PROJECT WORK REQUIREMENTS

Existing Roof System Removal

1. Remove and replace approximately 10,300 square feet of the existing built-up roof (BUR) system on the Redwood Science Research Lab.
2. Completely remove the existing built-up roof system, insulation, flashings, and related trims down to the original decking. Legally dispose of all removed materials.
3. Elevator shaft and two stair shafts:
   a. Completely remove all layers of asphalt shingles on the one elevator and two stair shafts.
   b. Remove existing underlayment down to sheathing.
   c. Remove metal edge trim.
   d. Remove gutters on stair shafts.
4. On both the flat and sloped roofs, examine the existing deck and parapet substrate for any deterioration or water damage.
5. Remove and replace any deck areas and parapet substrate that has deteriorated or been damaged or will negatively impact the installation of new roof system.
6. Coordinate the removal of the existing roof system with the installation of the new roof to prevent exposure to weather conditions and potential water infiltration into the building.
7. Do not leave any areas exposed and unprotected from weather.
8. The Contractor will identify and provide all requirements and coordinate with COR for:
   a. safety devices
   b. dumpster installation, management, removal
   c. chutes or other methods of roofing material removal
   d. roof protection from exposure to the weather
   e. protection of property and personnel
   f. maintaining building access routes and circulation patterns
   g. contractors use of the premises
   h. contractor parking
   i. building security procedures
   j. equipment and materials storage
   k. waste disposal

Caulking & Joint Sealants

1. All defective roof deck joint sealants shall be removed and replaced with high performance sealants as part of the roof system.
2. The work shall include cleaning, priming, and installation of new sealants with new backer rods and new bond breakers.

New Flat Roof System

1. Install a new SBS roof system in accordance with the requirements of the roofing manufacturer.
2. The manufacturer of the roofing system shall have no less than five (5) years' successful experience in producing the materials required for this project.
3. Membrane, flashing, and adhesive shall be the single product of a standard manufacturer.
4. Install the new built-up roof and drains to have a minimum life of 20 years.

New Sloped Roof System

1. Install a new standing seam metal panel roof system in accordance with the requirements of the roofing manufacturer.
2. The manufacturer of the roofing system shall have no less than five (5) years' successful experience in producing the materials required for this project.
3. Metal panels and flashing shall be the single product of a standard manufacturer.
4. Install the new standing seam metal panel roof system to have a minimum life of 20 years.
5. Install gutters at eave of stair shafts.

Flashing

1. Install new flashing at all rooftop HVAC curbing, conduit, pipe supports, pipe vents, roof hatch, ventilation fans, and other roof penetrations.
2. All pipe flashings are to be pre-molded and provided with stainless steel pipe clamps at each penetration.
3. Install new parapet wall cap flashing with drip edge. Overlap as recommended by manufacturer.
4. Install new eave flashing with drip edge full perimeter of asphalt shingle roof.
5. All new flashing to match color of existing flashing from manufacturer's standard colors.

Walkways

1. Provide new walkway protection at:
   a. full perimeter of both stair shafts and elevator shaft
   b. full perimeter of all roof mounted HVAC units and/or other similar equipment requiring periodic servicing and any other trafficking areas.

Roof Drains

1. All existing drains shall be removed and replaced. Set drains below the roof membrane surface.
2. Provide and install additional drains as required.
3. Ensure that drainage water will be carried away from the building foundations, footings, lanes, sidewalks, and driveways.
4. Install tapered insulation to slope roof and direct water flow to drains and ensure that there is no ponding of water on the roof.
5. Install concrete splash blocks at all scupper/overflow drains.

Guard Rails

1. Provide OSHA approved guard rails at low parapet walls.

Temporary Water:

1. Government will provide access to water required for construction or pay for cost of water required for construction.
2. Do not disrupt the existing water service to the building.
3. Contractor shall provide hoses for water conveyance.

Temporary Electrical

1. The Government will provide temporary electrical service. The Government will pay for provided power.

2. The Contractor shall provide all necessary wiring, extensions, connections, and temporary lighting.

Temporary Ladders, Chutes, Scaffolds, Hoists, and Cranes
1. The Contractor shall furnish and maintain temporary ramps, scaffolds, hoists, or chutes required for proper execution of work.

Temporary Toilet Facilities
1. Portable toilets will be provided by the contractor.
2. Coordinate site location with COR.

Storage of Equipment and Materials
1. Coordinate laydown area location for contractor equipment and materials storage with COR.
2. Proper storage of equipment and materials is the sole responsibility of the contractor.
3. Store materials on site. Cover and protect materials subject to damage by weather, including during transit. All materials shall be available for inspection.
4. Store flammable materials and volatile liquids in sealed containers located at a minimum of 20 feet from existing buildings.
5. Liquid products shall be in sealed original containers
6. Keep all labels intact and legible, clearly showing the product, manufacturer, and other pertinent information.

Procedures
1. Owner will occupy the premises during the entire period of construction
2. Cooperate with owner's representee in all construction operations to minimize conflict and facilitate owner's usage.

Contractor's Key Personnel
1. The Contractor shall demonstrate the ability to provide qualified and experienced personnel in the completion of this task.
2. Key project personnel shall have successfully participated in the completion of similar projects. All contractors and subcontractor personnel working on this task order shall be U.S. Citizens. The Contractor shall identify key personnel in the technical proposal regardless of the type of task and provide contact information for each.
3. NOTE: Key personnel may not be added nor removed from the task without express approval of the Contracting Officer's Representative (COR). The COR will attach a copy of the request and approval to the CO via electronic mail.

EQUIPMENT AND SAFETY
Quality:
1. Hand tools, power tools, equipment, machinery, materials, and personal protective apparatus shall be of manufacture listed by US or internationally recognized testing laboratory for specific application for which they are to be used.
2. They shall be quality products recognized for professional construction use, applications, work practices.

Scaffolding:
1. There shall be a standard tubular frame and clamp system manufactured and tested according to international standards.
2. The scaffold system shall include the scaffold manufacturer's integrated access stairway sections, handrails, toe boards, and walking platforms.

Safe Clearance Procedure:
1. Prior to initial use, and periodically thereafter at times of continued use provide inspections of construction tools, equipment, and machinery.
2. Do not permit continued use of tools, equipment, and machinery that are not in good condition.

Fall Protection:
On unprotected sides of the building edge, provide workers with warning lines, guardrails, safety nets, or personal fall arrest systems, or a combination of safety monitoring systems.

Hot Work:
1. Includes all work that results in open flame such as welding, cutting, brazing, and burning, the use of cranes, forklifts, joists, or generators powered by petroleum fuel when used on or near the building.
2. The contractor shall always provide effective fire protection and prevention during such operations.

Roof Access
1. Contractor personnel must access the roof from the EXTERIOR of the building.
2. Material loading and off-loading must be done from the EXTERIOR of the building.
3. Limit personnel movement through the occupied building interior.

Quality Assurance
Safety and Health Program Manager:
1. Appoint a Safety and Health Program Manager whose duties include effective implementation, coordination, and enforcement of CAL-OSHA Regulations.
2. The manager will be qualified to anticipate, identify, evaluate, and implement corrective action in relation to potential safety and health hazards and dangerous exposures to prevent accidents.
3. Provide frequent safety, health, and housekeeping inspections conducted by the Safety and Health Program Manager.
4. Inspections shall be at and not limited to temporary structures, fabrication shops, machinery, materials, and equipment.

PROJECT DESIGN REQUIREMENTS

Structural Requirements (as needed for new roof drains or support of existing drains)

1. Design new roof drain framing and additional framing for current roof drain locations in accordance with applicable provisions for seismic design in the International Building Code.
2. Incorporate local design codes and standards.

Building Code Requirements

Meet or exceed the requirements of the most recently adopted editions of the following codes:

1. International Existing Building Code
2. International Building Code (structural)
3. Uniform Plumbing Code
4. 2019 California Administrative Code, Title 24, Part1 - Section 8000
5. 2018 International Property Maintenance Code
6. 2019 California Referenced Standards Code, Title 24, Part 12, including Appendix - Section 8110
7. 2019 California Existing Building Code - Section 8130
8. 2019 California Energy Code, Title 24, Part 6 - Section 8160
9. 2019 California Electrical Code, Title 24, Part 3 - Section 8030
10. 2019 California Building Code, Title 24, Part 2, Volumes 1 & 2
11. 2019 California Mechanical Code, Title 24, Part 4 - Section 8040
12. 2019 California Plumbing Code, Title 24, Part 5 - Section 8050

Plumbing Requirements

1. All plumbing shall minimally meet the Uniform Plumbing Code (UPC) and California Plumbing Code, Title 24, Part 5, Section 8050.
2. All fixtures, valves and appurtenances shall be listed by IAPMO, UL or other recognized testing laboratories.
3. Drain Waste and Vent System (DWV) system piping system shall be hubless cast iron pipe with shielded couplings.

Utility Connections

1. Verify that existing drainpipes are in good condition. If not, remove and replace.
2. Connect new roof drains and piping to existing or replaced piping.
3. Coordinate the design required for connections from the facility to these utilities