DULUTH STEAM

4th Avenue West and 1st Street Steam Vault Repair

Duluth, Minnesota

**Structural Notes:**

- Reinforcing shall be shop fabricated, except #3 or #4 bars may be field bent. Do not strip forms until concrete has reached adequate strength.
- A special inspection agency shall be retained to perform the following special inspections:
  - Reinforcing Steel: Stainless steel A995, Gr 2205 or approved equal unless noted otherwise.
- The drawings, and all designs shown within these drawings, are copyrighted by Krech Ojard & Associates. The use of water reducing agents and plasticizers may be required.
- Design Loads:
  - Contractor shall review, mark, and stamp all submittals before submittal to the Engineer. Unreviewed submittals will not be considered.
- Specifications for Construction:
  - SOILS AND FOUNDATIONS: Conformance of site preparation, fill placement, and in-place density to 95% Standard Proctor Density.
  - AFL-93 Design Vehicle
  - Cast in place anchors shall be ASTM A316 Stainless Steel threaded rod with nut and washer at embedded point. Hilti HY 150 Max or approved equal. Hole preparation and rod installation shall be per manufacturer's instructions.
- Crystalline Waterproofing: Xypex's "C-500" or approved equal
- Roof & Walls:
  - Sheeting:
    - Jiffy Seal 140/60 (Protecto Wrap)
  - Flex Membrane:
    - 1 1/2" Puma (Flex Membrane with 1 1/2" Insulation)
  - Flashing:
    - 3/4" - 1" (max)" bonding compound or wet cure system per ACI recommendations, with special consideration for slag and fly ash.
The document contains detailed instructions for the construction and demolition of a steam vault. It includes measurements, requirements for concrete and steel, and instructions for traffic control. The diagrams provide a visual representation of the vault walls, floor, and roof, along with details on the placement of vents and the replacement of steel dowels for roof connections. The instructions are specific to the City of Duluth, with references to various standards and specifications.