

BID DOCUMENTS COVER SHEET

CONTRACT DOCUMENTS

FOR

L-527
College Complex Sector 13 Roof
Replacement

DSA File #N/A

DSA Application # N/A

AT

LOS MEDANOS COLLEGE

2700 East Leland Road, Pittsburg, California 94565

CONTRA COSTA COMMUNITY COLLEGE DISTRICT

ADDENDUM #2

May 14, 2018



CONTRA COSTA COMMUNITY COLLEGE DISTRICT

L-527 College Complex Sector 13 Roof Replacement

Los Medanos College

ADDENDUM #2

Date: 5/14/2018

NOTICE TO ALL PRE-QUALIFIED CONTRACTORS ONLY

You are hereby notified of the following changes, clarifications and/or modifications to the original Contract Documents, Project Manual, Drawings, Specifications and/or previous Addenda. This Addendum shall supersede the original Contract Documents and previous Addenda wherein it contradicts the same, and shall take precedence over anything to the contrary therein. All other conditions remain unchanged.

This Addendum forms a part of the Contract Documents and modifies the original Contract Documents dated **4/19/18**. Acknowledge receipt of this Addendum in space provided on the Bid Proposal Form. Failure to acknowledge may subject Bidder to disqualification.

A. Deletions, Additions, Changes, Revisions – Technical Specifications:

1. **ADD Section 07 54 05 Thermoplastic Membrane Roofing System**

B. Revisions to Drawing Sheets:

All modifications are indicated on the drawings with a cloud graphic and a Delta 2.

1. **A2.2 Sector 13 Roof Plan**

Revised Details 1 & 3 identifying temp unit and curb that will receive roofing initially and then patching once removed (temp unit and curb removal by others).

Clarified Detail 1/A10.40 reference.

2. **A10.41 Modified Bitumen Roof Details**

Added Detail 20 showing: A – Temporary mechanical unit flashing, B – Removal of flashing and section of roof, and C – Patch at temporary mechanical unit

ADDENDUM #2

DSA Appl. # N/A

c. Attachments:

- 1. Section 07 54 05 Thermoplastic Membrane Roofing System**
- 2. Revised Drawing Sheets: A2.2 & A10.41**
- 3. Pre-Bid Meeting Minutes**
- 4. Pre-Bid Sign in Sheet**

If you have any questions regarding this Addendum, please contact:

Jovan Esprit
Contra Costa Community College District
500 Court St., Martinez, CA 94553
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All other terms and conditions of BID are to remain the same.

Steelhead Engineers, Inc.
2570 W. El Camino Real, Suite 320
Mountain View, CA 94040-1313

Alan Burnett
14 MAY 2018

END OF ADDENDUM #2

SECTION 07 54 05

THERMOPLASTIC MEMBRANE ROOFING SYSTEM

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Single-ply roof system complying with California Title 24 (Cool Roofing) regulations applied over the penthouse roofs as shown on the Drawings.

1.02 RELATED SECTIONS

- A. Section 07 60 00 – Flashing and Sheet Metal
- B. Section 07 90 00 – Sealants

1.03 SCOPE

- A. Membrane and related items shall be classified by Underwriters Laboratories, Inc. as a Class A Sheathing Material for use in construction of Class A coverings and amendments.

1.04 APPLICATION

- A. This specially formulated thermoplastic-coated membrane classified as CPA in this section consists of a weft-inserted polyester scrim (18x14, 100 denier), laminated on both sides with a plasticized blend of vinyl and acrylic polymers. The membrane is pre-fabricated into various panel sizes with the largest being 2,500 sq.ft.
- B. Install new single-ply, fully-adhered reinforced PVC roofing system where designated.
- C. Install new fully-adhered membrane flashings and associated components along walls, curbs, or as shown in the Drawings and as required to properly terminate the roof membrane.
- D. Clean and restore all areas damaged, stained or otherwise affected by the Work.
- E. Include PVC repair kit with instructional course as provided by the manufacturer for use by the Owner's maintenance staff.
- F. Attend a roof-related preconstruction meeting after the submittals were transmitted and prior to the start of Work.

1.05 PHYSICAL PROPERTIES

- A. The single-ply membrane shall allow installation at any time of the year and shall provide resistance to ultra-violet rays, superb tear and puncture strength, the ability to be impervious to most caustic chemicals and acids, and show no ill effects to heat or cold.

1.06 ROOFING CONTRACTOR'S QUALIFICATIONS

- A. Contractor shall submit work history data showing successful warranted installation experience of the specified system, and of being authorized by the roofing system manufacturer to install the specified manufacturer's materials.
- B. The Contractor shall use adequate amounts of such qualified workmen to install the specified roofing system.
- C. The Contractor shall have an experienced, pre-qualified, superintendent having experience installing the roof system specified, familiar with the requirements of this project, on the job at all times when roofing system work is in progress. Training for superintendent shall include certification of completion of manufacturer's in-house training course and on-site training.

1.07 REQUIREMENTS OF THE MEMBRANE MANUFACTURER

- A. Roofing system components shall conform to the current published specifications and details of the membrane manufacturer.
- B. There shall be no deviation made from this specification without prior written approval of the membrane manufacturer and the Owner or Owner representative.
- C. Any manufacturer proposing to supply material for this project shall fourteen (14) days prior to bid date, provide financial information regarding their roofing company, i.e. a current D&B report. A manufacturer who has less than \$50,000,000 in annual roofing material sales, a net worth of less than \$3,000,000 or a history of late payments to creditors will not be permitted to submit their roofing material for use on this project. Manufacturer may be asked to submit an audited document listing the long-term warranty liability commitment of manufacturer.
- D. Provide primary thermoplastic membrane factory prefabricated roofing system from a single manufacturer, which has successfully manufactured raw materials into specified products for not less than five (5) years. No secondary private labels will be accepted. Provide secondary materials, such as insulation, gypsum board, vapor barriers as recommended and approved by manufacturer of primary materials.

- E. Products primary and secondary shall be manufactured in the United States of America by a company owned by citizens of the United States.

1.08 FIELD INSPECTION

- A. The Owner reserves the right to retain, at the Owner's expense, an independent inspection service to provide part-time or full-time inspection of the roofing system installation. The inspector shall have free access to the work area.
- B. The Contractor shall arrange for the membrane manufacturer to provide inspection of the roofing system installation. Upon completion of the installation, an inspection shall be made by a Quality Assurance Specialist of the membrane manufacturer at no extra charge to the Owner or Contractor. The inspection is to confirm the roofing system is installed in accordance with the membrane manufacturer's published specifications and details and Contract Documents.

1.09 DEFECTIVE WORK

- A. Should the roofing system not be approved by the manufacturer's technician, correcting the defective work shall be done by the Contractor until the roofing system satisfactorily meets all the specifications and manufacturer's requirements. Corrective work will be done with no additional expense to the Owner.

1.10 WARRANTIES

- A. The Contractor shall warrant the roof application with respect to workmanship and proper application for two (2) years from the date of acceptance by the membrane manufacturer. Should any leaks covered under the warranty occur during this period, corrective action will be taken by the Contractor to repair the roof to the satisfaction of the Owner and the manufacturer. All corrective work will be done at no cost to the Owner.
- B. The warranty shall be full roofing system repair and/or replacement fifteen (15) year warranty covering materials and labor. The warranty shall be a no-dollar limit type and provide for completion of repairs, replacement of membrane or total replacement of the roofing system at the then current material and labor prices throughout the life of the warranty. Warranty shall contain no exclusions for ponded water, biological growth, incidental or consequential damages.
- C. Warranty shall be issued by the original manufacturer of the roofing membrane. No private label membranes will be accepted.
- D. No future work shall be done on the roof, including but without limitations, openings made for flues, vents, drains, sign braces, or other equipment fastened to or set on the roof, without prior notification of the Contractor or membrane manufacturer. Contractor or membrane manufacturer shall be given the opportunity to make the necessary roofing application recommendations, and require such recommendations are complied with. Failure to observe this

condition shall render the warranty null and void. The contractor or membrane manufacturer shall be paid for time and material expended in making recommendations or repairs occasioned by the work of others on said roof.

- E. Corrective measures on leaks shall be undertaken within seventy-two (72) hours after Owner notification has been received by the Contractor or the roofing manufacturer from the Owner.

1.11 MECHANICAL ATTACHMENT

- A. Deck membrane shall be fastened with approved fasteners, 12 inches on center along bottom of all parapet walls, elevation changes and perimeter edges.
- B. Deck membrane shall be fastened around cut-outs with approved fasteners 12 inches on center or a minimum of 1 fastener per round penetration having a diameter of not more than 6 inches.

1.12 SUBMITTALS

- A. The contractor shall submit the following:
 - 1. Written confirmation from membrane manufacturer of approved applicator status.
 - 2. Manufacturer literature on the following items:
 - a) Roofing membrane with dielectrically welded seams
 - b) Pre-manufactured parapet flashings
 - c) Pre-manufactured pipe flashing
 - d) Urethane sealant
 - e) PVC termination bar
 - f) Self-Leveling pourable sealer
 - g) Maintenance & repair instructions.
 - 3. Submit 6 in. long samples of the following items for approval prior to ordering:
 - a) Pre-manufactured pipe flashing
 - b) Termination Bar
 - c) Sample of membrane
 - d) Mechanical fasteners
 - e) Lap splice sample (factory and field)
 - f) Roofing insulation
 - 4. Shop drawings including outline of the roof and roof size, perimeter and penetration details, special details and section layout, location of factory dielectric and field welds, accessory and material list.

5. Pullout Tests: Perform pullout tests and submit engineering results of manufacturer's random location pull tests. Manufacturer shall obtain at least one pull resistance test from indicated locations on the drawings. Submit pull test results with drawing indicating the locations of the tests. Engineering results shall demonstrate the manufacturer's reasons for selection of anchorage, frequency and the seaming patterns.
6. Membrane Data: Prior to receipt of bids, Contractor shall submit all forms and other required data to roofing system manufacturer for pre-approvals. Advise building Owner or Owner Representative in writing of any recommendations made or revisions required by manufacturer to particular job conditions. In the absence of any comments, the Owner and/or his representative shall assume the manufacturer's most recently published specifications shall be followed.
7. Provide repair procedures to the Owner and/or Owner's representative.

B. INSULATION

1. Submit a tapered insulation layout drawing (full size: 24 inch x 36 inch) from the insulation manufacturer. The drawing should include an outline of the roof area and locations of drains and major roof penetrations (i.e., smoke hatches and fan units). Provide a profile of tapered sections; indicate minimum and maximum thicknesses at perimeters, and R-values for the proposed insulation system. The Contractor shall verify dimensions and existing roof penetration locations to ensure proper layout and tapered insulation quantities.
2. Submit certification from each insulation manufacturer stating the roof membrane manufacturer for the specified warranty accepts the submitted products.

1.13 PRODUCT DELIVERY, STORAGE AND HANDLING PROCEDURES

- A. Deliver materials in original unopened packaging.
- B. Containers labeled with manufacturer's name, brand name, and identification of various items.
- C. Store materials in a dry area and protect from inclement weather. Damaged materials shall be replaced at contractor's expense.
- D. Do not allow roofing membrane to come in contact or be exposed to any materials that would be detrimental to or cause degradation of the roofing membrane.

1.14 JOB CONDITIONS

- A. Environmental Conditions

1. In making field heat welds, make sure all welding surfaces are clean and free of moisture or foreign items.
2. Weather Precautions: Proceed with roofing work when existing and forecasted weather conditions permit work performance in compliance with manufacturer's recommendations.
3. Roofing system shall not be applied when the surrounding air, surface temperature, relative humidity or wind velocity is not within the range acceptable under the manufacturer's recommendations.

B. Protection

1. Prior to starting work, protect all work in an approved manner including all paving and faces of building walls. Provide special protection of the face of the building wall adjacent to hoist.
2. Complete the whole roofing section or any portion of the roof in a single day to avoid exposure to rain, dew, or moisture of any kind. If rain threatens during the day or in an emergency, protect the unfinished exposed roofing components and provide temporary water cut-offs around exposed edges and incomplete flashing areas.
3. All hoisting equipment shall bear on solid pad blocking. If on the roof surface, pad shall be large enough to evenly distribute the load to avoid crushing insulation and roof system. Pad shall consist of two separate layers of material to eliminate vibration and movement to directly affect the roofing membrane. Pad shall be of sufficient size to accommodate work tools and weights used around hoisting operations.
4. Repairs: Clean or repair surfaces damaged or soiled by operations under this contract to the satisfaction of the Owner or Owner's representative without additional cost to the Owner. These would include, but not be limited to, windows, doors, floors, walls, stairs, elevators, steps, walks, curbs, lawn areas, or other roofs.

PART 2 – MATERIALS

2.01 ROOF MEMBRANE

- A. A special formulated, permanent, thermoplastic alloy, bonded to a high tenacity, low shrinkage weft inserted polyester fabric with resistance to ultraviolet rays, microorganisms and impervious to most caustic chemicals.
- B. Membrane shall be factory dielectrically welded, prefabricated sheets up to 2,500 square feet or as determined by job condition.

- C. The new roofing shall be a prefabricated fully adhered installation of single-ply reinforced co-polymer alloy (CPA) membrane. Product: 50 mil thick membrane by Duro-Last Corporation or approved equal. Manufacturer's physical specifications and minimum performance criteria shall be in accordance with the following table.

**MINIMUM PERFORMANCE AND PHYSICAL SPECIFICATION
REQUIREMENTS FOR MEMBRANE**

Physical Property	Test Method Used	Specification Requirements
Minimum Thickness	ASTM D-751	0.050 inch (50 mils) Type III
Tear Strength,	ASTM D-751 – Procedure B	68 x 92 lbf.
Breaking Strength	ASTM D-751 – Grab Method	472 x 366 lbf.
EMMAQUA Exposure	ASTM G90, Desert Sun	> 8.1 million langleys
Elongation at Break	ASTM D-751 – Grab Method	31%
Low Temperature Bend	ASTM D-2136	no cracks, -40 degrees F
Dynamic Impact (Puncturing)	ASTM - 5635	474 pdl – ft.
Solar Reflectance	ASTM C 1549	88%
Static Puncture	ASTM D 5602	56 lbs.
Water Vapor Transmission	ASTM E96 WVT, Procedure B, Method A	Less than 0.22 US Perms
Water Absorption	ASTM D 570 166 hrs. @ 158° F	0.7%
Fungi Resistance	ASTM G-21	No sustained growth or discoloration.
Linear Dimensional Change	ASTM D1204 – 6 hrs. @176° F	-0.4 %
Accelerated Weathering	ASTM G 154 (Formerly G53)	No cracking, checking, crazing, or erosion at 5000 hours of exposure.
Factory Mutual Research	ASTM E-108; FM 4450 & FM 4470	Rated 1-60, 1-105 & 1-210
Underwriter's Laboratory	UL-790	Class A, B and C approved
Scrim: Weft Inserted Polyester	-	18 x 14, 1000 denier

- D. Membrane Adhesive: Duro-Last WB or approved equal.
- E. Flashing Adhesive: Duro-Last SB or approved equal.
- F. Slip Sheet: Atlas FR-50 or approved equal
- G. Manufacturer
- Manufacturers requesting approval must submit acceptable information certifying that they are the direct manufacturer from raw material into specified membrane, factory prefabricate the membrane into roofing panels, and meet the performance and financial criteria required.
 - Fire resistance of CPA roofing system shall meet UL Class A. All packaging of membrane and insulation shall bear UL Class A label.

3. Membrane color shall be white.

2.02 MATERIALS

A. Membrane-Related Materials

1. All membrane components, including pipe and curb flashings, shall be factory prefabricated from the same fabric reinforced material used for the deck membrane.
2. Termination Sealant: Compatible with materials to which membrane is to be bonded, conforming to Federal Specifications TT-598 and TT-S-00230C as furnished by the membrane manufacturer.
3. Distribution Plates: Factory Mutual approved stress distribution plates formed from a minimum 24 gauge, G-90 C.Q. steel with a galvalume coating for insulation attachment, or 20 gauge G-90-C.Q. steel with galvalume coating or high strength polyblend for membrane attachment.
4. Water Cut-Off Mastic: Compatible with materials with which it is used and furnished by the membrane manufacturer.
5. Fasteners: Compatible with roof deck as furnished by the membrane manufacturer. Fasteners shall be furnished by the membrane manufacturer and be Duro-Guard coated #14 and must pass 30 cycles in the Kesternich Cabinet, DIN #50018-2 Liter. The FM approved fastener is inserted through the hole in the distribution plate and properly secured to the roof deck.
6. Terminations/Edge Details: Shall be manufactured from rigid exterior vinyl with slotted holes for securement and furnished by membrane manufacturer. All other terminations/edge details must be approved and warranted by the membrane manufacturer.
7. Termination Bars: Duro-Last or approved equal.
8. Pourable Sealer: Duro-Last Pitch Pocket Filler or approved equal.
9. Trowelable Mastic: Duro-Last Sure-Bond-240 Mastic or approved equal.

2.03 COVERBOARD & INSULATION

- A. Cover Board: Board insulation over the filler insulation and ribs shall be a minimum of 1/4 inch thick by 4 feet by 8 feet. Dens-Deck Prime by Georgia Pacific or approved equal.
- B. Tapered and Flat Stock Insulation: A rigid isocyanurate board with factory-applied fiberglass bituminous felts on both sides. Conforming to HH-I-530A (Type

II, unfaced) and C1289-02, Type II, Class 1, Grade 2 with an average density of 2.0 lbs. per cubic foot. Manufacturer: Johns Manville, ENRGY 3 or an approved equal. The board size: 4 foot by 8 foot by 1 in. thick.

C. Adhesive: Olybond 500 or an approved equal.

2.04 MISCELLANEOUS

A. Roofing Nails: Stainless Steel "Stronghold" type: (for use on parapet walls, wood nailers).

B. Pipe Clamps: Stainless steel draw band clamps.

C. Fasteners and Accessories

1. Fasteners for securement of each layer of gypsum fire barrier board under pvc roof system through the isocyanurate insulation (where applicable) and into the wood deck shall be fluorocarbon-coated, No. 12 self-drilling, self-tapping screws, long enough to penetrate the receiving substrate 1- $\frac{1}{4}$ inches minimum and 1- $\frac{1}{2}$ inches maximum. Fasteners shall be in conformance with 470 specifications.

2. Provide screws with stress distribution plates by Duro-Last, minimum 0.375 inch thick, 3 inch diameter.

D. Nailers & Blocking

1. Blocking/Lumber: S4S 1500 f'c Construction Grade Douglas fir conforming to standard 15 grading and dressing rules of the West Coast Lumber Inspection Bureau, or other species of wood of equal strength. All lumber shall be grade marked at the mill and pressure treated by a method approved by the roofing membrane manufacturer: "Wolmanized" or "Osiose K-33" is acceptable.

2. Nailer Fasteners: Nailers shall be securely anchored to the deck to resist the minimum force required in the recent edition of Loss Prevention Data Sheet I-49, "Perimeter Flashing," Factory Mutual Systems.

3. PVC(Vinyl)-Clad Metal Flashing: GSM flashing coated on one side by membrane manufacturer with weldable, PVC-clad surface or pre-manufactured with factory/shop welded piece of membrane pre-welded to surface by membrane manufacturer.

4. Other Accessories: Shall be furnished and approved by the membrane manufacturer.

PART 3 – EXECUTION

3.01 SUBSTRATE INSPECTION AND PREPARATION

- A. Inspect all surfaces to receive roofing for condition that will adversely affect execution, performance, or
- B. All roof surfaces and all sloped surfaces to gutters and outlets shall be checked and approved by the roofing contractor prior to the start of the roofing work.
- C. quality of work.
- D. Install roofing material only under satisfactory conditions as specified by the membrane manufacturer.
- E. Scheduling: Schedule the roofing work in areas and sections in such a manner as to keep the new and existing insulation, roofing materials, and building dry and watertight during new roofing work.
- F. Damage sustained to the facility or contents as a result of the scheduling of roofing work shall be the Contractor's responsibility.
- G. Preparation shall comply with the membrane manufacturer's recommendations.
- H. Mechanically secure separation material units to roofing deck independent of membrane attachment and cover immediately with membrane. Butt units tightly together, limiting joint separation to 1/8 inch, maximum. Meet attachment pattern requirements of the membrane manufacturer.
- I. Prior to insulation installation, remove all dirt, debris and dust from deck surfaces with a vacuum. Insulation systems shall be installed on properly installed, clean, dry surfaces. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application. Do not dry with open flames.
- J. Inspect insulation boards for defects, including but not limited to: broken corners, improperly adhered skins, excessive moisture content, dimensional irregularities, or other defects which may adversely effect the replacement roof system. Mark defective insulation boards and remove them from site.
- K. Cut insulation to the minimum dimension of 12 inches; the minimum surface area shall be 2 square feet.
- L. Do not deliver to site or install any material or system that has not been approved. Materials installed without approval may be required to be removed. All containers must bear the label and material classification of the manufacturer. Partially used containers and unlabeled containers may not be incorporated into the work.
- M. Comply with the manufacture's written instructions and these specifications. In case of discrepancies, the greater quantity and/or better quality of work, as determined by the Owner, will be provided by the contractor at no additional cost.

- N. Flashings shall be installed concurrently with the roof membrane to assure watertight terminations.
- O. Do not cut any material with a solvent or dilutant unless approve by the owner in writing.
- P. Keep covers tightly sealed on all canned and evaporative products to prevent premature curing.
- Q. Report any damaged or unsuitable deck sections immediately to the Owner's representative prior to covering and replacing.
- R. The contractor shall ensure that all applicable safety requirements are strictly followed. This includes OSHA, CALOSHA and other applicable requirements regarding work with construction equipment for workers and building occupants.
- S. Welded seams shall be checked after cooling for continuity with a dull, flat head screwdriver or other suitable object. Daily, on-site evaluation of welded seams shall be made by the Contractor at locations as directed by the Owner's representative or membrane materials representative. Two inch wide cross-section cuts shall be taken through completed seams. Correct weld displays failure from shearing of the membrane prior to separation of the weld. Each test cut cross-section area shall be patched by the Contractor at no extra charge to the Owner.
- T. Membrane specified to be fully adhered to insulation and various other horizontal and vertical substrates must be adhered completely without voids, bridging of membrane or unattached membrane.

3.02 GENERAL REQUIREMENTS

- A. Precautions
 - 1. Do not lay out or expose insulation that cannot be covered by membrane on the same day.
 - 2. In making field heat welds, make sure edges are clean and free of tar, mastic or other foreign items.
 - 3. Do not expose membrane and accessories to a constant temperature in excess of 120 degrees Fahrenheit.
 - 4. Sealants and adhesives should be applied according to the manufacturer's specifications and all containers shall be disposed of properly.
 - 5. Start securing the membrane at the highest point and work towards the drains.

6. Storing, wheeling, or trucking directly on roof insulation or membrane surface is not recommended. Smooth, clean plywood or plank walkways, runways and platforms shall be provided as necessary.
- B. Comply with local, state, and federal regulations regarding the removal and disposal of roofing materials.
- C. Roofing shall not be applied when ambient temperature is less than 40° F. Materials which have a temperature other than the recommended application temperature of the manufacturer shall not be installed.
- D. Surfaces to receive membrane or flashings shall be thoroughly dry. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application. No open flames will be allowed.
- E. Completed roof areas shall not be trafficked. Work shall be coordinated to prevent this situation by working toward the roof edges and access ways. Should access to completed roof areas be necessary, the Contractor shall provide (membrane covered) plywood protection for the trafficked areas.
- F. Temporary waterstops shall be installed at the end of each day's work, and shall be removed before proceeding with the next day's work. Waterstops shall be compatible with all materials and shall not emit dangerous or incompatible fumes.
- G. The Contractor is cautioned that thermoplastic membranes are incompatible with oil-based and asphaltic-based cement. Creosote and penta-based materials are also incompatible. The Contractor should consult the manufacturer with respect to material compatibility and shall provide protection against contamination of PVC membrane and flashings.
- H. The Contractor shall provide necessary temporary protection and barriers to segregate the work area and to prevent damages to adjacent areas.
- I. Prior to and during application, dirt, debris and dust shall be removed from surfaces either by vacuuming, sweeping or similar methods.
- J. Liquid materials such as solvents and adhesives shall be stored and used away from open flames, sparks and excessive heat.
- K. The Contractor shall be a licensed and approved applicator recommended by the manufacturer of the roof system specified. The Contractor shall notify the manufacturer prior to initiating the construction. It is the responsibility of the Contractor to arrange for the membrane manufacturer's technical representative to be on site when construction commences and a minimum of once per week until construction is completed. The Owner and Owner's Representative should be notified of scheduled visits so that they may attend.

- L. The building will be open to normal use during the time of construction. The Contractor shall take all precautions to create as little disruption as possible during the course of the work.
- M. The Contractor shall provide and equip as many work crews as is necessary to complete the project within the Contract period and according to the Contract Specifications without sacrificing quality.
- N. The Contractor shall closely follow adhesive application rates when adhering membranes and flashings. The contents within adhesive containers shall be thoroughly mixed prior to application. Submit adhesive container tags to the Owner's Representative on a daily basis.

3.03 INSULATION INSTALLATION

A. Tapered Insulation

1. Insulation shall be installed with approved adhesive. Comply with FM I-75.
2. Insulation shall have a maximum dimension of 4 feet by 8 feet
3. The insulation shall be staggered 50% from row to row.
4. Butt each insulation board firmly to the adjacent board. Do not jam insulation boards or allow cracks between insulation boards.
5. Cut boards to allow a maximum ¼ in. gap away from vertical surfaces.

B. Crickets

1. Install coverboard over tapered isocyanurate insulation. Crickets shall be constructed to ensure a minimum slope of 1/2 in. per foot along the valley towards the drainage point.
2. Butt each insulation board firmly to the adjacent board. Do not jam insulation boards or allow cracks between insulation boards.
3. Cut boards to allow a maximum ¼ in. gap away from vertical surfaces.

3.04 COVERBOARD INSTALLATION

A. Filler Insulation

1. Cover board shall be installed with approved adhesive.
2. Cover boards shall have a maximum dimension of 4 feet by 8 feet.

3. The cover boards shall be staggered 50% from row to row.
4. Butt each insulation board firmly to the adjacent board. Do not jam cover boards or allow cracks between cover boards.
5. Cut boards to allow a maximum ¼ in. gap away from vertical surfaces.

3.05 MEMBRANE INSTALLATION

A. Layout

1. Select the proper factory marked rolled sheet of roofing membrane for an outside corner or high point.
2. Orient the roofing membrane so the membrane is perpendicular to the flow of the roof.
3. When laying out, pull the membrane tight.

B. Roof Sections

The intent of this Specification Section is to provide the Owner with a fully adhered membrane, 100% bonded to the substrate.

1. Ensure all bituminous substances and contaminants of the original system are removed. Clean flashings, etc., of all bitumen residue.
2. Install membrane system in accordance with the recommendations and requirements of the membrane materials manufacturer, as amended in these Specifications.
3. Water-based adhesive shall be used as the contact adhesive for the roof membrane.
4. Solvent-based adhesive, specially formulated for vertical surfaces, shall be used as the contact adhesive for flashings installed.
5. Inspect surface of roof insulation prior to installation of roof membrane. Surfaces shall be clean and smooth with no excessive surface roughness. Contaminated surfaces or unsound surfaces shall be cleaned and voids shall be filled.
6. Over the properly installed and prepared gypsum fiberglass mat fire barrier board substrate, the water-based adhesive shall be poured out of the pail and spread using 9 in. medium nap paint roller. The adhesive shall be applied at a rate of 1 gallons per 70 - 90 square feet or as recommended otherwise the manufacturer. Apply the adhesive in an even coating with no

globbs, puddles, or similar irregularities. Allow the adhesive to dry slightly but not completely.

7. The membrane shall be carefully unrolled into the wet adhesive. The adhesive shall be spread and the membrane rolled out until the entire roll has been set into adhesive. The membrane shall be pressed firmly in place with a weighted foam covered lawn roller by frequent rolls in two directions. Lap the adjacent sheets a minimum of 3 inches. Note that adhesive shall not be applied in seam areas.

C. Field Welding

1. Weld adjacent sheets in accordance with the manufacturer's written instructions. Both sides and end lap joints shall be hot-air welded. Hand welded laps shall be 4 inches wide minimum; machine welded laps shall be 3 inches wide minimum. Sheets must be welded immediately after installation.
2. Use welding equipment provided by the membrane materials manufacturer. All technicians shall successfully complete a course of instruction provided by the roof membrane manufacturer's representatives prior to welding. All weld surfaces must be clean and dry. No adhesive or other contaminant shall be present within the lap areas.
3. Hand welded seams shall be completed in three (3) stages. Warm up equipment for at least one (1) minute prior to welding.
 - a. Tack weld the lap every 3 feet to hold seam in place.
 - b. Weld the back edge of the lap with a thin, continuous weld to prevent loss of the hot air during the final weld.
 - c. Insert the hot air nozzle into the lap, keeping the welding equipment at a 45° angle to the side lap. Once the material starts to flow, apply the hand roller at a right angle to the welding gun and press lightly. For straight laps, use the 1-1/2 inch wide nozzle. Correct weld speed will complete approximately 20 inches per minute. The hot air weld equipment shall have temperature adjustments to provide this proper speed and weld.
4. Alternately, an automatic lap welding machine may be used. Follow the manufacturer's strict requirements, instructions and local codes for electric supply, grounding and over current protection. The automatic weld machines power requirement is 218 to 230 volts at 30 amps. The availability of this voltage shall be verified at the work site on the roof before using the automatic welding machine. The use of portable generators is recommended. Prior to utilizing the automatic weld machine on the roof,

detailed instructions and operating procedure shall be obtained from the membrane manufacturer's technical representatives.

5. Terminate the membrane at perimeters and penetrations once welding of adjacent sheet seams is completed. Membrane shall be terminated with the manufacturer's recommended metal termination bar fastened at 6 inches (maximum) on center.
6. Flashings shall be installed concurrently with the roof membrane in order to achieve a watertight condition as the work progresses. When a situation arises where a break in the day's work occurs in the central area of a roof, a temporary waterstop shall be constructed to provide a 100% watertight seal utilizing a raised temporary waterstop. Sweep back and totally clean a 6 inch edge along the existing roof and set a 2 inch x 4 inch stud atop the prepared area in roof cement. Carry the new membrane up and over 2 inch x 4 inch waterstop. Seal the edge of the membrane in a continuous heavy application of water cut-off mastic. Weight the membrane down in the sealant with a 2 inch x 10 inch wood member with ballast on top. Ballast should be approximately 20 pounds per linear foot. When restarting work, remove all sealant, membrane, insulation fillers, etc. from the work area. Do not reuse any of the temporary cut-off material in the new work. Cut off contaminated membrane and dispose of immediately. If inclement weather occurs while a temporary waterstop is in place, the Contractor shall provide the labor necessary to monitor the situation to maintain a watertight condition.
7. Inspect all field welds with a probe. Re-weld loose laps at the end of each workday.

D. Perimeter Nailing

1. The membrane shall be mechanically fastened at all roof perimeters, parapets, curbs, walls, penetrations, in accordance with the Contract Documents and roofing manufacturer's specifications and details.

E. Cut-Outs

1. Make cut-outs in roofing membrane for protrusions through the roof. Some situations might require that the deck membrane be slit to the section edge for fitting around protrusions.
2. Fasten around cut-outs with approved fasteners, 12 inches on center or a minimum of one per side.
3. The skirts on factory prefabricated accessories when welded to deck will cover these.

F. Membrane Flashings

1. All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary membrane flashings shall be allowed without the prior written approval of the Owner. Approval shall only be given for specific locations on specific dates.
2. Follow the manufacturer's requirements and these Specifications. Ensure that shop drawings and material submittals have been approved.
3. Fully adhere polyester separation layer at specified locations as detailed. Ensure that felt isolates bituminous products (new and existing) from new PVC flashings.
4. Wall flashings shall be fully adhered to the plywood/wood substrates using a solvent-based adhesive. Cut the Membrane in six (6) foot long sections. Over the plywood apply the adhesive at a rate of 1 gallon per 50-60 square feet using 9-inch medium nap paint roller. The adhesive shall be applied in a smooth, even coating with no holidays, globs, puddles, or similar irregularities. Coat the underside of the membrane at a rate of 1 gallon per 50-60 square feet. Do not apply adhesive in lap areas. Allow the adhesive to become tacky when touched with a dry finger on both surfaces. The product on the membrane cannot be permitted to dry completely. The coated membrane shall be rolled onto the coated substrate being careful to avoid wrinkles. Adjacent sheets shall be overlapped 3-inches. Bring the top of the membrane up and over the parapet wall or wood blocking and secure with annular ring nails as shown in the contract drawings. The wall flashing membrane shall extend 4 inches onto the roof membrane.
5. Membrane flashings shall be hot-air welded at their seams and at their connections with the roof membrane or membrane clad metal flashings.
6. Vent pipes shall be flashed to the top of the pipe. Asphalt contaminated vent pipes which cannot be thoroughly cleaned shall be wrapped with aluminum tape prior to the installation of membrane flashing. Field or shop fabricated pipe caps of the PVC membrane shall be installed as shown in the detail drawings. Provide stainless steel pipe clamp terminations at all locations.
7. Membrane termination shall be flashed in with reinforced membrane. Termination bars shall be utilized as detailed in the contract drawings. Set termination bars in a bed of sealant with fasteners spaced at 3 inches on center.

3.06 SPECIAL REQUIREMENTS:

- A. Do not apply adhesive in lap areas

- B. The applicator shall keep track of the amount of adhesive used to confirm adhesive rate.

3.07 CLEAN-UP

- A. Upon completion of the membrane installation, the Contractor shall remove all foreign matter, rubbish and scrap material from the roof.
- B. The membrane surface shall be cleaned using cleaners recommended by the membrane manufacturer.

3.08 INSPECTION & WARRANTY

- A. Inspection: The Contractor shall submit all required drawings, details, and completed questionnaires to the roofing manufacturer before obtaining the specified warranty. After the authorized Manufacturer has inspected the roof for determining acceptability for warranty issuance, deficiencies on the final inspection report shall be corrected by the Contractor and made ready for reinspection within five (5) working days.
- B. Warranty: Upon receipt of required materials, certifying inspection, and acceptance of the roofing system by the roofing manufacturer, the warranty shall be duly executed and issued to the Owner.

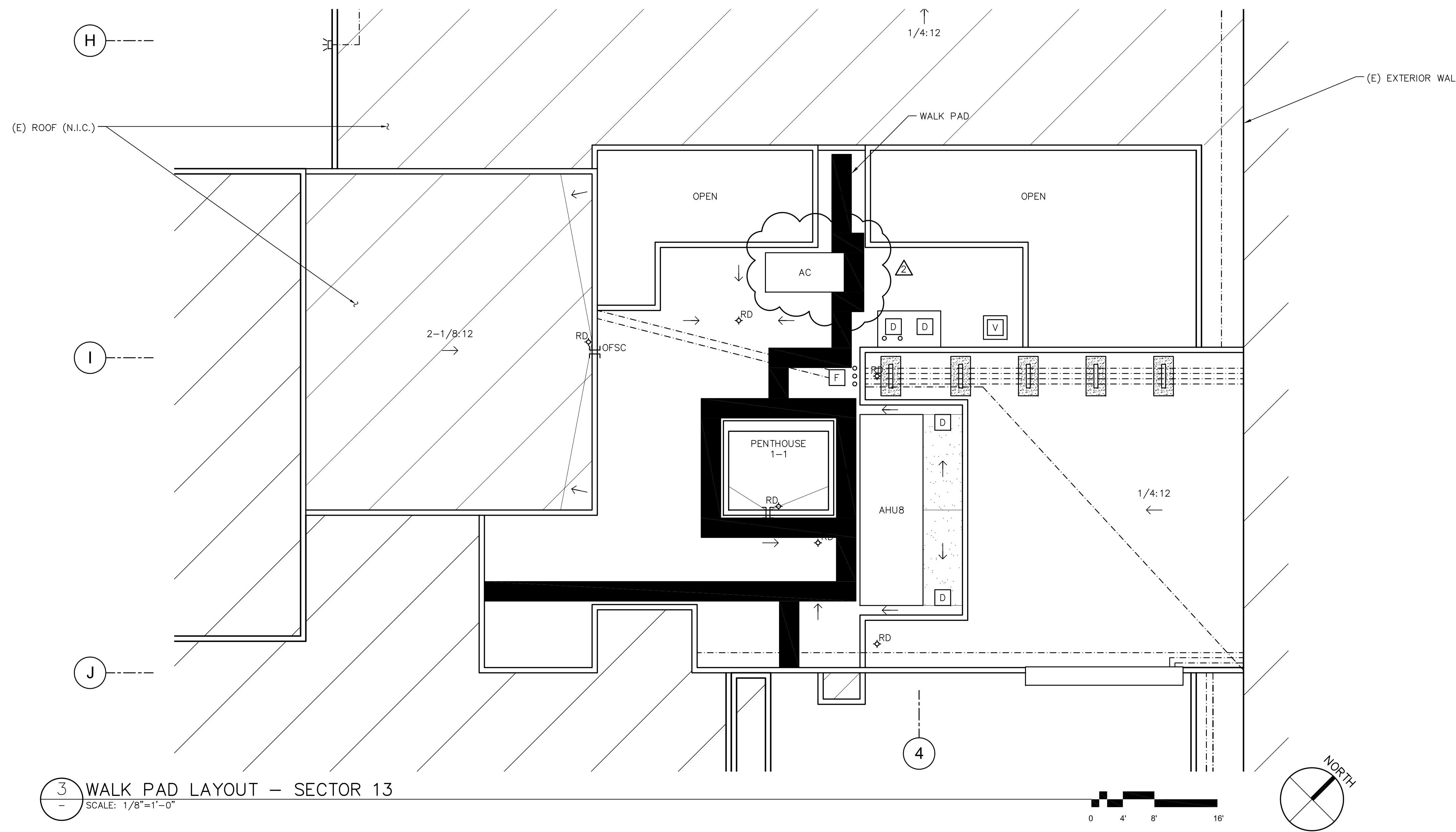
3.09 REPAIRS

- A. Future repairs or additions to the roofing system shall be made using the heat welding process.
- B. Adhesive bonded or butyl tape repairs shall not be allowed for the life of the roof.
- C. Contractor shall provide repair procedures to the Owner and/or Owner's representative.

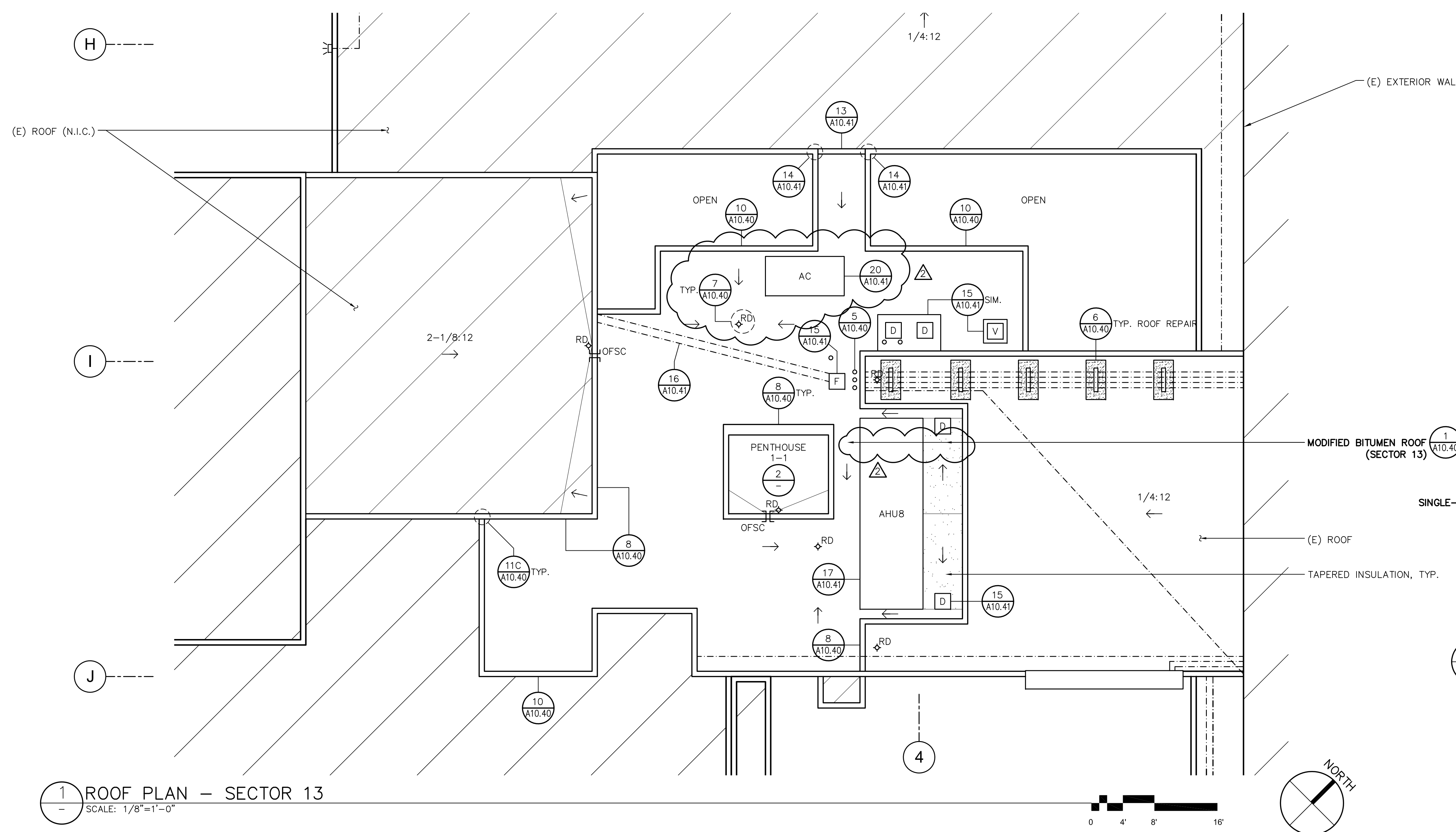
3.10 CONSTRUCTION DAMAGE

- A. Upon completion of work, repair or replace as required, building materials damaged as a result of the roofing operations. Match existing materials and construction as determined by the Owner.

END OF SECTION

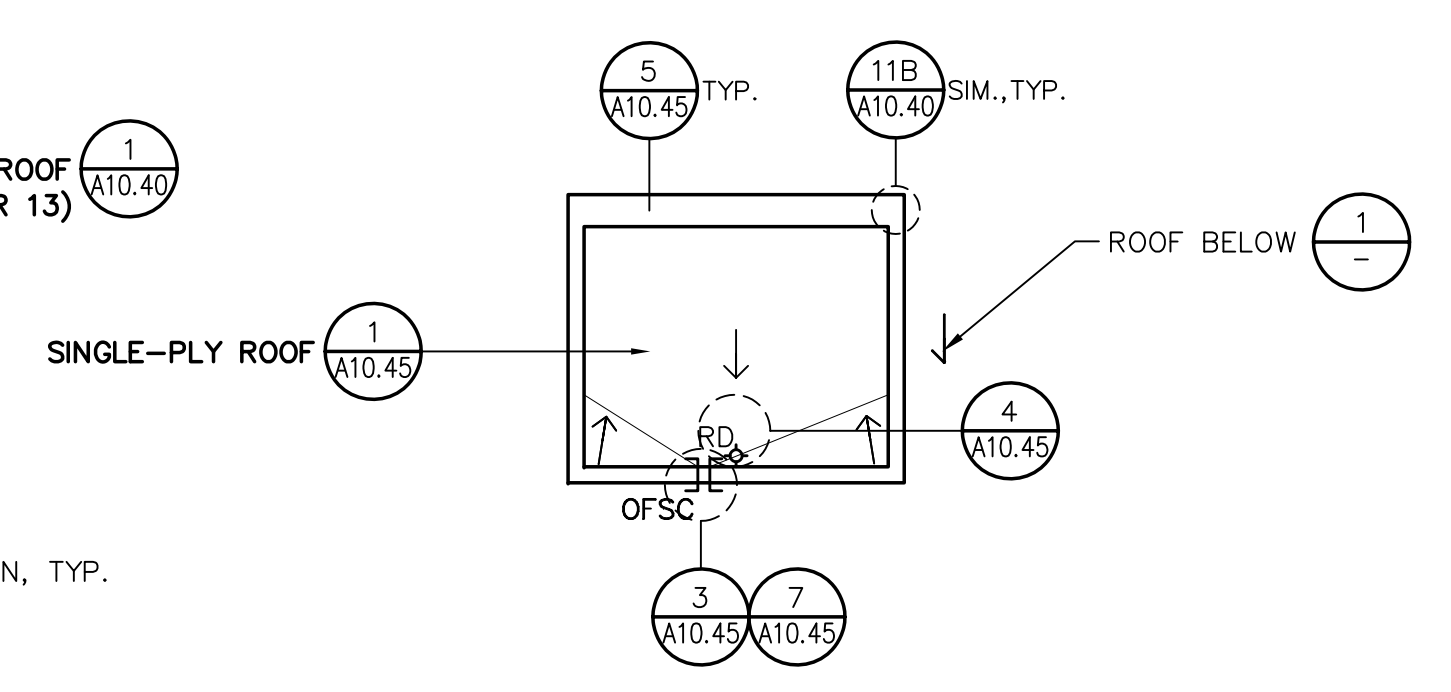


3 WALK PAD LAYOUT - SECTOR 13
 SCALE: 1/8"=1'-0"



1 ROOF PLAN - SECTOR 13
 SCALE: 1/8"=1'-0"

NOTE:
 (1) ASSUME ROOF REPAIRS AT FIVE NEW CURBS IN (E) ROOF THAT WILL REMAIN.



2 ROOF PLAN - PENTHOUSE 1-1
 SCALE: 1/8"=1'-0"

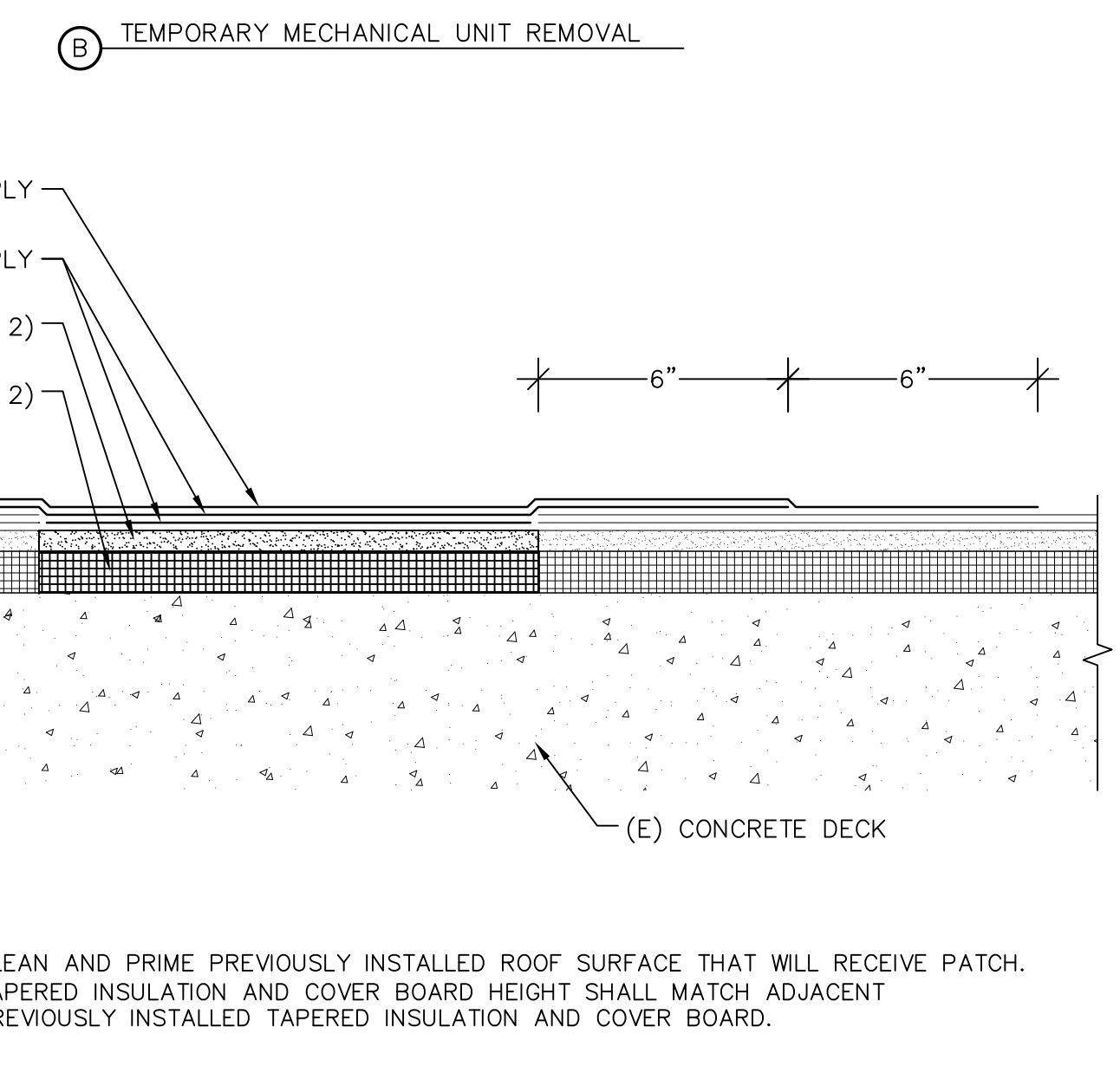
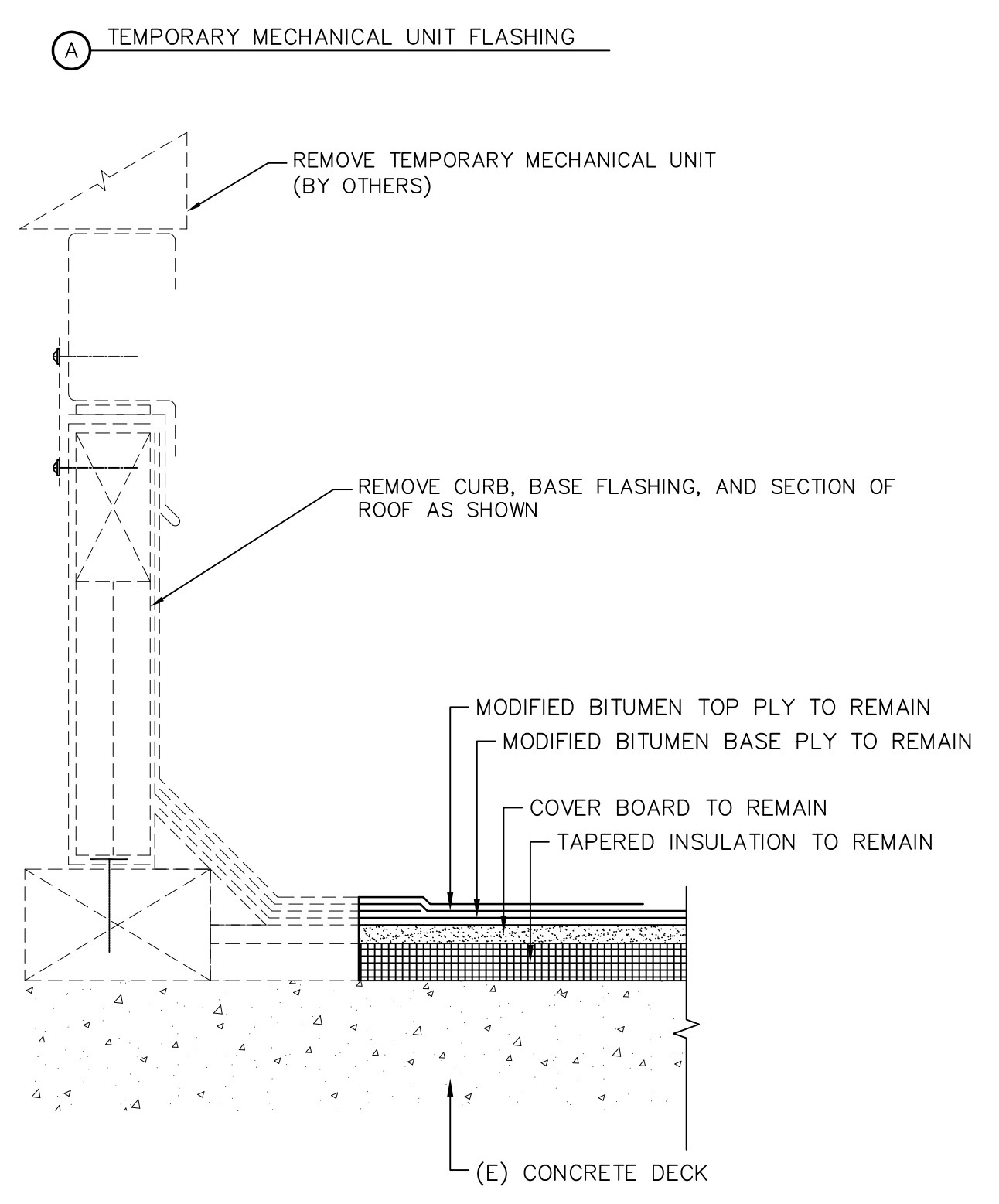
PROJECT: L-527 COLLEGE COMPLEX SECTOR 13 ROOF REPLACEMENT
 OWNER: LOS MEDANOS COLLEGE
 2700 EAST LELAND ROAD, PITTSBURG, CALIFORNIA
 CONTRA COSTA COMMUNITY COLLEGE DISTRICT
 500 COURT STREET
 MARTINEZ, CALIFORNIA

NO.	DATE	DESCRIPTION	BY
5/11/18		ADDENDUM 2	EY
4/19/18		BID SET	EY

PROJECT NO. 694712
 CADD FILE
 DESIGNED BY AEB
 DRAWN BY EY
 CHECKED BY AEB
 DATE 1 MAY 2015
 DRAWING SCALE AS NOTED
 SHEET TITLE
SECTOR 13 ROOF PLAN
 DRAWING NO.
A2.2
 OF

BID SET - NOT FOR CONSTRUCTION

REFER TO 17/A10.41



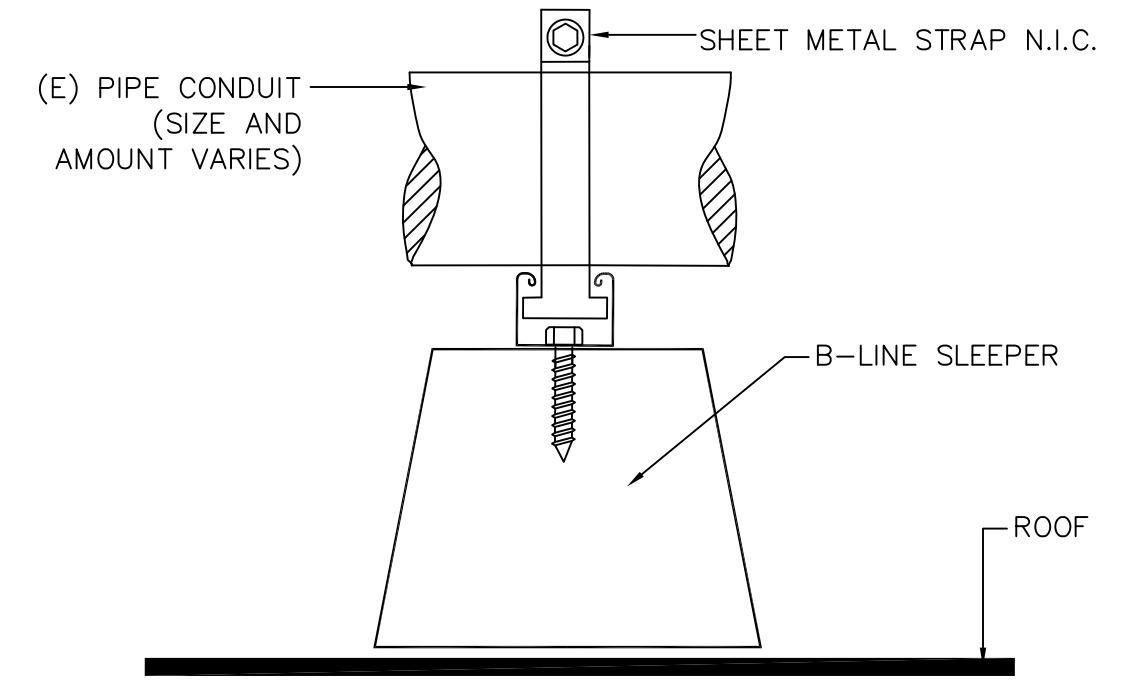
20 TEMPORARY MECHANICAL UNIT FLASHING AND PATCH
 A10.41 SCALE: NOT TO SCALE

22 NO DETAIL
 A10.41 SCALE: NOT TO SCALE

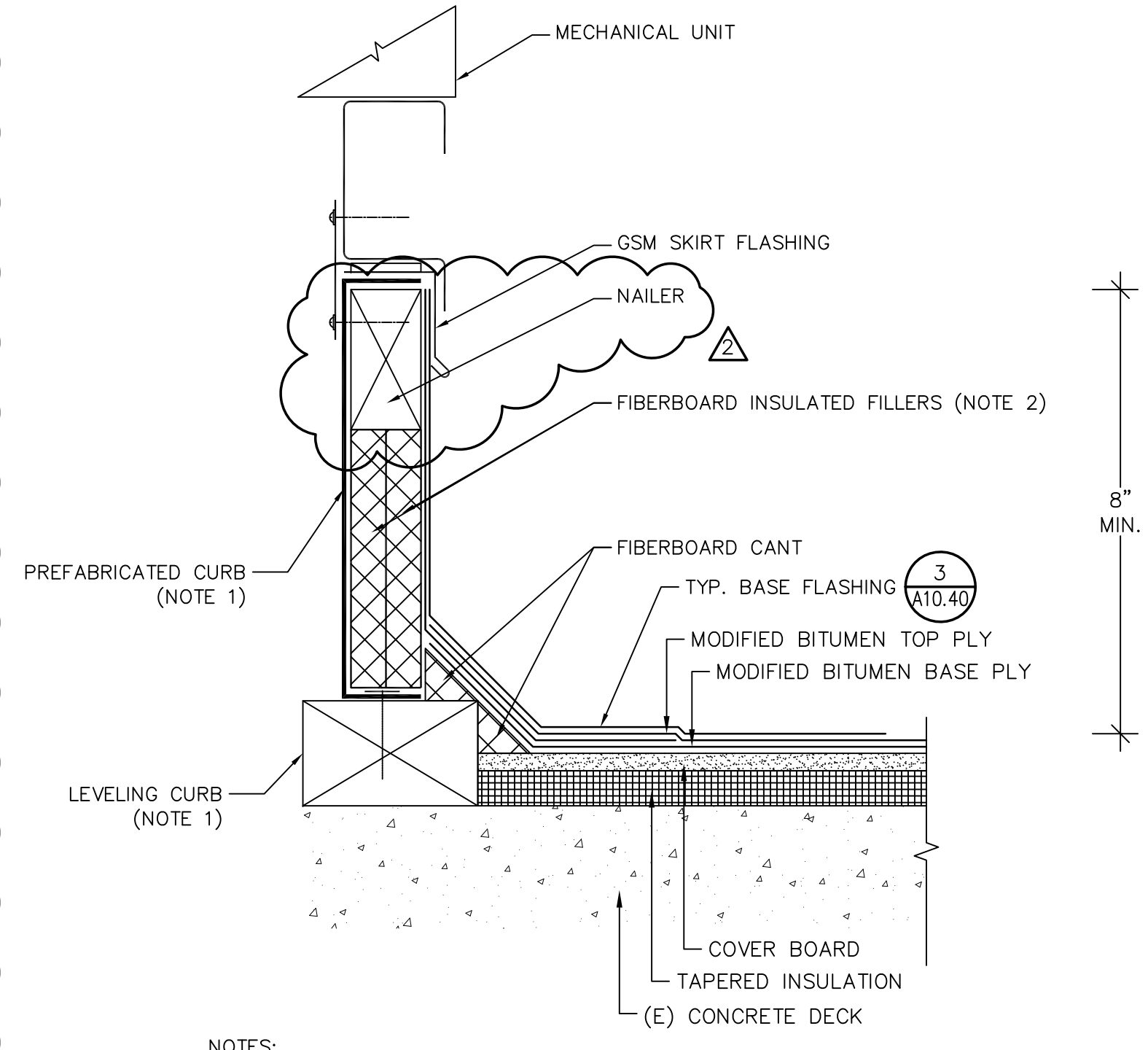
23 NO DETAIL
 A10.41 SCALE: NOT TO SCALE

24 NO DETAIL
 A10.41 SCALE: NOT TO SCALE

21 NO DETAIL
 A10.41 SCALE: NOT TO SCALE

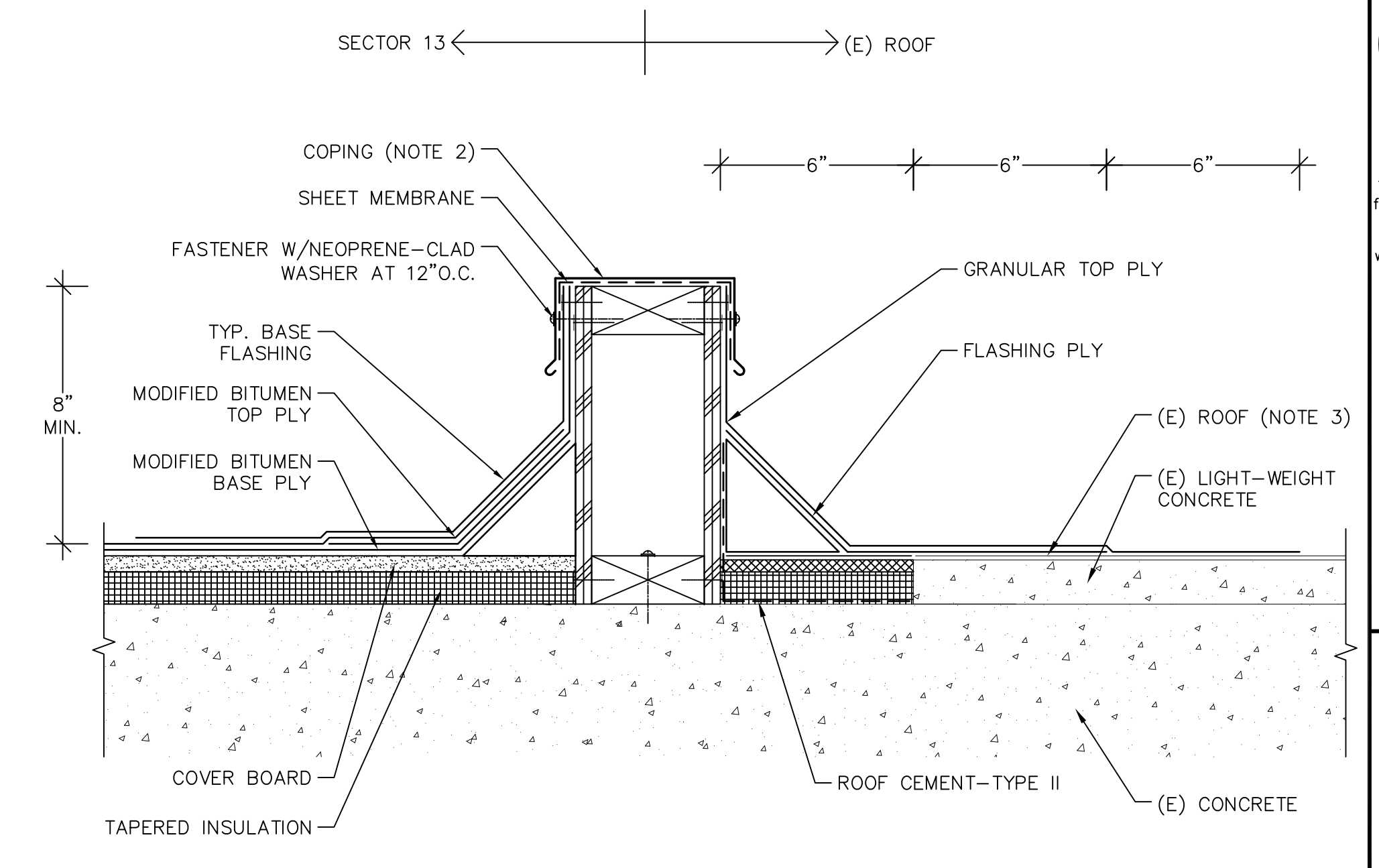


16 CONDUIT
 A10.41 SCALE: 3"=1'-0"



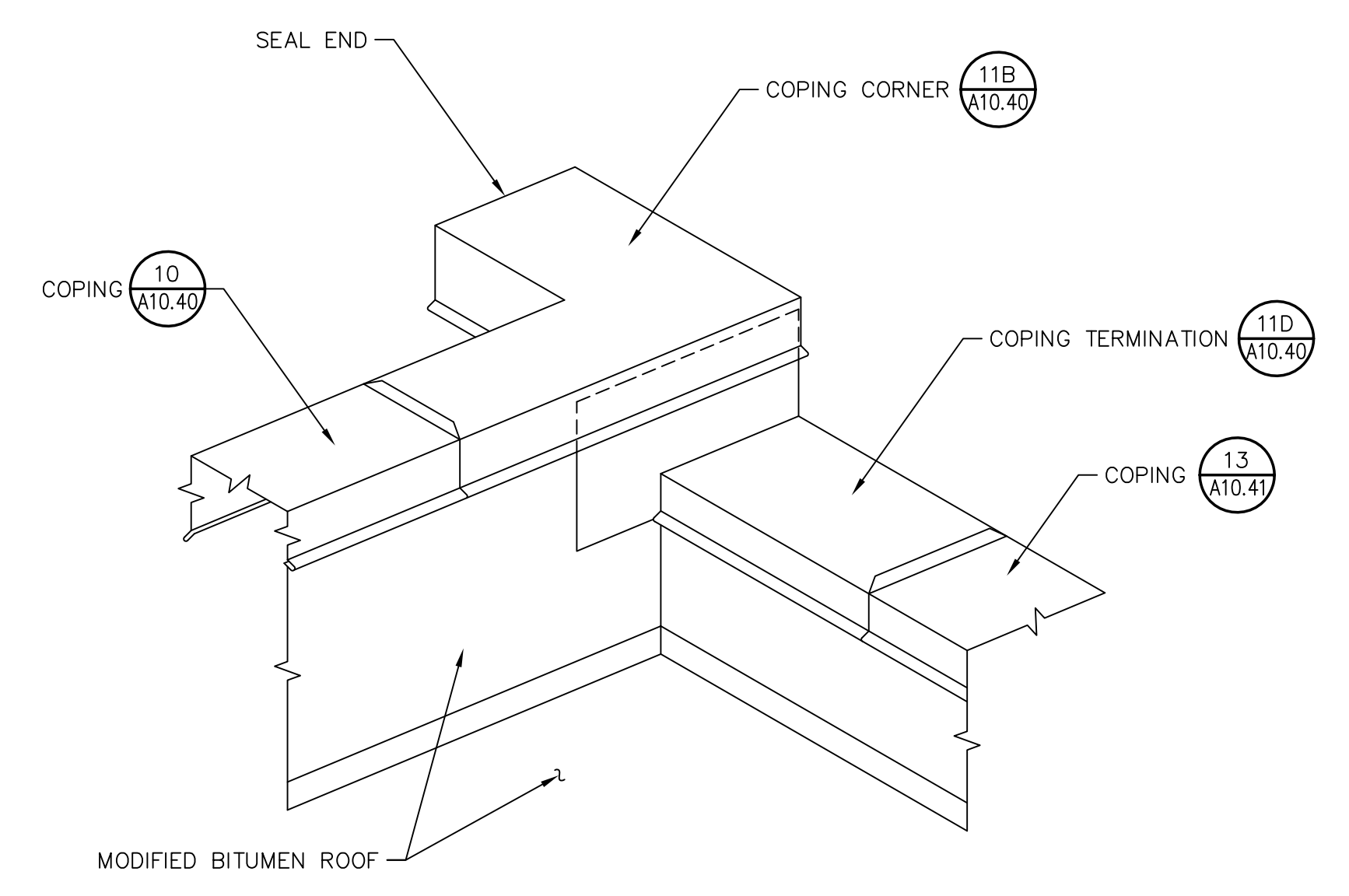
17 MECHANICAL UNIT-TYPE I
 A10.41 SCALE: 3"=1'-0" (6/M5.1)

18 NO DETAIL
 A10.41 SCALE: NOT TO SCALE

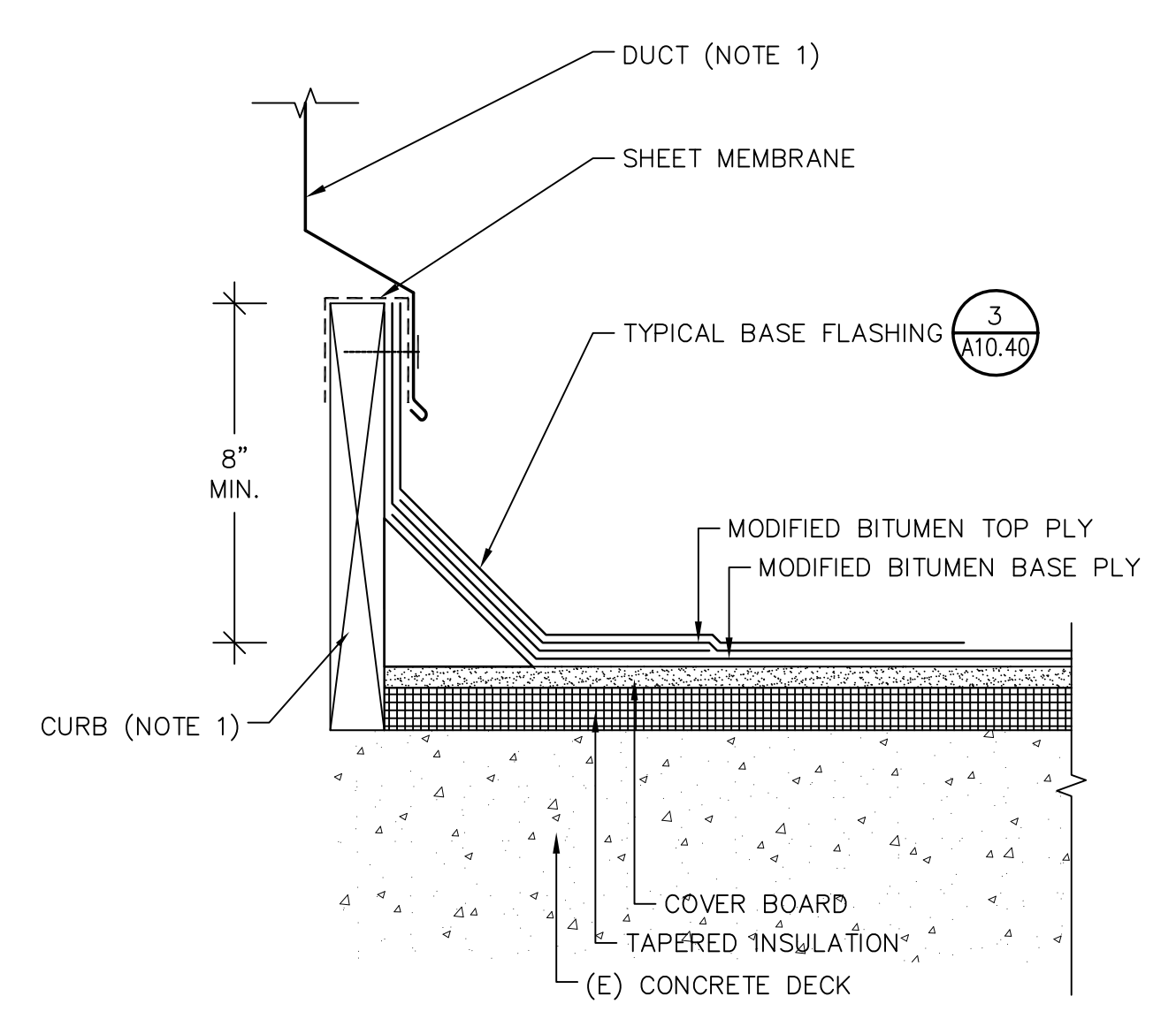


- NOTES:
 (1) REMOVE AGGREGATE TO INSTALL BASE FLASHING.
 (2) EXTEND COPING 12" MIN. BEYOND DIVIDING CURB ON EXISTING ROOF SIDE.
 (3) REMOVE (E) AGGREGATE, CLEAN AND PRIME (E) ROOF SURFACE THAT WILL RECEIVE ROOF REPAIRS.

13 DIVIDING PARAPET
 A10.41 SCALE: NOT TO SCALE



14 DIVIDING PARAPET/WALL
 A10.41 SCALE: NOT TO SCALE



- NOTE:
 (1) DUCT AND CURB WILL BE INSTALLED BY MECHANICAL CONTRACTOR (9/M-5.1).

15 DUCT
 A10.41 SCALE: 3"=1'-0" (9/M5.1)

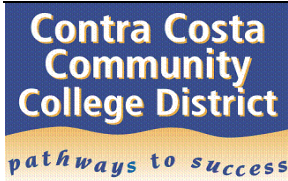
PROJECT
L-527 COLLEGE COMPLEX SECTOR 13 ROOF REPLACEMENT

OWNER
LOS MEDANOS COLLEGE
 2700 EAST LELAND ROAD, PITTSBURG, CALIFORNIA

OWNER
 CONTRA COSTA COMMUNITY COLLEGE DISTRICT
 500 COURT STREET
 MARTINEZ, CALIFORNIA

NO.	DATE	DESCRIPTION	BY
5/11/18	ADDENDUM 2	EY	
4/19/18	BID SET	EY	
PROJECT NO.		694712	
CADD FILE			
DESIGNED BY		AEB	
DRAWN BY		EY	
CHECKED BY		AEB	
DATE		1 MAY 2015	
DRAWING SCALE		AS NOTED	
SHEET TITLE			
MODIFIED BITUMEN ROOF DETAILS			
DRAWING NO.			
A10.41			
OF			

BID SET - NOT FOR CONSTRUCTION



AGENDA

PRE-BID MEETING & SITE WALK (MANDATORY)

PROJECT NUMBER/NAME: L-527 College Complex Sector 13 Roof Replacement

CAMPUS: Los Medanos College at 2700 E Leland Rd, Pittsburg, CA 94565

DATE: May 4, 2018

TIME: 11:00 AM

LOCATION: Los Medanos College - PS2 20

Important Note: An on-site job walk follows the meeting. Attendance at the job walk for this project is mandatory. At completion of the job walk, be sure to obtain a **Certification of Site Visit (Section 00450)**, signed by the District. **This signed form must be submitted with your bid.**

1. Opening Remarks

- Introductions
- DIR Registration requirement

2. Project Team Members

Kevin Little	Sr. Project Manager - Critical Solutions, Inc. (CSI)
Kelly Johnson	Sr. Construction Manager – Critical Solutions, Inc. (CI)
Rob Mohr	Construction Manager - Critical Solutions, Inc. (CSI)
Stefan Johnson	Construction Manager - Critical Solutions, Inc. (CSI)
Russell Holt	Buildings and Grounds (B&G) Manager, LMC
	Inspector of Record – Structure Consultants

3. Brief Project Description

In general, the Work consists of application of a fluid applied membrane, installation of new tapered insulation, installation of a modified bitumen roof system and single-ply modified bitumen roof system as shown on the L-527 College Complex Sector 13 Roof Replacement drawings and specifications prepared by Steelhead Engineering. Refer to Terracon hazardous material report dated 8/28/15 regarding existing roof and Salas O'Brien Air Handling Unit Replacement drawings for reference. Demolition work will be completed by others. Roof must be protected from water intrusion during adverse weather conditions. Work to be coordinated with mechanical contractor and be substantially complete by July 9, 2018 to allow completion of mechanical work. The project is located at Los Medanos College, 2700 East Leland Rd., Pittsburg, CA.

- Timeline (calendar days):
 - Estimated NTP – June 6, 2018
 - Construction Start – June 14, 2018
 - Duration to Substantial Completion – 25 Calendar Days

4. Project Work Restrictions

- Roofing contractor will need to coordinate with Mechanical Contractor doing HVAC work
- Refer to Supplementary General Conditions Section 00800

5. Bid Phase Communications & Correspondence

- All questions related to this Project must be in writing and directed to:

Jovan Esprit, Contracts Manager

Contra Costa Community College District

500 Court St., Martinez, CA 94553

Email: jesprit@4cd.edu Facsimile: 925-370-6517

CC: - Najia Sabeen najia_S@csipm.com and Rob Mohr robm@csipm.com

6. Addenda Update

- Addenda 1 issued

7. Bid Phase Schedule Milestones

- Last day for RFI: Wednesday, May 9, 2018 prior to 2:00 PM
- Last Addendum Issued: Monday, May 14, 2018
- Bid Opening: Monday, May 21, 2018 prior to 2:00 PM
- Award of Contract: May 30, 2018
- Notice to Proceed: June 6, 2018

8. Bid Opening

- **Bids must be received at the Contra Costa Community College District Office at 500 Court St, Martinez, CA by May 21, 2018, prior to 2:00 PM.**
- All bids will be time stamped at the reception counter in the building lobby.
- Any bid received after the bid opening time will be rejected.
- An announcement will be made at the 2-minute mark prior to the bid opening deadline.

Bid Package

- Review your bid package carefully before submitting it. **Be sure to include all required documentation.**

9. Contract Duration Discussion

- Section 00600, Construction Agreement
- 25 Calendar Days to Substantial Completion (SC) – LDs \$500/Calendar day beyond SC
- 30 Calendar Days between SC and Final Completion – LDs \$250/Calendar day beyond FC

10. Substitution requests MUST comply with Contract Documents

- Within three (3) work days of bid opening on District form; acceptance at District's sole discretion – form is provided at the end of section 00800.

11. Site Job Walk

- Review Construction Site
- Distribute signed Certificate of Site Visit forms
- Access and staging area plan

PRE-BID MEETING SIGN-IN SHEET



PROJECT TITLE: L-527 College Complex Sector 13 Roof Replacement

DATE / TIME: May 4, 2018 at 11:00AM

LOCATION: Los Medanos College

COMPANY NAME	NAME	TITLE
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Best Contracting Services Inc. Petrick Milligan Service Dept Pro Manager

Please provide business card

Office Phone 510 - 886 - 7240

Cell Phone 310 - 864 - 0066

Email Address Trigew@bestcontracting.com

I&A contractor inc. Hector Ibarra Superintendent

Please provide business card

Office Phone 650) 218-7793

Cell Phone 650) 315-3375

Email Address Hector@iacontractorinc.com ~~hbarra@iacontractorinc.com~~ hbarra@iacontractorinc.com

Stronger Building S

Please provide business card

Office Phone 510) 487 - 8363

Cell Phone 415) 823 - 6355

Email Address Ismael@strongerbuilding.com

WESTERN ROOFING SERVICE CHARIS McMENAMY PM

Please provide business card

Office Phone 510.924.0992

Cell Phone 415.716.7374

Email Address CMCMENAMY@WESTROOF.COM

PRE-BID MEETING SIGN-IN SHEET



PROJECT TITLE: L-527 College Complex Sector 13 Roof Replacement

DATE / TIME: May 4, 2018 at 11:00AM

LOCATION: Los Medanos College

COMPANY NAME	NAME	TITLE
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Platinum Roofing Inc Gerardo Barajas Permit & Warranty Technician.

Please provide business card

Office Phone (408) 280-5028 Alternate email below ↓
 Cell Phone (408) 502 0615 Barajas@platinumroofinginc.com
 Email Address permitdept@platinumroofinginc.com

ANDY'S ROOFING CO RAMON CASTANEDA SUPERVISOR

Please provide business card

Office Phone 510) 777-1100
 Cell Phone 408) 593-0077
 Email Address dor@andysroofing.com

Bay Area Roofers Labor Management

David Miller compliance officer

Please provide business card

Office Phone 510.632.1951
 Cell Phone 510.459.0175
 Email Address rooferscompliance@gmail.com

MATRIX HG

Mitch Lake P.M.

Please provide business card

Office Phone 925 459 9200
 Cell Phone 925 214 4985
 Email Address mlake@matrixhginc.com