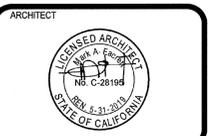


FILE NO. 36-H5
 IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 APPL. 04-18263
 DATE MAY 0 2019

ENGINEER

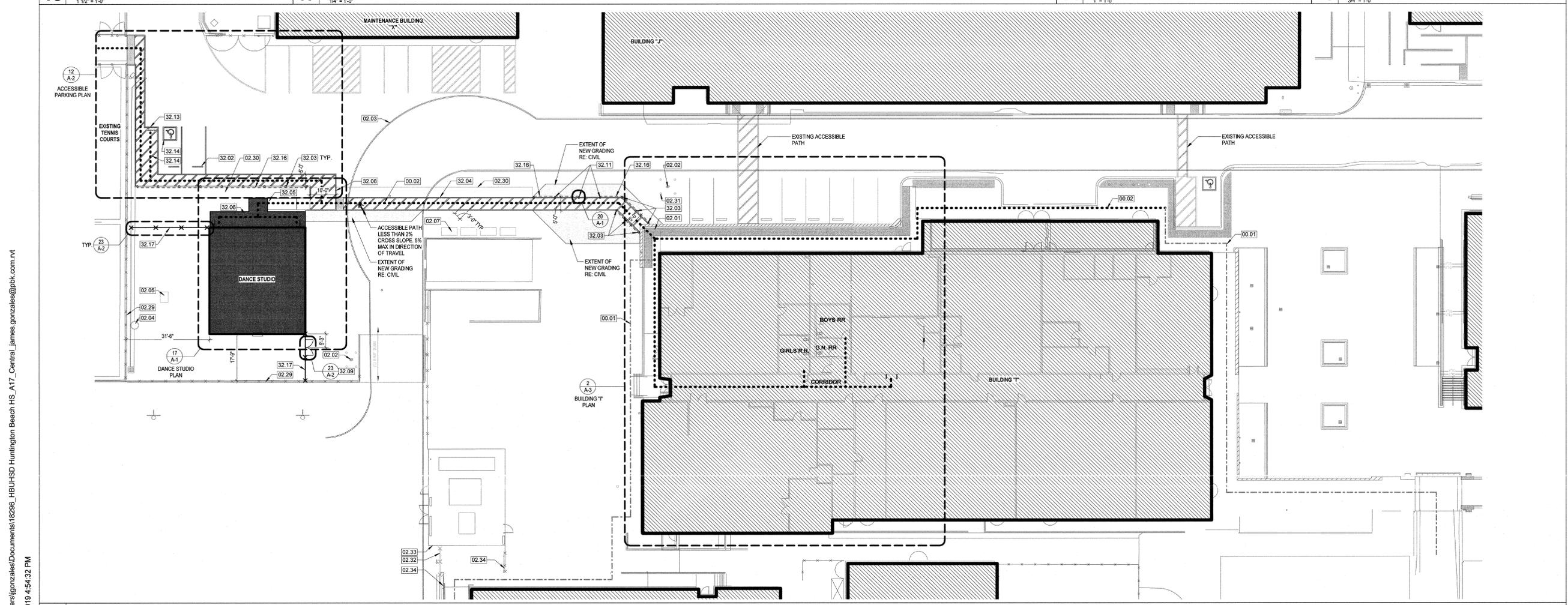
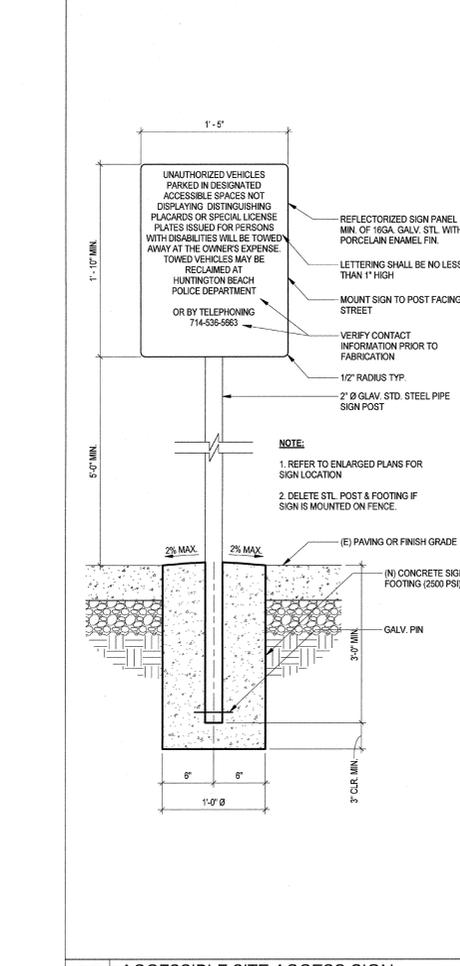
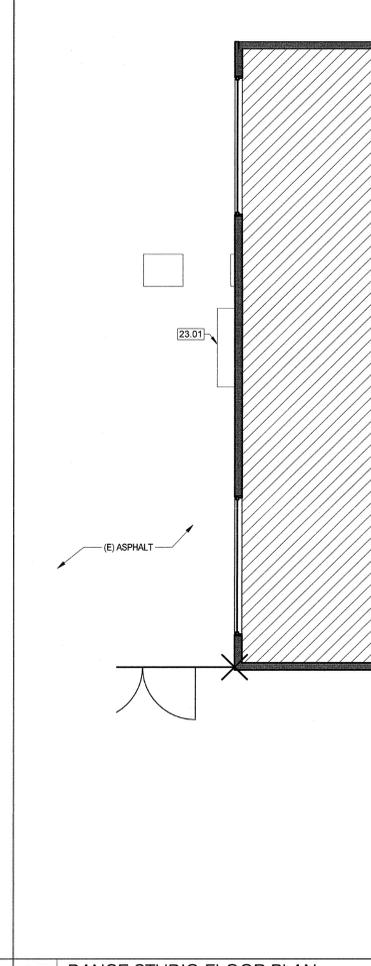
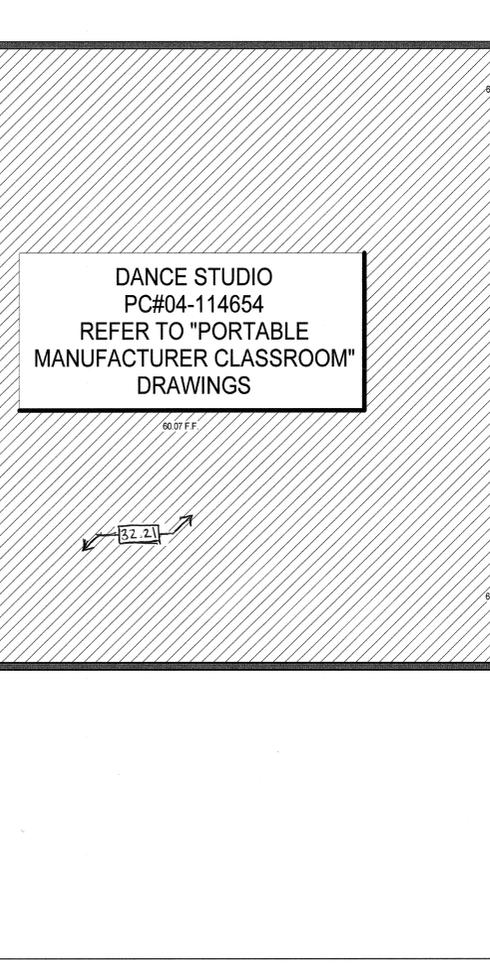
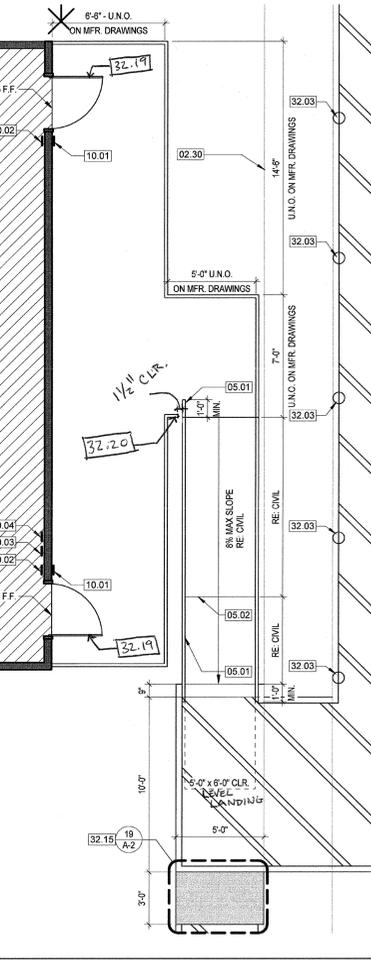
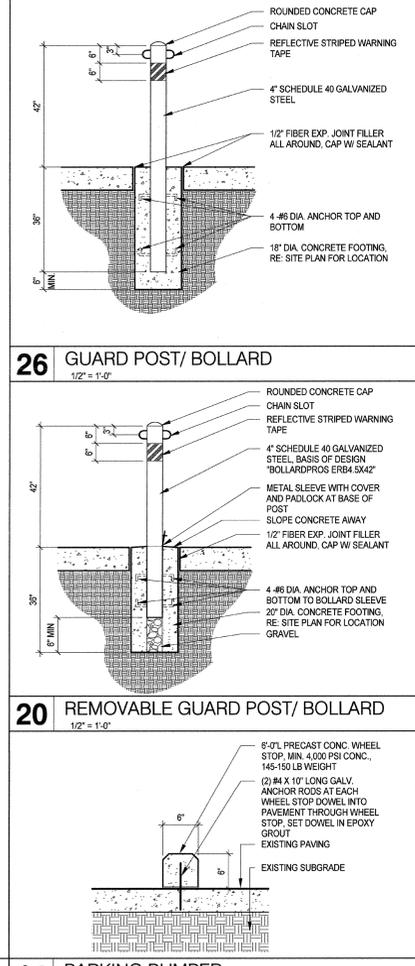


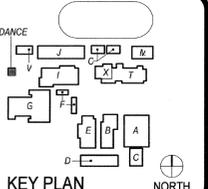
CLIENT
 HUNTINGTON BEACH UNION HIGH SCHOOL DISTRICT
 PROJECT NUMBER
 18296
 DATE: 05/09/2019
 DRAWN BY: JG
 CHECKED BY: LM

No.	Description	Date

DSA SUBMITTAL
ENLARGED SITEPLAN AND DETAILS

KEYED NOTES	
00.01	(E) PATH OF TRAVEL A604-107932
00.02	PATH OF TRAVEL
02.01	(E) TRUNCATED DOMES
02.02	(E) FIRE HYDRANT RE. SHEET G-1 FOR FIRE HYDRANT FLOW TEST
02.03	(E) FIRE ACCESS LANE STRIPING
02.04	(E) ELECTRICAL PANEL AND CONCRETE PODIUM
02.05	(E) UNDERGROUND ELECTRICAL VAULT
02.07	(E) TRASH BINS
02.29	(E) STEM WALL WITH FENCING
02.30	(E) SWALE
02.31	(E) BOLLARD
02.32	(E) 8'-0" SLIDING ACCESS GATE WITH PADLOCK
02.33	(E) KNOX BOX
02.34	(E) 8'-0" FENCE
05.01	HANDRAIL EXTENSION RE. PORTABLE MANUFACTURER
05.02	RAMP AND LANDING RE. PORTABLE MANUFACTURER
10.01	ROOM SIGN RE. PORTABLE MANUFACTURER
10.02	EXIT SIGN RE. PORTABLE MANUFACTURER
10.03	OCCUPANCY SIGN RE. PORTABLE MANUFACTURER
10.04	ASSISTIVE LISTENING SIGN RE. PORTABLE MANUFACTURER
23.01	PORTABLE WALL MOUNTED HVAC RE. PORTABLE MANUFACTURER
32.02	WHEEL STOP
32.03	FIXED BOLLARD WITH CHAIN
32.04	ACCESSIBLE PATH OF TRAVEL STRIPING, 4" WIDE BLUE STRIPING RE. CIVIL
32.05	ACCESSIBLE RAMP RE. PORTABLE MANUFACTURER
32.06	ACCESSIBLE LANDING RE. PORTABLE MANUFACTURER
32.08	ACCESSIBLE SWALE CROSSING, RE. CIVIL
32.09	6'-0" WIDE X 8'-0" HIGH CHAINLINK MAINTENANCE GATE
32.11	REMOVEABLE BOLLARD
32.13	4" BLUE PERIMETER STRIPING
32.14	4" WHITE STRIPING
32.15	TRUNCATED DOMES
32.16	PROVIDE CHAINS AS INDICATED BY THE DASHED LINE
32.17	8" HIGH CHAINLINK FENCE
32.19	LOCK POLE FROM THE INSIDE
32.20	GRIND SMOOTH AS REQUIRED
32.21	(1) WINDOW TO BE ACCESSIBLE, PROVIDE IWC SP203 SECURITY LATCH
	PAINTED INTERNATIONAL SYMBOL OF ACCESSIBILITY COLOR: WHITE
	BLUE FIELD COLOR: SHALL APPROXIMATE FS 15090 IN FEDERAL STANDARD 595C. (11B-703.7.2.1)
	2" WHITE STRIPING
	NOTE: GRID LINES ARE SHOWN FOR PROPORTION ONLY AND ARE NOT TO APPEAR AS PART OF SYMBOL.
	ACCESSIBILITY SYMBOL SHALL COMPLY WITH SECTION 11B-703.7.2.1 CALIFORNIA BUILDING CODE.
	SYMBOL SHALL BE LOCATED SO THAT IT IS VISIBLE TO A TRAFFIC ENFORCEMENT OFFICER WHEN VEHICLE IS PARKED IN THE SPACE.





FILE NO. 20-16
 IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 APRIL 04-118263
 DATE MAY 03 2019

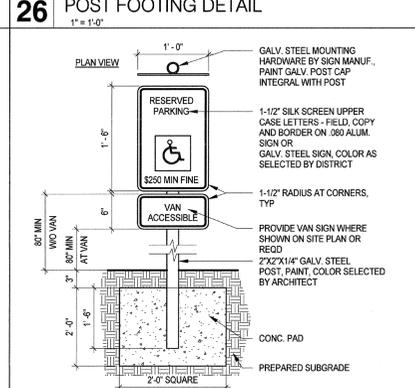
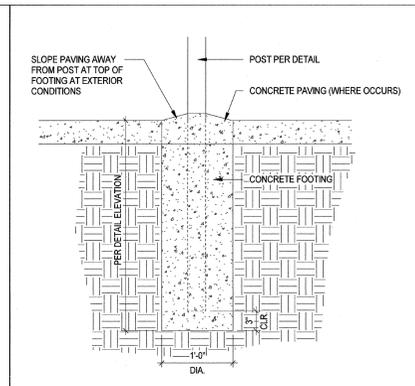
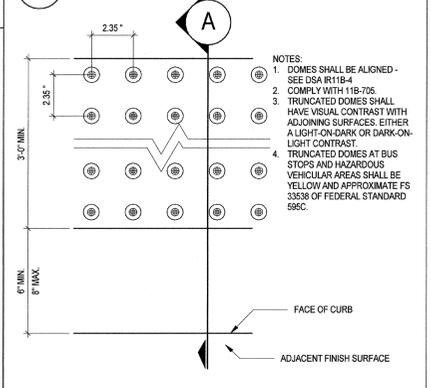
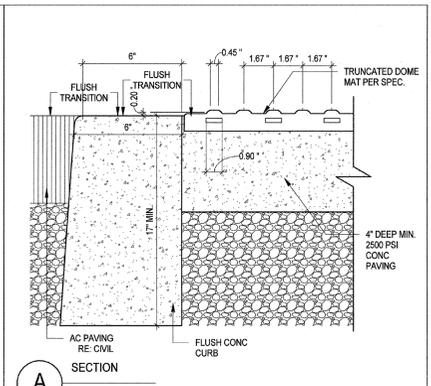
ENGINEER



CLIENT: HUNTINGTON BEACH UNION HIGH SCHOOL DISTRICT
 PROJECT NUMBER: 18296
 DATE: 05/09/2019
 DRAWN BY: JG
 CHECKED BY: LM

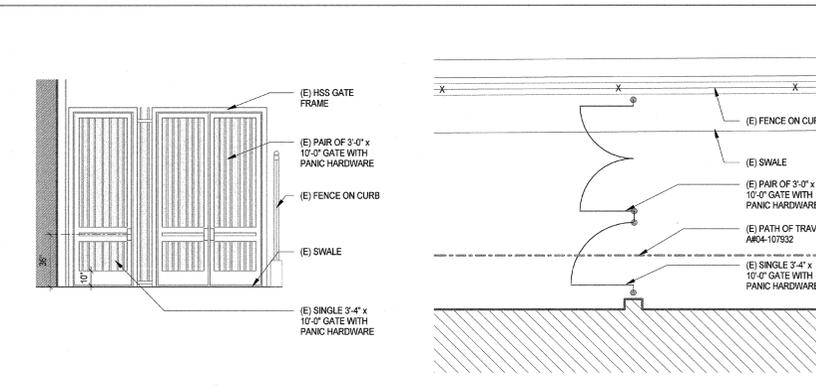
No.	Description	Date

ENLARGED SITE PLANS AND DETAILS

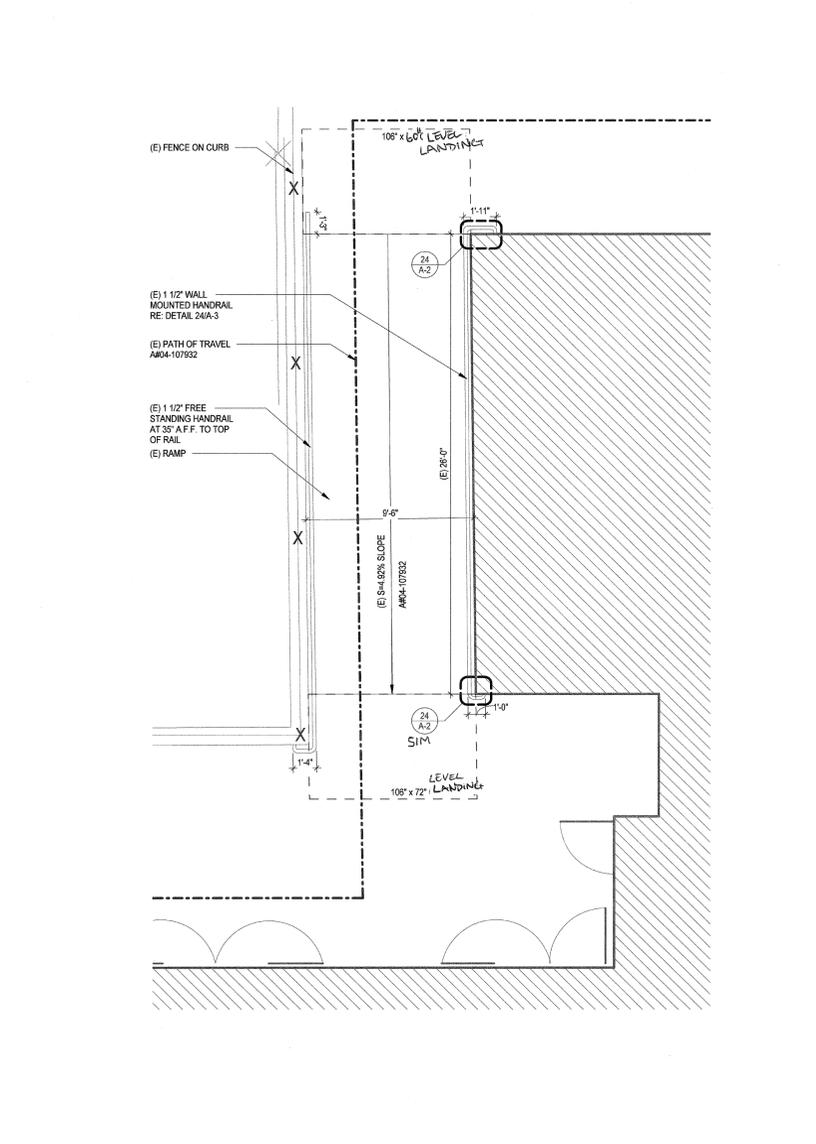


20 ACCESSIBLE PARKING SIGN NOT TO SCALE

19 TRUNCATED DOME PAVERS 3" = 1'-0"

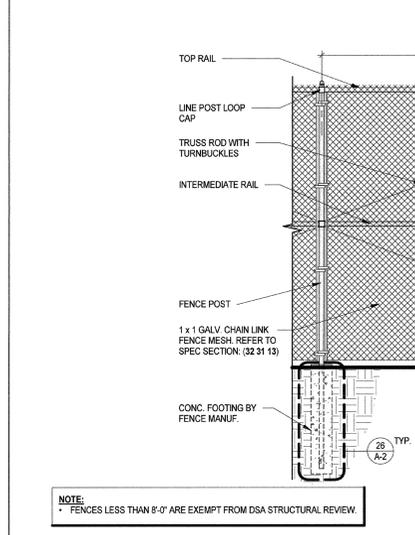


28 (E) ACCESSIBLE GATE - PLAN AND ELEVATION 1/4" = 1'-0"

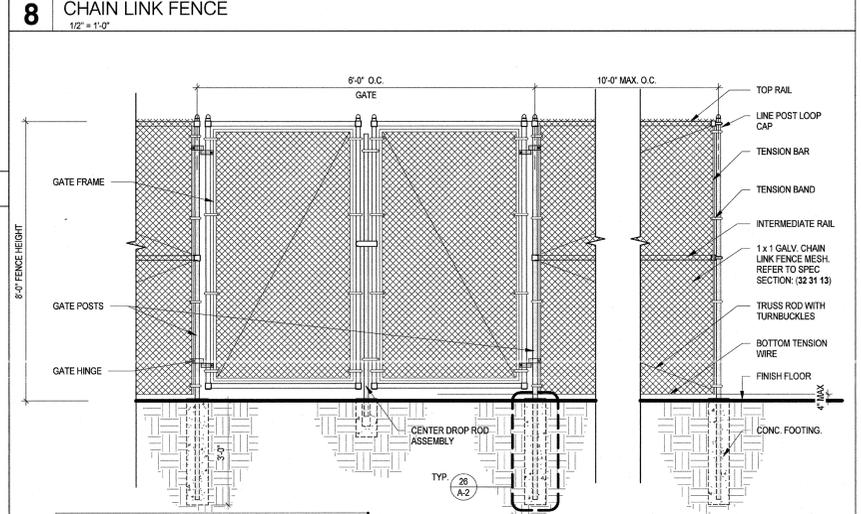


28 (E) ACCESSIBLE GATE - PLAN AND ELEVATION 1/4" = 1'-0"

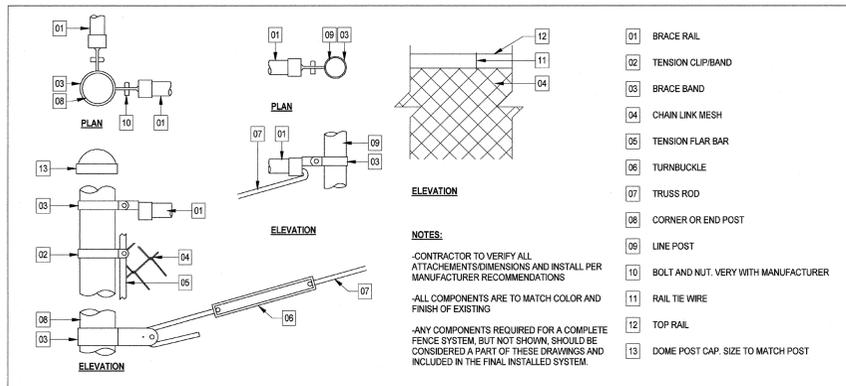
20 ACCESSIBLE PARKING SIGN NOT TO SCALE



8 CHAIN LINK FENCE 1/2" = 1'-0"



2 CHAIN-LINK FENCE - DOUBLE GATE 1/2" = 1'-0"



30 CHAIN LINK CONNECTIONS 1 1/2" = 1'-0"

Item	Height	Nominal Pipe Size (inches)	Outside Diameter (inches)	Weight (pounds per foot)	Footings Diameter (inches)	Footings Depth (inches)
Top Rail, Brace Rails and Transom Rails	Up to 10'-0"	1-1/4	1.650	2.27	N/A	N/A
	10'-1" to 16'-0"	1-1/2	1.900	2.72	N/A	N/A
	Up to 6'-0"	2	2.375	2.65	12	24
Line Posts	6'-1" to 8'-0"	2	2.375	2.65	12	36
	8'-1" to 10'-0"	2-1/2	2.875	5.79	12	36
	10'-1" to 16'-0"	3	3.500	7.58	14	60
Terminal, Corner, Angle & Pull Posts	Up to 8'-0"	2-1/2	2.875	5.79	12	36
	8'-1" to 10'-0"	2-1/2	2.875	5.79	14	42
	10'-1" to 16'-0"	3	3.500	7.58	14	60
Pedestrian Gate Posts	Up to 8'-0"	2-1/2	2.875	5.79	14	36
Gate Frames	Up to 8'-0"	1-1/2	1.900	2.72	N/A	N/A
Driveway Double Leaf Swing Gate Posts: Opening	Up to 17'-3-1/2"	Up to 8'-0"	3-1/2	4.000	9-11	18-42
	17'-4" to 20'-3-1/2"	Up to 8'-0"	3-1/2	4.000	9-11	18-42

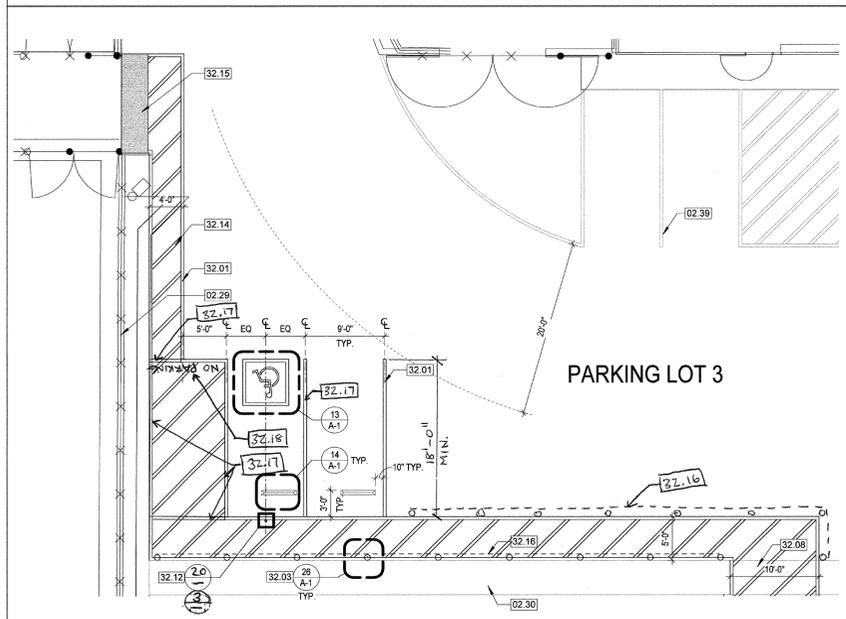
24 EXISTING WALL MOUNTED HANDRAIL 1 1/2" = 1'-0"

23 CHAINLINK & FENCE 3" = 1'-0"

KEYED NOTES

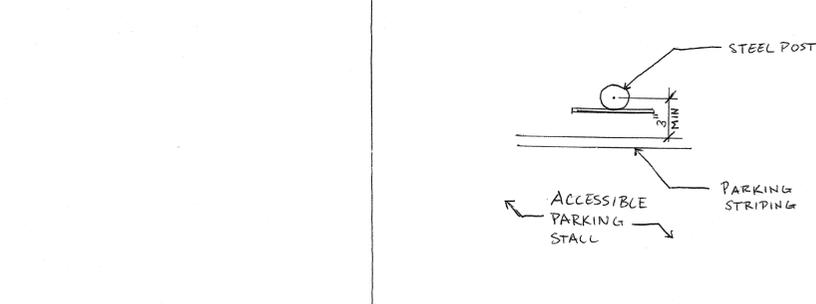
02.29 (E) STEM WALL WITH FENCING
 02.30 (E) SWALE
 02.39 (E) PARKING STRIPING
 32.01 PARKING STRIPING (WHITE)
 32.03 FIXED BOLLARD WITH CHAIN
 32.06 ACCESSIBLE SWALE CROSSING, RE: CIVIL

32.12 ACCESSIBLE PARKING SIGN
 32.14 4" WHITE STRIPING, DO NOT ALLOW STRIPING TO ENVELOACH 12" TEXT (6" O.C. MAX)
 32.15 TRUNCATED DOMES
 32.16 PROVIDE CHAINS AS INDICATED BY THE DASHED LINE
 32.17 12" HIGH 4" STRIPING
 32.18 12" HIGH WHITE TEXT "NO PARKING"



12 ACCESSIBLE PARKING - LOT 3 1/8" = 1'-0"

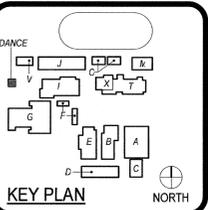
10 ENLARGED RAMP PLAN AT GYM 1/4" = 1'-0"



10 ENLARGED RAMP PLAN AT GYM 1/4" = 1'-0"

3 ACCESSIBLE PARKING SIGN NOT TO SCALE

3 ACCESSIBLE PARKING SIGN NOT TO SCALE



FILE NO. 30-HS
 IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 APPL. 04-118263
 ACCE. FLS. [initials] SS
 DATE: MAY 09 2018

ENGINEER

ARCHITECT
 LICENSED ARCHITECT
 James A. Gonzales
 No. C-28194
 EXPIRES 3-31-2020
 STATE OF CALIFORNIA

CLIENT: HUNTINGTON BEACH UNION HIGH SCHOOL DISTRICT
 PROJECT NUMBER: 18296
 DATE: 05/09/2019
 DRAWN BY: JG
 CHECKED BY: LM

No.	Description	Date

DSA SUBMITTAL
BUILDING "I" & "E" - EXISTING ACCESSIBLE RESTROOMS
A-3

TOILET ACCESSORIES

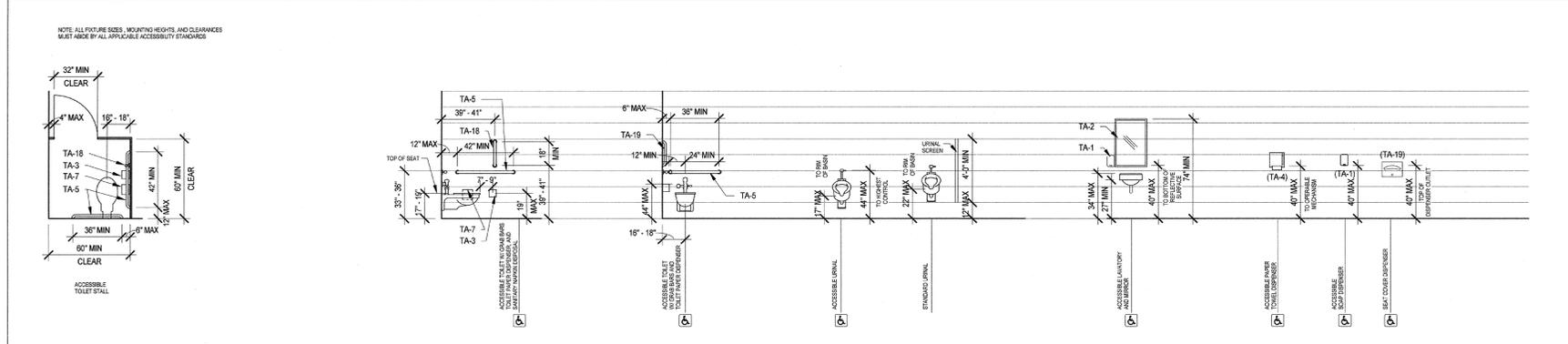
LABEL	DESCRIPTION	REMARKS
TA-1	SOAP DISPENSER	
TA-2	MIRROR	
TA-3	TOILET PAPER DISPENSER	
TA-4	PAPER TOWEL DISPENSER	
TA-5	GRAB BARS (AT TYPICAL ACCESSIBLE TOILET STALL)	
TA-6	SANITARY NAPKIN DISPENSER	
TA-7	SANITARY NAPKIN DISPOSAL	
TA-8	MOP AND BROOM HOLDER	
TA-9	GRAB BARS (AT ACCESSIBLE SHOWER)	
TA-10	FOLDING SHOWER BENCH	
TA-11	CLOTHES HOOK	
TA-12	SHOWER CURTAIN, ROD AND HOOKS	
TA-13	ELECTRIC HAND DRYER	
TA-14	PAPER TOWEL DISPENSER AND TRASH RECEPTACLE	
TA-15	GRAB BARS (AT AMBULATORY ACCESSIBLE TOILET STALL)	
TA-16	DIAPER CHANGING STATION	
TA-17	STAINLESS STEEL UTILITY SHELF	
TA-18	TOILET COVER DISPENSER	
TA-19	VERTICAL GRAB BAR (AT ACCESSIBLE ICC A117.1 TOILET STALL)	

NOTE: ALL TOILET ACCESSORIES SHALL BE CONTRACTOR FURNISHED AND CONTRACTOR INSTALLED UNLESS NOTED OTHERWISE.

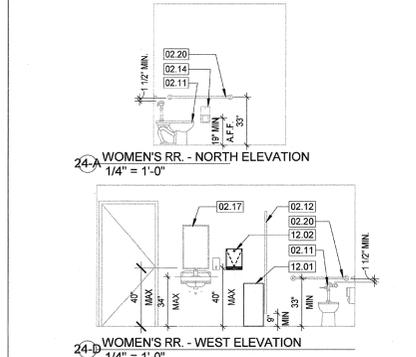
- COORDINATE FINAL LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
- CONTRACTOR IS TO VERIFY ALL HEIGHTS OF ACCESSORIES TO COMPLY WITH ALL APPLICABLE ACCESSIBILITY REQUIREMENTS.
- REFER TO ALL FINISHES AND COLORS IN FINISH SCHEDULE, VERIFY ALL PATTERNS WITH ARCHITECT.
- ALIGN MIRROR ON CENTER OF LAVATORY.

KEYED NOTES

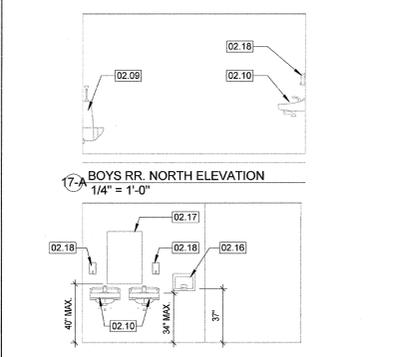
01.02	REMOVE EXISTING TOILET TISSUE DISPENSER	10.08	PROVIDE NEW TOILET PARTITION TO MATCH EXISTING
01.03	(E) TOILET SEAT COVER DISPENSER TO BE MOVED TO NEW LOCATION	10.07	RELOCATE TOILET SEAT COVER DISPENSER AS SHOWN
01.04	(E) TOILET PARTITION TO BE REMOVED	12.01	TRASH BIN - BOBRICK B-2250
01.05	(E) SINK TO BE REMOUNTED	12.02	PAPER TOWEL DISPENSER - BOBRICK B-255
01.06	(E) PARTITION TO BE REMOVED	12.03	SOAP DISPENSER - BOBRICK B-2111
01.07	(E) URINAL TO BE REMOVED	12.04	MIRROR
01.08	(E) WALL TO BE REMOVED	22.01	REMount (E) SINK TO NEW LOCATION
01.09	(E) PAPER TOWEL DISPENSER TO BE REMOVED	22.02	ACCESSIBLE URINAL, REMOUNT EXISTING AS REQUIRED
01.10	(E) REMOUNT AS REQUIRED		
02.00	(E) URINAL		
02.01	(E) SINK		
02.11	(E) TOILET		
02.12	(E) TOILET PARTITION		
02.13	(E) TOILET SEAT COVER DISPENSER		
02.14	(E) TOILET TISSUE DISPENSER		
02.15	(E) SANITARY NAPKIN DISPOSAL		
02.16	(E) HAND DRYER		
02.17	(E) MIRROR		
02.18	(E) SOAP DISPENSER		
02.20	(E) 3'-0" AND 4'-0" GRAB BARS		
02.21	(E) 3'-0" X 7'-0" DOOR		
02.36	(E) RESTROOM WALL SIGNAGE		
02.37	(E) RESTROOM DOOR SIGNAGE		
10.01	ROOM SIGN RE-PORTABLE MANUFACTURER		
10.05	RELOCATE (E) TOILET SEAT COVER DISPENSER TO THIS LOCATION		



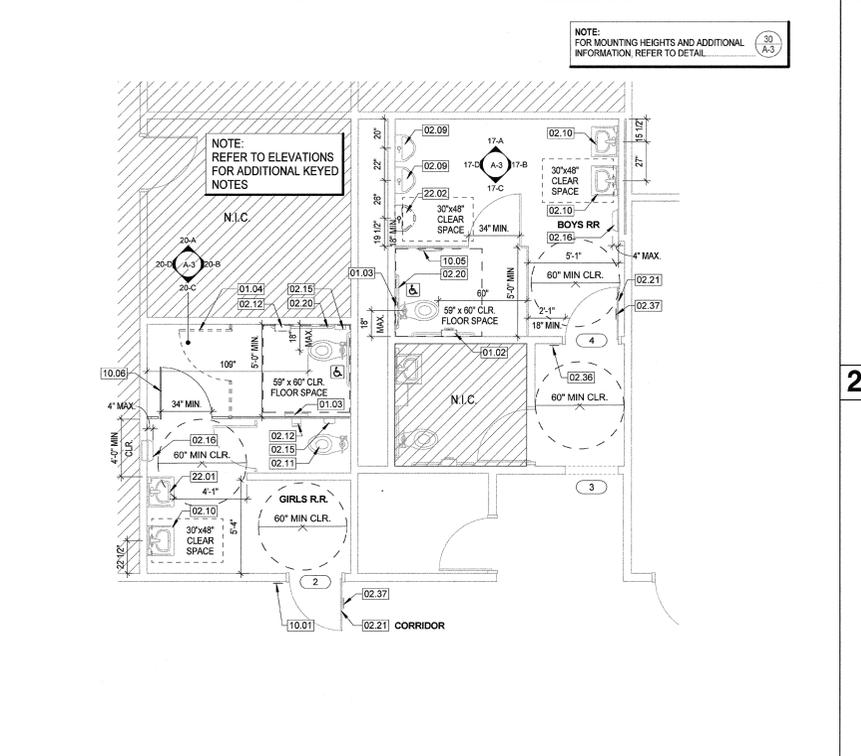
30 ACCESSIBILITY - AGES 13 THRU ADULT (GRADES 8 AND ABOVE)
 1/4" = 1'-0"



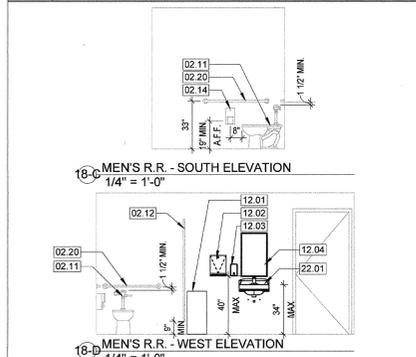
24 WOMEN'S RR ELEVATIONS - AGE: ADULT
 1/4" = 1'-0"



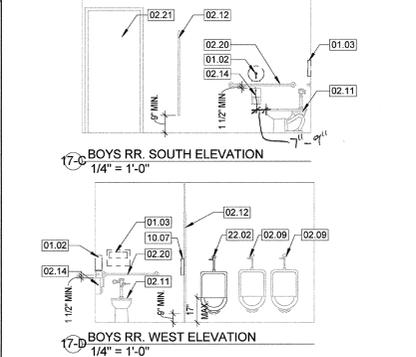
17 BOYS RR ELEVATIONS - AGE: 13-18
 1/4" = 1'-0"



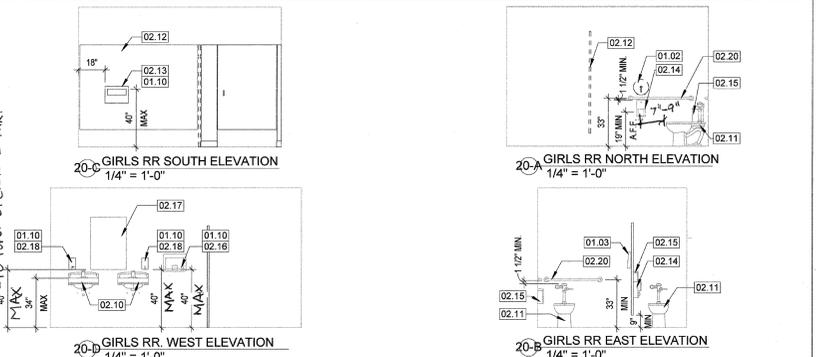
16 ENLARGED DEMO AND REVISED TOILET PLAN - BUILDING "I"
 1/4" = 1'-0"



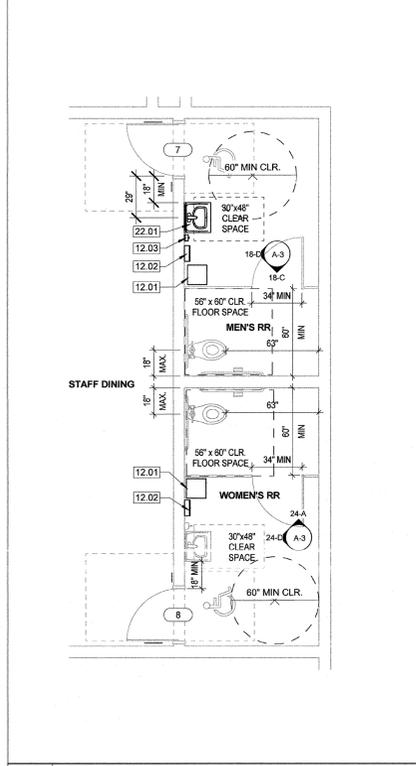
18 MEN'S RR ELEVATIONS - AGE: ADULT
 1/4" = 1'-0"



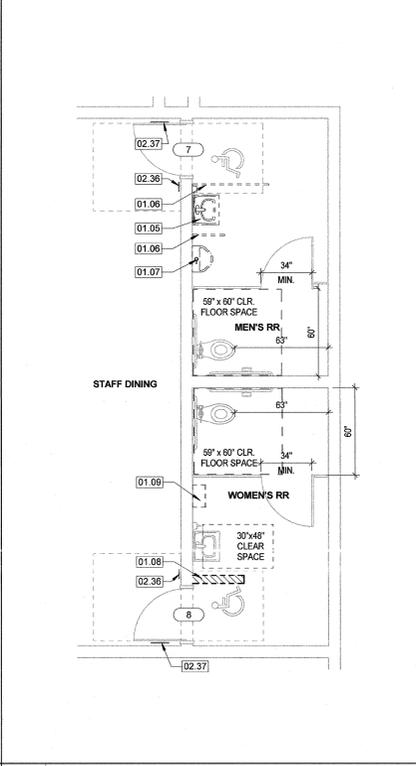
17 BOYS RR ELEVATIONS - AGE: 13-18
 1/4" = 1'-0"



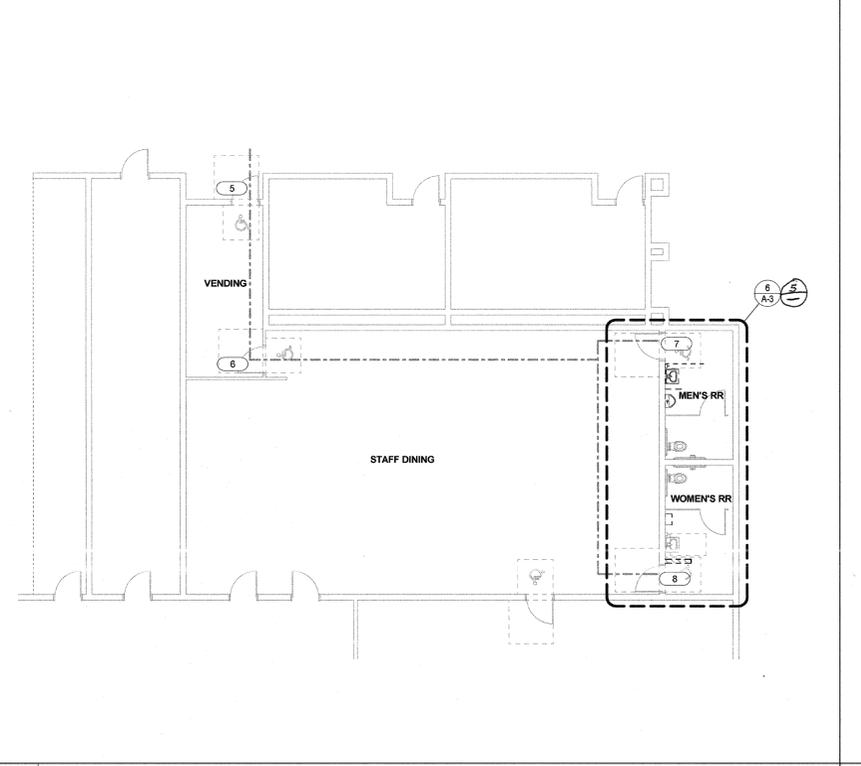
20 GIRLS RR ELEVATIONS - AGE: 13-18
 1/4" = 1'-0"



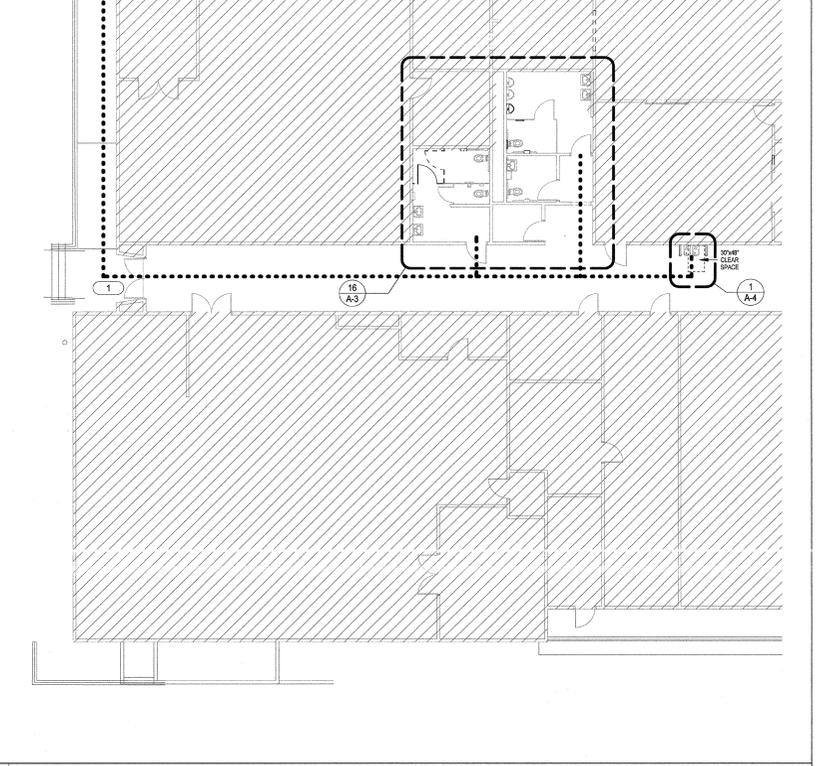
6 ENLARGED REV. TOILET PLAN - BLDG. "E"
 1/4" = 1'-0"



5 ENLARGED DEMO TOILET PLAN - BLDG. "E"
 1/4" = 1'-0"



4 EXISTING BUILDING "E" PLAN
 1/8" = 1'-0"

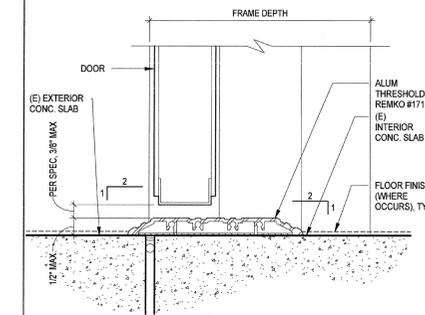


2 EXISTING BUILDING "I" PLAN
 3/32" = 1'-0"

DOOR SCHEDULE - FIRST FLOOR

MARK	Door Location	Family Phase	DOOR PANEL			DOOR FRAME			DETAILS			REMARKS			
			PAIR/SING	SIZE W x H		MATL	ELEV.	W	H	MATL	THRESHOLD		JAMB	HEAD	H.W.
				W	H										
1	BLDG I	EXISTING	PAIR	6'-0"	7'-0"	METAL	6'-4"	7'-2"	HM	19/A-4			P.H.	EXISTING PANIC HARDWARE ADJUST CLOSURE TO SLBS MAX OPENING PRESSURE.	
2	BLDG I	EXISTING	SINGLE	3'-0"	7'-0"	METAL	3'-4"	7'-2"	HM					ADJUST CLOSURE TO SLBS MAX OPENING PRESSURE	
3	BLDG I	EXISTING	OPEN	0"	0"		3'-0"	7'-0"	HM						
4	BLDG I	EXISTING	SINGLE	3'-0"	7'-0"	METAL	3'-4"	7'-2"	HM					ADJUST CLOSURE TO SLBS MAX OPENING PRESSURE	
5	BLDG E	EXISTING	SINGLE	3'-0"	7'-0"	METAL	3'-4"	7'-2"	HM	19/A-4			P.H.	EXISTING PANIC HARDWARE ADJUST CLOSURE TO SLBS MAX OPENING PRESSURE.	
6	BLDG E	EXISTING	SINGLE	3'-0"	7'-0"	METAL	3'-4"	7'-2"	HM					ADJUST CLOSURE TO SLBS MAX OPENING PRESSURE	
7	BLDG E	EXISTING	SINGLE	3'-0"	7'-0"	METAL	3'-4"	7'-2"	HM					ADJUST CLOSURE TO SLBS MAX OPENING PRESSURE	
8	BLDG E	EXISTING	SINGLE	3'-0"	7'-0"	METAL	3'-4"	7'-2"	HM					ADJUST CLOSURE TO SLBS MAX OPENING PRESSURE	

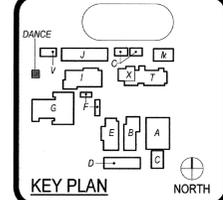
GENERAL NOTE:
1. ADJUST PEDESTRAIN DOORS SO DOOR AT 90 DEGREES IN OPEN POSITION TO 12 DEGREE IN 5 SECONDS MIN.



19 EXISTING THRESHOLD @ HM DOOR
8" = 1'-0"

NOTE:
11B-602.6 WATER FLOW. THE SPOUT SHALL PROVIDE A FLOW OF WATER 4 INCHES (102 MM) HIGH MINIMUM AND SHALL BE LOCATED 5 INCHES (127MM) MAXIMUM FROM THE FRONT OF THE UNIT. THE ANGLE OF THE WATER STREAM SHALL BE MEASURED HORIZONTALLY RELATIVE TO THE FRONT FACE OF THE UNIT. WHERE SPOUTS ARE LOCATED LESS THAN 3 INCHES (76 MM) OF THE FRONT OF THE UNIT, THE ANGLE OF THE WATER STREAM SHALL BE 30 DEGREES MAXIMUM. WHERE SPOUTS ARE LOCATED BETWEEN 3 INCHES (76 MM) AND 6 INCHES (152 MM) MAXIMUM FROM THE FRONT OF THE UNIT, THE ANGLE OF THE WATER STREAM SHALL BE 15 DEGREES MAXIMUM.

HUNTINGTON BEACH HIGH SCHOOL DANCE STUDIO
1905 MAIN ST
HUNTINGTON BEACH, CA 92648
DSA SUBMITTAL



FILE NO. 30-H5
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APPL. 04-118283
DATE MAY 0 2018

ENGINEER



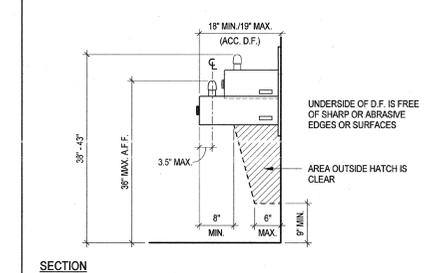
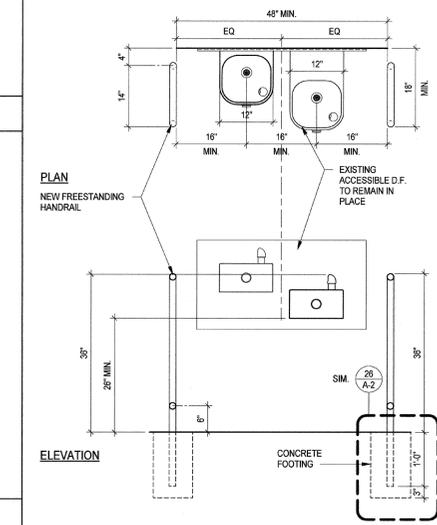
CLIENT: HUNTINGTON BEACH UNION HIGH SCHOOL DISTRICT
PROJECT NUMBER: 18296
DATE: 05/09/2019
DRAWN BY: Author
CHECKED BY: Checker

REVISIONS

No.	Description	Date

DSA SUBMITTAL
DOOR SCHEDULE AND DETAILS

A-4

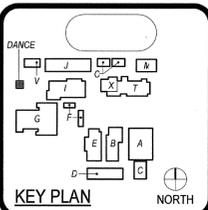


1 DRINKING FOUNTAIN GUIDELINE
3/4" = 1'-0"



ARCHITECTURE
 COSTA MESA
 234 EAST 17TH STREET, SUITE 200
 COSTA MESA, CA 92627
 949-548-5000 P
 949-548-5001 F
 PRK.com
 These drawings have been prepared as one coordinated set of drawings and are complementary. What is required by one drawing is required by all of the drawings, even if a detail or component part is not identified on any sheet. Any user's reliance on a single or select few sheet(s) of the drawings without consideration for the information included in the entire set of drawings will be at the user's sole risk and shall not form the basis for a request for additional compensation or time.

HUNTINGTON BEACH HIGH SCHOOL DANCE STUDIO
 1905 MAIN ST
 HUNTINGTON BEACH, CA 92648
 DSA SUBMITTAL



FILE NO. 30-HS
 IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 APR 14 11 12 23
 ACS FLS SS
 DATE MAY 0 9 2019

ENGINEER

ARCHITECT
 LICENSED ARCHITECT
 JAMES GONZALEZ
 No. C-26194
 EXPIRES 3-31-2020
 STATE OF CALIFORNIA

HUNTINGTON BEACH UNION HIGH SCHOOL DISTRICT
 PROJECT NUMBER 18296

No.	Description	Date
DATE:	05/09/2019	
DRAWN BY:	JG	
CHECKED BY:	LM	
REVISIONS		

DSA SUBMITTAL

SPECIFICATIONS
A-5.0

SECTION 01 25 00 SUBSTITUTION PROCEDURES AND FORM

PART 1 GENERAL

1.1 RELATED DOCUMENTS
 A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
1.2 SUMMARY
 A. Section Includes: Administrative and procedural requirements for substitutions.
1.3 DEFINITIONS
 A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 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 advantages to Contractor, such as duration, availability, sustainability design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 B. Products: Items purchased for incorporation in the Work, regardless if specifically purchased for the project or taken from the Contractor's previously purchased stock. The term "product" is inclusive for material, equipment, assembly, system" and other terms of similar intent.

1.4 SUBSTITUTIONS

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 facsimile of form provided in Project Manual.
 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, which are necessary to accommodate proposed substitution.
 c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, sustainability design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 e. Samples, where applicable or requested.
 f. Certificates and qualification data, where applicable or requested.
 g. List of similar installations for completed projects with project names and addresses and names and addresses of 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 substitution with Contractor's construction schedule in 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.

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.
 n. 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 Conditions 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.
1.5 QUALITY ASSURANCE
 A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.
1.6 PROCEDURE
 A. Coordination: Revise or adjust affected Work as necessary to integrate Work of the approved substitutions.
PART 2 PRODUCTS
2.1 SUBSTITUTIONS
 A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 30 days prior to time required for preparation and review of related submittals.
 B. 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 is consistent with the Contract Documents and will produce indicated results.
 b. Substitution request is fully documented and properly submitted.
 c. Requested substitution will not adversely affect Contractor's construction schedule.
 d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 e. Requested substitution is compatible with other portions of the Work.
 f. Requested substitution has been coordinated with other portions of the Work.
 g. Requested substitution provides specified warranty.
 h. 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 prior to the Award of the Contract. Requests received after that time may be considered or rejected at discretion of Architect.
 C. 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. 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.

END OF SECTION 01 25 00

PART 3 EXECUTION - NOT USED

Substitution Form to Follow

REQUEST FOR SUBSTITUTION
 Contract Award Date: _____
 To: _____
 Substitution Requested By: _____
 Project Name and Number: _____

We submit for consideration the following product in lieu of the specified item for the above project:
 Drawing No. Specification Section Paragraph Specified Item

 Proposed Substitution: _____

Request is made during _____ bidding _____ construction period.
 Submit in accordance with Section 01 33 00.
 1. Technical data, cost, and time information relating to changes to Construction Documents required by proposed substitution.
 2. Detailed comparison of proposed substitution and specified product including but not limited to warranty, significant variations, qualifications of manufacturers, and maintenance.
 3. Complete technical data, detailed shop drawings, samples, installation procedures, warranty, and substantiating data marked to indicate equivalent quality and performance to that specified. Manufacturer sell sheets are not acceptable submittals.

Cause for Request: _____
 Cost saving realized by Owner: _____
 Does substitution affect adjacent Work, Construction Documents, cost, schedule, quality, and related submittals?
 Yes _____ No _____ On separate sheet, explain affects to the Work, documents, schedule, and submittals.

The Contractor is responsible for associated costs and additional time of the proposed substitution including costs incurred by the Architect for evaluation of substitution and changes to the documents. Describe costs for changes to design, including engineering and detailing costs caused by the requested substitution.
 Explain Differences: _____
Contractor Certification:

In making a request for substitution, the Contractor certifies that:
 1. The proposed substitution has been thoroughly researched and evaluated and determined as equivalent or superior to specified product or material, will fit into space provided, and is compatible with adjacent materials.
 2. It will provide the same or better warranty for the proposed substitution at no additional cost to the Owner.
 3. Cost data is complete and includes related costs under the Contract. Claims for additional costs related to the proposed substitution that may subsequently become apparent are waived.
 4. It will assume the responsibility for delays and costs caused by the proposed substitution, if approved, are accepted by the Contractor unless delays are and costs are specifically mentioned and approved in writing by the Owner and the Architect.
 5. It will assume the liability for the performance of the substitution and its performance.
 6. The installation of the proposed substitution is coordinated with the Work and with changes required for the Work.
 7. It will reimburse the Owner and Architect for evaluation and redesign services associated with the substitution request and, when required, by approval by governing authorities.

Submitted by: _____
 Signature of Contractor Title _____
 Firm Telephone Date _____

Signature shall be by the individual authorized to legally bind the Contractor's to the above terms. Failure to provide legally binding signature will result in retraction of approval.
FOR USE BY ARCHITECT: FOR USE BY OWNER:
 _____ Accepted _____ Accepted as Noted _____ Accepted _____ Not Accepted
 _____ Not Accepted _____ Received Too Late
 By: _____
 Date: _____
 Remarks: _____

END OF SECTION 01 25 00

SECTION 01 33 00 SUBMITTAL PROCEDURES
PART 1 GENERAL
1.1 RELATED DOCUMENTS
 A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
 B. Related Sections:
 1. Section 01 25 00: Substitution Procedure and Form.
1.2 SUMMARY
 A. Section Includes: Requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
 B. Related Section:
 1. Section 01 25 00: Substitution Procedures and Form.
1.3 DEFINITIONS
 A. Submittals: Written and graphic information and physical samples that require Architect's responsive action or are for information and do not require the architect's action.
 B. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.
 C. Portable Document Format (PDF): An open standard file format used for representing documents in a device independent and display resolution independent fixed layout document format.

1.4 SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 2. Initial Submittal: Submit concurrently with construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule. Submit revised submittal schedule to reflect changes in current status and delivery time information.
 B. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
 1. Upon request, Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project record drawings.
 a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 b. Digital Drawing Software Program: The Contract Drawings are available in Revit.
 c. Contractor shall execute a data licensing agreement in the form of AIA Document C106, Digital Data Licensing Agreement.
 d. The following digital data files will be furnished for each appropriate discipline:
 1) Floor plans.
 2) Reflected ceiling plans.
 B. 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 submittals to Architect for review and approval. Submit submittals 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.
 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 C. Processing Time: Allow time for submittal review, including time for resubmittals. 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 10 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. Intermediate Review: If intermediate submittal is necessary, process in same manner as initial submittal.
 3. Resubmittal Review: Allow 10 days for review of each resubmittal.
 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
 5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 days for review of each submittal. Submittal will be returned to Architect before return to Contractor.
 D. Electronic Submittals: Identify and incorporate information in each electronic submittal file:
 1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number and other unique identifier, including revision identifier.
 a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., SLOHSM-06 10 00.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., SLOHSM-06 10 00.01A).
 3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
 4. Transmittal Form for Electronic Submittals: Use software generated form from electronic project management software acceptable to Owner, containing the following information:
 a. Project name.
 b. Date.
 c. Name and address of Architect.
 d. Name of Construction Manager.
 e. Name of Contractor.
 f. Name of firm or entity that prepared submittal.
 g. Names of subcontractor, manufacturer, and supplier.
 h. Category and type of submittal.
 i. Submittal purpose and description.
 j. Specification Section number and title.
 k. Specification paragraph number or drawing designation and generic name for each of multiple items.
 l. Drawing number and detail references, as appropriate.
 m. Location(s) where product is to be installed, as appropriate.
 n. Related physical samples submitted directly.
 o. Indication of full or partial submittal.
 p. Transmittal number, numbered consecutively.
 q. Submittal and transmittal distribution record.
 r. Other necessary identification.
 s. Remarks.

5. Metadata: Include the following information as keywords in the electronic submittal file metadata:
 a. Project name.
 b. Number and title of appropriate Specification Section.
 c. Manufacturer name.
 d. Product name.
 E. Options: Identify options requiring selection by Architect.
 F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
 G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
 H. 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.
 I. 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.

PART 2 PRODUCTS
2.1 SUBMITTAL PROCEDURES
 A. Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 1. Submit electronic submittals via email as PDF electronic files.
 a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 2. Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect will return two copies.
 3. Certificates and Certifications Submittals: Provide statement that includes verification 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.
 a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
 b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

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

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 a. Manufacturer's 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 showing 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 or concurrent with Samples.
 6. Submit Product Data in PDF electronic file.
 C. 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.
 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, other submittals, and related activities that require sequential activity.
 2. Sheet Size: Except for templates, patterns, and similar full size drawings, submit Shop Drawings on sheets size indicated in specification section.
 3. Submit Shop Drawings in PDF electronic file.
 D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 a. Generic description of Sample.
 b. Product name and name of manufacturer.
 c. Sample source.
 d. Number and title of applicable Specification Section.
 e. Specification paragraph number and generic name of each item.
 3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
 4. 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.
 5. Samples: Submit full size units or Samples, or 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 three sets of Samples. Architect will retain two Sample sets; remainder will be returned.
 1) Submit a single 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 at least three sets of paired units that show approximate limits of variations.

E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 1. Type of product. Include unique identifier for each product indicated in the Contract Documents or as set forth by Contractor if none is indicated.
 2. Manufacturer and product name, and model number if applicable.
 3. Number and name of room or space.
 4. Location within room or space.
 5. Submit product schedule in PDF electronic file.
 F. Coordination Drawing Submittals: Comply with requirements specified in Section 01 31 00.
 G. Contractor's Construction Schedule: Comply with requirements specified in Section 01 32 00.
 H. Application for Payment and Schedule of Values: Comply with requirements specified in Section 01 29 00.
 I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 01 45 23.
 J. Closeout Submittals required for Substantial Completion: Comply with requirements specified in Section 01 77 00.
 K. Maintenance Data: Comply with requirements specified in Section 01 78 23.
 L. 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.
 M. 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.
 N. 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.
 O. 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.
 P. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
 Q. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
 R. 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.
 S. 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.
 T. 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:
 1. Name of evaluation organization.
 2. Date of evaluation.
 3. Time period when report is in effect.
 4. Product and manufacturer's names.
 5. Description of product and building code requirements.
 6. Test procedures and results.
 7. Limitations of use.
 U. 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.
 V. 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 primers and substrate preparation needed for adhesion.

W. 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.
 X. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
2.2 DELEGATED DESIGN SERVICES
 A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required by 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 Certification: In addition to Shop Drawings, Product Data, and required submittals, submit digitally signed PDF electronic file and three 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. Identify 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.

PART 3 EXECUTION
3.1 CONTRACTOR'S REVIEW
 A. Action 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. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
3.2 ARCHITECT'S ACTION
 A. Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
 B. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
 C. Incomplete submittals are not permitted, will be considered nonresponsive, and will be returned for resubmittal without review.
 D. Submittals not required by the Contract Documents will be returned by the Architect without action.
END OF SECTION 01 33 00

SECTION 01 55 26 TRAFFIC CONTROL

PART 1 GENERAL

1.1 RELATED DOCUMENTS
 A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
1.2 SUMMARY
 A. Work consists of furnishing traffic control devices and services for the control and protection of traffic through the area of construction in accordance with the Drawings and Specifications and in conformity with the details and at the locations shown on the approved plans for Temporary Traffic Control or as established by local ordinances and/or CalTrans Engineers.
 B. Safe Traffic Flow to and through the project site shall be maintained at all times.
 C. Traffic control shall conform to Cal Tran's encroachment permit requirements or as designated by local ordinances.
1.3 SUBMITTALS
 A. Prior to beginning construction the Contractor shall apply for any and all traffic related permits and/or encroachments required by CalTrans or local jurisdictions. Provide detailed plans, indicating location and placement of traffic, altering devices including advanced warning signage, detour signage required for the project. Temporary Traffic Control plan must be approved by the Architect, subjected to CalTrans permitting prior to beginning construction activities.

PART 2 PRODUCTS - NOT USED
PART 3 EXECUTION
 A. There will be no interruption of traffic on adjacent and feeder roads to the residential and commercial usage by maintaining a minimum of one-way traffic.
 B. No construction shall begin until all traffic control signs and devices are installed by the Contractor.
END OF SECTION 01 55 26

SECTION 01 73 29 CUTTING AND PATCHING

PART 1 GENERAL

1.1 RELATED DOCUMENTS
 A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
1.2 SUMMARY
 A. Section Includes: Procedural requirements for cutting and patching.
1.3 DEFINITIONS
 A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
 B. Patching: Filling and repair Work required to restore surfaces to original conditions after installation of other Work.
1.4 SUBMITTALS
 A. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
 1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
 2. Changes to In Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
 3. Products: List products used for patching and firms or entities that will perform patching Work.
 4. Dates: Indicate when cutting and patching will be performed.
 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

1.5 QUALITY ASSURANCE
 A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 B. Structural Elements: When cutting and patching structural elements, 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.
 C. Operational Elements: Do not cut and patch operating elements and related components that results in reducing the capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 1. Primary operation systems and equipment.
 2. Fire separation assemblies.
 3. Air or smoke barriers.
 4. Fire suppression systems.
 5. Mechanical systems piping and ducts.
 6. Control systems.
 7. Communication systems.
 8. Fire-detection and -alarm systems.
 9. Conveying systems.
 10. Electrical wiring systems.
 11. Operating systems of special construction.
 D. Miscellaneous Elements: Do not cut and patch the following elements or related components that change the load bearing capacity, resulting in a reduction of capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 1. Water, moisture, or vapor barriers.
 2. Membranes and flashings.
 3. Exterior curtain wall construction.
 4. Equipment supports.
 5. Piping, ductwork, vessels, and equipment.
 6. Noise and vibration control elements and systems.
 7. Sprayed fire resistive material.

E. Visual Requirements: Do not cut and patch construction resulting in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces 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.
 1. If possible, retain original Installer or fabricator to cut and patch exposed Work. If possible, engage original Installer or fabricator. If original installer is not available, engage recognized, experienced, and specialized firm for the Work.
 a. Processed concrete finishes.
 b. Ornamental metal.
 c. Matched veneer woodwork.
 d. Preframed metal panels.
 e. Roofing.
 f. Fireproofing.
 g. Window and door frames.
 h. Fluid applied flooring.
 i. Wall covering.
 j. HVAC enclosures, cabinets, or covers.
 F. Cutting and Patching Conference: Before proceeding, meet at site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.6 WARRANTY
 A. 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.

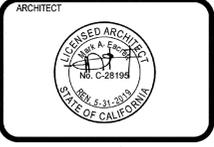
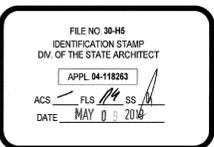
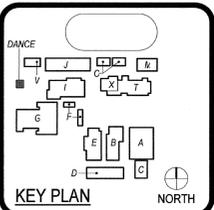
PART 2 PRODUCTS

2.1 MATERIALS
 A. Comply with specified requirements.
 B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 EXECUTION

3.1 EXAMINATION
 A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.
3.2 PREPARATION
 A. Temporary Support: Provide temporary support of Work to be cut.
 B. Protection: Protect existing 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.
 C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
 D. Existing Services: Before removal, relocation, or abandonment is necessary, bypass existing services before cutting to avoid interruption of services to occupied areas.

3.3 CUTTING AND PATCHING
 A. Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at earliest feasible time, and complete without delay.
 1. Cut existing construction to provide for installation of components or performance of construction, and subsequently patch as necessary to restore surfaces to original condition.
 2. 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. Temporary Support: Provide temporary support of Work to be cut.
 C. 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.
 D. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 01 10 00; Summary of work and what is shown on drawings.



CLIENT: HUNTINGTON BEACH UNION HIGH SCHOOL DISTRICT
PROJECT NUMBER: 18296
DATE: 05/09/2019
DRAWN BY: JG
CHECKED BY: LM

REVISIONS table with columns: No., Description, Date

SECTION 02 21 00 SURVEYS
PART 1 GENERAL
1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Division 01 Specifications Sections, apply to this Section.
1.2 SUMMARY
A. Section relates to execution of survey construction staking and addresses the following:
1. Personnel and applicable responsibilities for surveying and staking.
2. Procedures and time limitations.
3. Consideration of monuments and damage.
1.3 QUALITY ASSURANCE
A. The work to be done under this section shall be by an agent of the Owner and shall consist of furnishing and setting construction stakes and marks by the Owner to establish the lines and grades required for completion of the work as shown on the plans and specified in the project specifications.
B. The Contractor shall provide or procure surveying services as necessary for the successful completion of the work for all work required beyond that initially provided by the Owner.
PART 2 PRODUCTS (NOT USED)
PART 3 EXECUTION
A. Construction staking shall be performed under the direction of a licensed land surveyor or registered professional engineer familiar with construction surveying and staking.
B. Construction staking shall be performed as necessary to control the work. Construction stakes and marks shall be furnished and set with accuracy adequate to assure that the completed work conforms to the lines, grades, and sections shown on the plans.
C. The Contractor shall provide a construction staking request in writing to the Owner and Engineer no less than seventy-two (72) hours prior to the desired time for construction staking to be performed.
D. Construction stakes shall be removed from the site by the Contractor when no longer needed. Removal and disposal of construction staking materials is the sole responsibility of the Contractor.
E. In the event the Contractor's operations destroy any of the Owner's survey control points, the Contractor shall either replace such control points at his expense, subject to verification by the Engineer, or request the Owner to replace the destroyed control points. If requested to replace the control points, the Owner will do so within fourteen (14) calendar days. The cost of any such verification or replacement of the Owner's control surveys will be the sole responsibility of the Contractor with no additional cost to the Owner. The Contractor will not be allowed any adjustment in contract time for such verification or replacement of survey control points.
F. The Contractor must preserve all Geographic Reference Stations, section corners, and all other legal property monuments of any kind during all construction and related activities. It is the Contractor's responsibility to become familiar with the survey control and documentation of the site and surrounding property prior to conducting activities on the site that may potentially jeopardize such facilities.
G. The Contractor shall give written notice to the Owner and Engineer at least five (5) working days in advance of any need to disturb or destroy any of the monuments of the site. Contractor must receive approval for such destruction or disturbance from the Owner and Engineer prior to conducting the work.
H. Only a Professional Land Surveyor registered in the State of California will be permitted to perform surveying to reset or replace destroyed monuments. The Professional Land Surveyor shall follow all rules, regulations, provisions, and laws of the State of California, as applicable for such work.
I. The cost of replacement of monuments destroyed or disturbed by the Contractor will be the sole responsibility of the Contractor and be at an additional cost to the Owner.
J. The Owner will provide construction staking including benchmarks and layout. No payment will be made to the Contractor for these items.
END SECTION 02 21 00

SECTION 03 30 00 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. Revise list below to suit Project.
2. Footings and foundation walls.
3. Interior Slabs-on-grade.
4. Exterior slabs-on-grade.
B. Special Coordination Requirements: Coordinate with the work of the following sections to identify the finish flooring manufacturer's concrete slab requirements. Such requirements may be over and above the requirements of the Contract Documents and may require additional materials, means, or methods, which shall be included as part of the Work.
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 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. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hook spacing, and supports for concrete reinforcement.
D. Samples: For vapor retarder.
E. Certificates: Weighmaster's Certificates.
F. Material Certificates: For each of the following, signed by manufacturers:
1. Cementitious materials.
2. Admixtures.
3. Waterstops.
4. Curing materials.
5. Floor and slab treatments.
6. Bonding agents.
7. Adhesives.
8. Vapor retarders.
9. Sementing joint filler.
10. Joint-filler strips.
11. 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.
1.5 QUALITY ASSURANCE
A. Codes and Standards: Comply with provisions of following codes, specifications and standards, except where more stringent requirements are shown or specified:
1. CBC 2016 California Building Code (CCR Title 24, Part 2, as adopted and amended by DSA).
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. Source Quality Control: Furnish Weighmaster's Certificates for all concrete.
D. Welding Qualifications: Quality procedures and personnel according to AWS D1.4/D 1.4M, "Structural Welding Code - Reinforcing Steel".
E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
1. ACI 301, "Specifications for Structural Concrete".
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
3. ACI 308R, "Hot Weather Concrete".
4. ACI 308R, "Cold Weather Concrete".
5. ACI 308, "Standard Practice for Curing Concrete".
6. ACI 318-14, "Building Code Requirements for Reinforced Concrete".
F. Concrete Testing Service: Engage a qualified independent testing agency approved by DSA to perform material evaluation tests and to design concrete mixtures.
1.6 DELIVERY, STORAGE, AND HANDLING
A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

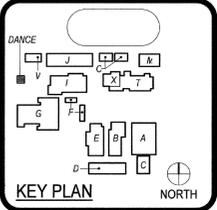
PART 2 PRODUCTS
2.1 FORM-FACING MATERIALS
A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in large sizes to minimize number of joints.
1. Plywood, metal, or other approved panel materials.
2. Exterior-grade plywood panels, 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. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.
D. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.
E. 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.
F. 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 ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.
2.2 STEEL REINFORCEMENT
A. Reinforcing Bars: ASTM A 615/A 615M, Grade 40 for #4 bars and smaller, Grade 60 for #4 5 bars and larger, using deformed bars for #3 and larger.
B. Welded Reinforcing Bars: Low-Alloy-Steel Reinforcing Bars, ASTM A 706/A 706M, deformed.
C. Do not use reinforcement having any of the following defects:
1. Bar lengths, depths, or bends exceeding the specified fabricating tolerances.
2. Bends or kinks not indicated on the Drawings or required for this Work.
3. Bars with cross-section reduced due to excessive rust or other causes.
2.3 REINFORCEMENT ACCESSORIES
A. 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.
2.4 CONCRETE MATERIALS
A. Cementitious Materials: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
1. Portland Cement: ASTM C 150, Type III. Supplement with the following:
2. Fly Ash: ASTM C 618, Class F.
B. Normal-Weight Aggregates: ASTM C 33.
1. Maximum Coarse-Aggregate Size: 3/4-inch nominal maximum aggregate size.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
C. Water: ASTM C 94 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.
C. Integral Waterproofing Admixtures: ASTM C494, Type S; complex catalyzed hydrous silicate, water and vapor proofing liquid admixture.
1. Product: Subject to compliance with requirements, provide Moxie International Inc., Moxie Shield 800 Concrete Admixture, P.O. Box 838 Loomis, CA 95650; Contact Manufacturer's representative: P-916-251-0825, F: 877-330-1930 Email: HYPERLINK "mailto:info@moxieshield.com" info@moxieshield.com
2. Properties:
a. Water/Cement Ratio: Maximum 0.52
b. Water Vapor transmission: Less than 0.1 perms (5.7 g/Pa-s-m2)
c. Water Seepage or Permeability: Not to exceed 7.00 x 10-9 cm/s @ 50psi (2.3 x 10-10 lbs)
3. HYPERLINK "http://www.arconnet.com/sustainable_design.aspx?topic=59" Products shall comply with the requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
2.6 VAPOR RETARDERS
A. Sheet Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.
1. HYPERLINK "http://www.specagcent.com/lookUp/?uid=1166&mf=04&src=wd" Products: Subject to compliance with requirements, acceptable products:
d. HYPERLINK "http://www.specagcent.com/lookUp/?uid=123456816737&mf=04&src=wd" Carlisle Coatings & Waterproofing, Inc.; Blackline 400
e. HYPERLINK "http://www.specagcent.com/lookUp/?uid=123456816738&mf=04&src=wd" Fortifiber Building Systems Group; Moistop Ultra 15
f. HYPERLINK "http://www.specagcent.com/lookUp/?uid=123456816739&mf=04&src=wd" Grace Construction Products, W. R. Grace & Co.; Floorpufo 120
g. HYPERLINK "http://www.specagcent.com/lookUp/?uid=123456816740&mf=04&src=wd" Insulation Solutions, Inc.; Viper Vapor Check 16
h. HYPERLINK "http://www.specagcent.com/lookUp/?uid=123456816741&mf=04&src=wd" Meadows, W. R., Inc.; Permimstar 15 ml
i. HYPERLINK "http://www.specagcent.com/lookUp/?uid=123456816742&mf=04&src=wd" Raven Industries Inc.; Vapor Block 15
j. HYPERLINK "http://www.specagcent.com/lookUp/?uid=123456816743&mf=04&src=wd" Reef Industries, Inc.; Griffon 15 mil Green
k. HYPERLINK "http://www.specagcent.com/lookUp/?uid=123456816744&mf=04&src=wd" Slagc Industries, LLC; Slagc Wrap 15 mil Class A
B. 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.
2.7 CURING MATERIALS
A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-styrene/ethylene sheet.
C. Water: Potable.
D. Non-shrink Grout:
1. Factory premixed grout; ASTM C1107.
2. Compressive strength: 7,000 psi at 28 days.
E. Exterior Concrete Walks: Provide a capillary break consisting of 2" of clean dry sand, ASTM C33, evenly spread on top of the compacted subgrade.
2.8 CONCRETE MIXTURES, GENERAL
A. Prepare design mixtures for each type and volume 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.
2. All concrete mix designs shall be prepared and stamped by a California registered Civil Engineer.
B. Cementitious Materials: Limit percentages, by weight, of cementitious materials other than portland cement in concrete as follows:
1. Fly Ash: 15 to 25 percent.
C. Admixtures: Use admixtures according to manufacturer's written instructions.
1. Use water-reducing 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 required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
D. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

2.8 CONCRETE MIXTURES FOR BUILDING ELEMENTS
A. Exterior Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 3000 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.55.
3. Minimum Cementitious Materials Content: 5.5 sacks of cement per cubic yard.
4. Slump Limit: 4 inches, plus or minus 1 inch.
2.10 FABRICATING REINFORCEMENT
A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice for Reinforcing Steel."
2.11 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.
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. Construct forms tight enough to prevent loss of concrete mortar.
D. Rightsize forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
E. 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. In no case shall any bolt or anchor be installed in place while or after the concrete is poured.
1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISI's "Code of Standard Practice for Steel Buildings and Bridges."
3.3 REMOVING AND REUSING FORMS
A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.
1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
2. Do not strip vertical concrete in less than 7 days.
3. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent. Duogard, manufactured by W.R. Meadows, or approved equal.
C. When forms are reused, clean surfaces, remove fins and laliance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.
3.4 SHORES AND RESHORES
A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.
1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.
B. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.
3.5 VAPOR RETARDERS
A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.
1. Lap joints 6 inches and seal with manufacturer's recommended tape.
2. Seal all penetrations (including pipes) per manufacturer's tape.
3. No penetration of the vapor barrier is allowed except for reinforcing and permanent utilities.
4. Repair damaged areas by cutting patches of vapor barrier, overlapping damaged area 6 inches and taping all four sides with tape.
5. Do not saturate the sand cushion.
6. If sand is saturated prior to placement of concrete, remove the sand and replace.
7. Protect all installed moisture barrier construction from precipitation and water penetration by covering and providing positive drainage away from the moisture barrier.
8. Cover slab openings and block-outs around columns to prevent water penetration of moisture barrier.
3.6 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.
2. Clean reinforcement and remove loose dust and mill scale, earth, oil, and other materials which reduce bond or destroy bond with concrete.
3. Position, support, and secure reinforcement against displacement by forms, construction, and the concrete placement operations. Provide metal chairs, dories, or other aids manufactured for this purpose.
4. Place reinforcement to obtain the required concrete coverages for concrete protection.
3.7 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 Architect.
C. Construction Joints in Slabs-on-Grade: Form weakened-plane construction joints, sectioning concrete into areas as indicated. Construct construction joints for a depth equal to at least one-inch as follows:
1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving tool marks on concrete surfaces.
2. Sawn Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch wide, 1/3-inch depth joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks. Saw cut slab so as soon as surface has hardened to where it can support the equipment and operator, normally within 2 hours after finishing. Use saw which is specially designed for cutting fresh concrete, such as "Soft-Cut" or equal.
D. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate one-half of dowel length to prevent concrete bonding to one side of joint.
3.8 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 Architect.
C. 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 induced 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.
D. 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. Scream 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.
E. 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 substrates 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.
F. 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.
3.9 FINISHING FORMED SURFACES
A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces not exposed to public view.
B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material arranged in an orderly and symmetrical pattern. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, to be covered with a coating or covering material applied directly to concrete.
C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
1. Smooth-Rubbed Finish: Not later than one day after form removal, smooth concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whiteners, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix 1 part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.
D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.
3.10 FINISHING FLOORS AND SLABS
A. General: Comply with ACI 302.1R recommendations for screeding, restraining, and finishing operations for concrete surfaces. Except as may be shown otherwise on the drawings, provide the following finishes at the indicated locations.
B. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.
3.11 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 exist. Apply evaporation retarder to concrete 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. 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.
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.
3.12 CONCRETE SURFACE REPAIRS
A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
3.13 FIELD QUALITY CONTROL
A. Testing and Inspecting: Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.
3.14 FIELD QUALITY CONTROL
A. Testing and Inspecting: Owner will engage a qualified testing and inspecting agency to 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: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
2. Testing Frequency: Obtain at least one composite sample for each 50 cu. yd. or fraction thereof of each concrete mixture placed each day, but not less than once for each 2000 square feet of surface area for slabs or walls.
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.
3. 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.
4. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. 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.
6. 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.
7. Compression Test Specimens: ASTM C 31/C 31M.
a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
b. Cast and field cure two sets of two standard cylinder specimens for each composite sample.
8. 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. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
b. 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.

9. When strength of field-cured cylinders is less than 85 percent of comparable laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
10. 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.
11. Test results shall be reported in writing to Architect, 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.
12. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
13. 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 Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
14. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
15. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.
END OF SECTION 03 30 00

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FILE NO. 30-HS IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT APRIL 04-118263

ENGINEER

ARCHITECT

HUNTINGTON BEACH UNION HIGH SCHOOL DISTRICT PROJECT NUMBER 18296

DATE: 05/09/2019 DRAWN BY: JG CHECKED BY: LM REVISIONS:

Table with 3 columns: No., Description, Date

DSA SUBMITTAL SPECIFICATIONS A-5.2

SECTION 09 80 00 PAINTING AND COATING

PART 1 GENERAL

- 1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
1.2 SUMMARY
A. Section Includes: Requirements including but not limited to:
1. Surface preparation and field painting of exposed items and surfaces.

- 1.3 DEFINITIONS
A. Standard coating terms defined in ASTM D 16 apply.
1. Flat refers to a lustereless or matte finish with a gloss range below 15 when measured at a 95 degree meter.

- 1.4 SUBMITTALS
A. Product Data: Submit technical data and information for block fillers, primers, paints, and coatings, including label analysis and instructions for handling, storing, and applying each coating material proposed for use.

- C. Product List: Submit list of including each paint system, color, and location of application. Use same product and location designations indicated in Finish Schedule.
1.5 QUALITY ASSURANCE
A. Regulatory Requirements:
1. Comply with Federal and local toxicity and air quality regulations and with Federal requirements on content of for heavy metals including but not limited to: lead and mercury. Do not use solvents in paint products that contribute to air pollution.

- 1.6 WARRANTY
A. Written warranty signed by the manufacturer and the installer in which the manufacturer and installer agree to repair or replace paint and primers that fail within specified warranty period.
1. Failures include, but are not limited to, the following:
a. Flaking or delamination of paint with the substrate.

- 1.7 DELIVERY, STORAGE, AND HANDLING
A. Store materials not in use in tightly covered containers in well ventilated areas with ambient temperatures continuously maintained at not less than 45 degrees F (7 degrees C).

- 1.8 PREPARATION
A. Coordination of Work: Review work in which primers are provided to ensure compatibility of the total system for various substrates. Notify Architect of anticipated problems when using materials specified over substrates primed by others.

- 1.9 MAINTENANCE
A. Maintenance of Work: Review work in which primers are provided to ensure compatibility of the total system for various substrates. Notify Architect of anticipated problems when using materials specified over substrates primed by others.

- 1.10 PROTECTION
A. Protection of Work: Review work in which primers are provided to ensure compatibility of the total system for various substrates. Notify Architect of anticipated problems when using materials specified over substrates primed by others.

- 1.11 CLEANING
A. Cleaning of Work: Review work in which primers are provided to ensure compatibility of the total system for various substrates. Notify Architect of anticipated problems when using materials specified over substrates primed by others.

- 1.12 PROTECTION OF FINISHED WORK
A. If vehicular traffic has altered finished work, reshape and re-compact.

2.2 SOURCE QUALITY CONTROL

- A. Testing of Paint Materials: Contractor reserves the right to invoke to engage the services of a qualified testing agency to sample paint materials.
1. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to site, samples may be taken at the site. Samples will be identified, sealed, and certified by testing agency.

- 2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying paint if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

- 3.1 FIELD CONDITIONS
A. Apply waterborne paints when temperatures of surfaces to be painted and surrounding air are between 50 degrees F and 90 degrees F (10 degrees and 32 degrees C).
B. Do not thin or add water to waterbased paints, including waterbased alkyls.
C. Weather Conditions:

- 1. Do not apply materials when surface and ambient temperatures are outside the temperature range specified by the paint product manufacturer.
2. Do not apply paint in snow, rain, fog, or mist, or when the relative humidity exceeds 85 percent, or at temperatures less than 5 degrees F (3 degrees C) above dew point, or to damp or wet surfaces.

- 3.2 EXTRA MATERIALS
A. Furnish extra materials, from the same product run, that match products installed and are packaged with protective covering for storage and identified with labels describing contents.
1. Paint: 2 percent, but not less than 1 gallon (3.8 L) of each material and color applied.

- 3.3 EXAMINATION
A. Examine substrates and conditions for compliance with requirements for maximum moisture content and conditions affecting performance of the work.
B. Test substrates after repairing and cleaning substrates but prior to application of paint and coatings.

- 1. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
a. Concrete: 12 percent.
b. Fiber Cement Board: 12 percent.
c. Masonry (Clay and CMUs): 12 percent.

- 3.4 COORDINATION OF WORK
A. Coordination of Work: Review work in which primers are provided to ensure compatibility of the total system for various substrates. Notify Architect of anticipated problems when using materials specified over substrates primed by others.

- 1. Preprimed Substrates: Inspect existing conditions in which primers are factory applied to ensure compatibility of the total system for each substrate. Notify Architect of anticipated problems when using materials specified over factory primed or preprimed substrates.

- 2. Existing Painted Surfaces: Inspect previously painted surfaces to ensure compatibility of the existing paints with new paint system for each substrate. Notify Architect of anticipated problems.
3. Correct defects and clean surfaces affecting bond with paint system. Remove existing paints exhibiting loose surface defects showing signs of rust, scale, or delamination.

- 4. Seal marks which may bleed through surface finishes.
B. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified. Provide barrier coats over incompatible primers or remove and reprime. If removal is impractical or impossible because of size or weight of item, provide surface applied protection before surface preparation and painting.

- 1. Remove hardware and hardware accessories, plates, lighting fixtures, and similar items that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface applied protection before surface preparation and painting. After completing painting operations in the trades space or area, reinstall items removed using workers skilled in the trade involved.
2. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface applied protection if any.

- 3. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
4. Clean and prepare surfaces to receive paint according to manufacturer's written instructions for each substrate condition and as specified. Provide barrier coats over incompatible primers, existing paint or coating, or remove and reprime.

- 5. Correct defects and clean surfaces affecting bond with paint or coating system. Remove existing coatings exhibiting loose surface defects. Seal marks which may bleed through surface finishes.
C. Cleaning: Before applying paint or surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning. Schedule cleaning and painting so dust and contaminants from the cleaning process will not fall on wet, newly painted surfaces.

- 1. Remove surface film preventing proper adhesion and bond.
2. Wash glossy paint with a solution of water and detergent until clean and thoroughly.
3. Remove loose, blistered, and defective paint and varnish, smooth edges with sandpaper.
4. Clean corroded iron and steel surfaces.
5. Repair and blend into portland cement plaster.
6. Prime bare surfaces.

- 7. Tone varnished surfaces with stain bringing to uniform color.
8. If existing surfaces show staining, use a stain remover or finishing by customary cleaning, sanding, and buffing operations, notify Owner and do not proceed until correcting unsatisfactory conditions.
F. Plaster/Stucco Substrates: Remove contaminants, release agents, curing compounds, efflorescence, chalk, mold, mildew, and similar delimiters. Spot patch existing plaster to eliminate blisters, buggies, excessive crazing, and to check cracking, dryouts, efflorescence, sweat outs, and similar defects the prevent plaster from bonding with paint or coatings.
1. Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

- 2. Do not paint surfaces if moisture content or alkalinity of surfaces exceeds that permitted in manufacturer's written instructions. Test for alkali using litmus paper.
3. Feather touch up coating overlapping minimum 2 inches onto adjacent unblemished areas producing smooth, uniform surface.
4. As soon after erection and installation as possible, touch up fasteners, welds, surfaces and surroundings, field connections, and areas on which shop dirt or other contaminants are present with specified primer before corrosion and other damage occurs from exposure.

- 3.6 FIELD QUALITY CONTROL
A. Dry Film Thickness (DFT) Testing: Tests for dry film thickness may be determined by using a Toke Scale and microgroover, an electronic scanner, or the Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
1. Contractor shall touch up and restore painted surfaces damaged by testing.

- 3.7 CLEANING AND PROTECTION
A. If it is determined that the ASD that the sites remain in a safe, clean, and well maintained condition. At the end of each day, leave the site ready to use by staff and students. Protect staff and students and the learning environment throughout the work.
B. Cleanup: At the end of each day, remove empty cans, rags, rubbish, and discarded paint materials from site. After completion of painting work, clean glass and paint splattered surfaces. Remove splattered paint by washing and scraping with appropriate solvents or using a scraper. Do not use solvents on masonry surfaces.

- 3.8 PROTECTION OF FINISHED WORK
A. If vehicular traffic has altered finished work, reshape and re-compact.

- 3.9 TRENCH EXCAVATION
A. Excavate for structures down to the levels indicated on the drawings or as directed by the Engineer. Excavate as large as necessary to accommodate the work forms. When necessary over-excavate to remove unsuitable soil and replace with engineered fill. Comply with all safety regulations.

- 3.10 BACKFILLING
A. Use care to prevent disturbance or damage to utilities or structures in trench.
B. Maintain optimum moisture content to attain required compaction density.
C. Remove surplus fill materials from site.
D. Leave fill material stockpile areas free of excess fill materials.

- 3.11 TRENCH BACKFILLING
A. Use excavated soil as embedment unless Engineer determines it unsuitable. Unsuitable material is defined as incapable of being compacted to specified density with optimum moisture content, solid or loose rock, lump material larger than 1 inch, organic matter, or debris.

- 3.12 FIELD QUALITY CONTROL
A. The Owner, at its discretion, may acquire the services of a certified soils testing laboratory to perform baseline Modified Proctor density tests in accordance with Cal 216 or latest revision:
1. Tests may be performed at locations approved by the Engineer.

- 3.13 PROTECTION OF FINISHED WORK
A. If vehicular traffic has altered finished work, reshape and re-compact.

- 3.14 TRENCH EXCAVATION
A. Excavate for structures down to the levels indicated on the drawings or as directed by the Engineer. Excavate as large as necessary to accommodate the work forms. When necessary over-excavate to remove unsuitable soil and replace with engineered fill. Comply with all safety regulations.

- 3.15 BACKFILLING
A. Use care to prevent disturbance or damage to utilities or structures in trench.
B. Maintain optimum moisture content to attain required compaction density.
C. Remove surplus fill materials from site.
D. Leave fill material stockpile areas free of excess fill materials.

- 3.16 TRENCH BACKFILLING
A. Use excavated soil as embedment unless Engineer determines it unsuitable. Unsuitable material is defined as incapable of being compacted to specified density with optimum moisture content, solid or loose rock, lump material larger than 1 inch, organic matter, or debris.

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A. Excavate for structures down to the levels indicated on the drawings or as directed by the Engineer. Excavate as large as necessary to accommodate the work forms. When necessary over-excavate to remove unsuitable soil and replace with engineered fill. Comply with all safety regulations.

- 3.18 BACKFILLING
A. Use care to prevent disturbance or damage to utilities or structures in trench.
B. Maintain optimum moisture content to attain required compaction density.
C. Remove surplus fill materials from site.
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- 3.19 TRENCH BACKFILLING
A. Use excavated soil as embedment unless Engineer determines it unsuitable. Unsuitable material is defined as incapable of being compacted to specified density with optimum moisture content, solid or loose rock, lump material larger than 1 inch, organic matter, or debris.

- 3.20 FIELD QUALITY CONTROL
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- 3.21 PROTECTION OF FINISHED WORK
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- 3.22 TRENCH EXCAVATION
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- 3.23 BACKFILLING
A. Use care to prevent disturbance or damage to utilities or structures in trench.
B. Maintain optimum moisture content to attain required compaction density.
C. Remove surplus fill materials from site.
D. Leave fill material stockpile areas free of excess fill materials.

- 3.24 TRENCH BACKFILLING
A. Use excavated soil as embedment unless Engineer determines it unsuitable. Unsuitable material is defined as incapable of being compacted to specified density with optimum moisture content, solid or loose rock, lump material larger than 1 inch, organic matter, or debris.

- 3.25 FIELD QUALITY CONTROL
A. The Owner, at its discretion, may acquire the services of a certified soils testing laboratory to perform baseline Modified Proctor density tests in accordance with Cal 216 or latest revision:
1. Tests may be performed at locations approved by the Engineer.

- 3.26 PROTECTION OF FINISHED WORK
A. If vehicular traffic has altered finished work, reshape and re-compact.

- 3.27 TRENCH EXCAVATION
A. Excavate for structures down to the levels indicated on the drawings or as directed by the Engineer. Excavate as large as necessary to accommodate the work forms. When necessary over-excavate to remove unsuitable soil and replace with engineered fill. Comply with all safety regulations.

- 3.28 BACKFILLING
A. Use care to prevent disturbance or damage to utilities or structures in trench.
B. Maintain optimum moisture content to attain required compaction density.
C. Remove surplus fill materials from site.
D. Leave fill material stockpile areas free of excess fill materials.

- 3.29 TRENCH BACKFILLING
A. Use excavated soil as embedment unless Engineer determines it unsuitable. Unsuitable material is defined as incapable of being compacted to specified density with optimum moisture content, solid or loose rock, lump material larger than 1 inch, organic matter, or debris.

- 3.30 FIELD QUALITY CONTROL
A. The Owner, at its discretion, may acquire the services of a certified soils testing laboratory to perform baseline Modified Proctor density tests in accordance with Cal 216 or latest revision:
1. Tests may be performed at locations approved by the Engineer.

1.2 SUMMARY

- A. Section relates to site preparation for grading and removal of excess material and includes:
1. Regulatory requirements
2. Protection
3. Site Grading
4. Excavation
5. Backfilling
6. Compaction
7. Quality Control
8. Restoration.

- B. Reference Standards:
1. ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb (2.5 Kg) Rammer and 12 inch (300 mm) Drop.
2. ASTM D1556 - Test Method for Density of Soil in Place by the Sand-Cone Method.

- C. Submittal Requirements:
1. In accordance with the requirements of Section 6705 of the Labor Code of the State of California, submit a detailed plan to the Engineer before excavation, showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of any trench or trenches 5 feet or more in depth.
2. Plan must be submitted and approved by the Owner and Engineer prior to start of work.

- 1.3 DEFINITIONS
A. Utility: Any buried pipe, duct, conduit, or cable.
B. Structure: Foundation, manhole, septic tank, cleanout, catch basin, vault, or culvert.
C. Solid Rock: Large continuous masses of igneous, metamorphic, or sedimentary rock, which in the opinion of the Engineer cannot be excavated without drilling and blasting. Soil that is capable of being excavated with rippers is not considered solid rock.

- 1.4 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
1.2 SUMMARY
A. This Section includes requirements for excavation, backfilling, compaction, quality control, and restoration.
B. Measurement:
1. Excavation and Fill: Includes all labor material and equipment necessary for the excavation and fill to the lines and grades shown on the project plans for construction. Fill shall be compacted per this section. Measurement shall be made by weight tickets or performing field surveys after initial site grading and after fill is complete, and shall be measured by the in-place volume or by other methods agreed upon between the Contractor and the Engineer.
2. Trenching & Backfilling: Cost to be included in other items. Includes excavating trenches and backfilling for all pipe and utilities in the project area.

- 1.5 RELATED DOCUMENTS
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A. This Section includes requirements for excavation, backfilling, compaction, quality control, and restoration.
B. Measurement:
1. Excavation and Fill: Includes all labor material and equipment necessary for the excavation and fill to the lines and grades shown on the project plans for construction. Fill shall be compacted per this section. Measurement shall be made by weight tickets or performing field surveys after initial site grading and after fill is complete, and shall be measured by the in-place volume or by other methods agreed upon between the Contractor and the Engineer.
2. Trenching & Backfilling: Cost to be included in other items. Includes excavating trenches and backfilling for all pipe and utilities in the project area.

- 1.12 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
1.2 SUMMARY
A. This Section includes requirements for excavation, backfilling, compaction, quality control, and restoration.
B. Measurement:
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2. Trenching & Backfilling: Cost to be included in other items. Includes excavating trenches and backfilling for all pipe and utilities in the project area.

PART 2 PRODUCTS

- 2.1 IMPORTED PIPE EMBEDMENT
A. Use imported soil that is free of shale, clay, friable material, and debris. Grade in accordance with ASTM C136, within the following limits:
Table 1: Sieve Size vs Percent Passing
Table 2: Sieve Size vs Percent Passing (Contract Compliance)

- 2.2 IMPORTED STRUCTURAL FILL
A. Use imported soil (if required) that has angular fragments and a low expansion index (less than 30 per ASTM D 4829). Use imported fill that complies with the requirements of Caltrans Class 2 Aggregate Sub-base:
Table 3: Sieve Size vs Percent Passing (Contract Compliance)

PART 3 EXECUTION

- 3.1 FIELD MEASUREMENTS
A. Verify that survey benchmarks, control points, and intended elevations are as shown on drawings.
3.2 PROTECTION
A. Barricade open excavations.
B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
C. Provide safe conditions for workers and passers-by.

- 3.3 PREPARATION
A. Notify Underground Service Alert (800) 227-2600 in Northern California prior to excavation. Comply with their notice requirements.
B. Identify required lines, levels, contours, and datum locations.
C. Protect plant life, lawns, rock outcroppings, and other features remaining as final landscaping.
D. Protect benchmarks, existing structures, fences, and paving from excavating equipment and vehicular traffic.
E. Maintain and protect utilities and structures to remain.

- 3.4 EXCAVATION
A. Use open cut method on all excavation unless otherwise shown on the drawings, required by permit, or approved in writing by the Engineer.
B. Stockpile excavated material on site. Any material not utilized for construction purposes may be spread onsite or removed from the site as designated by the Engineer.
3.5 CLASSIFICATION OF EXCAVATION
A. All excavation with equipment commonly used in the industry is classified as common excavation (except for drilling and blasting).

- 3.6 TRENCH EXCAVATION
A. Cut trenches sufficiently wide to enable installation and inspection. Remove water or materials that interfere with work. When groundwater is encountered the Contractor must submit a dewatering plan to the Engineer for approval.
B. Maintain trench sides as vertical as possible-between 12 inches and 24 inches wider than the outside diameter of the pipe bare-below pipe level.
C. Excavate trench width above the pipe as wide as necessary for shoring, sheeting, and installation.
D. Center trench excavation on pipe alignment for a minimum clearance of 6 inches on each side of the pipe.
E. Hand trim for bell and spigot pipe joints. Remove loose matter.
F. Restore over-excavated areas. If the trench bottom is over-excavated below the intended grade, fill over-excavation with imported pipe embedment and compact to density equivalent to the in situ material.

- G. Remove exposed subsoil, boulders, and rock up to 1/2 yd³ (measured by volume). H. Excavate for additional trench depth when soil prevents adequate pipe support. Refill addition with imported pipe embedment. Remove large rock, boulders, and large stones to provide 3 inches of soil cushion on all sides of the pipe and pipe accessories.
1. Length of trench that may be left open at any one time is 100 yards. Do not leave trench open over night.
J. Stockpile excavated material in designated area on site, and remove excess material from site.

- 3.7 STRUCTURE EXCAVATION
A. Excavate for structures down to the levels indicated on the drawings or as directed by the Engineer. Excavate as large as necessary to accommodate the work forms. When necessary over-excavate to remove unsuitable soil and replace with engineered fill. Comply with all safety regulations.
B. Excavate a sufficient distance from walls and footings to provide forming except where concrete is directly against excavated surfaces.
C. Do not excavate below depths indicated in the drawings. Restore over-excavated areas to proper elevation by filling with imported structural fill. Do not interfere with 45 degree bearing spray of foundations.
D. Hand-trim the bottom of the excavation to prevent disturbing the soil below the required depth.

- 3.8 BACKFILLING
A. Use care to prevent disturbance or damage to utilities or structures in trench.
B. Maintain optimum moisture content to attain required compaction density.
C. Remove surplus fill materials from site.
D. Leave fill material stockpile areas free of excess fill materials.

- 3.9 TRENCH BACKFILLING
A. Use excavated soil as embedment unless Engineer determines it unsuitable. Unsuitable material is defined as incapable of being compacted to specified density with optimum moisture content, solid or loose rock, lump material larger than 1 inch, organic matter, or debris.
B. Use excavated soil as final backfill unless the Engineer determines it unsuitable. Unsuitable final backfill material is solid or loose rock larger than 6 inches or lumps larger than 3 inches. Do not use organic matter or debris.
C. Backfill pipe embedment material in uniform layers on all sides of the pipe in lifts not to exceed 6 inches.
D. Use the following methods when placing final backfill material unless otherwise required by permit, or approved in writing by the Engineer.

Table with 4 columns: Location, Backfilling Method, Initial Backfill, Final Backfill

- 3.12 FIELD QUALITY CONTROL
A. The Owner, at its discretion, may acquire the services of a certified soils testing laboratory to perform baseline Modified Proctor density tests in accordance with Cal 216 or latest revision:
1. Tests may be performed at locations approved by the Engineer.
2. Test results from tests prior to construction will be made available to the contractor.
3. Testing is at the Owner's expense.
B. Compaction testing will be determined at the Engineer's discretion.
C. If work does not meet specified requirements, remove, replace, and retest. All re-testing is at the contractor's expense. Compaction tests shall be used as the basis for determination of acceptability of work performed under this contract.

- 3.13 PROTECTION OF FINISHED WORK
A. If vehicular traffic has altered finished work, reshape and re-compact.

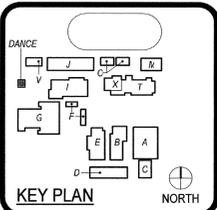
- 3.14 TRENCH EXCAVATION
A. Excavate for structures down to the levels indicated on the drawings or as directed by the Engineer. Excavate as large as necessary to accommodate the work forms. When necessary over-excavate to remove unsuitable soil and replace with engineered fill. Comply with all safety regulations.

- G. Prime Coats: Before applying finish coats, apply prime coat, recommended by manufacturer and tested to be in acceptable condition for painting.
H. Finish Coats: 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. If undercoats or other components are to be applied, apply uniform finish coat until cured film has a uniform paint finish, color, and appearance without bleed through.
1. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or surface imperfections is not acceptable.
2. Transparent (Clear) Finishes: Use multiple coats to produce glass smooth surface film of even color. Provide a finish free of lags, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections. Provide satin finish for final coats.

- I. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.
J. Touch Up: Touch up marred, scraped, and blemished areas of surfaces which were factory primed or previously coated.
K. Foreign Matter: Remove dust, dirt, and debris from surfaces before painting.
L. Patching and Repair: Repair compounds to set and cure before painting.
M. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

- N. Pipe Covering and Insulation: Clean to remove loose, foreign, and objectionable material before applying sealing coating.
1. Barrier Coat: Provide barrier coats over incompatible primers or remove and reprime. Notify Owner in writing of anticipated problems using specified finish coat material over previously coated substrates.
J. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Main containers used in mixing and applying paint in a clean condition, free of foreign material and residue.
2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into film. If necessary, remove surface film and strain material before using.
3. Do not use thinners for water based paints.
4. Tinting: Tint each undercoat a lighter shade to facilitate identification of each coat where multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but do not use different differences in shade of undercoats to distinguish each separate coat.

- 3.5 APPLICATION
A. Comply with manufacturer's written instructions and recommendations applicable to substrates and paint systems indicated.
1. The term exposed surfaces includes areas visible when permanent or built in fixtures, grilles, convactor covers, covers for finned tube radiation, and similar components are in place.
2. System integrity and provide desired protection.
3. Use applicators and techniques suited for paint and substrate indicated.
4. Provide finish coats compatible with primers.
5. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
6. Paint exposed surfaces with a prime coat if an item or surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces.
a. Field painting of exposed surfaces include bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron supports, and surfaces of mechanical and electrical equipment that do not have a factory applied finish coat.
b. Areas visible when permanent or built in fixtures, grilles, convactor covers, covers for finned tube radiation, and similar components are in place.
c. Extend coatings in areas, as required, to maintain system integrity and provide desired protection.



FILE NO. 30-H5 IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT APPL. 04-18263 ACS FLS SS DATE MAY 0 8 2019

ENGINEER



ARCHITECT HUNTINGTON BEACH UNION HIGH SCHOOL DISTRICT PROJECT NUMBER 18296 DATE: 05/09/2019 DRAWN BY: JG CHECKED BY: JG REVISIONS:

Table with 3 columns: No., Description, Date

DSA SUBMITTAL SPECIFICATIONS

A-5.3

SECTION 31 23 16.13 TRENCHING

PART 1 GENERAL 1.1 RELATED DOCUMENTS A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. 1.2 SUMMARY A. Section Includes: 1. Backfilling and compacting for utilities outside the building to utility main submittals. 2. Storm Drainage system 3. Irrigation B. Reference Standards: 1. AASHTO T 180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54 kg (10-lb) Rammer and a 457 mm (18 in.) Drop, 2015. 2. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/m3) (600 kN-m/m3), 2012. 3. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method, 2007. 4. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/m3) (2,700 kN m/m3), 2012. 5. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method, 2009. 6. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth), 2010. 1.3 DEFINITIONS A. Finish Grade Elevations: Indicated on drawings. B. Soil-Aggregate by Nuclear Methods (Shallow Depth): 2010. 1.4 SUBMITTALS A. See Section 01 33 00: Submittals for submittal procedures. B. Compaction Density Test Reports. 1.5 DELIVERY, STORAGE, AND HANDLING A. When necessary, store materials on site in advance of need. B. Prevent contamination. C. Protect stockpiles from erosion and deterioration of materials. PART 2 PRODUCTS 2.1 FILL MATERIALS A. Provide soil material free from organic matter and deleterious substances, containing no rocks or lumps over 2 inches in greatest dimensions. B. Cohesionless Material Used for Structural Backfill: Provide sand free from organic material and other foreign matter, and as approved by the geotechnical engineer. C. Backfill shall comply with the County of San Luis Obispo Specifications and Standards. PART 3 EXECUTION 3.1 EXAMINATION A. Identify required lines, levels, contours, and datum locations. B. Verify areas to be filled are not compromised with surface or ground water. 3.2 PREPARATION A. Scarify and proof roll subgrade surface to a depth of 6 inches to identify soft spots. B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill. C. Compact subgrade to density equal to or greater than requirements for subsequent fill material. D. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation. 3.3 TOLERANCES A. Top Surface of General Filling: Plus or minus 1 inch from required elevations. B. Top Surface of Filling Under Paved Areas: Plus or minus 1 inch from required elevations. END OF SECTION 31 23 23

SECTION 31 25 00 EROSION AND SEDIMENTATION CONTROLS

PART 1 GENERAL 1.1 RELATED DOCUMENTS A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. 1.2 SUMMARY A. The Work shall consist of furnishing, installing, inspecting, maintaining, and removing soil and erosion control measures as shown on the contract documents or as ordered by the Director's Representative during the life of the contract to provide erosion and sediment control. THE FOLLOWING 4 PARAGRAPHS INCLUDE ALL EROSION AND SEDIMENT CONTROL PRACTICES LISTED IN THE NOI. DELETE AS REQUIRED TO AGREE WITH ITEMS CHECKED IN THE NOI. B. Temporary structural measures provide erosion control protection to a critical area for an interim period. A critical area is any disturbed, denuded slope subject to erosion. These are used during construction to prevent offsite sedimentation. Temporary structural measures shall include check dams, construction rock stabilization, stabilized construction entrance, dust control, earth dike, level spreader, perimeter dikes/swale, pipe slope drain, portable sediment tank, rock dam, sediment basin, sediment traps, silt fence, storm drain inlet protection, straw/hay bale dike, access waterway crossing, storm drain diversion, temporary swale, turbidity curtain, water bars or other erosion control devices or methods as required. C. Weekly inspections will be completed by the Director's Representative. Comply with and correct all deficiencies noted as a result of these inspections. At the end of the construction season when soil disturbance activities will be finalized or suspended until the following spring, the frequency of the inspections may be reduced. If soil disturbance is completely suspended and the site is properly stabilized, a minimum of monthly inspections must be maintained. The stabilization activities must be completed before snow cover or frozen ground. If vegetation is required, seeding, planting and/or sodding must be scheduled to avoid die-off from frost frosts and allow for proper germination/establishment. Weekly inspections must resume no later than March 15. D. Related Sections: 1. Section 31 11 00: Clearing And Grubbing 2. Section 31 22 00: Grading 3. Section 31 23 00: Excavation and Fill 4. Division 32: Exterior Improvements 5. Section 33: Utilities E. Reference Standards: 1. Erosion and Sediment Control Guidelines: Conform to the latest edition of EPA STANDARDS and SPECIFICATIONS for EROSION and SEDIMENT CONTROL. Refer to these guidelines for construction and maintenance of all items (Temporary and Permanent Structural, Vegetative and Biotechnical) included in the Storm Water Pollution and Prevention Plan (SWPPP). 2. Storm Water Management: Conform to the latest edition of EPA STORMWATER MANAGEMENT DESIGN MANUAL. F. Responsibility: 1. Install and maintain the temporary storm water and diversion control items as shown on the drawings before starting any grading or excavation and maintain compliance of all Storm Water Pollution Plan/NPDES regulations. Provide any temporary sediment and erosion control measures that may be required within limits of the work, including any staging areas, throughout construction in conformity with the drawings and specifications of the Owner's Representative. Place the permanent control practices required before the removal of the temporary storm water diversion and control items. 2. During construction conduct operations in such a manner as to prevent or reduce to a minimum any damage to any water body from pollution by debris, sediment, chemical or other foreign material, or from the manipulation of equipment and/or materials in or near a stream or ditch flowing directly to a water body. 3. The Contractor shall be responsible for wash purposes or other similar operations which become polluted with sewage, silt, cement, concentrated chlorine, oil, fuels, lubricants, bitumens, or other impurities shall not be discharged into any water body. 3. In the event of conflict between these specifications and the regulation of other Federal, State, or local jurisdictions, the more restrictive regulations shall apply. 4. The Contractor shall adhere to all requirements of the Storm Water Pollution Prevention Plan. Comply with all applicable regulatory requirements. 5. The Contractor will submit copies of certificates documenting that on-site workers have completed a Erosion & Sediment Control training as required. 1.3 DEFINITIONS A. Temporary Structural Measures: 1. Rock Dam: A rock barrier or dam constructed of stone, bagged sand or gravel to reduce velocity of flow. 2. Construction Rock Stabilization: Stabilization of construction roads to control erosion. 3. Stabilized Construction Entrance: A stabilized pad of aggregate underlain with geo-textile where traffic enters a construction site to reduce or eliminate tracking of sediment to public roads. 4. Dust Control: Prevent surface and air movement of dust from disturbed soil surfaces. 5. Earth Dike: A temporary berm or ridge of compacted soil, located to channel water to a sediment trapping device. 6. Level Spreader: A non-erosive outlet for concentrated runoff to disperse flow uniformly across a slope. 7. Perimeter Dike/Swale: A temporary ridge of soil excavated from an adjoining swale located along the perimeter of the site or disturbed area to prevent runoff from entering the site area and preventing sediment laden runoff from leaving a construction site. 8. Pipe Slope Drain: A structure placed from the top of a slope to the bottom of a slope to convey runoff without causing erosion. 9. Portable Sediment Tank: A compartmented tank to which sediment laden water is pumped to retain sediment before pumping the water to adjoining drainage ways. 10. Rock Dam: A rock embankment located to capture sediment. 11. Sediment Basin: A barrier constructed across a drainage way to intercept and trap sediment. 12. Sediment Traps: A control device formed by excavation to retain sediment at a storm inlet or other points of collection. 13. Silt Fence: A barrier of geo-textile fabric installed on contours across the slope to intercept runoff by reducing velocity. Replace after 1 year. 14. Storm Drain Inlet Protection: A semi-permeable barrier installed around storm inlets to prevent sediment from entering a storm drainage system. 15. Straw/Hay Bale Dike: Intercept sediment laden runoff by reducing velocity. Replace after 3 months. 16. Access Waterway Crossing: A structure placed across a waterway to provide circulation for construction purposes. 17. Storm Drain Diversion: The redirection of a storm drain line or outfall channel for discharge into a sediment trapping device. 18. Temporary Swale: A temporary excavated drainage swale. 19. Turbidity Curtain: A flexible, impermeable barrier used to trap sediment when construction occurs within water bodies or along a shoreline. 20. Water Bars: A structure or channel constructed diagonally across a sloping road or right-of-way.

PART 2 PRODUCTS 2.1 MATERIALS A. Plant Materials for biotechnical slope protection: Locate stands of specified species and obtain approval to harvest material from these stands or obtain from managed production beds that are maintained for commercial distribution. Install all plant materials within 8 hours of cutting or provide proper storage. 1. Shrub willows: 'Streamco' purpleleaf willow, and 'Bankers' dwarf willow. 2. Redosier Dogwood B. Seeding: Permanent see Section 322919. 2.2 COMPANIES TEMPORARY STRUCTURAL THE FOLLOWING COMPANIES ARE MANUFACTURERS OF TEMPORARY STRUCTURAL PRODUCTS. SEE HIGHLIGHTED NOTES TO DETERMINE THE SPECIFIC PRODUCTS MANUFACTURED BY EACH COMPANY. SILT FENCE A. Mirafi, 365 South Holland Drive, Pendergrass, Ga, 30567, (888) 795-0808, www.mirafi.com. EROSION CONTROL BLANKET B. North American Green, 14649 Highway 41 North, Evansville, IN 47725, (800) 772-2040, www.naagain.com. TURBIDITY CURTAINS C. Siltarm Inc., P.O. Box 3600, Brockton MA, 02303, (800) 699-2374, www.splidam.com. FIBER ROLL EROSION CONTROL BLANKET D. Nedra Enterprises, Inc., 22187 Vantage Pointe Place, Ashburn, VA 20148, (888) 725-6999, www.nedra.com. CONCRETE FIBER ROLL E. Belton Industries, 5600 Oakbrook Parkway, Norcross GA, 30093, (800) 225-4099, www.beltonindustries.com. FIBER ROLL F. KriStar, 1219 Briggs Ave., Santa Rosa, CA 95401, (800) 579-8919, www.kristar.com. FIBER ROLL G. Rolanka International Inc., 155 Andrew Drive, Stockbridge GA 30281, (800) 760-3215, www.rolanka.com. DUST ABATEMENT H. Apex Resources Inc., 12910 Shelbyville Road, Louisville, KY 40243 (888) 677-2739, www.apex.com. DUST ABATEMENT I. MonoSol, LLC, 707 E. 80th PL., Merrillville, IN 46410 (800) 237-8552, www.terracol.com. TURBIDITY CURTAIN J. Environmental Equipment Inc., 12910 Shelbyville Road, Brockton, MA 02303 (800) 699-2374, www.splidam.com. TURBIDITY CURTAIN K. Aer-Flu Inc., 4455 18th St. East, Bradenton, FL 34203 (800) 823-7356, www.aerflo.com. STREAM STABILIZATION L. Contech Construction Products Inc., 9025 Centre Point Drive, Suite 400, West Chester, Ohio 45089, (800) 338-1122, www.contech-cpi.com. THE FOLLOWING COMPANIES ARE MANUFACTURERS OF PERMANENT STRUCTURAL PRODUCTS. SEE HIGHLIGHTED NOTES TO DETERMINE THE SPECIFIC PRODUCTS MANUFACTURED BY EACH COMPANY. PART 3 EXECUTION 3.1 WORK AREAS A. The Director's Representative has the authority to limit the surface area of erodible earth exposed by earthwork operations and to direct the Contractor to provide immediate temporary or permanent erosion measures to minimize damage to property and contamination of watercourses and water impoundments. Under no circumstances will the area of erodible earth material exposed at one time exceed 50,000 sq. ft. The Director's Representative may increase or decrease this area of erodible earth material exposed at one time as determined by his analysis of project, weather and other conditions. The Director's Representative may limit the area of clearing and grubbing and earthwork operations in progress commensurate with the Contractor's demonstrated capability in protecting erodible earth surfaces with temporary, permanent, vegetative or biotechnical erosion control measures. B. Schedule the work as to minimize the time that earth areas will be exposed to erosive conditions. Provide temporary structural measures immediately to prevent any soil erosion. C. Provide temporary seeding on disturbed earth or soil stockpiles exposed for more than 7 days or for any temporary shutdown of construction. In spring, summer or early fall apply ryegrass at a rate of 1 lb/1000 sq. ft. In late fall or early spring, apply certified Aroostook Ryegrass at a rate of 2.5 lbs/1000 sq. ft. Apply hay or straw at a rate of 2 bales/1000 sq. ft. or wood chip mulch at the manufacturer's recommended rate. Hay or straw shall be anchored. D. Coordinate the use of permanent controls or finish materials shown with the temporary erosion measures. E. All erosion and sediment control devices must be maintained in working order until the site is stabilized. All preventative and remedial maintenance work, including clean out, repair, replacement, re-grading, re-seeding, or re-mulching, must be performed immediately. F. After final stabilization has been achieved temporary sediment and erosion controls must be removed. Areas disturbed during removal must be stabilized immediately. END OF SECTION 31 25 00

SECTION 32 12 36 SEAL COATS

PART 1 GENERAL 1.1 RELATED DOCUMENTS A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. 1.2 SUMMARY A. Section includes specifications for applying a mixture of asphaltic emulsion, aggregate, polymer, and water spread on a surface or pavement. B. Measurement: 1. Includes surface preparation, placing, spreading, compacting, rolling, furnishing mix design, and testing. C. Related Reference: 1. State of California, Department of Transportation, Standard Specifications http://www.dot.ca.gov/hq/esc/oe/specifications/std_specs/2010_std_specs/10SISpecs.pdf, latest edition. D. Related Section: 1. Division 32: Exterior Improvements 1.3 SUBMITTALS A. Contractor must submit mix design to the Engineer for approval prior to placement of material in the field. 1.4 QUALITY ASSURANCE A. Perform Work in accordance with State of California, Department of Transportation, Standard Specifications, current edition. B. Obtain materials from same source throughout the life of the project. PART 2 PRODUCTS 2.1 MATERIALS A. Parking Area Seals, in accordance with State of California, Department of Transportation, Standard Specifications 2010, Section 37-4. PART 3 EXECUTION 3.1 ENVIRONMENTAL REQUIREMENTS A. Do not place seals coats when ambient air temperature is less than 55 degrees Fahrenheit and relative humidity is less than 60 degrees Fahrenheit, or when the receiving surface is wet or frozen. 3.2 EXAMINATION A. Contractor to receive confirmation of acceptance of surface prior to installation of seal coat. 3.3 PLACING SEAL COAT A. Install Work in accordance with State of California, Department of Transportation, Standard Specifications current edition. END OF SECTION 32 12 36

SECTION 32 12 13 CONCRETE PAVING

PART 1 GENERAL 1.1 RELATED DOCUMENTS A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. 1.2 SUMMARY A. Section Includes: 1. Concrete sidewalks, integral curbs, and gutters 2. Concrete collars for water valves and cleanouts. B. Related Sections: 1. Section 31 22 00: Grading 2. Section 31 23 23: Fill 3. Section 32 11 23: Aggregate Base Courses 4. Section 32 12 16: Asphalt Paving 5. Section 33 05 13: Manholes and Structures. C. Reference Standards: 1. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete, 1991 (Reapproved 2009). 2. ASTM C301 - Standard Specifications for Structural Concrete, 2010 (Errata 2012). 3. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete, 2000. 4. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement, 2015. 5. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete, 2015. 6. ASTM C33/C33M - Standard Specification for Concrete Aggregates, 2016. 7. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens, 2015a. 8. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete, 2015. 9. ASTM C150/C150M - Standard Specification for Portland Cement, 2016. 10. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method, 2014. 11. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete, 2010a. 12. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete, 2011. 13. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete, 2013. 14. ASTM C671 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete, 2015. 15. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing, 2014. 16. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types), 2004 (Reapproved 2013). 17. ASTM D1752 - Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction, 2004a (Reapproved 2013). 1.3 SUBMITTALS A. See Section 01 3300 - Submittals for submittal procedures.

SECTION 32 12 23 PAVEMENT MARKINGS

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: 1. Parking lot markings, including parking bays, arrows, handicapped symbols, and curb markings. B. Related Section: 1. Section 02 21 00: Surveys 2. Section 32 12 16: Asphalt Paving 3. Section 32 12 36: Seal Coats. 4. Reference Section 09 90 00: Painting and Coating. C. Reference Standard: 1. MPI (APL) - Master Painters Institute Approved Products List, Master Painters and Decorators Association, current edition, www.paintinfo.com. 1.3 DEFINITIONS A. Pavement Strip: Includes traffic control, materials, and all appurtenances not otherwise specified. B. Pavement Markings: Includes traffic control, setup, materials, and all appurtenances not otherwise specified in the bid schedule. 1.4 SUBMITTALS A. See Section 01 3300 - Submittals for submittal procedures. 1.5 DELIVERY, STORAGE, AND HANDLING A. Store products in manufacturer's unopened packaging until ready for installation. B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction. PART 2 PRODUCTS 2.1 MATERIALS A. Line and Zone Marking Paint: MPI (APL) No. 97 Latex Traffic Marking Paint, white. 1. Roadway Markings: As required by authorities having jurisdiction. 2. Handicapped Symbols: Blue B. Striping: Thermoplastic Strip, in accordance with State of California, Department of Transportation (CALTRANS), Standard Specifications July 2010, Section 84. C. Pavement Markings: Thermoplastic Markings, in accordance with State of California, Department of Transportation (CALTRANS), Standard Specifications July 2010, Section 84. PART 3 EXECUTION 3.1 FIELD CONDITIONS A. Do not install products under environmental conditions outside manufacturer's absolute limits. 3.2 EXAMINATION A. Do not begin installation until substrates have been properly prepared. B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding. 3.3 PREPARATION A. Allow new pavement surfaces to cure for a period of not less than 14 days before application of marking materials. B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result on the substrate under the project conditions. C. Clean surfaces thoroughly prior to installation. 1. Remove dust, dirt, and other granular surface deposits by sweeping, blowing with compressed air, rinsing with water, or a combination of these methods. D. Where oil or grease are present, scrub affected areas with several applications of trisodium phosphate solution or other approved detergent or degreaser, and rinse thoroughly with clean water. Seal oil-soaked areas with cut shealic to prevent bleeding through the new paint. E. Establish survey control points to determine locations and dimensions of markings; provide templates to control paint application by type and color at necessary intervals. 3.4 INSTALLATION A. Do not apply paint if temperature of surface to be painted or the atmosphere is less than 50 degrees F or more than 95 degrees F. B. Do not apply in accordance with manufacturer's instructions using an experienced technician that is thoroughly familiar with equipment, materials, and marking layouts. C. Apply markings in locations determined by measurement from survey control points; preserve control points until after markings have been accepted. D. Apply uniformly painted markings of color(s), lengths, and widths as indicated on the drawings, true, sharp edges and ends. 1. Apply paint in one coat only. 2. Wet Film Thickness: 0.015 inch, minimum. 3. Width Tolerance: Plus or minus 1/8 inch. E. Parking Lots: Apply parking space lines, entrance and exit arrows, painted curbs, and other markings indicated on drawings. 1. Mark the International Handicapped Symbol at indicated parking spaces. 2. Hand application by pneumatic spray is acceptable. 3. Remove and replace markings that are applied at less than minimum material rates, deviate from true alignment, exceed length and width tolerances, or show light spots, smears, or other deficiencies or irregularities. E. Remove markings in manner to avoid damage to the surface to which the marking was applied, using carefully controlled sand blasting, approved grinding equipment, or other approved method. F. Replace removed markings at no additional cost to District. END OF SECTION 32 12 23

SECTION 32 12 13 CONCRETE PAVING

PART 1 GENERAL 1.1 RELATED DOCUMENTS A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. 1.2 SUMMARY A. Section Includes: 1. Concrete sidewalks, integral curbs, and gutters 2. Concrete collars for water valves and cleanouts. B. Related Sections: 1. Section 31 22 00: Grading 2. Section 31 23 23: Fill 3. Section 32 11 23: Aggregate Base Courses 4. Section 32 12 16: Asphalt Paving 5. Section 33 05 13: Manholes and Structures. C. Reference Standards: 1. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete, 1991 (Reapproved 2009). 2. ASTM C301 - Standard Specifications for Structural Concrete, 2010 (Errata 2012). 3. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete, 2000. 4. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement, 2015. 5. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete, 2015. 6. ASTM C33/C33M - Standard Specification for Concrete Aggregates, 2016. 7. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens, 2015a. 8. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete, 2015. 9. ASTM C150/C150M - Standard Specification for Portland Cement, 2016. 10. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method, 2014. 11. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete, 2010a. 12. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete, 2011. 13. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete, 2013. 14. ASTM C671 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete, 2015. 15. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing, 2014. 16. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types), 2004 (Reapproved 2013). 17. ASTM D1752 - Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction, 2004a (Reapproved 2013). 1.3 SUBMITTALS A. See Section 01 3300 - Submittals for submittal procedures.

SECTION 32 12 13 CONCRETE PAVING

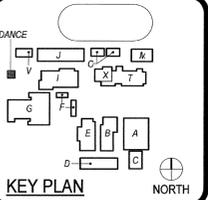
PART 1 GENERAL 1.1 RELATED DOCUMENTS A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section. 1.2 SUMMARY A. Section Includes: 1. Precast concrete parking bumpers and anchorage. B. Reference Standards: 1. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement, 2015. 2. ASTM C150/C150M - Standard Specification for Portland Cement, 2016. 3. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete, 2010a. 4. ASTM C330/C330M - Standard Specification for Lightweight Aggregates for Structural Concrete, 2014. 1.3 SUBMITTALS A. See Section 01 33 00 - Submittals, for submittal procedures. PART 2 PRODUCTS 2.1 MATERIALS A. Parking Bumpers: Precast concrete, conforming to the following: 1. Nominal Size: 7 inches high, 12 inches wide, 6 feet long, manufactured by Granite precast or approved equal. 2. Cement: ASTM C150/C150M. Portland Type I - Normal, white color. 3. Concrete Materials: ASTM C330/C330M aggregate, water, and sand. 4. Reinforcing Steel: ASTM A615/A615M, deformed steel bars, unfinished, strength and size commensurate with precast unit design. 5. Air Entrainment Admixture: ASTM C260/C260M. 6. Concrete Mix: Minimum 4000 psi compressive strength after 28 days, air entrained to 5 to 7 percent. 7. Use rigid mesh, constructed to maintain precast units uniform in shape, size and finish. Maintain consistent quality during manufacturing. 8. Embed reinforcing steel, and drill or sleeve for two dowels. 9. Cure units to develop concrete quality, and to minimize appearance blemishes such as non-uniformity, staining, or surface cracking. 10. Minor patching in plant is acceptable, providing appearance of units is not impaired. PART 3 EXECUTION 3.1 INSTALLATION A. Install units without damage to shape or finish. Replace or repair damaged units. B. Install units in alignment with adjacent work. End of section 03 01 30 END OF SECTION 32 12 13

SECTION 32 17 13 PARKING BUMPERS

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: 1. Precast concrete parking bumpers and anchorage. B. Reference Standards: 1. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement, 2015. 2. ASTM C150/C150M - Standard Specification for Portland Cement, 2016. 3. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete, 2010a. 4. ASTM C330/C330M - Standard Specification for Lightweight Aggregates for Structural Concrete, 2014. 1.3 SUBMITTALS A. See Section 01 33 00 - Submittals, for submittal procedures. PART 2 PRODUCTS 2.1 MATERIALS A. Parking Bumpers: Precast concrete, conforming to the following: 1. Nominal Size: 7 inches high, 12 inches wide, 6 feet long, manufactured by Granite precast or approved equal. 2. Cement: ASTM C150/C150M. Portland Type I - Normal, white color. 3. Concrete Materials: ASTM C330/C330M aggregate, water, and sand. 4. Reinforcing Steel: ASTM A615/A615M, deformed steel bars, unfinished, strength and size commensurate with precast unit design. 5. Air Entrainment Admixture: ASTM C260/C260M. 6. Concrete Mix: Minimum 4000 psi compressive strength after 28 days, air entrained to 5 to 7 percent. 7. Use rigid mesh, constructed to maintain precast units uniform in shape, size and finish. Maintain consistent quality during manufacturing. 8. Embed reinforcing steel, and drill or sleeve for two dowels. 9. Cure units to develop concrete quality, and to minimize appearance blemishes such as non-uniformity, staining, or surface cracking. 10. Minor patching in plant is acceptable, providing appearance of units is not impaired. PART 3 EXECUTION 3.1 INSTALLATION A. Install units without damage to shape or finish. Replace or repair damaged units. B. Install units in alignment with adjacent work. End of section 03 01 30 END OF SECTION 32 17 13

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 These drawings have been prepared as one coordinated set of drawings and are complementary. What is required by one drawing is required by all of the drawings, even if a detail or component part is not identified on every sheet. Any user's reliance on a single or selected sheet(s) of the drawings without consideration for the information included in the entire set of drawings will be at the user's sole risk and shall not form the basis for a request for additional compensation or time.

HUNTINGTON BEACH HIGH SCHOOL DANCE STUDIO
 1905 MAIN ST
 HUNTINGTON BEACH, CA 92648
 DSA SUBMITTAL



FILE NO. 30-H5
 IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 APPL 04-118263
 ACS FLS SS
 DATE MAY 0 2019

ENGINEER



CLIENT
 HUNTINGTON BEACH UNION HIGH SCHOOL DISTRICT
 PROJECT NUMBER
 18296
 DATE: 05/09/2019
 DRAWN BY: Author
 CHECKED BY: Checker

REVISIONS

No.	Description	Date

DSA SUBMITTAL
SPECIFICATIONS

A-5.4

SECTION 32 31 13 CHAIN LINK FENCE AND GATES
PART 1 GENERAL
1.1 RELATED DOCUMENTS
 A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
1.2 SUMMARY
 A. Related Section:
 1. Section 03 30 00: Cast-in-Place Concrete.
 B. Reference Standards:
 C. ASTM International (ASTM)
 1. A392, Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric
 2. F567, Standard Practice for Installation of Chain Link Fence
 3. F626, Standard Specification for Fence Fittings
 4. F900, Standard Specification for Industrial and Commercial Swing Gates
 5. F1083, Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded for Fence Structures
 D. Accessibility Requirements: Comply with applicable requirements.
 1. Americans with Disability Act of 1990, as amended.
 2. CBC 2016 California Building Code, CCR Title 24, Part 2, as adopted and amended by DSA.
1.3 SUBMITTALS
 A. Product Data:
 1. Manufacturer's schedules, charts, literature, and illustrations indicating the performance, fabrication procedures, product variations and accessories indicating material compliance and specified options.
 2. Manufacturer's installation instructions.
 B. Shop Drawings: Indicate materials, dimensions, details, and finish, show locations and installation procedures. Include details of fence and gate joints, attachments, accessories, footings, and clearances.
PART 2 PRODUCTS
2.1 MANUFACTURERS
 A. Specifications are based on products of Anchor Fence by Master Halco Inc., Baltimore, MD, Phone (800) 229-5615.
 B. Other manufacturers must have a minimum of five (5) years experience manufacturing chain link fencing and gates meeting or exceeding the following specifications for design, size, gauge, finish of metal parts and fabrication and comply with Division 1 requirements for substitutions in order to be considered.
 1. Golden State Fence, Co. Inc., Rancho Cordova, CA (916) 468-0975
 2. S & S Fence Co., Sacramento, CA (916) 682-1100
2.2 CHAIN LINK FENCE MATERIALS
 A. Fence Fabric:
 1. Hot dipped galvanized after weaving with a minimum zinc coating weight per ASTM A392, Class 1 with weight of zinc coating not less than 1.2 oz/ft² of uncoated wire surface.
 2. Size: Helically wound and woven to height of six (6) feet and ten (10) feet with two (2) inch diamond mesh, with core wire diameter of 0.148 inch (9 gauge) and a breakload of 1,290 lbf.
 3. Selvage of fabric shall be knuckled at top and knuckled at bottom.
 B. Fence Framing:
 1. Steel pipe - Type I: ASTM F1083, standard weight Schedule 40; minimum yield strength of 25,000 psi, sizes as indicated below. Hot-dipped galvanized with minimum average 1.8 oz/ft² of coated surface area.
 a. Line posts: 2 inch o.d., weighing 2.72 lb/ft.
 b. Terminal, End, Corner, and Pull Posts: 2-1/2 inch o.d., weighing 3.65 lb/ft.
 c. Rails and Braces: 1-5/8 inch o.d., weighing 2.27 lb/ft.
 C. Fence Accessories:
 1. Chain Link Fence Accessories: Provide items required to complete fence system. Galvanize each ferrous metal item and finish to match framing.
 2. Post Caps: Formed steel, cast malleable iron, or aluminum alloy weathertight closure cap for tubular posts. Provide one (1) cap for each post. (Where top rail is used, provide tops to permit passage of top rail.)
 3. Top Rail and Brace Rail Ends: Formed steel, malleable or cast iron, for connection of rail and brace to terminal posts.
 4. Top Rail Sleeves: 6 inch sleeve allowing for expansion and contraction of top rail.
 5. Wire Ties: 9 gauge galvanized steel wire for attachment of fabric to line posts. Double wrap 13 gauge for rails and braces. Hog ring ties of 12-1/2 gauge for attachment of fabric to tension wire.
 6. Brace and Tension (Stretcher Bar) Bands: Pressed steel.
 7. Tension (Stretcher) Bars: One piece lengths equal to 2 inches less than full height of fabric with a minimum cross-section of 3/16 inch x 3/4 inch or equivalent fiber glass rod. Provide tension (stretcher) bars where chain link fabric meets terminal posts.
 8. Tension Wire: 7 gauge, diameter core wire with tensile strength of 75,000 psi.
 9. Truss Rods: Steel rods with minimum diameter of 5/16 inch.
 10. Fasteners: Galvanized nuts and bolts.
2.3 CHAIN LINK SWING GATES
 A. Gate Frames: Fabricate chain link swing gates in accordance with ASTM F900 using galvanized steel tubular members, 2 inches square, weighing 2.60 lb/ft. Fusion or stainless steel welded connections forming rigid one-piece unit.
 B. Chain Link Fence Fabric: Same as specified above for fence. Install fabric with hook bolts and tension bars at all four (4) sides. Attach to gate frame at not more than 15 inches on center.
 C. Hardware Materials: Hot dipped galvanized steel or malleable iron shapes to suit gate size.
 1. Hinges: Structurally capable of supporting gate leaf and allow opening and closing without binding. Non-lift-off type hinge design shall permit gate to swing 180 degrees inward.
 2. Latch: Forked type capable of retaining gate in closed position and have provision for padlock. Latch shall permit operation from either side of gate.
 3. Keeper: Provide keeper for each gate leaf over five (5) feet wide. Gate keeper shall consist of mechanical device for securing free end of gate when in full open position.
 4. Drop Rod: Provide at double gates to hold inactive leaf. Provide gate stop pipe to engage center drop rod. Provide locking device and padlock eyes as an integral part of latch, requiring one (1) padlock for locking both gate leaves.
 D. Gate Posts: Steel pipe, ASTM F1083, standard weight Schedule 40; minimum yield strength of 25,000 psi. Hot-dipped galvanized with minimum 1.8 oz/ft² of zinc. Sizes as follows:
 1. Width for single gate or one gate leaf of double gates:
 a. 6 feet or less: 2.875 inches in diameter, weighing 5.79 lb/ft.
 b. Over 6 feet to 12 feet: 4.00 inches in diameter, weighing 9.11 lb/ft.
 c. Over 12 feet to 19 feet: 6.625 inches in diameter, weighing 18.97 lb/ft.
 d. Over 19 feet to 23 feet: 8.625 inches in diameter, weighing 28.55 lb/ft.
2.4 SETTING MATERIALS
 A. Concrete: Minimum 28 day compressive strength of 3,000 psi.
PART 3 EXECUTION
3.1 EXAMINATION
 A. Verify areas to receive fencing are completed to final grades and elevations.
 B. Ensure property lines and legal boundaries of work are clearly established.
3.2 CHAIN LINK FENCE FRAMING INSTALLATION
 A. Install chain link fence in accordance with ASTM F567 and manufacturer's instructions.
 B. Locate terminal post at each fence termination and change in horizontal or vertical direction of 30 degrees or more.
 C. Space line posts uniformly at 10 feet on center.
 D. Concrete fence post footings:
 1. Drill holes in firm, undisturbed or compacted soil. Excavate deeper than specified below as required for adequate support in soft and loose soils, and for posts with heavy lateral loads.
 2. Line posts shall be set in 9 inch minimum diameter concrete piers, with a minimum of 36 inches of post embedment in concrete with an additional 3 inch concrete cover at bottom.
 3. All end, corner, and pull posts shall be set in minimum 12 inch minimum diameter concrete piers, with a minimum of 36 inches of post embedment in concrete with an additional 3 inch concrete cover at bottom.
 4. Place concrete around posts in a continuous pour.
 5. Trowel finish around post. Slope to direct water away from posts.
 E. Check each post for vertical and top alignment, and maintain in position during placement and finishing operations.
 F. Bracing: Install horizontal pipe brace at mid-height for fences six (6) and over, on each side of terminal posts. Firmly attach with fittings. Install diagonal truss rods at these points. Adjust truss rod, ensuring posts remain plumb.
 G. Tension Wire: Provide tension wire at bottom of fabric. Install tension wire before stretching fabric and attach to each post with ties. Secure tension wire to fabric with 12-1/2 gauge hog rings 24 inches on center.
 H. Top Rail: Install lengths, 21 feet. Connect joints with sleeves for rigid connections for expansion/contraction.
 I. Bottom Rails: Install bottom rails between posts with fittings and accessories.

3.3 CHAIN LINK FABRIC INSTALLATION
 A. Fabric: Install fabric on security side and attach so that fabric remains in tension after pulling force is released. Leave approximately 2 inches between finish grade and bottom selvage. Attach fabric with wire ties to line posts at 15 inches on center and to rails, braces, and tension wire at 24 inches on center.
 B. Tension (stretcher) bars: Pull fabric taut; thread tension bar through fabric and attach to terminal posts with bands or clips spaced maximum of 15 inches on center.
3.4 ACCESSORIES
 A. Tie Wires: Bend ends of wire to minimize hazard to persons and clothing.
 B. Fasteners: Install nuts on side of fence opposite fabric side for added security.
3.5 CHAIN LINK SWING GATE POST INSTALLATION
 A. Install gate posts in accordance with manufacturer's instructions.
 B. Concrete gate post footings:
 1. Drill holes in firm, undisturbed or compacted soil. Excavate deeper than specified below as required for adequate support in soft and loose soils, and for posts with heavy lateral loads.
 2. All gate posts shall be set in minimum 12 inch diameter concrete piers, with a minimum of 36 inches of post embedment in concrete with an additional 3 inch concrete cover at bottom.
 3. Place concrete around posts in a continuous pour.
 4. Trowel finish around post. Slope to direct water away from posts.
 C. Gate posts and hardware: Set keeper, stops, sleeves into concrete. Check each post for vertical and top alignment, and maintain in position during placement and finishing operations.
3.6 GATE INSTALLATION
 A. Install gates plumb, level, and secure for full opening without interference.
 B. Attach hardware by means which will prevent unauthorized removal.
 C. Adjust hardware for smooth operation.
3.7 CLEANING
 A. Clean up debris and unused material, and remove from the site
END OF SECTION 32 31 13