



PROJECT NO. 104228

for

ADMIRAL BOLAND WAY ENTRY/EXIT GATES

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SAN DIEGO INTERNATIONAL AIRPORT  
SAN DIEGO, CALIFORNIA

Project Authorized for Bidding by:

A handwritten signature in blue ink, appearing to read "Iradj Ghaemi". The signature is written in a cursive style and is positioned above a horizontal line.

IRAJ GHAEMI, P.E., DIRECTOR  
FACILITIES DEVELOPMENT DEPARTMENT

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## ARTICLE 1D - SPECIAL CONDITIONS

### 1D-01 DESCRIPTION OF WORK

This project is to install four (4) security gates, relocate two (2) existing lift-arm gates, and construct all other items as set forth in the drawings and specifications.

It is intended that the work be completed in every respect under the Contract, and such items or details not mentioned above that are required by the Contract document shall be furnished, performed, placed, constructed, or installed by the Contractor.

### 1D-02 NOT USED

### 1D-03A CONTRACT TIME LIMITS AND LIQUIDATED DAMAGES

Contractor shall commence Work under this Contract on the date specified within the Notice to Proceed for field construction, and the Project shall be completed within **120** days from that date, including Saturdays, Sundays and holidays. Contractor further agrees to pay, as liquidated damages, the sum of **\$2,000** per day for each consecutive calendar day thereafter as provided in General Conditions Article 1C-8.2, "LIQUIDATED DAMAGES". In determining the number of days this Contract, or portions thereof, remains incomplete, the Completion date shall be as defined in General Conditions Article 1C-9.3, "ACCEPTANCE AND PAYMENT" as the date of recommendation of acceptance of work and material by Airport Authority. In addition, Contractor agrees to pay, as liquidated damages to Airport Authority, the amounts indicated in the following "Milestone Schedule" in the event a milestone/task is not timely achieved.

**CONTRACT MILESTONES AND LIQUIDATED DAMAGES SCHEDULE**

<b>Milestone No.</b>	<b>Milestone Description</b>	<b>Number of Calendar Days* from Notice of Award Date</b>	<b>Daily Liquidated Damages</b>
1(*)	<u>Administrative Processing</u> 1. Submittal Register approved 2. Appendix 4 Safety submittals approved 3. Submittals for Long lead procurement items approved 4. Airport SWPPP approved 5. Construction Phase/Traffic Control Plan approved 6. OCIP Enrollment completed for prime and all subs starting at NTP 7. Cost Loaded Construction CPM Schedule approved 8. Schedule of Values approved 9. Contractor's Quality Control Plan approved	50	\$800
<b>Milestone No.</b>	<b>Milestone Description</b>	<b>Number of Calendar Days from Issuance of Limited NTP</b>	
2(**)	Long Lead Item Procurement Completion (No field construction)	120	\$800
<b>Milestone No.</b>	<b>Milestone Description</b>	<b>Number of Calendar Days from Issuance of Full NTP</b>	<b>Daily Liquidated Damages</b>
3	Substantial Completion	90	\$2,000
4	Final Completion	120	\$2,000

**(\*) In the sole discretion of the Representative, the Limited NTP will only be issued after all of the requirements in Milestone No. 1, Administrative Processing, have been completed.**

**(\*\*) In the sole discretion of the Representative, the Full NTP will only be issued after all of the requirements in Milestone No. 2, Long Lead Items Procurement, have been completed and approved.**

1D-03B NOT USED

1D-03C NOT USED

1D-04 NOT USED

1D-05 WORK OUTSIDE REGULAR HOURS

All Contractor work outside regular hours or on Saturdays, Sundays or holidays (except emergency work) shall be scheduled a minimum of 48 hours in advance with the Airport Authority.

The regular hours are from 7:00 AM to 4:00 PM.

1D-06 PERMITS AND FEES

- A. All temporary utility services costs, including, without limitation, connection fees and charges and all other water bill charges during the Contract Time shall be from sources approved by the Airport Authority and shall be at Contractor's expense. Full compensation for all temporary utilities services and related costs (including those costs for construction offices) and for all water bill charges in connection with water used during the Contract Time shall be included in the Contract Price for the appropriate related Bid items, and no separate payment or reimbursement will be made therefor.
- B. Contractor shall obtain all other permits incidental to the Work, or made necessary by its operation, including but not limited to, those permits required for night work, overload, blasting, demolition and equipment, and pay all fees and costs incurred for and by the permit requirements. The cost of any such permit will be paid by the Contractor and is included in the Contract Price for the appropriate related Bid items, and no separate payment or reimbursement will be made therefor.

1D-07 NOT USED

1D-08 OVERHEAD

The Contractor will be compensated for time-related overhead in accordance with this Article.

Time-related overhead shall consist of those overhead costs, including field and home office overhead, which are in proportion to the time required to complete the Work.

Field office overhead expenses include time-related costs associated with the normal and reoccurring operations of the Project, and shall not include costs directly attributable to any of the Work of the Contract. Such time-related costs include, but are not limited to, the salaries and benefits of project managers, general superintendents, field office managers and other field office staff assigned to the Project, and rent, utilities, maintenance, security, supplies and equipment costs of the Project field office. The rate of field office overhead shall exclude all one-time charges not related to time, such as mobilization, licenses, permits, and any other charges not incurred on a regular basis during the duration of the Project.

Home office overhead or general and administrative (G&A) expenses refer to the fixed costs of operating the Contractor's business. Such costs include, but are not limited to, general administration, insurance, personnel and subcontract administration, purchasing, accounting, and project estimating. The rate of home office overhead shall be specific to this project, and shall exclude expenses related to other contracts or other businesses of the Contractor, equipment coordination, material deliveries, and consultant and legal fees.

The quantity of time-related overhead for payment will be measured as units based on the number of Days as specified in Article 1D-03, "CONTRACT TIME LIMITS AND LIQUIDATED DAMAGES" of these Special Conditions. In the event an early completion progress schedule is submitted by the Contractor and approved by the Airport Authority, the quantity of time-related overhead for payment accepted will be based on the total number of Days as specified in Article 1D-03 rather than the Contractor's early completion progress schedule. Overhead reflects the 90 day onsite field construction only. This does not apply to offsite management during the processing and procurement long lead items. The quantity of time-related overhead, as measured above, will be adjusted only as a result of suspensions and adjustments of time which revise the current Contract Completion date and which are also any of the following:

- A. Suspensions of work ordered in accordance with General Conditions Article 1C-11.3, "TERMINATION OR SUSPENSION FOR CONVENIENCE", except:
  - 1. Suspensions ordered due to weather conditions being unfavorable for the suitable prosecution of the controlling operation or operations; or

2. Suspensions ordered due to the failure on the part of the Contractor to carry out orders given, or to perform any provision of the contract; or
  3. Any other suspensions mutually agreed upon between the Airport Authority and the Contractor.
- B. Extensions of time granted by the Airport Authority in accordance with General Conditions Article 1C-7, "CHANGES IN THE WORK"; or
- C. Reductions in Contract Time set forth in approved Contract Change Orders, in accordance with General Conditions Article 1C-7, "CHANGES IN THE WORK".

In the event a Value Engineering proposal is submitted by the Contractor and provides for a reduction in Contract Time, the quantity of time related overhead associated with the reduction in Contract Time, shall be considered as a net savings of time related overhead, in accordance with Article 1D-40, "VALUE ENGINEERING" of these Special Conditions.

In the event that Contractor completes the Work earlier than the Contract Completion date specified in Article 1D-03, "CONTRACT TIME LIMITS AND LIQUIDATED DAMAGES" of these Special Conditions. Contractor's overhead amount, as shown in **Bid Schedule "A"**, shall not be reduced due to early Contract Completion.

If the quantity of time related overhead, as measured above, exceeds one hundred forty-nine percent (149%) of the number of Days specified in Article 1D-03, "CONTRACT TIME LIMITS AND LIQUIDATED DAMAGES" of these Special Conditions (excluding any days for plant establishment), the Contractor shall, within sixty (60) Days of the Airport Authority's written request, submit an audit performed by an independent Certified Public Accountant. The independent Certified Public Accountant's audit examination is to be performed in accordance with the American Institute of Certified Public Accountants Attestation Standards. The audit examination is to determine if the total quantity of time related overhead is:

- D. Allowable in accordance with Federal Acquisition Regulations, 48 CFR, Chapter 1, Part 31;
- E. Adequately supported by reliable documentation; and
- F. Related solely to the Project under examination.



The audit examination shall depict the Contractor's Project and company-wide financial records and shall specify the actual overall average daily rates for both field and home office overhead for the entire duration of the Project, and whether such costs have been properly allocated. The rates of field and home office overhead shall exclude all unallowable costs as determined in the request, the Contractor shall make its financial records available for audit by the state for the purpose of verifying the actual rate of time related overhead specified in the audit, submitted by the Contractor, shall be subject to approval by the Airport Authority.

If the Airport Authority elects, or if requested in writing by the Contractor, all Contract item payments for time related overhead in excess of one hundred forty-nine percent (149%) of the number of Days specified in Article 1D-03, "CONTRACT TIME LIMITS AND LIQUIDATED DAMAGES" of these Special Conditions (excluding any days for plant establishment), will be adjusted to reflect the actual rate.

The Contract unit price paid for time related overhead shall include full compensation for field and home office overhead measured for payment as specified above, and shall be considered to include all field and home office overhead costs incurred by the Contractor and by any joint venture partner, subcontractor, supplier or other party associated with the Contractor.

Full compensation for additional overhead costs incurred during the performance of extra work that is not a controlling operation and for all overhead, other than time-related overhead measured and paid for as specified above, shall be considered as included in the markups as specified in General Conditions Article 1C-7, "CHANGES IN THE WORK", and the various items of work, and no additional compensation will be allowed therefor.

1D-09

SUBMITTALS

- A. The term "submittals" includes shop drawings, drawings, diagrams, layouts, schematics, description literature, illustrations, schedules, samples, product, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the Work required by the Contract.
- B. Submittals are required for all specified materials.
- C. The Airport Authority has provided a Procurement Log and a Submittal Register in the electronic program management website.

The Contractor shall coordinate submittals with the Progress Schedule and submit to the electronic program management site for the Airport Authority's review. No submittals will be reviewed by the Airport Authority before the Procurement Log and Submittal Register have been accepted by the Airport Authority.

The electronic Procurement Log and electronic Submittal Register shall be updated by the Contractor weekly. Failure to update the Procurement Log, or Submittal Register, as required herein may result in the Airport Authority retaining an amount equal to ten percent (10%) of the estimated value of the work performed during the month from the next submitted Progress Estimate, except that such retention shall not exceed \$10,000, nor be less than \$1,000. Upon completion of an acceptable updated Procurement Log, or Submittal Register, any such withheld amounts can be invoiced and will be released with the next progress payment. Until such time as a final Procurement Log and Submittal Register are provided, no Final Payment shall be due and owing.

The columns titled "Specification Section", "Description", "Submittal Type", "Review Type" and "Submittal Number" will be completed by the Airport Authority.

The submission process shall be phased to ensure that submittals are submitted in order of their criticality to the construction process. A phased system which staggers submittals, by imposed start dates, shall be implemented. The intention is to adjust the flow of the submittals so as to produce an even workload, without peak loads, while meeting the needs of the construction process.

- D. The Contractor shall submit such submittals as required to maintain the progress of the Work. The Contractor shall coordinate all such submittals, and review them for accuracy, completeness and compliance with the Contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Submittals provided to the Airport Authority without evidence of the Contractor's approval will be returned for re-submission.

The Airport Authority will indicate its approval or disapproval of the submittals as specified below and if not approved as submitted shall indicate its reasons. Any Work done prior to such approval shall be at the Contractor's risk. Approval by the Airport Authority shall not relieve the Contractor from responsibility for any errors or omissions in submittals, nor from responsibility for complying with the requirements of this Contract, nor shall said review relieve the Contractor of any obligation hereunder, including without limitation the removal and replacement of defective Work, materials and

equipment which may be rejected by the Airport Authority notwithstanding such review, except with respect to variations described and approved in accordance with Subarticle G below. Submittals are included in the Contract Work.

Identification: Include an electronic label or title page on each submittal for identification.

1. Indicate name of firm and the person that prepared each submittal on label or title page.
  2. Provide a space to record Contractor's review and approval markings and action taken by the Airport Authority.
  3. Identify the intended use or location of each product by notation on the submittal, or by attached schedule, to indicate the Contractor understands the intended use of the product. Reference to specific Section text may not, by itself, constitute sufficient identification. Insufficiently identified products may be returned by the Airport Authority with no action.
  4. Training for the electronic submittal process will be provided by the Airport Authority.
- E. Readability: Submittals, regardless of source, must be clear and readable as determined by the Airport Authority.
- F. Faxes: Faxed submittals will be returned by the Airport Authority without review.
- G. Submittal Variations: If the submittals show any variations from the Contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. Contractor shall describe features of the variation and why the variation is desirable and beneficial to the Airport Authority. If lower cost is a benefit, also include an estimate of the cost savings. Contractor shall identify the proposed variation separately and include the documentation for the proposed variation along with the required submittal for the item. When submitting a variation for approval, the Contractor shall warrant the following:
1. Variation is compatible:  
  
The Contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of the Work.

2. Responsibility for Additional Costs:

Unless otherwise agreed to in writing by the Airport Authority, the Contractor shall take actions and bear the additional costs necessary due to the proposed variation.

3. Review Schedule is modified:

A period of 28 Days will be allowed for consideration by the Airport Authority of submittals with variations.

If the Airport Authority approves any submittals with unidentified variation(s), the Contractor's failure to specifically identify each variation as set forth above shall waive any implied or express approval obtained by the Airport Authority.

H. The Contractor shall electronically post submittals a minimum of three (3) weeks before need of reviewed submittals, unless otherwise specified by the Airport Authority. Contractor shall meet the most stringent delivery requirement specified. The Airport Authority's review is for the limited purpose of checking for general compliance with the concepts and intent of the Contract and it shall not bind the Airport Authority to discover errors. The Airport Authority's review is not for determining the accuracy or completeness of the Work such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems. Acceptance of submittals by the Airport Authority represents only that level of review and shall not further bind the Airport Authority. Contractor shall be responsible for the accuracy and correctness of all submittals and final installation of the Work.

I. Product Data/Material Lists:

1. Manufacturer's Standard Schematic Drawings: Modify drawings to delete information which is not applicable to Project.
2. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive data.
3. Clearly mark each copy to identify pertinent materials, products or models.

4. Show dimensions and clearances required.
  5. Show performance characteristics and capacities.
  6. Show wiring diagrams and controls.
  7. Include calculations when applicable.
- J. Samples and Mockups: Samples and Mockups shall be delivered and erected at the direction of the Airport Authority. (Reference Article 1D-10, "MATERIALS AND SAMPLES" of these Special Conditions). Samples shall illustrate materials, equipment, workmanship, and the like; Airport Authority approved samples shall establish the standards by which completed work will be inspected, approved, or rejected. Samples shall be of adequate and reasonable size and quantity to clearly illustrate the functional characteristics of product or material, with integrally related parts, attachment devices, and the like. Erect or apply field mockups, as applicable, at project site at location as noted and as approved by the Airport Authority. Construct each mockup complete, including work of all trades required in finished work.
- K. Number of Copies: Submit one (1) electronic copy of each submittal and re-submittal for the Airport Authority's review.
- L. As a minimum, submittals shall include the following information as applicable:
1. Date and revision date(s).
  2. Project title, name and location, Airport Authority and Work Order number and contract numbers.
  3. Names of contractor, subcontractor, and supplier or manufacturer.
  4. Identification of product or material.
  5. Relation to adjacent structure or material.
  6. Field dimensions, clearly identified as such.
  7. Specification section number.
  8. Consecutive submittal or resubmittal number.

9. Adequate blank space for the Airport Authority's review-stamp and comments.

Where specifically indicated by pertinent specification sections, submit proper certification by recognized producer or association in lieu of testing. Certification shall attest to products compliance with requirements of Contract Documents, see Article 1D-11, "CERTIFICATES OF COMPLIANCE" of these Special Conditions.

Shop drawings shall include name and location of project, name of Contractor, Airport Authority CIP and specification numbers, and cross reference to Contract Documents. Number shop drawings consecutively. Drawings shall be of a sufficiently large-scale to accurately describe the work, and be legible, and complete.

Each transmittal shall be consecutively numbered and shall contain list of items submitted, properly identified as to drawing numbers, Specification Section or other identification; and numbers and dates of previous submittals, if a resubmittal. Submittals and resubmittals shall be transmitted separately for each item, required by the Submittal Register and the Special Provisions, to be delivered to the Airport Authority. Submittals and resubmittals shall not be bundled by the manufacturer, supplier, subcontractor, or contractor. Submittals not adequately identified, incomplete, or bundled will be returned to Contractor for correction and resubmittal.

Mark each set of the submittal to show that it has the Contractor's review and approval. Prior to transmission to the Airport Authority, the Contractor shall review and affix their Contractor's electronic stamp, as set up in the Airport Authority's electronic project management system.

M. Electronic Submittal Requirements:

Prepare and submit Submittals in the submittal format specified and as required by individual Special Provisions Sections. Utilize any software that can save to or write a PDF and allows for encryption and signature.

Scanned Copies: Legible scanned PDF files of paper originals are acceptable; scanned submittals that are not legible will be rejected.

File Size: E-Mail Delivery, Maximum of 20 Megabytes (MB) including header. No zipped files are allowed. Uploaded documents to the electronic program management site have no size limitations.

Split Delivery: Break larger PDF files into small packages where necessary to meet delivery restrictions; identify split packages as "1 of 2" and "2 of 2" in the Subject Line of submission.

Sheet Orientation: Assemble PDF sheets in a single file; unless resulting file is larger than 10 MB, rotated to a "Ready-to-Read" orientation with majority of text horizontal to the sheet with no additional adjustments or formatting required by the viewer.

File Security: Do not set any permissions on the file; protected documents will not be accepted.

File Identification: File name must contain Project Number, Name of Submission, Date of Submission, Name of Fabricator and Submittal Number with an underscore between each item.

Transmission Requirements: Send non-zipped files as an attachment to e-mail or upload the submittal using the electronic project management website provided by the Authority. Zipped files will be rejected.

Drawings: Electronic copies of the Contract Drawings are provided as part of the original bidding documents by the Airport Authority for Contractor's use in preparing submittals. If drawings are larger than 11" X 17", one (1) paper copy in addition to the electronic copy shall be required for review. The paper copy will not be returned to the Contractor.

- N. Coordination: Coordinate preparation and processing of submittals with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
1. Coordinate and transmit related submittals so as to avoid delays during submittal review. The Airport Authority reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
  2. Mark each set of the submittal to show that it has the Contractor's review and approval. Prior to delivery to the Airport Authority, the Contractor shall review and affix their Contractor's stamp, with the required information completed.

3. Stamp Space on Submittals: Provide a blank space for the Airport Authority's electronic stamp on the cover sheet or top page of each submittal. Acceptance of submittals by the Airport Authority will be general and shall not relieve Contractor from responsibility for proper fitting and construction of Work, or from furnishing materials and Work required by Contract, which may not be indicated on submittals.
  4. Do not commence work requiring submittal until submittal has been approved by the Airport Authority. The work shall be in accordance with Airport Authority approved submittals.
- O. Submittals will be reviewed by the Airport Authority and returned to the Contractor within twenty-one (21) Days and will be: (1) returned marked "Approved," (2) returned marked "Approved With Corrections Noted," or (3) returned marked "Disapproved, Revise and Resubmit."
- P. Submittals marked "Disapproved, Revise and Resubmit" and returned to the Contractor shall be corrected by the Contractor to indicate compliance with design requirements and resubmitted for review before proceeding with fabrication. Drawings marked "Approved with Corrections Noted" shall be corrected, and may be issued by the Contractor for fabrication without further review and the Work shall be performed pursuant to the noted corrections.
- Q. Full compensation for furnishing and revising all submittals shall be considered as included in the Contract Price and no additional compensation will be allowed therefor.
- R. Trade Names and Alternatives: Certain materials, products, things or services to be incorporated in the Work may be designated in the specifications by specific brand or trade name by listing at least two (2) brands or trade names of comparable quality or utility followed by the words "or equal" so that the Contractor may furnish any equal material, product, thing or service. The Airport Authority shall, if aware of an equal product manufactured in California, name such product in the specifications. Only one such "or equal" item will be permitted per submitted item. In those cases involving a unique or novel product application required to be used in the public interest, or where only one (1) brand or trade name is known to the Airport Authority, it may list only one (1). In such case, the Contractor may submit data substantiating a request for a substitution of an "or equal" item thirty-five (35) Days after award of the Contract on the Substitution Request Form (Appendix 1, Form 10). If the Airport Authority rejects the substitution of an "or equal" item, the



Contractor shall provide the specified material, product, thing or service without extra cost to the Airport Authority. Public Contract Code section 3400 shall apply, if so designated by this specification. More specifically: 1) In order that a field test or experiment may be made to determine the product's suitability for future use; 2) In order to match other products in use on a particular public improvement either completed or in the course of completion; 3) In order to obtain a necessary item that is only available from one source.

- S. Photographs: Photographic submittals shall be in JPG format and copied to the electronic program management website with project name, project number and date. A brief description of the photographic event shall be provided for each image by the Contractor.

1D-10

MATERIALS AND SAMPLES

- A. All materials shall be new and of the specified quality and fully equal to samples, where samples are required or requested. The Contractor shall furnish to the Airport Authority for review or test, whenever requested and free of charge, samples of all materials proposed to be used in the Work. It shall also submit any required detailed drawings of articles or equipment for Airport Authority approval. Rejected materials must be immediately removed from the Work Site and shall not be brought again upon the Work or used in the Work.
- B. Materials furnished by the Airport Authority:
  - 1. In cases where the Airport Authority furnishes all or a portion of the equipment or materials to be used in the Work ("materials"), the Contractor shall accept delivery of such materials as may be provided. If the Contractor is required to haul such materials under this Contract to the Work Site, it shall pick them up promptly after notification by the Airport Authority, and shall pay at its own cost any demurrage or other charges which have accrued due to its failure to pick up the materials promptly.
  - 2. Contractor shall be responsible for the materials, including proper storage and handling from the time it receives them until Final Acceptance of the Work, and it shall replace or repair, at its own cost and in a manner satisfactory to Airport Authority, any of the materials which are lost or damaged after the Contractor's receipt of same.

3. Any Airport Authority furnished materials which remain unused at the Completion of the Work shall be delivered by the Contractor to the Airport Authority's storage yard designated by the Airport Authority.
4. All compensation to be received by the Contractor for handling and protecting Airport Authority furnished material is included in the Contract Price, and no extra compensation will be paid to the Contractor therefor.

1D-11      CERTIFICATES OF COMPLIANCE

A Certificate of Compliance shall be furnished prior to the use of any materials for which the Contract Documents require that such a certificate be furnished. In addition, when so authorized, the Airport Authority may permit the use of certain materials or assemblies prior to sampling and testing if accompanied by a Certificate of Compliance. The certificate shall be signed by the manufacturer of the material or the manufacturer of assembled materials and shall state that the materials involved comply in all respects with the requirements of the specifications. A Certificate of Compliance shall be furnished with each lot of material delivered to the Work and the lot so certified shall be clearly identified in the certificate.

All materials used on the basis of a Certificate of Compliance may be sampled and tested at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the Contractor of responsibility for incorporating material in the Work which conforms to the requirements of the Contract Documents and any such material not conforming to such requirements will be subject to rejection whether in place or not.

The Airport Authority reserves the right to refuse to permit the use of materials on the basis of a Certificate of Compliance. Certificates of Compliance shall be issued on a company letterhead type form.

1D-12      RECORD DRAWINGS

- A. The Contractor shall maintain at the Work Site record set of full-size project drawings upon which all field changes are recorded on a daily basis. This data shall be legibly recorded on blueline prints (furnished by the Airport Authority) to the satisfaction of the Airport Authority. Records shall be kept up to date with all entries checked by the Airport Authority before the work is buried or otherwise concealed. In the event the Contractor fails to maintain record drawings up to date on a monthly basis (see Appendix 1, Form 3, "As Built Drawing Certification") as required herein, the Airport Authority shall retain an amount equal to ten percent (10%) of the

estimated value of the Work performed during the month from the next submitted Progress Estimate, except that such retention shall not exceed \$10,000, nor be less than \$1,000. Upon the Contractor producing the required up to date record drawings, any such withheld amounts will be released with the next progress payment. Until such time as the final up to date record drawings are produced, no Final Payment shall be due and owing.

- B. Upon Completion of the Work and as a condition precedent to acceptance and the issuance of Final Payment, the Contractor shall sign and deliver to the Airport Authority a complete set of corrected prints, in good condition and with complete installation and every change in the Work indicated thereon whether concealed or visible.
- C. Any work showing faults under test, and any Work not in accordance with the Contract Documents shall be made good by the Contractor at its own expense.
- D. Should the Contractor refuse or neglect to make any tests necessary to satisfy the Airport Authority or its representative that it has carried out the true intent and meaning of the Contract Documents, the Airport Authority may make such tests and charge the expense to the Contractor, to be retained out of a progress or Final Payment as provided in the Contract Documents.
- E. The Airport Authority may require the testing of materials by a competent testing laboratory of its selection or by other means. The cost of the material to be tested, delivered to the point of testing, shall be borne by the Contractor and the cost of the initial tests will be borne by the Airport Authority. The Contractor shall pay all costs for subsequent tests where work or material fails to pass initial tests. Any Work or material showing faults under test shall be corrected by the Contractor at its own expense.
- F. The Contractor shall record any changes, deletions, additions, rerouting, stub-outs, offsets or any other deviation from the Plans on the as-built drawings. All underground and concealed work shall be recorded with exact location by dimension and elevation as detailed below, even when installed in conformance to original drawings.

Elevations shall refer to NAVD 88 datum.

Dimensions shall be shown from permanent installations rather than from fencing or other temporary locations that are subject to change.

Two reference dimensions shall be given for each underground or concealed installation.

Trenches for underground lines shall not be backfilled, nor shall concealed work be covered until elevations and dimensions are recorded complete on as-built drawings and a check has been made of lines versus recorded data by Airport Authority. If backfill is placed without Airport Authority's approval, the work shall be uncovered so that a proper check can be performed. Original data that is superseded shall be lined out and still remain legible. Original figures shall not be eradicated, nor corrections made over item.

1D-13

CONTRACTOR COORDINATION WITH OTHERS

- A. Contractor shall make all arrangements with utility agencies to arrange for connections, metering and new services required for the Project. Contractor shall pay all fees and charges and arrange for all required inspections.
- B. Airport Authority will reimburse Contractor the amount of the fees and charges upon claim substantiated by signed receipts from the agencies. The amount of the fees and charges has been estimated and an allowance item in that total amount has been included in the Bid Schedule.
- C. All water services for this Contract shall be made in the name of Contractor and Contractor shall pay all charges for water used under its name. At the time of Completion of the Project construction, when the Plant Establishment and Landscape Maintenance Period begins, the water services shall be transferred to the name of the San Diego County Regional Airport Authority.
- D. Contractor shall coordinate work with other Authority contractors, utilities, tenants, and Airport Operations, as required by the Contract Documents. The Contractor is required to coordinate all of its work on Airport Authority- owned systems through the Representative. The Airport Authority will then coordinate with all relevant Authority personnel. If the Airport Authority determines that Contractor is failing to coordinate its Work, the Airport Authority may upon 72 hours written notice:
  - 1. Withhold any payment otherwise owed hereunder until Contractor complies with Airport Authority's directions.
  - 2. Direct others to perform portions of Contract and charge the cost of Work against Contract amount.

3. Terminate any or all portions of Contract for Contractor's failure to perform in accordance with Contract.

E. In addition, the following provisions apply:

1. The Contractor shall notify and receive approval from the Airport Authority, in writing, ten (10) Days in advance of any utility, service, or system shut down that will affect the normal operations at San Diego International Airport. Utility, service, or system shut downs shall only be allowed at night and during hours determined by the Airport Authority (normally between 11:00 PM to 5:00 AM). The Contractor shall provide the Airport Authority with the type of utility, service, or system and anticipated duration of shut down and specific area(s) that will be affected as a result of the Work. The Contractor shall provide notification by using "Contractor Interface with Airport Systems Notification" (Appendix 1 Form 15). Contractor shall not proceed with Work until written approval is received from the Airport Authority.
2. The Contractor shall notify and receive approval from the Airport Authority, in writing, ten (10) Days in advance of any time that the Contractor plans to make contact with any utility, service or system at the Airport – no matter whether the utility, service, or system is believed to be functional, or non-functional. The Contractor shall provide the Airport Authority with the type of utility, service, or system and anticipated duration of shut down and specific area(s) that will be affected as a result of the Work. The Contractor shall provide notification by using "Contractor Interface with Airport Systems Notification" (Appendix 1 Form 15). Contractor shall not proceed with Work until written approval is received from the Airport Authority.
3. The Contractor shall maintain service under this Contract on all the existing utilities, including but not limited to water lines, telephone lines, data lines, gas lines, electrical lines, security system, paging system, and control systems during all phases of the Work.
4. The Contractor shall be fully responsible for any and all damages to underground and aboveground utilities and facilities resulting from Contractor's operation. No separate measurement or payment will be made to the Contractor for locating, working around, coordinating with the Airport Authority or protecting utilities, services, or systems. All

costs incurred thereby shall be considered incidental to Work under this Contract.

5. The Contractor shall have available on-call sufficient specialty contractors, such as electrical, plumbing, etc., to repair any damage to existing facilities that might occur as a result of construction operations, regardless of when the damage might occur.
6. The Contractor shall expect to work during the hours of 11:00 PM and 5:00 AM whenever construction activities interfere with the normal operation of any Airport Authority systems, airline, other Airport Authority tenant, or passengers.
7. Separate contractors on adjoining or overlapping work shall cooperate with each other as necessary. Such cooperation shall include, but not be limited to:
  - a. Coordination of all service outages to minimize the effects of construction work on the operation of the Airport;
  - b. Arrangements and conduct of Work;
  - c. Storage and disposal of materials, etc., by each, in such a manner as to not interfere with or hinder the progress of the work being performed by other contractors. Contiguous work shall be joined in an acceptable manner;
  - d. Access to the site.
8. The Airport Authority shall have the right, at any time, to contract for and perform other work on, near, over or under the Work covered by this Contract. In addition, other work may be performed under the jurisdiction of the Airport Authority, or another authority or Federal agency. In such cases, when a dispute arises among contractors, the Airport Authority will decide and direct the Contractor accordingly. The Contractor shall cooperate fully with such other Contractors and carefully fit their own work to such other work as may be directed by the Airport Authority.
9. The Contractor agrees that in the event of dispute as to cooperation, the Airport Authority will act as referee. The Contractor agrees to make no claims against the Airport Authority for any inconvenience, delay, or loss experienced

by them because of the presence and operations of other contractors.

1D-14

ACCESS TO BUSINESSES, TENANT LEASEHOLDS, PRIVATE PROPERTY, DRIVEWAYS, ALLEYWAYS, AND THOROUGHFARES

The Contractor shall schedule its operations on the Work Site to provide for:

- A. Pedestrian/vehicle ingress and egress for airport terminals, parking lots, public parks, and other Tidelands business sites at all times, except if otherwise approved in writing by the Airport Authority.
- B. Pedestrian/vehicle ingress and egress for each driveway, alleyway and street within project limits at all times (work on said facilities shall be scheduled so that no less than one half the width is available at a time).

The Airport Authority recognizes that temporary complete closure of certain pedestrian/vehicle ingress and egress locations may be unavoidable due to site and Project requirements. Contractor shall work closely with Airport Authority to keep these instances to an absolute minimum. When complete closures are necessary, detours shall be provided unless they are shown to cause undue hardship.

The Contractor is directed to Article 1D-20, "CONTRACTOR'S PROGRESS SCHEDULE" of these Special Conditions. The schedule shall show the start and end of any partial closures to pedestrian and vehicle pathways, walkways, alleys and driveways. This will allow the Airport Authority time to fulfill the Airport Authority's responsibility to notify all concerned parties and to apprise each party of what conditions can be expected when construction commences.

Contractor shall notify Airport Authority at least seven calendar days in advance upon any change in project schedule or operation that may affect access. Airport Authority will be responsible for notification to affected parties.

Full compensation for access to businesses, tenant leaseholds, private property, driveways, alleyways, and thoroughfares shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

1D-15

EXISTING UTILITIES, IMPROVEMENTS, AND OBSTRUCTIONS

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- A. Whenever any pole, structure, culvert, conduit, cable or other obstruction, either above or below ground surface within the area to be utilized by the Contractor in the performance of the Work is, or may be affected by the Contractor's operations, the Contractor shall preserve the same intact or it shall make such arrangements with the owner of same for its protection, support, alteration or removal and reinstallation, as may be required by the conditions encountered.
- B. The Contractor shall notify in advance and cooperate with each owner of poles, structures, pipes, culverts, conduits, cables or other improvements that may be encountered or affected in any way by the Work under this Contract. It shall be the responsibility of the Contractor to verify the existence and exact location of existing utilities prior to construction.
- C. Where water mains or services are altered or removed and reinstalled either to avoid interference with the Work under this Contract or for the convenience of the Contractor, such alteration, removal and reinstallation shall be performed in accordance with the rules and regulations of the owner, and the cost shall be borne as outlined in the following paragraphs.
- D. It shall be the Contractor's responsibility at its sole expense to verify the existence and the exact location of existing underground utilities prior to excavation. Contractor shall pothole to determine depths and exact location of utilities prior to excavation in the area. The Contractor shall uncover sewer laterals, telephone and electric conduits, water mains and gas mains or any other major utility crossings and other high risk underground facilities in advance of trenching operations a minimum of five (5) Business Days sufficient to permit grade changes, should such changes be required. The cost of such work shall be included in the Bid for items of work necessitating such location.
- E. Unless otherwise specifically provided in the Contract Documents, all costs of protecting, potholing, supporting, altering, obliterating, removing, salvaging, reconstructing and reinstalling pipes, poles, structures, trees and other obstructions, shall be borne by the Contractor, including facilities which are altered or removed and reinstalled for the Contractor's convenience, except:
  - 1. Unless otherwise provided, where a subsurface obstruction is encountered which is not shown on the Contract Documents.



2. Where it is necessary to remove or alter obstructions which are maintained under an Airport Authority franchise, ordinance, contract, permit or other agreement by the terms of which the obstruction is required to be moved or adjusted.
  3. The Airport Authority shall not be required to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the Work Site can be inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, on or adjacent to the site of the construction; provided, however, nothing herein shall relieve the Airport Authority from identifying main or trunk lines in the Contract Documents. The Airport Authority shall compensate the Contractor for the costs of locating, repairing damage not due to the failure of the Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Contract Documents with reasonable accuracy, and for equipment on the Project necessarily idled during such work.
- F. Except as otherwise expressly provided herein, the Contractor shall not be entitled to any additional compensation due to the presence of, or interference, delays or expense caused by obstructions, or the removal and/or replacement of obstructions where such obstructions could have been reasonably anticipated and such removal and/or replacement is required for proper completion of the Work. The Contractor shall not be assessed liquidated damages for delay in the Completion of the Work, when such delay was caused by the failure of the Airport Authority or the owner of the utility facilities as provided by Government Code Section 4215.
- G. Where the Work requires the removal of or damage to existing pavement, sidewalks, curbs, lawns, shrubbery, trees, hedges, gardens, drives, walls, fences, buildings or other improvements, the Contractor shall take precautions to limit the removal or damage to the least practicable amount; and it shall at its own cost replace or restore said improvements to as near its original location and condition as it reasonably possible, except as otherwise provided. Great care shall be exercised in placing and compacting backfill in areas where improvements are to be placed upon said backfill.
- H. Trees shall not be removed without the express permission of the Airport Authority or as shown in the Contract Documents. Damage to or excessive trimming of trees in the street or right-of-way shall be avoided. If directed by the Airport Authority, the Contractor shall replace with like kind any tree removed and/or overly trimmed in violation of this provision.

- I. The Contractor's attention is directed to the existence of certain underground facilities that may require special precautions be taken by the Contractor to protect the health, safety, and welfare of workmen and of the public. Facilities requiring special precautions include, but are not limited to: conductors of petroleum products, oxygen, chlorine, and toxic or flammable gases; natural gas in pipelines greater than 6 inches in diameter or pipelines operating at pressures greater than 60 psi (gage); underground electric supply system conductors or cables, with potential to ground of more than 300 volts, either directly buried or in duct or conduit which do not have concentric grounded conductors or other effectively grounded metal shields or sheaths.

The Contractor shall notify the Airport Authority and the appropriate regional notification center for operators of subsurface installation at least two working days prior to performing any excavation or work close to any underground pipeline, conduit, duct, wire or other structure. Regional notification centers include but are not limited to the following:

Underground Service Alert -  
Southern California (USA)

Telephone: 1 (800) 227-2600

Alternate: 1 (800) 422-4133

Website: [www.digalert.org](http://www.digalert.org)

1D-16 CONTRACTOR EQUIPMENT STORAGE AND STOCKPILE AREAS

Contractor Equipment Storage and Stockpile Areas are indicated on the drawing.

1D-17 CONTRACTOR'S EMPLOYEE PARKING

Parking for Contractor's personnel and the location of the Contractor's Employee Office Trailer is available as indicated on the drawing.

1D-18 SANITARY FACILITIES FOR CONTRACTOR PERSONNEL

Contractor shall provide portable sanitary facilities for its personnel.

1D-19 COST BREAKDOWN (SCHEDULE OF VALUES)

Attention is directed to Article 1D-20, "CONTRACTOR'S PROJECT SCHEDULE" of these Special Conditions. In addition to the requirements contained in that article, the following requirements shall apply:

The Contractor shall expand (break down) the lump sum and unit prices entered in the Bid Schedule in order to submit a detailed Cost Breakdown (Schedule of Values) for the entire Project. Schedule of Values shall be submitted simultaneously with the Contractor's Progress Schedule. The Initial Application for Payment will not be approved for payment until the Cost Breakdown (Schedule of Values) has been submitted to and accepted by the Airport Authority. Each Contractor's Application for Payment will require a legible copy of the most recent approved Schedule of Values. Any Application for Payment submitted without the current Schedule of Value, or an illegible Schedule of Value will not be process and immediately returned to the contractor for corrective action.

Format and Content: The Cost Breakdown (Schedule of Values) shall conform to the format, content and numbering system of the approved Contractor's Construction Schedule. Contractor's, subcontractors' and suppliers' profit and overhead shall be included in each line item. The Project Specification Table of Contents may be used as a general guide to format the Cost Breakdown (Schedule of Values). Special item numbers may be sequentially numbered.

- A. Entries shall match approved Contractor's Construction Schedule. Use updated schedules if revisions have been made.
- B. The Cost Breakdown (Schedule of Values) shall be a detailed itemization of the price to provide each item of work and material on the project. No breakdown (values) shall be included for non-construction activities including, but not limited to, procurement and submittals.
- C. Each line item on the Cost Breakdown (Schedule of Values) shall be presented in a manner that allows the Airport Authority to easily find that item of work within the pertinent construction period.
- D. Each line item on the Cost Breakdown (Schedule of Values) shall be ascribed a breakdown (value) by the Contractor that represents the breakdown (value) of the work. If required by the Airport Authority, the Contractor shall substantiate each breakdown (value) by the use of supplier, subcontractor written quotations, labor wages, labor rates, hourly estimates, or other industry recognized cost estimating references (as approved by the Airport Authority).
- E. Each line item of the Cost Breakdown (Schedule of Values) shall be coordinated with other line items of work.
- F. Arrange the Cost Breakdown (Schedule of Values) in a tabular form with separate columns to indicate the following for each item listed.

Each sheet of the Cost Breakdown (Schedule of Values) shall be titled and numbered sequentially.

1. Line Item Number
2. Description of Item
3. Quantity
4. Unit of Measure
5. Unit Price
6. Value of Line Item

Round amounts off to the nearest whole dollar; the total shall equal the Contract Sum.

- G. Schedule Updating: Contractor shall update and resubmit the Cost Breakdown (Schedule of Values) prior to each payment application when approved Change Orders result in a change in the Contract Sum.

1D-20A CONTRACTOR'S PROGRESS SCHEDULE

In addition to the requirements of the General Conditions, the following shall apply:

- A. Before the preparation of the Contractor's Progress Schedule, Contractor shall inspect the project Work Site in order to familiarize itself with the condition of the existing area where it will perform the Work.
- B. Contractor shall submit a practicable Progress Schedule, in quadruplicate, to the Airport Authority within 30 calendar days of Notice of Award. No Work shall be allowed to proceed unless and until a Progress Schedule is submitted. In the event a Notice to Proceed has been issued, no time extension or compensation will be allowed to Contractor for failure to comply with this provision.
- C. The Contractor may furnish the progress schedule using either the latest version of Primavera Project Management (P6) for Windows, latest version of Microsoft Project, or other equivalent CPM software. The schedule shall clearly show the order in which the Contractor proposes to perform the work, the dates on which it will start the salient features of the work (including but not limited to the procurement of materials, plant and equipment), production rates, and proposed completion dates for each of these features. The progress schedule submitted shall be consistent in all respects with the time constraints and sequencing requirements of the Contract.

- D. An updated progress schedule shall be submitted monthly, or as requested by the Airport Authority, to show the progress of the work. In any event, if the Contractor fails to submit said updated Progress Schedule within 10 calendar days after a written request by the Airport Authority, the Airport Authority shall have the right to withhold progress payments for any work until a satisfactory progress schedule is submitted to the Airport Authority. Failure to submit an updated progress schedule as required herein may result in the Authority retaining an amount equal to ten percent (10%) of the estimated value of the work performed during the month from the next submitted progress estimate, except that such retention shall not exceed \$10,000, nor be less than \$1,000. Upon receipt of the required updated progress schedule, any such withheld amounts will be released with the next progress payment. Until such time as the updated progress schedule is provided, no final payment will be due and owing.
- E. The capacity of the construction plant, sequence of operations, and methods of operations shall be such as to ensure the completion of the work within the time specified in the progress schedule.
- F. When the Contractor is to furnish major items of equipment or materials, the progress schedule shall include the proposed dates of manufacture and shipment of these items as well as the names and locations of factories or other sources from which these items are to be obtained.
- G. Total float is the number of days by which a part of the work in the schedule may be delayed from its early dates without necessarily extending the Contract time. Contract float is the number of days between the Contractor's anticipated date for early completion of the work, or specified part, and the corresponding Contract time. Total float and contract float belong to the project and are not for the exclusive benefit of any party. They shall be available to the Authority, or the Contractor to accommodate changes in the work or to mitigate the effect of events that may delay performance or completion. Each party will monitor and optimize the use of float for the benefit of the project.
- H. An early completion schedule is a schedule that anticipates completion of all or specified part of the work ahead of the corresponding Contract completion date. Because contract float belongs to the Project, the Contractor shall not be entitled to any extension in contract time, or recovery for any delay incurred because of extensions in an early completion date, until all contract float is used or consumed and performance or completion of the work extends beyond the Contract completion date. The Contractor

shall adjust or remove any float suppression techniques, e.g., preferential sequencing (crew movements, equipment use, form reuse, etc.) extended durations, imposed dates, scheduling of work not required for a Contract time as required work, and others, as prerequisite to a request for an increase in Contract price or Contract time.

- I. Time extensions: The Contractor shall submit a network window for all claimed time extension requests, showing the impact of the claimed delay on the Contract schedule.
- J. The Authority has no obligation to consider any time extension request unless the Contractor complies with the requirements of the Contract documents. The Authority is not responsible for or liable to the Contractor for any construction acceleration or deceleration resulting from the failure of the Authority to grant time extensions under the Contract documents if the Contractor fails to substantially comply with the submission requirements and the justification requirements of this Contract for time extension requests. The Contractor's failure to perform in accordance with the Contract schedule shall not be excused because the Contractor has submitted time extension requests, until and unless the Airport Authority approves such requests.
- K. Short interval scheduling (SIS) shall be used throughout the onsite construction activity. The interval shall be a 4-week projection and shall include the week submitted and 3 weeks thereafter. It shall contain sufficient detail to evaluate daily milestones and shall identify/tie into the monthly update Contract schedule. SIS shall require approval by the Airport Authority. SIS shall be submitted weekly. The Airport Authority will schedule a weekly meeting to review and discuss SIS.
- L. Recovery Schedule: If the Contract schedule falls 7 calendar days behind schedule on milestone dates or completion dates, the Contractor shall immediately notify the Airport Authority and shall be required to prepare and submit a recovery schedule, form and detail appropriate to the need, to explain and display how it intends to reschedule those activities to retain compliance with the Contract schedule during the immediate and subsequent pay periods. Upon acceptance by the Airport Authority, the Contractor shall incorporate the recovery schedule into the Contract schedule.
- M. Daily Reports: The Contractor shall submit a daily activity report to the Airport Authority for each workday, including weekends and holidays when worked.

N. Adverse Weather Delays

1. Allowance for normal rain days for the area shall be included and incorporated in the Contractor’s schedule. Normal rain days or “typical number of working days lost to inclement weather” are defined in Table 2 below.
2. Rain day: Any day of the week where work is originally planned is considered a rain day if both the Authority and the Contractor agree that no work can be performed on critical path rain-sensitive work, and that in actuality, as documented in the daily reports of both the Authority and Contractor, no work was performed on those activities on any part of the day. Weather delays may consist of days lost to adverse weather conditions or days lost to site cleanup because of adverse weather.
3. Rain calendar: A rain-sensitive activity covers rain-sensitive work only. A rain-sensitive activity in the schedule is given a dry-weather duration but, to allow for rain delay, is lengthened appropriately by being assigned a separate “rain calendar.” A rain calendar has typical rain days inserted for the month (e.g., four Wednesdays in February indicate four typical rain days for February). This technique allows for correct rain day allocation even if the schedule slides over time. The assignment of an activity to a rain calendar shall be approved by the Authority.
4. Table 2 lists the typical number of working days lost to inclement weather or normal rain days per month in the project area.

**Table 2**  
**Typical Number of Working Days Lost to Inclement Weather**  
**for Rain-Sensitive Work**

Month	No. of Days <sup>a</sup>	Month	No. of Days <sup>a</sup>
January	5	July	0
February	4	August	0
March	4	September	1
April	3	October	2
May	1	November	4
June	1	December	5

<sup>a</sup>Number of typical rain days will vary with location. The listed number of rain days is typical for San Diego International Airport.

Days cannot be carried over from one month to the next month.

Only working days lost because of weather in a given month in excess of those typical rain days listed for that month will be considered for a time extension. Such a time extension must be requested by the Contractor and comply with the provisions of Time Impact Evaluations and Time Extensions as described in the Contract Documents.

5. Contract time extensions for greater-than-typical weather delays will only be considered for delays that impact rain-sensitive activities on the critical path of the contract, as defined by the schedule update current at the time of the delay. Such time extensions, if approved and supported by TIEs and a mitigation plan, will be reason for non-compensatory time extensions of contractual milestones

1D-20B NOT USED

1D-21 CONSTRUCTION QUALITY CONTROL PROGRAM

A. SUMMARY

This Article specifies the responsibilities of the Contractor regarding quality control inspection and testing requirements. The Contractor will perform quality control inspection and testing. Quality assurance will be provided by the Airport Authority.

B. QUALITY CONTROL ORGANIZATION

The Contractor's Quality Control Program shall be implemented by the establishment of a separate quality control organization. An organizational chart shall be developed to show all quality control personnel and how these personnel integrate with other management/ production and construction functions and personnel.

The organizational chart shall identify all quality control staff by name and function, and shall indicate the total staff required to implement all elements of the Quality Control Program, including inspection and testing for each item of work. If necessary, different technicians can be utilized for specific inspection and testing functions for different items of work. If an outside organization or independent testing laboratory is used for implementation of all or part of the Quality Control Program, the personnel assigned shall be subject to the qualification requirements of paragraph 1 and 2



below. The organizational chart shall indicate which personnel are Contractor employees and which are provided by an outside organization.

The quality control organization shall consist of the following minimum personnel:

1. Program Administrator

The Program Administrator shall be a full time employee of the Contractor, or a consultant engaged by the Contractor. The Program Administrator shall have a minimum of 5 years of experience in airport and/or highway construction and shall have had prior quality control experience on a project of comparable size and scope as the contract.

Additional qualifications for the Program Administrator shall include at least one of the following requirements:

- a. Professional engineer registered in the State of California with 1 year of airport paving experience acceptable to the Airport Authority.
- b. Engineer in training with 2 years of airport paving experience acceptable to the Airport Authority.
- c. An individual with 3 years of highway and/or airport paving experience acceptable to the Airport Authority, with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction.
- d. Construction materials technician certified at Level III by the National Institute for Certification in Engineering Technologies (NICET).
- e. Highway materials technician certified at Level III by NICET.
- f. Highway construction technician certified at Level III by NICET.
- g. A NICET certified engineering technician in Civil Engineering Technology with 5 years of highway and/or airport paving experience acceptable to the Airport Authority.

The Program Administrator shall have full authority to institute any and all actions necessary for the successful implementation of the Quality Control Program to ensure compliance with the contract plans and Special Provisions. The Program Administrator shall report directly to a responsible officer of the construction firm.

The Program Administrator may supervise the Quality Control Program on more than one project provided that person can be at the job site within 2 hours after being notified of a problem.

## 2. Quality Control Technicians

A sufficient number of quality control technicians necessary to adequately implement the Quality Control Program shall be provided. These personnel shall be either engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II or higher construction materials technician or highway construction technician and shall have a minimum of 2 years of experience in their area of expertise.

The quality control technicians shall report directly to the Program Administrator and shall perform the following functions:

- a. Inspection of all materials, construction, plant, and equipment for conformance to the Special Provisions, and as required by this Article.
- b. Performance of all quality control tests as required by the Special Provisions and this Article.

Certification at an equivalent level, by a state or nationally recognized organization will be acceptable in lieu of NICET certification.

## 3. Staffing Levels

The Contractor shall provide sufficient qualified quality control personnel to monitor each work activity at all times. Where material is being produced in a plant for incorporation into the work, separate plant and field technicians shall be provided at each plant and field placement location. The scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The Quality

Control Program shall state where different technicians will be required for different work elements.

C. CONTRACTOR QUALITY CONTROL PROGRAM

1. It shall be the responsibility of the Contractor to provide and maintain a quality control program plan for all phases of the project. This requirement is in addition to any acceptance testing performed by the Airport Authority or its laboratory. Within three (3) weeks after the Notice of Award, or prior to Notice to Proceed for the Contract, whichever is earlier, the Contractor shall submit the Contractor's Quality Control (CQC) Plan to the Airport Authority for approval. The plan shall conform to the requirements of this Item. The Airport Authority will consider an interim plan for the first sixty (60) days of operation. The Contractor's work may be suspended or progress payments may be withheld, if the Contractor fails to submit the required and satisfactory CQC Plan as scheduled. Failure to submit CQC Plan as required herein may result in the Airport Authority retaining an amount equal to ten percent (10%) of the value of the estimated value of the work performed during the month from the next submitted Progress Estimate, except that such retention shall not exceed \$10,000, nor be less than \$1,000. Upon receipt of the required CQC Plan, any such withheld amounts will be released with the next progress payment. Until such time as the final CQC Plan information is provided, no Final Payment shall be due and owing.
2. The Contractor shall maintain an effective CQC Program that complies with the Special Provisions. The Contractor's program shall encompass all actions involving selection of construction material sources and suppliers, on-site and off-site fabrication of the Contractor-furnished items to be included in the work, on-site and off-site production of construction materials, work placement procedures, workmanship, inspection, and testing. Detailed CQC plan requirements for certain items of Contractor procured equipment to be installed in the finished work or off-site prefabricated materials are covered in the Special Provisions. The Contractor shall not build upon or conceal any feature of the work containing non-corrected defects. Payment on such defective or deficient features will be withheld until they are satisfactorily corrected or other action has been taken as authorized pursuant to the inspection and acceptance paragraphs.

3. The Contractor shall maintain a quality control system to provide the necessary supervision, inspection, and testing of all items of work, including that of his/her suppliers and subcontractors, that will assure the compliance of all work with applicable specifications and drawings in respect to the Contractor furnished equipment, materials, workmanship, construction, finish, functional performance and identification. The Contractor's system shall encompass all management and finished construction work, including all inspection controls and tests required for compliance with the Special Provisions, except for those inspections and tests specifically reserved to be accomplished by the Airport Authority. Results of tests conducted by the Airport Authority may be provided to the Contractor.
  
4. The controls shall be adequate to cover all construction operations, including both on-site and off-site fabrication, and shall be keyed to the proposed construction sequence. The Airport Authority shall be notified at least forty eight (48) hours in advance of the preparatory and initial phases of inspection and all phases of inspection shall be made a matter of record in the Contractor's quality control documentation. The controls shall include as a minimum at least three (3) phases of inspection for all definable features of work, as follows:
  - a. A preparatory inspection shall be performed prior to beginning any work on any definable feature of work. It shall include a review of Contract requirements; a check to assure that all materials and/or equipment has been tested, submitted, and approved; a check to assure that provisions have been made to provide required control testing; examination of the work area to ascertain that all preliminary work has been completed; and a physical examination of materials and equipment to assure that they conform to approved shop drawings or submittal data and that all materials and/or equipment is on hand.
  
  - b. An initial inspection shall be performed as soon as a representative portion of the particular feature of work has been accomplished and shall include examination of the quality of workmanship and shall include a review of control testing for compliance with the Contract requirements, use of defective or damaged materials, omissions, and dimensional requirements.

- c. Follow up inspections shall be performed daily to assure continuing compliance with the Contract requirement including control testing, until completion of the particular feature of work.
5. The Contractor shall maintain current records throughout the life of the Contract, on an appropriate approved form, for all inspections and tests performed. These records shall include, but not be limited to, factual evidence that the required inspections or tests have been performed, including type and number of inspections or tests involved, identification of operators and inspectors, results of inspections or tests, nature of defects, causes for rejection, etc., proposed remedial action and corrective actions taken. These records must cover both conforming and defective or deficient features and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the Contract. Legible copies of these records must be furnished to the Airport Authority daily, or at such other intervals as directed. The records shall cover all work placement subsequent to the previously furnished records and shall be verified by the Contractor or designated representative. Failure to submit inspection and test records as required herein may result in the Airport Authority retaining an amount equal to ten percent (10%) of the estimated value of the work performed during the month from the next submitted Progress Estimate, except that such retention shall not exceed \$10,000, nor be less than \$1,000. Upon receipt of the required inspection and test records, any such withheld amounts will be released with the next progress payment. Until such time as the final inspection and test information is provided, no Final Payment shall be due and owing.
6. Approval of the CQC Plan shall not relieve the Contractor of his/her responsibility to comply with the requirements of the Contract Documents. The plan shall be revised or updated as required or as requested by the Airport Authority. No additional cost or time extensions will be allowed for the Contractor's resubmittal of CQC Plans. This document shall include as a minimum:
  - a. An organization chart showing the portion of the Contractor's corporate organization which is concerned with the on-site construction activities;

- b. The Contractor's on-site organization chart including his/her quality control organization;
- c. Types of personnel (work classification) to be used in the quality control organization, required qualification standards, and the planned duration of their services;
- d. Authority and responsibilities of quality control personnel;
- e. Operational procedures for accomplishing and reviewing work, supervision, inspections, tests, construction material production controls, fabrication controls, certifications, documentation of quality control operations, and inspections and tests, including those for subcontractors. These procedures shall include the methods to be utilized during the procurement cycle (order to delivery) for those items of materials or equipment that require source inspection, shop fabrication, and operations away from the work site;
- f. Methods and procedures for selecting suppliers;
- g. The Contractor's plan for the testing and certification of welders;
- h. Methods and procedures for indoctrination and instruction of quality control personnel, construction supervisors, and foremen;
- i. An appropriate schedule of submission of the detailed CQC Plans required by the Special Provisions;
- j. A copy of the letter of direction to the Contractor's representative and his/her staff for quality control which defines their delegated duties and responsibilities; and
- k. When the quality control functions are to be accomplished by personnel not located at the site and/or not directly under the control of the Project Manager, the on-site/off-site coordinating procedures and authorities shall be covered in detail in the specific CQC Plan(s) involved.

7. At least thirty (30) Days prior to starting any specific phase of the work as identified in the various Special Provisions, the Contractor shall submit to the Airport Authority for review and approval three (3) copies of a detailed plan covering the following general items and any additional pertinent items. Such approval shall not relieve the Contractor of his/her responsibility for the compliance with the Contract requirements. Similar categories of work may be consolidated to a single plan even though they may relate to several different Technical Specifications Sections. If the majority of any one phase of the work is to be accomplished by a subcontractor, the subcontractor's CQC Plan may form the basic document, supplemented by those actions, inspections, and reports to be accomplished or made by the Contractor's quality control staff. In addition, the Contractor's Quality Control Representative shall have job site discussions with the Airport Authority on the interrelationship of their activities before starting each major phase of construction. These meetings shall be monthly or as otherwise required by the Airport Authority.
  - a. The specific requirements stated in the Special Provisions;
  - b. Phased inspection procedures as stated in paragraph "Quality Control System";
  - c. Total list of all tests to be performed by the Contractor, and the respective test methods and copies of forms to be used for recording inspection results, performance, or test data;
  - d. Procedures and methods for documentation and submittal for factory or off-site inspections;
  - e. Names of laboratories or individuals designated to accomplish the various types of inspection and test work;
  - f. The Contractor's program for regular indoctrination, coordination, and orientation meetings to keep workmen and craftsmen apprised of peculiar requirements for the succeeding period and general findings on work placement during preceding period;

- g. Specific reports to be rendered to the Airport Authority including the normal time required for processing information or data;
  - h. Documentation procedures which reference applicable specifications, Contract Drawings, and shop drawings; and
  - i. Pending submission and approval of CQC Plans, the Contractor shall submit written interim quality control reports as directed by the Airport Authority.
- 8. All inspections and Contractor required tests involving the recording of equipment or system performance data, including all corrective actions taken, shall be recorded on approved forms and endorsed by the Contractor's Quality Control Manager. The Contractor shall also prepare a monthly report, or at such intervals as directed by the Airport Authority, which summarizes all quality control operations.
- 9. This summary report shall identify inspections made, deficiencies found, corrective action taken, preparation status of plans being developed, and status of plans requiring resubmission under this Article. These inspection reports shall be completed and transmitted by the Contractor to the Airport Authority.
- 10. All quality control records shall be maintained in a central on-site location by the Contractor.
- 11. These records shall include all quality control sampling data; factory tests and/or manufacturer's certifications; quality control coordinating actions; records of quality control training; and routine hydrostatic, electrical continuity, grounding, welding and line cleaning tests. The quality control records will be available for examination, and the Contractor shall provide copies of specific tests and data as requested by the Airport Authority. The requirements to maintain quality control records, as described above, shall not be construed to relieve the Contractor from submitting samples, test data, shop drawings, material certificates, or other information required elsewhere in the Contract.

If the Airport Authority determines that the Contractor's quality control system or its operation are deficient in the identification and correction of nonconforming quality of workmanship or materials, documentation, or other



operational procedures, the Contractor shall correct and/or modify his/her quality control system as directed. In addition, the Contractor shall take prompt action to correct conditions that have resulted or might result in substandard or defective materials, parts, components, or services. This action shall include preventive measures as well as correction of conditions that have occurred. The Contractor shall document his/her efforts to correct existing deficiencies and to minimize their future occurrence. Reports prepared shall carry follow up action on all deficiencies until adequate correction has been made. The Contractor shall not build upon or conceal any feature of the work containing uncorrected defects.

Inspection and test results and detailed examination of deficient or failed articles shall be used to determine the nature and basic causes of deficiencies or failures. The Contractor shall provide samples of the deficient or failed articles to the Airport Authority upon request.

12. Noncompliance:
  - a. The Airport Authority will notify the Contractor of any noncompliance with any of the foregoing requirements. The Contractor shall, after receipt of such notice, immediately take corrective action. Any notice, when delivered by the Airport Authority or his/her authorized representative to the Contractor or his/her authorized representative at the site of the work, shall be considered sufficient notice.
  - b. In cases where quality control activities do not comply with either the Contractor's Quality Control Program or the contract provisions, or where the Contractor fails to properly operate and maintain an effective Quality Control Program, as determined by the Airport Authority, the Airport Authority may:
    - 1) Order the Contractor to replace ineffective or unqualified quality control personnel or subcontractors.
    - 2) Order the Contractor to stop operations until appropriate corrective actions are taken.
13. The Contractor shall provide and maintain gauges and other measuring and testing devices necessary to assure that

articles conform to the Contract requirements. These devices shall be calibrated against certified measurement standards that have known valid relationships to national standards at established periods to assure continued accuracy. Records shall be maintained of the data resulting from calibration operations. Any equipment exceeding its required due date or tolerance and any nonconforming articles shall be suitably isolated, tagged, or otherwise marked to prevent its use without written permission of the Airport Authority.

Full compensation for the construction quality control program shall be considered as included in the prices paid for various Contract items of work and no additional compensation will be allowed therefor.

1D-22      PROJECT MEETINGS

The Airport Authority will administer a Pre-Construction Conference for clarification of Contractor's responsibilities with regard to the use of the Work Site and for review of administrative procedures. The agenda shall include as a minimum, a discussion of the following:

- A. Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers, and Airport Authority.
- B. Channels and procedures for communications.
- C. Construction schedule, including sequence of critical work.
- D. Contract Documents, including distribution of required copies of original documents and revisions.
- E. Processing of Shop Drawings and other data submitted to the Airport Authority for review.
- F. Processing of field decisions and Change Orders.
- G. Rules and regulations governing performance of the Work.
- H. Procedures for safety and first aid, security, quality control, housekeeping, and other related matters.

The Airport Authority will schedule and administer the Project Progress meetings throughout progress of the Work, including the preparation and distribution of the meeting minutes. Project Progress meetings shall be

held every week throughout construction of the Project. When construction issues warrant more frequent meetings, the Airport Authority may schedule additional meetings. Location of meeting(s) will be determined by Airport Authority. Attendance will include, but not necessarily limited to Design Architect(s) and Engineer(s), Airport Authority, Contractor, Major Subcontractors, Suppliers (when necessary), and other affected parties, as deemed appropriate to agenda topics for each meeting. The minimum agenda should include the following:

- A. Approval of minutes of previous meetings.
- B. Review of Work progress.
- C. Review of field observations, problems, and decisions.
- D. Identification of problems, which impede planned progress.
- E. Review of submittals schedule and status of submittals.
- F. Review of Change Orders.
- G. Review of off-site fabrication and delivery schedules.
- H. Maintenance of progress schedule.
- I. Corrective measures to maintain, or restore schedules.
- J. Planned progress during succeeding work period.
- K. Review of Requests for Information.
- L. Review of non-conforming work.
- M. Other business relating to the work.
- N. Safety.

1D-23 OPERATIONAL SAFETY ON THE AIRPORT

Appendix 2, "Airport Operational Safety and Security Requirements" is incorporated herein by this reference.

1D-24 NOT USED

1D-25      AIRPORT SECURITY

Attention is directed to Appendix 3 of the Contract. The Contractor shall coordinate all security matters through the Airport Authority. A Chief of Security **is not** required for this project.

Full compensation for conforming to the requirements of this Article 1D-25, "AIRPORT SECURITY" shall be included in the Contract Price for the various items of work and no additional compensation will be allowed therefor.

1D-26      PROTECTION OF SECURITY SYSTEM

Contractor shall take all precautions to ensure that the existing access control security system is protected and not damaged by Contractor operations. In the event damage to the system is caused by the Contractor's performance of the Work, the Contractor shall make all repairs necessary bringing the system back to its originally completed condition within two hours.

If the Contractor does not repair the system within two (2) hours of the time the system was damaged, the Airport Authority will have its security system maintenance contractor repair the damage to the access control security system. The cost for repairing the damage will be deducted from the Contractor's current monthly progress payment.

In addition, the Contractor agrees to pay as liquidated damages \$5,000.00 per day for each calendar day or portion thereof the security system remains inoperable owing to the damage caused by the Contractor. These liquidated damages will be charged separately from and in addition to the liquidated damages charged for any internal phase and liquidated damages charged for not completing the total project on time, notwithstanding the posting of guards as mentioned elsewhere in these specifications.

1D-27      PROJECT CLOSEOUT

A.      CLOSEOUT PROCEDURES

1.      Contractor shall comply with procedures stated in the Contract Documents for issuance of Certificate of Substantial Completion.
2.      In addition to submittals required by the Contract Documents, Contractor shall provide submittals required by governing authorities and agencies.

B. SUBSTANTIAL COMPLETION

1. Contractor shall:
  - a. Submit a written declaration to Airport Authority that the Project or designated portion of the Project is substantially completed or corrected.
  - b. Submit list of items to be completed or corrected.
2. Airport Authority will make preliminary inspection after receipt of Contractor's declaration.
3. Should the Airport Authority Representative determine that Work is not Substantially Complete:
  - a. He/she shall immediately notify Contractor, in writing (Punch List), stating reasons.
  - b. Contractor shall complete work identified by the Airport Authority representative and send second written notice to Airport Authority certifying the Project or designated portion of Project is Substantially Complete.
  - c. Airport Authority will re-inspect Work and identify any outstanding items.
  - d. Contractor shall complete Work listed for completion or correction, within designated time.
4. When the Work is determined to be substantially complete the Airport Authority will prepare a Certificate of Substantial Completion with a list of remaining items to be completed.

C. FINAL COMPLETION

1. Contractor shall submit written declaration to Airport Authority that:
  - a. All aspects of Contract Documents have been complied with.
  - b. All items of Substantial Completion Punch List have been completed.
  - c. All tools, construction equipment and surplus materials have been removed from site.

- d. All final cleaning has been completed.
2. The Airport Authority will make inspection after receipt of Contractor's declaration of final completion.
3. Should the Airport Authority consider that Work is not Complete:
  - a. The Airport Authority shall notify Contractor, in writing (second Punch List), stating reasons.
  - b. Contractor shall take immediate steps to remedy the stated deficiencies and send second written notice to the Airport Authority certifying that Work is complete.
  - c. Airport Authority will re-inspect Work.
4. When Airport Authority and Airport Authority consider that work is finally complete in accordance with Contract Document requirements, the Airport Authority will prepare and process closeout documents.

#### D. REINSPECTION COSTS

1. Final Completion: Should the Airport Authority be required to perform second or subsequent inspections, after inspecting the Work following the Contractor's first written notice to the Airport Authority, because of the Contractor's failure to comply with the Airport Authority's written notifications, then the Airport Authority may be required to compensate the Design Team for additional services. The amount paid to the Design Team for such additional services shall be deducted from the final payment to the Contractor.

#### E. PROJECT RECORD DOCUMENTS

1. Maintain at Project Site, one copy of:
  - a. Record Contract Drawings
  - b. Record Project Manual, including addenda
  - c. Reviewed Shop Drawings, Product Data and Samples
  - d. Bulletins

- e. Change Orders (CO)
  - f. Other modifications to Contract
  - g. Field test records
  - h. Inspection reports and records
2. Store documents in temporary field office, apart from documents used for construction. Provide files and racks for storage of documents.
  3. Maintain documents in clean, dry, legible conditions; do not use.
  4. Make documents available at all times for inspection by the Airport Authority and Airport Authority.
  5. Record Contract Document Drawings: Refer to Article 1D-12, "RECORD DRAWINGS" of these Special Conditions.
  6. Shop Drawings: Maintain as record documents; legibly annotate Shop Drawings to record changes made after review.
  7. At completion of Project, deliver Actual Built and other record documents and transparencies to the Airport Authority.
  8. Certificate of Occupancy: The Contractor shall provide certification by Building Officials and all other governing departments of agencies having jurisdiction, that the building has been inspected, approved and accepted. Furnish to the Airport Authority original certificate for occupancy.

F. OPERATION AND MAINTENANCE MANUALS

1. Provide one (1) set of the operation and maintenance manuals, bound in 8 1/2 x 11 inch three ring side binders with durable plastic covers, and one complete soft copy on CD or DVD. Manuals must be furnished to the Airport Authority at least two weeks prior to the scheduled dates of any required Contractor furnished field instructions or at least one month prior to project completion, if no Contractor-furnished field instructions are required. Failure to submit manuals as required herein may result in the Airport Authority retaining an amount equal to ten percent (10%) of the estimated value of the work performed during the month

from the next submitted Progress Estimate, except that such retention shall not exceed \$10,000, nor be less than \$1,000. Upon receipt of the required operation and maintenance manuals, any such withheld amounts will be released with the next progress payment. Until such time as the operation and maintenance manuals are provided, no Final Payment shall be due and owing.

2. In each manual include information specified in the individual Specification Section and the following information for each major component of building equipment and its controls:
  - a. General system or equipment description.
  - b. Design factors and assumptions.
  - c. Copies of applicable Shop Drawings and Product Data.
  - d. System or equipment identification, including:
    - 1) Name of manufacturer
    - 2) Model number
    - 3) Serial number of each component
  - e. Operating instructions.
  - f. Emergency instructions.
  - g. Wiring diagrams.
  - h. Inspection and test procedures.
  - i. Maintenance procedures and schedules.
  - j. Precautions against improper use and maintenance.
  - k. Copies of warranties.
  - l. Repair instructions including spare parts listing.
  - m. Sources of required maintenance materials and related services.
  - n. Manual index.



3. Organize each manual into separate Sections for each piece of related equipment. As a minimum, each manual shall contain a title page; a table of contents; copies of Product Data, supplemented by Drawings and written text; and copies of each warranty, bond, and service contract issued.
  - a. Title Page: Provide a title page in a transparent, plastic envelope as the first sheet of each manual. Provide the following information:
    - 1) Subject matter covered by the manual.
    - 2) Name and address of the Project.
    - 3) Date of submittal.
    - 4) Name, address, and telephone number of the Contractor.
    - 5) Name and address of the Engineer/Architect of record.
    - 6) Cross-reference to related systems in other operation and maintenance manuals.
  - b. Table of Contents: After title page, include a typewritten table of contents for each volume, arranged systematically according to the Project Manual format. Include a list of each product included, identified by product name or other appropriate identifying symbol and indexed to the content of the volume.
  - c. Where a system requires more than one volume to accommodate data, provide a comprehensive table of contents for all volumes in each volume of the set.
  - d. General Information: Provide a general information Section immediately following table of contents, listing each product included in the manual, identified by product name. Under each product, list the name, address, and telephone number of the subcontractor or Installer and the maintenance contractor. Clearly delineate the extent of responsibility of each of these entities. Include a local source for replacement parts and equipment.

- e. Product Data: Where the manuals include manufacturer's standard printed data, include only sheets that are pertinent to the part or product installed. Mark each sheet to identify each part or product included in the installation. Where the Project includes more than one item in a tabular format, identify each item, using appropriate references from the Contract Documents. Identify data that is applicable to the installation, and delete references to information that is not applicable.
- f. Written Text: Prepare written text to provide necessary information where manufacturer's standard printed data is not available, and the information is necessary for proper operation and maintenance of equipment or systems. Prepare written text where it is necessary to provide additional information or to supplement data included in the manual. Organize text in a consistent format under separate headings for different procedures. Where necessary, provide a logical sequence of instruction for each operation or maintenance procedure.
- g. Drawings: Provide specially prepared drawings where necessary to supplement manufacturer's printed data to illustrate the relationship of component parts of equipment or systems or to provide control or flow diagrams. Coordinate these drawings with information contained in project record drawings to assure correct illustration of the completed installation.
- h. Do not use original project record documents as part of operation and maintenance manuals.
- i. Warranties, Bonds, and Service Contracts: Provide a copy of each warranty, bond, or service contract in the appropriate manual for the information of the Airport Authority's operating personnel. Provide written data outlining procedures to follow in the event of product failure. List circumstances and conditions that would affect validity of warranty or bond.

## G. EQUIPMENT OPERATION

- 1. Lubricate all operating equipment in strict accordance with manufacturer's instructions; provide all oil, grease and other

materials and methods required for the proper operation of the work by the Airport Authority.

2. Start up all equipment and test run for sufficient period to demonstrate operation and capacity of equipment; adjust for operation satisfactory to the Airport Authority's Representative and operating personnel prior to acceptance of the work by Airport Authority.
3. Weather protect all equipment which is located outside, as required by the conditions of exposure.
4. Furnish an operation and maintenance instruction period for the Airport Authority's representative and personnel following completion and initial operation of equipment and systems

#### H. WARRANTIES AND GUARANTEES

1. Contractor shall provide one (1) notarized hard copies and one (1) soft copy on CD or DVD of all warranties and guarantees required in the Special Provisions prior to Final Completion. Contractor shall also provide one (1) notarized copies of Warranty Acknowledgment as required in the Contract Documents in terms and language stated therein. Failure to submit warranties and guarantees as required herein may result in the Airport Authority retaining an amount equal to ten percent (10%) of the estimated value of the Work performed during the month from the next submitted Progress Estimate, except that such retention shall not exceed \$10,000 nor be less than \$1,000. Upon receipt of the required warranties and guarantees any such withheld amounts will be released with the next progress payment. Until such time as the warranties and guarantees are provided, no Final Payment shall be due and owing.
2. Execute Contractor's warranties and guarantees and assemble documents executed by subcontractors, suppliers and manufacturers. Provide table of contents and assemble in binder with durable plastic cover.
3. Submit materials prior to final Application for Payment. For equipment put into use with Airport Authority's permission during construction, submit within ten (10) days after first operation. For items of work delayed materially beyond Date of Substantial Completion, provide undated submittal within ten (10) days after acceptance, listing date of acceptance as start of warranty or guarantee period.

4. Provide a complete warranty matrix prior to final completion. (See "Warranty Information", Appendix 1 Form 12.)

I. **SPARE PARTS AND MAINTENANCE MATERIALS**

1. Provide products, spare parts and maintenance materials in quantities specified in each Technical Specification Section, in addition to that used for construction of Work. Coordinate with Airport Authority, deliver to Airport Authority's representative and obtain receipt prior to final payment. Failure to provide materials as required herein shall result in the Airport Authority retaining an amount equal to ten percent (10%) of the estimated value of the work performed during the month from the next submitted Progress Estimate, except that such retention shall not exceed \$10,000, nor be less than \$1,000. Upon receipt of the required materials any such withheld amounts will be released with the next progress payment. Until such time as the required materials are provided, no Final Payment shall be due and owing.

1D-28 MATERIALS, EQUIPMENT AND WORK TO BE FURNISHED BY AUTHORITY

Two (2) sets of the original contract specifications, including the Duplicate Original, and two (2) sets of drawings, one of which is marked "FOR RECORD DRAWING USE ONLY".

1D-29 RECEIPT OF DOCUMENTS

All documents received after 2:30 p.m. will be stamped and received the next Business Day.

1D-30 NOT USED

1D-31 NOT USED

1D-32 NOT USED

1D-33 CLEANING UP

The Representative may establish sanitary rules and regulations for all forces employed under this Contract. Contractor shall be responsible for compliance therewith, and in the event of noncompliance, the Representative may enforce the rules and regulations at the expense of the Contractor.

Contractor shall provide the necessary personnel, equipment, and materials needed to maintain the specified standard of cleanliness. Conduct daily inspection to verify that requirements of cleanliness are being met.

Use cleaning materials and equipment which are compatible with the surfaces being cleaned, as recommended by the manufacturer of the material to be cleaned. The Airport Authority reserves the right to withhold approval of payment requests for failure on the part of the Contractor to regularly clean the project in conformance with the requirements of this Article. The Airport Authority also reserves the right to clean any work areas that have not been acceptably cleaned by the Contractor and charge the Contractor for the Airport Authority's cleaning costs.

#### PROGRESS CLEANING

- A. Retain stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.
- B. Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this work.
- C. At least twice each month, and more often if necessary, remove scrap, debris, and waste material from the job site.
- A. Provide adequate storage for items awaiting removal from the job site, observing requirements for fire protection and protection of the environment.

#### SITE

- A. Daily, and more often if necessary, inspect the site and pick up all scrap, debris and waste material. Remove items to the place designated for their storage. Combustible waste shall be removed from the site. Flammable waste shall be kept in sealed metal containers until removed from the site.
- B. Weekly, and more often if necessary, inspect arrangements of materials stored on the site, restack, tidy, or otherwise service arrangements to meet the requirements specified above.
- C. Maintain the site in a neat and orderly condition.
- D. Contractor shall be responsible for Health and Welfare of employees, trades, and the public as relates to maintaining a clean and orderly site.

## FINAL CLEANING

- A. Definition: Except as otherwise specifically provided, “clean”, shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials; i.e., “scrub and polish clean”.
- B. General: Prior to Completion of the Work, Contractor shall remove from the Work Site all tools, surplus materials, equipment, scrap, debris, and waste. Contractor shall conduct final progress cleaning as described above.
- C. Work Site: Unless otherwise specifically directed by the Airport Authority, Contractor shall water and broom clean paved areas on the Work Site and public paved areas. Contractor shall provide demonstration section on paved area for approval by Airport Authority and the remainder of the Project shall be cleaned in conformance to approved test strip.

1D-34

## STORMWATER MANAGEMENT COMPLIANCE

- A. **Presence of Storm Water.** Storm, surface, ground, nuisance, or other waters may be encountered at various times during the Work. Contractor hereby acknowledges that it has investigated the risk arising from such waters, has prepared its Bid accordingly, and assumes any and all risks and liabilities arising therefrom.
- B. **Compliance with Law and Orders.** Contractor shall keep itself and all subcontractors, staff, and employees fully informed of and in compliance with all local, state and federal laws, rules and regulations that may impact, or be implicated by the performance of the Work including, without limitation, all applicable provisions of the Federal Water Pollution Control Act (33 U.S.C. §1251 *et seq.*); the California Porter-Cologne Water Quality Control Act (Cal. Water Code §13000 *et seq.*); and any and all ordinances, regulations, policies, permits, and orders issued pursuant to any such authority. These include, but are not limited to California Regional Water Quality Control Board, San Diego Region, Order No. R9-2013-0002, Order No. R9-2008-0002, and State Water Resources Control Board Order No. 97-03-DWQ (NPDES Order No. CAS000001), Order No. 2010-0014-DWQ, Order No. 2009-0009-DWQ, and Order No. 2012-0006-DWQ, and any amendment or renewal thereof.
- C. **Compliance with Other Water Quality Rules, Regulations and**

**Policies.** Contractor shall comply with the lawful requirements of the Airport Authority, and any municipality, drainage district, or other local agency with jurisdiction over the location where the Work is to be conducted, regarding discharges of storm water to separate storm drain systems or watercourses, including, but not limited to, all applicable requirements of the SAN Storm Water Management Plan (“SWMP”), the San Diego County Regional Airport Authority Best Management Practices (“BMP”) Design Manual, any final Water Quality Improvement Plan(s) (“WQIP”) for the Pueblo San Diego, Sweetwater, and Otay Watershed Management Areas, and any Storm Water Pollution Prevention Plan (“SWPPP”) in existence for the Project site. Contractor shall be familiar with the SWMP, the BMP Design Manual, and any applicable WQIP and shall comply with the requirements as specified therein.

Copies of the SWMP and BMP Design Manual are available on the internet at:

<http://www.san.org/Airport-Projects/Environmental-Affairs#124539-stormwater>

- D. **Compliance with Construction General Permit.** Contractor shall be required to comply with all aspects of the State Water Resources Control Board (“State Board”) Water Quality Order No. 2009-0009-DWQ, National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activity, including any amendment or renewal thereof, (“Construction General Permit”) for all projects that involve construction on or disturbance of one acre or more of land or which are part of a larger common area of development.

The Airport Authority may require Contractor to file the Notice of Intent (“NOI”) and obtain coverage for the Project under the Construction General Permit. This may include filing all necessary documentation including the Permit Registration Documents (“PRDs”) through the Stormwater Multiple Applications and Report Tracking System (“SMARTS”); preparing and implementing a Storm Water Pollution Prevention Plan (“SWPPP”) for the Work site; implementing all other provisions, and monitoring and reporting requirements required by the Construction General Permit; and providing a Qualified SWPPP Developer (“QSD”) and Qualified SWPPP Practitioner (“QSP”), as necessary for all Work site activities, including but not limited to preparation and submittal of all reports, plans, inspections, and monitoring information in compliance with the Construction General Permit. The Airport Authority retains the right to develop its own documentation for the Project site, including but not limited to the SWPPP, and in the

alternative may require Contractor to adopt and implement portions of the Airport Authority developed SWPPP. Specific requirements for the Work site shall be set forth in the Special Conditions. Contractor shall include all costs of compliance with specified requirements in the Contract amount.

1. For those Work sites where construction activity results in ground disturbance, soil disturbing activities that may generate pollutants in storm water runoff, the disturbance of less than one acre of total land area and/or do not need coverage under the Construction General Permit, the Contractor shall be responsible for preparing and implementing a pollution control plan, construction BMP plan, an Erosion and Sediment Control Plan, or other plans or practices in accordance with California Regional Water Quality Control Board Order NO. R9-2013-0001 and any amendment or renewal thereof, the Airport Authority's SWMP, BMP Design Manual, and any applicable WQIP.
2. Notwithstanding the above, before any PRDs, SWPPP, or other Construction General Permit related-document may be submitted to the State Water Resources Control Board or implemented on the Work site, it must first be reviewed and approved by the Airport Authority and/or the Airport Authority's designee. The Airport Authority expressly reserves the right to procure coverage under the Construction General Permit for the Work site if Contractor fails to draft satisfactory PRDs or SWPPP or otherwise fails to proceed in a manner that complies with the requirements of the Construction General Permit. The Airport Authority additionally reserves the right to hire additional contractors to maintain compliance at the Work site. Whether Contractor has adequately maintained compliance with the Construction General Permit shall be the Airport Authority's sole determination. Any costs incurred by the Airport Authority in procuring coverage under the Construction General Permit, or drafting and/or implementing a SWPPP for the Work site shall be paid by Contractor.

**E. Liability for Non-compliance.** Failure to comply with laws, regulations, and ordinances listed in this Article, is a violation of federal and state law. Notwithstanding any other indemnity contained in this Contract, Contractor agrees to indemnify and hold harmless the Airport Authority, its officials, officers, agents, employees and authorized volunteers from and against any and all claims, demands, losses or liabilities of any kind or nature which the Airport Authority, its officials, officers, agents, employees and authorized volunteers may sustain or incur for noncompliance with the laws, regulations, and ordinances listed above, arising out of or in



connection with the Work, except for liability resulting from the sole established negligence, willful misconduct or active negligence of the Airport Authority, its officials, officers, agents, employees or authorized volunteers.

**F. Reservation of Right to Defend.** Airport Authority reserves the right to defend any enforcement action or civil action brought against the Airport Authority for Contractor's failure to comply with any applicable water quality law, regulation, or policy. Contractor hereby agrees to be bound by, and to reimburse the Airport Authority for the costs associated with, any settlement reached between the Airport Authority and any relevant enforcement entity.

**G. Damages.** Airport Authority may seek damages from Contractor for delay in completing the Work in accordance with the Contract Documents, caused by Contractor's failure to comply with the laws, regulations and policies described in this Article, or any other relevant water quality law, regulation, or policy.

**H. Training.** In addition to the standard of performance requirements set forth in the Contract Documents, Contractor warrants that all employees and subcontractors shall have sufficient skill and experience to perform the Work assigned to them without impacting water quality in violation of the laws, regulations and policies described in this Article. Contractor further warrants that it, its employees and subcontractors will receive adequate training regarding the requirements of the laws, regulations and policies described in this Article as they may relate to the Work provided under this Contract.

1D-35 **STORM WATER MANAGEMENT - Projects Less than 1 Acre of Disturbed Soil and Not Subject to State Construction General Permit**

Projects with less than 1 acre of disturbed area, or that are not part of a larger common area of development that is equal to or greater than 1 acre are not subject to the State Water Resources Control Board (SWRCB) Order No. 2009-0009-DWQ, National Pollutant Discharge Elimination System (NPDES) Permit No. CAS000002, General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). However, projects that are not subject to the Construction General Permit are still subject to San Diego Regional Water Quality Control Board (RWQCB) Order No. R9-2013-0001, NPDES Permit No. CAS0109266, NPDES Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the San Diego Region (the "Permit") as adopted, amended, and/or modified. This Permit applies to construction activities that result in the disturbance of land area including clearing, grading, excavation, removal and replacement of soil or surface pavement, and reconstruction of existing

facilities. The Contractor shall comply with the Permit and Airport Authority direction related to permitted activities.

The Contractor shall retain and identify a Qualified SWPPP Developer (QSD) as defined in the Construction General Permit to prepare a Storm Water Pollution Prevention Plan based on the Airport Authority's template (Authority SWPPP). The QSD shall use the Authority SWPPP prepared by the Airport Authority as provided in the Bid Documents and improve as necessary to adjust to the Contractor's means and methods. The contractor will be solely responsible to implement, maintain, and adjust the Authority SWPPP to reflect the means and methods that will be used to comply with all regulations.

Construction work shall not start until the QSD has toured the site with the Airport Authority's project manager and/or construction manager, and the Authority SWPPP has been submitted to and reviewed and approved by the Airport Authority. The Contractor shall be responsible for delays associated with the Contractor's failure to complete and submit the Authority SWPPP for Airport Authority review and approval within the time specified in the bid documents.

The Contractor will maintain the Authority SWPPP as a living-document and implement the Authority SWPPP as required in APPENDIX 5 - STORM WATER POLLUTION PREVENTION. The Contractor will continually monitor the effectiveness of the Authority SWPPP during construction to prevent and/or eliminate unauthorized discharges off the jobsite and/or to the storm water conveyance system. The Contractor's QSD shall be available at all times to meet and confer with Airport Authority's construction manager regarding the need to amend the Authority SWPPP to address changing site conditions and ensure effectiveness of the Authority SWPPP. The amendments shall be submitted to the Airport Authority for approval prior to implementation.

The Contractor shall also retain and identify a Qualified SWPPP Practitioner (QSP), with qualifications as defined in the Construction General Permit, dedicated to, having the responsibility to, and having the authority to modify (but not amend) the Authority SWPPP and to maintain and modify best management practices (BMPs), according to California Stormwater Quality Association (CASQA) standards, in response to his activities, his inspections and his monitoring.

The Airport Authority may conduct monitoring and/or inspection and/or review and notify the Contractor to modify the Authority SWPPP and/or the implementation of the Authority SWPPP and/or BMPs, as necessary, in response to inspections conducted by a duly authorized Airport Authority representative or other public agency.

No discharges of any material may enter the storm water conveyance system including, but not limited to, process and wash waters, dust, petroleum products, soil or debris. All unauthorized discharges shall be reported immediately to the Airport Authority, in order to address any permit requirements regarding spill notifications on behalf of the Airport Authority or Contractor.

The Contractor shall be responsible for the costs and for liabilities imposed by law as a result of the Contractor's failure to comply with the provisions set forth in this section "Storm Water Management" and related sections, including but not limited to, compliance with the applicable provisions of Federal, State and local laws, regulations, and permits. Costs and liabilities include, but are not limited to, fines, penalties, and damages whether assessed against the Airport Authority or the Contractor, including those levied under the Federal Clean Water Act and the State Porter Cologne Water Quality Act.

The Contractor shall be responsible for delays associated with the Contractor's failure to complete the Work in compliance with the requirements of the Permit.

Contractor Quality Control. The Contractor shall develop a quality control program in accordance with section 1D-21 of the Special Condition Specifications. The program shall address all elements of Storm Water Management and the Authority SWPPP, including but not limited to the work required in Appendix 5 and the erosion control plans provided or prepared for the project.

Method of Measurement. Storm Water Management required which is not attributed to the Contractor's negligence, carelessness, or failure to install permanent controls will be performed as scheduled or ordered by the Contractor's QSP. The Contractor's QSP shall ensure implementation of one or a combination of the items below to achieve compliance with this Section. When shown on the Bid Schedule, completed and accepted work will be measured as follows:

1. Scheduling shall follow CASQA standard EC-1 and will be measured per calendar day as a complete item of work.
2. Gravel Bag Berm shall follow CASQA standard SE-6 and will be measured per linear foot. This item includes demolition and proper disposal upon completion of the phase or project.
3. Street Sweeping shall follow CASQA standard SE-7 and will be measured per calendar day as a complete item of work.
4. Storm Drain Inlet Protection shall follow CASQA standard SE-10 and will be measured per each. This item includes demolition and proper disposal upon completion of the phase or project.

The following shall follow CASQA standards as listed and will not be measured, as the performance of this work and the supplying of these materials as indicated shall be considered as a subsidiary obligation of the Contractor under other contract items. The inclusion of these items in this specification is merely to establish standards of performance and shall not be construed as creating separate pay items.

- a. Illicit Connection/Discharge shall follow CASQA standard NS-6 and will not be measured.
- b. Potable Water/Irrigation shall follow CASQA standard NS-7 and will not be measured.
- c. Vehicle and Equipment Cleaning shall follow CASQA standard NS-8 and will not be measured.
- d. Vehicle and Equipment Fueling shall follow CASQA standard NS-9 and will not be measured.
- e. Vehicle and Equipment Maintenance shall follow CASQA standard NS-10 and will not be measured.
- f. Pile Driving Operation shall follow CASQA standard NS-11 and will not be measured.
- g. Concrete Curing shall follow CASQA standard NS-12 and will not be measured.
- h. Concrete Finishing shall follow CASQA standard NS-13 and will not be measured.
- i. Material and Equipment Use Over Water shall follow CASQA standard NS-14 and will not be measured.
- j. Demolition Removal Adjacent to Water shall follow CASQA standard NS-15 and will not be measured.
- k. Temporary Batch Plants shall follow CASQA standard NS-16 and will not be measured.
- l. Material Delivery and Storage shall follow CASQA standard WM-01 and will not be measured.
- m. Material Use shall follow CASQA standard WM-01 and will not be measured.
- n. Spill Prevention and Control shall follow CASQA standard WM-01 and will not be measured.
- o. Solid Waste Management shall follow CASQA standard WM-01 and will not be measured.
- p. Hazardous Waste Management shall follow CASQA standard WM-01 and will not be measured.
- q. Sanitary-Septic Waste Management shall follow CASQA standard WM-01 and will not be measured.
- r. Liquid Waste Management shall follow CASQA standard WM-01 and will not be measured.

No measurement or direct payment will be made for revising the Authority SWPPP, inspection and maintenance reports, or other documentation required to perform this work, as these costs shall be considered as included

in other items for which direct payment is made. Dust control will not be measured, as the performance of this work and the supplying of these materials as indicated shall be considered as a subsidiary obligation of the Contractor under other contract items. The inclusion of dust control in this specification is merely to establish a standard of performance and shall not be construed as creating a separate pay item. Storm Water Management Control work performed for protection of construction areas outside the construction limits, such as borrow and waste areas, offsite haul roads, equipment and material storage sites, and temporary plant sites, will not be measured and paid for directly, but shall be considered as a subsidiary obligation of the Contractor under other contract items.

When there is an allowance in the Bid Schedule for additional erosion and sediment controls, this item may be implemented by the Airport Authority for unforeseen and miscellaneous conditions. Any unused allowance will be deducted from the contract with a deductive change order. All work directed by the Airport Authority under the item for additional Storm Water Management shall be performed per Article 7, Changes in the Work.

Basis of Payment. The unit bid prices for Storm Water Management work shall be full compensation for furnishing, placing all new materials and for all labor, equipment, tools, operations, hauling, excavation, backfill, and incidentals necessary to complete the item, maintain the item, and relocate or modify as needed, and subsequent removal when no longer required. Dust control during construction will be considered incidental to the contract. When shown in the Bid Schedule, the accepted quantities for best management practices required for storm water management will be measured and paid for under the following items:

- EC-1 Scheduling – per calendar day
- SE-6 Gravel Bag Berm – per linear foot
- SE-7 Street Sweeping – per calendar day
- SE-10 Storm Drain Inlet Protection – per each

Storm Water Management shall include all work such as preparing, maintaining, monitoring, modifying, and implementing the Authority SWPPP as required by the Permit. Costs of revision and implementation of the Authority SWPPP during the construction period is considered as included in the unit bid prices as shown in the Bid Schedule.

Schedule of Values. The Contractor shall submit a Schedule of Values in accordance with Section 1D-19 “Schedule of Values (SOV).” The SOV shall itemize the Work further as applicable to show more details as follows:

1. QSD, including availability to meet at the job-site with the Airport Authority Construction Manager

2. QSP, including attendance during weekly site walk/inspection conducted by the Authority's QSP (or his appointed designee)
3. Mandatory Training Session for Superintendent, Foreman, QSD, and QSP
4. Good Site Management "Housekeeping" BMPs
5. Non-Storm Water Management
6. Erosion Control
7. Sediment Control
8. Run-on and Runoff Management
9. BMP Inspection, Maintenance, and Repair, including documentation of such and in response to inspections by others
10. Development and Implementation of Construction Site Monitoring Program (CSMP)
11. Street Sweeping

Conformity with Plans, Specifications and Standards. All work and all materials furnished shall be in reasonably close conformity with general construction permit, the CASQA BMP's standards, and the material requirements that are specified in the contract, plans or specifications.

If the Airport Authority finds the materials furnished, work performed, or the BMP's are not within reasonably close conformity with the plans, specifications and/or the CASQA BMP standards, but that the portion of the work affected will, in his or her opinion, result in a product having a level of safety, economy, durability, and workmanship acceptable to the Airport Authority, then the affected work be accepted and remain in place. In this event, the Airport Authority will document the determination and a basis of acceptance will be provided for an adjustment in the contract price for the affected portion of the work. Changes in the contract price shall be covered by a bulletin and a contract change order as applicable.

If the Airport Authority finds the materials furnished, work performed, or the finished product are not in reasonably close conformity with the plans and specifications and have resulted in an unacceptable finished product, the Airport Authority will issue a non-compliance report (NCR) and the affected work or materials shall be immediately removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the Airport Authority's written directive.

For the purpose of this subsection, the term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the contract, plans, and specifications. The term shall not be construed as waiving the Airport Authority's responsibility to insist on strict compliance with the requirements of the contract, plans, and specifications during the Contractor's execution of the work, when, in the Airport Authority's opinion, such compliance is essential to provide an acceptable portion of the work.

1D-36 UTILITY USAGE

Contractor shall provide at its own cost all utilities, including water, which are necessary for performance of the Work. Said utilities, including water, shall be from sources approved by the Representative.

1D-37 WATER FOR THE WORK

The Contractor shall, whenever possible and not in conflict with the Technical Specifications or ordinances, minimize the use of water during construction of the Project. Watering equipment, hoses, piping and valves shall be kept in good working order; water leaks shall be repaired promptly, and washing of equipment, except when necessary for safety or for the protection of the equipment, shall be discouraged. Wash water from such activities shall not be discharged into storm drains.

1D-38 NOT USED

1D-39 DISPOSAL OF CONSTRUCTION AND DEMOLITION WASTE

The Airport Authority must manage the airport in compliance with California Public Resources Code Section 42648 requirements for solid waste reduction. The California Green Building Standards Code, commonly known as "CALGreen," and specifically, California Code of Regulations, Title 24, Part 11, Division 4.4, Section 4.408, requires planning for materials conservation and resource efficiency. The Airport Authority has adopted a Sustainability Policy to incorporate the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) criteria for all airport development and remodeling projects, including standards for construction waste management. As such, material from construction and demolition projects (C&D wastes) shall be reused or recycled and diverted from landfill disposal whenever practicable.

The minimum waste diversion goals are:

- A. 90% of the inert material (a material not subject to decomposition such as concrete, asphalt, brick, rock, block, dirt, metal, glass, etc.), by weight, and
- B. 75% of the total project waste from at least four material streams, by weight.

For projects that divert at or above ninety five percent (95%) of the total C&D waste by weight, the Contractor will receive public recognition from the Airport Authority upon satisfactory documentation of compliance.

All Projects shall divert C&D waste using one or a combination of the following activities:

- A. Salvage
- B. Deconstruction
- C. Reuse
- D. Source-Separated C&D Recycling
- E. Co-mingled C&D Recycling

The Contractor shall prepare and implement a Waste Management Plan (WMP) as required in Appendix 8.

The Contractor shall prepare and submit Waste Management Reports as required in Appendix 8.

The Contractor must also complete the following for projects for which a construction or demolition permit is required from the City of San Diego:

- A. Contractor shall comply with the City of San Diego Construction and Demolition (C&D) Debris Deposit Ordinance as adopted, amended, or modified, and available at:  
<http://www.sandiego.gov/environmental-services/recycling/cd/index.shtml>
- B. A copy of all initial and final documentation required by the City shall also be provided to the Airport Authority for its records within five (5) Business Days of submittal to the City.
- C. Documentation shall include verification of compliance to the satisfaction of the City in the form of proof of return of the required recycling deposit.

Where the specifications and/or the approved Waste Management Plan require the Contractor to dispose of any material, such material shall be legally disposed.

The Contractor shall be responsible for the costs and for liabilities imposed by law as a result of the Contractor's failure to comply with the provisions set forth in this section "Management of Construction and Demolition Waste" and related sections, including but not limited to, compliance with the applicable provisions of Federal, State and local laws, regulations, and permits. Costs and liabilities include, but are not limited to, fines, penalties, and damages whether assessed against the Airport Authority or the Contractor.



The Contractor shall be responsible for delays associated with the Contractor's failure to complete the Work in compliance with the requirements of this section and Appendix 8.

Management of Construction and Demolition (C&D) waste will not be measured, as the performance of this work and the supplying of these materials as indicated shall be considered as a subsidiary obligation of the Contractor under other contract items.

1D-40

#### VALUE ENGINEERING

The provisions of this Article will apply only to contracts awarded to the lowest bidder pursuant to competitive bidding.

On projects with original contract amounts in excess of \$100,000, the Contractor may submit to the Airport Authority, in writing, proposals for modifying the plans, specifications or other requirements of the contract for the sole purpose of reducing the cost of construction. The value engineering proposal shall not impair, in any manner, the essential functions or characteristics of the project, including but not limited to service life, economy of operation, ease of maintenance, desired appearance, and design and safety standards. This provision shall not apply unless the proposal submitted is specifically identified by the Contractor as being presented for consideration as a value engineering proposal.

Not eligible for value engineering proposals are changes in the basic design of a pavement type, runway and taxiway lighting, visual aids, hydraulic capacity of drainage facilities, or changes in grade or alignment that reduce the geometric standards of the project.

As a minimum, the following information shall be submitted by the Contractor with each proposal:

- A. A description of both existing contract requirements for performing the work and the proposed changes, with a discussion of the comparative advantages and disadvantages of each;
- B. An itemization of the contract requirements that must be changed if the proposal is adopted;
- C. A detailed estimate of the cost of performing the work under the existing contract and under the proposed changes;
- D. A statement of the time by which a change order adopting the proposal must be issued;

- E. A statement of the effect adoption of the proposal will have on the time for completion of the contract; and
- F. The contract items of work affected by the proposed changes, including any quantity variation attributable to them.

The Contractor may withdraw, in whole or in part, any value engineering proposal not accepted by the Airport Authority, within the period specified in the proposal. The provisions of this Article shall not be construed to require the Airport Authority to consider any value engineering proposal which may be submitted.

The Contractor shall continue to perform the work in accordance with the requirements of the Contract until a change order incorporating the value engineering proposal has been issued. If a change order has not been issued by the date upon which the Contractor's value engineering proposal specifies that a decision should be made, or such other date as the Contractor may subsequently have requested in writing, such value engineering proposal shall be deemed rejected.

The Airport Authority shall be the sole judge of the acceptability of a value engineering proposal and of the estimated net savings from the adoption of all or any part of such proposal. In determining the estimated net savings, the Airport Authority may disregard the Contract bid prices if, in the Airport Authority's judgment such prices do not represent a fair measure of the value of the work to be performed or deleted.

The Airport Authority may require the Contractor to share in the Airport Authority's costs of investigating a value engineering proposal submitted by the Contractor as a condition of considering such proposal. Where such a condition is imposed, the Contractor shall acknowledge acceptance of it in writing. Such acceptance shall constitute full authority for the Airport Authority to deduct the cost of investigating a value engineering proposal from amounts payable to the Contractor under the Contract.

If the Contractor's value engineering proposal is accepted in whole or in part, such acceptance will be by a Contract change order which shall specifically state that it is executed pursuant to this Article. Such change order shall incorporate the changes in the plans and specifications which are necessary to permit the value engineering proposal or such part of it as has been accepted and shall include any conditions upon which the Airport Authority's approval is based. The change order shall also set forth the estimated net savings attributable to the value engineering

proposal. The net savings shall be determined as the difference in costs between the original Contract costs for the involved work items and the costs occurring as a result of the proposed change. The change order shall also establish the net savings agreed upon and shall provide for adjustment in the Contract Price that will divide the net savings equally between the Contractor and the Airport Authority.

The Contractor's fifty percent (50%) share of the net savings shall constitute full compensation to the Contractor for the value engineering proposal and the performance of the work. Acceptance of the value engineering proposal and performance of the value engineering work shall not extend the time of completion of the Contract unless specifically provided for in the contract change order.

1D-41 BUY AMERICAN REQUIREMENT

This project is not AIP funded. The FAA Buy American Preference Requirements as stated in Section 1A "Instructions to Bidder" and Section 1B "Bidder's Submission Documents" are not applicable.

1D-42 NOT USED

1D-43 NOT USED

1D-44 NOT USED

1D-45 NOT USED

1D-46 NOT USED

1D-47 NOT USED

1D-48 NOT USED

\*\*\*\* END OF ARTICLE 1D \*\*\*\*

# SPECIAL PROVISIONS

## CIP 104228 – ADMIRAL BOLAND WAY ENTRY/EXIT GATES

**SAN DIEGO INTERNATIONAL AIRPORT**

**SAN DIEGO COUNTY REGIONAL AIRPORT  
AUTHORITY**

**(SDCRAA)**



**SAN DIEGO**  
INTERNATIONAL AIRPORT

**CIP 104228 STANDARD SPECIFICATIONS  
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## **SPECIAL PROVISIONS**

### **DIVISION 01 – GENERAL REQUIREMENTS**

#### **SECTION 01 11 00**

#### **SUMMARY OF WORK**

### **PART 1 – GENERAL**

#### **1.1 SUMMARY**

- A. This section includes:
  - 1. Related Requirements
  - 2. Work Covered by Contract Documents
  - 3. Phasing and General Order of Work
  - 4. Schedule and Time of Performance
  - 5. Manufacturers' Labels
  - 6. Laying Out of the Work
  - 7. Manufacturers' Specifications

#### **1.2 RELATED REQUIREMENTS**

- A. Related requirements specified in other Sections listed in the Project Specifications, including all Sections under Division 1, unless otherwise specified.
- B. The General Conditions, Special Conditions, and all Division 1 Sections are a part of each Section of the Special Provisions.
- C. Exhibits and Appendices listed in Index of Project Specifications.

#### **1.3 WORK COVERED BY CONTRACT DOCUMENTS**

- A. The scope of work includes the furnishing of all labor, materials, equipment, and incidental items meeting the technical requirements of these specifications. The work, in general, consists of:

Removing and replacing the two lift-arm gates (entrance and exit) located near West Palm Street to the north and two lift-arm gates (entrance and

exit) located on the access to North Harbor Drive to the south. And the addition of four new security gates to supplement the existing lift-arm gates, as well as all other items as shown on the drawings and specified in the specifications.

The project requires close coordination and phasing of work in support of Authority Airside and Landside Operations. The work consists of, but is not limited to, the following:

1. Installation of four new Wallace International Model PDXT trackless, post-driven, electrically-operated, fast-acting, bi-fold SpeedGates.
  2. Removing and reinstalling existing lift-arm gates.
  3. Removing and replacing asphalt where necessary with Caltrans Section 39, Type-A.
  4. Construction of new concrete curb, median, and curb and gutter.
  5. Installation of new security and decorative fence.
  6. All punchlist and closeout work.
- B. San Diego County Regional Airport Authority (Authority) is a fully operational international air transportation facility. Contractor operations shall not impact the Authority operations or any other part of the airport at any time. All Authority operations shall have priority over Contractor's operations. The work shall be fully coordinated and performed in phases to avoid impact to Authority operations.

#### **1.4 GENERAL ORDER OF WORK**

- A. The sequence of work described below is for the Contractor's guidance to plan and schedule the work. Only major aspects are included to demonstrate the sequence required to allow construction to proceed while supporting, Authority, FAA and airline operations. The Contractor shall follow the sequence of work as shown on the Drawings and as set forth herein. Construction activities cannot proceed unless supported by the California Least Tern Nesting Site Protection Program, with conditions and boundaries as established and identified in the contract documents and 1D-Special Conditions Appendix 9. The Contractor shall incorporate the seasonal limitations on work performed within the least tern habitat and nesting boundaries in its schedule.
1. Upon issuance of full Notice to Proceed (NTP), commence and complete Work items as indicated in Section 01 11 00-1.3.A and on the plans and specifications. The Work shall be planned, sequenced and coordinated to minimize impact to the Authority, FAA, airport

operations, airlines and City of San Diego (City). The sequencing plan is described in Section 01 11 00-1.4.B.

- B. The sequencing and phasing plan described below is for Contractor's guidance to plan and schedule the work. If Contractor wishes to propose an alternate plan that further minimizes the impact to the Authority, airport operations, airlines and City, the Contractor shall prepare and submit an alternate plan for the Authority's consideration and concurrence minimum 21 days in advance of scheduled work. Payment for said plan shall be considered as included in Contractor's various items of work and no additional payment will be made therefor. Contractor is directed to the project phasing diagram, located in the Contract Plans Sheets 5-8 that provides a graphical representation of the required sequencing and phasing.

1. Phase A Area:

- a. Work to be performed from Issuance of NTP to the completion of site installations for the entrance gate side for both N. Harbor Drive to the south and W. Palm Street to the north includes:
  - i. Remove and reinstall salvaged gate arm and controls as shown on the plans.
  - ii. Install concrete foundation and Wallace International PDXT SpeedGate and controller cabinet as shown on the plans.
  - iii. Install security fence as shown on the plans.
  - iv. Construct asphalt pavement as shown on the plans.
  - v. Construct concrete curb and gutter.
- b. Work to be performed for complete integration of gate controls with lift-arm and existing electrical and communication systems.

2. Phase B Area:

- a. After completion of Phase A, work to be performed for the completion of site installations for the entrance gate side to the completion of site installations for the exit gate side for both N. Harbor Drive to the south and W. Palm Street to the north includes:
  - i. Remove and reinstall salvaged gate arm and controls as shown on the plans.
  - ii. Install concrete foundation and Wallace International PDXT SpeedGate and controller cabinet as shown on the plans.
  - iii. Install security and decorative fence as shown on the plans.
  - iv. Construct asphalt pavement as shown on the plans.



- v. Construct concrete curb and valley gutter.
    - b. Work to be performed for complete integration of gate controls with lift-arm and existing electrical and communication systems.
- C. Complete all punchlist work after all Phases of work are completed in accordance with Section 1D-27.
- D. Contractor shall plan the work and cooperate fully with the Authority to accomplish the required phasing and milestones as stipulated in this Section and indicated in the Contract Plans and Specifications.
- E. Contractor shall provide work plan for each phase and sub-phase of the work twenty one (21) days in advance for Authority review and coordination. At a minimum, each work plan shall include the following information:
  - 1. Gantt schedule indicating work activities, location, dates and duration of work. Activities shall be listed in sufficient detail to establish scope of work and the ability to complete on time.
  - 2. List of primary and standby allocated resources, manpower and equipment to ensure work completion at end of each shift.
  - 3. List of all pertinent submittals (provided as part of contract) and review status. Contractor shall allow sufficient time for submittal approvals and procurement items in support of the required work.
  - 4. List of all prerequisite activities and tasks required in order to proceed with the planned work.
  - 5. List of all testing and CQC measures to be implemented during the work.
  - 6. List of temporary measures as required to protect the work in place in order to support airport operations.
  - 7. Layout plan of the work area indicating scope of work, construction footprint, proposed equipment interim staging and routing areas. See exhibit at the end of this section for tentative staging and haul routing.
  - 8. Identification of adjacent equipment and protective measures to be utilized.
  - 9. List of all required coordination items and special provisions required to support airport operations, airport security, stakeholders and tenant's property, and public use and right of way during the Work.
  - 10. Risk analysis and alternate plans stipulating measures to be supported to complete the work by end of each shift in case of unforeseen conditions including potential equipment or tool failures.

- F. Contractor shall contain and minimize dust and debris created during its construction work in accordance with Section 1D-39.
- G. Maintain safe traffic flow and control at all times during construction. Contractor shall support vehicular access and throughways at all times. Arrival and departure access points shall not be compromised.
- H. Any damage to airport property as a result of Contractor work, such as but not limited to landscaping, fencing, pavements, and gates shall be replaced by the Contractor and returned to the same condition as prior to start of Work at no cost to Authority.
- I. Alteration of Work and Quantities: If the quantity of a unit-priced item in this Contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 25 percent above or below the estimated quantity, an equitable adjustment in the Contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 125 percent or below 75 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time. Upon the receipt of a written request for an extension, the Authority shall ascertain the facts and make an adjustment for extending the completion date as in the judgment of the Authority, is justified.

## 1.5 SCHEDULE AND TIME OF PERFORMANCE

Contractor shall complete all work within the time specified in this section. The Work shall be performed as follows:

- A. Following the issuance of Notice to Proceed (NTP), the mobilization, stakeout and demolition is expected to take place.
- B. Next, the forming and pouring of the gate post foundations shall take place. There will be a 7-day curing process for these foundations.
- C. Following the 7-day curing of the gate foundations, the new Wallace International PDXT SpeedGate and infrastructure shall be installed.
- D. Following the installation of the SpeedGate and infrastructure, the controls, loops and commission will be installed.
- E. All punchlist work including all closeout submittals shall be completed as described in Section 1D.

## **1.6 MANUFACTURERS' LABELS**

- A. Manufacturer's labels or stamps are not allowed on finished product owned or to be owned or conveyed to Authority at the completion of the work.

## **1.7 LAYING OUT OF THE WORK**

- A. Contractor shall immediately locate all general reference points and take such action as is necessary to prevent their destruction; lay out his work and be responsible for all lines, elevations and measurements for work executed under this contract.
- B. Contractor shall layout all the systems as complete as field conditions will allow to determine any interference with building structures, utilities or any other equipment before final construction or installation of equipment takes place. It is the Contractor's responsibility to coordinate all clearance requirements with other contractors. No additional payment will be made to Contractor for failure to coordinate the placement of any equipment and to maintain the required clearances.

## **1.8 MANUFACTURERS' SPECIFICATIONS**

- A. All materials, items, equipment, etc. shall be installed in accordance with the manufacturers' applicable specifications and printed installation instructions when not otherwise specified.

## **1.9 CONTROL OF MATERIALS**

- A. **SOURCE OF SUPPLY AND QUALITY REQUIREMENTS:** The materials used on the work shall conform to the requirements of the contract, plans, and specifications. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).

In order to expedite the inspection and testing of materials, the Contractor shall furnish complete statements to the Authority Representative as to the origin, composition, and manufacture of all materials to be used in the work. Such statements shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the discretion of the Authority Representative, materials may be approved at the source of supply before delivery is stated. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other

sources.

- B. **SAMPLES, TESTS, AND CITED SPECIFICATIONS:** Unless otherwise designated, all materials used in the work shall be inspected, tested, and approved by the Authority Representative before incorporation in the work. Any work in which untested materials are used without approval or written permission of the Authority Representative shall not be applied. Materials found to be applied but not approved through a submittal by the contractor and found to be unacceptable and unauthorized will not be paid. This material shall be removed at the Contractor's expense. Unless otherwise designated, tests in accordance with the specification cited standard methods of ASTM, AASHTO, Federal Specifications, Commercial Item Descriptions, and all other cited methods, which are current on the date of advertisement for bids, will be made by and at the expense of the contractor. The testing organizations performing on site field tests shall have copies of all referenced standards on the construction site for use by all technicians and other personnel, including the Contractor's representative at his/her request. Unless otherwise designated, samples will be taken by a qualified representative of the Authority Representative. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work. Copies of all tests will be furnished to the Contractor's representative at his/her request.

The Contractor shall employ a testing organization with its staff licensed by the State of California to practice or to conduct such required tests. All the test data shall be reported to the Authority Representative after the results are known. A legible, handwritten copy of all test data shall be given to the Authority Representative daily, along with printed reports, in an approved format, on a weekly basis. After completion of the project, and prior to final payment, the Contractor shall submit a final report to the Authority Representative showing all test data reports, plus an analysis of all results showing ranges, averages, and corrective measures taken if and when required by the Authority Representative. Test results may be submitted to the Authority Representative via electronic mail in an attachment in PDF format.

- C. **PLANT INSPECTION:** The Authority Representative or his/her authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for his/her acceptance of the material or assembly. Should the Authority Representative conduct plant inspections, the following conditions shall exist:

1. The Authority Representative shall have the cooperation and assistance of the Contractor and the producer with whom he has contracted for materials.

2. The Authority Representative shall be given access to reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.

It is understood and agreed that the Authority shall have the right to retest any material that has been tested and approved at the source of supply after it has been delivered to the site. The Authority Representative shall have the right to reject only material which, when retested, does not meet the requirements of the contract, plans, or specifications. Rejected material or assembly, the defects of which have been corrected by the Contractor, shall not be returned to the site of the work until such time as the Authority Representative has approved its use in the work.

## **1.10 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC**

- A. RESTORATION OF SURFACES DISTURBED BY OTHERS: Shall be in accordance with Section 1C – General Conditions. The Authority reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, or a utility service of another government agency at any time during the progress of the work. The Authority has not identified any such utility service modification work at this time. Therefore, such work by others is not anticipated but, may be required if unforeseen conditions are encountered.

Except as listed above, the Contractor shall not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the work without the written permission of the Authority Representative.

Should the Authority of public or private utility service, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the work, the Contractor shall cooperate with such Authority's by arranging and performing the work in this contract so as to facilitate such construction, reconstruction or maintenance by others whether or not such work by others is listed above. When ordered as extra work by the Authority Representative, the Contractor shall make all necessary repairs to the work which are due to such authorized work by others, unless otherwise provided for in the contract, plans, or specifications. It is understood and agreed that the Contractor shall not be entitled to make any claim for damages due to such authorized work by others or for any delay to the work resulting from

such authorized work.

- B. **BARRICADES, WARNING SIGNS, AND HAZARD MARKINGS:** The Contractor shall furnish, erect, and maintain all barricades, warning signs, and markings for hazards necessary to protect the public and the work. When used during periods of darkness, such barricades, warning signs, and hazard markings shall be suitably illuminated. Unless otherwise specified, barricades, warning signs, and markings for hazards that are in the air operations area shall be a maximum of 18 inches high. Unless otherwise specified, barricades shall be spaced not more than 25 feet apart. Barricades, warning signs, and markings shall be paid for under Item 01 55 00, "Maintenance and Protection of Traffic" of these specifications. The latest editions of the publications cited in this subsection shall be used.

For vehicular and pedestrian traffic, the Contractor shall furnish, erect, and maintain barricades, warning signs, lights and other traffic control devices in reasonable conformity with the Manual of Uniform Traffic Control Devices for Streets and Highways (published by the United States Government Printing Office).

The Contractor shall furnish and erect all barricades, warning signs, and markings for hazards prior to commencing work that requires such erection and shall maintain the barricades, warning signs, and markings for hazards until their dismantling is directed by the Authority Representative.

- C. **USE OF EXPLOSIVES:** Explosives shall not be used on this project.
- D. **PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE:** The Contractor shall be responsible for the preservation of all public and private property, and shall protect carefully from disturbance or damage all land monuments and property markers until the Authority Representative has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the prosecution of the work, resulting from any act, omission, neglect, or misconduct in his/her manner or method of executing the work, or at any time due to defective work or materials, and said responsibility will not be released until the project shall have been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, he shall restore, at his/her own expense, such property to a condition similar or equal to that existing before

such damage or injury was done, by repairing, or otherwise restoring as may be directed, or he shall make good such damage or injury in an acceptable manner.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

**PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

- A. Item 01 11 00 – Summary of Work will not be paid for separately. Full compensation shall be considered as included in the contract price for the applicable work items and no additional compensation will be allowed therefor. Items not covered under the specific sections which are applicable to work items shall be considered as incidental to the general work under the scope and shall be considered as included in the price paid for various items of work and no additional payment will be made therefor. Items identified as owner-initiated changes shall be paid separately in accordance with General Conditions Section 1C.

**END OF SECTION 01 11 00**

## SPECIAL PROVISIONS

### DIVISION 01 – GENERAL REQUIREMENTS

#### SECTION 01 21 00

#### ALLOWANCES

### PART 1 GENERAL

#### 1.1 SUMMARY

- A. This specification defines allowance items for this contract. An allowance for a specific work item may be provided for and is described and identified for each Allowance Item in Section 1.2. The contract allowance amounts shall include all supervision and related onsite costs and Contractor's overhead and profit.

Contractor shall not commence work for any of the Allowance items unless the Authority has issued a written authorization to the Contractor. All work under an allowance item shall be performed and paid for according to Section 1C – General Conditions, Article 7 – Changes in the Work.

#### 1.2 ALLOWANCES

- A. Allowance Items:

1. Bid Schedule B, Item 1 – Allowance for Unforeseen and Miscellaneous Condition

An allowance amount of \$30,000.00 is included for all costs associated with any unforeseen and miscellaneous conditions that may prevent work from proceeding. In the event that an unknown condition is uncovered, the Authority will direct the Contractor to scope and fee to mitigate the unknown condition or modify the work accordingly. Contractor shall not commence work unless Authority issues written authorization to the Contractor.

2. Bid Schedule B, Item 2 – Allowance for Reimbursement of Work Performed on Integration and Commissioning

An allowance amount of \$50,000.00 is included for all costs associated with the work performed to the Authority's PMO system, and commissioning of the controls, alarms, or other systems associated with the gates operations. The work shall be performed



by Authority's Maintenance Contractor, SAS Access Systems (SAS). SAS will disconnect existing equipment, provide two (2) DSX controllers (2 door type), and assist with connections of equipment within Contractor installed or relocated cabinets. This allowance shall not include install of cabinets and equipment per Section 281300. This allowance shall not include conduit and wiring per Sections 260519, 260533, and 271323.

## **PART 2 - PRODUCTS (NOT USED)**

## **PART 3 - EXECUTION (NOT USED)**

## **PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Payment will be made in accordance with Section 1C – General Conditions – 1C 9.5 Quantity Units, Payments and Measurements, for each of the following bid items that are included in the Contract. Reimbursements to the Contractor for allowances in Bid Schedule B shall be made only with pre-approval from the Authority Representative in accordance with this Section and when supported by invoices and receipts submitted in the Contractor's monthly billing. This payment shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals and no additional payment will be made therefor.

- A. Payment for "ALLOWANCE FOR UNFORESEEN AND MISCELLANEOUS CONDITIONS" shall be a pre-negotiated lump sum payment; made only with pre-approval from the Authority Representative when supported by invoices and receipts submitted in the Contractor's monthly billing.
- B. Payment for "ALLOWANCE FOR REIMBURSEMENT OF WORK PERFORMED ON INTEGRATION AND COMMISSIONING" shall be made per allowance, only with pre-approval from the Authority Representative when supported by invoices and receipts submitted in the Contractor's monthly billing.

### **Payments will be under:**

- Item 01 21 00.1 Allowance for Unforeseen and Miscellaneous Conditions – per allowance
- Item 01 21 00.2 Allowance for Reimbursement of Work Performed on Integration and Commissioning – per allowance

### **END OF SECTION 01 21 00**

## **SPECIAL PROVISIONS**

### **DIVISION 01 – GENERAL REQUIREMENTS**

#### **SECTION 01 55 00**

#### **TRAFFIC CONTROL**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Description: The Contractor will utilize the preliminary Traffic Control Plan located in the Contract Drawings, coordinate with other agencies, and upon approval and coordination, will implement the plan throughout the construction time frame. This plan and implementation shall consist of accommodating traffic and access requirements for each on-site construction phase. Additional traffic control may be required off-site and adjacent to on-site improvements to accommodate traffic and access requirements.

#### **1.2 RELATED SECTIONS**

- A. Construction Plans and Specifications.
- B. Special Conditions Section 1D

#### **1.3 REFERENCE AND STANDARDS**

- A. The following is list of standards are referenced in this section:
  - 1. The Manual on Uniform Traffic Control Devices for Streets and Highways, 2009 Edition (MUTCD) as administered by the Federal Highway Administration.
  - 2. California Department of Transportation (Caltrans), Manual on Uniform Traffic Control Devices (MUTCD), 2014 Edition.
  - 3. California Department of Transportation (Caltrans), Standard Specifications for Construction of Local Streets and Roads Section 12, "*Construction Area Traffic Control Devices*" and Section 7-1.08, "*Public Convenience*", 2015 Edition.

#### **1.4 SUBMITTALS**

The following items shall be submitted in accordance with Section 1D-09, Submittals:

- A. On-Site Traffic Control Plan: The Contractor shall utilize the preliminary traffic control plans for each phase and submit the final project traffic control plan to the Authority for review and approval prior to construction, in accordance with Special Conditions Section 1D.

## **1.5 PROJECT CONDITIONS**

- A. Phasing limits, staging areas and traffic control as shown on the Plans are preliminary and may be subject to change at no additional cost to the Authority. If limits proposed, cannot accommodate the lane requirements as intended, the Contractor shall coordinate with the Airport Authority to determine actual phase limits and staging area locations prior to construction.
- B. Portions of this project may be located adjacent to facilities used by the Airport Authority or tenants of the Authority. Phasing limits, staging areas and traffic control shall be set to allow vehicle and pedestrian circulation around these buildings and facilities.
- C. It is the Contractor's responsibility to provide for the safety of traffic and the public during construction.

## **1.6 CONTRACTOR'S QUALITY CONTROL**

- A. The Contractor shall be responsible for developing and implementing a Contractor Quality Control Program for the overall construction project. This plan shall include all traffic control measures described in this specification to assure quality assurance.

## **1.7 PRE-CONSTRUCTION CONFERENCE**

- A. A pre-construction conference shall be conducted at the Site prior to the start of work to discuss traffic control requirement.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. All traffic control devices and materials shall conform to the requirements of Section 1.3 "References and standards".

## **PART 3 - EXECUTION**

### 3.1 TRAFFIC CONTROL

- A. Traffic Control Plan: Should the Contractor propose to alter the traffic control plan for site improvements alterations shall include but not limited to the following: construction vehicle access, public vehicle and pedestrian access routes through and around the construction work, lane closure traffic control layout, signs, access drive and roadway lane closure durations, haul roads, staging area size and location, the construction and maintenance of access roads, Contractor-supplied barricades and delineators (types and locations), flashing arrow boards, temporary asphalt paving sections, temporary fencing, temporary railing (Type K), temporary striping and pavement markings, temporary signs, flaggers and flagging procedures to maintain public access, and other devices necessary for the safe passage of traffic whether shown on the plans or not, throughout the duration of the project or until directed otherwise on the traffic control plans or by the Owner's representative.
- B. Traffic control shall be set up and maintained continuously throughout the duration of construction and until each work area has been accepted for use by the Airport Authority. Damaged, displaced, or non-functional traffic control features shall be replaced immediately upon identification or when directed by the Airport Authority.
- C. Whenever the Contractor's operations create a condition hazardous to traffic or to the public that is not covered by the approved traffic control plan, the Contractor shall, at the Contractor's expense and without cost to the Airport Authority, furnish, erect and maintain devices as described in the Traffic control Plan contents section and take such other protective measures that are necessary to prevent accidents or damage or injury to the public immediately.
- D. Traffic Control Flaggers shall be furnished 24/7 when the gate arms are decommissioned to keep the restricted area secure and safely direct vehicles and the public around work areas and to give adequate warning of any dangerous conditions. Contractor to phase operations to limit the use of Traffic Control Flaggers.
- E. The existence of general roadway/parking lot illumination shall not relieve the Contractor of the responsibility for furnishing and maintaining any of the protective facilities continuously throughout the duration of construction.
- F. All movements of workmen and construction equipment on or across areas open to public traffic shall be performed in a manner that will not endanger public traffic.
- G. When leaving a work area and entering a roadway carrying public traffic, the Contractor's equipment, whether empty or loaded, shall in all cases yield to public traffic.

- H. No material or equipment shall be stored where it will interfere with the free and safe passage of traffic, and at the end of each day's work and at other times when construction operations are suspended for any reason, the Contractor shall remove all equipment and other obstructions from that portion of the project area open for use by public traffic.
- I. Temporary facilities which the Contractor uses to perform the work shall not be installed or placed where they will interfere with the free and safe passage of public traffic.
- J. Should the Contractor appear to be neglectful or negligent in furnishing warning devices and taking protective measures as required, the Airport Authority may direct attention to the existence of a hazard and the necessary warning devices shall be furnished and installed and protective measures taken by the Contractor at the Contractor's expense. An approved set of drawings signed by the Engineer of record will be used to determine the bid price. Anything outside that will be paid extra.
- K. A minimum of one 12-foot lane shall be maintained operational at all times on each road affected during construction.
- L. Access into and out of the parking lots, parking spaces, along ingress and egress routes, and other public access roads and facilities shall be maintained at all times.
- M. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
- N. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- O. Coordinate work with the phasing plan.

## **PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

### **4.1 MEASUREMENT**

- A. Partial payments for Maintenance and Protection of Traffic will be made as the work progresses. These payments will be made as follows:
  - 1. 45 percent of the bid item amount will be paid after the submittal and acceptance of the Traffic Control Plans for entire project scope of work.
  - 2. 50 percent of the bid item amount will be paid after the completion and acceptance of the Project as shown on the Plans.
  - 3. 5 percent of the bid item amount will be paid after the Contractor is fully demobilized for entire project scope of work.
- B. Traffic Control Flaggers will be measured on a lump sum basis.

## 4.2 PAYMENT

Payment will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments and Measurements) for each of the following bid items that are included in the Contract.

- A. The Contract lump sum price paid for “MAINTENANCE AND PROTECTION OF TRAFFIC” shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals and for all the work involved in traffic control and maintenance and accepted in place as shown on the drawings, and as specified in these Specials Provisions. “Maintenance and Protection of Traffic ” shall be paid on a monthly basis to Contractor for the duration of the project that traffic control is required. No additional payment will be made therefor.
- B. The Contract lump sum price paid for “TRAFFIC CONTROL FLAGGERS” shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals and for all the work involved. “Traffic Control Flaggers” shall be paid on a monthly basis to Contractor for the duration of the project that traffic control is required. No additional payment will be made therefor.

### Payment will be made under:

Item 01 55 00.1	Maintenance and Protection of Traffic – per lump sum
Item 01 55 00.2	Traffic Control Flaggers – per lump sum

**END OF SECTION 01 55 00**

**SPECIAL PROVISIONS**  
**DIVISION 1 – GENERAL REQUIREMENTS**  
**SECTION 01 71 14**  
**MOBILIZATION AND DEMOBILIZATION**

**PART 1 – GENERAL**

**1.1 SUMMARY**

- A. Description: Mobilization and Demobilization shall include all preparatory work and operations including those necessary for the movement of personnel, equipment, facilities, materials, supplies, and incidentals to the project site that is necessary for work on the project. Additionally the contractor is responsible for all work and costs associated with obtaining bonds, insurance, and submittals shown on the submittal register, and Housekeeping items, Construction Waste Management Control Plan and reports, and other incidental items required for the various contract items.

**1.2 RELATED SECTIONS**

- A. Construction Plans and Specifications.
- B. Special Conditions Section 1D.

**1.3 PROJECT CONDITIONS**

- A. Construction will occur within the landside area of the airport.

**1.4 CONTRACTOR'S QUALITY ASSURANCE**

- A. The Contractor shall be responsible for developing and implementing a Contractor Quality Control Program for the overall construction project. This plan shall include all mobilization efforts as included in this specification to assure quality assurance and in accordance with Special Conditions Section 1D-21 (Construction Quality Control Program).

**1.5 PRE-CONSTRUCTION CONFERENCE**

- A. A pre-construction conference shall be conducted at the Site prior to the start of work. See other standard specifications for the specific requirements of this conference in accordance with Special Conditions Section 1D-22.

**PART 2 – PRODUCTS (NOT USED)**

## **PART 3 – EXECUTION**

### **3.1 GENERAL**

- A. Mobilization and demobilization shall include: the time, materials, equipment, and labor to move the necessary construction equipment to and from the job site; obtaining the Authority security badges, temporary construction fencing and entrance gates; initial setup and maintenance of the Contractor staging area; and supervisory time on the job by the Contractor's personnel to keep the construction site in safe condition throughout the project construction duration.
- B. Temporary Construction Fencing and Entrance Gates: The project limits, including Contractor's staging and storage area shall be fenced with minimum 6-foot high chain link fence and gates, each covered with green fabric screen along the entire surface.
- C. All facilities and equipment which are established at or brought to the worksite by the Contractor shall conform to the provisions of this Section and the project specifications unless the Authority specifically directs in writing otherwise. The Contractor shall be solely responsible for the adequacy of all plants, facilities, and equipment.

### **3.2 WORK ITEMS**

- A. Work items include the mobilization, demobilization, preparatory work, and staging area development for the specific project scope of work. It is intended to compensate the Contractor for operations required to start up and close down the project, including but not limited to:
  - 1. Schedule development, cost breakdown, safety, and other submittals, and review and approval by the Authority
  - 2. Establishment of Contractor Staging Area.
  - 3. Movement of equipment
  - 4. Movement of personnel
  - 5. Supplies
  - 6. Coordination scheduling with other Contractors per Special Conditions Section 1D
  - 7. Supplies and incidentals for the project site
  - 8. Payment of Bonds and Insurance for the project
  - 9. Utilities



10. And all other work required to be performed prior to the start of operations and construction
11. Securing of the Contractor Staging Area
12. All temporary walls and doors(s) as required on this Project (unless otherwise specified) for the security of the construction area and Contractor's Office
13. Demobilization
14. Coordination with Others
15. Clean up
16. Project close out
17. Shared haul routes
18. All repairs necessary to bring haul routes and contractor yard or staging area to pre-construction condition

## **PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

### **4.1 MEASUREMENT**

- A. Measurement for mobilization and demobilization will be made based on percentage of work completed in accordance with the schedule shown in Section 4.2.

### **4.2 PAYMENT**

- A. Payments will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments and Measurements) for each of the following bid items that are included in the Contract.
- B. Mobilization payments shall include all costs for demobilization and mobilization and shall be made at the contract lump sum price. The following partial payments will be made as the work progresses and shall be full compensation for furnishing all labor, materials, equipment, tools and incidentals for doing all the work associated with "MOBILIZATION AND DEMOBILIZATION" which is complete and in-place and no additional payment will be made therefor. The partial lump sum payments for these items of work will be made in accordance with the following provisions:
  1. The first partial payment for mobilization will be made at fifty (50) percent of the lump sum price bid at such time that: the project submittals have been provided to the satisfaction of the Authority; insurance, bonds and permits have been provided; the Site Specific Safety Plan, the SWPPP, the critical path method schedule has been

submitted; and the Contractor Quality Control Program has been submitted and accepted by the Authority Representative. All conditions shall be in accordance with General and Special Conditions Section 1C and 1D, respectively.

2. The second partial payment for mobilization will be made at ten (10) percent of the lump sum price bid at such time when the long lead item procurement order has been sent.
  3. The third partial payment for mobilization will be made at twenty five (25) percent of the lump sum price bid at such time all submittals have been approved by the Authority, the contractor yard has been setup and functional with equipment and supplies; and the contractor's mobilization of the initial personnel, equipment, and materials have been completed.
  4. The final partial payment for all mobilization will be made at fifteen (15) percent of the lump sum price bid at such time that construction is complete and accepted by the Authority Representative. This will include the Contractor's demobilization costs including final clean-up, and the Contractor's record drawings and mark-ups have been submitted and accepted by the Authority. This final payment shall be full compensation for furnishing all labor, materials, equipment and for completing all the work associated with mobilization and demobilization and no additional payment will be made therefor.
- C. Payment shall be made for the contract daily price for "DAILY OVERHEAD" as specified in Section 1D-08.

**Payment will be made under:**

Item 01 71 14.1	Mobilization and Demobilization – per lump sum
Item 01 71 14.2	Daily Overhead – per day

**END OF SECTION 01 71 14**

**SPECIAL PROVISIONS**  
**DIVISION 02 – EXISTING CONDITIONS**  
**SECTION 02 41 14**

**PAVEMENT AND MISCELLANEOUS REMOVALS**

**PART 1 – GENERAL**

**1.1 SUMMARY**

- A. **Description:** This item shall consist of the surface preparation, excavation and removal of existing pavement, and other miscellaneous items. The work includes removal of bituminous concrete pavements as shown on the Plans and as identified in the field by the Authority Representative and shall include hauling and disposing of all debris at an off Airport location, to be selected by the Contractor, which is certified to accept the materials.

This item also includes miscellaneous removals consisting of the removal, wholly and in part, and satisfactory disposal of concrete curb, gutter, median, and landscaped areas.

**1.2 DEFINITIONS**

- A. **Unclassified Excavation:** Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature, which is not otherwise classified and paid for under the following items. Unclassified excavation shall include the removal of existing base material that must be removed as part of the pavement removal as shown on the drawings.
- B. **Optimum Moisture Content:** The water content at which a soil can be compacted to a maximum dry unit weight by a given compactive effort in accordance with ASTM D 2216 for the maximum dry density for relative compaction.
- C. **Relative Compaction:** The ratio, in percent, of the as-compacted field dry density to the laboratory maximum dry density as determined by the Standard Proctor test specified in ASTM D 698, ASTM D 1556 or ASTM D 1557.

**1.3 RELATED DOCUMENTS**

- A. Section 02 41 19 – Selective Demolition.

**1.4 REFERENCES AND STANDARDS**

- A. American Association of State Highway and Transportation Officials (AASHTO):

1. AASHTO T-99 - Standard Method of Test for Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop
- B. Testing procedures shall conform to the following ASTM International (ASTM) standards as appropriate:
1. ASTM D 698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft·lbf/ft<sup>3</sup> (600 kN·m/m<sup>3</sup>))
  2. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
  3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft·lbf/ft<sup>3</sup> (2,700 kN·m/m<sup>3</sup>))
  4. ASTM D 2216 - Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
  5. ASTM D 4718 - Standard Practice for Correction of Unit Weight and Water Content for Soils Containing Oversize Particles
  6. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
- C. Special Conditions Section 1D.

## 1.5 SUBMITTALS

The following items shall be submitted in accordance with Section 1D-09, Submittals:

- A. Contractor's Quality Control Plan
- B. Contractor's Phasing Plan and Traffic Control Plan
- C. Permits: Submit copies of permits obtained in connection with earthwork, including hauling and debris disposal permits and notices for record purposes.
- D. Private Property Owner's Release: It is intended that existing soil will be used or stored on-site to the extent possible. If surplus material removed from the site will be deposited on private property, Contractor shall submit two copies of written releases not more than 15 days before the start of work. Releases shall absolve the Authority from responsibility in connection with the depositing of material on private property, and shall be signed by the owners of such property on which the material will be deposited. No separate payment will be made for this work.
- E. Disposal of Construction Material at Otay Landfill: The Contractor may be required to dispose construction material at the Otay landfill site for proper

disposal of construction material. Contractor shall submit all required paper work to the Engineer indicating such disposal. No separate payment will be made for this work.

- F. Test Plan: Submit a plan showing the Contractor's geotechnical testing firm's proposed distribution of field density tests of the compacted soil for the Engineer's approval.
- G. Test Reports: Submit certified test reports of all tests specified to be performed by or on behalf of the Contractor. Test reports shall be sealed and signed by a California registered geotechnical engineer or California registered Engineering Geologist when required to meet requirements of the California Building Code.

## **1.6 QUALITY CONTROL**

- A. The Contractor shall be responsible for developing and implementing a Contractor Quality Control Program including inspection and testing to assure compliance with the requirements of this section in accordance with Special Conditions, Section 1D.
- B. Contractor shall employ an independent Geotechnical Testing firm for continuous daily on-site monitoring and testing during earthwork and compaction efforts and for all other construction inspection and testing activities as required per these specifications. The Geotechnical Testing firm shall be qualified to perform this work and be acceptable to the Authority.

## **1.7 QUALITY ASSURANCE**

- A. Quality Assurance testing will be performed by the Authority's geotechnical engineering firm. QA testing performed by the Authority does not relieve the Contractor from the responsibility to perform QC testing.

## **PART 2 – PRODUCTS**

### **2.1 EQUIPMENT**

- A. All equipment shall be specified here and in the following paragraphs or approved by the Authority Representative. The equipment shall not cause damage to the pavement to remain in place.
- B. Equipment used in performing the Work shall be in good working order and shall be operated in accordance with manufacturer's instructions and recommendations.
- C. All the equipment used in hauling cleared vegetation shall be cleaned properly prior to leaving the site.

- D. Any soils contaminated by discharge of fluids from leaky or faulty equipment shall be removed and properly disposed, at no additional cost to the Authority. The contaminated area shall be backfilled with clean soil, at no additional cost to the Authority.

## **PART 3 – EXECUTION**

### **3.1 GENERAL**

- A. The Contractor shall provide continuous noise and dust abatement as required to prevent disturbance and nuisance to the public and workers; to Airport operations; and the occupants of adjacent premises and surrounding areas. Dampen or cover affected areas as necessary to prevent dust nuisance.
- B. The Contractor shall not commence earth moving operations until temporary erosion and sedimentation control measures; specified in Special Conditions Section 1D-34, 1D-35, and Appendix 5 are in place.
- C. Contractor shall obtain markings by the affected utility companies identifying underground utilities and their locations 72 hours prior to performing any excavation or other work close to any underground pipeline, conduit, duct, wire, or other structure. Notify the utility owners before performing any such excavation work. Notify most affected utilities by calling DigAlert at 811. Contact utility owners that may not be covered by DigAlert, such as owners of non-pressurized sewer lines and Caltrans, by calling the affected utility owners directly. Keep markings current in accordance with the requirements of DigAlert and specific utility owners.
- D. Prior to grading, excavating, or placement of fill, the Contractor shall perform the required demolition per Section 02 41 19 – Selective Demolition.

### **3.2 EXCAVATION**

- A. No excavation shall be started until the work has been staked out by the Contractor and the Engineer has obtained elevations and measurements of the ground surface.
- B. Where excavations near tree and plant protection zones are required, the final excavation may require hand excavation. Contractor shall use narrow-tine spading forks to comb soil and expose roots and not break, tear, or chop exposed roots. No mechanical equipment that rips, tears, or pulls roots shall be used by the Contractor.
- C. All suitable excavated material that meets the criteria for engineered fill shall be used in the formation of fills, subgrade, and for other purposes shown on the Plans. The suitability of material to be placed in embankments or fills shall be subject to approval by the Engineer.

When the volume of the excavation exceeds that required to construct the fills to the grades indicated, the excess shall be disposed of off-Airport. When the volume of excavation is not sufficient for constructing the fill to the grades indicated, the deficiency shall be obtained from borrow material obtained from sources on or off of the airport property.

- D. The grades shall be maintained so that the surface is well drained at all times. When necessary, temporary drains and drainage ditches shall be installed to intercept or divert surface water which may affect the work.
- E. The Contractor shall allow for soil material that is too wet for compaction (over optimal moisture content) and shall allow the soil to dry out to an acceptable level by draining, aerating the soil (disking and harrowing or other suitable methods, such as lime treatment) until the moisture content of the area is uniform and within the specified limits.
- F. No direct payment will be made for excavation operations. The cost of excavation shall be considered incidental to this Contract and the costs shall be included in the various pay items involved.

### **3.3 SUBGRADE PREPARATION**

#### **A. Compaction**

1. Subgrade under traffic loaded pavements shall be compacted to a depth of 6 in and to a density of not less than 95 percent for cohesive soils or 100 percent for non-cohesive soils as determined by ASTM D 1557.
2. The material to be compacted shall be within +/- 2 percent of optimum moisture content before rolled to obtain the prescribed compaction (except for expansive soils).
3. For soils with expansive characteristics, the maximum density should be determined in accordance with ASTM D 1557.
4. Moisture-density determinations shall be in conformance of AASHTO T 99 or T 180 for soils that are expected to have more than 30% retained on the 3/4 inch sieve. The moisture-density relationship test procedures ASTM D 698 are not applicable for materials with greater than 30 retained on the 3/4 in sieve. ASTM D 4718 shall be used for the coarse material (greater than 3/4-inch) up to 30 percent is retained. Maximum density testing (ASTM D 4253) may be used but it also limits the material retained on the 1 1/2 inch sieve to 30 percent. The AASHTO T-99 and T-180 are similar to ASTM D 1557, except they do not limit the replacement of the coarse material.
5. The in-place field density shall be determined in accordance with ASTM D 1556 or ASTM D 1557. In cuts, all loose or protruding rocks on the back slopes shall be barred loose or otherwise removed to line of finished grade of slope. All cut-and-fill slopes shall be

uniformly dressed to the slope, cross section, and alignment shown on the Plans or as directed by the Engineer.

6. If nuclear density machines are to be used for density determination, the machines shall be calibrated in accordance with ASTM D 6938.

**B. Finishing and Protection of Subgrade**

1. Stones and rock fragments larger than 4 inches in their greatest dimension will not be permitted in top 6 inches of the subgrade.
2. After the subgrade has been substantially completed the full width shall be conditioned by removing all soft and other unstable material which will not compact properly. The resulting areas and all other low areas, holes and depressions shall be brought to grade with suitable select material. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted subgrade shaped to the lines and grades shown on the Plans.
3. Grading of the subgrade shall be performed so that it will drain readily. The Contractor shall take all precautions necessary to protect the subgrade from damage. The Contractor shall limit hauling over the finished subgrade to that which is essential for construction purposes.
4. All ruts and rough places that develop in a completed subgrade shall be smoothed and re-compacted. No subbase, or surface course shall be placed on the subgrade until the subgrade has been approved by the Engineer.

### **3.4 EXISTING FACILITIES**

- A. The Contractor shall be aware of all underground facilities located within and adjacent to the construction area. These facilities shall be protected in place. All work performed around these facilities shall be accomplished by hand or other acceptable method so as not to damage the facilities in any way. If relocation of facilities is required per the plans, the Contractor shall field locate, both horizontally and vertically, these facilities prior to the start of any excavation.
- B. The Contractor shall protect benchmarks, structures, utilities, sidewalks, pavements, curbs, landscaping, and other facilities from damage caused by settlement, lateral movement, undermining, washout, traffic, and other hazards, unless otherwise noted on the drawings.
- C. Contractor shall not obstruct fire hydrants, driveways, or vehicular access points during construction.
- D. Any facilities damaged by the Contractor shall be repaired or replaced at the sole expense of the Contractor. The Authority Representative shall make the determination of repair actions by the Contractor, or other "outside



parties”, based on the facilities damaged. All costs of “outside parties” required to perform repairs shall be deducted from payments made to the Contractor.

### **3.5 REMOVAL OF EXISTING PAVEMENT**

- A. **SAWCUTTING ASPHALT PAVEMENT:** Existing asphalt pavement to be removed shall be cut full depth by a device capable of making a neat, straight and smooth cut without damaging adjacent pavement that is not to be removed. All pavements that are damaged beyond the cut shall be replaced at the Contractor’s sole expense.
- B. **ASPHALT CONCRETE PAVEMENT:** Asphalt concrete pavement to be removed to the full depth of the bituminous material. This does not apply if the removed pavement is to be replaced with concrete or soil. If the material is to be wasted on the airport site, it shall be broken to a maximum size as designated by the Authority Representative.

### **3.6 REMOVAL OF MISCELLANEOUS ITEMS**

- A. Miscellaneous items and materials to be removed shall be cut full depth by a device capable of making a neat, straight and smooth cut without damaging adjacent structures and pavement that is not to be removed. All items that are damaged beyond the cut shall be replaced at the Contractor’s sole expense. All items that are removed shall become the property of the Contractor and shall be properly disposed of off Airport unless specifically noted otherwise on the Plans and as directed by the Authority Representative.

### **3.7 SAWCUTTING**

- A. All pavements or miscellaneous items requiring saw cutting shall have the slurry material immediately vacuumed and contained for disposal.

### **3.8 ASPHALTIC CONCRETE PAVEMENT REPAIR**

Pavement repair shall be performed full depth or partial depth as designated on the Contract Drawings. Additional pavement repair not shown where joints or cracks that are 1 inch wide or greater, are spalled, or where the surface is depressed adjacent to the joints and cracks shall also be repaired when so directed by the Authority Representative.

- A. **FULL DEPTH AC PAVEMENT REPAIR:** Full depth repair areas shall be removed by conventional excavating equipment or by milling. The method chosen by the Contractor shall not damage the existing pavement to remain.

Any excessive area that is removed due to the Contractor’s choice of equipment, or replacement of damaged areas of existing pavement that are to remain, shall not be included in the measurement for payment. The

Contractor shall repair the excess areas at no additional cost to the Owner. Prior to removal, Contractor shall saw cut vertical faces along all sides of the pavement repair area to a minimum depth of 2 inches. Removal of repair area may warrant using a deeper saw cut to avoid damage to remaining existing pavement.

Placement and compaction of subbase and base courses shall be in accordance with their respective technical specification. The repair area shall be filled with bituminous concrete (Hot Mix Asphalt (HMA)) meeting the requirements of the technical specification as shown on the details. A bituminous tack coat shall be applied to the vertical faces of the repair area prior to filling. The repair area shall be filled with bituminous concrete from the bottom in successive lifts not exceeding the thickness specified in the technical specification for HMA. The final lift shall be placed to a height above the surface elevation of the pavement such that when the asphalt is compacted, the compacted mix shall be even with, or slightly above, the existing pavement. The bituminous concrete shall be compacted with a vibratory steel-wheel roller to the satisfaction of the Authority Representative. The roller shall have a minimum unprung weight of 10 Tons. On the final lift, the loose asphalt shall be "pinched-in" from the edges of the repair area. Removal of existing pavement by excavation or milling, the application of tack coat, and placement of bituminous concrete will be considered a necessary part of the work and its costs shall be considered by the Contractor and included in the contract price for the pay items of work involved.

### **3.9 CLEANUP**

- A. All pavement surfaces within the limits of work shall be cleaned. Cleanup shall be continuous throughout the surface preparation operations. Existing pavement surfaces shall be cleaned by the use of approved mechanical sweepers or by compressed air such that all mud, dirt, dust, and other debris is removed. Ruts and depressions below the general surface that are not adequately cleaned by the use of mechanical sweepers shall be cleaned by hand brooms. Waste materials shall be collected and removed from the pavement surface and adjacent areas by sweeping or vacuuming. All waste materials shall be disposed of off-site at a location approved by the Authority Representative. Precautions, acceptable to the Authority Representative, shall be taken by the Contractor to prevent waste material from entering storm sewer systems. Cleanup shall be considered a subsidiary and incidental part of the completion of this item and as such, the Contractor shall include the costs associated with cleanup in the various pay items involved.

### **3.10 SPOIL**

- A. Spoil material generated from cold milling operations shall be disposed of off airport property. Every effort should be made by the Contactor to

recycle or re-use the material in other projects.

No direct payment will be made for spoiling operations. The cost of spoiling material off-site shall be considered incidental to this Contract and the costs shall be included in the various pay items involved.

## **PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

### **4.1 MEASUREMENT**

If there is no quantity shown in the bidding schedule, the work covered by this section shall be considered as a subsidiary obligation of the Contractor and covered under other contract items.

- A. Surface pavements prepared by the Contractor and accepted by the Authority Representative as complying with the drawings and specifications will be measured on a lump sum basis.
- B. Pavement and miscellaneous removals including asphalt concrete pavement, concrete curb, concrete median, concrete curb and gutter and landscape area as shown on the drawings or directed by the Authority Representative will be measured on a lump sum basis.

### **4.2 PAYMENT**

Payments will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments and Measurements) for each of the following bid items that are included in the Contract.

- A. “SURFACE PREPARATION” will be paid for at the contract lump sum amount for preparing all surfaces, which shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals necessary for doing all of the work, as specified in these Special Provisions and shown in the drawings.
- B. “PAVEMENT AND MISCELLANEOUS REMOVALS” will be paid for at the contract lump sum amount for removing, where specified, portions of asphalt concrete pavement, concrete curb, concrete median, concrete curb and gutter and landscape area. This amount shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals necessary for all of the work, as specified in these Special Provisions and shown in the drawings.

#### **Payment will be under:**

Item 02 41 14.1

Surface Preparation – per lump sum

Item 02 41 14.2

Pavement and Miscellaneous Removals – per lump  
sum

**END OF SECTION 02 41 14**

**SPECIAL PROVISIONS**  
**DIVISION 02 – EXISTING CONDITIONS**  
**SECTION 02 41 19**  
**SELECTIVE DEMOLITION**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes the following:
  - 1. Demolition and removal of selected site elements.
  - 2. Salvage of existing items to be reused or recycled.

**1.2 RELATED DOCUMENTS**

- A. Construction Plans and Specifications

**1.3 DEFINITIONS**

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Authority ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

**1.4 SUBMITTALS**

The following items shall be submitted in accordance with Section 1D-09, Submittals:

- A. Qualification Data: For refrigerant recovery technician.
- B. Engineering Survey: Submit engineering survey of condition of site.
- C. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

- D. Schedule of Selective Demolition Activities: Indicate the following:
1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Airport Operations on-site operations are uninterrupted.
  2. Interruption of utility services. Indicate how long utility services will be interrupted.
  3. Coordination for shutoff, capping, and continuation of utility services.
  4. Locations of proposed dust- and noise-control temporary partitions and means of egress, including for other tenants affected by selective demolition operations.
  5. Means of protection for items to remain and items in path of waste removal from site.
- E. Pre-demolition photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.
- F. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- G. Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.
- H. Closeout Submittals:
1. Inventory: Submit a list of items that have been removed and salvaged.
  2. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

## 1.5 REGULATORY REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI A10.6 and NFPA 241.

## 1.6 QUALIFICATIONS

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.
- B. Demolition Firm Qualifications: An experienced firm that has specialized

in demolition work similar in material and extent to that indicated for this Project.

## **1.7 QUALITY CONTROL**

- A. The Contractor shall develop a Quality Control program in accordance with Section 1D – Special Conditions, Contractor’s Quality Control Program. The Contractor shall perform all quality control tests and inspections necessary to control the production and construction process applicable to this specification.

## **1.8 QUALITY ASSURANCE**

- A. Quality Assurance (QA) testing and inspections may be conducted by the Authority or designated representative. QA testing and inspections performed by the Authority do not relieve the Contractor from the responsibility to perform Quality Control testing as specified.

## **1.9 PROJECT CONDITIONS**

- A. The Airport Authority will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so airport operations will not be disrupted.
  - 1. Comply with requirements specified in related Sections.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Authority as far as practical.
  - 1. Before selective demolition, Authority will provide list of items to be removed, salvaged and turned over to them.
- C. Notify Authority of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify the Authority.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
- G. Maintain fire-alarm and security facilities in service during selective demolition operations.

## **1.10 PRE-INSTALLATION MEETINGS**

- A. Pre-Demolition Conference: Conduct conference at Project site to review methods and procedures related to selective demolition including, but not limited to, the following:

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.
6. Review phasing and hours of construction operations.
7. Determine items to be salvaged and returned to Authority.

### **1.11 WARRANTY**

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties. Notify warrantor before proceeding.
- B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

### **1.12 MATERIALS OWNERSHIP**

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Authority that may be uncovered during demolition remain the property of Authority.
  1. Carefully salvage in a manner to prevent damage and promptly return to Authority.

## **PART 2 - PRODUCTS (NOT USED)**

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.



- B. Review record documents of existing construction provided by Authority. Authority does not guarantee that existing conditions are same as those indicated in record documents.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to the Authority.
- E. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.
  - 1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
  - 2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction

### **3.2 PREPARATION**

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  - 1. Comply with requirements for access and protection specified in Section 1D-16 – Access to Businesses, Tenant Leaseholds, Private Property, Driveways, Alleyways, and Thoroughfares.
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  - 1. Provide protection to ensure safe passage of people around selective demolition area.
  - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
  - 3. Cover and protect furnishings, and equipment that have not been removed.
  - 4. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 1D-16 – Access to Businesses, Tenant Leaseholds, Private Property, Driveways, Alleyways, and Thoroughfares.

### 3.3 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
  2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
  4. Maintain adequate ventilation when using cutting torches.
  5. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  6. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  7. Dispose of demolished items and materials promptly.
- B. Removed and Salvaged Items:
1. Clean salvaged items.
  2. Pack or crate items after cleaning. Identify contents of containers.
  3. Store items in a secure area until delivery to Authority.
  4. Transport items to the Authority's storage area on-site.
  5. Protect items from damage during transport and storage.
- C. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
  2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  3. Protect items from damage during transport and storage.

4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
  5. If items are damaged in any way it is the Contractor's responsibility to return the items to the original condition or replace as new.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

### **3.4 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS**

- A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
1. Comply with requirements for existing services/systems interruptions specified in related Sections.
- B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
1. The Authority will arrange to shut off indicated services/systems when requested by Contractor.
  2. Arrange to shut off indicated utilities with utility companies.
  3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
  4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.
    - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
    - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
    - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.

- e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Authority.
- f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
- g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.
- h. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR 82 and regulations of authorities having jurisdiction.

### **3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS**

- A. Removal of Existing Fence: Existing fence locations and quantities shall be field verified by the Contractor and approved by the Engineer prior to removal. Fence removal shall include removal of the entire fence regardless of its size, including fabric, posts, foundations, gates and all appurtenances. Holes left after fence removal shall be restored to a condition equal to or better than the surrounding area. No separate measurement for payment shall be made for restoration after fence removal. Restoration after fence removal shall be considered incidental to the work involved and the costs shall be included in the various pay items involved.

### **3.6 DISPOSAL OF DEMOLISHED MATERIALS**

- A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Authority property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
- B. Do not allow demolished materials to accumulate on-site.
- C. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- D. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- E. Comply with requirements specified in related Sections.
- F. Burning: Do not burn demolished materials.
- G. Items to be demolished are indicated on the plans to the extent of information available. Disposal of all demolished materials shall be off site at an approved facility. Contractor is required to locate a disposal area outside the airport property limits at his/her own expense and shall obtain and file with the Engineer permission in writing from the property owner for the use of private property for this purpose. The Contractor shall provide documentation to the Authority that off-site disposal sites are in

compliance with applicable environmental regulations.

### 3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

## PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT

### 4.1 MEASUREMENT

- A. Removing type “A” bollard will be measured by the number per each bollard removed as determined by the Authority Representative from field measurement.
- B. Removing security and decorative fencing will be measured by the length of linear feet actually removed as determined by the Authority Representative from field measurement.
- C. Removing and reinstalling salvaged gate arm and controls will be measured on a lump sum basis.
- D. Removing and relocating existing controller cabinet and battery backup will be measured by the number per each controller cabinet and battery backup removed and relocated as determined by the Authority Representative from field measurement.

### 4.2 PAYMENT

Payments will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments and Measurements) for each of the following bid items that are included in the Contract.

- A. The contract unit price paid per each for “TYPE “A” BOLLARD REMOVAL” shall include full compensation for furnishing all labor, materials, equipment, tools, and incidentals necessary for all of the work as shown. No additional payment will be made therefor.
- B. The contract unit price paid per linear foot for “FENCING REMOVAL” shall include full compensation for furnishing all labor, materials, equipment, tools, and incidentals necessary for all of the work including removal of security chain link fencing and decorative fencing as shown. No additional payment will be made therefor.
- C. The contract lump sum price paid for “REMOVE AND REINSTALL SALVAGED GATE ARM AND CONTROLS” shall include removing and reinstalling existing gate arms, card readers, and RFID antennas which shall include full compensation for furnishing all labor, materials, equipment, tools, and incidentals necessary for all of the work. No additional payment will be made therefor.

**Payments will be under:**

- |                 |  |
|-----------------|--|
| Item 02 41 19.1 | Type "A" Bollard Removal – per each                                |
| Item 02 41 19.2 | Fencing Removal – per linear foot                                  |
| Item 02 41 19.3 | Remove and Reinstall Salvaged Gate Arm and Controls – per lump sum |

**END OF SECTION 02 41 19**

**SPECIAL PROVISIONS**  
**DIVISION 03 - CONCRETE**  
**SECTION 03 30 00**  
**CAST-IN-PLACE CONCRETE**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.

**1.2 RELATED DOCUMENTS**

- A. Section 02 41 14 – Pavement and Miscellaneous Removals

**1.3 SUBMITTALS**

The following items shall be submitted in accordance with Section 1D-09, Submittals:

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete mixture.
- C. Shop Drawings: Show fabrication and installation details for the following:
  - 1. Steel Reinforcement: Placing Drawings that detail fabrication, bending, and placement.
- D. Material certificates and test reports.

**1.4 QUALITY CONTROL**

- A. The Contractor shall develop a Quality Control program in accordance with Section 1D – Special Condition, Contractor’s Quality Control Program. The Contractor shall perform all quality control tests and inspections necessary to control the production and construction process applicable to this specification.

## **1.5 INFORMATIONAL SUBMITTALS**

- A. Material certificates.
- B. Material test reports.

## **1.6 QUALITY ASSURANCE**

- A. Quality Assurance (QA) testing and inspections may be conducted by the Authority Representative. QA testing and inspections performed by the Authority do not relieve the Contractor from the responsibility to perform Quality Control testing as specified.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
  - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

## **1.7 TESTING AGENCY QUALIFICATIONS**

- A. An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

## **1.8 PRECONSTRUCTION TESTING**

- A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on concrete mixtures.

## **1.9 FIELD CONDITIONS**

- A. Cold-Weather Placement: Comply with ACI 306.1.
  - 1. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1.



## **PART 2 - PRODUCTS**

### **2.1 CONCRETE, GENERAL**

- A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
  - 1. ACI 301
  - 2. ACI 117

### **2.2 FORM-FACING MATERIALS**

- A. Smooth-Formed Finished Concrete: Form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

### **2.3 STEEL REINFORCEMENT**

- A. Reinforcing Bars: ASTM A 615, Grade 60, deformed.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice."

### **2.4 CONCRETE MATERIALS**

- A. Cementitious Materials:
  - 1. Portland Cement: ASTM C 150, Type V, gray.
  - 2. Fly Ash: ASTM C 618, Class F.
- B. Normal-Weight Aggregates: ASTM C 33, graded.
  - 1. Maximum Coarse-Aggregate Size: 1-1/2 inches nominal.
  - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Air-Entraining Admixture: ASTM C 260.

- D. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
  - 1. Water-Reducing Admixture: ASTM C 494, Type A.
  - 2. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
- E. Water: ASTM C 94 and potable.

## 2.5 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

## 2.6 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301 and ACI 318.
- B. Cementitious Materials: Use fly ash as needed to reduce the total amount of portland cement, which would otherwise be used, by a maximum of 25 percent.
- C. Admixtures: Use admixtures according to manufacturer's written instructions.
  - 1. Use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
  - 2. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a w/c ratio below 0.50.

## **2.7 CONCRETE MIXTURES FOR BUILDING ELEMENTS**

- A. Normal-Weight Concrete:
  - 1. Minimum Compressive Strength: As indicated on the Drawings.
  - 2. Maximum W/C Ratio: As indicated on the Drawings.
  - 3. Slump Limit: 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
  - 4. Air Content: 4.5 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.

## **2.8 FABRICATING REINFORCEMENT**

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

## **2.9 CONCRETE MIXING**

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94, and furnish batch ticket information.
  - 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

## **PART 3 - EXECUTION**

### **3.1 FORMWORK INSTALLATION**

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Chamfer exterior corners and edges of permanently exposed concrete.

### **3.2 EMBEDDED ITEM INSTALLATION**

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

### **3.3 STEEL REINFORCEMENT INSTALLATION**

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

### **3.4 JOINTS**

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

### **3.5 CONCRETE PLACEMENT**

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections are completed.
- B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
  - 1. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.

### **3.6 FINISHING FORMED SURFACES**

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
  - 1. Apply to concrete surfaces not exposed to public view.

- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
  - 1. Apply to concrete surfaces exposed to public view.
- C. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

### **3.7 FINISHING CONCRETE**

- A. General: Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture.
  - 1. Apply float finish to surfaces to receive broom finish.
- C. Broom Finish: Apply a broom finish to exterior concrete.
  - 1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

### **3.8 CONCRETE PROTECTING AND CURING**

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 305.1 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for remainder of curing period.
- D. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days.
  - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
  - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

### **3.9 CONCRETE SURFACE REPAIRS**

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

### **3.10 FIELD QUALITY CONTROL**

- A. Special Inspections: Owner will engage a special inspector to perform field tests and inspections and prepare test reports.

## **PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

### **4.1 MEASUREMENT**

- A. Constructing PCC curb will be measured by the length of linear feet actually installed as determined by the Authority Representative from field measurement.

- B. Constructing PCC curb and gutter will be measured by the length of linear feet actually installed as determined by the Authority Representative from field measurement.
- C. Constructing PCC valley gutter will be measured by the length of linear feet actually installed as determined by the Authority Representative from field measurement.
- D. Constructing PCC sidewalk will be measured by the area of square feet actually installed as determined by the Authority Representative from field measurement.

## 4.2 PAYMENT

Payments will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments and Measurements) for each of the following bid items that are included in the Contract.

- A. The contract unit price for “PCC CURB” per linear foot shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals necessary for all of the work as shown on the drawings and specified in these Special Provisions. No additional payment will be made therefor.
- B. The contract unit price for “PCC CURB AND GUTTER” per linear feet shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals necessary for all of the work as shown on the drawings and specified in these Special Provisions. No additional payment will be made therefor.
- C. The contract unit price for “PCC VALLEY GUTTER” per linear feet shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals necessary for all of the work as shown on the drawings and specified in these Special Provisions. No additional payment will be made therefor.
- D. The contract unit price for “PCC SIDEWALK” per square feet shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals necessary for all of the work as shown on the drawings and specified in these Special Provisions. No additional payment will be made therefor.

**Payments will be under:**

Item 03 30 00.1	PCC Curb – per linear foot
Item 03 30 00.2	PCC Curb and Gutter – per linear foot
Item 03 30 00.3	PCC Valley Gutter – per linear foot
Item 03 30 00.4	PCC Sidewalk – per square foot

**END OF SECTION 03 30 00**



**SPECIAL PROVISIONS**  
**DIVISION 05 - METALS**  
**SECTION 05 50 00**  
**METAL FABRICATIONS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section Includes:
1. Steel framing and supports for mechanical and electrical equipment.
  2. Steel framing and supports for applications where framing and supports are not specified in other Sections.
  3. Metal bollards.
  4. Products furnished, but not installed, under this Section:
    - a. Anchor bolts, steel pipe sleeves, slotted-channel inserts, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.
    - b. Steel weld plates and angles for casting into concrete for applications where they are not specified in other Sections.

**1.2 RELATED DOCUMENTS**

- A. Section 03 30 00 - Cast-in-Place Concrete

**1.3 SUBMITTALS**

The following items shall be submitted in accordance with Section 1D-09, Submittals.

- A. Shop Drawings: Show fabrication and installation details for metal fabrications.
1. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.
- B. Welding certificates.

## **1.4 QUALITY CONTROL**

- A. The Contractor shall develop a Quality Control program in accordance with Section 1D – Special Conditions, Contractor’s Quality Control Program. The Contractor shall perform all quality control tests and inspections necessary to control the production and construction process applicable to this specification.
- B. Welding Qualifications: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
  - 2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
  - 3. AWS D1.6, "Structural Welding Code - Stainless Steel."

## **1.5 QUALITY ASSURANCE**

- A. Quality Assurance (QA) testing and inspections may be conducted by the Authority Representative. QA testing and inspections performed by the Authority do not relieve the Contractor from the responsibility to perform Quality Control testing as specified.

## **1.6 PROJECT CONDITIONS**

- A. Field Measurements: Verify actual locations of existing appurtenances and other construction contiguous with metal fabrications by field measurements before fabrication.

## **1.7 PERFORMANCE REQUIREMENTS**

- A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
  - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

## **1.8 COORDINATION**

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorages and steel weld plates and angles for casting into concrete.
  - 1. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and

items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

## **PART 2 - PRODUCTS**

### **2.1 METALS, GENERAL**

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

### **2.2 FERROUS METALS**

- A. Steel Plates, Shapes, and Bars: ASTM A 36.
- B. Stainless-Steel Sheet, Strip, and Plate: ASTM A 240 or ASTM A 666, Type 304 (interior), Type 316L (exterior).
- C. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304 (interior), Type 316L (exterior).
- D. Steel Pipe: ASTM A 53/A 53M, standard weight (Schedule 40) unless otherwise indicated.
- E. Cast Iron: Either gray iron, ASTM A 48, or malleable iron, ASTM A 47, unless otherwise indicated.

### **2.3 NONFERROUS METALS**

- A. Aluminum Plate and Sheet: ASTM B 209, Alloy 6061-T6.
- B. Aluminum Extrusions: ASTM B 221, Alloy 6063-T6.
- C. Bronze Plate, Sheet, Strip, and Bars: ASTM B 36/B 36M, Alloy UNS No. C28000 (muntz metal, 60 percent copper).

### **2.4 FASTENERS**

- A. General: Unless otherwise indicated, provide Type 316 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633 or ASTM F 1941, Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.
  - 1. Provide stainless-steel fasteners for fastening aluminum.
  - 2. Provide stainless-steel fasteners for fastening stainless steel.
- B. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A; with hex nuts, ASTM A 563; and, where indicated, flat washers.

- C. Stainless-Steel Bolts and Nuts: Regular hexagon-head annealed stainless-steel bolts, ASTM F 593; with hex nuts, ASTM F 594; and, where indicated, flat washers; Alloy Group 1.
- D. Anchor Bolts: ASTM F 1554, Grade 36, of dimensions indicated; with nuts, ASTM A 563; and, where indicated, flat washers.
  - 1. Hot-dip galvanize or provide mechanically deposited, zinc coating where item being fastened is indicated to be galvanized.
- E. Eyebolts: ASTM A 489.
- F. Machine Screws: ASME B18.6.3.
- G. Plain Washers: Round, ASME B18.22.1.
- H. Lock Washers: Helical, spring type, ASME B18.21.1.
- I. Anchors, General: Anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
- J. Cast-in-Place Anchors in Concrete: Either threaded type or wedge type unless otherwise indicated; galvanized ferrous castings, either ASTM A 47 malleable iron or ASTM A 27 cast steel. Provide bolts, washers, and shims as needed, all hot-dip galvanized per ASTM F 2329.
- K. Post-Installed Anchors: Chemical anchors.
  - 1. Material for Exterior Locations and Where Stainless Steel is Indicated: Alloy Group 1 stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

## 2.5 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
  - 1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

- E. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- F. Concrete: Comply with requirements in Section 03 30 00 - Cast-in-Place Concrete for normal-weight, air-entrained, concrete with a minimum 28-day compressive strength as indicated on the Drawings.

## 2.6 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work with accurate angles and surfaces and straight edges.
- E. Weld corners and seams continuously to comply with the following:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove welding flux immediately.
  - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.
- G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

- I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
  1. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch embedment and 2-inch hook, not less than 8 inches from ends and corners of units and 24 inches o.c., unless otherwise indicated.

## **2.7 MISCELLANEOUS FRAMING AND SUPPORTS**

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
- B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.
  1. Fabricate units from slotted channel framing where indicated.
  2. Furnish inserts for units installed after concrete is placed.
- C. Galvanize miscellaneous framing and supports where indicated.
- D. Prime miscellaneous framing and supports with zinc-rich primer where indicated.

## **2.8 METAL BOLLARDS**

- A. Fabricate metal bollards from Schedule 80 steel pipe.
  1. Cap bollards with 1/4-inch-thick steel plate.
  2. Where bollards are indicated to receive controls for door operators, provide necessary cutouts for controls and holes for wire.
  3. Where bollards are indicated to receive light fixtures, provide necessary cutouts for fixtures and holes for wire.
- B. Fabricate sleeves for bollard anchorage from steel pipe with 1/4-inch-thick steel plate welded to bottom of sleeve. Make sleeves not less than 8 inches deep and 3/4 inch larger than OD of bollard.
- C. Prime bollards with zinc-rich primer.

## **2.9 FINISHES, GENERAL**

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal fabrications after assembly.

- C. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

## **2.10 STEEL AND IRON FINISHES**

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.
  - 1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
- B. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.
  - 1. Shop prime with universal shop primer primers specified in Division 09 painting Sections unless zinc-rich primer is primers specified in Division 09 Section "High-Performance Coatings" are indicated.

## **2.11 STAINLESS STEEL FINISHES**

- A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
- B. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.
  - 1. Run grain of directional finishes with long dimension of each piece.
- C. Dull Satin Finish: No. 6.
- D. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

## **2.12 ALUMINUM FINISHES**

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

# **PART 3 - EXECUTION**

## **3.1 INSTALLATION, GENERAL**

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Field Welding: Comply with the following requirements:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove welding flux immediately.
  - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with the following:
  - 1. Cast Aluminum: Heavy coat of bituminous paint.
  - 2. Extruded Aluminum: Two coats of clear lacquer.

### **3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS**

- A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

### **3.3 INSTALLING METAL BOLLARDS**

- A. Fill metal-capped bollards solidly with concrete and allow concrete to cure seven days before installing.
- B. Anchor bollards in concrete with pipe sleeves preset and anchored into concrete in formed or core-drilled holes not less than 8 inches deep and 3/4 inch larger than OD of bollard. Fill annular space around bollard solidly with nonshrink, nonmetallic grout; mixed and placed to comply with grout manufacturer's written instructions. Slope grout up approximately 1/8 inch toward bollard.



- C. Anchor bollards in place with concrete footings. Center and align bollards in holes 3 inches above bottom of excavation. Place concrete and vibrate or tamp for consolidation. Support and brace bollards in position until concrete has cured.
- D. Fill bollards solidly with concrete, mounding top surface to shed water.
  - 1. Do not fill removable bollards with concrete.

### **3.4 ADJUSTING AND CLEANING**

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
  - 1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.
- B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Division 09 painting Sections.
- C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

## **PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

### **4.1 MEASUREMENT**

- A. Type "A" bollard installed by the Contractor will be measured by the number per each bollard actually constructed and installed as determined by the Authority Representative from field measurement.
- B. Type "B" bollard installed by the Contractor will be measured by the number per each bollard actually constructed and installed as determined by the Authority Representative from field measurement.

### **4.2 PAYMENT**

Payments will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments and Measurements) for each of the following bid items that are included in the Contract.

- A. The contract unit price paid for "INSTALL TYPE "A" BOLLARD" per each shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals necessary for all of the work including all placement and finishing requirements as shown on the drawings, and as specified in these Special Provisions.

- B. The contract unit price paid for "INSTALL TYPE "B" BOLLARD" per each shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals necessary for all of the work including all placement and finishing requirements as shown on the drawings, and as specified in these Special Provisions.

**Payments will be under:**

- |                 |                                     |
|-----------------|-------------------------------------|
| Item 05 50 00.1 | Install Type "A" Bollard – per each |
| Item 05 50 00.2 | Install Type "B" Bollard – per each |

**END OF SECTION 05 50 00**

**SPECIAL PROVISIONS**  
**DIVISION 26 – ELECTRICAL**  
**SECTION 26 05 19**

**LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

A. Section Includes:

1. Wires and cables rated 600 V and less.
2. Connectors, splices, and terminations rated 600 V and less.

**1.2 RELATED DOCUMENTS**

- A. Section 26 05 33 – Raceways and Boxes for Electrical Systems
- B. Section 26 05 53 – Identification for Electrical Systems

**1.3 ACTION SUBMITTALS**

- A. Product Data: For all products and materials – cut sheets, recommended application and installation methods.
- B. Shop Drawings:
  1. Drawings showing device locations and types, riser diagrams, wiring diagrams, approvals, test data.
  2. Complete shop drawings of all custom-fabricated or assembled products, including wiring diagrams.
  3. Drawings identifying all terminals and illustrating all device wiring connections.
  4. Elevations and detailing plans.
- C. Qualification Certification.
- D. Test Reports.
- E. Operation and Maintenance Manuals.
- F. Warranty Information.

## PART 2 - PRODUCTS

### 2.1 CONDUCTORS AND CABLES

- A. Copper Conductors: Comply with NEMA WC 70/ICEA S-95-658.
- B. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type XHHW-2.
- C. Detector Loop Cable: Type Type XHHW, No. 14, stranded copper wire in a plastic tubing. Plastic tubing must be polyethylene or vinyl, rated for use at 105°C, and resistant to oil and gasoline. Outside diameter of tubing must be 0.27 inch maximum with a wall thickness of 0.028 inch minimum.
- D. Detector Lead-in Cable: Conductors shall consist of two No. 16, stranded, tinned copper wires and a No. 20 copper drain wire. Cable shall be insulated with 20 mils of HDPE. Conductors must be twisted together with at least 2 turns per foot and the twisted pair must be protected with a copper or aluminum polyester shield. Cable must have a HDPE or high density polypropylene outer jacket with a nominal thickness of 32 mils. Including an amorphous interior moisture penetration barrier of nonhydroscopic polyethylene or polypropylene fillers.
- E. Card Reader Cable: Cable shall be a 6-pair type with stranded tinned copper No. 22 conductors. Each conductor insulation must be 13 mils minimum nominal thickness, color-coded, polypropylene material. Conductors must be in twisted pairs. Color coding distinguishes each pair. Each pair must be wrapped with an aluminum polyester shield and must have a No. 22 or larger stranded tinned copper drain wire inside the shielded pair. Cable jacket must be black, HDPE, rated for a minimum of 300 V(ac) and 60 degrees C, and must have a minimum nominal wall thickness of 40 mils.
- F. RFID Control Cable: Cable harness shall be produced by same manufacturer as RFID and must be ordered to achieve a minimum of 10 feet slack.
- G. Speedgate Control Cable: Cable harness shall be produced by same manufacturer as Speedgate controller and must be ordered to achieve a minimum of 10 feet slack.
- H. Gate Arm Cable: Cable shall be a 6-pair type with stranded tinned copper No. 22 conductors. Each conductor insulation must be 13 mils minimum nominal thickness, color-coded, polypropylene material. Conductors must

be in twisted pairs. Color coding distinguishes each pair. Each pair must be wrapped with an aluminum polyester shield and must have a No. 22 or larger stranded tinned copper drain wire inside the shielded pair. Cable jacket must be black, HDPE, rated for a minimum of 300 V(ac) and 60 degrees C, and must have a minimum nominal wall thickness of 40 mils.

- I. Strobe Cable: An 18 awg, 2-conductor cable shall be used for the power supply. An 18 awg, 2-conductor shielded cable shall be used for the photoeye assembly. An 18 awg, 2-conductor cable shall be used to integrate with the gate operator.
- J. DSX Output Cable: An outdoor rated 18 awg, 2-conductor cable shall be used for communication from DSX logic controller to speedgate controller.
- K. DSX Comm. Cable: An outdoor rated 22 awg, 4-conductor cable shall be used for communication from existing arm gate logic controller to new speedgate DSX logic controller.

## **2.2 SYSTEM DESCRIPTION**

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.

## **PART 3 - EXECUTION**

### **3.1 CONDUCTOR MATERIAL APPLICATIONS**

- A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 8 AWG and larger, except VFC cable, which shall be extra flexible stranded.

### **3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS**

- A. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type XHHW-2, single conductors in raceway.
- B. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type XHHW-2, single conductors in raceway.

### 3.3 INSTALLATION OF COPPER CONDUCTORS AND CABLES

- A. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.
- B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- D. Sealant for detector loops shall be Hot-Melt rubberized Asphalt sealant, unless otherwise directed by the Authority Representative. Loop conductors and sealant shall be installed on the same day the loop slots are cut.
- E. All detector loops shall be tested sequentially by the following methods:
  - 1. Impedance (measured by megaohms)
  - 2. resistance (measured by ohms)
  - 3. Inductance (measured by microhenries)

### 3.4 CONNECTIONS

- F. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- G. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
- H. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches (150 mm) of slack.

### 3.5 IDENTIFICATION

- A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

### 3.6 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:

1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.
  2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
- B. Cables will be considered defective if they do not pass tests and inspections.

## **PART 4 - MEASUREMENT AND PAYMENT**

### **4.1 MEASUREMENT**

- A. Electrical wiring furnished and installed by the Contractor and accepted by the Authority Representative as complying with the drawings and specifications will be measured on a lump sum basis.

### **4.2 PAYMENT**

Payments will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments, and Measurements) for each of the following bid items that are included in the Contract.

- A. “FURNISH AND INSTALL ELECTRICAL WIRING” will be paid for at the contract lump sum amount and shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals and for doing all the work complete and accepted in place as shown on the drawings and as specified in these special provisions. No additional payment will be made therefor.

#### **Payment will be made under:**

Item 26 05 19                      Furnish and Install Electrical Wiring – per lump sum

**END OF SECTION 26 05 19**

**SPECIAL PROVISIONS**  
**DIVISION 26 – ELECTRICAL**  
**SECTION 26 05 33**

**RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
1. Metal conduits, tubing, and fittings.
  2. Nonmetal conduits, tubing, and fittings.
  3. Boxes, enclosures, and cabinets.
  4. Handholes and boxes for exterior underground cabling.

**1.2 RELATED DOCUMENTS**

- A. Section 26 05 19 – Low Voltage Electrical Power Conductors and Cables
- B. Section 26 05 53 – Identification for Electrical Systems

**1.3 ACTION SUBMITTALS**

The following items shall be submitted in accordance with Section 1D-09, Submittals:

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
- B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, and attachment details.
- C. Qualification Certification.
- D. Test Reports.



## 1.4 INFORMATIONAL SUBMITTALS

The following items shall be submitted in accordance with Section 1D-09, Submittals:

- A. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved:
  - 1. Structural members in paths of conduit groups with common supports.
  - 2. HVAC and plumbing items and architectural features in paths of conduit groups with common supports.
- B. Seismic Qualification Certificates: For enclosures, cabinets, and conduit racks and their mounting provisions, including those for internal components, from manufacturer.

## PART 2 - PRODUCTS

### 2.1 METAL CONDUITS, TUBING, AND FITTINGS

- A. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. GRC: Comply with ANSI C80.1 and UL 6.
- C. IMC: Comply with ANSI C80.6 and UL 1242.
- D. PVC-Coated Steel Conduit: PVC-coated rigid steel conduit.
  - 1. Comply with NEMA RN 1.
  - 2. Coating Thickness: 0.040 inch (1 mm), minimum.
- E. EMT: Comply with ANSI C80.3 and UL 797.
- F. FMC: Comply with UL 1; zinc-coated steel .
- G. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.
- H. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.
  - 1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886 and NFPA 70.

2. Fittings for EMT:
    - a. Material: Steel or die cast.
    - b. Type: compression.
  3. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.
  4. Coating for Fittings for PVC-Coated Conduit: Minimum thickness of 0.040 inch (1 mm), with overlapping sleeves protecting threaded joints.
- I. Joint Compound for IMC, GRC, or ARC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

## **2.2 NONMETALLIC CONDUITS, TUBING, AND FITTINGS**

- A. Listing and Labeling: Nonmetallic conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. RNC: Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.
- C. Fittings for ENT and RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.
- D. Solvent cements and adhesive primers shall have a VOC content of 510 and 550 g/L or less, respectively, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- E. Solvent cements and adhesive primers shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

## **2.3 BOXES, ENCLOSURES, AND CABINETS**

- A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.

- B. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- C. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- D. Device Box Dimensions: 4 inches square by 2-1/8 inches deep (100 mm square by 60 mm deep).
- E. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, Type 3R with continuous-hinge cover with flush latch unless otherwise indicated.
  - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
- F. Cabinets:
  - 1. NEMA 250, Type 3R galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
  - 2. Hinged door in front cover with flush latch and concealed hinge.
  - 3. Key latch to match panelboards.
  - 4. Metal barriers to separate wiring of different systems and voltage.
  - 5. Accessory feet where required for freestanding equipment.

## **2.4 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING**

- A. General Requirements for Handholes and Boxes:
  - 1. Boxes and handholes for use in underground systems shall be designed and identified as defined in NFPA 70, for intended location and application.
  - 2. Boxes installed in wet areas shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Molded of sand and aggregate, bound together with polymer resin, and reinforced with steel, fiberglass, or a combination of the two.
  - 1. Standard: Comply with SCTE 77.
  - 2. Configuration: Designed for flush burial with open bottom unless otherwise indicated.
  - 3. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure and handhole location. Shall be steel plate, bolt down type, traffic rated.

4. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
5. Cover Legend: Molded lettering, "ELECTRIC", "LIGHTING", or "COMMUNICATION".
6. Minimum Pull Box Inside Dimensions (L x W x D): 24 inches by 13 inches by 24 inches.
7. Minimum Pull Box Outside Dimensions (L x W x D): 30 inches by 22 inches by 24 inches.

## **PART 3 - EXECUTION**

### **3.1 RACEWAY APPLICATION**

- A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
  1. Exposed Conduit: GRC.
  2. Concealed Conduit, Aboveground: IMC.
  3. Underground Conduit: RNC, Type EPC-40-PVC, direct buried.
  4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
  5. Boxes and Enclosures, Aboveground: NEMA 250, Type 4.
- B. Minimum Raceway Size: 1-inch (25-mm) trade size.
- C. Raceway Fittings: Compatible with raceways and suitable for use and location.
  1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
  2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with this type of conduit. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
  3. EMT: Use compression, plastic fittings. Comply with NEMA FB 2.10.
- D. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.
- E. Install surface raceways only where indicated on Drawings.

- F. Do not install nonmetallic conduit where ambient temperature exceeds 120 deg F (49 deg C).

### 3.2 INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
- B. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- C. Arrange stub-ups so curved portions of bends are not visible above finished slab.
- D. Install no more than the equivalent of three 90-degree bends for electrical conduit. Install no more than the equivalent of 180-degrees worth of bends for control and communication wiring. Support within 12 inches (300 mm) of changes in direction.
- E. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- F. Support conduit within 12 inches (300 mm) of enclosures to which attached.
- G. Raceways Embedded in Slabs:
  - 1. Run conduit larger than 1-inch (27-mm) trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure raceways to reinforcement at maximum 10-foot (3-m) intervals.
  - 2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
  - 3. Do not embed threadless fittings in concrete unless specifically approved by Architect for each specific location.
  - 4. Change from ENT to RNC, Type EPC-40-PVC, before rising above floor.
- H. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.

- I. Coat field-cut threads on PVC-coated raceway with a corrosion-preventing conductive compound prior to assembly.
- J. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.
- K. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. For electrical, install bushings on conduits up to 1-1/4-inch (35-mm) trade size and insulated throat metal bushings on 1-1/2-inch (41-mm) trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits. Communication and control conduits are to have threaded bushings.
- L. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.
- M. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces.
- N. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:
  - 1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
  - 2. Where an underground service raceway enters a building or structure.
  - 3. Where otherwise required by NFPA 70.
- O. Expansion-Joint Fittings:
  - 1. Install expansion fittings at all locations where conduits cross building or structure expansion joints.
  - 2. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.
- P. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches (1830 mm) of flexible conduit for equipment subject to

vibration, noise transmission, or movement; and for transformers and motors.

1. Use LFMC in damp or wet locations subject to severe physical damage.
- Q. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to bottom of box unless otherwise indicated.
- R. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
- S. Locate boxes so that cover or plate will not span different building finishes.
- T. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.
- U. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

### **3.3 INSTALLATION OF UNDERGROUND CONDUIT**

#### **A. Direct-Buried Conduit:**

1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom with sand, gravel, crushed aggregate, or native free-draining granular material having a sand equivalent of not less than 30 or a coefficient of permeability greater than 1.5 inches per hour (35 mm per hour). Bedding material shall be placed on a firm and unyielding subgrade so the pipe is supported for the full length of the barrel.
2. All narrow trenching shall conform to the City of San Diego Standard Drawings SDG-117 "Narrow Trench Resurfacing for Asphalt Concrete Surface Streets", SDG-118 "Narrow Trench Resurfacing for PCC Surfaced Streets", and be inspected prior to backfill. Trenches wider than 6-inch (6") shall conform to the City of San Diego Standard Drawings SDG-107 "Trench Resurfacing for Asphalt Concrete Surfaced Streets", SDG-108 "Trench Resurfacing for PCC Surfaced Streets", and SDG –Trench "Type G H I Backfill for Dry Utility". A 3-inch (3") bed of fine soil or sand shall be placed in the trench. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at

end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches (300 mm) of finished grade, make final conduit connection at end of run and complete backfilling to 90 percent relative compaction.

3. Install manufactured duct elbows for stub-up at poles and equipment and at building entrances through floor unless otherwise indicated. Encase elbows for stub-up ducts throughout length of elbow.
4. Communication and control conduits shall utilize 45-degree sweeps to ensure cables do not exceed manufacturer's maximum bending radius.
5. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through floor.
  - a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches (75 mm) of concrete for a minimum of 12 inches (300 mm) on each side of the coupling.
  - b. For stub-ups at equipment mounted on outdoor concrete bases and where conduits penetrate building foundations, extend steel conduit horizontally a minimum of 60 inches (1500 mm) from edge of foundation or equipment base. Install insulated grounding bushings on terminations at equipment.
6. Underground Warning Tape: Comply with requirements in Section 26 05 53 "Identification for Electrical Systems."

### **3.4 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES**

- A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.
- B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch (12.5-mm) sieve to No. 4 (4.75-mm) sieve and compacted to same density as adjacent undisturbed earth.
- C. Elevation: In paved areas, set so cover surface will be flush with finished grade. Set covers of other enclosures 1 inch (25 mm) above finished grade.



### **3.5 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS**

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies.

### **3.6 PROTECTION**

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
  - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
  - 2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

## **PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

### **4.1 MEASUREMENT**

- A. PVC conduit furnished and installed by the Contractor and accepted by the Authority Representative as complying with the drawings and specifications will be measured by the length of linear feet actually installed as determined by the Authority Representative from field measurement.
- B. #5 pull box with extension furnished and installed by the Contractor will be measured by the number per each pull box with extension actually installed as determined by the Authority Representative from field measurement.

### **4.2 PAYMENT**

Payments will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments, and Measurements) for each of the following bid items that are included in the Contract.

- A. The Contract price per linear foot to “FURNISH AND INSTALL 2” PVC CONDUIT shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals, including but not limited to, locating utilities, trenching, boring, conduit installation, compacting, backfilling, restoration, pull rope, and for doing all the work as shown on the drawings and specified in these special provisions. No additional payment will be made therefor.

- B. The Contract price per each to “FURNISH AND INSTALL #5 PULL BOX WITH EXTENSION” shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals, including but not limited to, locating of utilities, compaction, backfill and for doing all the work as shown on the drawings and specified in these special provisions. No additional payment will be made therefor.

**Payment will be made under:**

Item 26 05 33.1 Furnish and Install 2” PVC Conduit – per linear foot

Item 26 05 33.2 Furnish and Install #5 Pull Box with Extension – per each

**END OF SECTION 26 05 33**

**SPECIAL PROVISIONS**  
**DIVISION 26 - ELECTRICAL**  
**SECTION 26 05 53**

**IDENTIFICATION FOR ELECTRICAL SYSTEMS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
1. Identification for conductors.
  2. Underground-line warning tape.
  3. Warning labels and signs.
  4. Equipment identification labels.
  5. Miscellaneous identification products.

**1.2 RELATED DOCUMENTS**

- A. Section 260519 – Low Voltage Electrical Power Conductors and Cables
- B. Section 260533 – Raceways and Boxes for Electrical Systems

**1.3 ACTION SUBMITTALS**

The following items shall be submitted in accordance with Section 1D-09, Submittals:

- A. Product Data: For each electrical identification product indicated.

**1.4 QUALITY ASSURANCE**

- A. Comply with ANSI A13.1.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

## **PART 2 - PRODUCTS**

### **2.1 CONDUCTOR IDENTIFICATION MATERIALS**

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils (0.08 mm) thick by 1 to 2 inches (25 to 50 mm) wide.
- B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- C. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

### **2.2 UNDERGROUND-LINE WARNING TAPE**

- A. Tape:
  - 1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.
  - 2. Printing on tape shall be permanent and shall not be damaged by burial operations.
  - 3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.
- B. Color and Printing:
  - 1. Comply with ANSI Z535.1 through ANSI Z535.5.
  - 2. Inscriptions for Red-Colored Tapes: ELECTRIC LINE, HIGH VOLTAGE,.
  - 3. Inscriptions for Orange-Colored Tapes: TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE,.

### **2.3 WARNING LABELS AND SIGNS**

- A. Comply with NFPA 70 and 29 CFR 1910.145.
- B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.

- C. Baked-Enamel Warning Signs:
  - 1. Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application.
  - 2. 1/4-inch (6.4-mm) grommets in corners for mounting.
  - 3. Nominal size, 7 by 10 inches (180 by 250 mm).
- D. Warning label and sign shall include, but are not limited to, the following legends:
  - 1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
  - 2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES (915 MM)."

## **2.4 EQUIPMENT IDENTIFICATION LABELS**

- A. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with black letters on a white background. Minimum letter height shall be 3/8 inch (10 mm).

## **2.5 MISCELLANEOUS IDENTIFICATION PRODUCTS**

- A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Select paint system applicable for surface material and location (exterior or interior).
- B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- B. Apply identification devices to surfaces that require finish after completing finish work.

- C. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- D. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
- E. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot (15-m) maximum intervals in straight runs, and at 25-foot (7.6-m) maximum intervals in congested areas.
- F. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches (150 to 200 mm) below finished grade. Use multiple tapes where width of multiple lines installed in a common trench exceeds 16 inches (400 mm) overall.
- G. Painted Identification: Comply with requirements in painting Sections for surface preparation and paint application.

### 3.2 IDENTIFICATION SCHEDULE

- A. Accessible Raceways and Cables: Identify the covers and inside of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage. System legends shall be as follows:
  - 1. Power.
- B. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
  - 1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded feeder and branch-circuit conductors.
    - a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.
    - b. Colors for 208/120-V Circuits:
      - 1) Phase A: Black.
      - 2) Phase B: Red.
      - 3) Phase C: Blue.

- c. Colors for 480/277-V Circuits:
    - 1) Phase A: Brown.
    - 2) Phase B: Orange.
    - 3) Phase C: Yellow.
  - d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches (150 mm) from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.
- C. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.
- 1. Limit use of underground-line warning tape to direct-buried cables.
  - 2. Install underground-line warning tape for both direct-buried cables and cables in raceway.
- D. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
- 1. Labeling Instructions:
    - a. Indoor Equipment: Self-adhesive, engraved, laminated acrylic or melamine label Engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high label; where two lines of text are required, use labels 2 inches (50 mm) high.
    - b. Outdoor Equipment: Engraved, laminated acrylic or melamine label.
    - c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
    - d. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.
  - 2. Equipment to Be Labeled:

- a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer.
- b. Enclosures and electrical cabinets.
- c. Switchboards.
- d. Transformers.
- e. Enclosed switches.

## **PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

### **4.1 MEASUREMENT AND PAYMENT**

- A. Payment will be made in accordance with Section 1C – General Conditions – 1C-9.5 Quantity Units, Payments, and Measurements, for each of the following bid items that are included in the Contract:
- B. Work in this Section is considered incidental work under other payment items and no separate measurement or payment will be made to the contractor for work of this Section. Work of this section shall include furnishing all labor, material, equipment, and tools or doing all the work complete and accepted in place as shown on the drawings and as specified in these special provisions. No additional payment will be made therefor.

**END OF SECTION 26 05 53**



## **SPECIAL PROVISIONS**

### **DIVISION 27 – COMMUNICATIONS**

#### **SECTION 27 13 23**

#### **COMMUNICATIONS OPTICAL FIBER BACKBONE CABLING**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. This Section includes fiber optic cabling system consisting of installation, termination and testing.
- B. Project requires reestablishing fiber communication after relocation of associated equipment as specified on plans and these special provisions at the following locations:
  - 1. Palm Street: Existing fiber optic cable length from arm gate controller to Building RCC room 105 is unknown. Contractor to provision sufficient fiber optic cable to connect new controller location to building termination. Reuse of existing fiber optic cable to be determined by the Authority Representative if sufficient slack exists in existing fiber optic cable run. If existing fiber optic cable length is determined to have insufficient slack, contractor is to furnish and install new fiber optic cable from Building RCC room 105 to proposed arm gate controller location and terminate at both ends to reestablish communications.
  - 2. Harbor Street: Existing fiber optic cable length from arm gate controller to Building 2801 is unknown. Contractor to provision sufficient fiber optic cable to connect new controller location to building termination. Reuse of existing fiber optic cable to be determined by the Authority Representative if sufficient slack exists in existing fiber optic cable run. If existing fiber optic cable length is determined to have insufficient slack, contractor is to furnish and install new fiber optic cable from Building 2801 to proposed arm gate controller location and terminate at both ends to reestablish communications.

#### **1.2 RELATED DOCUMENTS**

- A. Section 26 05 33 – Raceways and Boxes for Electrical Systems

### 1.3 REFERENCES

- A. San Diego County Regional Airport Authority Information Technology Infrastructure Standards Construction Manual.

### 1.4 ACTION SUBMITTALS

The following items shall be submitted in accordance with Section 1D-09, Submittals:

- A. Product Data: For all products and materials – cut sheets, recommended application and installation methods.
- B. Shop Drawings:
  - 1. Drawings showing device locations and types, riser diagrams, wiring diagrams, approvals, test data.
  - 2. Complete shop drawings of all custom-fabricated or assembled products, including wiring diagrams.
  - 3. Drawings identifying all terminals and illustrating all device wiring connections.
  - 4. Elevations and detailing plans.
- C. Qualification Certification.
- D. Test Reports.
- E. Operation and Maintenance Manuals.
- F. Warranty Information.

## PART 2 - PRODUCTS

### 2.1 FIBER OPTIC CABLES

- A. The fiber-optic cable furnished and installed by the contractor shall meet the following requirements:
  - 1. Indoor/Outdoor, Loose Tube, Fiber-Optic Cable shall be constructed with loose buffer tubes containing fibers in the quantities specified and indicated. All fiber-optic cable shall be from the same manufacturer. Cable shall meet or exceed the following specifications and conform to the latest issue of ICEA S-104-696 Standard for Indoor-Outdoor Optical Fiber Cable.

2. The loose tube cables shall comply with the optical and mechanical requirements over an operating temperature range of -40°C to +70°C. The cable shall be tested in accordance with EIA-455-3A (FOTP-3), "Procedure to Measure Temperature Cycling Effects on Optical Fiber, Optical Cable, and Other Passive Fiber Optic Components." The change in optical attenuation at extreme operational temperature (-40°C to +70°C) for single mode fiber shall not be greater than 0.20 dB/km, with 80 percent of the measured values no greater than 0.15 dB/km. The single mode fiber measurement is made at 1550 nm.
3. Materials used within a given cable shall be compatible with all other materials used in the same cable when such materials come into contact. All cable components used shall not adversely affect the optical transmission or the mechanical integrity of the fiber placed in the cable. All materials used shall be non-toxic, non-corrosive, and shall present no dermal hazard. Cable shall be manufactured continuous with no factory splices in the fiber.
4. The Contractor shall provide a loop of slack for all fiber optic cables passing through, terminating, or splicing in a pull box. The Contractor shall install 50' of slack cable in each pull box or vault in which splicing is required per the Plans for future splicing access. A minimum of 20' of slack shall be provided at each pull box. No additional payment will be made for trunkline or branch cable slack and is considered incidental to the cost of the SMFO cable installation.
5. The fiber optic cable shall not be adversely affected by the following mechanical and environmental conditions.
  - a. Crush resistance:  
The cable shall not be crushed by a 10,000 N/m (6.78 lb./ft.) load.
  - b. Minimum Bending Radius  
The cable shall be designed for a minimum bending radius of:
    1. Installation (Loaded): 20 x cable diameter
    2. Static (Installed): 10 x cable diameter
  - c. Temperature:
    1. Operational: -40 to +70°C
    2. Storage: -40 to +70°C
  - d. Humidity: 0 to 100%
  - e. Tensile Strength: The cable shall not be damaged under the following tensile load:

1. Installation: 2,700 N (600 lb.-f)
  2. Static: 600 N (135 lb.-f)
6. Cables shall withstand an installation tensile load of not less than 600 pounds force and not less than 200 pounds force continuous tensile load.
  7. When tested in accordance with FOTP-33, "Fiber-optic cable Tensile Loading and Bending Test," and FOTP-38, "Measurement of Fiber Strain in Cables Under Tensile Load," a length of cable shall be tested to the rated tensile load. The rated tensile load shall be 2670 N (600 lb.-f). While under the rated tensile load, the fiber shall not experience a measured fiber strain greater than 60% of the fiber proof test level. After being held at the residual load (30% of the rated tensile load) the fiber shall not experience a measured fiber strain greater than 20% of the fiber proof test level nor an attenuation change greater than 0.15 dB at 1550 nm (single-mode). After the tensile load is removed, the fibers shall not experience an attenuation change greater than 0.40 dB at 1550 nm (single-mode).
  8. The cables shall withstand an impact of 1.5 lbs./in. as a minimum, and shall have a crush resistance of 300 pounds per square inch as a minimum. When tested in accordance with FOTP-25, "Repeated Impact Testing of Fiber-optic cables and Cable Assemblies," the cable shall withstand a minimum of 2 impact cycles at 3 locations separated by at least 150 mm. The impact energy shall be 4.4 NM. The fibers shall not experience an attenuation change greater than 0.40 dB at 1550 nm (single-mode) or greater than 0.60 dB at 1300 nm (multimode). The presence of visible cracks, splits, tears, or other openings on the outer surface of the jacket constitute a failure
  9. Compressive Load: When tested in accordance with FOTP-41, "Compressive Loading Resistance of Fiber-optic cables," the cable shall withstand a minimum compressive load of 220 N/cm (125 lb.-f/in.) applied uniformly over the length of the sample. The 220 N/cm (125 lb.-f/in.) load shall be applied at a rate of 2.5 mm (0.1 in) per minute. The load shall be maintained for a period of 1 minute. The load shall then be decreased to 110 N/cm (63 lb.-f/in.). Alternatively, it is acceptable to remove the 220 N/cm (125 lb.-f/in.) load entirely and apply the 110 N/cm (63 lb.-f/in.) load within five minutes at a rate of 2.5 mm (0.1 in) per minute. The 110 N/cm (63 lb.-f/in.) load shall be maintained for a period of 10 minutes. Attenuation measurements shall be performed before release of the 110 N/cm (63 lb.-f/in.) load. The change in attenuation shall not exceed 0.15 dB at 1550 nm for single-mode fibers.
  10. All fiber optic cables shall be all dielectric.

11. All fiber optic cables shall contain single mode fibers conforming to the requirements specified below:
- a. Each optical fiber shall be glass and consist of a doped silica core surrounded by concentric silica cladding. All fibers in the buffer tube shall be usable fibers, and shall be sufficiently free of surface imperfections and inclusions to meet the optical, mechanical, and environmental requirements of these Special Provisions. The required fiber grade SM shall reflect the maximum individual fiber attenuation, to guarantee the required performance of each and every fiber in the cable.
  - b. The single mode FOC shall comply with TIA /EIA 492-CAAB and the following optical specifications including the zero water peak.
  - c. Operational Wavelengths: 1,310 nm, 1383 nm and 1,550 nm.
  - d. Optical Attenuation: For all fibers the attenuation specification shall be a maximum attenuation for each fiber over the entire operating temperature range of the cable.
    - (1) @ 1,310 nm, 20 C: less than 0.38 dB/km
    - (2) @ 1,383 nm, 20 C: less than 0.36 dB/km
    - (3) @ 1,550 nm, 20 C: less than 0.26 dB/km
  - e. Optical fibers shall be single-mode (SM) step index optical glass wave-guides with a nominal core diameter of 8 to 9 microns. The fiber shall have a transmission window centered at 1310 nanometer (nm) wavelength and an optical window from 1300 to 1600 nm.
  - f. Cladding diameter shall be 125 microns plus or minus 3 microns. Core cladding offset shall be less than 1 micron. Minimum tensile strength of the fiber after primary protective coating shall be greater than 100,000 psi. Softening point of the clad material of the optical fiber shall be 1630 degrees C plus or minus 50 degrees.
  - g. Optical fiber shall be coated with suitable material to preserve the intrinsic high tensile strength of the glass fiber. Outside diameter of the coated optical fiber shall be 250 plus or minus 15 microns. Coating material shall be readily removable, mechanically or chemically, without damaging the optical fibers when the removal is desired. The coating of each optical fiber shall be a dual layered, UV cured acrylate. The coating shall be mechanically or chemically strippable without damaging the fiber.

- h. Each fiber shall be distinguishable by means of color-coding in accordance with TIA/EIA598-A, "Optical Fiber Cable Color Coding" and shall be targeted in accordance with the Munsell color shades. The color formulation shall be compatible with the fiber coating and the buffer tube filling compound, and be heat stable. In buffer tubes containing multiple fibers, the colors shall be stable across the specified storage and operating temperature range and not subject to fading or smearing onto each other or into the gel filling material. Colors shall not cause fibers to stick together.
  - i. Optical fibers shall be distinguishable from others in the same buffer tube by means of color coding according to the following:
 

1. Blue (BL)	7. Red (RD)
2. Orange (OR)	8. Black (BK)
3. Green (GR)	9. Yellow (YL)
4. Brown (BR)	10. Violet (VL)
5. Slate (SL)	11. Rose (RS)
6. White (WT)	12. Aqua (AQ)
12. 12 Strand Single Mode Fiber Optic Cable (FOC): 12 Strand Single Mode FOC shall be all dielectric and conform to the following requirements:
- a. Stranding:  
The 12 Strand Single Mode FOC shall have 12 individual glass fibers in a single blue buffer tube.
  - b. Buffer tube:  
Loose buffer tubes shall provide clearance between the fibers and the inside of the tube to allow for expansion without constraining the fiber. The fibers shall be loose or suspended within the tubes and shall not adhere to the inside of the tube.  
  
The loose buffer tubes shall be extruded from a material having a coefficient of friction sufficiently low to allow free movement of the fibers. The material shall be tough and abrasion resistant to provide mechanical and environmental protection of the fibers yet designed to permit safe.
  - c. Dry Core, Water Blocking and Dielectric strength member:  
Cable shall have dry core buffer tube with water swellable strength member surrounding the core buffer tube to prevent water migration.

Tensile strength shall be provided by high tensile strength aramid yarns or fiberglass which shall be placed evenly around the cable core buffer tube and shall not adhere to other cable components.

The water blocking tape and strength member may be a single or multiple layer(s).

d. Outer jacket:

Cable jacket shall be marked with manufacturer's name, sequential meter or foot markings, date of manufacture and a telecommunication handset symbol, as required by Section 350G of the National Electrical Safety Code (NEC). The markings shall be in contrasting color to the cable jacket.

Cable jacketing for exterior and aerial installations shall be medium density polyethylene material containing at least 2.6 percent carbon black with only black pigment added for coloring.

Jacketing for interior/exterior rated cable shall be UV-resistant polyvinyl chloride (PVC), which complies with optical fiber non-conductive riser (OFNR) requirements.

e. Maximum Cable Diameter:

The cable diameter shall not exceed 13 mm (0.51 inches).

## 2.2 CONNECTORS AND SPLICES

A. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

B. Fiber Optic Connectors and Pigtails

1. Fusion spliced Pre-polished connectors or connectorized pigtails are fusion spliced to the cable. Connectors shall not be installed and polished in the field.
2. Single-mode, 2 meter length, ultra PC polished, LC connector, fusion spliced, heat shrink protected on the splice.

C. Fusion-splice Protection Sleeves

1. The installer shall protect all fusion splices with rod-reinforced heat-shrink protective sleeves.

- D. Splice cases shall be water tight and re-enterable. Secure all cables in the splice case and end plates in accordance with manufacturer's specifications, ensuring a watertight seal.
- E. Exercise special care when assembling the case as to not damage any conductor and/or splice modules. Splicing technicians must have a manufacturer's installation certification for the splicing and splice cases being installed
- F. The splice enclosure shall not be flooded with encapsulate.
- G. Perform a pressure test each case for leaks at 12 psi, ensuring a watertight seal.

### **PART 3 - EXECUTION**

#### **3.1 INSTALLATION OF FIBER OPTIC CABLE**

- A. Installation procedures shall be in conformance with San Diego County Regional Airport Authority Information Technology Infrastructure Standards Construction Manual and the procedures specified by the cable manufacturer for the specific cable being installed. The Contractor shall submit the procedures to the Authority Representative in writing a minimum of 30 days prior to the start of cable pulling.
- B. FOC installation personnel shall also be familiar with the methods and procedures of installing fiber optic cables specified in this contract. The Contractor shall strictly adhere to the FOC manufacturer's qualification of installation personnel and installation procedures. Contractor is required to be an active and current member of the Corning NPI program to provide a 25 year warranty upon successful completion of an installation and review of test results
- C. The Contractor shall trim all existing conduit in existing pull boxes, as needed, to enable the FOC to be installed without exceeding the minimum bending radius of the cable.
- D. Under no circumstances shall fiber-optic cables be bent over a radius less than the manufacturer's minimum bending radius.
- E. The Contractor shall take care in handling the fiber-optic cable and reels. The Contractor shall be held responsible for any and all damage to the fiber-optic cable and/or fiber-optic cable reels. If cable reels are damaged, they shall be repaired or replaced with a new reel of FOC prior to installation. When lifting



reels, a spreader bar shall be used to prevent lifting cables from touching the reel flanges. Reels in storage shall be securely blocked up off the ground.

- F. Particular care shall be taken at all times to prevent the fiber-optic cable from being kinked, twisted, abraded or damaged in any manner. If the FOC is damaged in any way, then the Contractor shall notify the Authority Representative and inform the Authority Representative of the proposed remedial action plan to address the situation.
- G. Airport Authority must be made aware and approve of all proposed splicing plans. FOC cables shall only be spliced at locations shown on the Plans, unless otherwise approved by the Engineer in writing. If the Contractor requests permission from the Authority Representative to install additional fusion splices, not shown on the Plans and permission is granted by the Authority Representative, then the cost for furnishing, installing and testing, the additional fusion splices shall be at the Contractors expense.
- H. At locations where it is not practical to prevent the fiber-optic cable from coming in contact with the ground surface or other obstruction, suitable shielding boards shall be placed under the fiber-optic cable to protect it from damage.
- I. Mechanical aids may be used to install the FOC, provided that a tension measuring device is placed in tension to the end of the cable, and the allowable tension does not exceed the manufacturer's recommended pulling tension. A calibrated break-away feature shall be employed to work in tandem with the tension measuring device and limit excessive tension by disengaging just before the maximum allowable cable tension is exceeded.
- J. Information submittal on the proposed FOC pulling and stringing methods to be used shall be submitted to the Authority Representative within 30 days following the Notice to Proceed and a minimum of 30 days prior to the start of cable installation. The submittal shall contain project title and number; equipment description and specifications; manufacturer's test data covering the performance of the equipment and cable stress in a typical installation using cable equivalent to cable to be installed on this project; and user/installer manual for the equipment and installation procedures. Cable pulling shall not begin until all submittal reviews have been completed and all of the Authority Representatives comments have been addressed in writing.
- K. Following the completion of all reviews of the submittal and prior to the start of cable pulling, the Contractor shall conduct a training session with his staff and the Airport Authority staff, The Contractor shall notify the Authority Representative a minimum of 72 hours in advance of such training.

- L. The Contractor shall utilize installation methods that will maintain the minimum loaded bending radius of the cable at all times. Under no circumstance shall the cable be bent to a tighter bending radius than is specified in the Section 2.1, "Fiber Optic CableS," of these Special Provisions.
- M. At all times during the pull, the tensional operator shall monitor the tension meter to assure that the maximum pulling tension is not exceeded.
- N. The cable shall be continuously inspected as it leaves the reels. If any damage or deformity is found, stringing shall be stopped and corrective action shall be taken prior to continuing the pull. The Project Manager shall first approve any corrective action.
- O. Pull the cable to the location indicated at each terminal facility. Install a storage coil of 100 feet of cable in every run of FOC at underground splice box or pull box shown on Plans, unless otherwise directed by Engineer. Every FOC run shall have at least one 100 foot coil without exception. 50 feet of FOC shall be coiled up either side of each patch panel in each communication enclosure and rack.
- P. When the pulling grip is removed, cut off a minimum of twenty feet past the end of the grip to assure no stressed cable is used.
- Q. Fabric multi-celled innerduct shall be installed in underground conduit systems where fiber optic cable is placed.
  - 1. The method shall install cable without exceeding the cable manufacturer's tensile and compressive strength ratings.
  - 2. Three 3-cell fabric ducts (total of nine cells) shall be pulled and shall include a pull string with distance in feet markings at each end in each innerduct.
  - 3. Fabric multi-celled duct may be placed in existing conduits with existing cables, if fill ratio have been verified and coordination with SDCRAA has been conducted.
  - 4. Fabric multi-celled ducting should extend 4"-6" inside pull boxes, handholes and manholes, and be secured in place. Conduits must be sealed using an approved method by innerduct manufacturer.
  - 5. Every fabric multi-celled innerduct installed shall have a brass or plastic tag that contains the origin and destination. These tags shall be placed at both ends and in every pull box, handhole or manhole along the

pathway. These tags shall be securely fastened so that they cannot be accidentally removed.

- R. Raceways shall be thoroughly cleaned prior to installation to verify that no obstructions exist. All conduits shall be mandrelled prior to start of wire pulling to remove all debris and clear obstructions. No kinks in wire and cable will be permitted and bends shall be larger in radius than the minimum recommended by the manufacturer.
- S. A pulling machine shall be used that will not exceed the tension and bending radius ratings of the cable and will not cause any damage to the cable. All cable pulling equipment shall prevent sudden changes in cable tension and shall maintain minimum bending radius of 20 inches or greater.
- T. A tracer wire shall be provided and pulled in alongside FOC installed below ground on the project as shown on plans. The wire shall be No. 12 stranded XHHW-2 with green colored insulation. The wires shall be carefully placed so as not to be damaged. The tracer wire shall be continuous thru the entire length of each run from pull box to pull box, enclosure, or pole. The 5 feet of slack shall be extended into each pull box and fiber optic vault from each direction.
- U. Tracer wire may be spliced at intervals of not less than 500 feet and must reside in a vault or pull box.
- V. Provide Kellem grips and other supporting devices as required to support the cable in all vertical runs.
- W. Apply an approved cable pulling lubricant to the cable as it is pulled off the payoff reel to minimize friction.
- X. The cable shall not be pulled through more than 180 degrees of total bends in a continuous run. Where the cable is to be pulled through a raceway containing more than 180 degrees of load change, the cable shall be installed through multiple pulls by setting up pull and payoff points at intermediate vaults, manholes, or pull boxes. If intermediate pulls are not possible, consult with Engineer before proceeding.
- Y. Contractor shall be responsible for pumping or removing any dirt, slurry, mud, or water from any vault, pull-box or manhole as required to properly installing the cable.
- Z. The Contractor shall take any and all necessary measures to assure that the minimum bend radius of the cable is not violated, and that maximum pulling tensions are not exceeded.

AA. Fusion Splicing:

Following execution of contract, additional detail will be provided identifying specific fibers to be spliced together. The contract drawings identify the number of fibers to be spliced and location of splices. All terminations of fiber optic cables to patch panels shall have pigtails that are fusion spliced.

FOC splices shall be fusion type. Every splice shall be tested. The mean splice loss shall be obtained by measuring the loss through the splice in both directions and then averaging the resultant values.

At locations where new FOCs are being spliced together, the mean splice loss shall not exceed 0.1 dB per splice. If the mean splice loss exceeds 0.1 dB, then the Contractor shall cut out the splice and re-splice the cable until it passes. All costs associated with re-splicing and retesting shall be included in the price paid for various other items of work and no separate payment will be allowed therefor.

At least 48 hours prior to the start of work at each location containing existing FOC, the Contractor shall notify the Authority Representative in writing of the schedule of all work activities at each site. The schedule shall include the time and date the Contractor intends to start work at each of the sites. Within 10 minutes after arriving at each existing FOC site for the first time, the Contractor shall take photos of the existing cables and any apparent damage to the existing cables. The Contractor shall submit quality copies of the photos on quality photo paper to the Authority Representative within 24 hrs. after the photos are taken. It shall be assumed that the existing cables are in pristine condition if the Contractor fails to take and submit the photos within the time frames specified above.

At locations where existing FOC cables are to be spliced, the Contractor shall properly clean, cut, and prepare the cable ends and fiber strands for splicing.

At locations where new FOC is to be spliced onto existing FOC, the mean splice loss shall be lower than 0.1 dB per splice, unless otherwise specified herein. If the mean splice loss is greater than 0.1 dB, then the Contractor shall re-splice and retest. If after the third attempt at obtaining a splice with a mean splice loss less than 0.1dB the splice still does not pass, then the Contractor shall average the results of the three previous tests. If the mean splice loss of the splice is average or less than average and does not exceed 3dB, then the splice is acceptable. If not, then Contractor shall re-splice and retest the loss until the result is average or less than average of all of the previous tests and does not exceed 3dB. If after a total of five attempts the mean splice loss con-

tinues to exceed 3 dB, then the Contractor shall contact the Engineer for direction.

The Contractor is not responsible for any preexisting conditions in the existing cable prior to the Contractor arriving at the site, however, the Contractor shall be held responsible for damage to existing cables resulting from the Contractor's work activities or if the Authority Representative is of the opinion that the Contractor failed to properly perform work involving the existing cables that is covered under this contract ( i.e. take photos of the existing cable and submitting them prior to start of work ). All costs associated with re-splicing and re-testing shall be included in the price paid for various other items of work and no separate payment will be allowed therefor.

The field splices shall connect the fibers of the two FOC lengths together. These splices shall be placed in a splice tray and these splice tray(s) shall then be placed in the splice closure.

Fibers of the same buffer tube, but not being spliced shall be placed in a splice tray alongside spliced fibers. Buffer tubes that do not require enclosed fibers to be spliced shall not be disturbed and placed in the splice closure.

The termination splices shall connect the FOC span ends with pigtails. The termination splices shall be placed in a splice tray and the splice tray(s) shall then be placed in the fiber distribution unit (FDU). The individual fibers shall be looped one full turn within the splice tray to avoid micro bending. A 50 mm minimum bend radius shall be maintained during installation and after final assembly in the optical fiber splice tray. Each bare fiber shall be individually restrained in a splice tray. The optical fibers in buffer tubes and the placement of the bare optical fiber in the splice tray shall be such that there is no discernible tensile force on the optical fiber.

All splices shall be protected with a metal reinforced thermal shrink sleeve.

All fiber optic cables shall be labeled in the splice tray. Pigtail ends shall also be labeled to identify the destination of the fiber.

Contractor shall perform fusion splicing in clean environment.

Splices are only allowed where shown on the Plans, unless otherwise approved by the Engineer in writing.

Furnish and install heat-shrink fusion splice sleeves to all splices.

## **3.2 LABELING**

- A. All labels shall be computer or label maker generated.
- B. It is recommended that cable labeling be conform to Telecommunications Industry Association TIA/EIA-606A, Administrative Standard for Telecommunication Infrastructure.

### 3.3 CONNECTIONS

- C. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- D. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
- E. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches (150 mm) of slack.

### 3.4 FIBER OPTIC TESTING

- A. SDCRAA has the right to observe and verify all fiber optic tests. The Installer shall notify the Authority Representative one week prior to testing so that testing can be observed. SDCRAA will require the Installer to retest at the Installer's own expense if the tests are conducted without properly notifying the Authority Representative.
- B. Testing of all fiber optic cables shall occur on the reel with an OTDR prior to installations, to ensure there are no damages from the manufacturer. All strands shall be tested, and test results to be included in the overall documentation provided by the contractor.
- C. The testing shall demonstrate that there are no errors, damaged or incorrectly installed components, that the installation is correctly labeled and that all of the installed components meet or exceed the criteria detailed in this document.
- D. Any test that does not show that a component is satisfactorily installed, as per this document, shall be repeated at no additional expense to the SDCRAA. If a test procedure needs to be modified to satisfactorily test some components, the modifications shall be submitted to the Authority Representative for approval prior to the tests being conducted.
- E. The Installer shall supply all test equipment required to carry out all of these tests. The Installer shall include the cost of obtaining, calibrating, and maintaining test equipment, and the cost of carrying out and recording the tests

detailed in this document, including labor costs, in the total bid lump sum. No extra or additional costs will be considered.

- F. If on submittal of the test results there are any missing test results or incorrectly named files, the test shall be repeated at no additional cost to the Contract.
- G. The Installer shall test every fiber optic strand in the installation in accordance with the field test specifications defined by the ANSI/TIA/EIA 568-C or by the appropriate network application standard(s), whichever is more demanding.
- H. The Installer shall offset-null the power meter before starting a testing session to eliminate the detector dark currents. Offset nulling shall be performed before every test session or when environmental conditions change.
- I. The Installer shall use “Two (2) Jumper Reference” when referenced specification is not directed by primary specification to create reference test levels. The reference connections resemble those used during the actual loss test, which means that the same detectors are matched to the same sources for both the reference and the test.
- J. Before starting any new testing session or when a test jumper has been disconnected from the source port of either test set, the two jumper reference shall be repeated.
- K. Link attenuation does not include any active devices or passive devices other than cable, connectors, and splices, i.e. link attenuation does not include such devices as optical bypass switches, couplers, repeaters, or optical amplifiers.
- L. The link test limits attenuation are based on the use of the “Two (2) Jumper Reference” Method specified by ANSI/TIA/EIA 526-14A, Method A and ANSI/TIA/EIA 526-7, Method A.1; or the equivalent method. The user shall follow the procedures established by these standards or application notes to accurately conduct performance testing.
- M. The Installer shall test 100% of the installed cabling links; all cabling links must pass the requirements of the standards mentioned. The Installer shall diagnose and correct all failing links. The corrective action shall be followed with a new test to prove that the corrected link meets the performance requirements. The final and passing result of the tests for all links shall be provided in the test results documentation.
- N. Test equipment shall be factory calibrated on an annual basis, unless the manufacturer recommends this task to be performed more frequently.
- O. Test equipment shall have the most current calibration date indicated on the equipment.

- P. Evidence of calibration for test equipment shall be provided as part of the contractor's submittal package.
- Q. Trained technicians who have successfully attended an appropriate training program and have obtained a certificate as proof thereof shall execute the tests. Certificates shall be provided as part of the contractor's submittal package. These certificates may have been issued by any of the following organizations or an equivalent organization:
  - 1. The manufacturer of the fiber optic cable and/or the fiber optic connectors.
  - 2. Training organizations authorized by BICSI (Building Industry Consulting Services International with headquarters in Tampa, Florida) or by the ACP (Association of Cabling Professionals) Cabling Business Institute located in Dallas, Texas.
- R. Contractors are required to be an active and current member of the Corning NPI program to provide a 25 year warranty upon successful completion of an installation and review of test results.
- S. Test Jumpers shall have the core diameter and numerical aperture nominally equal to those of the cable plant being measured.
- T. The fiber optic launch cables, test reference cables, test jumpers, test aids and adapters must be of high quality and the cables shall not show excessive wear resulting from repetitive coiling and storing of the tester interface adapters. All test or reference optical patch cords shall be 3 meters in length, no more than 0.25 dB of total insertion loss, and 0.15 dB of repeatability over 10 mating cycles.
- U. Any test reference cable, launch cable or test aid used in the acquisition of a performance measurement of a fiber optic link or component shall never be coiled in a diameter less than 12 inches during testing.
- V. The "Pass or Fail" condition for the link-under-test is determined by the results of the required individual tests. A pass or fail result for each parameter is determined by comparing the measured values with the specified test limits for that parameter.

### **3.4.1 FIBER OPTIC TEST PARAMETERS**

- A. The following are current standards. Should these standards change in any way it is the responsibility of the Installer to adhere to the most current standards.



- B. The maximum allowable splice loss = 0.3 dB.
- C. The maximum allowable connector loss = 0.50 dB.
- D. The link attenuation shall be calculated by the following formulas specified in ANSI/TIA/EIA 568-B:
  - 1. Cable Attenuation (dB) = Attenuation Coefficient (dB/km) x Length (Km).
    - a. Attenuation Coefficient for single-mode is:
      - 1) 1310nm = .05 (Depending on fiber)
      - 2) 1550 nm = 1.0 (Depending on fiber)
    - b. Attenuation Coefficient for multi-mode is:
      - 1) 850nm = 3.5 (Depending on fiber)
      - 2) 1300nm = 1.5 (Depending on fiber)
  - 2. Link Attenuation (dB) = Cable Attenuation + Connector Attenuation + Splice Attenuation.
  - 3. Splice Attenuation (dB) = Number of Splices (S) x Splice Loss (dB).
  - 4. Connector Attenuation (dB) = Number of Connector Pairs x Connector Loss (dB).
- E. Single-Mode Testing
  - 1. The Installer shall perform the following tests on all single-mode fiber links.
    - a. Bi-Directional Attenuation / Insertion Loss using an Optical Power Meter
    - b. Bi-Directional Optical Return Loss (ORL)
    - c. Bi-Directional Optical performance Trace using an Optical Time Domain Reflectometer (OTDR)
    - d. Optical End Face visible inspection
- F. Single-mode backbone links shall be tested at 1310nm and 1550nm in accordance with ANSI/TIA/EIA 526-7, Method A.1, "Two Reference Jumper" or the equivalent method. All single-mode links shall be certified with test tools using laser light sources at 1310nm and 1550nm.
  - 1. Single-mode links shall be tested at 1310nm and 1550nm in accordance with ANSI/TIA/EIA 526-7, Method A.1, Two Reference Jumper Cable Measurement.

2. All single-mode links shall be certified with test tools using laser light sources at 1310nm and 1550nm.
3. The Installer shall test attenuation/insertion loss bi-directionally, in accordance with ANSI/TIA/EIA 526-7, Method A –1.
4. The Installer shall test Optical Return Loss (ORL) bi-directionally in accordance with ANSI/TIA/EIA 107, Return Loss for Fiber Optic Components.
5. The Installer shall perform an optical performance trace using an OTDR, bidirectionally, in accordance with ANSI/TIA/EIA 455-59, “Measurement of Fiber Point Defects Using An OTDR”, ANSI/TIA/EIA 455-60, “Measurement of Fiber or Cable Length Using An OTDR”, ANSI/TIA/EIA 455-61, “Measurement of Fiber or Cable Attenuation Using An OTDR”.

G. Optical Fiber Test Results and Documentation:

1. The test result information for each link shall be recorded in the memory of the field tester upon completion of the test.
2. The test result records saved by the tester shall be transferred into a Microsoft Windows™ based database utility that allows for the maintenance, inspection and archiving of these test records. A guarantee must be made that these results are transferred to the PC unaltered, i.e., “as saved in the tester” at the end of each test. The popular ‘csv’ format (comma separated value format) does not provide adequate protection and shall not be acceptable.
3. The database for the completed job shall be stored and delivered on CD-ROM; this CD-ROM shall include the software tools required to view, inspect, and print any selection of test reports.
4. A paper copy of the test results shall be provided that lists all the links that have been tested with the following summary information:
  - a. The identification of the link in accordance with the naming convention defined in the overall system documentation.
  - b. The overall Pass/Fail evaluation of the link-under-test including the attenuation worst case margin (margin is defined as the difference between the measured value and the test limit value).
  - c. The date and time the test results were saved in the memory of the tester.

5. General Information to be provided in the electronic data base containing the test result information for each link:
  - a. The identification of the customer site as specified by the end-user.
  - b. The overall Pass/Fail evaluation of the link-under-test.
  - c. The name of the standard selected to execute the stored test results.
  - d. The cable type and the value of the 'index of refraction' used for length calculations.
  - e. The date and time the test results were saved in the memory of the tester.
  - f. The brand name, model and serial number of the tester.
  - g. The revision of the tester software and the revision of the test standards database in the tester.
  
6. The detailed test results data to be provided in the electronic database for each tested optical fiber must contain the following information:
  - a. The identification of the link/fiber in accordance with the naming convention defined in the overall system documentation.
  - b. The insertion loss (attenuation) measured at each wavelength, the test limit calculated for the corresponding wavelength and the margin (difference between the measured attenuation and the test limit value).
  - c. The link length shall be reported for each optical fiber for which the test limit was calculated.
  
7. Acceptance of the fiber cable installation is partially contingent on the review and approval of the fiber power meter/source test data submitted.

## **PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

### **4.1 MEASUREMENT**

- A. Fiber optic cable furnished and installed by the Contractor and accepted by the Authority Representative as complying with the drawings and specifications will be measured by the length of linear feet actually installed as determined by the Authority Representative from field measurement.
  
- B. Fiber testing and integration performed by the Authority Maintenance Contractor and accepted by the Authority Representative as complying with the drawings and specifications will be paid under allowance.

## 4.2 PAYMENT

Payments will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments, and Measurements) for each of the following bid items that are included in the Contract.

- A. The Contract lump sum price paid to "FURNISH AND INSTALL 12-STRAND SINGLE MODE FIBER OPTIC CABLE" shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals, including but not limited to, installation of fiber, termination of fiber, and for doing all the work complete and accepted in place as shown on the drawings and as specified in these special provisions. No additional payment will be made therefor.

### Payment will be made under:

Item 27 13 23	Furnish and Install 12-Strand Single Mode Fiber Optic Cable – per lineal foot
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**END OF SECTION 27 13 23**

## **SPECIAL PROVISIONS**

### **DIVISION 28 – ELECTRICAL SAFETY AND SECURITY**

#### **SECTION 28 13 00**

#### **ACCESS CONTROL**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. The work includes the supply and installation of all components, specified or not, for a complete and working Lift Arm and Speedgate System. The Work includes, but is not limited to, the supply and installation of.
1. Speedgate Controller.
  2. Battery Back-Up System.
  3. Vehicle Detector Modules.

#### **1.2 RELATED DOCUMENTS**

- A. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables
- B. Section 26 05 33 – Raceway and Boxes for Electrical Systems
- C. Section 26 05 53 – Identification for Electrical Systems

#### **1.3 REFERENCES**

- A. San Diego County Regional Airport Authority Information Technology Infrastructure Standards Construction Manual.

#### **1.4 SUBMITTALS**

- A. Product Data: For all products and materials – cut sheets, recommended application and installation methods.
- B. Shop Drawings:
1. Drawings showing device locations and types, riser diagrams, wiring diagrams, approvals, test data.
  2. Complete shop drawings of all custom-fabricated or assembled products, including wiring diagrams.
  3. Drawings identifying all terminals and illustrating all device wiring connections.

- 4. Elevations and detailing plans.
- C. Qualification Certification.
- D. Test Reports.
- E. Operation and Maintenance Manuals.
- F. Warranty Information.

## **1.5 QUALITY CONTROL**

- A. The Contractor shall perform all quality control tests and inspections necessary to control the production and construction process applicable to this specification.
- B. All equipment provided by the Contractor shall be new and shall meet or exceed the latest published specifications of the manufacturer in all respects.
- C. Contractor to provide the latest model/revision of a specified piece of equipment, at the time of installation.
- D. Obtain detailed instructions for installation from manufacturer of each product.

## **1.6 QUALITY ASSURANCE**

- A. Quality Assurance (QA) testing and inspections may be conducted by the Authority or designated representative. QA testing and inspections performed by the Authority do not relieve the Contractor from the responsibility to perform Quality Control testing as specified.

## **1.7 PROJECT CONDITIONS**

- A. Drawings have been supplied for use in determining cable footages. However, the Contractor should verify the footages and routing, as neither the Authority nor the Consultant will be responsible for discrepancies.
- B. Contractor shall be responsible for final routing of all cables and/or conduits

## **PART 2 - PRODUCTS**

### **2.1 SPEEDGATE CONTROLLER**

- A. Speedgate controllers shall be Wallace PDXT.

- B. Controllers shall be installed in a 30 inch by 30 inch by 12 inch NEMA 3R cabinet. Cabinets shall have Authority approved locking mechanism.
- C. Speedgate shall include 2 year manufacturer warranty.
- D. Airport Authority Maintenance Contractor shall perform the following work:
  - 1. Furnish and install DSX logic controller for each location.
  - 2. Electrical wiring for DSX logic controller.
  - 3. Establishing communication connection from fiber distribution unit located within arm gate controller cabinet to DSX logic controller.
  - 4. Testing and commissioning of new DSX logic controllers.

## **2.2 BATTERY BACK-UP SYSTEM**

- A. Battery back-up shall be Alpha Micro 350 Rugged UPS, Clary SP 560, or approved equal.
- B. Battery back-up shall be housed in a Nema 3R rated cabinet per manufacturer's specification.
- C. Battery back-up system shall provide a minimum run time (30) minute of full run-time operation for associated Speedgate operating system.

## **2.3 VEHICLE DETECTOR MODULE**

- A. Vehicle detector modules shall be Reno A&E Model AX-4, EDI LMA-1250-LV, or approved equal.

## **2.4 SPEEDGATE TAMPER SWITCH**

- A. Tamper switch to be installed within Speedgate manual operator hatch.
- B. Tamper switch is to be integrated with the Speedgate controller and fiber optic system to alert the PMO if the hatch door is being opened.

## **PART 3 - EXECUTION**

### **3.1 OPERATION**

- A. Sequence of operation is as follows:
  - 5. Vehicle approaches the gate area and the approaching loops sense the presence of the vehicle and sends an input to the controller. Vehicle gates are not to be used by pedestrians, and this logic will prevent pedestrian usage of the vehicular gates.

6. A valid card is presented to the card reader, RFID or emergency strobe signal is received, an input is sent to the arm reader controller and arm gate is opened. The gate arm controller will send a signal to the Speedgate controller to fully open. The Speedgate will only open if a vehicle is being detected by the loop. The Speedgate stops in this position and awaits the next activity.
7. The vehicle continues forward and enters into the zone of the detector loop directly beneath the arm gate. Detecting a vehicle presence will hold both the arm gate and Speedgate in the open position. Once the vehicle has cleared this loop the gate arm will begin to close.
8. The vehicle continues forward and enters inside the loop just beyond the Speedgate will remain open as the loop detects a vehicle present.
9. The Speedgate will start the close cycle after the vehicle has cleared the last loop by entering through the gate opening. The Speedgate will not proceed to the close cycle if vehicle presence is detected on the loops approaching the arm gate.

### **3.2 COMMISSIONING**

- A. Wallace Perimeter Security representative is required onsite to commission and certify the installation.
- B. Contractor is responsible for scheduling and all cost associated with commissioning of the gate system.

### **3.3 MITIGATION**

- A. The contractor shall furnish and install all necessary equipment; logic controllers, relay switches, etc., to ensure the following for the scenario in which an arm gate malfunctions:
  1. Card readers, RFIDs and emergency strobes shall operate the opening of speed gates.
  2. Speedgates shall operate in a manner that only allows access for one vehicle at a time.
- . Contractor shall submit operations and maintenance manual including malfunctioning scenarios for Authority's approval.

### **3.4 SPEEDGATE CONTROLLERS**

- A. Speedgate controllers shall be installed 12 inches above finished surface.



- B. Controller cabinet stand and associated anchoring hardware shall be constructed per manufacturer's recommendation.

### **3.5 BATTERY BACK-UP SYSTEM**

- A. Battery back-up cabinets shall be mounted to back of Speedgate controller cabinets per manufacturer's recommendation unless otherwise specified on plans.
- B. Contractor shall perform a load test to ensure a minimum (30) minutes of full run time operation.

### **3.6 DEMONSTRATION AND TRAINING**

- A. Training of the Authority's operation and maintenance personnel is required in cooperation with the Authority and/or Authority's Representative. Provide competent personnel to provide instruction to operation and maintenance personnel concerning the location, operation and troubleshooting of the installed systems. The instruction shall be scheduled in coordination with the Authority and/or Authority's Representative after submission and approval of formal training plans.

### **3.7 TESTING**

- A. After work is completed, and prior to requesting the Acceptance Test, Contractor shall conduct a final inspection and pre-test all equipment and system features. Contractor shall correct any deficiencies discovered as the result of the inspection and pre-test.
- B. Contractor shall submit a request for the Acceptance Test in writing to the Authority using an approved "Request For Security Systems Acceptance Test" form, a copy of which will be provided.
  - 1. This request shall be submitted to the Authority no less than 7 days prior to the requested test date.
  - 2. The request for Acceptance Test shall constitute a certification from Contractor that all work is complete and in compliance with the Contract Documents, Manufacturer installation specifications, that all systems have been tested, and all corrections have been made.
- C. Acceptance Test shall be scheduled during a period that is acceptable to the Authority and a complete system test can be accomplished.
- D. Contractor shall provide the services of no fewer than 2 technicians to perform the Acceptance Test.

3. Technicians performing the Acceptance Test shall have been involved in the installation of this project and shall be thoroughly familiar with all aspects of the work.
- E. Contractor shall provide all tools, test equipment, and other facilities needed to accomplish the Acceptance Test.
  - F. During Acceptance Test, Contractor shall demonstrate all equipment and system features to the Authority or their agent
    4. Contractor shall fully cooperate with the Authority and provide assistance with the inspection and test.
    5. Contractor shall remove and reinstall covers, open and restore wiring connections, operate equipment, and perform other reasonable work as requested by the Authority during the Acceptance Test.
  - G. Any portions of the work found to be deficient or not in compliance with the Contract Documents will be rejected.
    6. The Authority will prepare a list of any deficiencies observed during the Acceptance Test.
    7. A copy of this list will be provided to the Contractor, who will promptly correct all deficiencies.
  - H. Should the systems not be ready for testing by the Consultant at the date(s) and time(s) indicated by the Contractor, system acceptance testing may be rescheduled at the sole discretion of the Consultant. The Contractor shall pay for the labor and expenses of the Consultant and other project team members assembled at the project site for the purpose of system acceptance testing for the date(s) of the original of the scheduled testing plus the labor and expenses of the Consultant and other project team members for the rescheduled testing date(s). The labor rate for the Consultant shall be a flat rate of \$200.00/hour including travel time. Other project team member labor costs shall be at their respective published rates. The PM and/or Authority shall be entitled to deduct any money owing to the Authority, PM, Consultant, or other project team members under this contract from any sum which may become due or is payable to the Contractor under this Contract for the purposes of satisfying the charges listed above.

### **3.8 SERVICE SUPPORT**

- A. The Contractor shall maintain a factory trained staff capable of performing all necessary support tasks.
- B. The Contractor shall have a 24-hour service staff located within a 100-mile radius of the project site.

- C. The service/organization shall have a minimum of 5 years experience with similar types of systems and equipment.
- D. Response time for service shall be on a timely basis. Phone contact shall occur within one hour. After receipt of service request, on-site service shall occur within 24 hours.

### **3.9 WARRANTY**

- A. The Security Systems described herein shall carry a warranty covering parts and labor for a period of one (1) full year from the date of Authority acceptance.
- B. During the warranty coverage, there shall be 2 preventative maintenance checks which include software updates, inspection of all components, fine adjustments and repairs as required.

## **PART 4 - MEASUREMENT AND PAYMENT**

### **4.1 MEASUREMENT**

- A. Speedgate vehicle detector loops furnished and installed by the Contract or and accepted by the Authority Representative as complying with the drawings and specifications will be measured by the number per each loop actually installed as determined by the Authority Representative from field measurement.
- B. 6' vehicle detector loops furnished and installed by the Contract or and accepted by the Authority Representative as complying with the drawings and specifications will be measured by the number per each loop actually installed as determined by the Authority Representative from field measurement.
- C. Wallace PDXT controller cabinet with pedestal stand furnished and installed by the Contractor and accepted by the Authority Representative as complying with the drawings and specifications will be measured by the number per each cabinet actually installed as determined by the Authority Representative from field measurement.
- D. Vehicle detector modules furnished and installed by the Contractor and accepted by the Authority Representative as complying with the drawings and specifications will be measured by the number per each module actually installed as determined by the Authority Representative from field measurement.

- E. Battery backups furnished and installed by the Contractor and accepted by the Authority Representative as complying with the drawings and specifications will be measured by the number per each battery backup actually installed as determined by the Authority Representative from field measurement.
- F. Existing controller cabinet and battery backup removed and relocated by the Contractor and accepted by the Authority Representative as complying with the drawings and specifications will be measured by the number per each controller cabinet and battery backup actually removed and reinstalled as determined by the Authority Representative from field measurement.
- G. Commissioning of Wallace Speedgate by the Authority Maintenance Contractor and accepted by the Authority Representative as complying with the drawings and specifications will be paid under allowance.
- H. Installation of DSX logic controller by the Authority Maintenance Contractor and accepted by the Authority Representative as complying with the drawings and specifications will be paid under allowance.

## 4.2 PAYMENT

Payment will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments, and Measurements) for each of the following bid items that are included in the Contract.

- A. The Contract price per each to “FURNISH AND INSTALL SPEED GATE VEHICLE DETECTOR LOOP” shall include full compensation for furnishing all labor, materials, equipment, tools, and incidentals, including but not limited to, loop wire, detector lead-in cable, saw cutting, sealant, splicing, termination, testing and for doing all work as shown on the drawings and specified in these special provisions. No additional payment will be made therefor.
- B. The Contract price per each to “FURNISH AND INSTALL 6’ VEHICLE DETECTOR LOOP PER CALTRANS STANDARD PLAN ES-5B” shall include full compensation for furnishing all labor, materials, equipment, tools, and incidentals, including but not limited to, loop wire, detector lead-in cable, saw cutting, sealant, splicing, termination, testing and for doing all work as shown on the drawings and specified in these special provisions. No additional payment will be made therefor.

- C. The Contract price per each to “FURNISH AND INSTALL WALLACE PDXT CONTROLLER CABINET WITH PEDESTAL STAND” shall include full compensation for furnishing all labor, materials, equipment, tools, and incidentals, including but not limited to, controller, wiring, cabinet, pedestal, anchoring hardware and for doing all work as shown on the drawings and specified in these special provisions. No additional payment will be made therefor.
- D. The Contract price per each to “FURNISH AND INSTALL VEHICLE DETECTOR MODULES” shall include full compensation for furnishing all labor, materials, equipment, tools, and incidentals, including but not limited to, terminations, wiring, mounting hardware, and for doing all work as shown on the drawings and specified in these special provisions. No additional payment will be made therefor.
- E. The Contract price per each to “FURNISH AND INSTALL BATTERY BACK-UP” shall include full compensation for furnishing all labor, materials, equipment, tools, and incidentals, including but not limited to, battery back-up unit, batteries, wiring, cabinet, and for doing all work as shown on the drawings and specified in these special provisions. No additional payment will be made therefor.
- F. The Contract price per each to “REMOVE AND RELOCATE EXISTING CONTROLLER CABINET AND BATTERY BACKUP” shall include full compensation for furnishing all labor, materials, equipment, tools, and incidentals, including but not limited to, relocation of battery back-up unit, batteries, wiring, cabinet, and for doing all work as shown on the drawings and specified in these special provisions. No additional payment will be made therefor.

**Payment will be made under:**

Item 28 13 00.1	Furnish and Install Speed Gate Vehicle Detector Loop – per Each
Item 28 13 00.2	Furnish and Install 6’ Vehicle Detector Loop Per Caltrans Standard Plan ES-5B – per Each
Item 28 13 00.3	Furnish and Install Wallace PDXT Controller Cabinet with Pedestal Stand – per Each
Item 28 13 00.4	Furnish and Install Vehicle Detector Modules – per Each
Item 28 13 00.5	Furnish and Install Battery Back-Up – per Each

Item 28 13 00.6

Remove and Relocate Existing Controller Cabinet and Battery Backup

**END OF SECTION 28 13 00**

## **SPECIAL PROVISIONS**

### **DIVISION 32 – EXTERIOR IMPROVEMENTS**

#### **SECTION 32 12 16**

#### **ASPHALT PAVING**

### **PART 1 – GENERAL**

#### **1.1 SUMMARY**

A. This section Includes:

1. Hot-mix asphalt concrete paving

#### **1.2 REFERENCE STANDARDS**

A. All references made within these technical provisions to the various standards shown in Section 1.2.B shall be limited to construction materials, methods, and all work incidental to the item of work only. Measurements and Payments shall be established as shown within Part 4 of these special provisions only.

B. The following is a list of standards which may be referenced in this section:

1. California Department of Transportation (Caltrans) Standard Specifications, 2015 Edition

#### **1.3 SUBMITTALS**

The following items shall be submitted in accordance with Section 1D-09, Submittals:

- A. Asphalt Concrete: Contractor shall submit a job mix design for 3/4 inch Type A HMA with PG70-10 in accordance with Section 39-2.02 Caltrans Standard Specifications.
1. Submittal shall identify source and individual grading of each material used to produce the mix design (including the percentage and individual gradation of any manufactured or natural sands), the combined aggregate gradation, aggregate quality reports, the optimum binder content (OBC), void content, RAP percentage, antistripping additives, plant identification, mix number, and the source and performance grade of the paving asphalt. Guidelines for submittal is indicated in Section 39-2.01A(3) Caltrans Standard Specifications.

2. All mix design documentation including aggregate test data, and job mix formula shall be within 12 months of submittal.
3. Provide copies of material certificates signed by material producer and Contractor, certifying that each paving material item complies with or exceeds, specified requirements.

## 1.4 QUALITY CONTROL

### A. Regulatory Requirements:

1. Hot Mix Asphalt: Comply with Section 39 “Hot Mix Asphalt” of the Caltrans Standard Specifications. Quality Control and Acceptance shall be in accordance with Sections 39-2.02A(4)(b) and 39-2.02A(4)(e). Quality Acceptance shall include at a minimum one test per patch area for asphalt binder content and compaction, and density of core per each production shift.

B. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by authorities having jurisdiction.

C. Contractor will hire an independent Testing Agency for daily on-site monitoring, testing, and inspections during paving operations. The Testing Agency shall conduct both quality control and acceptance testing.

D. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.

E. Hot mix asphalt that fails to meet the Quality and Acceptance requirements shall be removed and replaced at no additional cost to the Owner.

F. Pre-installation Conference: Conduct conference at Project site.

1. Review methods and procedures related to hot-mix asphalt paving
2. Review condition preparatory work.
3. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.
4. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.



## **PART 2 – PRODUCTS**

### **2.1 HOT MIX ASPHALT**

- A. Hot mix asphalt shall conform to Caltrans Standard Specifications, Section 39-2.02B “Materials”
- B. Hot mix asphalt for the pavement shall be 3/4-inch HMA Type A.
- C. Asphalt binder shall grade PG 70-10.
- D. Tack Coat shall be grade SS-1h.

## **PART 3 – EXECUTION**

### **3.1 HOT MIX ASPHALT, TYPE A**

- A. Hot mix asphalt (including application of tack coat) for pavement and sidewalk shall be constructed in accordance with the following sections of the Caltrans Standard Specifications.
  - 1. 39-2.01C and 39-2.02C “Construction”
  - 2. 39-2.01A(4)(i)(iii) “Pavement Smoothness”

## **PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

### **4.1 MEASUREMENT**

- A. The quantity of full depth pavement repair performed by the Contractor will be measured by the ton of asphalt actually placed as determined by the Authority Representative from field measurement.

### **4.2 PAYMENT**

Payments will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments and Measurements) for each of the following bid items that are included in the Contract.

- A. The contract unit price paid for “FULL DEPTH PAVEMENT REPAIR” per ton shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals necessary for all of the work as shown on the drawings and specified in these Special Provisions. No additional payment will be made therefor.

**Payments will be under:**

Item 32 12 16

Full Depth Pavement Repair – per ton

**END OF SECTION 32 12 16**

**SPECIAL PROVISIONS**  
**DIVISION 32 – EXTERIOR IMPROVEMENTS**  
**SECTION 32 17 23**  
**PAVEMENT MARKINGS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section includes painted markings applied to asphalt and concrete pavement.

**1.2 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site at the San Diego International Airport.

**1.3 ACTION SUBMITTALS**

The following items shall be submitted in accordance with Section 1D-09, Submittals:

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.

**PART 2 - PRODUCTS**

**2.1 PERFORMANCE REQUIREMENTS**

- A. Accessibility Standard: Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design" the ABA standards of the Federal agency having jurisdiction and ICC A117.1.

**2.2 PAVEMENT-MARKING PAINT**

- A. Pavement-Marking Paint: MPI #32, solvent-borne traffic-marking paint.

1. Color: White, Yellow.
- B. Pavement-Marking Paint: MPI #97, latex traffic-marking paint.
  1. Color: White, Yellow.
- C. Glass Beads: AASHTO M 247, Type 1.

## **PART 3 - EXECUTION**

### **3.1 REMOVAL OF EXISTING PAVEMENT MARKINGS**

- A. Existing pavement markings which are shown to be removed shall be blocked out into rectangular shapes. Markings within the rectangular shapes shall be removed by waterblasting or grinding such that 90% of all paint is removed to the satisfaction of the Authority Representative. The remaining pavement area within the rectangular shape shall be treated with the same removal process such that the entire rectangular shape is uniform in appearance. On bituminous pavements, the Contractor shall apply a pavement sealer to the entire blocked out area of treatment for paint removal. Pavement sealer shall be applied in accordance with the manufacturer's recommendations.

Black paint may be used to temporarily cover existing markings which will be restored upon completion of construction only when approved by the Authority Representative. Prior to repainting the original markings, the Contractor shall remove the black paint and the original markings as prescribed above. The removal area may be limited to the existing markings only if there is no impact to the adjacent pavement surface. If the removal impacts the adjacent surface, the Contractor shall perform the removal process in the rectangular shapes prescribed above. Otherwise, black paint shall not be used to cover markings.

If the condition of interim markings are flaking or in otherwise poor condition such that the permanent markings will not properly adhere, the Contractor shall remove the faulty areas at the Contractor's own expense.

### **3.2 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 a minimum of 28 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 provide a minimum wet film thickness of 15 mils.
  - 1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils. Apply paint so that it cannot run beneath stencil.
  - 2. Broadcast glass beads uniformly into wet markings at a rate of 6 lb/gal..

## **PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

### **4.1 MEASUREMENT**

- A. The quantity of paint removal performed by the Contractor will be measured by the area of square feet actually removed as determined by the Authority Representative from field measurement.
- B. The quantity of paint markings to be paid for will be measured by the area of square feet of markings actually installed as determined by the Authority Representative from field measurement.

### **4.2 PAYMENT**

Payments will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments and Measurements) for each of the following bid items that are included in the Contract.

- A. The contract unit price for "PAINT REMOVAL" per square feet shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals necessary for all of the work as shown on the drawings and specified in these Special Provisions. No additional payment will be made therefor.
- B. The contract unit price for "PAINT MARKINGS" per square feet shall include full compensation for furnishing all labor, materials, equipment, tools and incidentals necessary for all of the work as shown on the drawings and specified in these Special Provisions. No additional payment will be made therefor.

**Payments will be under:**

Item 32 17 23.1	Paint Removal – per square foot
Item 32 17 23.2	Paint Markings – per square foot

**END OF SECTION 32 17 23**

**SPECIAL PROVISIONS**  
**DIVISION 32 – EXTERIOR IMPROVEMENTS**  
**SECTION 32 31 12**  
**TRACKLESS SPEEDGATE**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. The trackless speedgate is a post driven electrically operated fast acting bi-fold gate.
- B. All structural columns, drive unit, controller, gate panels by Wallace Perimeter Security.

**1.2 RELATED SECTIONS**

- A. Section 32 31 13 - Fences.
- B. Section 03 30 00 - Cast-in-Place Concrete.

**1.3 SUBMITTALS**

The following items shall be submitted in accordance with Section 1D-09, Submittals:

- A. Shop Drawings:
  - 1. Submit final assembly drawings
  - 2. Indicate electric power requirements, installation details, wiring diagrams.
- B. Installation instructions:
  - 1. Submit two copies of manufacturer's written installation instructions.
  - 2. Submit reference list of five (5) installations of the specified type within the last 2 years.
- C. Test reports:
  - 1. Drive unit shall bear a label indicating that the gate controller/operator mechanism has been tested certified to UL

325 and CSA C22.2 No. 247 standards for all electrical components.

#### **1.4 CLOSEOUT SUBMITTALS**

The following items shall be submitted in accordance with Section 1D-09, Submittals:

- A. Provide operation and maintenance data for gate for incorporation into manual.
- B. Conduct comprehensive demonstration for maintenance staff on operation and care of gate.

#### **1.5 QUALITY ASSURANCE**

- A. Manufacturer: A company specializing in the manufacture of automated gate systems.
- B. Installer: A minimum of three years experience installing similar equipment and approved by manufacturer.

### **PART 2 - PRODUCTS**

#### **2.1 HIGH SPEED ELECTRONIC SECURITY GATE**

A. Manufacturers:

- 1. Wallace Perimeter Security  
Model PDXT SpeedGate  
Contact Wallace Perimeter Security:  
90 Lawson Crescent, Winnipeg, Manitoba Canada, R3P 2H8  
T. 866.300.1110 F. 204.284.1868  
[wallaceperimetersecurity.com](http://wallaceperimetersecurity.com)

#### **2.2 MATERIALS**

- A. Steel sheet: hot dipped galvanized to ASTM A653, A36 pre galvanized steel.
- B. Steel sections: to ASTM (Canadian Equivalent - CAN/CSA-G40.21) Grade [300W] [350W].
- C. Welding materials: to ASWD1.1 (Canadian Equivalent - CSA W59).
- D. Electrical components: Complete gate system to be UL325 listed and/or CSA C22.2 No.247 and complying with local requirements.



E. Power Supply: 208/240 V – 20 Amp single phase 60 hertz power supply.

## 2.3 COMPONENTS

### A. Gate Columns:

1. Formed steel columns, anchored to concrete foundation.
2. Columns to be 12” square with a wall thickness of .250”.

### B. Model PDXT:

1. Dimensions: 10 ft high x 14 ft clear opening.
2. Panels to be capable of fully opening within 7 seconds.
3. Panels: As shown on Contract Drawings.
4. Manufacturer's standard corrosion resistant hinges. Hinges are to be serviceable heavy duty corrosion resistant base material with a minimum 1 ” stainless steel shaft.
5. Fully compliant with ASTM F2200 – 05, Class I through Class IV.

### C. Safety/Obstruction Devices:

1. Provide reduced speed sensor - Absolute encoder mounted directly to drive motor to act as primary entrapment detection device.
2. Photoelectric transmitter and receiver: Equip each column with [2] built-in photocells at 20” [and] [60] inches above the base plate. To be mounted within the columns.
3. Provide 2 channel obstruction loop relay card for integration of dual obstruction loops.

### D. Drive Unit:

1. Provide variable frequency drive with programmable logic controller for controlling electro-mechanical drive system. Drive system to incorporate encoders with reduced speed sensing software as primary entrapment detection device.
2. All drive electrical components to be enclosed in weather-resistant housing.
3. Dual .75HP 3 Phase gear motors with integrated brake and 360:1 gear reduction box with synthetic lubricant.
4. Emergency override: Provide secured access panel for manual opening and closing in case of power failure/malfunction.

## **2.4 FINISHES**

- A. As shown on the Contract Drawings.

## **2.5 PRODUCT OPTIONS**

- A. As shown on the Contract Drawings.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Provision of concrete foundations as determined by local engineer according to drawings provided.
- B. Install high-speed security gate to manufacturer's written instructions, by contractor certified by Wallace Perimeter Security.
- C. Submit certificate of installation to manufacturer upon completion of installation for warranty validation

### **3.2 CLEANING AND MAINTENANCE**

- A. Perform cleaning and maintenance procedures in strict accordance with manufacturer's written instructions.
- B. Maintain logbook of repairs and maintenance.

## **PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

### **4.1 MEASUREMENT**

- A. Furnishing and installing Wallace International SpeedGate will be measured by the number per each SpeedGate installed as determined by the Authority Representative from field measurement.

### **4.2 PAYMENT**

Payment will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments and Measurements) for each of the following bid items that are included in the Contract.

- A. The contract unit price paid for "FURNISH AND INSTALL WALLACE INTERNATIONAL SPEEDGATE" per each shall include full compensation for furnishing all labor, materials, equipment, tools, and incidentals necessary for all of the work as shown on the drawings, and as specified in these Special Provisions. No additional payment will be made therefor.

**Payment will be made under:**

Item 32 31 12            Furnish and Install Wallace International SpeedGate – per  
each

**END OF SECTION 32 31 12**

## **SPECIAL PROVISIONS**

### **DIVISION 32 – EXTERIOR IMPROVEMENTS**

#### **SECTION 32 31 13**

#### **FENCES**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. This Section includes the following:
1. Type I High Security Chain Link Fence: Type I high security fence shall consist of 8 feet (in height) of woven fabric with three (3) strands of barbed wire (1 foot in height) and 18” concertina razor wire above the woven fabric and in conjunction with the three stands of barbed wire for a total height of 10 feet as shown on the plans and as specified in this specification.
  2. Decorative Fence: Decorative fencing shall conform in all aesthetics, function, and strengths as the existing decorative fence.

#### **1.2 RELATED DOCUMENTS**

- A. Section 03 30 00 – Cast-in-Place Concrete: Concrete footings for support of fence posts.

#### **1.3 SUBMITTALS**

- A. The following items shall be submitted in accordance with Section 1D-09, Submittals.
1. Product Data for components and accessories.
  2. Shop Drawings showing layout, dimensions, spacing of components, and anchorage and installation details.
  3. Sample: 8 by 10 inches minimum size sample of fence panel illustrating design, fabrication workmanship and selected color coating.
  4. Copy of warranty.

### **PART 2 - PRODUCTS**

#### **2.1 CHAIN LINK FENCE**

- A. Fabric:

1. Galvanized Chain Link Fence: The fabric shall be woven with a 9-gauge galvanized steel wire in a 2 inch mesh and shall meet the requirements of ASTM A 392, Class 2.
  2. Chain link fence and all fittings shall be black in color, 22 mil pressure bonded or 7 mil thermally fused vinyl coated over 9 gauge aluminized steel core fabric.
- B. Barbed wire: Barbed wire shall be 3-strands, 12½ gauge zinc-coated wire with 4-point barbs and shall conform to the requirements of ASTM A 121, Class 3, Chain Link Fence Grade.
- C. Posts, Rails, and Braces: Pull, corner, and line posts, rails, and braces shall conform to the requirements of ASTM F-1043 or ASTM F 1083 as follows: Galvanized tubular steel pipe shall conform to the requirements of Group IA, (Schedule 40) coatings conforming to Type A, or Group IC ( High Strength Pipe), external coating Type B, and internal coating Type B or D.
- Composite posts shall conform to the strength requirements of ASTM F 1043 or ASTM F 1083. The strength loss of composite posts shall not exceed 10 percent when subjected to 3,600 hours of exposure to light and water in accordance with ASTM G 23, ASTM G 26, and ASTM G-53.
- Posts, rails, and braces, with the exception of galvanized steel conforming to F 1043 or ASTM F 1083, Group 1A, Type A, or aluminum alloy, shall demonstrate the ability to withstand testing in salt spray in accordance with ASTM B 117 as follows:
1. External: 1,000 hours with a maximum of 5% red rust.
  2. Internal: 650 hours with a maximum of 5% red rust.
- The dimensions of the posts, rails, and braces shall be in accordance with Tables I through VI of Fed. Spec. RR-F-191/3.
- D. Extension Arms: Extension arms for barbed wire shall be of a type that can be attached to the tops of the posts and carry three wires at approximately 5 inches centers in a plane approximately 45 degrees from the vertical, inclined as shown on the plans or as directed by the Engineer.
- E. Gates: Gate frames shall consist of galvanized steel pipe and shall conform to the specifications for the same material under paragraph 162-2.3. The fabric shall be of the same type material as used in the fence.
- When PVC fence is shown as a pay item, gates and fittings shall be PVC coated with a minimum thickness of 15 mils. The requirements for the PVC coating shall conform to Table 210-5.2(A) of the Standard Specifications for Public Works Construction (Green Book).
- F. Wire Ties and Tension Wires: Wire ties for use in conjunction with a given type of fabric shall be of the same material and coating weight identified with the fabric type. Tension wire shall be 7-gauge marcelled steel wire with the same coating as the fabric type and shall conform to ASTM A

824. All material shall conform to Fed. Spec. RR-F-191/4.

- G. Stretcher Bar, Miscellaneous Fittings and Hardware: Stretcher bar, miscellaneous steel fittings and hardware for use with zinc-coated steel fabric shall be of commercial grade steel or better quality, wrought or cast as appropriate to the article, and sufficient in strength to provide a balanced design when used in conjunction with fabric posts, and wires of the quality specified herein. All steel fittings and hardware shall be protected with a zinc coating applied in conformance with ASTM A 153. Barbed wire support arms shall withstand a load of 250 pounds applied vertically to the outermost end of the arm.
- H. Concrete: Concrete shall be of a commercial grade with a minimum 28-day compressive strength of 3,000 psi, and shall comply with CSI 03 30 00 Cast-In-Place Concrete.
- I. Marking: Each roll of fabric shall carry a tag showing the kind of base metal (steel, aluminum, or aluminum alloy number), kind of coating, the gauge of the wire, the length of fencing in the roll, and the name of the manufacturer. Posts, wire, and other fittings shall be identified as to manufacturer, kind of base metal (steel, aluminum, or aluminum alloy number), and kind of coating.
- J. Concertina Razor Wire: Concertina razor wire shall be 18 inch razor ribbon, single coil AISI 430 stainless steel, clusters of 4 sharp needles on 4 inch center and 0.091 inch minimum galvanized reinforcing wire, Class 3, Finish 2.
- K. Visual Barrier Screening: Visual Barrier Screening shall be 5 feet in height and mounted at the bottom of the Fabric fence and shall be of a commercial grade meeting the requirements of following table. Edge reinforcement shall consist of 2" polypropylene webbing with 3/8" brass grommets @24" on center. Screening shall be dark green.

PROPERTIES	TEST METHOD	RESULTS
WEIGHT	ASTM D-5041	5.6 (OZ / YD)
WARP	ASTM D-5100	420 LBS.
WARP TEAR	ASTM D-2261	125 LBS.
FILL TENSILE.	ASTM D-5100	225 LBS.
FILE TEAR	ASTM D-5512	90 LBS.
AIR FLOW	ASTM D-737	10%

## 2.12 DECORATIVE FENCE

- A. Acceptable Manufacturers:
  - 1. Any manufacturer meeting the structural and aesthetic requirements as the existing decorative fence and as described in these

specifications.

2. Manufacturer must be approved by the Authority.

B. Materials:

1. Steel bar stock: ASTM A36.
2. Steel tubing: ASTM A500, Grade B.
3. Grout: Non-shrink type, pre-mixed compound consisting of non-metallic aggregate, cement, and water reducing and plasticizing additives.

C. Fence System:

1. Type: Ornamental steel fencing system consisting of modular open grille fencing panels fabricated by welding flat steel bars and rods, supported by steel posts and gates and gate hardware;
2. Fence panels: Fabricated from galvanized steel rods and flat bars welded to form an open grille pattern; Vertical main bars: 1 by 1/8 inch flat bars spaced at 2-3/8 inches.
  - a. Horizontal cross rods: 3/16 inch diameter rods spaced at 5-3/16 inches.
  - b. Top and bottom perimeter bars: 1 by 1/8 inch flat bars.
  - c. Panel height: As shown on the Contract Drawings.
  - d. Panel width: As shown on the Contract Drawings.
3. Posts: As shown on the Contract Drawings.

D. Accessories:

1. Extension arm posts: Provide posts with steel flat bar extensions, 11-3/4 by 2-3/8 by 5/16 inches, projecting 45 degrees, with 3 holes for attachment of barbed or electrified wires.
2. Barbed wire: Two twisted strands of ASTM A121 galvanized 12.5 gage wire with 14 gage four point round barbs at 5 inches.
3. Fasteners: Stainless steel bolts of type, size, and spacing as recommended by fence manufacturer for specific condition.

E. Factory Finishes:

1. Steel fence panels and posts shall be hot-dip galvanized to 1.25 ounces per square foot minimum zinc coating in accordance with ASTM A123 and/or components shall receive polyester powder coating. Large gate panels shall be coated with 2-part polyurethane coating.

Due to do the nature of hot-dip galvanizing, the galvanized coating and powder coat can leave impurities on the treated surface, i.e., flashing, drips, drops, unevenness, roughness, pinholes etc. These do not impair the coating in terms of corrosion resistance and have no impact on the warranty. If a perfectly smooth surface is desired, non-galvanized powder coated only finish shall be specified.

2. Polyester powder coating: Electrostatically applied colored polyester powder coating heat cured to chemically bond finish to metal substrate.
  - a. Minimum hardness measured in accordance with ASTM D3363: 2H.
  - b. Direct impact resistance tested in accordance with ASTM D2794: Withstand 160 inch-pounds.
  - c. Salt spray resistance tested in accordance with ASTM B117: No undercutting, rusting, or blistering after 500 hours in 5 percent salt spray at 95 degrees F and 95 percent relative humidity and after 1000 hours less than 3/16 inch undercutting.
  - d. Weatherability tested in accordance with ASTM D822: No film failure and 88 percent gloss retention after 1 year exposure in South Florida with test panels tilted at 45 degrees.
3. Polyurethane coating: 1.0 mil dry film thickness of coating of steel test panel cured 30 minutes at 180 degree F and aged 14 days shall resist the following test conditions without failure:
  - a. 5 percent salt spray for 500 hours.
  - b. 100 percent relative humidity for 1000 hours.
  - c. Water immersion for 100 hours.
  - d. 20 double rubs with cloth saturated with either lacquer thinner, acetone, MEK, gasoline, xylene.
  - e. Exposure to lubricating oils, hydraulic fluids, and cutting oils.
  - f. 16 cycles of 24 hours at 100 percent humidity, 24 hours at 10 degrees F, and 24 hours at 77 degrees F.
  - g. Hardness: H to 2H.



- h. Flexibility: 1/8 inch conical mandrel.
4. Installations in tropical or coastal areas: Apply zinc-phosphate pretreatment to mill Steel components. Electrostatically spray apply glossy, thermoplastic powder coat meeting DDA, “warm-to-the-touch” requirements. The powder coat shall comply with the following without failure:
- a. Salt spray testing to ASTM B117 has exceeded 20,000 hours with no blistering, cracking, corrosion or flaking.
  - b. Under-film corrosion from a scribe tested to ASTM B117 for 1,000 hours on pre-treated steel is 0 and 0.5 mm
  - c. After 2,000 hours QUV ASTM G145-06 (which supercedes ASTM G53), Xenon arc (ASTM G26) at 45 degrees to the sun by the sea, there is no significant change in color, gloss or mechanical properties.
5. Color: Tan type color aesthetically matching existing fence color.

## **PART 3 - EXECUTION**

### **3.1 CLEARING FENCE LINE**

All trees, brush, stumps, logs, and other debris which would interfere with the proper construction of the fence in the required location shall be removed a minimum width of 2 feet on each side of the fence centerline before starting fencing operations. The cost of removing and disposing of the material shall not constitute a pay item and shall be considered incidental to fence construction.

### **3.2 INSTALLING POSTS**

All posts shall be set in concrete at the required dimension and depth and at the spacing shown on the Plans. Posts shall be spaced not more than 10 feet apart and shall be set a minimum of 36 inches in concrete footings, unless shown otherwise on the Plans. The posts holes shall be in proper alignment so that there is a minimum of 3 inches of concrete on all sides of the posts.

The concrete shall be thoroughly compacted around the posts by tamping or vibrating and shall have a smooth finish slightly higher than the ground and sloped to drain away from the posts. All posts shall be set plumb and to the required grade and alignment. No materials shall be installed on the posts, nor shall the posts be disturbed in any manner within 7 days after the individual post footing is completed, or until the concrete has achieved 70% of its 28-day design strength.

Should rock be encountered at a depth less than the planned footing depth, a hole 2 inches larger than the greatest dimension of the posts shall be drilled to a depth of 12 inches. After the posts are set, the remainder of the drilled hole shall be filled with grout, composed of one part Portland cement and two parts mortar sand. Any remaining space above the rock shall be filled with concrete in the manner described above.

In lieu of drilling, the rock may be excavated to the required footing depth. No extra compensation shall be made for rock excavation.

### **3.3 INSTALLING TOP RAILS**

The top rail shall be continuous and shall pass through the post tops. The coupling used to join the top rail lengths shall allow for expansion.

### **3.4 INSTALLING BRACES**

Horizontal brace rails, with diagonal truss rods and turnbuckles, shall be installed at all terminal posts.

### **3.5 INSTALLING FABRIC**

The wire fabric shall be firmly attached to the posts and braced in the manner shown on the Plans. All wire shall be stretched taut and shall be installed to the required elevations. The fence shall generally follow the contour of the ground, with the bottom of the fence fabric no less than 1 inch or more than 3 inches from the ground surface. Grading shall be performed where necessary to provide a neat appearance.

At locations of small natural swales or drainage ditches and where it is not practical to have the fence conform to the general contour of the ground surface, longer posts may be used and multiple strands of barbed wire stretched thereon to span the opening below the fence. The vertical clearance between strands of barbed wire shall be 3 inches or less.

### **3.6 INSTALLING CONCERTINA RAZOR WIRE**

Concertina razor wire shall be attached to the top strand of the three strand barbed wire, to the top rail of the fence and to the barbed wire support arm as shown on the drawings.

### **3.7 INSTALLING VISUAL BARRIER SCREENING**

Visual Barrier Screening shall be attached to the Woven Fabric fence as shown on the drawings.

### **3.8 SECURITY FENCE**

Perimeter intrusion detection system (PIDS) is not required on proposed fencing for this project.

### **3.9 ELECTRICAL GROUNDS**

Electrical grounds shall be constructed as shown on the drawings at the ends of the fence; at 500 feet maximum intervals; and where a power line passes over the

fence. The ground shall be installed directly below the point of a power line crossing. The ground shall be accomplished with a copper clad rod 8 feet long and a minimum of 5/8 inch in diameter driven vertically until the top is 6 inches below the ground surface. A No. 6 solid copper conductor shall be clamped to the rod and to the fence in such a manner that each element of the fence is grounded. Installation of ground rods shall not constitute a pay item and shall be considered incidental to fence construction.

### **3.10 SIGNS**

Restricted area signs shall be securely attached to the vertical fence posts and fabric as shown on the plans and/or as directed by Airport Operations and at intervals not exceeding 150-feet with two (2) galvanized brackets and ¼ inch galvanized machine bolts and fender washers, 2 per sign. Furnishing and installing the signs shall be considered incidental to the fence construction.

## **PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

### **4.1 MEASUREMENT**

- A. Furnishing and installing type I chain link security fence will be measured by the length of linear feet actually installed as determined by the Authority Representative from field measurement along the top of the fence from center to center of end posts.
- B. Furnishing and installing decorative fence will be measured by the length of linear feet actually installed as determined by the Authority Representative from field measurement along the top of the fence from center to center of end posts.

### **4.2 PAYMENT**

Payments will be made in accordance with General Conditions Section 1C-9.5 (Quantity Units, Payments and Measurements) for each of the following bid items that are included in the Contract.

- A. The contract unit price for “FURNISH AND INSTALL TYPE I CHAIN LINK SECURITY FENCE” per linear feet shall include full compensation for furnishing all labor, materials, equipment, tools, and incidentals necessary for all of the work as shown on the drawings and as specified in these Special Provisions.
- B. The contract unit price for “FURNISH AND INSTALL DECORATIVE FENCE” per linear feet shall include full compensation for furnishing all labor, materials, equipment, tools, and incidentals necessary for all of the work as shown on the drawings and as specified in these Special Provisions.

**Payment will be made under:**

- Item 32 31 13.1      Furnish and Install Type I Chain Link Security Fence – per Linear Foot
- Item 32 31 13.2      Furnish and Install Decorative Fence– per Linear Foot

**END OF SECTION 32 31 13**

# APPENDICES

Appendix 1 Form 1 .....	Time and Materials Report
Appendix 1 Form 2 .....	Requests for Information
Appendix 1 Form 3 .....	As-Built Drawing Certification Form
Appendix 1 Form 4 .....	Bulletins
Appendix 1 Form 5 A*, B* .....	Summary of Progress Estimate of Value of Contract Work Completed
Appendix 1 Form 5C* .....	Summary of Change Order Request
Appendix 1 Form 5D .....	Conditional Waiver & Release Upon Progress Payment
Appendix 1 Form 5E .....	Unconditional Waiver & Release Upon Progress Payment
Appendix 1 Form 6 .....	Non-conformance Report
Appendix 1 Form 7 .....	Procurement Log
Appendix 1 Form 8 .....	Notice to Stop Work
Appendix 1 Form 9 .....	Change Order Request Cover Sheet
Appendix 1 Form 10 .....	Substitution Request Form
Appendix 1 Form 11* .....	Submittal Register
Appendix 1 Form 12 .....	Warranty Information
Appendix 1 Form 13a .....	Final Release of Claims
Appendix 1 Form 13b .....	Conditional Waiver & Release Upon Final Payment
Appendix 1 Form 13c .....	Unconditional Waiver & Release Upon Final Payment
Appendix 1 Form 14 .....	Substantial Completion Letter
Appendix 1 Form 15 .....	Contractor Interface with Airport Systems Notification Form
Appendix 2 .....	Airport Operational Safety & Security Requirements
Appendix 3 .....	Security Instructions (Exhibit C)
Appendix 4 .....	Site Health & Safety Program
Appendix 5 .....	Storm Water Pollution Prevention
Appendix 6 .....	Notification Regarding Environmental Conditions
Appendix 7 .....	Construction Crane Operations Notification Policy
Appendix 8 .....	Construction Waste Management Reporting for Projects of All Sizes
Appendix 9 .....	California Least Tern Protection Program

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\*Contained in Excel document files

**FACILITIES DEVELOPMENT DEPARTMENT  
TIME AND MATERIALS REPORT**

**Date:** \_\_\_\_\_ **Project:** \_\_\_\_\_

**Description of work performed:**  
 \_\_\_\_\_  
 \_\_\_\_\_

**RFI No:** \_\_\_\_\_ **Bulletin No:** \_\_\_\_\_ **C.O.R. No:** \_\_\_\_\_

<b>CRAFTSMAN/CONTRACTOR</b>	<b>RATE/CRAFT</b>	<b>HOURS</b>	<b>O/T</b>	<b>TOTAL</b>

<b>EQUIPMENT</b>	<b>MANUFACTURER</b>	<b>MODEL #</b>	<b>HOURS STANDBY</b>	<b>HOURS UTILIZED</b>

<b>MATERIAL:</b>	<b>QUANTITY:</b>

This report only verifies the labor, equipment and materials expended during the course of the work.  
 Use of this form does not imply concurrence that the resources expended are in addition to the Contract.

Time Verified By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Contractor Representative: \_\_\_\_\_ Date: \_\_\_\_\_







# FACILITIES DEVELOPMENT DEPARTMENT

Project: \_\_\_\_\_

## ***AS-BUILT DRAWING CERTIFICATION FORM***

Progress Payment No. \_\_\_\_\_

for the period beginning \_\_\_\_\_ and ending \_\_\_\_\_

Pursuant to specification section 1C-9.2.B, Contractor certifies that the as-built drawings have been updated and jointly reviewed by the Authority's Inspector and the Contractor's Representative for the month that payment is requested.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Contractor

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Facilities Development Department  
Inspector



**FACILITIES DEVELOPMENT DEPARTMENT**

PO Box 82776, San Diego, CA 92138-2776  
2415-A McCain Rd., San Diego, CA 92101-1022  
Phone: 619-400-2400 Fax: 619-400-2596

**Bulletin**

---

**Bulletin Number:**

Cost Trend Number:

Date:

Issued To:

Initiated By: Facilities Development Department

Project Manager:

Drawing/Spec Reference:

**Subject:**

---

**The following information/clarification further explains the Contract Work and is hereby incorporated into the Contract Documents. Contractor is directed to proceed with the work. Contractor is reminded if this Bulletin will increase Contract sum or extend scheduled completion date, Contractor must submit Change Order Request (COR) no later than 15 days, or sooner, if so requested based upon schedule restrictions, from date of this Bulletin pursuant to Specification Section 1C-7.3.A.1.D.**

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**Instructions:**

Initiated By: CM or PE

Concurrence by: Program Manager

Recommended by: Project Manager

Approved by: Director

**Any future correspondence regarding this matter must reference the following:**

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SAN DIEGO COUNTY REGIONAL AIRPORT AUTHORITY  
Part A  
ESTIMATE OF VALUE OF CONTRACT WORK COMPLETED

Estimate No:  beginning  ending

Type of Payment:      Progress       Final       Retention

Contractor: <span style="border: 1px solid black; display: inline-block; width: 350px; height: 15px;"></span> Remittent: <span style="border: 1px solid black; display: inline-block; width: 350px; height: 15px;"></span> Remit Address to: <span style="border: 1px solid black; display: inline-block; width: 350px; height: 15px;"></span>	Purchase Order # <span style="border: 1px solid black; display: inline-block; width: 100px; height: 15px;"></span> PROJECT NO.: <span style="border: 1px solid black; display: inline-block; width: 100px; height: 15px; color: blue;">104228</span> Invoice # <span style="border: 1px solid black; display: inline-block; width: 100px; height: 15px;"></span> PROJECT TITLE: <span style="border: 1px solid black; display: inline-block; width: 300px; height: 15px;"></span> ORIGINAL COMPLETION DATE <span style="border: 1px solid black; display: inline-block; width: 100px; height: 15px;"></span> SCHEDULED COMPLETION DATE: <span style="border: 1px solid black; display: inline-block; width: 100px; height: 15px;"></span>
--	--

1. Original Contract Amount	\$	-
2. Approved Change Order Amount	\$	-
<b>3. Revised Contract Amount to Date (1 plus 2)</b>	\$	-
4. Original Contract Value of Work Completed to Date	\$	-
5. Change Order Work Completed to Date	\$	-
6. Gross Value of Work Completed to Date (4 plus 5)	\$	-
7. Less 5% Retention	\$	-
8. Gross Value to Date (6 minus 7)	\$	-
9. Less Previous Payments		
10. Balance Due This Request (8 minus 9)	\$	-

**REMARKS:**

Authority Use Only		
Less:		
Stop Notices:		
Payroll Violation:		
Liquidated Damages:		
	\$	-
<b>Adjusted Amount Due Contractor</b>	\$	-

**APPROVED FOR PROCESSING**

Finance Department

**CERTIFICATE OF CONTRACTOR**

To the best of my knowledge and belief, I certify that all items of work for which payment is being requested have been computed in accordance with the terms of the contract, that no part of the amount requested has been previously received, and that previous payments, if any, have been applied to discharge my obligations to my subcontractors and vendors.

By:		
	Print Name	Title
	Signature	Date

Checked by:	Construction Manager	Date:
Approval Recommended:	Project Manager	Date:
Payment Approved:	Authority Program Manager	Date:





**CONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT**

**NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.**

---

**Identifying Information**

Name of Claimant:

Name of Customer:

Job Location:

Owner:

Through Date:

---

**Conditional Waiver and Release**

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check:

Amount of Check: \$

Check Payable to:

---

**Exceptions**

This document does not affect any of the following:

- (1) Retentions.
  - (2) Extras for which the claimant has not received payment.
  - (3) The following progress payments for which the claimant has previously given a conditional waiver and release but has not received payment:
    - Date(s) of waiver and release: \_\_\_\_\_
    - Amount(s) of unpaid progress payment(s): \$ \_\_\_\_\_
  - (4) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.
- 

**Signature**

Claimant's Signature:

Claimant's Title:

Date of Signature:

---

**UNCONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT**

**NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.**

---

**Identifying Information**

Name of Claimant:

Name of Customer:

Job Location:

Owner:

Through Date:

---

**Unconditional Waiver and Release**

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has received the following progress payment:

\$ \_\_\_\_\_

---

**Exceptions**

This document does not affect any of the following:

- (1) Retentions.
  - (2) Extras for which the claimant has not received payment.
  - (3) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.
- 

**Signature**

Claimant's Signature:

Claimant's Title:

Date of Signature:

---

# Non-Conformance Report

FACILITIES DEVELOPMENT DEPARTMENT

**Project:**

**TO:**

**FROM:** San Diego International Airport  
Facilities Development Department  
PO BOX 82776  
San Diego, CA 92138-2776

**Telephone:**

**Fax:**

NCR Number	Date Issued	Inspector	Specification / Drawing Numbers

**YOU ARE HEREBY NOTIFIED THAT THE FOLLOWING WORK DOES NOT CONFORM TO CONTRACT DOCUMENTS AND PAYMENT FOR THIS WORK WILL BE WITHHELD UNTIL CORRECTED:**

---

**LOCATION AND DESCRIPTION:**

---

**CORRECTIVE ACTION REQUIRED:**

---

**CORRECTIVE ACTION TAKEN:**

---

**CONFIRMED BY:** \_\_\_\_\_  
Contractor's QC Representative

**DATE:** \_\_\_\_\_

**INSPECTED BY:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**RELEASED BY:** \_\_\_\_\_

**DATE:** \_\_\_\_\_



# PROCUREMENT LOG

Project: \_\_\_\_\_

## San Diego International Airport

Subcontractor	Item/Specification Section	Submittal Approval Date	Order Date	Fabrication Time	Delivery Date	Field Required Date



**SAN DIEGO COUNTY REGIONAL AIRPORT AUTHORITY  
 FACILITIES DEVELOPMENT DEPARTMENT  
 2417-A McCain Road  
 San Diego, CA 92101  
 Change Order Request Cover Sheet**

**Authorization for Change Order Request No.**  
**Time Extension of 0 Calendar Days**  
**WO No.:**

Expiration Date: \_\_\_\_\_  
 Contract No.: \_\_\_\_\_  
 Document No.: \_\_\_\_\_  
 Certificate No.: \_\_\_\_\_  
 Fund No.: \_\_\_\_\_  
 Original Contract Amount: \$ \_\_\_\_\_

**Contractor:**  
**Project:**

**DESCRIPTION OF CHANGE:**

1) COR \$ 0 Days

**Reason for Change**

Authority Use only  
 This change has \_\_\_ No Merit \_\_\_ Merit and will be paid under Bulletin No. \_\_\_\_\_

<b>This Change will:</b>		
	not change the amount payable under the Contract	
	increase the amount payable under the Contract by	
	decrease the amount payable under the Contract by	

The above amount is based on:  Unit prices in bid  Unit prices agreed upon  
 Lump sum as agreed upon  Estimated cost plus

This change will require a \_\_\_\_\_ calendar-day time extension until

**SUBSTITUTION REQUEST FORM**

A. PROJECT DESCRIPTION

1. Project: {Projects.Name}
2. Architect: {LegalDocInfo.ArchName}
3. Contract Number: [\(Contract #\)](#)
4. Contractor: {Company.Name}

B. PROPOSED SUBSTITUTION

1. Specified Product:
2. Specification Section: \_\_\_\_\_ Page: \_\_\_\_\_  
Item No.: \_\_\_\_\_
3. Proposed Substitution: a) Description: \_\_\_\_\_  
b) Manufacturer Name/Rep/Phone: \_\_\_\_\_

C. CONTRACTORS REPRESENTATIONS

1. The proposed product meets or exceeds specification requirements?  
\_\_\_\_\_ Yes \_\_\_\_\_ No
2. Will changes be required to building design in order to properly install the proposed product?  
\_\_\_\_\_ Yes \_\_\_\_\_ No If Yes, please explain:  
\_\_\_\_\_  
\_\_\_\_\_
3. Does substitution affect drawing dimensions?  
\_\_\_\_\_ Yes \_\_\_\_\_ No If Yes, please explain:  
\_\_\_\_\_

4. What affect does the substitution have on other trades?  
\_\_\_\_\_
5. Proposed product is subject to all requirements of specifications, including warranties.  
\_\_\_\_\_ Yes \_\_\_\_\_ No
6. Will proposed substitution affect progress schedule or completion of work?  
\_\_\_\_\_ Yes \_\_\_\_\_ No If Yes, please explain: \_\_\_\_\_  
\_\_\_\_\_
7. Will proposed substitution increase/decrease project cost?  
\_\_\_\_\_ Yes \_\_\_\_\_ No. If Yes, Please explain and indicate total amount of increase/ decrease \_\_\_\_\_  
\_\_\_\_\_
8. Will maintenance and service parts be locally available for proposed substitution?  
\_\_\_\_\_ Yes \_\_\_\_\_ No. If Yes, Please indicate the manufacturer or supplier and provide contact: \_\_\_\_\_  
\_\_\_\_\_
9. Will proposed product meet all requirements of applicable codes and reviewing agencies?  
\_\_\_\_\_ Yes \_\_\_\_\_ No. If No, please explain: \_\_\_\_\_  
\_\_\_\_\_
10. Summarize differences in product characteristics between proposed substitution and specified item.  
\_\_\_\_\_  
\_\_\_\_\_

11. Proposed substitution by:

Representative: \_\_\_\_\_  
Company: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_

D. CONSULTANTS EVALUATION:

Accepted: \_\_\_\_\_ Accepted as Noted: \_\_\_\_\_

Rejected: \_\_\_\_\_ Received Late: \_\_\_\_\_

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

Remarks: \_\_\_\_\_

(Reproduce the following on Contractor's Letterhead)

SUBSTITUTION WARRANTY FORM

PROJECT: \_\_\_\_\_

We propose to provide \_\_\_\_\_  
in lieu of, and as an equivalent to \_\_\_\_\_  
as currently indicated in the Contract Documents.

We agree to assume all cost for testing, research, license fees, royalties, etc.  
and any modifications to other portions of the work as necessary to  
accommodate our material(s) and systems(s) including all appurtenances  
required for proper installation and functioning of said material(s) and system(s)  
and obtaining all governing agency approvals.

We hereby warrant the (provide description) is the equivalent of (specified product) in every aspect and will perform satisfactory under the conditions and use indicated on the Drawings and described in the Specifications.

We are hereby responsible for any costs or modifications (if any) to any other trade or portion of the project as necessary to accommodate the use of the requested substitution whether immediately apparent or discovered at a later date.

Unless indicated otherwise, in writing, there will be no delay in the Project Schedule as a result of this substitution.

Signed: \_\_\_\_\_  
(Manufacturer/Supplier/Other)

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

Signed: \_\_\_\_\_  
(Subcontractor)

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

Signed: \_\_\_\_\_  
(General Contractor)

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

Project	Description	CSI Code	Phase	Document Number	Mfr	Mfr Number	Revision Number	Supplier	Task	Due Date	Start Date	Lead Time	Finish Date	Company	Notes	Status	Submittal Status	Category
104228 Admiral Boland Way Entry/Exit Gates	Submittal Register			1	FACILITIES DEVELOPMENT DEPARTMENT	1D-09.C-b											Open	
104228 Admiral Boland Way Entry/Exit Gates	Contractor's Headquarters			2	FACILITIES DEVELOPMENT DEPARTMENT	1C-3.2.B.3											Open	
104228 Admiral Boland Way Entry/Exit Gates	Contractor's Representatives			3	FACILITIES DEVELOPMENT DEPARTMENT	1C-3.2.B.4											Open	
104228 Admiral Boland Way Entry/Exit Gates	Contractor's Emergency Numbers			4	FACILITIES DEVELOPMENT DEPARTMENT	1C-3.2.B.6											Open	
104228 Admiral Boland Way Entry/Exit Gates	Procurement Log			5	FACILITIES DEVELOPMENT DEPARTMENT	1D-09.C-a											Open	
104228 Admiral Boland Way Entry/Exit Gates	Record Drawings			6	FACILITIES DEVELOPMENT DEPARTMENT	1D-12.B											Open	
104228 Admiral Boland Way Entry/Exit Gates	Schedule of Value			7	FACILITIES DEVELOPMENT DEPARTMENT	1D-19											Open	
104228 Admiral Boland Way Entry/Exit Gates	Scheduler's Resume			8	FACILITIES DEVELOPMENT DEPARTMENT	1D-20A											Open	
104228 Admiral Boland Way Entry/Exit Gates	Contractor's Progress Schedule			9	FACILITIES DEVELOPMENT DEPARTMENT	1D-20A.B											Open	
104228 Admiral Boland Way Entry/Exit Gates	Quality Control Program Plan			10	FACILITIES DEVELOPMENT DEPARTMENT	1D-21.C.1											Open	
104228 Admiral Boland Way Entry/Exit Gates	Substantial Completion Letter			11	FACILITIES DEVELOPMENT DEPARTMENT	1D-27.B.1.a											Open	
104228 Admiral Boland Way Entry/Exit Gates	Punch List			12	FACILITIES DEVELOPMENT DEPARTMENT	1D-27.B.1.b											Open	
104228 Admiral Boland Way Entry/Exit Gates	Final Completion Letter			13	FACILITIES DEVELOPMENT DEPARTMENT	1D-27.C.1											Open	
104228 Admiral Boland Way Entry/Exit Gates	Operation and Maintenance Manuals			14	FACILITIES DEVELOPMENT DEPARTMENT	1D-27.F											Open	
104228 Admiral Boland Way Entry/Exit Gates	Warranties and Guarantees			15	FACILITIES DEVELOPMENT DEPARTMENT	1D-27.H											Open	
104228 Admiral Boland Way Entry/Exit Gates	Authority SWPPP			16	FACILITIES DEVELOPMENT DEPARTMENT	1D-35											Open	
104228 Admiral Boland Way Entry/Exit Gates	General Injury and Illness Prevention Plan			17	FACILITIES DEVELOPMENT DEPARTMENT	APPX. 4-1.4.B.1											Open	
104228 Admiral Boland Way Entry/Exit Gates	Site-Specific Safety Plan			18	FACILITIES DEVELOPMENT DEPARTMENT	APPX. 4-1.4.B.2											Open	
104228 Admiral Boland Way Entry/Exit Gates	OSHA 300 Logs for the preceding 3 years			19	FACILITIES DEVELOPMENT DEPARTMENT	APPX. 4-1.4.B.3											Open	
104228 Admiral Boland Way Entry/Exit Gates	Cal/OSHA and Fed/OSHA Inspection and Violation Reports for the preceding 5 years			20	FACILITIES DEVELOPMENT DEPARTMENT	APPX. 4-1.4.B.4											Open	
104228 Admiral Boland Way Entry/Exit Gates	Job Hazard Analysis			21	FACILITIES DEVELOPMENT DEPARTMENT	APPX. 4-1.4.B.5											Open	



Project	Description	CSI Code	Phase	Document Number	Mfr	Mfr Number	Revision Number	Supplier	Task	Due Date	Start Date	Lead Time	Finish Date	Company	Notes	Status	Submittal Status	Category
104228 Admiral Boland Way Entry/Exit Gates	Competent Person			22	FACILITIES DEVELOPMENT DEPARTMENT	APPX. 4-1.4.B.6											Open	
104228 Admiral Boland Way Entry/Exit Gates	Safety Data Sheet			23	FACILITIES DEVELOPMENT DEPARTMENT	APPX. 4-1.4.B.7											Open	
104228 Admiral Boland Way Entry/Exit Gates	Construction Phasing/Traffic Control Plan			24	FACILITIES DEVELOPMENT DEPARTMENT	APPX. 4-1.04.B.8											Open	
104228 Admiral Boland Way Entry/Exit Gates	Site Safety Representatives			25	FACILITIES DEVELOPMENT DEPARTMENT	APPX. 4-1.06.A											Open	
104228 Admiral Boland Way Entry/Exit Gates	Construction Waste Management Plan			26	FACILITIES DEVELOPMENT DEPARTMENT	Appendix 8 - A.3.A											Open	
104228 Admiral Boland Way Entry/Exit Gates	Progress Waste Management Report with each payment request			27	FACILITIES DEVELOPMENT DEPARTMENT	Appendix 8 - A.3.B											Open	
104228 Admiral Boland Way Entry/Exit Gates	Final Waste Management Report with final payment request			28	FACILITIES DEVELOPMENT DEPARTMENT	Appendix 8 - A.3.C											Open	
104228 Admiral Boland Way Entry/Exit Gates	Schedule of Selective Demolition Activities	02 41 19		29	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Salvaged Inventory List	02 41 19		30	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Survey of Existing Conditions	02 41 19		31	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Concrete Mix Design/Job Mix Formula, Test Reports & Material Certificates	03 30 00		32	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Steel Reinforcement Shop Drawings	03 30 00		33	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Welding Certificates	05 50 00		34	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Metal Shop drawings, fabrication & installation details	05 50 00		35	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Product Data	26 05 19		36	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Shop Drawings	26 05 19		37	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Qualification Certification	26 05 19		38	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Test Reports	26 05 19		39	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Operation and Maintenance Manuals	26 05 19		40	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Warranty Information	26 05 19		41	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Product Data	26 05 33		42	C&S Engineers, Inc												Open	

Project	Description	CSI Code	Phase	Document Number	Mfr	Mfr Number	Revision Number	Supplier	Task	Due Date	Start Date	Lead Time	Finish Date	Company	Notes	Status	Submittal Status	Category
104228 Admiral Boland Way Entry/Exit Gates	Shop Drawings	26 05 33		43	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Qualification Certification	26 05 33		44	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Test Reports	26 05 33		45	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Coordination Drawings	26 05 33		46	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Seismic Qualification Certificates	26 05 33		47	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Product Data	26 05 53		48	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Product Data	27 13 23		49	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Shop Drawings	27 13 23		50	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Qualification Certification	27 13 23		51	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Test Reports	27 13 23		52	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Operation and Maintenance Manuals	27 13 23		53	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Warranty Information	27 13 23		54	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Product Data	28 13 00		55	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Shop Drawings	28 13 00		56	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Qualification Certification	28 13 00		57	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Test Reports	28 13 00		58	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Operation and Maintenance Manuals	28 13 00		59	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Warranty Information	28 13 00		60	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	HMA Mix Design/Job Mix Formula	32 12 16		61	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Certified HMA Aggregate Tests	32 12 16		62	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Certified Void Tests	32 12 16		63	C&S Engineers, Inc												Open	

Project	Description	CSI Code	Phase	Document Number	Mfr	Mfr Number	Revision Number	Supplier	Task	Due Date	Start Date	Lead Time	Finish Date	Company	Notes	Status	Submittal Status	Category
104228 Admiral Boland Way Entry/Exit Gates	Stabilometer Value	32 12 16		64	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Tack Coat	32 12 16		65	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Product Data	32 17 23		66	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Samples	32 17 23		67	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Shop Drawings	32 31 12		68	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Installation Instructions	32 31 12		69	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Test Reports	32 31 12		70	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Gate operation and maintenance data	32 31 12		71	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Product Data	32 31 13		72	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Minimum 8x10 sample	32 31 13		73	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Warranty Copy	32 31 13		74	C&S Engineers, Inc												Open	
104228 Admiral Boland Way Entry/Exit Gates	Shop Drawings	32 31 13		75	C&S Engineers, Inc												Open	

**PLANNING & QUALITY ASSURANCE**  
 Facilities Division  
 San Diego County Regional Airport Authority

**WARRANTY INFORMATION**

Project No.: \_\_\_\_\_ Project Description: \_\_\_\_\_

Project Manager: \_\_\_\_\_ Inspector: \_\_\_\_\_

SECTION #	WARRANTY/DESCRIPTION	CONTRACTOR	CONTACT	WARRANTY PERIOD	START DATE	END DATE
		Company Name Address Phone # Fax #			xx/xx/xx	xx/xx/xx

104228

Form 12

Appendix 1

# SAN DIEGO COUNTY REGIONAL AIRPORT AUTHORITY

## FINAL RELEASE OF CLAIMS

The San Diego County Regional Airport Authority, a local governmental entity of regional government (the "Authority"), and {Company.Name}, as contractor (the "Contractor"), previously executed and delivered a Contract, dated as of [[REDACTED]] (the "Contract"), pursuant to which the Contractor agreed to perform all work required by {Projects.Number}, {Projects.Name}, as more particularly described therein. The Contract is on file in the office of the Clerk of the Authority, as Document No. {Contracts.Exhibits}.

The Contract provides, among other things, that five percent (5%) of the total price to be paid to the Contractor under the Contract shall not become due and payable until Contractor executes a Release of Claims, and thereafter final payment shall be made, at such time and in such manner as may be provided by law, of any balance due, including the percentage withheld, as above stated, or such portion thereof as may be due the Contractor. The Authority and the Contractor agree that the amount withheld under the Contract is the sum of **Dollars (\$ )**.

In consideration of the payment by the Authority to the Contractor of the sum of **Dollars (\$ )**, which is paid to and accepted by the Contractor as payment in full of all sums that may be due and owing under the Contract, and in further consideration of the sums previously paid to Contractor for work performed pursuant to the Contract, the Contractor, its officers, directors, owners, agents, representatives, successors, partners, assigns, and anyone claiming by, through or under them, under the Contract, hereby release and forever discharge the Authority and all of its officers, directors, employees, agents and representatives, from and against any loss, damage, expense, attorneys' fees, cost, claim, demand or liability, whether present or future, known or unknown, contemplated or not, now existing or hereafter directly or indirectly arising under, relating to or by virtue of the Contract or work performed pursuant to the Contract.

Contractor further waives any all rights which it may have under the provisions of section 1542 of the California Civil Code, which section provides as follows:

A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him, must have materially affected his settlement with the debtor.

The Contractor acknowledges and agrees that, if the facts or law with respect to which the foregoing release is given turn out to be other than or different from the facts or law now known to be or believed to be true, then the Contractor expressly assumes the risk of the facts or law turning out to be so different and agrees that the foregoing release shall be in all respects effective and not subject to termination or rescission for any such difference in facts or law.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 20XX

{Company.Name}

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

Its: \_\_\_\_\_

The law does not require that the signature be notarized

**CONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT**

**NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.**

---

**Identifying Information**

Name of Claimant:

Name of Customer:

Job Location:

Owner:

---

**Conditional Waiver and Release**

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check:

Amount of Check: \$

Check Payable to:

---

**Exceptions**

This document does not affect any of the following:  
Disputed claims for extras in the amount of: \$

---

**Signature**

Claimant's Signature:

Claimant's Title:

Date of Signature:

---

**UNCONDITIONAL WAIVER AND RELEASE ON FINAL PAYMENT**

**NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.**

---

**Identifying Information**

Name of Claimant:

Name of Customer:

Job Location:

Owner:

---

**Unconditional Waiver and Release**

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for all labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has been paid in full.

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**Exceptions**

This document does not affect any of the following:  
Disputed claims for extras in the amount of: \$

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**Signature**

Claimant's Signature:

Claimant's Title:

Date of Signature:

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{Date}

{Contractor Name}

{Company Name}

{Address 1}

{City}, {State} {Zip}

Dear {Prefix} {Last Name}:

Subject: {CIP-Project Title}  
Substantial Completion

The work performed under the subject Project has been reviewed by representatives of the San Diego County Regional Airport Authority and found to be substantially complete to allow Beneficial Occupancy by the Authority as of {Date}, as defined in General Conditions Article 1C-1.2.A7. The enclosed punch list (Enclosure 1) identifies items remaining to be completed or corrected before Completion of the work, as defined in General Conditions, Article 1C-1.2.A.14 and 1C-1.2.A.25. As per our agreement at the final inspection on {Date}, you have committed to complete this work by {Date}.

The enclosed Certificate of Substantial Completion (Enclosure 2) does not constitute an acceptance of Work not complete in accordance with the Contract documents, nor is it a release of the Contractor's obligation to complete the Work in accordance with the Contracts Documents.

If you have any questions regarding this matter, please contact {Project Manager} at (619) 400-{ext.}.

Sincerely,

{Name}

{Project Manager}

XX/XX/xx

Enclosure(s):

- (1) Punch List - {CIP} {Project Title}
- (2) Certificate of Substantial Completion

cc: Iraj Ghaemi, P.E, Director, Facilities Development Department  
Michael D. Tilley, P.E., Program Manager, Facilities Development Department  
{Name} Construction Manager, Facilities Development Department  
{Name} Inspector, Facilities Development Department  
{Name} Capital Project Assistant, Facilities Development Department  
Susan Chesebro, QC Manager, Facilities Development Department  
Yolanda Montoya, Labor Compliance Program Manager, Facilities Development Department  
Rose Robertson, Sr. Cost Analyst, Facilities Development Department  
Jana Vargas, Director, Procurement Department  
Kathy Kiefer, Sr. Director, Finance & Asset Mgmt. Department  
Michael Schaefer, Manager, Insurance & Construction Risk, Risk Management  
Ann Anderson, Marsh, OCIP Project Manager  
File: 104228:01730

# San Diego International Airport Contractor Interface with Airport Systems Notification Form

<u>Project Information</u>	
CIP or Project #: _____	Project Title: _____
Notification Number: _____	Date Submitted: _____
<b>(Must be submitted a minimum of ten (10) calendar days prior to the start of the work unless requesting an exemption)</b>	

Brief Description of Impact on Airport Systems:

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Specific Location of Work:

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Date(s) of Work:

Start \_\_\_\_\_ End \_\_\_\_\_

Time of Work (2300 to 0500 unless specified, or agreed, otherwise):

Start \_\_\_\_\_ End \_\_\_\_\_

<u>Affected Facilities and Stakeholders</u>		
<u>Facility, Utility, or System</u>		
<input type="checkbox"/> Electric	<input type="checkbox"/> Network, Data	<input type="checkbox"/> Elevator
<input type="checkbox"/> Gas	<input type="checkbox"/> Access Control System	<input type="checkbox"/> Escalator
<input type="checkbox"/> Water	<input type="checkbox"/> CCTV	<input type="checkbox"/> Baggage Handling
<input type="checkbox"/> Sanitary Sewer	<input type="checkbox"/> Paging	<input type="checkbox"/> Loading Bridge
<input type="checkbox"/> Telephone	<input type="checkbox"/> EVIDS	<input type="checkbox"/> Airfield Lighting
<input type="checkbox"/> NAVAIDS	<input type="checkbox"/> HVAC	<input type="checkbox"/> Irrigation
<input type="checkbox"/> Passenger Screening	<input type="checkbox"/> HVAC Control	<input type="checkbox"/> Storm Drain
<input type="checkbox"/> Baggage Screening (EDS)	<input type="checkbox"/> Fire Sprinkler	<input type="checkbox"/> Emergency Power
<input type="checkbox"/> Advertising	<input type="checkbox"/> Fire Detection	<input type="checkbox"/> Lighting Control
<input type="checkbox"/> Other _____	<input type="checkbox"/> Mechanical _____	<input type="checkbox"/> Signage
<input type="checkbox"/> Other _____	<input type="checkbox"/> Exit Doors or Stairs	<input type="checkbox"/> Other _____
<u>Authority, Tenants, or other Stakeholders</u>		
<input type="checkbox"/> Authority	<input type="checkbox"/> Airlines _____	
<input type="checkbox"/> Other _____	<input type="checkbox"/> Concessions _____	
<input type="checkbox"/> Other _____	<input type="checkbox"/> TSA	
<input type="checkbox"/> Homeland Security (FIS Areas)	<input type="checkbox"/> FAA	

# San Diego International Airport Contractor Interface with Airport Systems Notification Form

<u>Signatures</u>	
<u>Originated by:</u>	
Contractor, or Subcontractor Company: _____	
Name: _____	Date: _____
<u>Requested by:</u>	
Prime Contractor Company: _____	
Project Manager: _____	Date: _____
<u>Reviewed by:</u>	
FDD Project Manager: _____ (For CIP & MM projects)	Date: _____
<u>Accepted by:</u>	
Project Sponsor: _____ (For CIP & MM projects):	Date: _____
Tenant Project Inspector: _____ (For Tenant Improvement projects)	Date: _____

Attachments:   A: Work plan – including sketches (if applicable)  
                   B: Emergency Contact List (if applicable)

**Distribution: (Response with concerns is due within 48 hours of distribution)**

Project Sponsor (if applicable): \_\_\_\_\_  
 Information Technology: Rick Belliotti  
 Risk Management: Michael Schaefer  
 Facilities Development: Iraj Ghaemi, Gary Couture  
 Business and Financial Management: Troy Ann Leech  
 Facilities Management: David LaGuardia  
 Public Safety & Security: Clint Welch  
 Environmental Affairs: Brendan Reed, Richard Gilb  
 Air Service Development: George Condon  
 Terminal & Tenants: Jeff Rasor  
 Customer Service and Customer Relations: Colm Marmion  
 Vision, Voice & Engagement: Diana Lucero

If applicable:  
 SDG&E    SBC    City of San Diego    Port District    Other

Copy: Project File

# San Diego International Airport Contractor Interface with Airport Systems Notification Form

## Work Plan

Project Schedule Activity Number: \_\_\_\_\_ N/A

Critical Path Activity:            Yes                             No                             N/A

Pre-activity Construction Meeting Date: \_\_\_\_\_ N/A

Planned Duration (hours) \_\_\_\_\_ Float (hours) \_\_\_\_\_

Narrative (include Phasing Plan and sketches), (attach additional sheets if necessary):

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Contingency Plan (include a listing of labor, materials, equipment and standby contractors), (attach additional sheets if necessary):

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## **APPENDIX 2 – AIRPORT OPERATIONAL SAFETY & SECURITY REQUIREMENTS**

SHALL BE IN ACCORDANCE WITH THOSE POSTED ON THE AUTHORITY WEBSITE:

[http://www.san.org/Portals/0/Safety-Security\\_Requirements.pdf](http://www.san.org/Portals/0/Safety-Security_Requirements.pdf)

## APPENDIX 3 – SDIA CONTRACTOR SECURITY INSTRUCTIONS

SHALL BE IN ACCORDANCE WITH THOSE POSTED ON THE AUTHORITY WEBSITE:

[http://www.san.org/Portals/0/SAN\\_security\\_instructions.pdf](http://www.san.org/Portals/0/SAN_security_instructions.pdf)

# SITE HEALTH AND SAFETY PROGRAM

Revised 7/2/2014

## PART 1 - GENERAL

### 1.01 SUMMARY

- This section describes general and specific safety requirements and emergency / accident reporting for this Project. These requirements are in addition to the requirements of the related sections.

### 1.02 RELATED SECTIONS

- Airport Operational Safety & Security Requirements
- Special Provisions; Removal and Disposal of Asbestos Containing Building Materials (ACBM)
- Special Provisions; Treatment of Lead Paint
- Special Provisions; Removal and Disposal of PCB-Containing Fluorescent Light Fixture Ballast
- San Diego County Regional Airport Authority Lockout / Tagout Guidelines

### 1.03 RELATED DOCUMENTS

Following is a list of the publications that form a part of these Specifications by reference:

- OSHA General Industry Safety and Health Standards (29CFR1910)
- OSHA Construction Industry Standards (29CFR1926)
- Cal/OSHA, Title 8, Division 1, Chapter 4, Subchapter 7, General Industry Safety Orders
- Cal/OSHA Title 8, Division 1, Chapter 4, Subchapter 4, Construction Safety Orders
- San Diego County Regional Airport Authority Capital Improvements Program (SDCRAA CIP) Safety Manual
- FAA Advisory Circular: Operational Safety on Airports During Construction (AC No. 150/5370-2E, 1-17-03), U.S. Department of Transportation, Federal Aviation Administration
- National Emission Standards for Hazardous Air Pollutants (40CFR61)
- Environmental Protection Agency Final Rule (40CFR761)

# SITE HEALTH AND SAFETY PROGRAM

Revised 7/2/2014

- Record Keeping Guidelines for Occupational Injuries and Illnesses
- American National Standard Institute (ANSI) A10.33
- American National Standard Institute (ANSI) A10.8
- American National Standard Institute (ANSI) Z359
- American Society of Mechanical Engineers (ASME) B30
- National Fire Protection Association (NFPA) 51B
- National Fire Protection Association (NFPA) 70E
- Globally Harmonized System of Classification and Labeling of Chemicals (GHS)
- California Manual on Uniform Traffic Control Devices, CA Department of Transportation
- San Diego County Air Pollution Control District Rules 50 and 51
- City of San Diego Municipal Code, Division 3, Storm Water Management and Discharge, Section 43.0304

The Contractor is responsible for knowing and abiding by the appropriate sections of these and any other applicable regulations and / or specifications.

## 1.04 GENERAL

- . The San Diego County Regional Airport Authority and its representatives have a vital interest in maintaining safe, healthful and efficient working conditions for all Contractors, tiered Subcontractors and employees. Alcohol and illegal drug use pose a serious threat to workplace safety and health. Employees who abuse alcohol or use drugs are a danger to themselves, co-workers and other contractors. Therefore, the Contractor shall maintain an Alcohol and Drug Free Workplace.
- B. Fifteen (15) days prior to the start of onsite activities, the Contractor shall submit the following documents to the San Diego County Regional Airport Authority Project Manager (Project Manager) for review and acceptance:
  - 1. The Contractor's General Injury and Illness Prevention Plan
    - a. The Contractor's written General Injury and Illness Prevention Plan shall meet the requirements set forth in Cal/OSHA Title 8, Chapter 4, Subchapter 7, Section 3203, General Industry Safety Orders.



# SITE HEALTH AND SAFETY PROGRAM

Revised 7/2/2014

2. The Contractor's Site-Specific Safety Plan
  - a. The Contractor shall prepare and submit a safety plan that is specifically tailored to the contracted Project, addressing those conditions, materials and/or practices that are or could be hazardous or of an unusual nature. The site-specific safety plan shall incorporate all applicable requirements of the SDCRAA CIP Safety Manual.
3. The Contractor shall submit OSHA 300 logs for the preceding three (3) years.
4. The Contractor shall submit all Cal/OSHA and Fed/OSHA Inspection and violation reports for the preceding five (5) years. In the event the Contractor has not had any violations the Contractor shall submit a letter confirming that there have been no violations.
5. The Contractor shall submit a Job Hazard Analysis (JHA) for all anticipated hazardous or unusual work activities in accordance with the SDCRAA CIP Safety Manual. The Contractor shall update and resubmit the JHA(s) throughout the project to address upcoming hazards, new subcontractor mobilization, changing conditions and non-routine tasks. The Contractor shall ensure that all concerned parties participate in the preparation of the JHA and all employees are trained and understand those JHA(s) applicable to their assigned task(s).
6. The Contractor shall submit to the Project Manager the name(s) of the "Competent Person" designated by the Contractor and / or subcontractor for, but not limited to, the following, as applicable: (See Appendix 1 of the SDCRAA CIP Safety Manual for Competent Person Acknowledgement Form). Copies of qualification certificates or cards shall be submitted where appropriate.
  - Site Safety Representative
  - Scaffolding / Ladders
  - Excavations and Trenching
  - Fall Protection
  - Respiratory Protection

# SITE HEALTH AND SAFETY PROGRAM

Revised 7/2/2014

- Concrete, Concrete Forms and Shoring
  - Steel Erection
  - Emergency Responder
  - Electrical
  - Confined Space Entry
7. The Contractor shall submit to the Project Manager copies of the manufacturer's Safety Data Sheet (SDS) for any product that may contain harmful or hazardous materials or chemicals. The SDS shall be legible, not more than three (3) years old, or be accompanied by a letter from the manufacturer stating that the process and content have not changed. SDS's shall be made available to all employers on multi-employer work sites. As new materials are introduced, the Contractor shall submit the SDS to the Project Manager.
  8. The Contractor shall prepare and submit to the Authority traffic revision plans for all road, lane and pedestrian walkway closures, detours or deviations from existing roads, lanes and pedestrian walkways. The Contractor shall revise the traffic plan or submit a new traffic revision plan if needed as Project conditions change.
  9. Prior to commencing any excavation, five (5) feet or more in depth, the Contractor shall submit a detailed excavation plan showing the protective system to be used. When the depth of such excavations exposes structural foundations of existing structures or adjacent surface encumbrances, the Contractor shall include additional, appropriate protective measures for such structures or encumbrances in their excavation plan.
  10. Protective systems in excavations over twenty (20) feet deep must be designed, stamped and signed by a registered professional engineer and be submitted to the Project Manager twenty-one (21) days prior to the start of excavations.
  11. If the Contractor decides that its employees will enter permit-required confined spaces, the Contractor shall develop and implement a written permit-required confined space program to include rescue procedures.

## SITE HEALTH AND SAFETY PROGRAM

Revised 7/2/2014

12. Contractors performing structural steel erection, including metal decking, precast concrete erection, or roofing operations shall submit a "Project Specific Fall Protection Plan" detailing how they will comply with the six (6) foot, 100% fall protection requirements.
13. Provide certificates of compliance for each crane and rigging equipment entering an activity under this contract. Post certifications on the crane.
14. Submit a weight handling critical lift plan for lifts over 75 percent of the capacity of the crane or hoist at any radius of lift, lifts involving more than one crane or hoist, lifts of personnel, and lifts involving non-routine rigging.
15. An engineer stamped scaffold plan shall be submitted prior to erection.

### 1.05 SITE HEALTH AND SAFETY TRAINING MEETING

- A. The Owner's Safety Manager (Safety Manager) or Project Manager will conduct a Pre-Construction Site Health and Safety Meeting covering site-specific and general Airport Authority requirements. The Safety Manager and Project Manager will coordinate the Pre-Construction Site Health and Safety Meeting with the Contractor.
- B. This is a management level meeting and Contractor Project Management, Project supervision and major subcontractor management and supervisory staff is required to attend the meeting.
- C. No work, other than mobilization, may occur prior to acceptance of the Contractor's IIPP and Site Specific Safety Plan, and the completion of the Site Safety and Health Meeting.

### 1.06 SITE SAFETY REPRESENTATIVE

- A. The Contractor shall submit the name(s) and qualifications of the Contractor's proposed Site Safety Representative to the Project Manager for approval fifteen (15) days prior to the start of onsite activities.
- B. The Site Safety Representative shall have at a minimum, five (5) years' experience in construction, shall have completed an OSHA 30-Hour Construction Safety & Health Course, or equivalent, within three (3) years prior to the start of work, possess appropriate skills and experiences related to safety and have the authority to take prompt corrective measures to eliminate hazards or unsafe working conditions. **At the**

# SITE HEALTH AND SAFETY PROGRAM

Revised 7/2/2014

**discretion of the Project Manager, the Site Safety Representative duties may be shared with other duties. However, safety responsibilities shall take precedence over any other assigned duties. The Site Safety Representative shall not operate equipment nor perform any other field labors that would prevent or preclude them from functioning in a supervisory role.**

- C. The Site Safety Representative shall be responsible for, but not limited to, the following: Contractor and subcontractor safety and health, implementing the Injury and Illness Prevention Program and the Site-specific Safety Plan, indoctrinating new employees, ensuring employee compliance with all Project requirements, maintenance and inspection of site health and safety equipment such as first aid kits, fire extinguishers, eye wash stations, etc., Project site inspection, conducting the Contractor's weekly safety meetings, submitting necessary reports and documentation, and protection of the public.
- D. The Contractor Superintendent(s) assigned to the project shall have completed an OSHA 10-Hour Construction Safety & Health Course, or its equivalent, within the three (3) years prior to start of work.
- E. The Contractor shall submit evidence of completion of these courses to the Project Manager no later than fifteen (15) days prior to the start of onsite activities.
- F. The Contractor Site Safety Representative shall be onsite during all scheduled work hours.

## 1.07 EMERGENCY REPONSE

- A. The Contractor shall have at least one "emergency responder" on site during all scheduled work hours. At a minimum, the emergency responder shall:
  - Possess a valid Red Cross first aid card, or equivalent;
  - Possess a valid Red Cross CPR card with an AED endorsement, or equivalent;
  - Be trained in the OSHA requirements of Bloodborne Pathogens.
- B. The Contractor shall provide, at a minimum, the following first aid supplies and emergency response equipment in their jobsite office or on the jobsite as appropriate:
  - Properly stocked and maintained First Aid Kits that meet all applicable requirements;
  - Bloodborne Pathogen Protection and Clean Up Kit;

## 1.08 ADDITIONAL SAFETY REQUIREMENTS

- A. Employee Training – The Contractor and all subcontractors shall have:

# SITE HEALTH AND SAFETY PROGRAM

Revised 7/2/2014

- At least one worker on site who has completed an OSHA 30-Hour Construction Safety & Health Course within three (3) years prior to the start of work.

Training certification records shall be subject to audit by SDCRAA or its representatives at any time.

## B. Project Progress Meetings

1. The Contractor shall address project safety issues, concerns, incidents, including injury and non-injury accidents, near hits, safety deficiencies, Safety notices, etc.
2. Risk Mitigation Planning (Three-Week Look-Ahead) – The Contractor shall provide written summaries of upcoming work tasks and associated risks and control measures (based on the Contractor's three-week look-ahead schedule) at the Project Progress Meetings.
3. The Contractor shall discuss Risk Mitigation Planning including, but not limited to, the following:
  - Subcontractor activities at least three weeks in advance of the work.
  - Upcoming risks, exposures, hazards, mobilization or demobilization tasks, new contractors, changing conditions, competent person changes, training, etc.
  - Planned mitigation measures.

C. The Contractor shall conduct and document site-specific safety orientation for all employees, subcontractor employees, and lower tier employees, in accordance with Section 10 of the SDCRAA CIP Safety Manual, prior to an employee starting work. Records of orientation training shall be retained onsite utilizing the New Hire Orientation Checklist Acknowledgement Form found in Appendix 1 of the SDCRAA CIP Safety Manual (or equivalent) and made available for audit/inspection by Airport Authority representative(s) upon request. .

D. The Contractor shall ensure that weekly "tool box" safety meetings are conducted for all Contractor and subcontractor employees. Safety meeting minutes and attendance sign-in sheets shall be retained onsite and made available for audit/inspection by Airport Authority representative(s) upon request. The Airport Authority or Contractor may require additional safety meetings for special or changed conditions or to address safety audits and Safety Notices.

# SITE HEALTH AND SAFETY PROGRAM

Revised 7/2/2014

## 1.09 HAZARDOUS MATERIALS

- A. Material usage and disposal shall be accomplished with strict adherence to Cal/OSHA Regulation 5194 , 29 CFR 1910, Subpart Z, 1910.1200, Hazard Communication, Globally Harmonized System of Classification and Labeling of Chemicals (GHS) and to manufacturers' warnings on the SDS and product container labels. The Contractor shall follow the Hazard Communications procedures outlined in the SDCRAA CIP Safety Manual, Section 8.
- B. Where Asbestos Containing Building Materials (ACBM) and / or lead paint are abated, the Contractor shall provide the Airport Authority with clearance certificates, signed by a Certified Asbestos Consultant, once asbestos and lead abatement has been completed.
- C. The Contractor shall bring to the attention of the Project Manager and Safety Manager any material suspected of being hazardous encountered during execution of work. A determination will be made by the Project Manager as to whether the Contractor shall perform tests to determine if the material is hazardous.

## 1.10 INJURY ACCIDENT / PROPERTY DAMAGE REPORTING

- A. The Contractor shall follow all Incident and Claim Reporting Procedures contained in the SDCRAA CIP Safety Manual. For those Projects covered by OCIP, the Contractor shall also comply with the procedures outlined in the Owner Controlled Insurance Program (OCIP) Contractors Information Manual, Section 9.

## 1.11 SITE WORK CONDITIONS

- A. The Contractor shall take all necessary precautions to prevent injury to Contract workers, the public, or damage to property of others. For the purposes of this Contract, the public shall include all persons not employed by the Contractor or a Subcontractor working under its direction.
- B. When the construction area is adjacent to occupied areas the Contractor shall be responsible for conducting air monitoring, inside the occupied areas, for airborne contaminants (chemicals, asbestos, welding fumes, nuisance dusts, etc.) generated by construction activity. The Contractor shall provide for an independent testing consultant to conduct such air monitoring. With the approval of SDCRAA Environmental Affairs and the Safety Manager, erection of a dust proof barrier by the Contractor may relieve the Contractor of this requirement.
- C. The Contractor shall ensure that monitored levels of chemicals and/or dusts are below established Permissible Exposure Limits as set forth in 29

# SITE HEALTH AND SAFETY PROGRAM

Revised 7/2/2014

CFR 1926, Subpart D. The Contractor shall submit air monitoring test results to the Project Manager within seventy-two (72) hours after testing.

- D. The Contractor shall prevent building materials, debris, excavated and / or backfill material, etc. from migrating into or onto the Air Operations Area (AOA) of the Airport. Stockpiled material shall be constrained in such a manner as to prevent movement resulting from aircraft blast or wind conditions.
- E. The Contractor shall ensure employees working in Air Operation Areas (AOA) are properly instructed in and follow SDIA operations procedures and the applicable provisions of FAA Advisory Circular: "Operational Safety on Airports During Construction (AC No. 150/5370-2E, 1-17-03)", U.S. Department of Transportation, Federal Aviation Administration, including safe working distances, escort procedures, driver qualifications, Foreign Object Debris (FOD) and avoidance of jet engine blast.
- F. Where work involves isolating utilities to any portion of the airport or adjoining areas, the Contractor shall follow safety procedures as outlined in the San Diego County Regional Airport Authority Lock Out/Tag out Program Guidelines and the SDCRAA CIP Safety Manual.

## 1.12 HOT WORK

- A. All hot work shall be accomplished with strict adherence to applicable State and Federal Regulations, NFPA 51B and shall comply with the procedures outlined in Sections 12.9, Welding, Cutting and Compressed Gases; 12.10, Fire Protection / Prevention; and 14, Fire Watch Instructions of the SDCRAA CIP Safety Manual

## 1.13 EXCAVATIONS

- A. The Contractor shall obtain and maintain on site a Cal/OSHA Excavation Permit for excavations five (5) feet or greater in depth and shall transmit copies of permits to the Project Manager prior to the start of any excavation requiring a permit.
- B. The Contractor's excavations shall comply with regulations in the Excavations requirements of 29 CFR 1926, Subpart P, Excavations, Title 8, Chapter 4, Subchapter 4, Article 6, Cal/OSHA Construction Safety Standards and Section 12.7 of the SDCRAA CIP Safety Manual. Special attention to atmospheric testing shall be taken.
- C. The Contractor shall locate and identify all utilities prior to the start of excavations as required in Section 1D-15. Equipment operators shall be briefed on the locations and types of utilities. When within five (5) feet of known utilities, hand digging is required. Pot-holing to locate utilities may be allowed with the permission of the Project Manager.

# SITE HEALTH AND SAFETY PROGRAM

Revised 7/2/2014

- D. The Contractor shall ensure that all excavations are inspected and documented as required in Article 6, Section 1541(k) of the Cal/OSHA Construction Safety Orders.
- E. The Contractor shall submit the name(s) of the designated "Competent Person" to the Project Manager prior to the start of any excavation work. Supporting documentation indicating training and competency shall accompany the submitted name(s).
- F. While the excavation is open, the Contractor shall protect underground installations and utilities by supporting, or removing as necessary.

## 1.14 HOUSEKEEPING

- A. The Contractor shall ensure compliance with the Housekeeping requirements of 29 CFR 1926, Subpart C, Safety and Health Regulations for Construction and Section 12.8 of the SDCRAA CIP Safety Manual.
- B. The Contractor shall use only storage areas designated by the Project Manager.
- C. Storage in Air Operation Areas (AOA) shall follow SDIA operations procedures and the applicable provisions of FAA Advisory Circular: "Operational Safety on Airports During Construction (AC No. 150/5370-2E, 1-17-03)", U.S. Department of Transportation, Federal Aviation Administration.
- D. The Contractor shall not allow construction debris and FOD to accumulate. All trash shall be removed from the site or contained in suitable covered dumpsters, trash bins or similar containers daily. If the Contractor fails to comply, the San Diego County Regional Airport Authority will remedy the non-conforming situation and deduct costs incurred from monies owed the Contractor.
- E. The Contractor shall comply with Air Pollution Control District Rules 50 and 51 regarding dust emissions.
- F. The Contractor shall comply with City of San Diego Municipal Code, Division 3, Stormwater Management and Discharge, Section 43.0304 to prevent any discharges into the storm drain conveyance system.
- G. The Contractor shall ensure that all areas where water may accumulate are protected to contain water, including wash water, in secondary containment for proper disposal.

## 1.15 CONTROL OF HAZARDOUS ENERGY



# **SITE HEALTH AND SAFETY PROGRAM**

**Revised 7/2/2014**

- A. The Contractor shall ensure that a comprehensive program is in place for all anticipated sources of energy. All lockout/tagout procedures shall comply with the requirements of 29 CFR 1910, Subpart J, 1910.147, The control of hazardous energy, 29 CFR 1926, Subpart K, 1926.417, Lockout and tagging of circuits, Cal/OSHA Regulations 2320.2, 2320.4, 2320.5, 2320.6, 2320.7, 3314 and the lockout/tagout program guidelines outlined in the SDCRAA CIP Safety Manual, Section 12.17.

## **1.16 CONFINED SPACES**

- A. The Contractor, in coordination with the San Diego County Regional Airport Authority and Owner's Safety Manager, shall evaluate the workplace to determine if any spaces within the boundaries of the contracted project are permit-required confined spaces and comply with all applicable regulations including, OSHA 29 CFR 1910.146, Cal/OSHA Regulation 5157 and SDCRAA CIP Safety Manual, Section 12.15.

## **1.17 FALL PROTECTION**

- A. The Contractor shall establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards of six (6) feet or greater. Include responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures in accordance with the 29 CFR 1926, Subpart M, ANSI Z359, ANSI A10.32, Cal/OSHA, Title 8, Construction Safety Orders, Article 24 and SDCRAA CIP Safety Manual, Section 12.4.

## **1.18 WEIGHT HANDLING EQUIPMENT**

- A. Cranes and equipment, that can hoist, lower and horizontally move a suspended load shall comply with all applicable regulations in accordance with the 29 CFR 1926, Subpart H, N and CC, 29 CFR 1910 Subpart N, Cal/OSHA, Title 8, General Industry Safety Orders Group 3 §3472-3474 and Group 13, Cal/OSHA, Title 8 Construction Safety Orders, Article 15, ASME B30 and SDCRAA CIP Safety Manual, Section 12.11.

## **1.19 SCAFFOLDING**

- A Construction, maintenance, use and disassembly of all scaffolding shall comply with manufacturer's instructions, ANSI A10.8, OSHA 29 CFR 1926, subpart L and M, Cal/OSHA Title 8, Construction Safety Orders, Articles 21, 22, and 23, and SDRCAA CIP Safety Manual, Section 12.6.

# SITE HEALTH AND SAFETY PROGRAM

Revised 7/2/2014

## 1.20 EXECUTION

- A. When the Contractor is notified by the Project Manager and/or the Safety Manager of any noncompliance with the provisions of the Contract and the action(s) to be taken, the Contractor shall immediately, if so directed, or within forty-eight (48) hours after receipt of a notice of violation, correct the unsafe or unhealthy condition.
- B. If the Project Manager or Safety Manager becomes aware of any conditions that pose a serious or imminent danger to the health or safety of the public, Airport Authority personnel and their representatives, or the Contractor's personnel, the Project Manager or the Safety Manager shall notify the Contractor orally, followed with written confirmation, and request immediate initiation of corrective action.
- C. If the Contractor fails to comply promptly, the Project Manager or Safety Manager may stop all or any part of the work being performed with a Stop Work Order. When, in the opinion of the Project Manager, satisfactory corrective action has been taken to correct the unsafe and /or unhealthy condition, a Start Work Order will be issued immediately.
- D. The Contractor shall not be allowed any extension of time or compensation for damages by reason of or in connection with such suspension of work. The Contractor shall insert this clause, with appropriate changes in the designation of the parties, in all subcontracts. At no time shall the Contractor be relieved of the responsibility to be aware of and correct any unsafe conditions. If the Contractor fails to take corrective action, the Project Manager may cause the corrective action to be performed by a third party with the cost of such action being withheld from the next progress payment.
- E. If the Contractor fails, within the applicable time period, to abide by any of the following requirements:
  - i. the training requirements in Section 1.08 of this document, "Employee Training";
  - ii. the submittal and reporting requirements for safety;
  - iii. failure to comply, within 48 hours of receipt of notification, with the requirements set forth in an NCR regarding a Serious or a Serious – Wilful safety violation;
  - iv. failure to submit any applicable OCIP payroll reporting forms, as set forth in the OCIP Contractors Information Manual;

the San Diego County Regional Airport Authority may retain an amount equal to ten percent (10%) of the estimated value of the work performed

# **SITE HEALTH AND SAFETY PROGRAM**

**Revised 7/2/2014**

during that month from the next submitted Progress Payment. Such retention shall not exceed \$10,000, nor be less than \$1,000. Upon receipt of proof of compliance with the applicable requirement(s), the withheld amounts will be released with the next progress payment. Until such time as the requirements set forth above are not satisfied, no Final Payment shall be due and owing.

## **PART 2 - MEASUREMENT AND PAYMENT**

### **2.01 PREPARATION OF A SITE HEALTH AND SAFETY PROGRAM**

Full compensation for preparing a Site Health and Safety Program and for conforming to the provisions therein shall be considered as included in the prices paid for the various Contract items of work, and no separate payment will be made therefor.

**END OF SECTION**

# **STORM WATER POLLUTION PREVENTION**

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## **A. GENERAL**

### **1. Definitions and Acronyms:**

Best Management Practice (BMP) - (1) A method that is implemented to protect water quality and prevent or reduce the potential for pollution associated with storm water runoff and construction activities, e.g., scheduling of activities, prohibitions of practices, maintenance procedures, and other management practices, (2) any program, process, siting criteria, technology, treatment requirement, or operating method, measure, or device that controls, prevents, removes, or reduces pollution.

Authority Storm Water Pollution Prevention Plan (Authority SWPPP) - Site specific document required by the Airport Authority to ensure compliance with the Municipal Permit. See Attachment 1.

Construction General Permit (CGP) – National Pollutant Discharge Elimination System (NPDES) General Permit for the Storm Water Discharges associated with the construction and land disturbance activities i.e., State Water Resources Control Board Permit, Order No. 2009-0009 DWQ (NPDES Permit #CAS000002)..

Municipal Permit (Permit) – Municipal storm water permit for the San Diego region. San Diego Regional Water Quality Control Board Order Number R9-2013-0001 (NPDES Permit # CAS0109266), as amended or revised.

Qualified SWPPP Developer (QSD) - The trained and competent person employed by the Contractor responsible for preparing and amending, as necessary, the Authority SWPPP. Section VII.B.1 of the CGP details the training qualifications and certification requirements used in defining a QSD.

Qualified SWPPP Practitioner (QSP) - The trained and competent person employed by the Contractor responsible for the implementation of the Authority SWPPP. Section VII.B.3 of the CGP details the training qualifications and certification requirements used in defining a QSP.

Weather-triggered Action Plan (WTAP) – A plan outlining any necessary additional BMPs to be implemented prior to a rain event, the person responsible for implementing additional BMPs, any changes required in the construction schedule, any changes required in the activities underway for the particular construction phase, a listing of the types of tradesmen and subcontractors active on the construction site and their relevant contact information.

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2. **Scope of Work:** The work includes implementation and maintenance of an Authority SWPPP and implementation and maintenance of storm water pollution prevention Best Management Practices (BMPs) required to prevent and control discharges of dust, soil, sediment, debris, and other pollutants from the project site onto adjacent areas and/or into the storm water conveyance system from construction activities.

The Authority SWPPP and BMPs shall apply to all construction related areas and activities associated with the project, such as staging areas, equipment and material storage sites, waste management areas, temporary plant sites, and borrow pit operations which may be outside the construction limits.

Erosion control BMPs are the primary means of preventing storm water contamination at construction sites, and sediment control techniques should be used to capture any soil that becomes displaced or eroded.

3. **Contractor Required Submittals:** The Contractor shall provide the following submittals:

- a) Contractor's qualified QSD with verification of certification
- b) Contractor's qualified QSP with verification of certification
- c) Schedule of values related to storm water management
- d) Documentation that QSD observed construction site and has toured the site with the Airport Authority's project manager and/or construction manager prior to submitting the SWPPP
- e) Authority SWPPP signed by the contractors approved QSD
- f) Amendments to the Authority SWPPP prior to implementation
- g) Manufacturer, model, make and year of street sweeping equipment with verification of certification in accordance with South Coast Air Quality Management District (SCAQMD) Rule 1186
- h) Weekly and extended storm event site inspection reports
- i) One-week and 3-week look ahead schedules for storm water pollution prevention activities in consideration of construction activities, phase of work, BMPs in place, and current and forecasted weather
- j) Documentation of corrective action for notice of non-compliance

4. **Regulations and Authorities:** The Contractor shall comply with the following Permits or authorities:

- a) Regional Water Quality Control Board (RWQCB) Order No. R9-2013-0001, NPDES Permit No. CAS0109266, NPDES Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the San Diego Region (Municipal Permit or Permit) as amended, and/or modified (see

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[http://www.swrcb.ca.gov/rwqcb9/water\\_issues/programs/stormwater/index.shtml](http://www.swrcb.ca.gov/rwqcb9/water_issues/programs/stormwater/index.shtml)).

- b) Authority Storm Water Management Plan – <http://www.san.org/Airport-Projects/Environmental-Affairs#124539-stormwater>. Section 5 of the Airport Authority Storm Water Management Plan (SWMP) sets the Airport Authority's minimum requirements applicable to land disturbance and construction activity in the Airport Authority's jurisdiction.

In the event of a conflict between these requirements and pollution control laws, rules, regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply.

5. **Applicable Publications and Guidance:** The publications and guidance listed below form a part of this specification to the extent referenced. There are other sources of information available to the Contractor and the following list is not meant to limit those resources. These items are referred to in the text by the basic designation only.

- a) Authority Storm Water Pollution Prevention Plan (Authority SWPPP) Template – Provides outline and format for completing an Authority SWPPP. See Attachment 1.
- b) Airport Authority Storm Water Management Plan – <http://www.san.org/Airport-Projects/Environmental-Affairs#124539-stormwater>. Section 5 of the Airport Authority Storm Water Management Plan (SWMP) provides guidance on BMPs applicable to construction activities.
- c) California Stormwater Quality Association webpage - <https://www.casqa.org/Default.aspx>. In late 2009, CASQA posted an updated version of the Construction BMP Handbook as a web-based Portal. CASQA developed the new 2009 CASQA Construction BMP Handbook / Portal to complement the State Construction General Permit. The Construction Handbook / Portal provides general guidance for implementing storm water pollution prevention plans (SWPPPs) and Best Management Practices (BMPs). More information about the CASQA Construction BMP Handbook / Portal can be found at: <https://www.casqa.org/store/products/tabid/154/p-167-construction-handbookportal-initial-subscription.aspx>.
- d) State Water Resources Control Board webpage - [http://www.waterboards.ca.gov/water\\_issues/programs/stormwater/constr](http://www.waterboards.ca.gov/water_issues/programs/stormwater/constr)

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uction.shtml. Supplemental guidance on implementation of a SWPPP prepared in accordance with the Construction General Permit.

**6. Qualifications of the Contractor:** The Contractor shall appoint and identify a QSD and a dedicated QSP. The appointed QSP shall not be the project Superintendent or Forman, but shall be separate qualified individuals who shall report directly to the Contractors quality control program manager. The Contractor shall submit verification of the appointed person's or persons' certification as a qualified QSD and QSP at the "Pre-construction Meeting".

- a) **Qualified SWPPP Developer (QSD):** The Contractor shall appoint and identify a QSD to complete the Authority SWPPP with site specific BMPs and pertinent information in accordance with the Airport Authority's requirements. The QSP is primarily responsible to ensure development and implementation of the Authority SWPPP. The QSD must meet with the Airport Authority at the project site to observe site conditions prior to completing the Authority SWPPP.

The Contractor's QSD shall be available at all times to meet and confer with Authority's construction manager regarding the need to amend the Authority SWPPP to address changing site conditions and ensure effectiveness of the Authority SWPPP. The QSD shall amend the Authority SWPPP as necessary to ensure compliance with the Airport Authority requirements. All amendments will be reviewed and approved by the Airport Authority prior to implementation.

It is the Contractor's responsibility to submit and obtain approval in advance for an Alternate QSD should the designated QSD not be available. The QSD shall be relieved of these duties and replaced by another QSD at the request of the Airport Authority if the Airport Authority finds the QSD has failed to perform these duties to the satisfaction of the Airport Authority.

- b) **Qualified SWPPP Practitioner (QSP):** Prior to the start of any site work, the Contractor shall appoint and identify a dedicated QSP who is primarily responsible to ensure implementation of the Authority SWPPP. The Contractor shall submit verification of the appointed person's certification as a qualified QS at the "Pre-construction Meeting". The QSP shall have the authority and the responsibility to install, monitor, maintain, modify, and repair the BMPs presented in the Authority SWPPP. The QSP shall be on-site daily to evaluate the conditions of the Site with respect to Authority SWPPP. The QSP must be at the job site within 2 hours of being contacted by the Airport Authority.

The QSP shall modify (not amend) the Authority SWPPP as necessary to ensure compliance with the Airport Authority requirements. Issues and

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items subject to potential modification shall be described in the Authority SWPPP by the QSD at the time of preparation. Updates or changes required to the Authority SWPPP that are not so described are considered amendments that must be prepared by the QSD. All modifications will be reviewed and approved by the Airport Authority prior to implementation.

The QSP shall be responsible for non-storm water and storm water visual observations, the elimination of unauthorized discharges and the work of others assisting in accomplishing these tasks and the implementation of BMPs. The QSP shall not delegate any of these activities to any other employee.

It is the Contractor's responsibility to submit and obtain approval in advance for an Alternate QSP should the designated QSP not be available. The QSP shall be relieved of these duties and replaced by another QSP at the request of the Airport Authority if the Airport Authority finds the QSP has failed to perform these duties to the satisfaction of the Airport Authority.

The Contractor, as recommended by the QSD and/or the QSP, shall modify the working details, as necessary, to adapt the BMPs for site conditions to meet the pollution control objectives. There shall be no additional costs to the Airport Authority resulting from the Contractor's modification to BMPs.

7. **Mandatory Training:** Prior to completing and submitting the Authority SWPPP for the Airport Authority's review, the Contractor's Superintendent, Foreman, QSD, and QSP shall attend a mandatory 2- to 4-hour training class presented by the Airport Authority regarding storm water pollution prevention laws and regulations and expectations for implementation of the Authority Storm Water Pollution Prevention Plan (Authority SWPPP).
8. **Start of Work:** The Contract Time shall start in accordance with the official Notice to Proceed. The Work shall not commence without an approved Authority SWPPP.
9. **Authority SWPPP:**
  - a) After attending the Mandatory Training, the Contractor shall submit the preliminary Authority SWPPP document to Airport Authority at the "Authority SWPPP Review Meeting". Using the Authority SWPPP template in Attachment 1, the QSD shall review and complete the document as necessary to adjust to the Contractors means and methods. The Authority SWPPP shall be prepared and signed by the QSD. Any changes to the Authority SWPPP template format shall be proposed by the QSD in "track-changes". The Contractor's QSD shall submit the Authority SWPPP to the Airport Authority for review. If extensive additions or corrections are



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required, the Airport Authority will return the submittal for corrections and re-submission.

- b) After the Authority SWPPP has been revised to the satisfaction of the Airport Authority, the Contractor's QSD shall final, sign, and submit the Authority SWPPP to the Airport Authority.
- c) The Authority SWPPP shall address the following objectives:
  - i. Control all pollutants and their sources associated with the Work.
  - ii. Identify and either eliminate, control, or treat all non-storm water discharges.
  - iii. Reduce or eliminate pollutants in storm water and authorized non-storm water discharges during and after construction through the implementation of appropriate BMPs.

The Authority SWPPP shall include, but not be limited to, identification of potential pollutants, and identification of appropriate storm water pollution prevention BMPs to be utilized by the Contractor throughout the duration of the project, designed to prevent unauthorized discharges due to wind, rain, run-on or runoff water sources, and/or tracking by vehicles and equipment. The Authority SWPPP shall also include site plans with details of appropriate BMPs to be implemented and their locations for each phase of work. The Authority SWPPP shall identify BMPs to address: erosion and sediment controls, wind erosion controls, tracking controls, non-storm water management controls, materials management controls, and waste management controls.

Any discharge that is not solely storm water leaving the site boundary and/or entering any functioning portion of the onsite storm water conveyance system must be stopped and cleaned up immediately. The Contractor shall make stopping and cleaning up any such discharge the highest priority above all other site activities, except for ensuring job site safety.

The Authority SWPPP must include provisions for the development and implementation of a Weather-trigger Action Plan (WTAP).

The Airport Authority shall identify any adjacent construction work that might impact the project at the time the Airport Authority becomes aware of such work. Any potential impacts from adjacent construction work must be addressed by the Authority SWPPP at the time the potential is identified by either the Airport Authority or the Contractor, whether before the Contractor begins work on the site or during the project. The Contractor shall notify the Airport Authority if their work will affect or be affected by any adjacent contractor a minimum of 10 days in advance of such impact. Co-mingling storm water runoff from adjacent

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projects so as to effectively prevent storm water pollution must be approved in writing by the Airport Authority and include the identification of the Contractor's responsibilities for managing such commingled runoff.

- 10. Best Management Practices:** All construction activities shall be evaluated by the Contractor and the QSD for their potential to impact storm water quality. Adequate BMPs shall be identified by the QSD and implemented by the Contractor to control the potential impacts. Details and working drawings for BMPs shall be provided in the Authority SWPPP. BMPs shall be implemented in accordance with California Stormwater Quality Association (CASQA) Construction BMP Handbook / Portal (<https://www.casqa.org/store/products/tabid/154/p-167-construction-handbookportal-initial-subscription.aspx>). The BMPs shall include effective erosion and sediment controls, wind erosion controls, tracking controls, non-storm water management controls, and material and waste management controls.

The Contractor shall implement an effective combination of erosion and sediment control BMPs, wind erosion control BMPs, tracking control BMPs, non-storm water management BMPs, and materials and waste management BMPs using the Best Available Technology/Best Conventional Technology (BAT/BCT) throughout the duration of the project.

The Contractor is advised that any work on or near the airfield may severely limit the types and/or manner of installation for BMPs. Any BMPs that have the potential to create an airfield safety hazard or to create foreign object debris (FOD) and/or cause foreign object damage (also called FOD) as determined by the Airport Authority shall not be allowed. The Contractor shall request information on the potential for the creation of any safety hazards and/or FOD prior to selecting BMPs.

Erosion control BMPs include but are not limited to: scheduling, slope roughening, hydraulic mulches, soil stabilizers and binders, bonded fiber matrix (BFM), erosion control blankets, and plastic covers.

Temporary sediment control BMPs include but are not limited to linear sediment barriers (e.g., silt fence, fiber rolls, and gravel bag berms), sediment traps, and storm drain inlet protection. Inlet sediment control measures shall be maintained daily or more often as needed. Maintaining inlet sediment control measures shall include replacing damaged BMPs and removing and disposing of accumulated sediment, trash, and debris. The storm drain inlet protection shall not be removed until the Project is complete. The Contractor shall be responsible for preventing flooding associated with storm drain inlet protection. The water around the inlet shall not be allowed to pond such that the standing water impedes the safe flow of traffic. If in the extraordinary event that any BMPs are

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temporarily removed by the Contractor to alleviate a safety hazard due to flooding, those BMPs shall be replaced or modified as soon as safety allows.

Wind erosion control BMPs include covering and/or the application of water or dust palliatives to exposed soil and stockpiles. Stockpiles shall be effectively treated by one of these methods at the end of each day, and when not in use and/or when there is any chance of precipitation and/or visible dust. The need for and maintenance of stockpile and dust control measures must be evaluated and addressed by the QSP daily.

Tracking control BMPs include street sweeping, stabilized construction entrance and roadways, and site entrance/exit tire washing. The Contractor shall maintain or contract for on-site full-time street sweeping equipment. Street sweepers must be "PM-10 Certified" in accordance with SCAQMD Rule 1186 (<http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1186.pdf?sfvrsn=4>). Street sweeping of all on-site paved surfaces and paved points of access to the site shall be performed: a) as necessary; b) at least daily; and c) prior to any rain event. Loaders and grading equipment shall not access roads or streets or other paved surfaces utilized by the public. Only ten-wheelers shall be used to haul material on or off-site.

Non-storm water management BMPs include but are not limited to pavement cutting, vehicle and equipment cleaning and vehicle and equipment fueling and maintenance. Drip pans shall be used under all mobile motor-driven equipment when not in use and under all motor-driven equipment being used at a stationary location for any length of time.

Materials and Waste Management BMPs include but are not limited to material and waste storage and handling, stockpiles, spill prevention and control, clean up, and concrete waste management. Portable sanitation facilities shall feature secondary containment. A spill response plan shall be developed and included as a part of the Authority SWPPP.

- 11. Weather-triggered Action Plan (WTAP):** – The QSP shall develop a WTAP whenever there is a 40 percent or greater chance of precipitation forecasted over the next 5 days by the National Weather Service (NWS). The WTAP shall outline any necessary additional BMPs to be implemented prior to a rain event, the person responsible for implementing additional BMPs, any changes required in the construction schedule, any changes required in the activities underway for the particular construction phase, a listing of the types of tradesmen and subcontractors active on the construction site and their relevant contact information. The WTAP shall be deployed/activated whenever the NWS forecasts the chance of precipitation as 50 percent or greater at any time in the next 48-hour period.

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**12. Authority SWPPP Inspections, Maintenance, and Repair:** The Contractor's QSP shall conduct inspections of the project to evaluate the adequacy and efficiency of BMP implementation and the Authority SWPPP itself.

- a) Inspections shall be performed daily and at least once each 24-hour period during extended storm events. The inspection shall be noted on the contractors' daily report, to include any maintenance activities performed.
- b) The Contractor's QSP shall attend the scheduled weekly site walk/inspection conducted by the Authority's QSP (or his appointed designee) to evaluate the performance and adequacy of the BMPs currently being implemented on the project. The day and time of this weekly site walk/inspection shall be determined between the Authority's QSP and the Contractor's QSP at the beginning of the construction period, and all efforts shall be made to conduct the inspection at the same time each week. If the Contractor's QSP is unable to attend the scheduled site walk/inspection for any reason, it is the Contractor's responsibility to contact the Authority's QSP immediately to reschedule the inspection for another time that works for both parties.
- c) At least one of the daily inspections per week, and all of the inspections conducted during an extended storm event, shall be documented in paper format in accordance with the Authority SWPPP. The original documentation of any inspections shall be placed in the Authority SWPPP and copies shall be provided to the Airport Authority within 1 week of the subject inspection.
- d) Inspections and observations shall identify BMPs that need maintenance to operate effectively; have failed; or could fail to operate as intended.
- e) The Contractor shall begin implementing repairs or modifications to BMPs immediately and complete the work within 72 hours of identification.
- f) Maintenance and repair shall be performed or supervised by the QSP.

The Airport Authority and/or other duly authorized persons or agencies may conduct monitoring and/or inspection and/or review of the Authority SWPPP and/or BMP. In response to such monitoring, inspection, or review, the Airport Authority may notify the Contractor to modify the Authority SWPPP and/or the implementation of the Authority SWPPP and/or BMPs, as necessary. The Contractor shall begin implementing repairs or modifications to BMPs immediately and complete the work within 72 hours of such notification.

**13. Monitoring and Reporting:** The Contractor shall develop and implement a written site-specific Construction Site Monitoring Program (CSMP) as required by

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the Airport Authority and as outlined in the Authority SWPPP template. The CSMP shall be developed prior to the commencement of construction activities, and revised as necessary to reflect changed project conditions.

The CSMP shall include monitoring procedures and instructions, location maps, forms, and checklists, which shall cover the following requirements:

- a) Visual Monitoring for Qualifying Rain Events.
- b) Visual Observation Exemptions.
- c) Monitoring Methods.
- d) Non-Storm Water Discharge Monitoring.
- e) Non-Visible Pollutant Monitoring.

## **B. MATERIALS**

The Contractor shall have adequate materials on site to quickly deploy, maintain, repair, and place BMPs, as necessary, to protect the exposed portions of the site and to prevent sediment and pollutant discharges from the site.

## **C. EXECUTION**

1. **General:** The regulations listed in Item #A.4 above prohibit degradation of water quality and require prevention or control of discharges from construction sites and construction activities for all Airport Authority projects. The Contractor shall implement the Authority SWPPP to prevent and/or control potential discharges of dust, soil, sediment, debris, and other pollutant from the project site on to adjacent areas and/or into storm water conveyance system from any and all activities with the potential to release such pollutants directly or indirectly.

The Authority SWPPP shall be implemented and modified as necessary to address Site conditions. The Contractor's QSP shall modify the Authority SWPPP as necessary to address changing site conditions and ensure effectiveness of the Authority SWPPP. Issues and items subject to potential modification shall be described in the Authority SWPPP by the QSD at the time of preparation. Updates or changes required to the Authority SWPPP that are not so described are considered amendments that must be prepared by the QSD. Both modifications and amendments shall be submitted to the Airport Authority for approval prior to implementation.

The Contractor shall make the Authority SWPPP available at the Site during working hours while construction is occurring. The Authority SWPPP shall be made available upon request by a State inspector or the Airport Authority.

The 3 week look-ahead schedule shall identify activities that effect BMPs. The QSP shall ensure that adequate materials are on-site to maintain, replace, or

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repair any BMPs that may be damaged as a result of on-going activities or need to be deployed to address new work.

2. **Meetings**: The Contractor and the QSP shall take part in the weekly construction progress meetings as arranged by the Airport Authority. The weekly progress meetings will include review of the 1-week and 3-week look ahead schedules for storm water pollution prevention activities planned in consideration of scheduled construction activities, phase of work, BMPs in place, and current and forecasted weather.
3. **Training**: Contractor shall ensure that training on storm water pollution prevention in general and implementation of the Authority SWPPP prepared for the project is given to all employees and subcontractors involved in construction activities. This training shall include but not be limited to the location of the storm drains on the job site; the direct link between the storm drain system and the bay; potential pollutants; and BMP installation, inspection, maintenance and repair. All training shall be documented in the Authority SWPPP.
4. **Unauthorized Discharges**: No unauthorized discharges of any material, debris, or pollutant may leave the project site and/or enter the storm water conveyance system including process and wash waters, dust, petroleum products, soil or debris.

Any discharge leaving the project site boundary and/or entering any functioning portion of the onsite storm water conveyance system must be stopped and cleaned up immediately. The Contractor shall make stopping and cleaning up any such discharge the highest priority above all other site activities, except for those necessary to ensure job site safety.

The Contractor shall be responsible for clean-up, mitigation, and penalties levied against the Airport Authority, Contractor, or both, resulting from failure to implement and maintain appropriate BMPs for pollution prevention.

5. **Notification**: The Contractor shall notify the Airport Authority immediately of any unauthorized releases to the storm drain. The Contractor shall immediately document all unauthorized releases including but not limited to the time, date and duration, material released, and action taken to stop discharge and prevent future discharges. Documentation shall be provided to the Airport Authority and included in the copy of the Authority SWPPP being maintained on site.
6. **Cleanup**: All unsalvageable materials used in the storm water pollution prevention program shall be properly disposed of outside of the Airport Authority property at the completion of work.
7. **Notification of Non-Compliance**: The Airport Authority will notify the Contractor of any detected non-compliance with the foregoing requirements. The Contractor

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shall take immediate corrective action. The Contractor may be required to provide documentation of corrective actions in hard-copy and/or electronic copy using text and/or photographs. If the contractor fails or refuses to correct the non-compliant work, the Airport Authority will issue a non-compliance notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Airport Authority may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor is not entitled to any added costs or time extension due to such stop work orders.

If the contractor fails or refuses to correct the non-compliant work, the Airport Authority may mobilize a third party to implement remedial action and back charge the contractor. The back charge will not be eligible for reimbursement from any allowance and will be deducted from the Daily Allowance for Field Overhead, if applicable to the project.

\*\*\*\* END OF SECTION \*\*\*\*

## **NOTIFICATION REGARDING ENVIRONMENTAL CONDITIONS**

Contractor is hereby notified by the San Diego County Regional Airport Authority, a local governmental entity of regional government ("Authority"), that:

1. Certain Environmental Conditions (a) may exist at, under, on, around or near (i) the work site and (ii) property which is contiguous, upgradient or otherwise in the vicinity of the project site ("the Surrounding Property") and (b) may be encountered during activity undertaken pursuant to Work, as defined in the specification.

2. For purposes of this Notification, the term "Environmental Conditions" means (a) any environmental conditions, circumstances or other matters of fact, pertaining to, relating to or otherwise affecting the environment, including without limitation any natural resources (including, without limitation, flora and fauna), soil, surface water, groundwater, any present or potential drinking water supply, subsurface strata or the ambient air, and relating to or arising out of the presence, use, handling, storage, treatment, recycling, generation, transportation, release, spilling, leaking, pumping, pouring, emptying, discharging, injecting, escaping, emitting, leaching, disposal (including, without limitation, the abandonment or discarding of barrels, containers and other closed receptacles and fill materials containing any Hazardous Materials), dumping or threatened release of Hazardous Material and (b) the exposure of any persons (including, without limitation, owners, lessees, licensees, permittees, invitees or other occupants or users of the Work Site and/or the Surrounding Property) to Hazardous Materials, or the exposure of other natural persons within or outside the boundaries of the Work Site and/or the Surrounding Property to Hazardous Materials related to or otherwise arising from operations, acts, omissions or other conduct at the Work Site and/or the Surrounding Property (as the case may be) (the "Environmental Conditions"). For purposes of this Notification, the term "Hazardous Materials" means any pollutant, contaminant, hazardous material, hazardous waste, toxic substance and any other material, waste or substance that may present a hazard or threat to human health or safety or the environment or that is defined, listed, identified or regulated under any federal, state or local statute, law, rule, regulation or order pertaining to protection of human health or safety or the environment, including, without limitation, petroleum and petroleum products, asbestos and asbestos containing materials, polychlorinated biphenyls and radioactive or infectious materials or wastes.

3. Information relating to Environmental Conditions at, under, on, around or near the Work Site and/or the Surrounding Property, developed as a result of sampling, testing and analysis undertaken from time to time by the Authority, Authority tenants, third-party contractors and/or others, may be contained in certain of the Authority's files (the "Authority Files"). Subject to reasonable confidentiality assurances from Contractor, the Authority will make the Authority Files available for review. The Authority has not undertaken to conduct, and the Authority Files do not represent, a comprehensive analysis of Environmental Conditions at, under, on, around or near the Work Site and/or the Surrounding Property.

4. Information relating to Environmental Conditions at, under, on, around or near the Work Site and/or the Surrounding Property may be contained in the files of other



## **NOTIFICATION REGARDING ENVIRONMENTAL CONDITIONS**

governmental entities or agencies, including without limitation the San Diego Regional Water Quality Control Board, the San Diego Department of Health Services, the San Diego Air Pollution Control District, the San Diego Fire Department, the City of San Diego, the Centre City Development Corporation, the California Department of Toxic Substances Control, the California Environmental Protection Agency, and Region IX of the United States Environmental Protection Agency (the "Agency Files). If a governmental entity or agency conditions availability of Agency Files to Contractor, Authority shall provide such consent upon reasonable request and, in the case of trade or business secret information, subject to reasonable confidentiality assurances from Contractor.

5. The Authority's knowledge and files regarding Environmental Conditions at, under, on, around or near the Work Site and/or the Surrounding Property are not complete. The Authority has encouraged Contractor to review all readily available information relating to such Environmental Conditions, including, without limitation (a) the Environmental Impact Report, Remedial Action Plan, Remedial Investigation/Feasibility Study and other environmental reports and studies, if available, (b) the Authority Files, and (c) the Agency Files (collectively, the "Readily Available Information") to ascertain to the fullest extent possible the nature and existence of Environmental Conditions at, under, on, around or near the Work Site and/or the Surrounding Property. Contractor is responsible for ascertaining any information contained in the Readily Available Information and will be presumed to have knowledge of all such information.

6. Neither the Authority nor Contractor makes any representation or warranty, express or implied, in this Notification, regarding (a) the presence, extent, impact or consequences, whether foreseeable or unforeseeable, of any Environmental Conditions at, under, on, around or near the Work Site and/or the Surrounding Property, (b) the suitability of the Work Site in any respect for any purpose intended by Contractor; or (c) the completeness or accuracy of the Authority Files, the Agency files, any other Readily Available Information or any documents or information contained therein.

San Diego County Regional Airport Authority

# SAN DIEGO INTERNATIONAL AIRPORT (SDIA) AUTHORITY CONSTRUCTION CRANE OPERATIONS NOTIFICATION POLICY

## PURPOSE:

To establish construction crane operations notification procedures and guidelines to be used by the Airport Operations Supervisors (AOS) in the event crane operations must be suspended or modified due to airport/aircraft operational requirements or changes in weather conditions.

## GENERAL:

This policy applies to all projects proposing to use one or more cranes which may or may not penetrate any imaginary surfaces (as described in FAR Part 77) of San Diego International Airport (SAN).

## BACKGROUND:

- 1.1 Construction activities might necessitate the use of cranes of various heights, at different times and locations on the airport.
- 1.2 Before authorization is granted for the operation of any crane that might potentially penetrate an imaginary surface of the airport, a "crane plan" must have been submitted to and approved by SAN Airport Operations. The project sponsor is responsible for submitting said "plan".
- 1.3 At times, one or more cranes may penetrate the airport's imaginary surfaces. All cranes operating under this policy and penetrating an imaginary surface during IFR conditions (less than 1,000 ft. ceiling or 3 miles visibility as reported by the Airport Traffic Control Tower) must be lowered below this surface.

NOTE: A NOTAM must be issued identifying location, maximum height of crane and times of operation.

## PROCEDURES:

- 2.1 The project sponsor will complete the Construction Crane Operations Form (Attachment 1), Sections 1. Through 4. (except line 4B) and submit to the Airport Operations Supervisors Office at least 72 hours in advance of all crane operations. This form shall be completed for ALL cranes proposed to be operated at SAN, whether or not they would penetrate any imaginary surfaces. A diagram, map or sketch may also be attached for further clarification.
- 2.2 The Airport Operations Supervisor will complete Section 4, line 4B of the form and return one copy to the project sponsor.
- 2.3 When potential or actual IFR conditions are observed by or known to the AOS, the AOS will review all Construction Crane Operation Notification forms still in

## **SAN DIEGO INTERNATIONAL AIRPORT (SDIA) AUTHORITY CONSTRUCTION CRANE OPERATIONS NOTIFICATION POLICY**

effect and if the cranes penetrate any imaginary surfaces, will provide the following information to the appropriate contact person (telephone number listed in Sections 2. or 3. Of the Construction Crane Operation form):

- 2.4 Date, time, weather conditions (Say "IFR" and give ceiling, visibility and trend if known), instruction to lower crane(s) penetrating the imaginary surface(s), name of the AOS and phone number to call back for additional information as needed.
- 2.5 Upon observing and obtaining confirmation that IFR conditions no longer exist, the AOS will call the number mentioned in paragraph 2.3. above and leave a message stating the termination of the IFR conditions, the AOS name and time of the day.
- 2.6 At any time when construction personnel contact the AOS to request a confirmation of "IFR conditions," the AOS will ascertain the weather conditions and advise the requestor accordingly.
- 2.7 At any time during IFR conditions should the AOS observe a crane might be penetrating any airport imaginary surfaces (e.g. 7:1 transitional surfaces or 150' horizontal surfaces), and a Construction Crane Notification form has not been completed, the AOS will make a reasonable attempt to contact the crane operator or site superintendent (contractor) and require compliance with all provisions of this policy.

**EFFECTIVE DATE:** April 10, 2006

**SUPERSEDES:** CONSTRUCTION CRANE OPERATIONS NOTIFICATION POLICY  
dated Calendar Year 2003.

**AUTHORIZED BY:** George Condon, Director, Airside Operations

**Attachment:** CONSTRUCTION CRANE OPERATIONS NOTIFICATION FORM

**CONSTRUCTION CRANE OPERATION NOTIFICATION**

**INSTRUCTIONS:**

**SUBMITTER:** *SUBMIT FORM 7460-1 to FAA AS REQUIRED*

COMPLETE ALL INFORMATION IN 1. THRU 4. (EXCEPT LINE 4B.)

BELOW; ATTACH A DRAWING, SKETCH, OR MAP TO INDICATE

CRANE LOCATION, IF NEEDED; DATE, SIGN AND FORWARD FORM

ASAP TO AIRPORT OPERATIONS; RETAIN ONE COPY FOR YOUR FILE. FOR ADDITIONAL NOTES, COMMUNICATIONS RECORDS.

*AIRPORT OPERATIONS SUPERVISORS (AOS):*

COMPLETE LINE 4B; RETURN/FAX ONE COMPLETED COPY TO SUBMITTER; USE SUBMITTER'S "CONTACT PHONE #"

FOR ADDITIONAL INFO OR CLARIFICATION; USE NOTIFICATION INFO IN 2. OR 3., AS APPROPRIATE, TO NOTIFY OF

"START IFR" OR "END IFR" CONDITIONS AND/OR TO REQUIRE/REQUEST RESPONSE TO OPERATIONAL NEEDS AS

NECESSARY (START WITH "1ST CONTACT", IF UNABLE CONTINUE WITH "2ND CONTACT", ETC.); USE REVERSE SIDE

1. OPERATIONAL INFORMATION	CRANE #1	CRANE #2	CRANE #3
A. DATES OF OPS B. TIMES OF OPS C. LOCATION D. MAX HEIGHT E. CRANE OPERATOR F. REMARKS (E.G. PROJECT, CONSTRUCTION MANAGER, ETC.)			

**2. NOTIFICATION DURING "BUSINESS" HOURS (I.E. THRU , FROM AM/PM THRU AM/PM) EXCEPT HOLIDAY**

A. 1ST CONTACT:	NAME			
	1ST NUMBER			
	2ND NUMBER			
	3RD NUMBER			
B. 2ND CONTACT:	NAME			
	1ST NUMBER			
	2ND NUMBER			
	3RD NUMBER			

**3. NOTIFICATION DURING OTHER HOURS (I.E. OTHER THAN THOSE INDICATED IN 2. ABOVE)**

CONTACT:	NAME			
	1ST NUMBER			
	2ND NUMBER			
	3RD NUMBER			

**4. SUBMISSION OF FAA FORM 7460-1**

A. Contractor submits form 7460-1 to FAA?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	NOT REQUIRED <input type="checkbox"/>
B. Copy of FAA Determination forwarded to Authority?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
C. Copy of FAA Determination forwarded to ATCT?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
D. Determination of "No Hazard"?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
E. Conditions set by FAA being met?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	

4. THIS NOTIFICATION WAS	BY (NAME/SIGNATURE/POSITION/AFFILIATION)	CONTACT FAX #	CONTACT PHONE #
A. SUBMITTED ON - -20 , AT : AM/PM	SUBMITTER:		
B. RECEIVED ON - -20 , AT : AM/PM	RECEIVER: AOS/SDIA	619-400-2709	619-400-2710

# CONSTRUCTION WASTE MANAGEMENT REPORTING FOR PROJECTS OF ALL SIZES

## A. GENERAL

### 1. Summary

This section specifies reuse and recycling of Construction and Demolition (C&D) waste and includes administrative and procedural requirements for construction waste management and diversion activities. The minimum waste diversion goal is 90% of the inert material (a material not subject to decomposition such as concrete, asphalt, brick, rock, block, dirt, metal, glass, etc.) and 75% of the total remaining project waste from at least four material streams, by weight. The Contractor shall provide appropriate documentation, including a Waste Management Plan (WMP) and evidence of recycling and reuse of materials.

### 2. Definitions

- A. **Approved Recycling Facility:** The Contractor shall use any of the following facilities that have been properly permitted by the State, County of San Diego, or local authorities where applicable:
1. A facility that can legally accept C&D waste materials for the purpose of processing the materials into an altered form for the manufacture of a new product.
  2. **Material Recovery Facility:** A general term used to describe a waste-sorting facility. Mechanical, hand-separation, or a combination of both procedures are used to recover recyclable materials. Co-mingled containers are to be taken to a material recovery facility with at least a 50% co-mingled recycling rate.
- B. **Co-mingled C&D Recycling:** The process of collecting mixed recyclable materials in one container on-site. The container is taken to a material recovery facility where materials are separated for recycling.
- C. **Construction and Demolition (C&D) Waste:** Includes all non-hazardous solid wastes resulting from construction, remodeling, alterations, repair, demolition and land-clearing. This includes material that is recycled, reused, salvaged, or disposed as trash/garbage.
- D. **Deconstruction:** Process whereby an existing structure is demolished, removed, or taken down, with the main objective being the recovery of the existing building materials for further reuse.
- E. **Diversion or Divert:** Reduction or elimination of solid waste from landfill disposal.

## **CONSTRUCTION WASTE MANAGEMENT REPORTING FOR PROJECTS OF ALL SIZES**

- F. Inert Wastes: Includes material not subject to decomposition, such as concrete, asphalt, brick, rock, block, dirt, metal, glass, etc.)
- G. Landfill Disposal: Final deposition of solid waste at a permitted landfill.
- H. Reuse: Further or repeated use of construction and demolition debris on the project site or at another airport site.
- I. Recycling: The process of sorting, cleaning, treating, and reconstituting materials for the purpose of using the material in the manufacture of a new product.
- J. Salvage: The controlled removal or construction and demolition debris from a building or demolition site for the purpose of recycling, reuse, or storage (for later recycling or reuse) off airport property.
- K. Solid Waste: Includes all putrescible and non-putrescible solid, semisolid, and liquid wastes, including, but not limited to, garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, construction and demolition debris, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid wastes, and other discarded solid and semisolid wastes. Solid Waste does not include hazardous waste, hazardous substances or medical wastes, as those terms are defined in State or Federal law.
- L. Source-Separated C&D Recycling: The process of separating recyclable materials in separate containers as they are generated on the job-site. The separated materials are hauled directly to a recycling facility or transfer station.

### **3. Submittals**

- A. Waste Management Plan: Submit plan within seven days of date established for the Notice to Proceed.
- B. Waste Management Reports: Submit reports concurrent with each request for progress payment.
- C. Final Waste Management Report: Submit report concurrent with final request for progress payment.

# CONSTRUCTION WASTE MANAGEMENT REPORTING FOR PROJECTS OF ALL SIZES

## 4. Salvaged, Reused, or Recycled C&D Waste Materials

C&D waste materials that can be salvaged, reused or recycled include, but are not limited to, the following:

### Inert Waste

1. Asphalt
2. Brick/Masonry/Tile
3. Concrete
4. Soil/Dirt
5. Mixed Inerts

### Remaining Waste

6. Asphalt shingles
7. Building Materials (cabinets, doors, windows, fixtures, etc.)
8. Cardboard and other paper products
9. Carpet
10. Carpet Padding/Foam
11. Ceiling Tiles (acoustic)
12. Drywall (used)
13. Drywall (new, unpainted, scrap)
14. Electrical Components (light fixtures, cables, etc.)
15. Film Plastic and Styrofoam Blocks
16. Glass
17. Landscape Debris (plant & tree trimmings, stumps, etc.)
18. Mechanical Debris (e.g., ducts, controls, plumbing fixtures, etc.)
19. Metals
20. Roofing Materials (asphalt shingles, etc)
21. Wood and Pallets - unpainted
22. Trash and Garbage
23. Field office waste, including office paper, aluminum cans, glass, plastic, and office cardboard.
24. Other (describe)
25. Mixed Recyclables (a mixture of three or more materials from construction or demolition sites that will be taken to an "approved" facility for recycling.)

## 5. Quality Assurance

A. Regulatory Requirements: Conduct construction waste management activities in

## CONSTRUCTION WASTE MANAGEMENT REPORTING FOR PROJECTS OF ALL SIZES

accordance with all applicable Federal, State, and local statutes and regulations.

B. If the Contractor determines that it is infeasible for the project to meet the requirements to recycle 90% of inerts and 75% of total project waste from at least four material streams, by weight, the Engineer will establish the percentages of construction and demolition debris to be recycled, based on input from the Contractor.

C. Preconstruction Conference: Review methods and procedures related to waste management including, but not limited to, the following:

1. Review and discuss waste management plan, including responsibilities of Waste Management Coordinator.
2. Review requirements for documenting quantities of each type of materials that will be salvaged, recycled, or disposed of as waste.
3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.
6. Review and distribution of the following publications and programs:
  - a) City of San Diego – Certified Construction & Demolitions Recycling Facility Directory.
  - b) County of San Diego – Construction and Demolition Recycling Guide

### 6. **Waste Management Plan**

A. General: Develop plan consisting of a “good faith” estimate of the types and quantities (by weight) of waste that will be generated, methods of disposal, handling and transportation procedures, and methods of disposal. Identify the Waste Management Coordinator.

B. Organize the waste management plan in accordance with the sample plan included in Section C of this appendix, including the following information:

1. Types and estimated quantities, by weight, of C&D waste expected to be generated during demolition and construction.
2. Proposed methods for C&D waste salvage, reuse, recycling and disposal during demolition including, but not limited to, one or more of the following:
  - a) Contracting with a deconstruction specialist to salvage materials generated,
  - b) Selective salvage as part of demolition contractor’s work,
  - c) Reuse of materials on-site or off-site sale or donation to a third party.



## **CONSTRUCTION WASTE MANAGEMENT REPORTING FOR PROJECTS OF ALL SIZES**

3. Proposed methods for salvage, reuse, recycling and disposal during construction including, but not limited to, one or more of the following:
  - a) Requiring subcontractors to take their C&D waste to a recycling facility,
  - b) Contracting with a recycling hauler to haul recyclable C&D waste to an approved recycling or material recovery facility,
  - c) Processing and reusing materials on-site,
  - d) Self-hauling to a recycling or material recovery facility.
4. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.
5. Name of recycling or material recovery facility receiving each of the C&D wastes.

C. The Contractor shall revise the WMP as required by the Engineer.

### **7. Waste Management Report**

- A. Waste Management Reports: Submit a cumulative waste management progress report on the form included in Section D of this appendix with each request for progress payment with the following attachments:
  1. A record of the type and quantity, by weight, of each material salvaged, reused, recycled, or disposed during the reporting period.
  2. Disposal Receipts: Copy of receipts issued by a disposal facility for C&D waste that is disposed in a landfill.
  3. Recycling Receipts: Copy of receipts issued by approved recycling facilities for co-mingled materials. Include weight tickets from the recycling hauler or material recovery facility and verification of the recycling rate for co-mingled loads at the facility.
  4. Salvaged Materials Documentation: Types and quantities, by weight, for materials salvaged for reuse on site, sold or donated to a third party.
- B. Final Waste Management Report: Submit a final, cumulative waste management progress report on the form included in Section E of this appendix with the final request for progress payment that includes the following attachments:
  1. A record of the type and quantity, by weight, of each material salvaged, reused, recycled or disposed during the project.
  2. Total quantity of waste recycled as a percentage of total waste for the project.

# CONSTRUCTION WASTE MANAGEMENT REPORTING FOR PROJECTS OF ALL SIZES

## B. EXECUTION

### 1. Construction Waste Management, General

The Contractor shall do the following:

- A. Distribute copies of WMP to the Site supervisor and each Subcontractor.
- B. Include waste management and recycling in worker orientation.
- C. Provide on-site instruction on appropriate separation, handling, recycling, and recovery methods to be used by all parties at the appropriate stages of the Work at the Site.
- D. Include discussion of waste management and recycling in regular job meetings and job safety meetings conducted during the course of Work at the Site, including the use of detailed material estimates to reduce risk of unplanned and potential waste of materials and resources.
- E. To the greatest extent possible, include in material purchasing agreements a waste reduction provision requesting that materials and equipment be delivered in packaging made of recyclable material, that they reduce the amount of packaging, that packaging be taken back for reuse or recycling, and to take back all unused product. To the greatest extent possible, insure that subcontractors require the same provisions in their purchase agreements.
- F. Provide containers for C&D waste that is to be recycled clearly labeled as such with a list of acceptable and unacceptable materials. The list of acceptable materials must be the same as the materials recycled at the receiving material recovery facility or recycling processor.
- G. The collection containers for recyclable C&D waste must contain no more than 10% non-recyclable material, by volume.
- H. Provide containers for C&D waste that is disposed in a landfill clearly labeled as such.
- I. Conduct regular visual inspections of dumpsters and recycling bins to remove contaminants.
- J. Maintain records accessible to the Engineer for verification of the diversion of the recovered waste materials.

# CONSTRUCTION WASTE MANAGEMENT REPORTING FOR PROJECTS OF ALL SIZES

## 2. Source Separation

General: Separate recyclable materials from C&D waste to the maximum extent possible. Separate recyclable materials by type.

- A. Provide containers, clearly labeled, by type of separated materials or provide other storage method for managing recyclable materials until they are removed from Project site.
- B. Store processed materials on-site without intermixing with other materials.
- C. Store components off the ground and cover to protect from wind and rain. Place, grade, and shape storage areas to drain surface water.

## 3. Co-Mingled Recycling

General: Do not put C&D waste that will be disposed in a landfill into a co-mingled C&D waste recycling container.

## 4. Removal of Construction Waste Materials

- A. Remove C&D waste materials from project site on a regular basis. Do not allow C&D waste to accumulate on-site.
- B. Transport C&D waste materials off Airport Authority property and legally dispose of them.

## C. SAMPLE WASTE MANAGEMENT PLAN

**Company:** Southwest Best Construction  
**Project:** Southwest Bank Building, San Diego, CA

**Waste Management Coordinator:** John Doe

### **Waste Management Goals:**

This project will salvage, reuse, and/or recycle 90% of the inert material, by weight, and 75% of the total project waste from at least four material streams, by weight.

### **Communication Plan:**

- A. Waste prevention and recycling activities will be discussed at the beginning of each safety meeting.
- B. As each new subcontractor comes on-site, the Waste Management Coordinator will

## CONSTRUCTION WASTE MANAGEMENT REPORTING FOR PROJECTS OF ALL SIZES

present him/her with a copy of the Waste Management Plan and provide a tour of the recycling areas.

- C. The subcontractor will be expected to make sure all their crews comply with the Waste Management Plan.
- D. All recycling containers will be clearly labeled.
- E. Lists of acceptable/unacceptable materials will be posted throughout the site.

### Expected Project Waste, Disposal, and Handling:

The following charts identify waste materials expected on this project, the handling procedures and final disposition of each.

#### Demolition Phase

<b>Material</b>	<b>Estimated Quantity (by weight)</b>	<b>Handling Procedures</b>	<b>Final Disposition: a) Means - Salvage, Reuse, Recycle, or Disposal; and b) Location</b>
Asphalt from parking lot	100 tons	Ground on-site	Reused on site as fill
Wood Framing	6 tons	Separate "clean wood" in clean wood bin	Recycled - Wood Recyclers, Inc., Santee
Decorative Wood Beams	1.5 tons	Remove by hand, store on-site, load on pallets for pickup	Salvaged - Timber Frame Salvaging Co., La Mesa
Remaining Materials	8 tons	Dispose in "trash" dumpster	Landfilled – Otay Landfill, Chula Vista

**D. WASTE MANAGEMENT PROGRESS REPORT**

Project # and Name: \_\_\_\_\_ Reporting Period: \_\_\_\_\_  
 (Date to Date)

Company: \_\_\_\_\_ Waste Management Coordinator: \_\_\_\_\_ Telephone: \_\_\_\_\_

Material Type	Quantity by Weight				Final Destination
	Salvaged	Reused	Recycled	Disposed	
<b>Inert Waste</b>					
1. Asphalt					
2. Brick/Masonry/Tile					
3. Concrete					
4. Soil/Dirt					
5. Mixed Inerts					
<b>Remaining Waste</b>					
6. Asphalt shingles					
7. Building Materials					
8. Cardboard and other paper products					
9. Carpet					
10. Carpet Padding/Foam					
11. Ceiling Tiles (acoustic)					
12. Drywall (used)					
13. Drywall (new, unpainted, scrap)					
14. Electrical Components					
15. Film Plastic and Styrofoam Blocks					
16. Glass					
17. Landscape Debris					
18. Mechanical Debris					
19. Metals					
20. Roofing Materials					
21. Wood and Pallets – unpainted					
22. Trash and Garbage					
23. Field office waste					
24. Other (describe)					
25. Mixed Recyclables					
<b>TOTALS</b>					

## E. FINAL WASTE MANAGEMENT PROGRESS REPORT

Project # and Name: \_\_\_\_\_

Company: \_\_\_\_\_ Waste Management Coordinator: \_\_\_\_\_

Waste Management Goals:

\_\_\_\_\_ % of the inert material, by weight, salvaged, reused, and/or recycled; and

\_\_\_\_\_ % of the remaining project waste, by weight, salvaged, reused, and/or recycled.

Material Type	Quantity by Weight			
	Salvaged	Reused	Recycled	Disposed
<b>Inert Waste</b> (asphalt/brick/masonry/tile/concrete/soil/dirt)				
<b>TOTAL Inert Waste Diverted</b> (Salvaged + Reused + Recycled)				
<b>TOTAL Inert Waste Generated</b> (Salvaged + Reused + Recycled + Disposed)				
<b>PERCENT of Inert Waste Diverted</b> (Total Inert Waste Diverted divided by Total Inert Waste Generated)				
Material Type	Quantity by Weight			
	Salvaged	Reused	Recycled	Disposed
<b>Remaining Waste</b>				
<b>TOTAL Remaining Waste Diverted</b> (Salvaged + Reused + Recycled)				
<b>TOTAL Remaining Waste Generated</b> (Salvaged + Reused + Recycled + Disposed)				
<b>PERCENT of Remaining Waste Diverted</b> (Total Remaining Waste Diverted divided by Total Remaining Waste Generated)				

**END OF SECTION**

**CALIFORNIA LEAST TERN PROTECTION PROGRAM  
FOR LINDBERGH FIELD**

The following Conditions apply to proposed projects within 1,200 feet of the California Least Tern Nesting Habitat.

1. The California least tern, a seabird on the Federal Endangered Species List, nests throughout the spring and summer on the southeast end of the airport runway. The least tern nesting season runs from April 1 through September 15. The following conditions have been established to prevent harassment of the least tern:

A) The project should be scheduled and phased so that all project construction within 800 feet of the least tern nesting ovals will occur from September 16 to March 31 to avoid the least tern nesting season.

B) Any construction activity conducted within 1,200 feet of any least tern nesting oval that occurs after April 1 and before September 15 must be reviewed and approved by the Airport Authority Environmental Affairs Department and may be subject to oversight by a qualified least tern biologist under separate contract to the Airport and may result in a determination by the biologist or the Engineer that the Contractor immediately modify construction activity or incorporate protective measures to avoid harassment and/or disruption of the least terns or immediately cease all activity, except those activities necessary to make the airport safe and operational. If work is stopped, construction will not resume until approved by the Airport.

C) All Project staging areas shall be located at least 1,200 feet from any least tern nesting oval. Construction vehicles will approach the staging area and construction area from the north and west sides of the airport and will not routinely use roads that pass through the least tern nesting areas located on the south side of the airport runway.

D) Contractor shall provide trash dumpsters or other trash receptacles for use by construction personnel. All food items or containers that previously held food items obtained/handled/controlled by construction personnel shall be immediately disposed in these dumpsters or containers so as not to attract avian or mammalian predators of the least tern.

E) While on the airport, construction personnel shall not feed cats, gulls, ravens, etc. as this may result in an increase in the numbers of these potential predators in the vicinity of the least tern habitat.

F) During the least tern nesting season, crane booms or similar equipment owned or operated by the Contractor that have heights of 25 feet or greater will be lowered at the close of each construction day, unless it is impossible to do so.

**END**