

# CITY OF SANTA FE



## REQUEST FOR BID # '16/05/B PROJECT MANUAL

**SANTA FE TRAILS BUS SHELTERS PHASE 2  
CIP PROJECT # 665A**

**BIDS DUE:**

**NOVEMBER 10, 2015  
2:00 P.M.  
PURCHASING OFFICE  
CITY OF SANTA FE  
2651 SIRINGO ROAD – BUILDING “H”  
SANTA FE, NEW MEXICO 87505**

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## **(00 0100) PRE-BID INFORMATION**

### **PRE-QUALIFIED BIDDERS**

Only bidders that were previously pre-qualified by the City of Santa Fe will be allowed to bid on this work. The pre-qualified bidders are:

Brasco International, Inc.  
32400 Industrial Dr.  
Madison Heights, Michigan 48071  
Contact: Richard Padilla, National Transit Sales Consultant  
[rpadilla@brasco.com](mailto:rpadilla@brasco.com)

LNI Custom Manufacturing, Inc.  
12536 Chadron Avenue  
Hawthorne, California 90250  
Contact: Maria Maloles, Director of Sales and Marketing  
[maria@lnisigns.com](mailto:maria@lnisigns.com)

Pro-Fab Inc.  
1040 Bosque Farms Blvd.  
Bosque Farms, New Mexico 87068  
Phone (505) 869-2222  
Contact: Robert Caldwell, President/CEO  
[robertc@pro-fab.com](mailto:robertc@pro-fab.com)

### **(00 0101) DEBARRED OR SUSPENDED CONTRACTORS**

A business (contractor, subcontractor, or supplier) that has either been debarred or suspended pursuant to the requirements of City Purchasing Manual or Section 13-1-177 through 13-1-180, and 13-4-17 NMSA 1978 as amended or City Purchasing provisions, shall not be permitted to do business with the City and shall not be considered for award of Contract during the period for which it is debarred or suspended.

### **FEDERAL CONTRACT CLAUSES**

As this is a federal grant funded construction project, **the federal contract clauses included in this document must be signed by the Contractor and submitted with the bid.**

### **DBE REQUIREMENTS**

Federally mandated Disadvantaged Business Enterprise program requirements apply to this bid. Refer to the DBE Federal contract clause for the requirements.

## (00 1100) BID INFORMATION

### CITY OF SANTA FE CAPITAL IMPROVEMENTS PROGRAM

#### BID INFORMATION

SEALED BIDS FOR: CIP # 665A – Santa Fe Trails Bus Shelters Phase 2  
‘16/05/B

TO BE OPENED AT: Purchasing Office  
2651 Siringo Road  
Building H  
Santa Fe, New Mexico 87505  
(505) 955-5711

TIME: 2:00 P.M. Local Prevailing Time

DATE: November 10, 2015

ADDRESSED TO: City Purchasing Officer  
City of Santa Fe  
2651 Siringo Road  
Building H  
Santa Fe, New Mexico 87505

Bids will be received until the above time, then opened publicly at the Purchasing Director’s office or other designated place, and read aloud. BIDS RECEIVED AFTER THE ABOVE TIME WILL BE RETURNED UNOPENED.

Bidding Documents will be posted on the City of Santa Fe web site [www.santafenm.gov](http://www.santafenm.gov). and the link to the location of the plan set may be obtained from the City Project Manager, Mary MacDonald, office phone 505-955-5934, e-mail [mamacdonald@santafenm.gov](mailto:mamacdonald@santafenm.gov)

Bid Documents will also be on file at Builders News and Plan Room, Construction Reporter, and through Dodge Data & Analytics ([support@construction.com](mailto:support@construction.com)) and from CMD ([sdeperalta@reedbusiness.com](mailto:sdeperalta@reedbusiness.com)).

Bids for the project will be presented in the form of a base bid plus alternates if any. Award will be made to the bidder providing the lowest total base bid. Bidder shall Bid all items listed in the Scope of Work. Bidder shall include in the signed documents their license and classification. Contract award will be made to the responsible Bidder submitting the low Base Bid. However the Owner may award the contract to the responsible Bidder submitting the low combined Bid (Base Bid plus Additive Alternate and applicable Gross Receipts Taxes), within the amount of funds available, if applicable.

Bid security, made payable to the City of Santa Fe, the “Owner” in the amount of 5% of the proposal sum shall be submitted with the Bid. Bid security shall be in the form of a Bid Bond issued by Surety licensed to conduct business in the State of New Mexico, or by certified check. The Bidders security shall be retained by the Owner until the Contract is signed; the other Bidder’s security shall be returned as soon as practicable. Failure or refusal by the successful Bidder to enter into Contract with the Owner will constitute Liquidated Damages in favor of the Owner. The bid shall also include a signed “Non-Collusion Affidavit of Prime Bidders”, signed “Certificate of Non-Segregated Facilities”, a signed “Certificate of Bidder Regarding Equal Employment Opportunity”, a Subcontractor’s Listing, signed Federal Contract Clauses and; if applicable, a Local Preference Application and/or a Resident Veterans Preference form. New Mexico State Wage Rates do not apply to this project. The successful Bidder shall, upon notice of award of contract, secure from each of his Subcontractors a signed “Non-Collusion Affidavit of Subcontractors”.

The Bidding Documents contain a time for completion of the work by the successful Bidder, and further imposes liquidated damages for failure to comply with that time.

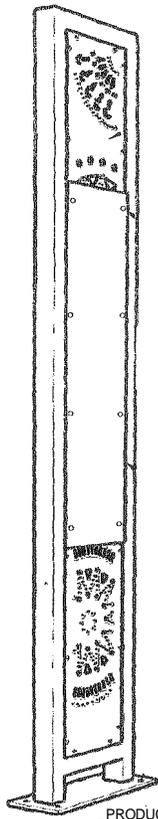
The Owner reserves the right to reject any and all Bids, to waive technicalities, and to accept the Bid it deems to be in the best interest of the City of Santa Fe.

The contractor shall be required comply with the most current City of Santa Fe, State of New Mexico and Federal codes.

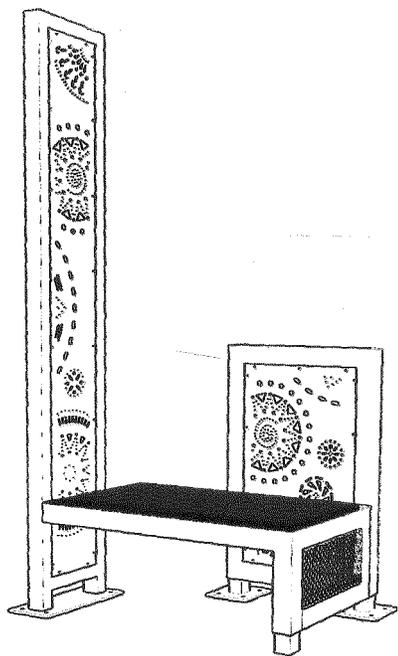
The work designated as **CIP 665A – Santa Fe Trails Bus Shelters Phase 2** includes the fabrication of sixty Product Package “A” bus shelters, ten Product Package “B” bus shelters and six Product Package “C” bus shelters, and the delivery of the fully assembled shelters to 2931 Rufina St., Santa Fe, New Mexico, 87505, and off-loading the delivered shelters.

Contractor shall be responsible for adherence to the Contract Documents, Construction Documents, Specifications and approved directives.

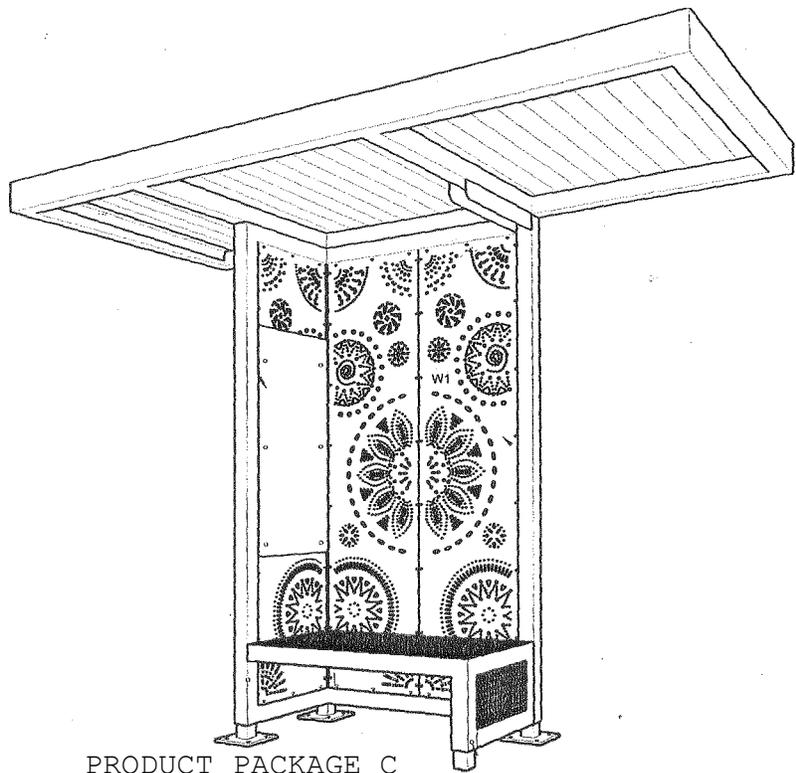
The City of Santa Fe is an Equal Opportunity Employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation or national origin. The successful Bidder will be required to conform to the Equal Opportunity Employment Regulations.



PRODUCT PACKAGE A



PRODUCT PACKAGE B



PRODUCT PACKAGE C

**(00 1114) BID SCHEDULE**

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1)	ISSUANCE OF BID PACKET:	October 16, 2015
2)	BID SUBMITTAL DEADLINE:	November 10, 2015
5)	OPENINGS OF BIDS RECEIVED:	November 10, 2015
	RECOMMENDATION OF AWARD:	
	PUBLIC WORKS/CIP AND LAND USE COMMITTEE:	November 23, 2015
	FINANCE COMMITTEE:	November 30, 2015
	CITY COUNCIL:	December 9, 2015

DATES OF CONSIDERATION BY COMMITTEES AND CITY COUNCIL ARE TENTATIVE AND SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE NOTE THAT THE CONTRACTOR BEING RECOMMENDED FOR SELECTION WILL NOT BE REQUIRED TO ATTEND COMMITTEE OR CITY COUNCIL MEETINGS.

# INSTRUCTIONS TO BIDDERS

## (00 2100)

### **1.0 DEFINITIONS AND TERMS**

- 1.1 Terms used in these Bidding Documents which are defined in the Conditions of the Contract for Construction (General, Supplementary, and other conditions) have the meanings assigned to them in those Conditions.

### **2.0 EXAMINATION OF BIDDING DOCUMENTS AND SITE**

- 2.1 Before submitting a Bid, each Bidder must (a) examine the Bidding Documents thoroughly, (b) visit the site to familiarize himself with local conditions that may in any manner affect cost, progress, or performance of the work, (c) familiarize himself with Federal, State, and local laws, ordinances, rules, and regulations that may in any manner effect cost, progress, or performance of the work, and (d) study and carefully correlate the Bidder's observations with the Bidding Documents.
- 2.2 On request, the Owner will provide each Bidder access to the site to conduct such investigations and tests as each Bidder deems necessary for submission of his Bid.
- 2.3 The lands upon which the work is to be performed rights-of-way for access thereto, and other lands designated for use by the Contractor in performing the work are identified in the Bidding Documents.
- 2.4 The submission of a Bid will constitute an incontrovertible representation by the Bidder that has complied with every requirement of this Section and that the Bidding Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the work.

### **3.0 BIDDING DOCUMENTS**

#### **3.1 COPIES OF BIDDING DOCUMENTS**

- 3.1.1 Bidding Documents may be obtained as indicated herein; the complete Request For Bid / Project Manual will be posted on the City's website on the bid release date; a link to the electronic files of the complete plan set will be provided by the City Project Manager upon request.
- 3.1.2 Complete sets of Bidding Documents shall be used in preparing Bids; the Owner does not assume responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 3.1.3 The Owner, in providing electronic files of Bidding Documents available on the above terms, does so only for the purpose of obtaining Bids on the work and does not confer a license or grant for any other use.

#### **3.2 INTERPRETATIONS**

- 3.2.1 All questions about the meaning or intent of the Bidding Documents shall be submitted to the Purchasing Officer in writing. Replies will be issued by Addenda mailed or delivered to all parties recorded by the Owner as having received the Bidding Documents. Questions received less than ten (10) days prior to the date for opening of Bids will not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 3.2.2 Bidders and Subcontractors shall promptly notify the Owner in writing. Addenda will be mailed or delivered to all parties who have received Bid packages. Request/Questions received less than ten (10) days prior to the date for opening of Bids will not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretation or clarifications will be without legal effect.

#### **3.3 SUBSTITUTE MATERIAL AND EQUIPMENT**

The Contract, if awarded, will be on the basis of material and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "of-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that substitute "of-equal" item of material or equipment may be furnished or used by the Contractor if acceptable to the Owner, application of such acceptance will not be considered by the Owner until after the "effective date of the Contract." The procedure for submittal of any such application by the Contractor and consideration by the Owner is set forth

in the Contract Documents.

### **3.4 ADDENDA**

- 3.4.1 No oral interpretations of the meaning of the specifications or other pre-bid documents will be binding. Oral communications are permitted in order to make assessment for an addendum. **ANY QUESTIONS CONCERNING THE BID SHOULD BE ADDRESSED PRIOR TO BID OPENING DATE.**

Every request for such interpretations should be in writing addressed to Robert Rodarte, Purchasing Officer, 2651 Siringo Road, Bldg H, Santa Fe, New Mexico 87505 and to be given consideration must be received at least ten (10) days prior to the date fixed for the opening of the bids.

- 3.4.2 Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be delivered to all prospective bidders not later than three (3) days prior to the date fixed for the opening of the bids. Failure of any bidder to receive any such addendum or interpretations shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.
- 3.4.3 The City reserves the right to not comply with these time frames if a critical addendum is required or if the proposal deadline needs to be extended due to a critical reason in the best interest of the City of Santa Fe.

### **4.0 BIDDING PROCEDURES**

- 4.01 The person or persons opening the bids will adhere to the following procedure:
- 4.02 Bid – Name the Bidder and the Number of Bidder’s New Mexico Contractor’s License with a check for proper signatures.
- 4.03 Bid Bond only for the highest option bid.
- 4.04 Non-Collusion Affidavit of Prime Bidder.
- 4.05 Acknowledgement of Addenda, if any on the Bid Form.
- 4.06 Properly executed Bid Form.
- 4.07 Equal Employment Opportunity
- 4.08 Certification of Non-segregated Facilities.
- 4.09 Subcontractor Listing
- 4.10 Current Certificate of Registration with New Mexico Department of Work Force Solutions
- 4.11 Signed Federal Contract Clauses

If any of the other requirements have not been met, the bid shall be disqualified and considered a non-responsive bid. Any disqualified bids will not be read.

### **4.1 FORM AND STYLE OF BIDS**

- 4.1.1 Bids shall be submitted on forms identical to the form included with the Bidding Documents.
- 4.1.2 All blanks on the Bid Form shall be filled in by typewriter or manually in ink.
- 4.1.3 Where so indicated by the makeup of the Bid Form, sums shall be expressed in both words and figures, and, in case of discrepancy between the two, the amount written in words shall govern.
- 4.1.4 Any interlineation, alteration, or erasure must be initialed by the signer of the Bid.
- 4.1.5 All requested Additive or Deductive Alternate Bids shall be Bid. If no change in the Base Bid is required,

enter "No Change."

- 4.1.6 Where there are two or more major items of work (identified as "Bid Lots") for which separate quotations are requested, the Bidder may, at his discretion, submit quotations for any or all items, unless otherwise specified. Additionally, the Bidder may submit a lump sum price for all lots for which the Bidder has submitted separate quotations.
- 4.1.7 Each copy of the Bid shall include the complete name of the Bidder and a statement that the Bidder is a sole proprietor, a partnership, by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the applicable New Mexico Certificate of Incorporation number or Certificate of Authority number. The Bid shall include the current Contractor's license number and type, and the current Contractor's preference number. A Bid submitted by an agent shall have a current Power of Attorney attached certifying the agent's authority to bind the Bidder.
- 4.1.8 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which shall be filled in on the Bid Form).
- 4.1.9 The address, to which communications regarding the Bid are to be directed, must be shown.

## **4.2 BID SECURITY**

- 4.2.1 Bid security only for the highest option bid in an amount equal to at least 5% of the amount of the Bid shall be a bond provided by a Surety company authorized to do business in this State, or the equivalent in cash, or otherwise supplied in a form satisfactory to the Owner. All Bonds shall be executed by such sureties as are named in the current list of Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies.
- 4.2.2 The Bid security shall be in the amount of five percent (5%) of the highest Bid amount submitted, unless otherwise stipulated, pledging that the Bidder will enter into a Contract with the Owner in the terms stated herein and will furnish bonds covering the faithful performance of the Contract and payment of all obligations arising there under. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds, the amount of the Bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.
- 4.2.3 The Owner will have the right to retain the Bid security of Bidders to whom an award is being considered until either (a) the Contract has been executed and bonds have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn, or (c) all Bids have been rejected.
- 4.2.4 When the Bidding Documents require Bid security, noncompliance by the Bidder requires that the Bid be rejected.
- 4.2.5 If a Bidder is permitted to withdraw his Bid before award, no action shall take place against the Bidder or the Bid Security.

## **4.3 PRE-BID CONFERENCE**

- 4.3.1 The Owner of Record shall conduct a Pre-Bid Conference approximately ten (10) calendar days prior to the Bid opening date stated in the Invitation for Bid.
- 4.3.2 The Owner of Record and his consultants, as applicable, shall be represented. Prospective Bidders and Prospective Subcontractors should ask questions regarding substitutions and/or request clarification of the Bidding Documents. The failure of a Bidder, Subcontractor, or Vendor to attend shall be interpreted to mean that the Bid Documents are clear and acceptable to all non participants at the Pre-Bid Conference. Such clarity and acceptability shall be presumed with respect to all Bidders.
- 4.3.3 Questions and requests for clarification are to be presented in written form. Responses will be written and issued as Addenda. No verbal response shall be binding.

## **4.5 SUBCONTRACTORS**

- 4.5.1 The threshold amount for this project is \$5,000.00. The General Contractor must list all Subcontractors who will perform work in excess of this threshold. Only one Subcontractor may be listed for each category as

defined on by the Contractor. The Subcontractor Fair Practice Act (13-4-31 through 13-4-43 NMSA 1978) shall apply.

The Bidder shall list the Subcontractors or material suppliers he proposes to use for all trades or items on the Subcontractor Listing Form attached to the Bidding Document. If awarded the contract, the Bidder shall use the firm listed, or himself if "General Contractor has been listed, unless a request for a change or substitution is approved by the Owner of any reason as outlined herein.

- 4.5.2 The Owner shall consider any request for a change in the listed forms if the Bidder can furnish evidence of being able to perform the work in a manner more satisfactory and beneficial to both the Owner and the Bidder by not using the listed form. Satisfactory reasons for a substitution may include the inability to bond or lack of evidence of being able to furnish acceptable materials on schedule. Also, if the Bidder has made a legitimate error in listing a low Subcontractor, a request for substitution, made after the Bid Opening with the Owner's approval, will be considered. The proof of error must be conclusive, based upon the approval of said evidence by the listed Subcontractor or material supplier and/or any other confirmation satisfactory to the Owner.
- 4.5.3 The Bidder shall not list himself as the supplier or as the Subcontractor for any trade unless he has previously performed work of this type or can prove to the Owner's satisfaction that he actually has or will obtain, fully adequate facilities and plans to perform the work with his own forces.
- 4.5.4 Omission or non-compliance with the intent of the Subcontractor Listing will be grounds for considering a Bid as non-responsive.
- 4.5.5 Prior to the award of the Contract, the Owner will notify the Bidder in writing if, after due investigation and written findings of fact, has reasonable and substantial objection to any person or organization on such list and refuses in writing to accept such person or organization, the Bidder may, at his option, (1) withdraw his Bid, or (2) submit an acceptable substitute Subcontractor with no increase in his Bid Price. In the event of withdrawal under this paragraph, Bid security will not be forfeited.
- 4.5.6 The successful Bidder shall, within seven (7) calendar days of notification of selection for the award of Contract for the work, submit the following information to the Owner:
  - (A) A signed list of the proprietary names and the suppliers of principal items or systems of materials and equipment proposed for the work; and
  - (B) A list signed by all Subcontractors proposed for the principal portions of the work in accordance with the Subcontractors Listing Form submitted with the Bid.
- 4.5.7 The successful Bidder will be required to establish to the satisfaction of the Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the work described in the Bidding Documents.
- 4.5.8 Persons and organizations proposed by the Bidder and to whom the Owner has made no reasonable objection under the provisions of Paragraph 4.5.7 must be used on the work for which they were proposed and shall not be changed except with the written consent of the Owner.
- 4.5.9 No successful Bidder shall be required to employ any Subcontractor, other person, or organization against whom he has reasonable objection.

#### **4.6 SUBMISSION OF BIDS**

- 4.6.1 Bids shall be submitted at the time and place indicated in the Invitation for Bid and shall be submitted in a sealed envelope marked with the Project title and name and address of the Bidder, and accompanied by the Bid Security, Subcontractors Listing, and other required documents listed in the Bid Documents.
- 4.6.2 The envelope shall be addressed to:

Purchasing Agent/City of Santa Fe  
2651 Siringo Road, Building 'H'  
Santa Fe, NM 87505

The following information shall be provided on the front of the Bid envelope: Invitation for Bid number, date of opening, time of opening, and New Mexico License Number. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BIDS ENCLOSED" on the face thereof.

- 4.6.3 Bids received after the date and time for receipt of Bids will be returned unopened.
- 4.6.4 The Bidder shall assume full responsibility for timely delivery of Bids at the office of the City's Purchasing Division, including those Bids submitted by mail. Hand-delivered Bids shall be submitted at the front desk of the City Purchasing Division and will be clocked in at the time received, which must be prior to the time specified. Bids will then be held for public opening.
- 4.6.5 Oral telephonic, e-mailed or telegraphic Bids are invalid and will not receive consideration.

#### **4.7 CORRECTION OR WITHDRAWAL OF BIDS**

- 4.7.1 A Bid containing a mistake discovered before Bid Opening may be modified or withdrawn by a Bidder prior to the time set for Bid Opening by delivering written or telegraphic notice to the location designated in the Invitation for Bid as the place where Bids are to be received.
- 4.7.2 Bid security, if required, shall be in an amount sufficient for the Bid as modified or resubmitted in conformance with Section 4.2.
- 4.7.3 Withdrawn Bids may be resubmitted up to the time and date designated for the receipt of Bids, provided they are then fully in conformance with the Bid Documents.
- 4.7.4 After Bid Opening, no modifications in Bid Prices or other provisions of Bids shall be permitted. A low Bidder alleging a material mistake of fact which makes his Bid non-responsive may be permitted to withdraw his Bid if:
  - (A) The mistake is clearly evident on the face of the Bid document; or
  - (B) The Bidder submits evidence which clearly and convincingly demonstrates that a mistake was made.

Any decision by the Owner to permit or deny the withdrawal of a Bid on the basis of a mistake contained therein shall be supported by a determination setting forth the grounds for the decision. If withdrawal is permitted, Bid security will not be forfeited.

#### **4.8 NOTICE OF CONTRACT REQUIREMENTS BINDING ON BIDDER**

- 4.8.1 In submitting this Bid, the Bidder represents that he has familiarized himself with the nature and extent of the following requirements of the Conditions of the Construction Contract (General, Supplementary, and Other Conditions).
  - (A) Definitions - Sections 1.0 to 1.17;
  - (B) Bribes, Gratuities, and Kickbacks - Section 4.0;
  - (C) Contract Bond Requirements - Section 4.2;
  - (D) Equal Employment Opportunity - Labor Standards Provisions and other listed within the Contract Documents.

#### **4.9 REJECTION OR CANCELLATION OF BIDS**

- 4.9.1 An Invitation for Bid may be canceled, or any or all Bids may be rejected in whole or in part, when it is in the best interest of the Owner. A determination containing the reasons shall be made part of the Project file. Bid security for rejected Bids shall be returned to the Bidder.

#### **4.10 PROTESTS**

- 4.10.1 Any Bidder, Offeror, or Contractor who is aggrieved in connection with this procurement (Bid) may protest to the City Purchasing Agent and the Owner in accordance with the requirements. The protest should be made in writing within twenty-four (24) hours after the facts or occurrences giving rise thereto, but in no case

more than within fifteen (15) calendar days after the facts or occurrences giving rise thereto.

- 4.10.2 The complete procedures and requirements regarding protest are available from the Purchasing Office upon request.

#### **4.11 COMPETITIVE SEALED BIDS**

- 4.11.1 Contracts solicited by competitive sealed Bids shall require that the base Bid amount exclude the applicable state gross receipts taxes or applicable local option taxes, but that the contracting agency shall be required to pay the applicable taxes including any increase in the applicable tax which becomes effective after the date the Contract is entered into. The applicable gross receipts taxes or local option taxes shall be shown as a separate amount on each billing or request for payment made under the contract.

#### **5.0 CONSIDERATION OF BIDS**

#### **5.1 RECEIPT, OPENING, AND RECORDING**

- 5.1.1 Bids received on time will be opened publicly and will be read aloud, and an abstract of the amounts of the Base Bids and Alternates or Bid items, if any, will be made available to the Bidders. Each Bid shall be open to public inspection. The Owner shall have the right to waive any informalities or irregularities in any Bid or Bids received and to accept the Bid or Bids which are in the Owner's best interest.

#### **5.2 BID EVALUATION AND AWARD**

- 5.2.1 It is the intent of the Owner to award a Contract to the responsible Bidder submitting the lowest option base bid provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available and is in the best interest of the City. The unreasonable failure of a Bidder to promptly supply information in connection with an inquiry with respect to responsibility is grounds for a determination that the Bidder is not a responsible Bidder.
- 5.2.2 Discrepancies in the Bid Form between words and figures will be resolved in favor of words. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- 5.2.3 Acceptance of Alternates: Owner reserves the right to accept any alternate in any order.

#### **5.3 NOTICE OF AWARD**

A written Notice of Award shall be issued by the Owner after review and approval of the Bid and related documents by the Governing Authority, "as defined in the Supplementary Conditions", with reasonable promptness.

#### **5.4 IDENTICAL BIDS**

- 5.4.1 When two or more of the Bids submitted are identical in price and are the low Bid, the City Purchasing Agent or the Owner may:
- (A) Award pursuant to the identical low bid provisions of the City Purchasing Manual;
  - (B) Award to a resident local business if the identical low Bids are submitted by a resident or local business and a non-resident business;
  - (C) Award to resident or local manufacturer if the identical low Bids are submitted by a resident or local manufacturer and a resident business;
  - (D) Award by lottery to one of the identical low Bidders; or
  - (E) Reject all Bids and re-solicit Bids or proposals for the required services, construction, or items of tangible personal property.

#### **5.5 CANCELLATION OF AWARD**

- 5.5.1 When in the best interest of the public, the Owner may cancel the award of any Contract at any time before

the execution of said contracts by all parties without any liability against the Owner.

**6.0 POST-BID INFORMATION**

**6.1 RETURN OF BID SECURITY**

All Bid security in the form of checks, except those of the two lowest Bidders, will be returned immediately following the opening and checking of the Bids. The retained Bid security of the unsuccessful of the two lowest Bidders, if in the form of a check, will be returned within fifteen (15) days following the award of contract. The retained Bid security of the successful Bidder, if in the form of a check, will be returned after a satisfactory Contract bond has been furnished and the Contract has been executed. Bid securities in the form of Bid bonds will be returned only upon the request of the unsuccessful Bidder, but will be released by the City Purchasing Agent after the Notice of Award is sent by the Owner.

**6.2 NOTICE TO PROCEED**

The Owner will issue a written Notice to Proceed to the Contractor stipulating the date from which Contract Time will be charged and the date Contract Time is to expire, subject to valid modifications of the Contract authorized by Change Order.

**6.3 FAILURE TO EXECUTE CONTRACT**

Failure to return the signed Contract with acceptable Contract Bonds and Certificate of Insurance within fifteen (15) calendar days after the date of the Notice of Award shall be just cause for the cancellation of the award and the forfeiture of the Bid security, which shall become damages sustained. Award may then be made to the next lowest responsible Bidder, or the work may be re-advertised and constructed under Contract or otherwise, as the Owner may decide.

**6.4 CONTRACTOR'S QUALIFICATION STATEMENT (Not Used)**

**6.5 CONTRACT BONDS REQUIREMENTS**

6.5.1 The successful Bidder, where the Contract price exceeds twenty five thousand dollars (\$25,000), shall post a one hundred percent (100%) Performance Bond and one hundred percent (100%) Labor and Material Payment Bond. Bonds shall be executed on Performance Bond and Labor and Material Bond forms attached hereto, with amount payable conforming to the terms of the Contract. Surety shall be a company licensed to do business in the State of New Mexico and acceptable to the Owner.

**6.6 INSURANCE REQUIREMENTS**

6.6.1 The selected Bidder shall purchase and maintain, with a company or companies licensed to do business in the State of New Mexico, Liability and Property Insurance as required by law.

6.6.2 The insurance shall be in limits not less than those stated in the insurance for, enclosed in the Bid package, or greater if required by law.

6.6.3 The insurance coverage shall include worker's compensation, employers liability, comprehensive general liability (Premises Operations, independent contractual liability, explosion and collapse hazard, underground hazard, personal injury), Comprehensive automobile liability (owned and hired), excess liability (umbrella form), and all-risk builder's risk. For more specific insurance requirements refer to page 8 of the boilerplate AIA agreement included in this RFB.

6.6.4 All insurance coverage must be maintained for the entire life of the project. Products and completed operations coverage shall be maintained for a minimum period of one (1) year after final payment.

6.6.5 A valid certificate of insurance must be submitted to the Owner prior to issuance of a Notice-to-Proceed.

**7.0 MINIMUM WAGE RATES**

7.1 No State minimum wage rates apply as this is a bid for fabrication only.

7.2 A summary of the City of Santa Fe Ordinance No. 2003-8, passed by the Santa Fe City Council on February 26, 2003 is included herein. The proponent or bidder will be required to submit the proposal or bid such that it

complies with the ordinance to the extent applicable. The recommended Contractor will be required to comply with the ordinance to the extent applicable, as well as any subsequent changes to the Ordinance throughout the term of this contract.

**8.0 OTHER INSTRUCTIONS TO BIDDERS**

- 8.1 The Owner will make copies of such reports available to any Bidder requesting them.. These reports are not guaranteed as to accuracy or completeness, nor are they part of the bidding documents. Before submitting his Bid, each Bidder shall, at his own expense, make such additional investigations and tests as the Bidder may deem necessary to determine his Bid for performance of the work in accordance with the time, price, and other terms and conditions of the Bidding Documents.

**9.0 NEW MEXICO LABOR AND INDUSTRIAL DIVISION OF THE LABOR DEPARTMENT CONTRACTOR AND SUBCONTRACTOR REGISTRATION**

- 9.1 Registration with the Labor and Industrial Division of the Labor Department. A contractor or subcontractor that submits a bid valued at more than fifty thousand dollars (\$50,000) for a city project that is subject to the Public Works Minimum Wage Act (13-4-10 NMSA 1978) shall be registered with the labor and industrial division of the labor department. The registration number shall be provided in the bid submitted for the contractor in the space provided and for subcontractors with work proposed over \$50,000, the registration number for the subcontractor must be included on the subcontractor form. After the bid opening, the registration number(s) will be verified by the City and the bid will be determined to be non-responsive and disqualified if the registration number(s) appear to be not valid and the contractor does not provide proof of the required registration for itself or its subcontractors with work proposed over fifty thousand dollars (\$50,000). It is the responsibility of the contractor and the subcontractors to ensure the registration is completed prior to the bid opening.

# BID FORM

## (00 4113) BID FORM - STIPULATED SUM (Single-Prime Contract)

Invitation No: RFB '16/05/B

Project:

CIP Project No: 665A – SANTA FE TRAILS BUS  
SHELTERS PHASE 2

Contractor Submittal Date:

Date: \_\_\_\_\_, 2015

This Bid is submitted to:

CITY OF SANTA FE  
PURCHASING DIRECTOR  
2651 SIRINGO ROAD, BUILDING H  
SANTA FE, NEW MEXICO 87505

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with the Owner in the form included in the Bidding Documents to perform and furnish all work as specified or indicated in the Bidding Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
2. The Bidder accepts all of the terms and conditions of the Invitation for Bid and Instructions to Bidders, including, without limitation, those dealing with the disposition of Bid security and other Bidding Documents. This Bid will remain subject to acceptance for \*60 days after the day of Bid opening. The Bidder shall sign and submit the Agreement between Owner and Contractor (hereinafter called Agreement) with the bonds and other documents required by the Bidding Requirements within fifteen (15) calendar days after the date of the Owner's Notice to Award.
3. In submitting this Bid, the Bidder represents, as more fully set forth in the Agreement, that:
  - A. The Bidder has examined copies of all the Bidding Documents and of the following Addenda (receipt of all of which is hereby acknowledged):

No. _____	Date _____	No. _____	Date _____
No. _____	Date _____	No. _____	Date _____
No. _____	Date _____	No. _____	Date _____
No. _____	Date _____	No. _____	Date _____
  - B. The Bidder has familiarized himself with the nature and extent of the Bidding Documents, work, site, locality, and all local condition, laws, and regulations that in any manner may affect cost, progress, performance, or furnishing of the work.
  - C. The Bidder has carefully studied all reports and drawings of subsurface conditions which are identified in the Information Available to Bidders and accepts the determination set forth in the Information Available to Bidders of the extent of the technical data contained in such reports and drawings upon which the Bidder is entitled to rely.
  - D. The Bidder has correlated the results of all such observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the Bidding Documents.
  - E. The Bidder has given the Architect written notice of all conflicts, errors, or discrepancies that he has discovered in the Bidding Documents, and the written resolution thereof by the Architect is acceptable to the Bidder.
  - F. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm, or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporations, the Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; the Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and the Bidder has not sought by collusion to obtain for himself any advantage over any other Bidder or over the Owner. It is understood that the Owner reserves the right to reject any or all Bids

and to waive any technical irregularities in the bidding.

G. It is the intent of the City to award a Contract to the responsible Bidder submitting the lowest total option, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and is in the best interest of the City.

- 4. The Bidder will complete the work designated as CNG FUEL FACILITY UPGRADES, CIP Project # 657A, which consists of custom steel fabrication of sixty Product Package A shelters (signs), ten Product Package B shelters (sign & bench) and six Product Package C shelters (roofed shelter), including artistic panels, powder coating, anti-graffiti coating and thermoplastic coating of bench tops. The work also includes delivery to Santa Fe and off-loading at designated location, for the following price(s):  
(All prices listed below are for a complete product and includes all labor, materials, equipment, bonding, insurance, overhead & profit, etc.)

Base Bid: \_\_\_\_\_  
 \_\_\_\_\_ (\$ \_\_\_\_\_)  
 (use words)

Gross Receipts Tax  
 (8.3125%)  
 \_\_\_\_\_ (\$ \_\_\_\_\_)  
 (use words)

Total Base Bid and Allowance Plus Tax  
 \_\_\_\_\_ (\$ \_\_\_\_\_)  
 (use words)

Additive Alternate No. 1: Fabrication of ten additional Product Package A shelters, including delivery to Santa Fe and off-loading.

Additive \_\_\_\_\_ (\$ \_\_\_\_\_)  
 (use words – including gross receipt tax)

- 5. The Bidder agrees that:
  - A. The work to be performed under the Contract shall commence not later than ten (10) consecutive calendar days after the date of written Notice to Proceed, and that completion of the Base Bid shall be achieved not later than one hundred ten (110) calendar days after the date of written “Notice to Proceed”, except as hereafter extended by valid written “Change Order” by the Owner.
  - B. Should the Contractor neglect, refuse, or otherwise fail to complete the work within the time specified, the Contractor agrees, in partial consideration for the award of this Contract, to pay the Owner the amount of one thousand dollars (\$1000.00) per consecutive calendar days, not as a penalty, but as liquidated damages for such breach of the Contract.
  - C. The above process shall include all labor, profit, insurance, taxes, etc., to cover the finished work of the several kinds called for. Changes shall be processed in accordance with the Contract Documents.
  - D. It is understood that the Owner reserves the right to reject any or all Bids and to waive any technical irregularities in the bidding.

- 6. The following documents are attached to and made a condition of this Bid:
  - A. Check for the Bid Bond.
  - B. This Bid Form, properly filled out and executed, including acknowledgement of Addenda, if any

- C. Non-Collusion Affidavit of Prime Bidder
- D. Equal Employment Opportunity
- E. Certificate of Non-Segregated Facilities
- F. Certificate of Registration with New Mexico Dept. of Workforce Solutions
- G. Subcontractors Listing
- H. Signed Federal Contract Clauses

If any of the above requirements have not been met, the bid shall not be read.

7. The terms used in this Bid and the Bidding and Contract Documents which are defined in the Conditions of the Construction Contract (General, Supplementary, and Other Conditions)

8. If the Bidder is:

A. AN INDIVIDUAL:

By: \_\_\_\_\_  
(Individual's Name)

doing business as:

\_\_\_\_\_

Business address:

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

Telephone: \_\_\_\_\_

(SEAL)

B. A PARTNERSHIP:

By: \_\_\_\_\_  
(Firm Name)

\_\_\_\_\_  
(General Partner)

Business Address:

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

Telephone: \_\_\_\_\_

(SEAL)

C. A CORPORATION

By: \_\_\_\_\_  
(Corporation Name)

\_\_\_\_\_  
(State of Incorporation)

By: \_\_\_\_\_  
(Name of person authorized to sign)

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

If a New Mexico Corporation: \_\_\_\_\_  
Certificate of Incorporation No.

If a Foreign Corporation: \_\_\_\_\_  
Certificate of Authority No.

Attest: \_\_\_\_\_  
(Secretary)

Business address: \_\_\_\_\_

Telephone: \_\_\_\_\_

D. A JOINT VENTURE

By: \_\_\_\_\_  
(Name)

Address: \_\_\_\_\_

By: \_\_\_\_\_  
(Name)

Address: \_\_\_\_\_

Each joint venture must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated in the appropriate category.  
-----

Bidder must fill in the following: (If none, write none)  
NM License No.: \_\_\_\_\_ Classification: \_\_\_\_\_  
NM Taxation and Revenue CRS No.: \_\_\_\_\_  
City of Santa Fe Business Registration No.: \_\_\_\_\_  
NM Resident Preference Number (if applicable): \_\_\_\_\_

**One Original and one copy of the Bid Submittal is required**

**SUPPLEMENT TO BID FORMS**  
**(00 4300-4500)**

**(00 4313) BID SECURITY FORM**

Review and Approval: This Bond has been executed by a Surety named in the current list of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies,” as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, United States Treasury Department.

Approved:

\_\_\_\_\_

DATE:

\_\_\_\_\_  
Owner’s Representative or Governing Authority

**THIS FORM MUST ACCOMPANY THE BID BOND**





**(00 4519) NON-COLLUSION AFFIDAVIT OF PRIME BIDDER**

STATE OF \_\_\_\_\_ )  
 )ss.  
COUNTY OF \_\_\_\_\_ )

\_\_\_\_\_, being first duly sworn, deposes and says that:

- 1) He is the \_\_\_\_\_ of \_\_\_\_\_, the Bidder that has submitted and attached Bid;
- 2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;
- 3) Such Bid is genuine and is not a collusive or sham Bid;
- 4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with the Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract or has in any manner directly or indirectly, sought by agreement or collusion or communications or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Santa Fe, or any person interested in the proposed Contract; and
- 5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

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

Title: \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public

My Commission expires: \_\_\_\_\_

**(00 4533) CERTIFICATION OF NONSEGREGATED FACILITIES**

(Applicable to construction contracts and related subcontracts exceeding \$10,000 which are not exempt from the Equal Opportunity Clause.)

The construction contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The construction contractor certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract. As used in this certification, the term "segregated facilities" means: any waiting room, work areas, rest rooms and wash rooms, restaurants and other eating areas; time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin because of habit, local custom, or otherwise. The construction contractor agrees that (except where he has obtained identical certifications from proposed Subcontractors for specific time periods) he will obtain identical certifications from proposed SUBCONTRACTORS prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provision of the Equal Opportunity Clause and that he will retain such certifications in his files.

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

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public

My Commission expires: \_\_\_\_\_

**(00 4546) CERTIFICATION OF EQUAL EMPLOYMENT OPPORTUNITY**

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The implementing rules and regulations provide that any Bidder or prospective contractor, or any of their proposed Subcontractors, shall state as an initial part of the Bid or negotiations of the Contract whether he has participated in any previous Contract or subcontract subject to the equal opportunity clause; and, if so, whether he has filed all compliance reports due under applicable instructions.

Where the certification indicates that the Bidder has not filed a compliance report due under applicable instructions, such Bidder shall be required to submit a compliance report within seven calendar days after Bid opening. No Contract shall be awarded unless such report is submitted.

---

CERTIFICATION BY BIDDER

Bidder's Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

1. Bidder has participated in a previous Contract or subcontract subject to the equal Opportunity Clause.

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

2. Compliance reports were required to be filed in connection with such Contract or subcontract.

\_\_\_\_\_ Yes                      \_\_\_\_\_ No

---

Certification - The information above is true and complete to the best of my knowledge and belief.

---

Name and Title of Signer (please type)

---

Signature

---

Date

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2. BUY AMERICA REQUIREMENTS

49 U.S.C. 5323(j)  
49 CFR Part 661

**Buy America**

The contractor agrees to comply with 49 U.S.C. 5323(j) and 49 C.F.R. Part 661, which provide that Federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 C.F.R. 661.7, and include final assembly in the United States for 15 passenger vans and 15 passenger wagons produced by Chrysler Corporation, and microcomputer equipment and software. Separate requirements for rolling stock are set out at 49 U.S.C. 5323(j)(2)(C) and 49 C.F.R. 661.11. Rolling stock must be assembled in the United States and have a 60 percent domestic content.

A bidder or offeror must submit to the FTA recipient the appropriate Buy America certification (below) with all bids or offers on FTA-funded contracts, except those subject to a general waiver. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as nonresponsive. This requirement does not apply to lower tier subcontractors.

**Certification requirement for procurement of steel, iron, or manufactured products.**

*Certificate of Compliance with 49 U.S.C. 5323(j)(1)*

The bidder or offeror hereby certifies that it will meet the requirements of 49 U.S.C. 5323(j)(1) and the applicable regulations in 49 CFR Part 661.5.

Date \_\_\_\_\_

Signature \_\_\_\_\_

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

Title \_\_\_\_\_

*Certificate of Non-Compliance with 49 U.S.C. 5323(j)(1)*

The bidder or offeror hereby certifies that it cannot comply with the requirements of 49 U.S.C. 5323(j)(1) and 49 C.F.R. 661.5, but it may qualify for an exception pursuant to 49 U.S.C. 5323(j)(2)(A), 5323(j)(2)(B), or 5323(j)(2)(D), and 49 C.F.R. 661.7.

Date \_\_\_\_\_

Signature \_\_\_\_\_

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

Title \_\_\_\_\_

**6. ENERGY CONSERVATION REQUIREMENTS**

42 U.S.C. 6321 et seq.  
49 CFR Part 18

**Energy Conservation**

The contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

\_\_\_\_\_ Signature of Contractor's Authorized Official  
\_\_\_\_\_ Name and Title of Contractor's Authorized Official  
\_\_\_\_\_ Date

7. CLEAN WATER REQUIREMENTS

33 U.S.C. 1251

**Clean Water**

(1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq . The Contractor agrees to report each violation to the Purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

(2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

\_\_\_\_\_ Signature of Contractor's Authorized Official  
\_\_\_\_\_ Name and Title of Contractor's Authorized Official  
\_\_\_\_\_ Date

## 10. LOBBYING

31 U.S.C. 1352

49 CFR Part 19

49 CFR Part 20

### **Byrd Anti-Lobbying Amendment**

31 U.S.C. 1352, as amended by the Lobbying Disclosure Act of 1995, P.L. 104-65 [to be codified at 2 U.S.C. § 1601, et seq.] - Contractors who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient.

Contractors who apply or bid for an award of \$100,000 or more shall file the certification required by 49 CFR part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the recipient.

### APPENDIX A, 49 CFR PART 20--CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

*(To be submitted with each bid or offer exceeding \$100,000)*

The undersigned [Contractor] certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for making lobbying contacts to an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form--LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions [as amended by "Government wide Guidance for New Restrictions on Lobbying," 61 Fed. Reg. 1413 (1/19/96)]. Note: Language in paragraph (2) herein has been modified in accordance with Section 10 of the Lobbying Disclosure Act of 1995 (P.L. 104-65, to be codified at 2 U.S.C. 1601, et seq .)]

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

[Note: Pursuant to 31 U.S.C. § 1352(c)(1)-(2)(A), any person who makes a prohibited expenditure or fails to file or amend a required certification or disclosure form shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such expenditure or failure.]

The Contractor, \_\_\_\_\_, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. A 3801, *et seq.*, apply to this certification and disclosure, if any.

\_\_\_\_\_  
Signature of Contractor's Authorized Official  
\_\_\_\_\_  
Name and Title of Contractor's Authorized Official  
\_\_\_\_\_  
Date

## 11. ACCESS TO RECORDS AND REPORTS

49 U.S.C. 5325  
18 CFR 18.36 (i)  
49 CFR 633.17

The following access to records requirements apply to this Contract:

1. Where the Purchaser is not a State but a local government and is the FTA Recipient or a subgrantee of the FTA Recipient in accordance with 49 C. F. R. 18.36(i), the Contractor agrees to provide the Purchaser, the FTA Administrator, the Comptroller General of the United States or any of their authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts and transcriptions. Contractor also agrees, pursuant to 49 C. F. R. 633.17 to provide the FTA Administrator or his authorized representatives including any PMO Contractor access to Contractor's records and construction sites pertaining to a major capital project, defined at 49 U.S.C. 5302(a)1, which is receiving federal financial assistance through the programs described at 49 U.S.C. 5307, 5309 or 5311.
2. Where the Purchaser is a State and is the FTA Recipient or a subgrantee of the FTA Recipient in accordance with 49 C.F.R. 633.17, Contractor agrees to provide the Purchaser, the FTA Administrator or his authorized representatives, including any PMO Contractor, access to the Contractor's records and construction sites pertaining to a major capital project, defined at 49 U.S.C. 5302(a)1, which is receiving federal financial assistance through the programs described at 49 U.S.C. 5307, 5309 or 5311. By definition, a major capital project excludes contracts of less than the simplified acquisition threshold currently set at \$100,000.
3. Where the Purchaser enters into a negotiated contract for other than a small purchase or under the simplified acquisition threshold and is an institution of higher education, a hospital or other non-profit organization and is the FTA Recipient or a subgrantee of the FTA Recipient in accordance with 49 C.F.R. 19.48, Contractor agrees to provide the Purchaser, FTA Administrator, the Comptroller General of the United States or any of their duly authorized representatives with access to any books, documents, papers and record of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts and transcriptions.
4. Where any Purchaser which is the FTA Recipient or a subgrantee of the FTA Recipient in accordance with 49 U.S.C. 5325(a) enters into a contract for a capital project or improvement (defined at 49 U.S.C. 5302(a)1) through other than competitive bidding, the Contractor shall make available records related to the contract to the Purchaser, the Secretary of Transportation and the Comptroller General or any authorized officer or employee of any of them for the purposes of conducting an audit and inspection.
5. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
6. The Contractor agrees to maintain all books, records, accounts and reports required under this contract for a period of not less than three years after the date of termination or expiration of this contract, except in the event of litigation or settlement of claims arising from the performance of this contract, in which case Contractor agrees to maintain same until the Purchaser, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto. Reference 49 CFR 18.39(i)(11).
7. FTA does not require the inclusion of these requirements in subcontracts.

**Requirements for Access to Records and Reports by Types of Contract**

Contract Characteristics	Operational Service Contract	Turnkey	Construction	Architectural Engineering	Acquisition of Rolling Stock	Professional Services
<u>I State Grantees</u>  a. Contracts below SAT (\$100,000)  b. Contracts above \$100,000/Capital Projects	None  None unless non-competitive award	Those imposed on state pass thru to Contractor	None  Yes, if non-competitive award or if funded thru 5307/5309/5311	None  None unless non-competitive award	None  None unless non-competitive award	None  None unless non-competitive award
<u>II Non State Grantees</u>  a. Contracts below SAT (\$100,000)  b. Contracts above \$100,000/Capital Projects	Yes <sup>3</sup>  Yes <sup>3</sup>	Those imposed on non-state Grantee pass thru to Contractor	Yes  Yes	Yes  Yes	Yes  Yes	Yes  Yes

\_\_\_\_\_ Signature of Contractor's Authorized Official  
 \_\_\_\_\_ Name and Title of Contractor's Authorized Official  
 \_\_\_\_\_ Date

12. FEDERAL CHANGES

49 CFR Part 18

Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Master Agreement between Purchaser and FTA, as they may be amended or promulgated from time to time during the term of this contract. Contractor's failure to so comply shall constitute a material breach of this contract.

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_  
Name and Title of Contractor's Authorized Official

\_\_\_\_\_  
Date

### 13. BONDING REQUIREMENTS

#### **Bid Bond Requirements (Construction )**

##### (a) Bid Security

A Bid Bond must be issued by a fully qualified surety company acceptable to City of Santa Fe and listed as a company currently authorized under 31 CFR, Part 223 as possessing a Certificate of Authority as described thereunder.

##### (b) Rights Reserved

In submitting this Bid, it is understood and agreed by bidder that the right is reserved by City of Santa Fe to reject any and all bids, or part of any bid, and it is agreed that the Bid may not be withdrawn for a period of [ninety (90)] days subsequent to the opening of bids, without the written consent of City of Santa Fe.

It is also understood and agreed that if the undersigned bidder should withdraw any part or all of his bid within [ninety (90)] days after the bid opening without the written consent of City of Santa Fe, shall refuse or be unable to enter into this Contract, as provided above, or refuse or be unable to furnish adequate and acceptable Performance Bonds and Labor and Material Payments Bonds, as provided above, or refuse or be unable to furnish adequate and acceptable insurance, as provided above, he shall forfeit his bid security to the extent of City of Santa Fe damages occasioned by such withdrawal, or refusal, or inability to enter into an agreement, or provide adequate security therefor.

It is further understood and agreed that to the extent the defaulting bidder's Bid Bond, Certified Check, Cashier's Check, Treasurer's Check, and/or Official Bank Check (excluding any income generated thereby which has been retained by City of Santa Fe as provided in [Item x "Bid Security" of the Instructions to Bidders]) shall prove inadequate to fully recompense City of Santa Fe for the damages occasioned by default, then the undersigned bidder agrees to indemnify City of Santa Fe and pay over to City of Santa Fe the difference between the bid security and City of Santa Fe total damages, so as to make City of Santa Fe whole.

The undersigned understands that any material alteration of any of the above or any of the material contained on this form, other than that requested, will render the bid unresponsive.

#### **Performance and Payment Bonding Requirements (Construction)**

The Contractor shall be required to obtain performance and payment bonds as follows:

##### (a) Performance bonds

1. The penal amount of performance bonds shall be 100 percent of the original contract price, unless the City of Santa Fe determines that a lesser amount would be adequate for the protection of the City of Santa Fe.
2. The City of Santa Fe may require additional performance bond protection when a contract price is increased. The increase in protection shall generally equal 100 percent of the increase in contract price. The City of Santa Fe may secure additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

##### (b) Payment bonds

1. The penal amount of the payment bonds shall equal:

(i) Fifty percent of the contract price if the contract price is not more than \$1 million.

(ii) Forty percent of the contract price if the contract price is more than \$1 million but not more than \$5 million;  
or

(iii) Two and one half million if the contract price is more than \$5 million.

2. If the original contract price is \$5 million or less, the City of Santa Fe may require additional protection as required by subparagraph 1 if the contract price is increased.

#### **Performance and Payment Bonding Requirements (Non-Construction)**

The Contractor may be required to obtain performance and payment bonds when necessary to protect the City of Santa Fe interest.

(a) The following situations may warrant a performance bond:

1. City of Santa Fe property or funds are to be provided to the contractor for use in performing the contract or as partial compensation (as in retention of salvaged material).

2. A contractor sells assets to or merges with another concern, and the City of Santa Fe, after recognizing the latter concern as the successor in interest, desires assurance that it is financially capable.

3. Substantial progress payments are made before delivery of end items starts.

4. Contracts are for dismantling, demolition, or removal of improvements.

(b) When it is determined that a performance bond is required, the Contractor shall be required to obtain performance bonds as follows:

1. The penal amount of performance bonds shall be 100 percent of the original contract price, unless the City of Santa Fe determines that a lesser amount would be adequate for the protection of the City of Santa Fe.

2. The City of Santa Fe may require additional performance bond protection when a contract price is increased. The increase in protection shall generally equal 100 percent of the increase in contract price. The City of Santa Fe may secure additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) A payment bond is required only when a performance bond is required, and if the use of payment bond is in the City of Santa Fe interest.

(d) When it is determined that a payment bond is required, the Contractor shall be required to obtain payment bonds as follows:

1. The penal amount of payment bonds shall equal:

(i) Fifty percent of the contract price if the contract price is not more than \$1 million;

(ii) Forty percent of the contract price if the contract price is more than \$1 million

but not more than \$5 million; or

(iii) Two and one half million if the contract price is increased.

#### **Advance Payment Bonding Requirements**

The Contractor may be required to obtain an advance payment bond if the contract contains an advance payment provision and a performance bond is not furnished. The City of Santa Fe shall determine the amount of the advance payment bond necessary to protect the City of Santa Fe.

**Patent Infringement Bonding Requirements (Patent Indemnity)**

The Contractor may be required to obtain a patent indemnity bond if a performance bond is not furnished and the financial responsibility of the Contractor is unknown or doubtful. The City of Santa Fe shall determine the amount of the patent indemnity to protect the City of Santa Fe.

**Warranty of the Work and Maintenance Bonds**

1. The Contractor warrants to City of Santa Fe, the Architect and/or Engineer that all materials and equipment furnished under this Contract will be of highest quality and new unless otherwise specified by City of Santa Fe, free from faults and defects and in conformance with the Contract Documents. All work not so conforming to these standards shall be considered defective. If required by the [Project Manager], the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.
2. The Work furnished must be of first quality and the workmanship must be the best obtainable in the various trades. The Work must be of safe, substantial and durable construction in all respects. The Contractor hereby guarantees the Work against defective materials or faulty workmanship for a minimum period of one (1) year after Final Payment by City of Santa Fe and shall replace or repair any defective materials or equipment or faulty workmanship during the period of the guarantee at no cost to City of Santa Fe. As additional security for these guarantees, the Contractor shall, prior to the release of Final Payment [as provided in Item X below], furnish separate Maintenance (or Guarantee) Bonds in form acceptable to City of Santa Fe written by the same corporate surety that provides the Performance Bond and Labor and Material Payment Bond for this Contract. These bonds shall secure the Contractor's obligation to replace or repair defective materials and faulty workmanship for a minimum period of one (1) year after Final Payment and shall be written in an amount equal to ONE HUNDRED PERCENT (100%) of the CONTRACT SUM, as adjusted (if at all).

\_\_\_\_\_ Signature of Contractor's Authorized Official  
\_\_\_\_\_ Name and Title of Contractor's Authorized Official  
\_\_\_\_\_ Date

**14. CLEAN AIR**

**42 U.S.C. 7401 et seq  
40 CFR 15.61  
49 CFR Part 18**

**Clean Air**

(1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq . The Contractor agrees to report each violation to the Purchaser and understands and agrees that the Purchaser will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

(2) The Contractor also agrees to include these requirements in each subcontract exceeding \$100,000 financed in whole or in part with Federal assistance provided by FTA.

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_  
Name and Title of Contractor's Authorized Official

\_\_\_\_\_  
Date

17. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

(1) **Overtime requirements** - No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) **Violation; liability for unpaid wages; liquidated damages** - In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

(3) **Withholding for unpaid wages and liquidated damages** - The (write in the name of the grantee) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) **Subcontracts** - The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

\_\_\_\_\_ Signature of Contractor's Authorized Official  
\_\_\_\_\_ Name and Title of Contractor's Authorized Official  
\_\_\_\_\_ Date

19. NO GOVERNMENT OBLIGATION TO THIRD PARTIES

**No Obligation by the Federal Government.**

(1) The Purchaser and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to the Purchaser, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.

(2) The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_  
Name and Title of Contractor's Authorized Official

\_\_\_\_\_  
Date

**20. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS  
AND RELATED ACTS**

31 U.S.C. 3801 et seq.  
49 CFR Part 31 18 U.S.C. 1001  
49 U.S.C. 5307

**Program Fraud and False or Fraudulent Statements or Related Acts.**

(1) The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § § 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying contract or the FTA assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

(2) The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate.

(3) The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

\_\_\_\_\_ Signature of Contractor's Authorized Official  
\_\_\_\_\_ Name and Title of Contractor's Authorized Official  
\_\_\_\_\_ Date

## 21. TERMINATION

49 U.S.C. Part 18  
FTA Circular 4220.1E

**a. Termination for Convenience (General Provision)** The City of Santa Fe may terminate this contract, in whole or in part, at any time by written notice to the Contractor when it is in the Government's best interest. The Contractor shall be paid its costs, including contract close-out costs, and profit on work performed up to the time of termination. The Contractor shall promptly submit its termination claim to City of Santa Fe to be paid the Contractor. If the Contractor has any property in its possession belonging to the City of Santa Fe, the Contractor will account for the same, and dispose of it in the manner the City of Santa Fe directs.

The City of Santa Fe may terminate this contract, in whole or in part, at any time by written notice to the Contractor when it is in the Government's best interest. The Contractor shall be paid its costs, including contract close-out costs, and profit on work performed up to the time of termination. The Contractor shall promptly submit its termination claim to City of Santa Fe to be paid the Contractor. If the Contractor has any property in its possession belonging to the City of Santa Fe, the Contractor will account for the same, and dispose of it in the manner the City of Santa Fe directs.

**b. Termination for Default [Breach or Cause] (General Provision)** If the Contractor does not deliver supplies in accordance with the contract delivery schedule, or, if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the City of Santa Fe may terminate this contract for default. Termination shall be effected by serving a notice of termination on the contractor setting forth the manner in which the Contractor is in default. The contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract.

If the Contractor does not deliver supplies in accordance with the contract delivery schedule, or, if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the City of Santa Fe may terminate this contract for default. Termination shall be effected by serving a notice of termination on the contractor setting forth the manner in which the Contractor is in default. The contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract.

If it is later determined by the City of Santa Fe that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of the Contractor, the City of Santa Fe, after setting up a new delivery of performance schedule, may allow the Contractor to continue work, or treat the termination as a termination for convenience.

**c. Opportunity to Cure (General Provision)** The City of Santa Fe in its sole discretion may, in the case of a termination for breach or default, allow the Contractor [an appropriately short period of time] in which to cure the defect. In such case, the notice of termination will state the time period in which cure is permitted and other appropriate conditions

The City of Santa Fe in its sole discretion may, in the case of a termination for breach or default, allow the Contractor [an appropriately short period of time] in which to cure the defect. In such case, the notice of termination will state the time period in which cure is permitted and other appropriate conditions

If Contractor fails to remedy to City of Santa Fe's satisfaction the breach or default of any of the terms, covenants, or conditions of this Contract within [ten (10) days] after receipt by Contractor of written notice from City of Santa Fe setting forth the nature of said breach or default, City of Santa Fe shall

have the right to terminate the Contract without any further obligation to Contractor. Any such termination for default shall not in any way operate to preclude City of Santa Fe from also pursuing all available remedies against Contractor and its sureties for said breach or default.

**d. Waiver of Remedies for any Breach** In the event that City of Santa Fe elects to waive its remedies for any breach by Contractor of any covenant, term or condition of this Contract, such waiver by City of Santa Fe shall not limit City of Santa Fe's remedies for any succeeding breach of that or of any other term, covenant, or condition of this Contract.

In the event that City of Santa Fe elects to waive its remedies for any breach by Contractor of any covenant, term or condition of this Contract, such waiver by City of Santa Fe shall not limit City of Santa Fe's remedies for any succeeding breach of that or of any other term, covenant, or condition of this Contract.

**e. Termination for Convenience (Professional or Transit Service Contracts)** The City of Santa Fe, by written notice, may terminate this contract, in whole or in part, when it is in the Government's interest. If this contract is terminated, the Recipient shall be liable only for payment under the payment provisions of this contract for services rendered before the effective date of termination.

The City of Santa Fe, by written notice, may terminate this contract, in whole or in part, when it is in the Government's interest. If this contract is terminated, the Recipient shall be liable only for payment under the payment provisions of this contract for services rendered before the effective date of termination.

**f. Termination for Default (Supplies and Service)** If the Contractor fails to deliver supplies or to perform the services within the time specified in this contract or any extension or if the Contractor fails to comply with any other provisions of this contract, the City of Santa Fe may terminate this contract for default. The City of Santa Fe shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. The Contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner or performance set forth in this contract.

If the Contractor fails to deliver supplies or to perform the services within the time specified in this contract or any extension or if the Contractor fails to comply with any other provisions of this contract, the City of Santa Fe may terminate this contract for default. The City of Santa Fe shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. The Contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner or performance set forth in this contract.

If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Recipient.

**g. Termination for Default (Transportation Services)** If the Contractor fails to pick up the commodities or to perform the services, including delivery services, within the time specified in this contract or any extension or if the Contractor fails to comply with any other provisions of this contract, the City of Santa Fe may terminate this contract for default. The City of Santa Fe shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of default. The Contractor will only be paid the contract price for services performed in accordance with the manner of performance set forth in this contract.

If the Contractor fails to pick up the commodities or to perform the services, including delivery services, within the time specified in this contract or any extension or if the Contractor fails to comply with any other provisions of this contract, the City of Santa Fe may terminate this contract for default. The City of Santa Fe shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of default. The Contractor will only be paid the contract price for services performed in accordance with the manner of performance set forth in this contract.

If this contract is terminated while the Contractor has possession of Recipient goods, the Contractor shall, upon direction of the City of Santa Fe, protect and preserve the goods until surrendered to the

Recipient or its agent. The Contractor and City of Santa Fe shall agree on payment for the preservation and protection of goods. Failure to agree on an amount will be resolved under the Dispute clause.

If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the City of Santa Fe.

**h. Termination for Default (Construction)** If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract or any extension or fails to complete the work within this time, or if the Contractor fails to comply with any other provisions of this contract, the City of Santa Fe may terminate this contract for default. The City of Santa Fe shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. In this event, the Recipient may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Recipient resulting from the Contractor's refusal or failure to complete the work within specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Recipient in completing the work.

If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract or any extension or fails to complete the work within this time, or if the Contractor fails to comply with any other provisions of this contract, the City of Santa Fe may terminate this contract for default. The City of Santa Fe shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. In this event, the Recipient may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Recipient resulting from the Contractor's refusal or failure to complete the work within specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Recipient in completing the work.

The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause if-

1. the delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include: acts of God, acts of the Recipient, acts of another Contractor in the performance of a contract with the Recipient, epidemics, quarantine restrictions, strikes, freight embargoes; and
2. the contractor, within [10] days from the beginning of any delay, notifies the City of Santa Fe in writing of the causes of delay. If in the judgment of the City of Santa Fe, the delay is excusable, the time for completing the work shall be extended. The judgment of the City of Santa Fe shall be final and conclusive on the parties, but subject to appeal under the Disputes clauses.

If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Recipient.

**i. Termination for Convenience or Default (Architect and Engineering)** The City of Santa Fe may terminate this contract in whole or in part, for the Recipient's convenience or because of the failure of the Contractor to fulfill the contract obligations. The City of Santa Fe shall terminate by delivering to the Contractor a Notice of Termination specifying the nature, extent, and effective date of the termination. Upon receipt of the notice, the Contractor shall (1) immediately discontinue all services affected (unless the notice directs otherwise), and (2) deliver to the Contracting Officer all data, drawings, specifications, reports, estimates, summaries, and other information and materials accumulated in performing this contract, whether completed or in process.

The City of Santa Fe may terminate this contract in whole or in part, for the Recipient's convenience or because of the failure of the Contractor to fulfill the contract obligations. The City of Santa Fe shall terminate by delivering to the Contractor a Notice of Termination specifying the nature, extent, and effective date of the termination. Upon receipt of the notice, the Contractor shall (1) immediately discontinue all services affected (unless the notice directs otherwise), and (2) deliver to the Contracting Officer all data, drawings, specifications, reports, estimates, summaries, and other information and materials accumulated in performing this contract, whether completed or in process.

If the termination is for the convenience of the Recipient, the Contracting Officer shall make an equitable adjustment in the contract price but shall allow no anticipated profit on unperformed services.

If the termination is for failure of the Contractor to fulfill the contract obligations, the Recipient may complete the work by contract or otherwise and the Contractor shall be liable for any additional cost incurred by the Recipient.

If, after termination for failure to fulfill contract obligations, it is determined that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the Recipient.

**j. Termination for Convenience of Default (Cost-Type Contracts)** The City of Santa Fe may terminate this contract, or any portion of it, by serving a notice of termination on the Contractor. The notice shall state whether the termination is for convenience of the City of Santa Fe or for the default of the Contractor. If the termination is for default, the notice shall state the manner in which the contractor has failed to perform the requirements of the contract. The Contractor shall account for any property in its possession paid for from funds received from the City of Santa Fe, or property supplied to the Contractor by the City of Santa Fe. If the termination is for default, the City of Santa Fe may fix the fee, if the contract provides for a fee, to be paid the contractor in proportion to the value, if any, of work performed up to the time of termination. The Contractor shall promptly submit its termination claim to the City of Santa Fe and the parties shall negotiate the termination settlement to be paid the Contractor.

The City of Santa Fe may terminate this contract, or any portion of it, by serving a notice of termination on the Contractor. The notice shall state whether the termination is for convenience of the City of Santa Fe or for the default of the Contractor. If the termination is for default, the notice shall state the manner in which the contractor has failed to perform the requirements of the contract. The Contractor shall account for any property in its possession paid for from funds received from the City of Santa Fe, or property supplied to the Contractor by the City of Santa Fe. If the termination is for default, the City of Santa Fe may fix the fee, if the contract provides for a fee, to be paid the contractor in proportion to the value, if any, of work performed up to the time of termination. The Contractor shall promptly submit its termination claim to the City of Santa Fe and the parties shall negotiate the termination settlement to be paid the Contractor.

If the termination is for the convenience of the City of Santa Fe, the Contractor shall be paid its contract close-out costs, and a fee, if the contract provided for payment of a fee, in proportion to the work performed up to the time of termination.

If, after serving a notice of termination for default, the City of Santa Fe determines that the Contractor has an excusable reason for not performing, such as strike, fire, flood, events which are not the fault of and are beyond the control of the contractor, the City of Santa Fe, after setting up a new work schedule, may allow the Contractor to continue work, or treat the termination as a termination for convenience.

\_\_\_\_\_  
Signature of Contractor's Authorized Official  
\_\_\_\_\_  
Name and Title of Contractor's Authorized Official  
\_\_\_\_\_  
Date

22. GOVERNMENT-WIDE DEBARMENT AND SUSPENSION (NONPROCUREMENT)

**49 CFR Part 29  
Executive Order 12549**

**Suspension and Debarment**

This contract is a covered transaction for purposes of 49 CFR Part 29. As such, the contractor is required to verify that none of the contractor, its principals, as defined at 49 CFR 29.995, or affiliates, as defined at 49 CFR 29.905, are excluded or disqualified as defined at 49 CFR 29.940 and 29.945.

The contractor is required to comply with 49 CFR 29, Subpart C and must include the requirement to comply with 49 CFR 29, Subpart C in any lower tier covered transaction it enters into.

By signing and submitting its bid or proposal, the bidder or proposer certifies as follows:

The certification in this clause is a material representation of fact relied upon by the City of Santa Fe. If it is later determined that the bidder or proposer knowingly rendered an erroneous certification, in addition to remedies available to the City of Santa Fe, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 49 CFR 29, Subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

\_\_\_\_\_  
Signature of Contractor's Authorized Official  
\_\_\_\_\_  
Name and Title of Contractor's Authorized Official  
\_\_\_\_\_  
Date

## 24. CIVIL RIGHTS REQUIREMENTS

29 U.S.C. § 623, 42 U.S.C. § 2000  
42 U.S.C. § 6102, 42 U.S.C. § 12112  
42 U.S.C. § 12132, 49 U.S.C. § 5332  
29 CFR Part 1630, 41 CFR Parts 60 et seq.

The following requirements apply to the underlying contract:

(1) Nondiscrimination - In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.

(2) Equal Employment Opportunity - The following equal employment opportunity requirements apply to the underlying contract:

(a) Race, Color, Creed, National Origin, Sex - In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(b) Age - In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § 623 and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(c) Disabilities - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(3) The Contractor also agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_

Name and Title of Contractor's Authorized Official

\_\_\_\_\_

Date

**25. BREACHES AND DISPUTE RESOLUTION**

**49 CFR Part 18**  
**FTA Circular 4220.1E**

**Disputes**

Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in writing by the authorized representative of the City of Santa Fe Attorney's Office. This decision shall be final and conclusive unless within ten (10) days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the City Attorney. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the authorized representative of the City of Santa Fe Attorney's Office shall be binding upon the Contractor and the Contractor shall abide by the decision.

**Performance During Dispute**

Unless otherwise directed by the city of Santa Fe, Contractor shall continue performance under this Contract while matters in dispute are being resolved.

**Claims for Damages**

Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefor shall be made in writing to such other party within a reasonable time after the first observance of such injury or damage.

**Remedies**

Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the City of Santa Fe and the Contractor arising out of or relating to this agreement or its breach will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State in which the City of Santa Fe is located.

**Rights and Remedies**

The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the City of Santa Fe, (Architect) or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

\_\_\_\_\_  
Signature of Contractor's Authorized Official  
\_\_\_\_\_  
Name and Title of Contractor's Authorized Official  
\_\_\_\_\_  
Date

28. DISADVANTAGED BUSINESS ENTERPRISE (DBE)

49 CFR Part 26

**Disadvantaged Business Enterprises**

a. This contract is subject to the requirements of Title 49, Code of Federal Regulations, Part 26, *Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs*. The national goal for participation of Disadvantaged Business Enterprises (DBE) is 10%. The agency's overall goal for DBE participation is 3.9 %.

b. The contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of this DOT-assisted contract. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as City of Santa Fe deems appropriate. Each subcontract the contractor signs with a subcontractor must include the assurance in this paragraph (see 49 CFR 26.13(b)).

c. Bidders/offerors are required to document sufficient DBE participation to meet these goals or, alternatively, document adequate good faith efforts to do so, as provided for in 49 CFR 26.53. Award of this contract is conditioned on submission of the concurrent with and accompanying an initial proposal:

1. The names and addresses of DBE firms that will participate in this contract;
  2. A description of the work each DBE will perform;
  3. The dollar amount of the participation of each DBE firm participating;
  4. Written documentation of the bidder/offeror's commitment to use a DBE subcontractor whose participation it submits to meet the contract goal;
  5. Written confirmation from the DBE that it is participating in the contract as provided in the prime contractor's commitment; and
  6. If the contract goal is not met, evidence of good faith efforts to do so.
- Bidders/offerors must present the information required above with initial proposals. (see 49 CFR 26.53(3)). The successful bidder/offeror will be required to report its DBE participation obtained through race-neutral means throughout the period of performance.

d. The contractor is required to pay its subcontractors performing work related to this contract for satisfactory performance of that work no later than 30 days after the contractor's receipt of payment for that work from the City of Santa Fe. In addition, is required to return any retainage payments to those subcontractors within 30 days after the subcontractor's work related to this contract is satisfactorily completed.

e. The contractor must promptly notify City of Santa Fe, whenever a DBE subcontractor performing work related to this contract is terminated or fails to complete its work, and must make good faith efforts to engage another DBE subcontractor to perform at least the same amount of work. The contractor may not terminate any DBE subcontractor and perform that work through its own forces or those of an affiliate without prior written consent of City of Santa Fe.

\_\_\_\_\_  
Signature of Contractor's Authorized Official

\_\_\_\_\_  
Name and Title of Contractor's Authorized Official

\_\_\_\_\_  
Date

**30. INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION (FTA) TERMS**

**FTA Circular 4220.1E**

**Incorporation of Federal Transit Administration (FTA) Terms**

The preceding provisions include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1E and are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any City of Santa Fe requests which would cause City of Santa Fe to be in violation of the FTA terms and conditions.

\_\_\_\_\_ Signature of Contractor's Authorized Official  
\_\_\_\_\_ Name and Title of Contractor's Authorized Official  
\_\_\_\_\_ Date

**AGREEMENT FORMS**  
**(00 5200)**

**(00 5213) AGREEMENT** (AIA A101 – 2007 Standard Form of Agreement Between Owner and Contractor (Stipulated Sum)

**(00 5214) AIA GENERAL CONDITIONS** (AIA A201 – 2007 General Conditions of the Contract for Construction)



**AIA**<sup>®</sup>

# Document A101™ – 2007

*Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum*

## FOR RFB PURPOSES ONLY

AGREEMENT made as of the      day of      in the year 2015

BETWEEN the Owner:

City of Santa Fe  
200 Lincoln Ave.  
Santa Fe, New Mexico 87501

and the Contractor:

yet to be determined

for the following Project:

Santa Fe Trails Bus Shelters Phase 2, CIP Project #665A

Fabrication of bus shelter product packages "A", "B" and "C", including delivery to Santa Fe and off loading.

The Architect:

None

The Owner and Contractor agree as follows.

### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

Init.

## TABLE OF ARTICLES

1	THE CONTRACT DOCUMENTS
2	THE WORK OF THIS CONTRACT
3	DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
4	CONTRACT SUM
5	PAYMENTS
6	DISPUTE RESOLUTION
7	TERMINATION OR SUSPENSION
8	MISCELLANEOUS PROVISIONS
9	ENUMERATION OF CONTRACT DOCUMENTS
10	INSURANCE AND BONDS

### ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

### ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

### ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

*(Paragraphs deleted)*

The date of commencement of the Work shall be the date of the Notice To Proceed.

§ 3.2 The Contract Time shall be measured from the date of commencement.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than

*(Paragraphs deleted)*

110 (one hundred ten) calendar days from the date of commencement, subject to adjustments of this Contract Time as provided in the Contract

*(Paragraphs deleted)*

Documents, after which liquidated damages of one thousand dollars (\$1,000.00) per calendar day will apply..

### ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be (\$ ), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

none

*(Table deleted)*

*(Paragraphs deleted)*

*(Table deleted)*

*(Paragraphs deleted)*

## ARTICLE 5 PAYMENTS

### § 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Owner by the Contractor, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month. § 5.1.3 Provided that an Application for Payment is received by the Owner not later than the first day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the 21st day of the month. If an Application for Payment is received by the Owner after the application date fixed above, payment shall be made by the Owner not later than twenty one ( 21 ) days after the Owner receives the Application for Payment.

*(Paragraphs deleted)*

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the may require. This schedule, unless objected to by the Owner, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values. Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™-2007, General Conditions of the Contract for Construction;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at a location agreed upon in writing, if approved in advance by the Owner;
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Owner has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201-2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Owner shall determine for incomplete Work, and
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201-2007.

### § 5.1.8

*(Paragraphs deleted)*

Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

*(Paragraph deleted)*

**§ 5.2 FINAL PAYMENT**

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201-2007, and to satisfy other requirements, if any, which extend beyond final payment; and

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the the final payment request from the Contractor has been received and the Contractor has provided all required waivers of liens and the consent of Surety.

**ARTICLE 6 DISPUTE RESOLUTION**

**§ 6.1 INITIAL DECISION MAKER**

The Owner will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201-2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.

*(Paragraphs deleted)*

**§ 6.2 BINDING DISPUTE RESOLUTION**

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201-2007, the method of binding dispute resolution shall be as follows:

- Arbitration pursuant to Section 15.4 of AIA Document A201-2007
- Litigation in a court of competent jurisdiction
- Other - *In accordance with New Mexico Public Works Mediation Act 13-4C-1 through 13-4C-11, NMSA 1978*

**ARTICLE 7 TERMINATION OR SUSPENSION**

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201-2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201-2007.

**ARTICLE 8 MISCELLANEOUS PROVISIONS**

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201-2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:

Mary MacDonald  
Project Administrator  
Facilities Division, Public Works Department  
City of Santa Fe  
2651 Siringo Rd., Bldg. "E"  
Santa Fe, New Mexico 87505  
Phone 505-955-5934

*(Paragraphs deleted)*

§ 8.4 The Contractor's representative:

Init.

yet to be determined

§ 8.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

§ 8.6.1 INDEMNIFICATION

The Contractor shall indemnify, hold harmless and defend the City from all losses, damages, claims or judgements, including payments of all attorneys' fees and costs on account of any suit, judgment, execution, claim, action or demand whatsoever arising from Contractor's performance under this Agreement as well as the performance of Contractor's employees, agents, representatives and subcontractors.

§ 8.6.2 APPROPRIATIONS

The terms of this Agreement are contingent upon sufficient appropriations and authorization being made by the City for the performance of this Agreement. If sufficient appropriations and authorization are not made by the City, this Agreement shall terminate upon written notice being given by the City to the Contractor. The City's decision as to whether sufficient appropriations are available shall be accepted by the Contractor and shall be final.

§ 8.6.3 THIRD PARTY BENEFICIARIES

By entering into this Agreement, the parties do not intend to create any right, title or interest in or for the benefit of any person other than the City and the Contractor. No person shall claim any right, title or interest under this Agreement or seek to enforce this Agreement as a third party beneficiary of this Agreement.

§ 8.6.4 STATUS OF CONTRACTOR; RESPONSIBILITY FOR PAYMENT OF EMPLOYEES AND SUBCONTRACTORS

A. The Contractor and its agents and employees are independent contractors performing professional services for the City and are not employees of the City. The Contractor, and its agents and employees, shall not accrue leave, retirement, insurance, bonding, use of City vehicles, or any other benefits afforded to employees of the City as a result of this Agreement.

B. Contractor shall be solely responsible for payment of wages, salaries and benefits to any and all employees or subcontractors retained by Contractor in the performance of the services under this Agreement.

C. The Contractor shall comply with City of Santa Fe Minimum Wage, Article 28-1-SFCC 1987, as well as any subsequent changes to such article throughout the term of this Agreement.

§ 8.6.5 CONFLICT OF INTEREST

The Contractor warrants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required under this Agreement.

Contractor further agrees that in the performance of this Agreement no persons having any such interests shall be

employed.

**§ 8.6.6 ASSIGNMENT: SUBCONTRACTING**

The Contractor shall not assign or transfer any rights, privileges, obligations or other interest under this Agreement, including any claims for money due, without the prior written consent of the City. The Contractor shall not subcontract any portion of the services to be performed under this Agreement without the prior written approval of the City.

**§ 8.6.7 RELEASE**

The Contractor, upon acceptance of final payment of the amount due under this Agreement, releases the City, its officers and employees, from all liabilities, claims and obligations whatsoever arising from or under this Agreement. The Contractor agrees not to purport to bind the City to any obligation not assumed herein by the City unless the Contractor has express written authority to do so, and then only within the strict limits of that authority.

**§ 8.6.8 INSURANCE**

A. The contractor, at its own cost and expense, shall carry and maintain in full force and effect during the term of this Agreement, comprehensive general liability insurance covering bodily injury and property damage liability, in a form and with an insurance company acceptable to the City, with limits of coverage in the maximum amount which the City could be held liable under the New Mexico Tort Claims Act for each person injured and for each accident resulting in damage to property. Such insurance shall provide that the City is named as an additional insured and that the City is notified no less than 30 days in advance of cancellation for any reason. The Contractor shall furnish the City with a copy of a Certificate of Insurance as a condition prior to performing services under this Agreement.

B. Contractor shall also obtain and maintain Workers' compensation insurance, required by law, to provide coverage for Contractor's employees throughout the term of this Agreement. Contractor shall provide the City with evidence of its compliance with such requirement.

**§ 8.6.9 RECORDS AND AUDIT**

The contractor shall maintain, throughout the term of this Agreement and for a period of three years thereafter, detailed records that indicate the date, time and nature of services rendered. These records shall be subject to inspection by the City, the Department of Finance and Administration, and the State Auditor. The City shall have the right to audit the billing both before and after payment. Payment under this Agreement shall not foreclose the right of the City to recover excessive or illegal payments.

**§ 8.6.10 APPLICABLE LAW: CHOICE OF LAW: VENUE**

Contractor shall abide by all applicable federal and state laws and regulations, and all ordinances, rules and regulations of the City of Santa Fe. In any action, suit or legal dispute arising from this Agreement, the Contractor agrees that the laws of the State of New Mexico shall govern. The parties agree that any action or suit arising from this Agreement shall be commenced in a federal or state court of competent jurisdiction in New Mexico. Any action or suit commenced in the courts of the State of New Mexico shall be brought in the First Judicial District Court.

**§ 8.6.11 AMENDMENT**

This Agreement shall not be altered, changed or modified except by an amendment in writing executed by

the parties hereto.

**§ 8.6.12 NON-DISCRIMINATION**

During the term of this Agreement, Contractor shall not discriminate against any employee or applicant for an employment position to be used in the performance of services by Contractor hereunder, on the basis of ethnicity, race, age, religion, creed, color, national origin, ancestry, sex, gender, sexual orientation, physical or mental disability, medical condition, or citizenship status.

**§ 8.6.13 SEVERABILITY**

In case any one or more of the provisions contained in this Agreement or any application thereof shall be invalid, illegal or unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions contained herein and any other application thereof shall not in any way be affected or impaired thereby.

**8.6.14 NOTICES**

Any and all notices provided for hereunder shall be in writing and shall be deemed delivered, given and received when (i) personally delivered, or (ii) five (5) days after the same are deposited in the United States Postal Service mail, postage prepaid, certified mail, return receipt requested, addressed to the applicable party at the address indicated below for each party, or at such other address as may be designated by either party in a written notice to the other party:

OWNER:	Facilities Division, Public Works Department City of Santa Fe PO Box 909 Santa Fe, NM 87504-0909
CONTRACTOR:	(yet to be determined)

**8.6.15 NEW MEXICO TORT CLAIMS ACT**

Any liability incurred by the City of Santa Fe in connection with this agreement is subject to the immunities and limitations of the New Mexico Tort Claims Act, Section 41-4-1, et. seq. NMSA 1978, as amended. The City and its "public employees" as defined in the New Mexico Tort Claims Act, do not waive any limitation of liability pursuant to law. No provision in this Agreement modifies or waives any provision of the New Mexico Tort Claims Act.

**8.6.16 TERM AND EFFECTIVE DATE**

This Agreement shall be effective when signed by the City and the Contractor, whichever occurs last, and terminate on July 31, 2017, unless sooner pursuant to section 7, infra.

**ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS**

**§ 9.1** The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

**§ 9.1.1** The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor.

**§ 9.1.2** The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
Request For Bid '16/ /B	RFB / Project Manual	Yet to be Determined	See Project Manual index

§ 9.1.4 The Specifications:

*(Paragraphs deleted)* The specifications are included in the drawings and in the Request For Bid '16/ /B / Project Manual

*(Table deleted)*

§ 9.1.5 The Drawings:

*(Paragraphs deleted)* Santa Fe Trails Bus Shelters Phase 2 plans as issued with the Request For Bid '16/ /B.

§ 9.1.6 The Addenda, if any:

Number	Date	Pages
Yet to be determined		

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

*(Paragraphs deleted)*

**ARTICLE 10 INSURANCE AND BONDS**

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201-2007.

*(Paragraph deleted)*

Type of insurance or bond	Limit of liability or bond amount (\$0.00)
Performance and Payment Bonds	100% of the Contract amount
Commercial General Liability	\$1,000,000 per occurrence, \$2,000,000 general aggregate
Automobile Liability	\$500,000 combined single limit
Workers Compensation	\$100,000 each accident, \$100,000 disease, each employee
Workers Compensation	\$500,000 disease, policy limit

Init.

IN WITNESS WHEREOF, the parties have executed this Agreement on the date set forth below.

CITY OF SANTA FE:

\_\_\_\_\_  
JAVIER M. GONZALES, MAYOR

DATE: \_\_\_\_\_

ATTEST:

\_\_\_\_\_  
YOLANDA Y. VIGIL  
CITY CLERK

APPROVED AS TO FORM:

*MDM*  
\_\_\_\_\_  
KELLEY A. BRENNAN,  
CITY ATTORNEY

*9/29/15*

CONTRACTOR:  
\_\_\_\_\_

\_\_\_\_\_  
BY:, (NAME, TITLE)

NM LICENSE #  
CRS #  
CITY BUSINESS REGISTRATION #:

APPROVED:

\_\_\_\_\_  
OSCAR S. RODRIGUEZ, FINANCE DIRECTOR

52416.570500  
Business Unit/Line Item

*(Paragraphs deleted)*

Init.



**AIA**<sup>®</sup>

# Document A201™ – 2007

## General Conditions of the Contract for Construction

### FOR RFB PURPOSES ONLY

for the following PROJECT:

Santa Fe Trails Bus Shelters Phase 2, CIP Project #665A

**THE OWNER:**

City of Santa Fe  
PO Box 909, 200 Lincoln Avenue  
Santa Fe, New Mexico, 87501  
(505)955-5934

**THE CONTRACTOR:**

(yet to be determined)

**THE ARCHITECT:**

None

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4	ARCHITECT
5	SUBCONTRACTORS
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8	TIME
9	PAYMENTS AND COMPLETION
10	PROTECTION OF PERSONS AND PROPERTY
11	INSURANCE AND BONDS
12	UNCOVERING AND CORRECTION OF WORK
13	MISCELLANEOUS PROVISIONS

**ADDITIONS AND DELETIONS:**

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This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Init.

14      **TERMINATION OR SUSPENSION OF THE CONTRACT**

15      **CLAIMS AND DISPUTES**

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Init.

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## **ARTICLE 1 GENERAL PROVISIONS**

### **§ 1.1 BASIC DEFINITIONS**

#### **§ 1.1.1 THE CONTRACT DOCUMENTS**

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

#### **§ 1.1.2 THE CONTRACT**

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

#### **§ 1.1.3 THE WORK**

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

#### **§ 1.1.4 THE PROJECT**

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

#### **§ 1.1.5 THE DRAWINGS**

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

#### **§ 1.1.6 THE SPECIFICATIONS**

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

#### **§ 1.1.7 INSTRUMENTS OF SERVICE**

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

#### **§ 1.1.8 INITIAL DECISION MAKER**

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

### **§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS**

**§ 1.2.1** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

### § 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

### § 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

### § 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights or other rights or exclusion of rights as indicated in the agreement between Owner and Architect.. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

### § 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

## ARTICLE 2 OWNER

### § 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

### § 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or

the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

### § 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

### § 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

## ARTICLE 3 CONTRACTOR

### § 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

## § 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

## § 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

## § 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other

facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

### § 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

### § 3.6 TAXES

The Contractor shall pay all obligatory sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

### § 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 3 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume

the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

### § 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

### § 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

### § 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

### § 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

### § 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be

required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

### § 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

### § 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

### § 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

### § 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

### § 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect and the Owner.

### § 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

## ARTICLE 4 ARCHITECT

### § 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

### § 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

#### § 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will sign the Application for Payment.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and sign the final Application for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

### § 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

### § 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may

be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

#### **§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS**

**§ 5.4.1** Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

**§ 5.4.2** Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

**§ 5.4.3** Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

### **ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

#### **§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS**

**§ 6.1.1** The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

**§ 6.1.2** When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

**§ 6.1.3** The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

**§ 6.1.4** Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

#### **§ 6.2 MUTUAL RESPONSIBILITY**

**§ 6.2.1** The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

**§ 6.2.2** If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that

the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

### § 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

## ARTICLE 7 CHANGES IN THE WORK

### § 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, or order for a minor change in the Work.

### § 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.2.3 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.2.4 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the percentages for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.2.5 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately after the issuance of a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

### § 7.3 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and consistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

*(Paragraphs deleted)*

## ARTICLE 8 TIME

### § 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

### § 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

### § 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## ARTICLE 9 PAYMENTS AND COMPLETION

### § 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

### § 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect and the Owner, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect or Owner, shall be used as a basis for reviewing the Contractor's Applications for Payment.

### § 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least five days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

### § 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within three days after receipt of the Contractor's Application for Payment, either sign the Application for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 Signing the Application for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the

quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. Signing the Application for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, signing the Application for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

#### **§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION**

**§ 9.5.1** The Architect may withhold approval of the Application for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to approve payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold signing an Application for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

**§ 9.5.2** When the above reasons for withholding approval are removed, approval will be made for amounts previously withheld.

**§ 9.5.3** If the Architect withholds approving a payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect.

#### **§ 9.6 PROGRESS PAYMENTS**

**§ 9.6.1** After the Architect has signed the Application for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

**§ 9.6.2** The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

**§ 9.6.3** The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

**§ 9.6.4** The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for

subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

#### § 9.7 FAILURE OF PAYMENT

If the Architect does not sign an Application for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within the time frame established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

#### § 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Contractor for their written acceptance of responsibilities assigned to them in such Certificate, then to the Owner for their approval. Upon such acceptance, the Owner shall make payment applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

## § 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

## § 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect and Owner will promptly make such inspection and, when the Architect and Owner finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly sign and issue a Final Completion Certificate stating that the Work has been completed in accordance with terms and conditions of the Contract Documents. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Final payment shall not become due until the Contractor submits to the Owner (1) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (2) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (3) consent of surety, if any, to final payment and (4), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

### § 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

### § 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

### § 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

### § 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the

Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

#### § 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

### ARTICLE 11 INSURANCE AND BONDS

#### § 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;

- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

#### § 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

#### § 11.3 PERFORMANCE BOND AND PAYMENT BOND

§ 11.3.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

*(Paragraphs deleted)*

§ 11.3.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

*(Paragraphs deleted)*

### ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

#### § 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

## § 12.2 CORRECTION OF WORK

### § 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

### § 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

## § 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

## ARTICLE 13 MISCELLANEOUS PROVISIONS

### § 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

### § 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

### § 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

### § 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

### § 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

### § 13.6 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

*(Paragraphs deleted)*

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

### § 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

#### § 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

#### § 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

### ARTICLE 15 CLAIMS AND DISPUTES

#### § 15.1 CLAIMS

##### § 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

### § 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

### § 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

### § 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

### § 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

### § 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

### § 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Owner will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

### § 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

### § 15.4 ARBITRATION

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction

Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

#### § 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

**BONDS, CERTIFICATES AND NOTICES**  
**(006100-6200)**

**(00 6101) BID BOND**

(Insert AIA Document A310 with bid.)

**(00 6113.13) PERFORMANCE BOND**

(Insert copy of executed Performance Bond later.)

**(00 6113.16) LABOR AND MATERIAL BOND**

(Insert copy of executed Labor and Material Payment Bond later.)

**(00 6216) CERTIFICATE OF LIABILITY INSURANCE**

(Insert copy of project-specified Certificate of Liability Insurance later.)

**(00 6217) WORKERS' COMPENSATION INSURANCE**

(Insert copy of project-specified Workers' Compensation Insurance later.)

**(00 6218) NOTICE TO PROCEED**

**SAMPLE**

DATE  
NAME  
ADDRESS  
CITY/STATE/ZIP

RE:

Dear:

**“OFFICIAL NOTICE-TO-PROCEED”**

On \_\_\_\_\_, the City Council awarded a Construction Contract to your firm for the above noted project.

This letter shall serve as official Notice-to-Proceed with the work described for this project in the Contract Documents and \_\_\_\_\_.

The award of the Contract is based on your Bid proposal dated \_\_\_\_\_, in the amount of \$\_\_\_\_\_.

Based on the date of issuance of this notice, as starting date, \_\_\_\_\_, and the ( ) calendar day time limit, the entire work under this Contract shall be substantially completed by \_\_\_\_\_, after which time liquidated damages as outlined in the project specifications will apply.

At the Pre-Construction conference on \_\_\_\_\_, the City Contract Compliance Officer provided you with a Wage Rate Poster which you are to display on the job site. Please comply with the requirements for filing payroll statements with the State Labor Commission and the City Contract Compliance Officer.

Please acknowledge receipt of this notice and return signed copies to the Owner (City of Santa Fe, Public Works Department, Facilities Division).

Sincerely,

\_\_\_\_\_  
(City Project Manager)

\_\_\_\_\_  
(City Facilities Division Director)

xc: Project/Book File

RECEIPT ACKNOWLEDGED:

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

\_\_\_\_\_  
Date

## **SUPPLEMENTARY CONDITIONS (00 7300)**

### **(00 7301) CITY OF SANTA FE REQUIREMENTS**

Document is intended to be used in conjunction with the General Conditions of the Contract.

#### **ADDITIONAL CONDITIONS**

- 1.0 DEFINITIONS - The following definitions shall apply through the Bidding Documents or Contract Documents unless otherwise specified.
- 1.1 ADDENDUM: Written or graphic instrument issued prior to the execution of the Contract which modifies or interpret the Bidding Documents, including Drawings and Specifications, by additions, deletions, clarifications, or corrections. Addenda will become part of the Contract Documents when the Construction Contract is executed. Plural: ADDENDA
- 1.2 ADDITIVE OR DEDUCTIVE ALTERNATE BID: Amount stated in the Bid to be added or deducted from the amount of the Base Bid if the corresponding change in project scope or alternate materials and/or methods of construction is accepted.
- 1.3 BASE BID: Amount of money stated in the Bid as the sum for which the Bidder offers to perform the work, not including that work for which Alternate Bids are also submitted.
- 1.4 BID: A complete and properly signed proposal to do the work or designated portion thereof for the sums stipulated therein, supported by data called for by the Bidding Documents.
- 1.5 BID LOT: A major item of work for which a separate quotation or proposal is requested.
- 1.6 BIDDER: One who submits a Bid for a Prime contract with the Owner, as distinct from a Subcontractor, who submits a Bid to a Bidder. Technically, a Bidder is not a Contractor on a specific project until a contract exists between him and the Owner.
- 1.7 BIDDING DOCUMENT: Documents that include the Invitation for Bid, Instructions to Bidders, the Bid Form, other sample bidding and contract forms, and the proposed Contract Documents, including any Addenda issued prior to receipt of Bids. The Contract Documents proposed for the work consist of the Owner-Contractor Agreement, the Conditions of the Construction Contract (General, Supplementary, and Other Conditions), the Drawings, the Specifications, and all Addenda issued prior to and all Modifications issued after execution of the Contract.
- 1.8 DAY: Calendar day, which is every day shown on the calendar, beginning and ending at midnight.
- 1.9 CENTRAL PURCHASING OFFICE: The Central Purchasing Office is the City of Santa Fe Purchasing Department.
- 1.10 GOVERNING AUTHORITY: The Governing Board of the City of Santa Fe for the execution of construction contracts is the Mayor and City Manager.
- 1.11 INVITATION FOR BID: The Bidding Documents utilized for soliciting sealed Bids. "Invitation to Bid" shall have the same meaning as "Invitation for Bid".
- 1.12 OWNER: The City of Santa Fe, New Mexico.
- 1.13 PROCUREMENT OFFICER: The Director of the Purchasing Division, or a designee authorized to enter into or administer contracts and make written determination with respect thereto.
- 1.14 RESPONSIBLE BIDDER: A Bidder who submits a responsive Bid and who has furnished, when required, information and data to prove that his financial resources, production or service facilities, personnel, service reputation, and experience are adequate to make satisfactory delivery of the services, construction, or items of tangible personal property described in the Bidding Documents (13-1-82, NMSA 1978).
- 1.15 SUCCESSFUL BIDDER: The lowest qualified and responsible Bidder to whom the Owner, on the basis of the Owner's evaluation, makes an award.

1.16 UNIT PRICES: Amounts stated in the Contract as prices per unit of measurement for materials or services as described in the Contract Documents.

1.17 USER: The City of Santa Fe or agencies or designated entity for whose use the Project is being constructed.

## **2.0 CONTRACT AUDIT**

The Owner shall be entitled to audit the books and records of a Contractor or any Subcontractor under any negotiated contract or subcontract other than a firm fixed-price contract to the extent that such books and records relate to the performance of such contract or subcontract. Such books and records shall be maintained by the Contractor for a period of three years from the date of final payment under the prime contract and by the Subcontractor for a period of three years from the date of final payment under the subcontract unless a shorter period is otherwise authorized in writing (13-1-161, NMSA 1978).

## **3.0 DEBARRED OR SUSPENDED CONTRACTORS**

A business (Contractor, Subcontractor, or Supplier) that has either been debarred or suspended pursuant to the requirements of Sections 13-1-177 through 13-1-180, and 13-4-11 through 13-4-17, NMSA 1978, shall not be permitted to do business with the State and shall not be considered for award of contract during the period for which it is debarred or suspended.

## **4.0 BRIBES, GRATUITIES, AND KICK-BACKS**

4.1 It is illegal in the State of New Mexico for any public employee to solicit or accept anything of value in connection with award of this Bid and for any person to offer or pay anything of value to any such public employee (30-24-1 through 30-24-2, NMSA 1978).

4.2 Pursuant to Section 13-1-191, NMSA 1978, reference is hereby made to the Criminal Laws of New Mexico (including 30-24-1, 30-23-2, and 30-41-1 through 3-41-3, NMSA 1978), which prohibit bribes, kick-backs, and gratuities and violation of which constitutes a felon. Further, the Procurement Code (13-1-28 through 13-1-199, NMSA 1978), imposes civil and criminal penalties for its violation

## **5.0 PROTESTS**

5.1 Any Contractor who is aggrieved in connection with a procurement may protest to the City Purchasing Agent and the Owner. The protest should be made in writing within twenty-four (24) hours after the facts or occurrences; giving rise thereto, but in no case, less than within fifteen (15) calendar days after the facts or occurrences giving rise thereto (13-1-173, NMSA 1978).

5.2 In the event of a timely protest under Section 5.1 (13-1-172 of the Procurement Code, NMSA 1978), the City Purchasing Agent and the Owner shall not proceed further with the procurement unless the State Purchasing Agent or the Owner makes a determination that the award of contract is necessary to protect substantial interests of the Owner (13-1-173, NMSA 1978).

5.3 The City Purchasing Agent or his designee shall have the authority to take any action reasonably necessary to resolve a protest of an aggrieved Contractor concerning a procurement.

5.4 This authority shall be exercised in accordance with adopted regulations, but shall not include the authority to award money damages or attorneys' fees (13-1-174, NMSA 1978).

5.5 The City Purchasing Agent or his designee shall promptly issue a determination relating to the protest. The determination shall:

A) State the reasons for the action taken; and,

B) Inform the protestant of the right to judicial review of the determination pursuant to Section 13-1-183, NMSA 1978 (13-1-175, NMSA 1978).

5.6 A copy of the determination issued under Section 13-1-175, NMSA 1978, shall be mailed immediately to the protestant (13-1-176, NMSA 1978).

## **6.0 CONTRACT BOND REQUIREMENTS**

6.1 The Successful Bidder, where the Contract Price exceeds twenty five thousand dollars (\$25,000), shall post a one hundred percent (100%) Performance Bond and a one hundred percent (100%) Labor and Material Payment Bond. Bonds shall be executed on Performance Bond and Labor and Material Payment Bond forms attached hereto, with amount payable conforming to the terms of the contract. Surety shall be a company licensed to do business in the State of New Mexico and acceptable to the Owner.

- 6.2 Personal sureties may be accepted if the Owner so determines in advance, but in such case the amount of the Bond shall be the full Contract Price, and the sureties shall justify under oath in amounts above liabilities and exemptions aggregating double the amount of the Bond.
- 6.3 Special attention of Bidders is called to the requirements of Section 13-4-18 through 13-4-20, NMSA 1978 regarding a Contractor who does not have his principal place of business in the State of New Mexico for all taxes due arising out of construction services rendered under the Contract.
- 6.3.1 The right to sue on this Bond accrues only to the Owner and the parties to whom Sections 13-4-18 through 13-4-20, NMSA 1978 grant such right; and any such right shall be exercised only in accordance with the provisions and limitations of said statutes.

**7.0 NON-RESIDENT CONTRACTOR'S REQUIREMENTS REGARDING GROSS RECEIPTS TAX SURETY BOND**

- 7.1 Section 7-1-55A, NMSA 1978 provides that any person (as defined in Section 7-1-3, NMSA 1978) engaged in the construction business who does not have his principal place of business in New Mexico and enters into a prime construction contract to be performed in this State shall, at the time such contract is entered into, furnish the Director of the Revenue Division, Taxation and Revenue Department, or his delegate with a surety bond or other acceptable security in a sum equivalent to the gross receipts to be paid under the contract multiplied by the applicable rate of the gross receipts tax imposed by Section 7-9-4, NMSA 1978 to secure payment of the tax imposed on the gross receipts from the contract, and shall obtain a certificate from the Director of the Revenue Division, Taxation and Revenue Department, or his delegate that the requirements of this paragraph have been met.
- 7.2 If the total sum to be paid under the contract is changed by ten percent or more after the date the surety bond or other acceptable security is furnished, to the Director or his delegate, such person shall increase or decrease, as the case may be, the amount of the bond or security within fourteen days after the change (7-1-55B, NMSA 1978).
- 7.3 In addition to the above requirements, the Contractor will be subject to all the requirements of the City Procurement Code.

**8.0 CONTRACTOR'S GROSS RECEIPTS TAX REGISTRATION**

- 8.1 Section 7-10-4, NMSA 1978 provides that any person (as defined in Section 7-10-3, NMSA 1978) performing services for the City of Santa Fe, as those terms are used in the Gross Receipts and Compensating Tax Act (Section 7-10-1 to 7-10-5, NMSA 1978), must be registered and be issued an identification number with the Revenue Division of the Taxation and Revenue Department to pay the gross receipts tax.
- 8.2 The identification number is needed to properly complete the approval process of the contract; therefore, so as to cause no delay in the processing, the Contractor must register with the State of New Mexico, Taxation and Revenue Department. For information contact:

Revenue Division  
 Taxation and Revenue Department  
 1100 South St. Francis Drive  
 Santa Fe, New Mexico 87504  
 (505)827-0700

- 8.3 If any person who performs services for the City of Santa Fe is not registered to pay the gross receipts tax, the City shall withhold payment of the amount due until the person has presented evidence of registration with the Revenue Department to pay the gross receipts tax.

**9.0 CONTRACT WITH NONRESIDENT PERSON OR PARTNERSHIPS OR UNADMITTED FOREIGN CORPORATIONS; AGENT FOR SERVICE OF PROCESS**

- 9.1 Special attention of Bidders is called to requirements of Sections 13-4-21 through 13-4-24, NMSA 1978, whereby a public works contract with a nonresident person or partnership or foreign corporation not authorized to do business in the State shall contain a specific provision designating an agent resident within the State, and his address, upon whom process and writs in any action or proceeding against such business may be served in any action arising out of such contract.

**10.0 MINIMUM WAGE RATES**

- 10.1 This is a steel fabrication project; State minimum wage rates do not apply. The summary of the City's Living Wage is included at the end of this section.

**11.0 FORM OF CHANGE ORDER, & SUBSTANTIAL COMPLETION and FINAL COMPLETION CERTIFICATES**

11.1 The Change Order forms, Certificate of Substantial Completion form and the Certificate of Final Completion form issued by the Owner are to be utilized by the Contractor and the Architect, pursuant to the requirements of the General Conditions. There are two Change Order forms, one for approval by the City Manager, and one for the approval of City Council.

**(00 7343) CITY LIVING WAGE**

# Living Wage Ordinance

*Ordinance Number §28-1 28-1.12 SFCC 1987*

***Purpose:***

The City of Santa Fe Living Wage Ordinance was adopted to establish minimum hourly wages.

***Who it affects:***

- All profit and nonprofit businesses required to have a business license or business registration with the City of Santa Fe.

***Compliance:***

- Affected businesses are required to pay employees an hourly wage of \$10.84 effective March 1, 2015.
- Beginning January 1, 2009, and each year thereafter, the minimum wage shall be adjusted upward by an amount corresponding to the previous year's increase, if any, in the Consumer Price Index for the Western Region for Urban Wage Earners and Clerical Workers.
- For workers who customarily receive more than \$100 per month in tips or commissions, any tips or commissions received and retained by a worker shall be counted as wages and credited toward satisfaction of the minimum wage provided that, for tipped workers, all tips received by such workers are retained by the workers, except that the pooling of tips among workers shall be permitted.
- The value of health care benefits and child care shall be considered as an element of wages.
- Nonprofit organizations whose primary source of funds is from Medicaid waivers are *exempt*.

***Prohibitions against retaliation and circumvention:***

- It shall be unlawful for any business, employer or employer's agent or representative to take any action against an individual in retaliation for exercising or communicating rights under this ordinance. This includes retaliation against individuals who mistakenly but in good faith allege noncompliance with the ordinance.
- Taking adverse action against an individual within 60 days of the individual's assertion of or communication of information regarding rights raises a reputable presumption of retaliation for assertion of rights.
- It shall be unlawful for any business or employer to intentionally circumvent the requirements of this ordinance by contracting portions of its operations or leasing portions of its property.

***Enforcement and Remedies:***

- Administrative Enforcement—The city manager, or his/her designee, is authorized, as appropriate and as resources permit, to enforce this ordinance.
- Criminal Penalty—A person violating this ordinance shall be guilty of a misdemeanor and, upon conviction, for each offense may be subject to fines and imprisonment as set forth in Section 1-3 SFCC 1987. A person violating any of the requirements of this ordinance shall be guilty of a separate offense for each day or portion thereof and for each worker or person to whom any such violation occurred.
- Other Remedies—The city, any individual aggrieved by a violation of this ordinance, or any entity the members of which have been aggrieved by a violation of this ordinance, may bring a civil action in a court of competent jurisdiction to restrain, correct, abate or remedy any violation of this ordinance and, upon prevailing, shall be entitled to such legal or equitable relief as may be appropriate to remedy the violation including, without limitation, reinstatement, the payment of any wages due and an additional amount as liquidated damages equal to twice the amount of any wages due, injunctive relief, and reasonable attorney's fees and costs.

***Nonexclusive Remedies and Penalties—The remedies provided in this section are not exclusive, and nothing in this ordinance shall preclude any person from seeking any other remedies, penalties, or relief provided by law.***

***Posting and Publication:***

- Any business subject to the provisions of this ordinance shall as a condition to obtaining and holding a City of Santa Fe business license or registration, post and display in a prominent location next to its business license or registration on the business premises a notice, in English and Spanish, that the business is in compliance with the provisions of this ordinance and post the text of this notice. Failure to comply with this section shall be construed a violation of this ordinance and, in addition, shall be considered grounds for suspensions, revocation, or termination of the business license or registration.

***For more information, please contact: Constituent Services at 955-6949 Email: [constituentservices@santafenm.gov](mailto:constituentservices@santafenm.gov)***

## Ordenanza Respecto al Sueldo Mínimo

*Ordenanza Numero §28-1 28-1.12 SFCC 1987*

**Propósito:**

La ordenanza respecto al Sueldo Mínimo fue adoptada por la Ciudad de Santa Fe con el fin de establecer un sueldo mínimo que determinadas empresas tienen que pagar.

**A Quién Afecta la Ordenanza:**

- A toda empresa con o sin fines de lucro se requiere que tenga una licencia comercial o estar registrada con la ciudad de Santa Fe.

**Cómo Se Tiene que Cumplir lo que Dispone la Ordenanza:**

- A partir del día primero de Marzo del 2017, las empresas que tienen que pagar el sueldo mínimo tienen la obligación de pagar un sueldo de \$10.: 6 la hora.
- A partir del día primero de enero del 2009, y cada año que sigue, el sueldo mínimo será ajustado de acuerdo con la inflación.
- Para trabajadores/as que regularmente reciben propinas o comisiones que sumen más de \$100 por mes, todas esas propinas o comisiones que reciban contarán como si fueran sueldo y serán acreditadas para satisfacer la ordenanza, siempre y cuando los trabajadores se queden con todas sus propinas. También se permitirá acreditar propinas que se juntan y se comparten.
- El valor de beneficios de seguro médico y de cuidado de niños se considerará como parte del sueldo mínimo.
- Las organizaciones sin fines de lucro que reciben la mayoría de sus fondos de (*Medicaid*) no tienen que pagar el sueldo mínimo de la ciudad.

”

**Se Prohíben Represalias o Evasiones:**

- Es en contra de la ley que una empresa o persona que emplea trabajadores o que el apoderado o persona que representa a la empresa tome represalias en contra del trabajador porque el o ella ejerce sus derechos o comunica sus derechos a otra persona. También es en contra de la ley tomar represalias contra un trabajador que erróneamente, pero de buena fe, alega que la empresa no ha cumplido con la ordenanza.
- Se presume como represalia, tomar cualquier acción dentro de los 60 días después de que un individuo quiso ejercer sus derechos.
- Es en contra de la ley que un empresario o empleador intencionalmente trate de evadir los requisitos de esta ordenanza contratando parte de su negocio a otra empresa o rentando partes de su propiedad, con el fin de no cumplir con la ordenanza.

”

**Remedios Legales Para Implementar la Ley:**

- Medidas Administrativas - El Administrador de la ciudad o su representante está autorizado a hacer cumplir la ordenanza hasta donde los recursos lo permitan.
- Castigo Judicial - El empleador que no cumpla con esta ordenanza será condenado por cada infracción. Pudiera estar sujeto a multas o encarcelamiento según dispone la sección 1-3 del Código Civil de Santa Fe de 1987. El empleador que no cumpla cualquiera de los requisitos en esta ordenanza será culpable de una infracción por cada trabajador afectado, por cada día o parte del día que no se cumpla la ordenanza.
- Otros Recursos Judiciales - La Ciudad de Santa Fe, cualquier individuo o cualquier grupo de individuos que han sido afectados porque no se cumplió la ordenanza, podrán presentar una queja en la corte civil que tiene jurisdicción para restringir, corregir, suprimir, o remediar toda infracción de esta ordenanza. La persona que gane el caso tiene derecho a un remedio legal o equitativo que sea adecuado para remediar la violación. Los remedios incluyen y sin limitar, que lo/la vuelvan a emplear, que le paguen el sueldo que le deben más una cantidad por daños determinados que son el igual a doble cantidad del sueldo que le deben, protección judicial y cuotas razonables que cobra el abogado más costos del caso.

**Remedios Legales, Daños y Perjuicios No Exclusivos** Los remedios legales en esta sección no son exclusivos. Eso quiere decir que esta ordenanza no prohíbe que el trabajador trate de plantear otros remedios en la corte, demandar por daños y perjuicios que la ley permite.

**Colocación de Anuncios y Publicación de los Anuncios:**

- Como condición para obtener y mantener una licencia o registro comercial toda empresa tendrá que colocar en un lugar prominente al lado de su licencia o registro en el lugar de trabajo este aviso en inglés y en español indicando que el negocio está cumpliendo con la ordenanza y con el texto de este aviso. Si la empresa no cumple lo que esta sección ordena se considerará como violación a esta ordenanza y se podrá suspender, revocar o dar por terminada la licencia o registro de la empresa.

”

””””Para obtener más información, favor de comunicarse con la oficina de: Constituent Services al número (505) 955-6949 o por  
””””Correo electrónico a: [constitutentservices@santafenm.gov](mailto:constitutentservices@santafenm.gov).

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### APPENDIX

SELECTED APPROVED SUBMITTALS FROM FIRST PHASE OF PROJECT

## BUS SHELTERS & AMENITIES

### SECTION 01330 - SUBMITTAL PROCEDURES

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.
- B. Related Sections include the following:
  - 1. Division 01 Section "Project Management and Coordination".
  - 2. Divisions 02 through 49 Sections for specific requirements for submittals in those Sections.

##### 1.3 DEFINITIONS

- A. Action Submittals: Information that requires Owner's responsive action.
- B. Informational Submittals: Information that does not require Owner's approval. Submittals may be rejected for not complying with requirements.

##### 1.4 PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Documents will not be provided by Owner for Contractor's use with the exception of the following:
  - 1. Dwg/Dxf file of the decorative metal panel pattern.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Owner reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

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- C. Submittal Schedule: Four copies of each submittal must be transmitted to the Owner's representative within 15 days of Notice to Proceed. In addition to hard copies, an electronic copy must be submitted as well.
- D. Processing Time: Allow enough time for submittal review, including time for re-submittals, as follows. Time to review shall commence on the Owner's receipt of submittal.
1. Initial Review: 15 days. Allow additional time if coordination with subsequent submittals is required. Owner will advise Contractor when a submittal being processed must be delayed for coordination.
  2. Intermediate Review: 7 days. If intermediate submittal is necessary, process it in same manner as initial submittal.
  3. Resubmittal Review: 7 days.
  4. Sequential Review: 15 days.
  5. Concurrent Consultant Review: 15 days. Submittal will be returned to Owner before being returned to Contractor.
  6. No extension of Contract time will be authorized because of failure to transmit submittal enough in advance of the Work to permit processing.
- E. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
  2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Owner.
  3. Include the following information on label for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name and address of Owner.
    - d. Name and address of Contractor.
    - e. Name and address of subcontractor.
    - f. Name and address of supplier.
    - g. Name of manufacturer.
    - h. Submittal number or other unique identifier, including revision identifier.
      - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
    - i. Number and title of appropriate Specification Section.
    - j. Drawing number and detail references, as appropriate.
    - k. Location(s) where product is to be installed, as appropriate.
    - l. Other necessary identification.
- F. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.
- G. Additional Copies: Unless additional copies are required for final submittal, and unless Owner observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

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1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Owner.
  2. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.
- H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Owner will return submittals, without review, received from sources other than Contractor.
1. Transmittal Form: Use AIA Document G810.
  2. Transmittal Form: Provide locations on form for the following information:
    - a. Project name.
    - b. Date.
    - c. Destination (To:).
    - d. Source (From:).
    - e. Names of subcontractor, manufacturer, and supplier.
    - f. Category and type of submittal.
    - g. Submittal purpose and description.
    - h. Specification Section number and title.
    - i. Drawing number and detail references, as appropriate.
    - j. Transmittal number, numbered consecutively.
    - k. Submittal and transmittal distribution record.
    - l. Remarks.
    - m. Signature of transmitter.
  3. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Owner on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
- I. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
  2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  3. Resubmit submittals until they are marked, "Approved" or "Approved as Noted."
- J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- K. Use for Construction: Use only final submittals with mark indicating "Approved" or "Approved As Noted" taken by Owner.
- 1.5 CONTRACTOR'S USE OF OWNER'S CAD FILES
- A. General: At Contractor's written request, copies of Owner's CAD files will be provided to Contractor for Contractor's use in connection with Project.

## BUS SHELTERS & AMENITIES

### PART 2 - PRODUCTS

#### 2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
  - 1. Submit electronic submittals directly to Owner.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
  - 2. Mark each copy of each submittal to show which products and options are applicable.
  - 3. Include the following information, as applicable:
    - a. Manufacturer's written recommendations.
    - b. Manufacturer's product specifications.
    - c. Manufacturer's installation instructions.
    - d. Standard color charts.
    - e. Manufacturer's catalog cuts.
    - f. Wiring diagrams showing factory-installed wiring.
    - g. Printed performance curves.
    - h. Operational range diagrams.
    - i. Mill reports.
    - j. Standard product operation and maintenance manuals.
    - k. Compliance with specified referenced standards.
    - l. Testing by recognized testing agency.
    - m. Application of testing agency labels and seals.
    - n. Notation of coordination requirements.
  - 4. Submit Product Data before or concurrent with Samples.
  - 5. Number of Copies: Submit four copies of Product Data, unless otherwise indicated. Owner will return two copies. Mark up and retain one returned copy as a Project Record Document.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal of Owner's CAD Drawings are otherwise permitted.
  - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Dimensions.
    - b. Identification of products.
    - c. Fabrication and installation drawings.
    - d. Roughing-in and setting diagrams.
    - e. Shopwork manufacturing instructions.
    - f. Templates and patterns.
    - g. Schedules.

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- h. Design calculations.
    - i. Compliance with specified standards.
    - j. Notation of coordination requirements.
    - k. Notation of dimensions established by field measurement.
    - l. Relationship to adjoining construction clearly indicated.
    - m. Seal and signature of professional engineer if specified.
  2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
  3. Number of Copies: Submit two opaque (bond) copies of each submittal. Owner will return one copy.
  4. Number of Copies: Submit three opaque copies of each submittal, unless copies are required for operation and maintenance manuals. Submit five copies where copies are required for operation and maintenance manuals. Owner will retain two copies; remainder will be returned. Mark up and retain one returned copy as a Project Record Drawing.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
  1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.
    - c. Sample source.
    - d. Number and title of appropriate Specification Section.
  3. Disposition: Maintain sets of approved Samples at an approved location, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
  4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    - a. Number of Samples: Submit two full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Owner will return submittal with options selected.
  5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of

## BUS SHELTERS & AMENITIES

color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

- a. Number of Samples: Submit three sets of Samples. Owner will retain two Sample sets; remainder will be returned.
  - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
  - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
  1. Type of product. Include unique identifier for each product.
  2. Number and name of room or space.
  3. Location within room or space.
  4. Number of Copies: Submit three copies of product schedule or list, unless otherwise indicated. Owner will return two copies.
    - a. Mark up and retain one returned copy as a Project Record Document.
- F. Contractor's Construction Schedule: Comply with requirements specified in Owner's General Requirements.
- G. Submittals Schedule: Comply with requirements specified in Owner's General Requirements.
- H. Application for Payment: Comply with requirements specified in Owner's General Requirements.
- I. Schedule of Values: Comply with requirements specified in Owner's General Requirements.
- J. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
  1. Name, address, and telephone number of entity performing subcontract or supplying products.
  2. Number and title of related Specification Section(s) covered by subcontract.
  3. Drawing number and detail references, as appropriate, covered by subcontract.
  4. Number of Copies: Submit three copies of subcontractor list, unless otherwise indicated. Owner will return two copies.
    - a. Mark up and retain one returned copy as a Project Record Document.

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### 2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
  - 1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Owner will not return copies.
  - 2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  - 3. Test and Inspection Reports: Comply with requirements specified in Division 01 Section "Quality Requirements."
- B. Coordination Drawings: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- C. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- D. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- E. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- F. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- G. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- H. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
  - 1. Name of evaluation organization.
  - 2. Date of evaluation.
  - 3. Time period when report is in effect.
  - 4. Product and manufacturers' names.
  - 5. Description of product.
  - 6. Test procedures and results.
  - 7. Limitations of use.
- I. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."

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- J. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- K. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- L. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- M. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- N. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
  - 1. Preparation of substrates.
  - 2. Required substrate tolerances.
  - 3. Sequence of installation or erection.
  - 4. Required installation tolerances.
  - 5. Required adjustments.
  - 6. Recommendations for cleaning and protection.
- O. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
- P. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Owner.
  - 1. Owner will not review submittals that include MSDSs and will return the entire submittal for resubmittal.

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### PART 3 - EXECUTION

#### 3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Owner.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

#### 3.2 OWNER'S ACTION

- A. General: Owner will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Owner will review each submittal, make marks to indicate corrections or modifications required, and return it. Owner will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
  - 1. "Approved"
  - 2. "Approved as Noted"
  - 3. "Revise and Resubmit"
  - 4. "Not Approved"
  - 5. "No Action Required."
- C. Informational Submittals: Owner will review each submittal and will not return it, or will return it if it does not comply with requirements. Owner will forward each submittal to appropriate party.
- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

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### SECTION 01400 - QUALITY REQUIREMENTS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and -control services required by Owner, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections include the following:
  - 1. Division 1 Section "Cutting and Patching".
  - 2. Divisions 2 through 49 Sections for specific test and inspection requirements.

##### 1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Owner.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing,

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or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.

- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.
- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

### 1.4 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Owner for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Owner for a decision before proceeding.

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### 1.5 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  - 1. Specification Section number and title.
  - 2. Description of test and inspection.
  - 3. Identification of applicable standards.
  - 4. Identification of test and inspection methods.
  - 5. Number of tests and inspections required.
  - 6. Time schedule or time span for tests and inspections.
  - 7. Entity responsible for performing tests and inspections.
  - 8. Requirements for obtaining samples.
  - 9. Unique characteristics of each quality-control service.
- C. Reports: Prepare and submit certified written reports that include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.
  - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  - 12. Name and signature of laboratory inspector.
  - 13. Recommendations on retesting and reinspecting.
- D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

### 1.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

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- C. **Manufacturer Qualifications:** A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. **Fabricator Qualifications:** A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. **Professional Engineer Qualifications:** A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. **Specialists:** Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- G. **Testing Agency Qualifications:** An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
  - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
  - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. **Factory-Authorized Service Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. **Preconstruction Testing:** Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
  - 1. Contractor responsibilities include the following:
    - a. Provide test specimens representative of proposed products and construction.
    - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
    - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
    - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.

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- f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Owner, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
  1. Build mockups in location and of size indicated or, if not indicated, as directed by Owner.
  2. Notify Owner seven days in advance of dates and times when mockups will be constructed.
  3. Demonstrate the proposed range of aesthetic effects and workmanship.
  4. Obtain Owner's approval of mockups before starting work, fabrication, or construction.
    - a. Allow seven days for initial review and each re-review of each mockup.
  5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
  6. Demolish and remove mockups when directed, unless otherwise indicated.
- K. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 2 through 16.

### 1.7 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
  1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
  2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
  3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

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- a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
  2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
  3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. **Manufacturer's Field Services:** Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."
- D. **Retesting/Reinspecting:** Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. **Testing Agency Responsibilities:** Cooperate with Owner, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Owner, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
  3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  6. Do not perform any duties of Contractor.
- F. **Associated Services:** Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Delivery of samples to testing agencies.
  6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspecting equipment at Project site.

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- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
  - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for the Notice to Proceed.
  - 1. Distribution: Distribute schedule to Owner, Owner, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

### 1.8 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified testing agency or special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
- B. Special Tests and Inspections: Conducted by a qualified testing agency or special inspector as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
  - 1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
  - 2. Notifying Owner, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  - 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Owner, with copy to Contractor and to authorities having jurisdiction.
  - 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
  - 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
  - 6. Retesting and reinspecting corrected work.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 TEST AND INSPECTION LOG

- A. Prepare a record of tests and inspections. Include the following:
  - 1. Date test or inspection was conducted.
  - 2. Description of the Work tested or inspected.
  - 3. Date test or inspection results were transmitted to Owner.
  - 4. Identification of testing agency or special inspector conducting test or inspection.

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- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

### 3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
  - 2. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01400

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### SECTION 016000 - PRODUCT REQUIREMENTS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. Related Sections include the following:
  - 1. Divisions 02 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.

##### 1.3 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

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### 1.4 SUBMITTALS

- A. Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
  2. Form: Tabulate information for each product under the following column headings:
    - a. Specification Section number and title.
    - b. Generic name used in the Contract Documents.
    - c. Proprietary name, model number, and similar designations.
    - d. Manufacturer's name and address.
    - e. Supplier's name and address.
    - f. Installer's name and address.
    - g. Projected delivery date or time span of delivery period.
    - h. Identification of items that require early submittal approval for scheduled delivery date.
  3. Initial Submittal: Within 21 days after date of commencement of the Work, submit 3 copies of initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.
    - a. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early in Contract period.
  4. Completed List: Within 30 days after date of commencement of the Work, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
  5. Owner's Action: Owner will respond in writing to Contractor within 7 days of receipt of completed product list. Owner's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Owner's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.
- B. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Request Form: Use CSI Form 13.1A.
  2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified material or product cannot be provided.
    - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as

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- performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
  - e. Samples, where applicable or requested.
  - f. List of similar installations for completed projects with project names and addresses and names and addresses of Owners and owners.
  - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
  - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
  - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
  - j. Cost information, including a proposal of change, if any, in the Contract Sum.
  - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
  - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Owner's Action: If necessary, Owner will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Owner will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
- a. Form of Acceptance: Written approval of product substitution from Owner if there is no difference in project cost. Change Order if there is a difference in Project Cost.
  - b. Use product specified if Owner cannot make a decision on use of a proposed substitution within time allocated.
- C. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
- 1. Owner's Action: If necessary, Owner will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Owner will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
    - a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
    - b. Use product specified if Owner cannot make a decision on use of a comparable product request within time allocated.

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- D. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

### 1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

### 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
  - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:
  - 1. Store products to allow for inspection and measurement of quantity or counting of units.
  - 2. Store materials in a manner that will not endanger Project structure.
  - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
  - 4. Store cementitious products and materials on elevated platforms.
  - 5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
  - 6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
  - 7. Protect stored products from damage and liquids from freezing.
  - 8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

### 1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

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1. **Manufacturer's Warranty:** Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
  2. **Special Warranty:** Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. **Special Warranties:** Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
1. **Manufacturer's Standard Form:** Modified to include Project-specific information and properly executed.
  2. **Specified Form:** When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
  3. Refer to Divisions 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. **Submittal Time:** Comply with requirements in Owner's General Requirements.

## PART 2 - PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

- A. **General Product Requirements:** Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  2. **Standard Products:** If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  4. Where products are accompanied by the term "as selected," Owner will make selection.
  5. Where products are accompanied by the term "match sample," sample to be matched is Owner's.
  6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
  7. **Or Equal:** Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. **Product Selection Procedures:**
1. **Products:** Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
  2. **Manufacturers:** Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.

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3. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
4. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
5. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
6. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
7. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Owner's sample. Owner's decision will be final on whether a proposed product matches.
  - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
8. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
  - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Owner will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
  - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Owner will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

### 2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Owner will consider requests for substitution if received within 15 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Owner.
- B. Conditions: Owner will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Owner will return requests without action, except to record noncompliance with these requirements:

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1. Requested substitution offers Owner a substantial advantage in cost, time, warranty, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Owner for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution does not require extensive revisions to the Contract Documents.
3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect Contractor's Construction Schedule.
6. Requested substitution is compatible with other portions of the Work.
7. Requested substitution has been coordinated with other portions of the Work.
8. Requested substitution provides specified warranty or better.
9. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

### 2.3 COMPARABLE PRODUCTS

- A. Conditions: Owner will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Owner will return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
  2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
  3. Evidence that proposed product provides specified warranty.
  4. List of similar installations for completed projects with project names and addresses and names and addresses of Owners and owners, if requested.
  5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

# BUS SHELTERS & AMENITIES

## SECTION 05 10 00 - STRUCTURAL STEEL

### PART 1 - GENERAL

#### 1.1 WORK INCLUDED

- A. This section includes the fabrication and erection of structural steel.

#### 1.3 QUALITY ASSURANCE

- A. Qualifications of Fabricator: Fabricator shall have a minimum of 5 years experience in the fabrication of structural steel of structures similar in size to those in this project.
- B. Qualifications of Erector: Erector shall have a minimum of 5 years experience in the erection of structural steel of structures of similar size.
- C. Qualifications of Field Welders: Welders shall be certified in accordance with AWS D1.1 within the last 12 months.
- D. Reference Standards:

1. ASTM International (ASTM)

- |    |                          |   |
|----|--------------------------|---|
| a. | ASTM A 36/<br>A36M-08    | Standard Specification for Carbon Structural Steel  |
| b. | ASTM A 53/<br>A 53M-10   | Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-coated Welded and Seamless                       |
| c. | ASTM A 61/<br>A6M-11     | Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling. |
| d. | ASTM A 307-10            | Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength                                |
| e. | ASTM A 325-10            | Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength              |
| f. | ASTM A 490-11            | Specification for Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength                     |
| g. | ASTM A 500/<br>A500M-10a | Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes      |
| h. | ASTM A 992/<br>A 992M-11 | Standard Specification for Structural Steel Shapes  |

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- i. ASTM C 1107/  
C1107M-11 Standard Specification for Packaged Dry,  
Hydraulic-Cement Grout (non-shrink)
  - j. ASTM F1554-07ae1 Standard Specification for Anchor Bolts,  
Steel, 36, 55, and 105-ksi Yield Strength.
2. American Welding Society (AWS), latest edition.
    - a. AWS D1.1 Structural Welding Code-Steel
  3. American Institute of Steel Construction (AISC), Steel Construction Manual,  
latest edition.
    - a. Specification for Structural Steel Buildings
    - b. AISC Code of Standard Practice
    - c. Specification for Structural Joints Using ASTM A 325 or A 490 Bolts.

### 1.4 SUBMITTALS

- A. Shop Drawings: Submit shop drawings including complete details and schedules for fabrication and assembly of structural steel members. Include details of cuts, connections, camber, holes, and other pertinent data. Indicate welds by standard AWS symbols, and show size, length, and type of each weld. Shop drawings shall not be made by reproduction of the Contract Drawings.
- B. Welder Certification: Submit affidavit stating that all welders are certified in accordance with AWS and provide copies of welder's certificates.
- C. Provide the following full size and fully powdercoated mock-ups:
  1. Adjustable foot – details 1/2.0 & 4/2.0

### 1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Support structural steel above ground on skids, pallets, platforms, or other supports.
- B. Protect steel from damage.
- C. Store packaged materials in original unbroken package or container.
- D. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures.
- E. Replace damaged shapes or members.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

REV. 9/29/15

STRUCTURAL STEEL

05 10 00-2

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- A. All Angles, Channels, Plates, and Bars: ASTM A 36.
- B. Rectangular or Square Hollow Structural Section: ASTM A 500, Grade B,  $F_y = 46$  ksi.
- C. Anchor Bolts: ASTM F1554, Grade 36
- D. Break Away Anchor Bolts: Drop in Anchor with 6220 dent Bolt, by Dent Breakaway Industries, or equivalent
- E. High Strength Tension Control Threaded Fasteners: Meet requirements of ASTM A 325 or ASTM A 490.
- F. Welding Electrodes: E 70 Series.
- G. Shop Primer Paint: Fabricators standard rust inhibitive primer.
- H. Non-Metallic, Non-Shrink Grout: Meets the requirements of ASTM C 1107.
- I. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, non-staining, mixed with water to consistency suitable for application and a 30-minute working time. Grout shall have a minimum 28 day compressive strength of 6,000 psi.
  - 1. Subject to compliance with requirements, provide products by one of the following or an approved equal:
    - a. Five Star Fluid Grout 100; Five Star Products, Inc., Fairfield, Connecticut.
    - b. Crystex; L&M Construction Chemicals, Inc. Omaha, Nebraska.
    - c. Sure-Grip High Performance Grout; Dayton superior Corp., Miamisburg, Ohio.
    - d. SonnogROUT 10K; Sonneborn Building Products, Shakopee, Minnesota.
    - e. Sealight Pac-It Grout; W.R. Meadows, Inc., Hampshire, Illinois.
    - f. Enduro 50; Conspec Marketing & Manufacturing Co., Inc, Kansas City, Kansas.

## 2.2 FABRICATION

- A. Fabrication shall be in accordance with the AISC "Code of Standard Practice for Buildings and Bridges".
- B. Connections: Weld or bolt shop connections as indicated on the approved shop drawings. Design connections to support reactions and forces where indicated on the drawings.
- C. Shop Welds: Shall be visually inspected by the Fabricator's quality control department.

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### 2.3 POWDER COAT

- A. General: Powder coat structural steel. Refer to Section 09960
- B. Bench Seats: Bench seats to be finished with a thermoplastic coating. Refer to Section 09960
- C. All metals surfaces, except bench seats will be coated with a clear anti-graffiti top coat. Refer to section 09960.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Clean surfaces to receive structural steel prior to erection.

### 3.2 ERECTION

- A. General: Erect structural steel in accordance with AISC "Code of Standard Practice for Steel Buildings and Bridges".
- B. Field Assembly: Assemble structural steel accurately to the lines and elevations shown on the drawings. Align and adjust components accurately before fastening.
- C. Temporary Bracing: Provide temporary bracing or guys to secure structural steel against wind, seismic, or construction loads. It is the responsibility of the Contractor to maintain stability of the structure during erection.
- D. Bolted Connections: Install high strength tension control bolts in accordance with AISC Specifications for Structural Joints Using ASTM A325 and A490 Bolts and the manufacturer's instructions. Where clearance within a connection does not permit the use of tension control bolts, standard A325 bolts shall be used and inspected in accordance with the AISC Specification for Structural Joints.
- E. Welding: Perform all welds in accordance with AWS.
- F. Inspection of Welds: Perform visual inspection of all welds. If any welds appear to be unsatisfactory, they shall be tested in accordance with ASTM E160 and/or replaced at the expense of the Contractor.
- G. Gas Cutting: Do not use gas-cutting torches in field to cut structural framing.
- H. Do not enlarge unfair holes by burning. Ream holes that must be enlarged to admit bolts. Use waterproof neoprene washers, 1/4" thick, with hardware if holes are enlarged after powder coating.
- I. Grout Placement: Comply with the manufacturer's instructions.

END OF SECTION 05 10 00

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### SECTION 05310 - STEEL DECK

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Noncomposite form deck.
- B. Related Sections include the following:
  - 1. Division 5 Section "Structural Steel".
  - 2. Division 7 Section "Sheet Metal Flashing and Trim".

##### 1.3 SUBMITTALS

- A. Product Data: For each type of deck, accessory, and product indicated.
- B. Shop Drawings: Show layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.
- C. Product Certificates: For each type of steel deck, signed by product manufacturer.

##### 1.4 QUALITY ASSURANCE

- A. AISI Specifications: Comply with calculated structural characteristics of steel deck according to AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members."
- B. FMG Listing: Provide steel roof deck evaluated by FMG and listed in its "Approval Guide, Building Materials" for Class 1 fire rating and Class 1-90 windstorm ratings.

##### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

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1. Protect and ventilate acoustical cellular roof deck with factory-installed insulation to maintain insulation free of moisture.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  1. Steel Deck:
    - a. ASC Profiles, Inc.
    - b. Canam Steel Corp.;The Canam Manac Group.
    - c. Consolidated Systems, Inc.
    - d. DACS, Inc.
    - e. D-Mac Industries Inc.
    - f. Epic Metals Corporation.
    - g. Marlyn Steel Decks, Inc.
    - h. New Millennium Building Systems, LLC.
    - i. Nucor Corp.; Vulcraft Division.
    - j. Roof Deck, Inc.
    - k. United Steel Deck, Inc.
    - l. Valley Joist; Division of EBSCO Industries, Inc.
    - m. Verco Manufacturing Co.
    - n. Wheeling Corrugating Company; Div. of Wheeling-Pittsburgh Steel Corporation.
    - o. Vulcraft

### 2.2 NONCOMPOSITE FORM DECK

- A. Noncomposite Steel Form Deck: Fabricate ribbed-steel sheet noncomposite form-deck panels to comply with "SDI Specifications and Commentary for Noncomposite Steel Form Deck," in SDI Publication No. 30, with the minimum section properties indicated, and with the following:
  1. Galvanized Steel Sheet: ASTM A 653/A 653M, Structural Steel (SS), Grade 80 (550) zinc coating.
    - a. Color: Unfinished galvanized
  2. Profile Depth: 9/16 inch.
  3. Design Uncoated-Steel Thickness: 0.0179 inch (0.45 mm)
  4. Span Condition: Simple span unless otherwise indicated.
  5. Side Laps: Overlapped

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### 2.3 ACCESSORIES

- A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.
- B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.
- C. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi (230 MPa), not less than 0.0359-inch (0.91-mm) design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.
- D. Galvanizing Repair Paint: ASTM A 780.
- E. Repair Paint: Manufacturer's standard rust-inhibitive primer of same color as primer.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance.

### 3.2 INSTALLATION, GENERAL

- A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 30, manufacturer's written instructions, and requirements in this Section.
- B. Install temporary shoring before placing deck panels, if required to meet deflection limitations.
- C. Locate deck bundles to prevent overloading of supporting members.
- D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.
- E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.
- F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.
- G. Mechanical fasteners shall be used to fasten deck. Locate mechanical fasteners and install according to deck manufacturer's written instructions.

### 3.3 ROOF-DECK INSTALLATION

- A. Perimeter Edge Fastening: Fasten perimeter edges of panels between supports, at intervals not exceeding 6 inches (150 mm), and as follows:

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1. Mechanically fasten with self-drilling, No. 12 (5.5-mm-) diameter or larger, carbon-steel screws with neoprene washers.
- B. End Bearing: Install deck ends over supporting frame with a minimum end bearing of [1-1/2 inches (38 mm)], with end joints as follows:
  1. End Joints: Lapped 2 inches (51 mm) minimum.

### 3.4 FIELD QUALITY CONTROL

- A. Remove and replace work that does not comply with specified requirements.
- B. Additional inspecting, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

### 3.5 REPAIRS AND PROTECTION

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Repair Painting: Wire brush and clean rust spots, welds, and abraded areas on both surfaces of prime-painted deck immediately after installation, and apply repair paint.
  1. Apply repair paint, of same color as adjacent shop-primed deck, to bottom surfaces of deck exposed to view.
- C. Provide final protection and maintain conditions to ensure that steel deck is without damage or deterioration at time of Substantial Completion.

END OF SECTION 05310

## BUS SHELTERS & AMENITIES

### SECTION 05730 - ORNAMENTAL FORMED METAL

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Exterior decorative steel panels.
- B. Related Sections include the following:
  - 1. Division 5 Section "Structural Steel".
  - 2. Division 7 Section "Sheet Metal Flashing and Trim".
  - 3. Division 9 Section "High Performance Coatings".

##### 1.3 PERFORMANCE REQUIREMENTS

- A. Structural Loads: Capable of withstanding the following structural loads without exceeding the allowable design working stress of materials involved, including anchors and connections, and without exhibiting permanent deformation in any components:
  - 1. Wind Loads on Exterior Items: As indicated on Drawings
- B. Thermal Movements: Provide exterior ornamental formed-metal assemblies that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- C. Corrosion Control: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

##### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated, including finishes.

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- B. Shop Drawings: Detail fabrication and installation of ornamental formed metal. Include plans, elevations, sections, and details of components and their connections. Show anchorage and accessory items. Show decorative pattern as indicated on drawings, AutoCAD files are available at manufacturer's request.
- C. Samples for Initial Selection: Manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available for each type of ornamental formed-metal product indicated.
- D. Mockup for Verification: For decorative steel panel required, prepare one full size mockup of decorative steel panel of same thickness and material and finish indicated for the Work.
- E. Qualification Data: For powder-coating applicator.

### 1.5 QUALITY ASSURANCE

- A. Powder-Coating Applicator Qualifications: A firm experienced in successfully applying powder coatings of type indicated to metals of types indicated and employing competent control personnel to conduct continuing, effective quality-control program to ensure compliance with requirements.
- B. Source Limitations: Obtain each ornamental formed-metal item through one source from a single manufacturer.

### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver ornamental formed-metal products wrapped in protective coverings and strapped together in suitable packs or in heavy-duty cartons. Remove protective coverings before they stain or bond to finished surfaces.
- B. Store products on elevated platforms in a dry location.

### 1.7 PROJECT CONDITIONS

- A. Verify actual construction contiguous with ornamental formed metal by measurements before fabrication and indicate measurements on Shop Drawings.

### 1.8 COORDINATION

- A. Coordinate installation of anchorages for ornamental formed-metal items. Furnish setting drawings, templates, and directions for installing anchorages. Deliver such items to Project site in time for installation.
- B. Coordinate installation of ornamental formed metal with adjacent construction.

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### 1.9 EXTRA MATERIALS

- A. Furnish five extra finished decorative steel panels from same production run. Deliver extra materials to Owner.

## PART 2 - PRODUCTS

### 2.1 SHEET METAL

- A. General: Provide sheet metal without pitting, seam marks, roller marks, stains, discolorations, or other imperfections where exposed to view on finished units.
- B. Custom Perforated Sheet Steel Panels: Uncoated, cold-rolled, ASTM A 1008/A 1008M, commercial steel, Type B, exposed.
- C. Bench Top Perforated Sheet Steel: Hot rolled, plain steel ASTM A 1008, 11 gauge, square hole  $\frac{3}{4}$ " square on 1" centers, straight row hole pattern, 56% open area, mill finish.
- D. Tamper Proof Nuts: Conically shaped with three driving slots formed into the outer periphery, to match tamper proof nuts on existing bus shelters. Basis of design: Trident Nuts by Tanner Bolt & Nut Corporation.

### 2.2 MISCELLANEOUS MATERIALS

- A. Fasteners: Use fasteners fabricated from same basic metal and alloy as fastened metal, unless otherwise indicated. Do not use metals that are corrosive or incompatible with materials joined.
  - 1. Provide concealed fasteners for interconnecting ornamental formed-metal items and for attaching them to other work, unless otherwise indicated.
  - 2. Provide Phillips flat-head machine screws for exposed fasteners, unless otherwise indicated.
  - 3. Provide tamperproof nuts unless otherwise indicated
  - 4. Provide neoprene washers on both sides unless otherwise indicated.

### 2.3 PAINTS AND COATINGS

- A. Shop Primers: Provide primers that comply with Division 9 Section "High-Performance Coatings".
- B. Shop Primer for Ferrous Metal: Per Manufacturer's recommendations.

### 2.4 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble ornamental formed-metal items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for

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shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

- B. Coordinate dimensions and attachment methods of ornamental formed-metal items with those of adjoining construction to produce integrated assemblies with closely fitting joints and with edges and surfaces aligned, unless otherwise indicated.
- C. Form metal to profiles indicated, in maximum lengths to minimize joints. Produce flat, flush surfaces without cracking or grain separation at bends. Fold back exposed edges of unsupported sheet metal to form a 1/2-inch- (12-mm-) wide hem on the concealed side, or ease edges to a radius of approximately 1/32 inch (1 mm) and support with concealed stiffeners.
- D. Provide support framing, mounting and attachment clips, splice sleeves, fasteners, and accessories needed to install ornamental formed-metal items.
- E. Decorative pattern may be performed by punching, plasma cutting, water jet cutting or other standard procedures in order to achieve the pattern indicated on the drawings.

### 2.5 FINISHES, GENERAL

- A. Complete mechanical finishes of flat sheet metal surfaces before fabrication where possible. After fabrication, finish all joints, bends, abrasions, and other surface blemishes to match sheet finish.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Finish items indicated on Drawings after assembly.
- D. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

### 2.6 STEEL SHEET FINISHES

- A. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning," to remove dirt, oil, grease, or other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning," or SSPC-SP 8, "Pickling."
- B. Pretreatment: Immediately after cleaning, apply a conversion coating of type suited to organic coating applied over it.
- C. Factory Priming for Field-Painted Finish: Immediately after cleaning and pretreating, apply shop primer.
- D. Powder-Coat Finish: Immediately after cleaning and pretreating, apply manufacturer's standard thermosetting polyester or acrylic urethane powder coating with cured-film thickness not less

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than 1.5 mils (0.04 mm). Prepare, treat, and coat metal to comply with resin manufacturer's written instructions.

1. Color and Gloss: Anodized Silver (Per TIGER Drylac Powder Coatings)

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of ornamental formed metal.
  1. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

- A. Locate and place ornamental formed-metal items level and plumb and in alignment with adjacent construction.
- B. Use concealed anchorages where possible. Provide neoprene washers fitted to screws where needed to protect metal surfaces.
- C. Form tight joints with exposed connections accurately fitted together.
- D. Corrosion Protection: Apply nonmelting/nonmigrating-type bituminous coating or other permanent separation materials on concealed surfaces where metals would otherwise be in direct contact with substrate materials that are incompatible or could result in corrosion or deterioration of either material or finish.

#### 3.3 ADJUSTING

- A. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit or provide new units.

#### 3.4 PROTECTION

- A. Protect finishes of ornamental formed-metal items from damage during construction period. Remove temporary protective coverings at time of Substantial Completion.

END OF SECTION 05730

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### SECTION 07620 - SHEET METAL FLASHING AND TRIM

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Formed roof flashing and trim.
- B. Related Sections include the following:
  - 1. Division 5 Section "Steel Deck".

##### 1.3 PERFORMANCE REQUIREMENTS

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.
- B. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

##### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Show layouts of sheet metal flashing and trim, including plans and elevations. Distinguish between shop- and field-assembled work. Include the following:
  - 1. Identify material, thickness, weight, and finish for each item and location in Project.

## BUS SHELTERS & AMENITIES

2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
3. Details for fastening, joining, supporting, and anchoring sheet metal flashing and trim, including fasteners, clips, cleats, and attachments to adjoining work.
4. Details of special conditions.
5. Details of connections to adjoining work.

### 1.5 QUALITY ASSURANCE

- A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.
- B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

### 1.7 COORDINATION

- A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

## PART 2 - PRODUCTS

### 2.1 SHEET METALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating designation; structural quality.

### 2.2 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.

## BUS SHELTERS & AMENITIES

1. Exposed Fasteners: Heads matching color of sheet metal by means of plastic caps or factory-applied coating.
2. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws, gasketed, with hex washer head.

### 2.3 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.
- B. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
- C. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
- D. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with elastomeric sealant concealed within joints.
- E. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.
- F. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
  1. Thickness: As recommended by SMACNA's "Architectural Sheet Metal Manual" for application but not less than thickness of metal being secured.

### 2.4 SHEET METAL FABRICATIONS

- A. Eave, Rake Flashing: Fabricate from the following material:
  1. Galvanized Steel: 0.0217 inch (0.55 mm) thick.

### 2.5 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## BUS SHELTERS & AMENITIES

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of work.
  - 1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
  - 2. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

#### 3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
  - 1. Torch cutting of sheet metal flashing and trim is not permitted.
  - 2. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.
- C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
- D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams.
- E. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- F. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with elastomeric sealant concealed within joints.
- G. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.
  - 1. Galvanized or Prepainted, Metallic-Coated Steel: Use stainless-steel fasteners.

## BUS SHELTERS & AMENITIES

### 3.3 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal roof flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.
- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in FMG Loss Prevention Data Sheet 1-49 for specified wind zone and as indicated.

### 3.4 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07620

## BUS SHELTERS & AMENITIES

### SECTION 09960 - HIGH-PERFORMANCE COATINGS

#### PART 1 - GENERAL

##### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Surface preparation and application of high-performance coating systems.
  - 2. Powder Coating
  - 3. Thermoplastic Powder Coating
  - 4. Anti-Graffiti Powder Coating
- B. Related Sections include the following:
  - 1. Division 5 Section "Structural Steel"
  - 2. Division 5 Section "Ornamental Formed Metal"
- C. The following submittal uses Tiger Drylac Series 38 Specification data for powder coating applied to metal surfaces.
- D. Tiger Drylac Series 38 shall be used as a basis of design. An equal product meeting all general specifications can be substituted and shall be provided as a submittal for review.
- E. The following submittal uses Innotek Polyarmor G17 technical data for thermoplastic powder coating applied to metal surfaces.
- F. Innotek Polyarmor G17 shall be used as a basis of design. An equal product meeting all general specifications can be substituted and shall be provided as a submittal for review.
- G. The following submittal uses Tiger Drylac Series 44 Anti-Graffiti Specification data for powder coating applied to metal surfaces or other substrates.
- H. Tiger Drylac Series 44 Anti-Graffiti shall be used as a basis of design. An equal product meeting all general specifications can be substituted and shall be provided as a submittal for review.

##### 1.3 REFERENCES

###### 1.3.1 POWDER COATING

## BUS SHELTERS & AMENITIES

### A. American Society for Testing and Materials (ASTM)

1. ASTM B117 – Practice for Operating Salt Spray (Fog) Apparatus.
2. ASTM D522 – Test Methods for Mandrel Bend Test of Attached Organic Coatings.
3. ASTM D523 – Test Method for Specular Gloss.
4. ASTM D714 – Test Method for Evaluating Degree of Blistering of Paints.
5. ASTM D968 – Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive.
6. ASTM D1400 – Test Method for Nondestructive Measurement of Dry Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base.
7. ASTM D1654 – Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
8. ASTM D1730 – Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting.
9. ASTM D2247 – Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
10. ASTM D2794 – Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
11. ASTM D3359 – Test Methods for Measuring Adhesion by Tape Test.
12. ASTM D3363 – Test Method for Film Hardness by Pencil Test.
13. ASTM D3451 – Practices for Testing Polymeric Powders and Powder Coatings.
14. ASTM D4214 – Test Method for Evaluating Degree of Chalking of Exterior Paint Films.
15. ASTM D5382 – A Guide to Evaluation of Optical Properties of Powder Coatings.
16. ASTM D5861 – Guide to Significance or Particle Size Measurements of Coating Powders.
17. ASTM D6441 – Test Methods for Measuring the Hiding Power of Powder Coatings.

### B. American Architectural Manufacturer's Association (AAMA)

## BUS SHELTERS & AMENITIES

1. AAMA 2604-05 – Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.

### C. International Organization for Standardization (ISO)

1. ISO 1519 - Paints and varnishes - Bend test (cylindrical mandrel).
2. ISO 1520 - Paints and varnishes - Cupping test.
3. ISO 2409 - Paints and varnishes - Cross-cut test.
4. ISO 2815 - Paints and varnishes - Buchholz indentation test.

## 1.3.2 THERMOPLASTIC POWDER COATINGS

### A. American Society for Testing and Materials (ASTM)

1. ASTM D 792
2. ASTM D 4541
3. ASTM D 2240
4. ASTM D 2794
5. ASTM D 1525
6. ASTM D 638
7. ASTM D 2247
8. ASTM D 117
9. ASTM D 53
10. ASTM D 4060
11. ASTM D 522
12. ASTM D 523
13. ASTM D 1238

## 1.3.3 ANTI-GRAFFITI POWDER COATING

### A. American Society for Testing and Materials (ASTM)

## BUS SHELTERS & AMENITIES

1. ASTM B117 – Practice for Operating Salt Spray (Fog) Apparatus.
2. ASTM D522 – Test Methods for Mandrel Bend Test of Attached Organic Coatings.
3. ASTM D523 – Test Method for Specular Gloss.
4. ASTM D609 – Practice for preparation of Cold-Rolled Steel Panels for Testing Paint, Varnish, Coatings, and related Coating Products
5. ASTM D610 – Test method for Evaluating Degree of Rusting on Painted Steel Surfaces
6. ASTM D714 – Test Method for Evaluating Degree of Blistering of Paints.
7. ASTM D870 – Test Method for Testing Water Resistance of Coatings Using Water Immersion
8. ASTM D968 – Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive.
9. ASTM D1014 – Practice for Conducting Exterior Exposure Tests of Paints on Steel.
10. ASTM D1186 – Test Methods for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to a Ferrous Base
11. ASTM D1400 – Test Method for Nondestructive Measurement of Dry Film Thickness of Nonconductive Coatings Applied to a Nonferrous Metal Base.
12. ASTM D1654 – Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
13. ASTM D1729 – Practice for Visual Appraisal of Colors and Color Differences of Diffusely Illuminated Opaque Materials.
14. ASTM D1730 – Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting.
15. ASTM D1735 – Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus
16. ASTM D2244 – Test Method for Calculation of Color Differences from Instrumentally Measured Coordinates.
17. ASTM D2247 – Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
18. ASTM D2794 – Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).

## BUS SHELTERS & AMENITIES

19. ASTM D3359 – Test Methods for Measuring Adhesion by Tape Test.
20. ASTM D3363 – Test Method for Film Hardness by Pencil Test.
21. ASTM D3451 – Practices for Testing Polymeric Powders and Powder Coatings.
22. ASTM D4214 – Test Method for Evaluating Degree of Chalking of Exterior Paint Films.
23. ASTM D5382 – A Guide to Evaluation of Optical Properties of Powder Coatings.
24. ASTM D5861 – Guide to Significance or Particle Size Measurements of Coating Powders.
25. ASTM D6441 – Test Methods for Measuring the Hiding Power of Powder Coatings.
26. ASTM E284 – Terminology of Appearance
27. ASTM E1164 – Practice for Obtaining Spectrophotometric Data for Object-color Evaluation
28. D6578-00 - Standard Practice for Determination of Graffiti Resistance

### B. American Architectural Manufacturer's Association (AAMA)

1. AAMA 2603-02 – Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.

### C. International Organization for Standardization (ISO)

1. ISO 1519 - Paints and varnishes - Bend test (cylindrical mandrel).
2. ISO 1520 - Paints and varnishes - Cupping test.
3. ISO 2409 - Paints and varnishes - Cross-cut test.
4. ISO 2815 - Paints and varnishes - Buchholz indentation test.
5. ISO 8130-7 Determination of loss of mass on stoving
6. ISO 8130-12 Determination of compatibility

## 1.4 SUBMITTALS

- A. Submit full records of all products used. List each product in relation to finish formula and include the following:

## BUS SHELTERS & AMENITIES

1. Product type and use.
  2. Manufacturer's product number.
  3. Color numbers or descriptions.
  4. Manufacturer's Material Safety Data Sheets (MSDS).
- B. Submit manufacturer's application instructions for each product specified.
- C. Submit certification that all materials have been applied in accordance with the coating manufacturer's recommendations.

### 1.5 SAMPLES

- A. Submit 12" x 8" mm sample panels of each finish type, color, and texture specified.
- B. Submit full range of available colors where color availability is restricted.
- C. Use 1.5 mm (14 gage) aluminum or steel q-panels for sample finish.

### 1.6 QUALITY ASSURANCE

1. Standard of Acceptance:
  - a. Final coat to exhibit uniformity of color and uniformity of gloss across full surface area.
  - b. Quality of coated products to conform to specified requirements.

### 1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver and store materials in original packaging, sealed, with labels intact. (see Product Descriptions)
- B. Indicate on containers or wrappings:
  1. Manufacturer's name and address.
  2. Type of coating.
  3. Color number in accordance with established color schedule.
  4. Batch number.
- C. Provide and maintain dry, temperature controlled, secure storage.

### 1.8 ENVIRONMENTAL REQUIREMENTS

## BUS SHELTERS & AMENITIES

- A. Maintain substrate and ambient temperature limits required by coating manufacturer.
- B. Apply coating only when surface to be coated is dry and adequately pre-treated.

### 1.9 SCHEDULING

- A. Submit work schedule for various stages of coating application.
- B. Submit schedule minimum 48 hours in advance of operations.

## PART 2 PRODUCTS

### 2.1 POWDER COATING

#### 2.1.1 MANUFACTURER

- A. TIGER Drylac® U.S.A., Inc., 1261 East Belmont Street, Ontario, California 91761; Phone (909)-930-9100, Fax (909) 930-9111; E-mail address: tiger@drylac.com. Web site address: www.tigerdrylac.com
- B. Substitutions: Allowed. Meet all general specifications included.

#### 2.1.2 MATERIALS

- A. Powder Coating: Super Durable Polyester resin-based thermosetting powder, Tiger Drylac Series 38 High Performance Architectural Coating.

#### 2.1.3 COLORS

- A. Selection of colors:
  - 1. Frame: 038/90018 Argento 314 Metallic.
  - 2. Panels: 038/91020 Anodized Silver

#### 2.1.4 COATING FINISHES

- A. Shop primed ferrous metal surfaces:
  - 1. Thermosetting Polyester Resin-based Powder.
- B. Galvanized and zinc coated metal surfaces:
  - 1. Thermosetting Polyester Resin-based Powder.

## BUS SHELTERS & AMENITIES

### **2.2 THERMOPLASTIC POWDER COATING**

#### **2.2.1 MANUFACTURER**

- A. Innotek Powder Coatings, LLC
- B. Substitutions: Allowed. Meet all general specifications included.

#### **2.2.2 MATERIALS**

- A. Thermoplastic Powder Coating: Polyarmor G17 polyethylene copolymer thermoplastic powder coating.

#### **2.2.3 COLORS**

- A. Selection of colors:
  - 1. Benchtops: H101 Black.

### **2.3 ANTI-GRAFFITI POWDER COATING**

#### **2.3.1 MANUFACTURER**

A. TIGER Drylac® U.S.A., Inc., 1261 East Belmont Street, Ontario, California 91761; Phone (909)-930-9100, Fax (909) 930-9111; E-mail address: tiger@drylac.com. Web site address: www.tigerdrylac.com

- B. Substitutions: Allowed. Meet all general specifications included.
- C. Coating to be applied by an applicator with the appropriate facilities (spray equipment, oven, controlled environment, etc...)

#### **2.3.2 MATERIALS**

- A. Powder Coating: Polyester resin-based thermosetting powder, Series 44 – Anti-Graffiti, weather resistant Polyester Urethane for Exterior or Interior applications.

#### **2.3.3 COLORS**

- A. Selection of colors:
  - 1. All Powder Coated Surfaces: Smooth Glossy Finish Color: 44/10008 – Clear

#### **2.3.4 COATING FINISHES**

## BUS SHELTERS & AMENITIES

- A. Shop primed ferrous metal surfaces:
  - 1. Thermosetting Polyester Resin-based Powder.
- C. Galvanized and zinc coated metal surfaces:
  - 1. Thermosetting Polyester Resin-based Powder.

### **PART 3 EXECUTION**

#### **3.1 PREPARATION**

- A. Grind fabrication welds smooth.
- B. Clean surfaces prior to pretreatment coating.
- C. Surfaces to Receive Finishes: Dry and free of debris, oils, dust, or other deleterious materials.

#### **3.2 CLEANING**

- A. Clean surfaces to be coated as follows:
  - 1. Remove all dust, dirt, and other surface debris by vacuuming, wiping dry with clean cloths or compressed air.
  - 2. Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
  - 3. Allow surfaces to drain completely and allow to thoroughly dry.
- B. If the above procedures do not clean the substrate surfaces, clean the surfaces with high pressure water washing.
- C. Apply pretreatment as soon as possible after cleaning and before surface deterioration occurs.
- D. Pre-treat iron phosphate for steel, zinc phosphate for galvanized or steel structures and yellow or green chromating, or approved chrome-free for aluminum substrates.

### **3.3 APPLICATION**

#### **3.3.1 POWDER COATING**

- A. Apply coating to requirements of coating manufacturer's written application instructions.
- B. Method of Application: Applicator to submit information regarding preferred method of application for review. Application types include the following: Electrostatic manual spraying. Electrostatic automatic spraying. Tribo/Airstatic manual spraying. Tribo/Airstatic automatic spraying. Metallic powder coating by electrostatic processing.
- C. Spray application.
  - 1. Provide and maintain equipment that is suitable for intended purpose, capable of properly fluidizing powder coating to be applied.
  - 2. Apply coating materials to clean surfaces to minimum 2.5 - 3.5 mil dry film thickness or as specified by manufacturer.
  - 3. Ensure coating adheres to internal corners and recessed areas.
- D. Allow surfaces to cure for minimum time period as required by manufacturer.
- E. Cure in accordance with manufacturer's cure curves.

#### **3.3.1 THERMOPLASTIC POWDER COATING**

- A. Apply coating to requirements of coating manufacturer's written application instructions.
- B. Method of Application: Applicator to submit information regarding preferred method of application for review. Application types include the following: Electrostatic manual spraying. Electrostatic automatic spraying. Fluidized bed dip coating.
- C. Spray application per manufacturer's recommendations.
  - 1. Provide and maintain equipment that is suitable for intended purpose, capable of properly fluidizing powder coating to be applied.
  - 2. Apply coating materials to clean surfaces to minimum 2.5 - 3.5 mil dry film thickness or as specified by manufacturer.
  - 3. Ensure coating adheres to internal corners and recessed areas.
- D. Allow surfaces to cure for minimum time period as required by manufacturer.
- E. Cure in accordance with manufacturer's cure curves.

**3.3.2 ANTI-GRAFFITI POWDER COATING**

- A. Apply coating to requirements of coating manufacturer's written application instructions.
- B. Method of Application: Applicator to submit information regarding preferred method of application for review. Application types include the following: Electrostatic manual spraying. Electrostatic automatic spraying. Tribo/Airstatic manual spraying. Tribo/Airstatic automatic spraying. Metallic powder coating by electrostatic processing.
- C. Spray application per manufacturer's recommendations.
  - 1. Provide and maintain equipment that is suitable for intended purpose, capable of properly fluidizing powder coating to be applied.
  - 2. Apply coating materials to clean surfaces to minimum 2.5 - 3.5 mil dry film thickness or as specified by manufacturer.
  - 3. Ensure coating adheres to internal corners and recessed areas.
- D. Allow surfaces to cure for minimum time period as required by manufacturer.
- E. Cure in accordance with manufacturer's cure curves.
- F. Apply Anti-Graffiti Coating as a final coating over previously applied powder coating.

**3.4 FIELD QUALITY CONTROL**

- A. Advise when each applied coating is ready for review.

END OF SECTION 09960

# **BUS SHELTERS & AMENITIES PHASE 2**

Santa Fe, NM

## **PROJECT MANUAL APPENDIX**

July 14, 2015

### **Autotroph Inc.**

422 Greg Ave  
Santa Fe, NM 87501  
phone: 505.216.7555



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## **APPENDIX**

**SELECTED APPROVED SUBMITTALS FROM FIRST PHASE OF PROJECT**



# APPENDIX

**The following information is provided for information purposes only.**

The following pages include the pertinent approved submittals from Phase 1 of the Bus Shelters and Amenities project. It is intended to be utilized as reference information for Phase 2. In the event of a conflict between the Drawings & Specifications and the appendix information, the drawings & specifications govern. The contractor shall notify the City of Santa Fe of any discrepancy between the Drawings & Specifications and Appendix information, prior to performing any work affected by the discrepancy.



City of Santa Fe  
2651 Siringo Rd.  
Santa Fe, NM 87505



Autotroph Design  
617 B Paulin St.  
Santa Fe, NM 87505



## Meridian Contracting, Inc.

3223 Los Arboles NE Albuquerque, NM 87107 PH: 505-872-2841 FAX: 505-884-0260



## Santa Fe Bus Shelters - CIP Project #665

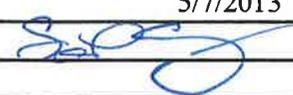
### Transmittal Form

Sent By: Sean Conway - Project Engineer

Sent to: Autotroph Design

Date: 5/7/2013

Attn: Jayita Sahni

Signature: 

Submittal #: 1 - Revision 1

Subcontractor / Supplier: **LNI Custom Manufacturing**

Specification # / Drawing: **05100, 05310, 05730, 07620, 09960**

#### Attachments:

Shop Drawing for Product Package  
A and B  
  
 Quality Assurance Certification

Material Product Data

#### Submitted For:

Approval  
  
 Your Use

As Requested  
  
 Information Purposes Only

#### Sent Via:

Attached

Separate Cover Via:

#### Comments

\*Provided are four copies for your use and two additional. Please return the additional approved copies for our record.



design • build • deploy

[www.LNIsigns.com](http://www.LNIsigns.com)

# Santa Fe Bus Shelters

## SUBMITTALS:

TECHNICAL INFORMATION RELATING TO:  
PRODUCT PACKAGE A  
PRODUCT PACKAGE B  
COMPONENTS: W, B, F

COLOR SAMPLES TO BE DELIVERED VIA FEDEX ASAP  
MOCK UPS WILL BE PROVIDED ONCE DRAWINGS ARE APPROVED

LNI CUSTOM MANUFACTURING, Inc.

Project No. 13017  
05/06/2013



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QUALITY ASSURANCE CERTIFICATE

MATERIAL DESCRIPTION & PRODUCT DATA

POWDER COATING APPLICATION & QUALIFICATION

**SUBMITTAL REVIEWED BY CHAVEZ-GRIEVES ENGINEERING. THE REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND FOR GENERAL COMPLIANCE WITH THE PLANS AND SPECIFICATIONS AND SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR OF THE FULL RESPONSIBILITY FOR PROVIDING MATERIALS, EQUIPMENT, AND WORK REQUIRED BY THE CONTRACT, THE PROPER FITTING AND CONSTRUCTION OF THE WORK, ACCURACY AND COMPLETENESS OF THE SUBMITTAL, SELECTING FABRICATION PROCESS AND TECHNIQUES OF CONSTRUCTION AND PERFORMING THE WORK IN A SAFE MANNER.**

PLEASE CORRECT AND RESUBMIT

RESUBMITTAL IS NOT REQUIRED, CORRECTIONS, IF ANY ARE NOTED

**CHAVEZ-GRIEVES  
CONSULTING ENGINEERS, INC.**

ACCT NO.: J21-110-11

BY: GB

DATE: 05/15/13

# autotroph

APPROVED

NOT APPROVED

APPROVED AS NOTED  NO ACTION REQUIRED

REVISE AND RESUBMIT

Architect's review and action is only for the limited purpose of checking for conformance with the information given and the design concept expressed in the Contract Documents. Architect's approval does not indicate approval of the accuracy and completeness of other details such as dimensions and quantities, or of instructions for installation or performance of equipment or systems, or of an assembly of which a specific item is a component.

DATE: 5/15/2013



design • build • deploy

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# SHOP DRAWINGS:

COMPONENT B1  
COMPONENT B2,W1,W2,W3  
PRODUCT PACKAGE A  
PRODUCT PACKAGE B



# Santa Fe Trails

Component "B1"

4/15/2013

Qty. 39

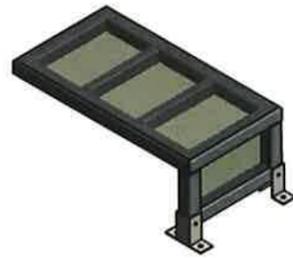


 5/1/13 Welding Symbols

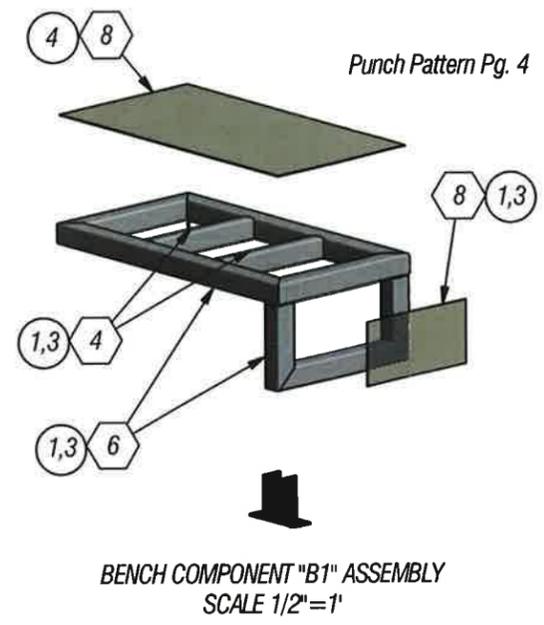
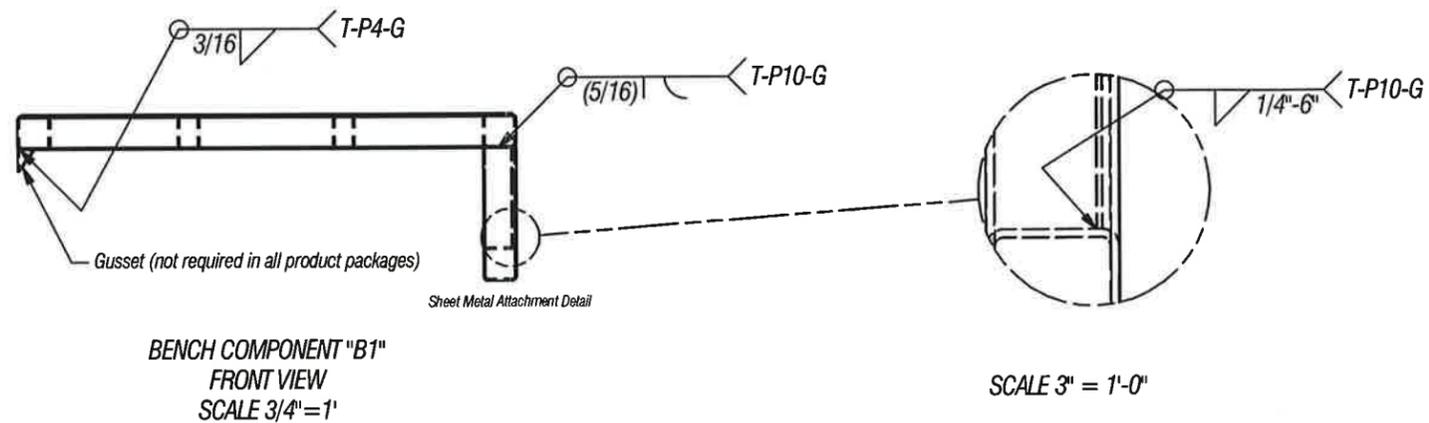
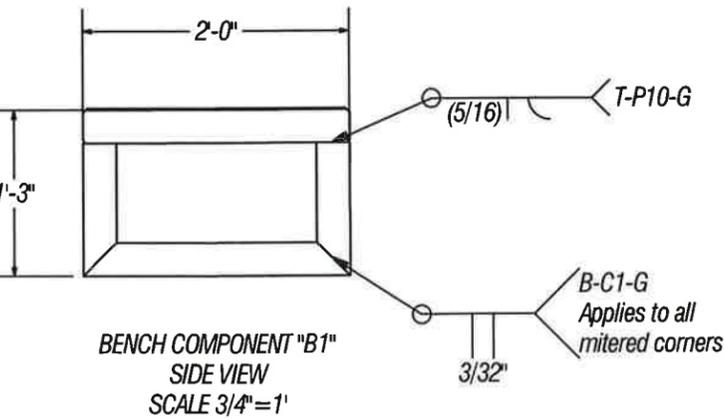
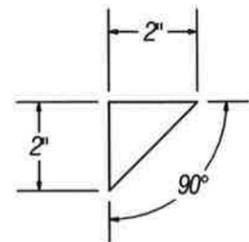
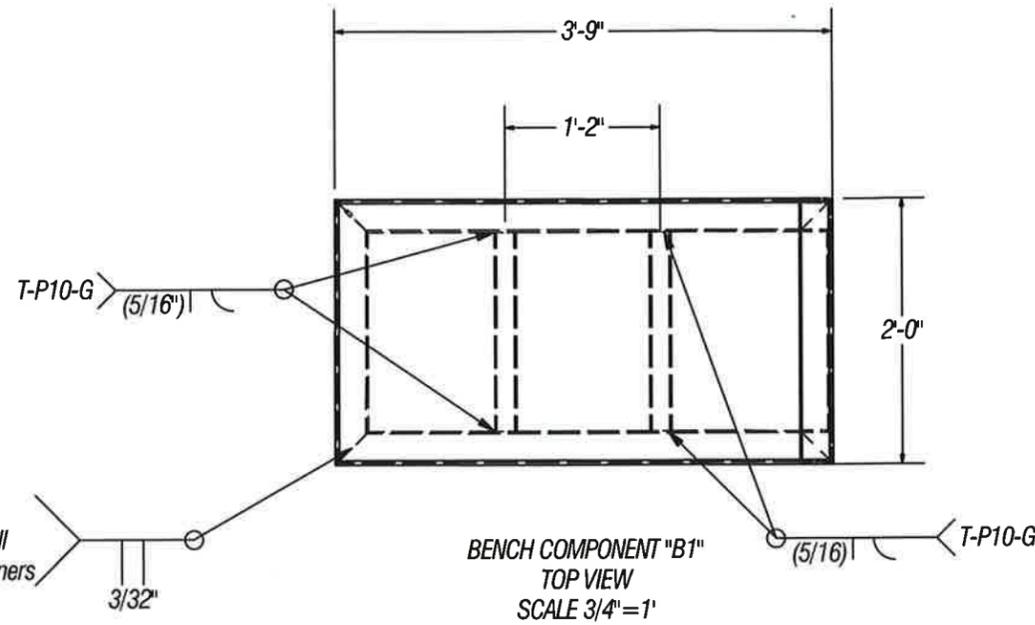
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Fax 310 978 4000



BENCH COMPONENT "B1"  
SCALE 3/8"=1'



Note: 11 Ga Steel Square Pattern Mesh attached to frame with #12 tamperproof self-taping screws with Neoprene washers @ 6" O.C  
11 Ga. Side steel mesh to be attached to the bench component structure by welding tacks @ 6" O.C  
Attach base foot using #12 Self Tapping screws with neoprene washers. One in each side of the foot base.

Material Legend	
1	1/2" Steel Plate
2	20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend	
1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

**Notes**  
All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

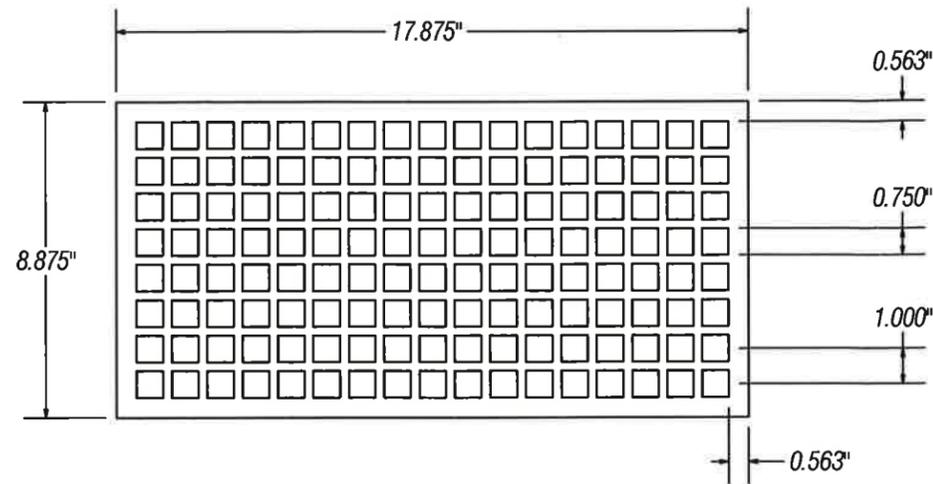
Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

COMPONENT "B1"	
Date:	4/15/2013
Comments:	

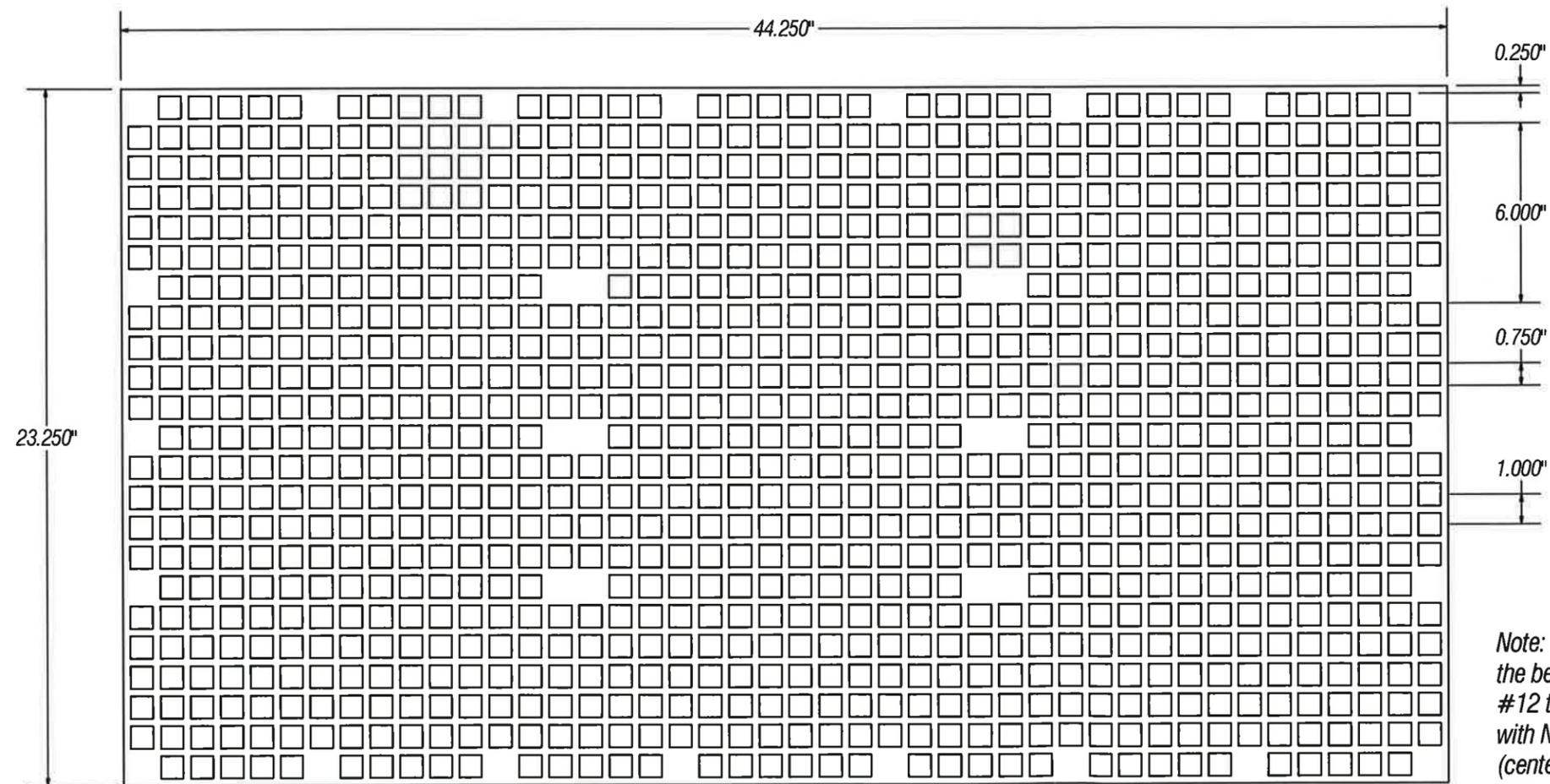
12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000

△	Date:	By:	
R1	5/1/13	JS	Welding Information

Sheet
2



Note: 11 Ga. Side steel mesh to be attached to the bench component structure by welding tacks @ 6" O.C



Note: 11 Ga. Steel to be attached to the bench component structure using #12 tamperproof self-taping screws with Neoprene washers @ 6" O.C (center of the blanks in the pattern)

Material Legend	
1	1/2" Steel Plate
2	16 Ga. See 2, 3 / 20 20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend	
1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.

Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

11Ga. Bench Seat Perforated Punched Pattern	
Date:	4/15/2013
Comments:	



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Hawthorne, California 90250  
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Fax 310 978 4000

△	Date:	By:	
R1	5/1/13	JS	Welding Information

# Santa Fe Trails

Components "B2", "W1", "W2" and "W3"

4/15/2013

B2 Qty. 7  
W1 Qty. 8  
W2 Qty. 14  
W3 Qty. 26



 5/1/13 Welding Symbols

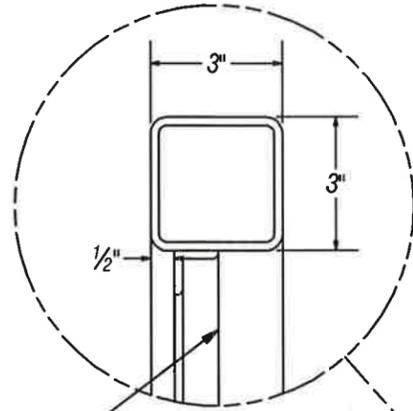
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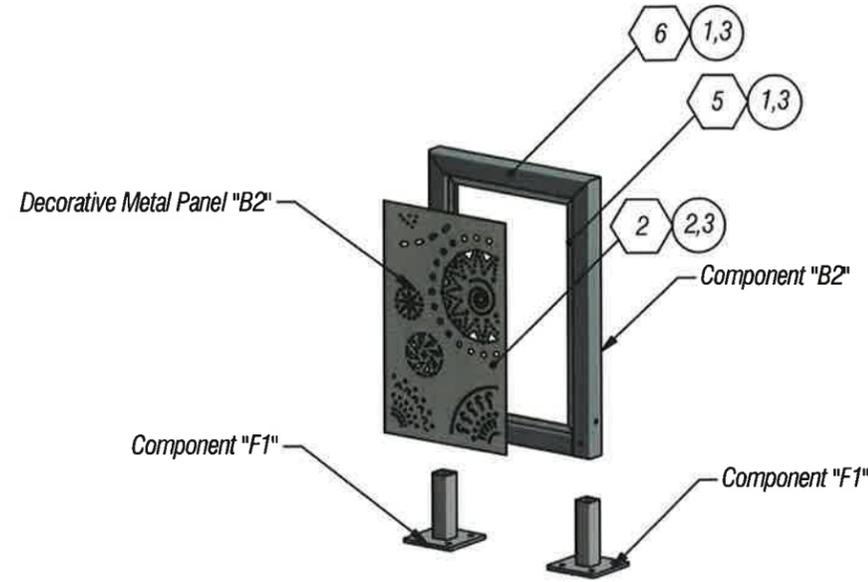
12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000



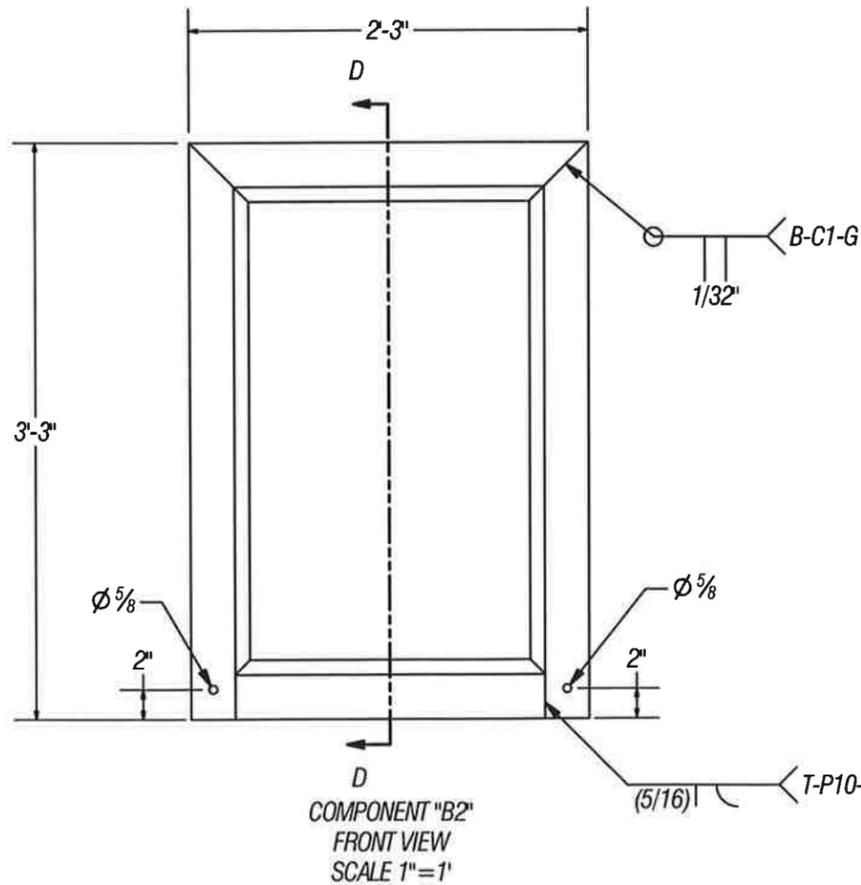
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ISOMETRIC VIEW  
SCALE 3/8"=1"



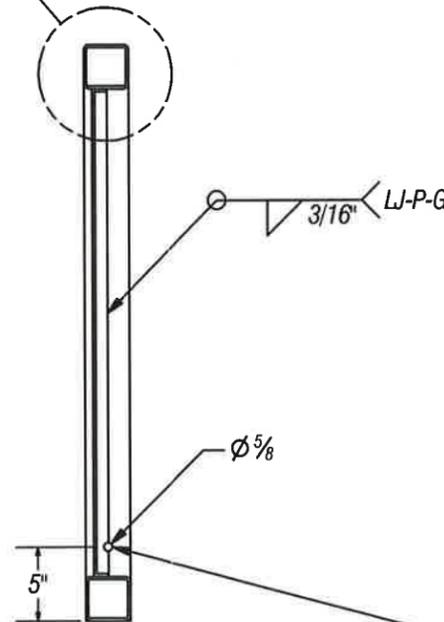
LJ-P-G  
3/16"  
COMPONENT "B2"  
SECTION DETAIL  
SCALE 3"=1"



COMPONENT "B2"  
ASSEMBLY  
SCALE 1/2"=1"



COMPONENT "B2"  
FRONT VIEW  
SCALE 1"=1"



COMPONENT "B2"  
SECTION D-D  
SCALE 1"=1"

Note: Decorative metal panels are fastened to the 1"x1" angle with a 1/4" threaded rod fastener tamperproof nut with neoprene washers on both sides @ 6" O.C. (20). See Page 8

CAUTION: bolt is offset. See 4/2.0  
The use of this bolted connection might conflict with Metal Decorative Panel frame.  
LNI Recommends to use only lower bolt. Use both bolts

### Material Legend

1	1/2" Steel Plate
2	20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

### Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

### Notes

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

COMPONENT "B2"	
Date:	4/15/2013
Comments:	



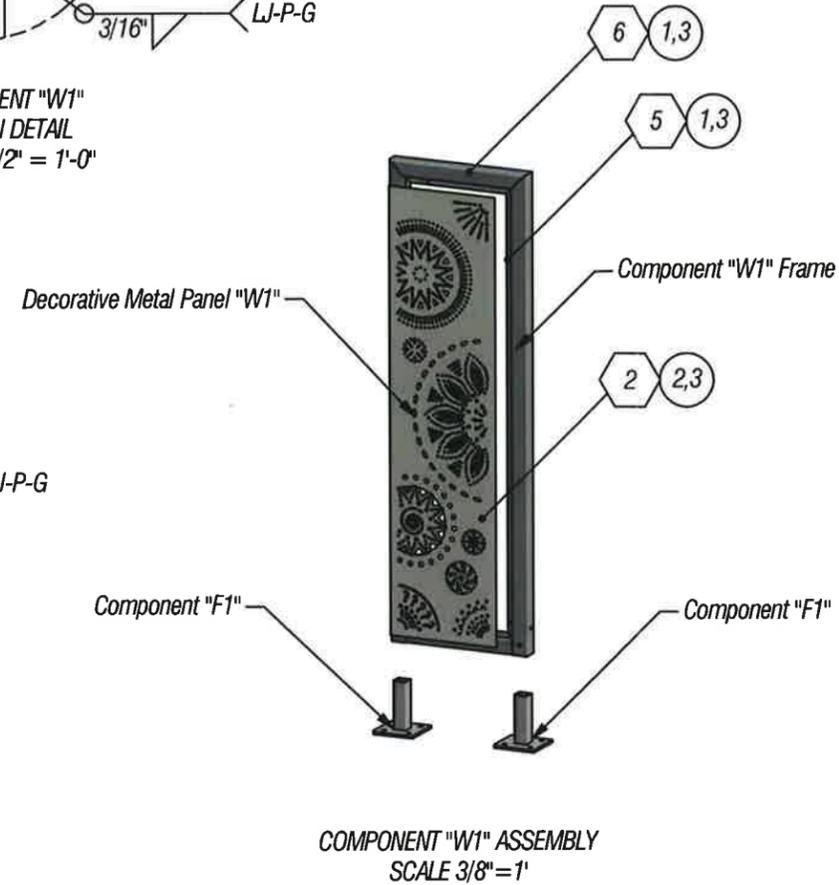
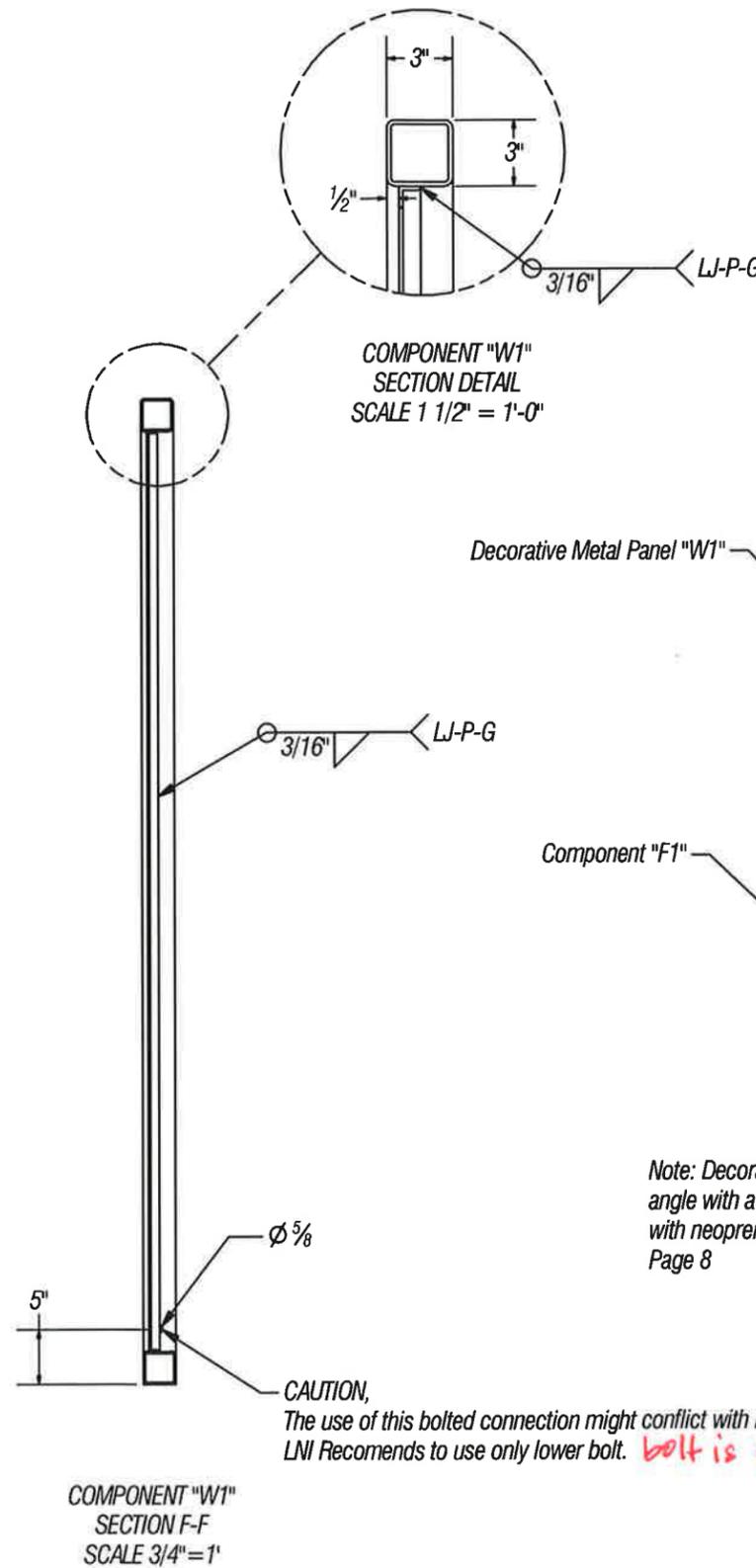
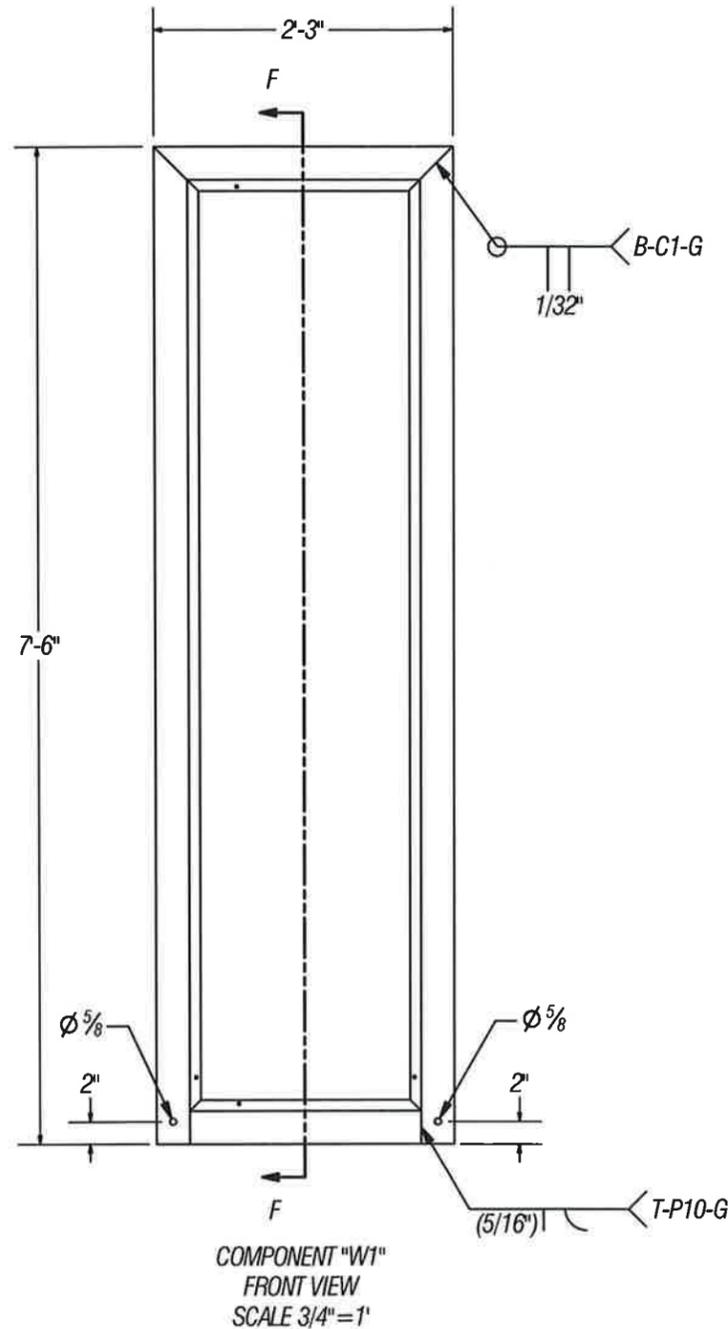
△	Date:	By:		
R1	5/1/13	JS	Welding Symbols	

Sheet

2



COMPONENT "W1"  
ISOMETRIC VIEW  
SCALE 3/8"=1"



Note: Decorative metal panels are fastened to the 1"x1" angle with a 1/4" threaded rod fastener tamperproof nut with neoprene washers on both sides @ 6" O.C. (20) See Page 8

CAUTION,  
The use of this bolted connection might conflict with Metal Decorative Panel frame.  
LNI Recommends to use only lower bolt. *bolt is offset. See 4/2.0. Use both bolts.*

Material Legend

1	1/2" Steel Plate
2	20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

Notes

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

COMPONENT "W1"	
Date:	4/15/2013
Comments:	

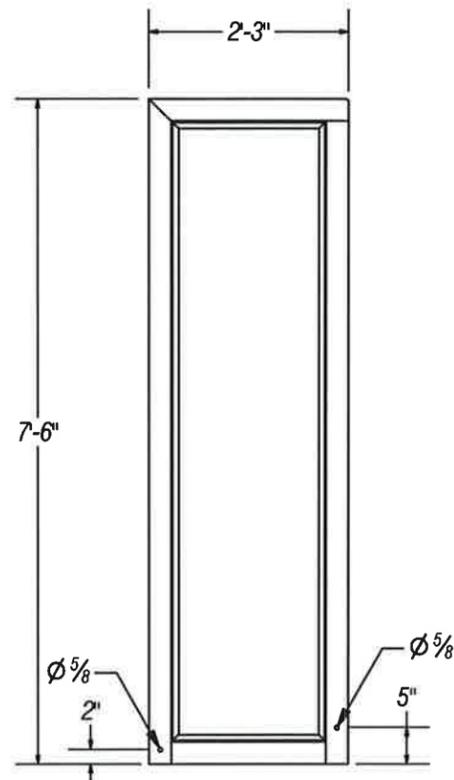


△	Date:	By:	
R1	5/1/13	JS	Welding Symbols

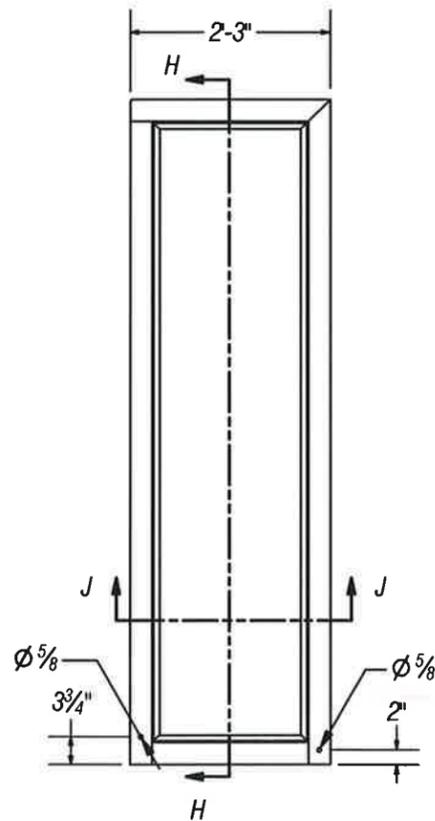
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3



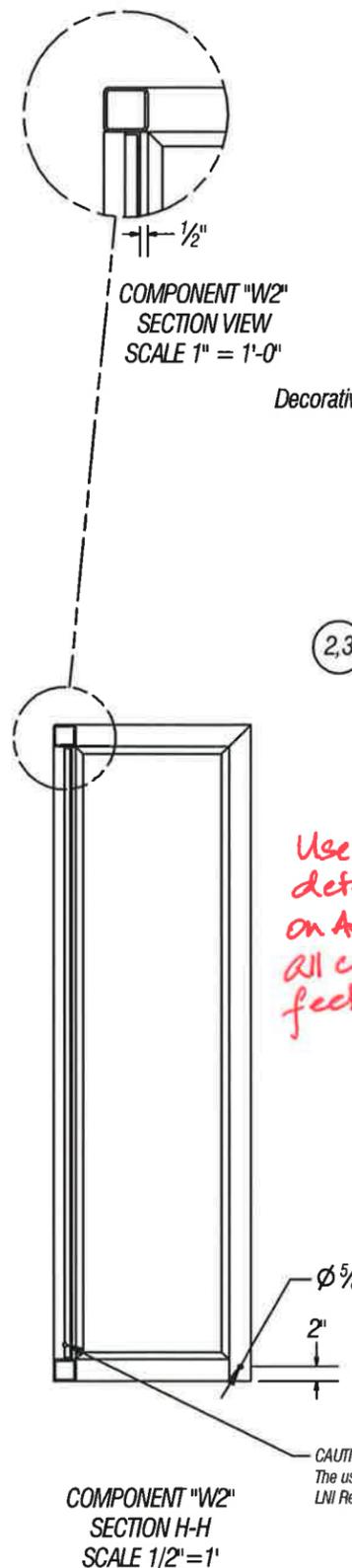
COMPONENT "W2"  
ISOMETRIC VIEW  
SCALE 3/8"=1'



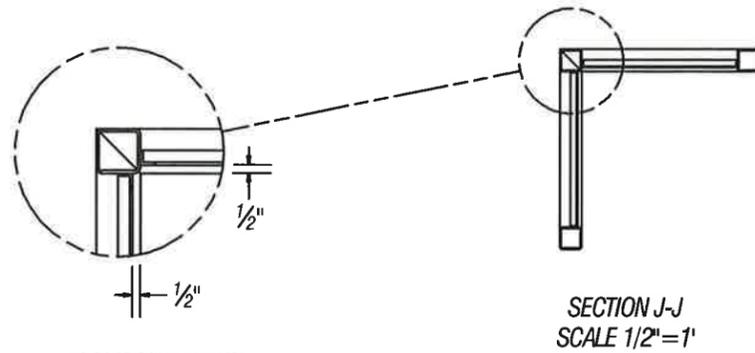
COMPONENT "W2"  
SIDE VIEW  
SCALE 1/2"=1'



COMPONENT "W2"  
FRONT VIEW  
SCALE 1/2"=1'



COMPONENT "W2"  
SECTION H-H  
SCALE 1/2"=1'



COMPONENT "W2"  
TOP SECTION VIEW  
SCALE 1"=1'-0"

SECTION J-J  
SCALE 1/2"=1'



COMPONENT "W2" ASSEMBLY  
SCALE 3/8"=1'

Note: Decorative metal panels are fastened to the 1"x1" angle with a 1/4" threaded rod fastener tamperproof nut with neoprene washers on both sides @ 6" O.C. (20)  
See Page 8

CAUTION:  
The use of this bolted connection might conflict with Metal Decorative Panel frame.  
LNI Recommends to use only lower bolt.  
*bolt is offset. See 4/20. Use both bolts.*

Material Legend

1	1/2" Steel Plate
2	20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

Notes

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

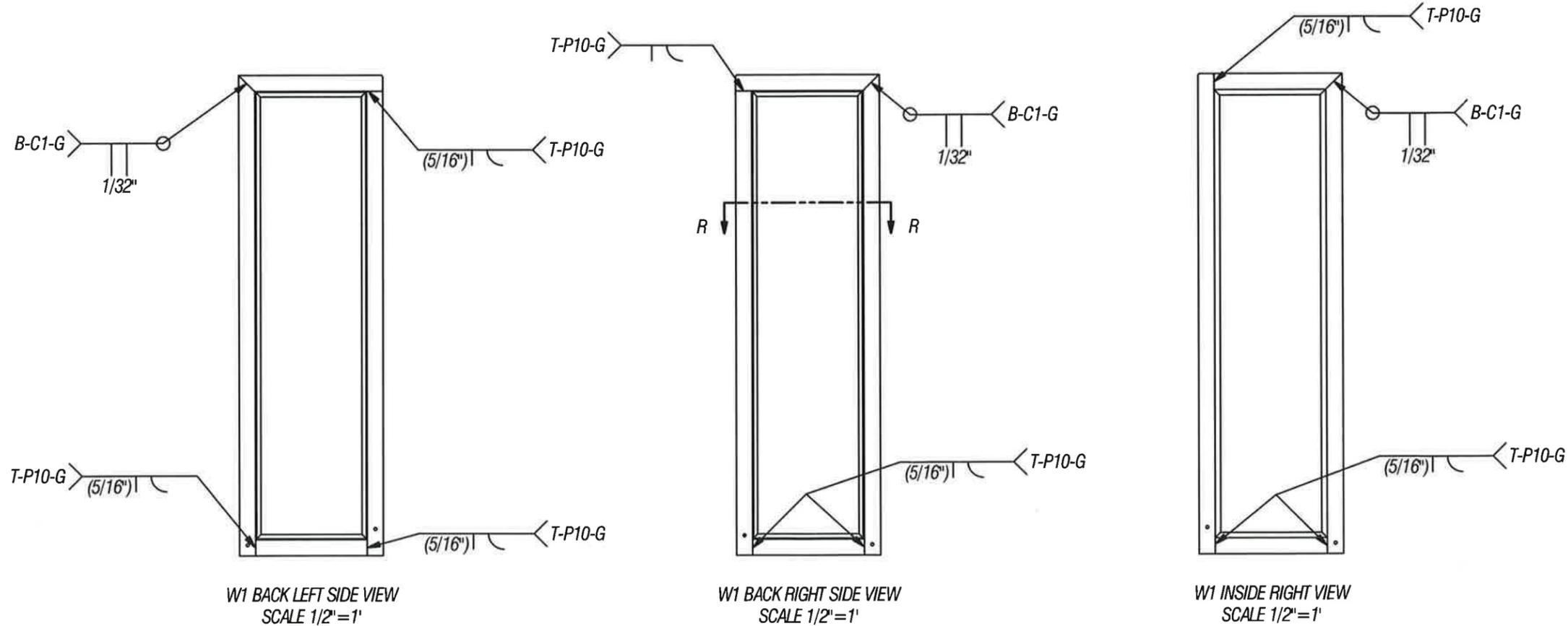
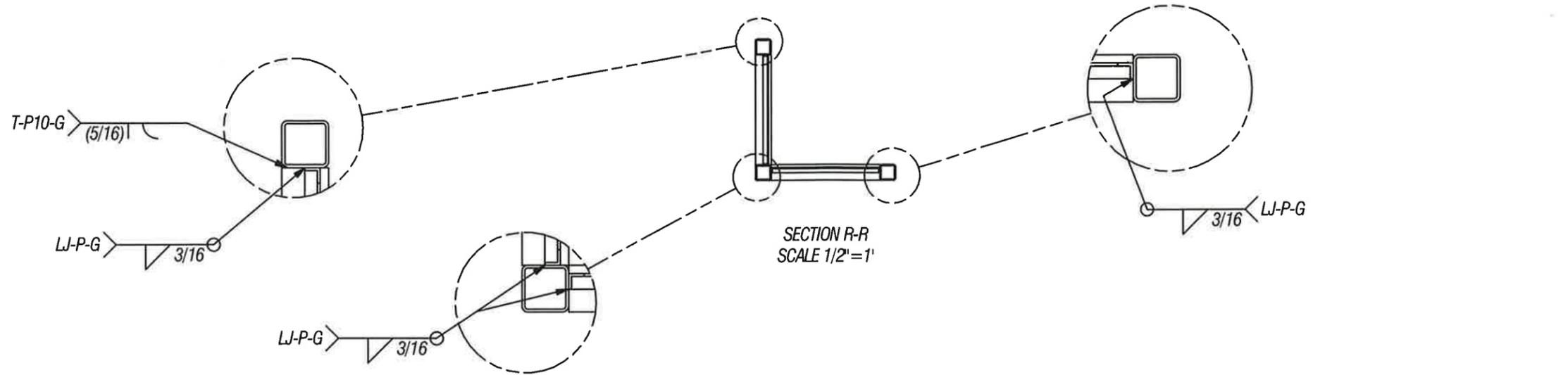
Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

COMPONENT "W2"	
Date:	4/15/2013
Comments:	



△	Date:	By:	
R1	5/1/13	JS	Welding Symbols

Sheet
4



Material Legend	
1	1/2" Steel Plate
2	20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend	
1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.

Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

Welding W2	
Date:	4/15/2013
Comments:	

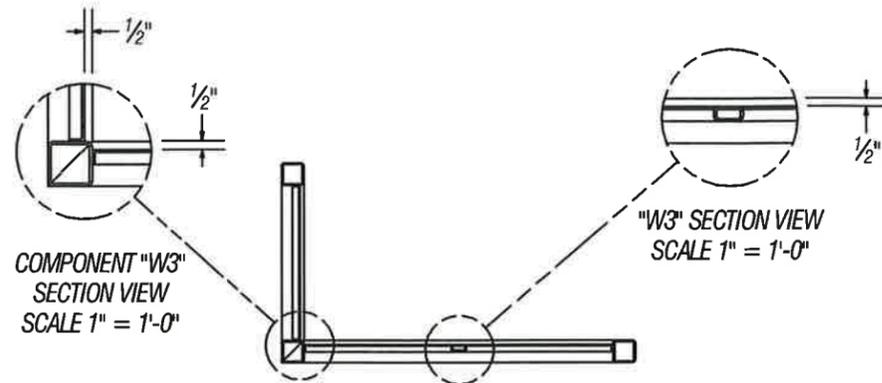
12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000

△	Date:	By:	
R1	5/1/13	JS	Welding Symbols

Sheet	5
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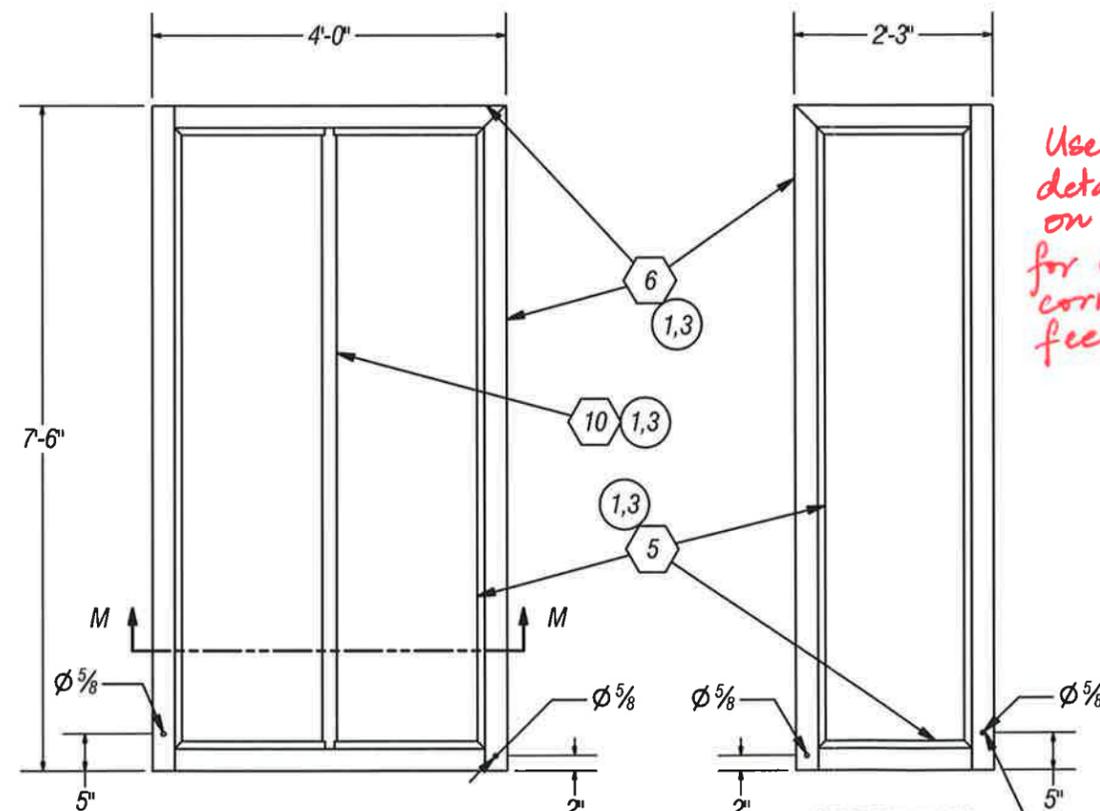
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ISOMETRIC VIEW  
SCALE 3/8"=1"



COMPONENT "W3"  
SECTION VIEW  
SCALE 1" = 1'-0"

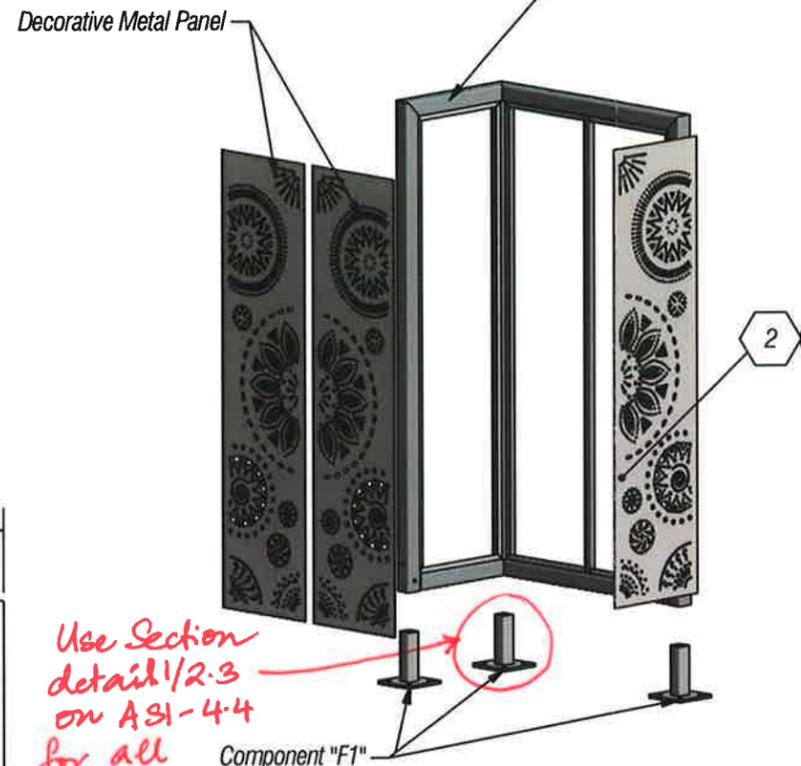
"W3" SECTION VIEW  
SCALE 1" = 1'-0"

SECTION M-M  
SCALE 1/2"=1'



COMPONENT "W3"  
FRONT VIEW  
SCALE 1/2"=1'

COMPONENT "W3"  
SIDE VIEW  
SCALE 1/2"=1'



Use Section detail 1/2-3 on ASI-44 for all corner feet

COMPONENT "W3"  
ASSEMBLY  
SCALE 3/8"=1'

Note: Decorative metal panels are fastened to the 1"x1" angle with a 1/4" threaded rod fastener tamperproof nut with neoprene washers on both sides @ 6" O.C. (20) See Page 8

CAUTION: The use of this bolted connector might conflict with Metal Decorative Panel frame. LNI Recommends to use only lower bolt. *bolt is offset. See 4/2.0 Use both bolts.*

Material Legend

1	1/2" Steel Plate
2	20 Ga. Steel Sheet Metal <i>See 2, 3/2.0</i>
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

Notes

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth. Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

COMPONENT "W3" (STEEL FRAME)	
Date:	4/15/2013
Comments:	



△	Date:	By:	
R1	5/1/13	JS	Welding Symbols

Sheet
6

**Material Legend**

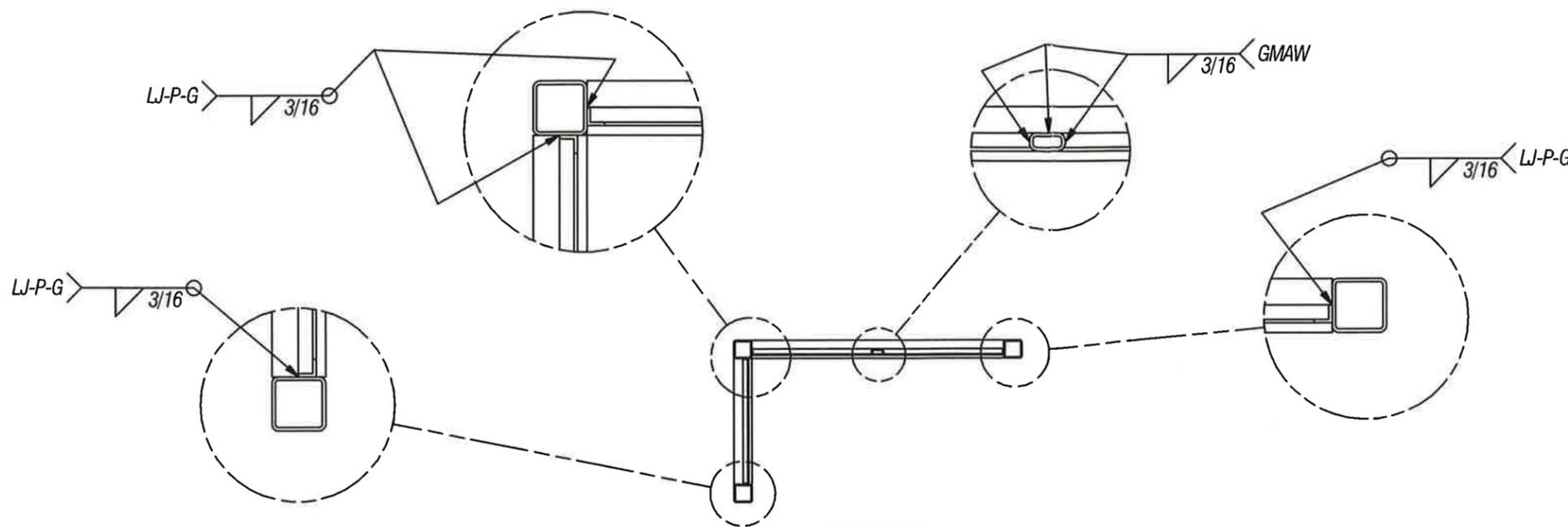
1	1/2" Steel Plate
2	20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

**Finish Legend**

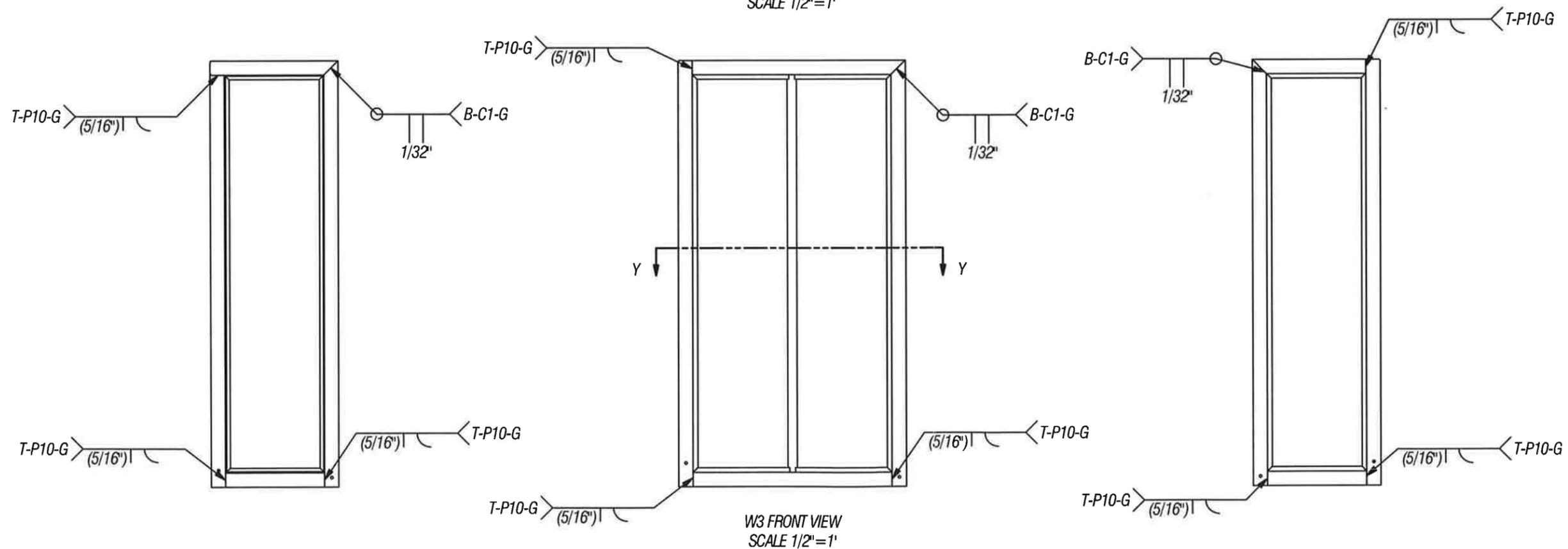
1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.



SECTION Y-Y  
SCALE 1/2"=1'



W3 FRONT VIEW  
SCALE 1/2"=1'

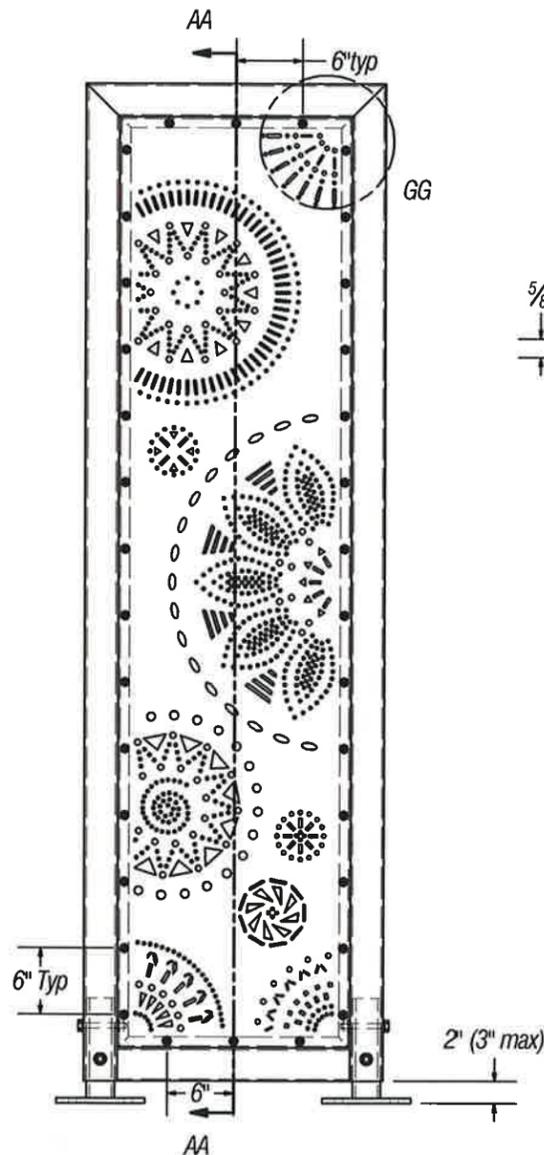
Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

<b>Welding W3</b>	
Date:	4/15/2013
Comments:	

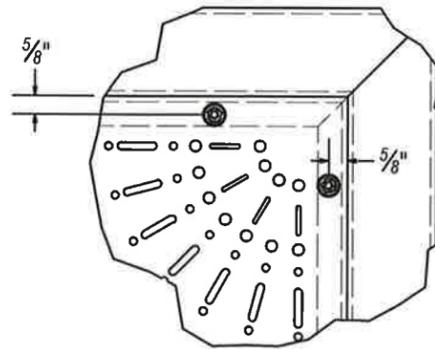


△	Date:	By:	
R1	5/1/13	JS	Welding Symbols

Sheet	7
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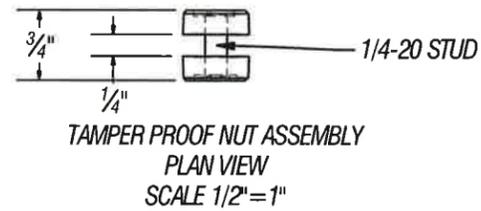
W1 TYPICAL HARDWARE  
DECORATIVE WALL MOUNTING  
LEVELING BOLTS  
SCALE 3/4" = 1'



DETAIL GG  
SCALE 2" = 1'-0"



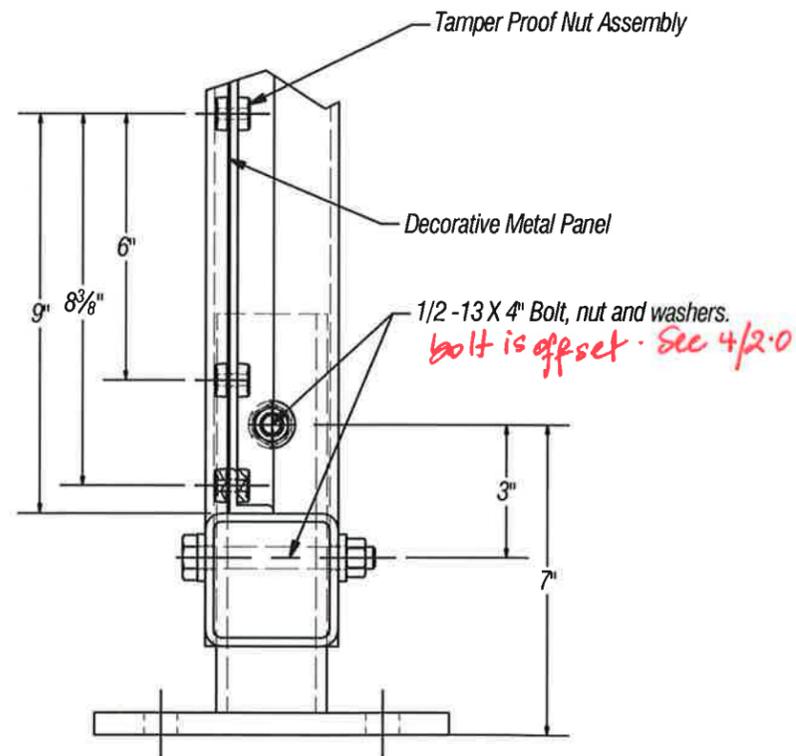
SECTION AA-AA  
SCALE 3/4" = 1'



TAMPER PROOF NUT ASSEMBLY  
PLAN VIEW  
SCALE 1/2" = 1"



TAMPER PROOF NUT  
FRONT VIEW  
SCALE 1/2" = 1"



DETAIL FF  
SCALE 3" = 1'

Note: See individual product package for anchor bolt details

Material Legend

1	1/2" Steel Plate
2	20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

Notes

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

Typical Hardware Details	
Date:	4/15/2013
Comments:	



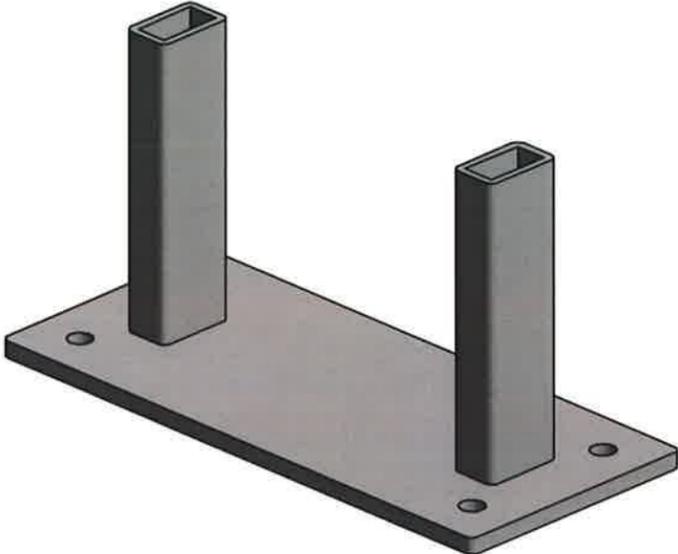
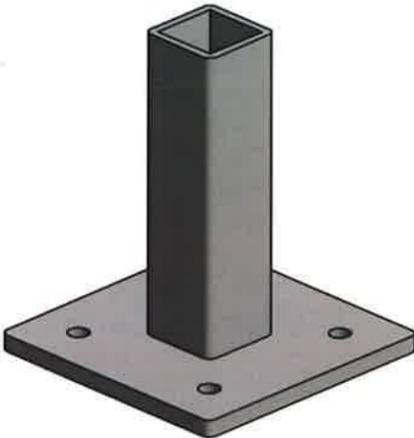
△	Date:	By:		Sheet
R1	5/1/13	JS	Welding Symbols	8

# Santa Fe Trails

# Components "F1" and "F2"

4/18/2013

F1 Qty. 134  
F2 Qty. 19

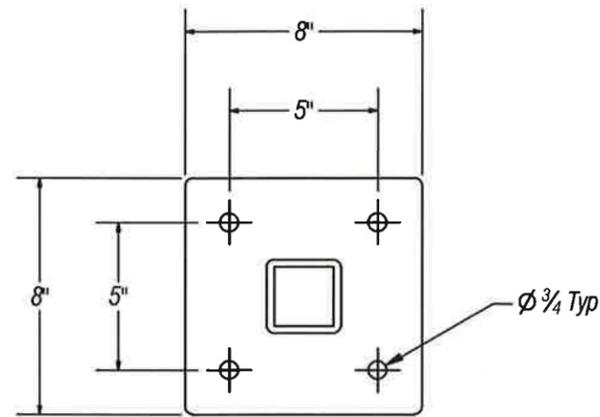


 5/1/13 Welding Symbols

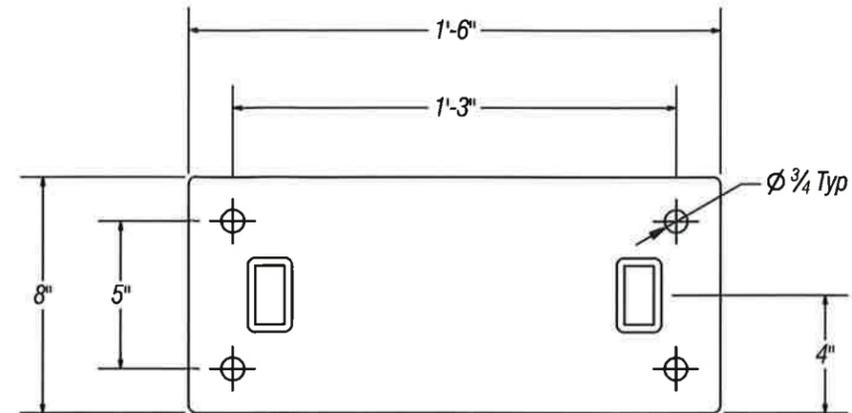
CUSTOM MANUFACTURING  
SINCE 1952



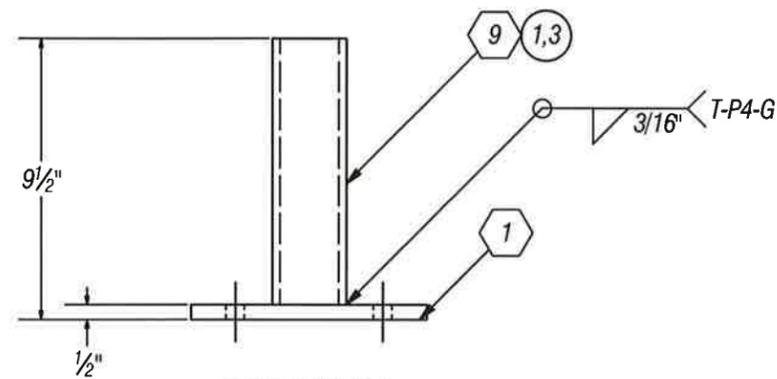
12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000



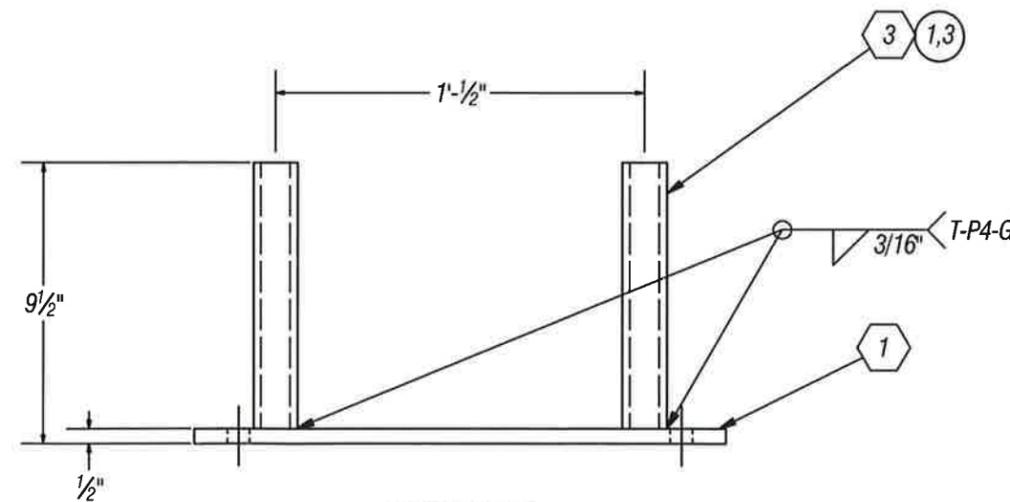
COMPONENT "F1"  
PLAN VIEW  
SCALE 2"=1"



COMPONENT "F2"  
PLAN VIEW  
SCALE 2"=1"



COMPONENT "F1"  
FRONT VIEW  
SCALE 2"=1"



COMPONENT "F2"  
FRONT VIEW  
SCALE 2"=1"

See individual product package for anchor bolt details.

See ASI-4:4 for Corner foot Section detail.

Material Legend

1	1/2" Steel Plate
2	20 Ga. Steel sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3/16" Steel Square Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 1/4" Steel Square Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

Notes

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

Component "F1" and "F2"	
Date:	4/18/2013
Comments:	



△	Date:	By:	
R1	5/1/13	JS	Welding Information

Sheet
2

# Santa Fe Trails

Product Package "A"

4/15/2013

Qty. 25



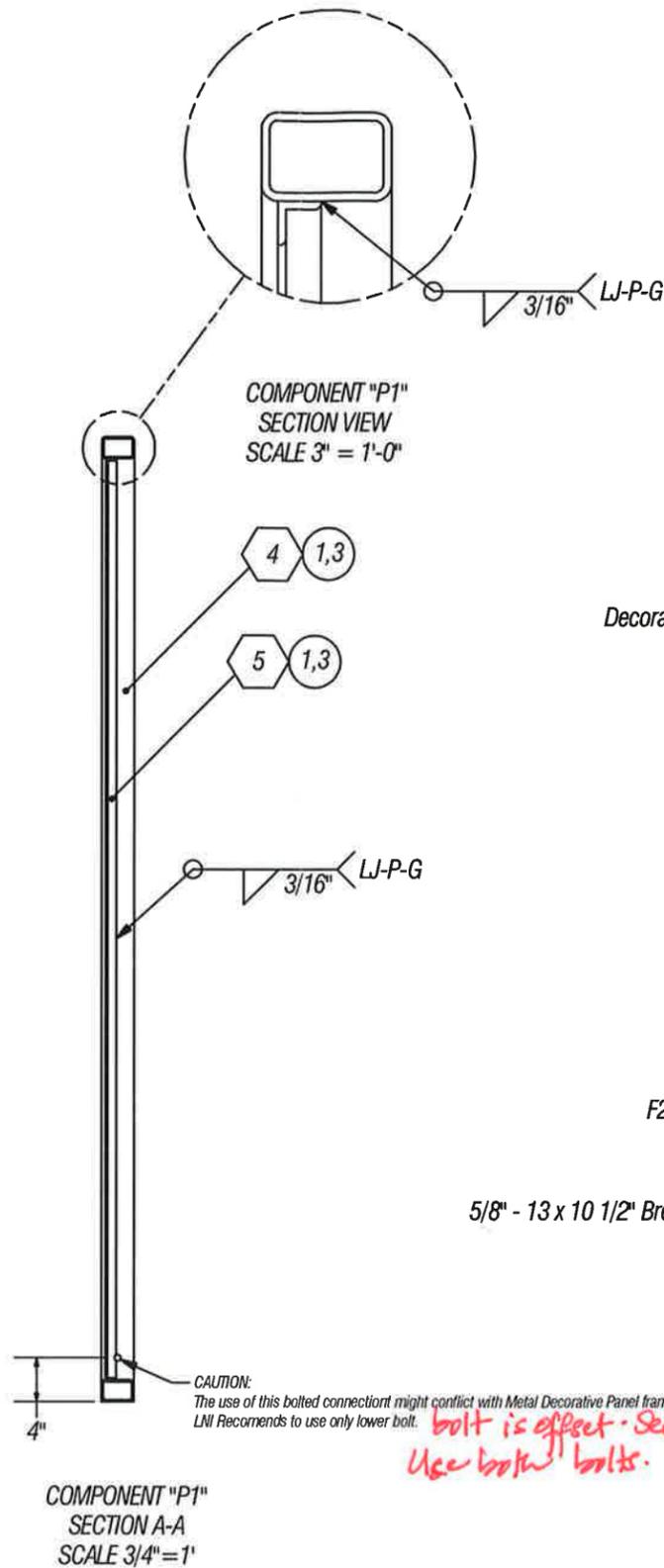
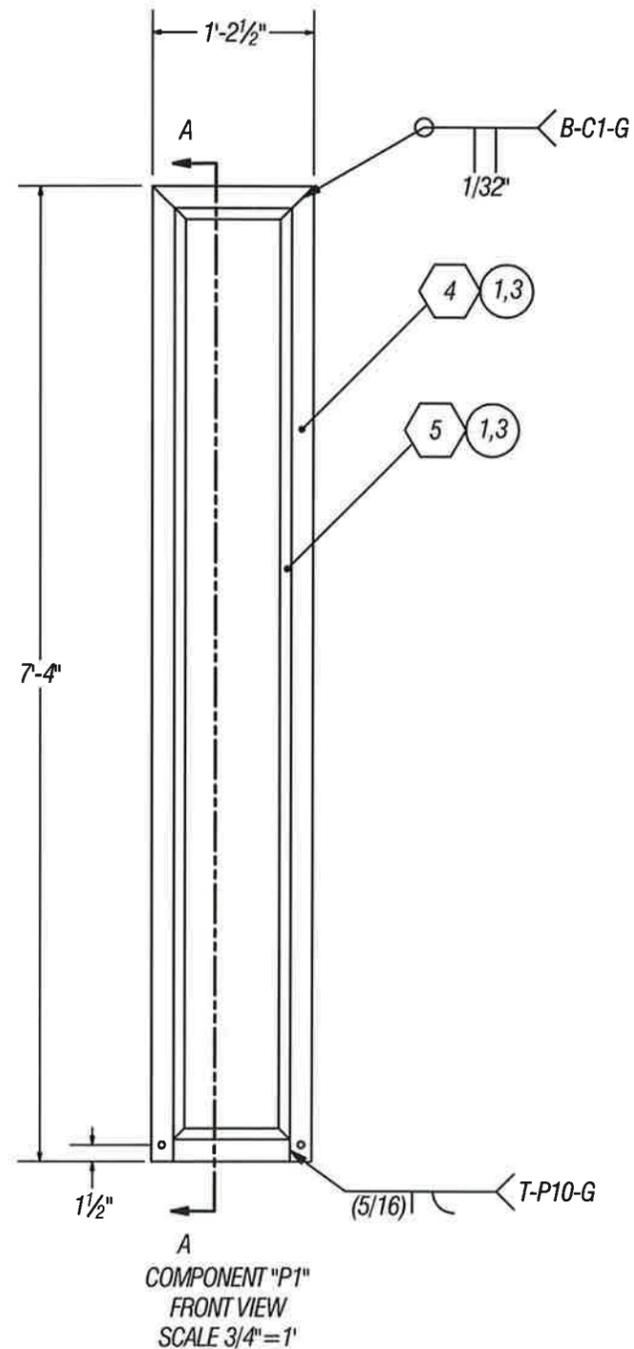
 5/1/13 Welding Symbols

CUSTOM MANUFACTURING  
SINCE 1952

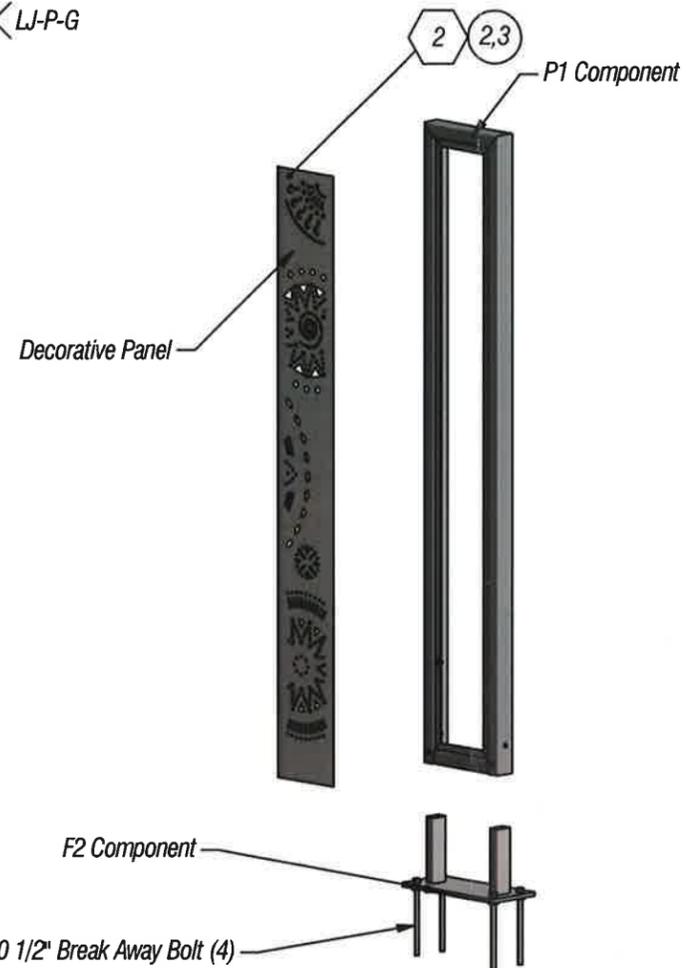
 12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000



COMPONENT "P1"  
ISOMETRIC VIEW  
SCALE 3/8"=1'



CAUTION:  
The use of this bolted connector might conflict with Metal Decorative Panel frame.  
LNI Recommends to use only lower bolt.  
*bolt is effect - See 4/2.0.  
Use both bolts.*



PRODUCT PACKAGE "A"  
SCALE 1/2"=1'

Note: Decorative metal panels are fastened to the 1"x1" angle with a 1/4" thread rod fastener tamper proof nut with neoprene washers on both sides @ 6" O.C. (32) See Page 4

Material Legend

1	1/2" Steel Plate <i>1/2 Ga. - See 2,3,4/2.0</i>
2	20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

Notes

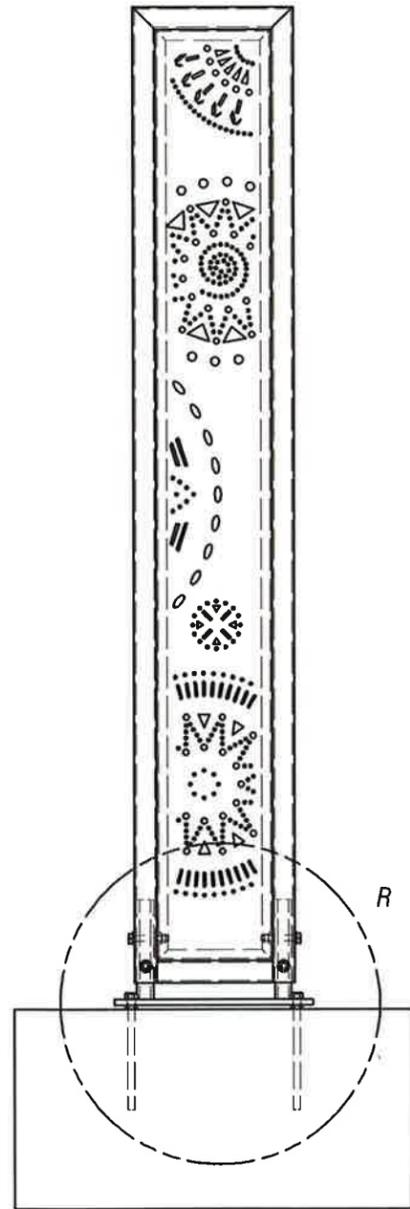
All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/ neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Snata Fe, NM
City/State:	Snata Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

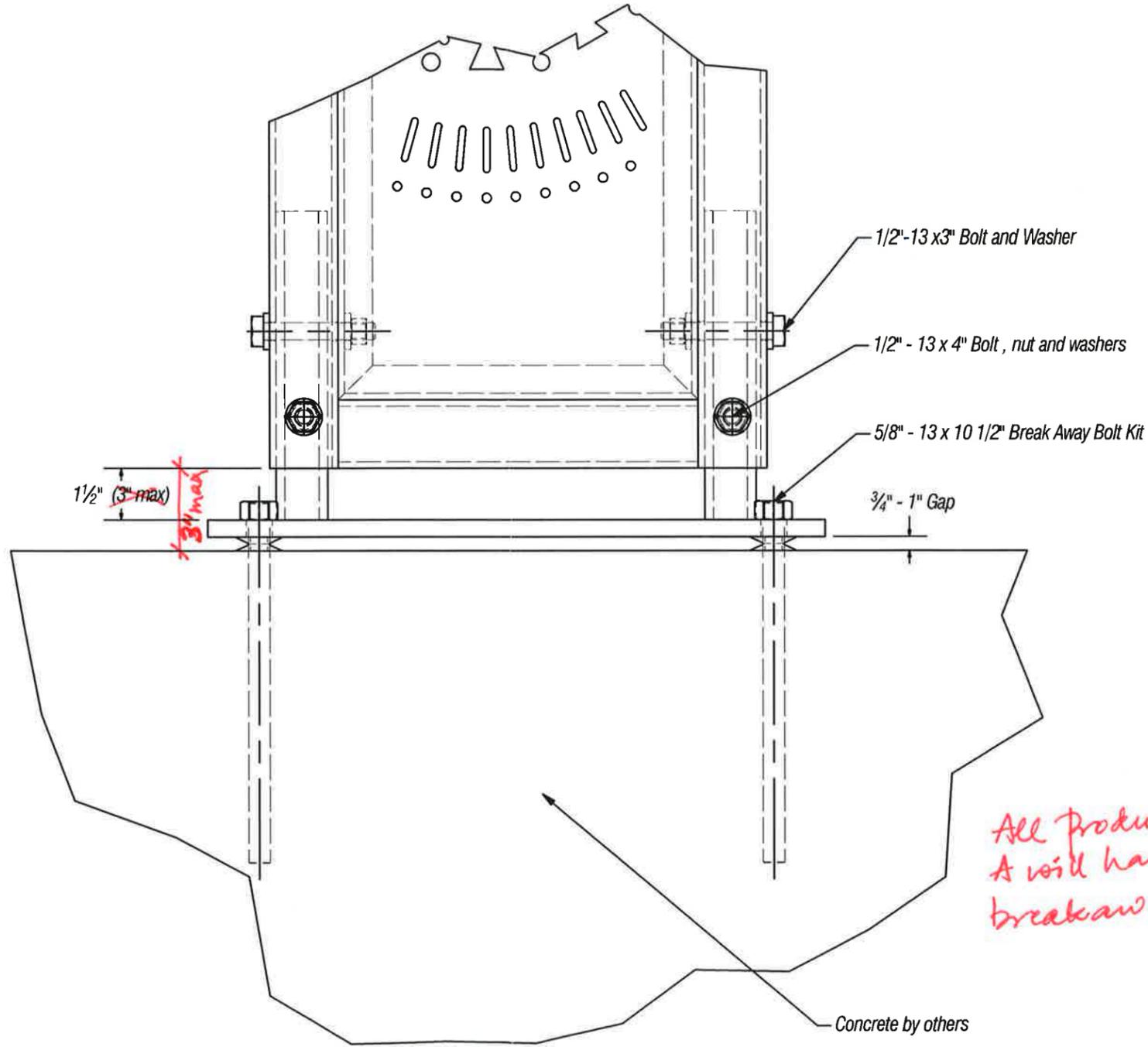
Product Package "A" (STEEL FRAME)	
Date:	4/15/2013
Comments:	---



△	Date:	By:		Sheet
R1	5/1/13	JS	Welding Information	2



PRODUCT PACKAGE "A"  
SCALE 3/4" = 1'



DETAIL R  
SCALE 3" = 1'-0"

All Product Packages  
A will have  
breakaway feet.

Material Legend

1	1/2" Steel Plate
2	20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

Notes

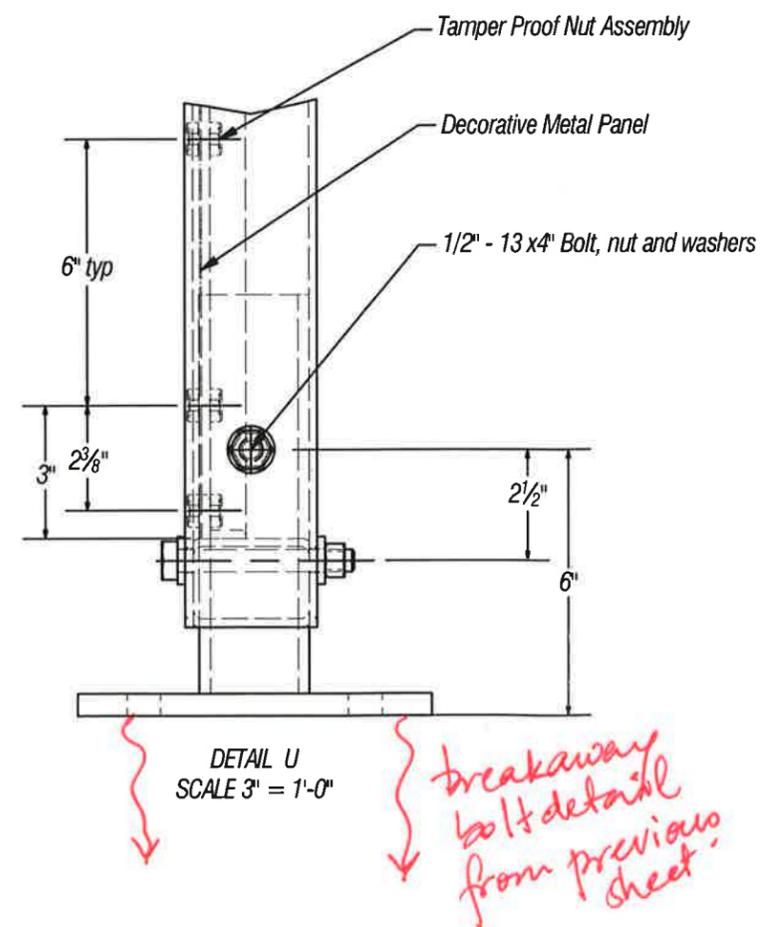
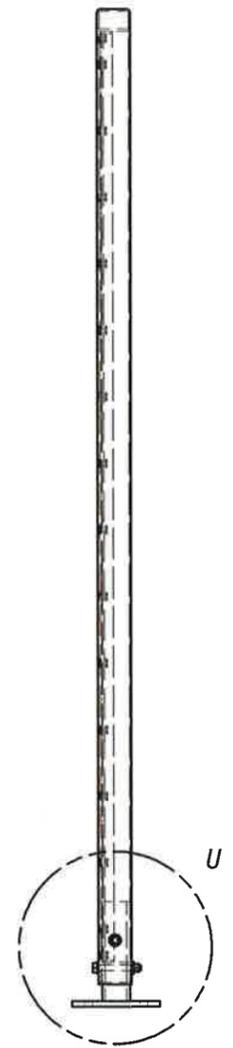
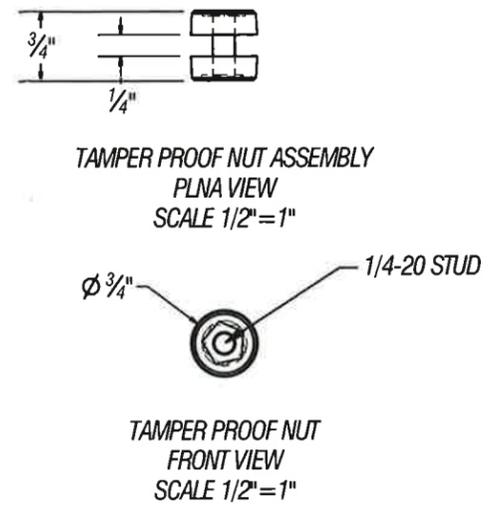
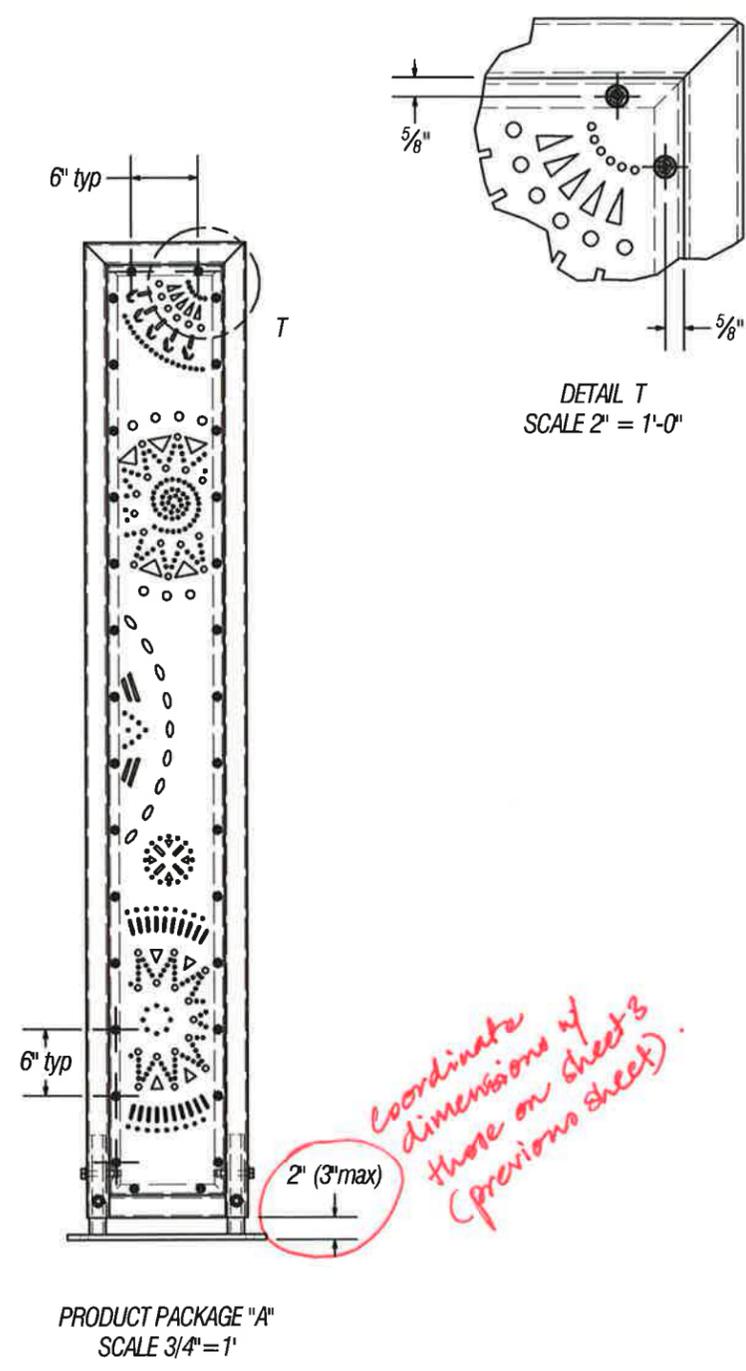
All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

Installing Product Package "A"	
Date:	4/15/2013
Comments:	



△	Date:	By:		Sheet
R1	5/1/13	JS	Welding Information	3



Material Legend	
1	1/2" Steel Plate
2	20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend	
1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth. Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/ neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

<b>Hardware Details</b>	
Date:	4/15/2013
Comments:	

**LNI**  
12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000

△	Date:	By:	
R1	5/1/13	JS	Welding Information

Sheet	4
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# Santa Fe Trails

Product Package "B"

4/15/2013

Qty. 7



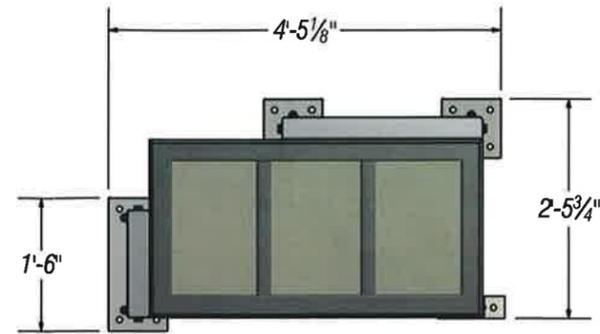
 5/1/13 Welding Symbols

CUSTOM MANUFACTURING  
SINCE 1952

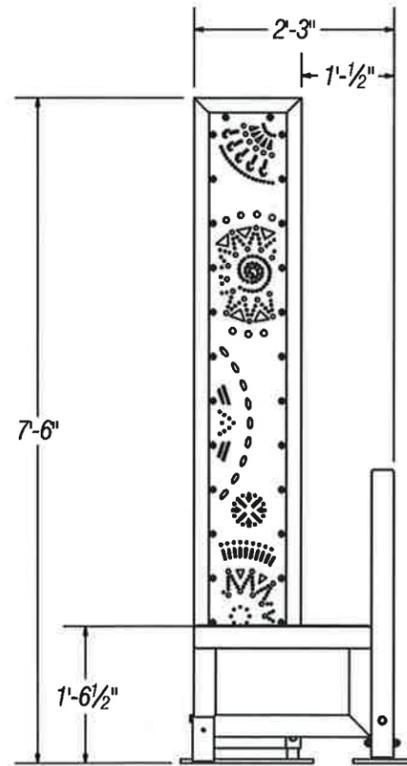
 12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000



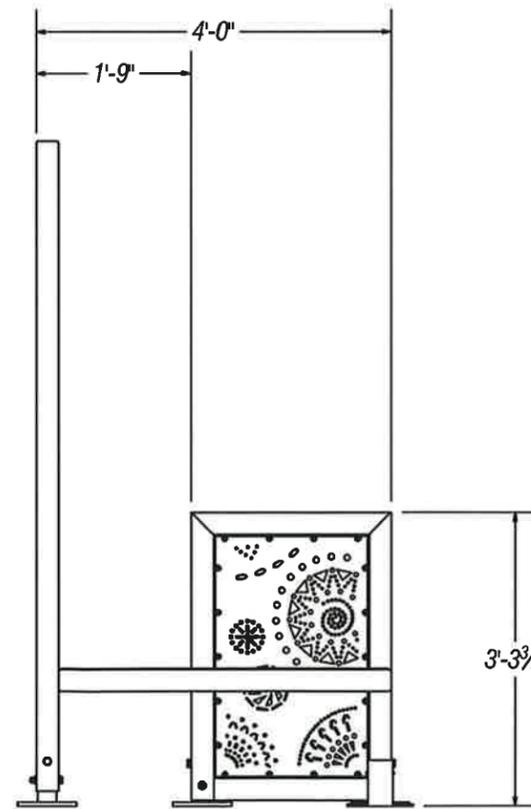
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ISOMETRIC VIEW  
SCALE 3/8"=1'



PRODUCT PACKAGE "B"  
PLAN VIEW  
SCALE 1/2"=1'



PRODUCT PACKAGE "B"  
SIDE VIEW  
SCALE 1/2"=1'



PRODUCT PACKAGE "B"  
FRONT VIEW  
SCALE 1/2"=1'

Material Legend

1	1/2" Steel Plate
2	20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Polyarmor G17
5	

Notes

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

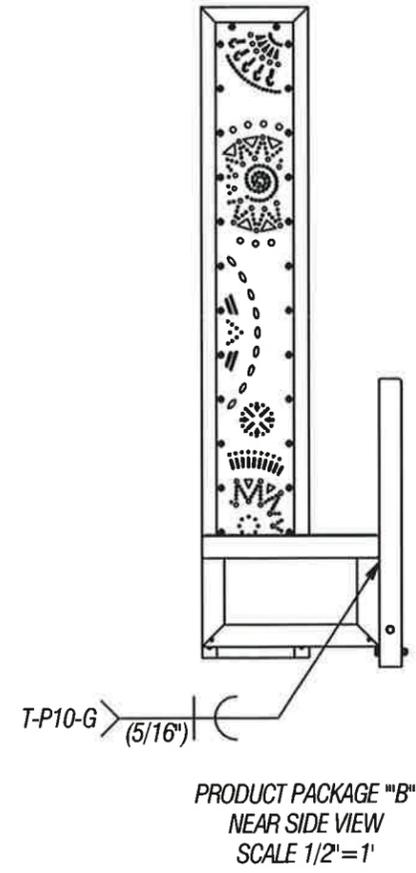
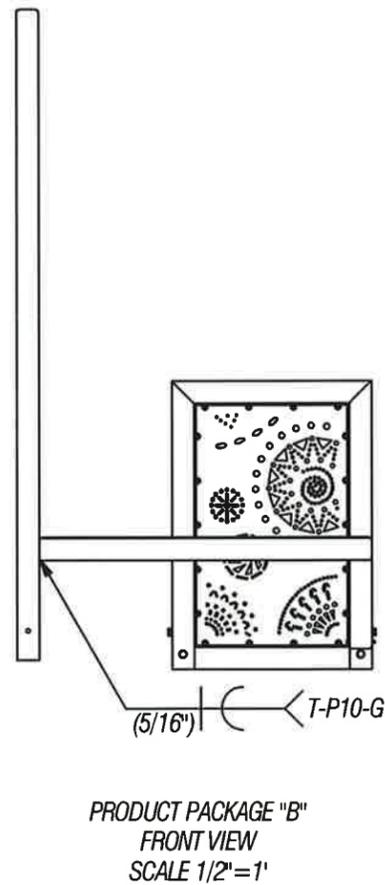
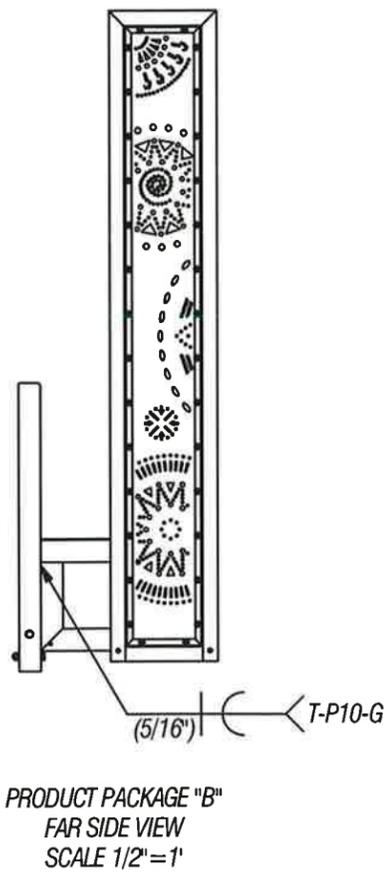
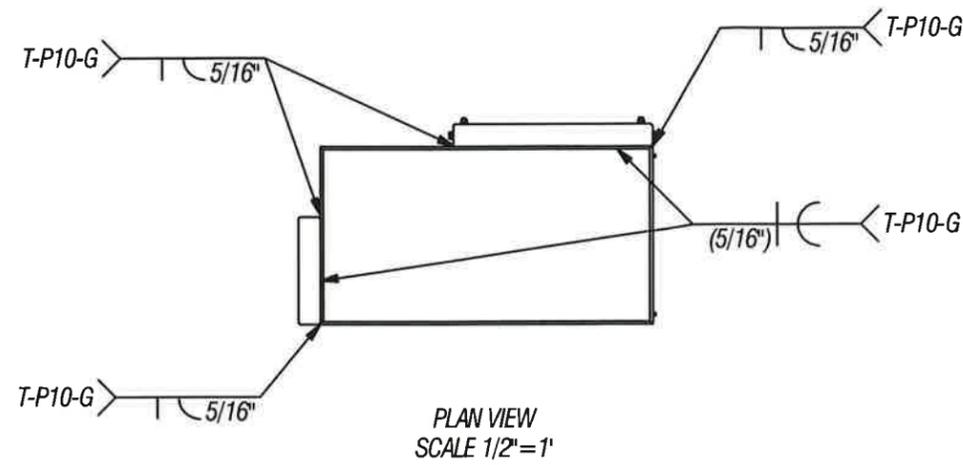
PRODUCT PACKAGE "B"	
Date:	4/15/2013
Comments:	



12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000

△	Date:	By:	
R1	5/1/13	JS	Welding Information

Sheet	2
-------	---



**Material Legend**

1	1/2" Steel Plate
2	20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

**Finish Legend**

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Polyarmor G17
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

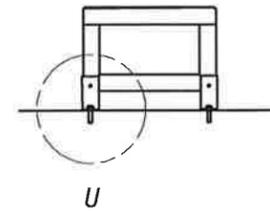
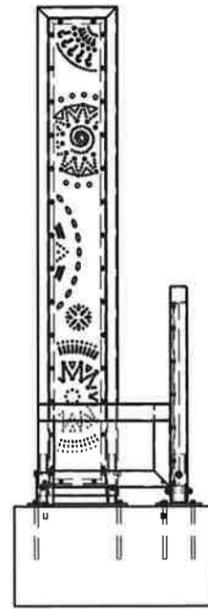
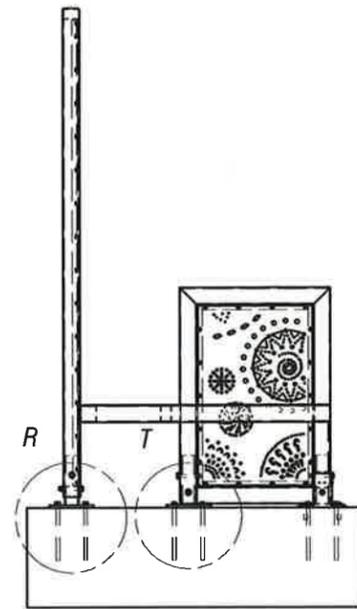
Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

<b>Product Package "B" Welding</b>	
Date:	4/15/2013
Comments:	

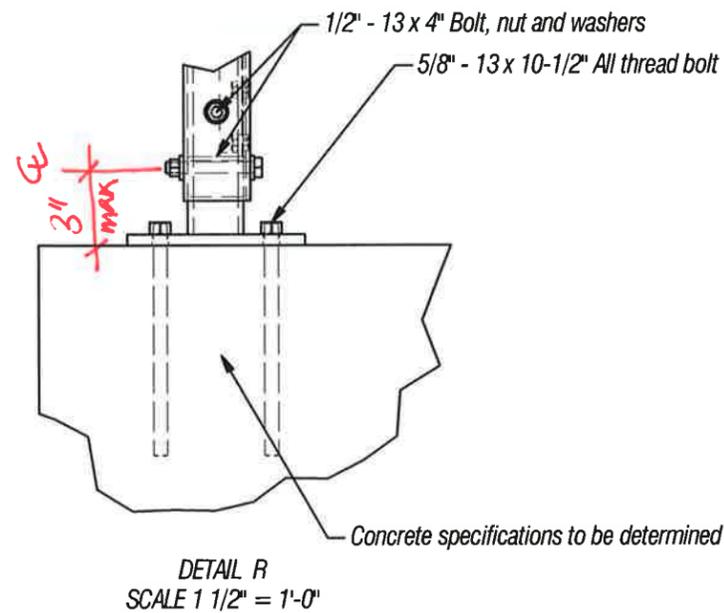


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R1	5/1/13	JS	Welding Information

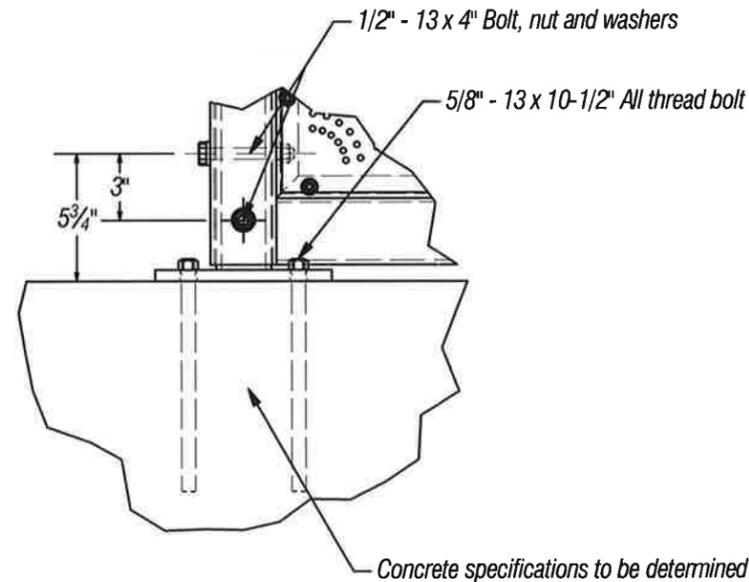
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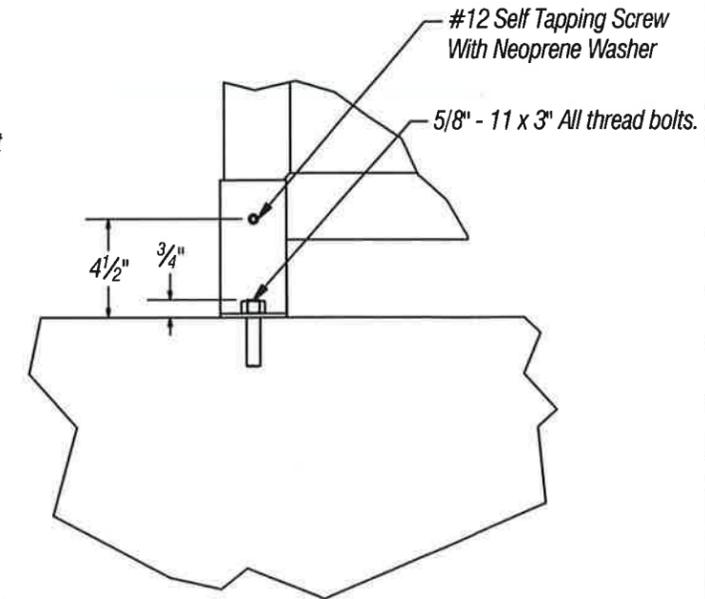
B1 COMPONENT  
SCALE 3/8" = 1'



DETAIL R  
SCALE 1 1/2" = 1'-0"



DETAIL T  
SCALE 1 1/2" = 1'-0"



DETAIL U  
SCALE 1 1/2" = 1'-0"

Material Legend

1	1/2" Steel Plate
2	20 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Polyarmor G17
5	

Notes

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/ neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

Installing Product Package "B"	
Date:	4/15/2013
Comments:	



12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000

△	Date:	By:	
R1	5/1/13	JS	Welding Information

Sheet
4

## Santa Fe - Bolt Schedule

All products are zinc, unless otherwise noted

Product Package	Quantity	Parts	Components Per Package	Total Hardware Quantities
A	25	F2 - [1]	[4] 5/8" x 13" All thread, 1/2" sq washer, 1/2" nut	[100] 5/8" x 13" All thread, 1/2" sq washer, 1/2" nut
			(4) Dent Breakawy coupling (see spec sheet)	(100) Dent Breakawy coupling (see spec sheet)
B	7	F1 - [2]	[8] 1/2" x 10.5" All thread, 1/2" nut, 1/2" washer	[84] 1/2" x 10.5" All thread, 1/2" nut, 1/2" washer
		F2 - [1]	[5] 1/2" x 10.5" All thread, 1/2" nut, 1/2" washer	
		F3 - [1]	[2] 5/8" x 3" All thread, 5/8" nut, 5/8" washer	[14] 5/8" x 3" All thread, 5/8" nut, 5/8" washer
		C1 - [1]	[1] 1/2" x 4" Thru Bolt, 1/2" nut, 1/2" Ne. washer	[21] 1/2" x 4" Thru Bolt, 1/2" nut, 1/2" Ne. washer
		C2 - [1]	[2] 1/2" x 4" Thru Bolt, 1/2" nut, 1/2" Ne. washer	
		C3 - [1]	[2] #12 self tapping screws, Ne. washer	[14] #12 self tapping screws/ washer
C	18	F1 - [3]	[12] 1/2" x 10.5" All thread, 1/2" nut, 1/2" washer	[216] 5/8" x 10.5" All thread, 1/2" nut, 1/2" washer
		F3 - [1]	[2] 5/8" x 3" All thread, 5/8" nut, 5/8" washer	[36] 5/8" x 3" All thread, 5/8" nut, 5/8" washer
		C1 - [3]	[3] 1/2" x 4" Thru Bolt, 1/2" nut, 1/2" washer	[54] 1/2" x 4" Thru Bolt, 1/2" nut, 1/2" Ne. washer
		C3 - [1]	[2] #12 self tapping screws, washer	[36] #12 self tapping screws/ washer
D	6	F1 - [6]	[24] 1/2" x 10.5" All thread, 1/2" nut, 1/2" washer	[144] 1/2" x 10.5" All thread, 1/2" nut, 1/2" washer
		F3 - [2]	[4] 5/8" x 3" All thread, 5/8" nut, 5/8" washer	[24] 5/8" x 3" All thread, 5/8" nut, 5/8" washer
		C1 - [6]	[6] 1/2" x 4" Thru Bolt, 1/2" nut, 1/2" Ne. washer	[36] 1/2" x 4" Thru Bolt, 1/2" nut, 1/2" Ne. washer
		C3 - [2]	[6] #12 self tapping screws, Ne. washer	[36] #12 self tapping screws/ washer
		RC - [1]	[5] 1/2" x 5" connecting bolts/ wahser/ nuts	[30] 1/2" x 5" connecting bolts, 1/2" nut, 1/2" washer
E	3	F1 - [8]	[32] 1/2" x 10.5" All thread, 1/2" nut, 1/2" washer	[98] 1/2" x 10.5" All thread, 1/2" nut, 1/2" washer
		F3 - [2]	[4] 5/8" x 3" All thread, 5/8" nut, 5/8" washer	[12] 5/8" x 3" All thread, 5/8" nut, 5/8" washer
		C1 - [8]	[1] 1/2" x 4" Thru Bolt, 1/2" nut, 1/2" Ne. washer	[21] 1/2" x 4" Thru Bolt, 1/2" nut, 1/2" Ne. washer
		C3 - [2]	[4] #12 self tapping screws, Ne. washer	[12] #12 self tapping screws/ washer
		RC - [1]	[5] 1/2" x 5" connecting bolts/ wahser/ nuts	[15] 1/2" x 5" connecting bolts, 1/2" nut, 1/2" washer
F	7	F1 - [10]	[40] 1/2" x 10.5" All thread, 1/2" nut, 1/2" washer	[280] 1/2" x 10.5" All thread, 1/2" nut, 1/2" washer
		F3 - [2]	[4] 5/8" x 3" All thread, 5/8" nut, 5/8" washer	[28] 5/8" x 3" All thread, 5/8" nut, 5/8" washer
		C1 - [10]	[10] 1/2" x 4" Thru Bolt, 1/2" nut, 1/2" Ne. washer	[70] 1/2" x 4" Thru Bolt, 1/2" nut, 1/2" Ne. washer
		C3 - [2]	[4] #12 self tapping screws, Ne. washer	[28] #12 self tapping screws/ washer



custom manufacturing

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# MATERIAL DESCRIPTION & PRODUCT DATA:



design • build • deploy

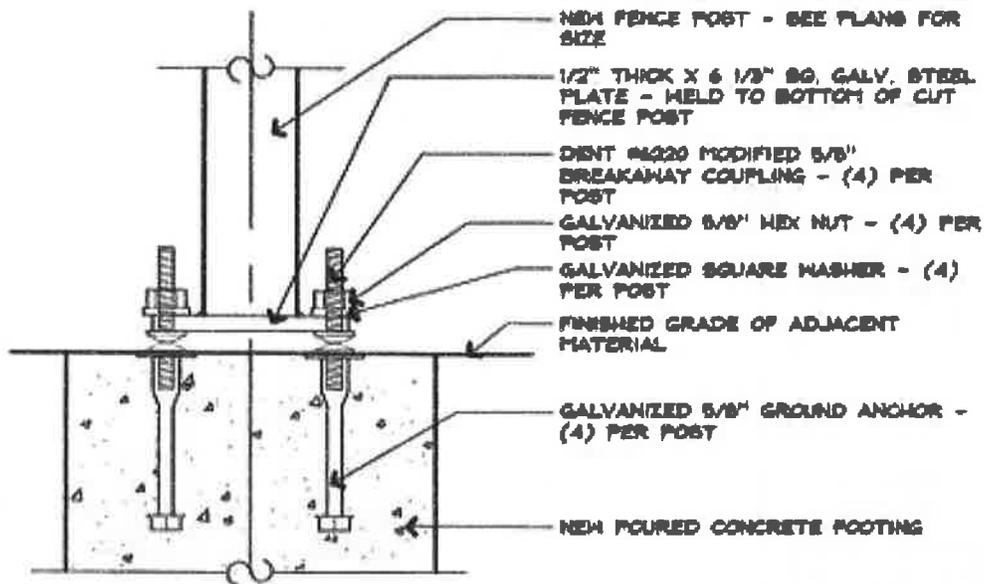
www.LNIsigns.com

May 6, 2013

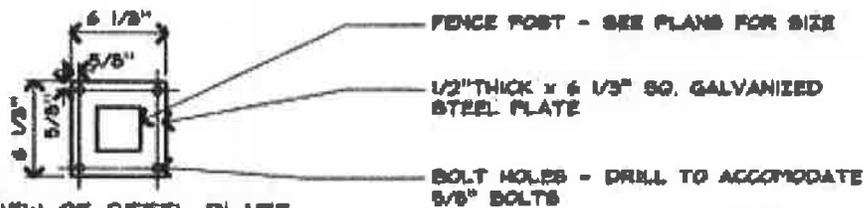
Project: Santa Fe Bus Shelters  
Subject: Product Data

The following products will be used, per specification package provided by customer, in the production of Products A & B:

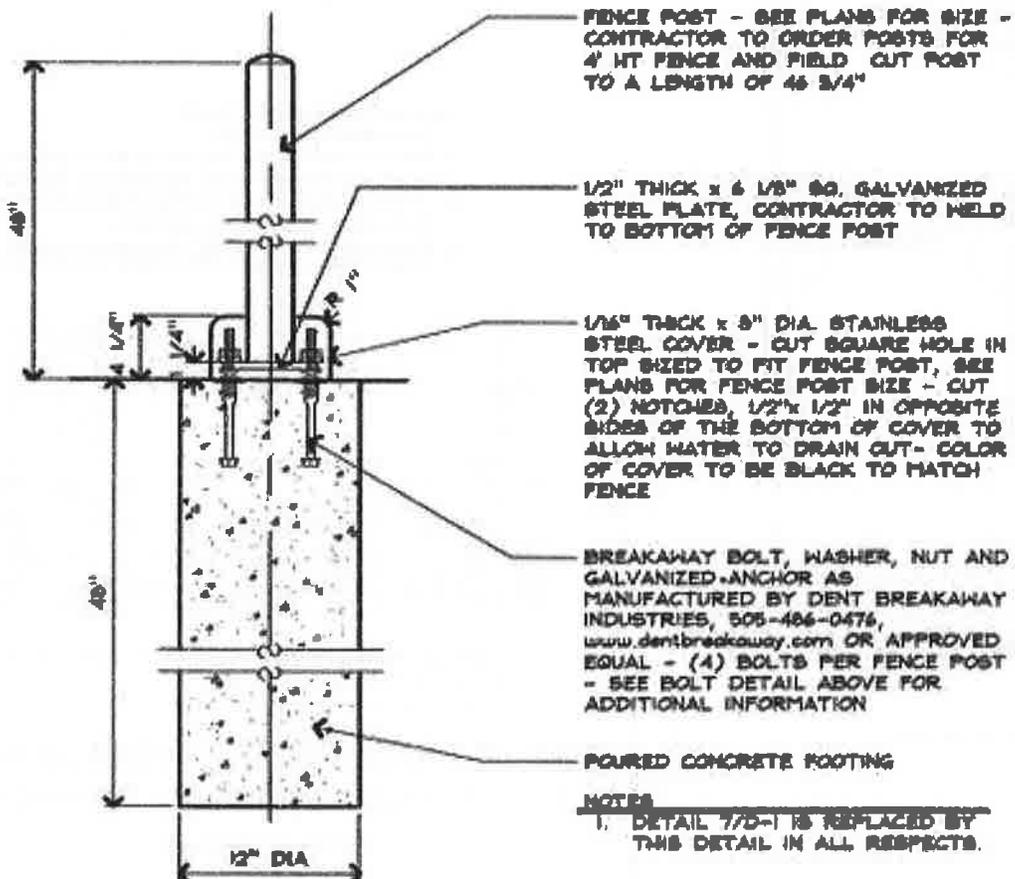
1. Production Sheet Metal: Various gauge cold rolled steel – stock component
  - a. no data sheets provided
- ~~2. Sheet Metal (Flashing & Trim)
  - a. Product Data Sheets
  - b. MSDS sheets~~ *not included in submittal*
3. Anchor Bolt: ½ All Thread – stock component
  - a. no data sheet provided
4. Breakaway Bolt System: Dent Breakaway Industries
  - a. Product Data Sheets attached



**BOLT DETAIL**



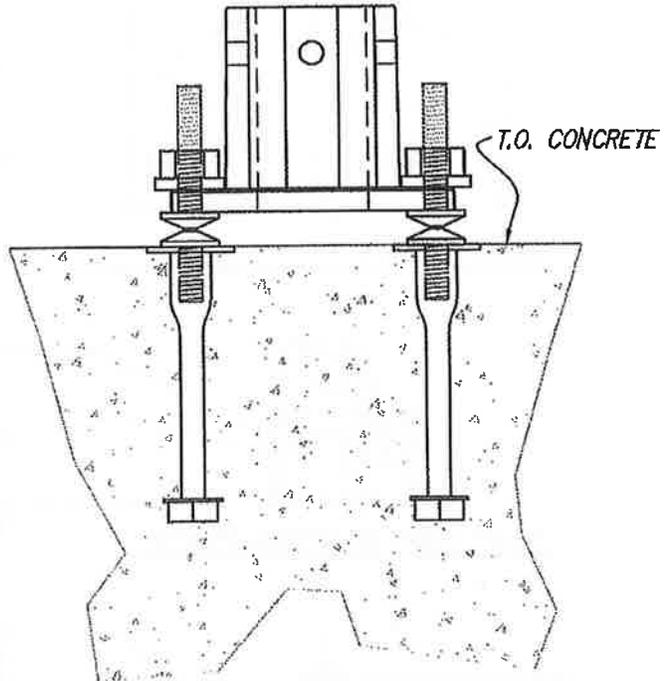
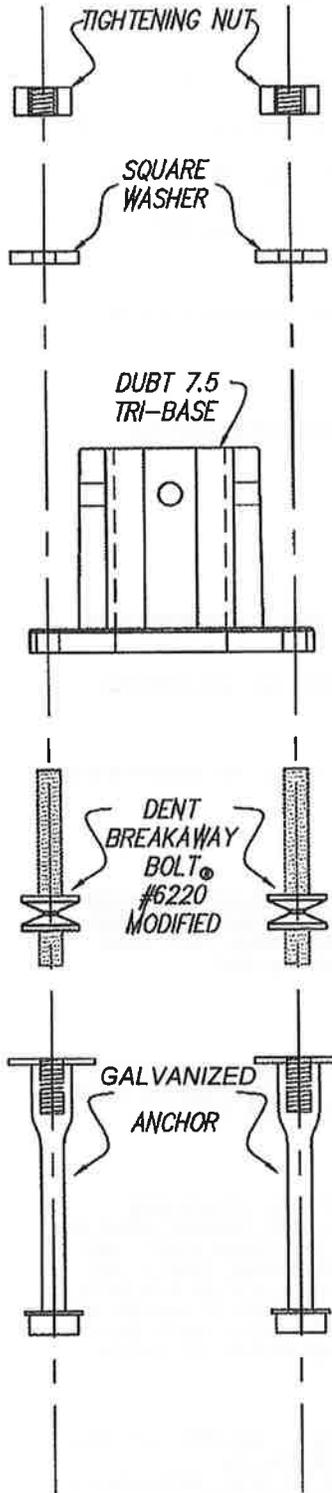
**PLAN VIEW OF STEEL PLATE**



**NOTES**

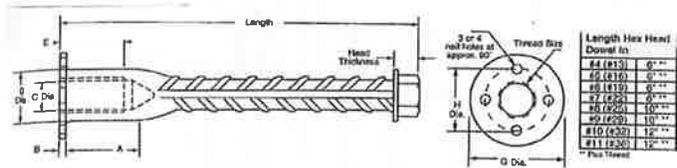
1. DETAIL 775-1 IS REPLACED BY THIS DETAIL IN ALL RESPECTS.

# INSTALLATION DETAIL FOR GROUND ANCHORS



### Concrete Ground Anchor Detail

1. Galvanized to ASTM 153
2. Thread size enlarged if required to accept galvanized thread
3. Length and diameter varies depending on application
4. H holes in upper washer to allow attachment to template
5. Works on three & four bolt application
6. Allows post to break off 3/8" above ground height
7. Accepts 6220 modified (5/8") OR 6882 modified (3/4") Dent Bolts



Size	Thread Size	A	B	C	D	E	W/In Across Flats	Washer Diameter	Head Thickness	Head Diameter	Ultimate Strength
#1 (#1)	5/8"-11 UNC	1-1/2"	1/2"	1-1/4"	5/8"	1"	1-1/2"	1-3/8"	1/2"	1-1/2"	18,000 lbs.
#2 (#2)	3/4"-10 UNC	1-5/8"	1/2"	1-1/4"	1-1/8"	1-1/4"	1-5/8"	1-5/8"	1/2"	1-1/2"	27,000 lbs.
#3 (#3)	1"-8 UNC	1-11/16"	1/2"	1-1/4"	1-1/8"	1-1/4"	1-5/8"	1-5/8"	5/8"	1-7/8"	25,000 lbs.
#4 (#4)	1-1/8"-6 UNC	1-27/32"	1/2"	1-1/4"	1-1/8"	1-1/4"	1-5/8"	1-5/8"	5/8"	1-7/8"	64,000 lbs.
#5 (#5)	1-1/2"-4 UNF	2-1/16"	1/2"	1-3/16"	1-1/8"	1-1/2"	1-3/4"	1-3/4"	5/8"	1-7/8"	21,000 lbs.
#6 (#6)	1-3/4"-4 UNF	2-5/16"	1/2"	1-5/16"	1-1/8"	1-1/2"	1-3/4"	1-3/4"	5/8"	1-7/8"	80,000 lbs.
#7 (#7)	1-7/8"-4 UNF	2-7/16"	1/2"	1-1/2"	1-1/8"	1-1/2"	1-3/4"	1-3/4"	5/8"	1-7/8"	114,000 lbs.
#8 (#8)	1-9/8"-4 UNF	2-8/16"	1/2"	1-5/8"	1-1/8"	1-1/2"	1-3/4"	1-3/4"	5/8"	1-7/8"	140,400 lbs.

THREADS CUT TO ACCEPT GALVANIZED BOLTS

Cliff Dent, Inventor Ph: (505) 486.0476, Fx: (413) 383.0681  
E-mail: info@dentbreakaway.com

### TRI-BASE EXPLODED VIEW

Eliminates need for:

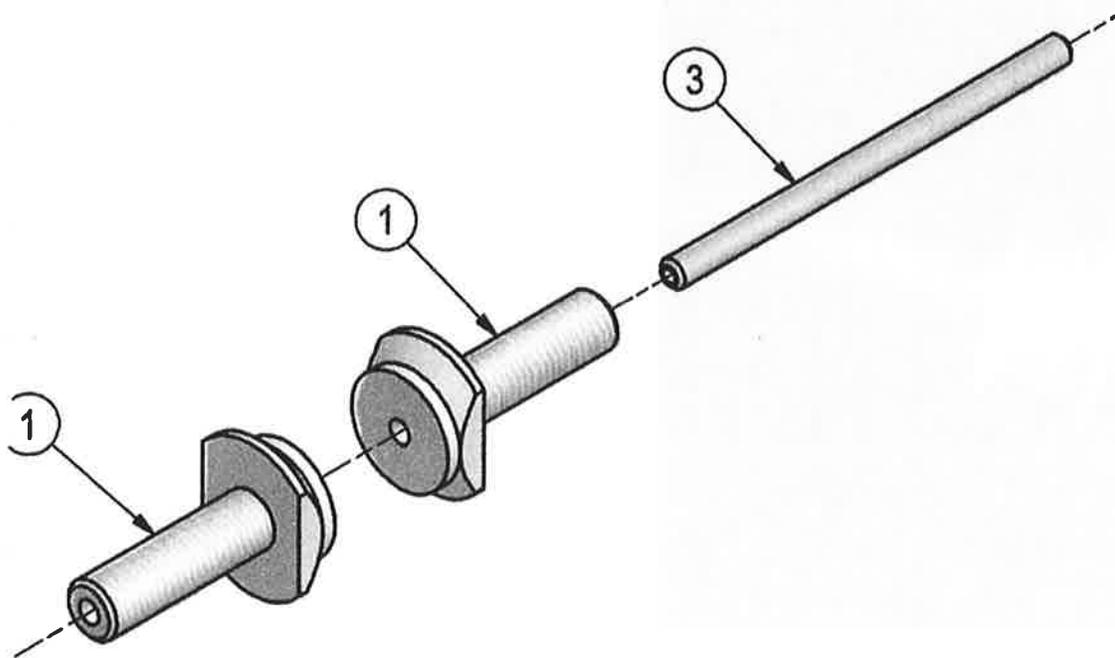
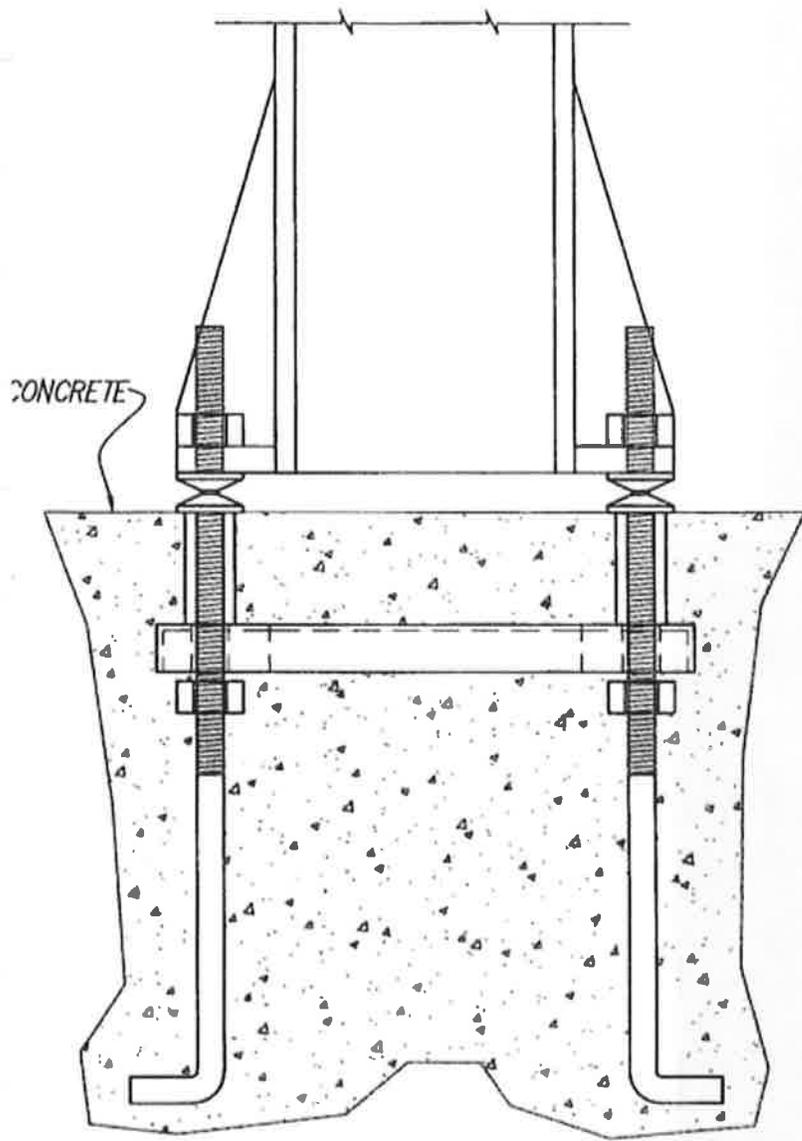
- \* Stub post assembly
- \* Riser from concrete to slip-base plate
- \* Keeper Plate
- \* Torque Requirements

## DENT CONCRETE GROUND ANCHOR ASSEMBLY FOR TRI-BASE OR FOUR BOLT APPLICATION

FHWA APPROVED  
Patent Pending

(C) Clifford Dent, 2005

DRAWING UPDATED 9-14-08



"J" Bolt with Coupling System & New Dent Connector



Drop-in Anchor System Dent Bolt





City of Santa Fe  
 2651 Siringo Rd.  
 Santa Fe, NM 87505



Autotroph Design  
 617 B Paulin St.  
 Santa Fe, NM 87505



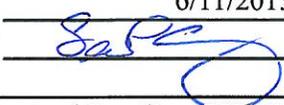
## Meridian Contracting, Inc.

3223 Los Arboles NE Albuquerque, NM 87107 PH: 505-872-2841 FAX: 505-884-0260



## Santa Fe Bus Shelters - CIP Project #665

### Transmittal Form

Sent By: Sean Conway - Project Engineer Sent to: Autotroph Design  
 Date: 6/11/2013 Attn: Jayita Sahni  
 Signature:  Submittal #: 1 - B Resubmittal

Subcontractor / Supplier: LNI Custom Manufacturing

Specification # / Drawing: 05100, 05310, 05730, 07620, 265600

Attachments:	
<input checked="" type="checkbox"/> Shop Drawing for Product Package C thru F	<input checked="" type="checkbox"/> Photovolcaic System PDS / Warranty
<input checked="" type="checkbox"/> Steel Deck PDS / MSDS	

Submitted For:	
<input checked="" type="checkbox"/> Approval	<input type="checkbox"/> As Requested
<input type="checkbox"/> Your Use	<input type="checkbox"/> Information Purposes Only

Sent Via:	
<input checked="" type="checkbox"/> Attached	<input type="checkbox"/> Separate Cover Via:

**Comments**

\*Provided are four copies for your use and two additional. Please return the additional approved copies for our record.



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# Santa Fe Bus Shelters

## SUBMITTALS – PART II:

TECHNICAL INFORMATION RELATING TO:

PRODUCT PACKAGE C

PRODUCT PACKAGE D

PRODUCT PACKAGE E

PRODUCT PACKAGE F

COMPONENTS: R, ILLUMINATION

MOCK UPS WILL BE PROVIDED ONCE DRAWINGS ARE APPROVED

May 14<sup>th</sup>, 2013



# Santa Fe Trails

W1-W1M-W2-W3-W3M

4/15/2013

W1-5  
W1M-3  
W2-14  
W3-23  
W3M-3



W1



W1-M



W2



W3



W3-M

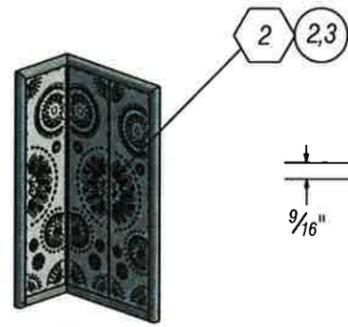
 6/7/13 leveling hole placement

 5/1/13 Welding Symbols

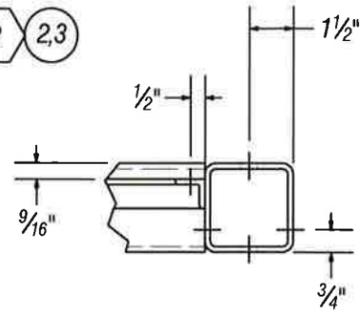
CUSTOM MANUFACTURING  
SINCE 1952



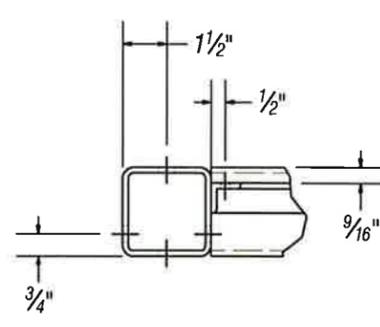
12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000



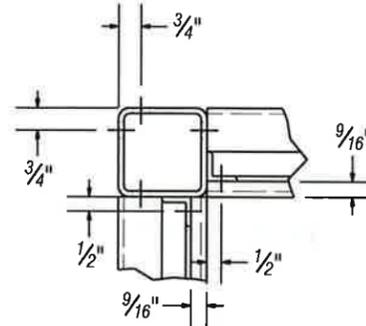
COMPONENT "W3"  
ISOMETRIC VIEW  
SCALE 3/16"=1'



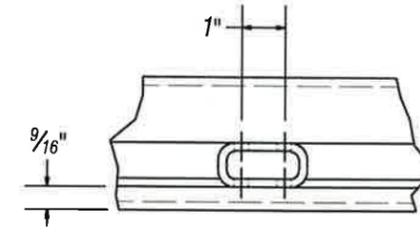
DETAIL E  
SCALE 2" = 1'-0"



DETAIL F  
SCALE 2" = 1'-0"



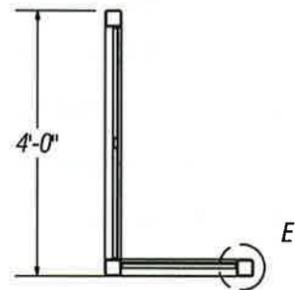
DETAIL G  
SCALE 2" = 1'-0"



DETAIL H  
SCALE 3" = 1'-0"

Note: Decorative metal panels are fastened to the 1"x1" angle with a 1/4" threaded rod fastener tamperproof nut with neoprene washers on both sides @ 6" O.C. (20)  
See Page 9

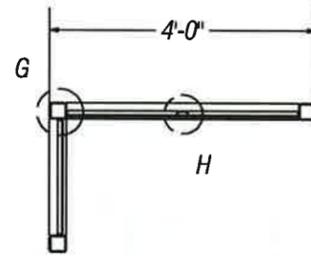
NOTE:  
IN (5) UNITS DO NOT DRILL LEVELING BASE HOLES IN THE SMALL WALL FAR FROM THE CENTER SIDE. (3) PPE AND (2) PPF



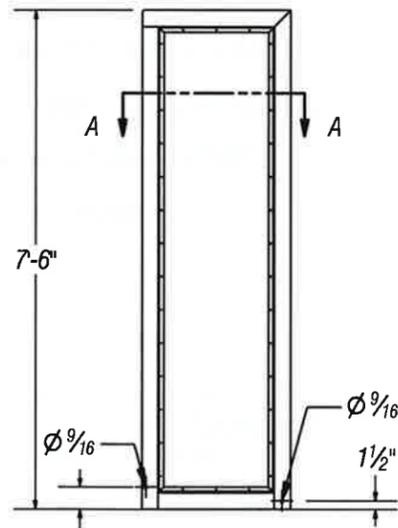
SECTION A-A  
SCALE 3/8"=1'



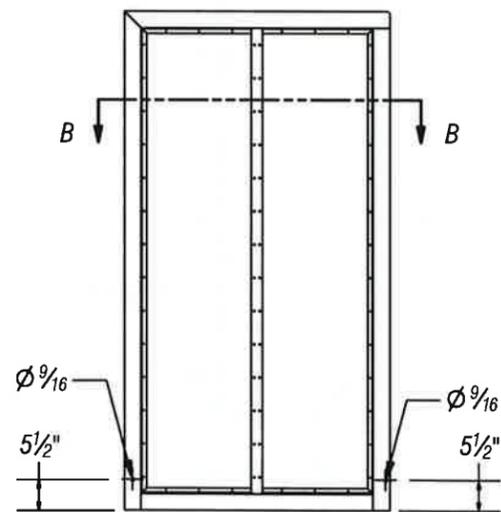
SECTION B-B  
SCALE 3/8"=1'



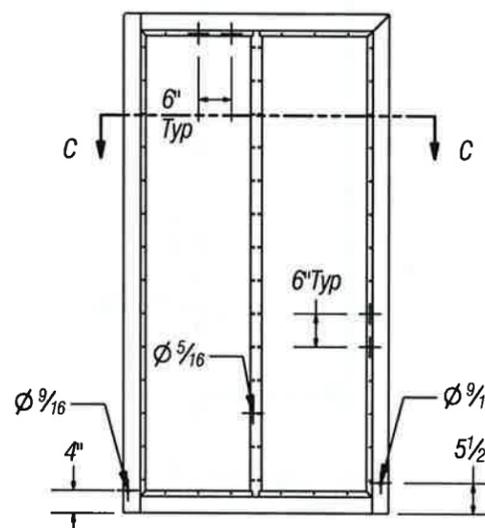
SECTION C-C  
SCALE 3/8"=1'



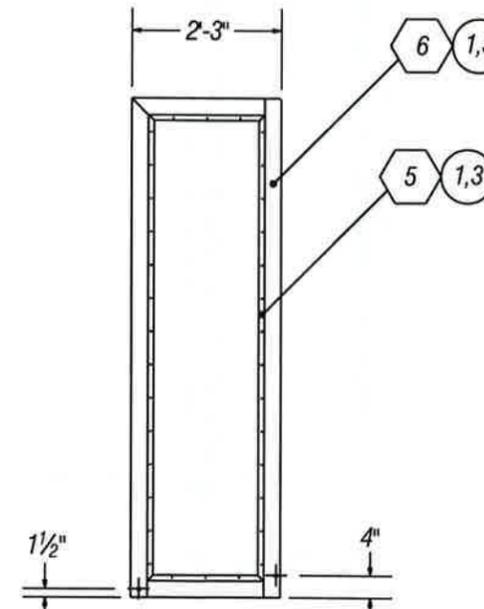
COMPONENT "W3"  
BACK VIEW LEFT WALL  
SCALE 3/8"=1'



COMPONENT "W3"  
BACK VIEW - RIGHT WALL  
SCALE 3/8"=1'



COMPONENT "W3"  
FRONT VIEW - RIGHT WALL  
SCALE 3/8"=1'



COMPONENT "W3"  
FRONT VIEW - LEFT WALL  
SCALE 3/8"=1'

Material Legend

1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

Notes

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/ neoprene washers on both sides @ 6" O. C.

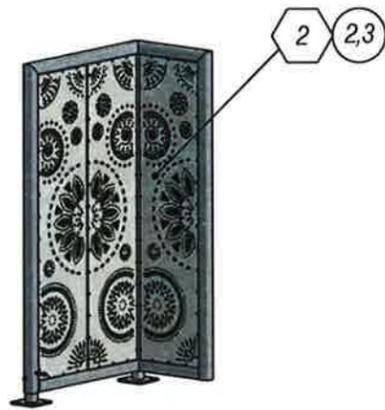
Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

COMPONENT "W3" (23)	
Date:	4/15/2013
Comments:	

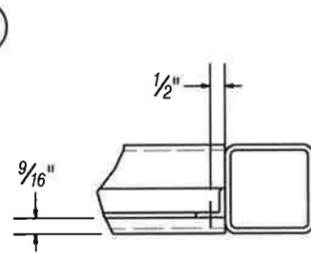


△	Date:	By:	
R1	5/1/13	JS	Welding Symbols
R2	6/7/13	JS	Leveling holes placement

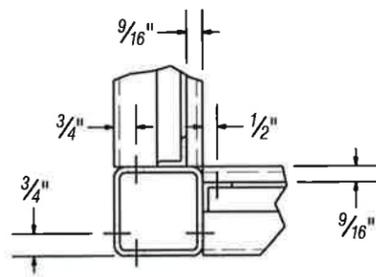
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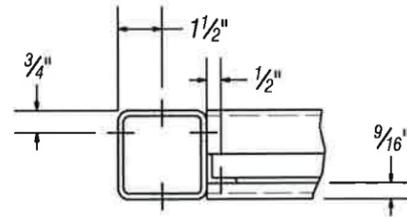
COMPONENT "W3-M"  
ISOMETRIC VIEW  
SCALE 1/4"=1'



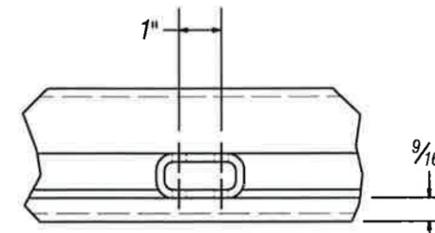
DETAIL A  
SCALE 2" = 1'-0"



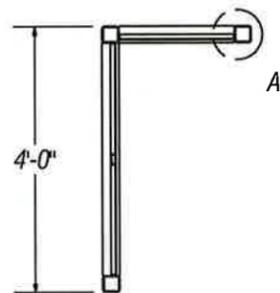
DETAIL B  
SCALE 2" = 1'-0"



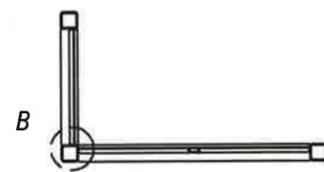
DETAIL C  
SCALE 2" = 1'-0"



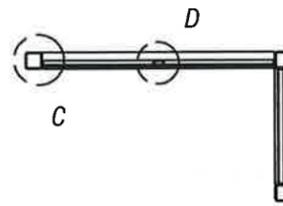
DETAIL D  
SCALE 3" = 1'-0"



SECTION A-A  
SCALE 3/8"=1'

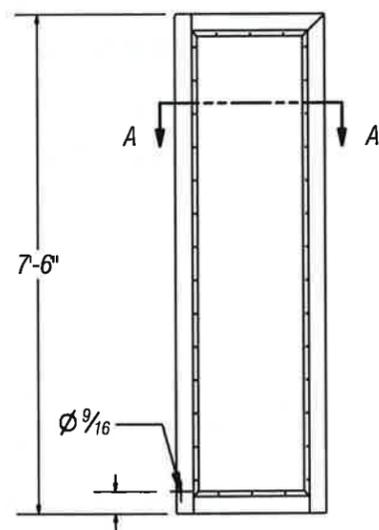


SECTION B-B  
SCALE 3/8"=1'

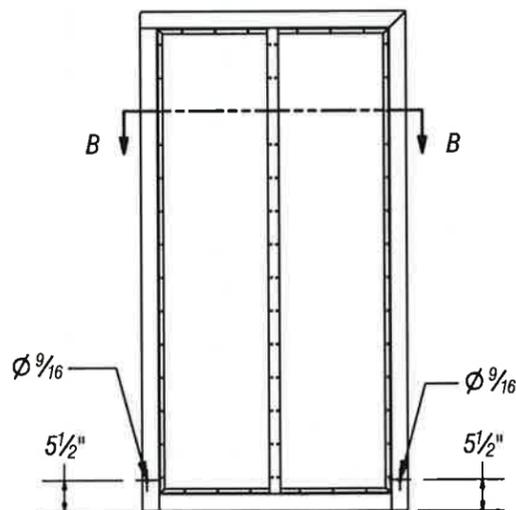


SECTION C-C  
SCALE 3/8"=1'

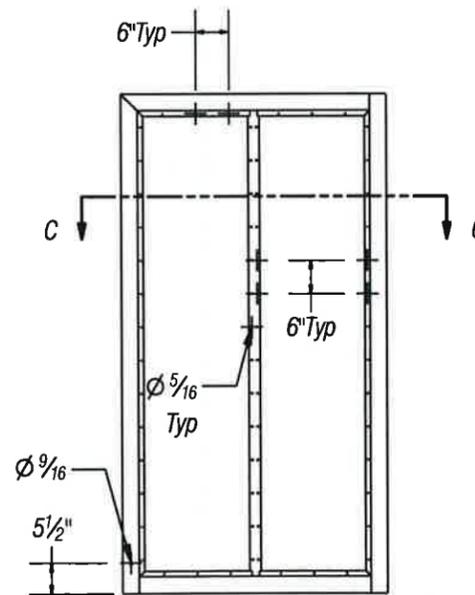
Note: Decorative metal panels are fastened to the 1"x1" angle with a 1/4" threaded rod fastener tamperproof nut with neoprene washers on both sides @ 6" O.C. (20)  
See Page 9



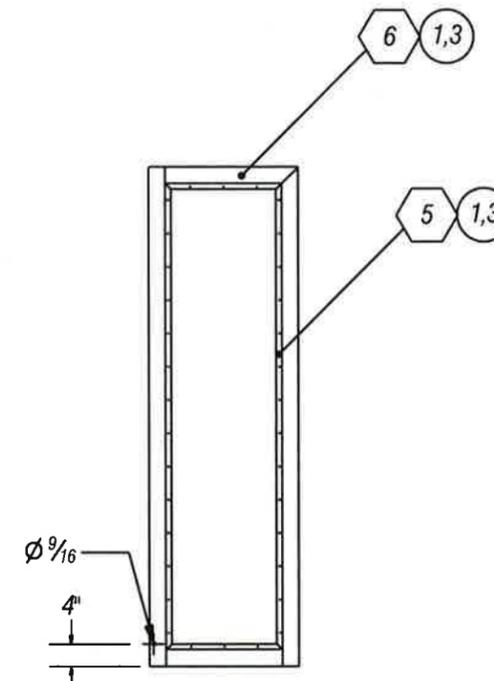
COMPONENT "W3-M"  
BACK VIEW - RIGHT WALL  
SCALE 3/8"=1'



COMPONENT "W3-M"  
BACK VIEW - LEFT WALL  
SCALE 3/8"=1'



COMPONENT "W3-M"  
FRONT VIEW - LEFT WALL  
SCALE 3/8"=1'



COMPONENT "W3-M"  
FRONT VIEW - RIGHT WALL  
SCALE 3/8"=1'

Material Legend

1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

Notes

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

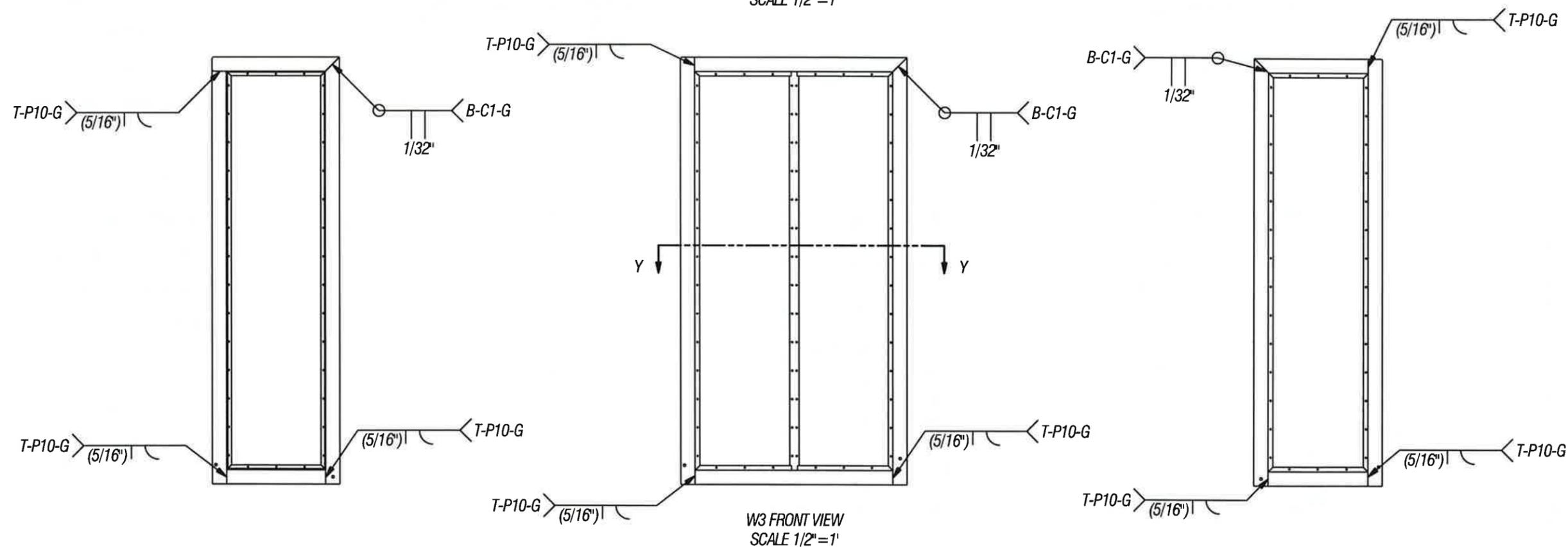
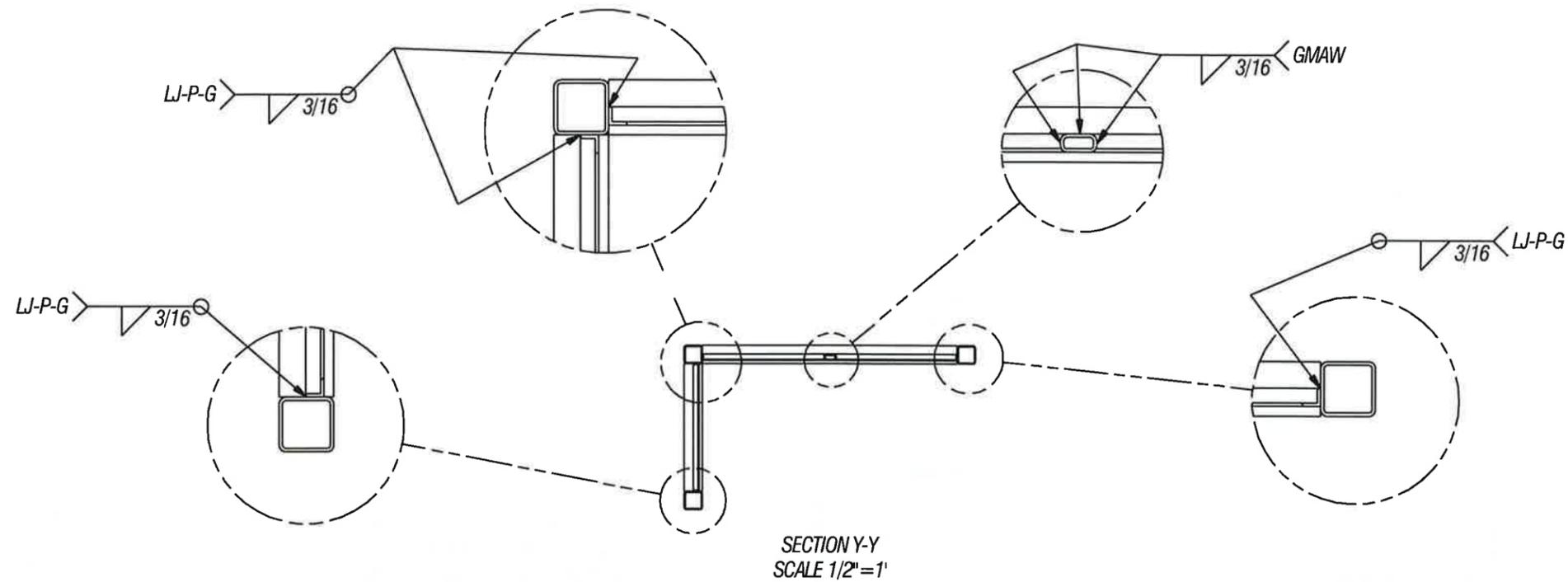
Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

COMPONENT "W3-M" (3)	
Date:	4/15/2013
Comments:	



△	Date:	By:	
R1	5/1/13	JS	Welding Symbols
R2	6/7/13	JS	Leveling holes placement

Sheet
7



Material Legend	
1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
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6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend	
1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.

Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

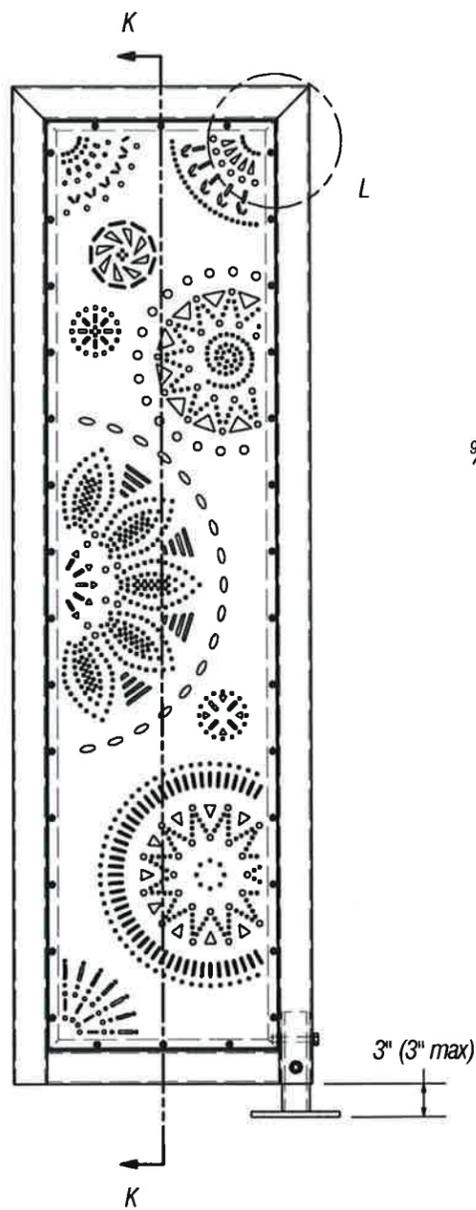
<b>Welding Details</b>	
Date:	4/15/2013
Comments:	



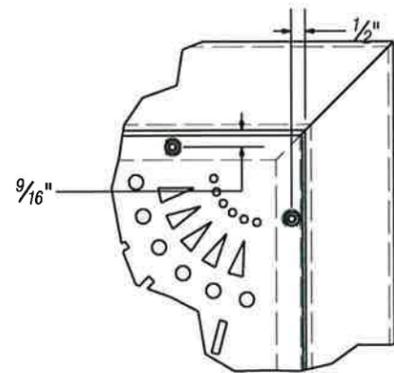
12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000

△	Date:	By:	
R1	5/1/13	JS	Welding Symbols
R2	6/7/13	JS	Leveling holes placement

Sheet
<b>8</b>



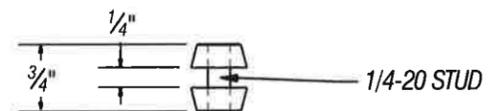
W1 TYPICAL HARDWARE  
DECORATIVE WALL MOUNTING  
LEVELING BOLTS  
SCALE 3/4"=1'



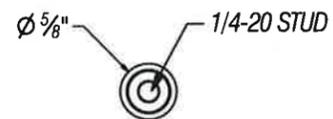
DETAIL L  
SCALE 2" = 1'-0"



SECTION K-K  
SCALE 3/4"=1'



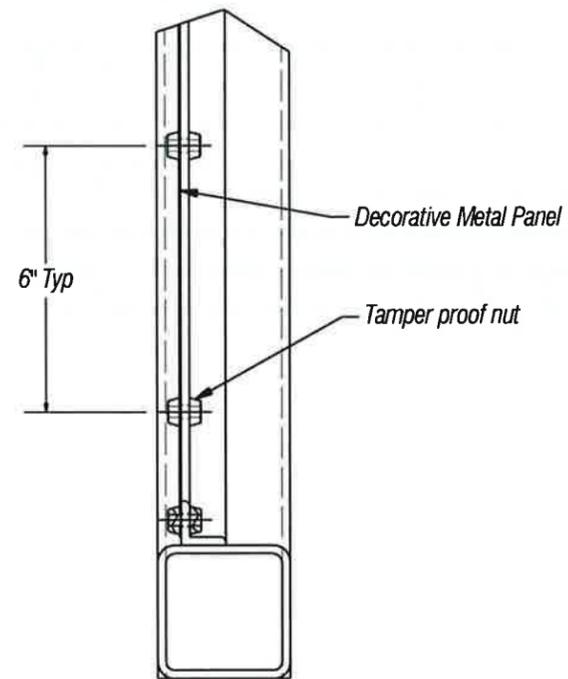
TAMPER PROOF NUT ASSEMBLY  
PLAN VIEW  
SCALE 1/2"=1"



TAMPER PROOF NUT  
FRONT VIEW  
SCALE 1/2"=1"



TAMPER PROOF NUT ASSEMBLY  
Zinc Plated Steel  
1/4-20  
SCALE 0.5:1



DETAIL M  
SCALE 3"=1'

Note: See individual product package for anchor bolt details

Material Legend

1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3" x 3/16" Steel Sq. Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 2-1/2" x 1/4" Steel S. Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor G17
5	

Notes

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

Typical Hardware	
Date:	4/15/2013
Comments:	



△	Date:	By:		Sheet
R1	5/1/13	JS	Welding Symbols	9
R2	6/7/13	JS	Leveling holes placement	

# Santa Fe Trails

Product Package "C"

4/17/2013

Qty. 18



2 6/7/13 Leveling clearance

1 5/1/13 Welding Symbols

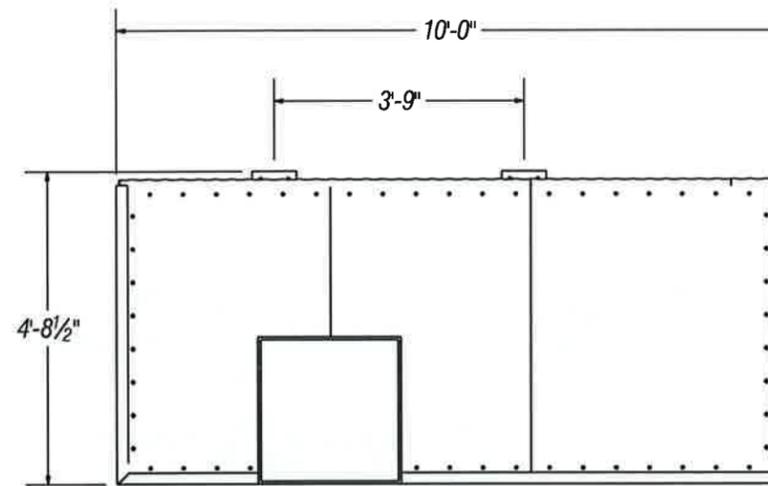
CUSTOM MANUFACTURING  
SINCE 1952



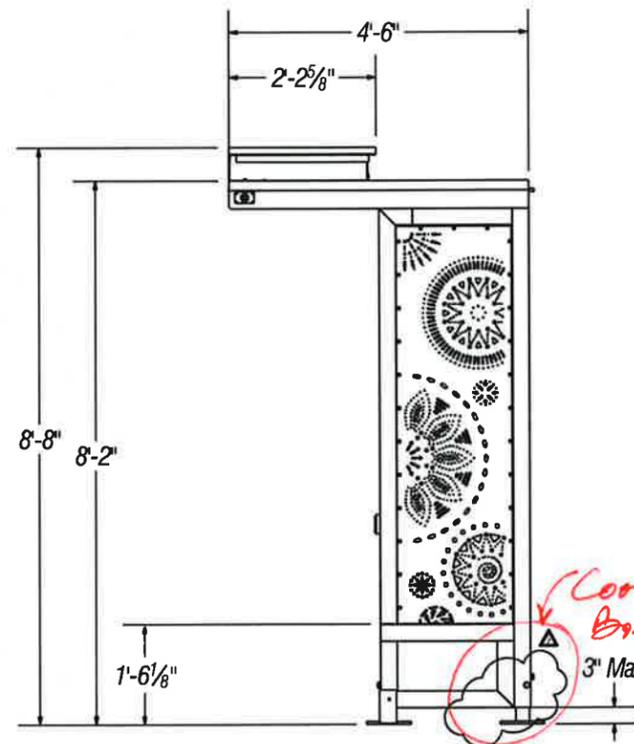
12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000



PRODUCT PACKAGE "C"  
ISOMETRIC VIEW  
SCALE 1/4=1'

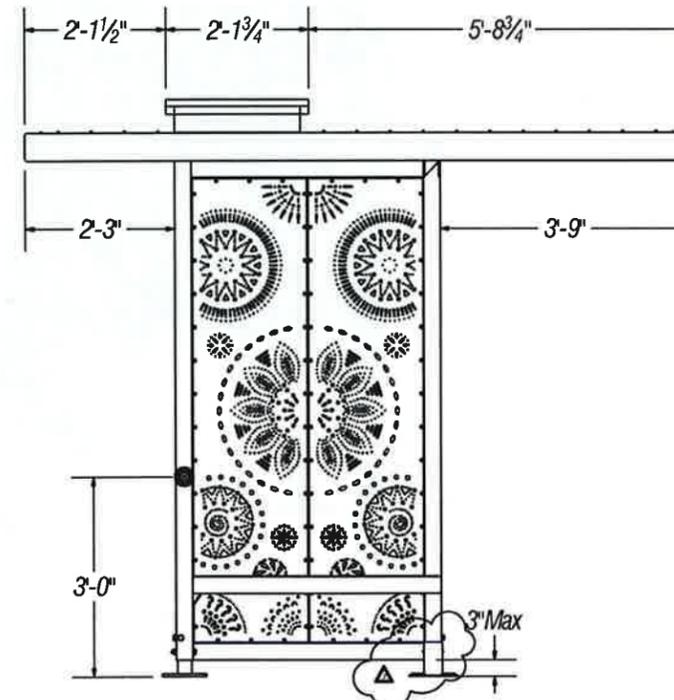


PRODUCT PACKAGE "C"  
PLAN VIEW  
SCALE 3/8=1'



PRODUCT PACKAGE "C"  
SIDE VIEW  
SCALE 3/8=1'

*Coordinate w/ Sheet 3  
Bolt Through Detail  
Component B1*



PRODUCT PACKAGE "C"  
FRONT VIEW  
SCALE 3/8=1'

Material Legend

1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3/16" Steel Square Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 1/4" Steel Square Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Polyarmor G17
5	

Notes

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/neoprene washers on both sides @ 6" O. C.

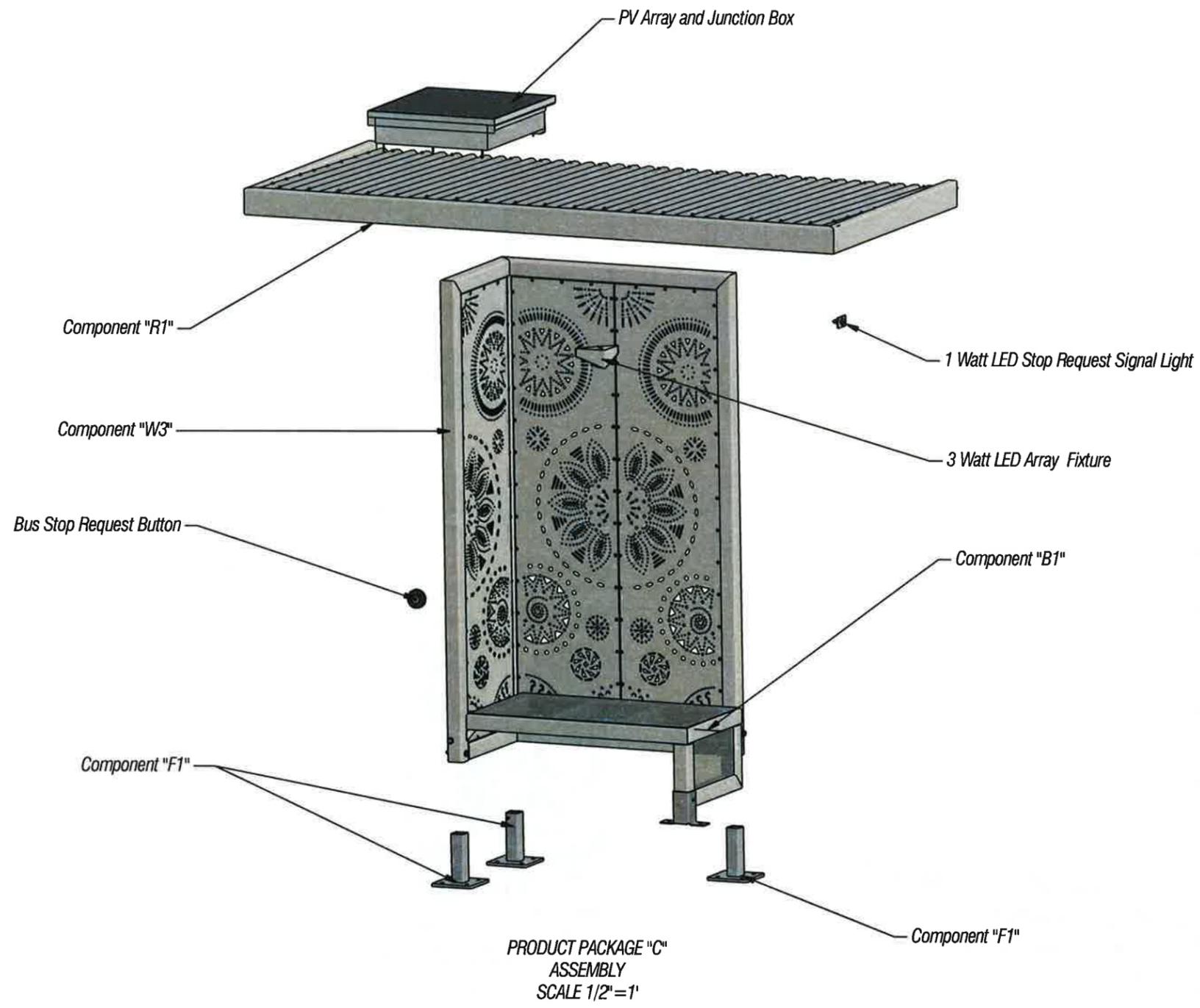
Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

PRODUCT PACKAGE "C"	
Date:	4/17/2013
Comments:	



△	Date:	By:	
R1	5/1/13	JS	Welding Information
R2	6/7/13	JS	Leveling Clearance

Sheet
2



Material Legend	
①	1/2" Steel Plate
②	16 Ga. Steel Sheet Metal
③	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
④	2" x 3" x 3/16" Steel R. Tube
⑤	1" x 1" x 3/16" Steel Angle
⑥	3" x 3/16" Steel Square Tube
⑦	7 Ga. Steel Sheet Metal
⑧	11 Ga. Steel Sheet Metal
⑨	2-1/2" x 1/4" Steel Square Tube
⑩	1" x 2" x 3/16" Steel Rec Tube
⑪	2" x 5" x 3/16" Steel Rec Tube
⑫	3/16" Steel Plate
⑬	2" x 1/8" Steel Angle
⑭	0.040" Aluminum Sheet Metal
⑮	

Finish Legend	
①	38/90018 Argento 314 Metallic
②	38/91020 Anodized Silver
③	44/00018 Smooth Glossy Clear
④	H-101 Polyarmor G17
⑤	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.

Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

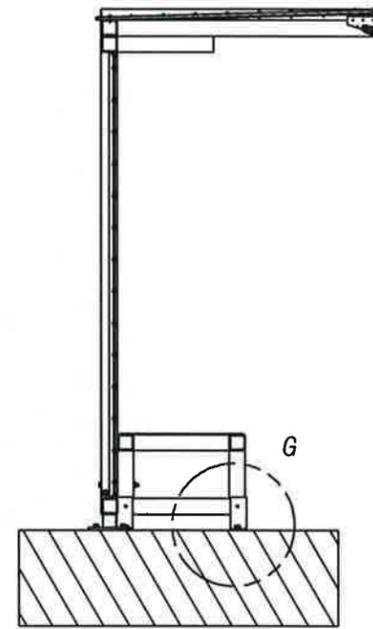
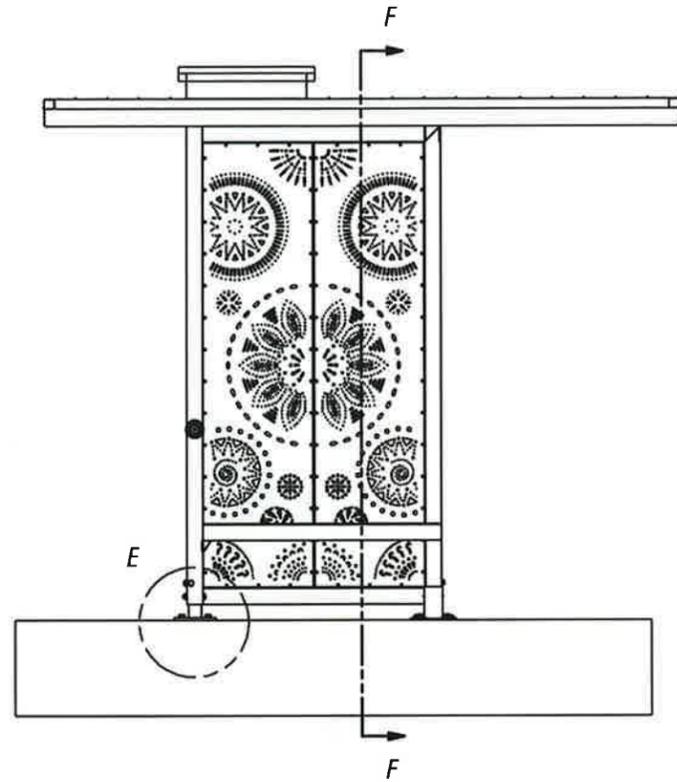
Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

<b>PRODUCT PACKAGE "C" ASSEMBLY</b>	
Date:	4/17/2013
Comments:	



12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3367 / 310 978 2000  
Fax 310 978 4000

△	Date:	By:	
R1	5/1/13	JS	Welding Information
R2	6/7/13	JS	Leveling Clearance



SECTION F-F  
SCALE 0.03 : 1

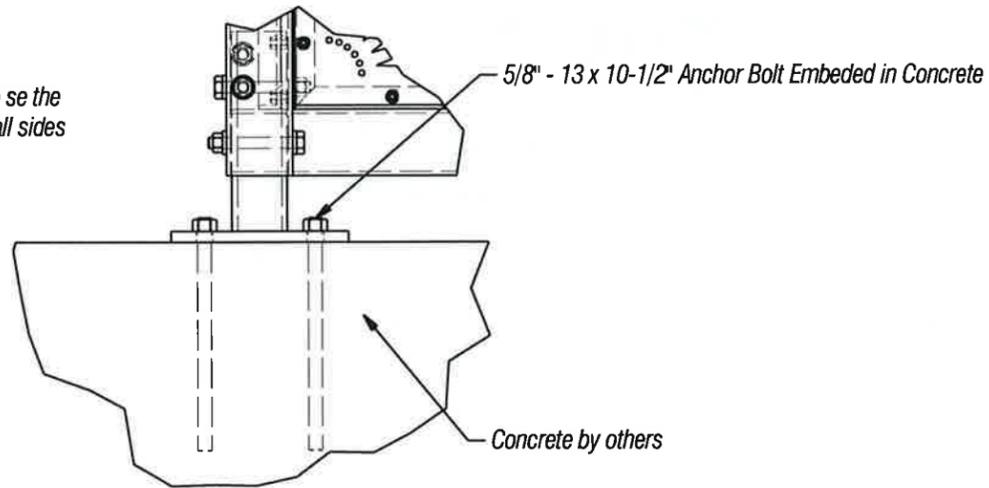
Material Legend	
1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3/16" Steel Square Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 1/4" Steel Square Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend	
1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Polyarmor G17
5	

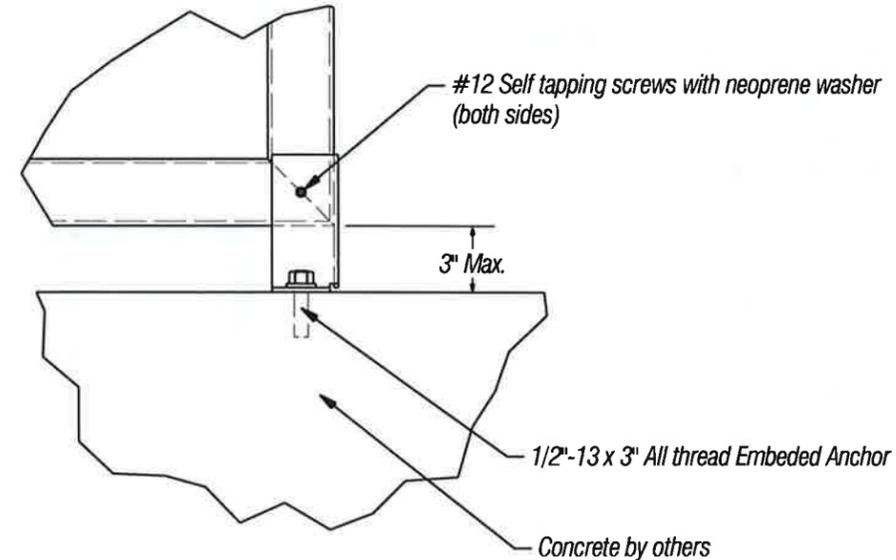
**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Note:  
See the wall construction package to see the placement of bolts in the different wall sides



DETAIL E  
SCALE 1 1/2" = 1'



DETAIL G  
SCALE 1 1/2" = 1'

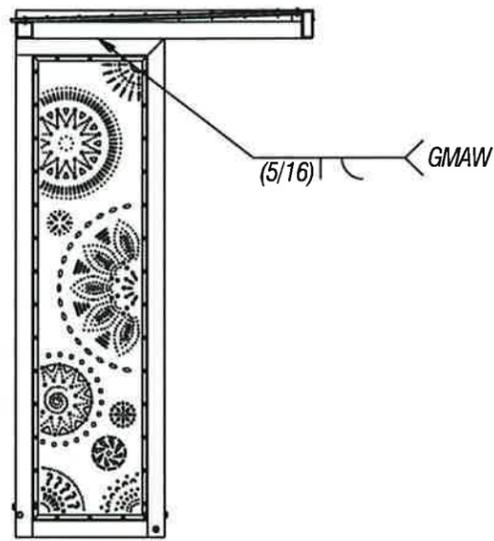
Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

Installing Product Package "C"	
Date:	4/17/2013
Comments:	

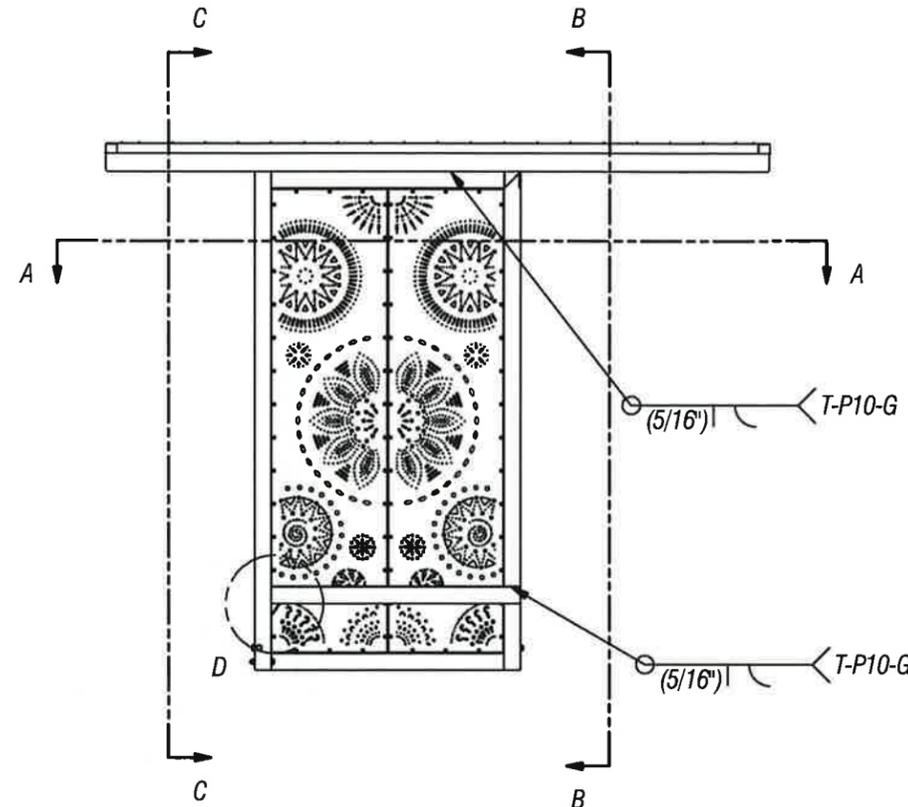


△	Date:	By:	
R1	5/1/13	JS	Welding Information
R2	6/7/13	JS	Leveling Clearance

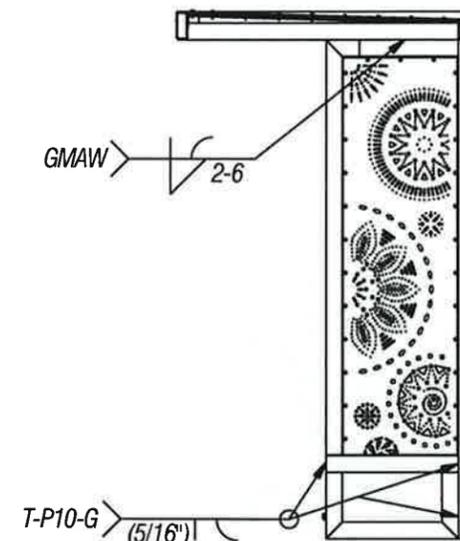
Sheet
6



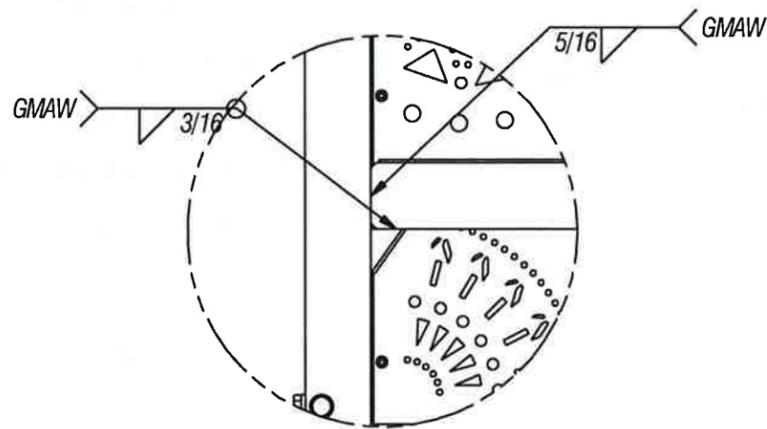
SECTION C-C  
SCALE 3/8"=1'



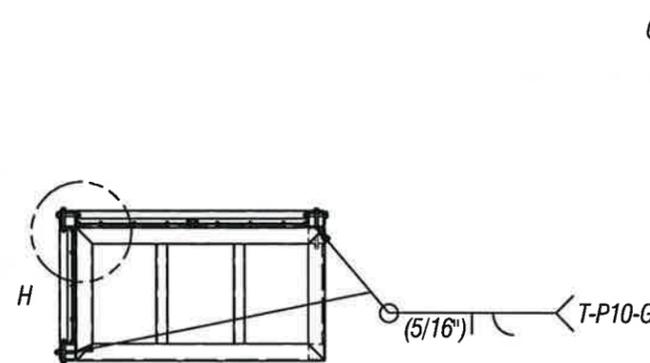
SECTION A-A  
SCALE 3/8"=1'



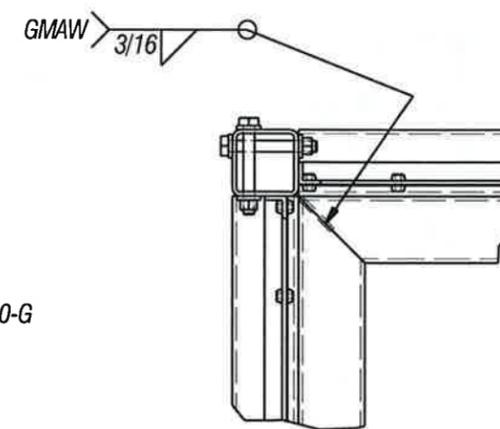
SECTION B-B  
SCALE 3/8"=1'



STIFFENING GUSSET  
DETAIL D  
SCALE 1 1/2" = 1'-0"



SECTION A-A  
SCALE 3/8"=1'



DETAIL H  
SCALE 1 1/2" = 1'-0"

**Material Legend**

1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3/16" Steel Square Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 1/4" Steel Square Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

**Finish Legend**

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Polyarmor G17
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tampoerproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

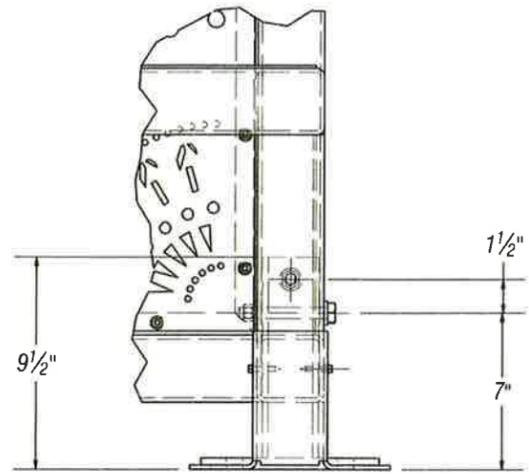
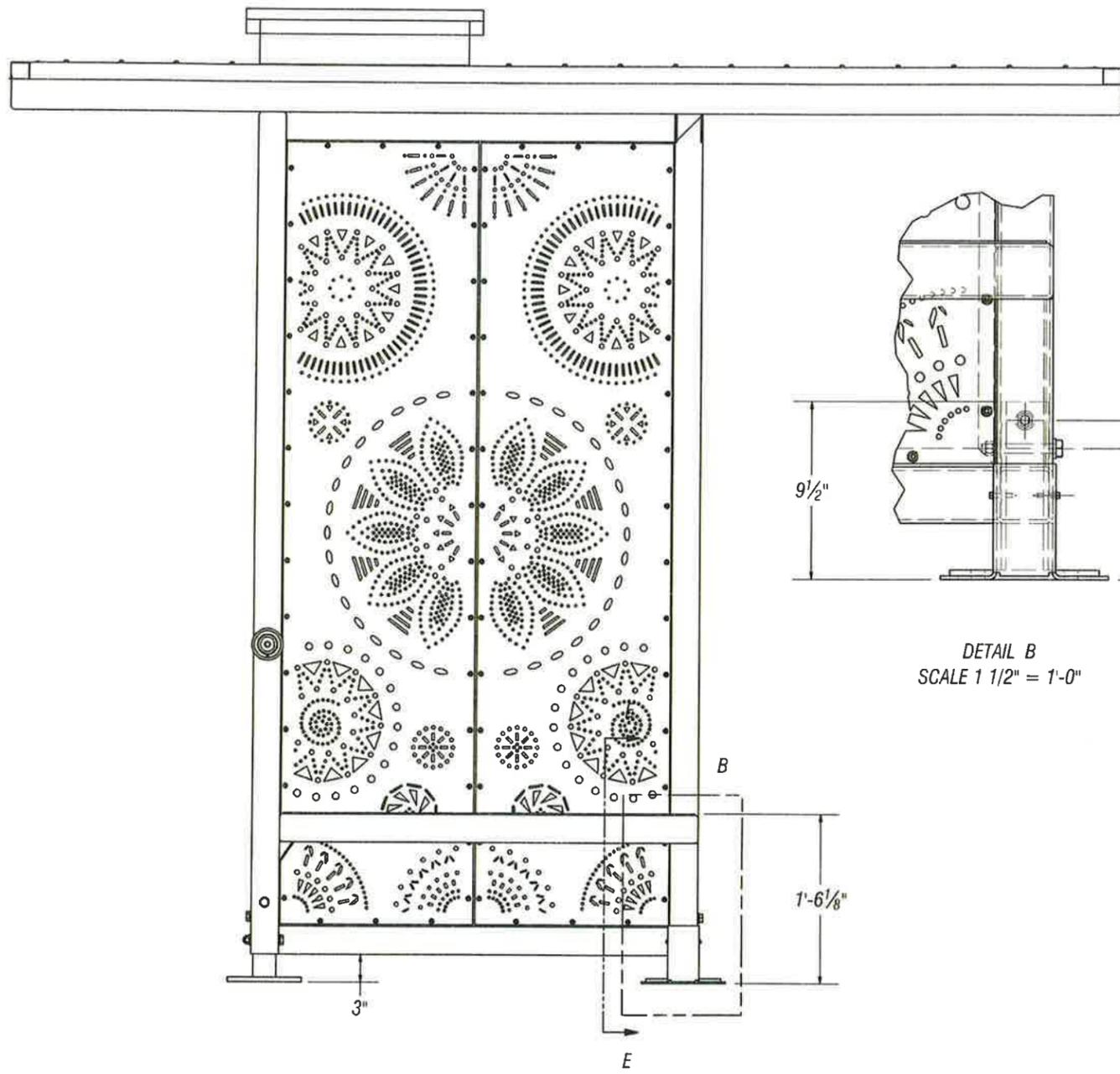
<b>Product Package "C" Welding</b>	
Date:	4/17/2013
Comments:	



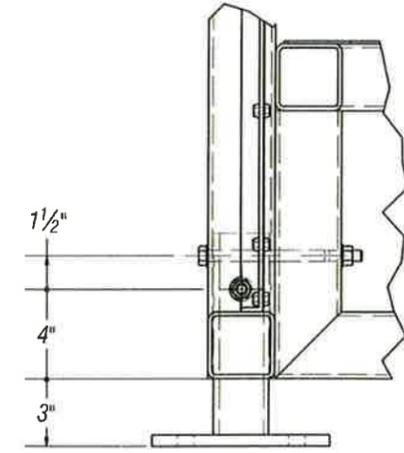
△	Date:	By:	
R1	5/1/13	JS	Welding Information
R2	6/7/13	JS	Leveling Clearance

Sheet

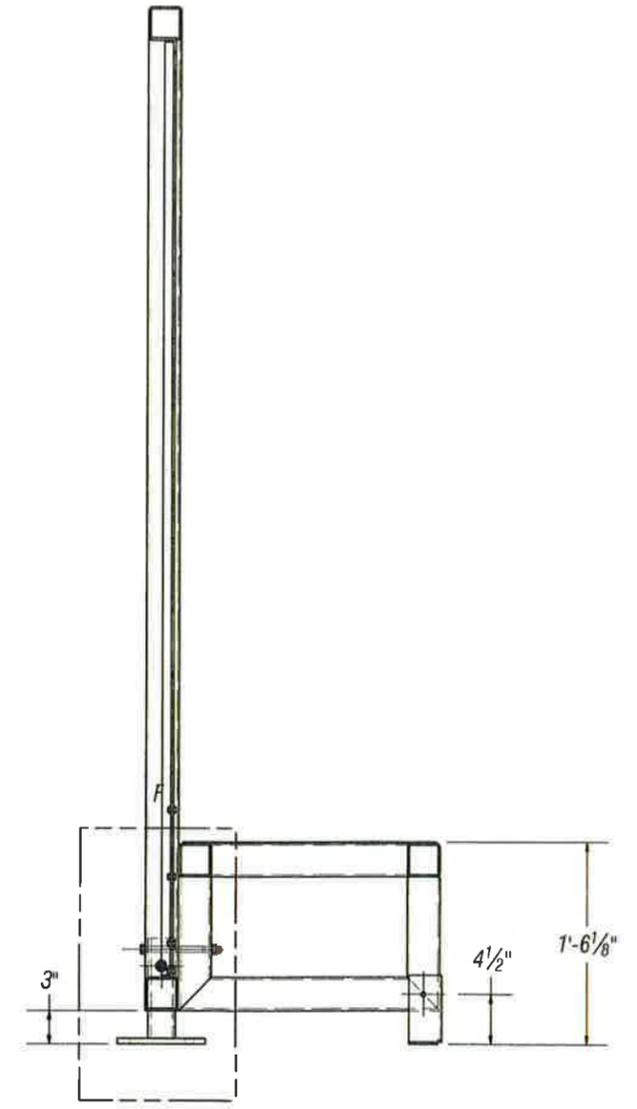
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DETAIL B  
SCALE 1 1/2" = 1'-0"

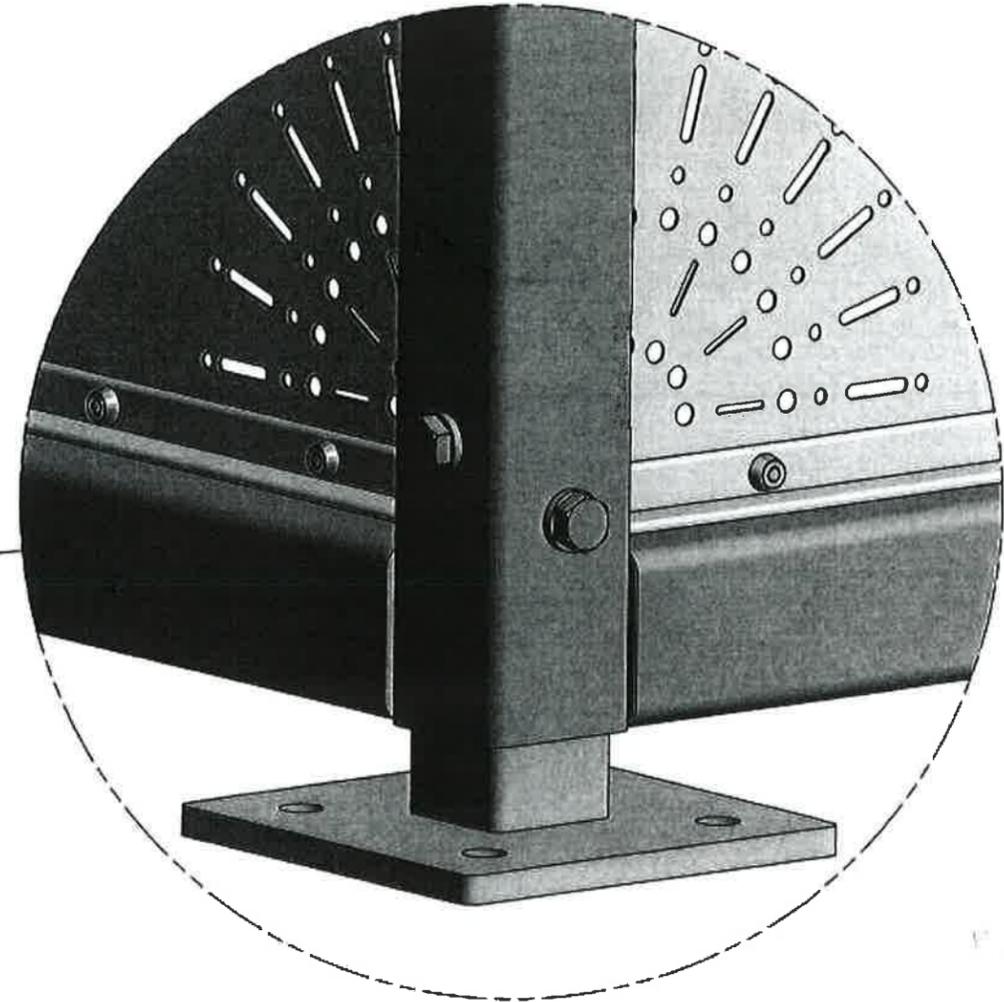
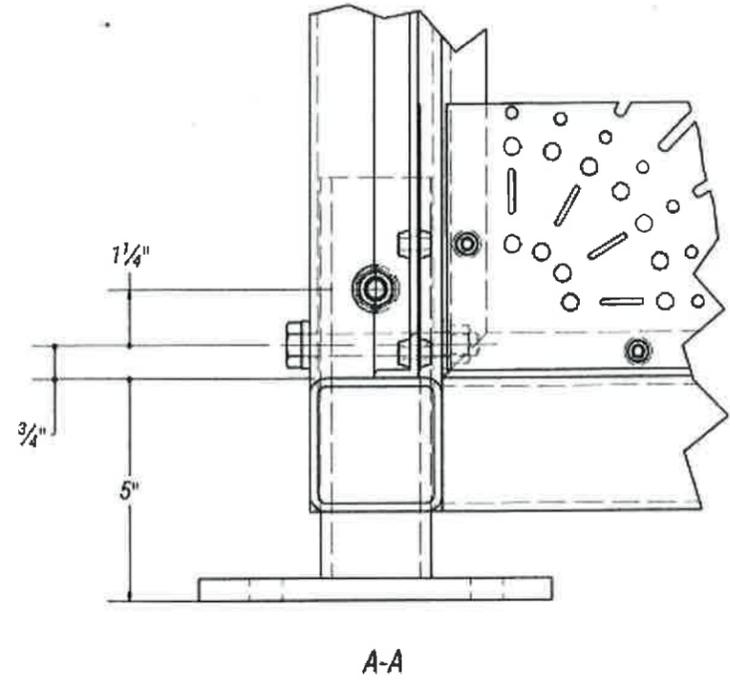
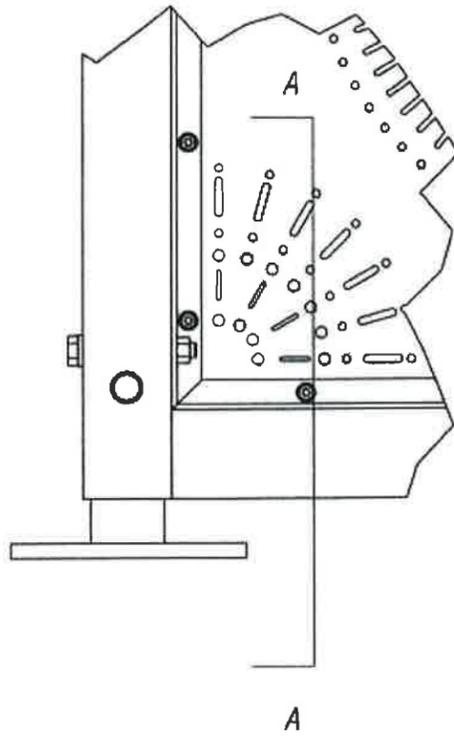


DETAIL F  
SCALE 1 1/2" = 1'-0"



SECTION E-E  
SCALE 3/4" = 1'

CORNER BOLT CONFIG.  
# 1



Handwritten notes or signature.

# Santa Fe Trails

Components "R1", "R1m", "R2" and "R2m"

4/17/2013

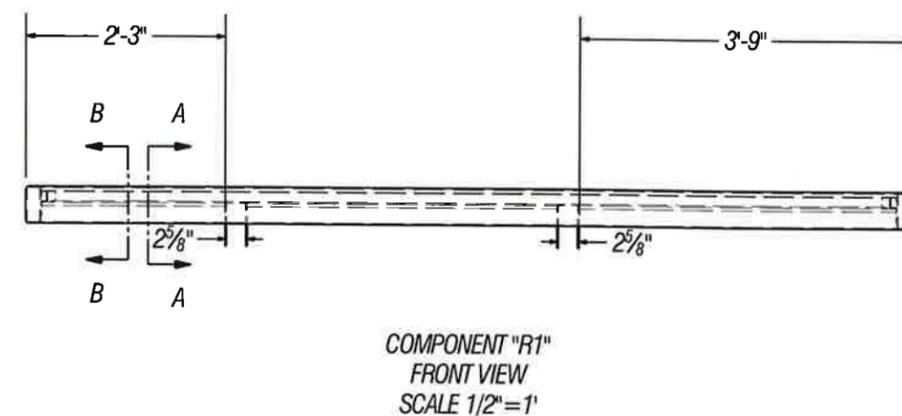
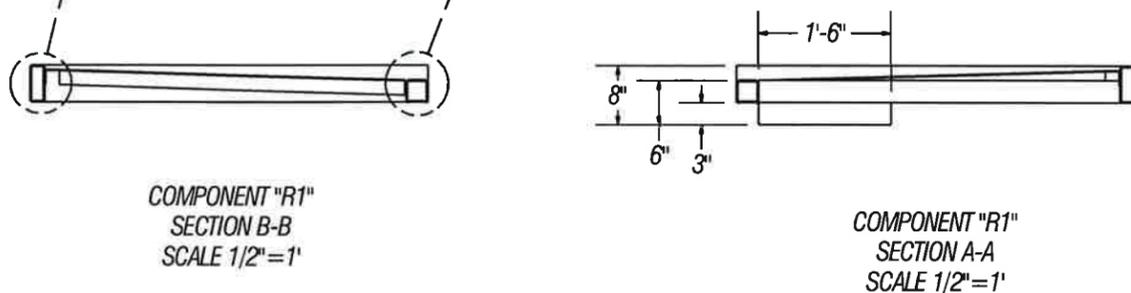
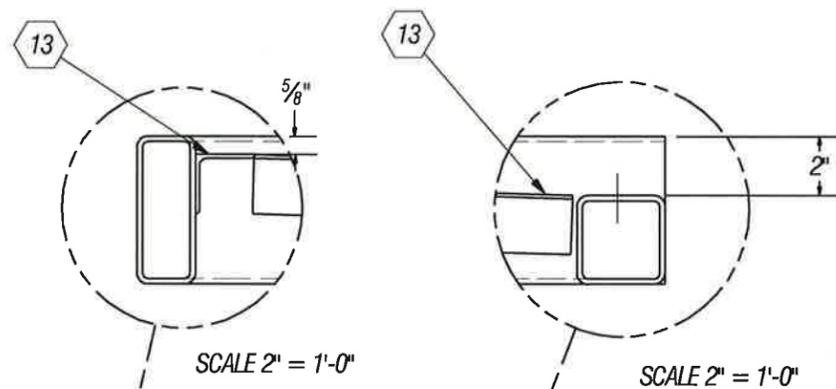
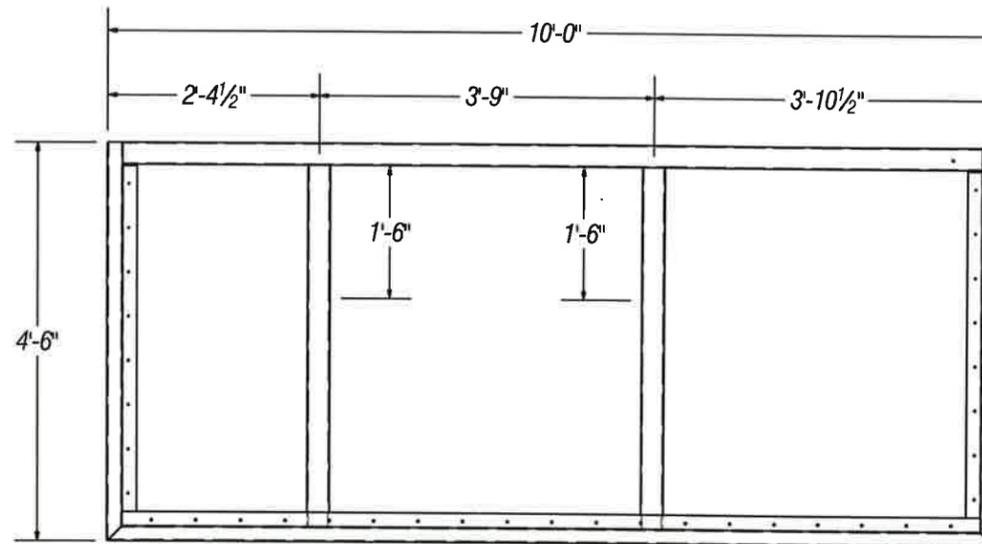
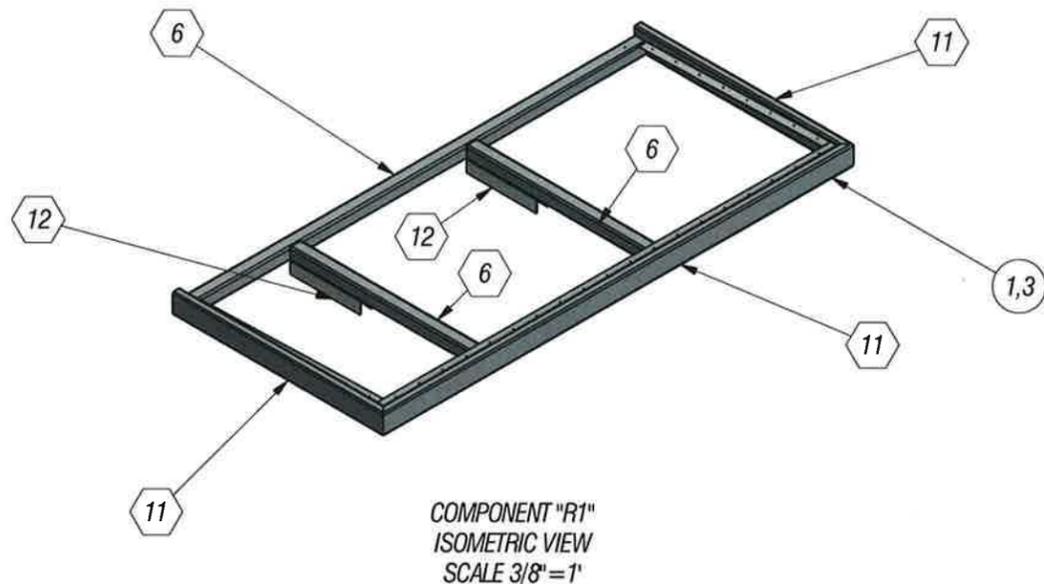
Qty.  
21-R1  
3-R1m  
8-R2  
6-R2m



 5/1/13 Welding Symbols

CUSTOM MANUFACTURING  
SINCE 1952

 12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000



Material Legend	
1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3/16" Steel Square Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 1/4" Steel Square Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend	
1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.

Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

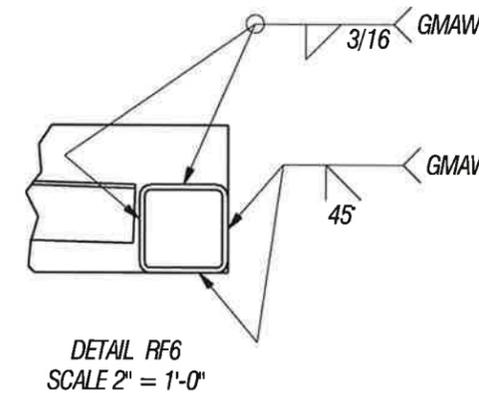
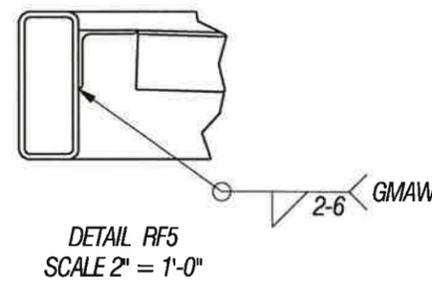
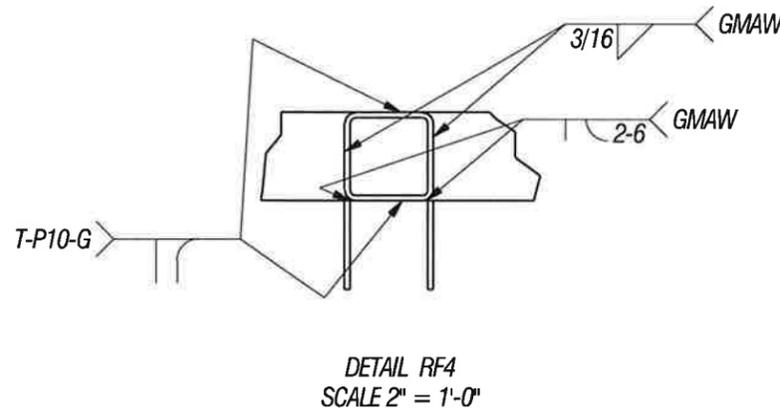
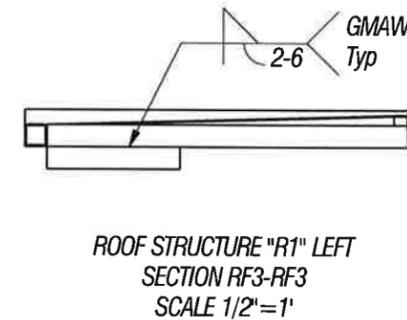
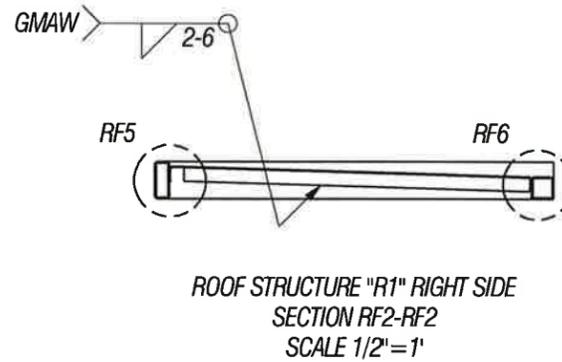
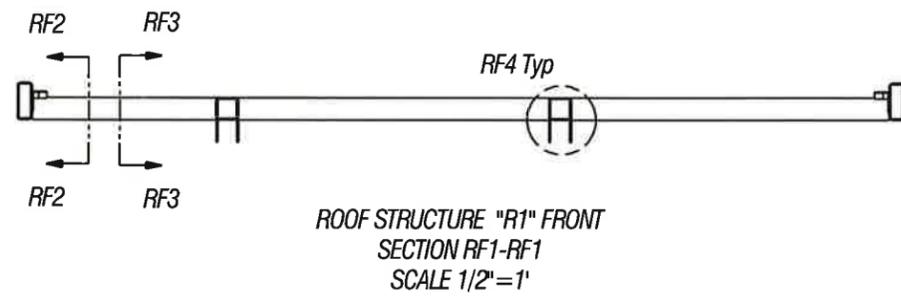
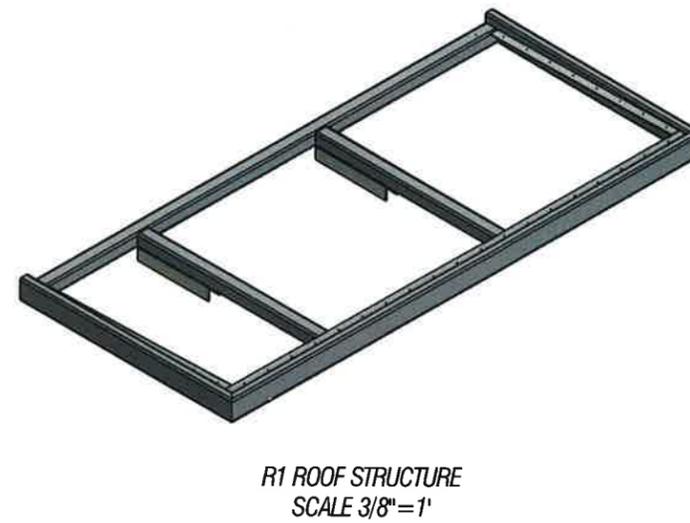
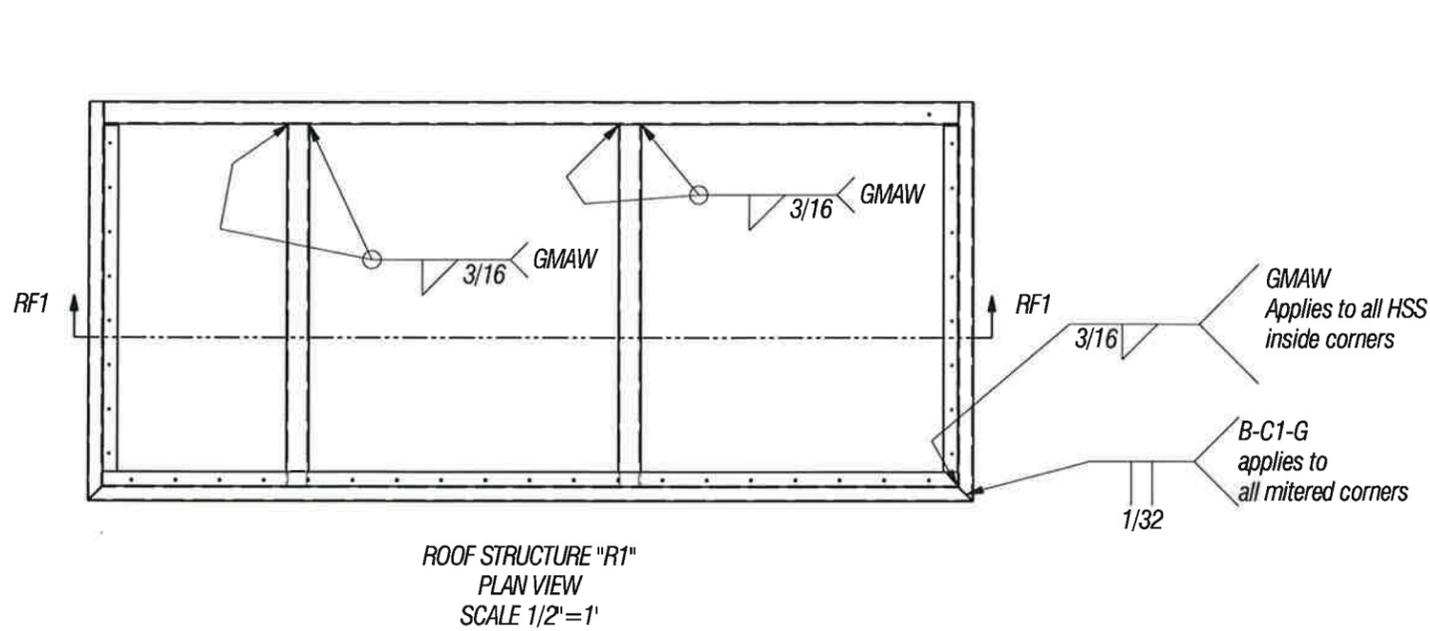
<b>COMPONENT "R1"</b>	
Date:	4/17/2013
Comments:	



12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000

△	Date:	By:	
R1	5/1/13	JS	Welding Symbols

Sheet
2



Material Legend	
1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3/16" Steel Square Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 1/4" Steel Square Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend	
1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.

Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/neoprene washers on both sides @ 6" O. C.

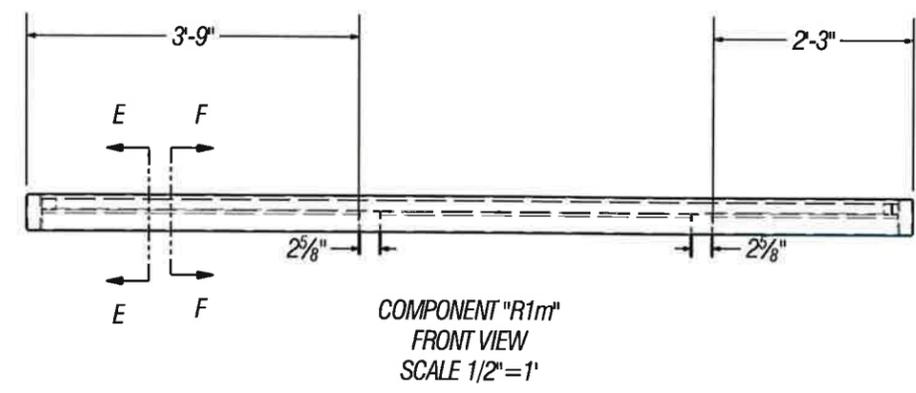
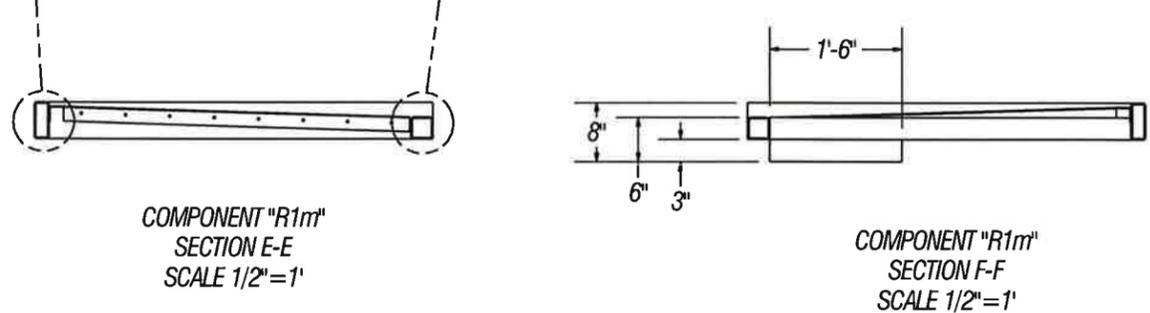
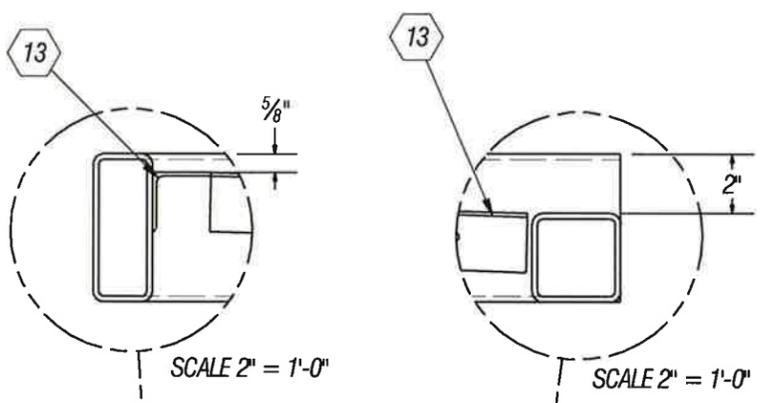
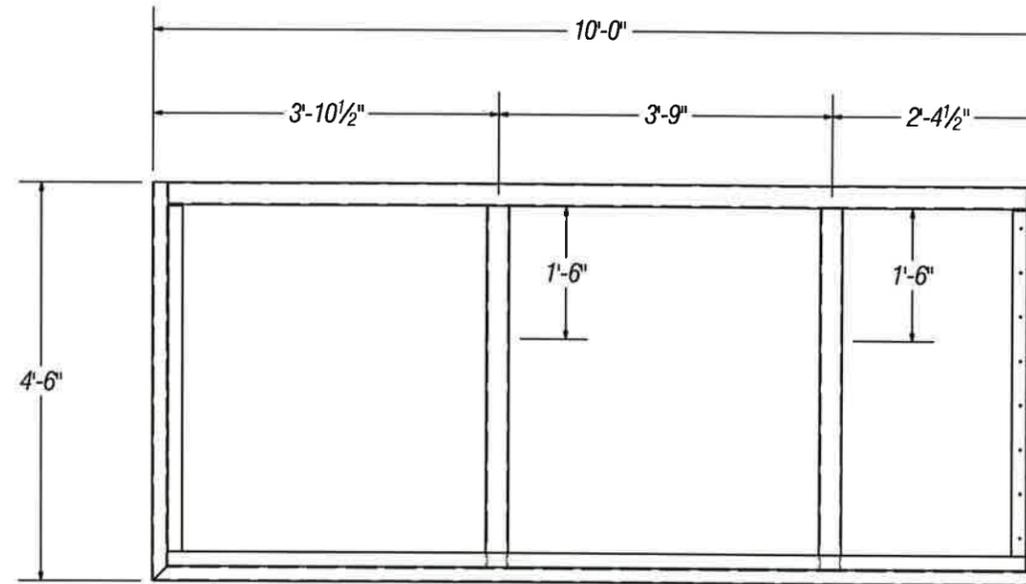
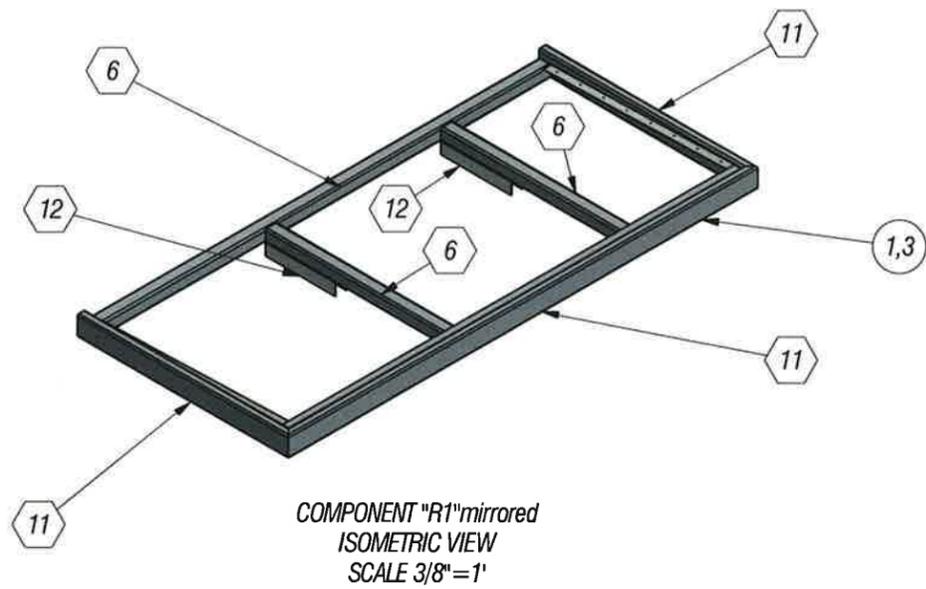
Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

Welding Component "R1"	
Date:	4/17/2013
Comments:	

12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000

△	Date:	By:	
R1	5/1/13	JS	Welding Symbols

Sheet
3



Material Legend	
1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3/16" Steel Square Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 1/4" Steel Square Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend	
1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/neoprene washers on both sides @ 6" O. C.

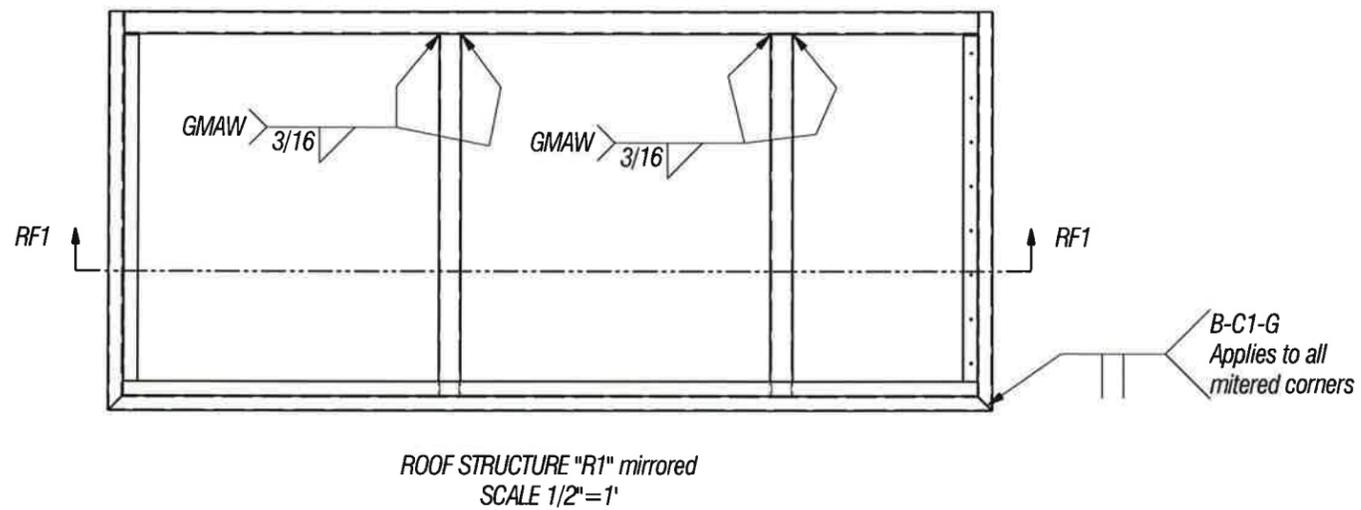
Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

<b>COMPONENT "R1m"</b>	
Date:	4/17/2013
Comments:	

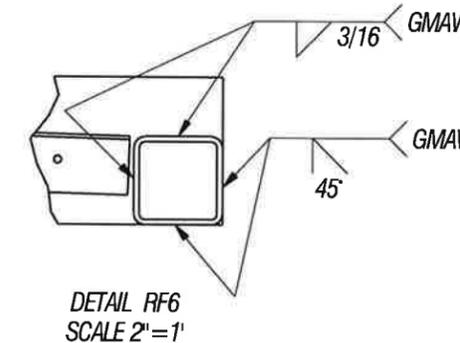
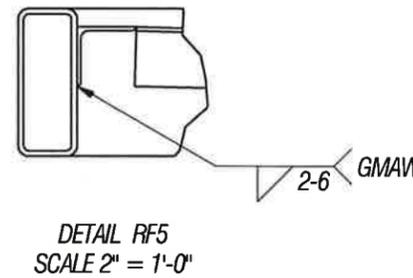
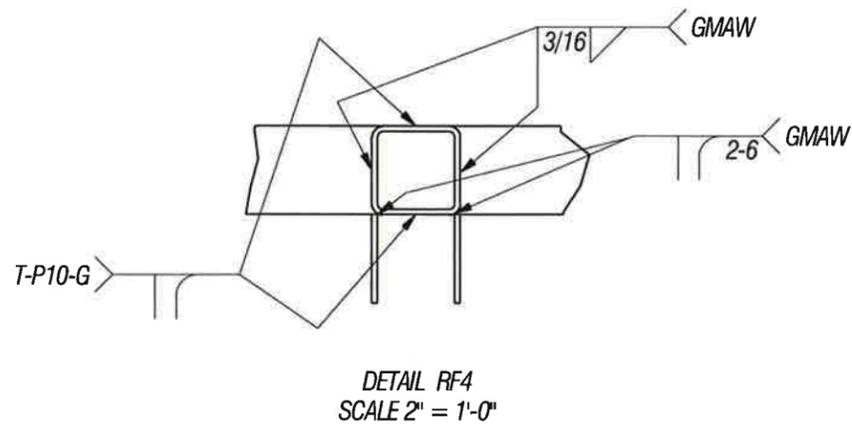
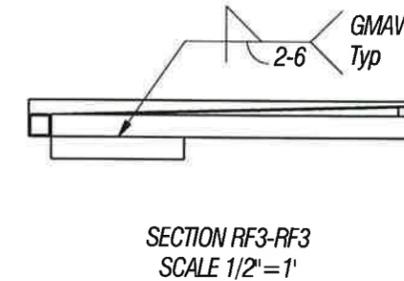
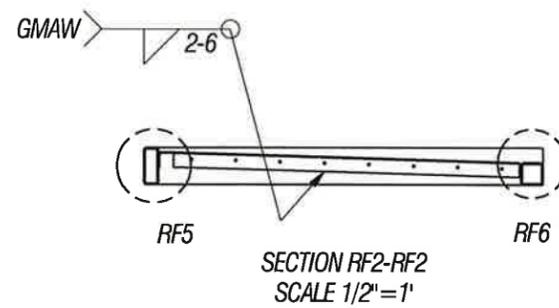
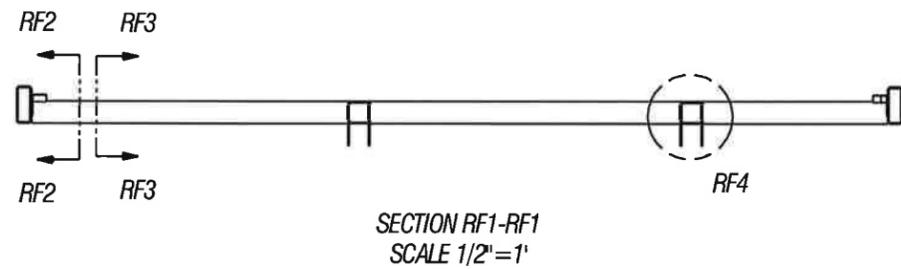
12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000

△	Date:	By:	
R1	5/1/13	JS	Welding Symbols

Sheet	<b>4</b>
-------	----------



R1 ROOF STRUCTURE  
SCALE 3/8"=1'



**Material Legend**

1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3/16" Steel Square Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 1/4" Steel Square Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

**Finish Legend**

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/tamperproof nut w/neoprene washers on both sides @ 6" O. C.

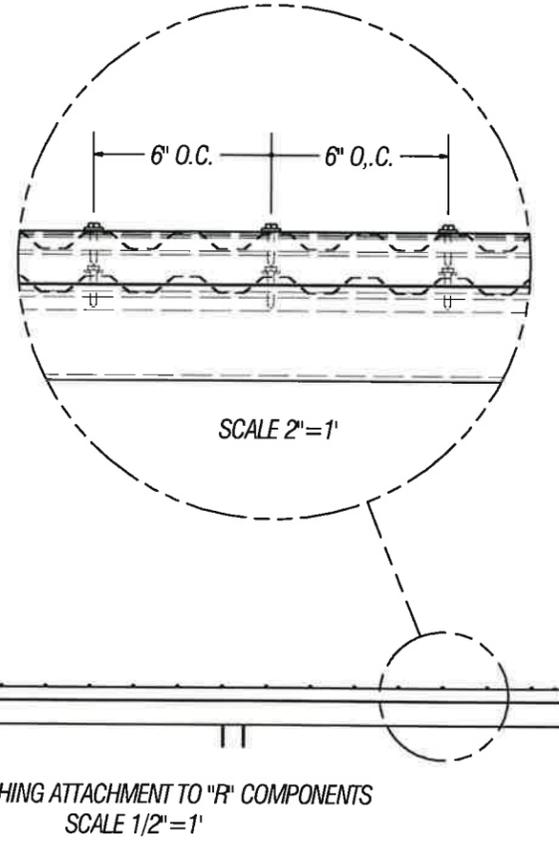
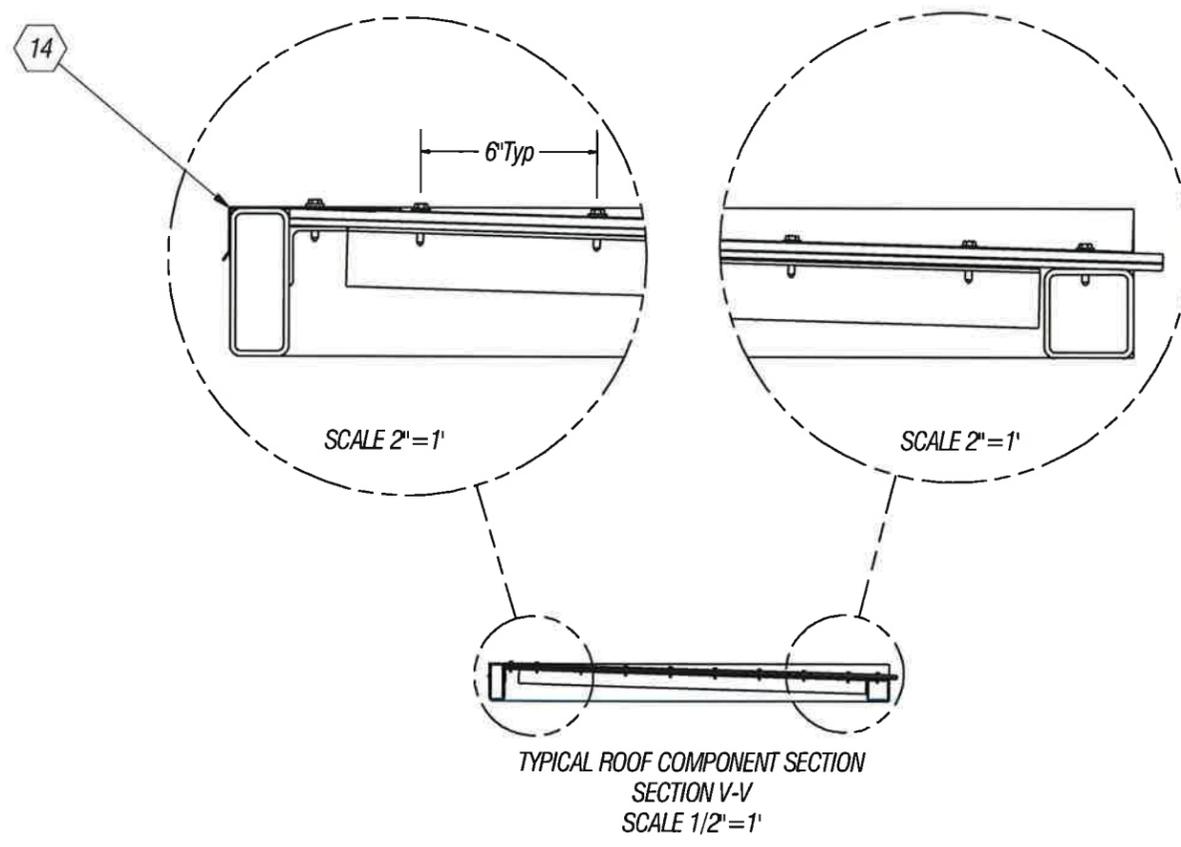
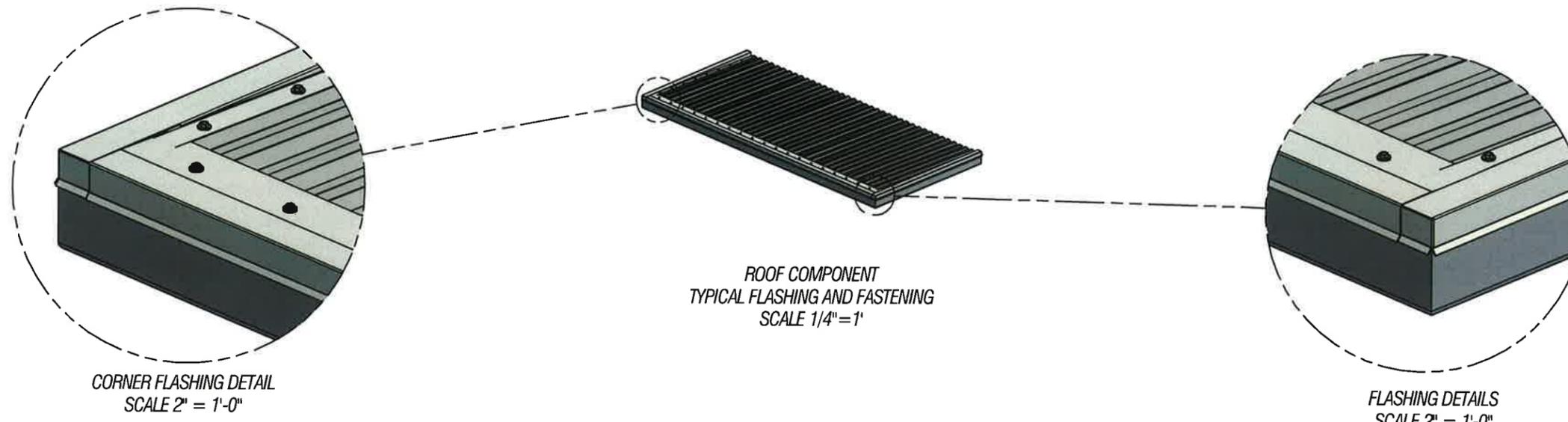
Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

Welding "R1" mirrored	
Date:	4/17/2013
Comments:	

12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000

△	Date:	By:	
R1	5/1/13	JS	Welding Symbols

Sheet
5



Material Legend	
1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3/16" Steel Square Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 1/4" Steel Square Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

Finish Legend	
1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.

Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/neoprene washers on both sides @ 6" O. C.

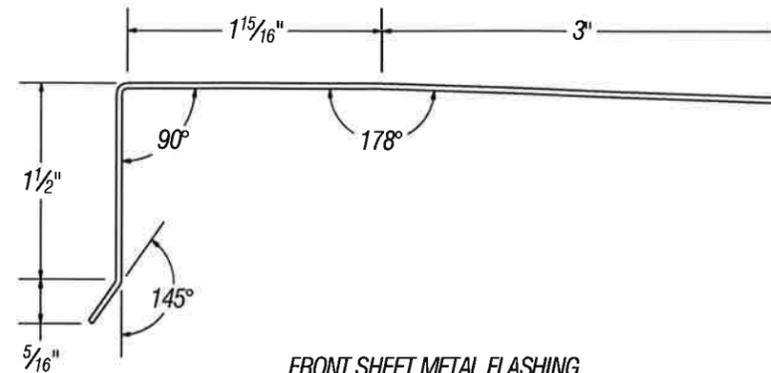
Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

<b>DECK AND FLASHING DETAILS</b>	
Date:	4/17/2013
Comments:	

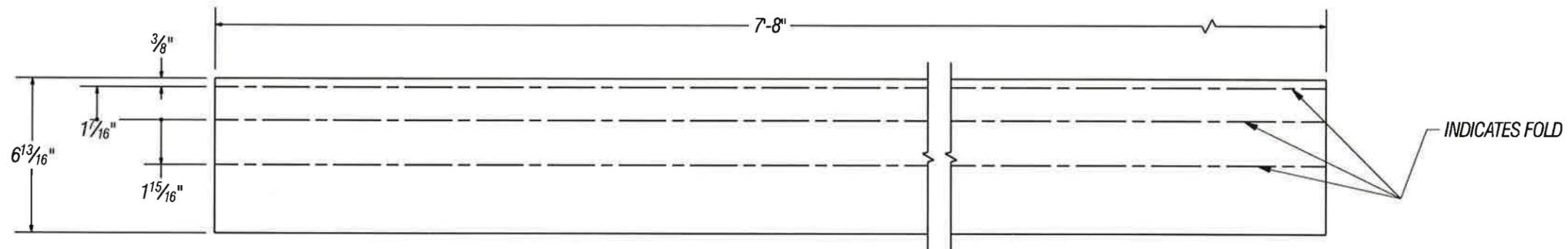


12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800.338.3387 / 310.978.2000  
Fax 310.978.4000

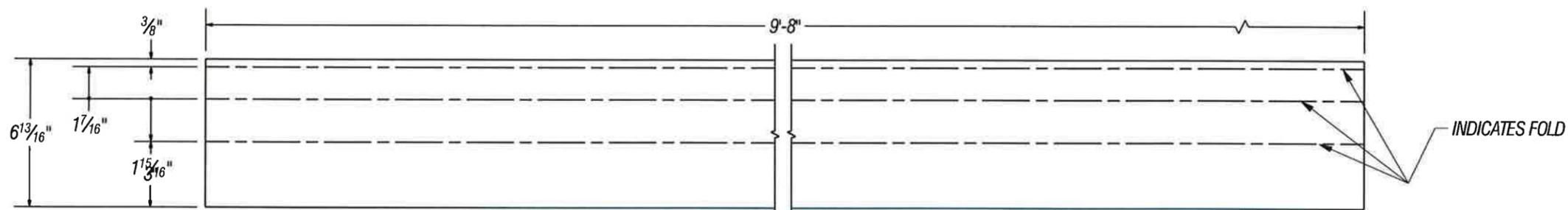
△	Date:	By:	
R1	5/1/13	JS	Welding Symbols



FRONT SHEET METAL FLASHING  
SCALE 3/4" = 1"



R2 & R2m FRONT FLASHING  
FLAT PATTERN  
SCALE 2" = 1'



R1 AND R1m FRONT FLASHING  
FLAT PATTERN  
SCALE 2" = 1'

**Material Legend**

1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3/16" Steel Square Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 1/4" Steel Square Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

**Finish Legend**

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

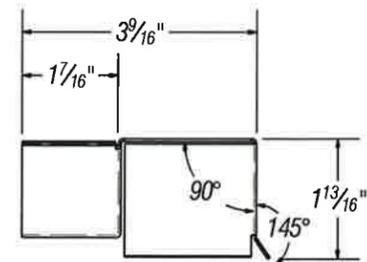
<b>Sheet Metal Flashing Flat Patterns</b>	
Date:	4/17/2013
Comments:	



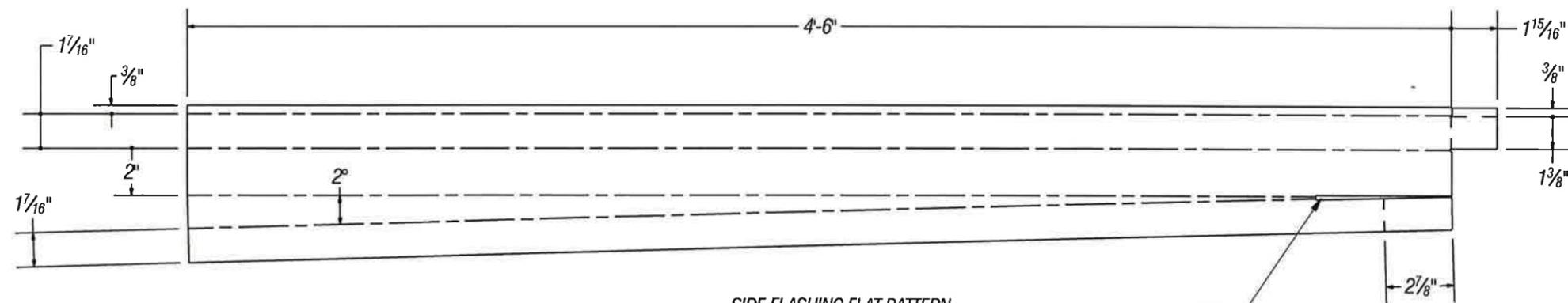
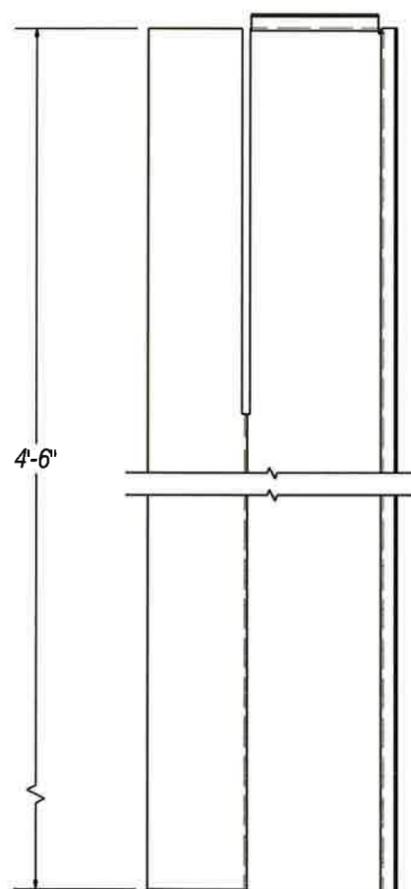
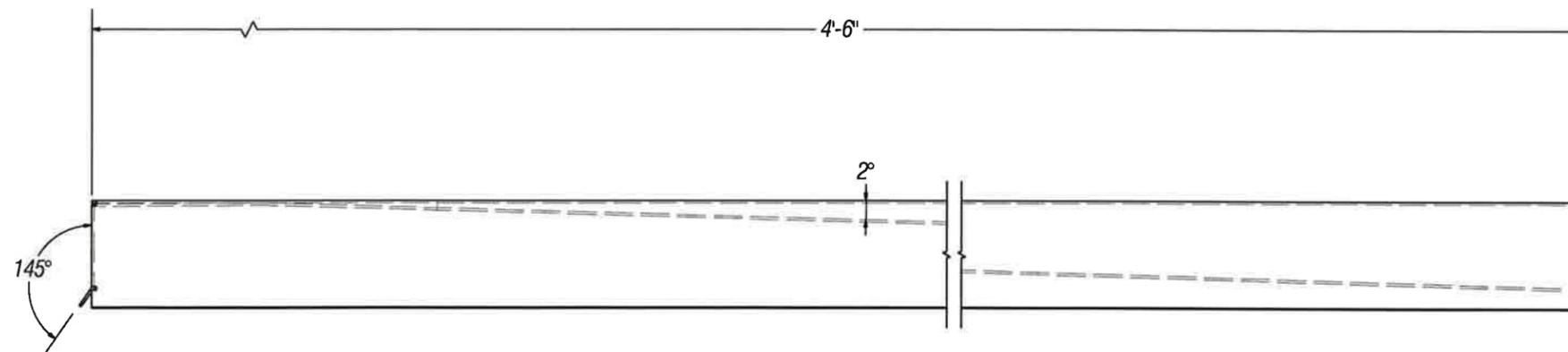
12536 Chadron Avenue  
Hawthorne, California 90250  
Tel 800 338 3387 / 310 978 2000  
Fax 310 978 4000

△	Date:	By:	
R1	5/1/13	JS	Welding Symbols

Sheet
11



SIDE SHEET METAL FLASHING  
SCALE 3/8" = 1"



SIDE FLASHING FLAT PATTERN  
(fold mirrored for other side)  
SCALE 2" = 1"

**Material Legend**

1	1/2" Steel Plate
2	16 Ga. Steel Sheet Metal
3	2-1/2" x 1-1/2" x 1/4" Steel R. Tube
4	2" x 3" x 3/16" Steel R. Tube
5	1" x 1" x 3/16" Steel Angle
6	3" x 3/16" Steel Square Tube
7	7 Ga. Steel Sheet Metal
8	11 Ga. Steel Sheet Metal
9	2-1/2" x 1/4" Steel Square Tube
10	1" x 2" x 3/16" Steel Rec Tube
11	2" x 5" x 3/16" Steel Rec Tube
12	3/16" Steel Plate
13	2" x 2" x 1/8" Steel Angle
14	0.040" Aluminum Sheet Metal
15	

**Finish Legend**

1	38/90018 Argento 314 Metallic
2	38/91020 Anodized Silver
3	44/00018 Smooth Glossy Clear
4	H-101 Black Polyarmor
5	

**Notes**

All tube steel to tube steel connections shall be continuously welded all around with 3/16" min. fillet or butt welds. Grind all welds smooth.  
Decorative metal panels are fastened to the 1" x 1" angle with a 1/4" threaded rod fastener w/ tamperproof nut w/neoprene washers on both sides @ 6" O. C.

Project Name:	Santa Fe Trails
Address:	Santa Fe, NM
City/State:	Santa Fe, NM
Sales:	Scott Blakely
Drawn By:	Carlos Garcia

<b>Sheet Metal Flashing Flat Patterns</b>	
Date:	4/17/2013
Comments:	



△	Date:	By:	
R1	5/1/13	JS	Welding Symbols

Sheet
12



design • build • deploy

[www.LNIsigns.com](http://www.LNIsigns.com)

May 14, 2013

**Project: Santa Fe Bus Shelters**

**Subject: Product Data**

The following products will be used, per specification package provided by customer, in the production of Products "C" through "F":

1. Steel Decking: Vercor – cut in 3' widths
  - a. Product Data Sheets
  - b. MSDS sheets
  
2. Steel Deck Joint Fasteners
  - a. Type/ application will be replicated per photo of existing shelter

# VERCOR™ DECK TECHNICAL DATA

## Material

Deep and Shallow VERCOR™ decks are fabricated from G90 galvanized steel, conforming to ASTM A 653 or A 1063, SS Grade 80.

## Uniform Load Tables

The tables on pages 101 and 103 list the allowable uniform loads for Deep and Shallow VERCOR decks, respectively. These are the total uniform loads which can be applied to the decks. Values are based on the allowable bending moment (stress) and limiting deflection to  $L/240$ . The symbol ♦♦♦ indicates that the allowable uniform load based on deflection exceeds the allowable load based on flexure (stress). Note that self-weight of the deck should be included when determining dead load.

Refer to page 6 for the design formulas used to determine the allowable uniform loads due to stress and deflection.

## Diaphragms with VERCOR™ Decks

Diaphragm values for Deep and Shallow VERCOR decks attached to the supports with screws, without fill are shown pages 104-105, and pages 108-111, respectively. See pages 106-107 for diaphragm values for Deep VERCOR deck welded to the supports with insulating concrete fill. The attachment patterns for each system are shown on pages 100 and 102.

- The allowable stress increase permitted for load combinations in IBC Section 1605.3.2, including wind or seismic forces, shall not be used for allowable diaphragm shears.
- The flexibility factor ( $F$ ) is the number of microinches a diaphragm web will deflect in a span of 1 ft under a shear load of 1 pound per ft.
- $R$  is the vertical load span (spacing between supports) ( $L_v$ ) of the deck divided by the length ( $L_g$ ) of the deck sheet:  $R = L_v / L_g$ .
- The flexibility limitations in Verco's evaluation reports may be used as a guide in lieu of a rational analysis of the anticipated deflections.

## Deep VERCOR™ Deck Attached with TEKS Screws

**Support Attachment:** Attach Deep VERCOR deck to the supports with ITW Buildex TEKS® (or TRAXX) self-drilling, self-tapping screws as shown in Figure 14. Select the appropriate screw based on the thickness of the substrate as shown in Table 12. See pages 104 and 105 for diaphragm values.

Table 12: ITW Buildex TEKS Screw Selection

Support Thickness	Fastener Designation
16 gage to 3/16 inch	#12-14 x 3/4" TEKS 3 (or TRAXX 3)
1/8 inch to 1/4 inch	#12-24 x 7/8" TEKS 4 (or TRAXX 4)
1/2 inch to 1/2 inch	#12-24 x 1 1/4" TEKS 5 (or TRAXX 5)

Using →

# Shallow VERCOR™

- 9/16" Deep Deck
- 36/4 Screw Pattern at Supports
- #12 Screw at 33 ksi Supports 54 mil (0.0566") thick
- Galvanized



Allowable Diaphragm Shear Values, q (plf) and Flexibility Factors, F ((In./lb)x10<sup>6</sup>)

GAGE	SIDELAP ATTACHMENT	SPAN (ft-in.)								
		1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"		
26	(none)	q	203	167	141	126	109			
		F	-20.1+489R	-7.8+324R	-0.6+241R	4.7+191R	8.9+157R			
	Screw @ 12"	q	223	211	189	188	171	174	161	
		F	-21.7+490R	-11.4+326R	-5.3+244R	-2.4+195R	0.4+162R	1.7+139R	3.4+122R	
	Screw @ 6"	q	234	223	215	210	205	203	200	
		F	-22.6+490R	-12.0+327R	-6.8+245R	-3.6+196R	-1.5+163R	0.1+140R	1.2+122R	
	Screw @ 4"	q	241	237	229	229	224	225	221	
		F	-22.9+491R	-12.8+327R	-7.5+245R	-4.5+196R	-2.3+163R	-0.9+140R	0.3+123R	
	24	(none)	q	272	223	188	168	145		
			F	-8.8+236R	0.2+156R	4.6+116R	8.0+91R	10.9+74R		
		Screw @ 12"	q	300	287	259	260	238	242	225
			F	-8.0+237R	-2.9+158R	0.5+118R	1.9+94R	3.5+78R	4.1+67R	5.2+59R
Screw @ 6"		q	316	303	294	289	284	281	277	
		F	-8.6+238R	-3.4+158R	-0.8+119R	0.8+95R	1.9+79R	2.7+68R	3.3+59R	
Screw @ 4"		q	325	320	312	312	307	308	303	
		F	-9+238R	-4.1+159R	-1.4+119R	0+95R	1.2+79R	1.8+68R	2.5+59R	
22		(none)	q	340	279	235	210	182		
			F	-1.6+135R	3+88R	6.1+65R	8.6+50R	10.9+40R		
		Screw @ 12"	q	379	365	331	333	307	312	292
			F	-2.8+135R	0.2+90R	2.4+67R	3.2+54R	4.3+44R	4.6+38R	5.4+33R
	Screw @ 6"	q	398	384	375	369	363	360	356	
		F	-3.4+136R	-0.3+90R	1.3+68R	2.2+54R	2.9+45R	3.3+39R	3.7+34R	
	Screw @ 4"	q	409	405	396	396	390	391	387	
		F	-3.7+136R	-0.9+91R	0.7+68R	1.5+54R	2.2+45R	2.6+39R	3.0+34R	

**Notes:**

1. Support Screw = #12 self-drilling, self-tapping screw.
2. Sidelap Screw = #10 x 3/4" long self-drilling, self-tapping screw.
3. See Table 15 on page 97 for adjustment factors when attaching to supports with different strength and/or thickness.

VERCOR™

# NUCOR

## MATERIAL SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Number: Steel Decking  
 CAS Number: Not applicable  
 Synonyms: Coated Deck, Uncoated Deck, Galvanized Deck  
 Use/Description: Steel for wall floor, and roof decking

<b>Vulcraft Locations</b>		<b>24 Hour Contact – CHEMTREC 1-800-424-9300</b>	
Vulcraft – Nebraska 1601 West Omaha Avenue Norfolk, Nebraska 68701 1-(402) 644-8500	Vulcraft – Alabama 7205 Gault Avenue, North Fort Payne, Alabama 35967 1-(256) 845-2460	Vulcraft – Texas North Main Street Extension Grapeland, Texas 75844 1-(936) 687-4665	
Vulcraft – Indiana County Road 60 St. Joe, Indiana, 46785 1-(260) 337-1800	Vulcraft – Utah 1875 West Hwy 13, South Brigham City, Utah, 84302 1-(435) 734-9433	Vulcraft of New York, Inc. 5362 Railroad Street Chemung, New York, 14825 1-(607) 529-9000	
Vulcraft – South Carolina 1501 W. Darlington Street Florence, SC 29501 1-(843)-662-0381	Verco 4340 North 42 <sup>nd</sup> Avenue Phoenix, AZ 85019 (602) 272-1347		

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS No.	% Weight	Exposure Limits			
<b>Base Metal:</b>			<b>Base Metal:</b>			
Iron (Fe)	7439-89-6	Balance	Iron (Fe)	7439-89-6	Balance	
<b>Alloying Elements</b>			<b>Alloying Elements</b>			
Aluminum (Al)	7429-90-5	0-0.01	Aluminum (Al)	7429-90-5	0-0.01	
Antimony (Sb)	7440-38-0	<0.0	Antimony (Sb)	7440-38-0	<0.0	
Arsenic (As)	7440-38-2	<0.09	Arsenic (As)	7440-38-2	<0.09	
Beryllium (Be)	7440-41-7	<0.09	Beryllium (Be)	7440-41-7	<0.09	
Boron (B)	7440-42-8	<0.0	Boron (B)	7440-42-8	<0.0	
Cadmium (Cd)	7440-43-9	<0.00	Cadmium (Cd)	7440-43-9	<0.09	
Calcium (Ca)	1305-78-8	<0.0	Calcium (Ca)	1305-78-8	<0.0	
Carbon (C)	7440-44-0	<1.0	Carbon (C)	7440-44-0	0.04-0.95	
Chromium (Cr)	7440-47-3	0.01-1.0	Chromium (Cr)	7440-47-3	0.01-1.0	
Cobalt (Co)	7440-48-4	<0.09	Cobalt (Co)	7440-48-4	<0.09	
Copper (Cu)	7440-50-8	<0.0	Copper (Cu)	7440-50-8	<0.0	
Lead (Pb)	7439-92-1	0.0-0.04	Lead (Pb)	7439-92-1	0.0-0.05	
Magnesium (Mg)	7439-95-4	<0.0	Magnesium (Mg)	7439-95-4	<0.0	
Manganese (Mn)	7439-96-5	<3.0	Manganese (Mn)	7439-96-5	0.2-2	
Molybdenum (Mo)	7439-98-7	<0.0	Molybdenum (Mo)	7439-98-7	<0.0	
Niobium (Nb)	7440-03-1	<0.0	Niobium (Nb)	7440-03-1	<0.0	

## Steel Decking

Components		CAS No.	% Weight	Exposure Limits			
Nickel	(Ni)	7440-02-0	0.01-0.1	Nickel	[Ni]	7440-02-0	0.01-0.4
Nitrogen	(N)	7727-37-9	<0.9	Nitrogen	(N)	7727-37-9	<0.9
Phosphorus	(P)	7723-14-0	<0.9	Phosphorus	[P]	7723-14-0	<0.9
Selenium	(Se)	7782-49-2	<0.9	Selenium	[Se]	7782-49-2	<0.9
Silicon	(Si)	7440-21-3	<0.9	Silicon	[Si]	7440-21-3	<0.9
Sulfur	(S)	7446-09-05	<0.9	Sulfur	[S]	7446-09-05	<0.9
Tin	(Sn)	7723-14-0	<0.9	Tin	[Sn]	7723-14-0	<0.9
Titanium	(Ti)	7440-32-6	<0.9	Titanium	[Ti]	7440-32-6	<0.9
Tungsten	(W)	7440-33-7	<0.9	Tungsten	[W]	7440-33-7	<0.9
Vanadium	(V)	7440-62-2	<0.9	Vanadium	[V]	7440-62-2	<0.9
Zinc	(Zn)	7440-66-8	<0.04	Zinc	[Zn]	7440-66-8	0.0-0.01
<b>Coatings and Finishing Treatments:</b>							
Hydrochloric Acid	(HCl)	7647-01-0	<3				
Petroleum, Natural or Synthetic oils	Mixture		<0.1	8	Mist	5	Mist
Anhydrous Potassium Hydroxide		1310-58-3	<0.01	2	Coating	2	Coating
Glycine, nn-1,2-ethenediylbis		60-00-4	<0.01				
Polyalkylene glycol	Mixture		<0.01				
Sodium nitrite		7632-00-0	<0.01				
Zinc (galvanized)		7440-66-8	0.4 - 10	10	Oxide Dust	5	Oxide Fume
				5	Oxide Fume	10	Oxide Dust
				10	Oxide Fume (STEL)		

NOTE: No permissible exposure limits (PEL) or threshold limit values (TLV) exist for steel. The above listing is a summary of elements used in normal Nucor Steel Products. Various grades of steel will contain different combinations of these elements and/or trace materials. Exact specifications for specific products may be available upon request.

### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

WARNING! WELDING, SAWING, BRAZING, GRINDING, AND MACHINING MAY CAUSE DUSTS AND/OR FUME TO BE RELEASED. MAY BE HARMFUL IF INHALED. MAY IRRITATE THE EYES, SKIN, AND RESPIRATORY TRACT. MOLTEN MATERIAL MAY CAUSE THERMAL BURNS

#### Potential Health Effects

Note: Steel products in their solid state under normal conditions, do not present an inhalation, ingestion or skin hazard. However, operations resulting in fume or particulate formation such as welding, sawing, brazing, grinding and machining may present health hazards. Molten steel also is hazardous.

#### Eye Contact

Dusts or particulates may cause mechanical irritation including pain, tearing, and redness. Scratching of the cornea can occur if eye is rubbed. Fumes may be irritating. Contact with the heated material may cause thermal burns.

#### Skin Contact

Dusts or particulates may cause mechanical irritation due to abrasion. Coated steel may cause skin irritation in sensitive individuals (see Section 16 for additional information.) Some components in this product are capable of causing an allergic reaction, possibly resulting in burning, itching and skin eruptions. Contact with heated material may cause thermal burns.

#### Inhalation

Dusts may cause irritation of the nose, throat, and lungs. Excessive inhalation of metallic fumes and dusts may result in metal fume fever, an influenza-like illness. It is characterized by a sweet or metallic taste in the mouth, accompanied by dryness and irritation of the throat, cough, shortness of breath, pulmonary edema, general malaise, weakness, fatigue, muscle and joint pains, blurred vision, fever and chills. Typical symptoms last from 12 to 48 hours.

## **Steel Decking**

### **Ingestion**

Not expected to be acutely toxic via ingestion based on the physical and chemical properties of the product. Swallowing of excessive amounts of the dust may cause irritation, nausea, and diarrhea.

### **Chronic or Special Toxic Effects**

Repeated exposure to fine dusts may inflame the nasal mucosa and cause changes to the lung. In addition, a red-brown pigmentation of the eye and/or skin may occur.

Welding fumes have been associated with adverse health effects. Contains components that may cause cancer or reproductive effects. The following components are listed by NTP, OSHA, or IARC as carcinogens: Nickel, chromium (hexavalent), cobalt, lead, cadmium, antimony (trioxide), arsenic, beryllium. See Section 11, for additional, specific information on effects noted above.

### **Target Organs**

Overexposure to specific components of this product that are generated in dusts or fumes may cause adverse effects to the following organs or systems: eyes, skin, liver, kidney, central nervous system, cardiovascular system, respiratory system.

### **Medical Conditions Aggravated by Exposure**

Diseases of the skin such as eczema may be aggravated by exposure. Also, disorders of the respiratory system including asthma, bronchitis, and emphysema. Long-term inhalation exposure to agents that cause pneumoconiosis (e.g. dust) may act synergistically with inhalation of oxide fumes or dusts of this product.

## **4. FIRST AID MEASURES**

**Eye Contact** - In case of overexposure to dusts or fumes, immediately flush eyes with plenty of water for at least 15 minutes occasionally lifting the eye lids. Get medical attention if irritation persists. Thermal burns should be treated as medical emergencies.

**Skin Contact** - In case of overexposure to dusts or particulates, wash with soap and plenty of water. Get medical attention if irritation develops or persists. If thermal burn occurs, flush area with cold water and get immediate medical attention.

**Inhalation** - In case of overexposure to dusts or fumes, remove to fresh air. Get immediate medical attention if symptoms described in this MSDS develop.

**Ingestion** - Not considered an ingestion hazard. However, if excessive amounts of dust or particulates are swallowed, treat symptomatically and supportively. Get medical attention.

**Notes to Physician** - Inhalation of metal fume or metal oxides may produce an acute febrile state, with cough, chills, weakness, and general malaise, nausea, vomiting, muscle cramps, and remarkable leukocytosis. Treatment is symptomatic, and condition is self limited in 24-48 hours. Chronic exposure to dusts may result in pneumoconiosis of mixed type.

## **5. FIRE FIGHTING MEASURES**

**Flash Point (Method)** - Not applicable

**Flammable Limits (% volume in air)** - Not applicable

**Autoignition Temperature** - Not applicable

**Extinguishing Media** - For molten metal, use dry powder or sand.

**Special Fire Fighting Procedures** - Do not use water on molten metal. Firefighters should not enter confined spaces without wearing NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

**Unusual Fire or Explosion Hazards** - Steel products do not present fire or explosion hazards under normal conditions. Fine metal particles such as produced in grinding or sawing can burn. High concentrations of metallic fines in the air may present an explosion hazard.

## **6. ACCIDENTAL RELEASE MEASURES**

**Precautions if Material is Spilled or Released** - Emergency response is unlikely unless in the form of dust. Avoid inhalation, eye, or skin contact of dusts by using appropriate precautions outlined in this MSDS (see section 8). Fine turnings and small chips should be swept or vacuumed and placed into appropriate disposable containers. Keep fine dust or powder away from sources of ignition. Scrap should be reclaimed for recycling. Prevent materials from entering drains, sewers, or waterways.

## **Steel Decking**

**Environmental Precautions** - Some grades of steel may contain reportable quantities of alloying elements. See Section 15 for additional information.

**Waste Disposal Methods** - Dispose used or unused product in accordance with applicable Federal, State, and Local regulations.

## **7. HANDLING AND STORAGE**

**Storage Temperatures** - Stable under normal temperatures and pressures.

**Precautions to be Taken in Handling and Storing** - Store away from strong oxidizers. Dusts or powders may form explosive mixtures with air. Avoid breathing dusts or fumes.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Operations with potential for generating high concentrations of airborne particulates or fumes should be evaluated and controlled as necessary.

**Eye Protection** - Use safety glasses. Dust resistant safety goggles are recommended under circumstances where particles could cause mechanical injury such as grinding or cutting. Face shield should be used when welding or cutting.

**Skin** - Appropriate protective gloves should be worn as necessary. Good personal hygiene practices should be followed including cleansing exposed skin several times daily with soap and water, and laundering or dry cleaning soiled work clothing.

**Respiratory Protection** - NIOSH/MSHA approved dust/fume/mist respirator should be used to avoid excessive exposure. See Section 2 for component material information exposure limits. If such concentrations are sufficiently high that this respirator is inadequate, or high enough to cause oxygen deficiency, use a positive pressure self-contained breathing apparatus (SCBA). Follow all applicable respirator use, fitting, and training standards and regulations.

**Ventilation** - Provide general and/or local exhaust ventilation to control airborne levels of dust or fumes below exposure limits.

**Exposure Guidelines** - No permissible exposure limits (PEL) or threshold limit values (TLV) exist for steel. See Section 2 for component materials. Various grades of steel will contain different combinations of these elements. Trace elements may also be present in minute amounts.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance and Odor** - Red, Grey or other color steel panels.

**Boiling Point** - Not applicable

**Melting Point** - Approximately 2800 °F

**pH** - Not applicable

**Specific Gravity (at 15.6 °C)** - Not applicable

**Density (at 15.6 °C)** - Not applicable

**Vapor Pressure** - Not applicable

**Vapor Density (air = 1)** - Not applicable

**% Volatile, by Volume** - Not applicable

**Solubility in Water** - Insoluble.

**Evaporation Rate (Butyl Acetate = 1)** - Not applicable

**Other Physical and Chemical Data**

None

## **10. STABILITY AND REACTIVITY**

**Stability** - Stable

**Conditions to Avoid** - Steel at temperatures above the melting point may liberate fumes containing oxides of iron and alloying elements. Avoid generation of airborne fume.

**Hazardous Polymerization** - Will not occur.

**Incompatibility (Materials to Avoid)** - Reacts with strong acids to form hydrogen gas. Do not store near strong oxidizers.

## **Steel Decking**

**Hazardous Decomposition Products** - Metallic fumes may be produced during welding, burning, grinding, and possibly machining or any situation with the potential for thermal decomposition. Refer to ANSI Z49.1

### **11. TOXICOLOGICAL INFORMATION**

The primary component of this product is iron. Long-term exposure to iron dusts or fumes can result in a condition called siderosis which is considered to be a benign pneumoconiosis. Symptoms may include chronic bronchitis, emphysema, and shortness of breath upon exertion. Penetration of iron particles in the skin or eye may cause an exogenous or ocular siderosis which may be characterized by a red-brown pigmentation of the affected area. Ingestion overexposures to iron may affect the gastrointestinal, nervous, and hematopoietic system and the liver. Iron and steel founding, but not iron or iron oxide, has been listed as potentially carcinogenic by IARC.

When this product is welded, fumes are generated. Welding fumes may be different in composition from the original welding product, with the chief component being ordinary oxides of the metal being welded. Chronic health effects (including cancer) have been associated with the fumes and dusts of individual component metals (see above), and welding fumes as a general category have been listed by IARC as a carcinogen (Group 2B). There is also limited evidence that welding fumes may cause adverse reproductive and fetal effects. Evidence is stronger where welding materials contain known reproductive toxins, e.g., lead which may be present in the coating material of this product.

Breathing fumes or dusts of this product may result in metal fume fever, which is an illness produced by inhaling metal oxides. These oxides are produced by heating various metals including cadmium, zinc, magnesium, copper, antimony, nickel, cobalt, manganese, tin, lead, beryllium, silver, chromium, aluminum, selenium, iron, and arsenic. The most common agents involved are zinc and copper.

This product may contain small amounts of manganese. Prolonged exposure to manganese dusts or fumes is associated with "manganism", a Parkinson-like syndrome characterized by a variety of neurological symptoms including muscle spasms, gait disturbances, tremors, and psychoses.

This product may contain small amounts of cadmium. Primary target organs for cadmium overexposure are the lung and the kidney. Because of its cumulative nature, chronic cadmium poisoning can cause serious disease which takes many years to develop and may continue to progress despite cessation of exposure. Progression of the disease may not reflect current exposure conditions. It is also capable of causing a painful osteomalacia called "Itai-Itai" in postmenopausal women, and has caused developmental effects and/or reproductive effects in male and female animals. Cadmium is a listed carcinogen by NTP, OSHA, and IARC (Group 1).

This product may contain small amounts of chromium. Prolonged and repeated overexposure to chromium dusts or fumes may cause skin ulcers, nasal irritation and ulceration, kidney damage and cancer of the respiratory system. Chromium is skin sensitizer. Cancer is generally attributed to the hexavalent (+6) form of chromium which is listed as a carcinogen by NTP and IARC (Group 1).

This product may contain small amounts of nickel. Prolonged and repeated contact with nickel may cause sensitization dermatitis. Inhalation of nickel compounds has caused lung damage as well as sinus, nasal and lung cancer in laboratory animals. Nickel is a listed carcinogen by NTP and IARC (Group 1).

This product may contain small amounts of vanadium. Adverse effects from dermal, inhalation or parenteral exposure to various vanadium compounds have been reported. The major target for vanadium pentoxide toxicity is the respiratory tract. Fumes or dust can cause severe eye and respiratory irritation, and systemic effects. Chronic bronchitis, green tongue, conjunctivitis, pharyngitis, rhinitis, rales, chronic productive cough, and tightness of the chest have been reported following overexposure. Allergic reactions resulting from skin and inhalation exposures have also been reported. A statistical association between vanadium air levels and lung cancer has been suggested, but vanadium currently is not regarded as a human carcinogen.

## ***Steel Decking***

This product may contain small amounts of lead. Lead can accumulate in the body. Consequently, exposure to fumes or dust may produce signs of polyneuritis, diminished vision and peripheral neuropathy, such as tingling and loss of feeling in fingers, arms and legs. Lead is a known reproductive and developmental toxin. It is also associated with central nervous system disorders, anemia, kidney dysfunction and neurobehavioral abnormalities. The brain is a major target organ for lead exposure. Elemental lead is listed as an IARC 2B carcinogen.

The product may contain small amounts of copper. Copper dust and fume can irritate the eyes, nose and throat causing coughing, wheezing, nosebleeds, ulcers and metal fume fever. Other effects from repeated inhalation of copper fume include a metallic or sweet taste, and discoloration of skin, teeth or hair. Copper also may cause an allergic skin reaction. Overexposure to copper can affect the liver.

### **12. ECOLOGICAL INFORMATION**

**Aquatic Ecotoxicological Data** - No specific information available on this product.

**Environmental Fate Data** - No specific information available on this product.

### **13. DISPOSAL CONSIDERATIONS**

Recovery and reuse, rather than disposal, should be the ultimate goal of handling efforts. Dispose in accordance with federal, state, and local health and environmental regulations. Prevent materials from entering drains, sewers, or waterways.

### **14. TRANSPORT INFORMATION**

**DOT Proper Shipping Name** - Not regulated

**DOT Hazard Classification** - Not regulated

**UN/NA Number** - Not applicable

**DOT Packing Group** - Not applicable

**Labeling Requirements** - Not applicable

**Placards** - Not applicable

**DOT Hazardous Substance** - Not applicable

**DOT Marine Pollutant** - Not applicable

### **15. REGULATORY INFORMATION**

This product is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, dusts and fumes from this product may be hazardous.

#### **CALIFORNIA PROPOSITION 65**

This product contains chemicals (antimony [oxide], arsenic, beryllium, chromium [hexavalent], cobalt, cadmium, lead, nickel) known to the State of California to cause cancer and chemicals (cadmium, lead) known to the State of California to cause birth defects or other reproductive harm.

#### **Regulatory Lists**

Some components of this product may be specifically listed by individual states; other product-specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements, you should contact the appropriate agency in your state.

#### **Toxic Substances Control Act (TSCA)**

Components of this product are listed on the TSCA Inventory.

#### **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)**

Steel is not reportable, however, it contains hazardous substances that may be reportable if released in pieces with diameters less than or equal to 0.004 inches (RQ marked with a "RQ").

Chemical Name

Reportable Quantity (in lb)

**Steel Decking**

<u>Chemical Name</u>	<u>Reportable Quantity (in lb)</u>
Antimony	5000*
Arsenic	1*
Beryllium	10*
Cadmium	10*
Chromium	5000*
Copper	5000*
Lead	10*
Nickel	100*
Phosphorus	1
Selenium	100*
Zinc	1000*

**Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III**  
**SECTION 311/312 HAZARD CATEGORIES:** Immediate Health Effect, Delayed Health Effect  
 This product contains the following EPCRA Section 313 chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right – To – Know Act of 1986 (40 CFR 372):

**SECTION 313 REPORTABLE INGREDIENTS:**

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Concentration (% by weight)</u>	<u>Reportable</u>
Aluminum	7429-90-5	<0.01	No – Less than 1%
Antimony	7440-36-0	<0.9	No – Less than 1%
Arsenic	7440-38-2	<0.09	No – Less than 0.1%
Beryllium	7440-43-9	<0.09	No – Less than 0.1%
Cadmium	7440-43-9	<0.09	No – Less than 0.1%
Chromium	7440-47-3	0.01-1.0	Yes – Greater than 0.1%
Cobalt	7440-48-4	<0.09	No – Less than 0.1%
Copper	7440-50-8	<0.9	No – Less than 1%
Lead	7439-92-1	0.0-0.04	Yes
Manganese	7439-96-5	<3.0	Yes – Greater than 1%
Nickel	7440-02-0	0.01-0.1	Yes – Greater than 0.1%
Phosphorus	7723-14-0	<0.9	No – Less than 1%
Selenium	7782-49-2	<0.9	No – Less than 1%
Vanadium	7440-62-2	<0.9	No – Less than 1%
Zinc	7440-66-8	<0.9	No – Less than 1%

Concentrations based on analytical data and process knowledge of typical products distributed by the facility.

**16. OTHER INFORMATION**

This product may be coated with a variety of materials, including oils, paints, galvanization, etc. that are not included in this MSDS. During welding precautions should be taken for airborne contaminants that may originate from components of the welding rod. Arc or spark generated when welding or burning could be a source of ignition or combustible and flammable materials. The information in this Material Safety Data Sheet (MSDS) was obtained from sources which we believe are reliable; however, the information is provided without any representation of warranty, expressed or implied, regarding the accuracy or correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with the handling, storage, use, or disposal of this product.



City of Santa Fe  
 2651 Siringo Rd.  
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Autotroph Design  
 1600 Lena St. Ste. E1  
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## Meridian Contracting, Inc.

3223 Los Arboles NE Albuquerque, NM 87107 PH: 505-872-2841 FAX: 505-884-0260



## Santa Fe Bus Shelters - CIP Project #665

### Transmittal Form

Sent By: Sean Conway - Project Engineer

Sent to: Autotroph Design

Date: 4/25/2013

Attn: Jayita Sahni

Signature:

Submittal #: 3

Subcontractor / Supplier: Quikrete / Lafarge North America

Specification # / Drawing: 033000-1.4 Cast in Place Concrete

Attachments:	
<input checked="" type="checkbox"/> Quikrete 5000 - PDS	<input checked="" type="checkbox"/> NMDOT Class AA - Mix Design
<input checked="" type="checkbox"/> Quikrete 5000 - MSDS	

Submitted For:	
<input checked="" type="checkbox"/> Approval	<input type="checkbox"/> As Requested
<input type="checkbox"/> Your Use	<input type="checkbox"/> Information Purposes Only

Sent Via:	
<input checked="" type="checkbox"/> Attached	<input type="checkbox"/> Separate Cover Via:

**Comments**

\*Provided are four copies for your use and two additional. Please return the additional approved copies for our record.



# QUIKRETE® 5000 Concrete Mix

PRODUCT No. 1007

**DIVISION 3**

**Structural Concrete  
03 31 00**

## PRODUCT DESCRIPTION

QUIKRETE® 5000 Concrete Mix is a commercial grade blend of stone or gravel, sand and cement specially designed for higher early strength.

## PRODUCT USE

QUIKRETE® 5000 Concrete Mix is suitable for any concrete use requiring high early strength and rapid strength gains. QUIKRETE® 5000 sets quickly, making it ideal for cold weather applications. It has a walk-on time of 10 - 12 hours. QUIKRETE® 5000 can be used for any application requiring concrete in a minimum thickness of 2" (51 mm), such as slabs, footings, steps, columns, walls and patios.

## SIZES

- QUIKRETE® 5000 Concrete Mix –
  - 80 lb (36.3 kg) bags
  - 60 lb (27.2 kg) bags

## YIELD

- Each 80 lb (36.3 kg) bag yields approximately 0.60 cu ft (17 L). A 60 lb (27.2 kg) bag yields approximately 0.45 cu ft (12.7 L).

## TECHNICAL DATA

### APPLICABLE STANDARDS

ASTM International - ASTM C387 Standard Specification for Packaged, Dry, Combined Materials for Mortar and Concrete

### PHYSICAL/CHEMICAL PROPERTIES

QUIKRETE® 5000 High Early Strength Concrete Mix exceeds the compressive strength requirements of ASTM C387, as shown in Table 1.

**TABLE 1 TYPICAL PHYSICAL PROPERTIES<sup>1</sup>**

### Compressive strength, ASTM C39

1 day	1500 psi (10.3 MPa)
3 day	2500 psi (17.2 MPa)
7 days	3500 psi (24.1 MPa)
28 days	5000 psi (34.5 MPa)
Slump range 2" - 3" (51 - 76 mm)	

<sup>1</sup> Tested under standard laboratory conditions in accordance with ASTM C387.



## INSTALLATION

### SITE PREPARATION

Stake out the area and remove sod or soil to the desired depth. Nail and stake forms securely in place. Tamp the sub-base until firm.

### MIXING

#### MACHINE MIXING

- QUIKRETE® 5000 can be mixed in a barrel-type concrete mixer or a mortar mixer. Choose the mixer size most appropriate for the size of the job to be done. Allow at least 1 cu ft (28 L) of mixer capacity for each 80 lb (36.3 kg) bag of QUIKRETE® 5000 to be mixed at a time
  - For each 80 lb (36.3 kg) bag of QUIKRETE® 5000 to be mixed, add approximately 6 pt (2.8 L) of fresh water to the mixer. Turn on the mixer and begin adding the bags of concrete to the mixer
  - If the material becomes too difficult to mix, add additional water until a workable mix is obtained
  - If a slump cone is available, adjust water to achieve a 2" - 3" (51 - 76 mm) slump
- Note - Final water content should be approximately 6 - 10 pt (2.8 - 4.7 L) per 80 lb (36.3 kg) bag and 4.5 - 7 pt (2.1 - 3.3 L) per 60 lb (27.2 kg) bag.

#### HAND MIXING

- Empty bags into a suitable mixing container
- Add approximately 6 pt (2.8 L) of clean water for each 80 lb (36.3 kg) bag
- Work the mix with a shovel, rake or hoe and add water as needed until a stiff, moldable consistency is achieved
- Do not exceed a total volume of 10 pt (4.7 L) per 80 lb (36.3 kg) bag or 7 pt (3.3 L) per 60 lb (27.2 kg) bag
- Be sure all material is wet; do not leave unabsorbed puddles of water

#### TEMPERATURE OF WATER

Set times will fluctuate in extremely hot or cold weather. Use cold water or water mixed with ice cubes in severely hot weather; use hot water when mixing in severely cold weather.



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## APPLICATION

- Dampen the sub-grade before concrete is placed. Do not leave standing puddles
  - Shovel or place the concrete into the form. Fill to the full depth of the form
  - After the concrete has been compacted and spread to completely fill the forms, strike off and float immediately
  - To strike off, use a straight board (screed), moving the edge back and forth with a saw-like motion to smooth the surface. Then use a darby or bull float to float the surface. This helps level any ridges and fill voids left by the straight edge
  - Cut the concrete away from the forms by running an edging tool or trowel along the forms to compact the slab edges
  - Cut 1" (25.4 mm) control joints into the slab every 6' - 8' (1.8 - 2.4 m) using a grooving tool
  - Allow the concrete to stiffen slightly, waiting until all water has evaporated from the surface before troweling or applying a broom finish
- Note - For best results, do not overwork the material.

## CURING

### GENERAL

Curing is one of the most important steps in concrete construction. Proper curing increases the strength and durability of concrete, and a poor curing job can ruin an otherwise well-done project. Proper water content and temperature are essential for good curing. In near freezing temperatures, the hydration process slows considerably. When weather is too hot, dry or windy, water is lost by evaporation from the concrete and hydration stops resulting in finishing difficulties and cracks. The ideal circumstances for curing are ample moisture and moderate temperature and wind conditions. Curing should be started as soon as possible and should continue for a period of 5 days in warm weather, 70°F (21°C) or higher, or 7 days in colder weather, 50 - 70°F (10 - 21°C).

### SPECIFIC CURING METHODS

QUIKRETE® Acrylic Cure & Seal – Satin Finish (#8730) provides the easiest and most convenient method of curing concrete.

- Apply by sprayer or roller after the final finishing operation when the surface is hard. The surface may be damp, but not wet, when applying curing compound. Complete coverage is essential.
- Other methods of providing proper curing include covering the surface with wet burlap, keeping the surface wet with a lawn sprinkler and sealing the concrete surface with plastic sheeting

- If burlap is used, it should be free of chemicals that could weaken or discolor the concrete. New burlap should be washed before use. Place it when the concrete is hard enough to withstand surface damage and sprinkle it periodically to keep the concrete surface continuously moist
- Water curing with lawn sprinklers or hoses must be continuous to prevent interruption of the curing process
- Curing with plastic sheets is convenient. They must be laid flat, thoroughly sealed at joints and anchored carefully along edges

### PRECAUTIONS

- When used in structural elements, comply with the steel reinforcing and additional requirements of applicable building codes.
- Curing compounds should not be applied if rain or temperatures below 50°F (10°C) are expected within 24 hours
- Curing with plastic or burlap can cause patchy discoloration in colored concrete. For colored concrete, wet curing or chemical curing compounds are recommended
- Use of Acrylic Cure & Seal – Satin Finish (#8730) or other curing compounds is not recommended during late fall in northern climates on surfaces where de-icers will be used to melt ice and snow. Using curing compounds at that time may prevent proper air curing of the concrete, which is necessary to enhance its resistance to damage caused by deicers
- Protect concrete from freezing during the first 48 hours. Plastic sheeting and insulation blankets should be used if temperatures are expected to fall below 32°F (0°)

### WARRANTY

The QUIKRETE® Companies warrant this product to be of merchantable quality when used or applied in accordance with the instructions herein. The product is not warranted as suitable for any purpose or use other than the general purpose for which it is intended. Liability under this warranty is limited to the replacement of its product (as purchased) found to be defective, or at the shipping companies' option, to refund the purchase price. In the event of a claim under this warranty, notice must be given to The QUIKRETE® Companies in writing. This limited warranty is issued and accepted in lieu of all other express warranties and expressly excludes liability for consequential damages.

The QUIKRETE® Companies  
One Securities Centre  
3490 Piedmont Rd., NE, Suite 1300, Atlanta, GA 30305  
(404) 634-9100 • Fax: (404) 842-1425

\* Refer to [www.quikrete.com](http://www.quikrete.com) for the most current technical data, MSDS, and guide specifications



[www.quikrete.com](http://www.quikrete.com)



CEMENT &amp; CONCRETE PRODUCTS™

## Portland Cement Based Concrete Products

### MATERIAL SAFETY DATA SHEET (Complies with OSHA 29 CFR 1910.1200)

#### SECTION I: PRODUCT IDENTIFICATION

The QUIKRETE® Companies  
One Securities Centre  
3490 Piedmont Road, Suite 1300  
Atlanta, GA 30329

Emergency Telephone Number  
(770) 216-9580

Information Telephone Number  
(770) 216-9580

MSDS J1  
Revision: May-12



<u>QUIKRETE® Product Name</u>	<u>Code #</u>
CONCRETE MIX	1101
FENCE POST MIX	1005
FIBER-REINFORCED CONCRETE MIX	1006
CRACK RESISTANT CONCRETE MIX	1006-80
QUIKRETE 5000 CONCRETE MIX	1007
QUIKRETE 6000 CONCRETE MIX	1007
LIGHTWEIGHT CONCRETE MIX	1008
HANDICRETE CONCRETE MIX	1141
MAXIMUM YIELD CONCRETE MIX	1100-80
B-CRETE	1101-81
PRO-FINISH QUIKRETE 5000	1007-85
BASIC CONCRETE MIX	1015
RIP RAP	1129
ALL-STAR CONCRETE MIX	1121
ALL-STAR CRACK RESISTANT CONCRETE MIX	1470-03
ALL-STAR 5000 CONCRETE MIX	1470-01
RED-E-CRETE CONCRETE MIX	1101-91, -87
RIP RAP SCRIM	1134-80
FIBER REINFORCED DECK MIX	1251-80, -81
PRO-FINISH CRACK RESISTANT CONCRETE MIX	1006-68
COUNTERTOP MIX	1106-80
RITEMIX CONCRETE	1171-60
GREEN CONCRETE MIX	1101-63, -73

**Product Use:** Portland cement-based, aggregated products for general construction

#### SECTION II - HAZARD IDENTIFICATION

**Route(s) of Entry:** Inhalation, Skin, Ingestion

**CEMENT & CONCRETE PRODUCTS™**

**Acute Exposure:** Product becomes alkaline when exposed to moisture. Exposure can dry the skin, cause alkali burns and affect the mucous membranes. Dust can irritate the eyes and upper respiratory system. Toxic effects noted in animals include, for acute exposures, alveolar damage with pulmonary edema.

**Chronic Exposure:** Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis.

**Carcinogenicity:** Since Portland cement and blended cements are manufactured from raw materials mined from the earth (limestone, marl, sand, shale, etc.) and process heat is provided by burning fossil fuels, trace, but detectable, amounts of naturally occurring, and possibly harmful, elements may be found during chemical analysis. Under ASTM standards, Portland cement may contain 0.75 % insoluble residue. A fraction of these residues may be free crystalline silica. Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs and possibly cancer. There is evidence that exposure to respirable silica or the disease silicosis is associated with an increased incidence of Scleroderma, tuberculosis and kidney disorders.

<b>Carcinogenicity Listings:</b>	NTP:	Known carcinogen
	OSHA:	Not listed as a carcinogen
	IARC Monographs:	Group 1 Carcinogen
	California Proposition 65:	Known carcinogen

**NTP:** The National Toxicology Program, in its "Ninth Report on Carcinogens" (released May 15, 2000) concluded that "Respirable crystalline silica (RCS), primarily quartz dusts occurring in industrial and occupational settings, is *known to be a human carcinogen*, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to RCS and increased lung cancer rates in workers exposed to crystalline silica dust (reviewed in IAC, 1997; Brown *et al.*, 1997; Hind *et al.*, 1997)

**IARC:** The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz or cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans* (Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances or studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates." (1997)

**Signs and Symptoms of Exposure:** Symptoms of excessive exposure to the dust include shortness of breath and reduced pulmonary function. Excessive exposure to skin and eyes especially when mixed with water can cause caustic burns as severe as third degree.

**Medical Conditions Generally Aggravated by Exposure:** Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure. Exposure to crystalline silica or the disease silicosis is associated with increased incidence of scleroderma, Tuberculosis and possibly increased incidence of kidney lesions.

**Chronic Exposure:** Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis. (May contain trace (<0.05 %) amounts of chromium salts or compounds including hexavalent chromium, or other metals found to be hazardous or toxic in some chemical forms. These metals are mostly present as trace substitutions within the principal minerals)

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**Medical Conditions Generally Aggravated by Exposure:** Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure.

**SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION**

Hazardous Components	CAS No.	%	PEL (OSHA) mg/M <sup>3</sup>	TLV (ACGIH) mg/M <sup>3</sup>
Portland Cement	65997-15-1	10-30	5	5
Lime	01305-62-0	0-5	5	5
Silica Sand, crystalline	14808-60-7	70-90	<u>10</u> %SiO <sub>2</sub> +2	0.05 (respirable)
May contain one or more of the following ingredients:				
Amorphous Silica (From fly Ash)	07631-86-9	<u>80</u> %SiO <sub>2</sub> +2	10	
Alumina (From Fly Ash)	01344-28-1	5	5	
Limestone Dust	01317-65-3	5	5	
Calcium Sulfate	10101-41-4 or 13397-24-5	5	5	

**Other Limits:** National Institute for Occupational Safety and Health (NIOSH). Recommended standard maximum permissible concentration=0.05 mg/M<sup>3</sup> (respirable free silica) as determined by a full-shift sample up to 10-hour working day, 40-hour work week. See NIOSH Criteria for a Recommended Standard Occupational Exposure to Crystalline Silica.

**SECTION IV – First Aid Measures**

**Eyes:** Immediately flush eye thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

**Skin:** Wash skin with cool water and pH-neutral soap or a mild detergent. Seek medical treatment if irritation or inflammation develops or persists. Seek immediate medical treatment in the event of burns.

**Inhalation:** Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. Seek medical help if coughing and other symptoms do not subside. Inhalations of large amounts of Portland cement require immediate medical attention.

**Ingestion:** Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

**SECTION V - FIRE AND EXPLOSION HAZARD DATA**

**Flammability:** Noncombustible and not explosive.

**Auto-ignition Temperature:** Not Applicable

**Flash Points:** Not Applicable

**SECTION VI – ACCIDENTAL RELEASE MEASURES**

If spilled, use dustless methods (vacuum) and place into covered container for disposal (if not contaminated or wet). Use adequate ventilation to keep exposure to airborne contaminants below the exposure limit.



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**SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE**

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Do not allow water to contact the product until time of use. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended.

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**SECTION VIII – EXPOSURE CONTROL MEASURES**

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**Engineering Controls:** Local exhaust can be used, if necessary, to control airborne dust levels.

**Personal Protection:** The use of barrier creams or impervious gloves, boots and clothing to protect the skin from contact is recommended. Following work, workers should shower with soap and water. Precautions must be observed because burns occur with little warning -- little heat is sensed.

WARN EMPLOYEES AND/OR CUSTOMERS OF THE HAZARDS AND REQUIRED OSHA PRECAUTIONS ASSOCIATED WITH THE USE OF THIS PRODUCT.

**Exposure Limits:** Consult local authorities for acceptable exposure limits

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**SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS**

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**Appearance:** Gray to gray-brown colored powder; Some products contain coarse aggregates.

<b>Specific Gravity:</b>	2.6 to 3.15	<b>Melting Point:</b>	>2700°F
<b>Boiling Point:</b>	>2700°F	<b>Vapor Pressure:</b>	Not Available
<b>Vapor Density:</b>	Not Available	<b>Evaporation Rate:</b>	Not Available
<b>Solubility in Water:</b>	Slight	<b>Odor:</b>	Not Available
<b>pH:</b>	13 (10%)	<b>Volatile Organic Content (VOC):</b>	0 g/L

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**SECTION X - REACTIVITY DATA**

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**Stability:** Stable.

**Incompatibility (Materials to Avoid):** Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires

**Hazardous Decomposition or By-products:** Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.

**Hazardous Polymerization:** Will Not Occur.

**Condition to Avoid:** Keep dry until used to preserve product utility.

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**SECTION XI – TOXICOLOGICAL INFORMATION**

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**Routes of Entry:** Inhalation, Ingestion

**Toxicity to Animals:**

LD50: Not Available

LC50: Not Available

**Chronic Effects on Humans:** Conditions aggravated by exposure include eye disease, skin disorders and Chronic Respiratory conditions.

**Special Remarks on Toxicity:** Not Available



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**SECTION XII – ECOLOGICAL INFORMATION**

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**Ecotoxicity:** Not Available  
**BOD5 and COD:** Not Available  
**Products of Biodegradation:** Not available  
**Toxicity of the Products of Biodegradation:** Not available  
**Special Remarks on the Products of Biodegradation:** Not available

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**SECTION XIII – DISPOSAL CONSIDERATIONS**

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**Waste Disposal Method:** The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302).

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**SECTION XIV – TRANSPORT INFORMATION**

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Not hazardous under U.S. DOT and TDG regulations.

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**SECTION XV – OTHER REGULATORY INFORMATION**

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**US OSHA 29CFR 1910.1200:** Considered hazardous under this regulation and should be included in the employers' hazard communication program

**SARA (Title III) Sections 311 & 312:** Qualifies as a hazardous substance with delayed health effects

**SARA (Title III) Section 313:** Not subject to reporting requirements

**TSCA (May 1997):** Some substances are on the TSCA inventory list

**Federal Hazardous Substances Act:** Is a hazardous substance subject to statues promulgated under the subject act

**California Regulation: WARNING:** This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

**Canadian Environmental Protection Act:** Not listed

**Canadian WHMIS Classification:** Considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations (Class D2A, E- Corrosive Material) and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This product has been classified according to the hazard criteria of the Controlled Products Regulation (CPR). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

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**SECTION XVI – OTHER INFORMATION**

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**HMIS-III:**

Health –	0 = No significant health risk
	1 = Irritation or minor reversible injury possible
	2 = Temporary or minor injury possible
	3 = Major injury possible unless prompt action is taken
	4 = Life threatening, major or permanent damage possible
Flammability-	0 = Material will not burn
	1 = Material must be preheated before ignition will occur
	2 = Material must be exposed to high temperatures before ignition

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Physical Hazard-	3 = Material capable of ignition under normal temperatures
	4 = Flammable gases or very volatile liquids; may ignite spontaneously
	0 = Material is normally stable, even under fire conditions
	1 = Material normally stable but may become unstable at high temps
	2 = Materials that are unstable and may undergo react at room temp
	3 = Materials that may form explosive mixtures with water
	4 = Materials that are readily capable of explosive water reaction

**Abbreviations:**

<b>ACGIH</b>	American Conference of Government Industrial Hygienists
<b>CAS</b>	Chemical Abstract Service
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation and Liability Act
<b>CFR</b>	Code of Federal Regulations
<b>CPR</b>	Controlled Products Regulations (Canada)
<b>DOT</b>	Department of Transportation
<b>IARC</b>	International Agency for Research
<b>MSHA</b>	Mine Safety and Health Administration
<b>NIOSH</b>	National Institute for Occupational Safety and Health
<b>NTP</b>	National Toxicity Program
<b>OSHA</b>	Occupational Safety and Health Administration
<b>PEL</b>	Permissible Exposure Limit
<b>RCRA</b>	Resource Conservation and Recovery Act
<b>SARA</b>	Superfund Amendments and Reauthorization Act
<b>TLV</b>	Threshold Limit Value
<b>TWA</b>	Time-weighted Average
<b>WHMIS</b>	Workplace Hazardous Material Information System

**Last Updated: May 8, 2012**

**NOTE:** The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products. END OF MSDS.



April 18, 2013

Meridian Contracting, Inc.  
3223 Los Arboles NE  
Albuquerque, NM 87107

RE: Santa Fe Bus Shelters

Lafarge proposes the following concrete mix designs for the above project:

Mix ID 1 #: 05434AA – 4000 psi.  $\frac{3}{4}$ " agg. w/AEA – NMDOT Class AA

The proposed mix designs will meet the specified strength when handled, placed, and tested in accordance with current ASTM and ACI Standards and Recommended Practices.

We request the inclusion of Lafarge North America AC&A on the distribution list for all concrete test cylinders from the selected testing laboratory from the owner or the general contractor, in accordance with ASTM C-94 and ACI 318.

Unless Lafarge North America AC&A is notified in writing, we will assume that the proposed mix designs and various parameters presented above are accepted and approved for the referenced project.

We trust this information meets with your approval. If Lafarge can be of further assistance please do not hesitate to call the undersigned below.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'AG', written over a horizontal line.

Andrew Graham  
RMX Sales Manager  
1500 N Renaissance Blvd. NE Ste. B  
Albuquerque, NM 87107  
Office: (505) 343-7842

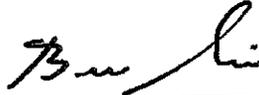
**NEW MEXICO DEPARTMENT OF TRANSPORTATION**

**APPROVED CONCRETE MIX DESIGN**

**Medium Risk Class AA Concrete Mix Design**

<b>Supplier:</b> Lafarge Southwest, Inc.		<b>Contact:</b> Andrew Graham			
<b>Address:</b> 1500 N. Renaissance BLVD NE, Suite 1 Albuquerque, NM 87107		<b>Phone No:</b> (505) 343-7842			
		<b>Fax No:</b> (505) 343-7686			
		<b>E-mail address:</b> andy.graham@lafarge-na.com			
<b>Entrained Air Content:</b> See Project Requirements		<b>Lab Number:</b> 2013-0594			
<b>Slump:</b> 3 1/2 +/- 1		<b>Yes</b> <b>No</b>			
<b>Strength Required:</b> 4000 psi at 28 Days		<b>Combined Grad.:</b> <b>X</b>			
<b>Date Approved:</b> April 1, 2013		<b>Expiration Date:</b> April 1, 2014			
MIXTURE COMPONENT PROPERTIES					
Specific Gravity of Cement:	3.150	F.M. of Combined Fine Aggregate:	2.72		
Specific Gravity of Fine Aggregate 1:	2.613	Absorption of Fine Aggregate 1:	1.00%		
Specific Gravity of Fine Aggregate 2:		Absorption of Fine Aggregate 2:			
Specific Gravity of Coarse Aggregate 1:	2.596	Absorption of Coarse Aggregate 1:	1.40%		
Specific Gravity of Coarse Aggregate 2:	2.599	Absorption of Coarse Aggregate 2:	1.30%		
Specific Gravity of Coarse Aggregate 3:		Absorption of Coarse Aggregate 3:			
Specific Gravity of Fly Ash - Class F:	1.940	Agg. Correction Factor:	0.4		
Specific Gravity of Fly Ash - Class C:					
<b>Total Pozzolan/Total Cementitious Material Ratio:</b>		<b>Mortar Factor:</b> 62.9%			
<b>Total Pozzolan/Cement Ratio (by wt of cement):</b> 42.9%		<b>Max. Theoretical Unit Wt. (PCF):</b> 146.33			
<b>Class F/Cement Ratio (by wt. of cement):</b> 42.9%		<b>Paste Ratio:</b> 34.0%			
<b>Water/Cement Ratio:</b> 0.46		<b>Sand/Aggregate Ratio:</b> 45.6%			
<b>Maximum Water/Cement + Pozzolan Ratio:</b> 0.32		<b>Gravel/Aggregate Ratio:</b> 54.4%			
MIXTURE PROPORTIONS					
<b>Suppliers Mix No.:</b>					
Component	Source	Batch Wt. (Pounds Per Cubic Yard)	ABS. VOL. (ft <sup>3</sup> )	Freeze-Thaw Risk Zone	Allowable Unit Weights (Pounds/Cubic Foot)
Cement-Type I-II	GCC - Tijeras	574	2.92	Low Risk	139.7 to 134.6
(SACKS)		6.11	-		
Fly Ash - Class F	SRM - 4 Corners	246	2.03		
Fly Ash - Class C				Medium Risk	139.0 to 134.6
Water	City	264	4.23		
(Gallons)		31.7	-		
Fine Aggregate 1 (SSD)	Placitas Pit	1194	7.32	High Risk	
Fine Aggregate 2 (SSD)					
Coarse Aggregate 1 (SSD)	Placitas Pit	1025	6.33		
Coarse Aggregate 2 (SSD)	Placitas Pit	391	2.41		
Coarse Aggregate 3 (SSD)					
<b>Totals:</b>		<b>3694</b>	<b>27.00</b>		
<b>Calculated Unit Weight:</b>		<b>136.82 lbs/ft<sup>3</sup></b>			
ADMIXTURES					
WR Grace	Rate (Ounces/CWT)	Ounces per Cubic Yard	Ml per Cubic Meter	QC/QA TARGET STRENGTH	
Myra 110	12.00	98.4	3806		
Terra Pave	1.80	14.8	571		
				<b>5340</b>	

**Notes:** The original mix design performed by Western Technologies Inc. This mix design has been reviewed in accordance with Section 510 of the NMDOT Standard Specifications. This mix has been approved under the Combined Gradation Procedures. Therefore, it is the sole responsibility of the supplier to continuously monitor the gradation of the stockpiles, and to provide current gradation data to the NMDOT Project Manager at least once every 7 days, or before each placement.

Approved:   
NMDOT Materials Testing Engineer

**GCC of America**  
 130 Rampart Way, Ste. 205 Denver, CO 80230  
 Sales (303) 739-5900 Customer Service (800) CALL GCC



Plant: Tijeras Cement Type: I-II(MH), Low Alkali  
 PO Box 100 Date: 2-Apr-13  
 Tijeras, NM 87059 Production Period: 2/1/13-2/28/13  
 Contact: Jay S. Schreffler/Guillermo Delgado Site: AVERAGE  
 Phone: (605) 286-6036/(605) 286-6027

**STANDARD REQUIREMENTS ASTM C 150-11/AASHTO M 85**

CHEMICAL		
Item	Spec. Limit	Test Result
SiO <sub>2</sub> (%)	A	20.4
Al <sub>2</sub> O <sub>3</sub> (%)	6.0 max	4.2
Fe <sub>2</sub> O <sub>3</sub> (%)	6.0 max	3.2
CaO (%)	A	64.4
MgO (%)	6.0 max.	2.7
SO <sub>3</sub> (%)	3.0 max.	2.9
Ignition Loss (%)	3.0 max.	1.9
Na <sub>2</sub> O (%)	A	0.20
K <sub>2</sub> O (%)	A	0.54
Equivalent Alkalies (%)	B	0.86
Insoluble Residue (%)	0.75 max.	0.26
CO <sub>2</sub> (%)	A	0.0
Limestone (%)	5.0 max.	3.0
CaCO <sub>3</sub> in Limestone (%)	70 min	94
Potential Compounds (%)		
C <sub>2</sub> S	A	66
C <sub>3</sub> S	A	9
C <sub>3</sub> A	8 max	6
C <sub>4</sub> AF	A	10
C <sub>3</sub> S + 4.76 C <sub>3</sub> A	100 max	94

PHYSICAL			
Item	Spec. Limit	Test Result	
Air content of mortar (volume %)	12 max	8	
Blaine fineness (m <sup>2</sup> /kg)	260 min.	408	
	430 max.		
Autoclave expansion (%)	0.80 max.	0.03	
False set (%)	50 min.	81	
Compressive strength (MPa)			
		MPa	psi
1 day, Minimum MPa (psi)	A	17	2600
3 day, Minimum MPa (psi)	12 (1740)	30	4350
7 day, Minimum MPa (psi)	19 (2760)	36	6230
28 day, Minimum MPa (psi)	A	43	6170
Time of setting, Vicat (minutes)			
Initial	Not less than	46	131
Initial	Not more than	375	
PROCESS ADDITION (If Applicable)			
Pozzolan Type:	N/A	Potential Compounds (%)	
SiO <sub>2</sub> (%)	N/A	C <sub>3</sub> S	N/A
Al <sub>2</sub> O <sub>3</sub> (%)	N/A	C <sub>3</sub> S	N/A
Fe <sub>2</sub> O <sub>3</sub> (%)	N/A	C <sub>3</sub> A	N/A
CaO (%)	N/A	C <sub>4</sub> AF	N/A
SO <sub>3</sub> (%)	N/A		

A Not applicable.  
 B Limit not specified by purchaser. Test result for information only.

GCC of America Portland Cement is warranted to conform at the time of shipment with ASTM C-150/AASHTO 85. No other warranty is made or implied. Having no control over the use of its cements, GCC of America does not guarantee finished work. GCC is not responsible for any additives not stated in the Certificate of Compliance. GCC of America certifies that the data described above under "Process Addition" represents the materials in the cement manufactured during the production period indicated.

We certify that the above described cement, at the time of shipment, meets the chemical and physical requirements of ASTM C 150-09 and AASHTO M 85-09.

Signature: Jay Schreffler Title: \_\_\_\_\_ Plant Chemist



Salt River Materials Group

Aggregates

Fly Ash

Phoenix Cement

January 8, 2013

Lafarge - NA  
5006 Industrial Park Loop NE  
Albuquerque, NM 87124

PRODUCT: **Four Corners Class F Fly Ash** from Fruitland, New Mexico

This letter serves as certification that all **Four Corners Class F Fly Ash** (pozzolan) sold by Salt River Materials Group – Phoenix Cement Company to Lafarge - NA meets the requirements of the latest revision of ASTM C618 for Class F Fly Ash (pozzolan).

We appreciate your interest in our product. If we can provide additional information or technical assistance, please contact us.

Respectfully,

Jeff Hearne  
Vice President of Quality Assurance

A Salt River Pima-Maricopa Indian Community Company

Tel: 480.850.5757 • Fax: 480.850.5758 • 8800 E. Chaparral Rd, Suite 155 • Scottsdale AZ 85250-2606

Lafarge - NA  
5006 Industrial Park Loop NE  
Albuquerque, NM 87124

Corporate Headquarters  
8800 E Chaparral Rd, Ste 155  
Scottsdale, AZ 85250  
Phone: 480-850-5757  
Fax: 480-850-5758

Cement Manufacturing  
601 N Cement Plant Rd  
Clarkdale, AZ 86324  
Phone: 928-634-2261  
Fax: 928-634-3543

19th Avenue Facility  
1802 W Lower Buckeye Rd  
Phoenix, AZ 85007  
Phone: 602-253-9149  
Fax: 602-253-9160

Lower Buckeye Facility  
1941 W Lower Buckeye Rd  
Phoenix, AZ 85009  
Phone: 602-258-7798  
Fax: 602-252-3362

21st Avenue Facility  
1325 N 21st Avenue  
Phoenix, AZ 85009  
Phone: 602-254-3824  
Fax: 602-254-3825

Mesa Community Storage  
Dobson & McKellips  
Mesa, AZ 85211  
Phone: 480-990-7847

Cholla Fly Ash Facility  
P O Box 360  
Joseph City, AZ 86032  
Phone: 928-288-1661  
Fax: 928-288-1663

Four Corners Fly Ash Facility  
P O Box 1007  
Fruitland, NM 87416  
Phone: 505-598-8657  
Fax: 505-598-8633

San Juan Fly Ash Facility  
San Juan Generating Station  
Waterflow, NM 87421  
Phone: 505-598-7546  
Fax: 505-598-7547

Escalante Fly Ash Facility  
CR19 / P O Box 620  
Prewitt, NM 87405  
Phone: 505-285-4590  
Fax: 505-285-4667

Gallup Fly Ash Facility  
9001/4 N 9th St  
Gallup, NM 87305

Product: ASTM C618 Class F, Four Corners Fly Ash  
AASHTO M295

**11-28-12 POZZOLAN TEST REPORT** CIR#: 71368

**Lot: 6188** **Results**    **Specifications**

Chemical Analysis (C311 / C114 / D4326)

Silicon Dioxide, SiO <sub>2</sub>	61.84 %	---
Aluminum Oxide, Al <sub>2</sub> O <sub>3</sub>	25.84 %	---
Ferric Oxide, Fe <sub>2</sub> O <sub>3</sub>	4.20 %	---
SiO <sub>2</sub> + Al <sub>2</sub> O <sub>3</sub> + Fe <sub>2</sub> O <sub>3</sub>	91.88 %	70.00 Min
Calcium Oxide, CaO	1.92 %	---
Magnesium Oxide, MgO	1.25 %	---
Sulfur Trioxide, SO <sub>3</sub>	0.20 %	5.00 Max
Moisture Content	0.12 %	3.00 Max
Loss on Ignition	0.27 %	5.00 Max
Available Alkalis as Na <sub>2</sub> O	0.34 %	---
Alkalis (%Na <sub>2</sub> O + 0.658% K <sub>2</sub> O)	1.93 %	---
R Factor (%CaO -5) / (%FeO)	-0.73 %	---

Physical Analysis

Fineness, amount retained on #325 sieve, % (C430)	20.30	34.00 Max
variation, points from average	1.69	5.00 Max
Density, g/cm <sup>3</sup> (C188)	1.94	---
Variation from average, %	0.02	5.00 Max
Strength Activity Index with Portland Cement (C311 / C109)	78.33	---
at 7 days, % of cement control	78.98	75.00 Min
at 28 days, % of cement control		
Water Requirement (C311)	95.45	105.00 Max
% of cement control		
Soundness, autoclave expansion or contraction, % (C311 / C151)	-0.04	0.80 Max

All tests have been made in strict accordance with the current standards of the American Society for Testing and Materials covering the type of material specified.

*Lee Gorby*  
Lee Gorby, Quality Assurance Manager  
08 JAN 2013





Product Quality Assurance Department  
3700 Singer, Suite C Albuquerque, NM 87109

**REPORT of AGGREGATE  
PHYSICAL PROPERTIES**



Material: Washed Concrete Sand  
 Period: 07/02/12 - 07/02/13  
 Source Pit: Placitas  
 Product Code: AG2109  
 Agency Specification: ASTM C33, Fine Aggregate  
 Product Description: Natural, washed, graded, fine aggregate.

Project No: 12001  
 Lab No.: A1203-0047  
 Sample Date: 02-Jul-12  
 Report Date: 20-Aug-12  
 Reviewed by: *John J. Salvo*

SIEVE ANALYSIS			TEST RESULTS					
ASTM C136		ASTM C33	Standard	PHYSICAL PROPERTIES		Results	Specification	Lab of Record
Sieve Size	Accum. % Passing	Specifications		Unit Weight & Voids	Unit Weight, lbs./cu.ft. Voids, %			
450 mm (18")			ASTM C 29			104.1		Lafarge 02-Jul-12
375 mm (15")						34.4		
300 mm (12")						Rodded		
250 mm (10")			ASTM C 127	Coarse Specific Gravity & Absorption	Bulk Specific Gravity (dry)= Bulk Specific Gravity, SSD= Apparent Specific Gravity= Absorption, %=			
225 mm (9")								
200 mm (8")								
180 mm (8")								
125 mm (5")			ASTM C 128	Fine Specific Gravity & Absorption	Bulk Specific Gravity (dry)= Bulk Specific Gravity, SSD= Apparent Specific Gravity= Absorption, %=	2.548		Lafarge 02-Jul-12
100 mm (4")								
75.0 mm (3")								
63.0 mm (2-1/2")								
50.0 mm (2")			ASTM D 2419	Sand Equivalent	Sand Equivalent, %	86		Lafarge 02-Jul-12
37.5 mm (1-1/2")			ASTM D 4701	Flat & Elongated	Flat & Elongated, % Ratio			
25.0 mm (1")			ASTM C 131	L. A. Abrasion	Small Coarse Loss, % Grading/ Revs.			
19.0 mm (3/4")			ASTM C 837	Methylene Blue	Methylene Blue Value mg/g	1.8		Lafarge 08-Jul-12
12.5 mm (1/2")								
9.5 mm (3/8")	100	100	ASTM C 88	Soundness	Coarse Soundness Loss, % Magnesium No. of Cycles			
4.75mm (No. 4)	98	95-100						
2.98 mm (No. 8)	83	80-100		Soundness	Fine Soundness Loss, % Magnesium No. of Cycles	9.8	max. 15	Lafarge 02-Jul-12
2.00 mm (No. 10)						5		
1.18mm (No.16)	69	50-85	ASTM C 142	Clay/Friable Particles	Coarse Aggregate, % Fine Aggregate, %			Lafarge 02-Jul-12
0.600 mm (No.30)	51	25-60					0.4	max. 3.0
0.425mm (No. 40)			ASTM C 40	Organic Impurities	Fine Aggregate, %	LTS		Lafarge 02-Jul-12
0.300mm (No. 50)	21	5-30	ASTM C 123	Lightweight Pieces	Coarse Aggregate, % Fine Aggregate, %			Lafarge 02-Jul-12
0.180mm (No. 80)							0.2	max. 0.5
0.150mm (No.100)	4	0-10	ASTM C 1252	Fine Aggregate Angularity	Uncompacted Voids, % Method A			
0.075mm (No. 200)	1.1	0-3	ASTM D 1557	Compaction Modified Effort	Optimum Moisture, % Max. Density, lbs./cu.ft.			
ASTM C117			ASTM D 4318	Liquid Limit, Plastic Limit & Plasticity Index	Liquid Limit= Plastic Limit= Plasticity Index=	NV		Lafarge 02-Jul-12
Moisture Content, %								
ASTM C568								
Fractured Face, %								
2 faces								
Fineness Modulus (FM)	2.74							
ASTM C136								

Note:

Submit for ASTM



Product Quality Assurance Department  
3700 Singer, Suite C Albuquerque, NM 87109

**REPORT of AGGREGATE  
PHYSICAL PROPERTIES**



Material: 3/8" Round Size 8  
 Period: 07/02/12 - 07/02/13  
 Source Pit: Placitas  
 Product Code: AG7203  
 Agency Specification: AASHTO M80, M43, Size # 8

Project No: 12001  
 Lab No.: A1203-0058  
 Sample Date: 02-Jul-12  
 Report Date: 13-Aug-12  
 Reviewed by: [Signature]

Product Description: Granular, washed, graded, coarse aggregate.

SIEVE ANALYSIS			TEST RESULTS					
AASHTO T27		AASHTO M43	Standard	PHYSICAL PROPERTIES		Results	Specification	Lab of Record
Sieve Size	Accum. % Passing	Specifications		Unit Weight & Voids	Unit Weight, lbs./cu.ft. Voids, %			
450 mm (18")			AASHTO T 19			88.6		Lafarge
375 mm (15")						38.2		02-Jul-12
300 mm (12")						Rodded		
250 mm (10")			AASHTO T 85	Coarse Specific Gravity & Absorption	Bulk Specific Gravity (dry)= Bulk Specific Gravity, SSD= Apparent Specific Gravity= Absorption, %=	2.609 2.547 2.609 1.5		Lafarge 02-Jul-12
225 mm (9")								
200 mm (8")			AASHTO T 84	Fine Specific Gravity & Absorption	Bulk Specific Gravity (dry)= Bulk Specific Gravity, SSD= Apparent Specific Gravity= Absorption, %=			
150 mm (6")								
125 mm (5")			AASHTO T 178	Sand Equivalent	Sand Equivalent, %=			
100 mm (4")			ASTM D 4791	Flat & Elongated	Flat & Elongated, %= Ratio=			
75.0 mm (3")			AASHTO T 86	L. A. Abrasion	Small Coarse Loss, %= Grading/ Revs.=	18 C/500	max. 50	Lafarge 02-Jul-12
63.0 mm (2-1/2")								
50.0 mm (2")								
37.5 mm (1-1/2")								
25.0 mm (1")	100	100						
18.0 mm (3/4")	98	85-100						
12.5 mm (1/2")			AASHTO T 104	Soundness	Coarse Soundness Loss, %= Magnesium No. of Cycles=	8.7 5	max. 18	Lafarge 02-Jul-12
9.5 mm (3/8")								
6.3 mm (1/4")	24	10-30						
4.75mm (No. 4)	6	0-10						
2.36 mm (No. 8)								
2.00 mm (No. 10)	3	0-5	AASHTO T 112	Clay/Friable Particles	Coarse Aggregate, %= Fine Aggregate, %=	0.3	max. 2.0	Lafarge 02-Jul-12
1.18mm (No.16)								
0.800 mm (No.30)			AASHTO TP58-99	Micro-Daval	% Loss: Grading:			
0.425mm (No. 40)								
0.300mm (No. 50)			AASHTO T 113	Lightweight Pieces	Coarse Aggregate, %= Fine Aggregate, %=	0.1	max. 0.5	Lafarge 02-Jul-12
0.180mm (No. 80)			NMDOT Section 910	NMDOT Aggregate Index	Coarse Aggregate, %=	12.5	max. 25	Lafarge 02-Jul-12
0.150mm (No.100)	1.8							
0.075mm (No. 200)			AASHTO T 99	Compaction Modified Effort	Optimum Moisture, %= Max. Density, lbs./cu.ft.=			
AASHTO T 11								
Moisture Content, %			AASHTO T 89/90	Liquid Limit, Plastic Limit & Plasticity Index	Liquid Limit= Plastic Limit= Plasticity Index=			
AASHTO T255								
Fractured Face, %	7							
2 faces								
Fineness Modulus (FM)								



Product Quality Assurance Department  
3700 Singer, Suite C Albuquerque, NM 87109

**REPORT of AGGREGATE  
PHYSICAL PROPERTIES**



Material: 3/4" Crushed, Size 67 Blend  
 Period: 07/02/12 - 07/02/13  
 Source Pit: Placitas  
 Product Code: AG1322  
 Agency Specification: ASTM C 33 & D 448, Size # 67

Project No: 12001  
 Lab No.: A1203-0054  
 Sample Date: 02-Jul-12  
 Report Date: 20-Aug-12  
 Reviewed by: Jeh-Je Salari

Product Description: Crushed, washed, graded, coarse aggregate.

SIEVE ANALYSIS			TEST RESULTS					
ASTM C136		C 33 & D 448	Standard	PHYSICAL PROPERTIES		Result	Specification	Lab of Record
Sieve Size	Accum. % Passing	Specifications		Unit Weight & Voids	Unit Weight, lbs./cu.ft. Voids, %			
450 mm (18")			ASTM C 29			92.6		Lafarge
375 mm (15")						41.6		02-Jul-12
300 mm (12")						Rodded		
250 mm (10")			ASTM C 127	Coarse Specific Gravity & Absorption	Bulk Specific Gravity (dry)= Bulk Specific Gravity, SSD= Apparent Specific Gravity= Absorption, %	2.544 2.575 2.625 1.2		Lafarge 02-Jul-12
225 mm (9")								
200 mm (8")								
150 mm (6")			ASTM C 128	Fine Specific Gravity & Absorption	Bulk Specific Gravity (dry)= Bulk Specific Gravity, SSD= Apparent Specific Gravity= Absorption, %			
125 mm (5")								
100 mm (4")								
75.0 mm (3")			ASTM D 2419	Sand Equivalent	Sand Equivalent, %			
63.0 mm (2-1/2")								
50.0 mm (2")			ASTM D 4791	Flat & Elongated	Flat & Elongated, % Ratio	3 3:1		Lafarge 02-Jul-12
37.5 mm (1-1/2")			ASTM C 131	L. A. Abrasion	Small Coarse Loss, % Grading/ Revs.	24 B / 500	max. 50	Lafarge 02-Jul-12
25.0 mm (1")	100	100						
19.0 mm (3/4")	94	90-100	ASTM C 535	L. A. Abrasion	Large Coarse Loss, % Grading/ Revs.			
12.5 mm (1/2")	45							
9.5 mm (3/8")	27	20-55	ASTM C 88	Soundness	Coarse Soundness Loss, % Magnesium No. of Cycles	11.4 5	max. 18	Lafarge 02-Jul-12
6.3 mm (1/4")								
4.75mm (No. 4)	5	0-10		Soundness	Fine Soundness Loss, % Magnesium No. of Cycles			
2.36 mm (No. 8)	3	0-5						
2.00 mm (No. 10)			ASTM C 142	Clay/Friable Particles	Coarse Aggregate, % Fine Aggregate, %	0.1	max 2.0	Lafarge 02-Jul-12
1.18mm (No.18)			AASHTO TP58-99	Micro-Deval	% Loss: Grading			
0.600 mm (No.30)			ASTM C 123	Lightweight Pieces	Coarse Aggregate, % Fine Aggregate, %	0.1	max. 0.5	Lafarge 02-Jul-12
0.425mm (No. 40)								
0.300mm (No. 50)				NMDOT Aggregate Index	Coarse Aggregate, %		max. 25	Lafarge 02-Jul-12
0.180mm (No. 80)			ASTM D 1557	Compaction Modified Effort	Optimum Moisture, % Max Density, lbs./cu.ft.			
0.150mm (No.100)								
0.075mm (No. 200)	1.3		ASTM D 4318	Liquid Limit, Plastic Limit & Plasticity Index	Liquid Limit= Plastic Limit= Plasticity Index=			
ASTM C117								
Moisture Content, %								
ASTM C568								
Fractured Face, %	54	50 min						
2 faces								
Fineness Modulus (FM)								

Grace Construction Products

W.R. Grace & Co. - Conn.  
62 Whittemore Avenue  
Cambridge, MA 02140-1692

T 617-876-1400  
www.graceconstruction.com

4/10/2013

Andy Graham  
Lafarge  
1500 N. Renaissance Blvd. NE  
Albuquerque, New Mexico 87107

Project Name: Various  
Product Selected: MIRA® 110

**GRACE**

This is to certify that the MIRA 110, a Mid-Range and High-Range, Water-Reducing Admixture, as manufactured and supplied by Grace Construction Products, W.R. Grace & Co. - Conn., is formulated to comply with the Specifications for Chemical Admixtures for Concrete, ASTM: C494, Type A, F, AASHTO: M194, Type A, F.

MIRA 110 does not contain calcium chloride or chloride containing compounds as a functional ingredient. Chloride ions may be present in trace amounts contributed from the process water used in manufacturing.

The foregoing is in addition to and not in substitution for our standard Conditions of Sale attached.



G. Terry Harris  
Technical Services Manager

Grace Construction Products

W.R. Grace & Co. - Conn.  
62 Whittemore Avenue  
Cambridge, MA 02140-1692

T 617-876-1400  
www.graceconstruction.com

4/10/2013

Andy Graham  
Lafarge  
1500 N. Renaissance Blvd. NE  
Albuquerque, New Mexico 87107

Project Name: Various  
Product Selected: Terapave® AEA

**GRACE**

This is to certify that the Terapave AEA, a Air-Entraining Agent, as manufactured and supplied by Grace Construction Products, W.R. Grace & Co. - Conn., is formulated to comply with the Specifications for Chemical Admixtures for Concrete, ASTM: C260, AASHTO: M154.

Terapave AEA does not contain calcium chloride or chloride containing compounds as a functional ingredient. Chloride ions may be present in trace amounts contributed from the process water used in manufacturing.

The foregoing is in addition to and not in substitution for our standard Conditions of Sale attached.



G. Terry Harris  
Technical Services Manager



City of Santa Fe  
2651 Siringo Rd.  
Santa Fe, NM 87505



Autotroph Design  
617 B Paulin St.  
Santa Fe, NM 87505



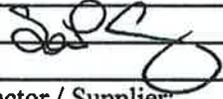
**Meridian Contracting, Inc.**

3223 Los Arboles NE Albuquerque, NM 87107 PH: 505-872-2841 FAX: 505-884-0260



**Santa Fe Bus Shelters - CIP Project #665**

**Transmittal Form**

Sent By: Sean Conway - Project Engineer Sent to: Autotroph Design  
Date: 5/3/2013 Attn: Jayita Sahni  
Signature:  Submittal #: 4

Subcontractor / Supplier: N/A

Specification # / Drawing: 032000 - Concrete Reinforcement

Attachments:	
<input checked="" type="checkbox"/> Concrete Reinforcement Sketch (Header Curb)	<input checked="" type="checkbox"/> Concrete Reinforcement Sketch (Footing)

Submitted For:	
<input checked="" type="checkbox"/> Approval	<input type="checkbox"/> As Requested
<input type="checkbox"/> Your Use	<input type="checkbox"/> Information Purposes Only

Sent Via:	
<input checked="" type="checkbox"/> Attached	<input type="checkbox"/> Separate Cover Via:

**Comments**

\*Provided are four copies for your use and two additional. Please return the additional approved copies for our record.

Sanita Fe Bus Signators

# MERIDIAN CONTRACTING, INC.

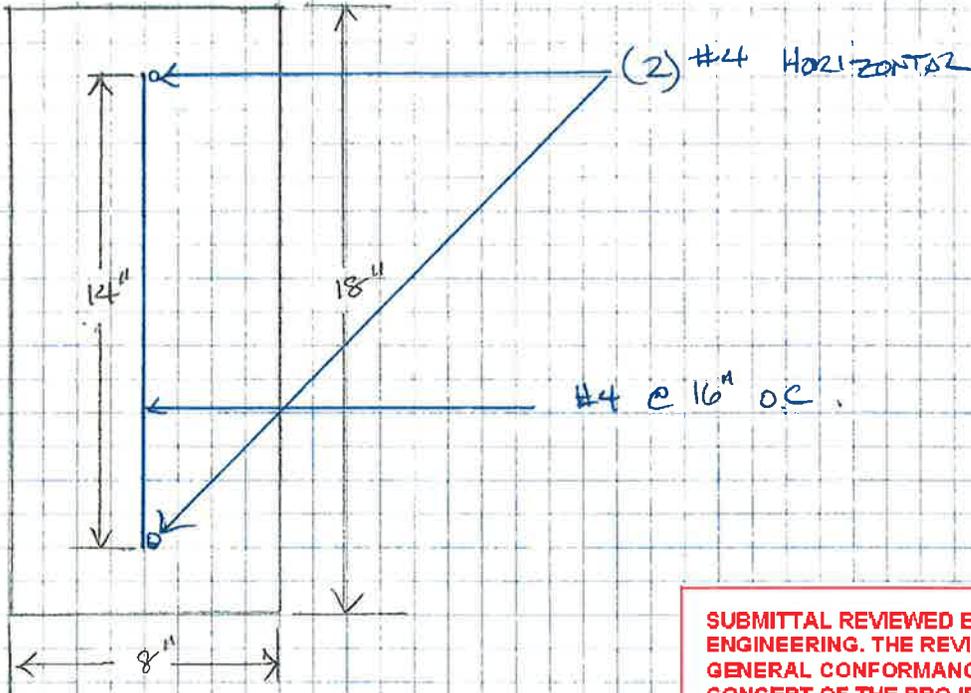
Tucson  
(520) 878-0500

Albuquerque  
(505) 872-2841

Oklahoma  
(405) 928-5959

Header CURB REINFORCEMENT

Date



# autotroph

- APPROVED
- NOT APPROVED
- APPROVED AS NOTED
- NO ACTION REQUIRED
- REVISE AND RESUBMIT

Architect's review and action is only for the limited purpose of checking for conformance with the information given and the design concept expressed in the Contract Documents. Architect's approval does not indicate approval of the accuracy and completeness of other details such as dimensions and quantities, or of instructions for installation or performance of equipment or systems, or of an assembly of which a specific item is a component.

DATE: 5/10/13

SUBMITTAL REVIEWED BY CHAVEZ-GRIEVES ENGINEERING. THE REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND FOR GENERAL COMPLIANCE WITH THE PLANS AND SPECIFICATIONS AND SHALL NOT BE CONSTRUED AS RELIEVING THE CONTRACTOR OF THE FULL RESPONSIBILITY FOR PROVIDING MATERIALS, EQUIPMENT, AND WORK REQUIRED BY THE CONTRACT, THE PROPER FITTING AND CONSTRUCTION OF THE WORK, ACCURACY AND COMPLETENESS OF THE SUBMITTAL, SELECTING FABRICATION PROCESS AND TECHNIQUES OF CONSTRUCTION AND PERFORMING THE WORK IN A SAFE MANNER.

- PLEASE CORRECT AND RESUBMIT
- RESUBMITTAL IS NOT REQUIRED, CORRECTIONS, IF ANY ARE NOTED

CHAVEZ-GRIEVES  
CONSULTING ENGINEERS, INC.

ACCT NO.: 421-110-11  
BY: GB  
DATE: 05/08/13



City of Santa Fe  
2651 Siringo Rd.  
Santa Fe, NM 87505



Autotroph Design  
617 B Paulin St.  
Santa Fe, NM 87505



## Meridian Contracting, Inc.

3223 Los Arboles NE Albuquerque, NM 87107 PH: 505-872-2841 FAX: 505-884-0260



## Santa Fe Bus Shelters - CIP Project #665

### Transmittal Form

Sent By: Sean Conway - Project Engineer  
Date: 5/3/2013  
Signature: 

Sent to: Autotroph Design  
Attn: Jayita Sahni  
Submittal #: 5

Subcontractor / Supplier: **Action Safety**

Specification # / Drawing: **01500-Temporary Facilities & Controls**

Attachments:	
<input checked="" type="checkbox"/> X Traffic Control List	<input checked="" type="checkbox"/> X TC Plan - Shoulder Work (#3974)
<input checked="" type="checkbox"/> X TC Plan - Right Lane Closure (#3972)	<input checked="" type="checkbox"/> X TC Plan - Flagman Setup (#3975)
<input checked="" type="checkbox"/> X TC Plan - Shift Setup (#3973)	

Submitted For:	
<input checked="" type="checkbox"/> X Approval	<input type="checkbox"/> As Requested
<input type="checkbox"/> Your Use	<input type="checkbox"/> Information Purposes Only

Sent Via:	
<input checked="" type="checkbox"/> X Attached	<input type="checkbox"/> Separate Cover Via:

**Comments**

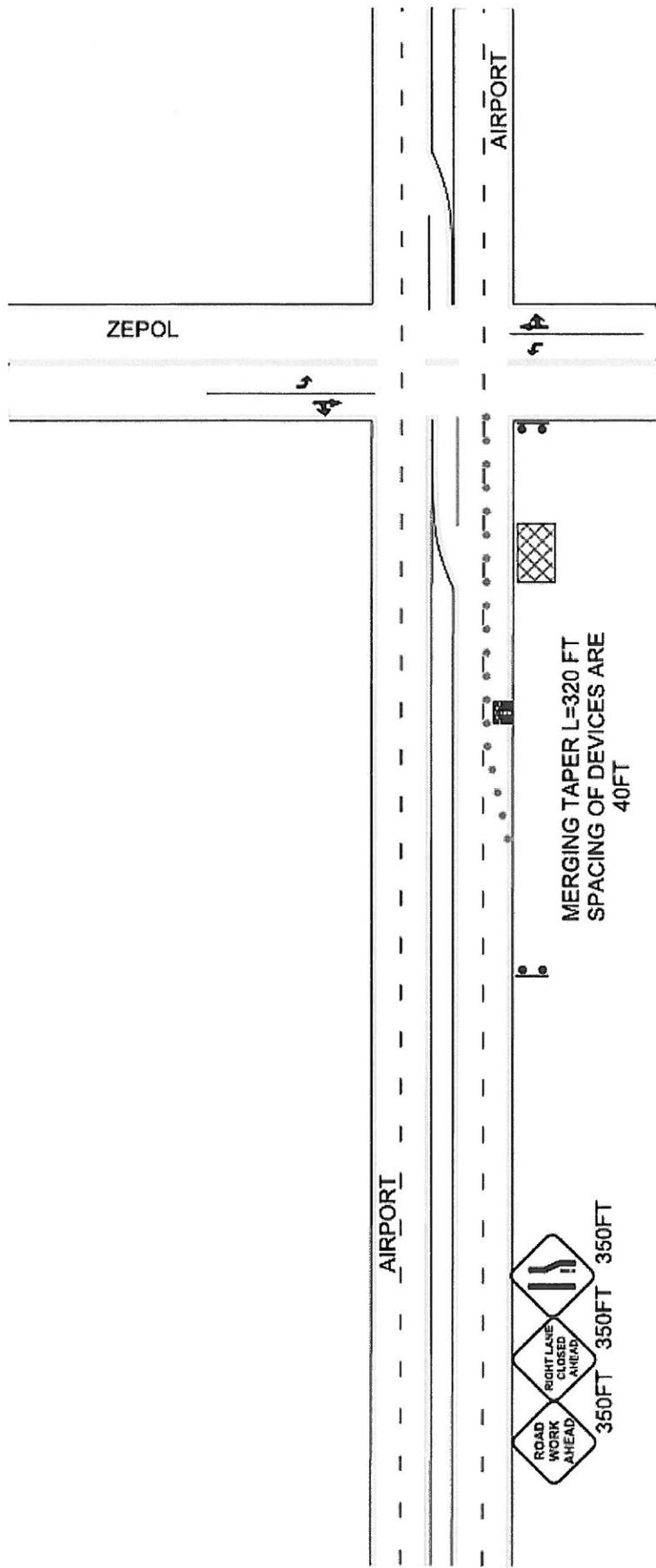
\*Provided are four copies for your use and two additional. Please return the additional approved copies for our record.

## Santa Fe Bus Shelters - Traffic Control List

<b>1. Shoulder Setup (TCP #3974)</b>			
No	Bus Stop	Location	TC Setup
1	94085	Sandoval St. @ Water st.	1
2	97057	Zaferano @ Target	1
3	97058	Zaferano Ops Target	1
6	7007	Plaza del Sol West @ Airport Rd.	1
12	94164	Guadalupe St. @ Garfield	1
19	2004	N. Guadalupe @ Paseo de Peralta	1
20	2003	N. Guadalupe @ Paseo de Peralta	1
22	94068	Aqua Fria @ Siler	1
25	94053	Airport Rd. @ Jemez Rd.	1
36	99002	Jaguar @ Avenida Contenta	1
<b>2. Shift Setup (TCP #3973)</b>			
No	Bus Stop	Location	TC Setup
7	94118	Cerrillos & Lujan	2
15	94124	Cerrillos Rd. @ Monterey	2
16	94014	Aqua Fria @ Osage Ave.	2
17	94073	Aqua Fria @ Osage Ave.	2
23	94051	Airport Rd. @ Zepol Rd.	2
29	94173	Pacheco St. @ St. Michael's Dr.	2
31	96068	Camino Carlos Rey @ Calle Sernena	2
40	94238	Hospital Dr. OPS Santa Fe Imaging	2
42	97020	Rodeo Rd. & legacy Ct	2
<b>3. Right Lane Drop (TCP #3972)</b>			
No	Bus Stop	Location	TC Setup
5	94126	Cordova @ Montoya Building	3
8	94098	Cerillos & Lujan	3
10	94090	St. Francis Dr. & Cordova Rd.	3
11	94220	St. Francis Dr. & Cordova Rd.	3
21	96004	Aqua Fria @ Siler	3
24	94038	Airport Rd. @ Zepol Rd.	3
26	96027	Airport Rd. @ S. Meadows	3
27	94087	Cerrillos Rd. @ Paseo de Peralta	3
28	94129	Cerrillos Rd. @ Paseo de Peralta	3
30	3004	Rodeo @ GCCC	3
32	96115	Zia Rd. @ Dakota Canyon Apts.	3
35	99004	Jaguar @ Paseo del Sol	3
38	94249	St. Michael's @ SFUAD	3
39	94245	St. Michael's Opp SFUAD	3
<b>No Traffic Control Needed</b>			
No	Bus Stop	Location	TC Setup
4	94045	SFCC	None
9	94125	Cerrillos @ NMDOT	None
18	94239	St. Vincent Hospital	None
33	97015	Camino Lejo @ Museums	None
34	96079	Aqua Fria Rd. @ Frenchy's Park	None
37	10001	599 Rail Runner Station	None
41	3	South Capitol Station	None
43	12001	Country Club & Valentine Way	None
<b>Flagman Setup (TCP #3975)</b>			
Used only if necessary			

\* This project involves multiple (41) Locations considered as work areas. We are confident that these four TC Plans we are submitting will cover all of the various work areas.

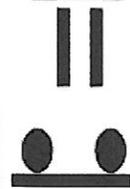
# NOTE T.C.P. NOT TO SCALE T.C.P. #3972



WORK ZONE



SIDEWALK CLOSED



Date: 4/29/2013 Author: ANDREW CARVER Project: AIRPORT RD & ZEPOL RD  
Label USER-1: Value MERIDIAN CONST. Label USER-2: Value C.O.S.F. PERMITS

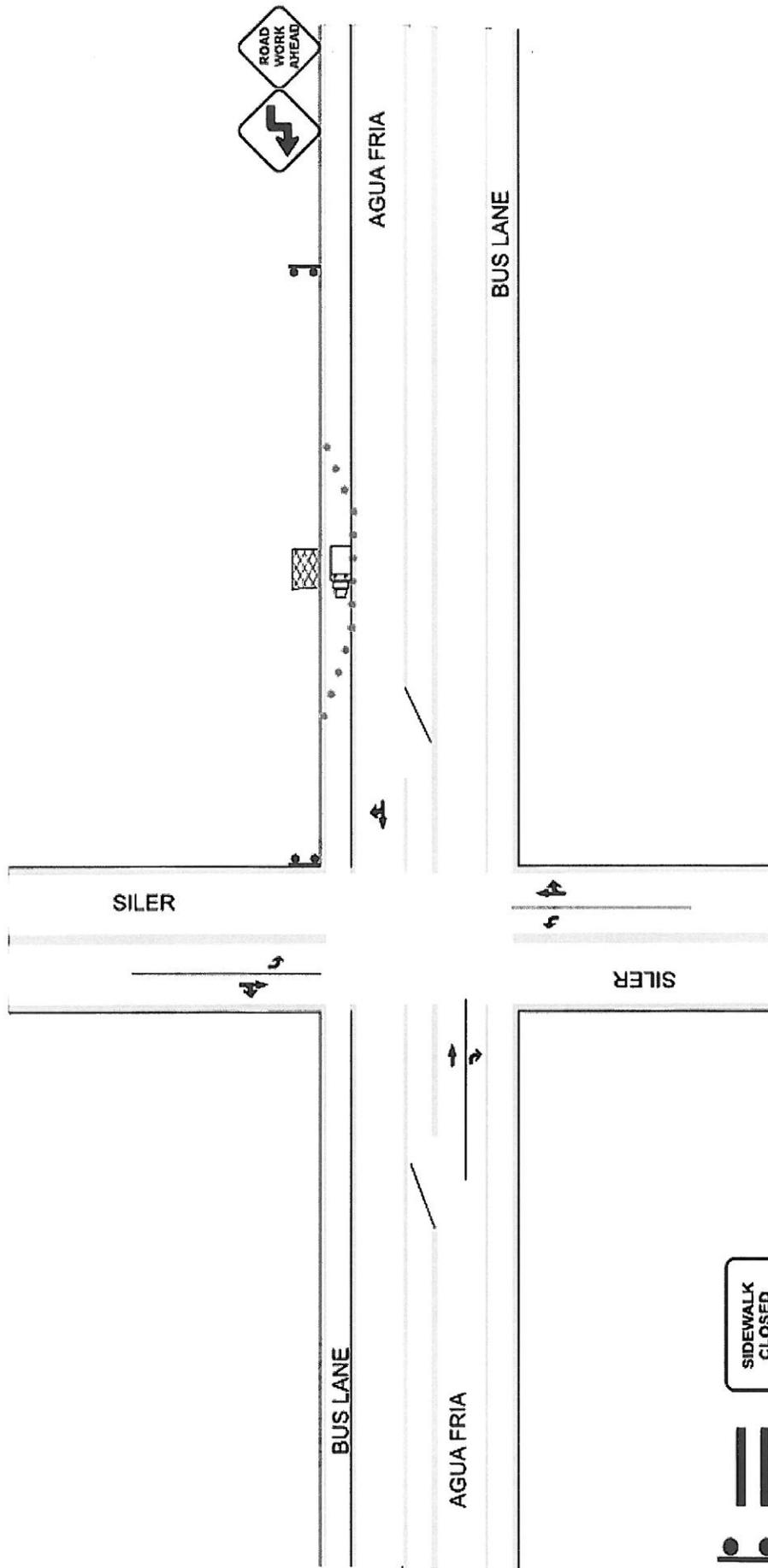
Comments:

RIGHT LANE CLOSER GOING NORTH BOUND AIRPORT



# NOTE T.C.P. NOT TO SCALE T.C.P.#3973

www.valuere.com



**SIDEWALK  
CLOSED**



**WORK  
ZONE**

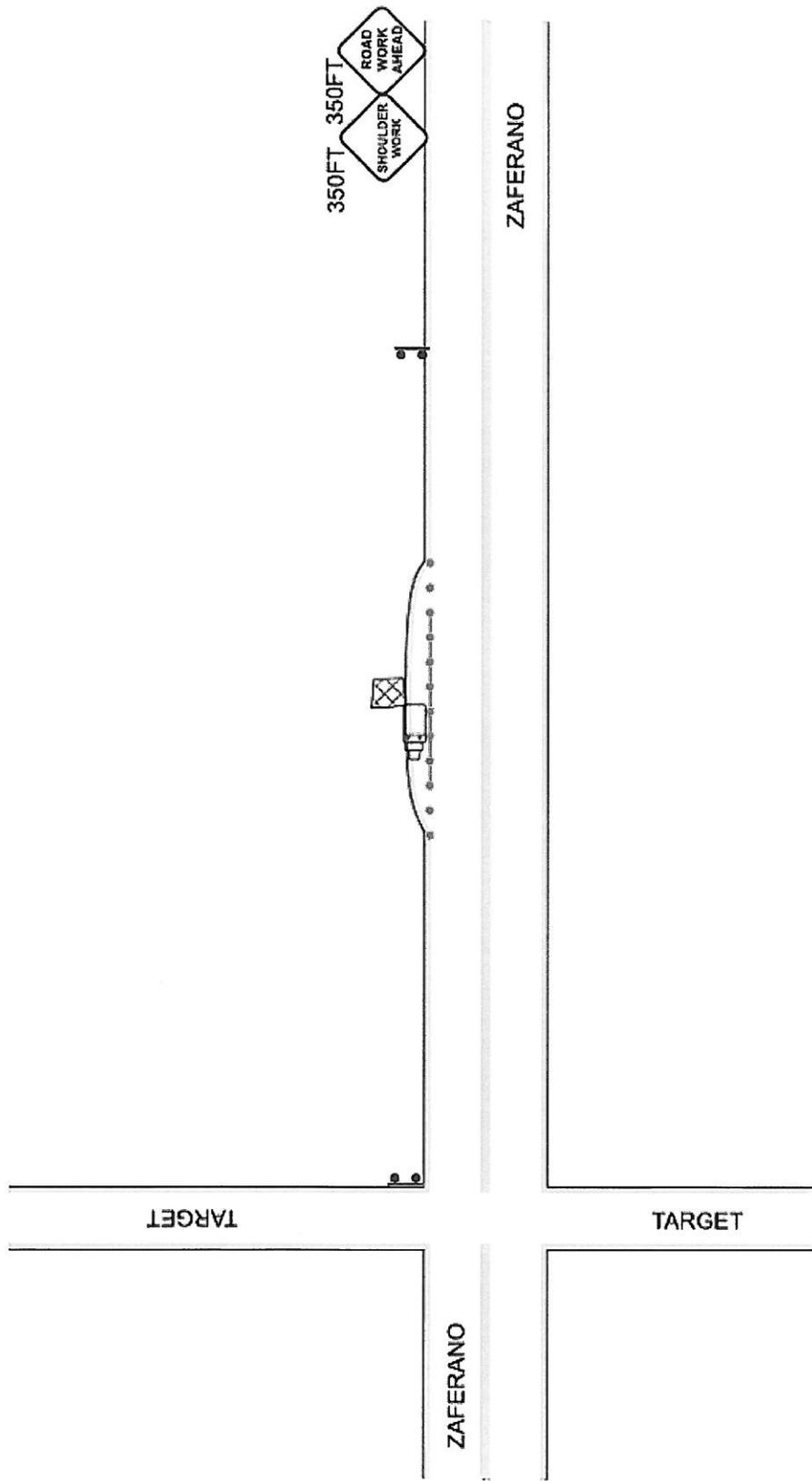


Date: 4/29/2013 Author: ANDREW CARVER Project: AGUA FRIA & SILER  
 Label USER-1: Value MERIDIAN CONST Label USER-2: Value C.O.S.F.PERMITS  
 Comments:  
 SHIFT SETUP GOING SOUTH BOUND AGUA FRIA



# NOTE T.C.P. NOT TO SCALE T.C.P.#3974

www.action.com





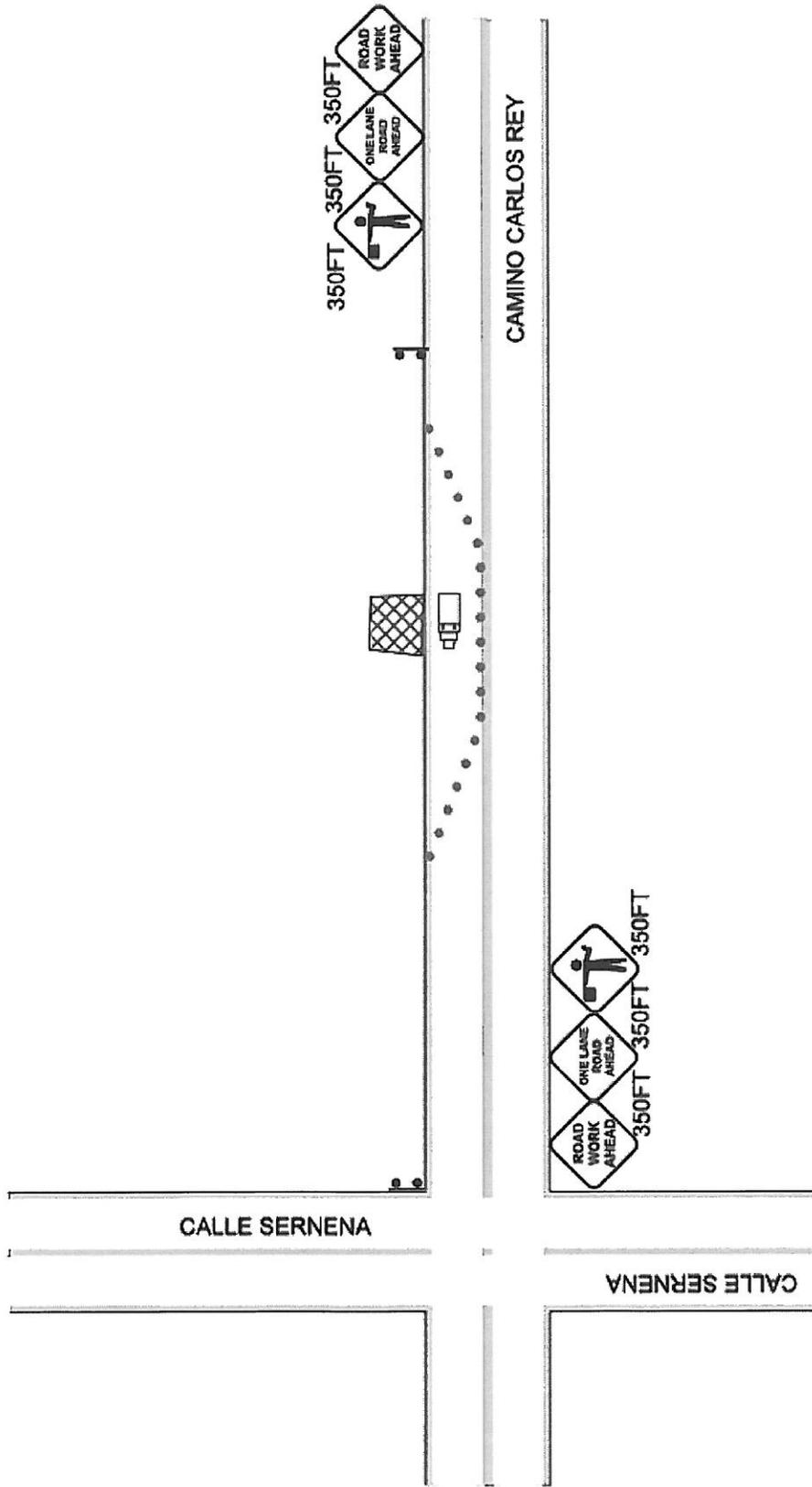


**SIDEWALK CLOSED**  
**WORK ZONE**

**Date:** 4/29/2013 **Author:** ANDREW CARVER **Project:** ZAFERANO AND TARGET  
**Label USER-1:** Value MERIDIAN CONST. **Label USER-2:** Value C.O.S.F.PERIMITS  
**Comments:**  
 SHOULDER WORK SETUP GOING WEST BOUND ZAFERANO


 (555) 878-4690  
 ACTION  
 SAFETY SERVICES  
 700  
 4085th

# NOTE T.C.P. NOT TO SCALE T.C.P.#3975



 **SIDEWALK CLOSED**  
 **WORK ZONE**  
  


**Date:** 4/29/2013 **Author:** ANDREW CARVER **Project:** CAMINO CARLOS REY & CALLE SERNENA  
**Label USER-1:** Value MERIDIAN CONST. **Label USER-2:** Value C.O.S.F.PERMITS  
**Comments:**  
 FLAGMAN SETUP GOING WEST BOUND CAMINO CARLOS REY

 **ACTION**  
 (561) 878-9360  
 710  
 SAFETY SOLUTIONS



City of Santa Fe  
2651 Siringo Rd.  
Santa Fe, NM 87505



Autotroph Design  
617 B Paulin St.  
Santa Fe, NM 87505



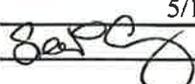
## Meridian Contracting, Inc.

3223 Los Arboles NE Albuquerque, NM 87107 PH: 505-872-2841 FAX: 505-884-0260



## Santa Fe Bus Shelters - CIP Project #665

### Transmittal Form

Sent By: Sean Conway - Project Engineer Sent to: Autotroph Design  
Date: 5/13/2013 Attn: Alexander Dzurec  
Signature:  Submittal #: 6

Subcontractor / Supplier: **Absolute Powdercoating**

Specification # / Drawing: **09960 - High Performance Coatings**

#### Attachments:

<input checked="" type="checkbox"/> Method of Application	<input checked="" type="checkbox"/> Tiger Drylac - Anodized Silver MSDS
<input checked="" type="checkbox"/> Tiger Drylac-Anodized Silver PDS	<input checked="" type="checkbox"/> Tiger Drylac- Anti Graffiti MSDS
<input checked="" type="checkbox"/> Tiger Drylac-Anti-Graffiti PDS	

<b>Submitted For:</b>	<b>Requested Approval Date:</b> <u>5/17/2013</u>
<input checked="" type="checkbox"/> Approval	
<input type="checkbox"/> Your Use	

#### Sent Via:

<input checked="" type="checkbox"/> Attached	<input type="checkbox"/> Separate Cover Via:
--	--

#### Comments

\*Provided are four copies for your use and two additional. Please return the additional approved copies for our record.



design • build • deploy

[www.LNIsigns.com](http://www.LNIsigns.com)

# POWDER COATING APPLICATION & QUALIFICATION DATA:



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May 6, 2013

Project: Santa Fe Bus Shelters  
Subject: Painting and Coating Process

To Whom It May Concern:

Per section 05730/1.4/E of submittal specifications, the following represents powder coating application process:

1. Surface Preparation: Prepared to SSPC SP-10
  - a. Sandblast product to "Near-White Blast" condition.
  - b. We use a Clemco® Abrasive Blast sandblaster, at 120 psi
  - c. Kleen Blast® premium non-silica abrasive.
  - d. Wipe clean with paint thinner/acetone
  
2. Prime Coat: Tiger Drylac Zinc Rich Primer - Series 69/ 905000
  - a. Product Data Sheets
  - b. MSDS sheets
  
3. First Coat: Tiger Drylac Powder Coat - Series 38, or Innotek Polymer G17
  - a. Product Data Sheets
  - b. MSDS sheets
  
4. Finish Coat: Tiger Anti-Graffiti – Series 44
  - a. Product Data Sheets
  - b. MSDS sheets

Sincerely,  
LNI Custom Manufacturing

Jennifer Payne  
Project Manager

## LNI Certificate of Conformance

Job Name: Santa Fe Bus Shelters  
Owner: City of Santa Fe  
2651 Siringo Road, Bldg H  
Santa Fe, NM 87505

Purchase Order: 10198, 03/27/2013

LNI Project Number: 13017, 10/22/2012

The undersigned hereby certifies that all parts processed on the above purchase order were coated in accordance with customer and material specifications.

Material Used: Tiger DryZinc- Zinc Rich Primer, Series 69/ Tiger Drylac Super Durable Polyester resin-resin based Thermosetting powder, Series 38/ High Performance Arch. Coating, Series 44- Anti Graffiti, weather resistant Polyester Urethane for Ext. Application  
-All Surfaces: 69/90500 Zinc- Rich Primer  
-Frame: 038/ 90018 Argento 314 Metallic  
-Panels: 038/ 91020 Anodized Silver  
-All Surfaces: Smooth Glossy Finish 44/10008 - Clear

Specification: Tiger Drylac Specification

Manufactured By: Tiger Drylac U.S.A, Inc. (Lot/ Batch: T.B.D.)

All processing procedures used were in accordance with material manufactures and customers specifications:

Carlos Garcia  
Quality Assurance

*Provide sample chips  
for approval of color and finish.*

Jennifer Payne  
Project Manager

# Product Data Sheet



## SERIES 69 - DRYZINC® ZINC-RICH PRIMER (69/90500)

Epoxy zinc-rich powder coating primer. Part of a two-coat TIGER Shield® system. Designed to impart superior corrosion protection to steel substrates.

### Typical applications

- Steel constructions.
- Stadium seating.
- Agricultural machinery.
- Industrial equipment.
- Fixtures.
- Fences.
- Bike mounts.
- Heavy corrosion protection.

**Standard Packaging**      44 lb (20 kg) box.  
5 lb (2.5 kg) minipack.

**Specific Gravity (ASTM D792)**      approximately 2.2 g/cm<sup>3</sup>  
depending on pigmentation.

**Theoretical Coverage**      at 2.2 specific gravity and  
2.5 mils (60 µm) film thickness:  
**24 ft<sup>2</sup>/lb (4.0 m<sup>2</sup>/kg).**

Refer also to the latest edition  
of "Theoretic Powder Coating  
Coverage Chart".  
Version 00-1001 (imperial).  
Version 00-1000 (metric).

**Storage Stability**      6 months at no more than  
77 °F (25 °C).

### Features

- Zinc-rich primer.
- Especially suited for blasted substrates.
- Good intercoat adhesion.
- Very good corrosion protection.
- Very good mechanical properties.
- Good chemical resistance.
- Good storage stability.
- Very good edge coverage.

### Finish and Color

- Grey smooth flow glossy surface, approximately 75±5\*.

\* Gloss level according to ASTM 523 at 60° angle.

### TIGER Shield®

TIGER Shield® is a two-coat system consisting of a corrosion protective primer as a base coat:

- TIGER Drylac® 69/70000 Dryprotector®,
  - or TIGER Dryzinc® 69/90500,
  - or TIGER Drylac® zinc-free OGF 09/73841,
- and an opaque weather resistant TIGER Drylac® powder coating.

# Series 6g - DRYZINC® Zinc-Rich Primer (6g/90500)



TIGER Drylac U.S.A., Inc. | 3855 Swenson Avenue | St Charles, IL | T 800 243 8148 | F 877 926 8148 | office.us@tiger-coatings.us | www.tiger-coatings.us

## Pretreatment (alternatives)

Two methods of pretreatment have been tested. A prerequisite for inclusion in the TIGER Shield® processing is the quality of the steel substrate defined as an alloy-treated steel, class ST 37, ST 52 or any other equally suited steel that can be coated (stainless steel alloys, any derivatives thereof as well as galvanized work pieces are explicitly excluded for use within a TIGER Shield® application).

The following means of pretreatment and metal preparation have been tested respectively, and approved, in accordance with the requirements as set forth in EN ISO 12944.

### I. Zinc phosphating

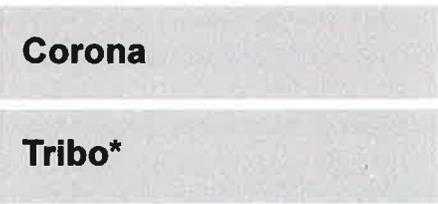
Minimum conversion coating weight  $2.5 \pm 1.0 \text{ g/m}^2$ .

### II.) Blasting

The raw steel surface needs to be blasted using sharp and edged minerals or cast iron pellets. The tolerances for a blasted steel surface thereby need to correspond to the comparison specimen standard G 201 (lower tolerance segment 2, upper tolerance segment 3 = medium grade) and to the surface preparation class of minimum Sa 2.5 according to ISO 8503-1 and ISO 8503-2 with the surface depth between a minimum of  $R_z$  1.96-2.75 mils (50-70  $\mu\text{m}$ ) and a maximum of  $R_{max}$  3.93 mils (100  $\mu\text{m}$ ) according to ISO 8501 and a peak amount  $P_c$  0.39 mils (10  $\mu\text{m}$ ) of 20 measured with a perthometer (Mahr). Blasting must ensure that a minimum of 95% of the total area to be blasted is reached.

To avoid any corrosion, the powder coating has to take place immediately after the blasting stage.

## Processing

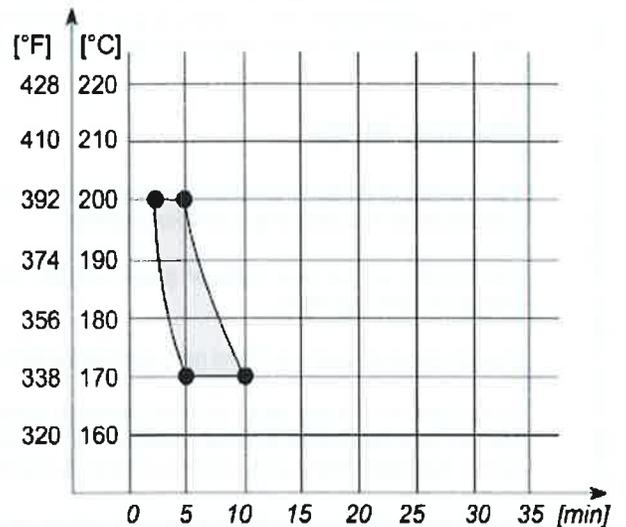


\* For Tribo/Airstatic powder coatings please confirm before ordering. Suitability of metallic effects for Tribo processing must be verified prior to application. Please refer to the latest edition of the relevant Information Sheets.

Since not all powder coatings are suitable for recycling/reclaim, please verify before ordering.

## Cure Parameters (substrate temperature)

TIGER Drylac® Two-Coat Process  
Cure Parameters | Base Coat



Substrate temperature versus curing time

To achieve a full cure and the desired mechanical properties and weatherability the time/temperature combination must fall within the cure window.

## Two-Coat Process

If used as a two-coat TIGER Shield® system, best intercoat adhesion is achieved when pre-gelling the primer at 392 °F (200 °C) for 2-3 minutes prior to applying a TIGER Drylac® powder coating topcoat. It is then to be cured, applying the curing parameters as given in the relevant Product Data Sheet for that top coat.

To avoid eventual oxidation no more than 12 hours must elapse between the application of TIGER Dryzinc® 69/90500 and the spraying of any TIGER Drylac® topcoat.

When the pre-gelling and subsequent cure is done in a directly fired gas oven, intercoat adhesion between the primer and the topcoat may suffer due to a variation in the gas supply.

# Series 6g - DRYZINC® Zinc-Rich Primer (69/90500)



## Film Thickness

A minimum film thickness of 2.5 mils (60 µm) per layer needs to be applied. The system requires the primer; either TIGER Dryzinc® 69/90500 or TIGER Dryprotector® 69/70111, to be applied at 2.5-4.0 mils (60-100 µm) and the weather resistant top coat to be sprayed at a film thickness of 2.5-4.0 mils (60-100 µm). It is required that the total film thickness of both; the primer and the top coat, amount to an entire film build up to 5.0 mils (120 µm). In order to achieve sufficient opacity, it may become necessary to apply organic pigmented top coats at a higher film thickness. Please note that non-pigmented top coats, such as clear coats or transparent effects are not suited for a TIGER Shield® application.

## Please Note

For metallic finishes, it is recommended to observe the guidelines published in the latest edition of TIGER Drylac® "Application guidelines for metallic effect powder coatings".

Top coating with a clear exterior grade powder coating over an interior grade powder coating does not result into a weather resistant coating system.

Post-bending properties of any part must be verified prior to application. Minor cracks in the coated surface may lead to corrosion.

Joint sealants and any other auxiliary products, such as glazing aids, gliding waxes, drilling and cutting lubricants, which come in contact with the coated surface, must be pH-neutral and free of substances that may damage the finish. Therefore, a suitability test at the applicator's end, prior to coating, is highly recommended.

In general, colors in the red, orange and yellow range may require an increased film thickness to achieve full hiding.

Any post-mechanical processing of already coated parts, such as sawing, drilling, milling, cutting and bending will result in damage of the coated surface and will subsequently weaken the corrosion protection.

Please read and understand the Material Safety Data Sheet (MSDS) before use.

# Series 69 - DRYZINC® Zinc-Rich Primer (69/90500)



## Test Results

Results are checked on a 1/8 inch (3 mm) gauge zinc phosphated, steel panel, two-coat TIGER Shield® system (TIGER Dryzinc® 69/90500 and a smooth glossy finish topcoat) with a total film thickness of maximum 6.4 mils (160µm). Cure conditions according to the cure curves.

Test results	Test method	Dryzinc® 69/90500 + TIGER Drylac® Series 38
Film thickness		5.0-7.0 mils (120-180 µm)
Cross cut tape test 2 mm	ASTM D3359	5B
Humidity resistance 1,000 hours	ASTM D2247	Maximum undercutting 1/32 inch (1 mm). No blistering.
Salt spray resistance 3,000 hours	ASTM B117	Maximum undercutting 1/32 inch (1 mm). No blistering.
Porosity of paint films	ASTM D3258	Non-porous.

**Cleaning recommendations:** Refer to the latest edition of TIGER "Cleaning Recommendations" information sheet, Version 00-1005.

If the metal preparation and pretreatment are followed according to the instructions as set forth in this Product Data Sheet, the TIGER Shield® system will yield protection against corrosion that meets the requirements of a corrosion class C5-I long according to EN ISO 12 944 part VI.

### TIGER Shield® (Pretreatment with zinc phosphating)

Results are checked on a 1/8 inch (3 mm) zinc phosphated steel panel, two-coated-structure (TIGER Dryzinc® 69/90500 and a smooth glossy finish topcoat) with a general maximum film thickness of 6.4 mils (160 µm). Cure according to the relevant curing parameters.

Test results	Test method	Dryzinc® 69/90500 + TIGER Drylac® Series 38
Tested corrosion resistance	EN ISO 12 944	C5-I long IKS test report PB 300/64/00*
Suitable for application in pre-stressed and highly fastened bolted connections	DIN 18 800 Part 1***	Unrestricted use for bolted connections ISL test report PB 10/00**

### TIGER Shield® (Metal preparation with blasting)

Results are checked on a 1/8 inch (3 mm) gauge blasted steel panel, two-coat TIGER Shield® system (TIGER Dryzinc® 69/90500 and a smooth glossy finish topcoat) with a total maximum film thickness of 5.0-7.0 mils (120-180 µm). Cure conditions are according to the cure curves.

Test results	Test method	Dryzinc® 69/90500 + TIGER Drylac® Series 38
Tested corrosion resistance	EN ISO 12 944	C5-I long IKS test report PB 300/64/00*
Suitable for application in pre-stressed and highly fastened bolted connections	DIN 18 800 Part 1***	Unrestricted use for bolted connections ISL test report PB 10/00**

\* Institute for Corrosion Protection, Dresden, Germany

\*\* Institute for Steel Construction, Leipzig, Germany

\*\*\* DIN = German Industrial Standard

# Series 69 - DRYZINC® Zinc-Rich Primer (69/90500)



## Chemical Resistance

The required chemical resistance of a powder coating depends, among other things, on its formulation. Chemical resistance requirements must be considered according to processing conditions and final use of the finished product. This is best established during the product specification process. Agreement between all parties involved must be reached about the requirements for such chemical resistance as well as the test method, which may be performed in accordance with PCI test method #8 "Solvent Cure Test". Furthermore, the test duration and concentration of the test media need to be agreed upon.

As part of TIGER Drylac® product information program, Product Data Sheets are updated periodically. It is recommended to always check for the latest editions on TIGER's website. TIGER's verbal and written recommendations for the use of its products are based upon experience and in accordance with current technological standards. These are given in order to support the buyer or user. They are non-committal and do not create any additional commitments to the purchase agreement. They do not release the buyer from verifying the suitability of TIGER products for the intended application. This Product Data Sheet supersedes all previous Product Data Sheet versions and notes published in relation to this product.

TIGER Drylac U.S.A., Inc. | 3855 Swenson Avenue | St Charles, IL | T 800 243 8148 | F 877 926 8148 | office.us@tiger-coatings.us | www.tiger-coatings.us

Certified according to  
ISO 9001 | 14001

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W www.tiger-coatings.us

# Material Safety Data Sheet

acc. to ISO 11014

Printing date 09/10/2010

Reviewed on 07/13/2010

## 1 Identification of substance

- . **Product details**

- . **Trade name** ZICH RICH PRIMER SM GL

- . **Article number:** 69/90500

- . **Manufacturer/Supplier:**

USA:

TIGER Drylac U.S.A., Inc.

1090 Commons Blvd.

Reading, PA 19605

Phone: +1 / 610 / 926 8148

Fax: +1 / 610 / 926 8149

Canada:

TIGER Drylac Canada Inc.

110 Southgate Drive

Guelph, Ontario, N1G 4P5

Phone: +1 / 519 / 766 4781

Fax: +1 / 519 / 766 4787

- . **Informing department:** Product Safety Department

- . **Emergency information:** 24/7:1-800-255-3924; International:+01 or +001-813-248-0585

## \* 2 Composition/Data on components:

- . **Chemical characterization**

- . **Description:** Mixture consisting of the following components with harmless additives.

- . **Dangerous components:**

7440-66-6	zinc powder -zinc dust (stabilized)	N; R 50/53	25-50%
80-05-7	bisphenol A	Xn, Xi; R 37-41-43-62	2.5-10%
693-98-1	2-methylimidazole	C, Xn; R 21/22-34-41	< 1.0%

- . **Additional information** For the wording of the listed risk phrases refer to section 16.

## \* 3 Hazards identification

- . **Hazard designation:**

Irritant

Dangerous for the environment

- . **Information pertaining to health and environmental hazards**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

May cause sensitization by skin contact.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

- . **Classification system**

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

- . **NFPA ratings (scale 0-4)**



Health = 1

Fire = 1

Reactivity = 1

(Contd. on page 2)

USA

# Material Safety Data Sheet

acc. to ISO 11014

Printing date 09/10/2010

Reviewed on 07/13/2010

Trade name ZICH RICH PRIMER SM GL

(Contd. of page 1)

## HMIS-RATINGS (SCALE 0 - 4)



Health = 1

Fire = 1

Reactivity = 1

## 4 First aid measures

- . **After inhalation**  
Supply fresh air and call for doctor for safety reasons.  
In case of unconsciousness bring patient into stable side position for transport.
- . **After skin contact** Instantly wash with water and soap and rinse thoroughly.
- . **After eye contact** Rinse opened eye for several minutes under running water.
- . **After swallowing** In case of persistent symptoms consult doctor.

## \* 5 Fire fighting measures

- . **Suitable extinguishing agents**  
CO<sub>2</sub>, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
- . **Protective equipment:** No special measures required.

## \* 6 Accidental release measures

- . **Person-related safety precautions:**  
Wear protective equipment. Keep unprotected persons away.  
Avoid causing dust.
- . **Measures for environmental protection:**  
Do not allow product to reach sewage system or water bodies.  
Inform respective authorities in case product reaches water or sewage system.
- . **Measures for cleaning/collecting:** Collect mechanically.

## \* 7 Handling and storage

- . **Handling**
- . **Information for safe handling:** No special measures required.
- . **Information about protection against explosions and fires:**



Keep ignition sources away - Do not smoke.

Dust can combine with air to form an explosive mixture.

- . **Storage**
- . **Requirements to be met by storerooms and containers:**  
Store only in the original container.  
Static charges may build up in the powder
- . **Information about storage in one common storage facility:** Not required.
- . **Further information about storage conditions:** None.

## \* 8 Exposure controls and personal protection

- . **Additional information about design of technical systems:** No further data; see item 7.
- . **Components with critical values that require monitoring at the workplace:** not required
- . **Additional information:**  
The lists that were valid during the compilation were used as basis.

(Contd. on page 3)

USA

# Material Safety Data Sheet

acc. to ISO 11014

Printing date 09/10/2010

Reviewed on 07/13/2010

Trade name ZICH RICH PRIMER SM GL

(Contd. of page 2)

- . **Personal protective equipment**
- . **General protective and hygienic measures**  
Instantly remove any soiled and impregnated garments.  
Wash hands during breaks and at the end of the work.
- . **Breathing equipment:**



In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

- . **Protection of hands:**



Protective gloves.

- . **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- . **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- . **Eye protection:**



Safety Glasses

- . **Body protection:** Protective work clothing.

## \* 9 Physical and chemical properties:

- . **General Information**

<b>Form:</b>	Solid
<b>Colour:</b>	According to Trade Name
<b>Smell:</b>	Characteristic

- . **Change in condition**

<b>Melting point/Melting range:</b>	> 50 C / 120F
<b>Boiling point/Boiling range:</b>	Not determined

- . **Flash point:**

Not applicable

- . **Self-inflammability:**

Product is not selfigniting.

- . **Danger of explosion:**

Product is not explosive. However, formation of explosive air/dust mixtures is possible

- . **Density at 20°C (68°F)**

1.97 g/cm<sup>3</sup>

- . **Solubility in / Miscibility with Water:**

Unsoluble

- . **Solvent content:**

<b>Organic solvents:</b>	0.0 %
--------------------------	-------

<b>Solids content:</b>	100.0 %
------------------------	---------

## \* 10 Stability and reactivity

- . **Conditions to be avoided:** No decomposition if used according to specifications.

(Contd. on page 4)

USA

# Material Safety Data Sheet

acc. to ISO 11014

Printing date 09/10/2010

Reviewed on 07/13/2010

Trade name ZICH RICH PRIMER SM GL

(Contd. of page 3)

- . **Materials to be avoided:**
- . **Dangerous reactions** No dangerous reactions known
- . **Dangerous products of decomposition:** In case of fire: CO, CO<sub>2</sub>, NO<sub>x</sub>

## 11 Toxicological information

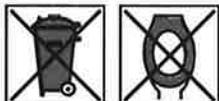
- . **Acute toxicity:**
- . **Primary irritant effect:**
- . **on the skin:** No irritant effect.
- . **on the eye:** No irritant effect.
- . **Sensitization:** Sensitization possible by skin contact.
- . **Additional toxicological information:**  
The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:  
Irritant

## \* 12 Ecological information:

- . **Ecotoxicological effects:**
- . **Remark:** Harmful to fish

## 13 Disposal considerations

- . **Product:**
- . **Recommendation**



Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- . **Uncleaned packagings:**
- . **Recommendation:** Disposal must be made according to official regulations.

## \* 14 Transport information

- . **DOT regulations:**
- . **Hazard class:** Not regulated.
- . **Maritime transport IMDG/GGVSea:**
- . **IMDG/GGVSea Class:** Not regulated.
- . **Marine pollutant:** No
- . **Air transport ICAO-TI and IATA-DGR:**
- . **ICAO/IATA Class:** Not regulated.

## \* 15 Regulations

- . **SARA (Superfund Amendments and Reauthorization Act):**

- . **Section 355 (Extremely hazardous substances):**

None of the ingredients is listed.

- . **Section 313 (Specific toxic chemical listings):**

7440-66-6	zinc powder -zinc dust (stabilized)
80-05-7	bisphenol A

- . **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

(Contd. on page 5)

USA

# Material Safety Data Sheet

acc. to ISO 11014

Printing date 09/10/2010

Reviewed on 07/13/2010

Trade name ZICH RICH PRIMER SM GL

(Contd. of page 4)

**Proposition 65:**

<b>Chemicals known to cause cancer:</b>		
None of the ingredients is listed.		
<b>Chemicals known to cause reproductive toxicity for females:</b>		
None of the ingredients is listed.		
<b>Chemicals known to cause reproductive toxicity for males:</b>		
None of the ingredients is listed.		
<b>Chemicals known to cause developmental toxicity:</b>		
None of the ingredients is listed.		
<b>Cancerogenity categories</b>		
<b>EPA (Environmental Protection Agency)</b>		
None of the ingredients is listed.		
<b>IARC (International Agency for Research on Cancer)</b>		
1317-60-8	Hematite (Fe <sub>2</sub> O <sub>3</sub> )	3
7631-86-9	silicon dioxide, chemically prepared	3
<b>NTP (National Toxicology Program)</b>		
None of the ingredients is listed.		
<b>TLV (Threshold Limit Value established by ACGIH)</b>		
None of the ingredients is listed.		
<b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>		
None of the ingredients is listed.		
<b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>		
None of the ingredients is listed.		

**Designation according to EC guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

**Code letter and hazard designation of product:**

Irritant  
Dangerous for the environment

**Hazard-determining components of labelling:**

bisphenol A

**Risk phrases:**

May cause sensitization by skin contact.  
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**Safety phrases:**

Avoid contact with skin.  
Wear suitable gloves.  
Use appropriate container to avoid environmental contamination.  
This material and its container must be disposed of as hazardous waste.

**16 Other information:**

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- \* Data compared to the previous version altered.

# Pattern orientation as installed on Prd Pkgs C



**Absolute Powder Coating LLC**  
**2400 Menaul Blvd NE Suite B**  
**Albuquerque, NM 87107**  
**(505)369-1641**  
**chris@powdercoatingabq.com**  
**www.powdercoatingabq.com**

May 13, 2013

TO: Meridian Contracting, Inc.

Reference: Specification on Powder Coating for Parts Listed-  
(22) Trash Receptacle-Santa Fe Bus Shelter

Purchase Orders listed:  
10199

Process:

- Parts will be bead blasted to a near white blast
- Parts will be cleaned with dry compressed air to remove contaminants
- Parts will pre-bake for a minimum 1 hour.
- Parts will be cleaned with dry compressed air to remove any contaminants once again
- Parts will cool
- Parts will then be powder coated with Tiger Drylac Anodized Silver as specified with a target thickness of 2.5 to 3.5 mils using manual electrostatic powder coating spray equipment and flash cured
- Parts will cool and then be powder coated with Anti-Graffiti clear glossy top coat as specified with a target thickness of 2.5 to 3 mils using manual electrostatic powder coating spray equipment.
- Parts will cure @ 400 degrees per manufacturer's recommendations!

*Absolute Powder Coating LLC Certifies Conformance to the specifications noted in the drawings and purchase orders from Meridian Contracting, Inc. Please call if you have any questions or concerns. Thank you.*

Chris Damon

X 

Owner-President

# Product Data Sheet



## SERIES 38 – SUPER DURABLE

Polyester TGIC super durable powder coating compliant to AAMA 2604 with excellent weather resistance properties for high performance architectural exterior applications.

### Typical Applications

- Metal façades.
- Steel constructions.
- Stadium seating and railings.
- Residential windows and doors.
- Patio furniture and garden equipment.
- Railings.
- Playground equipment.
- Agriculture equipment.

**Standard Packaging** 44 lb (20 kg) box.  
5 lb (2.5 kg) minipack.

**Specific Gravity (ASTM D792)** approximately 1.2-1.8 g/cm<sup>3</sup>  
depending on pigmentation.

**Theoretical Coverage** at 1.5 specific gravity and  
2.5 mils (60 µm) film thickness:  
**30.2 ft<sup>2</sup>/lb (9.8 m<sup>2</sup>/kg).**

Refer also to the latest edition  
of "Theoretic Powder Coating  
Coverage Chart".  
Version 00-1001 (imperial).  
Version 00-1000 (metric).

**Storage Stability** 6 months at no more than  
77 °F (25 °C).

### Features

- Excellent weather resistance.
- Excellent UV-light resistance.
- AAMA 2604-10\* compliant.
- 5 years South Florida exposure.
- Very smooth flow.
- Good storage stability.
- Good yellowing stability.

\* AAMA 2604-10 compliance dependent upon the color  
and/or effect.

### Finish and Color

- Smooth flow glossy, approximately 80-95+\*.
- Smooth flow semi gloss, approximately 60±5\*.
- Smooth flow matte, approximately 20±5\*.

\* Gloss level according to ASTM 523 at 60° angle.

Available as stock product in smooth glossy, semi gloss and  
matte in 70 colors. It can be custom matched in limited colors  
(minimum order quantity and color limitation applies).

# autotroph

- APPROVED  NOT APPROVED  
 APPROVED AS NOTED  NO ACTION REQUIRED  
 REVISE AND RESUBMIT

Architect's review and action is only for the limited purpose of  
checking for conformance with the information given and the  
design concept expressed in the Contract Documents. Architect's  
approval does not indicate approval of the accuracy and  
completeness of other details such as dimensions and quantities,  
or of instructions for installation or performance of equipment or  
systems, or of an assembly of which a specific item is a component.

*Provide physical color  
chips for all colors/  
materials included  
in this submittal for  
approval of color/texture*

*5/15/2013*

Autograph

REVISOR AND RESUBMIT [ ]  
APPROVED AS NOTED [ ] NO ACTION REQUIRED [ ] NOT APPROVED [ ]

The Architect's review and action is only for the limited purpose of  
checking for conformance with the information given and the  
concept expressed in the Contract Documents. Architect's  
approval does not indicate approval of the accuracy and  
completeness of other details such as dimensions and placement  
of materials or performance of workmanship.  
The responsibility of which is specific from the Contract Documents.

# Series 38 - Super Durable



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## Pretreatment (alternatives)

The following table reflects the common methods of pretreatment with regards to various substrates and applications. In selecting the proper type of pretreatment the suitability of the type of powder coating for a desired application according to the guidelines on page one of this Product Data Sheet should be observed.

	Aluminum	Galvanized Steel	Steel
Degreasing	○	○	○
<sup>1)</sup> Chromating	○	○	○
<sup>2)</sup> Anodizing	○	○	○
<sup>2)</sup> Chrome free	○	○	○
Iron Phosphating			○
Zinc Phosphating		○	○
Blasting		○	○
<sup>3)</sup> Sweeping		○	○
	I E A	I E A S	I E S <sup>4)</sup>

- Interior.
- Exterior.
- Ⓐ Architectural.
- Ⓢ Steel construction.

- 1) According to ASTM B 449.
- 2) According to GSB quality and test regulations.
- 3) Only for zinc coated parts >1.8 mils (>45 µm).
- 4) For a two-coat process/TIGER Shield®.

## Processing

**Corona**

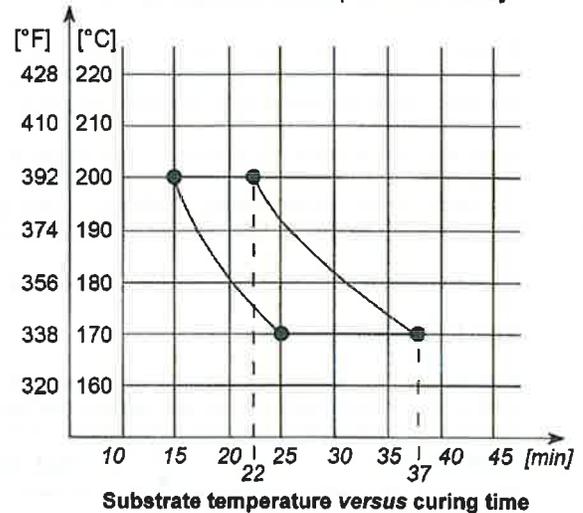
**Tribo\***

\* For Tribo/Airstatic powder coatings please confirm before ordering. Suitability of metallic effects for Tribo processing must be verified prior to application. Please refer to the latest edition of the relevant Information Sheets.

Since not all powder coatings are suitable for recycling/reclaim, please verify before ordering.

## Cure Parameters (substrate temperature)

TIGER Drylac® Series 38  
Cure Parameters | Smooth Glossy



To achieve a full cure and the desired mechanical properties and weatherability the time/temperature combination must fall within the cure window.

## Weather Resistance

Florida exposure at 45° angle  
Facing South - RAL 8014



The remaining gloss values that can be expected may vary depending on the original gloss level and color. A reasonable degree of gloss loss and color variation owing to long term UV exposure should be expected.

# Series 38 - Super Durable



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## Please Note

Top coating with a clear exterior grade powder coating over an interior grade powder coating does not result into a weather resistant coating system.

Post-bending properties of any part must be verified prior to application. Minor cracks in the coated surface may lead to corrosion.

Joint sealants and any other auxiliary products, such as glazing aids, gliding waxes, drilling and cutting lubricants, which come in contact with the coated surface must be pH-neutral and free of substances that may damage the finish. Therefore, a suitability test at the applicator's end, prior to coating, is highly recommended.

In general, colors in the red, orange and yellow range may require an increased film thickness to achieve full hiding.

Any post-mechanical processing of already coated parts, such as sawing, drilling, milling, cutting and bending will result in damage of the coated surface and will subsequently weaken the corrosion protection.

Please read and understand the Material Safety Data Sheet (MSDS) before use.

## Test Results

Results are checked on 1/64 inch (0.7 mm) thick yellow chromated aluminum test panel. Cure conditions are according to the cure curves. When used as a two-coat system, the increase in film thickness will result in a decrease of mechanical properties.

Test results	Test method	Series 38 Smooth Glossy
Film thickness	ISO 2360	2.5-3.5 mils (60-80 µm)
Gloss - 60°	ASTM D523	80-95+
Cross hatch adhesion test	ASTM D3359 Method B	5B
Mandrel bending test	ASTM D522	1/8 inches (3 mm).
Impact test	ASTM D2794	Up to 80 in/lb. Cracking at the perimeter of the concave area but no cracking pick off.
Pencil hardness	ASTM D3363	2H minimum.
Weathering	EN 20105 - A02	≥4
Light fastness	EC ISO 105 - B02	≥Grade7
Humidity resistance 3,000 hours	ASTM D2247	Maximum undercutting 1/32 inches (1 mm).
Acid salt spray resistance 2,000 hours	ASTM G85 Annex A5	Maximum undercutting 1/32 inches (1 mm).
<b>5 years Florida exposure</b>		
Color change	ASTM D2244	≤Δε 5.0 (Hunter).
Gloss retention	ASTM D523	>80%

**Cleaning recommendations:** Refer to the latest edition of TIGER "Cleaning Recommendations" information sheet, Version 00-1005.

# Series 38 - Super Durable



TIGER Drylac U.S.A., Inc. | 3855 Swenson Avenue | St Charles, IL | T 800 243 8148 | F 877 926 8148 | office.us@tiger-coatings.us | www.tiger-coatings.us

## Special Applications

Objects directly exposed to salt/fog conditions in a marine environment or need heavy corrosion protection must be coated with TIGER Shield® system. Refer to the latest editions of TIGER Drylac® Product Data Sheets.

## Chemical Resistance

The required chemical resistance of a powder coating depends, among other things, on its formulation. Chemical resistance requirements must be considered according to processing conditions and final use of the finished product. This is best established during the product specification process. Agreement between all parties involved must be reached about the requirements for such chemical resistance as well as the test method, which may be performed in accordance with PCI test method #8 "Solvent Cure Test". Furthermore, the test duration and concentration of the test media need to be agreed upon.

As part of TIGER Drylac® product information program, Product Data Sheets are updated periodically. It is recommended to always check for the latest editions on TIGER's website. TIGER's verbal and written recommendations for the use of its products are based upon experience and in accordance with current technological standards. These are given in order to support the buyer or user. They are non-committal and do not create any additional commitments to the purchase agreement. They do not release the buyer from verifying the suitability of TIGER products for the intended application. This Product Data Sheet supersedes all previous Product Data Sheet versions and notes published in relation to this product.

Certified according to  
ISO 9001 | 14001

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# Product Data Sheet



## SERIES 44 – ANTI GRAFFITI

Polyurethane weather resistant powder coating with anti-graffiti properties that allow easy cleaning of component surfaces. Suitable for interior and exterior applications.

### Typical Applications

- Metal façades.
- Underground railway constructions.
- Noise reduction paneling.
- As a clear top-coat for weather resistance.

**Standard Packaging** 44 & 55 lb (20 & 25 kg) box.  
5 lb (2.5 kg) minipack.

**Specific Gravity (ASTM D792)** approximately 1.2-1.6 g/cm<sup>3</sup>  
depending on pigmentation.

**Theoretical Coverage** at 1.5 specific gravity and  
2.5 mils (60 µm) film thickness:  
**51.5 ft<sup>2</sup>/lb (11.1 m<sup>2</sup>/kg).**

Refer also to the latest edition  
of "Theoretic Powder Coating  
Coverage Chart".  
Version 00-1001 (imperial).  
Version 00-1000 (metric).

**Storage Stability** 6 months at no more than  
77 °F (25 °C).

### Features

- Clean easy properties.
- Good weather resistance.
- Very smooth flow.

### Finish and Color

- Smooth flow glossy 80-95\*.

~~Anti-Graffiti Clear Glossy TIGER Drylac® 44/00018~~  
~~Anti-Graffiti White (RAL 9010) TIGER Drylac® 44/10008~~

\* Gloss level according to ASTM 523 at 60° angle.

Available as a stock product in a selection of colors and finishes (see color charts). It can be made to order in other colors (minimum order quantity applies).

# Series 44 – Anti Graffiti



TIGER Drylac U.S.A., Inc. | 3855 Swenson Avenue | St Charles, IL | T 800 243 8148 | F 877 926 8148 | office.us@tiger-coatings.us | www.tiger-coatings.us

## Pretreatment (alternatives)

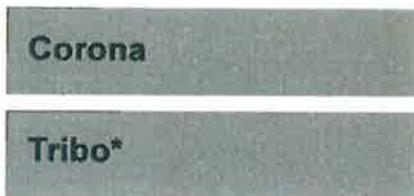
The following table reflects the common methods of pretreatment with regards to various substrates and applications. In selecting the proper type of pretreatment the suitability of the type of powder coating for a desired application according to the guidelines on page one of this Product Data Sheet should be observed.

	Aluminum	Galvanized Steel	Steel
Degreasing	○	○	○
<sup>1)</sup> Chromating	○	○	○
<sup>2)</sup> Anodizing	○	○	○
<sup>2)</sup> Chrome free	○	○	○
Iron Phosphating			○
Zinc Phosphating		○	○
Blasting		○	○
<sup>3)</sup> Sweeping		○	○
	I E A	I E A S	I E S <sup>4)</sup>

- Interior.
- Exterior.
- Architectural.
- Steel construction.

- 1) According to ASTM B 449.
- 2) According to GSB quality and test regulations.
- 3) Only for zinc coated parts >1.8 mils (>45 µm).
- 4) For a two-coat process/TIGER Shield®.

## Processing

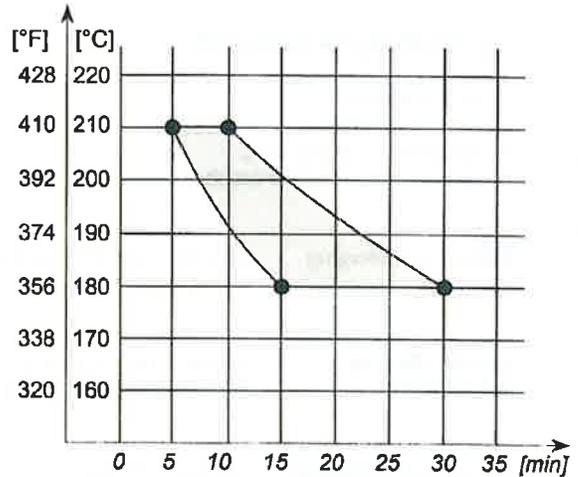


\* For Tribo/Airstatic powder coatings please confirm before ordering. Suitability of metallic effects for Tribo processing must be verified prior to application. Please refer to the latest edition of the relevant Information Sheets.

Since not all powder coatings are suitable for recycling/reclaim, please verify before ordering.

## Cure Parameters (substrate temperature)

TIGER Drylac® Series 44 Anti Graffiti  
Cure Parameters | Smooth Glossy



Substrate temperature versus curing time

To achieve a full cure and the desired mechanical properties and weatherability the time/temperature combination must fall within the cure window.

## Cleaning Process

It is recommended to use Bulk Stripper 870GC manufactured by Bulk Chemicals Inc\*.

The cleaning process includes the following steps:

- Apply liquid cleaner with a brush.
- Wait approximately five minutes for the cleaner to act.
- Loosen the paint with the brush.
- Remove the solvent solution and the paint remnants with a soft absorbent cloth.
- Rinse off the remaining solvent with water.
- Dry the surface with a soft absorbent cloth.

\* **Bulk Chemicals Inc.**  
1074 Stinson Drive | Reading, PA | 19605  
T 610-926-4128 | F 610 926 6125

# Series 44 – Anti Graffiti



## Please Note

For metallic finishes it is recommended to observe the guidelines published in the latest edition of TIGER Drylac® "Application guidelines for metallic effect powder coatings".

Top coating with a clear exterior grade powder coating over an interior grade powder coating does not result into a weather resistant coating system.

Post-bending properties of any part must be verified prior to application. Minor cracks in the coated surface may lead to corrosion.

Joint sealants and any other auxiliary products, such as glazing aids, gliding waxes, drilling and cutting lubricants, which come in contact with the coated surface, must be pH-neutral and free of substances that may damage the finish. Therefore, a suitability test at the applicator's end, prior to coating, is highly recommended.

In general, colors in the red, orange and yellow range may require an increased film thickness to achieve full hiding.

Please read and understand the Material Safety Data Sheet (MSDS) before use.

## Test Results

Results are checked on iron phosphated steel test panels of Bonderite B-1000 or equivalent. Cure conditions are according to the cure curves. When used as a two-coat system, the increase in film thickness will result in a decrease of mechanical properties.

Test results	Test method	Series 44 Anti Graffiti   Smooth Glossy
Film thickness		2.5-3.5 mils (60-80 µm)
Gloss - 60°	ASTM D523	80-95+
Cross cut tape test	ASTM D3359 Method B	5B
Mandrel bending test	ASTM D522	≤1/8 inches (3 mm)
Impact Test 80 in/lb	ASTM D2794	No appearance of cracks down to the substrate.
Pencil hardness	ASTM D3363	4H minimum.
Humidity resistance 500 hours	ASTM D2247	Maximum undercutting 1/32 inches (1 mm). No blistering.
Salt spray resistance 500 hours	ASTM B117	Maximum undercutting 1/32 inches (1 mm). No blistering.

**Cleaning recommendations:** Refer to the latest edition of TIGER "Cleaning Recommendations" information sheet, Version 00-1005.

# Series 44 – Anti Graffiti



## Chemical Resistance

The required chemical resistance of a powder coating depends, among other things, on its formulation. Chemical resistance requirements must be considered according to processing conditions and final use of the finished product. This is best established during the product specification process. Agreement between all parties involved must be reached about the requirements for such chemical resistance as well as the test method, which may be performed in accordance with PCI test method #8 "Solvent Cure Test". Furthermore, the test duration and concentration of the test media need to be agreed upon.

As part of TIGER Drylac® product information program, Product Data Sheets are updated periodically. It is recommended to always check for the latest editions on TIGER's website. TIGER's verbal and written recommendations for the use of its products are based upon experience and in accordance with current technological standards. These are given in order to support the buyer or user. They are non-committal and do not create any additional commitments to the purchase agreement. They do not release the buyer from verifying the suitability of TIGER products for the intended application. This Product Data Sheet supersedes all previous Product Data Sheet versions and notes published in relation to this product.

Certified according to  
ISO 9001 | 14001

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**Safety Data Sheet**  
acc. to ISO 11014

Printing date 02/25/2013

Reviewed on 01/22/2013

\* **1 Information of the product and the company undertaking**

- . **Product identifier**
- . **Trade name** ANODIZED SILVER MET SGL
- . **Article number:** 38/91020
- . **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- . **Application of the substance / the preparation** Powder coating material
- . **Details of the supplier of the safety data sheet**
- . **Manufacturer/Supplier:**  
USA:  
TIGER Drylac U.S.A., Inc.  
3865 Swenson Ave  
St. Charles, IL 60174  
Phone: +1 / 630 / 587 2918  
Fax: +1 / 630 / 587 2923  
  
Canada:  
TIGER Drylac Canada Inc.  
110 Southgate Drive  
Guelph, Ontario, N1G 4P5  
Phone: +1 / 519 / 766 4781  
Fax: +1 / 519 / 766 4787
- . **Informing department:** Product Safety Department
- . **Emergency telephone number:** 24/7:1-800-255-3924; International:+01 or +001-813-248-0585

\* **2 Hazards identification**

- . **Classification of the substance or mixture**
- . **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
Toxic  
May cause heritable genetic damage.  
  
Harmful  
Harmful by inhalation and if swallowed.  
  
Irritant  
Irritating to eyes. May cause sensitization by skin contact.
- . **Information concerning particular hazards for human and environment:**  
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- . **Classification system:**  
The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.
- . **Label elements**
- . **Labelling according to EU guidelines:**  
The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)
- . **Code letter and hazard designation of product:**  
Toxic
- . **Hazard-determining components of labelling:**  
TGIC
- . **Risk phrases:**  
May cause heritable genetic damage.  
Also harmful by inhalation and if swallowed.  
Irritating to eyes.  
May cause sensitization by skin contact.

(Contd. on page 2)

USA

## Safety Data Sheet

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Printing date 02/25/2013

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Trade name ANODIZED SILVER MET SGL

(Contd. of page 1)

**Safety phrases:**

- Avoid exposure - obtain special instructions before use.
- Keep container in a well-ventilated place.
- Avoid contact with skin.
- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- Wear suitable gloves.
- In case of accident or if you feel unwell, seek medical advice immediately.
- This material and its container must be disposed of as hazardous waste.
- Avoid release to the environment. Refer to special instructions/Safety data sheets

**Classification system****NFPA ratings (scale 0-4)**

Health = 2  
Fire = 1  
Reactivity = 1

**HMIS-RATINGS (SCALE 0 - 4)**

Health = \*2  
Fire = 1  
Reactivity = 1

**Other hazards****Results of PBT and vPvB assessment**

- PBT:** Not applicable.
- vPvB:** Not applicable.

### \* 3 Composition/information on ingredients

**Chemical characterization: Mixtures**

**Description:** Mixture consisting of the following components with harmless additives.

**Hazardous ingredients:**

13463-67-7	titanium dioxide	10-25%
2451-62-9	TGIC T Muta. Cat. 2 R46-23/25; Xn R48/22; Xi R41-43 R52/53	2.5-10%
7429-90-5	aluminum powder (stabilized) F R10-15	2.5-10%
18282-10-5	tin dioxide Xi R37	< 0.1%

**SVHC**

2451-62-9	TGIC
-----------	------

**Additional information** For the wording of the listed risk phrases refer to section 16.

### \* 4 First aid measures

**Description of first aid measures****General information**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

**After inhalation**

Supply fresh air and call for doctor for safety reasons.

In case of unconsciousness bring patient into stable side position for transport.

**After skin contact** Instantly wash with water and soap and rinse thoroughly.**After eye contact**

Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.

**After swallowing** Instantly call for doctor.

(Contd. on page 3)

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Trade name ANODIZED SILVER MET SGL

(Contd. of page 2)

- . **Information for doctor**
- . **Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- . **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### \* 5 Fire or explosion hazard

- . **Extinguishing media**
- . **Suitable extinguishing agents**  
CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
- . **Special hazards arising from the substance or mixture**  
No further relevant information available.
- . **Advice for firefighters**
- . **Protective equipment:** Put on breathing apparatus.

### \* 6 Accidental release measures

- . **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Avoid causing dust.
- . **Environmental precautions:** Do not allow product to reach sewage system or water bodies.
- . **Methods and material for containment and cleaning up:**  
Collect mechanically.  
Ensure adequate ventilation.
- . **Reference to other sections**  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.

### \* 7 Handling and storage

- . **Handling**
- . **Precautions for safe handling**  
No special measures required.  
Thorough dedusting.  
Keep containers tightly sealed.  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle container with care.
- . **Information about protection against explosions and fires:**



Keep ignition sources away - Do not smoke.

Keep breathing equipment ready.  
Dust can combine with air to form an explosive mixture.

- . **Conditions for safe storage, including any incompatibilities**
- . **Storage**
- . **Requirements to be met by storerooms and containers:**  
Store only in the original container.  
Static charges may build up in the powder
- . **Information about storage in one common storage facility:** Not required.
- . **Further information about storage conditions:** Keep container tightly sealed.
- . **Specific end use(s)** No further relevant information available.

(Contd. on page 4)

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Trade name ANODIZED SILVER MET SGL

(Contd. of page 3)

### \* 8 Exposure controls/personal protection

. Additional information about design of technical systems: No further data; see item 7.

. Control parameters

. Components with critical values that require monitoring at the workplace:

13463-67-7 titanium dioxide	
PEL (U.S.A)	15* mg/m <sup>3</sup> *total dust
REL (U.S.A)	See Pocket Guide App. A
TLV (U.S.A)	10 mg/m <sup>3</sup>
EL (Canada)	10 mg/m <sup>3</sup> IARC 2B
EV (Canada)	10 mg/m <sup>3</sup> total dust
LMPE (Mexico)	Short-term value: 20 mg/m <sup>3</sup> Long-term value: 10 mg/m <sup>3</sup> A4
2451-62-9 TGIC	
TLV (U.S.A)	0.05 mg/m <sup>3</sup>
EL (Canada)	0.05 mg/m <sup>3</sup> R; S
EV (Canada)	0.05 mg/m <sup>3</sup>
7429-90-5 aluminum powder (stabilized)	
PEL (U.S.A)	15* 5** mg/m <sup>3</sup> *total dust **respirable fraction
REL (U.S.A)	10* 5** mg/m <sup>3</sup> Metal, insol.compds.:*total dust**resp. fraction
TLV (U.S.A)	1* mg/m <sup>3</sup> *as respirable fraction
EL (Canada)	10 mg/m <sup>3</sup>
LMPE (Mexico)	2 5* mg/m <sup>3</sup> *humos de soldadura

. Additional information:

The lists that were valid during the compilation were used as basis.

. Exposure controls

. Personal protective equipment

. General protective and hygienic measures

Keep away from foodstuffs, beverages and food.  
Instantly remove any soiled and impregnated garments.  
Wash hands during breaks and at the end of the work.  
Store protective clothing separately.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.

. Breathing equipment:



In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

. Protection of hands:



Protective gloves.

(Contd. on page 5)

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## Safety Data Sheet

acc. to ISO 11014

Printing date 02/25/2013

Reviewed on 01/22/2013

Trade name ANODIZED SILVER MET SGL

(Contd. of page 4)

**. Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

**. Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**. Eye protection:**



Safety Glasses

**. Body protection: Protective work clothing.**

### 9 Physical data

**. Information on basic physical and chemical properties**

**. General Information**

**. Appearance:**

Form: Solid  
 Colour: According to Trade Name

Smell: Characteristic

Odour threshold: Not determined

pH-value: Not applicable

**. Change in condition**

Melting point/Melting range: > 50 C / 120F  
 Boiling point/Boiling range: Not applicable

Flash point: Not applicable

Inflammability (solid, gaseous) Not determined

Ignition temperature: 400 °C (752 °F)

Decomposition temperature: Not determined

Self-inflammability: Product is not selfigniting.

Danger of explosion: Product is not explosive. However, formation of explosive air/dust mixtures is possible

**. Critical values for explosion:**

Lower: Not determined.  
 Upper: Not determined.

Steam pressure: Not applicable.

Density (Specific gravity) at 20 °C (68 °F) 1.36 g/cm<sup>3</sup> (11.349 lbs/gal)

Relative density Not determined.

Vapour density Not applicable.

Evaporation rate Not applicable.

**. Solubility in / Miscibility with**

Water: Insoluble

Partition coefficient (n-octanol/water): Not determined.

**. Viscosity:**

dynamic: Not applicable.  
 kinematic: Not applicable.

**. Solvent content:**

Organic solvents: 0.0 %

Solids content: 100.0 %

(Contd. on page 6)

USA

## Safety Data Sheet

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Trade name ANODIZED SILVER MET SGL

. Other information

(Contd. of page 5)  
No further relevant information available.**\* 10 Reactivity data**

- . Reactivity
- . Chemical stability
- . Conditions to be avoided: No decomposition if used according to specifications.
- . Possibility of hazardous reactions: No dangerous reactions known
- . Conditions to avoid: No further relevant information available.
- . Incompatible materials: No further relevant information available.
- . Hazardous decomposition products: In case of fire: CO, CO<sub>2</sub>, NO<sub>x</sub>

**\* 11 Toxicological data**

- . Information on toxicological effects
- . Acute toxicity:

. LD/LC50 values that are relevant for classification:

2451-62-9 TGIC

Oral	LD50	188-1450 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rat)
Inhalative	LC50/4 h	0.309-0.650 mg/l (rat)

- . Primary irritant effect:
  - . on the skin: No irritant effect.
  - . on the eye: Irritant effect.
- . Sensitization: Sensitization possible by skin contact.
- . Additional toxicological information:
 

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:

Irritant  
Harmful  
The product can cause inheritable damage.

. Carcinogenic categories

. IARC (International Agency for Research on Cancer)

13463-67-7	titanium dioxide	2B
7631-86-9	silicon dioxide, chemically prepared	3
112926-00-8	Silicon dioxide	3
9002-88-4	Ethene, homopolymer	3
1309-37-1	diiron trioxide	3

. NTP (National Toxicology Program)

None of the ingredients is listed.

**\* 12 Ecological information**

- . Toxicity
- . Aquatic toxicity: No further relevant information available.
- . Persistence and degradability: No further relevant information available.
- . Behaviour in environmental systems:
- . Bioaccumulative potential: No further relevant information available.
- . Mobility in soil: No further relevant information available.
- . Additional ecological information:
- . General notes:
 

Water danger class 3 (Self-assessment): extremely hazardous for water.  
Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into soil.

(Contd. on page 7)

USA

## Safety Data Sheet

acc. to ISO 11014

Printing date 02/25/2013

Reviewed on 01/22/2013

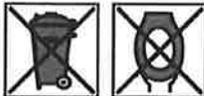
Trade name ANODIZED SILVER MET SGL

(Contd. of page 6)

- . Results of PBT and vPvB assessment
- . PBT: Not applicable.
- . vPvB: Not applicable.
- . Other adverse effects No further relevant information available.

### 13 Disposal considerations

- . Waste treatment methods
- . Recommendation



Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- . Uncleaned packagings:
- . Recommendation: Disposal must be made according to official regulations.

### \*14 Transport information

- . UN-Number N/A
- . ADR, IMDG, IATA N/A
- . UN proper shipping name N/A
- . DOT, ADR, IMDG, IATA N/A
- . Transport hazard class(es) N/A
- . DOT, IMDG, IATA
- . Class Not regulated.
- . Packing group N/A
- . ADR, IMDG, IATA N/A
- . Environmental hazards:
- . Marine pollutant: No
- . Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

### \*15 Regulatory information

- . Safety, health and environmental regulations/legislation specific for the substance or mixture

- . SARA (Superfund Amendments and Reauthorization Act):

- . Section 355 (Extremely hazardous substances):

None of the ingredients is listed.

- . Section 313 (Specific toxic chemical listings):

7429-90-5 aluminum powder (stabilized)

1344-28-1 aluminium oxide

- . TSCA (Toxic Substances Control Act):

All ingredients are listed.

- . Proposition 65:

- . Chemicals known to cause cancer:

None of the ingredients is listed.

- . Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

- . Chemicals known to cause reproductive toxicity for males:

2451-62-9 TGIC

- . Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

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USA

## Safety Data Sheet

acc. to ISO 11014

Printing date 02/25/2013

Reviewed on 01/22/2013

Trade name ANODIZED SILVER MET SGL

(Contd. of page 7)

**. Cancerogenity categories**

<b>. EPA (Environmental Protection Agency)</b>		
None of the ingredients is listed.		
<b>. TLV (Threshold Limit Value established by ACGIH)</b>		
13463-67-7	titanium dioxide	A4
1344-28-1	aluminium oxide	A4
1314-23-4	zirconium dioxide	A4
1309-37-1	diron trioxide	A4
<b>. NIOSH-Ca (National Institute for Occupational Safety and Health)</b>		
13463-67-7	titanium dioxide	
<b>. OSHA-Ca (Occupational Safety &amp; Health Administration)</b>		
None of the ingredients is listed.		

**. Designation according to EC guidelines:**

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

**. Code letter and hazard designation of product:**

Toxic

**. Hazard-determining components of labelling:**

TGIC

**. Risk phrases:**

May cause heritable genetic damage.

Also harmful by inhalation and if swallowed.

Irritating to eyes.

May cause sensitization by skin contact.

**. Safety phrases:**

Avoid exposure - obtain special instructions before use.

Keep container in a well-ventilated place.

Avoid contact with skin.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wear suitable gloves.

In case of accident or if you feel unwell, seek medical advice immediately.

This material and its container must be disposed of as hazardous waste.

Avoid release to the environment. Refer to special instructions/Safety data sheets

**. National regulations****. Technical instructions (air):**

Class	Share in %
I	5.9

**. Water hazard class:**

Water danger class 3 (Self-assessment): extremely hazardous for water.

**. Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**16 Other information**

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**. \* Data compared to the previous version altered.**

USA

# Material Safety Data Sheet

acc. to ISO 11014

Printing date 02/15/2011

Reviewed on 07/13/2010

## 1 Identification of substance

**Product details**

**Trade name** CLEAR ANTI-GRAFFITI SM GL

**Article number:** 44/00018

**Manufacturer/Supplier:**

USA:

TIGER Drylac U.S.A., Inc.  
1090 Commons Blvd.  
Reading, PA 19605  
Phone: +1 / 610 / 926 8148  
Fax: +1 / 610 / 926 8149

Canada:

TIGER Drylac Canada Inc.  
110 Southgate Drive  
Guelph, Ontario, N1G 4P5  
Phone: +1 / 519 / 766 4781  
Fax: +1 / 519 / 766 4787

**Informing department:** Product Safety Department

**Emergency information:** 24/7:1-800-255-3924; International:+01 or +001-813-248-0585

## \* 2 Composition/Data on components:

**Chemical characterization**

**Description:** Mixture consisting of the following components with harmless additives.

**Dangerous components:**

137658-79-8	2-(4,6-bis(2,4-dimethylphenyl)-1,3,5-triazin-2-yl)-5-(3-((2-ethylhexyl)oxy)-2-hydroxypropoxy)-phenol R 53	< 1.0%
65447-77-0	1-(2-Hydroxyethyl)-4-hydroxy-2,2,6,6-tetramethyl piperidine-succinic acid, dimethyl ester, copolymer R 52/53	< 1.0%
77-58-7	dibutyltin dilaurate Xn, Xi, N; R 22-36/38-48-50/53	< 1.0%
63843-89-0	Bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]butylmalonate Xn; R 22-52/53	< 1.0%
96-76-4	2,4-di-tert-butylphenol Xi, N; R 36/37/38-50/53	< 0.1%

**Additional information** For the wording of the listed risk phrases refer to section 16.

## \* 3 Hazards identification

**Hazard designation:** Void

**Information pertaining to health and environmental hazards**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**Classification system**

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

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USA

# Material Safety Data Sheet

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Trade name CLEAR ANTI-GRAFFITI SM GL

### . NFPA ratings (scale 0-4)

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Health = 1  
Fire = 1  
Reactivity = 1

### . HMIS-RATINGS (SCALE 0 - 4)



Health = 1  
Fire = 1  
Reactivity = 1

## 4 First aid measures

### . After inhalation

Supply fresh air and call for doctor for safety reasons.  
In case of unconsciousness bring patient into stable side position for transport.

- . After skin contact Instantly wash with water and soap and rinse thoroughly.
- . After eye contact Rinse opened eye for several minutes under running water.
- . After swallowing In case of persistent symptoms consult doctor.

## \* 5 Fire fighting measures

### . Suitable extinguishing agents

CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

- . Protective equipment: No special measures required.

## \* 6 Accidental release measures

### . Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.  
Avoid causing dust.

### . Measures for environmental protection:

Do not allow product to reach sewage system or water bodies.  
Inform respective authorities in case product reaches water or sewage system.

- . Measures for cleaning/collecting: Collect mechanically.

## \* 7 Handling and storage

### . Handling

- . Information for safe handling: No special measures required.
- . Information about protection against explosions and fires:



Keep ignition sources away - Do not smoke.

Dust can combine with air to form an explosive mixture.

### . Storage

#### . Requirements to be met by storerooms and containers:

Store only in the original container.  
Static charges may build up in the powder

- . Information about storage in one common storage facility: Not required.
- . Further information about storage conditions: None.

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# Material Safety Data Sheet

acc. to ISO 11014

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Trade name CLEAR ANTI-GRAFFITI SM GL

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## \* 8 Exposure controls and personal protection

. **Additional information about design of technical systems:** No further data; see item 7.

. **Components with critical values that require monitoring at the workplace:**

### 77-58-7 dibutyltin dilaurate

PEL (U.S.A)	0.1 mg/m <sup>3</sup> as Sn
REL (U.S.A)	0.1 mg/m <sup>3</sup> as Sn, Skin
TLV (U.S.A)	Short-term value: 0.2 mg/m <sup>3</sup> Long-term value: 0.1 mg/m <sup>3</sup> as Sn; Skin
EL (Canada)	Short-term value: 0.2 mg/m <sup>3</sup> Long-term value: 0.1 mg/m <sup>3</sup> as Sn; Skin

. **Additional information:**

The lists that were valid during the compilation were used as basis.

. **Personal protective equipment**

. **General protective and hygienic measures**

Wash hands during breaks and at the end of the work.

. **Breathing equipment:**



In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

. **Protection of hands:**



Protective gloves.

. **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

. **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

. **Eye protection:**



Safety Glasses

. **Body protection:** Protective work clothing.

## \* 9 Physical and chemical properties:

. **General Information**

<b>Form:</b>	Solid
<b>Colour:</b>	According to Trade Name
<b>Smell:</b>	Characteristic

. **Change in condition**

<b>Melting point/Melting range:</b>	> 50 C / 120F
<b>Boiling point/Boiling range:</b>	Not determined

. **Flash point:** Not applicable

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Trade name CLEAR ANTI-GRAFFITI SM GL

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- . **Self-inflammability:** Product is not selfigniting.
- . **Danger of explosion:** Product is not explosive. However, formation of explosive air/dust mixtures is possible
- . **Density at 20°C (68°F)** 1.15 g/cm<sup>3</sup>
- . **Solubility in / Miscibility with Water:** Insoluble
- . **Solvent content:**
- . **Organic solvents:** 0.0 %
- . **Solids content:** 100.0 %

## \* 10 Stability and reactivity

- . **Conditions to be avoided:** No decomposition if used according to specifications.
- . **Materials to be avoided:**
- . **Dangerous reactions** No dangerous reactions known
- . **Dangerous products of decomposition:** In case of fire: CO, CO<sub>2</sub>, NO<sub>x</sub>

## \* 11 Toxicological information

- . **Acute toxicity:**

- . **LD/LC50 values that are relevant for classification:**

77-58-7 dibutyltin dilaurate

Oral	LD50	200-1600 mg/kg (rat)
------	------	----------------------

- . **Primary irritant effect:**
- . **on the skin:** No irritant effect.
- . **on the eye:** No irritant effect.
- . **Sensitization:** Sensitization possible by skin contact.
- . **Additional toxicological information:**

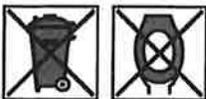
The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:  
Irritant

## \* 12 Ecological information:

- . **Ecotoxicological effects:**
- . **Remark:** Harmful to fish

## 13 Disposal considerations

- . **Product:**
- . **Recommendation**



Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- . **Uncleaned packagings:**
- . **Recommendation:** Disposal must be made according to official regulations.

## \* 14 Transport information

- . **DOT regulations:**
- . **Hazard class:** Not regulated.
- . **Maritime transport IMDG/GGVSea:**
- . **IMDG/GGVSea Class:** Not regulated.

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- . Marine pollutant: No
- . Air transport ICAO-TI and IATA-DGR:
- . ICAO/IATA Class: Not regulated.

**\* 15 Regulations**

## . SARA (Superfund Amendments and Reauthorization Act):

## . Section 355 (Extremely hazardous substances):

None of the ingredients is listed.

## . Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

## . TSCA (Toxic Substances Control Act):

All ingredients are listed.

## . Proposition 65:

## . Chemicals known to cause cancer:

None of the ingredients is listed.

## . Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

## . Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

## . Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

## . Cancerogenity categories

## . EPA (Environmental Protection Agency)

None of the ingredients is listed.

## . IARC (International Agency for Research on Cancer)

112926-00-8 Silicon dioxide

3

## . NTP (National Toxicology Program)

None of the ingredients is listed.

## . TLV (Threshold Limit Value established by ACGIH)

77-58-7 dibutyltin dilaurate

A4

## . NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

## . OSHA-Ca (Occupational Safety &amp; Health Administration)

None of the ingredients is listed.

## . Designation according to EC guidelines:

The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

## . Risk phrases:

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

## . Safety phrases:

This material and its container must be disposed of as hazardous waste.  
Avoid release to the environment. Refer to special instructions/Safety data sheets**16 Other information:**

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- . \* Data compared to the previous version altered.



autotroph

- APPROVED  NOT APPROVED
- APPROVED AS NOTED  NO ACTION REQUIRED
- REVISE AND RESUBMIT

Architect's review and action is only for the limited purpose of checking for conformance with the information given and the design concept expressed in the Contract Documents. Architect's approval does not indicate approval of the accuracy and completeness of other details such as dimensions and quantities, or of instructions for installation or performance of equipment or systems, or of an assembly of which a specific item is a component.

 DATE: 5/21/2013



