SCHEDULE OF ITEM

Item No.	Description	Quantity	Unit	Unit Price	Total Price
1.	Design, manufacture, delivery, and installation of a single girder crane which will be mounted on this platform and lift the concrete vault lids (1,000#) off the vault, move lid aside and replace after casket interment.	1	Each	$_____	$_____

STATEMENT OF WORK

Design, Manufacture, Delivery, and Installation of a Single Girder Crane

1. BACKGROUND

The Veterans Administration is currently utilizing a Lowering Device Platform (LDP) which lowers caskets into preplaced concrete vaults. We are seeking proposals for the design and installation of a crane which will be mounted on this platform and lift the concrete vault lids (1,000#) off the vault, move lid aside and replace after casket interment. We currently have a prototype in operation (see photos). Plans for this prototype and existing platform are attached to this statement of work and may be used to assist in the design. This prototype is to be replaced by the following: 1. Runways (to be installed on the LDP). 2. A bridge girder (to support the hoist) 3. Motorized end trucks. 4. Power supply. 5. Low headroom wire rope hoist. This assembly is to be installed on a working platform at Riverside National Cemetery, Riverside California.

2. STATEMENT OF BID ITEM

2.1 Work includes the detailed design of completed crane system, including as applicable: bridge, end trucks, hoist, cabling, controls and all appurtenances specified hereinafter.

2.2 Shop drawings

2.3 Fabrication of complete crane

2.3 Onsite installation

2.4 Inspection and shop testing

2.5 Documentation and schedules

3. REFERENCES

3.1 OSHA – Occupational Safety and Health Administration
Part 1926.554 – Overhead Hoists
Part 1910.179 – Overhead and Gantry Cranes

3.2 CMAA Crane Manufacturer's Association of America
Specifications for Top Running Bridge and Gantry Tryp Multiple Girder Electric Overhead Traveling Cranes.

3.3 American National Standards Institute/American Society of Mechanical Engineers.
ANSI\ASME HST-4 Performance Standards for Overhead Electric Wire Rope Hoists.
ANSI\ASME B 30.2-2001 Overhead and Gantry Cranes.
3.4 NEMA – National Electric Manufacturer's Association

3.5 NEC – National Electric Code.

4. SUBMITTALS

SHOP DRAWINGS AND EQUIPMENT DATA

4.1 Manufacturer's catalogue data for hoist.
4.2 Dimensional drawings and details for crane system.
4.3 Wiring schematics.

OPERATIONS AND MAINTENANCE MANUALS (one set of Owner's manuals in paper and on CD ROM)

4.4 Equipment function, normal operating characteristics, and limiting conditions.

4.5 Assembly, installation, alignment, and maintenance instructions.

4.6 Lubrication and maintenance instructions.

4.7 Guide to "troubleshooting".

4.8 Parts list.

4.9 As built drawing.

4.10 Test results

5. APPLICABLE STANDARDS

5.1 Contractor shall adhere to OSHA, state, and local safety guideline, laws, rules, and regulations.

5.2 Contractor shall conform to all applicable ANSI, CMAA, and HMI specifications and\or standards.

5.3 All electric equipment shall be UL, CSA c/us or ETL labeled.

6. WARRANTIES

Provide one-year equipment warranty.

7. Materials

Components	Material
Bridge beams	Steel, ASTM A36 or A992
End trucks	Steel, ASTM A36 (or equal)
Trolley	Steel, ASTM A36 (or equal)
Wheels	Cast iron or steel
Hooks	Forged steel

8. EQUIPMENT

HOIST

8.1 The hoist shall be equipped with an electro-mechanical load-limiting device that shall prevent lifting more than 110% of the rated load.

8.2 Hoist motor brake shall be DC disc type with adequate torque to stop and hold over 125% of the hoist rated load.

8.3 Wire rope shall be constructed from galvanized steel having a minimum safety factor of 5.

8.4 The hoist nameplate is to carry a CSA c/us rating. The actual hoist control enclosure rating shall be at least equivalent to IP55/NEMA 4 type.

8.5 Hooks shall be made of forged alloy steel. (34CrMo4QT or 34CrNiMo6QT) and shall be fitted with spring-loaded flipper-type safety latch.

8.6 Hoist shall have a duty rating suitable for the load class and load cycles of the application.

8.7 Top-running single girder crane (1/2 ton capacity). Spacemaster SX low headroom electric wire rope hoist (R&M Materials Handling Inc., Springfield, OH) or equal.

8.8 Hoisting motor shall be two-speed/two winding squirrel cage type with a speed ratio of 6:1.

8.9 Hoisting motor shall be totally enclosed with IP55 protection, minimum class F insulation, Klixon type bimetal switch for thermal protection and shall have a 60% ED rating.

8.10 Rotary cam type limit switch equipped with 4 micro-switches shall be provided. Limit switch shall provide upper and lower limit of hoist travel, hoist slow down prior to reaching upper limit and phase sequence supervision at upper limit. An additional block operated limit shall be included.

8.11 Large diameter rope drum with a minimum of 36:1 drum to wire rope diameter ratio. Groove depth shall be at least 35% of rope diameter. The rope drum shall be equipped with a rope guide to help keep the rope aligned in the grooves of the drum.

8.12 AGMA quality class 12 machine cut, hardened and precision ground hoist gearing. The gears inside the hoist gearboxes on models up to 5 ton capacity are lubricated by semi-fluid grease.

9. END TRUCKS AND BRIDGE DRIVES

9.1 End trucks shall be designed in accordance with CMAA specifications as applicable.

9.2 End trucks shall be bolted to bridge girder.

9.3 Bridge drive shall be dual-motor (A-4 arrangement per CMAA). Other drive methods may be used upon approval of the Contracting Officers Technical Representative.

9.4 Bridge motors shall be inverter duty motors with minimum class "F" insulation and motor enclosures shall be TENV (totally enclosed non-ventilated).

9.5 AGMA quality class 10, hardened and precision ground bridge drive gearing, lubricated by semi-fluid grease.

9.6 Bridge drive shall be designed to stop the bridge within CMAA specifications.

9.7 End trucks shall be equipped with rail sweeps and energy-absorbing rubber bumpers.

9.8 Travel limit switches to be provided as necessary for safe operation.

9.9 Bridge shall be furnished with an adjustable frequency inverter drive and two-step or infinitely variable speed control for smooth acceleration and decelerations.

10. POWER SUPPLY

The crane is to be used in the field and requires an independent power supply. A battery capable of lifting\lowering the 1,000# lid 50 cycles before requiring a recharge is preferred. If a generator is required it shall be electric start, fuel efficient and whisper quiet. The prototype is currently utilizing a 12v marine battery which is removed nightly and recharged.

11. LABELING

11.1 Hoist and bridge beam shall be labeled with load rating.

11.2 A corrosion-resistant nameplate shall be fixed to the bridge with the following information.

a. Name of Manufacturer
b. Mfg's model number and serial number
c. Capacity
d. Date of manufacture (month and year)

12. PAINTING

12.1Hoist and trolley shall be factory painted (2-part epoxy or powder coat) per manufacturer's standards.

12.2 Bridge shall be shop cleaned, primed, and painted per manufacturer's standards.

12.3 The following items shall not be painted

a. Rail surfaces in contact with wheels
b. Wheel running surfaces
c. Hoist wire rope
d. Conductor bar, festoon cables and supports (if applicable)

13. INSTALLATION AND INSPECTION

13.1 Before installation of crane assembly the Lowering Device Platform will require replacement of 4 wheels. Existing 4 wheels shall be replaced with Hamilton Champion #7241900-R Heavy duty swivel caster (or equal).

13.2 Bridge crane assembly shall be installed in conformance with manufacturer's instructions. Provide all necessary accessories to make crane complete, usable, and capable of meeting the operating requirements specified in the Operating Requirements. Test, adjust and clean equipment for acceptance by the Veterans Administration Contracting Officer's Representative (COR).

14. TESTING

All crane equipment shall be operated through a complete lift and lowering cycle and through a complete travel of the bridge to determine that the equipment shall perform smoothly and safely and that pendant cable length is sufficient to permit operation from desired levels. All tests shall be carried out with the crane equipment loaded at 125% of capacity. The bridge crane provider shall provide the test weight loads. Any defects shall be corrected by the crane provider without any expense to the government.

15. GENERAL INFORMATION

15.1 The crane assembly will be utilized outside during all seasons. All electrical and mechanical parts shall be protected to ensure operability year round.

15.2 Crane, batteries\power supplies, motors and controllers shall be mounted in such a fashion as to facilitate easy removal\replacement.

15.3 Dimensions and clearances are included in the attached drawings.

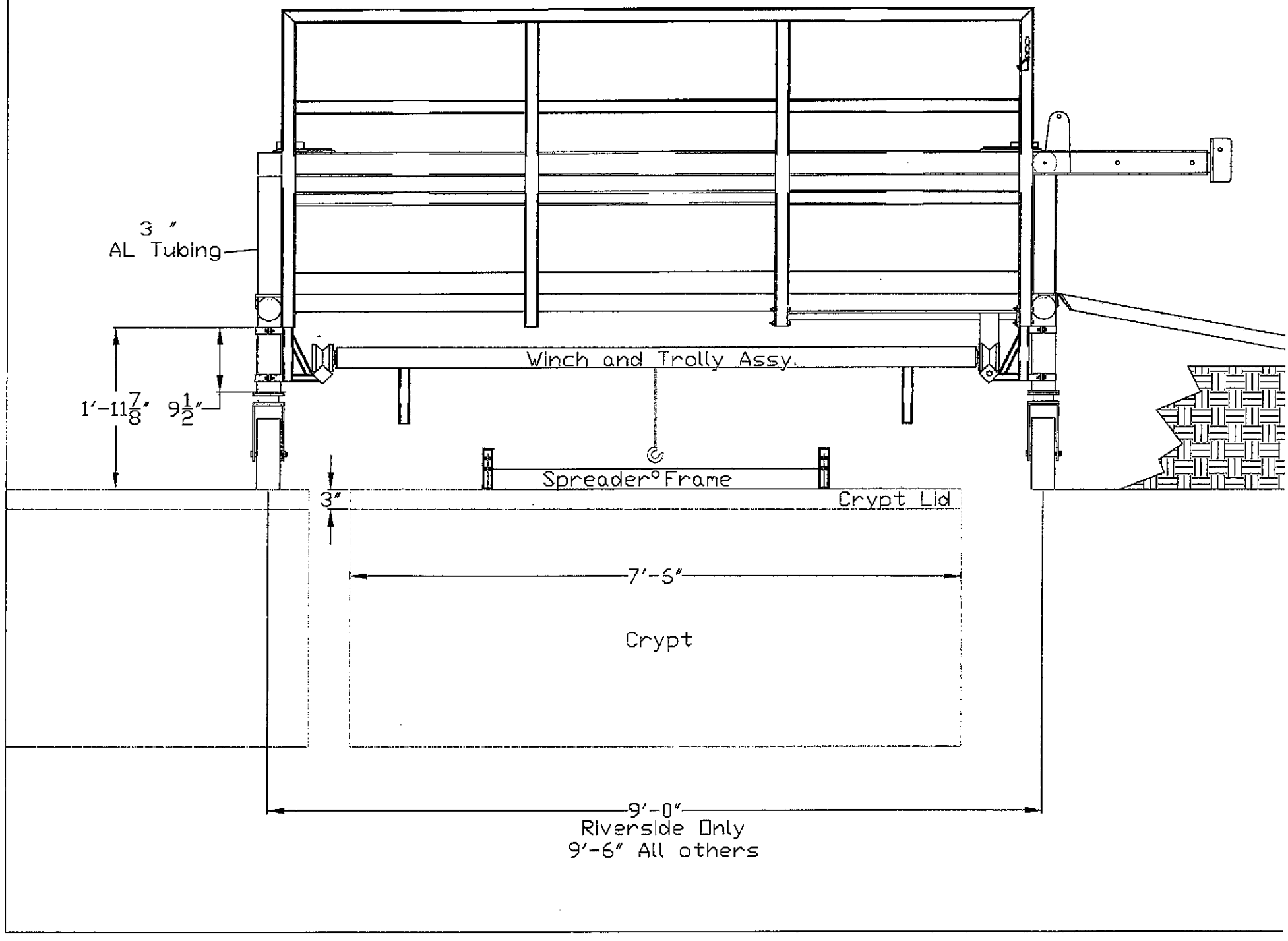
15.4 Spreader frames are currently in use and vary in design to suit local site specific characteristics (vault lid lift requirements). Minor onsite modifications may be required.

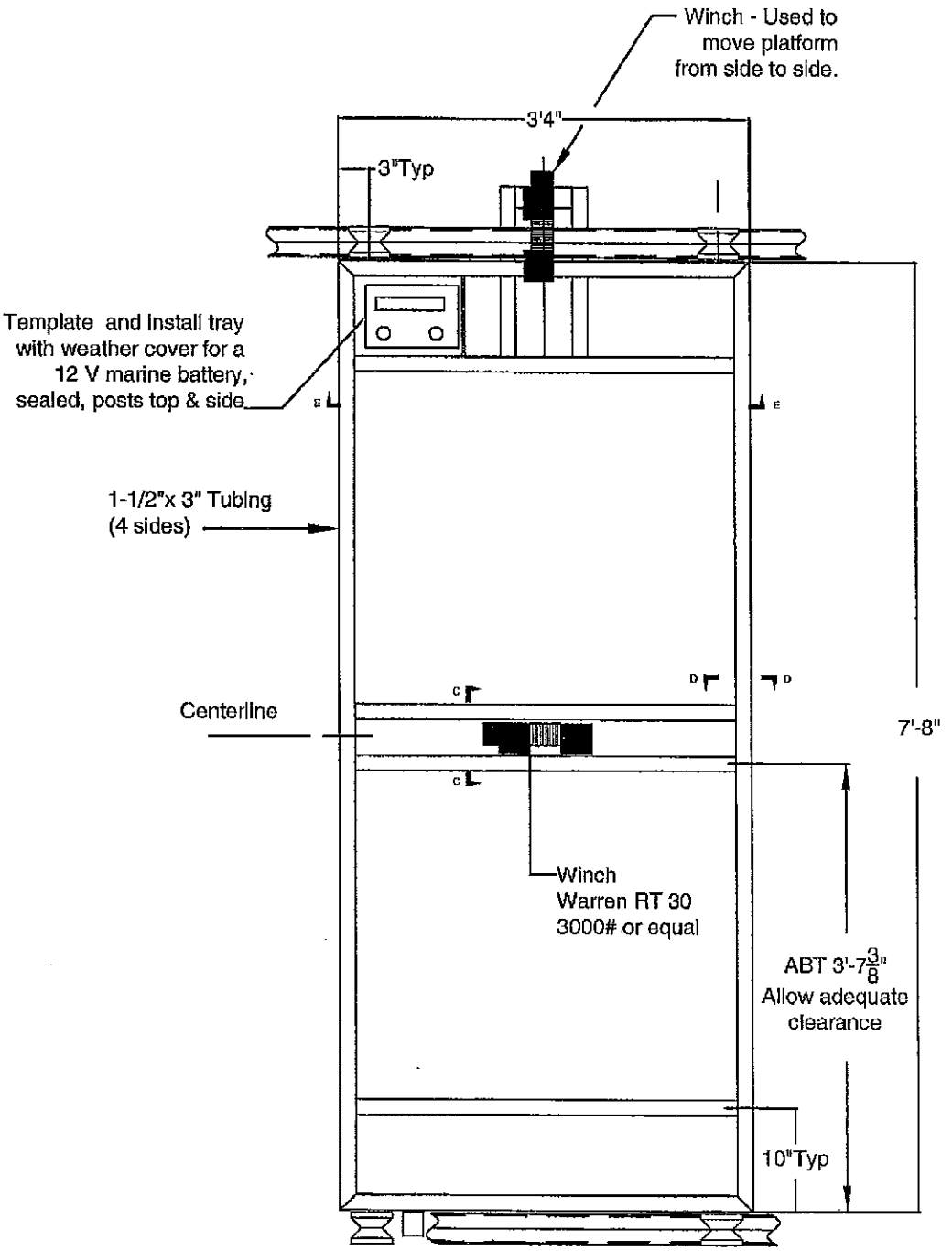
16. TIMEFRAME

Delivery and installation 45 days from award of contract. Additional time may be allowed by COR for accommodate long lead items.

17. CLEANUP

Upon completion of work, area shall be cleaned and restored to original condition, acceptable by the COR.


3 ″
AL Tubing
1′-11 7/8″
9 1/2″
Winch and Trolly Assy.
Spreader° Frame
3″
Crypt Lid
7′-6″
Crypt
9′-0″
Riverside Only
9′-6″ All others

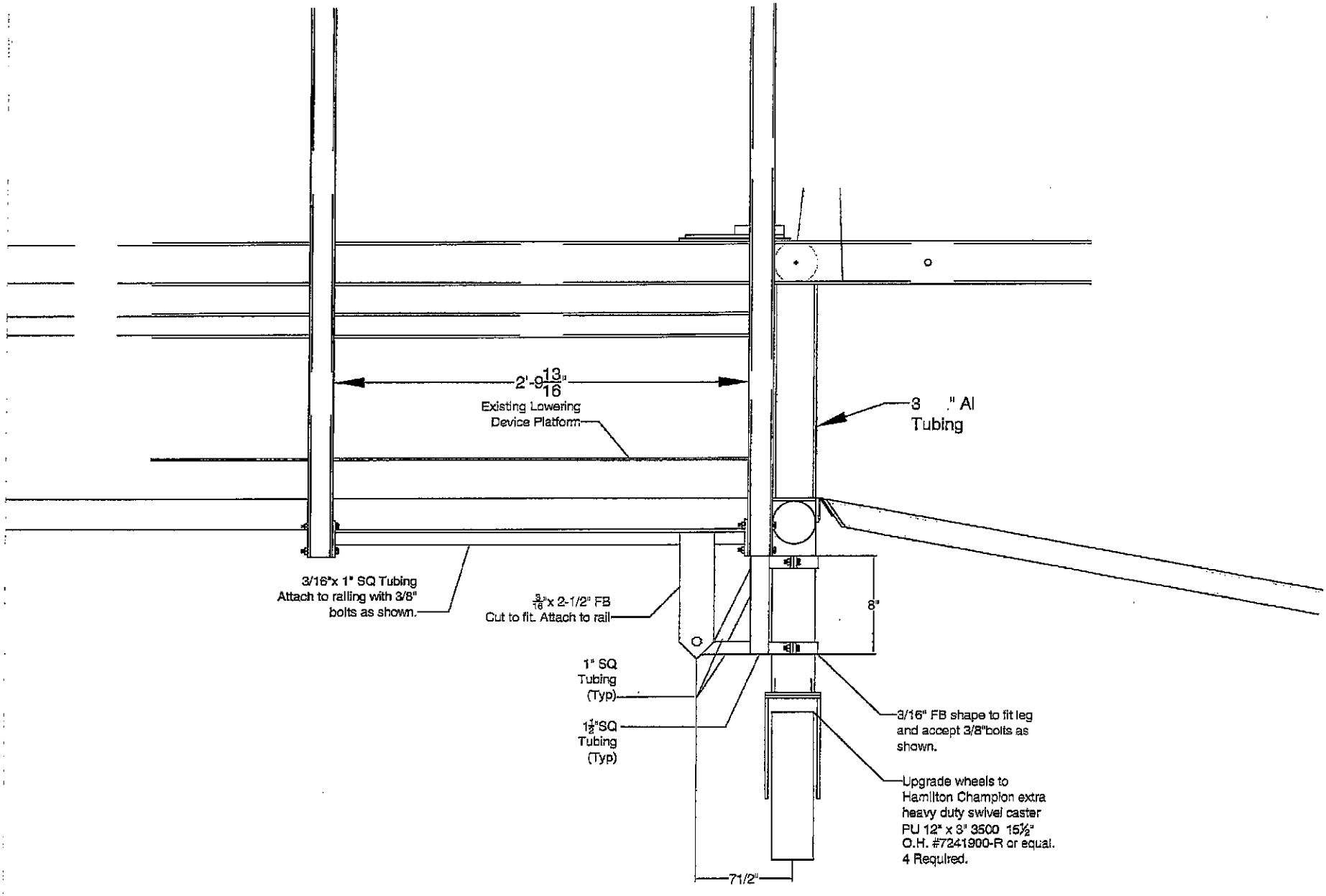


Lift Prototype

Hoist and moveable platform used to lift vault lids, move to side and replace. Assembly to be replaced with an engineered crane consisting of two end trucks, and one bridge girder.

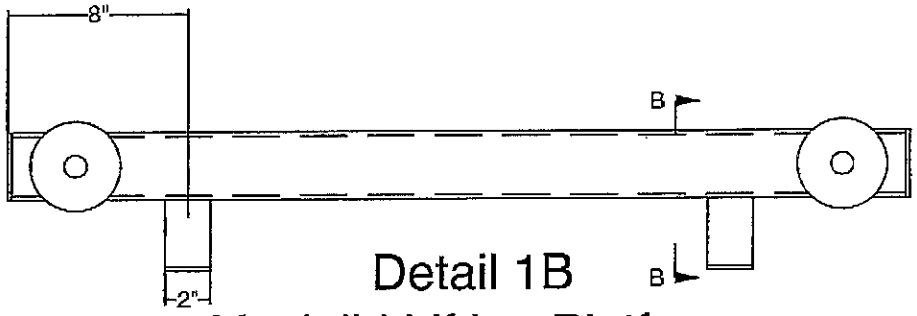
Plan View 1A
Vault Lid Lifting Platform

Scale ¾"=1'-0"



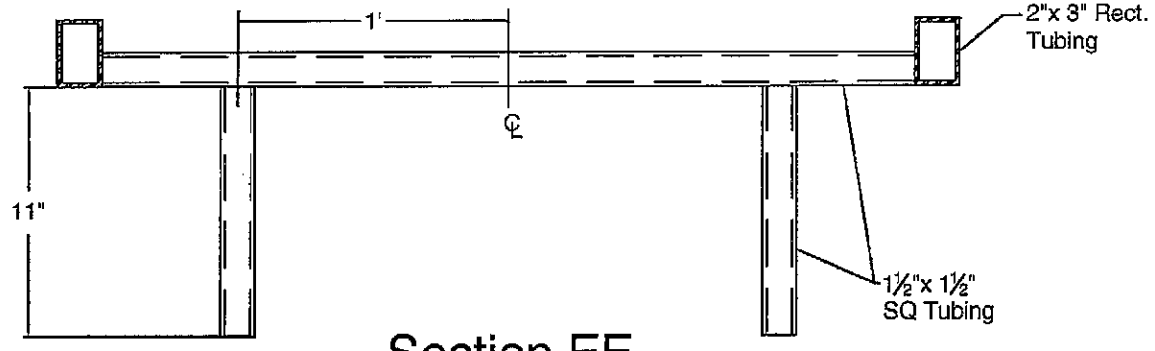
Detail 1A
Lid Lift Rail Support & Leg Attachment

Scale 1"=1'-0"



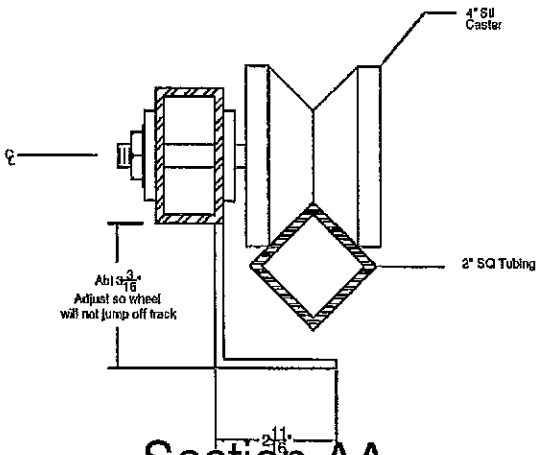
Detail 1B
Vault lid Lifting Platform
with securing brackets

Scale 1½"=1'-0"



Section EE
Vault lid Lifting Platform
with lid stablizing bars

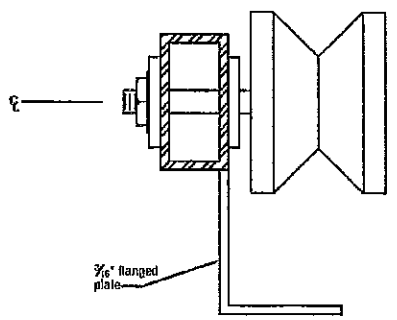
Scale 1½"=1'-0"



Section AA

Platform shown mounted on rail

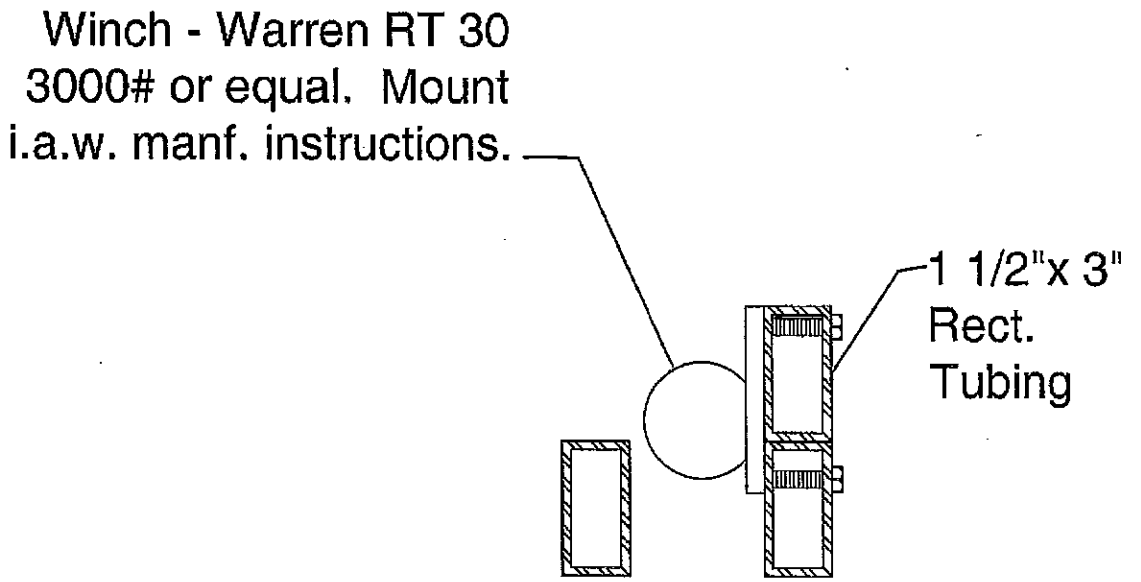
Scale 3"=1'-0"



Section BB

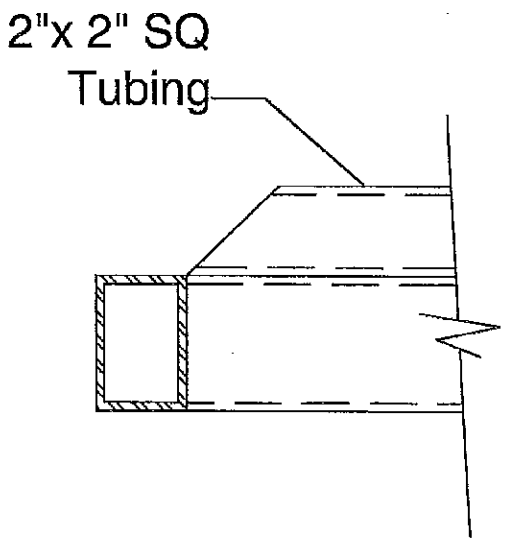
Platform shown without rail

Scale 3"=1'-0"



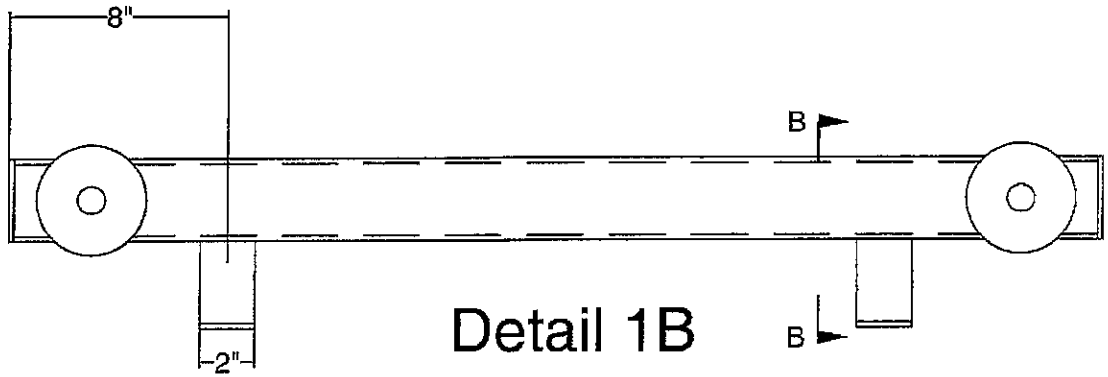
Section CC
Winch Mount and cable
guide\securing bracket

Scale 3"=1'-0"



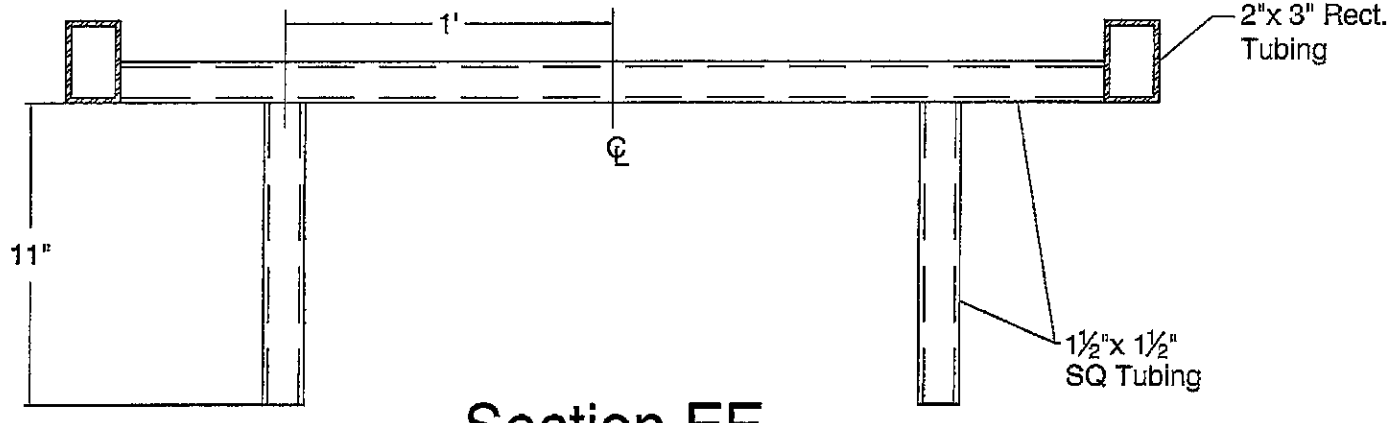
Section DD
Reinforced Winch Bracket Mount

Scale 3"=1'-0"



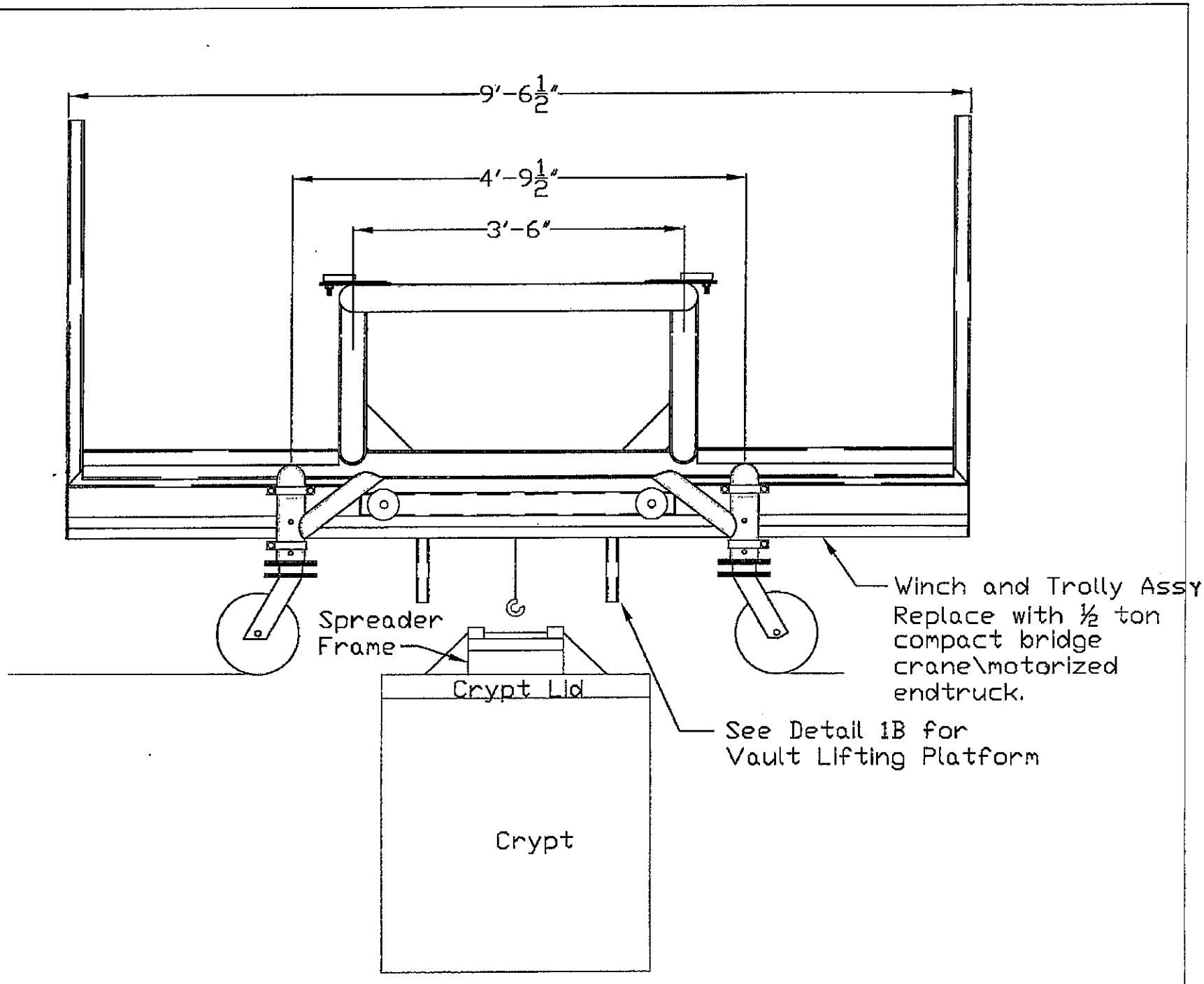
Detail 1B
Vault lid Lifting Platform with securing brackets

Scale 1½"=1'-0"



Section EE
Vault lid Lifting Platform with lid stablizing bars

Scale 1½"=1'-0"


9'-6½"
4'-9½"
3'-6"
Winch and Trolly Assy
Replace with ½ ton
compact bridge
crane\motorized
endtruck.
Spreader
Frame
Crypt Lid
See Detail 1B for
Vault Lifting Platform
Crypt