

## SECTION 01 5000

### TEMPORARY FACILITIES AND CONTROLS

#### PART 1 - GENERAL

##### 1.01 RELATED REQUIREMENTS:

- A. Use of site - Section 01 3550.
- B. Maintenance of existing services - Section 01 3550.
- C. Demolition, cutting, dust control - Section 01 3550.

##### 1.02 SANITARY FACILITIES:

- A. Provide adequate temporary chemical toilets at each site at time Work is commenced.
- B. Maintain facilities in compliance with applicable health laws and regulations. Keep clean and unobtrusive.
- C. Upon completion of Work, remove these facilities and all traces thereof.

##### 1.03 STORAGE OF MATERIALS:

- A. Store materials in areas approved by Owner and local governing requirements.
- B. Cover and protect materials subject to damage by weather, including during transit.
- C. Do not use building as storage facility with the exception of roofing materials which can be stored on the roof.
- D. Provide additional storage at no cost to Owner in the event that additional storage area is required beyond approved areas.
- E. Stored materials shall be available for inspection by Architect and Owner at all times.
- F. Store flammable and volatile liquids in sealed containers located a minimum of 30 ft. from existing buildings.
- G. Flammable or volatile liquids shall be transported in and used from U.L. listed safety cans.

##### 1.04 TEMPORARY WATER:

- A. Contractor shall make arrangements with Owner for water required for construction.
- B. Owner will pay for costs of water.
- C. Contractor shall provide hoses for conveyance.

##### 1.05 TEMPORARY ELECTRICAL ENERGY:

- A. Contractor shall make arrangements with Owner for temporary electrical service for completion of the Work.
- B. Owner will pay energy charges for temporary power and lighting.
- C. Contractor shall provide all necessary temporary wiring, extensions and temporary lighting devices.

##### 1.06 TEMPORARY LADDERS, SCAFFOLDS, HOISTS:

- A. Furnish and maintain temporary ramps, scaffolds, hoists or chutes as required for proper execution of Work.
- B. Such apparatus, equipment and construction shall be of noncombustible construction and meet

requirements of applicable Federal, State and Local Safety and Labor Laws.

#### **1.07 GUARDRAILS, BARRICADES AND TEMPORARY COVERINGS:**

- A. Provide barricades as required to protect natural resources, site improvements, existing property, adjacent property and passers-by.
- B. Where pedestrian traffic is adjacent to work areas, provide necessary guardrails and barricades to protect pedestrians and to prevent pedestrian access to Work areas.
- C. At completion of construction, remove guardrails and barricades.
- D. Provide suitable temporary watertight coverings over windows and roof openings as necessary to protect interior equipment from water damage.

#### **1.08 PROTECTION:**

- A. Protect existing buildings and property, including trees, lawns and plants.
  - 1. Contractor is responsible for repairing lawn areas and/ or repairing lawn irrigation lines damaged due to construction activity such as driving lifts over the lawn. Please note that there are is no irrigation system in between the buildings, the irrigation lines are only around the outside perimeter.
- B. Refer to Section 01 3550 for additional protection requirements of existing building.
- C. Existing dishes on roofs are to be carefully moved for re-roofing work and replaced in their exact locations after re-roofing is completed. If exact alignment is not reestablished, Contractor is responsible for realignment, including contacting the service provider and having them realign the dishes for proper reception if required.

#### **1.09 TEMPORARY FIRE PROTECTION:**

- A. During construction, Contractor and his subcontractors and sub-subcontractors and their agents and employees shall comply with fire safety practices as outlined in NFPA Pamphlet 241 and local fire protection codes.
  - 1. During entire construction period, provide one U.L. listed 2A:20BC dry chemical fire extinguisher, or one standard U.L. listed 1-1/2 ga. water (E-10) and one U.L. listed 10BC carbon dioxide fire extinguisher mounted together, in each of following areas:
    - a. Each 3,000 sq. ft. of roof work area or fraction thereof.
    - b. Each temporary storage shed.
    - c. Do not use 2A:20BC dry chemical type fire extinguisher in confines of telephone equipment areas for purposes of suppression.
  - 2. Contractor's superintendent, or other assistant superintendents, shall be appointed as project fire warden for entire construction period.
  - 3. Train workmen in proper use of each type fire extinguisher.
  - 4. Post telephone number of fire department, specific information on location of on-site firefighting equipment and procedures to be followed in event of fire.
  - 5. Maintain free access at all times to fire extinguisher equipment, street fire hydrants and outside connections for standpipe hose systems.
  - 6. Maintain all exit facilities and access thereto, free of material and other obstructions.
  - 7. Refer 07 5200 3.04 B. for Fire Watch information.

#### **1.10 CLEANING DURING CONSTRUCTION:**

- A. Oversee cleaning and ensure that building and grounds are maintained free from accumulations of waste materials and rubbish.
- B. At not less than every day during progress of work, clean work areas and access, and dispose of waste materials, rubbish and debris.
- C. Dump containers may be used for collection of waste materials, rubbish and debris. Locate

containers in areas approved by Owner and local governing requirements. Remove containers when filled.

- D. Do not allow waste materials, rubbish and debris to accumulate and become an unsightly or hazardous condition.
- E. Remove waste materials, rubbish and debris from site, and legally dispose of at public or private dumping areas off Owner's property.
- F. Lower waste materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

**1.11 EMPLOYEE CONTROL:**

- A. Do not allow construction employees to enter Owner occupied areas except when approved and escorted for secured spaces and for access to roof and as required to perform work.

**1.12 PARKING FACILITIES:**

- A. Contractor shall be responsible for parking of construction personnel vehicles at locations approved by Owner.

**1.13 LEAK (WATER) DAMAGE CONTROL:**

- A. In the event of rain during reroofing construction operations, immediately inspect interior of building for leaks. This shall occur on a 24 hour basis.
- B. If leaks are discovered during rains, immediately cover interior improvements and furnishing and immediately notify Owner of leak condition.
- C. Perform emergency repairs on roofing to stop leaks.

**PART 2 - NOT APPLICABLE**

**PART 3 - NOT APPLICABLE**

**END OF SECTION**

## SECTION 07 5200

### MODIFIED BITUMUNIOUS MEMBRANE ROOFING

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES:

- A. Removal of existing base flashing.
- B. New modified bitumen sheet roofing.
- C. Related new membrane flashing and penetration flashing.
- D. Removal and replacement of existing wet roofing.

##### 1.02 RELATED SECTIONS:

- A. Section 01 2700 – Unit Pricing
- B. Section 01 3550 - Alterations Project Procedures
- C. Section 07 2200 - Roof Insulation
- D. Section 07 5650 - Minor Roof Renovation Work
- E. Section 07 6000 - Sheet Metal Work

##### 1.03 REFERENCES:

- A. ASTM D41 - Asphalt Primer.
- B. ASTM D312 - Asphalt for Use in Constructing Built-up Roof Coverings.
- C. ASTM D4586 - Fibrated Asphalt Roof Cement.

##### 1.05 SUBMITTALS:

- A. Procedures for Submittals: Section 01 3300.
- B. Shop Drawings:
  - 1. Indicate complete installation details of roofing and flashing, including flashing details, penetration details and accessories.
  - 2. Include complete flashing detail for each flashing condition.
- C. Product Data: Manufacturer's roofing and base flashing specifications, including list of materials proposed for use, and manufacturer's data sheets for other products.
- D. Progress Schedule/Phasing Plan:
  - 1. Submit a complete progress schedule and phasing plan indicating complete sequence of removal and replacement of roofing.
  - 2. Include roof plan with layout of phasing, indicating amount of roof area included in each day's work.
  - 3. Indicate dates for beginning and completing each activity.
  - 4. Identify other related work affecting roof replacement and phasing.
- E. Samples: Submit 8 x 11 in. sample of roof membrane cap sheet.
- F. Warranty: Submit specimen copy of manufacturer's roofing warranty with Product Data submittal, including evidence of application for warranty.
- G. Manufacturer's Reports: Submit manufacturer's field quality reports of field inspections, including 2 copies of manufacturer's final inspection punch list.

- H. Maintenance Data: Compile and submit maintenance instructions in accordance with Section 01 7000. Include complete manufacturer's instructions for periodic inspection and maintenance of roofing system, including precautions and warnings to prevent damage and deterioration to roofing system.

**1.06 QUALITY ASSURANCE:**

- A. Applicator:
  - 1. Approved in writing by manufacturer of accepted roofing system.
  - 2. A single applicator with a minimum of 3 years previous successful experience in installations of similar systems.
- B. Regulatory Requirements: Underwriter's Laboratories, Inc.: Class A fire hazard classification.
- C. Pre-Installation Conference:
  - 1. Prior to installation of roofing system, conduct a pre-installation conference at each project site.
  - 2. Attendance: Owner, Consulting Architect, Contractor, project superintendent, and roof manufacturer's technical representative.
  - 3. Agenda:
    - a. Methods of removing existing roofing and debris and controls required to prevent damage to building.
    - b. Maintaining water tightness of building during reroofing, including night seal procedures.
    - c. Roofing details and procedures.
    - d. Critical work sequencing and review of phasing plan.
    - e. Maintaining Owner access to and usage of existing facilities.

**1.07 DELIVERY, STORAGE AND HANDLING:**

- A. Deliver materials in manufacturer's original, unopened containers or packages with labels intact and legible, including required fire resistance classification labels.
- B. Store rolled goods on end on clean raised platforms with weather protective covering when stored outdoors.
- C. Provide continuous protection of materials against wetting and absorption; remove wet materials from project site.
- D. Materials stored on roof levels for immediate use shall be:
  - 1. Distributed to prevent concentrated loads that would impose excessive strain on deck or structural members.
  - 2. Positively secured to prevent displacement by excessive wind forces.

**1.08 PROJECT CONDITIONS:**

- A. Existing Conditions: Examine existing buildings and existing roofing to determine existing physical conditions that affect removal of existing roofing and installation of new roofing.
- B. Environmental Requirements:
  - 1. Apply roofing in dry weather.
  - 2. Do not remove existing roofing and flashing in inclement weather or when rain is predicted (20% or more possibility).
  - 3. Do not apply roofing when ambient temperature is below 40 degrees F.
  - 4. Ensure roof deck is structurally sound and sufficiently rigid to support the live and dead load requirements of the construction traffic.

- C. Protection:
  1. Provide special protection or avoid heavy traffic on completed work when ambient temperature is above 80 degrees F.
  2. Restore to original condition or replace work or materials damaged during handling of roofing materials.
- D. Emergency Equipment: Maintain on-site equipment necessary to apply emergency temporary edge seal in the event of sudden storms or inclement weather.
- E. Leak Damage Control: Comply with requirements of Section 015000.
- F. Restrictions:
  1. Comply with requirements of Section 011000 on use of site.
  2. Smoking is prohibited on roof areas or in existing building.
- G. Continuation of Services: Comply with requirements of Section 011000.

**1.09 SEQUENCING/SCHEDULING:**

- A. Do not remove more existing roofing in one day than can be replaced with new roof membrane or temporary roof in the same day.
- B. For each day's work, install complete roof system including flashings, penetrations and other materials required for a complete, watertight installation.

**1.10 WARRANTY:**

- A. Applicator: Furnish a 5 year warranty against leaks and defects in materials and workmanship.
  1. Include repairs required to maintain roof and base flashing in a watertight condition.
  2. Make repairs at no expense to Owner.
- B. Roof Manufacturer: Furnish a minimum 15 year "No Dollar Limit" (NDL) warranty against leaks and defects in materials and workmanship.
  1. Include agreement to maintain roof and base flashing in a watertight condition for period of warranty.
  2. Make repairs at no expense to Owner.

**PART 2 - PRODUCTS**

**2.01 MANUFACTURER:**

- A. Systems specified for roofing are SBS modified bitumen sheet roof systems manufactured by Soprema and are listed as a standard of quality and basis of design.
- B. Equivalent SBS systems by Siplast are acceptable substitutions, subject to meeting requirements of Specifications. These acceptable substitution roof systems shall include modifications and other accessories required by roof system manufacturer to provide same warranty as specified for base manufacturer.
- C. Component products listed for roofing systems are product names of Soprema, unless otherwise specified.
- D. Comply with roofing system manufacturer's recommendations for component roofing system materials not listed in this specification.

**2.02 ROOF RECOVERY SYSTEM – TORCH APPLIED TWO PLY MODIFIED BITUMEN ROOF SYSTEM AT ALL ROOF AREAS:**

- A. Qualities: Granular surfaced torch applied modified bitumen cap sheet installed over a semi-adhered modified bitumen base ply torch applied over the primed surface of the existing modified bitumen cap sheet that has been prepared in accordance with the manufacturer's requirements.

- B. System Components by Soprema:
  - 1. Cap Sheet: ELASTOPHENE LS FR GR.
  - 2. Semi-Adhered Base Ply: COLVENT Flam TG.
  - 3. Primer: ELASTOCOL 500 Primer.
  - 4. Resin Penetration Flashing: Polymethacrylate (PMMA) liquid resin, liquid-applied (Alsan RS 230 Flash), layered application of resin encapsulating a layer of polyester fleece (Alsan RS Fleece) by Soprema.
  
- C. Base Flashing Components: Same as System Components above.

**2.03 NEW ROOFING SYSTEM FOR INFILL WHERE EXISTING ROOFING IS TO BE REMOVED DUE TO THE PRESENCE OF WET INSULATION – NOTE THAT THIS SYSTEM WILL BE INSTALLED PRIOR TO THE INSTALLATION OF THE RECOVERY ROOF SYSTEM:**

- A. Base Ply: ELASTOPHENE FLAM 180.

**2.04 RELATED MATERIALS:**

- A. Flashing Primer: ASTM D41, Elastocol 500 by Soprema.
- B. Cold Adhesive (Flashing Cement): ASTM D4586, COLPLY by Soprema.
- C. Fasteners:
  - 1. Nails: Non-ferrous, cement-coated, or galvanized fasteners approved by roofing manufacturer.
- D. Cants and Tapered Edge Strips: As approved by manufacturer.
- E. Metal Termination Bar: 1/8 x one inch aluminum bar pre-drilled or punched for fasteners at 6 in. o.c.
- F. Caulking: Sopramastic 200 by Soprema.
- G. Pourable Sealer: Pourable Sealer Part A & Part B as manufactured by Firestone Building Products Company.

**PART 3 - EXECUTION**

**3.01 EXAMINATION:**

- A. Verify that work which penetrates roof deck has been completed.
- B. Verify that insulation systems have been satisfactorily completed.
- C. Verify that all roofing materials containing moisture have been removed.
- D. Examine surfaces for defects, rough spots, ridges, depressions, foreign material, moisture and unevenness.
- E. Do not proceed until defects are corrected.

**3.02 PREPARATION:**

- A. Remove roof system base flashings and other flashings in accordance with the manufacturer's requirements.
- B. Preparation of Existing Roofing to Remain: Prime the surfaces of all Refer to Section 07 2200.
- B. Priming: Prime metal and masonry surfaces with asphalt primer as necessary.
- C. Cleaning:
  - 1. Verify that debris has been completely removed.
  - 2. Broom roof insulation immediately prior to roofing application.

- D. Remove and replace existing wet roofing materials consisting of the existing modified bitumen roof system, underlying perlite insulation and underlying polyisocyanurate insulation. Replacement insulation, gypsum roof board and roofing shall be installed in accordance with Section 07 2200.
- E. Cut 6 inch long slits at 3 feet on center each way through the existing roof system with such slits penetrating the cap sheet and base ply of the existing modified bitumen roof system.

### 3.03 APPLICATION:

- A. General:
  - 1. Membrane application: Apply roofing in accordance with roofing manufacturer's instructions and as detailed and specified herein.
  - 2. Aesthetic considerations: An aesthetically pleasing overall appearance of the finished roof system will be required prior to the work being accepted. Numerous patches and other repairs that will be sight exposed after the installation of the roof system has been completed will not be acceptable.
  
- B. Roofing Membrane – Heat Welded Application at Areas Where Existing Wet Roofing Materials Are To Be Removed and Replaced:
  - 1. Install in accordance with roofing manufacturer's specification, and as specified below.
  - 2. Phased construction of roofing membrane is strictly prohibited, unless specifically approved by roofing manufacturer.
  - 3. Lay sheets at right angles to slope of deck.
  - 4. Beginning at low point of roof area being replaced, heat weld unsurfaced ply sheet to substrate, lapping sides a minimum of 3 inches and ends a minimum of 6 inches. Seal laps by running a hot trowel along edge of the seam.
  - 5. Heat weld and additional ply of unsurfaced ply sheet to base layer of unsurfaced ply membrane, lapping sides a minimum of 3 inches and ends a minimum of 6 inches. Stagger laps between plies a minimum of 12 inches. Heat weld in accordance with manufacturer's recommendations.
  - 6. Complete application of roofing system without pockets, blisters, wrinkles or fishmouths.
  - 7. Complete installation of roofing system up to line of termination of day's work. Install temporary water cut-offs of asphalt or plastic cement and fiberglass felts at end of each day's work. Remove upon resumption of work.
  
- C. Roofing Membrane – Heat Welded Application of Recovery Roof System:
  - 1. Install in accordance with roofing manufacturer's specification, and as specified below.
  - 2. Phased construction of roofing membrane is strictly prohibited, unless specifically approved by roofing manufacturer.
  - 3. Lay sheets at right angles to slope of deck.
  - 4. Beginning at low point of roof, heat weld unsurfaced ply sheet to substrate, lapping sides a minimum of 3 inches and ends a minimum of 6 inches. Seal laps by running a hot trowel along edge of the seam.
  - 5. Heat weld cap sheet over unsurfaced ply membrane, lapping sides a minimum of 3 inches and ends a minimum of 6 inches. Stagger laps between plies a minimum of 12 inches. Heat weld in accordance with manufacturer's recommendations. Avoid asphalt seepage greater than 1/2 inch at seams. Check lap seams using edge of a hot trowel. Correct defects.
  - 6. Granule Embedment: Broadcast approved granules into asphalt seepage during installation of cap sheet while bitumen is still hot.
  - 7. Complete application of roofing system without pockets, blisters, wrinkles or fishmouths.
  - 8. Complete installation of roofing system up to line of termination of day's work. Install temporary water cut-offs of asphalt or plastic cement and fiberglass felts at end of each day's work. Remove upon resumption of work.



- D. Base Flashing:
  - 1. Install 2 ply system consisting of unsurfaced ply sheet and mineral surfaced flashing sheet in accordance with requirements of roofing system manufacturer, with each ply sheet extending full height of flashing.
  - 2. Adhere sheets with torch application and mechanically attach leading edge at 9 in. o.c.
  - 3. Install where roofing system abuts vertical surfaces and at curbs.
- E. Liquid Applied Penetration Flashing:
  - 1. Install penetration flashings at scheduled penetrations as detailed in accordance with manufacturer's directions.
  - 2. Prepare metal surfaces by sandblasting to bare metal or as otherwise required by roofing manufacturer. Prime all metal surfaces with manufacturer's recommended primers.
  - 3. Install liquid flashing in a layered application with scrim cloth reinforcing.
- F. Roof Drains:
  - 1. Reuse existing roof drains, renovating as specified in Section 07 59 00 and raising the roof drains.
  - 2. Extend roof membrane into roof drain and flash with lead flashing and membrane in accordance with manufacturer's directions.
  - 3. Securely tighten clamping rings and securely install strainers. Replace damaged, missing or plastic roof drain strainers with painted cast iron strainers properly sized for each subject roof drain.
- G. Roof Walkways: Adhere and additional ply of modified bitumen cap sheet over the surface of the finished modified bitumen cap sheet in accordance with the manufacturer's requirements. Install walkways around three sides of all roof hatches, below doors providing access to roof areas, on each side of roof access ladders installed to provide access from one roof area to another and around all rooftop equipment requiring periodic maintenance. Provide one inch gaps between walkways at a maximum of 6 ft. on center or as otherwise approved.

#### **3.04 FIELD QUALITY CONTROL:**

- A. Manufacturer's Field Service:
  - 1. During installation, provide for 10 on-site inspections of roof application by qualified technical representatives of roofing manufacturer with individual inspections being made for all base ply installations prior to the installation of the cap sheet.
  - 2. Upon completion of installation, provide a final inspection at each site by a technical representative of roofing manufacturer to confirm that roofing system has been installed in accordance with manufacturer's requirements.
- B. Fire Watch:
  - 1. At the completion of each work day that involves work with an open flame (such as torch-applied product), the Contractor is to provide personnel to conduct a 4 hour fire watch. The fire watch commences at the completion of the day's work and ends 4 hours later.

#### **3.05 CLEANING AND PATCHING:**

- A. Clean up debris, excess materials and equipment and remove from site.
- B. Remove drippage or spills of coatings, sealant, mastic or primers from finish surfaces.
- C. Patch misaligned or inadequately lapped seams, inadequately adhered areas, punctures or other damage to membrane with a patch of membrane sheet that extends at least 6 inches in each direction from deficiency.

#### **3.06 PROTECTION:**

- A. Provide special protection and avoid heavy traffic on completed work when ambient temperature is above 80 degrees F.

- B. Restore to original condition or replace work or materials damaged during handling of roofing materials.

**END OF SECTION**