ALLEN EVENT CENTER

City of Allen

Zach Cain-Loss Director
James Kaltman-TMLIRP Claim Manager

Scott Franklin
4T Partnership LLC

PART 1 GENERAL CONTRACT REQUIREMENTS

1. Contractor will bid this project through the TIPS/Manufacture Direct program. This project must be 100% Bonded and Insured to the satisfaction of the City of Allen by the TIPS contractor.

2. All contractor employees on jobsite must conform to and meet standards as outlined in State of Texas Senate Bill 9, as enacted as law. Documentation must be provided to building owner/owners representatives.

3. TIPS MANUFACTURE & Sub-Contractor must execute State of Texas Conflict of Interest Form.

4. Contract final acceptance will only be valid after TIPS certifies that all cost is at or below the contracted "Favored Nation Pricing" table submitted to TIPS buying co-operative.

5. Contractor must provide documentation results of pull tests and wind calculations to Manufacture TIPS administrator as part of the submittal & bid package.

6. Contractor through coordination with the City will pull all appropriate & required permits and post at the appropriate location as identified by the City. Any costs will be at the exact cost by the city. Due to timing any permit costs will be passed on without mark-up to the City. There is a $25.00 fee for registration.

7. Contractor to provide a unit cost for replacement of 2.5" polysiocyanurate insulation and DensDeck® board.

8. Copies of all Manufacturer inspections to be sent upon publication to 4T Partnership and Owner within 5 days of all Manufacturer inspections.

9. Contractor to provide and include in their proposal the following breakout items:

   A. Alternate Add #001 – Installer to provide a separate cost option for a Permanent Line Safety Cable system to both the upper and lower roof area. $_____

   B. Alternate Add #002 – Provide a separate add cost to provide (10) 4,000 lb. non-penetrating anchors in lieu of "Permanent Life Safety System". $_____

   C. Alternate Add #003 – Provide the cost to add all Anchor non-penetrating mounts required for securing all required Lightening protection mounts for existing lightening protection to be reattached after repair of existing roof system. $_____

   D. Alternate #004 – Deduct to reuse existing pipe supports in lieu of ne Anchor pipe supports. $_____

   E. Line Item pricing for replacement of wet/damaged insulation. $_____

1.0 SCOPE OF WORK – Upper Arena Roof and detached Upper Roof Areas

A. Contractor to slice existing PVC membrane to release all stress points in accordance to Duro-Last Roofing, Inc. specifications.

B. Contractor shall mechanically install a 1/4" 4' x 8' DensDeck® Prime Roof board in accordance to Duro-Last Roofing, Inc. specifications. Fastening determined from pull tests.

C. Contractor shall furnish and install, on the cover board, via a **fully adhered** system using Duro-Grip CR-20 a white, **80 mil (98 mil with Fleece) Duro-Fleece®** single-ply membrane roofing system that is fabricated of a weft inserted, low-shrink, anti-wicking polyester fabric and has a thermoplastic coating of PVC material laminated to both sides and a 5.5-ounce per square yard needle punched polypropylene fleece as manufactured by Duro-Last Roofing, Inc. to attain a 20-year NDL warranty. Contractor to be certain to follow all manufacturers' specifications.

D. Contractor to include the use of Duro-Last Peel Stop Detail AS9060A where needed as per the Duro-Last published specifications. All Peel Stops are 2' in on all perimeter walls. This is required regardless of whether required by Manufacture.

E. Contractor shall install new base-flashing at all multi-pipe curb penetrations and counter flash with new skirting.

F. Contractor shall install all Duro-Last related accessories that include vents, open stacks, open curbs, scuppers, drains, edgings, etc. No non pre-fab boots are allowed. All boots to fit snug to shaft of penetration a min. of 8" above finished roof then top sealed and back seal along with stainless steel clamping band.

G. Contractor shall install new gutters and downspouts to match existing gutters & downspouts that are manufactured by Exceptional Metals, Inc. These gutters shall be installed on the North and South sides of the roof.

H. Contractor shall terminate on the Eave side (East & West) of building using white Duro-Last vinyl coated metal with pre-installed skirt. Termination flashing to meet or exceed Factory Mutual/ES 1-90 and be a current certified and approved Factory Mutual Manufacture of metal components. All metal components are to be included as part of the primary manufactures guaranty and consequential damage coverage.

J. Contractor shall install a temporary Life Safety Protection system. Contractor shall follow construction process requiring all work in compliance with OSHA Guidelines. Manufacture shall also file a full safety plan with daily inspection by certified Safety Manager throughout the project.

K. Contractor to furnish and install a new Bilco or equivalent roof ladder on the (1) East and (1) West side of building. (Transition between High and Low Arena Roofs)

L. Contractor will replace any wet or damaged insulation found or documented during the roof replacement project. Provide line item for insulation replacement.

M. Contractor shall have the roof inspected by the Duro-Last Quality Assurance Technical Representative. Upon satisfaction the Technical Rep shall provide a 20-year NDL warranty. This warranty covers all material and labor as set forth by the printed document.

N. Copies of all Manufacture inspections to be sent upon publication to 4T Partnership and Owner within 5 days of all Manufacture Inspections by installing contractor.

O. Contractor, at no cost to him, shall have interim and finished inspection by third party consultant – 4T Partnership LLC. All final punch list items are to be completed prior to release of retainage.

P. Invoicing will be limited to once a month and include only those areas/ material on site and completely installed and inspected prior to the 20th of each month. Invoices approved shall be processed and paid by the following 10th and include a copy of the interim inspection confirming work completion being invoiced.

Q. Contractor shall dispose of all debris in an approved facility in accordance with all local, state and federal regulations. The work area will be kept clean daily. Dumpsters and Port-A-Johns to be provided by installing contractor. All materials for Arena upper and lower to be loaded on a

daily basis. No materials are to be stored overnight. Pre-loading can be done on to lower Modified roof.

R. Contractor shall supply their own source of power. No use of building owners electrical receptacle allowed.

S. **ALTERNATE ADD #001 -**Contractor to install ICE Guards throughout the exposed roof to prevent Ice from falling in large chunks down below.

1.01 SCOPE OF WORK – Lower Roof/Canopies

A. Contractor to remove exposed mechanically attached membrane between membrane screws and plates. Contractor shall not remove any more membrane then can be covered each day. Contractor shall dispose of all materials properly in an approved receptacle. Remove and replace any wet or damaged roof Insulation.

B. Contractor shall mechanically install a 1/4" 4' x 8' Dens Deck® Prime Roof board in accordance to Duro-Last Roofing, Inc. specifications. Fastening determined from pull tests. **Contractor shall use White fasteners over the practice Hockey Rink and round Aatrium front entrance.**

C. Contractor shall furnish and install, via a fully adhered system using Duro-Grip CR-20 a white, **60 mil (90 mil nominal with Fleece) Duro-Fleece®** single-ply membrane roofing system that is fabricated of a weft inserted, low-shrink, anti-wicking polyester fabric and has a thermoplastic coating of PVC material laminated to both sides and a 5.5-ounce per square yard needle punched polypropylene fleece as manufactured by Duro-Last Roofing, Inc. to attain a 20-year NDL warranty.

D. Contractor shall furnish and install, via a fully adhered system using Duro-Last WB II Adhesive a white, **60** mil (90 mil with Fleece) Duro-Fleece® single-ply membrane roofing system that is fabricated of a weft inserted, low-shrink, anti-wicking polyester fabric and has a thermoplastic coating of PVC material laminated to both sides and a 5.5-ounce per square yard needle punched polypropylene fleece as manufactured by Duro-Last Roofing, Inc. Contractor shall encapsulate wall and terminate on the outside of wall and fully adhered flashings using the 60 mill Fleece with Water Based adhesive.

E. Contractor shall terminate roof edge by using a 2-Piece Compression edge metal that is manufactured by Exceptional Metals, Inc. (Detail DF3110). Color to be chosen by building owner or representative. Bareback membrane to be welded to Duro-Fleece® and extend over cleat prior to installation of cover. Assembly to be ES-1 Certified.

F. Contractor shall install all Duro-Last related accessories that include vents, stacks, curbs, scuppers, drains, edgings, etc. No non pre-fab boots are allowed. All boots must fit snug to shaft a min of 8" above finished membrane, top sealed, back sealed and terminated with stainless steel draw band.

G. At Hockey practice section/area exposed air ducts, contractor to fully adhere 60 mil Duro-Fleece® over exposed ducts that extend 36" and terminate using Duro-Last termination bar with caulking.

H. Contractor shall install 30"x60" Duro-Last Trak III Walkway Pads around all serviceable unit sides, ladders and roof hatches per Duro-Last specifications.

I. Contractor shall re-use original support products for all pipes to keep pipes off the exposed membrane. Spacing to be as required by manufacturers published specifications.

J. Contractor shall paint (grey) all exposed vent penetrations.

K. Contractor to provide and install new steps and railing at roof landing leading out of access door.

L. Contractor shall have the roof inspected by the Duro-Last Quality Assurance Technical Representative. Upon satisfaction the Technical Rep shall provide a 20-year NDL warranty. This warranty covers all material and labor as set forth by the printed document.

M. Copies of all Manufacture inspections to be sent upon publication to 4T Partnership and Owner within 5 days of all Manufacture Inspections.

N. Roof to be inspected weekly and published field report of findings to be supplied to Owner and Manufacturer by 4T Partnership.

O. Contractor shall dispose of all debris in an approved facility in accordance with all local, state and federal regulations. The work area will be kept clean daily. Dumpsters and Port-A-Johns to be provided by installing contractor.

SCOPE OF WORK- Existing Modified Roof / Mechanical Roof Area

A. Contractor to prepare existing modified roof by cleaning and removing all debris for acceptance for a new Duro-Last roof. Any identified wet Insulation shall be cut and removed prior. At any low spots in the exposed system contractor will feather out using inverted cap sheet prior to installation of new.

B. Contractor shall furnish and install, via a fully adhered system using Duro-Grip CR-20 a white, **60 mil (90 mil with Fleece) Duro-Fleece®** single-ply membrane roofing system that is fabricated of a weft inserted, low-shrink, anti-wicking polyester fabric and has a thermoplastic coating of PVC material laminated to both sides and a 5.5-ounce per square yard needle punched polypropylene fleece as manufactured by Duro-Last Roofing, Inc. to attain a 20-year NDL warranty.

C. Contractor shall furnish and install, via a fully adhered system using Duro-Last WB II Adhesive a white, **60 mil (90 mil with Fleece) Duro-Fleece®** single-ply membrane roofing system that is fabricated of a weft inserted, low-shrink, anti-wicking polyester fabric and has a thermoplastic coating of PVC material laminated to both sides and a 5.5-ounce per square yard needle punched polypropylene fleece as manufactured by Duro-Last Roofing, Inc. on the parapet walls and curb flashings. This is to include the exposed concrete wall. Contractor shall use 60 mil Duro-Fleece® at all wall, base flashings and curbs.

D. Contractor shall terminate roof edge by using a Pre-painted skirt flashing and terminate just below existing coping and vented wall assembly.

E. Contractor shall install all Duro-Last related accessories that include vents, stacks, curbs, scuppers, drains, edgings, etc. No non pre-fab boots are allowed.

F. Contractor to fully adhere using 60 mil Duro-Fleece over exposed ducts that extend 36” and terminate using Duro-Last termination bar with caulking.

G. Contractor shall cover all multiple pipe penetration curbs with fully adhered membrane installed over metal cover and each pipe penetration to be properly flashed with boots.

H. Contractor shall remove existing counterflashing on inside wall terminate flashing and reinstall counterflashing. At locations of curbs contractor to add metal skirt metal to counter flash any exposed base flashings.

I. Contractor shall install 30”x60” Duro-Last Trak III Walkway Pads around all serviceable unit sides, ladders and roof hatches per Duro-Last specifications.

J. Contractor shall have the roof inspected by the Duro-Last Quality Assurance Technical Representative. Upon satisfaction the Technical Rep shall provide a 20-year NDL warranty. This warranty covers all material and labor as set forth by the printed document.

K. Contractor to cover all exposed concrete walls with fully adhere membrane. Membrane shall be fully adhered up and over parapet wall and terminated using two-piece compression.

L. Parapet walls covered with cap sheet. Contractor will remove any loose or detached cap sheet. Contractor will then fully adhere 60 mil Duro-Fleece® membrane over the exposed wall and terminate below the copping. (Once terminated with term par and caulk contractor to counter flash with skirt metal that extends under the inside face of the coping and counter flashes the termination bar by no less than 2".

M. Contractor to seal and re-caulk all exposed caulking joints in coping be reused at louvers and steel column areas.

N. Contractor shall dispose of all debris in an approved facility in accordance with all local, state and federal regulations. The work area will be kept clean daily. Dumpsters and Port-A-Johns to be provided by installing contractor.

1.1 SECTION INCLUDES

A. Overlay Single-Ply: (Arena Upper & Lower), (Lower Roofs and Canopies), (Modified Roof and Mechanical) and (Canopies) Fully adhered Roof, walls and curb flashings using 80 & 60 mill fully adhered PVC assembly to meet Factory Mutual Sever Hail Rated assembly.

B. Duro-Last® Duro-Fleece Plus™ membrane adhered with Duro-Fleece CR-20 membrane adhesive, splatter applied at all vertical walls and curb flashings.

C. DensDeck® Prime Roof Board, attached with steel screws and plates at Arena, lower and canopy roofs.

D. Prefabricated flashings, corners, parapets, stacks, vents, and related details.

E. Fasteners, adhesives, and other accessories required for a complete roofing installation.

F. Traffic Protection.

1.2 NATIONAL STANDARDS & REFERENCES COMPLIANCE

A. NRCA - The NRCA Roofing and Waterproofing Manual.

B. ASCE 7 - Minimum Design Loads For Buildings And Other Structures.

C. UL - Roofing Materials and Systems Directory, Roofing Systems (TGFU.R10128).

D. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.

E. ASTM D 751 - Standard Test Methods for Coated Fabrics.

F. ASTM D 4434 - Standard Specification for Poly(Vinyl Chloride) Sheet Roofing.

G. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.

H. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

1.3 SYSTEM DESCRIPTION

A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.

B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing membrane manufacturer based on testing and field experience.

C. Physical Properties:

1. Roof product must meet the requirements of Type III PVC sheet roofing as defined by ASTM D 4434 and must meet or exceed the following physical properties.
2. Thickness: 60 mil (90 mil including fleece), nominal, in accordance with ASTM D 751.
3. Thickness Over Scrim: ≥ 32 mil in accordance with ASTM D 751.
4. Breaking Strengths: ≥ 546 lbf. (MD) and ≥ 490 lbf. (XMD) in accordance with ASTM D 751, Grab Method.
5. Elongation at Break: ≥ 21% (MD) and ≥ 39% (XMD) in accordance with ASTM D 751, Grab Method.
6. Heat Aging in accordance with ASTM D 3045: 176 °F for 56 days. No sign of cracking, chipping or crazing. (In accordance with ASTM D 4434).
7. Factory Seam Strength: ≥ 539 lbf. in accordance with ASTM D 751, Grab Method.
8. Tearing Strength: ≥ 104 lbf. (MD) and ≥ 192 lbf. (XMD) in accordance with ASTM D 751, Procedure B.
9. Low Temperature Bend (Flexibility): Pass at -40 °F in accordance with ASTM D 2136.
10. Accelerated Weathering: No cracking, checking, crazing, erosion or chalking after 5,000 hours in accordance with ASTM G 154.
11. Linear Dimensional Change: ≤ 0.16% (MD) and 0.16% (XMD) in accordance with ASTM D 1204 at 176 ± 2 °F for 6 hours.
12. Water Absorption: ≤ 2.2% in accordance with ASTM D 570 at 158 °F for 166 hours.
13. Static Puncture Resistance: ≥ 33 lbs. in accordance with ASTM D 5602.
14. Dynamic Puncture Resistance: ≥ 14.7 ft-lbf. in accordance with ASTM D 5635.

D. Cool Roof Rating Council (CRRC):

1. Membrane must be listed on CRRC website.
   a. Initial Solar Reflectance: ≥ 87%
   b. Initial Solar Reflective Index (SRI): ≥ 110

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Duro-Last data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.
4. Maintenance requirements.

C. Shop Drawings: Indicate insulation pattern, overall membrane layout, field seam locations, joint or termination detail conditions, and location of fasteners.

D. Verification Samples: For each product specified, two samples, representing actual product, color, and finish.

1. 4 inch by 6 inch sample of roofing membrane, of color specified.

2. 4 inch by 6 inch sample of walkway pad.

3. Termination bar, fascia bar with cover, drip edge and gravel stop if to be used.

4. Each fastener type to be used for installing membrane, insulation/recover board, termination bar and edge details.

E. Installer Certification: Certification from the roofing system manufacturer that Installer is approved, authorized, or licensed by manufacturer to install roofing system.

F. Manufacturer's warranties.

1.5 QUALITY ASSURANCE

A. Perform work in accordance with manufacturer's installation instructions.

B. Manufacturer Qualifications: A manufacturer specializing in the production of PVC membranes systems and utilizing a Quality Control Manual during the production of the membrane roofing system that has been approved by and is inspected by Underwriters Laboratories.

C. Installer Qualifications: Company specializing in installation of roofing systems similar to those specified in this project and approved by the roofing system manufacturer.

D. Source Limitations: Obtain components for membrane roofing system from roofing membrane manufacturer.

E. There shall be no deviations from the roof membrane manufacturer's specifications or the approved shop drawings without the prior written approval of the manufacturer.

1.6 REGULATORY REQUIREMENTS

A. Conform to applicable code for roof assembly wind uplift and fire hazard requirements.

B. Fire Exposure: Provide membrane roofing materials with the following fire-test-response characteristics. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.

1. Exterior Fire-Test Exposure:

a. Class A; ASTM E 108, for application and roof slopes indicated.

2. Fire-Resistance Ratings: Comply with ASTM E 119 for fire-resistance-rated roof assemblies of which roofing system is a part.

3. Conform to applicable code for roof assembly fire hazard requirements.

C. Wind Uplift:

1. Roofing System Design: Provide a roofing system designed to resist uplift pressures calculated according to the current edition of the ASCE-7 Specification *Minimum Design Loads for Buildings And Other Structures*.

1.7 PRE-INSTALLATION MEETING

A. Convene meeting not less than one week before starting work of this section.

B. Review methods and procedures related to roof deck construction and roofing system including, but not limited to, the following.

1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing installer, roofing system manufacturer's representative, deck installer, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.
2. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
4. Review structural loading limitations of roof deck during and after roofing.
5. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
6. Review governing regulations and requirements for insurance and certificates if applicable.
7. Review temporary protection requirements for roofing system during and after installation.
8. Review roof observation and repair procedures after roofing installation.

1.8 DELIVERY, STORAGE AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Store roof materials and place equipment in a manner to avoid permanent deflection of deck.

E. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.9 WARRANTY

A. Contractor's Warranty: The contractor shall warrant the roof application with respect to workmanship and proper application for two (2) years from the effective date of the warranty issued by the manufacturer.

B. Manufacturer's Warranty: Must be 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. In addition the warranty must meet the following criteria:

1. Warranty Period: 20 years from date issued by the manufacturer.
2. Must provide positive drainage.
3. No exclusion for damage caused by biological growth.
4. Issued direct from and serviced by the roof membrane manufacturer.
5. Transferable for the full term of the warranty.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Manufacturer: Duro-Last Roofing, Inc., which is located at: 525 Morley Drive, Saginaw, MI 48601. Telephone: 800-248-0280.

B. All roofing system components to be provided or approved by Duro-Last Roofing, Inc.

C. Substitutions: Not permitted.

2.2 ROOFING SYSTEM COMPONENTS

A. Roofing Membrane: Duro-Last® Duro-Fleece Plus™ membrane conforming to ASTM D 4434, type III, fabric-reinforced, PVC, NSF/ANSI 347 Gold or Platinum Certification, and a product-specific third-party verified Environmental Product Declaration. Membrane properties as follows:

1. Thickness:
2. 80 mill (Arena) 60 mil (Mechanical, Lower & Canopies)
3. Exposed Face Color:
    a. White.
4. Minimum recycle content 7% post-industrial and 0% post-consumer.
5. Recycled at end of life into resilient flooring or concrete expansion joints.

B. Accessory Materials: Provide accessory materials supplied by or approved for use by Duro-Last Roofing, Inc.

1. Sheet Flashing: Manufacturer's standard reinforced PVC sheet flashing.
2. Duro-Last Factory Prefabricated Flashings: manufactured using Manufacturer's standard reinforced PVC membrane.
    a. Stack Flashings.
    b. Curb Flashings.
    c. Inside and Outside Corners.
3. Sealants and Adhesives: Compatible with roofing system and supplied by Duro-Last Roofing, Inc.
    a. Duro-Last Water based Adhesive. (Walls & Base Flashings)
    b. Duro-Grip® CR-20 Membrane Adhesive for all three roof areas.
    c. Duro-Caulk® Plus.
    d. Strip Mastic.
4. Slip Sheet: Compatible with roofing system and supplied by Duro-Last Roofing, Inc.
5. Fasteners and Plates: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane and insulation to substrate. Supplied by Duro-Last Roofing, Inc.
    a. #15 Heavy Duty Fasteners.
6. PV Anchors

7. Termination and Edge Details: Supplied by Duro-Last Roofing, Inc.
    a. Termination Bar.
    b. Universal 2-Piece Compression Metal System.
    c. AllTerm™.
8. Vinyl Coated Metal: Supplied by Duro-Last Roofing, Inc. 24 gauge, hot-dipped galvanized, grade 90 metal with a minimum of 17 mil of Duro-Last membrane laminated to one side.

C. Substrate Board:
1. Glass-mat-faced, water-resistant gypsum substrate conforming to ASTM C 1177/C 1177M, DensDeck® Prime Roof Board as manufactured by Georgia-Pacific Corporation.
    a. 1/4 inch thick.

D. Walkways:
1. Provide non-skid, maintenance-free walkway pads in areas of heavy foot traffic and around mechanical equipment.
    a. Duro-Last Roof Trak® III Walkway Pad.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that the surfaces and site conditions are ready to receive work.

B. Verify that the deck is supported and secured.

C. Verify that the deck is clean and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters.

D. Verify that the deck surfaces are dry and free of standing water, ice or snow.

E. Verify that all roof openings or penetrations through the roof are solidly set.

F. If substrate preparation is the responsibility of another contractor, notify Architect of unsatisfactory preparation before proceeding.

G. Prior to re-covering an existing roofing system, conduct an inspection of the roof system accompanied by a representative of the membrane manufacturer or an authorized contractor.
1. Determine required fastener type, length, and spacing.
2. Verify that moisture content of existing roofing is within acceptable limits.
3. Identify damaged areas requiring repair before installation of new roofing.
4. Conduct core cuts as required to verify information required.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Surfaces shall be clean, smooth, free of fins, sharp edges, loose and foreign material, oil, grease, and bitumen.

D. Re-Roofing Over Existing Single-Ply System:
   1. Remove all loose or high fasteners.
   2. Membrane contaminated with bitumen must be immediately cleaned. If cleaning does not remove the bitumen, the contaminated membrane must be replaced, or covered with both a slip sheet and new membrane.
   3. Blisters, buckles and other surface irregularities must be repaired or removed. If the damage is extensive, an approved rigid board insulation or a cover board must be installed.
   4. When the system is smooth or granular-surfaced, any approved slip sheet, insulation or cover board may be used to provide separation of the roof system and new membrane. Duro-Guard fan folds may be used if the surface is pea gravel or crushed stone which is ¼ to 3/8 inch in size and has been leveled and maintained at 4 psf. For larger rock/gravel, utilize an approved rigid insulation or cover board.
   5. If rock/gravel surfacing is removed, an approved fan fold, rigid insulation or cover board must be used. If embedded rock/gravel remains that protrudes out of the deck more than ¼ inch, do not use fan fold board. Instead, use an approved cover board or rigid insulation.
   6. When installing polystyrene insulation over coal tar pitch or asphalt-based roof systems, a slip sheet must be used between the insulation and existing roof.

3.3 INSTALLATION

A. Install insulation in accordance with the roof manufacturer's requirements.

B. Separation Board: DensDeck® Prime Roof Board.

C. Roof Membrane: 80 mill FB & 60 mil, Duro-Last® Duro-Fleece TUFF™ membrane.
   1. Use only membrane adhesive acceptable to the roof manufacturer’s that meets the applicable design requirements.
   2. Cut membrane to fit neatly around all penetrations and roof projections.
   3. Unroll roofing membrane and positioned with a minimum 6 inch overlap along the selvage edge. Roll ends must be butted together and membrane of the same mil thickness, without fleece backing, must be used to form the end lap.
   4. Apply adhesive in accordance with the roof manufacturer’s requirements.
   5. Apply adhesive in splatter pattern.
   6. Follow guidelines outlined in the adhesive’s Product Data Sheet.
   7. Read the adhesive’s Material Safety Data Sheet (MSDS) prior to using the adhesive.

D. Seaming:
   1. Weld overlapping sheets together using hot air. Minimum weld width is 1-1/2 inches.
   2. Check field welded seams for continuity and integrity and repair all imperfections by the end of each work day.

E. Membrane Termination/Securement: All membrane terminations shall be completed in accordance with the membrane manufacturer’s requirements.
   1. Provide securement at all membrane terminations at the perimeter of each roof level, roof section, curb flashing, skylight, expansion joint, interior wall, penthouse, and other similar condition.
   2. Provide securement at any angle change where the slope or combined slopes exceeds two

inches in one horizontal foot.

F. Flashings: Complete all flashings and terminations as indicated on the drawings and in accordance with the membrane manufacturer's requirements.

1. Provide securement at all membrane terminations at the perimeter of each roof level, roof section, curb flashing, skylight, expansion joint, interior wall, penthouse, and other similar condition.

a. Do not apply flashing over existing thru-wall flashings or weep holes.

b. Secure flashing on a vertical surface before the seam between the flashing and the main roof sheet is completed.

c. Extend flashing membrane a minimum of 6 inches (152 mm) onto the main roof sheet beyond the mechanical securement.

d. Use care to ensure that the flashing does not bridge locations where there is a change in direction (e.g. where the parapet meets the roof deck).

2. Penetrations:

a. Flash all pipes, supports, soil stacks, cold vents, and other penetrations passing through the roofing membrane as indicated on the Drawings and in accordance with the membrane manufacturer's requirements.

b. Utilize custom prefabricated flashings supplied by the membrane manufacturer.

c. Existing Flashings: Remove when necessary to allow new flashing to terminate directly to the penetration.

3. Pipe Clusters and Unusual Shapes:

a. Clusters of pipes or other penetrations which cannot be sealed with prefabricated membrane flashings shall be sealed by surrounding them with a prefabricated vinyl-coated metal pitch pan and sealant supplied by the membrane manufacturer.

b. Vinyl-coated metal pitch pans shall be installed, flashed and filled with sealant in accordance with the membrane manufacturer's requirements.

c. Pitch pans shall not be used where prefabricated or field fabricated flashings are possible.

G. Roof Drains:

1. Coordinate installation of roof drains and vents specified in Section 15146 - Plumbing Specialties.

2. Remove existing flashing and asphalt at existing drains in preparation for sealant and membrane.

3. Provide a smooth clean surface on the mating surface between the clamping ring and the drain base.

H. Edge Details:

1. Provide edge details as indicated on the Drawings. Install in accordance with the membrane manufacturer's requirements.

2. Join individual sections in accordance with the membrane manufacturer's requirements.

3. Coordinate installation of metal flashing and counter flashing specified in Section 07620.

4. Manufactured Roof Specialties: Coordinate installation of copings, counter flashing systems, gutters, downspouts, and roof expansion assemblies specified in Section 07710.

I. Walkways:

1. Install walkways in accordance with the membrane manufacturer's requirements.
2. Provide walkways where indicated on the Drawings.
3. Install walkway pads at roof hatches, access doors, rooftop ladders and all other traffic concentration points regardless of traffic frequency. Provided in areas receiving regular traffic to service rooftop units or where a passageway over the surface is required.
4. Do not install walkways over flashings or field seams until manufacturer's warranty inspection has been completed.

J. Water cut-offs:

1. Provide water cut-offs on a daily basis at the completion of work and at the onset of inclement weather.
2. Provide water cut-offs to ensure that water does not flow beneath the completed sections of the new roofing system.
3. Remove water cut-offs prior to the resumption of work.
4. The integrity of the water cut-off is the sole responsibility of the roofing contractor.
5. Any membrane contaminated by the cut-off material shall be cleaned or removed.

3.4 FIELD QUALITY CONTROL

A. The membrane manufacturer's representative shall provide a comprehensive final inspection after completion of the roof system. All application errors shall be addressed and final punch list completed.

3.5 PROTECTION

A. Protect installed roofing products from construction operations until completion of project.

B. Where traffic is anticipated over completed roofing membrane, protect from damage using durable materials that are compatible with membrane.

C. Repair or replace damaged products after work is completed.

END OF SECTION

Earliest start date: "Upon Notice to Proceed"
Expected Pre-Construction date: August 15th, 2019 at 9am.
Number of days to completion 90 days
Following guidelines regarding workdays (per July 29th, 2019 meeting)

- Rain days- defined as days which the closest national weather service forecast 20%+ chance of rain.
- Wind Days- Days where wind speeds exceed 20 mph / 10 mph on Arena Roof area
- Event Center "no workdays"- Days that the Event Center cannot be worked on due to security or scheduled event. (Per provided schedule at July 29th, 2019 meeting)

CONTRACTOR OF RECORD: Duro-Last

Sub- Contractor Company Name: Merit Roofing

PROJECT: Allen Event Center

Address: 2009 East Stacey Road

City: Allen **State**: Texas 75002

Signature of Manufacture/Contractor of Record: Duro-Last

Authorized (Print) Signature Name: _____

TIPS PROPOSAL COST BREAKDOWN

Arena-Upper & Lower Cost: $_____

Lower Roof and all canopies: $_____

Modified Roof-Mechanical: $_____

Bond (Performance and Payment): $_____

TIPS (1%) $_____

TAX: TAX EXEMPT

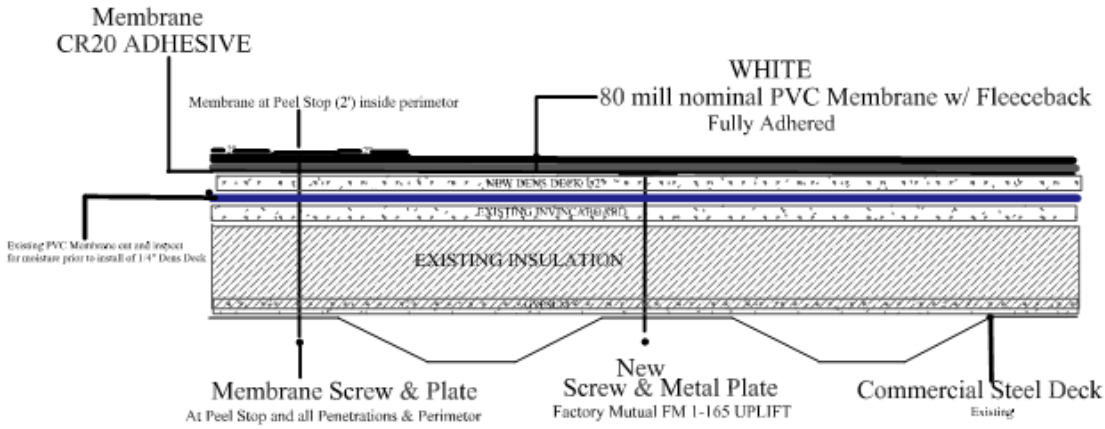
Total: $_____

4.00 Drawings

4.01 See attached

ROOF ASSEMBLY

Upper Roof Areas & All Fully Adhered detached Roof Areas



General Scope of Work

All Upper fully adhered roof area's

Cut existing fully adhered PVC Membrane / Verify Assembly is dry,Clean and smooth
Contractor to mark, document and replace any wet or damaged Insulation
Mechanically attach Primed 1/4" Dens Deck over existing assembly
Fully adhere 80 mill Fleeceback using CR20 adhesive over existing Dens Deck Primed

Additional Items:

Lightning Protection (Disconnect and reconnect by other contractor) Contractor to provide induction anchors at all neccesary locations for reinstallation
Contractor to install Peel-Stop 2' in from perimeter
Contractor to replace all Gutters/ Downspouts
Contractor to install PVC clad metal gravel stop into gutter at perimeter of roof
Contractor to furnish and install Indution anchor hooks as marked for safety line attachment
Contractor to install new roof ladder at deck transition of both ends
Contractor to install walk pads at all access points and ladders / Install walk pads at service side of all units
Contractor to remove and reflash all door thresholds / Door entry areas

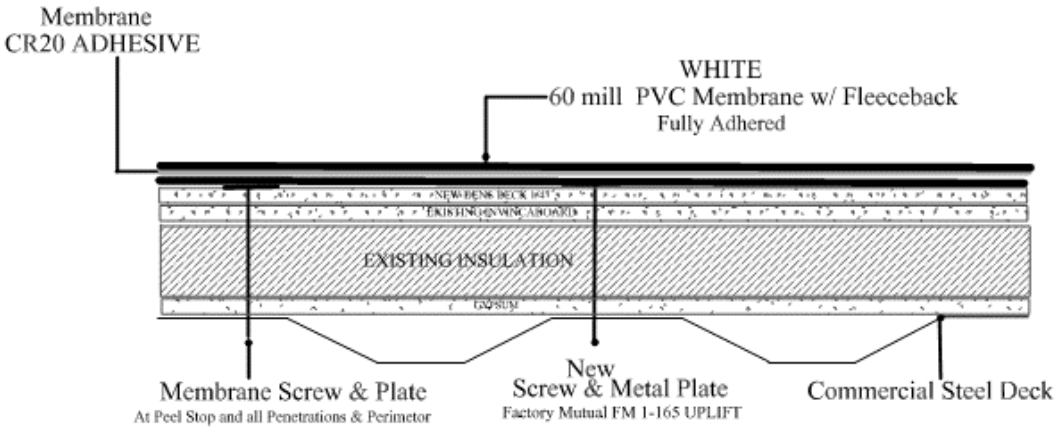
Not to Scale

Detail	ALLEN EVENT CENTER	CONSTRUCTION/RFP DETAIL SLIDE
#1	Allen Convention Center ALLEN, TEXAS	UPPER ARENA ROOF AREA
		4T PARTNERSHIP LLC

Upper Roof Areas / Assembly Drawings

ROOF ASSEMBLY

Lower Roof Areas & Canopies- Mechanically attached locations



GENERAL SCOPE OF WORK:

Remove existing PVC Membrane / Inspect and replace any wet or damage Insulation
Install 1/4" Primed Dens Deck over existing Insulation Assembly
Install Fully Adhered PVC Fleeceback using CR20

Additional Items

Lightning Protection (Detach and Reattach by other contractor) Contractor to provide Lightning Protection induction anchors at same locations
Install 60 mill PVC adhered over 1" Insulation over (1) exposed Air Duct
Install Metal/Steel Landing with two steps at access door entry to Lower Shippeing roof
Contractor to use white fasteners over Hockey Practice Rink to attach new Dens Deck
Contractor to install fully adhered 60 mill FB Membrane to excapsulate all exposed Parapet walls
Contractor to install new PVC induction supports to replace all existing Pipe Supports
Contractor to install new walk pads at all acess locations, Ladders and service side of all units
Contractor to remove and reflash all door thresholds / Door entry to Roof areas

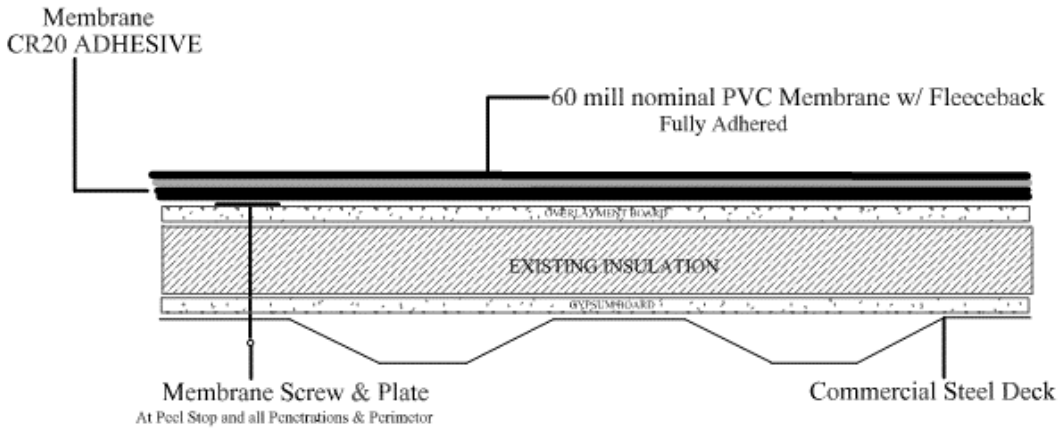
Not to Scale

Detail	ALLEN EVENT CENTER	CONSTRUCTION/RFP DETAIL SLIDE
#2	Allen Convention Center ALLEN, TEXAS	LOWER ROOF ASSEMBLY AREAS
		4T PARTNERSHIP LLC

Lower Roof Area & Canopies (Existing Mechanically attached PVC)

ROOF ASSEMBLY

Mechanical Roof Area - SBS Modified Roof



General Scope of Work

Contractor to sweep and clean surface of SBS Modified Roof Membrane
Contractor to verify and remove all wet or damaged Roof Insulation assembly
Contractor to feather any low spots with cap sheet
Contractor to Fully adhere 60 mill FB membrane with CR20

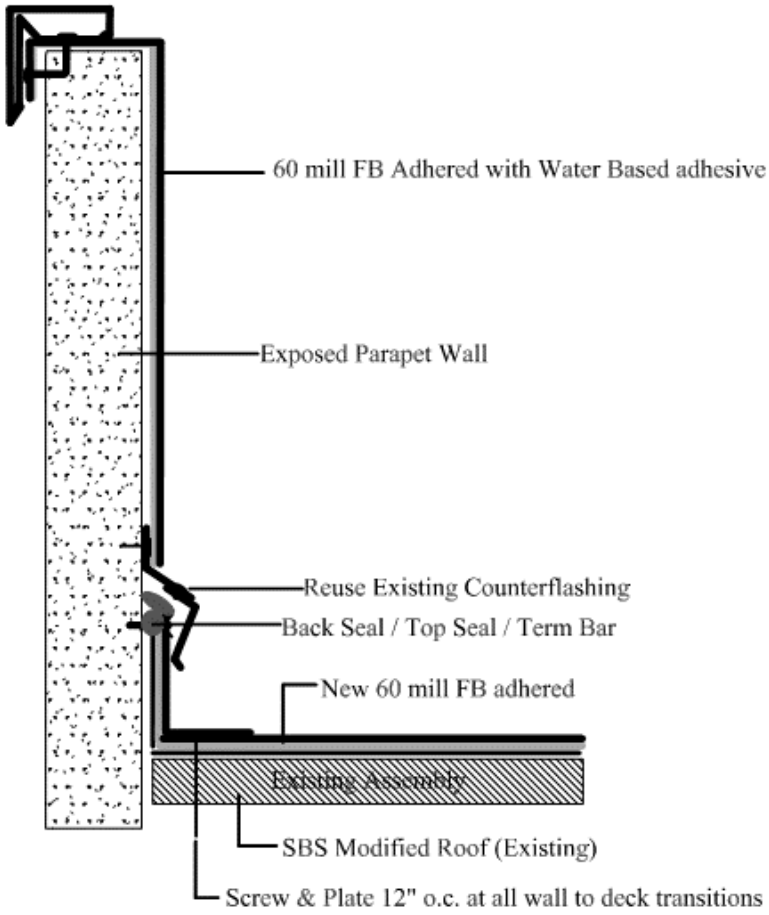
Additional Items:

Lightning Protection (Disconnect & Reconnct by other) Contractor to provide Induction anchor at all Lightning Protection locations
Contractor to install walk pads at all access ladders and Doors to roof / Service side of all units
Contractor to install new scuppers at all current scupper locations
Contractor to install new induction supports at all required locations to support piping up off the roof
Contractor to install 50 mill FB fully adhered at all base flashings
Contractor to cover all exposed parapet walls with full adhered membrane
Contractor to install metal termination at all paraets where membrane extends up and over parapet
Contractor to reuse counterflashing at inter and exterior parapets
Contractor to install "Z" flashing metal were terminating at existing coping locations
Contractor to remove and reflash all door access lacotion
At all raised and detached upper decks contractor to cover all exposed parapets
Duct support legs to be flashed with boot flashing / Remove all pitchpans
Contractor to recaulk all existing caulking locations where coping to remain (under louver locations)
Contractor to install metal skirting at all base flashings to assure Base Flashing Termination is not exposed

Not to Scale

Detail	ALLEN EVENT CENTER	CONSTRUCTION ASSEMBLY
#3	Allen Convention Center ALLEN, TEXAS	MECHANICAL ROOF AREA
		4T PARTNERSHIP LLC

Mechanical Roof Area (SBS Modified Roof Area)



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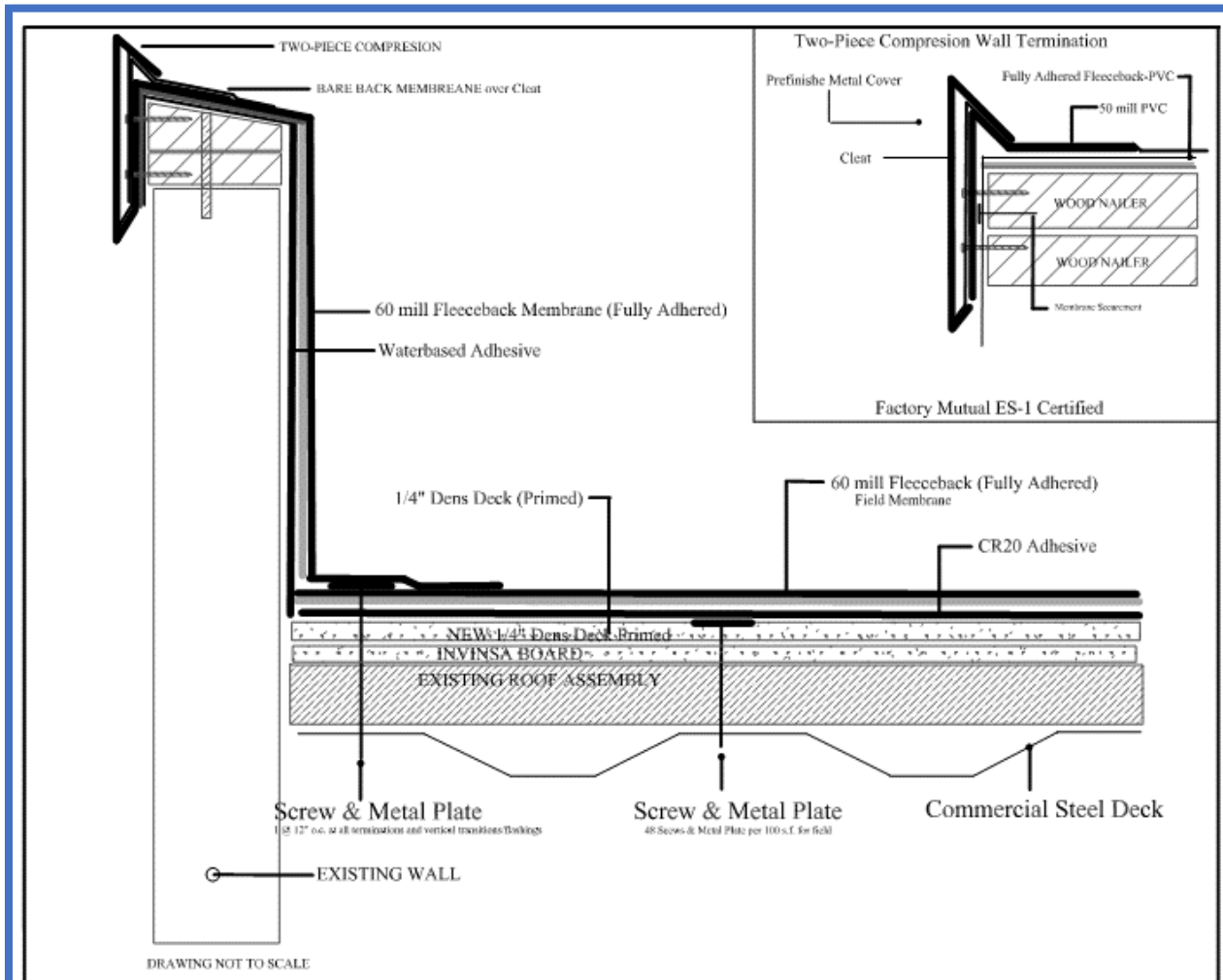
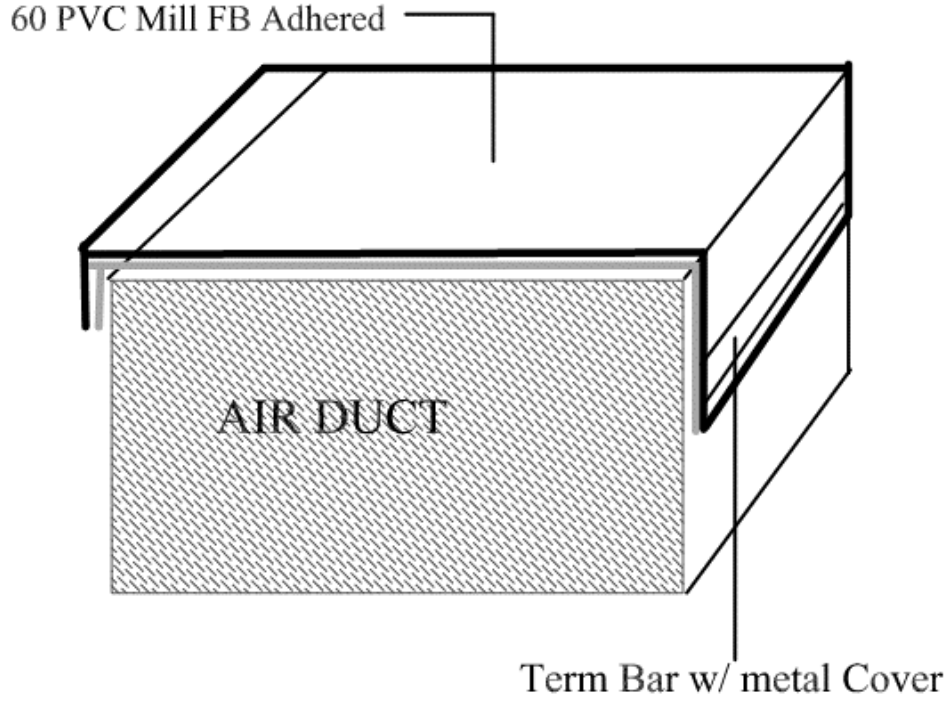
Detail	MECHANICAL ROOF AREA	PARAPET WALL DETAIL
#4	ALLEN EVENT CENTER ALLEN, TEXAS	PARAPET WALL DETAIL 4T PARTNERSHIP LLC



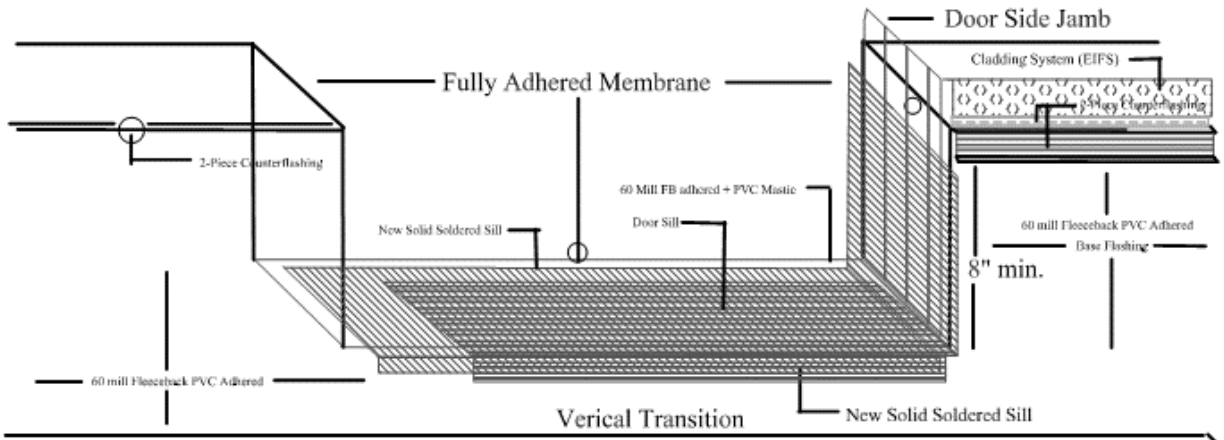
Detail	LOWER ROOF AREAS-PARAPET WALLS	WALL to Deck Transitions
#5	ALLEN EVENT CENTER ALLEN, TEXAS	WALL to Deck / Parapet Wall Assembly 4T PARTNERSHIP LLC



WALL to Deck Transitions

Detail	MECHANICAL ROOF AREA & LOWER ROOF AREA	EXPOSED AC DUCTS
#6	ALLEN EVENT CENTER ALLEN, TEXAS	Membrane adhered over exposed Duct
		4T PARTNERSHIP LLC

Door Frame Assembly



Field of Roof

Not to Scale

Detail	Door Threshold	
#7	Allen Eventt Center Allen, Texas	Door Assembly to Roof 4T PARTNERSHIP LLC