

July 14, 2016
BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA
Y16-782 / ADDENDUM # 3
ORANGE COUNTY CONVENTION CENTER NORTH/SOUTH BUILDING REPAIR OF
DECORATIVE ROOFING FEATURES

Bid Opening Date: July 21, 2016

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to and shall take precedence over the original documents. Underlining indicates additions, deletions are indicated by ~~strikethrough~~.

- A. The Bid Opening Date remains as July 21, 2016.
- B. The following are questions/responses/clarifications:
1. **Self-Leveling Sealer at Large Mullion Cell** – Vistawall drawing 3D-3 shows WFG-1503 mullion with large enclosed cavity inboard of glass. According to ARC drawing 5.03, 5.08 & 5.09 call for drilling 3/4” hole to 2” depth to allow access to interior cell of extrusion. We understand that this refers to the large interior cell (approx. 5” x 5”). ARC Arched Window Report Interior Photos 6-27-14 show shims and sill flashing may not exist at the lower end of the million 5 x 5 cell (for example, photos 072 & 073). Therefore, self-leveling sealant will not be retained by the sill flashing and will exit the mullion to the building interior during installation. It is not apparent how moisture could enter the interior 5 x 5 cell. Please advise if the 5 x 5 cell can be excluded from the self-leveling requirement.

"Response: The sealing of the aluminum curtain wall extrusions at the sill of the system is in addition to the “wet glazing”, therefore we believe the 5 x 5 cell should be treated. The bidder will need to tape or otherwise block the interior joints of the system to contain the sealants being installed. An alternate means / method may be to install the materials in steps to minimize flow and use the previously installed sealant to contain subsequent applications. These concerns and responsibilities contributed to the revisions of the attached Special Conditions (00850). It also defines the probable need to access the interior side of the curtain wall sill prior to the installation of the sealants.
 2. **Foam Fill at Sill Extrusion** – Vistawall drawing 3D-1 shows the sill extrusion with bottom open to the shim and sill flashing. ARC report indicates that sill flashing is not installed with interior turned-up lip. ARC detail 5.03 shows expandable polyurethane foam partially filling sill extrusion. ARC Arched Window Report Interior Photos 6-27-14 show shims and sill flashing is not continuous at the underside of the mullion (for example, photos 072 & 073). If the sill extrusion does not have a “bottom” it is not clear how the expandable polyurethane foam will fill only the desired area. Please clarify.

Response: Refer to response on prior question # 1.

C. CHANGES TO SPECIFICATIONS:

- 1. Section 00850 – Special Conditions:
Added Spec Section to reference to the Roof Report by Base.**
- 2. Section 02010 - Existing Condition Assessment.
Note that on page 1, the weblink to the photos, window shop drawings and earlier reports has been provided. This weblink does not include any drawings or specifications which should be obtain through Procurement.**
- 3. Section 07900 – Joint Protection.
Page 3, paragraphs 1.10/A and 1.10/B have been revised to target warranty coverage.**
- 4. Section 08446 – Aluminum Curtainwall repairs.
Page 3, paragraph 1.7/A has been revised to target warranty coverage.**

D. CHANGES TO DETAILS:

- 1. DETAILS 5.03 THRU 5.07**
 - A. REVISED TO ADDRESS QUESTIONS # 1 & # 2**
- 2. DETAILS 5.09 THRU 5.11**
 - A. REVISED TO ADDRESS QUESTIONS # 1 & # 2**

E. ATTACHMENTS:

- A Specification Sections:**
 - i. 00850– Special Conditions**
 - ii. 02010 – Existing Condition Assessment**
 - iii. 07900 – Joint Protection**
 - iv. 08446 – Aluminum Curtainwall Repairs**
- B. Report: Roof Report by Base.**
- C. Drawing Details:**
 - i. 5.03 thru 5.07**
 - ii. 5.09 thru 5.11**

- F. All other terms and conditions of the IFB remain the same.
- G The Proposer shall acknowledge receipt of this addendum by completing the applicable section in the solicitation or by completion of the acknowledgement information on the addendum. Either form of acknowledgement must be completed and returned not later than the date and time for receipt of the proposal.

Receipt acknowledged by:

Authorized Signature

Date Signed

Title

Name of Firm

PART I GENERAL

1.1 RELATED SECTIONS

- A. Section 00700 – General Conditions
- B. Section 00800 – Supplemental Conditions
- C. Section 01010 – Summary of Work.
- D. Section 01040 – Project Management and Coordination

1.2 SUMMARY

- A. This section defines additional Owner requirements for the performance of the Work of this Contract for the **Vaulted Roofs Modifications and Replacements, at the Orange County Convention Center North / South Building, 9400 Universal Blvd., Orlando, Florida 32869** as define elsewhere in these documents and includes the following:
 - 1. Contractor use of the site.
 - 2. Coordination of work schedule.
 - 3. On-site traffic patterns.
 - 4. Building emergency egress.
 - 5. Protection of existing building.
 - 6. Protection of existing roof systems.
 - 7. Loading of the existing structure.
 - 8. Hurricane and storm preparedness.
- B. The Owner will full occupy the site and building during the entire Repair / Replacement period and normal operations of the facility will continue. Cooperate with the Owner during Repair / Replacement operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations.

1.3 CONTRACTOR USE OF SITE

- A. General: Contractor shall have limited use of facility and grounds for construction operations as indicated on Drawings and/or Specifications by contract limits.
- B. Contractor is to confine all activities associated with this contract to the work areas defined within the documents and/or coordinated with the Owner.
- C. Contractor is to provide an adequate barrier to enclose and confine personnel, equipment and materials to the staging areas defined by these documents and agreed upon with the Owner. If the staging area is visible to the public, provide both a physical and visual barrier to enclose this area.
- D. The Prime Contractor is ultimately responsible for adherence to these requirements by all trades and subcontractors involved with the project, this responsibility shall not be delegated to individual trades or subcontractors.

1.4 COORDINATION OF WORK SCHEDULE

- A. The primary purpose of this facility is to host shows and conventions on a leased basis, any disturbance of these shows and/or conventions can have a significant financial impact for the Owner, therefore coordination of all work with the show and convention schedule as defined by the Owner is required.
- B. The Owner will provide a schedule of the shows / conventions, the specific areas within the building involved, and the activities for each day; the contractor will coordinate with the Owner what construction activities will be permitted each day, and in which locations on a weekly basis. The Owner may update the schedule and re-coordinate work as necessary to accommodate the shows and/or conventions.
- C. Disruptions to the shows and/or conventions would include noise, dust, debris, and any hindrance to their presentation and/or operations.
- D. The Prime Contractor is ultimately responsible for adherence to these scheduling requirements by all trades and subcontractors involved with the project, this responsibility shall not be delegated to individual trades or subcontractors.

1.5 ON-SITE TRAFFIC PATTERNS

- A. The facility and site is to be considered open to the public at all times, unless otherwise directed by and coordinated with the Owner.
- B. All traffic lanes intended for public or commercial use are to be maintained open to traffic at all times, this includes the traffic lanes dedicated to personally operated vehicles (POV), bus lanes, and truck delivery lanes.

1.6 BUILDING EMERGENCY EGRESS

- A. The facility and site is to be considered open to the public at all times, unless otherwise directed by and coordinated with the Owner, therefore all paths of emergency egress shall be maintained open and protected in compliance with all safety codes and regulations.
- B. If a path of egress falls within or under an area of work, adequate overhead protection of that path of egress to comply with all safety regulations is to be provided by the Contractor, unless already adequately protected by an existing overhead structure.
- C. Means and methods for maintenance of emergency paths of egress solely the responsibility of the Contractor, and is to be addressed and defined within the Contractor's Safety Plan for this project.

1.7 PROTECTION OF EXISTING BUILDING

- A. The facility and site is to be considered open to the public at all times, therefore the building interior and exterior are to be maintained in a “show-ready” condition at all times unless otherwise directed by and coordinated with the Owner.
- B. The Contractor is responsible to control all dust and debris within the interior of the building to the satisfaction of the Owner using whatever means and methods the Contractor deems appropriate.
- C. The Contractor is responsible to protect the interior of the building against damage from the materials and/or work methods being used to perform the repair work, including leakage of the sealant being used for the repair of the curtainwall system. The Contractor may use whatever means or methods they deem appropriate, taping or otherwise blocking the lower interior joints of the curtainwall prior to installation of the specified sealants is recommended as a minimum protective measure.
- D. All landscaping and/or exterior surfaces of the site and building are to be protected from damage or defacement due to the work of this contract to the satisfaction of the Owner using whatever means and methods the Contractor deems appropriate. Any damaged landscape materials are to be replaced with the same species of plant, of equal size or larger, as reviewed and accepted by the Owner.
- E. The Prime Contractor is ultimately responsible for adherence to these requirements by all trades and subcontractors involved with the project, this responsibility shall not be delegated to individual trades or subcontractors. The Prime Contractor will be responsible for any damage to the existing landscaping, site and/or building.

1.8 PROTECTION OF EXISTING ROOF SYSTEMS

- A. The Contractor shall have limited use of roof areas of the facility for construction operations, all existing roof areas not included within the area of work are to be adequately protected from damage and/or traffic.
- B. Contractor is to define roof areas needed to access the areas of work, storage of equipment and/or materials, and staging of work for the Owners review and acceptance at or prior to the Pre-construction meeting.
- C. All areas of the roof to be used by the Contractor are to be protected from damage due to traffic by a continuous layer of rigid foam insulation, (1½“ minimum thickness) laid over the existing roof membrane system, followed by two layers of 5/8” (minimum thickness) CDX plywood. The plywood is to be laid in a staggered pattern to offset all joints, then mechanically fastened together to adequately resist the loads and stresses anticipated at that location. No anchorage to the existing roof system or structure is permitted, provide adequate ballast to resist movement and wind uplift. Design and location of the traffic protection is to be reviewed and accepted by the Owner prior to construction.
- D. All areas of the roof not need for use by the Contractor are to be protected from

traffic by a continuous physical barrier with a minimum height of 42 inches. This barrier is to no openings with a minimum opening dimension larger than 12 inches, and shall be properly braced to resist lateral wind loads. Design and location of the barriers are to be reviewed and accepted by the Owner prior to construction.

- E. The Prime Contractor is ultimately responsible for adherence to these protection requirements by all trades and subcontractors involved with the project, this responsibility shall not be delegated to individual trades or subcontractors. The Prime Contractor will be responsible for any damage to the existing roof system.

1.9 LOADING OF THE EXISTING STRUCTURE

- A. General: The existing steel roof deck in the areas of work has been analyzed in regards to load capacity by the structural engineer relative to superimposed loads from the work of this contract, (copies available upon request).
- B. The existing roof deck is capable of supporting a maximum point load of 350 pounds within any single deck span, and an impact load of 230 pounds within any single deck span. These loads are to be considered the limit for which the existing deck is to be considered adequate protection for the space and occupants below the area of work.
- C. Any loads superimposed on the existing structure in excess of those shown above will require analysis by a structural engineer retained by the Contractor. Any significant loads superimposed on the arched roof structures will require analysis by the original building structural engineer, Walter P. Moore and Associates, Inc.
- D. Contractor is to confine all activities associated with this contract to the work areas defined within the documents and/or coordinated with the Owner.
- E. The Prime Contractor is ultimately responsible for adherence to these requirements by all trades and subcontractors involved with the project, this responsibility shall not be delegated to individual trades or subcontractors.

1.10 HURRICANES AND WEATHER RELATED CONCERNS

- A. Because of the buildings' locations and their exposure during the Florida Hurricane season, the Contractor shall be responsible for the tracking, charting and following all information relating to storms.
- B. The Contractor shall make all preparations in anticipation of hurricanes, tropical storms and other types of storms.
- C. The Contractor shall make personnel available to discuss and coordinate all necessary activities affecting preparations for hurricanes and other weather related issues.

SPECIAL CONDITIONS
SECTION 00850

- D. The Contractor shall be responsible for providing all necessary means and methods for securing materials, equipment, temporary facilities, tools and all other associated items being used for the construction of this project. Any and all preparations must begin immediately after issuance of a hurricane watch by the National Hurricane Center.
- E. County will not reimburse the Contractor for costs associated with hurricane preparations and other weather related events.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION 00850

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Existing Project and Site Conditions observed by A/R/C Associates.
 - 2. Bidder Responsibility to verify existing conditions.
 - 3. Internet link to field investigation photographs by A/R/C Associates.

- B. Related Sections:
 - 1. Section 01010 – Summary of Work

1.2 EXISTING PROJECT / SITE CONDITIONS

- A. Key Plan: The Roof Area numbers are indicated in the Specifications and on the Drawings. The Key Plan also indicates assumed deck types as a reference only and is attached at the end of this section.

- B. Field Investigation: A field investigation was conducted by A/R/C Associates, Incorporated on **October 10, 2014** during which time the exposed conditions were observed. Limited existing construction record drawings and specifications were available for A/R/C to verify. The details of the project indicated and existing conditions are based on typical construction practices. A/R/C offers no assurance that all varying conditions have been discovered, or that any Owner furnished information is completely accurate. It shall be the responsibility of each bidder to make additional inspections as they may judge to be a necessity.
 - 1. Our office also took numerous photographs of the various conditions for reference during our design process, those are also being made accessible through a website, the link for which is:

<https://app.box.com/s/qlmub3t5y9p9x7x2nbsq>

- C. Verification of Dimensions: The approximate dimensions shown for each roof area are the result of reconstruction of the building design from field measurements taken by A/R/C Associates. This information is given to assist prospective Bidders in establishing the approximate scope of the project. As a prerequisite for bidding the project, however, all dimensions shall be field verified by each Bidder so that the dimensions and areas utilized in bidding the project will be confirmed or corrected by the Bidder.

**EXISTING CONDITION ASSESSMENT
SECTION 02010**

- D. Condition of Structure:
1. The Owner assumes no responsibility for actual condition of the structure.
 2. Conditions existing at time of inspection for bidding purposes will be maintained by Owner in so far as practicable. However, variations may occur due to the Owner's ongoing operations.
 3. Prior to bidding, inspect and verify visible existing conditions of Project, including elements subject to damage or to movement during reroofing.
 - a. Conflicts and problems shall be reported to the Architect for resolution prior to bidding.
 - b. Failure to report these conflicts places the responsibility on the Prime Contractor to complete the work in accordance with the Documents at no additional cost to the Owner.
 4. During construction, inspect conditions affecting installation of Products, or performance of work.
 - a. Report unsatisfactory or questionable conditions to Architect in writing; do not proceed with work until Architect has provided further instructions.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Silicone building sealants
 - 2. Silicone seals
 - 3. Joint backing and accessories as may be required for refurbishment of metal framed skylight and glazing systems.

- B. Related Sections:
 - 1. Section 07410 – Standing Seam Metal Roofing
 - 2. Section 07620 – Sheet Metal Flashing and Trim
 - 3. Section 08446 – Aluminum Curtainwall Repairs

1.2 REFERENCES

- A. ASTM
 - 1. ASTM C 639 - Standard Test Method for Rheological (Flow) Properties of Elastomeric Sealants.
 - 2. ASTM C 661 - Standard Test Method for Indentation Hardness of Elastomeric Type Sealants by Means of a Durometer
 - 3. ASTM C 719 - Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle).
 - 4. ASTM C 794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.
 - 5. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.
 - 6. ASTM C1135 - Standard Test Method for Determining Tensile Adhesion Properties of Structural Sealants.
 - 7. ASTM C 1184 – Standard Specification for Structural Silicone Sealants
 - 8. ASTM C 1193 - Standard Guide for Use of Joint Sealants.
 - 9. ASTM C 1248 - Standard Test Method for Staining Porous Substrate by Joint Sealants.
 - 10. ASTM C 1330 – Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants
 - 11. ASTM C 1401 – Standard Guide for Structural Sealant Glazing
 - 12. ASTM D 412 - Standard Test Method for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers – Tension
 - 13. ASTM D 624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
 - 14. ASTM D 2240 - Rubber Property Durometer Hardness.

- B. Government Services Administration (GSA), Commercial Item Descriptions (CID):
 - 1. GSA CID A-A-272A - Sealing Compound: Silicone Rubber Base (For Caulking, Sealing, and Glazing in Buildings and Other Structures).
 - 2. GSA CID A-A-1556 -Sealing Compound Elastomeric Type, Single Component (For Caulking, Sealing, and Glazing in Buildings and Other Structures).

1.3 DEFINITIONS

- A. Structural bite: Minimum width or contact surface of structural silicone sealant on both glass panel and support frame. (ASTM C1401).
- B. Glueline thickness: Width of installed structural silicone sealant. (ASTM C1401).

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Products Data: Submit data for silicone sealant, primer, joint backing, and other accessories. Include material safety data sheets (MSDSs) and certifications showing compliance with specified standards.
- C. Shop drawings detailing sealant joints and indicating dimensions, materials, structural bite, glueline thickness, joint profile, and support framing.
- D. Manufacturer's Installation Instructions: Submit special procedures, surface preparation, and perimeter conditions requiring special attention.
- E. Warranty: Include coverage for installed sealants and accessories failing to achieve watertight seal, exhibit loss of adhesion or cohesion, and sealants which do not cure.

1.5 QUALITY ASSURANCE

- A. Perform work in strict accordance with sealant manufacturer's requirements for preparation of surfaces and material installations instructions.
- B. Maintain one copy of each document covering installation requirements on site.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Applicator: Company specializing in performing Work of this section with minimum three years documented experience, and approved by manufacturer.

1.7 MOCKUP

- A. Section 01 40 00 - Quality Requirements: Requirements for mockup.
- B. Construct mockup of sealant joints in conjunction with window, wall and roof mockups specified in other sections.
- C. Construct mockup with specified sealant types and with other components noted.

1. Determine preparation and priming requirements based on manufacturers recommendations; take action necessary for correction of failure of sealant tests on mock-up.
2. Verify sealants, primers, and other components do not stain adjacent materials.

D. Locate where directed by Architect/Engineer.

E. Incorporate accepted mockup as part of Work.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements.

B. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

C. Existing Conditions:

1. Verify existing conditions, such as soundness of perimeter conditions, and varying deck and wall thickness for length of anchoring services required and other visible conditions prior to Bidding.
2. Report conflicts and problems to the Architect for resolution prior to Bidding. Failure to report these conflicts and problems places the responsibility on the Contractor to complete the work in accordance with the Documents at no additional cost to the Owner.
3. Replace or restore to original condition any materials or work damaged during construction.
4. Surfaces not designated to receive the system shall be properly masked or otherwise protected against accidental spillage or application of the material to those areas.
5. Failure to install the work in strict accordance with provisions of this Section is subject to total rejection of work specified herein.

1.9 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Coordinate Work with sections referencing this section.

1.10 WARRANTY

A. Installer's five [5] year workmanship warranty for all work of this project, excluding the curtainwall repair work defined within specification section 08446.

B. Manufacturer's twenty (20) year material warranty for properly installed silicone sealant for all work of this project, excluding the curtainwall repair work defined within specification section 08446.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Dow Corning Corporation, P.O. Box 994, Midland, MI 48686-0994; (800) 248-2481; www.dowcorning.com/construction.

2.2 SEALANT

- A. Dow Corning 795 Silicone Building Sealant: One-component, neutral-cure, RTV (room temperature vulcanizing) silicone rubber sealant for structural and non-structural glazing, structural attachment of panel systems, and above-grade weathersealing joints with most common construction materials.
1. ASTM C920, Type S, Grade NS, Class 50, Use NT, G, A, and O.
 2. ASTM C1184, Type S, Use G, A, and O.
 3. GSA CID A-A-272A - Sealing Compound: Silicone Rubber Base (For Caulking, Sealing, and Glazing in Buildings and Other Structures).
 4. GSA CID A-A-1556 -Sealing Compound Elastomeric Type, Single Component (For Caulking, Sealing, and Glazing in Buildings and Other Structures).
 5. Characteristics /Physical Properties:
 - a. Color: Black / Gray
 - b. Curing time: 7 to 14 days
 - c. Tack-free time: 3 hours
 - d. Working time: 20 to 30 minutes
 - e. Curing time: 7 to 14 days
 - f. Full adhesion time: 14 to 21 days
 - g. Flow, sag, or slump: 0.1 inch, tested in accordance with ASTM C639.
 - h. Volatile organic compound (VOC) content: 28 grams/liter
 - i. Volatile organic compound (VOC) content: 28 grams/liter
 - j. Cured sealant properties after 21 days at [77 degrees F] [25 degrees C] and 50 percent relative humidity.
 - 1) Joint movement capability: Plus and minus 50 percent, tested in accordance with ASTM C719.
 - 2) Hardness: 35-durometer hardness, Shore A, tested in accordance with ASTM D2240.
 - 3) Maximum peel strength: [32 ppi] [5.7 kg/cm], tested in accordance with ASTM C794.
 - 4) Tensile adhesion modulus, tested in accordance with ASTM C1135:
 - i. At 25 percent extension: 45 psi.
 - ii. At 50 percent extension: 60 psi.
 - 5) Staining: None on concrete, marble, granite, limestone, and brick, when tested in accordance with ASTM C1248.
 - 6) Service temperature range: Minus 40 to plus 300 degrees F
 - 7) Weathering after 10,000 hours, tested in accordance with ASTM C1135 using QUV Weatherometer:
 - i. At 25 percent extension: 35 psi.
 - ii. At 50 percent extension: 50 psi.

- B. *Dow Corning* 123 Silicone Seal: Preformed, ultra-low modulus silicone extrusion for bonding to substrates with silicone sealant.
 - 1. Roll width: Approximately 2 inches (field verify)
 - 2. Color: Black
 - 3. Characteristics /Physical Properties:
 - a. Hardness: 25-durometer hardness, Shore A, tested in accordance with ASTM C 661.
 - b. Properties, tested in accordance with ASTM D 412:
 - 1) Tensile strength: 400 psi.
 - 2) Elongation: 400 percent
 - c. Tear strength, die B: [100 ppi] [17.5 kN/m], tested in accordance with ASTM C 624.
 - d. Surface: Grooved to facilitate bending.

2.3 ACCESSORIES

- A. Substrate Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Sealant backing: Provide backing complying with ASTM C 1330 Type B non-absorbent, bi-cellular material with surface skin or as recommended by sealant manufacturer.
 - 1. Size: Greater than joint opening by 25% minimum.
- D. Bond Breaker: Pressure sensitive tape to prevent adhesion to joint fillers or joint surfaces at back of joint and allow sealant movement.
 - 1. Type: Polyethylene or other plastic tape recommended by sealant manufacturer.
- E. Glazing setting blocks and spacers: Compatible with silicone sealant and recommended by sealant manufacturer.
 - 1. Acceptable materials: Silicone, Alcryn, polyurethane foam type, and vinyl extrusions.
 - 2. Unacceptable materials: EPDM, neoprene, Santoprene, Krayton, and other similar organic materials are not acceptable.
 - 3. Prior to installation, setting blocks and spacers shall be tested for compatibility.
- F. Masking tape: Non-staining, non-absorbent type compatible with silicone sealant and adjacent surfaces

PART 3 EXECUTION

3.1 GENERAL

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Prepare substrates and apply silicone sealant and silicone seal in accordance with manufacturer's instructions and reviewed submittals
- C. Site install glass panels specified in Section 08 88 00 – Metal Framed Skylight Glazing
- D. To ensure compatibility and correct sizes, coordinate provision of glass, support framing, and sealants
- E. Handle, store, and apply materials in compliance with applicable Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), volatile organic compound (VOC), and other regulations and manufacturer's material safety data sheets (MSDSs).
- F. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

- A. Inspect existing joints to be repaired and new substrates to receive silicone seal. Ensure surfaces are clean, dry, and free of frost, dust, dirt, grease, oil, curing compounds, form release agents, laitance, efflorescence, mildew, and previous films and coatings.
 - 1. Ensure surfaces are clean, dry, and free of frost, dust, dirt, grease, oil, curing compounds, form release agents, laitance, efflorescence, mildew, and previous films and coatings.
 - 2. Ensure that metal framing surfaces to receive glazing are flat and smooth without slots, serrations, and other irregularities.
 - 3. Verify aluminum framing has alodine, anodized, fluorocarbon paint, polyester powder coat finish, or other acceptable finish or material. Mill-finish aluminum is not an acceptable substrate for structural silicone sealant.
- B. Remove existing joint sealant materials. Clean joints and remove joint sealant residue. Repair deteriorated or damaged substrates as recommended by silicone sealant manufacturer to provide suitable substrate. Allow patching materials to cure.
- C. Clean substrates to receive silicone sealant and silicone seal.
 - 1. Porous surfaces: Abrasive-clean followed by blasting with oil-free compressed air.
 - 2. Nonporous surfaces: Use two-cloth solvent wipe in accordance with ASTM C 1193.
- D. Adhesion test: Apply silicone sealant to small area and perform adhesion test in accordance with ASTM C1193, Method A, to determine if primer is required to achieve

adequate adhesion. If necessary, apply primer at rate and in accordance with manufacturer's instructions.

- E. Masking: Apply masking tape as required outlining area where silicone seal will be applied, to protect adjacent surfaces, to ensure straight bead line and facilitate cleaning.
- F. Protect elements surrounding Work of this section from damage or disfiguration.

3.3 INSTALLATION

A. **Silicone Sealant:**

1. Spacers and setting blocks: Install as indicated on drawings and reviewed shop drawings. Ensure joint openings and recesses are accurately sized.
2. Sealant backing: Install without gaps, twisting, stretching, or puncturing backing material. Use gage to ensure uniform depth to achieve correct profile, coverage, and performance.
3. Bond breaker: Install on backside of joint where backing is not feasible.
4. Temporary glass support: Use temporary fasteners, clips, two-sided adhesive, and other means to retain glass panels while sealant is applied and allowed to cure as approved by the design professional.
5. Use sealant-dispensing equipment to push sealant bead into opening. Fill joint opening to full and proper configuration. Apply in continuous operation. Ensure sealant fills entire joint and firmly contacts all surfaces. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
6. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
7. Measure joint dimensions and size joint backers to achieve the following, unless otherwise indicated:
 - a. Minimum joint width: 1/4"; use 1:1 width/depth ratio.
 - b. Width/depth ratio of 2:1.
 - c. Neck dimension no greater than 1/2 of joint width.
 - d. Surface bond area on each side not less than 75 percent of joint width.
8. Install bond breaker where joint backing is not used
9. Tooling: Before skinning or curing begins, tool sealant with metal spatula:
 - a. Provide concave, smooth, uniform, sealant finish. Eliminate air pockets and ensure complete contact on both sides of joint opening.
 - b. Tool joints with one continuous stroke.
 - c. Do not use water, soap, or alcohol to facilitate tooling.

B. **Silicone Seal:**

1. Within 10 minutes of sealant application, press silicone extrusion into wet sealant. Apply consistent pressure with roller to ensure uniform contact with 3/8 inch minimum bonding area.
2. Complete horizontal joints prior to vertical joints. Lap vertical sealant over horizontal joints. At joint ends, cut extrusion with razor knife.

- C. Perform installation in accordance with ASTM C1193 and manufacturer's instructions.

- D. Cleaning: Remove masking tape and excess sealant.
 - 1. Uncured sealant: Within 10 minutes of application, remove uncured sealant with solvent-dampened cloth, wearing solvent-resistant gloves.
 - 2. Completely cured sealant: Carefully cut or scrape away.
 - 3. Neck dimension no greater than 1/2 of joint width.
 - 4. Surface bond area on each side not less than 75 percent of joint width.
- E. Allow sealant to fully cure before adhesive is stressed. Use test specimens formed at time of sealant application to verify curing time. When cured, remove temporary glass supports
- F. Ensure installed sealant is not painted as part of other construction operations.

3.4 FIELD QUALITY CONTROL

- A. Perform adhesion tests in accordance with manufacturer's instructions and ASTM C1193, Method A, Field-Applied Sealant Joint Hand-Pull Tab.
 - 1. Perform 5 tests for first 1,000 linear feet of applied silicone sealant and 1 test for each 1,000 feet of applied sealant thereafter or perform 1 test per floor per building elevation minimum.
 - 2. For sealants applied between dissimilar materials, test both sides of joint.
- B. Sealants and/or Seals failing adhesion test shall be removed, substrates cleaned, sealants and seals re-installed, and re-testing performed.
- C. Follow all requirements and maintain test log for structural/weatherseal applications and submit report to Architect indicating tests, locations, dates, results, and remedial actions.

3.5 FINAL CLEANING

- A. Section 01700 - Execution and Closeout Requirements: Final Cleaning.
- B. Clean adjacent soiled building surfaces.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01700 - Execution and Closeout Requirements: Protecting Installed Construction.
- B. Protect sealants until cured.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Removal, modification and reinstallation of cosmetic trim on curtainwall.
 - 2. Drilling curtainwall components and injection of waterproofing fillers.
 - 3. Installation of new fabricated aluminum sill flashing.
 - 4. Installation of mechanical anchorage system for cosmetic trim.
 - 5. Pre-cleaning of existing glass and framing prior to refurbishment activities.
 - 6. Removal and disposal of existing sealant material.
 - 7. Application of sealant (wet glazing) to existing curtainwall system.
 - 8. Preservative treatment of wood where indicated.

- B. Related Sections:
 - 1. Section 07620 – Sheet Metal Flashing and Trim.
 - 2. Section 07900 – Joint Protection / Sealants

1.2 REFERENCES

- A. American Architectural Manufacturers Association (AAMA)
 - 1. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
 - 2. AAMA 800 - Voluntary Specifications and Test Methods for Sealants
 - 3. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.
 - 4. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Architectural Extrusions and Panels.
 - 5. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Architectural Extrusions and Panels.

- B. American National Standards Institute (ANSI)
 - 1. ANSI Z 97.1 - Safety Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings.

- C. American Society of Civil Engineers (ASCE)
 - 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

- D. Consumer Product Safety Commission (CPSC)
 - 1. CPSC 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.

- E. Glass Association of North America (GANA):
 - 1. Engineering Standards Manual.
 - 2. Glazing Manual.
 - 3. Laminated Glass Design Guide.

- F. Flat Glass Manufacturers Association (FGMA).

ALUMINUM CURTAINWALL REPAIRS
SECTION 08446

- G. Insulating Glass Manufacturers Alliance (IGMA):
 - 1. IGMA TB-3001 - Sloped Glazing Guidelines.
 - 2. SIGMA TM-3000 - Glazing Guidelines for Sealed Insulating Glass Units.

1.3 SUBMITTALS

- A. Section 01300 - Submittal Procedures
- B. Product Data: Submit technical data on
 - 1. Sealants and filler compounds, (see also section 07900).
 - 2. Metal flashing materials and components, (see also 07620).
 - 3. Fasteners and Anchors, (see also section 07620).
- C. Closeout Submittals: Provide according to section 01700 and the following:
 - 1. Project record documents.
 - 2. Installer's written warranty.

1.4 QUALIFICATIONS

- A. Applicator: Company specializing in performing Work of a similar nature to the designated repairs within this section with minimum three years documented experience

1.5 MOCK-UP

- A. Prior to curtainwall repairs beginning in earnest, execute a mock-up of repairs which are to be performed at a location designated by the Architect and Owner. The mock-up will serve to clarify the repair methods and procedures for all parties involved and establish a quality of work for the remainder of the project.
 - 1. Mock-up shall include adequate area along the lower portion of the existing curtainwall to demonstrate the repairs at a vertical mullion, the transition from a level to curved sill, and repairs at an intermediate radiused mullion.
 - 2. Repairs to be demonstrated shall include drilling and filling of extrusions, application of new sill flashing, installation of trim cap anchor system and wet glazing with sealant.
 - 3. Notify architect and owner one week in advance of beginning work on the mock-up, due to the complexity of the repairs, the architect will schedule periodic visits during execution of the mock-up to assist with interpretation of design intent.
 - 4. Once the mock-up is completed and approved by the architect and owner, it shall be maintained in undisturbed condition as long as possible as a construction aid prior to being integrated into the finished work.

1.6 QUALITY ASSURANCE

- A. Perform work in strict accordance with sealant manufacturer's requirements for preparation of surfaces and material installations instructions.

ALUMINUM CURTAINWALL REPAIRS
SECTION 08446

- B. Maintain one copy of each document covering installation requirements on site.
- C. Perform Work in accordance with current Florida Building Code requirements.

1.7 WARRANTY

- A. Provide a two (2) year material and workmanship warranty under provisions of Section 01700 –Execution and Closeout Requirements **for the work of this section.**

PART 2 PRODUCTS

2.1 MATERIALS

- A. Aluminum Sheet: ASTM B 209, alloy 3003, temper H14, AA-C22A41 mill finish or prefinished where exposed to view with a factory applied, full strength fluoropolymer finish. Paint shall contain 75% KYNAR 500 resin and applied, (0.80 mil thickness), over manufacturer's primer, (0.20 mil thickness), with a total system thickness of 1.00 mil per ASTM D 1400. Gloss to be 20-30% per ASTM d 523 at 60 degrees. See section 07620 for accessories and associated materials.
- B. Sealant at Glazing: Dow Corning 795 one-component, neutral-cure, room temperature vulcanizing, silicone rubber sealant. See section 07900 for additional information.
- C. Sealant / Filler within Curtainwall: Dow Corning 1299 one-component, neutral-cure, room temperature vulcanizing, self-leveling silicone rubber sealant intended for use in fenestration assemblies. See section 07900 for additional information
 - 1. Validated AAMA Component as Narrow Joint Seam Sealer per Specification 803.3-10, Type II.
 - 2. Characteristics /Physical Properties:
 - a. Color: Clear
 - b. Curing time: 7 to 14 days
 - c. Volatile organic compound (VOC) content: less than 60 grams/liter.

2.2 ACCESSORIES

- A. Substrate Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Sealant backing: Provide backing complying with ASTM C 1330 Type B non-absorbent, bi-cellular material with surface skin or as recommended by sealant manufacturer.
 - 1. Size: Greater than joint opening by 25% minimum.

ALUMINUM CURTAINWALL REPAIRS
SECTION 08446

- D. Bond Breaker: Pressure sensitive tape to prevent adhesion to joint fillers or joint surfaces at back of joint and allow sealant movement.
 - 1. Type: Polyethylene or other plastic tape recommended by sealant manufacturer.
- E. Glazing setting blocks and spacers: Compatible with silicone sealant and recommended by sealant manufacturer.
 - 1. Acceptable materials: Silicone, Alcryn, polyurethane foam type, and vinyl extrusions.
 - 2. Unacceptable materials: EPDM, neoprene, Santoprene, Krayton, and other similar organic materials are not acceptable.
 - 3. Prior to installation, setting blocks and spacers shall be tested for compatibility.
- F. Masking tape: Non-staining, non-absorbent type compatible with silicone sealant and adjacent surfaces.

PART 3 EXECUTION

3.1 GENERAL

- A. Contractor to verify the existing conditions before starting work. Inspect all surfaces and components to confirm conditions are acceptable for the specified work.
- B. Handle, store, and apply materials in compliance with applicable Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), volatile organic compound (VOC), and other regulations and manufacturer's material safety data sheets (MSDSs).

3.2 PREPARATION

- A. Remove the cosmetic trim cap extrusions and associated spline clips; label, store and protect for reinstallation.
- B. Grind or cut to remove the lower spline extrusion along the window sill as indicated in the project details.
- C. Clean all surfaces to receive new flashings and sealants in accordance with the manufacturer's instructions and approved submittals.
- D. Inspect existing joints to be repaired and new substrates to receive silicone seal. Ensure surfaces are clean, dry, and free of frost, dust, dirt, grease, oil, curing compounds, form release agents, laitance, efflorescence, mildew, and previous films and coatings.
 - 1. Ensure surfaces are clean, dry, and free of frost, dust, dirt, grease, oil, curing compounds, form release agents, laitance, efflorescence, mildew, and previous films and coatings.

ALUMINUM CURTAINWALL REPAIRS

SECTION 08446

2. Ensure that metal framing surfaces to receive glazing are flat and smooth without slots, serrations, and other irregularities.
 3. Verify aluminum framing has alodine, anodized, fluorocarbon paint, polyester powder coat finish, or other acceptable finish or material. Mill-finish aluminum is not an acceptable substrate for structural silicone sealant.
- E. Remove existing joint sealant materials. Clean joints and remove joint sealant residue. Repair deteriorated or damaged substrates as recommended by silicone sealant manufacturer to provide suitable substrate. Allow patching materials to cure.
- F. Clean substrates to receive silicone sealant and silicone seal.
1. Porous surfaces: Abrasive-clean followed by blasting with oil-free compressed air.
 2. Nonporous surfaces: Use two-cloth solvent wipe in accordance with ASTM C 1193.
- G. Adhesion test: Apply silicone sealant to small area and perform adhesion test in accordance with ASTM C1193, Method A, to determine if primer is required to achieve adequate adhesion. If necessary, apply primer at rate and in accordance with manufacturer's instructions.
- H. Masking: Apply masking tape as required outlining area where silicone seal will be applied, to protect adjacent surfaces, to ensure straight bead line and facilitate cleaning.
- I. Protect elements surrounding Work of this section from damage or disfiguration.

3.3 INSTALLATION

- A. **Silicone Sealant:**
1. Spacers and setting blocks: Install as indicated on drawings and reviewed shop drawings. Ensure joint openings and recesses are accurately sized.
 2. Sealant backing: Install without gaps, twisting, stretching, or puncturing backing material. Use gage to ensure uniform depth to achieve correct profile, coverage, and performance.
 3. Bond breaker: Install on backside of joint where backing is not feasible.
 4. Temporary glass support: Use temporary fasteners, clips, two-sided adhesive, and other means to retain glass panels while sealant is applied and allowed to cure as approved by the design professional.
 5. Use sealant-dispensing equipment to push sealant bead into opening. Fill joint opening to full and proper configuration. Apply in continuous operation. Ensure sealant fills entire joint and firmly contacts all surfaces. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
 6. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
 7. Measure joint dimensions and size joint backers to achieve the following, unless otherwise indicated:
 - a. Minimum joint width: 1/4"; use 1:1 width/depth ratio.

ALUMINUM CURTAINWALL REPAIRS
SECTION 08446

- b. Width/depth ratio of 2:1.
- c. Neck dimension no greater than 1/2 of joint width.
- d. Surface bond area on each side not less than 75 percent of joint width.
- 8. Install bond breaker where joint backing is not used
- 9. Tooling: Before skinning or curing begins, tool sealant with metal spatula:
 - a. Provide concave, smooth, uniform, sealant finish. Eliminate air pockets and ensure complete contact on both sides of joint opening.
 - b. Tool joints with one continuous stroke.
 - c. Do not use water, soap, or alcohol to facilitate tooling.

B. Silicone Seal:

- 1. Within 10 minutes of sealant application, press silicone extrusion into wet sealant. Apply consistent pressure with roller to ensure uniform contact with 3/8 inch minimum bonding area.
- 2. Complete horizontal joints prior to vertical joints. Lap vertical sealant over horizontal joints. At joint ends, cut extrusion with razor knife.

C. Perform installation in accordance with ASTM C1193 and manufacturer's instructions.

D. Cleaning: Remove masking tape and excess sealant.

- 1. Uncured sealant: Within 10 minutes of application, remove uncured sealant with solvent-dampened cloth, wearing solvent-resistant gloves.
- 2. Completely cured sealant: Carefully cut or scrape away.
- 3. Neck dimension no greater than 1/2 of joint width.
- 4. Surface bond area on each side not less than 75 percent of joint width.

E. Allow sealant to fully cure before adhesive is stressed. Use test specimens formed at time of sealant application to verify curing time. When cured, remove temporary glass supports

F. Ensure installed sealant is not painted as part of other construction operations.

3.4 FIELD QUALITY CONTROL

A. Perform adhesion tests in accordance with manufacturer's instructions and ASTM C1193, Method A, Field-Applied Sealant Joint Hand-Pull Tab.

- 1. Perform 5 tests for first 1,000 linear feet of applied silicone sealant and 1 test for each 1,000 feet of applied sealant thereafter or perform 1 test per floor per building elevation minimum.
- 2. For sealants applied between dissimilar materials, test both sides of joint.

B. Sealants and/or Seals failing adhesion test shall be removed, substrates cleaned, sealants and seals re-installed, and re-testing performed.

C. Follow all requirements and maintain test log for structural/weatherseal applications and submit report to Architect indicating tests, locations, dates, results, and remedial actions.

ALUMINUM CURTAINWALL REPAIRS
SECTION 08446

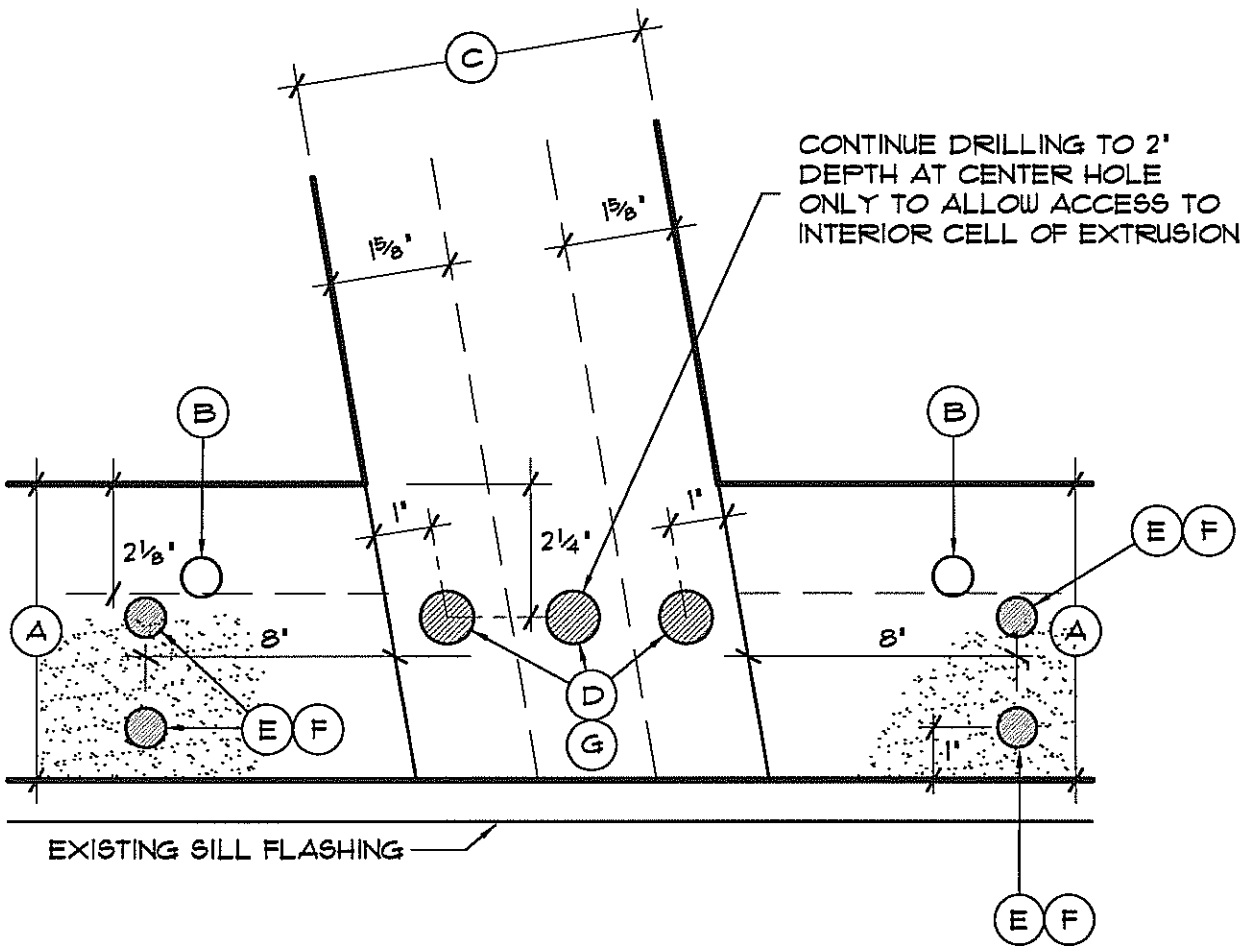
3.5 FINAL CLEANING

- A. Section 01700 - Execution and Closeout Requirements: Final Cleaning.
- B. Clean adjacent soiled building surfaces.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

- A. Section 01700 - Execution and Closeout Requirements: Protecting Installed Construction.
- B. Protect sealants until cured.

END OF SECTION



- A. EXISTING 5" ALUM. SILL EXTRUSION
- B. EXISTING 1/4" φ WEEP HOLES
- C. EXISTING 5" ALUM. VERTICAL MULLION EXTRUSION.
- D. DRILL 3-3/4" φ HOLES IN VERT. MULLION AS SHOWN
- E. DRILL 1/2" φ HOLE 8" EACH SIDE OF VERT. MULLION IN SILL EXTRUSION.
- F. PARTIALLY FILL SILL EXTRUSION W/ EXPANDABLE POLYURETHANE FOAM TO BLOCK AND ISOLATE THE REMAINDER OF THE SILL EXTRUSION CAVITY FROM VERT. MULLION CONDITION.
- G. FILL THE REMAINING CAVITIES AT SILL & VERTICAL MULLION WITH SELF-LEVELING POURABLE SEALER UP TO THE ELEVATION OF THE 3 HOLES.

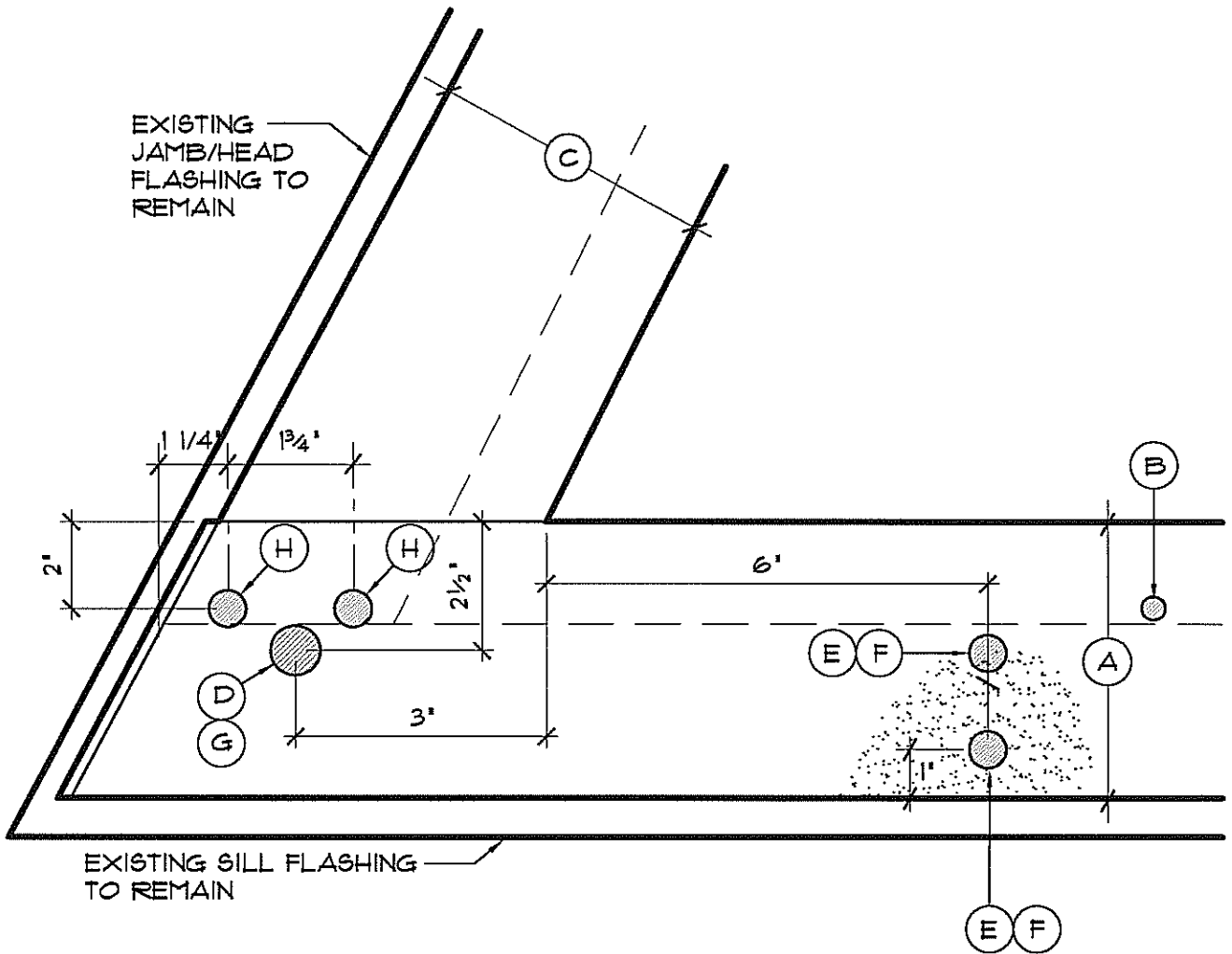
REVISED 7-12-16

A/R/C Associates Incorporated
 601 NORTH FERN CREEK AVENUE SUITE 100
 ORLANDO, FLORIDA 32803-4899
 TEL (407)898-7875 FAX (407)898-8043

TITLE WATERPROOFING REPAIRS
 AT VERTICAL MULLION

SCALE 3" = 1'-0"

NO.
5.03



- A. EXISTING 5' ALUM. SILL EXTRUSION
- B. EXISTING 1/4"φ WEEP HOLES
- C. EXISTING 5' ALUM. VERTICAL JAMB EXTRUSION.
- D. DRILL 1/2"φ HOLE IN SILL EXTRUSION AS SHOWN
- E. DRILL 1/2"φ HOLE 6' IN FROM JAMB EXTRUSION.
- F. PARTIALLY FILL SILL EXTRUSION W/ EXPANDABLE POLYURETHANE FOAM TO BLOCK AND ISOLATE THE REMAINDER OF THE SILL EXTRUSION CAVITY FROM VERT. MULLION CONDITION.
- G. FILL THE REMAINING CAVITIES AT SILL & VERTICAL MULLION WITH SELF-LEVELING POURABLE SEALER UP TO THE ELEVATION OF THE 3 HOLES.
- H. NEW 1/4"φ WEEP HOLES DRILLED IN ALUM. SILL EXTRUSION.

REVISED 7-12-16



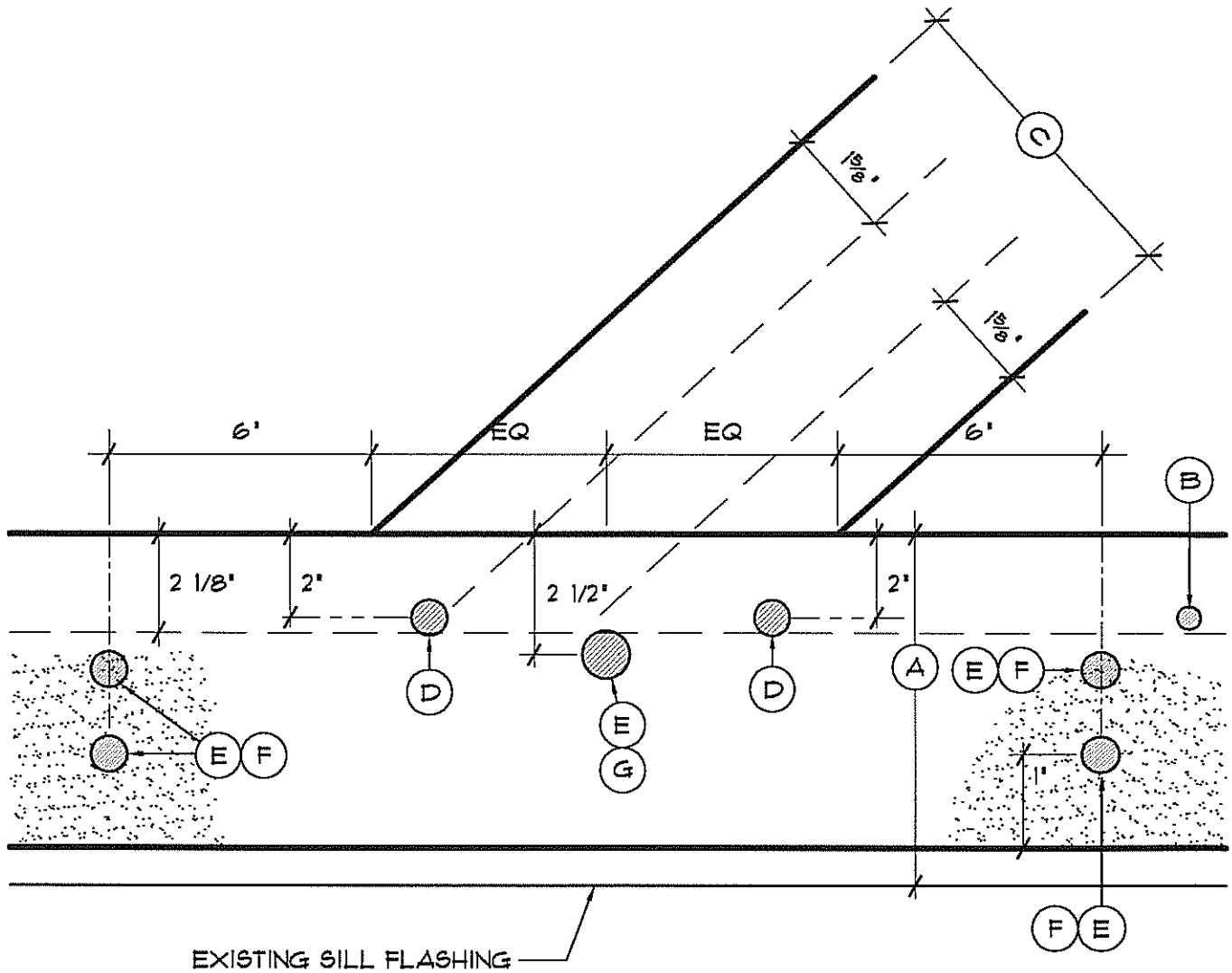
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 ORLANDO, FLORIDA 32803-4899
 TEL (407)896-7875 FAX (407)896-6043

TITLE WATERPROOFING REPAIRS
 AT JAMB OF WINDOW SILL

SCALE 3" = 1'-0"





- | | |
|---|--|
| <p>A. EXISTING 5" ALUM. SILL EXTRUSION</p> <p>B. EXISTING 1/4"φ WEEP HOLES</p> <p>C. EXISTING 5" ALUM. VERTICAL MULLION EXTRUSION.</p> <p>D. NEW 1/4"φ WEEP HOLES DRILLED IN ALUM. SILL EXTRUSION</p> <p>E. DRILL 1/2"φ HOLE IN SILL EXTRUSION AS SHOWN</p> | <p>F. PARTIALLY FILL SILL EXTRUSION W/ EXPANDABLE POLYURETHANE FOAM TO BLOCK AND ISOLATE THE REMAINDER OF THE SILL EXTRUSION CAVITY FROM VERT. MULLION CONDITION.</p> <p>G. FILL THE REMAINING CAVITIES AT SILL EXTRUSION WITH SELF-LEVELING POURABLE SEALER UP TO THE ELEVATION OF THE FILLER HOLE.</p> |
|---|--|

REVISED 7-12-16

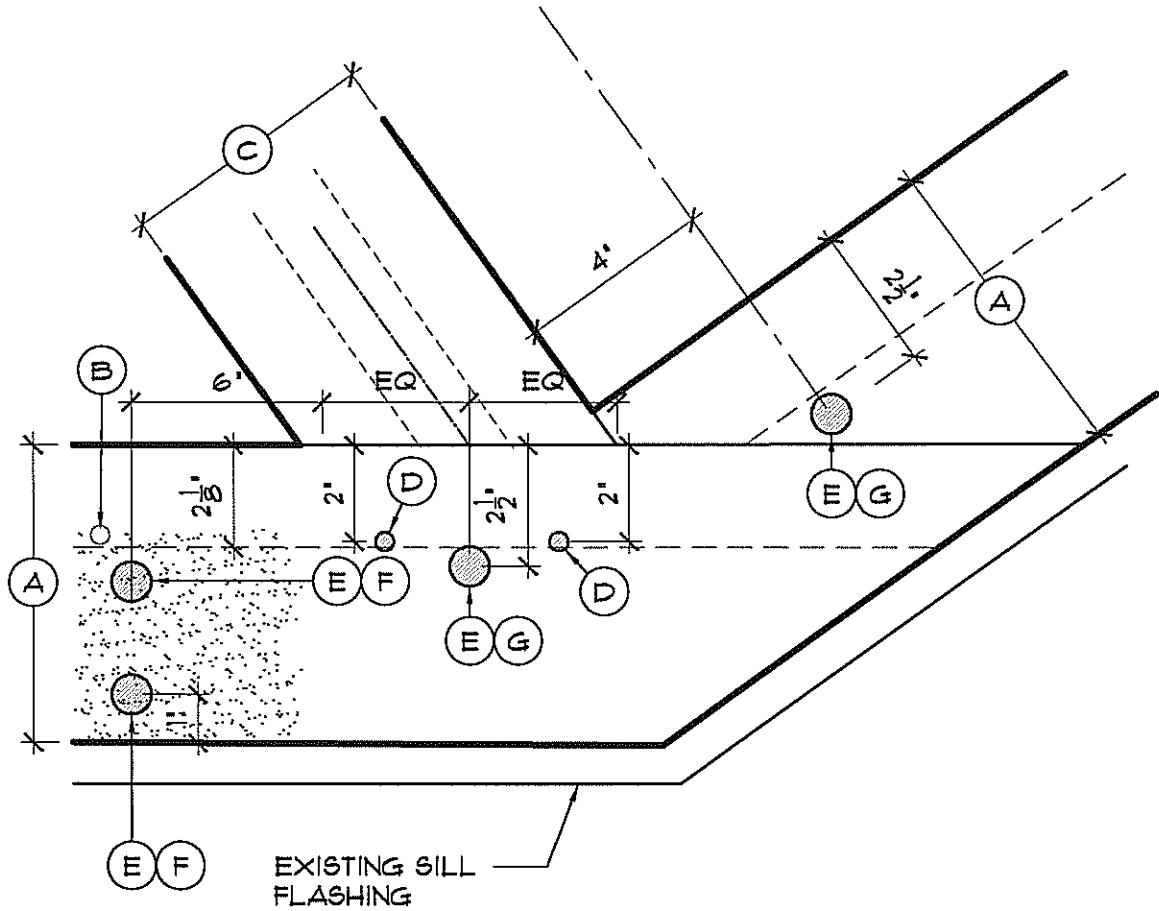


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TITLE WATERPROOFING REPAIRS
 AT VERTICAL MULLION

SCALE N.T.S.





- | | |
|--|---|
| <p>A. EXISTING 5" ALUM. SILL EXTRUSION</p> <p>B. EXISTING 1/4" ϕ WEEP HOLES</p> <p>C. EXISTING 5" ALUM. VERTICAL MULLION EXTRUSION.</p> <p>D. DRILL 1/4" ϕ WEEP HOLES IN SILL EXTRUSION AS SHOWN</p> <p>E. DRILL 1/2" ϕ HOLE IN SILL EXTRUSION AS SHOWN.</p> | <p>F. PARTIALLY FILL SILL EXTRUSION W/ EXPANDABLE POLYURETHANE FOAM TO BLOCK AND ISOLATE THE REMAINDER OF THE SILL EXTRUSION CAVITY FROM VERT. MULLION CONDITION.</p> <p>G. FILL THE REMAINING CAVITIES AT VERTICAL MULLION WITH SELF-LEVELING POURABLE SEALER UP TO THE ELEVATION OF THE FILL HOLES.</p> |
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REVISED 7-12-16



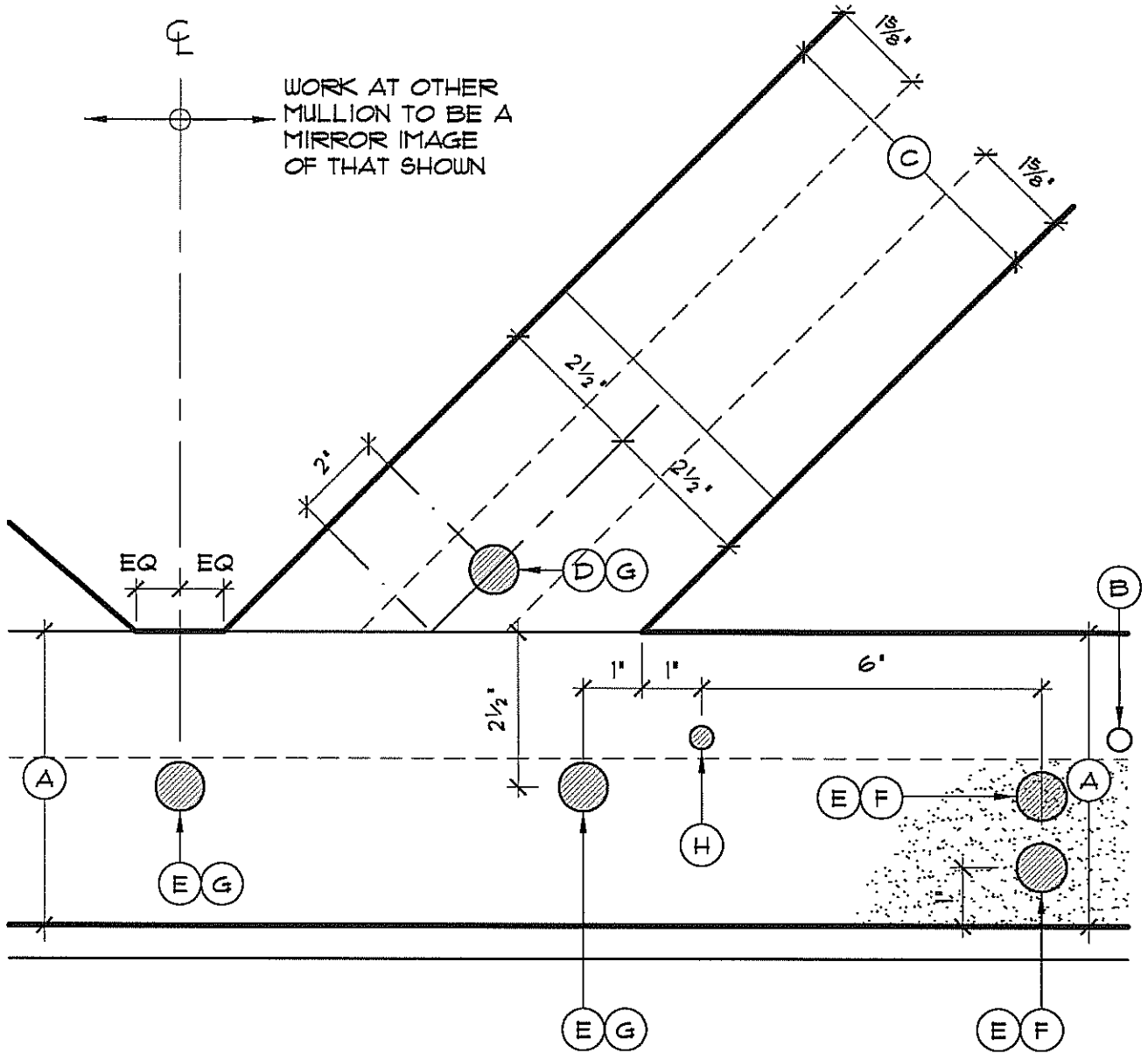
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TITLE WATERPROOFING REPAIRS AT
 62 CORNER TRANSITION

SCALE 3"=1'





WORK AT OTHER
MULLION TO BE A
MIRROR IMAGE
OF THAT SHOWN

- A. EXISTING 5' ALUM. SILL EXTRUSION
- B. EXISTING 1/4"φ WEEP HOLES
- C. EXISTING 5' ALUM. VERTICAL JAMB EXTRUSION.
- D. DRILL 1/2"φ HOLE IN VERT. MULLION EXTRUSION
- E. DRILL 1/2"φ HOLE IN SILL EXTRUSION AS SHOWN
- F. PARTIALLY FILL SILL EXTRUSION W/ EXPANDABLE POLYURETHANE FOAM TO BLOCK AND ISOLATE THE REMAINDER OF THE SILL EXTRUSION CAVITY FROM VERT. MULLION CONDITION.
- G. FILL THE REMAINING CAVITIES AT SILL & VERTICAL MULLION WITH SELF-LEVELING POURABLE SEALER UP TO THE ELEVATION OF THE 3 HOLES.
- H. NEW 1/4"φ WEEP HOLES DRILLED IN ALUM. SILL EXTRUSION.

REVISED 7-12-16



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TITLE WATERPROFING REPAIRS AT
JAMB OF WINDOW DETAIL

SCALE N.T.S.



ACAD FILE # 14034.00-509

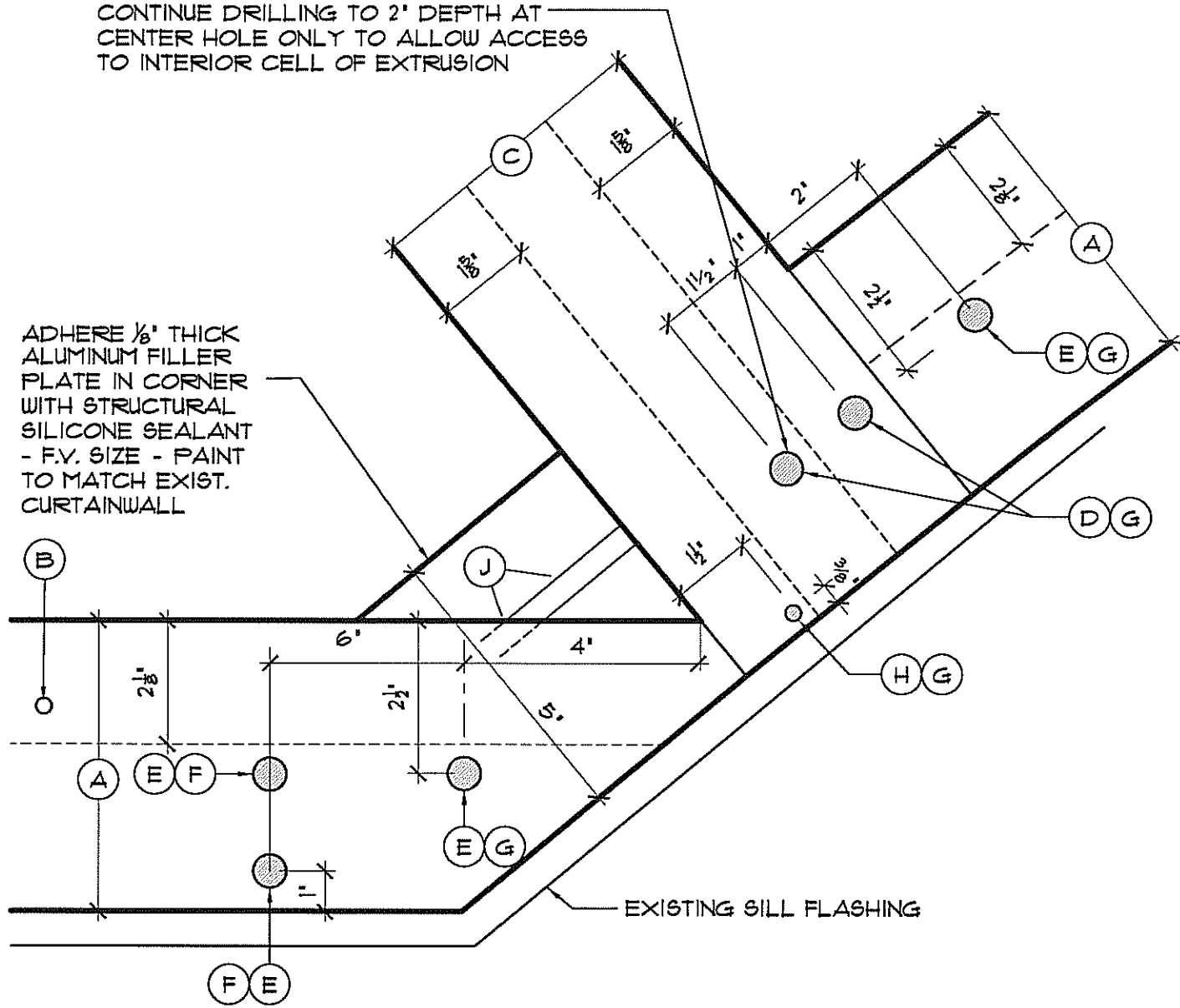
CATALOG #

PLOT SCALE : 3"=1'

PROJECT NUMBER: 14034.00

CONTINUE DRILLING TO 2' DEPTH AT CENTER HOLE ONLY TO ALLOW ACCESS TO INTERIOR CELL OF EXTRUSION

ADHERE 1/8" THICK ALUMINUM FILLER PLATE IN CORNER WITH STRUCTURAL SILICONE SEALANT - F.V. SIZE - PAINT TO MATCH EXIST. CURTAINWALL



- A. EXISTING 5' ALUM. SILL EXTRUSION
- B. EXISTING 1/4" φ WEEP HOLES
- C. EXISTING 5' ALUM. VERTICAL MULLION EXTRUSION.
- D. DRILL 2-3/4" φ HOLES IN VERT. MULLION AS SHOWN
- E. DRILL 1/2" φ HOLE IN SILL EXTRUSION AS SHOWN

- F. PARTIALLY FILL SILL EXTRUSION W/ EXPANDABLE POLYURETHANE FOAM TO BLOCK AND ISOLATE THE REMAINDER OF THE SILL EXTRUSION CAVITY FROM VERT. MULLION CONDITION.
- G. FILL THE REMAINING CAVITIES AT SILL & VERTICAL MULLION WITH SELF-LEVELING POURABLE SEALER UP TO THE ELEVATION OF THE 3 HOLES.
- H. DRILL 3/8" φ HOLE IN VERTICAL MULLION AS SHOWN
- J. NOTCH REMOVABLE COVERS AS REQ'D FOR NEW SILL FLASHING.

REVISED 7-12-16

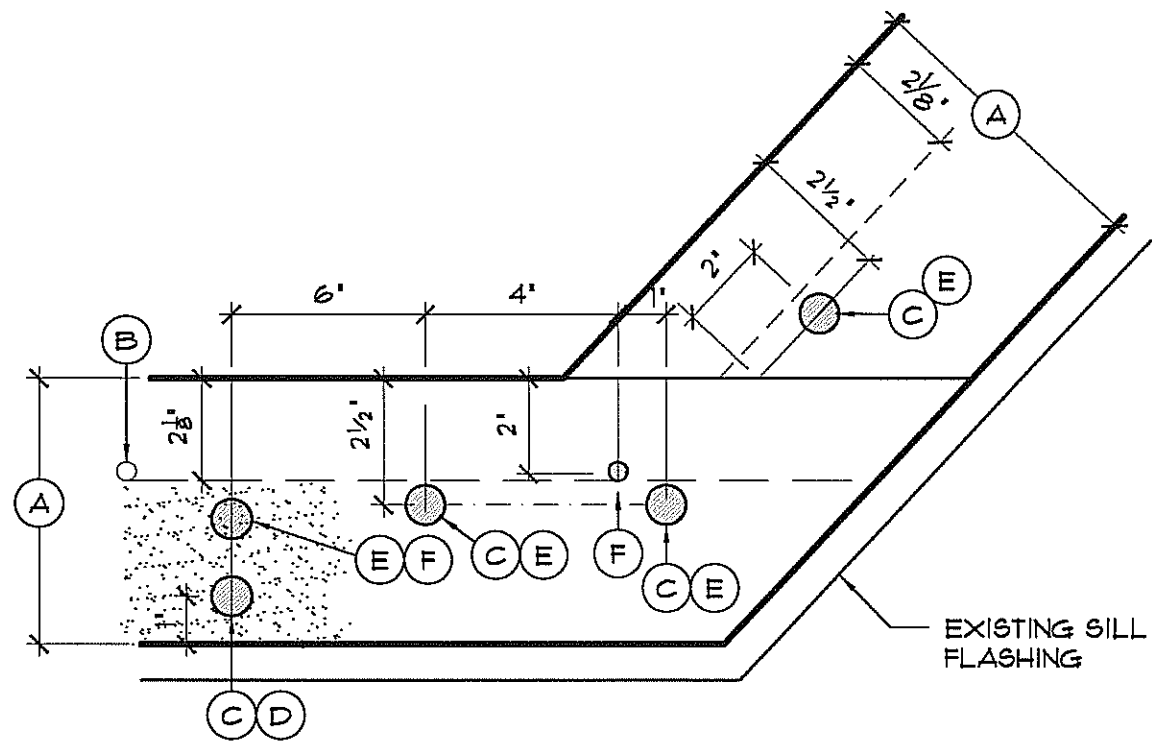


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TITLE WATERPROOFING REPAIRS AT
53 CORNER TRANSITION

SCALE 3"=1'





- A. EXISTING 5" ALUM. SILL EXTRUSION
- B. EXISTING 1/4"φ WEEP HOLES
- C. DRILL 1/2"φ HOLE IN SILL EXTRUSION AS SHOWN
- D. PARTIALLY FILL SILL EXTRUSION W/ EXPANDABLE POLYURETHANE FOAM TO BLOCK AND ISOLATE THE REMAINDER OF THE SILL EXTRUSION CAVITY FROM VERT. MULLION CONDITION.
- E. FILL THE REMAINING CAVITIES AT SILL EXTRUSIONS WITH SELF-LEVELING POURABLE SEALER UP TO THE ELEVATION OF THE 3 HOLES.
- F. NEW 1/4"φ WEEP HOLES DRILLED IN ALUM. SILL EXTRUSION.

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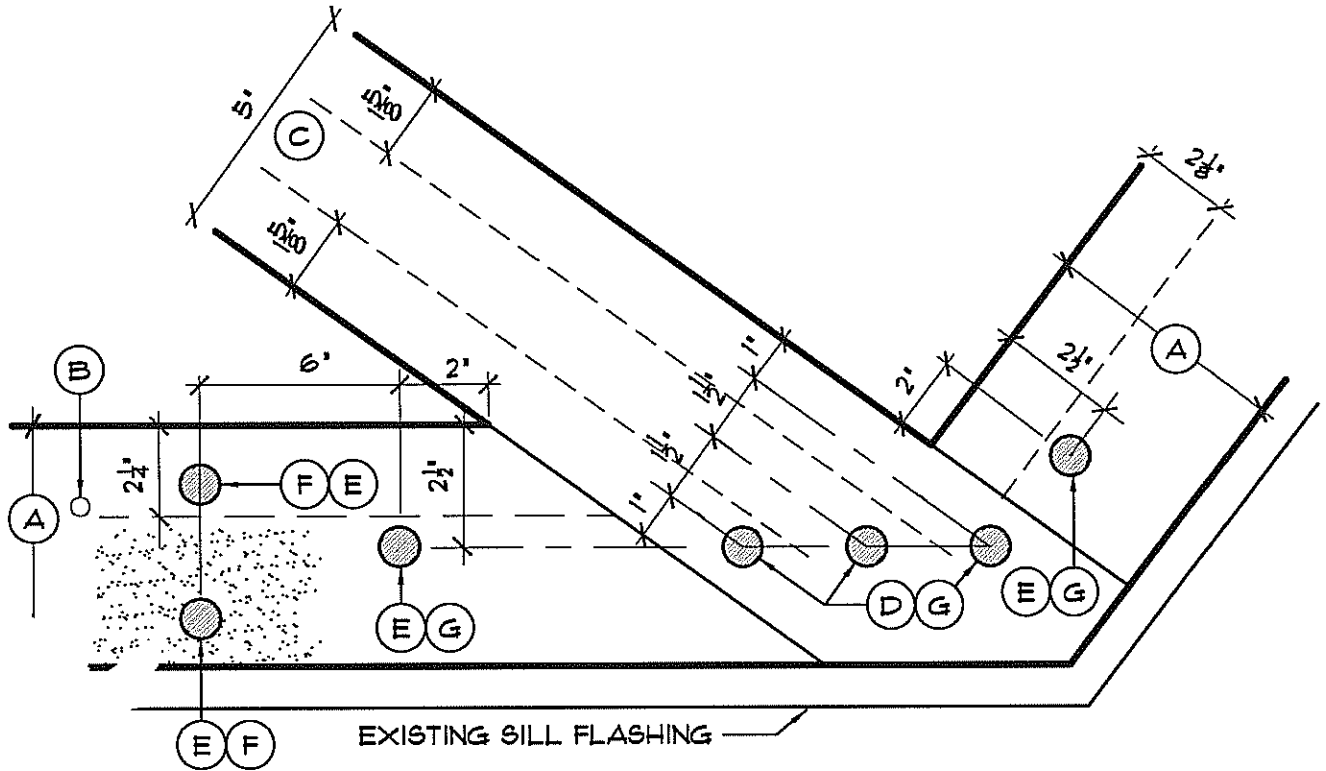


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TITLE WATERPROOFING REPAIRS
 AT 64 CORNER TRANSITION

SCALE 3" = 1'-0"

NO. 5.10



- A. EXISTING 5" ALUM. SILL EXTRUSION
- B. EXISTING 1/4" ϕ WEEP HOLES
- C. EXISTING 5" ALUM. VERTICAL MULLION EXTRUSION.
- D. DRILL 3-3/4" ϕ HOLES IN VERT. MULLION AS SHOWN
- E. DRILL 1/2" ϕ HOLE IN SILL EXTRUSION AS SHOWN
- F. PARTIALLY FILL SILL EXTRUSION W/ EXPANDABLE POLYURETHANE FOAM TO BLOCK AND ISOLATE THE REMAINDER OF THE SILL EXTRUSION CAVITY FROM VERT. MULLION CONDITION.
- G. FILL THE REMAINING CAVITIES AT SILL & VERTICAL MULLION WITH SELF-LEVELING POURABLE SEALER UP TO THE ELEVATION OF THE 3 HOLES.

REVISED 7-12-16



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TITLE WATERPROOFING REPAIRS
 AT 85 CORNER TRANSITION

SCALE 3" = 1'-0"



May 4, 2016

Joe Williams,
A/R/C Associates, Incorporated
601 N. Fern Creek Ave, Ste 100
Orlando, Florida 32803

RE: Orange County Convention Center Metal Roof Deck Capacity

STRUCTURAL REPORT

BASE Consultants was hired to perform a structural capacity review of the existing roof deck at the Orange County Convention Center. The deck above the four arched windows of the North/ South Building was reviewed for construction loads associated with the roofing replacement. Our review is based on the existing structural drawings provided by the owner (Sheets S0.000, S7.001, S7.0012, S7.022). A summary of our assessment is provided in this report.

EXISTING CONDITIONS

The Orange County Convention Center North/South Building is located at 9800 International Drive, Orlando, FL. Per the structural drawings provided by the owner, the roof deck near the four arched windows is 3" deep, 20 gage, galvanized roof deck spanning 10 feet between roof beams. The condition of the deck below the existing roofing is not known at this time.

OBSERVATIONS AND RECOMMENDATIONS

The following assumptions were used in evaluating the capacity of the deck:

1. The roof deck load capacity is based on values provided in the Vulcraft deck catalog.
2. The integrity of the deck is not compromised.
3. The deck is placed over a single span.
4. Existing structural drawings does not specify type of the deck. Design values for type N deck is used for design and analysis.
5. Allowable total deflection is limited to $L/360$.
6. An impact factor of 1.5 is used to account for the dynamic effect of the dropping load on the deck.

The service load capacity of the deck based on strength and service criteria are as follows:

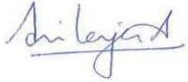
1. Superimposed allowable load (dead+ live) capacity of the deck is 56psf. However, the applied load on the supporting structural system should not to exceed the design live load of 20psf provided in the existing structural drawing sheet S0.000.
2. Concentrated load capacity for any isolated load on a span is 230 pounds (see attached calculation).

The following items should be reviewed and noted by the roofing contractor for the performance of the work:

1. Review the existing roof deck against the basis and assumptions noted above and notify the evaluating engineer of any discrepancy.
2. Perform a review of the proposed roofing system's actual weight and associated construction loads. Confirm the load capacity noted above is not exceeded.
3. Take care to protect the deck system, its attachment and coating system from damage during construction. Propose repair schemes for any existing damage or damage resulting from construction.
4. Use methods and procedures consistent with the approved practices for this type of work for providing adequate safety to the general public from construction activities

Please do not hesitate to call if you have any questions regarding these recommendations.

Sincerely,
BASE Consultants, Inc.

A handwritten signature in blue ink, appearing to read "Sailaja Alath", with a horizontal line underneath.

Sailaja Alath, P.E., LEED A.P.
President
P.E. #53305

Attachment: Sheet S7.001, Structural calculation

Load capacity of the existing roof deck at the Orange County Convention Center above the four arched windows of the North/ South Building:

Due to geometry and unknown field conditions our evaluation is based on following assumptions:

1. The roof deck load capacity is based on values provided in the Vulcraft deck catalog.
2. Existing structural drawings does not specify type of the deck. Design values for type N deck is used for design and analysis. attached cut sheet identifying the values/type used so that they can try to match the info. In field)
3. The integrity of the deck is not compromised.
4. The deck is placed over single span.
5. Allowable total deflection is limited to L/240.
6. Maximum span = beam center to spacing = 10ft
7. An Impact factor 1.5- a factor to account for the momentum due to impact with which the load hits the deck

Two separate cases are analyzed.

Properties of the 3N, 20ga deck

$$I_p = 0.848 \text{ in}^4/\text{ft}$$

$$S_p = 0.501 \text{ in}^3/\text{ft}$$

$$E = 29.5 \times 10^6 \text{ psi}$$

$$F_y = 33 \text{ ksi}$$

$$F_s = 0.7 F_y \text{ (for construction and maintenance loads)}$$

$$F_s = 0.7 * 33 = 23.1 \text{ ksi}$$

Case 1: Distributed loads

Per Vulcraft catalog for 3N deck, maximum super imposed (dead + live) loads shall not exceed 56psf. According to the existing drawings super imposed live loads shall not exceed 20psf.

Case 2: Concentrated load:

Based on flexural strength

Assuming point load is acting at the midspan:

$$M_{\max} = PL/4 = F_s * S/12$$

$$P * 10/4 = 23.1 * .501/12$$

$$P = 385 \text{ pounds}$$

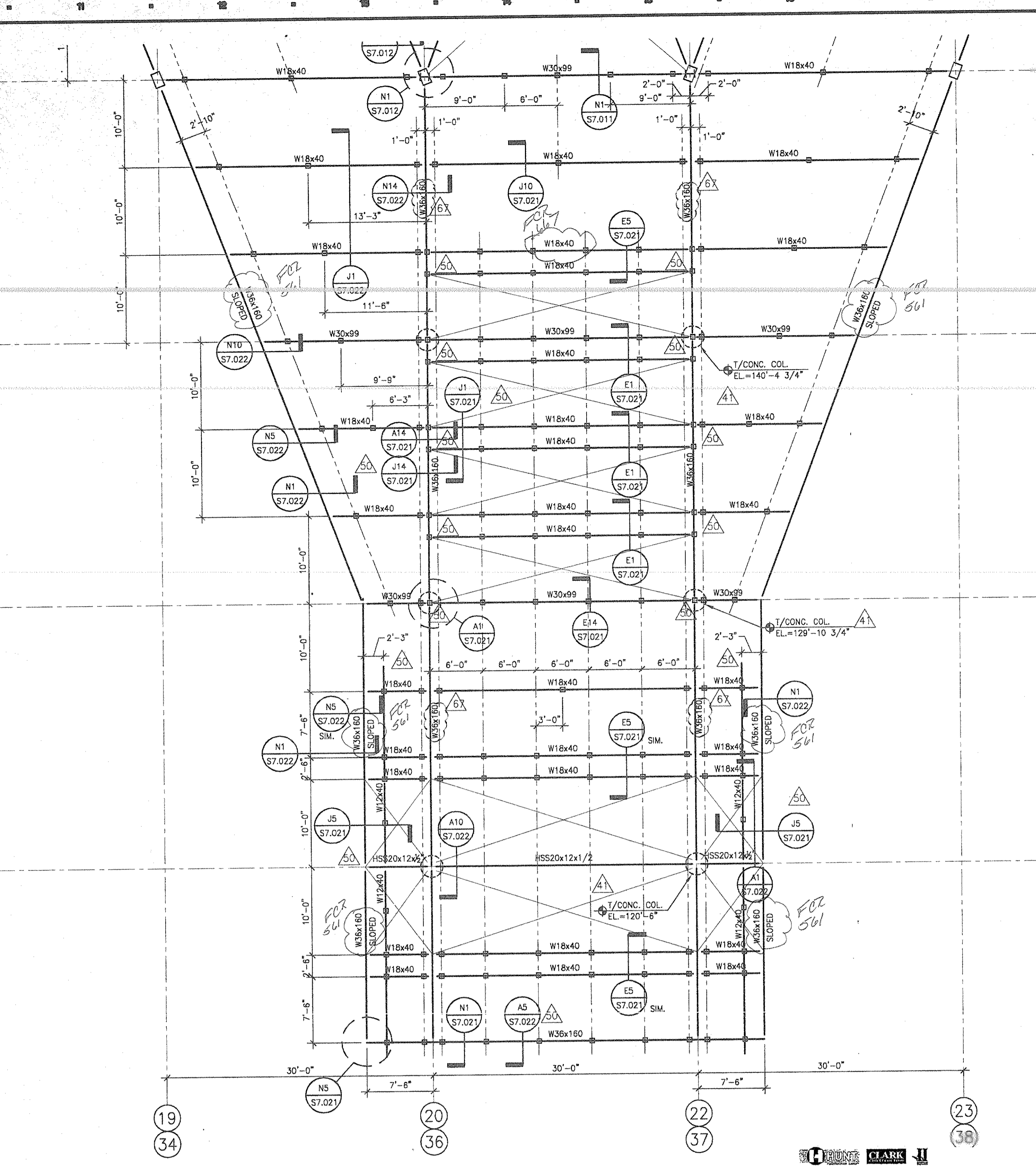
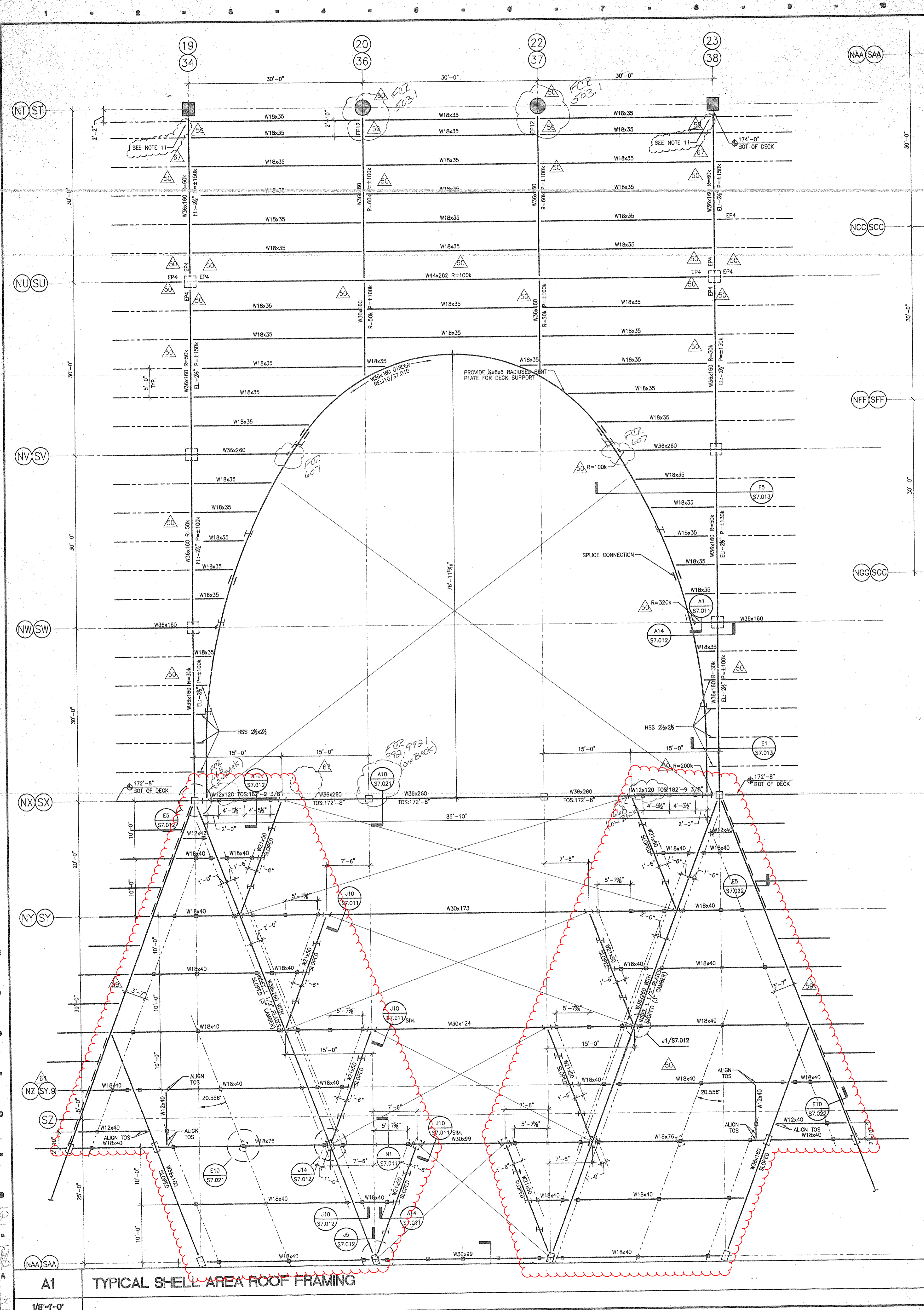
Assuming an impact factor of 1.5, allowable load = 250 pounds

$$\Delta_{\max} = PL^3/48EI$$

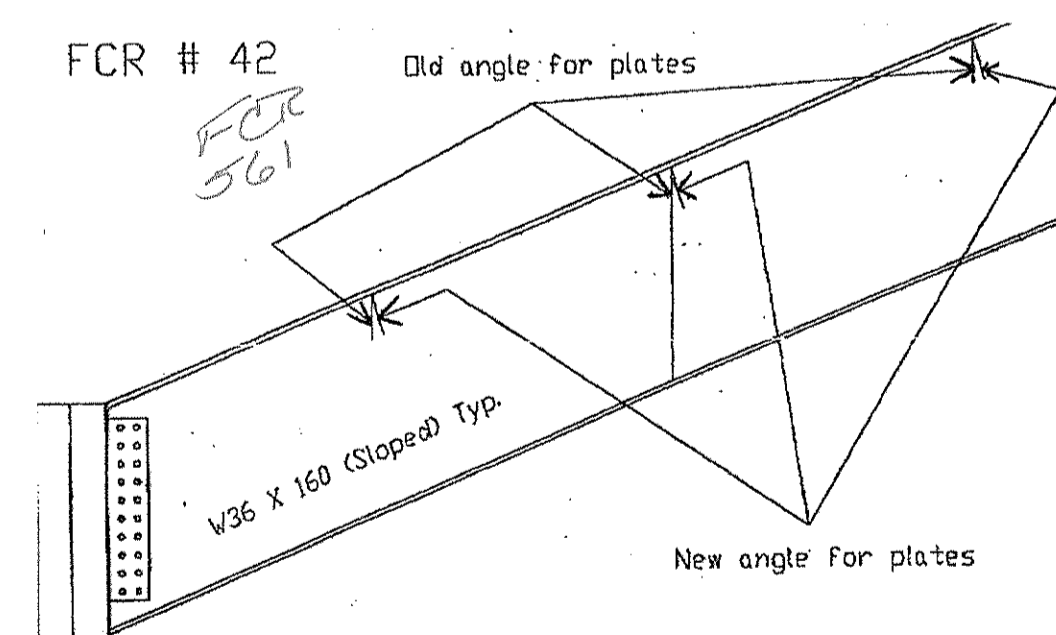
$$\Delta_{\text{all}} = L/240 = 10 * 12/240 = 1/2 = P * 10^3 * 12^3 / 48 * 29.5 * 10^6 * 0.848$$

$$P = 48 * 29.5 * 10^6 * 0.848 / 2 * 10^3 * 12^3 \quad P = 350 \text{ pounds}$$

Assuming an impact factor of 1.5, allowable load = 230 pounds → Maximum allowable load with impact



- NOTES:
- 1) PROVIDE 3" DEEP, 20 GAGE, METAL ROOF DECK WITH G90 GALVANIZATION, TYP. PROVIDE 2 1/4" WELDING PATTERN USING 5/8" PUDDLE WELDS SIDE LAB FASTENERS @ 18" O.C. AND 3/4" PUDDLE WELDS @ 6" O.C. FOR ALL EDGE OF DECK CONDITIONS.
 - 2) WHERE INDICATED IN THE DETAILS, PROVIDE 1 1/2" DEEP, WIDE RIB TYPE 8, 20 GAGE, METAL ROOF DECK WITH G90 GALVANIZATION, PROVIDE 3/8" WELDING PATTERN USING 5/8" PUDDLE WELDS, SIDE LAB FASTENERS @ 18" O.C. AND 3/4" PUDDLE WELDS @ 6" O.C. FOR ALL EDGE OF DECK CONDITIONS.
 - 3) ALL STRUCTURAL STEEL EXPOSED BELOW THE CEILING LINE SHALL BE CLASSIFIED AS AESS.
 - 4) REFER TO A1 & A10/S7.002 FOR ADDITIONAL FRAMING PLANS.
 - 5) THE BOTTOM FLANGE ELEVATION OF W18 AND W30 MEMBERS ORIENTED EAST-WEST IS 3" ABOVE THE BOTTOM FLANGE OF THE INTERSECTING W36 GIRDER.
 - 6) THE ROOF FRAMING CONSISTS OF SLOPED AND SKEWED MEMBERS. THE DETAILS MAY NOT ACCURATELY REFLECT THE PRECISE ORIENTATION OF THE MEMBERS. REVELD BASE PLATES SHALL BE PROVIDED AS REQUIRED TO PROVIDE A TRUE HORIZONTAL BEARING SURFACE.
 - 7) REFER TO ARCH. DRAWINGS FOR SUPPLEMENTARY INFORMATION.
 - 8) THE SPLICES FOR THE W36x260 BUILT UP SECTIONS SHALL BE FULLY WELDED TO ALLOW FULL MOMENT AND SHEAR TRANSFER CAPABILITIES ABOUT THE STRONG AND WEAK AXES. THE SPLICE SHALL CONFORM TO THE AESS SPECIFICATIONS.
 - 9) THE STRUCTURAL MEMBERS SHALL BE DESIGNED FOR THE FACTORED FORCES SHOWN BELOW. ALL ARCHITECTURALLY EXPOSED CONNECTIONS SHALL BE DESIGNED AS SIMPLE PUDDLE CONNECTIONS, WITH THE PLATE EXTENDING THE FULL DEPTH OF THE BEAM. BOLTS FOR ALL CONNECTIONS EXPOSED TO THE ELEMENTS SHALL BE GALVANIZED.
- | MEMBER | VERTICAL SHEAR (KIPS) | HORIZONTAL SHEAR (KIPS) | AXIAL (KIPS) |
|---------|-----------------------|-------------------------|--------------|
| W12x40 | 20 | 10 | 10 |
| W12x120 | 30 | 20 | 10 |
| W18x40 | 30 | 15 | 20 |
| W18x150 | 30 | 10 | 30 |
| W18x76 | 60 | 30 | 30 |
| W30x99 | 70 | 40 | 40 |
| W30x124 | 80 | 40 | 40 |
| W30x173 | 90 | 40 | 50 |
| W36x160 | 200 | 40 | 60 |
| W36x260 | 210 | 40 | 100 |
10. PROVIDE FOR 8 REINFORCED PENETRATIONS THROUGH THE W36 GIRDERS FOR RAIN LEADERS. THE OPENING SIZE SHALL BE 10" DIAMETER. LOCATIONS TO BE COORDINATED WITH MEP DRAWINGS.
 11. PROVIDE 3/4" x 1 1/2" x 10" EMBED PLATE W/ 3/8" x 8" LONG WELDED HEADED STUDS (28 TOTAL). SEE DETAIL A14/S7.011 FOR SIMILAR EMBED PLATE CONNECTION.



FIELD CORRECTION REQUEST

TRADE CONTRACTOR: Address
PRIORITY: High

PROJECT NO. 464
1300 First Coast Drive, Suite 400
Orlando, Florida 32819
TEL: (407) 218-4551 FAX: (407) 218-4561

FOR NO. 961 (ASB # 42)
TO: Bill Terry (DEICP) STL: 0000

PLEASE RESPOND TO THE FIELD CONDITION AS DESCRIBED BELOW:
The field notes suggest the decking in the upper area on the W18x40 in the sloped area have been double checked and found to be correct. The decking in the lower area on the W18x40 in the sloped area has been found to be incorrect. The decking in the lower area on the W18x40 in the sloped area should be replaced with the correct decking. A separate file. Please specify.

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FOR APPROVE: R. Berry Date: 10/17/01
ARCHITECT/ENGINEER RESPONSE: ACCEPTABLE - NOVA CORP TO THE "FIELD CORRECTION REQUEST" ATTACHED SHEETS. ACCEPTABLE PER: [Signature] DATE: 11/18/01

FIELD CORRECTION REQUEST

TRADE CONTRACTOR: Address
PRIORITY: High

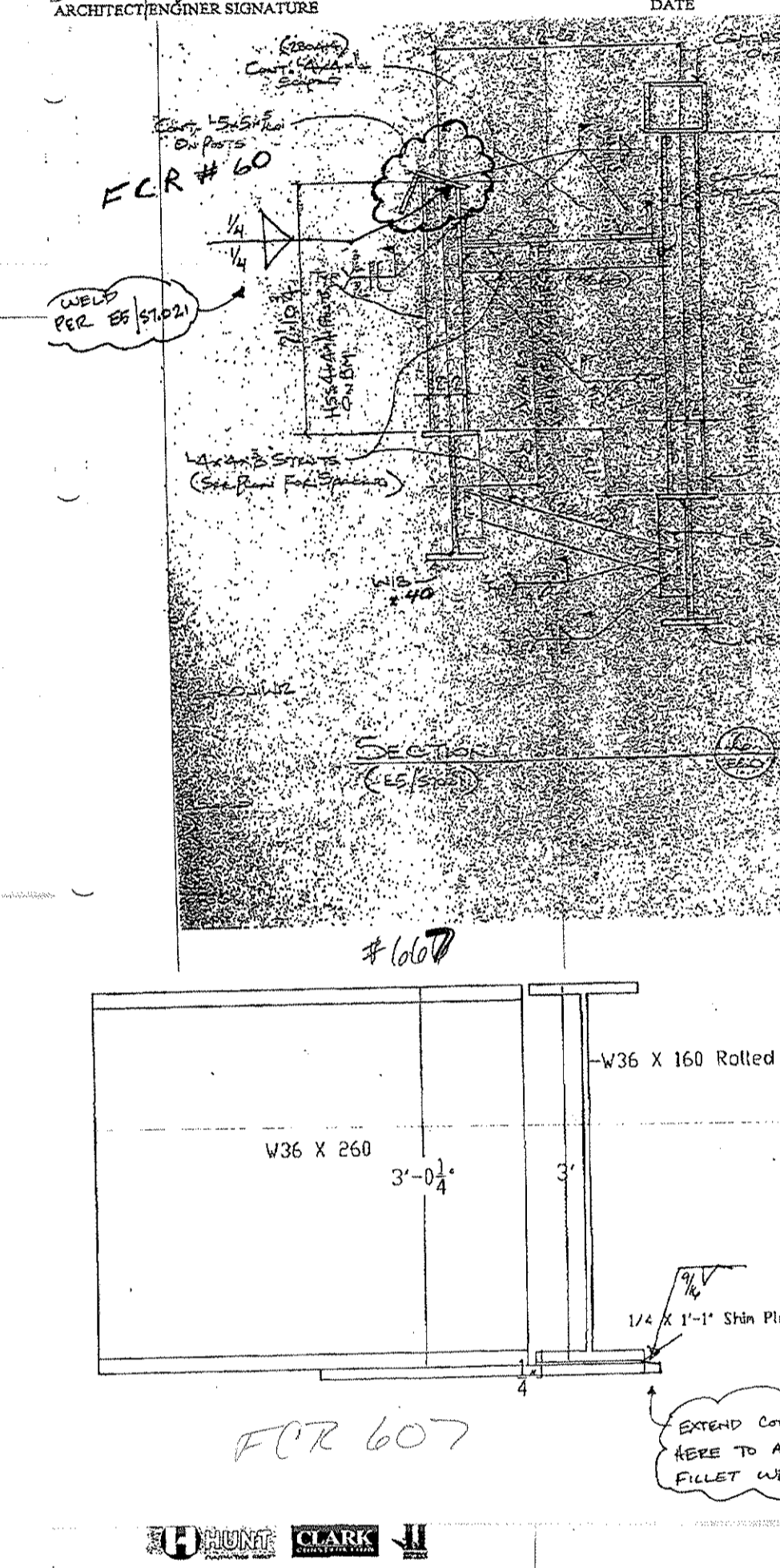
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DATE	SUBMISSION / REVISION	NO.
12.00	COMPOSITE STRUCTURAL SET	1
12.00	ISSUE FOR CONSTRUCTION	2
02.01	RE-ISSUE FOR CONSTRUCTION	3
04.16	RE-ISSUE FOR CONSTRUCTION	4
04.30	RE-ISSUE FOR CONSTRUCTION	5
05.10	RE-ISSUE FOR CONSTRUCTION	6
06.15	RE-ISSUE FOR CONSTRUCTION	7

FRAMING ENTRY ROOF SHELL SUPPORT

PROJ. NO. 1060
SHEET (OR BACK) **S7.001**