTION 321823-CONCRETE TENNIS COURT SURFACE COLOR COATING SYSTEM

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Concrete tennis court surface color coating system.

#### 1.2 RELATED REQUIREMENTS

- A. Section 03300 (03 30 00) – Cast-in-Place Concrete

#### 1.3 REFERENCE STANDARDS

- A. American Sports Builders Association (ASBA).
- B. United States Tennis Association (USTA) Rules of Tennis.
- C. International Tennis Federation (ITF).

#### 1.4 SUBMITTALS

- A. Comply with Section 01330 (01 33 00) – Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including surface and crack preparation and application instructions.
- C. Samples: Submit manufacturer's color samples of color coating.
- D. Test Reports:
  - 1. Submit independent test results for solar reflectance index.
  - 2. Submit independent test results for 2000 Hour ASTM G154, accelerated weathering UV test, to demonstrate long-term durability and fade resistance.
  - 3. Submit independent test results for 2000 Hour, accelerated weathering ASTM G155 Xenon Arc test, to demonstrate long-term fade resistance and quality of pigment.
- E. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.
- F. Manufacturer's Project References: Submit manufacturer's list of successfully completed concrete tennis court surface color coating system projects, including project name, location, and date of application.
- G. Applicator's Project References: Submit applicator's list of successfully completed concrete tennis court surface color coating system projects, including project name, location, type and quantity of color coating system applied, and date of application.
- H. Warranty Documentation: Submit manufacturer's standard warranty.
- I. Authorized Installer Certificate: Submit manufacturer's authorized installer certificate.

## 1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications:
  - 1. Manufacturer regularly engaged, for past 5 years, in manufacture of concrete tennis court surface color coating systems of similar type to that specified.
  - 2. United States owned company.
  - 3. Member: ASBA.
  - 4. Manufacturer has surfaces that are classified by the ITF's (International Tennis Federation) pace classification program.
- B. Applicator's Qualifications:
  - 1. Applicator regularly engaged, for past 3 years, in application of tennis court surface color coating systems of similar type to that specified.
  - 2. Employ persons trained for application of tennis court surface color coating systems.
  - 3. Applicator must be authorized installer of the surfacing brand used.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery and Acceptance Requirements: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage and Handling Requirements:
  - 1. Store and handle materials in accordance with manufacturer's instructions.
  - 2. Keep materials in manufacturer's original, unopened containers and packaging until application.
  - 3. Store materials in clean, dry area indoors.
  - 4. Store materials out of direct sunlight.
  - 5. Keep materials from freezing.
  - 6. Protect materials during storage, handling, and application to prevent contamination or damage.
  - 7. Close containers when not in use.
  - 8. Retain manufacturer batch codes on each container and application dates, for warranty purposes.

## 1.7 AMBIENT CONDITIONS

- A. Do not apply concrete tennis court surface color coating system when air or surface temperatures are below 50°F (10°C) during application or within 24 hours after application.
- B. Do not apply concrete tennis court surface color coating system when rain is expected during application or within 24 hours after application.

## PART 2 PRODUCTS

### 2.1 MANUFACTURER

- A. SportMaster Sport Surfaces, PO Box 2277, 2520 South Campbell Street, Sandusky, Ohio 44870. Toll Free 800-326-1994. Fax 877-825-9226. Website [www.sportmaster.net](http://www.sportmaster.net). E-mail [moreinfo@sportmaster.net](mailto:moreinfo@sportmaster.net).

All other brands must be pre-approved by the architect/owner, 7 days prior to the bid date. If submitting another brand, bidder must furnish copies of all submittal documents under section 1.4

## 2.2 MATERIALS

- A. Concrete Tennis Court Surface Color Coating System: SportMaster Color Coating System.
- B. Crack Sealant: SportMaster "Crack Magic".
  - 1. 100 percent acrylic emulsion elastomeric crack sealant.
  - 2. Seals cracks and expansion joints up to 1/2 inch wide in concrete pavement.
  - 3. Weight per Gallon at 77 Degrees F: 8.8 lbs., plus or minus 0.5 lbs.
  - 4. Non-Volatile Material: 61 percent, plus or minus 5 percent.
  - 5. Color: [Green] [Neutral] [Red].
- C. Crack Filler: SportMaster "Acrylic Crack Patch".
  - 1. 100 percent acrylic emulsion trowel-grade crack filler.
  - 2. Fills cracks in concrete pavement up to 1 inch wide.
  - 3. Chemical Characteristics, by Weight, Minimum:
    - a. Acrylic Emulsion: 10.0 percent.
    - b. Hiding Pigment: 0.2 percent.
    - c. Mineral Inert Fillers: 78.0 percent.
    - d. Film Formers, Additives: 1.8 percent.
    - e. Water: 8.5 percent.
  - 4. Weight per Gallon at 77 Degrees F: 15.2 lbs., plus or minus 1.0 lbs.
  - 5. Non-Volatile Material: 80 percent, plus or minus 5 percent.
  - 6. Color: [Green] [Neutral] [Red] [Blue].
- D. Patch Binder: SportMaster "Acrylic Patch Binder".
  - 1. 100 percent acrylic emulsion liquid binder.
  - 2. Mix on-site with sand and cement.
  - 3. Levels and repairs low spots and depressions up to 3/4 inch deep in concrete pavement.
  - 4. Fills Cracks in concrete up to 1" in width.
  - 5. Weight per Gallon at 77 Degrees F: 8.8 lbs., plus or minus 0.5 lbs.
- E. Adhesion Promoter: SportMaster "Acrylic Adhesion Promoter".
  - 1. Acrylic emulsion primer.
  - 2. Primes concrete surface and promotes adhesion of color coating system materials.
  - 3. Weight per Gallon at 77 Degrees F: 8.7 lbs., plus or minus 0.5 lbs.
- F. Filler Course: SportMaster "Acrylic Resurfacer".
  - 1. 100 percent acrylic emulsion resurfacer.
  - 2. Mix on-site with silica sand.
  - 3. Apply to adhesion promoter or previously colored acrylic surfaces in preparation of color coating system.
  - 4. Chemical Characteristics, by Weight, Minimum:
    - a. Acrylic Emulsion: 44.0 percent.
    - b. Hiding Pigment: 2.0 percent.
    - c. Mineral Inert Fillers: 5.0 percent.
    - d. Film Formers, Additives: 0.2 percent.
    - e. Water: 45.0 percent.
  - 5. Weight per Gallon at 77 Degrees F: 8.5 lbs., plus or minus 0.5 lbs.
  - 6. Non-Volatile Material: 27.5 percent, plus or minus 5.0 percent.
  - 7. Color: [Black] or [Neutral].
- G. Color Coating: SportMaster "ColorPlus System".
  - 1. 100 percent acrylic emulsion coating.
  - 2. Mix on-site with silica sand and water.

3. Color coats tennis and multipurpose courts.
4. Weight per Gallon at 77 Degrees F: 9.2 lbs., plus or minus 0.5 lbs.
5. Color: [Beige] [Blue] [Brown] [Dark Green] [Dove Gray] [Forest Green] [Gray] [Ice Blue] [Light Blue] [Light Green] [Maroon] [Red] [Sandstone] [\*Tournament Purple] [\*Orange] [Yellow] [\*Brite Red] [Black]

H. Line Markings Primer: SportMaster "Stripe-Rite".

1. 100 percent acrylic emulsion primer, clear drying.
2. Primes line markings and prevents bleed-under for sharp lines.
3. Chemical Characteristics, by Weight, Nominal:
  - a. Acrylic Emulsion: 38.0 percent.
  - b. Hiding Pigment: 0.0 percent.
  - c. Mineral Inert Fillers: 7.0 percent.
  - d. Film Formers, Additives: 1.5 percent.
  - e. Water: 50.0 percent.
4. Weight per Gallon at 77 Degrees F: 8.9 lbs., plus or minus 0.5 lbs.
5. Non-Volatile Material: 29 percent, plus or minus 5 percent.

I. Line Paint: SportMaster "Textured Line Paint".

1. Pigmented, 100 percent acrylic emulsion line paint.
2. Line marking on concrete tennis courts.
3. Chemical Characteristics, by Weight, Nominal:
  - a. Acrylic Emulsion: 25.89 percent.
  - b. Pigment: 14.90 percent.
  - c. Mineral Inert Fillers: 13.12 percent.
  - d. Additives: 4.73 percent.
  - e. Water: 41.36 percent.
4. Weight per Gallon at 77 Degrees F: 10.65 lbs., plus or minus 0.75 lbs.
5. Non-Volatile Material: 45.17 percent, plus or minus 5 percent.
6. Color: White.

### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Examine concrete tennis court surfaces to receive color coating system.
- B. Verify:
  1. Suitable vapor barrier beneath concrete slab.
  2. Perimeter drainage to prevent moisture accumulation beneath concrete surface.
  3. Curing compounds have not been used on concrete surface.
  4. Concrete tennis courts meet ASBA construction requirements.
- C. Notify Architect of conditions that would adversely affect application or subsequent use.
- D. Do not begin surface preparation or application until unacceptable conditions are corrected.

#### 3.2 SURFACE PREPARATION

- A. Protection of In-Place Conditions: Protect adjacent surfaces and landscaping from contact with concrete tennis court surface color coating system.
- B. Prepare surfaces in accordance with manufacturer's instructions.
- C. New Concrete:

1. Cure new concrete surfaces a minimum of 28 days before application of concrete tennis court surface color coating system.
  2. Provide medium broom finish or similar roughened texture.
  3. Do not steel trowel finish.
  4. Acid etch with phosphoric or muriatic acid and rinse thoroughly prior to application of color coating system.
- D. Remove dirt, dust, debris, oil, grease, sealers, curing compounds, vegetation, loose coatings, loose materials, and other surface contaminants which could adversely affect application of concrete tennis court surface color coating system. Pressure wash entire surface.
- E. Repair cracks, depressions, and surface defects in accordance with manufacturer's instructions before application of color coating.
- F. Repair spalled areas and level depressions 1/8 inch and deeper with patch binder in accordance with manufacturer's instructions.
- G. Apply adhesion promoter over entire concrete surface in accordance with manufacturer's instructions.
- H. Apply 1 coat of filler course to provide smooth underlayment for application of color coating.
- I. Ensure surface repairs are flush and smooth to adjoining surfaces.
- 3.3 APPLICATION
- A. Apply concrete tennis court surface color coating system in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Mix materials in accordance with manufacturer's instructions.
- C. Apply Filler Course and Color Coating with a 50-60 durometer, soft rubber squeegee.
- D. Filler Course:
1. Apply 1 coat on new concrete or existing acrylic surfaces with minimal repairs.
  2. Apply 2 coats on existing acrylic surfaces with extensive cracks or low spot repair.
- E. Apply a minimum of 2 coats of color coating to prepared surfaces in accordance with manufacturer's instructions.
- F. Allow material drying times in accordance with manufacturer's instructions before applying other materials or opening completed surface to foot traffic.
- 3.4 LINE MARKINGS
- A. Lay out tennis court line markings in accordance with USTA Rules of Tennis.
- B. Apply line markings primer, after masking tape has been laid, to seal voids between masking tape and tennis court surface to prevent bleed-under when line paint is applied.
- C. Apply a minimum of 1 coat of line paint in accordance with manufacturer's instructions.
- 3.5 PROTECTION
- A. Allow a minimum of 24 hours curing time before opening tennis courts for play.

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CC-1668

- B. Protect applied concrete tennis court surface color coating system to ensure that, except for normal weathering, coating system will be without damage or deterioration at time of Substantial Completion.

END OF SECTION 321823

## **APPENDIX A**

### **DOWNLOAD PUBLIC WORKS STANDARDS**

[http://www.huntingtonbeachca.gov/Government/Departments/Public\\_Works](http://www.huntingtonbeachca.gov/Government/Departments/Public_Works) then Select the STANDARD PLANS 2008 and  
WATER STANDARD PLANS

### **DOWNLOAD TRUCK ROUTE**

[http://www.huntingtonbeachca.gov/files/users/public\\_works/development\\_services/Truck%20Route%20Map.pdf](http://www.huntingtonbeachca.gov/files/users/public_works/development_services/Truck%20Route%20Map.pdf)

### **DOWNLOAD TRASH PICK UP SCHEDULE**

[http://www.huntingtonbeachca.gov/files/users/public\\_works/hb\\_rainbow\\_collection\\_schedule\\_map.pdf](http://www.huntingtonbeachca.gov/files/users/public_works/hb_rainbow_collection_schedule_map.pdf)

### **DOWNLOAD STREET SWEEPING SCHEDULE**

[http://www.huntingtonbeachca.gov/files/users/public\\_works/Streetsweepers2.pdf](http://www.huntingtonbeachca.gov/files/users/public_works/Streetsweepers2.pdf)

### **DOWNLOAD TEMPORARY WATER METER FOR CONSTRUCTION**

[http://www.huntingtonbeachca.gov/business/license\\_permit\\_codes/temporary-water-meter-info.cfm](http://www.huntingtonbeachca.gov/business/license_permit_codes/temporary-water-meter-info.cfm)

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## **APPENDIX B**

### **DOWNLOAD PROJECT PLANS & SPECIFICATIONS**

<https://pbsystem.planetbids.com/portal/15340/portal-home>  
then click on "Bid Opportunities"

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## APPENDIX C

# DOWNLOAD REGIONAL WATER QUALITY CONTROL BOARD PERMITS

GENERAL CONSTRUCTION PERMIT INCLUDING FACTSHEET-  
ORDER 2009-0009-DWQ, NPDES CAS000002

[http://www.swrcb.ca.gov/water\\_issues/programs/stormwater/constpermits.shtml](http://www.swrcb.ca.gov/water_issues/programs/stormwater/constpermits.shtml)[http://www.swrcb.ca.gov/water\\_issues/programs/stormwater/constpermits.shtml](http://www.swrcb.ca.gov/water_issues/programs/stormwater/constpermits.shtml)

WASTE DISCHARGE REQUIREMENT FOR  
INSIGNIFICANT (DE MINIMUS) THREAT TO WATER QUALITY-  
ORDER R8-2015-0004 AMENDING R8-2009-0030, NPDES CAG998001

[http://www.waterboards.ca.gov/santaana/board\\_decisions/adopted\\_orders/orders/2015\\_orders.shtml](http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2015_orders.shtml)

MS4 (MUNICIPAL SEPARATE STORM SEWER SYSTEM)  
ORDER R8-2009-0030, NPDES CAS618030

[http://www.waterboards.ca.gov/santaana/board\\_decisions/adopted\\_orders/orders/2009\\_orders.shtml](http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2009_orders.shtml)

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## **APPENDIX D**

### **CONTRACTORS BUSINESS LICENSE APPLICATION**

## ABOUT BUSINESS LICENSES...

Welcome to the City of Huntington Beach business community. This information guide is intended as a summary of information you will need to know in order to operate a business in Huntington Beach. This guide is provided as a public service. It is not all-inclusive and any specific questions should be directed to Business License at (714) 536-5267. Clarification and definition can also be found in the Huntington Beach Municipal Code, Section V. A City of Huntington Beach business license is not a regulatory license, but is a tax to help pay for the public safety needs of the people of Huntington Beach.

## Who Needs a Business License?

The City of Huntington Beach Municipal Code requires most businesses operating in Huntington Beach to pay an annual business license tax. Business Licenses are not transferable between owners; however, they may be transferred to a new location upon notification to Business License and approval by the City Planning Department. All businesses, trades, professions, callings, or occupations operating in the City need a Business License. These include but are not limited to:

- ✓ Any business in a commercial or industrial location.
- ✓ Persons who have a home office or use their home as the headquarters of their business.
- ✓ Businesses, which are located outside the city, but transact business in the city such as contractors, cleaners, repair people, gardening services, fumigators, telemarketers etc.
- ✓ Independent contractors such as doctors, real estate sales agents, hairdressers, janitorial contractors, and home party demonstrators.
- ✓ Apartment owners renting 3 or more units.
- ✓ Mobile Vendors who sell merchandise from their vehicles, such as ice cream trucks.
- ✓ Temporary businesses such as a one-day or weekend event in the city, or a short-term seasonal business.

## How Do I Obtain a Business License?

You can obtain an application from City Hall, or download one from our website at [www.surfcity-hb.org](http://www.surfcity-hb.org). Look under Business / Licenses, Permits, Codes / Business License. Complete the application and bring it to City Hall on the 1<sup>st</sup> floor, 2000 Main Street or mail it to Business License, P.O. Box 190, Huntington Beach, CA 92648. If you are in a commercial location in the city, you may need to fill out an application for a Certificate of Occupancy for the Planning Department, who can be reached at (714) 536-5271. Apply for this in person on the 3<sup>rd</sup> floor.

## How Much Does It Cost?

The business license cost is based on a flat tax plus additional amounts if there are more than 3 employees, more than 1 business vehicle or coin operated machines. A typical business license starts at \$75 plus a non-refundable processing fee. Additional amounts added are as follows:

Additional Employees:	4 – 9	\$4.00 each
	10 – 52	\$3.00 each
	> 52	\$2.00 each
Additional vehicles:	Under 1 ton:	\$12.00 each
	1 to 3 tons:	\$35.00 each
	Over 3 tons:	\$46.00 each

Home-based businesses are required to pay a one-time fee for a Home Occupation Permit, in addition to their license.

Some business licenses are calculated differently, such as apartment rental, hotels, carnivals, special events, vending machines, out of town contractors, pool halls. Call (714) 536-5267 for information on these types of licenses or to find out the cost of your license.

## How Long Does It Take to Apply?

A business license may be issued at City Hall while you wait. Your application must be complete and include all necessary documents. You may need to bring the following: Certificate of Occupancy or receipt showing payment; Seller's Permit showing a Huntington Beach location; Health Permit. The application may also be mailed to City Hall. Be sure to complete all relevant items on the application.

## What Other Things May I Need?

- ✚ **Certificate of Occupancy** – required by the Planning Dept. for businesses in a commercial or industrial location. Call (714) 536-5271 or pick up an application from City Hall.
- ✚ **Conditional Use Permit** – required by the Planning Dept. for some businesses such as live entertainment, dance schools, internet cafes and alcohol sales. Call (714) 536-5271.
- ✚ **Certified Unified Program Agency (CUPA)** – required by the Fire Dept. if you handle or store hazardous material or waste. Call (714) 536-5676.
- ✚ **Fictitious Name (dba)** – must be filed if you choose a business name that does not include your own last name. Contact the County Clerk's office at (714) 834-2889, go online at [www.oc.ca.gov/recorder](http://www.oc.ca.gov/recorder) or contact your local newspaper office.
- ✚ **Seller's Permit (Resale #)** – required by the State Board of Equalization if you sell merchandise. Call (714) 558-4059 or visit [www.boe.ca.gov](http://www.boe.ca.gov).
- ✚ **Health Permit** – required by the County Health Dept. for food handling, permanent make-up, tattooing or body piercing. Call (714) 433-6000.
- ✚ **Federal Tax ID #** – required if you have employees, are incorporated, or have a registered partnership. Call (800) 829-1040 or visit [www.irs.gov](http://www.irs.gov).
- ✚ **Worker's Compensation Insurance** – required if you have employees. Contact your local insurance agent, state fund or visit [www.dir.ca.gov/dwc](http://www.dir.ca.gov/dwc).
- ✚ **Liquor License** – required by the State Dept. of Alcoholic Beverage Control if you sell or serve alcohol. Contact (714) 558-4101 or visit [www.abc.ca.gov](http://www.abc.ca.gov).
- ✚ **Special Permits** – required by the Police Dept. for certain types of business activities, such as firearm dealers, pawnbrokers, psychic reading, massage, soliciting for donations, live entertainment, and bingo. Call (714) 536-5267 or the Police Dept. at (714) 536-5991 for more information.

## Frequently Asked Questions:

### What if I Don't Obtain a License?

Conducting business in the city without a license can result in penalties, Notices of Violation and Administrative Citations. It is a misdemeanor to violate the City Business License ordinances.

### Do I Need to Display My Business License?

Yes, all business licenses must be posted in public view at the fixed location of the business. If no fixed location in the city, the responsible party must carry the business license with them while conducting business in Huntington Beach.

### How Often Do I Need to Renew It?

Business licenses are renewed annually. A courtesy notice is mailed approx. 4 weeks before the due date. However, you are responsible for renewing your license whether or not the renewal notice is received. If the payment is received more than 30 days past the due date, a 10% per month penalty is charged. Notices of Violation and Administrative Citations may also be issued.

### I am Moving to a New Location in the City.

Please notify us of your new address, phone number, and any other changes to your business. After compliance with any applicable city requirements, your business license may be transferred to the new location for a small processing fee. If you are moving to a new commercial location, you will need to apply for a new Certificate of Occupancy. Call (714) 536-5271.

### What if I Stop Doing Business or Move Away?

Let us know in writing if you want your license cancelled, otherwise you will continue to receive renewal notices and late penalties. No refunds are given when the business ceases.

### Can I Transfer My License to Someone Else?

Business Licenses are not transferable from one owner to another. The new owner must apply for a business license in their name.

### Where Do I Find You?

We are located at 2000 Main St on the corner of Yorktown and Main, in the Civic Center on the 1<sup>st</sup> floor. Enter the Administration Building and follow the signs to Business License.

## Who Else Can Help Me Get Started?

How To Do Business in the City of Huntington Beach - a guide to permits: [www.hbbiz.com](http://www.hbbiz.com).

U.S. Small Business Administration – provides financial assistance programs, guide to resources and workshops. (714) 550-7420 or [www.sba.gov](http://www.sba.gov).

S.C.O.R.E Service Corps of Retired Executives. Workshops and counselors for small businesses. Call (714) 550-7369 or visit [www.score.org](http://www.score.org).

California Permit Assistance Center - information on local, state & federal permits. (714) 834-2840 or [www.calgold.ca.gov](http://www.calgold.ca.gov).

Small Business Corner - helpful information about taxes from the IRS. Visit their website at [www.irs.gov](http://www.irs.gov).

Small Business Development Center - provides help to small businesses through 1-on-1 counseling, workshops and education seminars. Call (800) 303-6600 or visit [www.commerce.ca.gov](http://www.commerce.ca.gov).

## Additional Telephone Numbers:

Better Business Bureau..... (714) 985-8915  
Building Permits..... (714) 536-5241  
Chamber of Commerce..... (714) 536-8888  
Community Services Dept..... (714) 536-5486  
Consumer Affairs Dept..... (800) 344-9940  
Contractors State License Board... (800) 321-2752  
Employment Development Dept..... (888) 745-3886  
Franchise Tax Board..... (800) 852-5711  
Library (Central)..... (714) 842-4481  
Office of Secretary of State..... (213) 897-3062  
Sign Permits..... (714) 536-5271  
State Compensation Ins. Fund..... (714) 565-5000  
Zoning Department..... (714) 536-5271

# How to Obtain a Business License in Huntington Beach



City of Huntington Beach  
Shari L. Freidenrich, City Treasurer  
Business License

2000 Main Street  
1<sup>st</sup> Floor  
Huntington Beach  
CA 92648

Phone: (714) 536-5267  
Fax: (714) 374-1603

Hours: 8:00 am – 5:00 pm  
Monday to Friday

[www.surfcity-hb.org](http://www.surfcity-hb.org)



# CITY OF HUNTINGTON BEACH

## FINANCE DEPARTMENT – BUSINESS LICENSE

P. O. Box 190 - 2000 Main Street, Huntington Beach, CA 92648-2702

Phone (714) 536-5267 – Fax (714) 536-5934 – [www.surfcity-hb.org](http://www.surfcity-hb.org)

## APPLICATION FOR BUSINESS LICENSE

<b>BUSINESS DETAILS:</b> Applications must be typed, or legibly hand printed in blue or black ink							
Name of Business (DBA)							
Name of Corporation (attach list of officers)							
Owner(s) or Principal(s)					Title		
					Title		
Contact Person					Title		
Business Address							
Mailing Address							
Web Site		E-mail Address			Business Phone		Fax
Type of Ownership: <input type="checkbox"/> Sole Proprietor	Social Security #		Type of Ownership: <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation		Federal Tax ID #		State Tax ID #
Date Business Started in Huntington Beach			# Employees (include self per latest tax filing):		Full-time	Part-time (FTE)	SIC #
Detailed Description of Business Activity							
Located in a BID? <input type="checkbox"/> Yes <input type="checkbox"/> No	BID Zone <input type="checkbox"/> 1 <input type="checkbox"/> 2	Area (sq ft)	BID Type		Discharge into Stormdrain? <input type="checkbox"/> Yes <input type="checkbox"/> No		NPDES Permit #
Description of Products Sold			Do you collect sales tax? <input type="checkbox"/> Yes <input type="checkbox"/> No			Seller's Permit (Resale #)	
Business Vehicles Used in the City? <input type="checkbox"/> Yes <input type="checkbox"/> No How Many?		Under 1 ton	1-3 tons	Over 3 tons	License Plate #		License Plate #
<input type="checkbox"/> General Contractor <input type="checkbox"/> Sub Contractor	Contractor's Lic #	Classes	Type of Job		Project Address (# street)		
Burglar Alarm System? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, permit is required. Call (714) 960-8805		Alarm Permit #		Health Permit #		ABC License #	CUPA#
State License (# / Type / Exp. Date)			Live Entertainment? <input type="checkbox"/> Yes <input type="checkbox"/> No			Sale of Adult Only Items? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Coin Operated Machines? <input type="checkbox"/> Yes <input type="checkbox"/> No	# Vending	# Amusement		# Service	# Music	# Bulk	
Vending Company's Name/Address/Phone							
# Apt/Motel/Rooming House/Office Units		# Trailer Spaces		Date of Purchase		Mobile Vendor? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, complete section on back of form	
<p>I am aware of the provisions of Section 3700 of the California Labor Code, which requires every employer to be insured against liability for Workers Compensation. (Please check appropriate box)</p> <p><input type="checkbox"/> Certificate of Workers Compensation Insurance <input type="checkbox"/> Certificate of Self-Insurance of Workers Compensation</p> <p><input type="checkbox"/> I certify that in the performance of work for which this license is issued I shall not employ any person in any manner so as to become subject to the worker's compensation laws of California. Note: If after signing the certificate, you hire any employee, you become subject to the workers' compensation provisions of the California Labor Code and you must immediately comply with the provisions of Section 3700 or your license immediately becomes revoked.</p>							
I hereby declare under penalty of perjury that the information and statements on this application are true and correct.							
Signature: _____				Title: _____			
Printed Name: _____				Date: _____			
<b>Total Due:</b>							

<b>SUPPLEMENTARY INFORMATION REQUIRED: (NON-PUBLIC INFORMATION)</b>						
Owner or Principal					Title	
Residence Address						
City			State	Zip	Home Phone	
Date of Birth		Social Security #		Drivers License		
Signature			Date			
Partner's Name or Secondary Principal (If applicable)					Title	
Residence Address						
City			State	Zip	Home Phone	
Date of Birth		Social Security #		Drivers License		
Signature			Date			
<b>ALTERNATIVE CONTACT IN CASE OF EMERGENCY:</b>						
Name			Title		Phone	
<b>MOBILE VENDORS ONLY – SUPPLEMENTARY INFORMATION:</b>						
Products Sold			Overnight Location of Vehicle			
Registered Owner of Vehicle			Description of Logo (may attach photo)			
Make of Vehicle	Year	Color	Serial #	Engine #		
Previous License? <input type="checkbox"/> Yes <input type="checkbox"/> No		City where previous license obtained			Date	
Has license/franchise previously been revoked/suspended? <input type="checkbox"/> Yes <input type="checkbox"/> No		Reason for Suspension if Yes			Year	
<b>Please attach list of drivers/vendors; copy of liability insurance; photo of vehicle.</b>						
<b>IMPORTANT INFORMATION:</b>						
Please notify the Business License Office of any changes to the business, including business name, location, owners, partners, business type or activity. If the business license is not updated accordingly, it may no longer be valid and the business owner may then be liable for penalties and administrative citations.						
If the business moves to another commercial location, a Certificate of Occupancy for the new location must be applied for with the Planning Department. Call (714) 536-5271 for application.						
As an applicant for a business license as a sole proprietor, you are required to provide your Social Security number as part of the application. Pursuant to Section 405(c)(2)(C)(i) of Title 42 of the United States Code, the City is permitted to require disclosure of the Social Security number for tax purposes. Disclosure of this information is mandatory. However, while disclosure is required in order for the City to properly administer the business license tax program, the Social Security number is not public record, and will not be disclosed to any members of the public.						
<b>OFFICE USE ONLY:</b>						
Certificate of Occupancy CD T	Date Filed	Bus License #	Drivers Lic	Receipt	TOTAL DUE: _____ (Includes non-refundable processing fee)	

**NOTES:**

## **APPENDIX E**

### **INSURANCE AND INDEMNITY REQUIREMENTS**



**FROM:** \_\_\_\_\_  
(Contractor Name)

\_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(City, State and Zip)

**TO: CITY OF HUNTINGTON BEACH**

**PROJECT:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(Signature of Individual Who is Making Declaration)

By \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

RESOLUTION NO. 2008-63

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF  
HUNTINGTON BEACH REVISING AND RESTATING THE  
CITY'S INSURANCE AND INDEMNITY REQUIREMENTS

WHEREAS, there are persons and organizations who are engaged in various activities in the City, thereby subjecting the City to substantial risk of liability for damage to property and injury to persons; and,

The City desires to establish insurance and indemnification requirements; and, in appropriate cases, a procedure for the waiver thereof; and,

The City desires to establish internal staff responsibility for the administration of the insurance required by this Resolution and delineate the authority to make adjustments to requirements based upon unique and unusual circumstances.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Huntington Beach that effective on the date of adoption of this Resolution, the insurance coverage and indemnity requirements shall be as follows:

SECTION I. DEFINITIONS AND FORMS REQUIRED

A. Definitions:

1. "Contractors" are any persons or entities who contract with the City and/or provide services to the City which are readily available and efficiently procured by competitive bidding.
2. "Design Professionals" are professional services contractors who contract with the City and/or provide architectural and/or engineering services to the City.
3. "Licensees/Lessees" are any persons or entities who contract with the City for the use of public property.
4. "Permittees" are any persons or entities who make application to the City for any use of or encroachment upon any public street, waterway, pier, or City property.
5. "Professional Services" are as defined by Huntington Beach Municipal Code section 3.03.
6. "Vendors" are any persons or entities who transfers property or goods to the City which may or may not involve delivery and/or installation.

B. Indemnity and Insurance Coverage Requirements Defined

1. General Liability: Combined single limit bodily injury, personal injury and property damage: Minimum limits of \$1,000,000 per occurrence.

- a. Coverage must include completed operations liability and unlimited blanket contractual liability and, where products are furnished, products liability.
  - b. If coverage is provided under a form which includes a designated general aggregate limit, the aggregate limit must be no less than \$1,000,000 or an increased coverage as memorialized in the terms and conditions agreed to by the parties and the policy holder shall submit written notice of any known depletion of limits to City attached to the proof of insurance.
  - c. Claims made policies are not acceptable, except that claims made insurance for pollution liability shall be acceptable.
  - d. All deductibles in excess of \$5,000, or alternative forms of providing coverage must be approved through the Waiver Procedure set forth in Section III to this Resolution. The requirement for self-insured retention remains at zero.
  - e. The City, its, officers, elected or appointed officials, employees, agents and volunteers are to be covered as additional insureds by separate attached endorsement(s) approved by the City Attorney as respects liability arising out of action performed by or on behalf of the contractor, products and completed operations of the contractor, premises owned, occupied or used by the contractor; or automobiles owned, leased or borrowed by the contractor. The coverage shall contain no special limitations on the scope of protection afforded to the City, its agents, officers and employees.
  - f. For any claims related to the project, the contractor's insurance coverage shall be primary insurance as respects the City, its agents, officers, and employees. Any insurance or self-insurance maintained by the City, its agents, officers, and employees shall be excess of the contractor's insurance and shall not contribute with it.
  - g. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to the City, its agents, officers and employees.
  - h. The contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.
2. Workers Compensation and Employers' Liability: In accordance with the applicable state statutes with limits in the case of workers' compensation and employers' liability in amounts not less than the State statutory limits.

Alternatively, a signed declaration of non-employee status shall be filed. A certificate or consent to self-insure issued by the California Director of Industrial Relations is also acceptable.

3. Professional Liability Insurance: Coverage must be provided at a minimum of \$1,000,000 per occurrence and in the aggregate. All deductibles in excess of \$10,000, or alternative forms of providing coverage must be approved through the Waiver Procedure set forth in Section III to this Resolution. The requirement for self-insured retention remains at zero.
  - a. Claims made policies are acceptable if the policy further provides that:
    1. The policy retroactive date coincides with or precedes the professional services contractor's start of work (including subsequent policies purchased as renewals or replacements).
    2. The professional services contractor will make every effort to maintain similar insurance during the required extended period of coverage following project completion, including the requirement of adding all additional insureds.
    3. If insurance is terminated for any reason, professional services contractor agrees to purchase an extended reporting provision of at least two (2) years to report claims arising from work performed in connection with this agreement or permit.
    4. The reporting of circumstances or incidents that might give rise to future claims.
4. Automobile Liability Coverage must be provided at a minimum of \$1,000,000 per occurrence.
  - a. If coverage is provided under a form which includes a designated general aggregate limit, the aggregate limit must be no less than \$1,000,000 and the policy holder shall submit written notice of any known depletion of limits to City attached to the proof of insurance.
  - b. All deductibles in excess of \$1,000, or alternative forms of providing coverage must be approved through the Waiver Procedure set forth in Section III to this Resolution. The requirement for self-insured retention remains at zero.
  - c. The City, its officers, elected or appointed officials, employees, agents and volunteers are to be covered as additional insureds by separate attached endorsement(s). The coverage shall contain no special limitations on the scope of protection afforded to the City, its agents, officers and employees.
  - d. For any claims related to the project, the contractor's insurance coverage shall be primary insurance as respects the City, its agents, officers, and employees. Any insurance or self-insurance maintained by the City, its agents, officers, and employees shall be excess of the contractor's insurance and shall not contribute with it.

C. Certificate of Insurance Requirements Defined

1. Form. Evidence of insurance coverage and limits as required by the City shall be furnished to the City as a certificate holder on the "Acord" or similar form approved by the City Attorney. (See samples attached herein as Exhibit "A").
  - a. The description of work to be performed, the City department involved in the performance, and the City staff contact person must be clearly identified on the "Acord" or similar form evidencing insurance coverage.
  - b. All forms of insurance shall identify the City of Huntington Beach, its officers, elected or appointed officials, employees, agents and volunteers as an additional insured by separate attached endorsement with respect to general liability and automobile liability coverages.
  - c. Contractors shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.
2. Approval of Certificate Insurance certificates must be approved by the City Attorney prior to commencement of any performance under a contract or issuance of any permit, as authorized by the City Charter.
3. Acceptability of Insurers Insurance must be placed with insurer with a Best's rating of no less than A: VII and insurer must be a California admitted carrier.

SECTION II INSURANCE AND INDEMNIFICATION REQUIREMENTS

A. INSURANCE

1. Contractors and Permittees must meet the requirements as set forth in Exhibit "B" incorporated by reference and attached herein. Permittees who do not use vehicles or equipment in connection with the permit, shall not be required to provide auto insurance. To be exempt from this requirement, permittees must execute a declaration such as Exhibit I attached hereto and incorporated by this reference.
2. Professional Services providers must meet the requirements as set forth in Exhibit "C" incorporated by reference and attached hereto.
3. Licensees/Lessees must meet the requirements as set forth in Exhibit "D" incorporated by reference and attached hereto.
4. Vendors
  - a. Vendors supplying goods including delivery, service and/or installation must meet the requirements of Exhibit "B".

- b. Vendors supplying goods only without delivery, service and/or installation are required to provide products liability coverage only.
5. The insurance requirements of persons or organizations not identified herein shall be as designated by the agreement. All certificates of insurance designated must conform to the requirements of this Resolution.
6. Exceptions.
- a. Public entities are exempt from the requirements of this resolution. Any insurance and indemnity requirements of a public entity shall be pursuant to Section II(A)(5).
  - b. Persons providing judicial or quasi-judicial services as independent contractors, such as judges, arbitrators, hearing officers, expert witnesses, and court reporters shall be exempt from all insurance coverage requirements. Any insurance and indemnity requirements shall be pursuant to Section II(A)(5).
  - c. Each person making application for a permit for private property construction, alteration, improvement, demolition, or repair of any building or structure shall sign a declaration under penalty of perjury verifying workers' compensation coverage or exemption from coverage, as required by Section 19825 of the Health and Safety Code and, at the time of permit issuance, contractors shall show their valid workers' compensation insurance certificate.
  - d. Persons contracting with the City under subdivision agreements are exempt from providing evidence of workers' compensation.
  - e. Oil operators as regulated by Huntington Beach Municipal Code Section 15.16 and pipeline franchises as regulated by Huntington Beach Municipal Code Section 3.44 are exempt from the requirements of this resolution.
  - f. Taxicabs/Vehicles-for-hire as regulated by Huntington Beach Municipal Code Section 5.50 are exempt from the requirements of this resolution.
  - g. Trucking companies, including those regulated under Huntington Beach Municipal Code Section 10.32, are exempt from the minimum insurance requirements of this resolution but must submit proof of workers' compensation insurance and general liability insurance in accordance with the requirements of the Public Utilities Commission (PUC) regulations which include: 1) the general liability insurance requirements are \$600,000 combined single limit or \$250,000 bodily injury or death of one person and \$500,000 protection against total liability for bodily injury or death of more than one person from any one accident. 2) this is subject to the same \$250,000 limitation for each person and \$100,000 protection for accidental damage or destruction of property other than property being transported. 3) the City of Huntington Beach must be

named as certificate holder but does not need to be named as additional insured.

7. Indemnity

- a. Contractors and Permittees shall be required to indemnify City, pursuant to the indemnity provision attached hereto and incorporated herein by this reference as Exhibit "E".
- b. All design professionals shall be required to indemnify City pursuant to the indemnity provision attached hereto and incorporated herein by this reference as Exhibit "F".
- c. All other persons or organizations, including but not limited to professional service providers other than Design Professionals as defined by this Resolution, shall be required to indemnify City, pursuant to the indemnity provision attached hereto and incorporated by reference as Exhibit "G".

SECTION III. WAIVER OR MODIFICATION PROCEDURE

A. Waivers or Modification Request Form.

A department Request for Waiver or Modification, Exhibit "H" attached, shall be completed and forwarded to the Risk Manager for all requests for waiver or modifications of the minimum indemnification and insurance requirements. Claim history, financial statements and scope of work must be submitted as attachments with any request for waiver.

B. Waiver or Modification Authority.

The Risk Manager and the City Attorney may approve any waiver or modification of the insurance and indemnification requirements, including requests for indemnification of third parties. A denial may be appealed to the City Administrator.

C. Waiver Criteria.

The criteria to evaluate any requests for waiver shall include the following:

- a. The type of waiver or modification requested;
- b. The reason for the waiver or modification;
- c. The nature of the scope of work;
- d. The cost of the contract;
- e. The liability exposure of the City;
- f. The cost and availability of the coverage requested;
- g. The claim history of the requesting party;
- h. The past experience of the City with the requesting party; and
- i. The past experience of the City with other contracting parties of a similar nature.

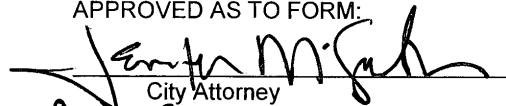
SECTION IV. Resolution 2007-03 and all other resolutions in conflict herewith are hereby repealed.

PASSED AND ADOPTED by the City Council of the City of Huntington Beach at a regular meeting held 6th day of October 2008.

  
\_\_\_\_\_  
Mayor

INITIATED AND APPROVED:  
  
\_\_\_\_\_  
Director of Human Resources

REVIEWED AND APPROVED:  
  
\_\_\_\_\_  
City Administrator

APPROVED AS TO FORM:  
  
\_\_\_\_\_  
City Attorney  
9.24.08

Attachments

Exhibit A  
Exhibit B  
Exhibit C  
Exhibit D  
Exhibit E  
Exhibit F  
Exhibit G  
Exhibit H  
Exhibit I



<b>ACORD™ CERTIFICATE OF LIABILITY INSURANCE</b>						DATE (MM/DD/YYYY)
PRODUCER			THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.			
INSURED			INSURERS AFFORDING COVERAGE		NAIC #	
			INSURER A:			
			INSURER B:			
			INSURER C:			
			INSURER D:			
			INSURER E:			
<b>COVERAGES</b>						
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. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.						
INSR	ADD'L LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
		<b>GENERAL LIABILITY</b> <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC				EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP* (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$
		<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS				COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
		<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: EA ACC \$ AGG \$
		<b>EXCESS/UMBRELLA LIABILITY</b> <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE  <input type="checkbox"/> DEDUCTIBLE \$ <input type="checkbox"/> RETENTION \$				EACH OCCURRENCE \$ AGGREGATE \$ \$ \$ \$
		<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below OTHER				WC STATUTORY LIMITS <input type="checkbox"/> OTH-ER <input type="checkbox"/> E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$
DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS						
<b>CERTIFICATE HOLDER</b>			<b>CANCELLATION</b>			
			SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL <u>30</u> DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES. AUTHORIZED REPRESENTATIVE			

**IMPORTANT**

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

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).

**DISCLAIMER**

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

POLICY NUMBER:

COMMERCIAL GENERAL LIABILITY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED-OWNERS, LESSEES OR  
CONTRACTORS (Form B)**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY

**SCHEDULE**

Name of Person or Organization; **THE CITY OF HUNTINGTON BEACH**  
2000 Main Street  
Huntington Beach, CA 92648

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

WHO IS AN INSURED (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" for that insured by or for you

RE: ALL OPERATIONS OF THE NAMED INSURED FOR THE CERTIFICATE HOLDER.

City of Huntington Beach, its elected or appointed officials, agents, officers, employees and volunteers

**STATE  
COMPENSATION  
INSURANCE  
FUND**

P.O. BOX 420807, SAN FRANCISCO, CA 94142-0807

**CERTIFICATE OF WORKERS' COMPENSATION INSURANCE**

POLICY NUMBER  
CERTIFICATE EXPIRES

CITY OF HUNTINGTON BEACH  
RISK MANAGEMENT  
2000 MAIN STREET  
HUNTINGTON BEACH, CA 92648

This is to certify that we have issued a valid Workers' Compensation insurance policy in a form approved by the California Insurance Commissioner to the employer named below for the policy period indicated.

This policy is not subject to cancellation by the Fund except upon ten days' advance written notice to the employer.

We will also give you ten days' advance notice should this policy be cancelled prior to its normal expiration.

This certificate of insurance is not an insurance policy and does not amend, extend or alter the coverage afforded by the policies listed herein. Notwithstanding any requirement, term, or condition of any contract or other document with respect to which this certificate of insurance 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.

*Thom Hansen*  
AUTHORIZED REPRESENTATIVE

*K. Bollier*  
PRESIDENT

EMPLOYER'S LIABILITY LIMIT INCLUDING DEFENSE COSTS: \$1,000,000 PER OCCURRENCE.

ENDORSEMENT #2065 ENTITLED CERTIFICATE HOLDERS' NOTICE EFFECTIVE 07/01/00 IS ATTACHED TO AND FORMS A PART OF THIS POLICY.

EMPLOYER

EXHIBIT A-4 of 4

THIS DOCUMENT HAS A BLUE PATTERNED BACKGROUND

SCIF 10262 (REV)

## EXHIBIT B

### INSURANCE REQUIREMENTS FOR CONTRACTORS, AND PERMITTEES

#### PLEASE GIVE THESE INSURANCE REQUIREMENTS TO YOUR INSURANCE AGENT

##### Minimum Limits of Insurance

City Council Resolution \_\_\_\_\_ requires submittal of certificates of insurance evidencing the following minimum limits with a California admitted carrier with a current A.M. Best's Rating of no less than A:VII:

1. General Liability: \$1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit. "Claims made" designation is only acceptable for professional or pollution liability insurance.

The City of Huntington Beach, its officers, elected or appointed officials, employees, agents and volunteers must be named as certificate holder and as additional insured by separate attached endorsement. (This wording must be exact.)

2. Workers' Compensation and Employer's Liability: State statutory limits of \$250,000 bodily injury by disease, policy limit, and \$100,000 bodily injury each employee for accident or disease per occurrence. If you have no employees, you must sign a Declaration of Non-employee Status form available from the City. In lieu of a certificate of insurance, a certificate of consent to self-insure issued by the California Director of Industrial Relations is also acceptable.
3. Automobile liability of \$1,000,000 per occurrence for bodily injury, personal injury and property damages. The City of Huntington Beach, its officers, elected or appointed officials, employees, agents and volunteers must be named as certificate holder and as additional insured by separate attached endorsement. (This wording must be exact).

##### Deductibles, Self-Insured Retentions, or Similar Forms of Coverage Limitations or Modifications

Any deductibles, self-insured retentions or similar forms of coverage limitations or modifications, must be declared to and approved by the City of Huntington Beach.

##### Subcontractors

Contractor shall include all subcontractors as insured under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

##### Description of Work to be Performed

The staff contact and purpose of the evidence of coverage must be identified.

PLEASE FORWARD THIS NOTICE TO YOUR INSURANCE AGENT.  
FOR ASSISTANCE, PLEASE CONTACT RISK MANAGEMENT.

**EXHIBIT C**

**INSURANCE REQUIREMENTS PROFESSIONAL  
SERVICE CONTRACTORS**

*PLEASE GIVE THESE INSURANCE REQUIREMENTS TO YOUR INSURANCE AGENT*

**Minimum Limits of Insurance**

City Council Resolution No. \_\_\_\_\_ requires submittal of certificates of insurance evidencing the following minimum limits with a California admitted carrier with a current A.M. Best's Rating of no less than A:VII :

Errors and Omissions liability: \$1,000,000 per occurrence.

**Deductibles, Self-Insured Retentions, or Similar Forms of Coverage Limitations or Modifications**

Any deductibles, self-insured retentions or similar forms of coverage limitations or modifications, must be declared to and approved by the City of Huntington Beach.

**Description of Work to be Performed**

The staff contact and purpose of the evidence of coverage must be identified.

**EXHIBIT D**

**INSURANCE REQUIREMENTS FOR LESSEES/LICENSEES**

***PLEASE GIVE THESE INSURANCE REQUIREMENTS TO YOUR INSURANCE AGENT***

Minimum Limits of Insurance

City requires submittal of certificates of insurance pursuant to the form set forth in Resolution No. \_\_\_\_\_ evidencing the following minimum limits with a California admitted carrier with a current A.M. Best's Rating of no less than A:VII:

1. General Liability: \$1,000,000 per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit. "Claims made" designation is only acceptable for professional or pollution liability insurance.

For general liability certificate holder, the City of Huntington Beach, its elected or appointed officials, agents, officers, employees, and volunteers must be named as certificate holder and as additional insured by separate attached endorsement. (This wording must be exact).

2. Workers Compensation and Employer's Liability: State statutory limits of \$250,000 bodily injury by disease, policy limit, and \$100,000 bodily injury each employee for accident or disease per occurrence. If you have no employees, you must sign a Declaration of Non-employee Status form available from the City. In lieu of a certificate of insurance, a certificate of consent to self-insure issued by the California Director of Industrial Relations is also acceptable.
3. Property Insurance: Full replacement cost with no coinsurance penalty provision.

Deductibles, Self-Insured Retentions, or Similar Forms of Coverage Limitations or Modifications

Any deductibles, self-insured retentions or similar forms of coverage limitations or modifications, must be declared to and approved by the City of Huntington Beach.

Description of Work to be Performed

The staff contact and purpose of the evidence of coverage must be identified.

***PLEASE FORWARD THIS NOTICE TO YOUR INSURANCE AGENT,  
FOR ASSISTANCE, PLEASE CONTACT RISK MANAGEMENT***

EXHIBIT E

TO RESOLUTION NO. \_\_\_\_\_

CONTRACTOR'S INDEMNIFICATION, DEFENSE, HOLD HARMLESS

Contractor hereby agrees to protect, defend, indemnify and hold harmless City, its officers, elected or appointed officials, employees, agents, and volunteers from and against any and all, claims, damages, losses, expenses, judgments, demands defense costs, and consequential damage or liability of any kind or nature, however caused, including those resulting from death or injury to Contractor's employees and damage to Contractor's property, arising directly or indirectly out of the obligations or operations herein undertaken by Contractor, caused in whole or in part by any negligent act or omission of the Contractor, any subcontractors, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, including but not limited to concurrent active or passive negligence, except where caused by the active negligence, sole negligence, or willful misconduct of the City. Contractor will conduct all defense at its sole cost and expense and City shall approve selection of contractor's counsel. City shall be reimbursed for all costs and attorney's fees incurred by City in enforcing this obligation. This indemnity shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by Contractor.



EXHIBIT F

TO RESOLUTION NO. \_\_\_\_\_

INDEMNIFICATION, DEFENSE, AND HOLD HARMLESS

To the fullest extent permitted by law (including, without limitation, California Civil Code Sections 2782 and 2782.6), CONSULTANT hereby agrees to protect, defend, indemnify and hold harmless CITY, its officers, elected or appointed officials, employees, agents and volunteers from and against any and all claims, damages, losses, expenses, demands, and defense costs (including without limitation, costs and fees of litigation of every nature or liability of any kind or nature) arising out of or in connection with CONSULTANT's (or CONSULTANT's subcontractors, if any) negligence, recklessness or willful misconduct related to performance of this Agreement or its failure to comply with any of its obligations contained in this Agreement by CONSULTANT, its officers, agents or employees. CITY shall be reimbursed by CONSULTANT for all costs and attorney's fees incurred by CITY in enforcing this obligation. CONSULTANT will conduct all defense at its sole cost and expense, and the CITY shall approve selection of CONSULTANT's counsel. This indemnity shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by the CONSULTANT.

EXHIBIT G

TO RESOLUTION NO. \_\_\_\_\_

INDEMNIFICATION, DEFENSE, AND HOLD HARMLESS

CONSULTANT hereby agrees to protect, defend, indemnify and hold harmless CITY, its officers, elected or appointed officials, employees, agents and volunteers from and against any and all claims, damages, losses, expenses, judgments, demands and defense costs (including, without limitation, costs and fees of litigation of every nature or liability of any kind or nature) arising out of or in connection with CONSULTANT's (or CONSULTANT's subcontractors, if any) negligent (or alleged negligent) performance of this Agreement or its failure to comply with any of its obligations contained in this Agreement by CONSULTANT, its officers, agents or employees except such loss or damage which was caused by the sole negligence or willful misconduct of CITY. CITY shall be reimbursed by CONSULTANT for all costs and attorney's fees incurred by CITY in enforcing this obligation. CONSULTANT will conduct all defense at its sole cost and expense and the CITY shall approve selection of CONSULTANT's counsel. This indemnity shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as limitation upon the amount of indemnification to be provided by the CONSULTANT.



## INSURANCE AND INDEMNIFICATION WAIVER MODIFICATION REQUEST

1. Requested by: \_\_\_\_\_
2. Date: \_\_\_\_\_
3. Name of contractor/permittee: \_\_\_\_\_
4. Description of work to be performed: \_\_\_\_\_
5. Value and length of contract: \_\_\_\_\_
6. Waiver/modification request: \_\_\_\_\_
7. Reason for request and why it should be granted: \_\_\_\_\_
8. Identify the risks to the City in approving this waiver/modification: \_\_\_\_\_

\_\_\_\_\_  
Department Head Signature

\_\_\_\_\_  
Date:

### APPROVALS

Approvals must be obtained in the order listed on this form. Two approvals are required for a request to be granted. Approval from the City Administrator's Office is only required if Risk Management and the City Attorney's Office disagree.

**1. Risk Management**

☐ Approved    ☐ Denied

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**2. City Attorney's Office**

☐ Approved    ☐ Denied

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**3. City Administrator's Office**

☐ Approved    ☐ Denied

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

If approved, the completed waiver/modification request is to be submitted to the City Attorney's Office along with the contract for approval. Once the contract has been approved, this form is to be filed with the Risk Management Division of Administrative Services

EXHIBIT H



CITY OF HUNTINGTON BEACH  
2000 Main Street  
Huntington Beach, CA 92648

DECLARATION OF PERMITTEE

I certify that no vehicle(s) will be used or operated in the performance of the task(s) or event(s) for which this permit is granted.

I authorize the City of Huntington Beach to immediately and retroactively revoke the license or permit issued in connection with or in the performance of said task(s) or event(s) if any vehicle(s) is used.

Signature of Permittee \_\_\_\_\_

Print name \_\_\_\_\_

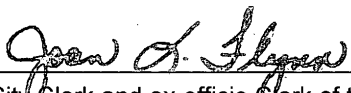
Company name (if applicable) \_\_\_\_\_

Date signed \_\_\_\_\_

STATE OF CALIFORNIA  
COUNTY OF ORANGE                    ) ss:  
CITY OF HUNTINGTON BEACH        )

I, JOAN L. FLYNN the duly elected, qualified City Clerk of the City of Huntington Beach, and ex-officio Clerk of the City Council of said City, do hereby certify that the whole number of members of the City Council of the City of Huntington Beach is seven; that the foregoing resolution was passed and adopted by the affirmative vote of at least a majority of all the members of said City Council at a **regular** meeting thereof held on **October 6, 2008** by the following vote:

**AYES:** Hansen, Hardy, Bohr, Cook, Coerper, Carchio  
**NOES:** None  
**ABSENT:** Green  
**ABSTAIN:** None

  
\_\_\_\_\_  
City Clerk and ex-officio Clerk of the  
City Council of the City of  
Huntington Beach, California

# **APPENDIX F**

## **BOND FORMS**

### **BID BOND (Not Included)**

(Bidder may use any standard form)

### **PAYMENT BOND**

(To be completed only by the awarded Contractor)

### **PERFORMANCE BOND**

(To be completed only by the awarded Contractor)

### **MAINTENANCE BOND**

(To be completed only by the awarded Contractor)

## PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, City of Huntington Beach (hereafter referred to as "City") has, by written agreement dated \_\_\_\_\_, 20\_\_\_\_, entered into a contract with \_\_\_\_\_

\_\_\_\_\_  
(name and address of Contractor)

(hereinafter referred to as "Principal"), for performance of the work described as follows:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(Project Title)

WHEREAS, said contract, and all documents referenced therein (hereinafter collectively "Contract"), are incorporated herein by this reference made a part hereof as though set forth herein in full; and

Said Principal is required under the terms of the Contract to furnish a bond guaranteeing the prompt, full and faithful performance of said Contract, by a duly admitted surety insurer under the laws of the State of California (hereinafter referred to as "Surety"); and

Surety is certified and listed in the U.S. Department of the Treasury Circular 570, and has provided proof of sufficient bonding limitations as shown in said circular to provide bonds in the amount required by said Contract; and

Surety has provided financial strength ratings from reputable companies, such as from A.M. Best, Moody's, or Standard & Poor's, to validate that Surety has positive ratings of being secure or Stable; and

Surety is registered and listed with the California Department of Insurance,

NOW, THEREFORE, we, the undersigned, as Principal, and

\_\_\_\_\_  
\_\_\_\_\_  
(name and address of Surety)

as Surety, are held and firmly bound unto City in the penal sum of \_\_\_\_\_

Dollars (\$ \_\_\_\_\_), this amount being not less than one hundred percent of the price set forth in the Contract, in lawful money of the United States, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT if the Principal shall promptly, fully and faithfully perform each and all of the covenants, obligations and things to be done and performed by the Principal in strict accordance with the terms of the Contract as said contract may be altered, amended or modified from time to time; and if the Principal shall indemnify and save harmless City and all of City's officers, agents and employees (hereinafter collectively referred to as "Obligees") from any and all losses, liability and damages, claims, judgments, stop notices, fees and costs of every description, whether imposed by law or in equity, which may be incurred by the Obligees by reason of the failure or default on the part of the Principal in the performance of any or all of the terms or the obligations of the Contract, including all alterations, amendments and modifications thereto, and any warranties or guarantees required thereunder, then this obligation shall be void; otherwise, it shall be and shall remain in full force and effect.

Surety stipulates and agrees, for value received, that no adjustment of the time or price in the Contract or any alteration, change, deletion, addition or other modification to the Contract, or the work to be performed thereunder, shall in any way affect, limit, restrict, impair or release the obligations of the Surety under this Bond. Surety waives notice of any adjustment of contract or contract price, and any other alteration, change, deletion, addition or other modification to the Contract, or the work to be performed thereunder, and agrees

Bond No. \_\_\_\_\_

to automatically adjust the penal sum of this Bond to reflect such adjustments, alterations, changes, deletions, additions or other modifications. Surety agrees to provide written confirmation of such adjustments in the penal sum to City on not less than a quarterly basis. Surety also waives the provisions of Civil Code §§ 2845 and 2849.

The obligations of this Bond shall survive the completion of the work described in the Contract as to all obligations and liabilities of the Principal which survive completion of the work.

IN WITNESS WHEREOF, each party represents and warrants that this instrument has been duly executed by Principal and Surety, on the date set forth below, that the name of each corporate party being affixed hereto is such party's proper legal name and that the individuals signing this instrument have been duly authorized pursuant to the authority of its governing body. Surety, by execution of this bond, waives any defense which Surety has or may have by reason of any failure of the Principal to execute or properly execute this bond.

Dated: \_\_\_\_\_

ATTEST

(Corporate Seal)

\_\_\_\_\_  
\_\_\_\_\_  
(Principal Name)

By: \_\_\_\_\_  
Name: \_\_\_\_\_

Title: \_\_\_\_\_

ATTEST

(Corporate Seal)

\_\_\_\_\_  
\_\_\_\_\_  
(Surety Name)

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
(Signature of Attorney-in-Fact for Surety)

(Attach Attorney-in-Fact Certificate)

( ) \_\_\_\_\_  
(Area Code & Telephone Number for Surety)

APPROVED AS TO FORM:

By:   
Michael E. Gates, City Attorney

*Per 3/30/2015*

*Note: This bond must be executed in duplicate and dated, all signatures must be notarized, and evidence of the authority of any person signing as attorney-in-fact must be attached.*

PERFORMANCE BOND



**PAYMENT BOND  
(LABOR AND MATERIALS)**

KNOW ALL PERSONS BY THESE PRESENTS:

WHEREAS, City of Huntington Beach (hereafter referred to as "City") has awarded to \_\_\_\_\_

\_\_\_\_\_  
(name and address of Contractor)

(hereinafter referred to as "Principal"), a contract ("Contract") for the work described as follows:

\_\_\_\_\_  
(Project Title)

WHEREAS, Principal is required under the terms of the Contract and the California Civil Code to furnish a bond to secure the payment of claims of laborers, mechanics, materialmen, and other persons as provided by law, by a duly admitted surety insurer under the laws of the State of California (hereinafter referred to as "Surety"); and

Surety is certified and listed in the U.S. Department of the Treasury Circular 570, and has provided proof of sufficient bonding limitation, as shown in said circular to provide bonds in the amount required by said Contract; and

Surety has provided financial strength ratings from reputable companies, such as from A.M. Best, Moody's or Standard & Poor's, to validate that Surety has positive ratings of being secure or stable; and

Surety is registered and listed with the California Department of Insurance.

NOW THEREFORE, we, the undersigned Principal, and \_\_\_\_\_

\_\_\_\_\_  
(name and address of Surety)

as Surety, are held and firmly bound unto City in the penal sum of

\_\_\_\_\_  
dollars (\$ \_\_\_\_\_), this amount being not less than one hundred percent (100%) of the total price set forth in the Contract, in lawful money of the United States of America, for the payment of which sum, well and truly to be made, we bind ourselves, and each of our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the Principal, his, her, or its heirs, executors, administrators, successors or assigns, or subcontractors shall fail to pay any of the persons named in Section 3181 of the California Civil Code ("Claimants") for all labor, materials or services used or reasonably required for use in performance of the work described in the Contract, or any amounts due under the Unemployment Insurance Code with respect to work or labor performed by any such Claimant, or prevailing wages due and penalties incurred pursuant to Sections 1774, 1775, 1813 or 1815 of the Labor Code, or any amounts required to be deducted, withheld and paid over to the Employment Development Department from the wages of employees of the Principal and Subcontractors pursuant to Section 13020 of the Unemployment Insurance Code with respect to the work or labor performed under the Contract, Surety will pay for the same, in an amount not exceeding the penal sum specified in this bond; otherwise, this obligation shall be null and void.

This bond shall inure to the benefit of any of the persons named in Section 3181 of the California Civil Code so as to give a right of action to such persons or their assigns. In case any action is brought upon this bond, Surety further agrees to pay all court costs and a reasonable attorney's fee in an amount fixed by the court.

PAYMENT BOND

Surety stipulates and agrees, for value received, that no change, extension of time, alteration, addition or modification to the terms of the Contract, or any contract document or any work to be performed thereunder, whether made after notice or not, shall in any way affect, impair or release the obligations of Surety under this bond. Surety hereby waives notice of any such change, extension of time, alteration, addition, or modification to the terms of the Contract, the contract documents or the work thereunder. Surety also waives the provisions of California Civil Code §§ 2845 and 2849.

IN WITNESS WHEREOF, each party represents and warrants that this instrument has been duly executed by Principal and Surety, on the date set forth below, that the name of each corporate party being affixed hereto is such party's proper legal name and that the individuals signing this instrument have been duly authorized pursuant to the authority of its governing body. Surety, by execution of this bond, waives any defense which Surety has or may have by reason of any failure of the Principal to execute or properly execute this bond.

Dated: \_\_\_\_\_

ATTEST

(Corporate Seal)

\_\_\_\_\_  
\_\_\_\_\_  
(Principal Name)

By: \_\_\_\_\_  
Name: \_\_\_\_\_

Title: \_\_\_\_\_

ATTEST

(Corporate Seal)

\_\_\_\_\_  
\_\_\_\_\_  
(Surety Name)

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
(Signature of Attorney-in-Fact for Surety)

(Attach Attorney-in-Fact Certificate)

( ) \_\_\_\_\_  
(Area Code & Telephone Number for Surety)

APPROVED AS TO FORM:

By:   
Michael E. Gates, City Attorney

P. 2  
3/30/2015

*Note: This bond must be executed in duplicate and dated, all signatures must be notarized, and evidence of the authority of any person signing as attorney-in-fact must be attached.*

## MAINTENANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS:

That \_\_\_\_\_ (contractor's name)

\_\_\_\_\_ (contractor's street address, city and state and zip code)

as Principal (hereinafter called Contractor), and:

\_\_\_\_\_ (surety's name)

\_\_\_\_\_ (surety's street address, city and state and zip code)

a corporation organized and existing under the laws of the State of \_\_\_\_\_ with its principal office in the City of \_\_\_\_\_ as Surety (hereinafter called Surety), are held firmly bound unto CITY OF HUNTINGTON BEACH as Oblige (hereinafter called Owner), in the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), equivalent to the entire contract amount including all change orders, for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents,

WHEREAS, Surety is a duly admitted surety insurer under the laws of the State of California; and

Surety is certified and listed in the U.S. Department of the Treasury Circular 570, and able to provide proof of bonding limitation shown in said circular is sufficient to provide bonds in the amount required by said Contract; and

Surety has provided financial strength ratings from reputable companies, such as from A.M. Best, Moody's, Standard & Poor's, to validate that Surety has positive ratings of being secure or stable; and

Surety is registered and listed with the California Department of Insurance; and

Contractor has by written agreement dated \_\_\_\_\_, 20\_\_\_\_, entered into a contract with Owner for the

\_\_\_\_\_ in accordance with drawings and specifications prepared by \_\_\_\_\_ which contract is by reference made a part hereof (hereinafter referred to as the Contract); and

The Contract provides that the principal will guarantee, for a period of one year, the work performed as part of the Contract from and against all defects in materials and workmanship; and

The Contract also provides that the Contractor shall secure Contractor's obligations during the one-year period with a bond executed by a surety duly admitted in the state of California; and

The Contract has been completed, and the Owner, Contractor and Surety agree that the commencement date for this Guarantee and Bond shall be \_\_\_\_\_, 20\_\_\_\_,

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if Contractor shall, for a period of one year from and after the date of completion and acceptance of the Contract by Owner, repair and/or replace any and all defects arising in the Work, whether resulting from defective materials or defective workmanship, then this obligation shall be null and void; otherwise it will remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the Owner.

Whenever Contractor shall be, and declared by Owner to be in default under the Contract, the Surety shall, within thirty (30) days following Owner's written notice of default, either: (a) remedy the default, or (b) shall promptly complete the Contract in accordance with its terms and conditions.

Surety shall save the Owner harmless from any claims, judgments, liens or losses arising from the Surety's failure to either remedy the default or to complete the Contract in accordance with its terms and conditions in a timely manner.

Whenever the Principal shall be, and declared by the Owner to be in default under the Contract, which shall include without limitation, any breach or default of the Contract, then, after written notice from the Owner to the Surety, as provided for below, the Surety shall either: (a) remedy the default or breach by the Principal; or (b) shall promptly and faithfully take charge of the Work and complete the Work in accordance with the requirements of the Contract with a contractor other than the Principal, at its own expense, and make available as work progresses sufficient funds to pay the cost of completion less the unpaid balance of the Contract including other costs and damages for which the surety may be liable hereunder, provided, however, that the procedure by which the Surety undertakes to discharge its obligations under this Bond shall be subject to the advance written approval of the Owner.

Within thirty (30) days after Surety's receipt of a written notice from Owner of the failure of performance of the Contract by the Principal, it shall be the duty of the Surety to give to the Owner a notice, in writing, of the Surety's election to (a) remedy the default(s) of the Principal promptly, or (b) arrange for performance of the Contract promptly by a contractor other than the Principal, time being of essence to this Bond. In said Notice of Election, the Surety shall state the date of commencement of its cure or remedy of the Principal's default(s) or its performance of the Contract. The Surety's obligations for cure or remedy, include but are not limited to: correction of defective work and completion of the Contract, additional legal, design professional and delay costs arising from Surety's actions or failure to act; and liquidated damages (or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance by the Principal). The Surety shall give prompt written notice to the Owner upon completion of the cure or remedy of the Principal's default(s) of its performance of the Contract.

If the Surety does issue its Notice of Election and does not proceed to cure or remedy the Principal's default(s) of its performance of the Work within thirty (30) days after receipt of a written notice from Owner, Surety shall be deemed to be in default on this bond, and the Owner shall be entitled to enforce any remedy available to Owner.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the owner named herein or the successors of Owner.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

Principal Raised Corporate Seal  
[MUST BE AFFIXED]

\_\_\_\_\_  
(Contractor Name)

By: \_\_\_\_\_ (Seal)

Principal Raised Corporate Seal  
[MUST BE AFFIXED]

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Surety Name)

By: \_\_\_\_\_ (Seal)

APPROVED AS TO FORM:

By:   
Michael E. Gafes, City Attorney

NOTES:

1. Acknowledgments must be completed and returned as part of the bond.
2. Raised Corporate Seals are mandatory.
3. Please attach Power of Attorney.

*pl*  
*3/30/2015*

# APPENDIX G

## AGENCY EXTRA WORK FORMS

*AGENCY will provide approved forms and Microsoft Excel Files to manage Extra Work at a future pre-construction meeting, after the award of the contract.*

*Contact Person to Obtain Forms:*

*Brian Polivka*

*(714) 536-5525*

<mailto:brian.polivka@surfcity-hb.org>

---

## Time & Material Charge Order Form Procedure

1. Excel form file is for up to one week of full time work.
2. The form is designed with maximum of 7 subcontractors on a given day of T&M. Notify City to modify form if greater than 7 is necessary.
3. DO NOT COPY AND PASTE CELLS. ALWAYS TYPE IN DATA ONLY into the yellow cells.
4. Markups allowed are programmed into the Excel file, consistent with markup shown in the Contract Document.
5. Submit daily signed T&M file to City's Contract Administrator for review and approval.
6. City's Contract Administrator will coordinate with the Contractor regarding monthly invoicing for progress payment, which will include change order with T&M payment.



# Daily Extra Work - Cost Summary

## Project / CC#: Change Order:

### City of Huntington Beach

2000 Main Street  
Huntington Beach, CA 92648  
Attn: Contract Administration  
Phone:   
Change Order #:   
Work Auth. By:

### Project Information

Project Name/CC#:   
Location/Stationing:   
Date(s) of Work:   
Inspector:   
Weather/Temp.:

### Contractor Information

Name:   
Address:   
City, State, Zip:   
Phone:   
Job #:

DAY	1	2	3	4	5	TOTAL
DATE	-	-	-	-	-	-
LABOR	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
EQUIP.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
MAT.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SUBS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
SUB-TOTAL	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BONDING	1%					\$0.00
TOTAL						\$0.00





# GENERAL CONTRACTOR USE

# DAY 1

Work Auth. By:

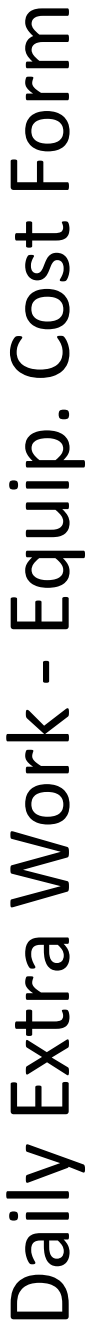
Weather/Temp.:

Job #:

LABOR Subtotal	\$0.00
20% Markup	\$0.00
5% SubMarkup†	\$0.00
Total	\$0.00

\*General contractor only. Subcontractors must use supplemental form. Per Department of Industrial Relations Position/Classification.  
†Additional 5% Markup only to be used if a subcontractor for labor was used.





# DAY 1

Job #:

Equip	Subtotal	\$0.00
	15% Markup	\$0.00
	5% SubMarkup	\$0.00
	Total	\$0.00


+Additional 5% Markup only to be used if a subcontractor for equipment was used.



# Daily Extra Work - Material Cost Form

GENERAL CONTRACTOR USE

DAY 1

City of Huntington Beach  
2000 Main Street  
Huntington Beach, CA 92648  
Attn: Contract Administration  
Phone: \_\_\_\_\_  
Change Order #: \_\_\_\_\_  
Work Auth. By: \_\_\_\_\_

Project Information  
Project Name/CC#: \_\_\_\_\_  
Location/Stationing: \_\_\_\_\_  
Date of Work: \_\_\_\_\_  
Start/Stop Time(s): \_\_\_\_\_  
Weather/Temp.: \_\_\_\_\_

Contractor Information  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Job #: \_\_\_\_\_

**MATERIAL\*:**

**DESCRIPTION**

DESCRIPTION	VENDOR/SUPPLIER	NUMBER	QUANTITY	Unit		Ext
				Cost	Amount	
			0.0	\$0.00		\$0.00
			0.0	\$0.00		\$0.00
			0.0	\$0.00		\$0.00
			0.0	\$0.00		\$0.00
			0.0	\$0.00		\$0.00
			0.0	\$0.00		\$0.00
			0.0	\$0.00		\$0.00
TOTAL				\$0.00		\$0.00

Material	Subtotal	\$0.00
15% Markup		\$0.00
5% SubMarku		\$0.00
Total		\$0.00

**NOTES:**

\*General contractor only. Subcontractors must use supplemental form.  
†Additional 5% Markup only to be used if a subcontractor for materials were used.

# Daily Extra Work - Cost Form

**SUBCONTRACTOR USE ONLY**

Supplemental Form

**DAY 1**

**City of Huntington Beach**

2000 Main Street

Huntington Beach, CA 92648

Attn: Contract Administration

Phone: \_\_\_\_\_

Change Order # \_\_\_\_\_

Work Auth. By: \_\_\_\_\_

**Project Information**

Location/Stationing: \_\_\_\_\_

Date of Work: \_\_\_\_\_

Project Name/CC#: \_\_\_\_\_

**Subcontractor Information**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Job #: \_\_\_\_\_

**Subcontractor Total**

Subcontractor subtotals \_\_\_\_\_

Markups \_\_\_\_\_

Subcontractor Total \_\_\_\_\_

**LABOR\*:**

NAME	POSITION**	CLASSIFICATION**	TOTAL HOURS	Basic Hrly Rate	Fringe Benefit	Place an "x" for Regular, OT, or DT.			Ext Amount
						Reg Time	OT 1.5	DT 2	
									\$0.00
									\$0.00
									\$0.00
									\$0.00
TOTAL									

**NOTES:** \_\_\_\_\_

\*Subcontractor only.

\*\*Per Department of Industrial Relations Position/Classification

LABOR	Subtotal	_____
20.0% Markup	_____	_____
Total	_____	_____

**EQUIPMENT\*:**

EQUIPMENT #	DESCRIPTION	QUANTITY	TOTAL HOURS	Basic Hrly Rate	Ext Amount
TOTAL					

**NOTES:** \_\_\_\_\_

\*Subcontractor only.

Equip	Subtotal	_____
15.0% Markup	_____	_____
Total	_____	_____

**MATERIAL\*:**

DESCRIPTION	VENDOR/SUPPLIER	APPROVED SUBMITTAL NUMBER	QUANTITY	Unit Cost	Ext Amount
TOTAL					

**NOTES:** \_\_\_\_\_

\*Subcontractor only.

Material	Subtotal	_____
15.0% Markup	_____	_____
Total	_____	_____

<b>DAY: 4</b>												
					0							
					<b>Subcontractor_1</b>							
Total Labor*	\$0.00				\$0.00							
Total Equipment*	\$0.00				\$0.00							
Total Materials*	\$0.00				\$0.00							
Subcontractor Total **	<b>\$0.00</b>				\$0.00							
						<b>No. of Subs</b>						
						<b>1</b>						

\* Costs shown w/o Markup  
\*\* Total Costs shown w/ Markup

DAY: 5		0								
Total Labor*	\$0.00	Subcontractor 1								
Total Equipment*	\$0.00									
Total Materials*	\$0.00									
Subcontractor Total **	\$0.00									
		No. of Subs		1						

\* Costs shown w/o Markup  
\*\* Total Costs shown w/ Markup

# **APPENDIX H**

## **LEAD AND ASBESTOS TESTING REPORT**

# ASBESTOS AND LEAD-BASED PAINT SURVEY LEBARD PARK COMMUNITY BUILDING

June 15, 2022

Prepared For:

**PBLA Engineering, INC.**  
Matt Evans  
1481 Ford Street, Suite 201  
Redlands, CA 92373

N|V|5

NV5 – Alta Environmental  
3777 Long Beach Blvd, Annex Building  
Long Beach, CA 90807  
Phone: 562.495.5777

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## 1.0 INTRODUCTION

On June 7, 2022, NV5 conducted a limited investigation for the presence of asbestos-containing materials (ACM), lead-based paint (LBP) and PCBs in putty/caulking at the Lebard Park Community building and tennis courts in Huntington Beach, CA.

## 2.0 PROJECT BACKGROUND

PBLA Engineering, INC. retained NV5 for this investigation. Jorge Robles, a Cal/OSHA Certified Site Surveillance Technician (CSST) and California Department of Public Health (CDPH) Certified Lead Sampling Technician, employed by NV5, conducted the sampling.

## 3.0 SCOPE OF WORK

The scope of work for the project included the surveying of the community building and adjacent tennis courts in anticipation of an upcoming demolition project. The survey included the following:

- Investigation to locate suspect asbestos-containing materials (ACM);
- Investigation to locate suspect lead-based paint (LBP);
- Investigation to locate suspect PCB materials in putty/caulking;
- Physical assessment of suspect ACM, LBP and PCB materials
- Collection of bulk samples from suspect materials; and
- Laboratory analysis of all ACM, LBP and PCB samples collected.

## 4.0 METHODOLOGY

### 4.1 ASBESTOS

The sampling was conducted using guidelines set forth in *Federal Register 40 CFR Part 763*. NV5 conducted an initial walkthrough of the site to develop a listing and sampling scheme of suspect materials. Samples were placed in sealable sample containers and assigned a unique sample identification number.

Bulk samples collected from the subject site were subsequently analyzed by polarized light microscopy (PLM) for asbestos content in accordance with the United States Environmental Protection Agency's (USEPA) *Determination of Asbestos in Bulk Building Materials: EPA/600/R-93/116, July 1993*, at AQ Environmental Laboratory, 1508 East 33<sup>rd</sup> Street, Signal Hill, California 90755, phone (562) 206-2770.

Additional analysis using 1000 point counts (EPA 600/R-93/116) was conducted as required on bulk samples where initial analysis indicated trace amounts of asbestos present (less than one percent). This methodology has a detection limit of 0.1 percent and increases the accuracy and precision of the asbestos concentration determined in a sample.

Based on the requirements of the USEPA as set forth in *40 CFR 763*, a homogeneous area is defined as “an area of surfacing material, thermal system insulation material or miscellaneous material that is uniform in color and texture.” Furthermore, the regulation requires that a minimum number of samples be collected from each identified homogeneous area. If one sample in a homogeneous area is found to contain asbestos, the entire homogeneous area is considered asbestos-containing.

It is possible that one sample out of a set of samples collected from a homogeneous area can be positive for asbestos and the remaining samples in the homogeneous area are negative. However, the entire area must be considered asbestos-containing.

Caution is advised in interpreting results provided herein.

The limited survey was conducted to identify hazardous materials (asbestos and lead). The investigation did not include destructive testing (i.e., the opening of wall and ceiling cavities) and was limited to accessible areas. Prior to renovation or demolition, materials not identified in this report or materials subsequently discovered through destructive sampling should be tested for the presence of asbestos. An investigation below soil grade was outside the scope of this project, and additional material such as asbestos-cement pipes, electrical wiring insulation, or other materials may subsequently be discovered.

## 4.2 LEAD

Paint chips were collected to determine the weight percent concentration of lead in the painted surfaces. Paint chip samples were collected for construction safety as defined by *Title 8 CCR Section 1532.1*. Paint chip sample analysis was conducted by EPA Method SW846/7420 at AQ Environmental Laboratory, 1508 East 33<sup>rd</sup> Street, Signal Hill, California 90755.

## 4.3 PCBs

PCB samples were collected during this investigation using the following general methodology:

- A properly decontaminated screwdriver, razor blade, chisel, or similar tool was used to collect each sample.
- Samples were placed into one-time use plastic bags, labelled, packaged, and documented on a chain of custody for shipping to the laboratory.
- Samples were shipped to the laboratory in a chilled ice chest.
- Prior to use, reusable sampling equipment was decontaminated using a two-step decontamination process consisting of a spray with a phosphate-free cleaning solution, followed by a wipe with a clean paper towel lightly sprayed with de-ionized water. After the two-step decontamination procedures, the equipment was placed on top of clean paper towels and set to dry individually. Each piece of equipment was inspected by Alta/NV5 for evidence of residual dust and debris.

Following collection, each sample was placed in a plastic bag, sealed and labeled with a unique sample ID. All samples were stored in a chilled cooler pending shipment to the laboratory for analysis. Once received, all samples were prepared by the laboratory using EPA Method 3540C for Soxhlet extraction and were analyzed on a standard 5-day turnaround time for PCBs using EPA Method 8082A.

## 5.0 RESULTS

### 5.1 ASBESTOS

If any materials were found to contain greater than one-tenth of one percent of asbestos by weight as determined by the PLM method of analysis, Cal/OSHA mandates that the material(s) be treated as an asbestos-containing materials (ACM) subject to regulation under *CCR Title 8, Section 1529*.

If any materials are found to contain more than one percent asbestos by weight as determined by the PLM method of analysis, the USEPA mandates that the material(s) be treated as ACM, subject to regulation under *40 CFR 61*.

The following materials were found to be asbestos-containing/ACM:

Material	Sample No.	Material Location	Asbestos Content	Est. Quantity
Asphalt core	T-1 to T-7	Tennis courts	5% Chrysotile – top coating None Detected – bottom layer	6,000 SF
9" beige floor tile and mastic	A-01 to A-03	Main room, restroom under vinyl flooring	5% Chrysotile – tile 8% Chrysotile – mastic	500 SF
9" tan floor tile and black mastic	A-04 to A-06	Storage	5% Chrysotile – tile 5% Chrysotile – mastic	100 SF
White vinyl flooring with glue	A-07 to A-09	Restroom	None Detected	100 SF
12" white floor tile w/glue and mastic	A-10 to A-12	Kitchen	None Detected – tile 4% Chrysotile – mastic	200 SF
4" black cove base and glue	A-13 to A-15	Kitchen	None Detected	50 LF
Popcorn ceiling material	A-16 to A-18	Throughout building	3% Chrysotile	900 SF

Material	Sample No.	Material Location	Asbestos Content	Est. Quantity
4" beige cove base and glue	A-19 to A-21	Restroom	None Detected	50 LF
Drywall	A-22 to A-24	Throughout building	None Detected	900 SF
Drywall Mud	P-25 to P-27	Throughout building	2% Chrysotile	900 SF
Door caulking	A-28 to A-30	Exterior doors	None Detected	10 LF
Roof felt core w/barrier paper	P-37 to P-39	Roof	None Detected	900 SF

## 5.2 LEAD

Currently, the State of California, HUD and the USEPA define LBP as paint or other surface coating with lead content equal to or greater than 5,000 parts per million (ppm) by paint chip analysis. The following are surfaces with results equal to or greater than 5,000 ppm of lead as tested by paint chip analysis. These surfaces are subject to regulation by the CDPH and the USEPA.

**No Lead based paint was discovered during the course of this inspection**

The following are results of painted surfaces with any detectable levels of lead in paint below 5,000 ppm that were determined by paint chip sampling. When disturbed for construction purposes these surfaces are subjected to Cal/OSHA exposure assessment requirements set forth in *Title 8 CCR, Section 1532.1(d)*. This regulation requires initial employee exposure monitoring to evaluate work exposure during work that disturbs paint with any detectable level of lead. If airborne lead levels are above the established Cal/OSHA action limit or permissible exposure limit, additional monitoring and respiratory protection are required.

Component	Sample No.	Substrate	Paint Color	Material Location	Results (ppm)
Component	Sample No.	Substrate	Paint Color	Material Location	Results (ppm)
Wall	PC-1	Drywall	White	Interior walls	740
Wall	PC-2	Wood	Green	Exterior walls	1,600

## 5.3 PCBs

Below are the results of bulk samples collected and analyzed for PCBs by EPA Method 3540C/8082A as described in Title 40 of the Code of Federal Regulations (CFR) in part 761 subparts M, O, P and R. PCB concentrations in the samples collected were found to be below 50 ppm and therefore would not be regulated as a PCB waste under TSCA.

Sample ID	Material	Location	Result PCBs mg/kg
B-1	Door caulking	Exterior doors	None Detected
B-1A	Door caulking	Exterior doors	None Detected

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

### 6.1 ASBESTOS

Asbestos-containing materials (ACM) were discovered during course of this inspection. Refer to Section 5 in this report for a summary of ACMs. If during the course of this project, materials are found or added to the scope of work that are not listed in this report as being sampled, they must be treated as asbestos-containing until subsequent sampling and laboratory analysis prove otherwise.

Any damaged asbestos materials should be removed, repaired, encapsulated or enclosed. The USEPA requires that all asbestos materials be removed prior to any renovation or demolition activities that may impact the material. The USEPA recommends that a proactive, management- in-place program be developed and implemented whenever asbestos is discovered in a building. Asbestos materials that are not damaged may be managed in place with a good operations and maintenance (O&M) program.

Please note that a subterranean investigation was not part of this survey. Subterranean suspect cement piping may be encountered during earthwork activities. If these materials are encountered, an investigation should be performed, and a procedure 5 work plan should be prepared by a Certified Asbestos Consultant per AQMD Rule 1403 requirements.

Certain notification requirements apply to owners of buildings constructed prior to 1979 where asbestos is known to be present. California Health and Safety Code 25915-25915.7 requires that all employees working within a building known to contain asbestos be informed, in writing, initially and annually thereafter of its presence, location, procedures and handling restrictions, results for any sampling conducted in the building and

potential health risks of asbestos. In addition, notification shall be provided to contractors, maintenance workers or others.

One hundred square feet or more of materials containing greater than 1/10<sup>th</sup> of one percent asbestos must be properly removed by a licensed asbestos abatement contractor using isolation control methods and disposed of appropriately. Workers handling materials containing asbestos must be properly trained and must wear the appropriate personal protective equipment (PPE).

Furthermore, when asbestos is present in any amount, be advised that certain provisions of Cal-OSHA regulation Title 8 Section 1529 still apply. These include, but are not limited to, exposure assessments, air monitoring, hazard communication, prohibitions and work practices, such as wet methods and HEPA vacuuming.

## 6.2 LEAD

Lead-containing paint was reported during this inspection.

Disturbances of paints and/or component with any detectable amount of lead are subject to regulation under *Title 8 CCR, Section 1532.1 (d)*. These requirements include awareness training, and monitoring to determine worker exposure. This regulation requires initial and on-going (if necessary) employee exposure monitoring to evaluate lead work exposure that disturbs paint with any detectable level of lead. NV5 suggests that engineering controls, respiratory protection and personal protective equipment be employed during any project that disturbs painted surfaces.

All other painted surfaces not listed above are considered lead-containing until confirmatory paint chip sampling proves otherwise.

## 6.3 POLYCHLORINATED BIPHENYLS (PCBS) IN LIGHTING EQUIPMENT

Prior to renovation work, the light fixtures must be dismantled and the ballast exposed so that the label on each light ballast can be examined. If a label is missing or is not clearly labeled "No PCB" by the manufacturer, the unit must be assumed to contain PCBs.

All ballasts assumed to contain PCB's shall be removed intact and in a non-destructive manner. Ballasts shall be packaged and disposed of in accordance with Title 22 of the California Code of Regulations, Sections 66243, et seq., and Sections 25157.8, et al, of the California Health and Safety Code.

Any ballasts that are observed to be leaking shall be properly containerized and disposed of in accordance with 40 CFR 761.

In addition, any impacted electrical panels or other appropriate machinery should be assumed to contain some form of PCB oil and should be disposed of accordingly.

## 6.4 MERCURY IN FLORESCENT LIGHT TUBES/BATTERIES

All light tubes from this project shall be segregated, packaged and disposed of in accordance with all federal, state, and local regulations and guidelines including CA Title 22 division 4.5 Chapter 11 Section 66261.50. Mercury-containing thermostats, gauges or switches must be removed by properly trained personal and disposed of properly.

Ensure that any universal waste battery that shows evidence of leakage, spillage, or damage that could cause leakage are properly contained. All batteries associated with emergency exit signs, emergency lighting, and spent battery devices should be removed intact, packaged and disposed of under Title 22 of the California Code of Regulations, Sections 66243, et seq., and Sections 25157.8, et al, of the California Health and Safety Code.

## 6.5 REFRIGERANTS/GASES

Prior to renovation activities ensure all refrigerants/gases associated with HVAC units, etc. are properly collected, transported, and disposed of/recycled in accordance with federal and California Air Resource Boards. Personnel performing the removal and collection activities should be trained in compliance with the EPA's Technician Certification Program.

## 7.0 ASSUMPTIONS AND LIMITATIONS

This report was prepared exclusively for use by PBLA Engineering, Inc. and may not be relied upon by any other person or entity without NV5 's express written permission. The information, conclusions and recommendations described in this report apply to conditions existing at certain locations when services were performed and are intended only for the specific purposes, locations, time frames and project parameters indicated. NV5 cannot be responsible for the impact of any changes in environmental standards, practices or regulations after performance of services.

In performing our professional services, we have applied present engineering and scientific judgment and used a level of effort consistent with the current standard of practice for similar types of studies.

As applicable, NV5 has relied in good faith upon representations and information furnished by individuals with respect to operations and existing property conditions, to the extent that they have not been contradicted by data obtained from other sources. Accordingly, NV5 accepts no responsibility for any deficiencies, omissions, misrepresentations, or fraudulent acts of persons interviewed.

NV5 will not accept any liability for loss, injury claim, or damage arising directly or indirectly from any use or reliance on this report. NV5 makes no warranty, expressed or implied.

This report is issued with the understanding that the client, the property owner, or its representative is responsible for ensuring that the information, conclusions, and recommendations contained herein are brought to the attention of the appropriate regulatory agencies, as required.

If you have any questions, please do not hesitate to contact the undersigned at (562) 477-0935. We appreciate the opportunity to be of service to PBLA Engineering, Inc.

## 8.0 SIGNATORY

Respectfully submitted by:



James C. Byers  
 Senior Consultant/Project Manager  
 Certified Asbestos Consultant  
 Cal/OSHA Cert. #06-4122  
 Lead Inspector/Assessor  
 CDPH #LRC-00001746



## Appendix A

Material Inventory: Asbestos



ALTA  
ENVIRONMENTAL

## FIELD BULK SAMPLE LIST

CLIENT: 1CG1 Technician: Large Robles  
PROJECT NO.: 1CG1-22-10942 Date: 6/1/22  
PROJECT NAME: 20461 Cairn Ln Page: 1 of 1

MATERIAL	SAMPLE #	SAMPLE LOCATION	MATERIAL LOCATION	EST. QTY.	F	D
Asphalt	1-1	Southwest corner	Tennis courts	6000 ft <sup>2</sup>	N	N
core	1-2	South center				
	1-3	center				
	1-4	Southwest corner				
	1-5	Northeast corner				
	1-6	center, North				
	1-7	Northeast corner				
9" Beige F.T. w/ Black mastic	A-01	Main dm, N ctr	Main Room, Restroom under vinyl flooring	500 ft <sup>2</sup>	N	N
	-02	↓, S ctr				
	-03	RR, NW				
9" Tan F.T. w/ Black mastic	-04	Storage, SW	Storage	100 ft <sup>2</sup>	N	N
	-05	↓, SE				
	-06	↓, NE				
White vinyl flooring w/glue	-07	RR, NE	Restroom	100 ft <sup>2</sup>	N	N
	-08	↓, SE				
	-09	↓, SW				

## FIELD BULK SAMPLE LIST

CLIENT: 1CG1-22-10942

PROJECT NO.: 1CG1

PROJECT NAME: 20161 Cairns Ln

Technician: George Roberts

Date: 6/7/22

Page:     of    

MATERIAL	SAMPLE #	SAMPLE LOCATION	MATERIAL LOCATION	EST. QTY.	F	D
12" White F.T. w/ glue & black mastic	A - 10 -11 -12	Kitchen, NE ↓ center ↓, SW	Kitchen	200ft <sup>2</sup>	N	N
4" Black caulk w/ glue	-13 -14 -15	Kitchen, SW ↓, w ctr ↓, NW	Kitchen	50 mft	N	N
Popcorn Drywall ceiling	-16 -17 -18	Kitchen, ctr Main Rm, ctr Storage, ctr	Throughout Bldg	900ft <sup>2</sup>	N	N
4" Biogre caulk w/ glue	-19 -20 -21	Restroom, N ctr ↓, E ctr ↓, w ctr	Restroom	50 1/2 ft	N	N
Drywall	-22 -23 -24	Main Rm, NE ↓, SW Kitchen, w ctr	Throughout Bldg	900ft <sup>2</sup>	N	N

At exterior wood wall panels. No seam caulking observed  
At no window caulking observed

Page:            of           [illegible]

## Appendix B

Laboratory Analytical Report and Field Notes: Asbestos, Lead and PCBs



1508 East 33rd Street  
Signal Hill, CA 90755  
Toll: 888-207-2022  
Tel: 562-206-2770  
Fax: 562-206-2773

Alta Environmental  
3777 Long Beach Blvd.  
Long Beach CA 90807  
Attn.: Jim Byers

Report Number 2249477

Date Received 06/08/2022

Date Analyzed 06/14/2022

Date Reported 06/14/2022

Method of Analysis 40 CFR Part 763 Appendix E to Subpart E, EPA Method 600/M4-82-020; updated method 600 R-93/116  
Determination of Asbestos in Bulk Building Materials.

Project Number ICGI-22-10942

Project Name 20461 Cramer Ln.

Location Huntington Beach, CA

PO Number

WO Number

Date Sampled 06/07/2022

Sampled By Jorge Robles

Total Samples 71

## Test Report

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Non-Asbestos Components	(%)	Asbestos Type	(%)
2249477-001 T-1A	Tennis Courts Asphalt core- Coating, Red, Non-homogeneous	LAYER 1 100%	Fibrous Glass Quartz Binder/Filler	5% 40% 50%	Chrysotile	5%
Asbestos Present: Yes		Total % Non-Asbestos:		95.0%	Total %Asbestos:	5.0%
2249477-002 T-1B	Tennis Courts Asphalt core, Black, Non-homogeneous	LAYER 1 100%	Mineral Aggregate/Filler Bituminous Matrix	90% 10%	None Detected	
Asbestos Present: No		Total % Non-Asbestos:		100.0%	Total %Asbestos:	No Asbestos Detected
2249477-003 T-2A	Tennis Courts Asphalt core- Coating, Note: Not Analyzed- Positive Stop	Total % Non-Asbestos: Not Analyzed				
Asbestos Present:		Total % Non-Asbestos:		Not Analyzed	Total %Asbestos:	Not Analyzed
2249477-004 T-2B	Tennis Courts Asphalt core, Black, Non-homogeneous	LAYER 1 100%	Mineral Aggregate/Filler Bituminous Matrix	90% 10%	None Detected	
Asbestos Present: No		Total % Non-Asbestos:		100.0%	Total %Asbestos:	No Asbestos Detected
2249477-005 T-3A	Tennis Courts Asphalt core- Coating, Note: Not Analyzed- Positive Stop	Total % Non-Asbestos: Not Analyzed				
Asbestos Present:		Total % Non-Asbestos:		Not Analyzed	Total %Asbestos:	Not Analyzed
2249477-006 T-3B	Tennis Courts Asphalt core, Black, Non-homogeneous	LAYER 1 100%	Mineral Aggregate/Filler Bituminous Matrix	90% 10%	None Detected	
Asbestos Present: No		Total % Non-Asbestos:		100.0%	Total %Asbestos:	No Asbestos Detected
2249477-007 T-4A	Tennis Courts Asphalt core- Coating, Note: Not Analyzed- Positive Stop	Total % Non-Asbestos: Not Analyzed				
Asbestos Present:		Total % Non-Asbestos:		Not Analyzed	Total %Asbestos:	Not Analyzed



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Project Name 20461 Craimer Ln.

Location Huntington Beach, CA

PO Number

WO Number

Date Sampled 06/07/2022

Sampled By Jorge Robles

Total Samples 71

## Test Report

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Non-Asbestos Components	(%)	Asbestos Type	(%)
2249477-008 T-4B	Tennis Courts Asphalt core, Black, Non-homogeneous	LAYER 1 100%	Mineral Aggregate/Filler Bituminous Matrix	90% 10%	None Detected	
Asbestos Present: No		Total % Non-Asbestos:		100.0%	Total %Asbestos: No Asbestos Detected	
2249477-009 T-5A	Tennis Courts Asphalt core- Coating, Note: Not Analyzed- Positive Stop					
Asbestos Present:		Total % Non-Asbestos:		Not Analyzed	Total %Asbestos: Not Analyzed	
2249477-010 T-5B	Tennis Courts Asphalt core, Black, Non-homogeneous	LAYER 1 100%	Mineral Aggregate/Filler Bituminous Matrix	90% 10%	None Detected	
Asbestos Present: No		Total % Non-Asbestos:		100.0%	Total %Asbestos: No Asbestos Detected	
2249477-011 T-6A	Tennis Courts Asphalt core- Coating, Note: Not Analyzed- Positive Stop					
Asbestos Present:		Total % Non-Asbestos:		Not Analyzed	Total %Asbestos: Not Analyzed	
2249477-012 T-6B	Tennis Courts Asphalt core, Black, Non-homogeneous	LAYER 1 100%	Mineral Aggregate/Filler Bituminous Matrix	90% 10%	None Detected	
Asbestos Present: No		Total % Non-Asbestos:		100.0%	Total %Asbestos: No Asbestos Detected	
2249477-013 T-7A	Tennis Courts Asphalt core- Coating, Note: Not Analyzed- Positive Stop					
Asbestos Present:		Total % Non-Asbestos:		Not Analyzed	Total %Asbestos: Not Analyzed	



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Alta Environmental  
3777 Long Beach Blvd.  
Long Beach CA 90807  
Attn.: Jim Byers

**Project Number** ICGI-22-10942  
**Project Name** 20461 Cramer Ln.  
**Location** Huntington Beach, CA  
**PO Number**  
**WO Number**

**Report Number** 2249477

**Date Received** 06/08/2022

**Date Sampled** 06/07/2022

**Date Analyzed** 06/14/2022

**Sampled By** Jorge Robles

**Date Reported** 06/14/2022

**Total Samples** 71

**Method of Analysis** 40 CFR Part 763 Appendix E to Subpart E, EPA Method 600/M4-82-020; updated method 600 R-93/116  
Determination of Asbestos in Bulk Building Materials.

### Test Report

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Non-Asbestos Components	(%)	Asbestos Type	(%)
2249477-014 T-7B	Tennis Courts Asphalt core, Black, Non-homogeneous	LAYER 1 100%	Mineral Aggregate/Filler Bituminous Matrix	90% 10%	None Detected	
<b>Asbestos Present:</b> No		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos:</b> No Asbestos Detected	
2249477-015 A-01A	Community Bldg 9" FT, Beige, Homogeneous	LAYER 1 100%	Calcium Carbonate Vinyl Binder	45% 50%	Chrysotile	5%
<b>Asbestos Present:</b> Yes		Total % Non-Asbestos:		95.0%	<b>Total %Asbestos:</b> 5.0%	
2249477-016 A-01B	Community Bldg Mastic, Black, Homogeneous	LAYER 1 100%	Bituminous Matrix	92%	Chrysotile	8%
<b>Asbestos Present:</b> Yes		Total % Non-Asbestos:		92.0%	<b>Total %Asbestos:</b> 8.0%	
2249477-017 A-02A	Community Bldg 9" FT, Not Analyzed- Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos:		Not Analyzed	<b>Total %Asbestos:</b> Not Analyzed	
2249477-018 A-02B	Community Bldg Mastic, Not Analyzed- Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos:		Not Analyzed	<b>Total %Asbestos:</b> Not Analyzed	
2249477-019 A-03A	Community Bldg 9" FT, Not Analyzed- Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos:		Not Analyzed	<b>Total %Asbestos:</b> Not Analyzed	
2249477-020 A-03B	Community Bldg Mastic, Not Analyzed- Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos:		Not Analyzed	<b>Total %Asbestos:</b> Not Analyzed	
2249477-021 A-04A	Community Bldg 9" FT, Tan, Homogeneous	LAYER 1 100%	Calcium Carbonate Vinyl Binder	40% 55%	Chrysotile	5%
<b>Asbestos Present:</b> Yes		Total % Non-Asbestos:		95.0%	<b>Total %Asbestos:</b> 5.0%	





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**Project Name** 20461 Cramer Ln.

**Location** Huntington Beach, CA

**PO Number**

**WO Number**

**Date Sampled** 06/07/2022

**Sampled By** Jorge Robles

**Total Samples** 71

**Method of Analysis** 40 CFR Part 763 Appendix E to Subpart E, EPA Method 600/M4-82-020; updated method 600 R-93/116  
Determination of Asbestos in Bulk Building Materials.

### Test Report

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Non-Asbestos Components	(%)	Asbestos Type	(%)
2249477-022 A-04B	Community Bldg Mastic, Black, Homogeneous	LAYER 1 100%	Bituminous Matrix	95%	Chrysotile	5%
<b>Asbestos Present:</b> Yes		Total % Non-Asbestos:		95.0%	<b>Total %Asbestos:</b>	<b>5.0%</b>
2249477-023 A-05A	Community Bldg 9" FT, Not Analyzed- Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos:		Not Analyzed	<b>Total %Asbestos:</b>	<b>Not Analyzed</b>
2249477-024 A-05B	Community Bldg Mastic, Not Analyzed- Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos:		Not Analyzed	<b>Total %Asbestos:</b>	<b>Not Analyzed</b>
2249477-025 A-06A	Community Bldg 9" FT, Not Analyzed- Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos:		Not Analyzed	<b>Total %Asbestos:</b>	<b>Not Analyzed</b>
2249477-026 A-06B	Community Bldg Mastic, Not Analyzed- Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos:		Not Analyzed	<b>Total %Asbestos:</b>	<b>Not Analyzed</b>
2249477-027 A-07A	Community Bldg Vinyl flooring, White, Non-homogeneous	LAYER 1 100%	Cellulose Fiber Fibrous Glass Vinyl Binder/ Filler	15% <1 85%	None Detected	
<b>Asbestos Present:</b> No		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos:</b>	<b>No Asbestos Detected</b>
2249477-028 A-07B	Community Bldg Glue, White/Cream, Non-homogeneous	LAYER 1 100%	Organic Binders/Filler	100%	None Detected	
<b>Asbestos Present:</b> No		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos:</b>	<b>No Asbestos Detected</b>
2249477-029 A-08A	Community Bldg Vinyl flooring, White, Non-homogeneous	LAYER 1 100%	Cellulose Fiber Fibrous Glass Vinyl Binder/ Filler	15% <1 85%	None Detected	
<b>Asbestos Present:</b> No		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos:</b>	<b>No Asbestos Detected</b>



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Alta Environmental  
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Long Beach CA 90807  
Attn.: Jim Byers

**Report Number** 2249477

**Date Received** 06/08/2022

**Date Analyzed** 06/14/2022

**Date Reported** 06/14/2022

**Project Number** ICGI-22-10942

**Project Name** 20461 Craimer Ln.

**Location** Huntington Beach, CA

**PO Number**

**WO Number**

**Date Sampled** 06/07/2022

**Sampled By** Jorge Robles

**Total Samples** 71

**Method of Analysis** 40 CFR Part 763 Appendix E to Subpart E, EPA Method 600/M4-82-020; updated method 600 R-93/116  
Determination of Asbestos in Bulk Building Materials.

## Test Report

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Non-Asbestos Components	(%)	Asbestos Type	(%)
2249477-030 A-08B	Community Bldg Glue, White, Homogeneous	LAYER 1 100%	Organic Binders/Filler	100%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-031 A-09A	Community Bldg Vinyl flooring, White, Non-homogeneous	LAYER 1 100%	Cellulose Fiber Fibrous Glass Vinyl Binder/ Filler	15% <1 85%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-032 A-09B	Community Bldg Glue, White, Homogeneous	LAYER 1 100%	Organic Binders/Filler	100%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-033 A-10A	Community Bldg 12" FT, White, Homogeneous	LAYER 1 100%	Calcium Carbonate Vinyl Binder	60% 40%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-034 A-10B	Community Bldg Mastic/Glue, Black/Brown, Non-homogeneous	LAYER 1 100%	Bituminous Matrix/Filler	96%	Chrysotile	4%
<b>Asbestos Present: Yes</b>		Total % Non-Asbestos:		96.0%	<b>Total %Asbestos: 4.0%</b>	
2249477-035 A-11A	Community Bldg 12" FT, White, Homogeneous	LAYER 1 100%	Calcium Carbonate Vinyl Binder	60% 40%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	



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**Project Number** ICGI-22-10942  
**Project Name** 20461 Craimer Ln.  
**Location** Huntington Beach, CA  
**PO Number**  
**WO Number**

**Report Number** 2249477

**Date Received** 06/08/2022

**Date Sampled** 06/07/2022

**Date Analyzed** 06/14/2022

**Sampled By** Jorge Robles

**Date Reported** 06/14/2022

**Total Samples** 71

**Method of Analysis** 40 CFR Part 763 Appendix E to Subpart E, EPA Method 600/M4-82-020; updated method 600 R-93/116  
Determination of Asbestos in Bulk Building Materials.

### Test Report

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Non-Asbestos Components	(%)	Asbestos Type	(%)
2249477-036 A-11B	Community Bldg Mastic /Glue, Note: Not Analyzed- Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos: Not Analyzed		<b>Total %Asbestos: Not Analyzed</b>		
2249477-037 A-12A	Community Bldg 12" FT, White, Homogeneous	LAYER 1 100%	Calcium Carbonate Vinyl Binder	60% 40%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-038 A-12B	Community Bldg Mastic/Glue, Not Analyzed- Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos: Not Analyzed		<b>Total %Asbestos: Not Analyzed</b>		
2249477-039 A-13A	Community Bldg 4" Covebase, Black, Homogeneous	LAYER 1 100%	Calcium Carbonate Vinyl Binder	40% 60%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-040 A-13B	Community Bldg Glue, Tan, Homogeneous	LAYER 1 100%	Organic Binders/Filler	100%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-041 A-14A	Community Bldg 4" Covebase, Black, Homogeneous	LAYER 1 100%	Calcium Carbonate Vinyl Binder	40% 60%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	



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**Project Number** ICGI-22-10942

**Project Name** 20461 Craimer Ln.

**Location** Huntington Beach, CA

**PO Number**

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**Date Sampled** 06/07/2022

**Sampled By** Jorge Robles

**Total Samples** 71

**Method of Analysis** 40 CFR Part 763 Appendix E to Subpart E, EPA Method 600/M4-82-020; updated method 600 R-93/116  
Determination of Asbestos in Bulk Building Materials.

### Test Report

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Non-Asbestos Components	(%)	Asbestos Type	(%)
2249477-042 A-14B	Community Bldg Glue, Tan, Homogeneous	LAYER 1 100%	Organic Binders/Filler	100%	None Detected	
<b>Asbestos Present:</b> No		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos:</b> No Asbestos Detected	
2249477-043 A-15A	Community Bldg 4" Covebase, Black, Homogeneous	LAYER 1 100%	Calcium Carbonate Vinyl Binder	40% 60%	None Detected	
<b>Asbestos Present:</b> No		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos:</b> No Asbestos Detected	
2249477-044 A-15B	Community Bldg Glue, Tan, Homogeneous	LAYER 1 100%	Organic Binders/Filler	100%	None Detected	
<b>Asbestos Present:</b> No		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos:</b> No Asbestos Detected	
2249477-045 A-16	Community Bldg Popcorn drywall ceiling, White/ Brown, Non-homogeneous	LAYER 1 100%	Cellulose Fiber Vermiculite Calcium Carbonate Gypsum/Binder/Filler	5% 10% 50% 32%	Chrysotile	3%
<b>Asbestos Present:</b> Yes		Total % Non-Asbestos:		97.0%	<b>Total %Asbestos:</b> 3.0%	
2249477-046 A-17	Community Bldg Popcorn drywall ceiling, Not Analyzed-Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos:		Not Analyzed	<b>Total %Asbestos:</b> Not Analyzed	
2249477-047 A-18	Community Bldg Popcorn drywall ceiling, Not Analyzed-Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos:		Not Analyzed	<b>Total %Asbestos:</b> Not Analyzed	
2249477-048 A-19A	Community Bldg 4" Covebase, Beige, Homogeneous	LAYER 1 100%	Vinyl Binder/ Filler	100%	None Detected	
<b>Asbestos Present:</b> No		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos:</b> No Asbestos Detected	



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**Report Number** 2249477

**Project Number** ICGI-22-10942  
**Project Name** 20461 Cramer Ln.  
**Location** Huntington Beach, CA  
**PO Number**  
**WO Number**

**Date Received** 06/08/2022

**Date Analyzed** 06/14/2022

**Date Reported** 06/14/2022

**Date Sampled** 06/07/2022

**Sampled By** Jorge Robles

**Total Samples** 71

**Method of Analysis** 40 CFR Part 763 Appendix E to Subpart E, EPA Method 600/M4-82-020; updated method 600 R-93/116  
Determination of Asbestos in Bulk Building Materials.

### Test Report

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Non-Asbestos Components	(%)	Asbestos Type	(%)
2249477-049 A-19B	Community Bldg Glue, Off White, Homogeneous	LAYER 1 100%	Organic Binders/Filler	100%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-050 A-20A	Community Bldg 4" Covebase, Beige, Homogeneous	LAYER 1 100%	Vinyl Binder/ Filler	100%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-051 A-20B	Community Bldg Glue, Off White, Homogeneous	LAYER 1 100%	Organic Binders/Filler	100%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-052 A-21A	Community Bldg 4" Covebase, Beige, Homogeneous	LAYER 1 100%	Vinyl Binder/ Filler	100%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-053 A-21B	Community Bldg Glue, Off White, Homogeneous	LAYER 1 100%	Organic Binders/Filler	100%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-054 A-22	Community Bldg Drywall, White/ Brown, Non-homogeneous	LAYER 1 100%	Cellulose Fiber Fibrous Glass Gypsum/Filler	2% <1 98%	None Detected	
<b>Asbestos Present: No</b>		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	



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**Project Number** ICGI-22-10942  
**Project Name** 20461 Craimer Ln.  
**Location** Huntington Beach, CA  
**PO Number**  
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**Report Number** 2249477

**Date Received** 06/08/2022

**Date Sampled** 06/07/2022

**Date Analyzed** 06/14/2022

**Sampled By** Jorge Robles

**Date Reported** 06/14/2022

**Total Samples** 71

**Method of Analysis** 40 CFR Part 763 Appendix E to Subpart E, EPA Method 600/M4-82-020; updated method 600 R-93/116  
Determination of Asbestos in Bulk Building Materials.

## Test Report

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Non-Asbestos Components	(%)	Asbestos Type	(%)
2249477-055 A-23	Community Bldg Drywall, White/ Brown, Non-homogeneous	LAYER 1 100%	Cellulose Fiber Fibrous Glass Gypsum/Filler	5% <1 95%	None Detected	
<b>Asbestos Present:</b> No		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos:</b> No Asbestos Detected	
2249477-056 A-24	Community Bldg Drywall, White/ Brown, Non-homogeneous	LAYER 1 100%	Cellulose Fiber Fibrous Glass Gypsum/Filler	2% <1 98%	None Detected	
<b>Asbestos Present:</b> No		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos:</b> No Asbestos Detected	
2249477-057 A-25	Community Bldg Drywall mud, Beige, Non-homogeneous	LAYER 1 100%	Mica Calcium Carbonate Binder/Filler	15% 60% 23%	Chrysotile	2%
<b>Asbestos Present:</b> Yes		Total % Non-Asbestos:		98.0%	<b>Total %Asbestos:</b> 2.0%	
2249477-058 A-26	Community Bldg Drywall mud, Not Analyzed- Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos:		Not Analyzed	<b>Total %Asbestos:</b> Not Analyzed	
2249477-059 A-27	Community Bldg Drywall mud, Not Analyzed- Positive Stop					
<b>Asbestos Present:</b>		Total % Non-Asbestos:		Not Analyzed	<b>Total %Asbestos:</b> Not Analyzed	
2249477-060 A-28	Community Bldg Door caulking, White, Non-homogeneous	LAYER 1 100%	Organic Binders/Filler	100%	None Detected	
<b>Asbestos Present:</b> No		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos:</b> No Asbestos Detected	
2249477-061 A-29	Community Bldg Door caulking, White, Non-homogeneous	LAYER 1 100%	Organic Binders/Filler	100%	None Detected	
<b>Asbestos Present:</b> No		Total % Non-Asbestos:		100.0%	<b>Total %Asbestos:</b> No Asbestos Detected	



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Attn.: Jim Byers

**Project Number** ICGI-22-10942  
**Project Name** 20461 Craimer Ln.  
**Location** Huntington Beach, CA  
**PO Number**  
**WO Number**

**Report Number** 2249477

**Date Received** 06/08/2022

**Date Sampled** 06/07/2022

**Date Analyzed** 06/14/2022

**Sampled By** Jorge Robles

**Date Reported** 06/14/2022

**Total Samples** 71

**Method of Analysis** 40 CFR Part 763 Appendix E to Subpart E, EPA Method 600/M4-82-020; updated method 600 R-93/116  
Determination of Asbestos in Bulk Building Materials.

### Test Report

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Non-Asbestos Components	(%)	Asbestos Type	(%)
2249477-062 A-30	Community Bldg Door caulking, Green/White, Non-homogeneous	LAYER 1 100%	Organic Binders/Filler	100%	None Detected	
<b>Asbestos Present: No</b>		<b>Total % Non-Asbestos:</b>		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-063 A-31A	Community Bldg Roof felt core- Composition Roofing (2 layers), Brown, Non-homogeneous	LAYER 1 100%	Fibrous Glass Quartz/Gravel Bituminous Matrix/Filler	15% 35% 50%	None Detected	
<b>Asbestos Present: No</b>		<b>Total % Non-Asbestos:</b>		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-064 A-31B	Community Bldg Roof felt core- Vapor Barrier, Black, Homogeneous	LAYER 1 100%	Cellulose Fiber Bituminous Matrix	60% 40%	None Detected	
<b>Asbestos Present: No</b>		<b>Total % Non-Asbestos:</b>		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-065 A-32A	Community Bldg Roof felt core- Composition Roofing, Brown, Non-homogeneous	LAYER 1 100%	Fibrous Glass Quartz/Gravel Bituminous Matrix/Filler	15% 35% 50%	None Detected	
<b>Asbestos Present: No</b>		<b>Total % Non-Asbestos:</b>		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-066 A-32B	Community Bldg Roof felt core- Vapor Barrier, Black, Homogeneous	LAYER 1 100%	Cellulose Fiber Bituminous Matrix	60% 40%	None Detected	
<b>Asbestos Present: No</b>		<b>Total % Non-Asbestos:</b>		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	
2249477-067 A-33A	Community Bldg Roof felt core- Composition Roofing, Brown, Non-homogeneous	LAYER 1 100%	Fibrous Glass Quartz/Gravel Bituminous Matrix/Filler	15% 35% 50%	None Detected	
<b>Asbestos Present: No</b>		<b>Total % Non-Asbestos:</b>		100.0%	<b>Total %Asbestos: No Asbestos Detected</b>	





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Report Number 2249477

Date Received 06/08/2022

Date Analyzed 06/14/2022

Date Reported 06/14/2022

Method of Analysis 40 CFR Part 763 Appendix E to Subpart E, EPA Method 600/M4-82-020; updated method 600 R-93/116  
Determination of Asbestos in Bulk Building Materials.

Project Number ICGI-22-10942

Project Name 20461 Craimer Ln.

Location Huntington Beach, CA

PO Number

WO Number

Date Sampled 06/07/2022

Sampled By Jorge Robles

Total Samples 71

### Test Report

Laboratory ID Sample No.	Sample Location Description	Layer No. Layer %	Non-Asbestos Components	(%)	Asbestos Type	(%)
2249477-068 A-33B	Community Bldg Roof felt core- Vapor Barrier, Black, Homogeneous	LAYER 1 100%	Cellulose Fiber Bituminous Matrix	60% 40%	None Detected	
Asbestos Present: No		Total % Non-Asbestos:		100.0%	Total %Asbestos: No Asbestos Detected	
2249477-069 T-2A	2nd Layer T-2 Asphalt- 2nd Layer, Black, Non- homogeneous	LAYER 1 100%	Mineral Aggregate/Filler Bituminous Matrix	90% 10%	None Detected	
Asbestos Present: No		Total % Non-Asbestos:		100.0%	Total %Asbestos: No Asbestos Detected	
2249477-070 T-5A	2nd Layer T-5 Asphalt- 2nd Layer, Black, Non- homogeneous	LAYER 1 100%	Mineral Aggregate/Filler Bituminous Matrix	90% 10%	None Detected	
Asbestos Present: No		Total % Non-Asbestos:		100.0%	Total %Asbestos: No Asbestos Detected	
2249477-071 T-6A	2nd Layer T-6 Asphalt- 2nd Layer, Black, Non- homogeneous	LAYER 1 100%	Mineral Aggregate/Filler Bituminous Matrix	85% 15%	None Detected	
Asbestos Present: No		Total % Non-Asbestos:		100.0%	Total %Asbestos: No Asbestos Detected	

Method Detection Limit: Less than one percent (<1%). Asbestos content has been determined using calibrated visual estimation (CVES). Samples tested were received in acceptable condition unless otherwise stated. Test report relates only to items tested. Non-homogeneous samples containing discrete and separable layers are analyzed and reported separately; composite results may be reported upon customer's request. Non-homogeneous samples with inseparable layers are analyzed and reported as composite samples. Due to the limitations of Polarized Light Microscopy, samples reported as None Detected or with low asbestos concentrations may not be reliable and further analysis such as TEM is recommended to confirm PLM results. This report shall not be reproduced except in full without the written approval of this laboratory. This report may not be used by the customer to claim product certification, endorsement, or approval by NIST/NVLAP or any agency of the government. Samples shall be disposed according to local, state and federal laws, 30 days after results are reported unless otherwise instructed.

CA-ELAP #2823

*Cristina Tabatt*

Analyst - Cristina Tabatt

*Cristina Tabatt*

Approved Signatory Cristina E. Tabatt



NVLAP Lab Code 500044-0



# CHAIN OF CUSTODY



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(Lab) Order No. 2249477

CUSTOMER INFORMATION		Turnaround Time	Shipped By	Report Send Via:
Company	NV5	Same Day <input type="checkbox"/>	Fedex <input type="checkbox"/>	Web <input type="checkbox"/>
Address	3777 Long Beach Boulevard	1 Day <input type="checkbox"/>	UPS <input type="checkbox"/>	Email <input type="checkbox"/>
City/State/Zip	Long Beach, CA 90807	2 Day <input type="checkbox"/>	USPS <input type="checkbox"/>	Fax <input type="checkbox"/>
Contact	<u>Jim Byers</u>	3 Day <input type="checkbox"/>	Drop Off <input type="checkbox"/>	Verbal <input type="checkbox"/>
Office Phone	562/ 495-5777	5 Day <input type="checkbox"/>	Drop Box <input type="checkbox"/>	Mail <input type="checkbox"/>
Cell		Weekend <input type="checkbox"/>	Other <input type="checkbox"/>	Pick up <input type="checkbox"/>
Fax	562/ 495-5877	Special Instructions:		
Email	<u>Jim.Byers@NV5.com</u>			

## PROJECT INFORMATION

Project Name:	<u>20461 Cramer Ln.</u>	PO Number:	
Project Number:	<u>16A1-22-10942</u>	Work Order No.:	
Location:	<u>Huntington Beach, CA</u>	Sampled By:	<u>Jorge Rojas</u>

PLM	PCM	MOLD	LEAD (Pb)
PLM EPA 600/M4-82-020 <input checked="" type="checkbox"/>	NIOSH 7400A <input type="checkbox"/>	Spore Trap <input type="checkbox"/>	Air <input type="checkbox"/> TTLC <input type="checkbox"/>
PLM 400 Pt. Count (<0.25%) <input type="checkbox"/>	NIOSH 7400B <input type="checkbox"/>	Tape Lift <input type="checkbox"/>	Paint <input type="checkbox"/>
PLM 1000 Pt. Count (<0.1%) <input type="checkbox"/>	w/ TWA <input type="checkbox"/>	Bulk Sample <input type="checkbox"/>	Wipe <input type="checkbox"/>
			Soil <input type="checkbox"/>

SAMPLE ID	SAMPLE TYPE	LOCATION	Date Sampled	Start Time	Stop Time	Avg Flow Rate	Volume (L)
T-1	Asphalt core	Tennis Courts	6/7/22				
-2							
-3							
-4							
-5							
-6							
-7							
A-01	9" Bridge F.T. w/ Black mastic	Community Bldg					
-02							
-03							

Relinquished By: <u>Jorge Rojas</u>	Received By: <u>Jorge Rojas</u>
Date/Time: <u>6/8/22 1400</u>	Date/Time: <u>6/8/22 14:25</u>

Lab Forms  
Ver. 082411

# CHAIN OF CUSTODY

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Company: NV5  
Project Number: 1CG1-22-10942  
Project Name: 20461 Cramer Ln

Analysis:

TAT:

(Lab) Order No. 2249477

SAMPLE ID	SAMPLE TYPE	LOCATION	Date Sampled	Start Time Stop Time	Avg Flow Rate	Volume (L)
A-04	8" Tan F.T. w/ Black mastic	Community Bldg	6/1/22			
-05	↓					
-06	↓					
-07	white vinyl flooring w/ glue					
-08	↓					
-09	↓					
-10	12" white F.T. w/ glue & Black mastic					
-11	↓					
-12	↓					
-13	4" Black Covebase w/ glue					
-14	↓					
-15	↓					
-16	Popcorn drywall ceiling					
-17	↓					
-18	↓					
-19	4" Black Covebase w/ glue					
-20	↓					
-21	↓					
-22	Drywall					
-23	↓					

Relinquished By: [Signature]  
Date/Time: 6/8/22 1400

Received By: [Signature]  
Date/Time: 6/8/22 14:25



# CHAIN OF CUSTODY

1508 E. 33rd Street  
Signal Hill, CA 90755  
562-206-2770 Tel  
562-206-2773 Fax  
services@AQenvlabs.com



Company: NV5  
Project Number: 1C G1-22-10942  
Project Name: 20461 Coarner Ln

Analysis:

TAT:

(Lab) Order No. 2249477

SAMPLE ID	SAMPLE TYPE	LOCATION	Date Sampled	Start Time Stop Time	Avg Flow Rate	Volume (L)
A-24	Drywall	Community Bldg	6/7/22			
-25	Drywall und					
-26	↓					
-27	↓					
-28	Door caulking					
-29	↓					
-30	↓					
-31	Root felt core w/ black barrier paper					
-32	↓					
-33	↓					
T-2A	Asphalt 2nd layer	2nd layer T-2	6/7/22			
T-5A	↓	2nd layer T-5	↓			
T-6A	↓	2nd layer T-6	↓			

Relinquished By: [Signature] Received By: [Signature]  
Date/Time: 6/8/22 1400 Date/Time: 6/8/22 14:25

Lab Forms  
Ver. 082411



1508 East 33rd Street  
Signal Hill, CA 90755  
Tel (562) 206-2770  
Fax (562) 206-2773

**Alta Environmental**  
**3777 Long Beach Boulevard**  
**Long Beach, CA 90807**  
Attention: Jim Byers

**Project Number:** ICGI-22-10942  
**Project Name:** 20461 Craimer Ln.  
**Location:** Huntington Beach, CA

**Report Number:** 2249469

Date Received: 6/8/2022  
Date Analyzed: 6/10/2022  
Date Reported: 6/13/2022

Date Sampled: 6/7/2022  
Sampled By: Jorge Robles  
Total Samples: 3

**Analytical Method:** EPA 7420/3050  
**Reporting Limit:** 5.0 µg Pb

Lead (Pb) in Paint by Flame AAS			
Lab ID Client ID	Location/Description	Sample Weight (g)	Lead Concentration ppm (mg/kg)
2249469-001 PC-1	White PC- Interior Walls (Drywall)	0.1031	740
2249469-002 PC-2	Green PC- Exterior Walls (Wood)	0.1062	1600
2249469-003 PC-3	Beige PC- Flashing, Exterior (Wood)	0.1047	510

Samples tested were received in acceptable condition unless otherwise stated. Test report relates only to items tested. This report shall not be reproduced without the written approval of this laboratory. The client shall be solely responsible for interpreting analytical results. Samples have not been blank corrected. Samples shall be disposed according to local, state and federal laws, 30 days after reporting results.

CA ELAP Cert #2823

Approved Signatory- Cristina E. Tabatt

# CHAIN OF CUSTODY



1508 E. 33rd Street  
Signal Hill, CA 90755  
562-206-2770 Tel  
562-206-2773 Fax  
services@AQenvlabs.com

(Lab) Order No. 2249469

CUSTOMER INFORMATION		Turnaround Time	Shipped By	Report Send Via:
Company	NV5	Same Day <input type="checkbox"/>	Fedex <input type="checkbox"/>	Web <input type="checkbox"/>
Address	3777 Long Beach Boulevard	1 Day <input type="checkbox"/>	UPS <input type="checkbox"/>	Email <input type="checkbox"/>
City/State/Zip	Long Beach, CA 90807	2 Day <input type="checkbox"/>	USPS <input type="checkbox"/>	Fax <input type="checkbox"/>
Contact	<u>Jim Byers</u>	3 Day <input checked="" type="checkbox"/>	Drop Off <input type="checkbox"/>	Verbal <input type="checkbox"/>
Office Phone	562/ 495-5777	5 Day <input type="checkbox"/>	Drop Box <input type="checkbox"/>	Mail <input type="checkbox"/>
Cell		Weekend <input type="checkbox"/>	Other <input type="checkbox"/>	Pick up <input type="checkbox"/>
Fax	562/ 495-5877	Special Instructions:		
Email	<u>Jim.Byers@NV5.com</u>			

PROJECT INFORMATION	
Project Name: <u>20401 Gainer Ln</u>	PO Number: _____
Project Number: <u>1CG1-22-10942</u>	Work Order No.: _____
Location: <u>Huntington Beach, CA</u>	Sampled By: <u>Jorge Robles</u>

PLM	PCM	MOLD	LEAD (Pb)
PLM EPA 600/M4-82-020 <input type="checkbox"/>	NIOSH 7400A <input type="checkbox"/>	Spore Trap <input type="checkbox"/>	Air <input type="checkbox"/> TTLC <input type="checkbox"/>
PLM 400 Pt. Count (<0.25%) <input type="checkbox"/>	NIOSH 7400B <input type="checkbox"/>	Tape Lift <input type="checkbox"/>	Paint <input checked="" type="checkbox"/>
PLM 1000 Pt. Count (<0.1%) <input type="checkbox"/>	w/ TWA <input type="checkbox"/>	Bulk Sample <input type="checkbox"/>	Wipe <input type="checkbox"/>
			Soil <input type="checkbox"/>

SAMPLE ID	SAMPLE TYPE	LOCATION	Date Sampled	Start Time	Avg Flow Rate	Volume (L)
PC-1	White PC	Interior walls, (Drywall)	6/7/22			
PC-2	Green PC	Exterior walls (wood)	+			
PC-3	Brick PC	Flashing, Exterior (wood)	+			

Relinquished By: <u>[Signature]</u>	Received By: <u>[Signature]</u>
Date/Time: <u>6/8/22 1400</u>	Date/Time: <u>6/8/22 14:25</u>

Lab Forms  
Ver. 082411

**Enviro - Chem, Inc.**

**1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907**

Date: June 15, 2022

Mr. Jim Byers  
NV5  
3777 Long Beach Blvd, Annex Building  
Long Beach, CA 90807  
Tel: (562) 477-0935 E-Mail: Jim.Byers@NV5.com

Project: **ICG1-22-10942**  
Lab I.D.: **220608-29, -30**

Dear Mr. Byers:

The **analytical results** for the solid samples, received by our laboratory on June 8, 2022, are attached. The samples were received chilled, intact and accompanying chain of custody.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,



Curtis Desilets  
Vice President



Pearl Wong  
Quality Manager



This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or Manager's Designee, as verified by the above signature which applies to this PDF File as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of ELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.





# Enviro-Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766

Tel (909)590-5905 Fax (909)590-5907

## EPA 8082 QA/QC Report

Matrix: **Soil/Solid/Sludge**

Date Analyzed: **6/10/2022**

Unit: **mg/Kg(PPM)**

**Matrix Spike (MS)/Matrix Spike Duplicate (MSD)**

**Spiked Sample Lab I.D.: 220609-LCS 5/6**

Analyte	S.R.	spk conc	MS	%REC	MSD	%REC	%RPD	ACP %RPD	ACP %REC
PCB (1016+1260)	0.000	0.100	0.112	112%	0.113	113%	2%	0-20%	70-130

**Lab Control Spike (LCS) Recovery:**

Analyte	spk conc	LCS	% REC	ACP %REC
PCB (1016+1260)	0.100	0.109	109%	75-125

Surrogate Recovery	ACP%	ACP%	%REC	%REC	%REC	%REC	%REC	%REC
<b>Sample I.D.</b>		MB	220608-29	220608-30				
Tetra-chloro-meta-xylene	50-150	68%	74%	72%				
Decachlorobiphenyl	50-150	124%	130%	120%				

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC	%REC	%REC
<b>Sample I.D.</b>								
Tetra-chloro-meta-xylene								
Decachlorobiphenyl								

Surrogate Recovery	%REC	%REC	%REC	%REC	%REC	%REC
<b>Sample I.D.</b>						
Tetra-chloro-meta-xylene						
Decachlorobiphenyl						

S.R. = Sample Result

\* = Surrogate fail due to matrix interference (If Marked)

spk conc = Spike Concentration

Note: LCS, MS, MSD are in control therefore results are in control.

%REC = Percent Recovery

ACP %RPD = Acceptable Percent RPD Range

ACP %REC = Acceptable Percent Recovery Range

Analyzed and Reviewed By: *KL Amy*

Final Reviewer: \_\_\_\_\_

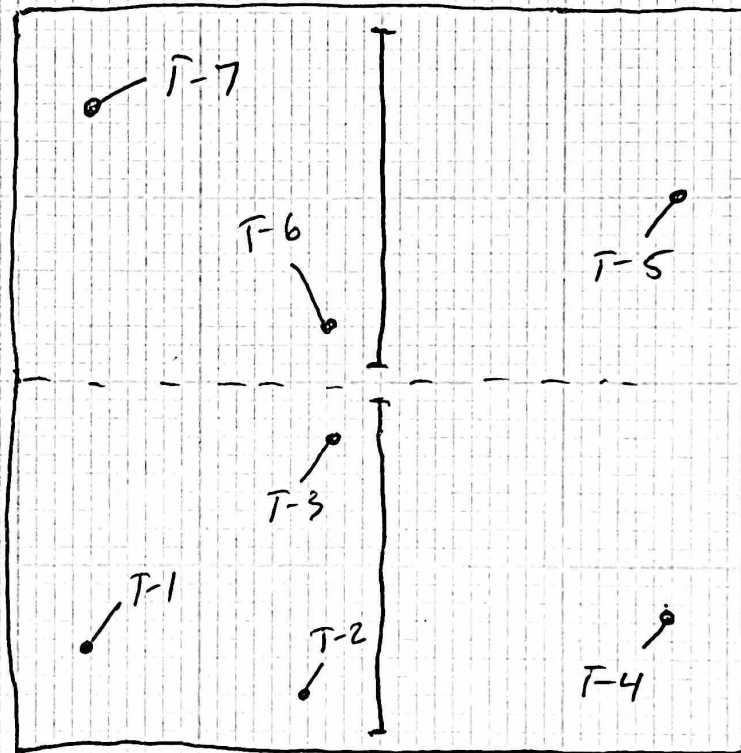




## Appendix C

Sample Location Map: Asbestos, Lead and PCBs

## Tennis Courts





ALTA ENVIRONMENTAL

Scale

Checked by

Date

Calculated by C.R.

Date

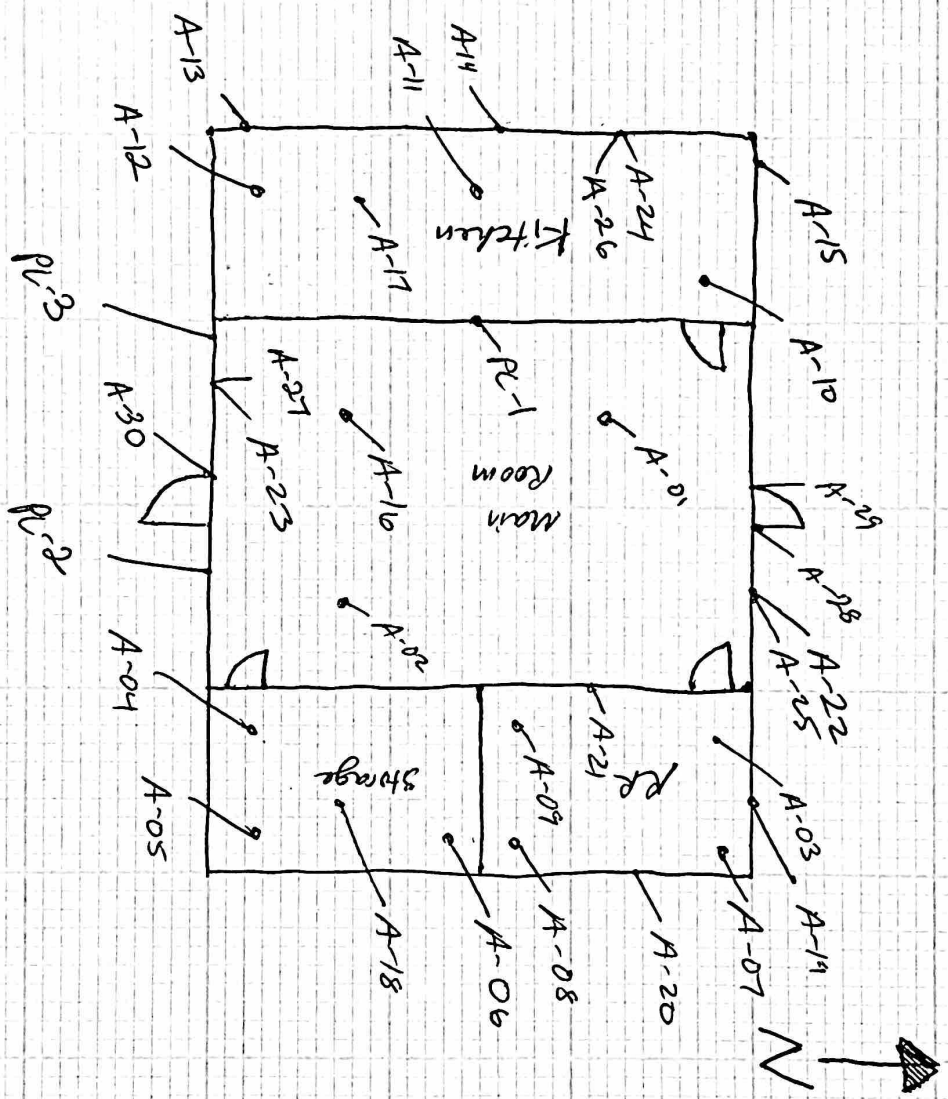
6/7/92

Project No./Task No. 1661-22-10942

Project Name 20461 Crawlers Ln

Sheet of

Community Bldg



## Appendix D

Employee Certifications

State of California  
Division of Occupational Safety and Health  
**Certified Site Surveillance Technician**

**Jorge Robles**

Name

**17-6028**

Certification No.

**11/14/22**

Expires on



This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.





STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC HEALTH



## LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:



**Jorge Robles**

CERTIFICATE TYPE:

Lead Sampling Technician

NUMBER:

LRC-00003495

EXPIRATION DATE:

10/28/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at [www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb) or calling (800) 597-LEAD.



STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC HEALTH



## LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:



**James Byers**

CERTIFICATE TYPE:

Lead Inspector/Assessor

NUMBER:

LRC-00001746

EXPIRATION DATE:

8/24/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at [www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb) or calling (800) 597-LEAD.



State of California  
Division of Occupational Safety and Health  
**Certified Asbestos Consultant**

**James Charles Byers, Jr.**



Certification No. **06-4122**

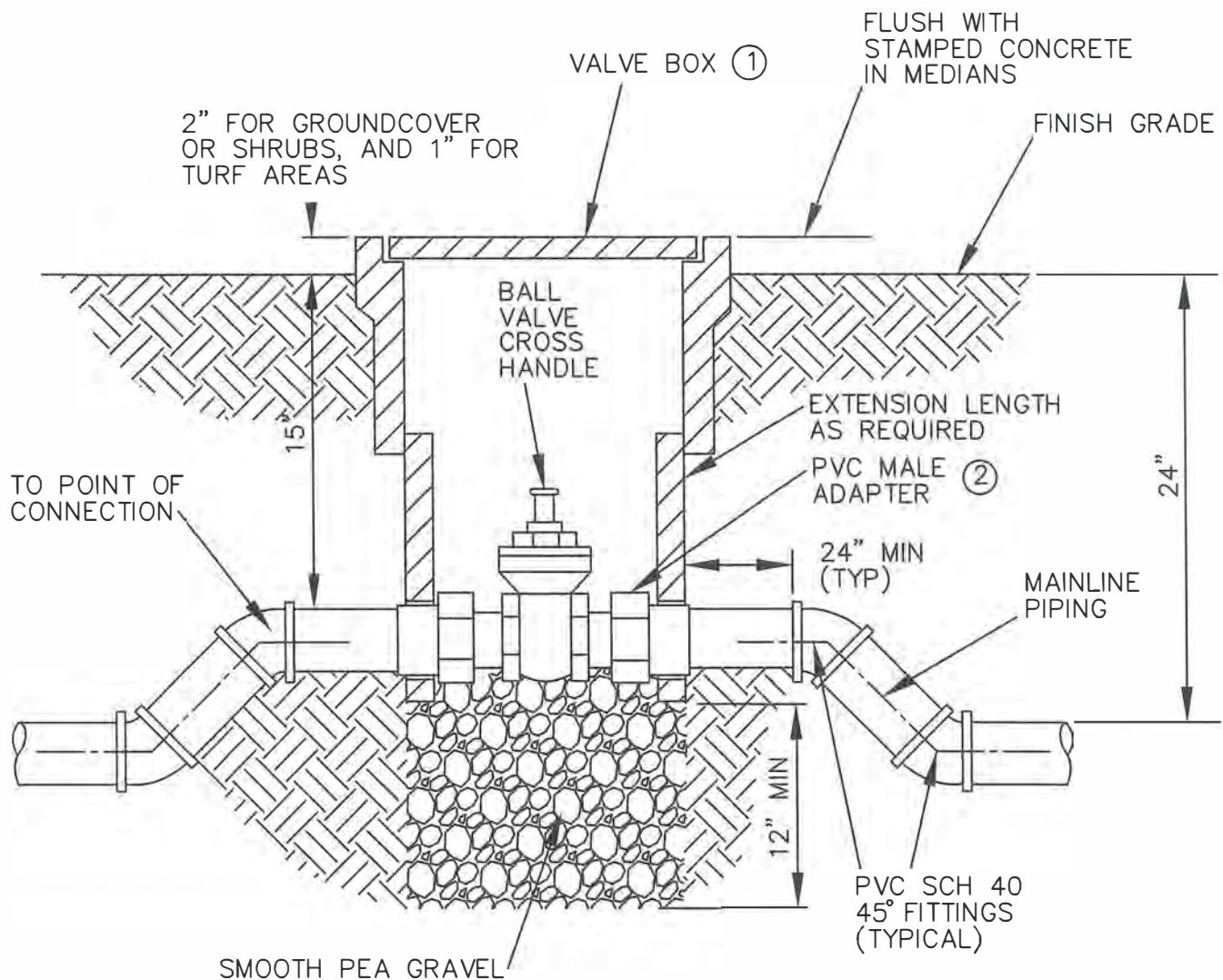
Expires on **01/18/23**

This certification was issued by the Division of Occupational Safety and Health as authorized by Article 7180 et seq. of the Business and Professions Code.



## **APPENDIX I**

### **AGENCY STANDARD IRRIGATION PLANS AND PROJECT CONSTRUCTION SIGN**



- NOTE:
- ① PER CITY STANDARD PLANS
  - ② USE TEFLON TAPE ON ALL MALE THREADS

## GATE VALVE



APPROVED:

*[Signature]*  
CITY ENGINEER

**CITY OF HUNTINGTON BEACH**

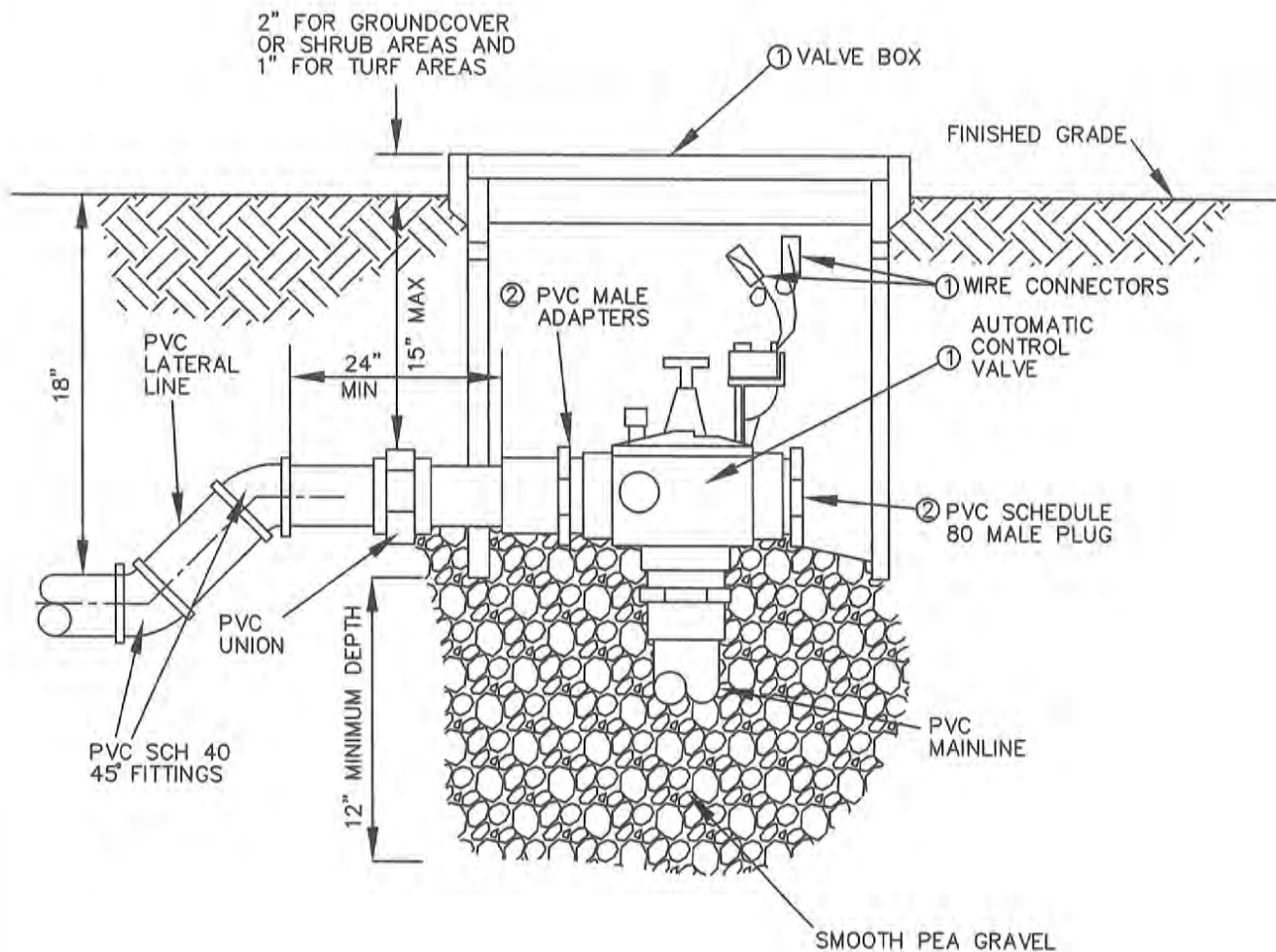
DEPARTMENT OF PUBLIC WORKS

2013

STANDARD  
PLAN

**703**

1 OF 1



## REMOTE CONTROL VALVE



APPROVED:

*[Signature]*  
CITY ENGINEER

**CITY OF HUNTINGTON BEACH**

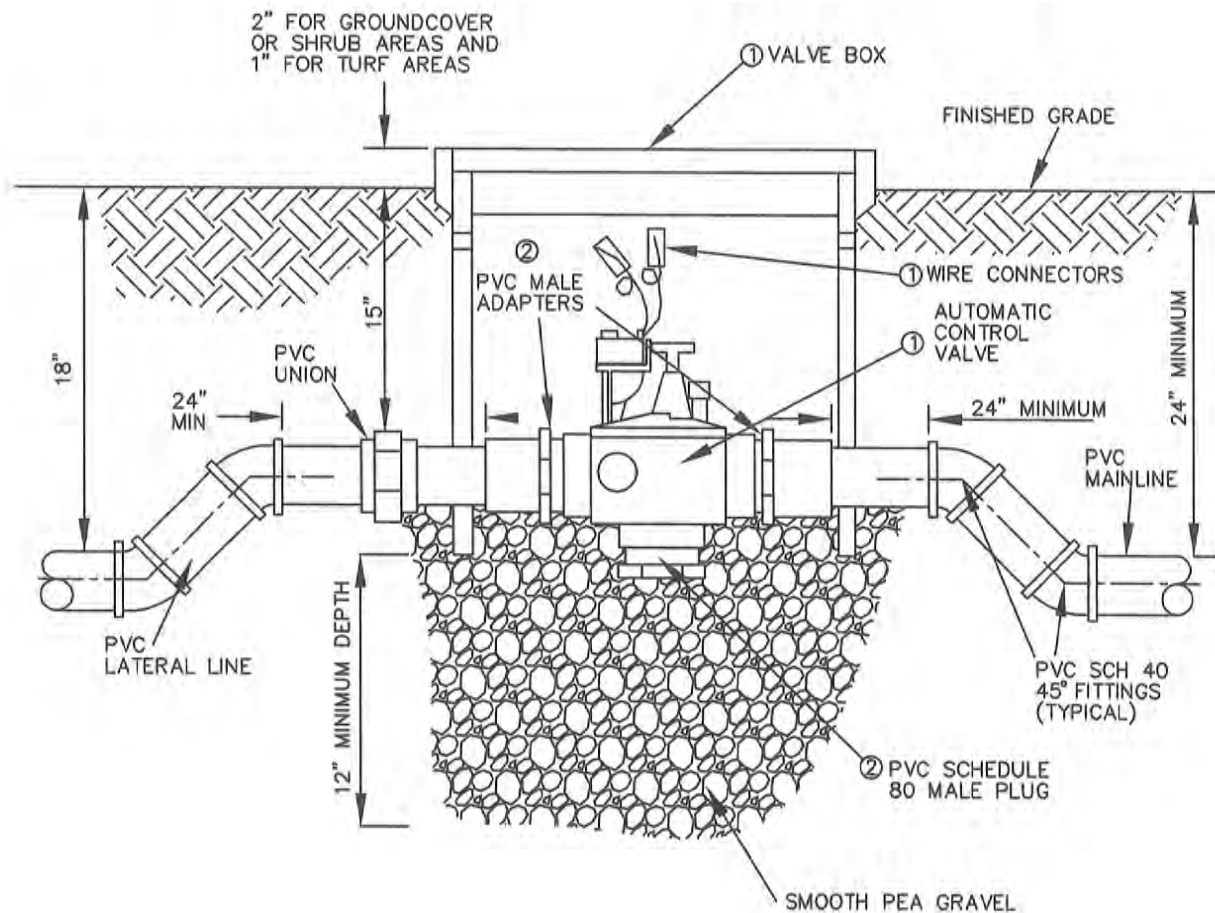
DEPARTMENT OF PUBLIC WORKS

2013

STANDARD  
PLAN  
**704**

1 OF 2





① PER CITY STANDARD PLANS

② USE TEFLON TAPE ON ALL MALE PIPE THREADS

## REMOTE CONTROL VALVE

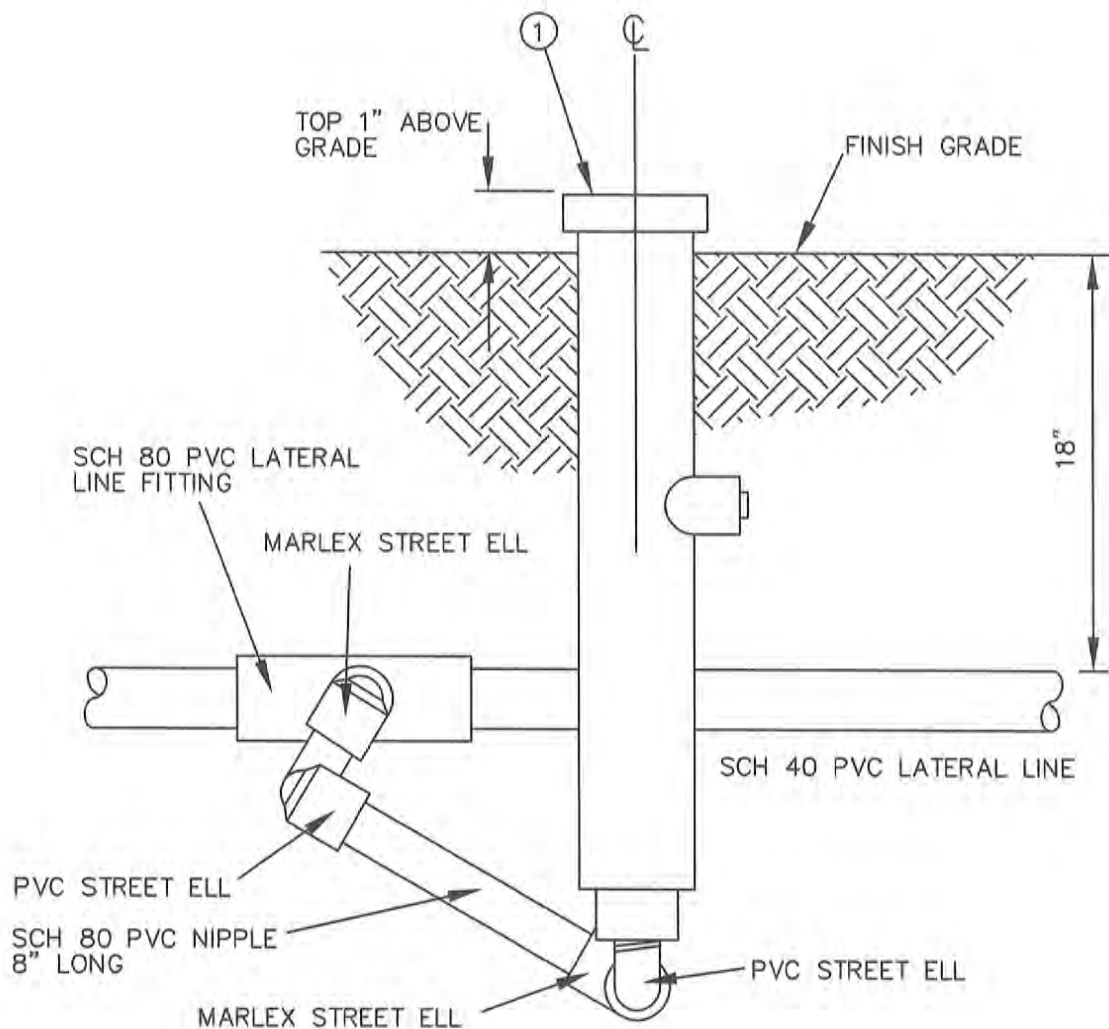


APPROVED:

*[Signature]*  
CITY ENGINEER

**CITY OF HUNTINGTON BEACH**  
DEPARTMENT OF PUBLIC WORKS  
2013

STANDARD  
PLAN  
**704**  
2 OF 2



- ① HEADS REQUIRING SNAP-ON PURPLE (RECLAIMED WATER DESIGNATOR) RINGS/CAP TO BE GLUED ON.

THERE ARE TO BE (4) FOUR ELLS AT EACH HEAD TYPICAL.  
LATERAL LINES SHALL BE BEHIND BOMANITE/CONCRETE WITH TEE FACING TOWARD MEDIAN CENTER OR THE CENTER OF THE PLANTING AREA.

## SPRINKLER HEAD TYPE A



APPROVED:

*[Signature]*  
CITY ENGINEER

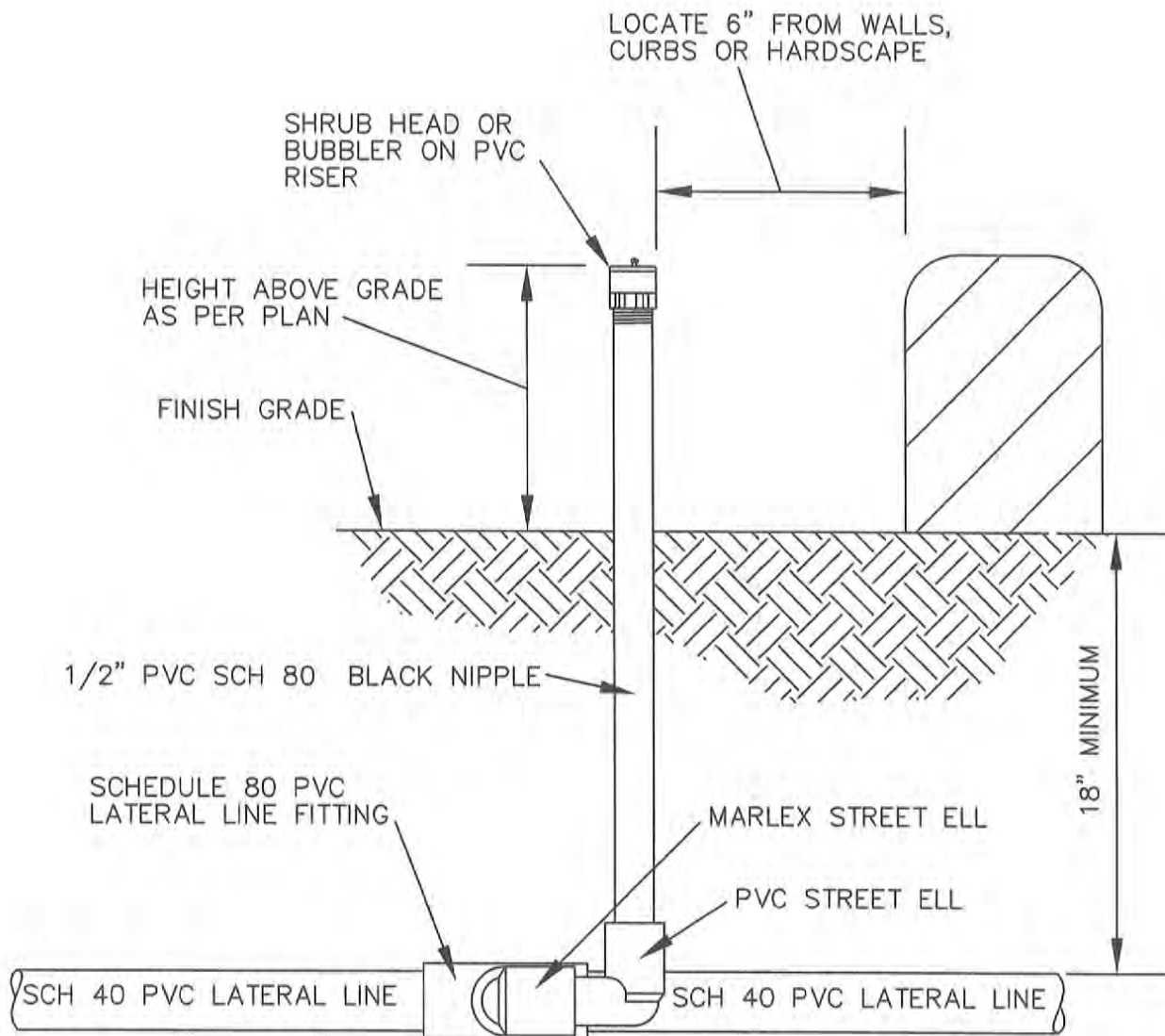
**CITY OF HUNTINGTON BEACH**

DEPARTMENT OF PUBLIC WORKS

2013

STANDARD  
PLAN  
**705**

1 OF 2



**GENERAL NOTES**

1 FOUR (4) ELLS AT EACH HEAD

2 HEADS REQUIRING SNAP-ON PURPLE (RECLAIMED WATER DESIGNATOR) RINGS/CAP (TO BE USED ON RECLAIMED WATER SYSTEMS ONLY) SHALL BE GLUED IN PLACE.

**SPRINKLER HEAD TYPE B**



APPROVED:

*[Signature]*  
CITY ENGINEER

**CITY OF HUNTINGTON BEACH**

DEPARTMENT OF PUBLIC WORKS

2013

STANDARD

PLAN

**705**

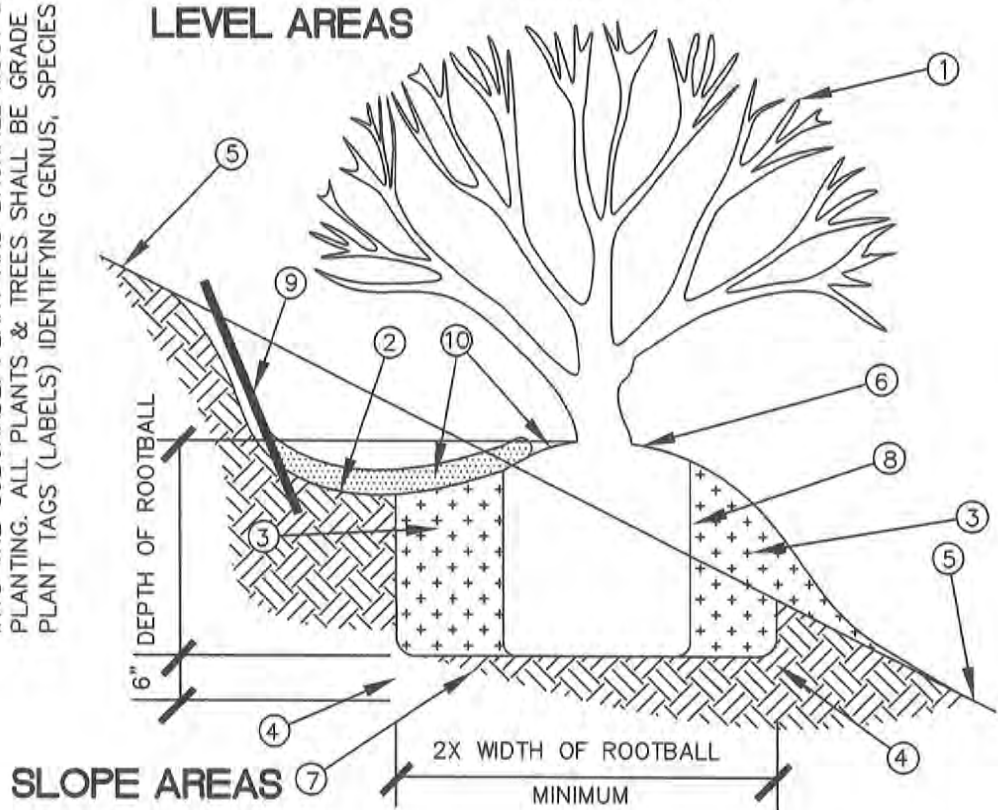
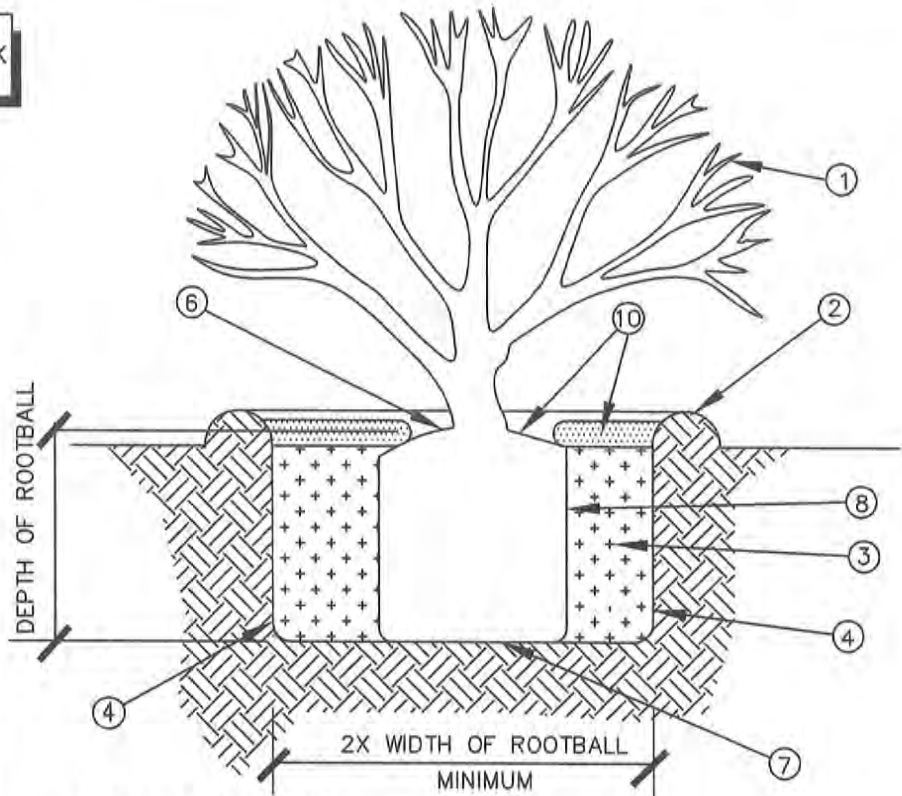
2 OF 2



ALL PLANTINGS MUST FOLLOW  
ANSI A300 PART 6, GREEN BOOK  
REFERENCE SECTION 308.

- ①—1, 5, 15, OR BOXED SHRUB OR TREES.
- ②—WATER BASIN 5" MINIMUM DEPTH BEHIND OR AROUND TREEWELL/WATER BASIN SHRUB OR TREE.
- ③—BACKFILL PER CITY OF HUNTINGTON BEACH LANDSCAPE SPECIFICATIONS, SEE STANDARD 714.
- ④—SCARIFY SIDES AND BOTTOM OF PLANTING PIT.
- ⑤—EXISTING 2:1 MAXIMUM SLOPE.
- ⑥—SET TRUNK FLARE HEIGHT TO  $\frac{3}{4}$ " ABOVE FINISH GRADE.
- ⑦—UNDISTURBED NATIVE SOIL.
- ⑧—LIGHTLY SCARIFY AND CUT ROOTS ALONG ROOTBALL.
- ⑨—SLOUGH WALL AND MATERIAL APPROVED BY THE CITY OF HB
- ⑩—3" THICK WOOD CHIP MULCH (PER APPROVED PLANS) (NOT AROUND TRUNK FLARE)

NOTE: PRIOR TO PLANT OR TREE PLACEMENT, FILL ALL PITS WITH WATER AND ALLOW TO PERCOLATE INTO THE SUBGRADE. PLANT AND BACKFILL MUST BE THOROUGHLY WATERED IN DIRECTLY UPON INITIAL PLANTING. ALL PLANTS & TREES SHALL BE GRADE "A" NO. 1 NURSERY STOCK AND SHALL HAVE PLANT TAGS (LABELS) IDENTIFYING GENUS, SPECIES AND CULTIVARS OF EACH.



## SHRUB PLANTING



APPROVED:

*[Signature]*  
CITY ENGINEER

**CITY OF HUNTINGTON BEACH**  
DEPARTMENT OF PUBLIC WORKS  
2013

STANDARD  
PLAN  
**712**  
1 OF 1

## SERIES 700 LANDSCAPE IRRIGATION MANUFACTURERS GUIDE

### BACKFLOW PREVENTERS:

- FEBCO 825Y-825YA  $\frac{3}{4}$ " TO 2" SERVICE

NOTE: ALL BACKFLOWS TO BE RIGID INSTALLATION, BRASS UPSTREAM AND DOWNSTREAM OF DEVICE.

### IRRIGATION CONTROLLERS:

- CALSENSE 2000E
- RAINMASTER SENTAR
- LEIT SOLAR

### SERVICE VALVES:

- MATCO RESILIENT WEDGE W/ SERVICE HANDLE 2" AND UP
- NIBCO OR EQUIVALENT 2" OR UNDER

### REMOTE CONTROL VALVES:

- GRISWOLD 2000 SERIES

### QUICK COUPLING VALVES:

- RAINBIRD R44 1" INLET (RIGID INSTALL)

### SPRINKLERS:

- RAINBIRD 900-950E  $1\frac{1}{2}$ " INLET (VALVE IN HEAD)
- RAINBIRD 8005 W/STAINLESS STEEL RISER 1" INLET HEAD
- RAINBIRD 5004 INCH - 5006 INCH W/STAINLESS STEEL RISER  $\frac{3}{4}$ " INLET
- TORO 570 SERIES 3,4,6,12 INCH POP-UPS  $\frac{1}{2}$ " INLET
- TORO 300 SERIES STREAM ROTORS  $\frac{3}{4}$ " INLET HEAD

### NOTE:

ANY AND ALL LANDSCAPE & IRRIGATION PRODUCTS SHALL BE SUBMITTED TO THE HUNTINGTON BEACH LANDSCAPE & IRRIGATION DIVISION FOR APPROVAL PRIOR TO INSTALLATION.

PRODUCTS OF LISTED ACCEPTABLE MANUFACTURERS SHALL MEET SPECIFICATIONS NOTWITHSTANDING THE FACT THAT MANUFACTURER IS "LISTED". THE CITY RESERVES THE RIGHT TO REJECT SUBMITTALS AND PRODUCTS FROM "ACCEPTABLE MANUFACTURERS" IF PRODUCTS FAIL TO DEMONSTRATE COMPLIANCE WITH SPECIFICATIONS.

THE CITY OF HUNTINGTON BEACH RESERVES THE RIGHT TO REJECT PRODUCT SUBSTITUTIONS SOLELY ON THE BASIS OF MAINTENANCE ECONOMIES OF SCALE AVAILABLE TO THE CITY PARK TREES & LANDSCAPE DIVISION THROUGH STANDARDIZATION OF MANUFACTURERS AND CONTROLLED SPARE PARTS INVENTORIES.

## LANDSCAPE IRRIGATION MANUFACTURERS GUIDE



APPROVED:

  
CITY ENGINEER

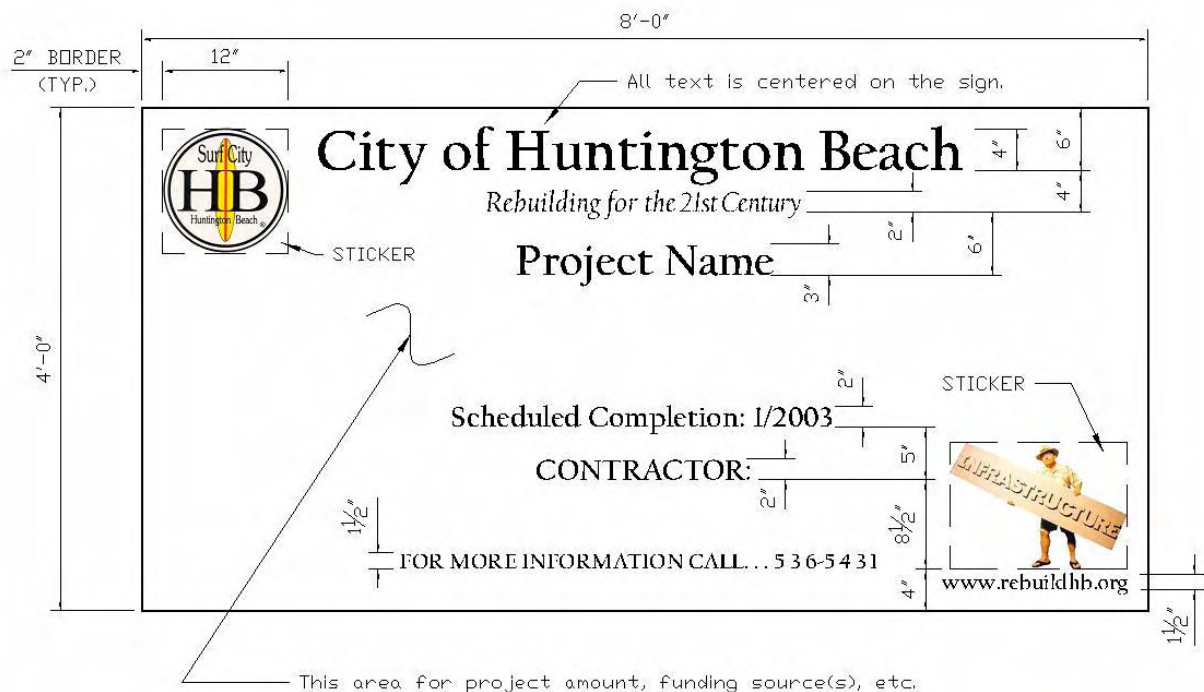
**CITY OF HUNTINGTON BEACH**

DEPARTMENT OF PUBLIC WORKS

2013

STANDARD  
PLAN  
**720**  
1 OF 1





1. The sign shall be made of 1/2" exterior grade plywood, or other approved material suitable for signs.
2. The entire sign shall be primed with at least one (1) coat of enamel undercoater. After the primer is dry, the sign shall be painted with at least one (1) coat of oil based enamel white paint, before applying lettering, logos, or stickers.
3. All lettering shall be black vinyl die-cut letters.
4. Sticker(s) shall be supplied by the City.
5. Project Name, project amount, funding source(s), and contractor shall be filled in by the vendor per direction from the Public Works Construction Manager.
6. The sign shall be made only by experienced craftsmen for the work.
7. The location of the sign shall be determined by City Staff at the pre-construction meeting.
8. Provide adequate supports for sign as sight conditions may require. Keep sign a proper distance above prevailing grade to permit public viewing.

PROJECT CONSTRUCTION SIGN

CITY OF HUNTINGTON BEACH  
DEPARTMENT OF PUBLIC WORKS



1 OF 1

# **APPENDIX J**

## **OC CONSTRUCTION RUNOFF GUIDENCE MANUAL**



# Construction Runoff Guidance Manual

for Contractors, Project Owners, and Developers

December 2012



**Orange County Stormwater Program:**

A Cooperative Project of the County of Orange,  
Cities of Orange County and  
Orange County Flood Control District



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# **1 Introduction and Overview**

## **1.1 Introduction**

This Construction Runoff Guidance Manual (Manual) is intended to enable applicants for building or grading permits to understand and comply with the regulatory requirements for creek, river, stream and coastal water protection during the construction phase of new development and significant redevelopment projects. Project owners and developers should be able to use this Manual as a guide to understand which permits and ordinances apply to their construction project. Contractors should be able to use this Manual as a guide to the Best Management Practices (BMPs) typically needed to be implemented at a construction site to ensure compliance with the Construction General Permit (CGP) and local ordinances.

## **1.2 Overview**

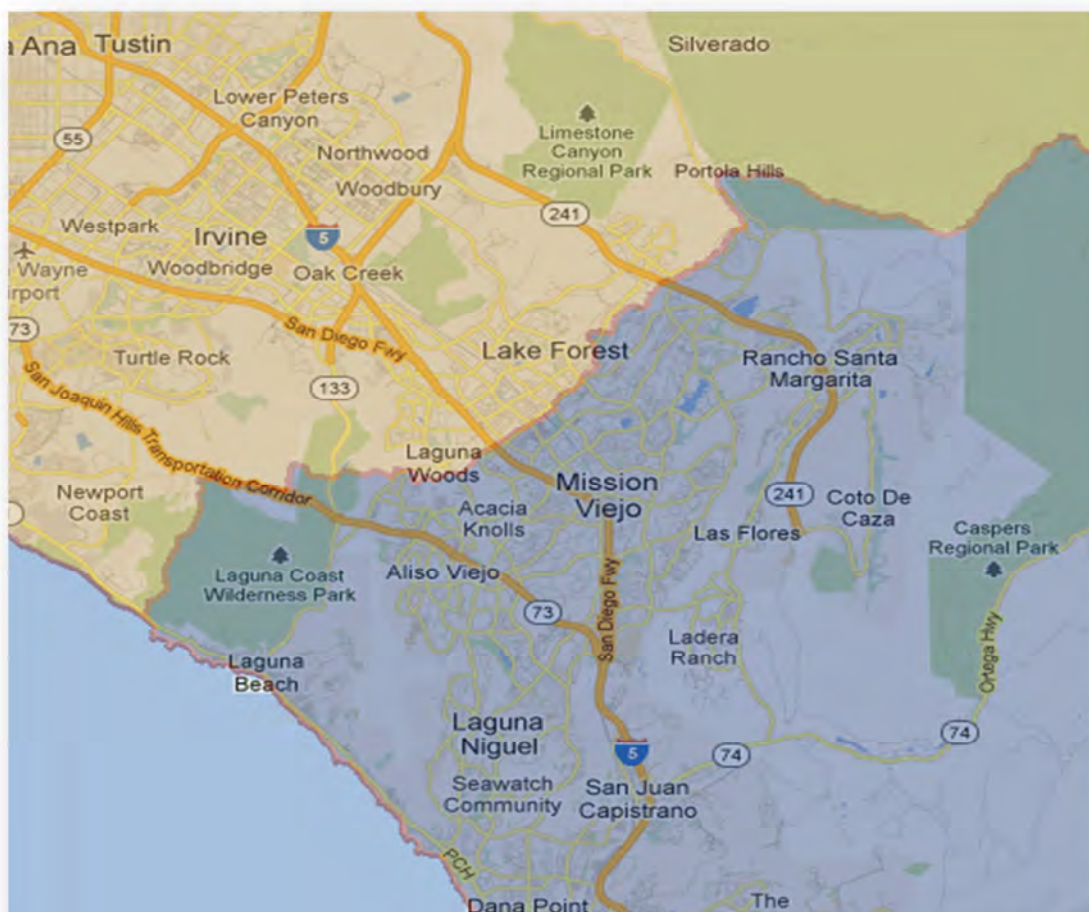
The goal of this Manual is to provide useful, succinct information to enable contractors to control pollutant discharges from construction sites. Activities and materials used on a construction site may be a source of pollutants, including but not limited to sediment, concrete and grout; paints, lacquers, and primers; herbicides and pesticides; soaps and detergents; wood preservatives; equipment fuels, lubricants, coolants, and hydraulic fluids; and cleaning solvents. Water from construction sites can be a major transporter of these pollutants, which can leak from heavy equipment, be spilled, or can be eroded by rain from exposed soil or stockpiles. Once released, they can be transported into the receiving waters of the County of Orange (Orange County or “the County”), where they may enter aquatic food chains and cause fish toxicity problems, contribute to algal blooms, impair recreational uses, and degrade drinking water sources.



## **2 Regulatory Requirements**

### **2.1 State and Regional Permit Requirements**

Construction activity in Orange County is subject to regulation by both the Santa Ana and the San Diego Regional Water Quality Control Boards (Regional Boards or RWQCBs). The Regional Boards are responsible for implementing the Clean Water Act and the California Porter-Cologne Act. The boundary between the two Regional Board jurisdictions approximately follows El Toro Road in Lake Forest, separating the Santa Ana Region (Regional Board 8 or RB8) (north of El Toro Road) from the San Diego Region (Regional Board 9 or RB9) (south of El Toro Road). While some of the permits listed in Table 1 are issued statewide by the State Water Resources Control Board (State Board or SWRCB) and implemented throughout the state by the Regional Boards, other permits, like dewatering or de minimus permits, are issued and implemented on a Region-by-Region basis. Additionally, the Regional Boards issue Municipal Separate Storm Sewer System (MS4) Permits to the County and cities, which include additional requirements for managing construction sites.



**Figure 1: Map of Boundary between Santa Ana Regional Board (Yellow) and San Diego Regional Board (Blue)**

Table 1 includes a list of all State or Regional permits related to runoff water quality that may apply to construction projects in Orange County. To determine which, if any, of these permits affect your construction project, go to Appendix A and follow the three flow charts. Appendix B includes a brief summary of each permit shown in Table 1. A list of web links for each permit is included in the Reference section at the end of this Manual.

Table 1: Summary of State and Regional Permits that May Affect Construction Projects in Orange County

	Order Number / NPDES Number	Permit Name	Affected Area
CGP	2009-0009-DWQ/ CAS000002	National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit)	Statewide
MS4	R8-2009-0030/ CAS618030	Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and The Incorporated Cities of Orange County within the Santa Ana Region (MS4 Permit for Santa Ana Region)	Santa Ana Region within Orange County
	R9-2009-0002/ CAS0108740	Waste Discharge Requirements for Discharges of Runoff from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watershed of the County of Orange, The Incorporated Cities of Orange County, and The Orange County Flood Control District Within the San Diego Region (MS4 Permit for San Diego Region)	San Diego Region within Orange County
Discharge To Land	2003-0003-DWQ	Statewide General Waste Discharge Requirements (WDRs) for Discharges to Land with a Low Threat to Water Quality (WDR for Discharge to Land)	Statewide
Groundwater Dewatering	R8-2007-0041/ CAG918002	General Discharge Permit for Discharges to Surface Waters of Groundwater Resulting from Groundwater Dewatering Operations and/or Groundwater Cleanup Activities at Sites within the San Diego Creek / Newport Bay Watershed Polluted by Petroleum Hydrocarbons, Solvents, Metals and/or Salts (Dewatering Permit for Santa Ana Region)	Santa Ana Region within Orange County
	R9-2008-0002/ CAG919002	Discharges of Extracted Groundwater to Surface Waters Except for San Diego Bay (Dewatering Permit outside of San Diego Bay for San Diego Region)	San Diego Region within Orange County
Potable Water	R8-2009-0003/ CAG998001	General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality (De Minimus WDRs for Santa Ana Region)	Santa Ana Region within Orange County
	R9-2010-0003/ CAG679011	General NPDES Waste Discharge Requirements for Discharges of Hydrostatic Test Water and Potable Water to Surface Waters and Storm Drains or Other Conveyance Systems within the San Diego Region (Potable Water WDRs for San Diego Region)	San Diego Region within Orange County

In 2009, the SWRCB adopted Order No., 2009-0009-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, NPDES No. CAS000002 (Construction General Permit or CGP). The CGP requires that construction sites with one acre or greater of soil disturbance or less than one acre but part of a greater common plan of development apply for coverage for discharges under the CGP by submitting Permit Registration Documents (PRD) for coverage, developing a stormwater pollution prevention plan (SWPPP), implementing BMPs to address construction site pollutants and complying with the monitoring requirements of the CGP.

The County's and cities' construction site requirements are coordinated with, but separate from the CGP. The CGP applies regardless of whether a construction site discharges directly to receiving waters or to a municipal storm drain system. Inspections of construction sites by the County / cities (for MS4 permit compliance) or by Regional Board staff (for CGP compliance) are separate and carry different enforcement actions / mechanisms.

More details regarding the CGP and other State and Regional permits can be found in Appendix A.

## **2.2 Local Agency Requirements**

Each city, as well as the County of Orange, has a Municipal Code that establishes requirements for erosion and sediment control on grading projects. All project owners must meet the requirements of the applicable code prior to, during, and after construction. Additionally, through the MS4 Permits listed in Table 1 and described in Appendix B, each city or the County is responsible for periodic inspections of construction sites within its boundaries. (All project owners must allow city or County inspectors onto the project site for these inspections.)

### **2.2.1 Local Grading Code**

The Grading Code sets the rules and regulations for grading operations including operations preparatory to grading on private property. In addition to other requirements, the Grading Code requires that a project owner, developer or contractor prepare erosion control plans (ECPs), obtain a grading permit, and implement and maintain erosion and sediment control BMPs. Refer to the appropriate city or County website and/or Public Works Department for the full text of the municipal grading code.

### **2.2.2 Local Water Quality Ordinance**

The County and cities in Orange County have adopted Water Quality Ordinances for the purpose of improving water quality and compliance with NPDES permit requirements and for the control of urban pollutants. The Water Quality Ordinances are part of their municipal codes and are, in effect, laws that contractors are required to comply with. Non stormwater discharges to the municipal storm drain system are prohibited unless covered by a discharge exception. Prohibited non-stormwater discharges include wastewater from concrete truck washing, paint equipment cleaning, spill cleanup, etc. (See Table 3). Please refer to the appropriate city or County website and/or Public Works Department for the full text of the municipal water quality ordinance.

**Table 2: Allowed and Prohibited Discharges**

Allowed	Prohibited (not allowed)
<ul style="list-style-type: none"> <li>▪ Discharges composed entirely of stormwater</li> <li>▪ Projects permitted under the CGP may be authorized to discharge non-stormwater discharges including dechlorinated potable water sources such as:               <ul style="list-style-type: none"> <li>A. fire hydrant flushing,</li> <li>B. irrigation of vegetative erosion control measures (only in Region 8),</li> <li>C. pipe flushing and testing,</li> <li>D. water to control dust, and</li> <li>E. uncontaminated ground water from dewatering.</li> </ul> <p>Consult a construction stormwater professional to review the specific conditions.</p> </li> <li>▪ Discharges that are authorized by a De Minimus or Dewatering permit.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trash / debris / litter</li> <li>▪ Concrete waste</li> <li>▪ Sanitary waste</li> <li>▪ Fuel or oil (Dumping, Spills, or Leaks)</li> <li>▪ Non-stormwater discharges to the municipal storm drain system or receiving water (unless covered by an NPDES Permit, such as CGP or De Minimus)</li> <li>▪ Projects in Region 9 permitted under the CGP are not authorized to discharge non-stormwater discharges including dechlorinated potable water sources such as:               <ul style="list-style-type: none"> <li>F. irrigation of vegetative erosion control measures</li> </ul> </li> </ul>

## **3 Best Management Practices (BMPs)**

Best Management Practices (BMPs) collectively refer to a variety of pollution prevention controls implemented throughout the project site at various times of the project. BMPs discussed herein are specifically aimed to control pollution in stormwater runoff during the construction phase of the project. The major construction BMP categories can be broken down into

- Erosion Control (EC)
- Sediment Control (SE)
- Wind Erosion Control (WE)
- Tracking Control (TC)
- Non-Stormwater Management (NS)
- Waste Management and Materials Pollution Control (WM)

These BMPs will be discussed in detail throughout the remainder of this section. Permanent post-construction BMPs are not addressed in this document. Post construction BMP requirements are detailed in the Model Water Quality Management Plan (WQMP) as required by the MS4 Permits of either the Santa Ana Region or San Diego Region.

### **3.1 BMP Overview Diagram**

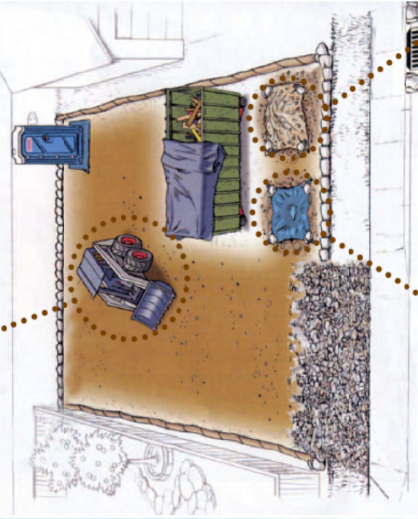
The BMPs that are commonly used on construction sites are shown in Figure 2.



## Best Management Practices for Construction Sites

### Earthmoving Equipment

All earthmoving equipment must be stored onsite. Drip pans must be placed under equipment not in use, and maintenance must be conducted onsite instead of in the street. Any leaks should be cleaned up and repaired immediately.



### Washout Areas

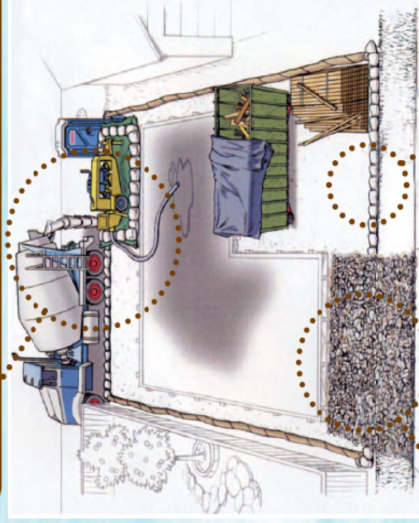
Disposal of "wet" construction materials should be handled in the washout area. This includes paint, stucco, and concrete. Use a plastic-lined pit to collect and contain liquids and prevent runoff into the street and gutter. The washout area must be checked and maintained daily to ensure compliance. Washout material must be disposed of properly.

### Dirt and Grading

Stockpiled dirt and gravel must be stored onsite and covered. Dust control shall be maintained throughout all phases of construction. During the rainy season (October 1 – April 30) additional gravel, bags, tarps, and visqueen must be stored onsite for emergency repair.

### Concrete Trucks/Pumpers

Pumpers must be surrounded by perimeter controls, such as gravel bags, sandbags, and straw wattles. Tarps also must be placed beneath concrete pumpers at all times to prevent spills into the street and sidewalk. Residual materials must be cleaned up as well. Trucks and pumpers are required to clean out in the washout area, not in the street, catch basin or a wheelbarrow.



### Perimeter Controls

Gravel bags, silt fences and straw wattles are acceptable perimeter controls and must be used to control site run-on and runoff. Avoid running over perimeter controls with vehicles or heavy equipment, as they can damage the materials. Keep extra absorbent materials and/or a wet/dry vacuum onsite to quickly pick up spills. Sites must be checked and maintained daily.

### Tracking Controls

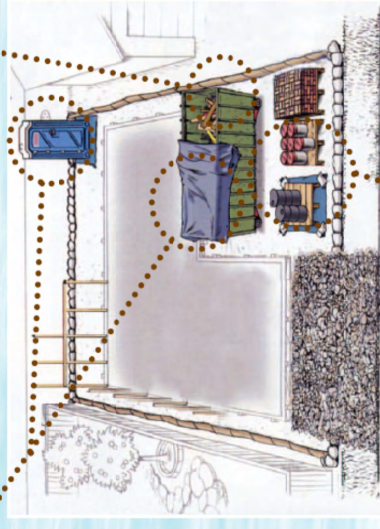
All entrances/exits on the site must have coarse gravel (1" to 3" angular material) and/or steel shaker plates to limit offsite sediment tracking. Hand or mechanical sweeping must also be used as needed to clean up any material that gets tracked offsite.

### Dumpsters and Portable Toilets

Dumpsters must be covered with a tarp at the end of each work day and area around dumpster must be kept clean. Dumpsters must be located onsite unless an Encroachment Permit is obtained for placement in street. Portable toilets must have drip pans and be placed onsite so that any spills do not discharge offsite.

### Building Materials/Staging Areas

Construction materials (including landscape materials) must be stored onsite. Building materials must be covered when not in use to prevent runoff caused by wind or rain.



### Liquid Storage

Paints, solvents, fuel and other liquids stored onsite must be contained and covered. It is illegal for contractors to wash out or dump liquid waste or residue in the street, storm drain or sewer. Use washouts or hazardous material drums to contain liquid waste and residue and dispose of this material properly.

Figure 2: Typical Construction Site BMPs (Graphic provided by the City of San Clemente)

### 3.2 Minimum Site BMP Requirements

The following requirements are for deployment of selected construction BMPs and apply year-round (not just during the rainy season) to all projects.

- A. Pollution prevention where appropriate.
- B. Development and implementation of a site specific run-off management plan.
- C. Minimization of areas that are cleared and graded to only the portion of the site that is necessary for construction.
- D. Minimization of exposure time of disturbed soil areas.
- E. Minimization of grading during the wet season and correlation of grading with seasonal dry weather periods to the extent feasible.
- F. Limitation of grading to a maximum disturbed area as determined by the County / city before either temporary or permanent erosion controls are implemented to prevent stormwater pollution. The County / city has the option of temporarily increasing the size of disturbed soil areas by a set amount beyond the maximum, if the individual site is in compliance with applicable stormwater regulations and the site has adequate control practices implemented to prevent stormwater pollution.
- G. Temporary stabilization and reseeded of disturbed soil areas as rapidly as feasible.
- H. Non-stormwater management measures to prevent illicit discharges and control stormwater pollution sources.
- I. Erosion Control BMPs shall be implemented.
- J. Wind erosion control BMPs (dust control) shall be implemented.
- K. Sediment control BMPs shall be implemented at all appropriate locations along the site perimeter, at all operational storm drain inlets and at all non-active slopes.
- L. Tracking control BMPs to control off-site sediment tracking shall be implemented and maintained.
- M. Waste management and materials pollution control BMPs shall be implemented to prevent the contamination of stormwater by construction wastes and materials.
- N. Non-stormwater BMPs shall be implemented to reduce or prevent the contamination of stormwater from construction activities.
- O. Weather tracking: projects shall monitor the National Weather Service ([www.weather.gov](http://www.weather.gov)) probability of precipitation. When a rain event is predicted (forecast predicts a greater than 50% probability of precipitation), the project must be inspected and BMPs must be maintained or deployed as needed to protect the project from discharging pollutants. (CGP projects only)
- P. BMP failures must be repaired or replaced with an acceptable alternate as soon as it is safe to do so. Repairs or replacements must result in an adequate BMP, or additional BMPs should be installed to provide adequate protection.



- Q. Active exposed areas: Sufficient materials needed to install standby erosion and sediment control BMPs necessary to protect all active exposed areas from erosion and to reduce or prevent sediment discharges shall be stored on site. The total active exposed area shall not exceed that which can be adequately protected by deploying standby erosion control and sediment control BMPs prior to a predicted rain event.
- R. Inactive exposed areas: All exposed areas not being actively worked in shall be protected from erosion with temporary or permanent BMPs (erosion and sediment control). The ability to deploy standby BMP materials is not sufficient for these areas; erosion and sediment control BMPs must actually be deployed.
- S. Completed areas: Areas that have already been protected from erosion using permanent erosion control BMPs (physical or vegetation) are not considered “exposed”. Deployment of permanent erosion control BMPs should commence as soon as practical on completed areas.
- T. Preservation of natural hydrologic features where feasible.
- U. Preservation of riparian buffers and corridors where feasible.
- V. Evaluation and maintenance of all BMPs, until removed.
- W. Retention, reduction, and proper management of all stormwater pollutant discharges on site to the Maximum Extent Practicable (MEP) standard.

### 3.3 CASQA BMP Handbook

The California Stormwater Quality Association (CASQA) has prepared a handbook providing details about all of the recommended BMPs. The current version of this handbook is the CASQA Best Management Practice Handbook, Construction, 2009 Edition. A membership to CASQA can be obtained at [www.casqa.org](http://www.casqa.org). Access to the BMP Fact Sheets referenced in this section is included with the CASQA membership. The Handbook contains six major categories of BMP fact sheets with guidelines on how to select each BMP. The six categories include: Erosion Control (EC), Sediment Control (SE), Wind Erosion Control (WE), Tracking Control (TC), Non-Stormwater Management (NS), and Waste Management and Materials Pollution Control (WM).

These categories of BMPs and their applicability are discussed in the following sections.

### 3.4 BMP Directory

In order to meet the requirements of the Permits and Ordinances mentioned in Section 2, BMPs must be selected, installed, and maintained properly throughout the duration of construction projects. BMPs must be discussed with all project contractors, subcontractors, and any party involved, because education is the most important BMP.

#### 3.4.1 Erosion Control (EC)

Erosion control BMPs focus on preventing soil from being eroded by stormwater and potentially discharged from the construction site. Erosion control is more effective than sediment control for reducing sediment discharge. However, a combination of both erosion control and sediment control is required to effectively reduce sediment discharge. This section highlights the most common erosion control BMPs for construction projects.


Erosion prevention is to be used as the most important measure for keeping sediment on site during construction. Permanent revegetation or landscaping shall be done as early as feasible at a minimum.

**Table 3: Physical / Vegetative Stabilization BMPs**


<b>Physical / Vegetative Stabilization:</b> Covering the soil with a protective layer that can help to hold soil in place and/or reduce the erosive impact of rain drops or runoff.	
<b>Type</b>	<b>Description</b>
Scheduling	Sequencing construction activities to reduce the amount of exposed soil during seasons of higher precipitation probability. All projects should consider scheduling activities to minimize the amount of disturbed area during seasons of higher precipitation probability. Phasing can be used to maintain stabilized areas (vegetation or impervious cover) as much as possible during construction. Disturbed areas should be stabilized as soon as practical. Attempt to schedule grading outside of seasons of higher precipitation probability. <u>Reference:</u> CASQA EC-1, EC-2
Seeding	Applying seed to a surface with the intention of achieving vegetation which can effectively protect soils from erosion while reducing runoff by encouraging infiltration / transpiration. Seeding is effective for temporary and permanent stabilization of slopes, stock piles, and other disturbed soils. Seeds can be combined with mulch and water then sprayed onto surfaces (also referred to as hydro seeding) for immediate erosion protection. Without combining or covering seeds with mulch seeds will be susceptible to erosion until vegetation has sufficiently established. Supplemental irrigation may be required to establish vegetation. Scarifying surfaces prior to seed application can increase its effectiveness. <u>Reference:</u> CASQA EC-4
Soil Binders	Spraying a liquid compound to disturbed soils to bind and stabilize the soil surface (forming a crust). This process reduces the potential for wind and water erosion. Examples include: guar, psyllium, starch, gypsum, pitch and rosin emulsion, polymers, and acrylates. Soil binders are effective for temporary stabilization of slopes, stockpiles, and other disturbed areas. Soil binders need time to cure and should not be applied less than 24 hours before predicted precipitation. The specific soil binder selected depends on the type of soil. Soil binders must be non-toxic and environmentally benign. Soil binders will need to be reapplied as needed based on the specific soil binder and visual inspection. Soil binders are much less effective in areas that receive traffic. <u>Reference:</u> CASQA EC-5
Mulching	Covering disturbed soils with a fibrous wood, straw, or similar material to protect the bare soil from rainfall impact erosion while reducing runoff by encouraging infiltration / evaporation. Mulching is effective for temporary stabilization of slopes, stock piles, and other disturbed soils. Mulch materials can be combined with water then sprayed onto surfaces (also referred to as hydraulic mulch) for increased wind erosion protection. Typically, mulch must be reapplied every 6 to 12 months. Soil roughening prior to mulch application can increase its effectiveness. <u>Reference:</u> CASQA EC-3, EC-6, EC-8
Geotextiles and Mats	Covering disturbed soils with a natural or synthetic blanket or mat. This process greatly reduces the potential for wind and water erosion. Some rolls and mats physically hold the soil in place. Example include: geotextiles, plastic covers, rolled erosion control blankets / mats, straw / mulch blanket, coconut fiber blanket, and plastic netting. Geotextiles and mats are effective for temporary stabilization of steep slopes with high erosion potential, stockpiles, and channels that will be vegetated. Geotextiles and mats are more expensive than other erosion control BMPs. Materials may need to be removed prior to final stabilization. Mats / blankets are most effective when in direct contact with the soil; do not roughen soil or leave significant rocks / roots. Mats / blankets typically require an anchoring mechanism to hold them in place. Mats / blankets should be laid parallel to the

**Physical / Vegetative Stabilization:**

Covering the soil with a protective layer that can help to hold soil in place and/or reduce the erosive impact of rain drops or runoff.

Type	Description
	<p>direction of flow. Mats / blankets should allow water to flow on top of them and not below which would cause the soil to wash out. <u>Reference:</u> CASQA EC-7</p> 
Non-Vegetative Stabilization	<p>Covering disturbed soils with a non-vegetative material to protect the bare soil from rainfall impact erosion while reducing runoff by encouraging infiltration / evaporation. Examples include: decomposed granite, gravel, and rock slope protection. Other non-vegetative stabilization is effective for temporary and permanent stabilization of areas with heavy vehicular or pedestrian traffic or areas where a vegetative cover is infeasible. Other non-vegetative stabilization is intended to be used in combination with additional erosion control and sediment control BMPs. If used for permanent stabilization, periodic inspection and maintenance may be required. Material should be selected based on the slope and use of the area. <u>Reference:</u> CASQA EC-16 and Caltrans Standard Specifications May 2006 Section 72-2.</p>

**Table 4: Concentrated Flow Erosion Control BMPs**

<b>Concentrated Flow Erosion Control:</b> Reducing concentrated flow velocity or protecting concentrated flow paths to prevent erosion.	
Type	Description
Dikes, Swales, and Slope Drains	<p>Grading and compacting soil or installing pipe to control / divert / direct runoff. Dikes, swales, and slope drains can be combined to safely convey runoff down a slope, direct runoff to a stabilized channel, reduce potential for flooding, direct runoff to sediment traps / basins. Dikes, swales, and pipes that are used to direct runoff must be properly sized based on the specific application. Typically, slope drains require energy dissipation. Monitor swales and dikes for erosion or accumulation of sediment or debris. Swale and dike slopes should be 2:1 or less. Use vegetation, geotextiles, or mats to stabilize swales. Temporary devices must be removed. <u>Reference:</u> CASQA EC-9, EC-11</p> 
Energy Dissipation	<p>Placing rock, riprap, or similar material to reduce erosion from concentrated, high velocity flows. Energy dissipation is effective at pipe outlets, channel linings, and transitions from stabilized to un-stabilized conveyances. Line the area with filter fabric prior to placing rock or riprap. Accumulated sediment may be difficult to remove from energy dissipation area. For pipe outfalls the size of the energy dissipation area will increase with flow rate and/or pipe size. Temporary devices must be removed. <u>Reference:</u> CASQA EC-10, EC-12</p>
Soil Roughening	<p>Mechanically roughening soil (track walking or imprinting) to prepare soil for additional BMPs or create small terraces to break up sheet flow. Soil roughening can be applied to slopes, stockpiles, basins, and other disturbed soil areas. Soil roughening is intended to be used in combination with additional erosion control and sediment control BMPs. A common implementation method is to drive heavy equipment with its treads parallel to the contours of the slope. For long slopes additional terracing may be required. <u>Reference:</u> CASQA EC-15</p>

### 3.4.2 Sediment Control (SE)

Sediment control BMPs focus on preventing eroded soil from being discharged from the construction site. The demand placed on sediment control BMPs is dependent upon the effectiveness of the erosion control BMPs. More robust erosion controls will reduce the need for sediment controls and vice versa. However, a combination of both erosion control and sediment control is required to effectively reduce sediment discharge. This section highlights the most common sediment control BMPs for construction projects.

At a minimum, sediment controls are to be used as a supplement to erosion prevention for keeping sediment on-site during construction, and slope stabilization must be used on all active slopes during rain events regardless of the season and on all inactive slopes during the rainy season and during rain events in the dry season.

**Table 5: Perimeter / Linear Control BMPs**

<b>Perimeter / Linear Controls:</b> Establishing linear BMPs to reduce the potential for sediment discharge across a slope, at the project's perimeter, or to Environmentally Sensitive Areas (ESAs)	
<b>Type</b>	<b>Description</b>
Linear Sediment Controls	Installing sediment control BMPs along contours to reduce runoff velocity, remove sediment, and discourage rill erosion. Examples include: fiber rolls, sand / gravel bags, and straw bales. Linear sediment controls are effective parallel to contours on the face of slopes and at the top and toe of slopes. Linear sediment controls are typically implemented temporarily until slope is stabilized. Straw bales must be anchored and should not be used on the face of slopes. Fiber rolls must be trenched and staked during installation. For Risk Level / LUP Type 2 and 3 projects, the CGP specifies minimum uninterrupted sheet flow lengths for slopes to be 20 feet for slopes under 25%, 15 feet for slopes 25-50%, and 10 feet for slopes over 50%. <u>Reference:</u> CASQA SE-5, SE-6, SE-8, SE-9, SE-14
Perimeter Controls	Installing a barrier to prevent sediment discharges by controlling run-on and run-off around the perimeter of the construction site or limits of grading. Examples include: silt fence, fiber rolls, sand / gravel bags, and straw bales. Perimeter controls are effective when implemented around the perimeter of the construction site or limits of grading. Perimeter controls are not effective when used in a concentrated flow path. Silt fence and fiber rolls require proper installation which includes trenching and staking. Typically, perimeter controls should be installed prior to grading and remain functional until final stabilization is achieved. Maintenance of perimeter controls must be performed as needed. Perimeter controls are a minimum BMP requirement of the CGP. <u>Reference:</u> CASQA SE-1, SE-5, SE-6, SE-8, SE-14



**Perimeter / Linear Controls:**


Establishing linear BMPs to reduce the potential for sediment discharge across a slope, at the project's perimeter, or to Environmentally Sensitive Areas (ESAs)

Type	Description
	


**Table 6: Storm Drain Inlet Protection BMPs**

**Storm Drain Inlet Protection:**


Ponding and/or filtering stormwater to remove pollutants (primarily sediment) from entering the storm drain system.

Type	Description
Storm Drain Inlet Protection	<p>Filtering or ponding of stormwater before it enters a storm drain inlet to reduce the amount of sediment that discharges. Storm drain inlet protection should be implemented at every storm drain inlet that receives runoff from active construction areas. Ponding of sediment laden stormwater can provide the best results if the ponding capacity is appropriate for the tributary drainage area. Ponding may be limited by street traffic constraints. Other sediment controls such as check dams should be used upstream to reduce the amount of sediment that reaches the storm drain inlet protection. After a storm sediment that has settled must be cleaned up. <u>Reference:</u> CASQA SE-10, SE-14.</p> 

**Table 7: Sediment Capture BMPs**

<b>Sediment Capture:</b> Capturing sediment in channelized stormwater to reduce sediment discharge.	
Type	Description
Sediment Trap / Basin	<p>Constructing a temporary containment area to detain runoff to allow for deposition of sediment prior to stormwater discharge. Sediments traps / basins are effective when implemented within the downstream section of a construction site or at discharge points. Sediment traps can be effectively implemented throughout a large construction site. Sediment basins can efficiently be developed at locations where future post-construction basins will be utilized. Sediment traps should only be used for tributary drainage areas below 5 acres. Sediment basins should be used for tributary drainage areas between 5 and 75 acres. Sediment traps / basins can be large and may not be suitable for small construction projects. Sediment traps / basins should be sized by a Registered Civil Engineer to ensure they have sufficient capacity. Sediment traps / basins should not hold water for longer than 72 hours. Local agencies may have stricter vector control and child safety fence requirements. Typically dikes, swales, or piping are required to direct runoff to traps / basins. <u>Reference:</u> CASQA SE-2, SE-3</p> 
Check Dams	<p>Constructing small barriers along a swale or channel to reduce channel erosion and allow for deposition of sediment. Check dams are effective for sediment control within un-stabilized concentrated flow paths on the construction site such as swales, ditches, or channels. Typically, check dams are constructed of rock, sand / gravel bags or fiber rolls. Effective check dams will collect sediment behind each check dam which must be removed regularly to maintain the performance of the check dam. Check dams should not be constructed with straw bales or silt fence. <u>Reference:</u> CASQA SE-4, SE-5, SE-6, SE-8</p>

**Table 8: Street Cleaning BMPs**

<b>Street Cleaning:</b> Cleaning streets and other paved areas that have collected sediment and/or debris to prevent it from entering the storm drain system.	
Type	Description
Street Sweeping and Vacuuming	<p>Cleaning sediment from streets and roadways to reduce the potential discharge to storm drain inlets or receiving waters. Sweeping and vacuuming should be implemented on all paved areas within and adjacent to construction sites. Inspect and maintain areas subject to sediment tracking on a daily basis. Utilize methods that collect and remove sediment instead of methods that simply spread the sediment around. <u>Reference:</u> CASQA SE-7</p> 

### 3.4.3 Wind Erosion Control (WE)

Wind Erosion Control is any practice that protects the soil surface and prevents the soil particles from being detached by wind. Wind Erosion Control is also referred to as dust control.

**Table 9: Wind Erosion Control BMPs**

<b>Wind Erosion Control:</b> Covering or wetting exposed soil to prevent erosion by-way-of wind.	
Type	Description
Wind Erosion Control	<p>Preventing wind from causing erosion or dust. Examples include: wet suppression, chemical dust suppression, covering exposed sediment, and minimizing disturbed area through scheduling. Wind erosion control should be implemented at every construction project throughout all disturbed areas. Wet suppression is sufficient for most projects if implemented regularly. Other requirements (Clean Air Act, Air Quality Management Districts, etc.) typically address wind erosion control. Chemical dust suppression should only be implemented when it will have no negative environmental impacts. <u>Reference:</u> CASQA WE-1</p>



**Wind Erosion Control:**

Covering or wetting exposed soil to prevent erosion by-way-of wind.

Type	Description
	

### 3.4.4 Tracking Control (TC)

Tracking Control is any practice that prevents or reduces the amount of sediment that is tracked to paved areas from unpaved areas by vehicles or construction equipment.


**Table 10: Tracking Control BMPs**


<b>Tracking Control:</b> Reducing the amount of sediment that leaves the site from vehicles and construction equipment.	
Type	Description
Stabilized Construction Entrance / Exit	<p>Constructing a stabilized surface where sediment can be dislodged from vehicle and equipment tires before being tracked onto off-site paved roads. Stabilized construction entrance / exits should be implemented at every construction project to prevent sediment tracking from the site. Stabilized construction entrances / exits should be 50 feet or more in length. The most common method is to place 3-6 inch rock at least 1 foot high over filter fabric. Additional rock may need to be added as sediment accumulates. Rumble plates can be added for additional sediment removal. Tracking controls are a minimum BMP requirement of the CGP. <u>Reference:</u> CASQA TC-1</p> 

### 3.4.5 Non-Stormwater Management (NS)

Non-stormwater management is any practice that limits or reduces potential pollutants at their source before they are exposed to stormwater. Non-stormwater management typically involves day-to-day operations of the construction site and is usually under the control of the contractor. Non-stormwater management is often referred to as good housekeeping practices.

**Table 11: Non-Stormwater Management BMPs**


<b>Non-Stormwater Management:</b> Preventing construction related pollutants from contacting stormwater.	
Type	Description
Vehicle and Equipment Pollution Prevention	<p>Preventing, containing, and disposing of pollutants from cleaning, fueling, and maintaining vehicles and equipment. Vehicle and equipment pollution prevention should occur at every construction project that cleans, fuels, or maintains vehicles or equipment. All cleaning, fueling, and maintenance performed on the site should occur in an area designated for the activity and at least 50 feet away from downstream storm drain facilities. Avoid “topping-off” of fuel tanks. Keep absorbent spill cleanup materials available; dispose of used materials properly. Train employees and subcontractors proper spill prevention, control, and cleanup procedures. Use drip pans or a secondary containment area for fueling and maintenance. Inspect for equipment leaks daily. Prevent wash water from entering storm drain system. <u>Reference:</u> CASQA NS-8, NS-9, NS-10</p> 
Dewatering Operations	<p>Managing and/or treating the discharge of accumulated stormwater or non-stormwater (groundwater or water used during construction activities) to prevent unauthorized discharge. Dewatering operations should be implemented for any discharge of accumulated stormwater or non-stormwater. Primary concern with accumulated stormwater is sediment. Common methods for reducing sediment from a discharge are sediment traps / basins, weir tanks, dewatering tanks, filter bags / socks, media / cartridge filters. Risk Level and LUP Type 2 and 3 projects must sample accumulated stormwater discharge. As an alternative, accumulated stormwater can be pumped to another area on the site for infiltration to eliminate the need to discharge. Non-stormwater discharges typically require a separate discharge permit. An example of a dewatering filter bag for stormwater dewatering discharges is provided below. <u>Reference:</u></p>

Non-Stormwater Management: Preventing construction related pollutants from contacting stormwater.	
Type	Description
	<p>CASQA NS-2</p> 
Paving and Grinding Operations	<p>Managing paving and grinding operations to reduce the potential for pollutant discharge. Paving and grinding operations should be implemented at every construction project that involves paving, resurfacing, or saw cutting. Avoid paving operations when rain is forecasted. Grindings, saw-cutting slurry, and waste / debris must be collected and recycled or properly disposed of; none of this should be allowed to enter the storm drain system. Do not apply seal coat, tack coat, slurry seal, or fog seal if rain is forecasted within the curing period.  <u>Reference:</u> CASQA NS-3</p>

### 3.4.6 Waste Management and Materials Pollution Control (WM)


Waste management and materials pollution control are practices that limit or reduce or prevent the contamination of stormwater by construction wastes and materials. Potential wastes include solid, sanitary, concrete, hazardous, and equipment-related. Waste management and materials pollution control is also often referred to as good housekeeping practices.

**Table 12: Materials Pollution Management BMPs**

<b>Materials Pollution Management:</b> Handling, storing, and using construction materials with adequate precautions and control measures to reduce or prevent the contamination of stormwater.	
Type	Description
Stockpile Management	<p>Covering or stabilizing stockpiles and providing sediment controls around the perimeter of stockpiles. Stockpile management should occur at every required stockpile within a construction project. Required stockpiles include those of soil, sand, PCC or AC rubble, cold mix asphalt, aggregate base or sub base, and treated wood. Stockpile management is effective against stormwater and wind erosion. All stockpiles can be covered with plastic or similar material. Alternatively, soil stockpiles may be protected with an erosion control (stabilization) practice. Raw materials such as cold mix treated wood should also be placed on top of plastic. Typical sediment controls placed around the perimeter of stockpiles are fiber rolls, silt fence, and sand / gravel bags. All stockpiles should be placed at least 50 feet away from downstream storm drain facilities. Reference: CASQA WM-3, SE-1, SE-5, SE-6, SE-8</p> 

**Materials Pollution Management:**

Handling, storing, and using construction materials with adequate precautions and control measures to reduce or prevent the contamination of stormwater.

Type	Description
Material Delivery, Storage, and Use	<p>Preventing and containing pollutant discharges from materials that are delivered, stored, and used on-site. Materials of concern include: petroleum products, asphalt, concrete, paints, solvents, soil stabilizers and binders, pesticides, herbicides, fertilizers, detergents, and other hazardous chemicals. Material delivery, storage, and use management should occur at every location of a construction project where materials of concern are delivered, stored, or used. All material delivery and storage should occur in an area designated for the activity and at least 50 feet away from downstream storm drain facilities. Minimize the quantities of materials of concern. Store materials in an enclosed area with secondary containment. Keep absorbent spill cleanup materials available; dispose of used materials properly. Train employees and subcontractors on proper spill prevention, control, and cleanup procedures. Avoid over-application of soil binders, pesticides, herbicides, and fertilizers. <u>Reference:</u> CASQA WM-1, WM-2, WM-4</p> 

**Table 13: Waste Management BMPs**

**Waste Management:**

Handling, storing, and disposing of construction wastes with adequate precautions and control measures to reduce or prevent the contamination of stormwater.

Type	Description
Spill Prevention and Control	<p>Preventing, controlling, and cleaning up spills to reduce pollutant discharges from construction activities. Spill prevention and control should occur at every construction project that uses petroleum products, asphalt, concrete, paints, solvents, soil stabilizers and binders, pesticides, herbicides, fertilizers, detergents, or other hazardous chemicals. Train employees and subcontractors proper spill prevention, control, and cleanup procedures. Do not bury or wash spills away with water. Keep absorbent spill cleanup materials available; dispose of used materials properly. Report significant spills (those that cannot be contained by personnel in the immediate vicinity) to a local agency, such as the Fire Department, for cleanup assistance. Additional agencies may need to be contacted in the event of a significant spill. <u>Reference:</u> CASQA WM-4</p>
Solid Waste Management	<p>Containing and disposing of debris and non-hazardous waste to prevent it from being discharged to the storm drain system. Solid waste management and materials pollution control should occur throughout every construction project for non-hazardous</p>



**Waste Management:**


Handling, storing, and disposing of construction wastes with adequate precautions and control measures to reduce or prevent the contamination of stormwater.

Type	Description
	construction waste and scraps, trash from employees or subcontractors, and waste generated from demolition. Waste should be collected and contained in designated areas. Avoid using waste containers that do not have lids or are not watertight. Collect and dispose of loose trash and waste weekly. <u>Reference:</u> CASQA WM-5
Hazardous Waste Management	Containing and disposing of hazardous waste to prevent it from being discharged to the storm drain system. Hazardous waste management and materials pollution control should occur at every construction project that uses petroleum products, asphalt, concrete, paints, solvents, pesticides, herbicides, fertilizers, wood preservatives, or other hazardous chemicals. Train employees and subcontractors proper hazardous waste management and materials pollution control procedures. Store hazardous wastes in an enclosed area with secondary containment. Do not allow hazardous wastes to infiltrate at the site. Avoid overfilling hazardous waste containers. Hazardous wastes should be handled as required by Title 22. For projects that require demolition, lead-, cadmium-, or chromium-based paints, asbestos, and PCBs may exist and will require special treatment. All hazardous waste storage should occur in a designated area at least 50 feet away from downstream storm drain facilities. Hazardous wastes should be disposed of by a licensed hazardous waste transporter. <u>Reference:</u> CASQA WM-6
Concrete Waste Management	Containing and disposing of concrete waste to prevent it from being discharged to the storm drain system. Concrete Waste Management should occur at every construction project where concrete is poured, saw cut, grinded, or demolished. Inform all employees and subcontractors that washout from concrete trucks and concrete waste should be collected in concrete washout. Concrete washouts should be watertight and prevent any concrete waste from being able to discharge to the storm drain system. Avoid allowing concrete washout to become greater than 75% full. Concrete demolition debris may be stored by following the stockpile management BMP. <u>Reference:</u> CASQA WM-8, WM-3



**Waste Management:**

Handling, storing, and disposing of construction wastes with adequate precautions and control measures to reduce or prevent the contamination of stormwater.

Type	Description
	
Sanitary Waste Management	<p>Containing and disposing of sanitary waste to prevent it from being discharged to the storm drain system. Sanitary Waste Management should occur at every construction project that contains portable or permanent sanitary facilities. Avoid placing portable sanitary facilities in a concentrated flow path, such as a gutter. Use secondary containment under portable sanitary facilities. Contract a licensed sanitary and septic waste hauler to maintain portable sanitary facilities. All portable sanitary facilities should be located at least 50 feet away from downstream storm drain facilities. If a spill occurs, follow federal, state, and local regulations for containment and cleanup. <u>Reference:</u> CASQA WM-9</p>

### 3.4.7 Inspection and Maintenance Frequency Summary

	Santa Ana Region Criteria (only one need apply)			Inspection Frequency	
				Wet Season (Oct. – Apr.)	Dry Season (May – Sep.)
High	All sites 20 acres and larger	Sites over 1 acre tributary to Clean Water Act Section 303(d) waters listed for sediment or turbidity impairment.	Sites tributary to and within 500 feet of an Area of Special Biological Significance (ASBS).	Monthly	Conduct at a frequency to ensure that sediment and other pollutants are properly controlled and that unauthorized, non-stormwater discharges are prevented.
Medium	All sites between 5 to 20 acres where none of the other above criteria apply.			Twice during wet season	
Low	All sites less than 5 acres where none of the other above criteria applies.			Once during wet season	

When BMPs or BMP maintenance is deemed inadequate or out of compliance, an inspection frequency of once every week will be maintained until BMPs and BMP maintenance are brought into compliance (regardless of site prioritization).

	San Diego Region Criteria (only one need apply)			Inspection Frequency	
				Wet Season (Oct. – Apr.)	Dry Season (May – Sep.)
All sites 30 acres or more in size with rough grading or active slopes occurring during wet season.	All sites one acre or more, and tributary to a CWA section 303(d) water body segment impaired for sediment or within or directly adjacent to, or discharging directly to, the ocean or a receiving water within an ESA.	Other sites determined by the Copermittees or the Regional Board as a significant threat to water quality.		Biweekly (Once every two weeks)	As needed during the dry season. Sites that meet any of the criteria for biweekly inspections during the wet season must be inspected at least once in August or September each year.
All sites one acre or larger where none of the above criteria apply.				Monthly	
All sites less than one acre where none of the above criteria apply.				As needed to ensure compliance with ordinances and MS4 Permit.	

Reinspection frequencies must be determined by each Copermittee based upon the severity of deficiencies, the nature of the construction activity, and the characteristics of soils and receiving water quality.



## 4 References

Web links to permits listed in Table 1.

- National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities. Order number 2009-0009-DWQ. NPDES number CAS000002.  
[www.waterboards.ca.gov/water\\_issues/programs/stormwater/construction.shtml](http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml)
- Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and The Incorporated cities of Orange County within the Santa Ana Region. Order number R8-2009-0030. NPDES number CAS618030.  
[www.waterboards.ca.gov/rwqcb8/water\\_issues/programs/stormwater/oc\\_permit.shtml](http://www.waterboards.ca.gov/rwqcb8/water_issues/programs/stormwater/oc_permit.shtml)
- Waste Discharge Requirements for Discharges of Runoff from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watershed of the County of Orange, The Incorporated cities of Orange County, and The Orange County Flood Control District Within the San Diego Region. Order number R9-2009-0002 NPDES number CAS0108740.  
[www.waterboards.ca.gov/rwqcb9/water\\_issues/programs/stormwater/oc\\_stormwater.shtml](http://www.waterboards.ca.gov/rwqcb9/water_issues/programs/stormwater/oc_stormwater.shtml)
- Statewide General Waste Discharge Requirements (WDRs) for Discharges to Land with a Low Threat to Water Quality. Order number 2003-0003-DWQ.  
[www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/water\\_quality/2003/wqo/wqo2003-0003.pdf](http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf)
- General Discharge Permit for Discharges to Surface Waters of Groundwater Resulting from Groundwater Dewatering Operations and/or Groundwater Cleanup Activities at Sites within the San Diego Creek / Newport Bay Watershed Polluted by Petroleum Hydrocarbons, Solvents, Metals and/or Salts. Order number R8-2007-0041. NPDES number CAG918002.  
[www.waterboards.ca.gov/santaana/board\\_decisions/adopted\\_orders/orders/2007/07\\_041\\_gen\\_wdr\\_san\\_diego\\_crk\\_11302007.pdf](http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2007/07_041_gen_wdr_san_diego_crk_11302007.pdf)
- Discharges of Extracted Groundwater to Surface Waters Except for San Diego Bay. Order number R9-2008-0002. NPDES number CAG919002.  
[www.waterboards.ca.gov/sandiego/board\\_decisions/adopted\\_orders/2008/r9-2008-0002.pdf](http://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2008/r9-2008-0002.pdf)
- General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant (De Minimus) Threat to Water Quality. Order number R8-2009-0003. NPDES number CAG998001.  
[www.waterboards.ca.gov/santaana/board\\_decisions/adopted\\_orders/orders/2009/09\\_003\\_deminimus\\_permit\\_wdr.pdf](http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2009/09_003_deminimus_permit_wdr.pdf)
- General NPDES Waste Discharge Requirements for Discharges of Hydrostatic Test Water and Potable Water to Surface Waters and Storm Drains or Other Conveyance Systems within the San Diego Region. Order number R9-2010-0003. NPDES number CAG679011.  
[www.waterboards.ca.gov/sandiego/board\\_decisions/adopted\\_orders/2010/r9-2010-0003.pdf](http://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2010/r9-2010-0003.pdf)

## 5 Glossary

**ASBS** – Area of Special Biological Significance. The Water Quality Control Plan for Ocean Waters of California (California Ocean Plan) designates 35 Areas of Special Biological Significance, two of which lie within the Santa Ana Regional Board jurisdiction:

- Newport Beach Marine Life Refuge (HU801.110)
- Irvine Coast Marine Life Refuge (HU801.110)

**BMP** – Best Management Practices (BMPs) are activities, practices, procedures, or facilities implemented to avoid, prevent, or reduce pollution of the stormwater system and receiving waters.

**Common Plan of Development** – Generally a contiguous area where multiple, distinct construction activities may be taking place at different times under one plan. A plan is generally defined as any piece of documentation or physical demarcation that indicates that construction activities may occur on a common plot. Such documentation could consist of a tract map, parcel map, demolition plans, grading plans or contract documents. Any of these documents could delineate the boundaries of a common plan area. However, broad planning documents, such as land use master plans, conceptual master plans, or broad-based CEQA or NEPA documents that identify potential projects for an agency or facility are not considered common plans of development.

**Construction General Permit (CGP)** – A National Pollution Discharge Elimination System (NPDES) permit (No. CAS000002) issued by the State Water Resources Control Board for the discharge of stormwater associated with construction and land disturbance activities of one acre or more (Order No. 2009-0009-DWQ).

**Construction Project** – any site for which building or grading permits are issued and where an activity results in the disturbance of soil such as soil movement, grading, excavation, clearing, road construction, structure construction, or structure demolition; and sites where uncovered storage of materials and wastes such as dirt, sand, or fertilizer occurs; or exterior mixing of cementaceous products such as concrete, mortar, or stucco will occur.

**Demolition** – an activity involving the demolishing or the destruction of a structure, facilities, or associated appurtenances.

**Discharge** – the release spill, leak, pump, flow, escape, leaching, dumping or disposal of any liquid, semi-solid, or solid substance.

**Environmentally Sensitive Area (ESA)** – includes but is not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated in the Ocean Plan as Areas of Special Biological Significance (ASBS) or by the State Water Resources Control Board (Water Quality Control Plan and amendments); water bodies designated with the RARE beneficial use by the State Water Resources Control Board (Water Quality Control Plan and amendments); areas designated as preserves or equivalent under the Natural Community Conservation Planning Program; and any areas designated as Critical Aquatic Resources (CARS) or other equivalent environmentally sensitive areas which have been identified by the County or city.

**Erosion** – the wearing away of the ground surface as a result of the movement of wind, water, and/or ice

**Erosion Control** – the activity of reducing or eliminating erosion by using a combination of Best Management Practices to protect adjacent private property, watercourses, public facilities, and receiving waters from an abnormal deposition of sediment or dust.

**Erosion Control Plan** – A plan (including drawings, specifications, or other requirements) detailing the methods of implementing an erosion control system.

**Municipal Separate Storm Sewer System (MS4)** – the street gutter, channel, storm drain, catch basin, constructed drain, lined diversion structure, wash area, inlet, outlet, or other facility, which is part of or tributary to the County-wide stormwater runoff system and owned, operated, maintained, or controlled by the County / city, and used for the purpose of collecting, storing, transporting, or disposing of stormwater.

**NPDES Permit** – NPDES is an acronym for National Pollution Discharge Elimination System. NPDES is the national program for administering and regulating Sections 307, 318, 402 and 405 of the Clean Water Act (CWA).

**Non-stormwater** – any runoff or discharge not entirely composed of stormwater.

**Notice of Intent (NOI)** – an application submitted by the owner / operator of a project that constitutes his intent to be authorized by an NPDES permit issued for stormwater discharges associated with the construction activity indicated.

**Notice of Termination** – a form to discontinue coverage under an NPDES general permit for stormwater discharges associated with industrial activity and stormwater discharges associated with construction activity.

**Pollutant** – any liquid, solid or semi-solid substances that will interfere with or adversely affect the beneficial uses of the receiving waters, flora, or fauna of the state. A more detailed definition is included in the Water Quality Ordinance. Generally, pollutants can include such items as:

- Artificial materials
- Household wastes
- Metals and Non-metals
- Petroleum and related hydrocarbons
- Animal wastes
- Substances having a pH less than 6.5 or greater than 8.6, or unusual coloration, turbidity or odor
- Waste materials, sediment, and wastewater generated by construction sites and construction activities
- Pollutants defined by the Federal Clean Water Act
- Other constituents or materials, including but not limited to pesticides, herbicides, fertilizers, fecal coliform, fecal streptococcus or enterococcus, or eroded soils, sediment and particulate materials.

**Post-Construction BMPs** – Structural and non-structural controls which detain, retain, or filter the release of pollutants to receiving waters after construction is complete and final stabilization is attained.

**Qualified SWPPP Developer (QSD)** – Individual who is authorized per the requirements of Order No. 2009-0009-DWQ to develop and revise SWPPP's.

**Qualified SWPPP Practitioner (QSP)** – Individual assigned responsibility by the owner for non-stormwater and stormwater visual observations, sampling and analysis, and responsibility to ensure full compliance with the Construction General Permit and implementation of all elements of the SWPPP, including the preparation of the annual compliance evaluation and the elimination of all unauthorized discharges.

**RARE** – Rare, Threatened, or Endangered Species (RARE) Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.

**Receiving Water** – A river, lake, ocean, stream, or other watercourse identified in the Basin Plan into which waters may be discharged.

**Regional Board** – Regional Water Quality Control Boards administer water quality requirements within a watershed region. There are nine Regional Boards under the SWRCB. The SWRCB is one of five branches of the California Environmental Protection Agency The San Diego Regional Board and the Santa Ana Regional Board have jurisdiction in Orange County.

**Runoff** – Water originating from rainfall, melted snow, and other sources (e.g., sprinkler irrigation) that flows over the land surface to receiving waters.

**Run-on** – Off site stormwater surface flow which enters your site.

**Scour** – The erosive and digging action in a watercourse caused by flowing water.

**Secondary Containment** – Structures, usually dikes, berms, or large containers, surrounding tanks or other storage containers, designed to catch spilled material to prevent it from being discharged.

**Sediment** – Solid particulate matter, both mineral and organic that comes from the weathering of rock.

**Sedimentation** – The process of depositing soil particles, clays, sands, or other sediments that were picked up by runoff.

**Sheet Flow** – Flow of water that occurs overland in areas where there are no defined channels where the water spreads out over a large area at a uniform depth.

**Storm Drains** – Above- and below-ground structures for transporting stormwater to streams or outfall for flood control purposes.

**Stormwater** – Urban runoff and snowmelt runoff consisting only of those discharges, which originate from precipitation events.

**Stormwater Pollution Prevention Plan (SWPPP)** – Document required by the General Construction Permit to be developed and implemented by construction sites with 1 acre or greater of soil disturbance, or less than 1 acre but part of a greater common plan of development. The SWPPP emphasizes the use of appropriately selected, correctly installed, and maintained

pollution reduction BMPs. This approach provides the flexibility necessary to establish BMPs that can effectively address source control of pollutants during changing construction activities.

**State Water Resources Control Board (SWRCB)** – California agency that implements and enforces water quality and NPDES permit requirements and oversees the Regional Boards.

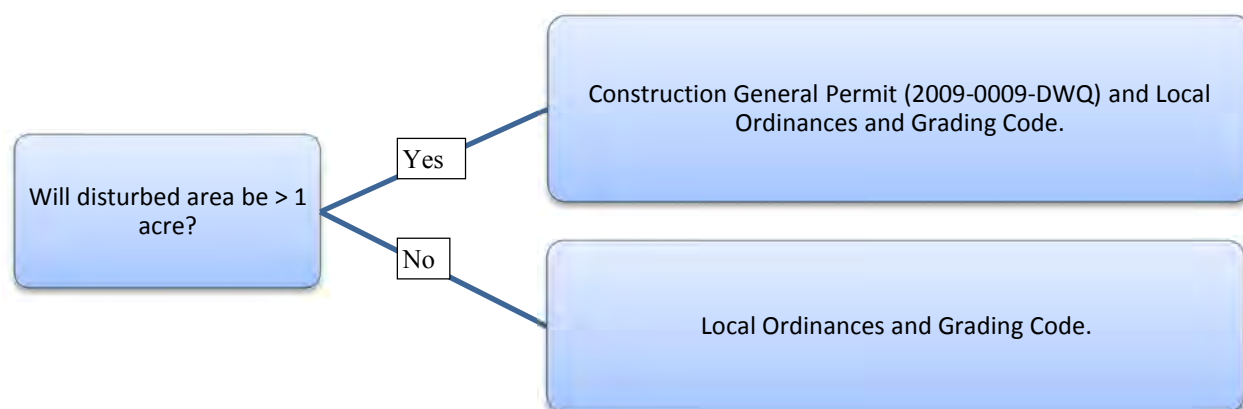
**Waste Discharge Identification (WDID) Number** – an identification number assigned by the State Water Resources Control Board upon receipt of a complete NOI.

## Appendix A: Permit Determination Flowcharts

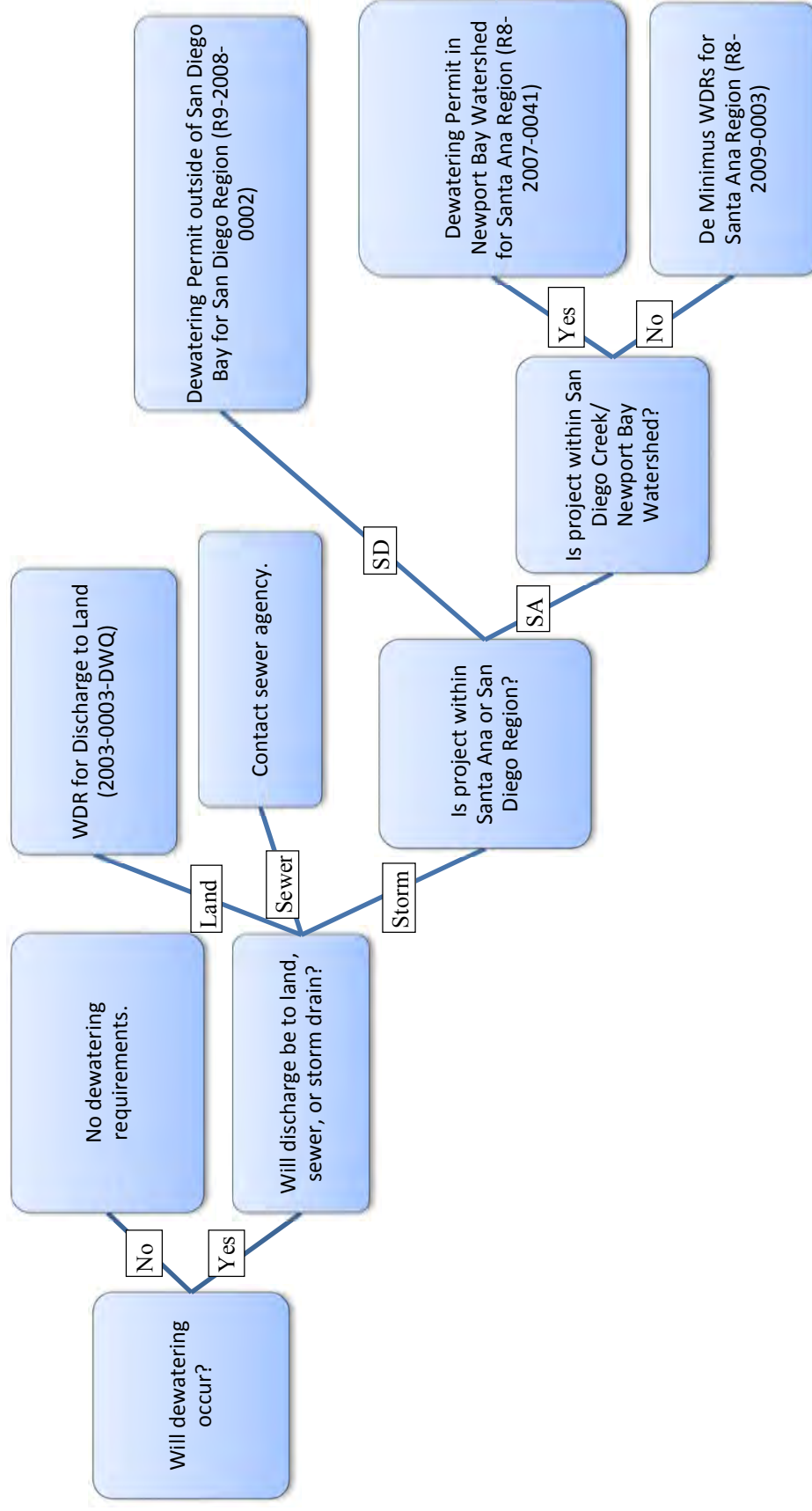
This appendix includes flowcharts for project owners or developers to quickly determine which permits are required for a particular project and a short description of each permit. For each project, follow the questions in each of the three flow charts to determine construction permitting and site management requirements. For example if a project is less than an acre, but requires dewatering, the reader should quickly understand that the CGP does not apply to them, but that they need to read more about dewatering permits.

To use this appendix, follow Steps 1-3 for each project. After following the steps, refer to Sections 2.1 and 2.2 for details on the specific permits and ordinances that may affect your project.

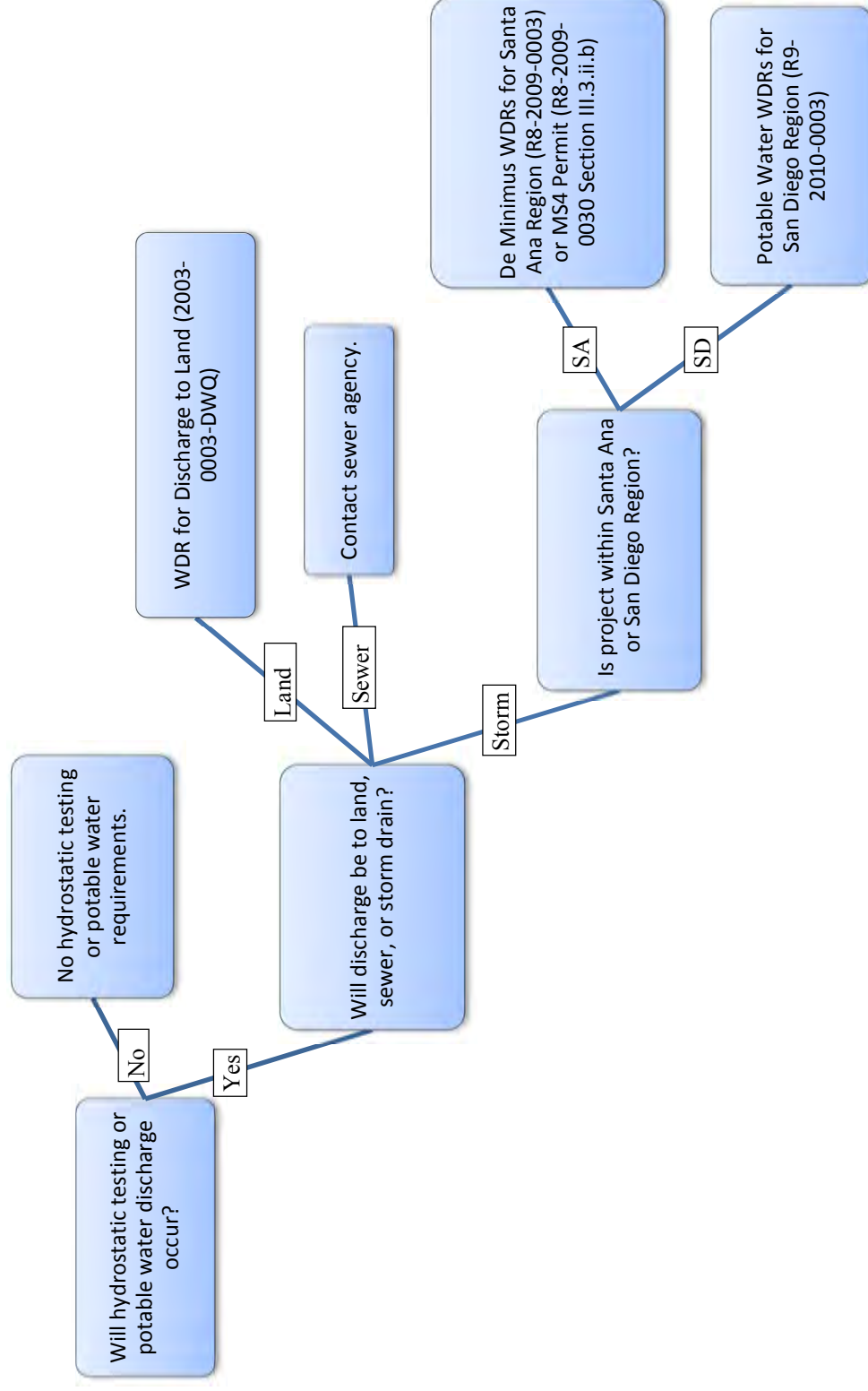
### Step 1: Project Size



## Step 2: Dewatering



### Step 3: Hydrostatic Testing or Potable Discharge





## Appendix B: Permit Descriptions

### 1. Construction General Permit (2009-0009-DWQ / CAS000002)

Note: This Section applies only to projects with greater than or equal to one acre of disturbed area.

In 2009, the State Water Resources Control Board (SWRCB) adopted Order No., 2009-0009-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, NPDES No. CAS000002 (Construction General Permit or CGP).

The CGP requires that construction sites with one acre or greater of soil disturbance or less than one acre but part of a greater common plan of development apply for coverage for discharges under the CGP by submitting Permit Registration Documents (PRD) for coverage, developing a stormwater pollution prevention plan (SWPPP), implementing BMPs to address construction site pollutants and complying with the monitoring requirements of the CGP.

The County's and cities' construction site requirements are coordinated with, but separate from the CGP. The CGP applies regardless of whether a construction site discharges directly to receiving waters or to a municipal storm drain system. Inspections of construction sites by County / cities (for MS4 permit compliance) or by Regional Board staff (for CGP compliance) are separate and carry different enforcement actions / mechanisms.

The following briefly summarizes the process for a construction project that is subject to the CGP:

- The project owner, Legally Responsible Person (LRP), is responsible for obtaining CGP coverage. Permit coverage is obtained by preparing and certifying the Permit Registration Documents (PRDs). PRDs must be uploaded and certified by the LRP in the SWRCB Storm Water Multi Application Report Tracking System (SMARTS, <https://smarts.waterboards.ca.gov/>).
- Each project subject to the CGP requires the services of a Qualified SWPPP Developer (QSD) and a Qualified SWPPP Practitioner (QSP). These titles are defined in the CGP, Section VII.
- Each year an Annual Report must be submitted and certified in SMARTS. The reporting period is from August 1 to June 30 and Annual Reports are due on September 1.
- After construction is completed and the site fully complies with the final stabilization requirements of the CGP, the owner must terminate permit coverage through SMARTS.

### 2. MS4 Permit for Santa Ana Region (R8-2009-0030 / CAS618030)

In 2009, the Santa Ana Regional Board issued its fourth term MS4 permit, Order No. R8-2009-0030. This permit regulates stormwater discharge from municipal storm drain systems. The permit is issued to the County of Orange and the cities within the Santa Ana Region boundary. The goal of the MS4 permit is to protect water quality by requiring the County and cities (collectively, the Co-Permittees) to implement a program to eliminate significant pollutant discharges from construction activities by requiring the implementation of appropriate Best

Management Practices (BMPs) on all construction sites. BMPs are activities, practices, procedures, or devices implemented to avoid, prevent or reduce pollution of the municipal storm drain system and receiving waters.

### **3. MS4 Permit for San Diego Region (R9-2009-0002 / CAS0108740)**

In 2009, the San Diego Regional Board issued its fourth term NPDES permit, Order No. R9-2009-0002. This permit regulates stormwater discharge from municipal storm drain systems. The permits issued to the County of Orange and the cities within the San Diego Region Boundary. The goal of the MS4 permit is to protect water quality by requiring the County and cities (collectively, the Co-Permittees) to implement a program to eliminate significant pollutant discharges from construction activities by requiring the implementation of appropriate Best Management Practices (BMPs) on all construction sites. BMPs are activities, practices, procedures, or devices implemented to avoid, prevent or reduce pollution of the municipal storm drain system and receiving waters.

### **4. WDRs for Discharge to Land (2003-0003-DWQ)**

This permit, Order No. 2003-0003-DWQ, applies to projects that discharge to land where the discharge has a low threat to water quality. These are typically low volume discharges with minimal pollutant concentrations. The primary difference between this permit and the permits described in herein is the destination of the water. This permit regulates discharges to land, while the following two sections discuss discharges to storm drains or receiving waters. For instance, if a dewatering discharge will be piped to an infiltration basin during construction, this permit should be used.

### **5. De Minimis WDRs for Santa Ana Region (R8-2007-0041 / CAG918002 and R8-2009-0003 / CAG998001)**

There are two permits within the Santa Ana Region that regulate dewatering discharges to a storm drain or receiving water. Order No. R8-2007-0041, NPDES No. CAG918002, regulates dewatering discharges in the San Diego Creek / Newport Bay watershed. And, Order No. R8-2009-0003, NPDES No. CAG998001, amended by R8-2012-0062, regulates dewatering discharges for the Santa Ana Region. Refer to the permit text for specific circumstances allowing projects to be covered under the region-wide permit even though it is located within the San Diego Creek / Newport Bay watershed.

Dischargers subject to the San Diego Creek / Newport Bay Permit (Order No. R8-2007-0041) formed a Working Group and funded the development of a Work Plan to develop a management plan for nitrate and selenium discharges to surface waters that result from groundwater-related inflows. If those entities that participate in the Working Group (refer to Order for enrollees list), can demonstrate that compliance with the numeric selenium effluent limitations identified in the Order is infeasible, the groundwater-related discharge is allowed provided that the Working Group implements the Work Plan in a timely manner and that the discharger fulfills its financial and participatory requirements established by the Group. For dischargers who are not participating in the Working Group and cannot comply with the numeric effluent limitations, the discharger must either not proceed with the planned discharge or must identify and participate in a program that assures that selenium discharges in excess of those allowed by the Order are offset on at least a one-to-one basis.

To obtain coverage under either of these permits, the general guidelines below should be followed:

### **Existing Dischargers**

1. Submit an updated Notice of Intent (NOI) to continue discharging; and
2. A copy of the current Monitoring and Reporting Program along with any proposed treatment modifications.

Additionally, Order No. R8-2007-0041 should be reviewed by all parties as there are different and/or additional stipulations that need to be met based on enrollment status in the Nitrogen and Selenium Management Program (NSMP).

### **New Dischargers**

At least 45 days (180 days if applying under Order No. R8-2007-0041) before the start of a new discharge, the Discharger needs to submit an application for coverage and obtain a letter of authorization from the Executive Officer for the dewatering discharge. The application needs to include:

1. A Notice of Intent (NOI) to be covered under the Order.
2. A site characterization study that identifies the presence of contaminated groundwater onsite (constituents of concern listed with the Orders), its properties, and a three-dimensional assessment of the extent of concentration of contaminants in the subsurface; which includes a description of the geologic and hydrologic factors that control the migration of the contaminants; and, if adjacent to a contaminated site, the Discharger has to evaluate the depth and flow rate of the extraction as well as the possibility of extracting the contaminated groundwater from the adjacent site.
3. A report including the following:
  - a. A list of constituents and the discharge concentration of each constituent from each source (See the Order for constituent of concern); and for coverage under Order No. R8-2007-0041 only, a chemical analysis of the untreated groundwater for organic pollutants using EPA method 8260B (See the Order for specific constituent testing and reporting requirements);
  - b. Estimated average and maximum daily flow rates in million gallons per day (mgd), the frequency and the expected start date and duration of the discharges;
  - c. Proposed discharge location(s) and the latitude and longitude of each discharge point;
  - d. A description of the proposed treatment system (if applicable);
  - e. The affected receiving water and a map showing the path from the point of initial discharge to the ultimate receiving water; and
4. Any other information deemed necessary by the Regional Board Executive Officer.

It should be noted that coverage under Order No. R8-2007-0041 requires several extra steps and it is highly recommended to review those requirements within the Order. Some of those additional items are:

1. An evaluation of selenium and nitrogen concentrations and the feasibility of meeting the numeric effluent limitations specified in the Order. The conclusion of which has varying impacts on coverage as specified in the Order;
2. A fixed hardness value for sites polluted with metals needs to be submitted for approval by the Regional Executive Officer as outlined in the Order; and
3. A description of run-on, interception and diversion of runoff.

Additionally, Order No. R8-2007-0041 should be reviewed by all parties as there are different and/or additional stipulations that need to be met based on enrollment status in the NSMP.

#### **6. Dewatering Permit Outside of San Diego Bay for San Diego Region (R9-2008-0002 / CAG919002)**

This permit, Order No. R9-2008-0002, applies to discharges of extracted groundwater to receiving waters or storm drains within the San Diego Regional Board jurisdiction (South of El Toro Road). To qualify for this permit, a laboratory analysis of the groundwater must show that the water quality is within the limits set by the permit. The permit requires sampling and analysis of dewatering discharges, and reporting to the Regional Board on a periodic basis.

#### **7. Potable Water Discharges in Santa Ana Region (R8-2009-0003 / CAG998001)**

The permit identified in Section 2. 1 for de minimus discharges, Order No. 2009-0003, is also the permit that applies to discharges of potable water during construction. This may include discharges of hydrostatic test water for pipes or tanks.

#### **8. Potable Water Discharges in San Diego Region (R9-2010-0003 / CAG679011)**

This permit, Order No. R9-2010-0003, regulates discharges of hydrostatic test water and/or potable water to storm drains or receiving waters in the San Diego Region, to all receiving waters except for San Diego Bay and its tributaries. Activities covered may include discharge from testing, repair and maintenance of pipelines, tanks and vessels dedicated to drinking water purveyance.

## Appendix C: Erosion Control Best Management Practices Field Evaluation – Summary

### Background

The County of Orange conducted a field evaluation of five erosion control BMPs to evaluate their effectiveness in the field. A full copy of the Erosion Control Best Management Practices Field Evaluation (Study) may be found on the OC Watersheds website ([http://www.ocwatersheds.com/documents/OCerosionControl\\_FINALReportJan07II.pdf](http://www.ocwatersheds.com/documents/OCerosionControl_FINALReportJan07II.pdf)), and a brief summary of the Study is provided here. The Study included development of a study plan, selection of an appropriate test site with soils and slopes commonly found in Orange County, selection of erosion controls for evaluation, study implementation, monitoring and maintenance of the test plots.

### BMPs Selected

Four erosion control BMPs were selected for the Study:

- UltraTack- UltraTack is a low molecular weight polyacrylamide product. UltraTack is a spray on binder or tackifier, and is nontoxic to plant and animal life. UltraTack must be applied 24 hours prior to a storm event, and must be reapplied as needed, but generally every three months at a minimum.
- EarthGuard – EarthGuard is a high molecular weight polyacrylamide product. Earth Guard is a spray on binder and is nontoxic to plant and animal life. It is effective immediately, even when applied during a rain event, and may provide erosion control for up to three months.
- EarthGuard Fiber Matrix (recycled paper mulch and wood fiber mulch) – This BMP combines Earth Guard and fiber to form a matrix that provides erosion control for a full rainy season. The binder plus fiber harden after application to form a crust that protects soil from raindrop impact. Two types of EarthGuard fiber mulch were used; one consisting of 100% recycled paper mulch, and the other wood fiber mulch.
- Landscaping Mulch – The wood mulch tested for this study was a typical landscaping mulch made of shredded wood mulch and bark. Wood mulch helps reduce soil erosion by protecting bare soil from rainfall impact, increasing infiltration and reducing runoff.

### Test Plots

A total of fifteen test plots were used in the Study, three for each of the BMPs selected. Each BMP was tested on a slope of 2% (flat slope), 5% (mild slope) and 50%. Each test plot was approximately 25 feet by 100 feet, with flow in the long direction.

## **Test Period**

Each of the test plots was observed over the course of the 2004-2005 wet season. Observations of the performance of each type of control were made before and after forecast events, as well as once per month. The condition of each test plot and the location and mechanism of any failures were documented, along with evidence of erosion and unraveling of erosion control materials.

## **Findings**

The 2004-2005 water year was one of the wettest on record, with the Study site receiving over twice the normal amount of precipitation for the area. The relative performance of the selected erosion controls was evaluated qualitatively using the results of the visual monitoring. BMPs were considered to have “failed” when rilling or similar evidence of erosion became visually apparent. In general, the hydro mulches outperformed the binders; whereas landscape mulch performed best on all slopes. The binders and hydro mulches did not hinder growth of volunteer vegetation. Although seed mix was not added to the controls, new vegetation was observed on all test plots except for the landscape mulch.

## **Recommendations**

The Study provides erosion control recommendations based on the findings of the Study (see **Table C-1**). These recommendations are based on appropriate slope, application rate, duration of effectiveness, application methods, inspection requirements and costs

Table C-1: Recommendations from the Erosion Control Best Management Practices Field Evaluation

EC Control	Amount Rain / Duration <sup>1</sup>		Appropriate Site Applications	Application Methods	Inspection Requirements	Costs
	Flat Area (< 5%)	Slope Area (> 5%)				
PAM (low weight)	1"; 1 storm	Not recommended	Temporary, single storm event; cohesive soils; slope length<500 feet	Dissolve in water, 20 lbs. per 2000 gallons, per acre	After each rain event	\$1.30 – \$5.50 / lb (material cost only)
PAM (high weight)	< 2"; 2+storm	1"; 2+ storm	Temporary, two storm events; cohesive soils; slope length<500 feet	Dissolve in water, 20 lbs. per 2000 gallons, per acre	After each rain event	\$1.30 – \$5.50 / lb (material cost only)
Wood Hydro-mulch <sup>2</sup>	<12"; 1 season	<12"; 1 season	Steep slopes, steeper than 3:1; high erosion potential slopes; slopes where anchored mulch is needed; disturbed areas where plants slow to develop; stockpiles; slopes adjacent to ESAs	3,000 lb / acre to 4,000 lb / acre based on the manufacturer's recommendation, 12-24 hours to dry and become effective	Prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season (nrs)	\$6,000 per acre
Landscape Mulch <sup>3</sup>	< 12"; 1 season	< 12"; 1 season	Flat areas, steep slopes, cohesive soils	Distribute by hand or use pneumatic methods, 2-3- inch depth (thickness) per CASQA guidance	Prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the nrs	\$4,000 per acre

<sup>1</sup> When used per manufacturer recommendations.<sup>2</sup> When used with a high-weight binder. Hydro mulch consisting only of paper fiber is not recommended. Wood hydro mulch may not contain more than 25% paper fiber.<sup>3</sup> Tested at about 5-inch depth (thickness).

# **APPENDIX K**

## **UNDERGROUND SERVICE ALERT IDENTIFICATION NUMBER**

(To be completed only by the awarded Contractor prior to excavation)



# UNDERGROUND SERVICE ALERT IDENTIFICATION NUMBER

(To be completed only by the awarded Contractor prior to excavation)

No excavation will be permitted until this form is completed and returned to the AGENCY.

Section 4216/4217 of the Government Code requires a Dig Alert Identification Number be issued before a Permit to Excavate will be valid. All USA markings must be removed by contractor once the job is completed. Any damage created during removal must be restored by contractor.

To obtain a Dig Alert Identification Number, call Underground Service Alert at **811** or **1-800-422-4133** a minimum of two working days before scheduled excavation.

***Dig Alert Identification Number:*** \_\_\_\_\_

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
By

\_\_\_\_\_  
Title

Date: \_\_\_\_\_

**Note:** *This form is required for every **Dig Alert Identification Number** issued by U.S.A. during the course of the Work. Additional forms may be obtained from the AGENCY upon request.*

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