PROJECT MANUAL
For

RSD – Parking Lot Repair at Shuey ES

Rosemead, CA

Prepared by

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BIDDING DOCUMENTS
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SECTION 01000

ABBREVIATIONS, SYMBOLS AND ACRONYMS

PART 1 - GENERAL

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A. List of abbreviations, symbols, and acronyms of societies, institutes, and associations generally appearing in the Contract Documents.

1.02.1 RELATED SECTIONS

A. Division 01: General Requirements

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.01 ABBREVIATIONS

ac	Alternating current
amp	ampere
BTU	British thermal unit
cfh	Cubic feet per hour
cfm	Cubic feet per minute
cm	Centimeter
Co.	Company
COP	Coefficient of performance
Corp.	Corporation
d	Penny
db.	Decibel
DB	Dry bulb
dc	Direct current
EER	Energy efficiency ratio
F	Degrees Fahrenheit
fpm	Feet per minute
ft	Foot or feet
gph	Gallons per hour
gpm	Gallons per minute
HP	Horsepower
HVAC	Heating, ventilating and air conditioning
Hz	Hertz
Inc.	Incorporated
KHz	Kilohertz
Kip	thousand pounds
Ksf	Thousand pounds per square foot
Ksi	Thousand pounds per square inch
Kv	Kilovolt

KVA	Kilovolt amperes
KW	Kilowatt
KWH	Kilowatt hour
LF	Linear foot
lb	Pound
LED	Light emitting diode
MBH	1000 BTUs per hour
MHz	Mega hertz
mil	Thousandth of an inch
mm	Millimeter
mph	Miles per hour
oz.	Ounce
PCF	Pounds per cubic foot
pH	Acidity-alkalinity balance
psf	Pounds per square foot
psi	Pounds per square inch
psig	Pounds per square inch, gage
RF	Radio frequency
rpm	Revolutions per minute
SF	Square foot
SY	Square yard
V	Volt
WB	Wet bulb

3.02 SYMBOLS

#	Number or pound
'	Foot or feet
"	Inch(es)
%	Percent

3.03 ACRONYMS

AA	The Aluminum Association, Inc
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ABMA	American Boiler Manufacturers Association
ACI	American Concrete Institute
ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Accessibility Guidelines
AGA	American Gas Association
AGCIH	American Conference of Governmental Industrial Hygienists
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction

AMCA	Air Movement and Control Association, Inc.
ANSI	American National Standards Institute
APA	APA – The Engineered Wood Association
ARI	Air-Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATBCB	Architectural & Transportation Barriers Compliance Board
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Institute of America
CAL/OSHA	California Occupational Safety and Health Administration
CBC	California Building Code
CCR	California Code of Regulations
CEC	California Electrical Code
CFR	Code of Federal Regulations
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CMC	California Mechanical Code
CQC	California Quality Control (CMA Standards)
CPC	California Plumbing Code
CRA	California Redwood Association
CRI	Carpet and Rug Institute
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standards, U.S. Department of Commerce
CSFM	California State Fire Marshal
CSI	Construction Specifications Institute
CTIOA	Ceramic Tile Institute of America
CTI	Cooling Tower Institute
DHI	Door and Hardware Institute
DSA	Division of the State Architect
EPA	Environmental Protection Agency
ETL	ETL Testing Laboratories
FCC	Federal Communication Commission
FM	Factory Mutual
FS	Federal Specifications
GA	Gypsum Association
GANA	Glass Association of North America

HMMA	Hollow Metal Manufacturer's Association
HPVA	Hardwood Plywood & Veneer Association
IACS	International Annealed Copper Standards
IAMPO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical & Electronic Engineers, Inc.
IES	Illuminating Engineering Society
IMI	International Masonry Institute
IRI	Industrial Risk Insurers
ISO	International Organization for Standardization
MLSFA	Metal Lath/Steel Framing Association
MSS	Manufacturers Standardization Society of the Valve & Fittings Industry.
NAAMM	National Association of Architectural Metal Manufacturers
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards
NCMA	National Concrete Masonry Association
NEBB	National Environmental Balancing Bureau
NEMA	National Electrical Manufacturers Association
NEC	National Electrical Code
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology
NOFMA	National Oak Flooring Manufacturers Association
NPCA	National Paint and Coatings Association
NPDES	National Pollutant Discharge Elimination System
NRCA	National Roofing Contractors Association
NSF	National Sanitation Foundation
NTMA	National Terrazzo & Mosaic Association
NUSIG	National Uniform Seismic Installation Guidelines
NWMA	National Woodwork Manufacturers Association
PCA	Portland Cement Association
PCI	Precast/Prestressed Concrete Institute
PDI	Plumbing and Drainage Institute
PEI	Porcelain Enamel Institute
PS	Product Standard, U.S. Department of Commerce
RIS	Redwood Inspection Service
RFCI	Resilient Floor Covering Institute
SCAQMD	South Coast Air Quality Management District
SDEI	Steel Deck Institute
SDI	Steel Door Institute

SFM	State Fire Marshal
SFPA	Southern Forest Products Association
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joist Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Steel Structures Painting Council
SWI	Steel Window Institute
TCA	Tile Council of America
UBPPA	Uni-Bell PVC Pipe Association
UCI	Uniform Construction Index
UFAS	Uniform Federal Accessibility Standards
UL	Underwriters' Laboratories, Inc.
WCLIB	West Coast Lumber Inspection Bureau
WDMA	Window and Door Manufacturers Association
WIC	Woodwork Institute of California
WWPA	Western Wood Products Association

END OF SECTION

SECTION 01050

SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Procedure for submission of a certified Schedule of Values for review and approval by the OAR.

1.02 RELATED SECTIONS

A. Section 01080: Application for Payment
B. Section 01300: Submittals
C. Section 01365: Construction Schedule

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.01 PREPARATION

A. Upon receipt of the Notice of Intent to Award, CONTRACTOR shall commence preparation of a certified Schedule of Values.

B. CONTRACTOR shall coordinate the preparation of a certified Schedule of Values with preparation of the Construction Schedule as set forth in Section 01365.

C. CONTRACTOR shall follow the table of contents as a Project specific guide to establish the format for a certified Schedule of Values. Provide at least one (1) line item for each Division and/or Specification Section item. Provide separate line items for labor and material when required by the OAR.

D. Include the following Project school(s) identification on each certified Schedule of Values:

1. Project name and location
2. Project Number
3. ARCHITECT name
4. CONTRACTOR name
5. Date of Submittal

E. Round amounts to the nearest whole dollar; the total shall equal the Contract Amount.

F. An approved certified Schedule of Values shall serve as the basis for the monthly certified Application for Payment.

3.02 90 DAY INTERIM SCHEDULE OF VALUES

A. CONTRACTOR may prepare and submit, in accordance with sub-section 3.03, a 90 day interim Schedule of Values denoting Work to be completed during the first 90 days following the date established in the Notice to Proceed.

B. CONTRACTOR shall coordinate the preparation of the 90 day interim Schedule of Values with preparation of the Construction Schedule as set forth in Section 01360.

C. The 90 day interim Schedule of Values is subject to the same terms and conditions as set forth in sub-section 3.03.

D. The 90 day interim Schedule of Values shall be incorporated into a final Schedule of Values.

E. The OAR has the right to require subsequent revisions to an approved 90 day interim and/or a final Schedule of Values.

3.03 SUBMITTAL

A. Within ten (10) days after the date established in the Notice to Proceed, CONTRACTOR shall submit five (5) certified copies of an interim and/or final Schedule of Values for review and approval by the OAR.

B. OAR will review and if necessary, return the submitted Schedule of Values with summary comments noting items not in compliance with the requirements of the Contract Documents. CONTRACTOR shall revise the submitted Schedule of Values and return five (5) copies within three (3) days of receipt of summary comments.

C. Signature by OAR shall constitute acceptance of the submitted Schedule of Values.

D. A copy of the approved Schedule of Values will be transmitted to CONTRACTOR, IOR, and ARCHITECT.

E. CONTRACTOR shall obtain OAR approval of a 90 day interim Schedule of Values prior to submittal of the first certified Application for Payment.

F. CONTRACTOR shall obtain OAR approval of the final Schedule of Values prior to submittal of the fourth certified Application for Payment.

END OF SECTION

SECTION 01080

APPLICATION FOR PAYMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES:

A. This Section specifies administrative and procedural requirements relative to a certified Application for Payment.

1. Coordinate the certified Schedule of Values and certified Application for Payment with, but not limited to, the Construction Schedule, submittal log, and list of Subcontractors.

1.02 RELATED SECTIONS:

1.	Section 01050:	Schedule of Values
2.	Section 01365:	Construction Schedule
3.	Section 01700:	Contract Closeout

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.01 APPLICATION FOR PAYMENT

A. Each certified Application for Payment shall be consistent with previous applications and payments as reviewed by ARCHITECT and/or OAR, paid for by OWNER, and:

1. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.

B. Payment Application Times: The period of Work covered by each Application for Payment is the payment date for each progress payment as specified in the General Conditions. The period covered by each Application for Payment is the previous month.

C. Payment Application Forms: Use OWNER provided forms for the Application for Payment.

D. Application Preparation: Complete every entry on the form. Include execution by a person authorized to sign legal documents on behalf of CONTRACTOR. ARCHITECT will return incomplete applications without action.

E. Transmittal: Submit a minimum of four (4) signed and original copies of each certified Application for Payment to the ARCHITECT. All copies shall be complete, including releases and similar attachments.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information related to the application, in a manner acceptable to ARCHITECT.

F. Initial Application for Payment: Administrative actions and submittals, that must precede or coincide with submittal for the first certified Application for Payment include, but are not limited to, the following:

1. Certified Schedule of Values
2. Performance and payment bonds. List of principal suppliers and fabricators.
3. Worker Compensation certificates, if applicable.
4. Auto Insurance, if applicable.
5. Hazardous Material Insurance Certificates, if applicable.
6. Construction Schedule
7. Submittal Schedule
8. Emergency Contact List
9. Copies of authorizations and licenses from governing authorities for performance of the Work

G. Application for Payment at Substantial Completion: Following OAR issuance of the certificate of Substantial Completion, submit an Application for Payment:

1. Administrative actions, submittals and/or Work that shall precede or coincide with this application include:

a. Occupancy permits and similar approvals by authorities having legal jurisdiction over the Work.
b. Removal of temporary facilities and services.
c. Testing, adjusting and balance records.
d. Removal of surplus materials, rubbish, and similar elements.
e. Meter readings.
f. Start-up performance reports.
g. OWNER training and orientations.
h. Change over information related to OWNER occupancy, use, operation, and maintenance.
i. Final cleaning.

j. Ensure that incomplete Work is not accepted and will be completed without undue delay.
k. Advice on shifting insurance coverage.
l. List of defective Work, recognized as exceptions to certificate of Substantial Completion.
m. Change of door locks to OWNER system.

H. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include, but are not limited to, the following:

1. Completion of Contract Closeout requirements.
2. Project record documents.
3. Completion of final punch list items.
4. Delivery of extra materials, products and or stock.
5. Identification of unsettled claims.
6. Proof that taxes, fees, and similar obligations are paid.
7. Operating and maintenance instruction manuals.
8. Consent of surety to final payment.
9. Waivers and releases.
10. Warranties, guarantees and maintenance agreements.

END OF SECTION

SECTION 01100

COORDINATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. This Section specifies administrative and procedural requirements necessary for coordinating Work operations including, but not limited to, the following:

1. General coordination procedures.
2. Coordination drawings.

PART 2 – PRODUCTS (NONE)

PART 3 - EXECUTION

3.01 COORDINATION

A. CONTRACTOR shall coordinate operations included in various sections of the Contract Documents to assure efficient and orderly installation of each part of the Work. Coordinate Work operations included under related sections of the Contract Documents that depend on each other for proper installation, connection, and operation of the Work, including but not limited to:

1. Schedule construction operations in the sequence required where installation of one part of the Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.

3. Provide provisions to accommodate items scheduled for later installation.

4. Prepare and administer provisions for coordination drawings.

B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required in notices, reports, attendance at meetings, and:

1. Prepare similar memoranda for OAR and Separate Work Contract where coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of schedules.
2. Installation, relocation, and removal of temporary facilities.
3. Delivery and processing of submittals.
4. Progress meetings.
5. Project closeout activities.

D. Conservation: Coordinate Work operations to assure operations are carried out with consideration given to conservation of energy, water, materials, and:

1. Salvage materials and equipment involved in performance of, but not actually incorporated into the Work.

3.02 SUBMITTALS

A. Coordination Drawings: CONTRACTOR shall prepare coordination drawings for coordination of installation of roofing and sheet metal products. Prepare coordination drawings for those areas where limited space availability necessitates maximum utilization of space for efficient installation of different components.

1. All coordination meetings will be held in the Project field office of CONTRACTOR. CONTRACTOR is required to distribute Shop Drawings, cut sheets and submittals to Subcontractors where appropriate. Reviewed coordination drawings will be maintained in the Project field office of CONTRACTOR.

END OF SECTION

SECTION 01160

REQUEST FOR CLARIFICATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Procedure for requesting clarification of the intent of the Contract Documents.

1.02 RELATED SECTIONS

A. Section 01005: Summary of the Work
B. Section 01100: Coordination
C. Section 01365: Construction Schedule
D. Section 01700: Contract Closeout

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.01 PROCEDURE

A. ARCHITECT response is a clarification of the intent of the Contract Documents and does not authorize changes in the Contract Amount, Milestones and/or Contract Time.

B. A Request for Clarification may be returned with a stamp or notation "Not Reviewed," if:

1. The requested clarification is ambiguous or unclear;

2. The requested clarification is equally available to the requesting party by researching and/or examining the Contract Documents;

3. CONTRACTOR has not reviewed the Request for Clarification prior to submittal.

C. Allow a minimum of nine (8) days for review and response time, after receipt by ARCHITECT and OAR. CONTRACTOR shall verify and is responsible in verifying ARCHITECT and OAR receipt of a Request for Clarification.

D. Changes or alterations to the approved drawings or specifications shall be made by means of addenda or change orders as per section 4-338 of the California Building Standards Administrative Code.

END OF SECTION

SECTION 01200

PROJECT MEETINGS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This Section specifies administrative and procedural requirements for Project meetings, including but not limited to, the following:

1. Job start meeting.
2. Pre-installation conferences.
3. Progress meetings.
4. Meetings as required by the OAR.

1.02 RELATED SECTIONS

A. Section 01010: Phasing of the Work
B. Section 01100: Coordination
C. Section 01300: Submittals
D. Section 01365: Construction Schedule

PART 2 – PRODUCTS

PART 3 - EXECUTION

3.01 JOB START MEETING

A. In accordance with General Condition Article 2.6, OAR will schedule a job start meeting before starting the Work, at a time and date determined by OAR. Meeting shall be held at the Project site or another location as determined by OAR. Meeting will be held in order to review responsibilities, procedures, and other administrative requirements contained within the Contract Documents.

B. Authorized representatives of OWNER, IOR, ARCHITECT, CONTRACTOR and other parties shall attend the meeting. All participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work.

C. Agenda items shall include significant items which could affect progress of the Work, including, but not limited to the following:

1. Preliminary Construction Schedule
2. Critical work sequencing

3. Designation of responsible personnel
4. Identification of OAR
5. Procedures for processing field decisions
6. Request for Proposal
7. Construction Directive and Change Order
8. Procedures for processing Applications for Payment
9. Prevailing wages
10. Submittal of Shop Drawings, Product Data, material lists, and Samples
11. Preparation of project record documents
12. Use of the Project site and/or premises
13. Parking availability
14. Office, work, and storage areas
15. Equipment deliveries and priorities
16. Safety procedures
17. First Aid
18. Security
19. Housekeeping
20. Working hours
21. Insurance Services including OCIP
22. Environmental Health & Safety

D. OAR shall prepare and issue meeting minutes to attendees and interested parties no later than five (5) calendar days after the meeting date.

3.02 PRE-INSTALLATION CONFERENCES

A. CONTRACTOR shall coordinate and conduct pre-installation conferences at the Project site as required by related Sections of the Contract Documents.

B. CONTRACTOR, manufacturers, and fabricators involved in or affected by the installation and its coordination or integration with other pre-ceding and/or subsequent installations of Work shall attend the meeting. CONTRACTOR shall advise OAR, IOR, and ARCHITECT of scheduled meeting dates in order to secure their attendance.

1. CONTRACTOR shall review the progress of construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for the following:

a. Contract Documents
b. Options
c. Related Construction Directives and Change Orders
d. Purchases
e. Deliveries
f. Shop Drawings, Product Data, and quality-control samples
g. Review of mockups

h. Possible conflicts
i. Compatibility problems
j. Time schedules
k. Weather limitations
l. Manufacturer's recommendations
m. Warranty requirements
n. Compatibility of materials
o. Acceptability of substrates
p. Temporary facilities
q. Space and access limitations
r. Governing regulations
s. Safety
t. Inspecting and testing requirements
u. Required performance results
v. Recording requirements
w. Protection

2. CONTRACTOR shall record significant discussions and directives received from each conference. CONTRACTOR shall, within three (3) calendar days after the meeting date, distribute the minutes of the meeting to all concerned parties, including but not limited to, OAR, IOR, and ARCHITECT.

3.03 PROGRESS MEETINGS

A. Progress meetings will be held at the Project site at regular intervals, typically weekly, as determined by the OAR.

B. In addition to representatives of CONTRACTOR, OWNER, and ARCHITECT, each Subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of the Work shall, if requested by OAR, be represented at these meetings. All participants at the conference shall be familiar with the Project and authorized to conclude all matters relating to the Work.

C. Failure of the CONTRACTOR to be so represented at any progress meeting which is held at a mutually agreed time or for which a written notice is given, shall not relieve CONTRACTOR from abiding by any and all OAR or ARCHITECT determinations or directives issued at such meeting.

D. OAR will review and correct or approve minutes of the previous progress meeting and will review other significant items affecting progress. Topics for discussion as appropriate to the status of the Project include but are not limited to:

1. Interface requirements
2. Construction Schedule

3. Sequence and coordination
4. Status of submittals / RFC's
5. Deliveries
6. Off-site fabrication
7. Access
8. Site utilization
9. Temporary Construction Facilities and Controls
10. Hours of work
11. Hazards and risks
12. Housekeeping
13. Quality and workmanship
14. Unforeseen conditions
15. Testing and Inspection
16. Defective Work
17. Construction Directive
18. Request for Proposal
19. Change Order Proposals and Change Orders
20. Documentation of information for payment requests
21. Application for Payment
22. Other items as required or as brought forth.

E. No later than three (3) calendar days after each progress meeting, OAR will prepare and distribute minutes of the meeting to each present and absent party. Include a brief summary, in narrative form, of progress, decisions, directives, actions taken, and all other issues since the previous meeting and report.

1. Schedule Updating: If required, CONTRACTOR shall revise the Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the next scheduled progress meeting.

3.04 ADDITIONAL MEETINGS

A. OAR, upon giving notice to the intended parties and without further obligation, may require additional meetings to discuss Work and/or Project related activities.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Administrative and procedural requirements for submittals required for the Work, including but not limited to; Shop Drawings, Product Data, Samples, material lists, and quality control items as required by the Contract Documents.

B. Wherever possible, throughout the Contract Documents, the minimum acceptable quality of workmanship and products has been defined by the name and catalog number of a manufacturer and by reference of recognized industry standards.

C. To ensure that specified products are furnished and installed in accordance with the design intent, procedures have been established for submittal of design data and for its review by ARCHITECT, OAR and/or others.

1.02 RELATED SECTIONS

A. Section 01100: Coordination
B. Section 01120: Cutting and Patching
C. Section 01365: Construction Schedule
D. Section 01640: Substitutions
E. Section 01700: Contract Closeout
F. Section 01740: Warranties

PART 2 – PRODUCTS

PART 3 - EXECUTION

3.01 PROCEDURES

A. CONTRACTOR shall package each submittal appropriately for transmittal and handling. CONTRACTOR shall transmit each submittal to ARCHITECT with concurrent copy of the transmittal to the OAR. ARCHITECT and/or OAR will not accept submittals received from sources other than from CONTRACTOR.

B. After ARCHITECT review, ARCHITECT will transmit submittals to OAR and OAR shall further distribute to CONTRACTOR, IOR and/or others as required. Work shall not commence, unless otherwise approved by OAR, until approved submittals are transmitted to CONTRACTOR.

C. CONTRACTOR shall clearly identify any deviations from the Contract Documents on each submittal. Any deviation not so noted even though stamped reviewed is not acceptable.

D. CONTRACTOR shall coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities requiring sequential activity.

E. Timing of Submittals:

1. In accordance with General Conditions, CONTRACTOR shall submit to ARCHITECT, with copy of transmittal to the OAR, those Shop Drawings, Product Data, diagrams, materials lists, Samples and other submittals required by the Contract Documents.

2. The schedule of submittals shall provide adequate time between submittals in order to allow for proper review without negative impact to the Construction Schedule.

3. Schedule of submittals shall be related to Work progress, and shall be so organized as to allow sufficient time for transmitting, reviewing, corrections, resubmission, and re-reviewing.

4. CONTRACTOR shall coordinate submittal of related items and ARCHITECT reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received by ARCHITECT.

5. CONTRACTOR shall revise, update and submit submittal schedule to ARCHITECT and OAR on the first of each month, or as required by OAR.

6. CONTRACTOR shall allow in the Construction Schedule, at least sixteen (16) days for ARCHITECT review following ARCHITECT receipt of submittal. For mechanical, plumbing, electrical, and other submittals requiring joint review with OAR, CONTRACTOR shall allow a minimum of eighteen (18) days following ARCHITECT receipt of submittal.

7. No adjustments to the Contract Time and/or Milestones will be authorized because of a failure to transmit submittals to ARCHITECT sufficiently in advance of the Work to permit review and processing.

8. In case of product substitution, Shop Drawing preparation shall not commence until such time ARCHITECT and OAR reviews said submittal relative to the General Conditions.

G. If required, resubmit submittals in a timely manner. Resubmit as specified for initial submittal but identify as such. Review times for re-submitted items shall be as per the time frames for initial submittal review.

H. Shop Drawing preparation shall not commence until such time as CONTRACTOR receives Product Data approval.

I. ARCHITECT, or authorized agent, will stamp each submittal with a uniform, action stamp. ARCHITECT, or authorized agent, will mark the stamp appropriately to indicate the action taken, as follows:

1. Final Unrestricted Release: When ARCHITECT, or authorized agent, marks a submittal " Reviewed, " the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.

2. Final-But-Restricted Release: When ARCHITECT, or authorized agent, marks a submittal " Reviewed as Noted," the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.

3. Returned for Re-submittal: When ARCHITECT, or authorized agent, marks a submittal " Rejected, Revise and Resubmit," do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat as necessary to obtain different action mark. In case of multiple submittals covering same items of Work, CONTRACTOR is responsible for any time delays, schedule disruptions, out of sequence Work, or additional costs due to multiple submissions of the same submittal item. Do not use, or allow others to use, submittals marked "Rejected, Revise and Resubmit" at the Project site or elsewhere where Work is in progress.

4. Other Action: Where a submittal is for information or record purposes or special processing or other activity, the ARCHITECT, or authorized agent, will return the submittal marked "Action Not Required ".

3.02 SHOP DRAWINGS

A. Shop Drawings are original drawings prepared by CONTRACTOR, Subcontractor, supplier, or distributor illustrating some portion of Work by showing fabrication, layout, setting, or erection details. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings.

B. Produce Shop Drawings to an accurate scale that is large enough to indicate all pertinent features and methods. Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 x 11 inches but no larger than 24 x 36 inches.

C. Shop Drawings shall include fabrication and installation drawings, setting diagrams, schedules, patterns, templates, and similar drawings. Include the following information:

1. Dimensions
2. Identification of products and materials included by sheet and detail number.
3. Compliance with specified standards.
4. Notation of coordination requirements.
5. Notation of dimensions established by field measurement.

D. Provide a space of approximately 4 by 5 inches on the label or beside the title block on Shop Drawings to record CONTRACTOR and ARCHITECT review, and the action taken. Include the following information on the label for processing and recording action taken:

1. Project name.
2. Date.
3. Name and address of ARCHITECT.
4. Name and address of CONTRACTOR.
5. Name and address of Subcontractor.
6. Name and address of supplier.
7. Name and address of manufacturer.
8. Name and title of appropriate Specification section.
9. Drawing number and detail references, as appropriate.

E. Unless otherwise agreed to or indicated in individual Specification sections, submit a sufficient number to allow for adequate CONTRACTOR, Subcontractor, supplier, manufacturer and fabricators distribution plus two sets to be retained by ARCHITECT, one set to IOR and one set to OAR. .

3.03 PRODUCT DATA

A. Collect Product Data into a single submittal for each element of Work or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, wiring diagrams, schedules, illustrations, or performance curves.

1. Mark each copy to show or delineate pertinent materials, products, models, applicable choices, or options. Where Product Data includes information

on several products that are not required, clearly mark copies to indicate the applicable information. Include the following information:

a. Manufacturer's printed recommendations.
b. Compliance with trade association standards.
c. Compliance with recognized testing agency standards.
d. Application of testing agency labels and seals.
e. Notation of dimensions verified by field measurement.
f. Notation of coordination requirements.
g. Notation of dimensions and required clearances.
h. Indicate performance characteristics and capacities.

2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed. .

C. Required Copies and Distribution: Same as denoted in sub - section 3.02, E.

3.04 SAMPLES

A. Procedure:

1. Submit Samples of sufficient size, quantity, cured and finished and physically identical to the proposed product or material. Samples include partial or full sections or range of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches denoting color, texture, and/or pattern.

a. Mount or display Samples in the manner to facilitate review of qualities indicated. Include the following:

1. Specification section number and reference.
2. Generic description of the Sample.
3. Sampling source.
4. Product name or name of manufacturer.
5. Compliance with recognized standards.
6. Availability and delivery time.

2. Submit Samples for review of size, kind, color, pattern, and texture. Submit Samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.

a. Where variations in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least three (3) multiple units that show the approximate limits of the variations.

b. Refer to other Specification sections for requirements for Samples that illustrate workmanship, fabrication techniques, assembly details, connections, operation, and similar construction characteristics.

c. Refer to other sections for Samples to be returned to CONTRACTOR for incorporation into the Work. Such Samples must be undamaged at time of installation. On the transmittal indicate special requests regarding disposition of Sample submittals.

d. Samples not incorporated into the Work, or otherwise not designated as OWNER property, remain the property of CONTRACTOR and shall be removed from the Project site prior to Substantial Completion.

3. Color and Pattern: Whenever a choice of color or pattern is available in a specified product, submit accurate color chips and pattern charts to OAR for review and selection.

4. Number Required: Submit 5 of each. Two will be returned to CONTRACTOR with one to ARCHITECT, OAR, and IOR.

B. When specified, erect field Samples and mock-ups at the Project site to illustrate products, materials, or workmanship and to establish standards by which completed Work shall be judged.

C. Maintain sets of Samples, as returned, at the Project site, for quality comparisons throughout the course of the Work. Sample sets may be used to obtain final acceptance of the Work associated with each set.

3.05 QUALITY CONTROL SUBMITTALS

A. Submit quality control submittals, including design data, certifications, manufacturer's field reports, and other quality control submittals as required under other sections of the Contract Documents.

B. When other sections of the Contract Documents require manufacturer's certification of a product, material, and/or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.

C. Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the represented company.

D. Requirements for submittal of inspection and test reports are specified in other sections of the Contract Documents.

END OF SECTION

SECTION 01340

CONSTRUCTION & DEMOLITION WASTE MANAGEMENT

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Preparation and implementation, including reporting and documentation, of a Waste Management Plan for reusing, recycling, salvage or disposal of non-hazardous waste materials generated during demolition and/or new construction (Construction & Demolition (C&D) Waste), to foster material recovery and re-use and to minimize disposal in land fills.

B. Related Sections

1. Section 01300: Submittals

2. Section 01500: Construction Facilities and Temporary Controls

3. Section 01700: Contract Closeout

1.02 REFERENCES

A. California Integrated Waste Management Act of 1989 (AB 939)

B. California Code of Regulations Title 14, Section 18700 et seq.

1.03 SYSTEM DESCRIPTION

A. Collection and separation of all C&D waste materials generated on-site, reuse or recycling on-site, transportation to approved recyclers or reuse organizations, or transportation to legally designated landfills, for the purpose of recycling salvaging and/or reusing a minimum of 75% of the C&D waste generated.

1.04 SUBMITTALS

A. C&D Waste Management Plan (Exhibit 1): Within 10 calendar days after the Notice to Proceed and prior to any waste removal, submit the following to the OAR for review and approval. Update quarterly. Include:

1. Materials to be recycled, reused, or salvaged, either onsite or offsite.

2. Estimates of C&D waste quantity (in tons) by type of material. (If waste is measured by volume, give factors for conversion to weight in tons.)

3. Procedures for recycling/ reuse program.

4. Permit or license and location of Project waste-disposal areas.

5. Site plan for placement of waste containers.

B. C&D Waste Management Monthly Progress Report (Exhibit 2): Summary of waste generated by Project, monthly with Application for Payment. Include:

1. Firms accepting the recovered or waste materials.

2. Type and location of accepting facilities (landfill, recovery facility, used materials yard, etc.). If materials are reused or recycled on the Project site, location should be designated as "on-site reuse / recycling".

3. Type of materials and net weight (tons) of each.

4. Value of the materials or disposal fee paid.

5. Attach weigh bills and other documentation confirming amount and disposal location of waste materials.

C. C&D Waste Management Final Compliance Report: Final update of Waste Management Plan to provide summary of total waste generated by Project.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION

3.01 IMPLEMENTATION

A. Implement approved Waste Management Plan including collecting, segregating, storing, transporting and documenting each type of waste material generated, recycled or reused, or disposed in landfills.

B. Designate an on-site person to be responsible for instructing workers and overseeing the sorting and recording of waste/ recyclable materials.

C. Include waste management and recycling in worker orientation and as an agenda item for regular Project meetings.

D. Recyclable and waste bin areas shall be limited to areas approved on the Waste Management Plan. Keep recycling and waste bins neat and clearly marked to avoid contamination of materials.

3.02 ATTACHMENTS

A. Exhibit 1: Waste Management Plan

B. Exhibit 2: Waste Management Monthly Progress Report.

EXHIBIT 1

WASTE MANAGEMENT PLAN
CONSTRUCTION/ MAINTENANCE/ALTERATION & DEMOLITION PROJECTS

PROJECT NAME: **«PROJECTTITLE» «CONTRACTTITLE»**
PROJECT NO: **«Project Number»**
NAME OF COMPANY:
CONTACT PERSON:
TELEPHONE:
PROJECT SITE LOCATION:
PROJECT TYPE: ☐ NEW CONSTRUCTION ☐ DEMOLITION
☐ MAINTENANCE/ALTERATION PROJECTS
PROJECT SIZE (SQ. FT.):
DATE & ESTIMATED PERIOD

(1) Material Type	(2) Tons Estimated Recycle	(3) Tons Estimated Reuse	(4) Tons Estimated Salvage	(5) Tons Estimated Landfill	(6) Proposed Disposal or Recycling Facility (e.g., Onsite, Name of Facility)
Total					
Diversion Rate: Columns [(2)+(3)+(4)] / [(2)+(3)+(4)+(5)]					=

Signature	Title	Date

Column 1 "Material Types" – Enter type of materials targeted for recycling, reuse, and/or salvage, either on- or off-site, and include a category for waste materials requiring disposal.

Columns 2 thru 4 "Estimated Generation" - Enter estimated quantities (tons) of recyclable, reusable, or salvageable waste materials anticipated to be generated and state number of salvageable items.

Column 5 "Estimated Landfill" - Enter quantities (tons) of materials to be disposed in landfill.

Column 4 "Disposal Location" - Enter end-destination of recycled, salvaged, and disposed materials.

General : (1) Attach proposed Recycling & Waste Bin Location Plan.
(2) Attach name and contact data for each recycling or disposal destination to be used.

EXHIBIT 2

WASTE MANAGEMENT PROGRESS REPORT
CONSTRUCTION/ MAINTENANCE/ALTERATION & DEMOLITION PROJECTS

PROJECT NAME: **«PROJECTTITLE» «CONTRACTTITLE»**
PROJECT NO: **«Project Number»**
NAME OF COMPANY:
CONTACT PERSON:
TELEPHONE:
PROJECT SITE LOCATION:
PROJECT TYPE: ☐ NEW CONSTRUCTION ☐ DEMOLITION
☐ MAINTENANCE/ALTERATION PROJECTS
PROJECT SIZE (SQ. FT.):
PERIOD to

(1) Material Type	(2) Tons Actual Recycle	(3) Tons Actual Reuse	(4) Tons Actual Salvage	(5) Tons Actual Landfill	(6) Disposal or Recycling Facility (e.g., Onsite, Name of Facility)
Total					
Diversion Rate: Columns [(2)+(3)+(4)] / [(2)+(3)+(4)+(5)]					=

Signature	Title	Date

Column 1 "Material Types" – Enter type of materials targeted for recycling, reuse, and/or salvage, either on- or off-site, and include a category for waste materials requiring disposal.

Columns 2 thru 4 "Estimated Generation" - Enter estimated quantities (tons) of recyclable, reusable, or salvageable waste materials anticipated to be generated and state number of salvageable items.

Column 5 "Estimated Landfill" - Enter quantities (tons) of materials disposed.

Column 4 "Disposal Location" - Enter end-destination of recycled, salvaged, and disposed materials.

General : (1) Attach proposed Recycling & Waste Bin Location Plan.

(2) Attach name and contact data for each recycling or disposal destination to be used.

END OF SECTION

SECTION 01365

CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Construction Schedule procedures, preparation, submittal, updates, and revisions.

1.02 RELATED SECTIONS

A. Section 01300: Submittals.

B. Section 01700: Contract Closeout.

1.03 PROCEDURES

A. Within 7 calendar days after date of Notice to Proceed, CONTRACTOR shall submit to OWNER for review, a detailed Construction Schedule setting forth all requirements for complete execution of the Work.

B. Seven (7) calendar days after receipt of the OWNER'S review comments, submit a final Construction Schedule acceptable to OWNER.

C. If a Construction Schedule is considered by OWNER to not be in compliance with any requirement of the Contract, CONTRACTOR will be notified to review and revise the Construction Schedule and bring it into compliance. Failure of CONTRACTOR to submit a Construction Schedule in full compliance with the Contract Documents will result in a delay in progress payment processing. The Construction Schedule is to be used in evaluating progress for payment approval.

D. Subsequently with each Progress Payment Request, CONTRACTOR shall deliver to OWNER an updated Construction Schedule reflecting Work progress to the end of the Progress Payment Request period. Each such Construction Schedule shall indicate actual progress to date in execution of the Work, together with a projected schedule for completion of all the Work.

E. All schedule submittals are subject to review and acceptance by OWNER. OWNER retains the right to withhold progress payments until CONTRACTOR submits a Construction Schedule acceptable to OWNER.

F. Concurrent with OWNER'S acceptance of CONTRACTOR’S submitted Construction Schedule, shall be CONTRACTOR'S signature of acceptance.

1.04 SCHEDULE SUBMITTAL PREPARATION GUIDELINES

A. The Contract Work shall be scheduled and progress monitored using a Critical Path Method (CPM) network type scheduling system. Schedule shall be broken into sub-activities which shall, as a minimum, include major suppliers, all submittal approvals, all major trades, plumbing, mechanical, electrical, security, fire, and elevators/escalators. Scheduling system shall indicate all inter-relationships between trades and suppliers.

B. Construction Schedule shall represent a practical plan to complete the Work within the Contract time requirement.

1. A schedule extending beyond Contract time or less than Contract time will not be acceptable.

2. A schedule found unacceptable by OWNER shall be revised by CONTRACTOR and resubmitted.

C. Construction schedule shall clearly indicate sequence of construction activities, grouped by applicable phase and sorted by areas, buildings, or facilities within phase, and shall specifically indicate:

1. Start and completion of all Work items, their major components, and interim milestone completion dates, as determined by CONTRACTOR and OWNER.

2. Activities for procurement, delivery, installation of equipment, materials, and other supplies, including:

a. Time for submittals, resubmittals, and reviews. Include decision dates for selection of finishes.

b. Time for manufactured products for the Work fabrication and delivery.

c. Interdependence of procurement and construction activities.

d. As applicable, dates for testing, balancing equipment, and final inspection.

D. Schedule shall be in sufficient detail to assure adequate planning and execution of the Work.

1. Each task activity shall range in duration from a 1 workday minimum to a 15 workday maximum and shall be total of actual days required for

completion. The activity duration shall not include consideration of weather impact on completion of that activity.

2. Schedule shall be suitable, in judgment of OWNER, to allow monitoring and evaluation of progress in performance of the Work; it shall be calendar time-scaled.

3. Activities shall include:

a. Description; what is to be accomplished and where.

b. Workday duration.

c. Scheduled activities shall indicate continuous flow, from left to right.

4. CONTRACTOR shall setup up the schedule calendar to identify workdays per week and shifts per day worked, non-work days, weekends and holidays.

E. Failure to include any element of Work required for performance of this Contract shall not excuse CONTRACTOR from completing Work required to comply with the Contract Documents, notwithstanding acceptance of Construction Schedule.

F. Submittal of Construction Schedule shall be understood to be CONTRACTOR'S confirmation that the schedule meets requirements of the Contract Documents, and that the Work will be executed in sequence indicated in schedule.

1.05 REVIEWS, UPDATES, AND REVISIONS

A. OWNER will review and return the initial submittal of CONTRACTOR'S Construction Schedule, with summary comments, within 7 calendar days. If revisions are required, CONTRACTOR shall resubmit Schedule within 7 calendar days following receipt of OWNER'S comments.

B. CONTRACTOR shall analyze and update the Project Construction Schedule:

1. As part of monthly payment application, CONTRACTOR shall submit to and participate with OWNER in a schedule review to include:

a. Actual start dates for Work items started during report period.

b. The percent (%) complete on activities that have actual start dates.

c. Actual completion dates for Work items completed during report period.

d. Estimated remaining duration for Work items in progress, which will not exceed original duration for activity.

e. Estimated start dates for Work items scheduled to start during month following report period, if applicable.

f. Changes in duration of Work items.

2. In case of a change to CONTRACTOR'S planned sequence of Work, CONTRACTOR shall include a narrative report with updated progress schedule which shall include, but not be limited to, a description of problem areas, current and anticipated delaying factors, and any proposed revisions for a recovery plan.

3. All Change Orders affecting the schedule shall be clearly identified as separate and new activities integrated into the schedule at the appropriate time and in the appropriate sequence as reviewed and approved by OWNER.

4. The Project Construction Schedule Review will not relieve CONTRACTOR of responsibility for accomplishing all Work in accordance with the Contract Documents.

D. Updates: CONTRACTOR shall submit to OWNER, with each payment application, an up-to-date Project Construction Schedule to include following:

1. Work Item Report: Detailing Work items and dependencies as indicated on the Schedule.

2. Separate listing of activities completed during reporting period.

3. Separate listing of activities which are currently in progress, indicating their remaining duration and percentages completed.

4. Separate listing of activities which are causing delay in Work progress.

E. Scheduling of change or extra Work orders is responsibility of CONTRACTOR.

1. CONTRACTOR shall revise the Project Construction Schedule to incorporate all activities involved in completing change orders or extra Work orders and submit it to OWNER for review.

F. If OWNER finds CONTRACTOR is entitled to extension of any completion date, under provisions of the Contract, OWNER'S determination of total number of days of extension will be based upon an analysis of the current Project Construction Schedule, and upon data relevant to the extension.

G. CONTRACTOR acknowledges and agrees that delays to non-critical activities will not be considered a basis for a time extension unless activities become critical. Non-critical activities are those activities which, when delayed, do not affect an interim or Substantial Completion date.

H. Any claim for extension of time shall be made in writing to OWNER not more than 7 days after commencement of delay; otherwise, it shall be deemed waived for all purposes. CONTRACTOR shall provide an estimate of the probable effect of such a delay on progress of Work as part of claim.

1.06 CONTRACTOR'S RESPONSIBILITY

A. Nothing in these requirements shall be deemed to be an usurpation of CONTRACTOR'S authority and responsibility to plan and schedule Work as CONTRACTOR sees fit, subject to all other requirements of Contract Documents.

B. CONTRACTOR shall provide at all times sufficient competent labor, materials, and equipment to properly carry on Work and to insure completion of each part in accordance with Construction Schedule and within time agreed.

C. CONTRACTOR shall be responsible for ensuring that all submittals to the OWNER are accurate and consistent. Damage, including extra time and cost, caused by inaccuracies from CONTRACTOR will be compensated by CONTRACTOR.

1.07 SUSPENSION OF PAYMENTS

A. Initial Submittal: If CONTRACTOR fails to comply with the specified requirements, OWNER reserves the right to engage an independent scheduling consultant to fulfill these requirements. Upon additional notice to CONTRACTOR, OWNER shall retain against CONTRACTOR all incurred costs for additional services.

B. Update Submittals: OWNER has the right to withhold progress payments if CONTRACTOR fails to update and submit the Project Construction Schedule and reports as required by OWNER.

1.08 RECORD COPY

A. Prior to the Contract Completion, CONTRACTOR shall submit the Project Construction Schedule showing the as-built sequence. The as-built schedule shall have all activities with actual start and end dates.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

SECTION 01640

SUBSTITUTIONS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. This Section includes administrative and procedural requirements for handling requests for substitutions submitted eleven (11) days or more after the date established in the Notice to Proceed.

1.2 RELATED SECTIONS

A. Section 01300: Submittals
B. Section 01600: Materials and Equipment

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.1 APPLICATION

A. CONTRACTOR proposed changes in products or materials required by the Contract Documents eleven (11) days or more after the date established in the Notice to Proceed, are considered to be requests for substitutions. OAR will consider requests for substitution if a product is no longer manufactured and/or cannot be acquired from existing inventories. The following are not considered to be valid requests for substitutions:

1. Revisions to the Contract Documents requested by OAR or ARCHITECT.

2. Specified options of products included in the Contract Documents.

3. Substitutions requested on a “or equal” basis.

3.2 SUBMITTALS

A. Transmit submittals as described in related Sections for each request for substitution.

1. Identify the product to be replaced in each request. Include related Specification Section and Drawing number.

2. Provide complete documentation denoting compliance with the requirements for substitutions, and the following information, as appropriate.

   a. A detailed comparison of significant qualities of the proposed substitution with those specified in the Contract Documents. Significant qualities may include elements, such as performance, weight, size, durability, and visual effect.

   b. Product Data, including Drawings, descriptions of products, fabrication, and installation procedures.

   c. Samples, where applicable or requested.

   d. CONTRACTOR certification the proposed substitution conforms to requirements of the Contract Documents in every respect and is appropriate for the applications indicated.

   e. CONTRACTOR waiver of rights to an increase in the Contract Amount, Milestones and/or Contract Time that may subsequently become necessary because of the failure of the substitution to adequately perform.

3. If required, ARCHITECT will request additional information or documentation for evaluation. OAR will notify CONTRACTOR of acceptance or rejection of the substitution.

4. ARCHITECT will review and consider request for substitution and provide a recommendation to OAR

5. Where a proposed substitution involves and/or effects more than one Subcontractor, CONTRACTOR shall ensure each Subcontractor cooperates with the other Subcontractor involved to coordinate the Work, provide uniformity and consistency, and assure compatibility of all products.

6. CONTRACTOR submittal and ARCHITECT review of Shop Drawings, Product Data, material lists or Samples do not constitute an acceptable or valid request for substitution.

END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This Section includes administrative and procedural requirements for Contract Closeout, including but not limited to, the following:

1. Inspection procedures.
2. Project record documents submittal.
3. Operation and maintenance manual submittal.
4. OWNER orientation and instruction.
5. Final cleaning.

B. Closeout requirements for specific Work activities are included in the appropriate Sections in Divisions 01 through 16.

1.02 RELATED SECTIONS

A. Section 01080: Application for Payment
B. Section 01300: Submittals
C. Section 01365: Construction Schedule
D. Section 01500: Construction Facilities and Temporary Controls
E. Section 01740: Warranties

PART 2 – PRODUCTS

PART 3 - EXECUTION

3.01 SUBSTANTIAL COMPLETION

A. Inspection Procedures: On receipt of a request for a certificate of Substantial Completion, OAR will either authorize commencement of inspection or advise CONTRACTOR of unfilled requirements. IOR, OAR, CONTRACTOR and ARCHITECT will inspect the Work and IOR shall prepare a comprehensive punch list of items to be completed.

1. IOR will repeat inspection when requested and assure the Work is complete.

2. Results of the completed inspection will form a partial basis of the requirements for Final Completion.

B. Re-inspection Procedures: IOR, OAR, CONTRACTOR and ARCHITECT will inspect the Work upon notice the Work, including final inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to OAR.

1. Upon completion of inspection, OAR will recommend Final Completion. If the Work is incomplete, OAR will advise CONTRACTOR of Work that is incomplete or of obligations that have not been fulfilled but are required for Final Completion.

2. If necessary, re-inspection will be repeated, but may be assessed against CONTRACTOR if OWNER is subject to additional professional service and or additional costs of inspection.

3.02 PROJECT RECORD DOCUMENT SUBMITTAL

A. General: Do not use project record documents for construction purposes. Protect record documents from deterioration and loss. Provide access to record documents for ARCHITECT, IOR and OAR reference during normal working hours. Project record document shall be updated on a weekly basis. Prior to submitting each application for payment, secure IOR and ARCHITECT approval of project record documents.

B. Record Drawings: Maintain a clean, undamaged set of blue or black line white prints of Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which Drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Drawings. Provide detailed and accurate field dimensions for concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work. Date and number entries in the same format as submitted. Call attention to entry by a “cloud” around the affected areas.

2. Mark new information important to OWNER but was not shown on Drawings or Shop Drawings.

3. Utility location and depth below finished grade and/or above ceilings and attic spaces shall be fully dimensioned and indicated on record drawings. Dimensions shall be measured from building lines or permanent landmarks and shall be triangulated to those features.

4. Note related Change Order or Construction Directive numbers where applicable. RFC submissions shall be referenced on each affected sheet, Drawing and/or Shop Drawing.

5. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.

6. Prior to Final Completion of the Work, and review of the project record drawings by ARCHITECT, prepare a final set of project record drawings incorporating all mark ups and information noted. Provide a hardline drawing set of record drawings printed on reproducible white bond paper. Submit final set of Record Drawings to ARCHITECT.

C. Record Specifications: Maintain two complete copies of the Specifications, including Addenda. Include with the Specifications two copies of other written Contract Documents, such as Change Orders and/or Construction Directives issued during construction.

1. Mark these record documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.

2. Give particular attention to substitutions and selection of options and information on concealed Work that cannot otherwise be readily discerned later by direct observation.

3. Note related record document information with Product Data.

4. Prior to Final Completion of the Work, submit record Specifications to ARCHITECT for OWNER records.

D. Record Product Data: Maintain two copies of each Product Data submittal. Note related Change Orders and Construction Directives and mark-up of record drawings and Specifications.

1. Mark these documents to illustrate significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the Project site and from the manufacturer's installation instructions and recommendations.

2. Provide detailed and accurate information regarding concealed products and portions of Work that cannot otherwise be readily discerned later by direct observation.

3. Prior to Final Completion of the Work, submit complete set of record Product Data to the ARCHITECT for OWNER records.

E. Record Samples: Immediately prior to Substantial Completion, CONTRACTOR shall meet with ARCHITECT and OAR at the Project site to determine which Samples are to be transmitted to OWNER for record purposes. Comply with OAR instructions regarding delivery to OWNER storage area.

F. Miscellaneous Records: Refer to other Specification sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Immediately prior to the date of Final Completion, complete and compile miscellaneous records and place in good order. Identify miscellaneous records properly and bind or file, ready for continued use and reference. Submit to ARCHITECT for OWNER records.

G. Maintenance Manuals: Prior to Substantial Completion, organize operation and maintenance data into suitable two sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2-3", 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Submit to OAR for ARCHITECT and for OWNER records. Include the following types of information.
1. Spare parts list of warranties
2. Inspection procedures
3. Shop Drawings and Product Data

H. Verified Reports: Construction progress of the Work shall be reported to DSA via a duly verified report as per Sections 4-336 and 4-343 of the California Building Standards Administrative Code.

3.03 CLOSEOUT PROCEDURES:

A. Operation and Maintenance Instructions: Prior to Substantial Completion, arrange for each installer of equipment that requires regular operation and maintenance to meet with designated OWNER personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:

1. Maintenance manuals
2. Record documents
3. Cleaning
4. Warranties and bonds
5. Maintenance agreements and similar continuing commitments

3.04 FINAL CLEANING

A. General: Related sections of the Contract Documents specify general cleaning during performance of the Work. General cleaning is included in Division 01 Section "Construction Facilities and Temporary Controls".

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

1. Complete the following cleaning operations before requesting inspection for a certificate of Substantial Completion.

a. Remove labels that are not permanent labels.

b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

c. Clean exposed exterior and interior hard-surfaced finished to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

e. Clean the Project site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.

END OF SECTION PART 1 - GENERAL

1.03 SECTION INCLUDES

C. This Section includes administrative and procedural requirements for Contract Closeout, including but not limited to, the following:

6. Inspection procedures.
7. Project record documents submittal.
8. Operation and maintenance manual submittal.

9. OWNER orientation and instruction.
10. Final cleaning.

D. Closeout requirements for specific Work activities are included in the appropriate Sections in Divisions 01 through 16.

1.04 RELATED SECTIONS

A. Section 01080: Application for Payment
B. Section 01300: Submittals
C. Section 01360: Construction Schedule
D. Section 01450: Test and Balance
E. Section 01500: Construction Facilities and Temporary Controls
F. Section 01740: Warranties

PART 2 – PRODUCTS

PART 3 - EXECUTION

3.01 SUBSTANTIAL COMPLETION

C. Inspection Procedures: On receipt of a request for a certificate of Substantial Completion, OAR will either authorize commencement of inspection or advise CONTRACTOR of unfilled requirements. IOR, OAR, CONTRACTOR and ARCHITECT will inspect the Work and IOR shall prepare a comprehensive punch list of items to be completed.

3. IOR will repeat inspection when requested and assure the Work is complete.

4. Results of the completed inspection will form a partial basis of the requirements for Final Completion.

D. Re-inspection Procedures: IOR, OAR, CONTRACTOR and ARCHITECT will inspect the Work upon notice the Work, including final inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to OAR.

3. Upon completion of inspection, OAR will recommend Final Completion. If the Work is incomplete, OAR will advise CONTRACTOR of Work that is incomplete or of obligations that have not been fulfilled but are required for Final Completion.

4. If necessary, re-inspection will be repeated, but may be assessed against CONTRACTOR if OWNER is subject to additional professional service and or additional costs of inspection.

3.02 PROJECT RECORD DOCUMENT SUBMITTAL

H. General: Do not use project record documents for construction purposes. Protect record documents from deterioration and loss. Provide access to record documents for ARCHITECT, IOR and OAR reference during normal working hours. Project record document shall be updated on a weekly basis. Prior to submitting each application for payment, secure IOR and ARCHITECT approval of project record documents.

I. Record Drawings: Maintain a clean, undamaged set of blue or black line white prints of Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which Drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Drawings. Provide detailed and accurate field dimensions for concealed elements that would be difficult to measure and record at a later date.

7. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work. Date and number entries in the same format as submitted. Call attention to entry by a "cloud" around the affected areas.

8. Mark new information important to OWNER but was not shown on Drawings or Shop Drawings.

9. Note related Change Order or Construction Directive numbers where applicable. RFC submissions shall be referenced on each affected sheet, Drawing and/or Shop Drawing.

10. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.

11. Prior to Final Completion of the Work, and review of the project record drawings by ARCHITECT, prepare a final set of project record drawings incorporating all mark ups and information noted. Provide a hardline drawing set of record drawings printed on reproducible white bond paper. Submit final set of Record Drawings to ARCHITECT.

J. Record Specifications: Maintain two complete copies of the Specifications, including Addenda. Include with the Specifications two copies of other written Contract Documents, such as Change Orders and/or Construction Directives issued during construction.

5. Mark these record documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.

6. Give particular attention to substitutions and selection of options and information on concealed Work that cannot otherwise be readily discerned later by direct observation.

7. Note related record document information with Product Data.

8. Prior to Final Completion of the Work, submit record Specifications to ARCHITECT for OWNER records.

K. Record Product Data: Maintain two copies of each Product Data submittal. Note related Change Orders and Construction Directives and mark-up of record drawings and Specifications.

4. Mark these documents to illustrate significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the Project site and from the manufacturer's installation instructions and recommendations.

5. Provide detailed and accurate information regarding concealed products and portions of Work that cannot otherwise be readily discerned later by direct observation.

6. Prior to Final Completion of the Work, submit complete set of record Product Data to the ARCHITECT for OWNER records.

L. Record Samples: Immediately prior to Substantial Completion, CONTRACTOR shall meet with ARCHITECT and OAR at the Project site to determine which Samples are to be transmitted to OWNER for record purposes. Comply with OAR instructions regarding delivery to OWNER storage area.

M. Miscellaneous Records: Refer to other Specification sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Immediately prior to the date of Final Completion, complete and compile miscellaneous records and place in good order. Identify miscellaneous records properly and bind or file, ready for continued use and reference. Submit to ARCHITECT for OWNER records.

N. Maintenance Manuals: Prior to Substantial Completion, organize operation and maintenance data into suitable two sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2-3", 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on

front and spine of each binder. Submit to OAR for ARCHITECT and for OWNER records. Include the following types of information.

4. Shop Drawings and Product Data

H. Verified Reports: Construction progress of the Work shall be reported to DSA via a duly verified report as per Sections 4-336 and 4-343 of the California Building Standards Administrative Code.

3.03 CLOSEOUT PROCEDURES:

B. Operation and Maintenance Instructions: Prior to Substantial Completion, arrange for each installer of equipment that requires regular operation and maintenance to meet with designated OWNER personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:

6. Maintenance manuals
7. Record documents
8. Identification systems Hazards
9. Cleaning
10. Warranties and bonds
11. Maintenance agreements and similar continuing commitments

3.04 FINAL CLEANING

C. General: Related sections of the Contract Documents specify general cleaning during performance of the Work. General cleaning is included in Division 01 Section "Construction Facilities and Temporary Controls".

D. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

2. Complete the following cleaning operations before requesting inspection for a certificate of Substantial Completion.

f. Remove labels that are not permanent labels.

g. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances

that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

h. Clean exposed exterior and interior hard-surfaced finished to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

i. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

j. Clean the Project site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.

END OF SECTION

SECTION 017416

STORM WATER POLLUTION PREVENTION PLAN

(FOR SITES WITH LAND DISTURBANCE OF ONE ACRE OR MORE)

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Storm water permitting and certification in compliance with state and local regulations, including payment of application and annual fees and electronic filing, through SMARTS website.
2. Preparation, implementation, maintenance, and monitoring of Storm Water Pollution Prevention Plan and all associated Best Management Practices.
3. Prepare Storm Water Pollution Prevention Plan using the SWPPP Template.
4. Control runoff and pollutants from the site during construction activities.

B. Related Requirements:

1. Division 01 – General Requirements.

1.2 ACRONYMS AND DEFINITIONS

BMP	Best Management Practice.
CAN	Corrective Action Notice.
CASQA	California Stormwater Quality Association.
COI	Change of Information.
DWQ	Division of Water Quality.
CGP	NPDES General Permit for Storm Water Discharges Associated with Construction Activities.
ELAP	Environmental Laboratory Accreditation Program.
LARWQCB	Los Angeles Regional Water Quality Control Board.
LRP	Legally Responsible Person (OWNER).
NOI	Notice of Intent.
NOT	Notice of Termination.
NPDES	National Pollutant Discharge Elimination System.

OAR	Owner Authorized Representative
PRDs	Permit Registration Documents, including NOI, Risk Assessment, Site Map, SWPPP, Annual Fee, Signed Certification Statements.
REAP	Rain Event Action Plan.
RISK LEVEL	As defined by CGP.
QSD	Qualified SWPPP Developer.
QSP	Qualified SWPPP Practitioner.
QRE	Qualifying Rain Event, is an event that produces 0.5 inches of precipitation with a 48 hour or more period between rain events.
SMARTS	Storm Water Multiple Application and Report Tracking System (smarts.waterboard.ca.gov).
SWPPP	Storm Water Pollution Prevention Plan.
SWRCB	State Water Resources Control Board.
WPCD	Water Pollution Control Drawings.
WDID	Waste Discharge Identification Number.

1.3 SWPPP REQUIREMENTS

A. CONTRACTOR shall assign a QSD and QSP, who shall be in responsible charge of Work of this Section.

B. Prior to start of Construction, CONTRACTOR shall:

1. Submit QSD and QSP qualifications.
2. Incorporate SWPPP activities into the Project Schedule.
3. Develop new SWPPP using the SWPPP or update SWPPP provided by ARCHITECT using the SWPPP Template to reflect CONTRACTOR's proposed construction staging, phasing, schedule and other construction activities. SWPPP shall be certified by QSD.
4. Complete the following on the SMARTS website under project application started by OWNER LRP. CONTRACTOR shall provide SMARTS user name to OAR/LRP in order to be linked to the application.
    a. NOI forms.
    b. Upload SWPPP certified by QSD.
    c. Risk Level Calculation.
    d. Post Construction Water Balance Calculation provided by ARCHITECT (Attachment "B" Section 33 4000).

5. Inform OAR/LRP to review and certify the NOI application and PRDs on SMARTS at least 10 days prior to soils disturbance.

6. Submit NOI fee statement along with payment to SWRCB at least 7 days prior to start of construction to obtain a WDID number.

7. Secure and pay for deposits, permits and inspection fees to _____.

8. Inform CONTRACTOR and Subcontractors personnel on the BMP procedures to prevent pollutants from entering the storm drain system, before they start construction activities.

C. During Construction:

1. Implement, install and maintain BMPs. Insure that BMPs are designed to protect all exposed portions of the site.

2. Retain a copy of the SWPPP, monitoring records, and PRDS on site until project completion and NOT has been accepted by the SWRCB.

3. Conduct and document storm water pollution prevention training of CONTRACTOR site personnel and provide records of training to OAR/LRP. See Attachment "D" for sample training log. Keep personnel informed of the SWPPP changes.

4. Monitor the Project Site per the CGP requirements.

   a. Conduct site inspection of pollution prevention controls and provide Site Monitoring Reports per the CGP and SWPPP. Prepare and maintain, at the Project site, a log of each inspection using Site Monitoring Report forms (Attachment “A”, at the end of the Section) and provide to the OAR/LRP within 24 hours of inspection completion. Inspections shall include, at a minimum:

      1) At least weekly.

      2) Within 48 hours prior to a QRE.

      3) Within 48 hours after a QRE, conduct a post-storm event inspection to identify weather BMPs are adequately designed, implemented, and effective and identify any additional BMPs necessary and revise the SWPPP accordingly.

      4) At least once each 24 hours during extended storm events.

      5) Conduct quarterly non-storm water inspections (Attachment “C”).

   b. Conduct sampling and reporting as directed by CGP and outlined in the SWPPP Construction Site Monitoring Plan.

   c. For Risk Level 2 and 3 sites only, prepare a REAP a minimum of 48 hours prior to a likely precipitation event with over a 50% or greater chance of producing precipitation on the project area.

d. Precipitation forecast information shall be obtained from the National Weather Service Forecast Office (http://www.srh.noaa.gov/).

e. Provide all monitoring reports to the OAR/LRP within 24 hours of completion of each monitoring report

5. Participate in quarterly SWPPP inspections with representative from OWNER's OEHS. Correct CAN items issued by OEHS.

6. Non-compliance with the CGP and Unauthorized Discharges shall be reported to OAR immediately, who will notify OEHS.

7. Provide verification annually that construction activities are in compliance with SWPPP. Submit Annual Report Compliance Certification (Attachment "B") to OAR and complete Annual Report on SMARTS by July 15 of each year, for review and certification. Annual Report will be certified by OWNER's LRP.

8. Maintain, Report, and update SWPPP and PRDs on the SMARTS website, including items listed below.

a. Upload SWPPP amendments.

b. Complete Ad-Hoc Reports for all sampling events. Non-Visible, Effluent Monitoring, and Exceedance Results must be reported electronically by deadlines per CGP.

c. Provide COI in SMARTS to reflect changes to construction site area, schedule, and risk level. COI shall be submitted to OAR/LRP for certification.

9. Pay annual fees related to the CGP up until the date of Substantial Completion.

10. Pay fines and penalties from regulatory agencies against OWNER due to CONTRACTOR'S non-compliance with storm water regulations. OWNER shall recover costs of fines and penalties by appropriate OWNER assessment. Review of the SWPPP and inspection log by OAR shall not relieve CONTRACTOR from liabilities arising from non-compliance of storm water pollution regulations.

11. Update Post Construction BMP Installation and Maintenance Log and complete Maintenance Plan, provided by ARCHITECT, to reflect 'actual products installed (See Attachment "A" Section 33 4000 Storm Drainage Utilities). Markup Site Plan, Appendix 2 of Attachment "A" of Section 33 4000 to reflect 'As-Builts' conditions.

D. At Substantial Completion:

1. Provide SWPPP, Site Monitoring Reports, and record documents to OAR/LRP.

2. Handover the maintenance log and maintenance plan to OAR/LRP. OWNER will maintain prevention controls left in place.

3. Conduct Post-Construction BMP training of OWNER personnel.

4. Notify OAR/LRP to schedule a meeting with OEHS to confirm Substantial Completion of SWPPP.

5. Submit to OAR/LRP Substantial Completion Certification that the Project has met all of the conditions of the CGP (Attachment "B"). Post-construction storm water operation and management plan as mentioned in the compliance certifications shall be in place at Substantial Completion.

6. Prepare the final Annual Report and NOT to terminate permit coverage. Submit NOT electronically with required attachments through the SMARTS system. NOT will be certified by the OWNER's LRP.

7. OWNER Maintenance and Operations will maintain prevention controls left in place after CONTRACTOR receives Substantial Completion.

E. Project Inspector and OEHS Inspector will conduct inspection and examination of the SWPPP.

1.4 SUBMITTALS

A. Submit the following:

1. Qualifications and experience of QSD and QSP for OWNER's review and acceptance.

2. Two electronic copies (CDs) of SWPPP updated and certified by QSD.

3. NOI application to OAR/LRP for review and certification through SMARTS.

4. NOI fee statement along with payment to SWRCB.

5. Documentation in accordance with CGP requirements for SWPPP, including:

a. BMP material quality, grade, type as specified in the CASQA BMP Handbook.

b. Electronic Copies of weekly and quarterly inspections, annual reports, compliance certifications, and test results.

c. Proof of filing with the Water Board; copies of PRDs and all attachments.

d. Training records of CONTRACTOR site personnel.

e. BMP implementation schedule.

f. WPCD revisions.

B. SWPPP Closeout Documents: At Substantial Completion provide one hard copy and two CD's with electronic files of the documents listed below to OAR/LRP. LRP will retain records for a period of three years

1. Copy of SWPPP and PRDs, including NOI, Monitoring Program, Inspection Records, Annual Reports, Compliance Certifications, and supporting documents.
2. Updated and signed SWPPP amendments and amendment log.
3. Storm and non-storm water sampling records and test results, including Noncompliance Reports, when limits are exceeded.
4. Training Records for CONTRACTOR and OWNER personnel.
5. Maintenance records for post construction BMP, per Appendix 4 of Attachment "A" of Section 33 4000.
6. Updated Post-Construction Storm Water Management Plan to reflect 'As-Builts' conditions.
7. Notice of Termination.
9. Signed Substantial Completion Certification that the Project has met all of the conditions of the CGP.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with the following requirements:
1. National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Lands Disturbance Activities; ORDER NO. 2009-0009-DWQ; NPDES NO. CAS000002 or current Construction General Permit, adopted by the State Water Resources Control Board.
2. Regulations of the California Environmental Protection Agency, State Water Resources Control Board; Los Angeles Regional Water Control Board, and local ordinances.
3. CASQA Stormwater Best Management Practice Handbook for Construction Activity (BMP Handbook), current adopted edition.

B. Qualifications: CONTRACTOR's QSP/QSD shall meet the following qualifications:
1. Current certification as a Construction General Permit Qualified SWPPP Developer/Practitioner.
2. Two years minimum experience in erosion and sediment control and knowledgeable in the requirements of SWPPP, Best Management Practices and GCP.

1.6 STORAGE AND PROTECTION

A. Provide proper storage of materials and equipment to prevent rain and storm water runoff to come in contact with pollutants, such as soil stabilizers, paint or fluids from vehicles.

1.7 TRAINING OF OWNER PERSONNEL

A. Training of Owner's personnel shall include 8 hours of on-site overview and maintenance of the following Post Construction BMPs:

1. Proprietary Infiltration Devices

B. Training of Owner's personnel on the Post Construction BMPs shall be per Section 33 4000, Storm Drainage Utilities.

1.8 ATTACHMENTS

A. The following attachments are included at the end of this Section:

1. Attachment "A" - Site Monitoring Report.
2. Attachment "B" - Compliance Certification and Checklist.
3. Attachment "C" – Quarterly Non-Storm Water Form.
4. Attachment "D" – Sample Construction Storm Water Training Form.

B. The following attachments are included at the end of Section 33 4000:

1. Attachment "A" - Post-Construction Storm Water Management Plan.
2. Attachment "B" – Post-Construction Water Balance Calculator.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide quality, grade and type of materials as specified in the CASQA BMP Handbook.

B. Provide and have available on-site during construction activities a non-stormwater sampling kit suitable for obtaining storm water and non-stormwater quality grab samples. Kit shall include containers and preservatives appropriate for the pollutants known or expected to be in the stormwater. Required sampling equipment shall be adequate to capture and transport samples to a local ELAP State certified water testing lab.

C. Provide a rain gauge on site to record readings during site inspections.

PART 3 – EXECUTION

3.1 IMPLEMENTATION

A. Install perimeter controls prior to starting work at the Project site.

B. Implement BMPs as specified in the SWPPP to contain on-site storm water on the Project site. Provide storm drain inlet protection. Do not drain on-site water directly into the storm drain without proper BMPs in place. If an Active Treatment System (ATS) is used, comply with the design storm specified in the CGP (10-year, 24-hour event)

C. Prevent pollutant discharges into the storm drain system. Prevent storm water from coming into contact with pollutants, such as material spills, or leakage from storage tanks, waste containers or transfer areas. In the event contamination is found CONTRACTOR shall immediately notify OAR/LRP who will contact the OEHS.

D. Protect exposed dirt, such as stockpiles, landscaping areas, and hillsides.

E. Properly manage non-storm water discharges such as ground water, broken utility lines and fire hydrant testing per CGP requirements.

F. Adjust BMP's locations and layouts in accordance to construction progress to assure compliance to regulations.

G. Conduct inspections of pollution prevention controls and provide Site Monitoring Report to OAR/LRP immediately if pollutants are discharged into the site runoffs. CONTRACTOR shall sample and remediate contaminated water.

H. Upon Substantial Completion: Maintain and leave post-construction storm water pollution prevention controls in place and remove those that are not needed as determined by the QSD and OAR/LRP.

3.2 SWPPP CLOSEOUT

A. Verify the following prior to Substantial Completion of SWPPP:

1. Elements of the SWPPP have been completed.
2. Final stabilization of site, as defined by the GCP, has been demonstrated.
3. There is no potential for construction related storm water pollutants to be discharged into site runoff.
4. Construction related equipment and temporary BMPs have been removed from site.
5. Rubbish, debris, and waste materials have been removed and legally disposed of off the Project site.
6. Post-Construction BMP Maintenance Plan has been established.

END OF SECTION

_____ OWNER Project Number	Los Angeles Community College District As OWNER ATTACHMENT "A" STORM WATER POLLUTION PREVENTION SITE MONITORING REPORT	STATE OF CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

School Name: _____ _____

Project Description: Contract Number

I. Type of Examination: (Use one form for each type of examination):

☐ Prior to Anticipated Storm Event ☐ After Actual Storm Event ☐ Weekly

Date Examined: _____

II. Check the response for each SWPPP question below:

	YES	NO
1. Do you have an updated Storm Water Pollution Prevention Plan (SWPPP) and a BMP Handbook on the Project site?	☐	☐
2. Does your SWPPP incorporate an up-to-date erosion control plan?	☐	☐
3. Is the erosion control installed per plan?	☐	☐
4. If the Work is at a stage where the erosion control plan can not be constructed, is the erosion control at the Maximum Extent Practicable for the stage you are in?	☐	☐
5. Did you observe the presence of any floating materials such as oil, grease, pieces of wood, paper, etc., odor, toxics, and/ or sediments?	☐	☐
6. If yes, what is it that you observed? _____		
7. Have the SWPPP revisions been certified by the QSD and uploaded to SMARTS?	☐	☐

III. Check the status of the following items as observed:

	SWPPP Items	Not Applicable	Acceptable	Not Acceptable		Repairs Required	Date Repairs Completed
1.	De-silting Basins (Cleaned)	☐	☐	☐	--	☐	
2.	Water Quality Basin	☐	☐	☐	--	☐	
3.	Silt Fences	☐	☐	☐	--	☐	
4.	Hay bales/ Check dams/ Sandbags	☐	☐	☐	--	☐	
5.	Berms and Dikes	☐	☐	☐	--	☐	
6.	Sand/Gravel Inlet	☐	☐	☐	--	☐	
7.	Slope Protection - Polymer and Mulch	☐	☐	☐	--	☐	
8.	Vegetation / Re-vegetation	☐	☐	☐	--	☐	
9.	Dust Control	☐	☐	☐	--	☐	
10.	Surface Erosion	☐	☐	☐	--	☐	
11.	Slope Instability	☐	☐	☐	--	☐	
12.	Storage	☐	☐	☐	--	☐	
13.	Disposal	☐	☐	☐	--	☐	
14.	Spills	☐	☐	☐	--	☐	
15.	Clean-up	☐	☐	☐	--	☐	
16.		☐	☐	☐	--	☐	
17.		☐	☐	☐	--	☐	

IV. Describe any problems or required repairs checked above and the necessary actions needed:

Item	Description of Problem or Required Repair	Action Needed

Examination Performed by CONTRACTOR:

_____ _____
By (Print Name and Title) Date

Verified by Inspector:

_____ _____
By (Print Name and Title) Date

Detailed Storm Water Quality Construction Site Inspection Checklist
ATTACHMENT "A" (Cont.)

GENERAL INFORMATION				
Project Name				
Project Number				
Contractor				
Inspector's Name				
Inspector's Title				
Signature				
Date of Inspection				
Inspection Type (Check Applicable)	❒ Prior to forecast rain ❒ 24-hr intervals during extended rain		❒ After a rain event ❒ Other _____Weekly or Quarterly_____	
Season (Check Applicable)	❒ Rainy		❒ Non-Rainy	
Storm Data	Storm Start Date & Time:		Storm Duration (hrs):	
	Time elapsed since last storm (Circle Applicable Units)	Min. Hr. Days	Approximate Rainfall Amount (inches)	

PROJECT AREA SUMMARY AND DISTURBED SOIL AREA (DSA) SIZE		
Total Project Area	_____	Acres
Field Estimate of Active DSAs	_____	Acres
Field Estimate of Non-Active DSAs	_____	Acres

INSPECTION OF BMPs - ATTACHMENT "A" (Cont.)				
BMP	Yes	No	N/A	Corrective Action
Preservation of Existing Vegetation				
Is temporary fencing provided to preserve vegetation in areas where no construction activity is planned?				
Location:				
Location:				
Location:				
Location:				
Erosion Control				
Does the applied temporary erosion control provide 100% coverage for the affected areas?				
Are any non-vegetated areas that may require temporary erosion control?				
Is the area where erosion controls are used required free from visible erosion?				
Location:				
Location:				
Location:				
Location:				
Temporary Linear Sediment Barriers (Silt Fence, Fiber Rolls, Sandbag Barriers, etc.)				
Are temporary linear sediment barriers properly installed, functional and maintained?				
Are temporary linear sediment barriers free of accumulated litter?				
Is the built-up sediment less than 1/3 the height of the barrier?				
Are cross barriers installed where necessary and properly spaced?				
Location:				
Location:				
Location:				
Location:				
Location:				
Storm Drain Inlet Protection				
Are storm drain inlets internal to the project properly protected?				

INSPECTION OF BMPs - ATTACHMENT "A" (Cont.)				
BMP	Yes	No	N/A	Corrective Action
Are storm drain inlet protection devices in working order and being properly maintained?				
Location:				
Location:				
Location:				
Location:				
Location:				
Sediment Basins				
Are basins designed in accordance with the requirements of the General Permit?				
Are basins maintained to provide the required retention/detention?				
Are basin controls (inlets, outlets, diversions, weirs, spillways, and racks) in working order?				
Location:				
Location:				
Location:				
Location:				
Stockpiles				
Are all locations of temporary stockpiles, including soil, hazardous waste, and construction materials in approved areas?				
Are stockpiles protected from run-on, run-off from adjacent areas and from winds?				
Are stockpiles located at least 15 m from concentrated flows, downstream drainage courses and storm drain inlets?				
Are required covers and/or perimeter controls in place?				
Location:				
Location:				
Location:				
Location:				
Concentrated Flows				
Are concentrated flow paths protected and free from visible erosion?				

INSPECTION OF BMPs - ATTACHMENT "A" (Cont.)				
BMP	Yes	No	N/A	Corrective Action
Location:				
Location:				
Location:				
Location:				
Tracking Control				
Is the entrance stabilized to prevent tracking				
Is the stabilized entrance inspected daily to ensure that it is working properly				
Are points of ingress/egress to public/private roads inspected and swept and vacuumed as needed?				
Are all paved areas free of visible sediment tracking or other particulate matter?				
Location:				
Location:				
Location:				
Location:				
Wind Erosion Control				
Is dust control implemented?				
Location:				
Location:				
Location:				
Location:				
Dewatering Operations				
Are all one-time dewatering operations covered by the General Permit inspected before and as they occur and BMPs implemented as necessary during discharge?				
Is ground water dewatering handled in conformance with the dewatering permit issued by the LARWQCB?				
Is required treatment provided for dewatering effluent?				
Location:				
Location:				
Location:				
Location:				

INSPECTION OF BMPs - ATTACHMENT "A" (Cont.)				
BMP	Yes	No	N/A	Corrective Action
Vehicle & Equipment Fueling, Cleaning, and Maintenance				
Are vehicle and equipment fueling, cleaning and maintenance areas reasonably clean and free of spills, leaks, or any other deleterious material?				
Are vehicle and equipment fueling, cleaning and maintenance activities performed on an impermeable surface in dedicated areas?				
If no, are drip pans used?				
Are dedicated fueling, cleaning, and maintenance areas located at least 15 m away from downstream drainage facilities and watercourses and protected from run-on and runoff?				
Is wash water contained for infiltration/ evaporation and disposed of appropriately?				
Is on-site cleaning limited to washing with water (no soap, soaps substitutes, solvents, or steam)?				
On each day of use, are vehicles and equipment inspected for leaks and if necessary, repaired?				
Location:				
Location:				
Location:				
Location:				
Waste Management & Materials Pollution Control				
Are material storage areas and washout areas protected from run-on and runoff, and located at least 15 m from concentrated flows and downstream drainage facilities?				
Are all material handling and storage areas clean; organized; free of spills, leaks, or any other deleterious material; and stocked with appropriate clean-up supplies?				
Are liquid materials, hazardous materials, and hazardous wastes stored in temporary containment facilities?				
Are bagged and boxed materials stored on pallets?				
Are hazardous materials and wastes stored in appropriate, labeled containers?				

INSPECTION OF BMPs - ATTACHMENT "A" (Cont.)				
BMP	Yes	No	N/A	Corrective Action
Are proper storage, clean-up, and spill-reporting procedures for hazardous materials and wastes posted in open, conspicuous and accessible locations adjacent to storage areas?				
Are temporary containment facilities free of spills and rainwater?				
Are temporary containment facilities and bagged/boxed materials covered?				
Are temporary concrete washout facilities designated and being used?				
Are temporary concrete washout facilities functional for receiving and containing concrete waste and are concrete residues prevented from entering the drainage system?				
Do temporary concrete washout facilities provide sufficient volume and freeboard for planned concrete operations?				
Are concrete wastes, including residues from cutting and grinding, contained and disposed of off-site or in concrete washout facilities?				
Are spills from mobile equipment fueling and maintenance properly contained and cleaned up?				
Is the site free of litter?				
Are trash receptacles provided in the yard, field trailer areas, and at locations where workers congregate for lunch and break periods?				
Is litter from work areas collected and placed in watertight dumpsters?				
Are waste management receptacles free of leaks?				
Are the contents of waste management receptacles properly protected from contact with storm water or from being dislodged by winds?				
Are waste management receptacles filled at or beyond capacity?				
Location:				
Location:				
Location:				
Location:				
Temporary Water Body Crossing or Encroachment				

INSPECTION OF BMPs - ATTACHMENT "A" (Cont.)				
BMP	Yes	No	N/A	Corrective Action
Are temporary water body crossings and encroachments constructed appropriately?				
Does the project conform to the requirements of the 404 permit and/or 1601agreement?				
Location:				
Location:				
Location:				
Location:				
Illicit Connection/ Discharge				
Is there any evidence of illicit discharges or illegal dumping on the project site?				
If yes, has the Owner/Operator been notified?				
Location:				
Location:				
Location:				
Location:				
Discharge Points				
Are discharge points and discharge flows free from visible pollutants?				
Are discharge points free of any significant sediment transport?				
Location:				
Location:				
Location:				
Location:				
SWPPP Update				
Does the SWPPP and Project Schedule adequately reflect the current site conditions and contractor operations?				
Are all BMPs shown on the Erosion Control Plans installed in the proper location(s) and according to the details in the SWPPP?				
Location:				
Location:				
Location:				
Location:				

INSPECTION OF BMPs - ATTACHMENT "A" (Cont.)				
BMP	Yes	No	N/A	Corrective Action
General				
Are there any other potential concerns at the site?				
Location:				
Location:				
Location:				
Location:				
Storm Water Monitoring				
Does storm water discharge directly to a water body listed in the General Permit as impaired for sediment/sedimentation or turbidity?				
If yes, were samples for sediment/sedimentation or turbidity collected pursuant to the sampling and analysis plan in the SWPPP?				
Did the sampling results indicate that the discharges are causing or contributing to further impairment?				
If yes, were the erosion/sediment control BMPs improved or maintained to reduce the discharge of sediment to the water body?				
Were there any BMPs not properly implemented or breaches, malfunctions, leakages or spills observed which could result in the discharge of pollutants to surface waters that would not be visually detectable in storm water?				
If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan during rain events?				
If sampling indicated pollution of the storm water, were the leaks, breaches, spills, etc. cleaned up and the contaminated soil properly disposed of?				
Were the BMPs maintained or replaced?				
Were soil amendments (e.g., gypsum, lime) used on the project?				
If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan in the SWPPP?				

INSPECTION OF BMPs - ATTACHMENT "A" (Cont.)				
BMP	Yes	No	N/A	Corrective Action
If sampling indicated pollution of the storm water by the use of the soil amendments, is there a contingency plan for retention onsite of the polluted storm water?				
Did storm water contact stored materials or waste and run off the construction site? (Materials not in watertight containers, etc.)				
If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan in the SWPPP?				

_____ OWNER Project Number	Los Angeles Community College District As OWNER ATTACHMENT "B" GENERAL CONSTRUCTION ACTIVITY STORM WATER PERMIT COMPLIANCE CERTIFICATION	STATE OF CALIFORNIA STATE WATER BOARD WDID NO._____

School Name: _____ _____
Project Description: Contract Number

ANNUAL CERTIFICATION

I certify the Project has met the following conditions: All elements of the Storm Water Pollution Prevention Plan are in place; construction materials and equipment maintenance waste have been disposed of properly; and the Project site is in compliance with all local storm water management requirements including erosion/sediment control requirements, and the appropriate use permits have been obtained. The reports have been uploaded to smarts.waterboards.ca.gov system.

CONTRACTOR: _____

Print Name: _____ Title: _____

Signature: _____ Date: _____

SUBSTANTIAL COMPLETION CERTIFICATION

I certify the Project has been completed and the following conditions have been met: All elements of the Storm Water Pollution Prevention Plan have been completed; construction materials and equipment maintenance waste have been disposed of properly; the Project site is in compliance with all local storm water management requirements including erosion/sediment control requirements and the appropriate use permits have been obtained; and a post-construction storm water operation, and management plan is in place.

CONTRACTOR: _____

Print Name: _____ Title: _____

Signature: _____ Date: _____

REPORT DATE

ATTACHMENT "B" (CONT.)

CERTIFICATION CHECK LIST

SITE _____

PROJECT NUMBER _____

IS SWPPP BOOK ONSITE AND UPDATED	[ ] YES	[ ] NO
TRAINING RECORDS	[ ] YES	[ ] NO
CONSTRUCTION SCHEDULE	[ ] YES	[ ] NO
EROSION CONTROL PLAN	[ ] YES	[ ] NO
Property Line Dileanated	[ ] YES	[ ] NO
Active / Inactive Areas	[ ] YES	[ ] NO
Drainage Patterns	[ ] YES	[ ] NO
Discharge Points	[ ] YES	[ ] NO
Sampling Points	[ ] YES	[ ] NO
BMPs with legend	[ ] YES	[ ] NO
Staging Areas, Stockpiles, entrance exit	[ ] YES	[ ] NO
Vehicle Storage, concrete wahsout	[ ] YES	[ ] NO
SIGNED COPY OF NOI ON WALL	[ ] YES	[ ] NO
WEEKLY REPORTS FILED	[ ] YES	[ ] NO
WEATHER REPORTS	[ ] YES	[ ] NO
QUARTERLY NON-STORMWATER (Attachment "C")	[ ] YES	[ ] NO

LATEST DATED:_____

SWPPP AMENDMENTS DOCUMENTED [ ] YES [ ] NO

ANNUAL FEES PAID AND REPORTS FILED LATEST DATED:_____

Data Submitter _____

login _____

SMARTS access _____

OAR _____

login _____

DATE OF LAST OEHS INSPECTION VISIT LATEST DATED:_____

WERE OEHS RECOMMENDATION IMPLEMENTED [ ] YES [ ] NO

CERTIFICATION OF CONTRACTORS QSP

Name _____

Agency _____

Number _____

Expiration Date _____

Email _____

Phone _____

Sampling Kit Lab Name

COMMENTS

OAR NAME	CONTRACTOR NAME
SIGNATURE	SIGNATURE

Attachment "C"
Quarterly / Annual Non-Stormwater Form

I. WDID NO. _____

II. FACILITY OPERATOR INFORMATION

Facility Name _____ Contact Person _____

Mailing Address _____ Title _____

_____

City _____ State CA Zip _____ Phone _____

_____

III. FACILITY SITE INFORMATION

Facility Name _____ Contact Person _____

Location _____ Title _____

City _____ State CA Zip _____ Phone _____

_____

IV. PERMIT LANGUAGE

All dischargers are required to conduct quarterly, non-storm water visual inspections. For these inspections, the discharger must visually observe each drainage area for the presence of (or indications of prior) unauthorized and authorized non-storm water discharges and their sources.

CGP Section II.E describes authorized non-storm water discharges including those from de-chlorinated potable water sources such as: fire hydrant flushing, irrigation of vegetative erosion control measures, pipe flushing and testing, water to control dust, uncontaminated ground water dewatering, and other discharges not subject to a separate general NPDES permit adopted by a region. Additionally, authorized non-storm water discharges must not be used to clean up failed or inadequate construction or post-construction BMPs designed to keep materials onsite. Authorized non-storm water dewatering discharges may require a permit because some Regional Water Boards have adopted General Permits for dewatering discharges. The General Permit prohibits the discharge of storm water that causes or threatens to cause pollution, contamination, or nuisance.

Non-storm water discharges directly connected to receiving waters or the storm drain system have the potential to negatively impact water quality. The discharger must implement measures to control all non-storm water discharges during construction, and from dewatering activities associated with construction. Examples include; properly washing vehicles in contained areas, cleaning streets, and minimizing irrigation runoff.

Non-storm water discharges include a wide variety of sources, including improper dumping, spills, or leakage from storage tanks or transfer areas. Non-storm water discharges may non-storm water discharges regulated by this General Permit shall not contain a hazardous substance equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4, unless a separate NPDES Permit has been issued to regulate those discharges.

V. DOCUMENT CHECKLIST (Please check each item to verify that the documents are attached)

☐ Did Authorized Discharge take place ☐ Did Unauthorized Discharge take place

☐ Form 2 Attached ☐ Form 3 Attached

☐ Complete Form 1 once a Quarter and prior to fire hydrant testing or other authorized discharges.

Attachment "C" (Cont.)
FORM 1

Structural Best Management Practices Housekeeping for Non-Visible Pollutants	BMP Conditions E, NM, N/A YES OR NO	Actions Taken or BMPs Added
Drainage Areas		
Free of Floating & Suspended Material		
Free of Sheen/Discoloration		
Free of Turbidity		
Free of Odor		
Construction Materials Storage Areas		
Materials Properly Stored		
Pollutants Covered		
Pollutants Bermed		
Construction Waste Management		
Containment Stockpiled Waste		
Containment Sanitary Facilities		
Containment Waste Watertight Containers		
Vehicle Storage/Fueling/Spill Prevention		
Fueling Procedures/Designated Areas		
Vehicle Storage with Containment		
Spill Kit Onsite		
Concrete Residuals & Washouts Wastes		
Properly Placed Washout		
Secondary Containment		
Landscape Materials		
Stored Away from Flow Lines		
Containment Fertilizers/Soil Amendments		
Secondary Containment Plants		
Observations/Comments:		

E-EFFECTIVE N/M-NEEDS MAINTENANCE N/A-NOT APPLICABLE YES or NO

Attachment "C" (Cont.)

REPORT – PART A FORM 2 QUARTERLY VISUAL OBSERVATIONS OF AUTHORIZED NON STORM WATER DISCHARGES (NSWDs)

- Quarterly dry weather visual observations are required of each authorized NSWD.
- Observe each authorized NSWD source, impacted drainage area, and discharge location.
- Authorized NSWDs must meet the conditions provided in Section D (pages 5-6), of the General Permit.
- Make additional copies of this form as necessary.

QUARTER: JULY-SEPT. DATE: _	Observers Name: _ Title: Signature:	 WERE ANY AUTHORIZED NSWDs DISCHARGED DURING THIS QUARTER? YES ☐ If YES, complete Part B of this form. NO ☐
QUARTER: OCT.-DEC. DATE: _	Observers Name: _ Title: Signature:	 WERE ANY AUTHORIZED NSWDs DISCHARGED DURING THIS QUARTER? YES ☐ If YES, complete Part B of this form. NO ☐
QUARTER: JAN.-MARCH DATE: _	Observers Name: _ Title: Signature:	 WERE ANY AUTHORIZED NSWDs DISCHARGED DURING THIS QUARTER? YES. ☐ If YES, complete Part B of this form. NO ☐
QUARTER: APRIL-JUNE DATE: _	Observers Name: _ Title: Signature:	 WERE ANY AUTHORIZED NSWDs DISCHARGED DURING THIS QUARTER? NO YES ☐ If YES, complete Part B of this form. NO ☐

Attachment "C" (Cont.)

REPORT
FORM 2 – QUARTERLY VISUAL OBSERVATIONS OR AUTHORIZED
NON-STORM WATER DISCHARGES (NSWDs)

DATE/TIME OF OBSERVATION	SOURCE AND LOCATION OF AUTHORIZED NSWD Example: Air conditioner Units on Building C	NAME OF AUTHORIZED NSWD Example: Air conditioner condensate	DESCRIBE AUTHORIZED NSWD CHARACTERISTICS Indicate weather authorized NSWD is clear, cloudy, or discolored, causing staining, contains floating objects or an oil sheen, has odors, etc.		DESCRIBE ANY REVISED OR NEW BMP's AND PROVIDE THEIR IMPLEMENTATION DATE
			At the NSWD Source	At the NSWD Drainage Area and Discharge Location	
_____ _____☐ AM ☐ PM					
_____ _____☐ AM ☐ PM					
_____ _____☐ AM ☐ PM					

_____ _____☐ AM ☐ PM					
_____ _____☐ AM ☐ PM					

Attachment "C" (Cont.)

REPORT – PART A FORM 3 QUARTERLY VISUAL OBSERVATIONS OF UNAUTHORIZED NON STORM WATER DISCHARGES (NSWDs)

- Unauthorized NSWDs are discharges (such as wash or rinse waters) that do not meet the conditions provided in Section D (pages 5-6) of the General Permit.
- Quarterly visual observations are required to observe current and detect prior unauthorized NSWD.
- Quarterly visual observations are required during dry weather and at all facility drainage areas.
- Each unauthorized NSWD source, impacted drainage area, and discharge location must be identified and observed.
- Unauthorized NSWDs that can not be eliminated within 90 days of observation must be reported to the Regional Board in accordance with Section A.10.e of the General Permit.
- Make additional copies of this form as necessary.

QUARTER: JULY-SEPT. DATE/TIME OF OBSERVATIONS ☐ AM ☐ PM _____	Observers Name: _ Title: Signature:	WERE ANY AUTHORIZED NSWDs OBSERVED? YES ☐ NO ☐ WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NAWDS? YES ☐ NO ☐ If YES, complete Part B of this form.
QUARTER: OCT.-DEC. DATE/TIME OF OBSERVATIONS ☐ AM ☐ PM _____	Observers Name: _ Title: Signature:	WERE ANY AUTHORIZED NSWDs OBSERVED? YES ☐ NO ☐ WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NAWDS? YES ☐ NO ☐ If YES, complete Part B of this form.

QUARTER: JAN.-MARCH DATE/TIME OF OBSERVATIONS ☐ AM ☐ PM _____	Observers Name: _ Title: Signature:	WERE ANY AUTHORIZED NSWDs OBSERVED? YES ☐ NO ☐ WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NAWDS? YES ☐ NO ☐ If YES, complete Part B of this form.
QUARTER: APRIL-JUNE DATE/TIME OF OBSERVATIONS ☐ AM ☐ PM _____ _	Observers Name: _ Title: Signature:	WERE ANY AUTHORIZED NSWDs OBSERVED? YES ☐ NO ☐ WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NAWDS? YES ☐ NO ☐☐ If YES, complete Part B of this form.

Attachment "C" (Cont.)

REPORT
FORM 3 – QUARTERLY VISUAL OBSERVATIONS OR UNAUTHORIZED
NON-STORM WATER DISCHARGES (NSWDs)

OBSERVATION DATE (FROM REVERSE SIDE)	NAME OF UNAUTHORIZED NSWD Example: Vehicle Wash Water	SOURCE AND LOCATION OF AUTHORIZED NSWD Example: NW Corner of Parking Lot	DESCRIBE UNAUTHORIZED NSWD CHARACTERISTICS Indicate weather unauthorized NSWD is clear, cloudy, or discolored, causing stains, contains floating objects or an oil sheen, has odors, etc.		DESCRIBE CORRECTIVE ACTIONS TO ELIMINATE UNAUTHORIZED NSWD AND TO CLEAN IMPACTED DRAINAGE AREAS. PROVIDE UNAUTHORIZED NSWD ELIMINATION DATE
			AT THE UNAUTHORIZED NSWD SOURCE	AT THE UNAUTHORIZED NSWD DRAINAGE AREA AND DISCHARGE LOCATION	
_____ _____☐ AM ☐ PM					
_____					

_____☐ AM ☐ PM					
_____ _____☐ AM ☐ PM					
_____ _____☐ AM ☐ PM					
_____ _____☐ AM ☐ PM					

ATTACHMENT "D"

CONTRACTOR MAY USE HIS OWN FORM.

MEETING DATE	PROJECT	PROJECT NUMBER

ATTENDANCE-SIGNATURE (Add additional sheets if required)

STORM WATER TOPICS DISCUSSED

SUGGESTIONS / COMMENTS

OAR COMMENTS

OAR SIGNATURE	DATE	CONTRACTOR	DATE

SUGGESTED TOPICS FOR DISCUSSION

[ ] PREPARING FOR A STORM EVENT	[ ] GOOD HOUSEKEEPING	[ ] MAINTENANCE POST BMPS
[ ] MAINTAINING STOCKPILES	[ ] SOURCE CONTROL	[ ] CASQA MANUAL
[ ] DUST CONTROL	[ ] OAR ROLE & RESPONSIBILITY	[ ] SWPPP UPDATING
[ ] TRAINING NEW STAFF	[ ] CONTRACTOR ROLE	[ ] SCHEDULING
[ ] RECORD KEEPING	[ ] FREQUENTLY ASKED QUESTIONS	[ ] PREVENTING FLOODING

END OF ATTACHMENTS

SECTION 01740

WARRANTIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers and/or installer's standard warranties on products and special product warranties.

1. Refer to the General Conditions for terms of the guarantee period for the Work.

1.2 RELATED SECTIONS

A. Section 01600: Materials and Equipment
B. Section 01700: Contract Closeout
C. All Necessary work related sections division 2-16

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.1 WARRANTY REQUIREMENTS

A. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties shall not relieve CONTACTOR of the warranty of the Work incorporating such materials, products, and/or equipment. Manufacturer's disclaimers and limitations on warranties do not relieve suppliers, manufacturers, installers, and Subcontractors of the requirement to countersign special warranties with CONTRACTOR.

B. Standard warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to OWNER.

C. Special warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for OWNER.

D. Related Damages and Losses: When correcting failed or defective warranted Work, remove and replace Work that has been damaged as a result of such failure

or which must be removed and replaced to provide access for correction of warranted Work.

E. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement with the reinstated warranty equal to the original warranty.

F. Replacement Cost: Upon determination the Work covered by a warranty has failed and/or is defective, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. CONTRACTOR is responsible for the cost of replacing or rebuilding defective Work regardless of whether OWNER has benefited from use of the Work through a portion of its anticipated useful service life.

G. OWNER Recourse: Expressed warranties made to OWNER are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which OWNER can enforce such other duties, obligations, rights, or remedies.

H. Rejection of Warranties: OAR reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

I. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, OAR reserves the right to refuse to accept the Work until CONTRACTOR presents evidence the entities required to countersign such commitments have done so.

3.2 SUBMITTALS

A. Submit written warranties to ARCHITECT prior to Final Completion of the Work. If the certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, submit written warranties as set forth in the certificate of Substantial Completion.

1. When a designated portion of the Work is partially used and/or occupied by OWNER, submit properly executed warranties to ARCHITECT within fifteen (15) days of the Partial Use or Occupancy of the designated portion of the Work.

B. When the Contract Documents require CONTRACTOR, or CONTRACTOR and a Subcontractor, installer, supplier or manufacturer to execute a special warranty, prepare a written document containing appropriate terms and identification, ready for execution by the required parties. Submit a draft to OAR, through the ARCHITECT, for approval prior to final execution.

1. Refer to Divisions 02 through 16 for specific content requirements and particular requirements for submitting special warranties.

C. Form of Submittal: Prior to Final Completion of the Work, compile two copies of each required warranty properly executed by CONTRACTOR, or by CONTRACTOR and Subcontractor, installer, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the Specifications.

D. Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8½ by 11" (115 by 280 mm) paper.

1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the item or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the installer.

2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title and/or name, and name of CONTRACTOR.

3. When warranted Work requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

END OF SECTION

SECTION 024116

DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Furnishing labor, materials and equipment necessary for demolition, dismantling, cutting and alterations as indicated, specified, or required for completion of the Work. Includes items such as the following:

1. Protection of existing improvements to remain.

2. Cleaning existing improvements to remain.

3. Disconnecting and capping utilities.

4. Removing debris, waste materials, and equipment.

5. Removal of items for performance of the Work.

6. Salvageable items to be retained by the Owner.

B. Related Requirements:

1. Division 01 - General Requirements.

2. Section 01 1100 - Summary of Work.

3. Section 01 5000 - Construction Facilities and Temporary Controls.

4. Section 01 7329 - Cutting and Patching.

5. Section 01 7419 - Construction and Demolition Waste Management.

6. Division 22 –- Plumbing.

7. Division 23 –- HVAC.

8. Division 26 –- Electrical.

1.02 SUBMITTALS

A. Shop Drawings: Submit Shop Drawings indicating the extent of items and systems to be removed. Indicate items to be salvaged or items to be protected during demolition. Indicate locations of utility terminations and the extent of abandoned lines to be removed. Include details indicating methods and location of utility terminations.

1.03 QUALITY ASSURANCE

A. Perform the Work of this section by workers skilled in the demolition of buildings and structures. Perform the Work of this section under direct superintendence at all times.

B. Prior to commencement of Work, schedule a walkthrough with the OAR, to confirm Owner property items have been removed from scheduled Work areas. Identify and mark remaining property items and schedule their removal.

C. Coordinate demolition for the correct sequence, limits, and methods. Schedule demolition Work to create least possible inconvenience to the public and facility operations.

D. Related Standard: ANSI/ASSE A10.6.

1.04 PROJECT CONDITIONS

A. Drawings may not indicate in detail all demolition Work to be performed. Examine existing conditions to determine the full extent of required demolition.

B. Repair damage to existing improvements or damage due to excessive demolition.

C. Provide all measures to avoid excessive damage from inadequate or improper means and methods, improper shoring, bracing or support.

D. If conditions are encountered that varies from those indicated, promptly notify the Architect for clarification before proceeding.

PART 2 - PRODUCTS

2.01 HANDLING OF MATERIALS

A. Items scheduled for salvage by the Owner shall be delivered to a location designated by the OAR. Items shall be cleaned, packaged and labeled for storage.

B. Items scheduled for reuse shall be stored on the Project site and protected from damage, theft and other deleterious conditions.

PART 3 - EXECUTION

3.01 GENERAL

A. Protection:

1. Do not commence demolition until safety partitions, barricades, warning signs and other forms of protection are installed. Refer to Section 01 5000 - Construction Facilities and Temporary Controls.

2. Provide safeguards, including warning signs, lights and barricades, for protection of workers, occupants, and the public.

B. If safety of existing construction appears to be endangered, take immediate measures to correct such conditions; cease operations and immediately notify the OAR.

3.02 DEMOLITION

A. Do not throw or drop materials. Furnish ramps or chutes as required by the Work.

B. Remove existing construction only to extent necessary for proper installation of Work and interfacing with existing construction. Cut back finished surfaces to straight, plumb or level lines as required for a smooth transition.

C. Where openings are cut oversize or in improper locations, replace or repair to required condition.

3.03 CUTTING EXISTING CONCRETE

A. Cutting of existing concrete shall be performed by skilled workers familiar with the requirements and space necessary for placing concrete. Perform concrete cutting with concrete cutting wheels and hand chisels. Do not damage concrete intended to remain.

B. Extent of cutting of structural concrete shall be as indicated on Drawings. Cutting of non-structural concrete shall be as indicated on Drawings or as reviewed by the Architect or structural engineer. Replace concrete demolished in excess of amounts indicated.

C. Prior to cutting or coring concrete, determine locations of hidden utilities or other existing improvements and provide necessary measures to protect them from damage.

3.04 REMOVAL OF EXISTING PLUMBING AND ELECTRICAL EQUIPMENT AND SERVICES

A. Remove existing plumbing and electrical equipment fixtures and services not indicated for reuse and not necessary for completion of the Work. Remove abandoned lines and cap unused portions of existing lines.

3.05 REMOVAL OF OTHER MATERIALS

A. Masonry: Cut back to joint lines and remove mortar without damaging units to remain. Allow space for repairs to backing where applicable.

B. Woodwork: Cut or remove to a joint or panel line.

C. Roofing: Remove as required, including accessory components such as insulation and flashings. At penetrations through existing roofing, trim cut edges back to

sound roofing with openings restricted to the minimum size necessary to receive Work.

D. Sheet Metal: Remove back to joint, lap, or connection. Secure loose and unfastened ends or edges and provide a watertight condition. Re-seal as required.

E. Glass: Remove broken or damaged glass and clean rebates and stops of glazing channels.

F. Modular materials such as acoustical ceiling panels, resilient tile, or ceramic tile: Remove to a natural joint without leaving damaged or defective Work where joining new Work. After flooring removal, clean substrates to remove setting materials and adhesives.

G. Gypsum Board: Remove to a panel joint line on a stud or support line.

H. Plaster: Saw cut plaster on straight lines, leaving a minimum 2-inch width of firmly attached metal lath for installing new lath and plaster.

I. Remove existing improvements not specifically indicated or required but necessary to perform Work. Cut to clean lines, allowing for installation of Work.

3.06 PATCHING

A. Patch or repair materials to remain when damaged by the performance of the Work of this section. Finish material and appearance of patch and/or repair Work shall match existing.

3.07 CLEANING

A. Clean existing materials to remain with appropriate tools and equipment.

B. Protect existing improvements during cleaning operations.

C. Debris shall be dampened by fog water spray prior to transporting by truck.

D. Debris pick-up area shall be kept broom-clean and shall be washed daily with clean water.

E. Remove waste and debris, other than items to be salvaged. Turn over salvaged items to Owner, or store and protect for reuse where required. Continuously clean up and remove items as demolition Work progresses.

F. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 311000

SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Removal of vegetation, grass, grass roots, shrubs, tree stumps, trees, upturned stumps, weed growth, tree roots, brush, masonry, concrete, rubbish, debris and other materials.

2. Removal of concrete and bituminous surfaces.

3. Removal of existing fences and gates.

1.2 QUALITY ASSURANCE

A. Comply with Standard Specifications for Public Works Construction, current edition, as a minimum requirement.

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 TREE AND STUMP REMOVAL

A. Remove trees and stumps indicated or required to be removed. Remove trees, together with bulk of roots, to a minimum depth of 4 feet below required grade, and within a radius of approximately 7 feet beyond perimeter of trunk at grade.

B. Fill and compact excavation from tree and stump removal. Fill in 6 inch layers, each compacted to 90 percent of maximum density in accordance with ASTM D1557, or as directed by geotechnical report, whichever is greater.

1. Back filling shall not commence until the excavation is inspected and tested.

3.2 CONCRETE AND BITUMINOUS SURFACING REMOVAL

A. Break up and completely remove existing concrete surfacing, curbs, gutters, walks and bituminous surfacing to indicated limits. Cutting shall be performed to a neat and even line with proper tools or a concrete cutting saw. Minimum depth of cut shall be 1 1/2- inch, unless otherwise indicated. Remove concrete broken beyond the indicated limits to the nearest joint or score line and replace with new concrete to match existing.

3.3 FENCING

A. Existing fences scheduled to remain may be removed to facilitate the Work, provided they are installed to their original condition.

B. Fencing indicated to be removed and not reinstalled shall be completely removed, including footings. Fill and compact excavations.

C. Install chain link fencing indicated to be relocated.

3.4 CLEANUP

A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 312200

GRADING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. General exterior grading, cutting and filling, including grading for building area, paving, planting areas, banks and hillsides.

1.2 PROJECT REQUIREMENTS

A. General:

1. Before grading, contact Underground Service Alert of Southern California (USASC) for information on public buried utilities and pipelines. Retain the services of an underground utility locator for on-site utilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials shall conform to requirements specified in this and related sections.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain installed stakes until their removal is required for the Work. Provide replacement grade or location stakes lost or disturbed.

B. Install grade stakes and compare to indicated grades. If discrepancies are found between existing grades and grades indicated on Drawings, do not proceed until discrepancies are resolved.

3.2 ROUGH, (REMEDIAL) AND FINE GRADING

A. Rough grade area sufficiently high to require cutting by fine grading:

1. Grade area for bituminous surfacing and other paving to the indicated grades, equal to the section of the indicated base and pavement.

2. Slope banks to required finish grades as cut progresses or leave cuts full and finish grade by mechanical equipment to provide grades and soil densities indicated on the Drawings.

3. Rough grade, fill and compact banks beyond indicated finish grades. Finish grade banks and slopes to indicated grades and specified soil densities.

4. Grade Only Areas: In areas not indicated to receive pavement, rough grade to approximate finish grades and then scarify, moisten and roll to obtain required density and indicated finish grades.

5. Tolerances: Finish grades shall be within a tolerance of 0.05 inch per foot above or below grades indicated. Provide an average grade as indicated.

6. Soils import requirement
   a. The contractor must provide test report, at his own cost, to indicate the soils is clean based on the requirements in EPA standards and subset DTSC "Clean Imported Fill Material", October 2001.
   b. The contactor shall ensure that the import soil submittal complies with Greenbook standards.
   c. The contractor shall obtain paperwork from the LOR or a District Environmental agency confirming that the import fill material is characterized, handled, and documented in accordance with EPA and State of California regulations.

B. Base:

1. After subgrade has been constructed to approximate required grades, scarify to a depth of at least 6 inches:

a. After scarifying, process loosened material to a finely divided condition and adjust moisture content to optimum condition by addition of water, addition and blending of dry suitable material, or by drying of existing material.

b. Install base course in accordance with Specifications.

2. Tolerance of completed grades of base or subgrade shall not vary more than 0.03 inch per foot from grades indicated. Provide an average grade as indicated.

3.3 SHORING

A. Provide shoring as necessary to properly and safely support earth sides of excavations, and existing curbs, sidewalks, gutter, drives and stairs, against movement and collapse.

B. Design and Calculations: Provide in accordance with requirement of Cal OHSA.

C. Remove shoring upon completion of the Work of this section or when no longer needed unless required otherwise by authorities having jurisdiction.

3.4 EXCESS MATERIAL DISPOSAL

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

3.5 PROTECTION

A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 312316

EXCAVATION AND FILL FOR PAVING

PART 1 – GENERAL

1.1 REQUIREMENTS

A. Import and Export of Earth Materials:

1. Fees: Pay as required by authorities having jurisdiction over the area.
2. Bonds: Post as required by authorities having jurisdiction over the area.
3. Haul Routes and Restrictions: Comply with requirements of authorities having jurisdiction over the area.

1.2 SUBMITTALS

A. Imported Soils: A geotechnical engineer, retained by the Owner as an Owner Consultant, shall obtain initial product Sample for testing in accordance with the terms of Article 3.05 of this section.

1.3 QUALITY ASSURANCE

A. Comply with Standard Specifications for Public Works Construction, current edition, except as modified herein.

PART 2 - PRODUCTS

2.1 BASE MATERIALS

A. Concrete Slabs on Grade: Provide "Crushed Aggregate Base "as specified in the Standard Specifications for Public Works Construction, Section 200: "Rock Materials," with ¾ inch maximum size aggregates. Provide 4"-inch thick base, unless noted otherwise.

B. Bituminous Surfacing: As indicated on Drawings.

2.2 FILL AND BACKFILL MATERIALS

A. Fill and backfill materials shall be previously excavated materials or imported fill material, free of clods and stones larger than 3-inch, foreign materials, vegetable growths, sod, expansive soils, rubbish and debris. Material shall conform to these specified requirements and related sections.

B. Fill material exhibiting a wide variation in consistency and moisture content shall be blended or aerated to stabilize and upgrade the material.

C. Imported Fill Material:

1. Provide suitable materials obtained from Project site excavations for earthwork and fill materials. If excavated materials are not of suitable quality or sufficient quantity, import additional materials as necessary. Imported fill shall be a granular material with sufficient binder to form a firm and stable unyielding subgrade and shall not have more than 60 percent of fines passing 200 mesh sieves. Material shall have a coefficient of expansion of not more than 2 percent from air dry to optimum moisture content and not more than 6 percent from air dry to saturation. Imported material shall be clean and free of rubbish, debris, and toxic or hazardous contaminants. Adobe or clay soils are not permitted.

D. Other Fill Materials: Brick rubble and broken concrete originating from the Project site may be legally disposed of off the Project site or incorporated in fill, if reviewed by a geotechnical engineer, retained by the Owner as an Owner Consultant. Unless otherwise required, no such materials may be imported from outside the Project site.

E. Permeable Backfill:

1. Provide permeable backfill material behind retaining structures consisting of gravel, crushed gravel, crushed rock, natural sands, manufactured sand, or combinations of these materials conforming to the following gradations:

Sieve Size:	Percentage Passing:
3/4 inch (19mm)	100
3/8 inch (10mm)	80 to 100
No. 100	0 to 8
No. 200	0 to 3

2. Those portions of fill material passing a No. 4 sieve shall provide a sand equivalent of at least 60.

3. Provided backing for weep holes shall consist of two cubic feet of aggregate in burlap sacks, securely tied. Aggregate shall conform to requirements for No. 3 concrete aggregate as specified in subsection 200-1.4 of the Standard Specifications for Public Works Construction.

4. Permeable Backfill Alternate Materials: Instead of the materials specified for retaining structures backfill, a drainage matting system, Miradrain by Mirafi, Inc., or equal, may be provided if reviewed by the Architect.

PART 3 - EXECUTION

3.1 SITE PREPARATION

A. Clear the Project site as required in Section 31 1000 - Site Clearing.

3.2 PROTECTION

A. Protect and guard excavations against danger to life, limb, and property as required by, but not limited to, Cal-OSHA regulations.

B. Protect adjacent existing improvements including landscaping against damage.

3.3 EXISTING UTILITY LINES

A. Protect existing utility lines from damage or displacement.

B. Remove conduits or pipes not in service, exposed during Work, unless a minimum cover of 2 feet is provided. Remove concrete, clay or other non-metallic pipe over 8 inches in diameter, unless otherwise indicated.

3.4 EXCAVATION

A. Unclassified Excavations: Comply with the Standard Specifications for Public Works Construction, Section 300: "Earthwork," except as modified herein.

3.5 FILL

A. Unclassified Fill and Compaction: Comply with the Standard Specifications for Public Works Construction, Section 300: "Earthwork," except as modified herein.

B. Provide fill materials as specified in Part 2 - Products. If excavated materials from the Project site are not of required quality or sufficient quantity, import additional materials as necessary.

C. Soils import requirement

1. The contractor must provide test report, at his own cost, to indicate the soils is clean based on the requirements in EPA standards and subset DTSC "Clean Imported Fill Material", October 2001.
2. The contactor shall ensure that the import soil submittal complies with Greenbook standards.
3. The contractor shall obtain paperwork from the LOR or a District Environmental agency confirming that the import fill material is characterized, handled, and documented in accordance with EPA and State of California regulations.

D. Imported fill materials shall be sampled by a geotechnical engineer, retained by the Owner as an Owner Consultant, for compliance with the requirements of Part 2 of this Section.

E. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall submit samples to a DSA approved independent approved testing laboratory for testing.

F. Initial sampling shall be performed by the geotechnical engineer, retained by the Owner as an Owner Consultant, before importing material to the Project site. Identify the location of the source site in addition to the address, name of the person and/or entity responsible for the source site. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall obtain both the initial and additional samples from the identified site and shall submit samples to the approved independent testing laboratory for testing.

G. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall perform additional sampling during import operations. If the total quantity of import is determined to be greater than 1,000 cubic yards of material, one sample shall be obtained and submitted for testing tested for each 250 cubic yards of imported material. If the total quantity of import is determined to be less than 1,000 yards, one sample shall be obtained and submitted for testing for each 100 cubic yards of imported material.

H. The independent approved testing laboratory shall perform the required tests and report results of tests noting if the tested material passed or failed such tests and shall furnish copies to the Project Inspector, Architect, OAR, DSA, Contractor, and others as required. Report shall state tests were conducted under the responsible charge of a licensed State of California professional engineer and the material was tested in

I. Bills of lading or equivalent documentation will be submitted to the Project Inspector on a daily basis.

J. Upon completion of import operations, provide the OAR a certification statement attesting that imported material has been obtained from the identified source site.

3.6 INSTALLATION OF MATERIALS

A. Fill or backfill materials shall be installed in horizontal layers of 6 inches, unless otherwise required. Each layer shall be evenly placed and moistened or aerated as necessary. Unless otherwise reviewed by the geotechnical engineer, retained by the Owner as an Owner Consultant, each layer of fill material shall cover the length and width of the area to be filled before the next layer of material is installed. Top surface of each layer shall be installed to an approximate level with a crown or crossfall of at least 1 in 50, but no more than 1 in 20. Provide adequate drainage at all times during construction of the Work of this section.

3.7 COMPACTING

A. Each layer of fill material shall be compacted by tamping, sheepsfoot rollers, or pneumatic-tired rollers to provide specified relative compaction. At inaccessible locations, provide specified compaction by

manually held, operated and directed compaction equipment.

B. Unless otherwise indicated, compact each layer of earth fill to a relative compaction of at least ninety percent where placed in non-structural areas, landscaping areas and utility trenches. Jetting or flooding of backfill should not be permitted. The upper 24" of subgrade supporting pavements should be compacted to at least ninety five percent relative compaction.

C. When fill materials, or a combination of fill materials, are encountered or provided which develop densely packed surfaces as a result of installation or compacting operations, scarify each compacted layer before installing the next succeeding layer.

3.8 INSPECTION AND TESTING

A. The geotechnical engineer, retained by the Owner as an Owner Consultant, will inspect and test excavations, sample material quality as required in Part 2, and observe installation and compaction of fill materials.

B. The geotechnical engineer, retained by the Owner as an Owner Consultant, will sample imported fill materials from their designated source before delivery to the Project site.

C. Installation of backfill shall be observed by the geotechnical engineer, retained by the Owner as an Owner Consultant.

D. The geotechnical engineer, retained by the Owner as an Owner Consultant, will inspect and test excavation Work before the installation of fill and/or other materials.

E. Compaction: Test compaction in accordance with ASTM D1557, Method C

3.9 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.10 CLEANING

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 312323

EXCAVATION AND FILL FOR UTILITIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Excavating, backfilling, and compacting utility trenches such as water, gas, irrigation, storm drain, sewer lines, concrete-encased conduits, and manholes, vaults, valve boxes, catch basins, underground tanks, thrust blocks, yard boxes, pull boxes and other utility appurtenances.

1.2 PROJECT REQUIREMENTS

A. Import and Export of Earth Materials:
1. Fees: Pay as required by authorities having jurisdiction over the area.
2. Haul Routes and Restrictions: Comply with requirements of authorities having jurisdiction over the area.

1.3 SUBMITTALS

A. Imported Soil: A geotechnical engineer, retained by the Owner as an Owner Consultant, shall obtain initial product Sample for testing in accordance with the terms of Article 3.05 of this section.

1.4 QUALITY ASSURANCE

A. Comply with the following as a minimum requirement: Standard Specifications for Public Works construction, current edition except as modified herein.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Bedding material from trench bottom to one foot above the pipe:
1. Sand, gravel, crushed aggregate or native free-draining granular material providing a sand equivalent of at least 30 or a coefficient of permeability greater than 1.4 inches per hour.
2. Sand complying with the Specifications for cement concrete aggregates.

B. Backfill Materials:
1. Excavated trench material to be installed for backfilling shall be clean, free of large clods, and stones larger than 2 ½-inch in any

dimension.

2. Cement-sand slurry shall be provided with one sack of cement per cubic yard of the mixture.
3. Imported Fill Material: Imported fill material shall be a granular material with sufficient binder to form a firm and stable unyielding subgrade and shall not have more than 60 percent of fines passing a 200 mesh sieve. Material shall provide a coefficient of expansion of not more than two percent from air dry to optimum moisture content and not more than six percent from air dry to saturation. Imported materials shall be clean and free of rubbish, debris, and toxic or hazardous contaminants. Adobe or clay soils are not permitted.

PART 3 – EXECUTION

3.1 GENERAL

A. Before excavation, contact the "Underground Service Alert of Southern California" (USASC) for information on buried public utilities and pipelines. For on-site utilities retain an underground locating service.

B. Barricade trenches, ditches, pits, sumps, and similar Work outside the barricaded working area with chain link fence as specified in Section 01 50 00 - Construction Facilities and Temporary Controls, and in accordance with Cal-OSHA standards and requirements.

C. Saw-cut concrete or bituminous paving for trench installation.

D. Trenches over 5 feet in depth shall conform to the Cal-OSHA.

E. Where indicated and required to excavate in lawn areas, protect adjoining lawn areas outside of the Work area. Replace or install removed sod upon completion of backfill by installing sod level with adjacent lawns. If installation of removed sod fails, furnish sod and install to match existing lawns.

F. Backfill over excavations to the required elevations with earth, gravel, sand, or concrete and compact as required. Provide excavations free from standing water by pumping, draining, or providing protection against water intrusion. Slope adjacent grades away from excavations to minimize entry of water.

G. Do not install piping lengthwise under concrete walks without review by the Architect.

H. Do not excavate trenches parallel to footings closer than 18 inches from the face of the footing or below a plane having a downward slope of two horizontal to one vertical, from a line 9 inches above bottom of footings.

1. Unless otherwise indicated on Drawings, depth of excavations outside the buildings shall allow for a minimum coverage above top of pipe, tank, or conduit measured from the lowest adjoining finished grade, as follows:

Steel Pipe	24 inches below finished
grade Copper Water Tube	18 inches below finished

grade Cast-Iron Pressure Pipe 36 inches below finished grade Plastic Pipe (other than waste) 30 inches below finished grade Tanks or other structures 36 inches below finished grade

Soil, Sewer & Storm Drain minimum 18 inches below finished grade, and as required for proper pitch and traffic load. (Install polypropylene sewer pipe with at least 24 inches coverage)

Irrigation Pipe: nonpressure pipe 12 inches, pressure pipe 24 inches

2. Trench width shall provide ample space for fitting and joining. Excavate for piping bells and fittings, bell and spigot pipe and other fittings.

I. Unless indicated otherwise, excavate trenches to the required depths for utilities, such as pipes, conduit, and tanks, with minimum allowances of 6 inches at the bottom and 6 inches at the sides for bedding of unprotected piping or as required for concrete encasement of conduits as indicated on Drawings. Grade bottom of trenches to a uniform smooth surface. Remove loose soil from the excavation before installing sand bedding or concrete encasement.

J. Provide excavations free from standing water by pumping, draining, or providing protection against water intrusion. If soil becomes soft, soggy, or saturated, excavate to firm undisturbed soil and fill as required. Slope adjacent grades away from excavations to minimize entry of water.

K. Provide a minimum clear dimension of 2 inches from sides of wall excavation to outer surfaces of buried pipes or conduits installed in the same trench or outside surfaces of containers and tanks.

L. Do not install backfill until required inspections and testing is completed.

M. Backfill electrical or other excavated utility trenches located outside of barricaded installation areas within 24 hours after inspection by the Project Inspector.

N. Install backfill materials in layers not exceeding 4 inches in thickness and compact to 90 percent of the maximum density. Jetting or flooding of backfill should not be permitted.

O. If materials excavated from the Project site are not permitted for trench backfill in paved areas, backfill trenches with a cement-sand slurry mix. Install backfill to an elevation of the existing undisturbed grade plus one inch.

P. Install and compact sand bedding to provide a uniform full length bearing under piping and conduits.

Q. Where portions of existing structures, walks, paving, or other improvements are removed or cut for piping or conduit installation, replace the material with equal quality, finished to match adjoining existing improvements. Repair pavement as specified in Section 32 0117 -

Pavement Repair

3.2 IMPORT/EXPORT OF MATERIALS

A. Provide fill materials as specified in Part 2- Products. If excavated materials from the Project site are not of required quality or sufficient quantity, import additional materials as necessary.

B. Soils import requirement

1. The contractor must provide test report, at his own cost, to indicate the soils are clean based on the requirements in EPA standards and subset DTSC "Clean Imported Fill Material", October 2001.
2. The contactor shall ensure that the import soil submittal complies with Greenbook standards.
3. The contractor shall obtain paperwork from the LOR or a District Environmental agency confirming that the import fill material is characterized, handled, and documented in accordance with EPA and State of California regulations.

C. Imported fill materials shall be sampled by a geotechnical engineer, retained by the Owner as an Owner Consultant, for compliance with the requirements of Part 2 of this section.

D. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall perform the tests by utilizing an independent approved testing laboratory.

E. Initial sampling shall be performed by the geotechnical engineer, retained by the Owner as an Owner Consultant, before importing material to the Project site. Identify the location of the source site in addition to the address, name of the person and/or entity responsible for the source site. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall obtain both the initial sample and additional samples from the identified site and shall submit all samples to the approved independent testing laboratory.

F. The geotechnical engineer, retained by the Owner as an Owner Consultant, shall perform additional sampling during import operations. If the total quantity of import is determined to be greater than 1,000 cubic yards of material, one sample shall be obtained and submitted for testing for each 250 cubic yards of imported material. If the total quantity of import is determined to be less than 1,000 yards, one sample shall be obtained and submitted for testing for each 100 cubic yards of imported material.

G. The independent approved testing laboratory shall perform the required tests and report results of all tests noting if the tested material passed or failed such tests and shall furnish copies to the Project Inspector (IOR), Architect, OAR, DSA, Contractor, and others as required. Report shall state tests were conducted under the responsible charge of a licensed State of California professional engineer and the material was tested in accordance with

applicable provisions of the Contract Documents, CBC and the DSA. Upon completion of the Work of this section, the independent testing laboratory and geotechnical engineer shall submit a verified report to the DSA as required by CBC.

H. Bills of lading or equivalent documentation will be submitted to the Project Inspector on a daily basis.

I. Upon completion of import operations, provide the IOR a certification statement attesting that imported material has been obtained from the identified source site.

3.3 INSPECTION AND TESTING

A. The geotechnical engineer, retained by the Owner as an Owner Consultant, will inspect and test excavations, sample material quality as required in Part 2, observe installation and compaction of fill materials.

B. Compaction test shall be performed in accordance with ASTM D1557, method "C."

3.4 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.5 CLEANUP

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 321216

ASPHALT PAVING

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Paving for playground, parking areas, areas between buildings, synthetic track surfacing adjacent to planting and turf areas as indicated.

B. Related Requirements:
   1. Division 01 - General Requirements.
   2. Section 31 22 00 - Grading.

1.2 SUBMITTALS

A. Shop Drawings: Submit site plan indicating extent of paving and accessories.

B. Product Data: Manufacturer's technical data for materials and products.

1.3 QUALITY ASSURANCE

A. Comply with the following as a minimum requirement: Standard Specifications for Public Works Construction.

1.4 PROJECT CONDITIONS

A. Information on Drawings or in soils report does not constitute a guarantee of accuracy or uniformity of soil conditions over the Project site.

B. A copy of the soils report is available for examination in the office of the Architect during regular office hours of the Architect.

PART 2 – PRODUCTS

2.1 BITUMINOUS MATERIALS

A. Provide materials of the class, grade, or type indicated on the Drawings, conforming to relevant provisions of Section 203 - Bituminous Materials of the Standard Specifications for Public Works Construction.

2.2 HEADERS

A. Concrete: Per specification Section 32 1313 - Site Concrete Work.

PART 3 – EXECUTION

3.1 HEADERS

A. Install headers along edge of bituminous surfacing abutting turf, earth, or planting area, unless indicated otherwise

B. Install headers so the bottom surface has continuous bearing on solid grade. Where excavation for headers is undercut, thoroughly tamp soil under the header. Compact backfill on both sides of header to the density of adjacent undisturbed earth.

C. Remove existing headers where new surfacing is installed adjacent to existing surfacing.

D. Install temporary headers at transverse joints of paving where continuous paving operations are not maintained.

E. Provide additional stakes and anchorage as required to fasten headers in place.

3.2 CONSTRUCTION OF ASPHALT CONCRETE PAVEMENT

A. Thickness of Surfacing: Unless otherwise indicated on Drawings or specified, install bituminous surfacing to a compacted thickness of 2 inches.

B. Provide surfacing material over base course.

C. Surfaces of walls, concrete, masonry, or existing bituminous surfacing indicated to be in direct contact with installed bituminous surfacing shall be cleaned, dried and uniformly coated with an asphaltic emulsion film.

D. Thicken edges of bituminous surfacing that do not abut walls, concrete, or masonry, and edges joining existing bituminous surfaces. Remove headers at existing bituminous surfacing where new bituminous surfacing is to be installed. Thicken edges an additional 2 inches and taper to the indicated or specified thickness 6 inches back from such edges.

E. At stairways, adjust thickness of paving such that the first tread is equal in height to all other treads.

F. Provide adequate protection for concrete, planting areas, and other finish Work adjacent to areas indicated to receive bituminous surfacing.

G. Placing:

1. Do not install bituminous surfacing when atmospheric temperature is below 40 degrees F; or when fog or other unsuitable weather conditions are present. Temperature of mixture at time of installation shall not be lower than 260 degrees F in warm weather or higher than 320 degrees F in cold weather.
2. Where 2-inch or 3-inch thick surfacing is indicated or specified, install surfacing in one course. Where surfacing is indicated or specified 4 inches or more in thickness, except for thickened edges, install bituminous surfacing in courses of approximately equal thickness, each course not exceeding 2 ½ inches in thickness.

H. Stakes or Screeds: Provide grade or screed stakes spaced not more than 15 feet apart in flow lines with grades of less than one percent. Continuous screeds may be provided instead of stakes.

I. Spreading: Install bituminous surfacing in a manner to cause least possible handling of mixture. In open areas and wherever practicable, install by mechanical means with a self- propelled mechanical spreader. In confined or restricted areas, install mixture with hot shovels and rakes, and smooth with lutes.

J. Joints: Provide vertical joints between successive runs. Install joints true to line, grade, and cross section. Lapped joints are not permitted.

K. Rolling:

1. Finish roll with a self-propelled tandem roller weighing at least 8 tons.

Break down roll with a self-propelled roller weighing between 1 ½ tons and 8 tons.

2. Roll in a manner that preserves flow lines and the established finished grades. Break down roll in areas adjacent to flow lines parallel to flow lines. Break down roll after bituminous surfacing is installed without shoving or cracking of mixture under roller. Continue finish rolling until surfacing is unyielding, true to grade, and meets requirements for specified smoothness. Areas inaccessible to finish roller may be finish rolled with breakdown roller or tamped with hot tamping irons and smoothed with hot smoothing irons or hand roller.
3. Where bituminous surfacing abuts concrete, masonry, walks or paving, tamp joint smooth, if necessary, as described above to obtain a uniformly even joint, true to line and grade. Tamp and smooth to properly compact.
4. Compacted bituminous surfacing shall be provided with a bulk specific gravity of at least 2.31 when tested in accordance with ASTM D1188.

3.3 TOLERANCE

A. Smoothness: Surface of bituminous surfacing after rolling, shall be even, smooth and uniform in texture with no voids or rock pockets, free of roller marks or other irregularities, and not varying by more than 0.03 foot, except at local depressions or raised areas as indicated, when a 10-foot straightedge is placed on surface.

B. Grade: Finished grade shall not vary more than 0.02 foot above or below required grade. Variations within prescribed tolerance shall be compensating so that average grade and cross-section are provided.

C. Premium paving tolerances and requirements for synthetic track:

1. General: Test in-place asphalt concrete courses for compliance with requirements or thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by Owner's representative.
2. Thickness: Tolerances for thickness shall be ¼ inch, plus or minus.
3. Planarity: The asphalt substrate shall not vary from the planned cross slope by more than plus or minus 0.1 percent. The finished asphalt shall not vary, plus or minus, under a 10 feet straight edge greater than 1/8 inch. Flood test the surface with the use of a water truck. If, after 30 minutes on a 70-degree F day, "bird baths" are evident at a depth more than 1/8 inch repair using the best method of correction.

4. Corrective Measures: Determine if the planarity, cross slopes, and general specifications have been met. If all of the conditions have been met notify the Owner in writing of the acceptance of the asphalt paving.

3.4 TESTING

A. After first coat of surface seal has been installed and after a 24-hour period, the flood test shall be completed of the bituminous surfacing in presence of the Project Inspector. Repair areas of standing water or puddles and flood test locally; install surface seal and retest as necessary.

3.5 SURFACE SEALING

A. After bituminous surfacing has passed flood test, clear and allow to dry and provide one more coat of surface seal.

B. Where indicated, provide multiple coats of surface seal to existing bituminous surfacing.

C. Where new bituminous surfacing joins existing bituminous surfacing, overlap surface seal a minimum of 12 inches onto existing bituminous surfacing.

3.6 PROTECTION

A. Protect the Work of this section until Substantial Completion.

3.7 CLEANUP

A. Remove rubbish, debris and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 321236

EMULSIFIED SLURRY SEAL

PART 1 – GENERAL

1.1 SUMMARY

A. The work shall consist of mixing asphaltic emulsion, aggregate, set-control additives and water, and spreading the mixture on a surfacing or pavement.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.

B. Asphaltic Emulsion: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.

C. Material certificates.

D. Log of slurry seal application, including dates, times, temperature readings and other pertinent information.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer shall be registered with and approved by authorities having jurisdiction or the DOT of the state in which Project is located.

B. Standard Specifications: Comply with latest editions and supplements for Caltrans Standard Specifications Sections 37 and 94. These Specifications apply only to performance and materials and how they are to be incorporated into the Work. The legal/contractual relationship sections and the measurement and payment sections do not apply to this document.

1.4 PROJECT CONDITIONS

A. Environmental Limitations: The slurry seal shall not be applied if either the pavement or air temperature is below 50 degrees Fahrenheit. and falling, but may

be applied when both pavement and air temperatures are above 45 degrees Fahrenheit and rising. No slurry seal shall be applied when there is a possibility of freezing temperatures at the project location within 24 hours after application.

B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 degrees Fahrenheit for oil- based materials, 50 degrees Fahrenheit for water-based materials, and not exceeding 95 degrees Fahrenheit.

PART 2 – PRODUCTS

2.1 ASPHALTIC

A. Asphaltic emulsion shall be a quick-setting type, grade QS1h anionic, or grade CQS1h cationic, conforming to the provisions in Caltrans Standard Specifications Section 94, Table 4. The grades of asphaltic emulsion shall be at the option of the Contractor.

2.2 AGGREGATE

A. Aggregate shall conform to the provisions in Caltrans Standard Specification Section 37- 2.02C, Type II

2.3 WATER

A. Water shall be such quality that the asphalt will not separate from the emulsion before the slurry seal is in place in the work. If necessary for workability, a set-control agent that will not adversely affect the slurry seal may be used.

2.4 MIX DESIGN

A. Compatibility of the emulsified asphalt, aggregate, water and additives shall be evaluated in the mix design. The slurry seal mixture shall conform to the requirements specified when tested in accordance with the Caltrans Standard Specifications Section 37-2.03.

2.5 PAVEMENT MARKING PAINT

A. Pavement-Marking Paint: Latex, waterborne emulsion, lead and chromate free, ready mixed, complying with Caltrans Standard Specifications - Section 84 (Federal Specification No. TT-P-1952 for Blue, Red and Green paint; and State

of California Standard Specification No. PTWB-01 for White, Yellow and Black paint) with drying time of less than 45 minutes.

1. Color: White

PART 3 – EXECUTION

3.1 SURFACE PREPARATION

A. Prior to applying the slurry seal, loose material, oil spots, vegetation, and other objectionable material shall be removed. A standard cleaning method such as sweeping, flushing, or other means will be acceptable. If water is used, cracks shall be allowed to dry thoroughly before slurry surfacing. Manholes, valve boxes, catch basins, and other utility boxes shall be protected from slurry seal by a suitable method.

B. Treat cracks wider than 0.25 inches in the pavement surface with an approved crack sealer prior to application of slurry seal.

3.2 PLACING

A. The slurring mixture shall be uniformly spread on the existing surfacing within the rate specified without spotting, re-handling or otherwise shifting of the mixture.

B. Slurry seal shall not be placed when the atmospheric temperature is below 50 degrees Fahrenheit or during unsuitable weather.

C. Slurry seal shall be spread at a rate specified in Caltrans Standard Specifications Section 37-2.06.

D. The mixture shall be uniform and homogeneous after spreading on the existing surfacing and shall not show separation of the emulsion and aggregate after setting.

E. Lumping, balling, or unmixed aggregate will not be acceptable.

F. Adequate means shall be supplied to protect slurry seal from damage by traffic until such time that the mixture has cured sufficiently so that the slurry seal will not adhere to and be picked up by the tires of vehicles.

G. No excess buildup, uncovered areas, or unsightly appearance shall be permitted

on longitudinal or traverse joints. The contractor shall supply suitable equipment to produce a minimum number of longitudinal joints throughout the project. When possible, a longitudinal joint shall not be place in a wheel path. Less than full box width passes will be used only as required. If less than full box width passes are used, they shall not be the last pass of any paved area. A maximum of six inches shall be allowed for overlap of longitudinal joints.

H. Area which cannot be accessed by the mixing machine shall be surfaced using hand squeegees to allow complete and uniform coverage. If necessary, the area to be handworked shall be lightly dampened prior to mix placement. Handwork shall exhibit the same finish as that applied by the spreader and shall be completed prior to final surfacing.

I. Care shall be taken to apply straight lines along curbs and gutters. No run-off on these areas will be permitted. Roofing felt or heavy plastic may be used to begin or end a pull cleanly.

J. Rolling is not necessary for slurry seal on roadways. Parking areas shall be rolled by a self-propelled, 10-ton (maximum) pneumatic tire roller equipped with a water spray system. All tires shall be inflated per manufacture's specifications. Rolling shall not start until the slurry has cured sufficiently to avoid damage by the roller. Areas which require rolling shall receive a minimum of two full coverage passes.

3.3 PAVEMENT MARKING

A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.

B. Allow paving to age for 30 days before starting pavement marking.

C. Sweep and clean surface to eliminate loose material and dust.

D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to allow a minimum wet film thickness of 15 mils.

3.4 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test

reports.

B. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

C. Remove and replace or install additional slurry seal mixture where test results or measurements indicate that it does not comply with specified requirements.

3.5 DISPOSAL

A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an Environmental Protection Agency (EPA) approved landfill.

END OF SECTION

SECTION 334000

STORM DRAINAGE UTILITIES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Catch basins, grates and frames; culverts; curb inlets; drainage pipes; sub-surface drains; manhole covers and frames; surface run-off collection or infiltration.

2. Stormwater treatment systems:

a. Biotreatment Devices.

b. Cartridge Media Filter Devices.

c. Infiltration BMPs.

d. Hydrodynamic Separation Devices.

e. Catch Basin Inserts.

3. Closed-circuit television inspection of storm drain lines.

B. Related Requirements:

1. Division 01 - General Requirements.

2. Section 01 3593 - Off-site Improvement Procedures.

3. Section 01 3596 - Off-site Improvement Procedures (B-Permit).

4. Section 01 7415 - Storm Water Pollution Prevention Plan.

5. Section 01 7417 – BMP Implementation Plan.

6. Section 22 1000 - Plumbing.

7. Section 31 2313 - Excavation and Fill.

8. Section 31 2323 - Excavation and Fill for Utilities.

9. Section 32 0117 - Pavement Repair.

10. Section 32 1313 - Site Concrete Work.

11. Section 32 1343 – Pervious Concrete Pavement.

12. Section 32 1415 – Permeable Interlocking Concrete Pavers.

C. Definitions:

1. BMP: Stormwater Best Management Practice.

2. Post Construction BMP: Devices installed by the Contractor for storm water management to be left on site after construction completion.

3. SWPPP: Storm Water Pollution Prevention Plan.

1.02 SUBMITTALS

A. Shop Drawings: Submit site plan denoting locations of lines, valves, and appurtenances.

B. Product Data: Manufacturer's catalog data for all required materials. Include technical data for accessories, information concerning gaskets, joints and couplings.

C. Certificates: Certificates attesting that tests set forth in referenced publication have been performed and the results required by design have been met.

D. Closeout Documents: At Substantial Completion submit to the OAR two CD's and one hard copy of the documents indicated in paragraphs 1 through 5 below:

1. Maintenance Log: Provide Microsoft Excel Spreadsheet including the following information:

a. Maintenance log and upkeep records of the installed Post Construction BMPs. Include the following headers as a minimum: "Date of Service", "Location of BMP", "Type of Maintenance or Service", "Notes", "Next Scheduled Preventive Maintenance Due", and "Inspector Signature".

b. Maintenance Requirements: Include the following headers as a minimum: "BMP Description", "Location of BMP and Map Grid Location" and "Type of Maintenance or Service Needed", i.e.; weekly, monthly, quarterly, etcetera. "Stock No.", "Manufacturer Contact Information", along with "Frequency" namely: weekly, monthly, quarterly, etcetera and "Special Instructions".

2. Maintenance Manuals: Provide Maintenance Manual for storm drainage BMP components installed along with requirements, replacement or

maintenance schedule and plans with the location of each BMP component. This manual shall include product information cut sheet, shop drawings, vendor information for each component and warranty.

3. Record drawings: 'As-Builts' site plan(s) showing Post Construction BMP. Provide a copy of marked record set with red pencil identifying any variations from design documents.

4. Training Documentation:

   a. OWNER attendees sign off training sheet.

   b. Two DVD's of materials covered in the training and components installed.

5. Records of Closed-Circuit Television Inspection: At Substantial Completion submit to the OAR three DVD's of Closed-circuit television inspections performed. Include the following information:

   a. Electronic Media Recordings: Visual and audio record of the entire length of pipe. For existing laterals identify problem areas, such as roots, cracks, fractures, broken pipe, and other unusual conditions found.

   b. Digital Photographs of the pipe condition, connections, points of interest and defects found. Indicate distance of defects to a point of reference such as face of building or mainline.

   c. Inspection Log: Provide written report including:

      1) Date and time of inspection.

      2) Name of School, Project, Contractor, and operator name.

      3) Location, material and size of pipe.

      4) Description of defects found.

1.03 QUALITY ASSURANCE

A. Comply with the following as a minimum requirement: Standard Specifications for Public Works Construction, current edition.

1.04 TRAINING OF OWNER PERSONNEL

A. At Substantial Completion and when the storm drainage system is fully operational, knowledgeable representatives from the contractor and manufacturer(s) of the

components specified and installed at the site shall provide up to 8 hours of training. Date, time and location for the training shall be coordinated through the project OAR. Have OWNER attendees sign off training sheet and provide a copy to the OAR.

B. Training period shall cover but not be limited to the following:

1. Explain the operation of storm drainage system and its design intent.

2. Explain the maintenance requirements of every component of the system.

3. Provide recommendations of practices to minimize or eliminate negative impact on the system.

4. Provide maintenance schedule as recommended by the manufacturers for every component and review it with OWNER's Maintenance and Operations staff.

5. Conduct a site walk, identify every component of the system and demonstrate its operation.

6. Training shall be conducted with the use of Maintenance log and Maintenance manual.

1.05 SURPLUS MATERIALS

A. Provide sufficient additional materials for each component of BMP that requires replacement or service during the first year.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Storm Drain Pipe:

1. Nonreinforced Concrete Pipe (CP): Provide in conformance with Section 207 - Pipe and Section 208 - Pipe Joint Types and Materials of the Standard Specifications for Public Works Construction.

2. Reinforced Concrete Pipe (RCP): Provide in conformance with Section 207 - Pipe and Section 208 - Pipe Joint Types and Materials of the Standard Specifications for Public Works Construction.

3. Cast Iron Pipe (CIP): Provide in conformance with Section 207 - Pipe and Section 208 - Pipe Joint Types and Materials of the Standard Specifications for Public Works Construction.

4. Ductile Iron Pipe (DIP): Provide in conformance with Section 207 - Pipe and Section 208 - Pipe Joint Types and Materials of the Standard Specifications for Public Works Construction.

5. Annular High Density Polyethylene (HDPEP): Provide in conformance with Section 207 - Pipe and Section 208 - Pipe Joint Types and Materials of the Standard Specifications for Public Works Construction.

B. Perforated Subsurface Drain Pipe: Shop-perforated with perforations symmetrically located within a maximum arc of 160 degrees. Perforations shall provide a total open area of at least 0.3 square inches per linear foot of pipe, with a minimum of one perforation per linear foot, except for joint areas. Perforation shall be either holes or slots. Hole diameters of ¼ inch minimum to 3/8 inch maximum. Width of slots of 3/16 inch minimum to 5/16 inch maximum with slot length not exceeding 4 inches.

C. Concrete, Mortar and Related Materials: Conform to Section 32 1313 - Site Concrete Work.

D. Metal Covers, Grates, Frames and Accessories:

1. Conform to Section 206 - Miscellaneous Metal Items of the Standard Specifications for Public Works Construction.

2. Hot-dip galvanize steel parts after fabrication and before installation, in accordance with Section 210 - Paint and Protective Coatings of the Standard Specifications for Public Works Construction.

3. Grates and Frames:

a. Vandal-proof design and construction.

b. ADA compliant, in conformance to CBC 11B-302.3.

c. Rated for vehicular traffic on areas intended for use by motor vehicles.

d. Hot-dip galvanized.

E. Bedding Material for Pipe: Conform to the requirements of Section 31 2313 - Excavation and Fill or Section 31 2323 - Excavation and Fill for Utilities, as required.

F. Subsurface Drain Fabric: Non-woven geotextile filter fabric,

1. TenCate Geosynthetics Americas, Mirafi 140N.

2. US Fabrics, Inc., 120NW.

3. Propex Fabrics, Inc., Geotex 451.

4. Equal.

G. Aggregate Around Perforated Pipe: 6 inches of gravel containing no particles finer than a 3/8 inch to 1/2 inch sieve opening size.

H. Manhole Brick Mortar, Grout, and Plaster: Conform to Standard Specifications for Public Works Construction, Section 202 - Masonry Materials.

2.02 STORMWATER TREATMENT SYSTEMS

A. Cartridge Media Filters

1. Manufacturer: Baysaver Tachnologies Inc., Contech Construction Products Inc., CrystalStream Technologies, Oldcastle Precast Inc., or Equal.

2. Products:

B. Hydrodynamic Separation Devices

1. Manufacturer: Rinker Materials, Oldcastle Precast Inc., Contech Construction Products Inc., Baysaver Technologies Inc., or Equal.

2. Products:

C. Catch Basin Inserts

1. Manufacturer: AbTech Industries, Aquashield Inc., Contech Construction Products Inc., Ecosense International, Oldcastle Precast Inc., Nyloplat, FabCo Industries Inc., UltraTech International Inc., or Equal.

2. Products:

D. Infiltration BMPs

1. Manufacturer: Contech Construction Products Inc., Oldcastle Precast Inc., Hancor, Jensen Precast, Hydrologic Solutions Inc., StormTech LLC, StormTrap, Triton Stormwater Solutions, or Equal.

2. Products;

E. Biotreatment Devices

1. Manufacturer: DeepRoot Urban Landscape Products, Filterra Bioretention Systems, Modular Wetlands Systems, Storm Threat Systems or Equal.

2. Products:

2.03 NAMEPLATES:

A. Stainless steel or aluminium nameplate permanently fastened to BMP showing the following information:

1. BMP ID number and BMP type.

2. Next service day, followed by a one inch by four inch long blank space.

3. Manufacturer name, model number, telephone number and stock ID number.

4. Installation or production date.

5. One inch by four inch blank space for Owner's use.

PART 3 – EXECUTION

3.01 EXCAVATION, BACKFILLING AND COMPACTING

A. Conform to the requirements of Section 31 2313 - Excavation and Fill or Section 31 2323 - Excavation and Fill for Utilities, as required.

3.02 INSTALLATION OF PIPE

A. Conform to Section 306 - Underground Conduit Construction of the Standard Specifications for Public Works Construction.

B. Non-ferrous drainpipe installed with less than 12 inches of cover to finish grade shall be provided with a 4 inch thick concrete pipe encasement.

3.03 DRAINAGE APPURTENANCES

A. Catch basins, junction chambers, manholes, box culverts, outlet chambers and other drainage structures: Construct as indicated on Drawings and as specified in Section 32 1313 - Site Concrete Work.

B. Ensure that Post Construction BMP have a visible identifying manufacturer tag with product identification, manufacturer contact information, date of last service and date of next service due.

C. Provide storm drain stencil per City or County requirements as applicable.

3.04 STORMWATER TREATMENT SYSTEMS

A.

3.05 ABANDONED DRAINAGE LINES AND STRUCTURES

A. Cap or plug existing drain lines that are cut and abandoned and remove existing drainage structures that are abandoned.

3.06 CLOSED-CIRCUIT TELEVISION INSPECTION

A. Coordinate with OAR time and date of inspection. Project Inspector shall be present during the CCTV inspection.

B. Clean laterals by hydraulic jet.

C. Perform internal closed-circuit television inspection of lateral from the building to the public mainline. Record drain line in its entirety with no breaks or interruptions. Move camera at a speed no grater than 30 feet per minute, stopping for a minimum of ten seconds to record pipe connections, defects, and points of interest.

D. Maintain technical quality, sharp focus and distortion free picture. Pan, tilt, and rotate as necessary to best view and evaluate connections, defects and points of interest.

E. Closed-circuit Television Equipment: As a minimum equipment shall include:

1. Television camera specially designed for pipe inspections, and operative in 100 percent humidity conditions.

2. Camera and television monitor capable of producing minimum 470H-line resolution color video picture.

3. Camera capable to inspect lines as small as three inches up to 70 feet from storm drain mainline.

4. Camera lighting shall be suitable to allow clear picture of inner wall at least ten feet in front.

F. Defective Work:

1. New Lines: Defective Work found shall be repaired at Contractor's expense. Perform a new closed-circuit television inspection at no cost to Owner.

2. Existing Laterals:

a. If roots, sludge, or sediment material or other defect not related to the Work of this project impedes inspection, withdraw camera, restart inspection from opposite end and notify OAR of defects found.

b. If obstruction or stoppage was caused by Work related to this project, remove obstruction at no cost to Owner. Perform a new closed-circuit television inspection at Contractor's expense.

3.07 CLEANUP

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

B. Maintain Post Construction BMP after installation and keep a maintenance log to be turned over to OAR at Substantial Completion.

3.08 PROTECTION

A. Protect the Work of this section until Substantial Completion.

END OF SECTION