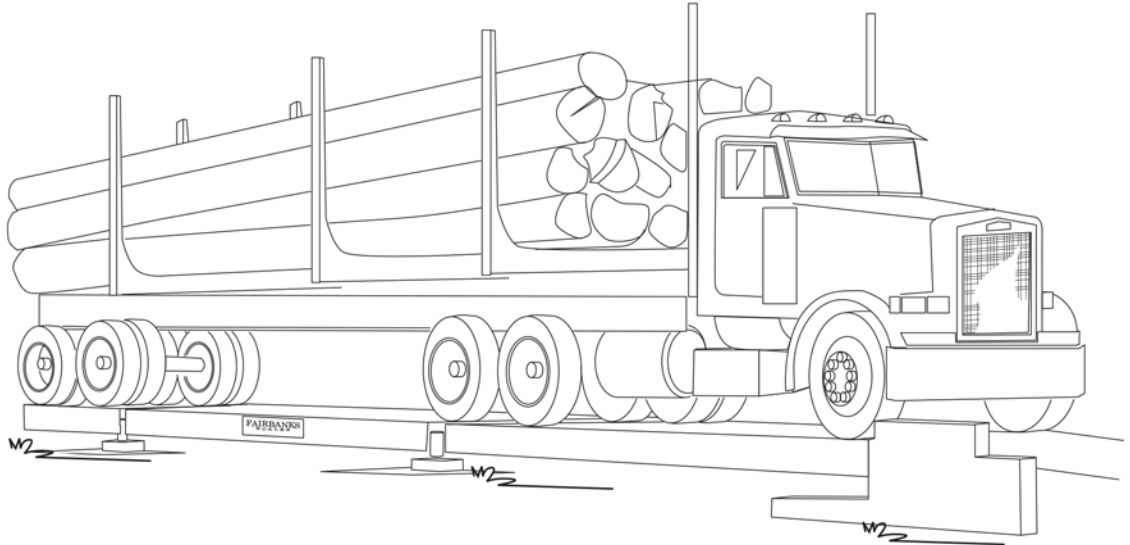




TALON SERIES

Motor Truck Scale

Models: HV Series
HVX Series



FAIRBANKS

Amendment Record

Talon Series Motor Truck Scales

50785

Manufactured by Fairbanks Scales Inc.

821 Locust

Kansas City, Missouri 64106

Issue 1	04/05	New Product
Issue 2	09/05	Corrected Parts List
Revision 3	01/08	Updated Illustrations and Specifications
Revision 4	10/08	Parts Update; Updated Illustrations and Specifications per Engineering Dept.
Revision 5	05/12	Parts update
Revision 6	03/15	Parts Update

Disclaimer

Every effort has been made to provide complete and accurate information in this manual. However, although this manual may include a specifically identified warranty notice for the product, Fairbanks Scales makes no representations or warranties with respect to the contents of this manual, and reserves the right to make changes to this manual without notice when and as improvements are made.

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Section 1: General Information

A. Introduction

This Instruction manual provides installation instructions for the Fairbanks Modular Steel and Field-Pour model scales.

For correct Talon scale installation(s), use:

- Methods and Procedures FF-2267 / 101732 (Appendix I)
- The Certified prints/setting plans supplied with the scale
- This Instruction Manual, 50785

The concrete foundation work must be performed according to the Certified prints issued for the specific customer and order number. (The name and order number for the particular customer will be on the prints.)

B. Description

The Modular Steel and Field Pour truck scales are available in various lengths and widths. The scale is made up of modules of 10', 15', 20' or 23'-4" in length. All modules are assembled and welded at the factory.

The scale should be located so that vehicles can approach and exit the scale as easily as possible. The platform should be visible from the instrument location. Drainage of surface water must be such that water does not collect under the scale. Smooth and level approaches are required at each end of the platform to reduce loading shock and facilitate testing of the scale. Approaches must conform to the requirements of the law in the state in which the scale is being installed. In the absence of such laws the approaches must conform to paragraph UR.2.6 National Institute of Standards and Technology Handbook 44, which states that the first 10 feet must be level and on the same plane as the scale platform.

C. Specifications

NTEP CC: **96-089A3**

MC: **AM - 4949**

1. Talon HV Steel Deck

<u>Product Number</u>	<u>Capacity Tons</u>	<u>Platform Size</u>	<u>Number Sections</u>	<u>CLC Lbs</u>	<u>Modules</u>
89560	60 Ton	10' x 10'	2	90K	1
89572	60 Ton	10' x 11'	2	90K	1
89561	60 Ton	15' x 10'	2	90K	1
89573	60 Ton	15' x 11'	2	90K	1
89562	60 Ton	20' x 10'	2	90K	1
89574	60 Ton	20' x 11'	2	90K	1
89563	60 Ton	23' x 10'	2	90K	1
89575	60 Ton	23' x 11'	2	90K	1
89564	90 Ton	30' x 10'	3	90K	2
89576	90 Ton	30' x 11'	3	90K	2
89565	90 Ton	40' x 10'	3	90K	2
89577	90 Ton	40' x 11'	3	90K	2
89566	90 Ton	47' x 10'	3	90K	2
89578	90 Ton	47' x 11'	3	90K	2
89567	120 Ton	60' x 10'	4	90K	3
89579	120 Ton	60' x 11'	4	90K	3
89568	120 Ton	70' x 10'	4	90K	3
89580	120 Ton	70' x 11'	4	90K	3
89569	150 Ton	80' x 10'	5	90K	4
89581	150 Ton	80' x 11'	5	90K	4
89570	150 Ton	90' x 10'	5	90K	4
89582	150 Ton	90' x 11'	5	90K	4
89571	150 Ton	100' x 10'	6	90K	5
89583	150 Ton	100' x 11'	6	90K	5
89736	150 Ton	110' x 10'	6	90K	5
89740	150 Ton	110' x 11'	6	90K	5
89737	150 Ton	120' x 10'	7	90K	6
89741	150 Ton	120' x 11'	7	90K	6

2. Talon HVX Steel Deck

<u>Product Number</u>	<u>Capacity Tons</u>	<u>Platform Size</u>	<u>Number Sections</u>	<u>CLC Lbs</u>	<u>Modules</u>
89584	60 Ton	10' x 10'	2	95K	1
89596	60 Ton	10' x 11'	2	95K	1
89608	60 Ton	10' x 12'	2	95K	1
89585	60 Ton	15' x 10'	2	95K	1
89597	60 Ton	15' x 11'	2	95K	1
89609	60 Ton	15' x 12'	2	95K	1
89586	60 Ton	20' x 10'	2	95K	1
89598	60 Ton	20' x 11'	2	95K	1
89610	60 Ton	20' x 12'	2	95K	1
89587	60 Ton	23' x 10'	2	95K	1
89599	60 Ton	23' x 11'	2	95K	1
89611	60 Ton	23' x 12'	2	95K	1
89588	90 Ton	30' 4" x 10'	3	95K	2
89600	90 Ton	30' 4" x 11'	3	95K	2
89612	90 Ton	30' 4" x 12'	3	95K	2
89589	90 Ton	40' 4" x 10'	3	95K	2
89601	90 Ton	40' 4" x 11'	3	95K	2
89613	90 Ton	40' 4" x 12'	3	95K	2
89590	90 Ton	47' x 10'	3	95K	2
89602	90 Ton	47' x 11'	3	95K	2
89614	90 Ton	47' x 12'	3	95K	2
89591	120 Ton	60' x 10'	4	95K	3
89603	120 Ton	60' x 11'	4	95K	3
89615	120 Ton	60' x 12'	4	95K	3
89592	120 Ton	70' x 10'	4	95K	3
89604	120 Ton	70' x 11'	4	95K	3
89616	120 Ton	70' x 12'	4	95K	3
89593	150 Ton	80' x 10'	5	95K	4
89605	150 Ton	80' x 11'	5	95K	4
89617	150 Ton	80' x 12'	5	95K	4
89594	150 Ton	90' x 10'	5	95K	4
89606	150 Ton	90' x 11'	5	95K	4
89618	150 Ton	90' x 12'	5	95K	4
89595	150 Ton	100' x 10'	6	95K	5
89607	150 Ton	100' x 11'	6	95K	5
89619	150 Ton	100' x 12'	6	95K	5
89744	150 Ton	110' x 10'	6	95K	5
89748	150 Ton	110' x 11'	6	95K	5
89752	150 Ton	110' x 12'	6	95K	5
89745	150 Ton	120' x 10'	7	95K	6
89749	150 Ton	120' x 11'	7	95K	6
89753	150 Ton	120' x 12'	7	95K	6

3. Talon HV Field Pour

Product Number	Capacity Tons	Platform Size	Number Sections	CLC Lbs	Modules
89500	60 Ton	10' x 10'	2	90K	1
89512	60 Ton	10' x 11'	2	90K	1
89501	60 Ton	15' x 10'	2	90K	1
89513	60 Ton	15' x 11'	2	90K	1
89502	60 Ton	20' x 10'	2	90K	1
89514	60 Ton	20' x 11'	2	90K	1
89503	60 Ton	23' x 10'	2	90K	1
89515	60 Ton	23' x 11'	2	90K	1
89504	90 Ton	30' x 10'	3	90K	2
89516	90 Ton	30' x 11'	3	90K	2
89505	90 Ton	40' x 10'	3	90K	2
89517	90 Ton	40' x 11'	3	90K	2
89506	90 Ton	47' x 10'	3	90K	2
89518	90 Ton	47' x 11'	3	90K	2
89507	120 Ton	60' x 10'	4	90K	3
89519	120 Ton	60' x 11'	4	90K	3
89508	120 Ton	70' x 10'	4	90K	3
89520	120 Ton	70' x 11'	4	90K	3
89509	150 Ton	80' x 10'	5	90K	4
89521	150 Ton	80' x 11'	5	90K	4
89510	150 Ton	90' x 10'	5	90K	4
89522	150 Ton	90' x 11'	5	90K	4
89511	150 Ton	100' x 10'	6	90K	5
89523	150 Ton	100' x 11'	6	90K	5
89716	150 Ton	110' x 10'	6	90K	5
89720	150 Ton	110' x 11'	6	90K	5
87503	150 Ton	115' x 11	6	90K	5
98717	150 Ton	120' x 10'	7	90K	6
98721	150 Ton	120' x 11'	7	90K	6

4. Talon HVX Field Pour

Product Number	Capacity Tons	Platform Size	Number Sections	CLC Lbs	Modules
89524	60 Ton	10' x 10'	2	95K	1
89536	60 Ton	10' x 11'	2	95K	1
89548	60 Ton	10' x 12'	2	95K	1
89525	60 Ton	15' x 10'	2	95K	1
89537	60 Ton	15' x 11'	2	95K	1
89549	60 Ton	15' x 12'	2	95K	1
89526	60 Ton	20' x 10'	2	95K	1
89538	60 Ton	20' x 11'	2	95K	1
89550	60 Ton	20' x 12'	2	95K	1
89527	60 Ton	23' x 10'	2	95K	1
89539	60 Ton	23' x 11'	2	95K	1
89551	60 Ton	23' x 12'	2	95K	1
89528	90 Ton	30' 4" x 10'	3	95K	2
89540	90 Ton	30' 4" x 11'	3	95K	2
89552	90 Ton	30' 4" x 12'	3	95K	2
89529	90 Ton	40' 4" x 10'	3	95K	2
89541	90 Ton	40' 4" x 11'	3	95K	2
89553	90 Ton	40' 4" x 12'	3	95K	2
89530	90 Ton	47' x 10'	3	95K	2
89542	90 Ton	47' x 11'	3	95K	2
89554	90 Ton	47' x 12'	3	95K	2
89531	120 Ton	60' x 10'	4	95K	3
89543	120 Ton	60' x 11'	4	95K	3
89555	120 Ton	60' x 12'	4	95K	3
89532	120 Ton	70' x 10'	4	95K	3
89544	120 Ton	70' x 11'	4	95K	3
89556	120 Ton	70' x 12'	4	95K	3
89533	150 Ton	80' x 10'	5	95K	4
89545	150 Ton	80' x 11'	5	95K	4
89557	150 Ton	80' x 12'	5	95K	4
89534	150 Ton	90' x 10'	5	95K	4
89546	150 Ton	90' x 11'	5	95K	4
89558	150 Ton	90' x 12'	5	95K	4
89535	150 Ton	100' x 10'	6	95K	5
89547	150 Ton	100' x 11'	6	95K	5
89559	150 Ton	100' x 12'	6	95K	5
89724	150 Ton	110' x 10'	6	95K	5
89728	150 Ton	110' x 11'	6	95K	5
89732	150 Ton	110' x 12'	6	95K	5
89725	150 Ton	120' x 10'	7	95K	6
89729	150 Ton	120' x 11'	7	95K	6
89733	150 Ton	120' x 12'	7	95K	6

Section 2: Installation

A. Introduction

Installation consists of the following:

- Foundation check, layout, and base plate setting
- Tools, materials, documentation, and a crane
- Setting the modules
- Setting the modules on load cells

Note: *Additional installation instructions are provided for the Field-Pour deck in Section 3 of this manual.*

B. Preparations for Installations, all Models

1. Tools, Equipment, and Materials Required:

- a. Certified Prints
- b. A mobile crane of sufficient capacity to safely lift and place the weigh bridge modules.

Approximate maximum weights:

- Steel modules - 4 tons
 - Field pour Modules - 2.5 tons
 - w/concrete - 12.5 tons to 15 tons +/- 5%
- c. Four (4) equal length (20 ft) lifting chains or cables with hooks to safely attach to the modules at the lifting points.

Note: The lifting chains or cables MUST be requested in advance from the crane vendor.

- d. Machinists levels (starrett # 134 & 132-6)
- e. Hand tools
- f. Hammer Drill with $\frac{5}{8}$ " bit, 24" long

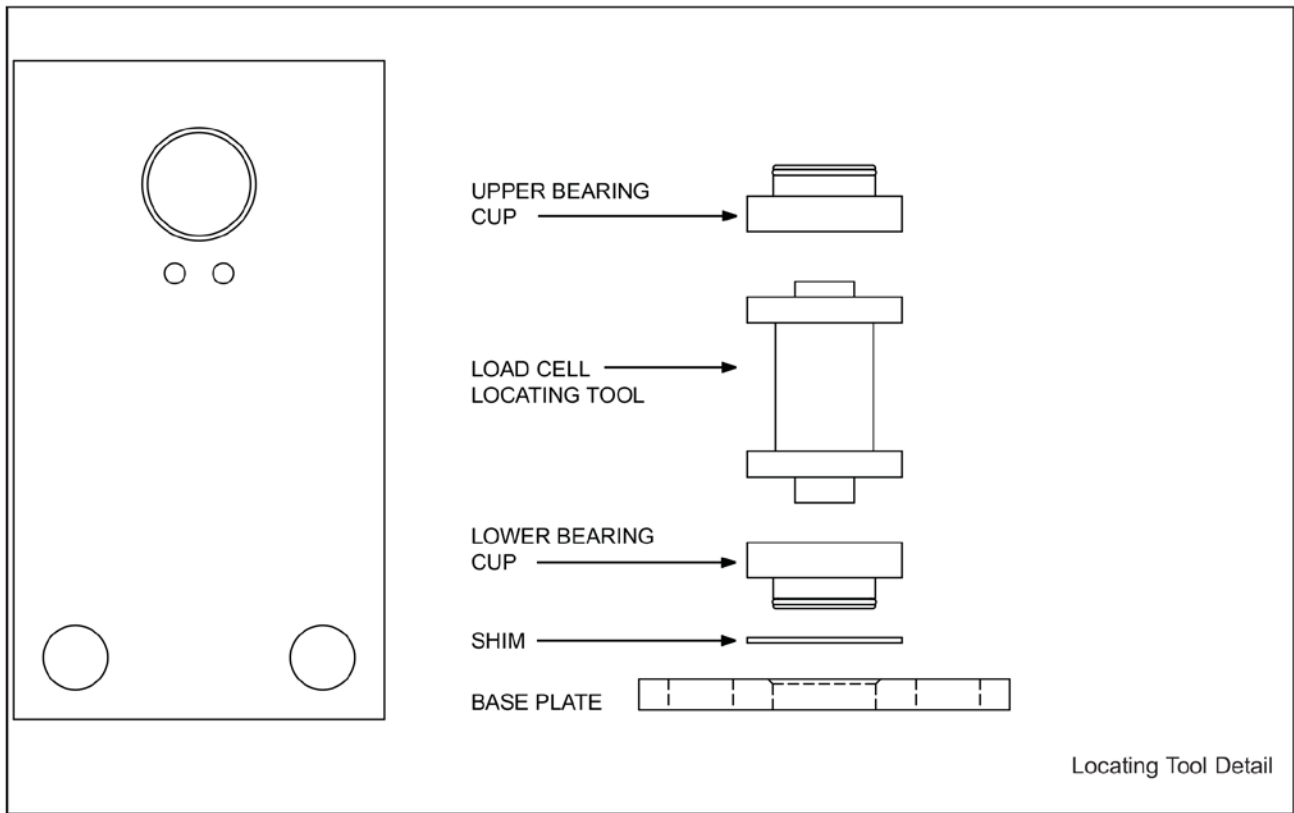
- g.** Hydraulic jacks -- Use hydraulic jacks that have sufficient capacity plus (+) a safety factor for the model of scale you are installing.
 - Steel modules 10 ton hydraulic jacks (2)
 - Field pour Modules 30 ton hydraulic jacks (2)
 - 93296 30 ton jacks
 - 93297 Hand pump
 - 93298 Hose, 6'
- h.** 100' steel tape measure
- i.** Stringline and / or chalkline
- j.** Prybars
- k.** Grease and anti-seize
- l.** Load cell locating tools, one for each load cell,
 - Part No. 71717 for 5½"
 - Part No. 107118 for 6"
- m.** 4" x 4" x 12' timbers for field pour models

2. Foundation

Before installing any part of the scale, the foundation must be checked for accuracy using Foundation Inspection, Field Check List, FF-2267 / 101732 (see Appendix I).

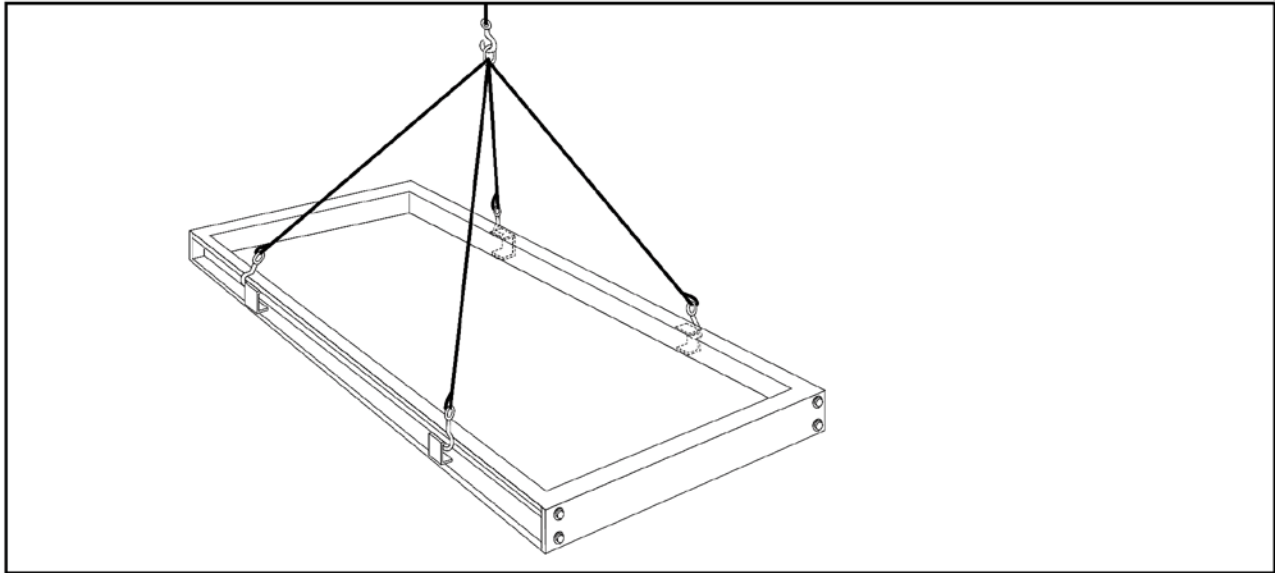
- a.** Layout and position the base plates in the proper locations using the Methods & Procedures and Certified prints. Each base plate must be level and in full contact with the top of the pier. Adjustments can be made by chipping the concrete or grouting under the base plates.
- b.** Re-check the locations of each base plate against the Certified prints.
 - Insert two ½" roll pins into each lower cup for anti-rotation.
- c.** For 5½" and 6" cell cups, grease and install the inner "O" ring in each cup if they are not already installed. On all cups, grease the large outer "O" rings, then install one in the groove on the outside of each cup. Put a 3/16" shim on the lower cups, grease the outsides, then insert them into the base plates. Lower cups for 5½" or 6" load cells have a pin which must be aligned between the two roll pins in the base plate.
- d.** Place the upper cup with greased "O" ring on the edge of the the upper foundation next to each base plate.

- e. Place the load cell locating tool next to each base plate.



3. Setting The Modules

- a. Preparing The Modules For Lifting
- The modules are complete with lifting channels welded to the sides for attaching lifting hooks, NO bolts are required.



4. Setting the Center Module

The center module is always set first. The center module will have four load cells to install, all other modules will have two load cells. The modules must be placed in the proper order and aligned in the foundation so that all modules fit correctly.

- These scales have a definite orientation because the cable conduit is welded to one (1) side only. These modules have unmarked ends as well. The conduit side of the center module should face the home-run conduit; the conduit side of the other modules must face the same way.
- a. Place blocks that will set the modules at a height slightly less than the finished height as safety blocks, or for setting the modules on.
- b. Lift the center module to a location above the four center load cell base plates.

OPTION 1:

- Set the module directly on the locating tools and the blocks will act as safety stands.
- Install a Load Cell Bearing Cup with "O" rings into the upper receiver of each corner, grease will help hold the cup in place.
- Insert the upper end of the locating tool into the upper cup on the module.
- Lower the module while holding the locating tool upright and guiding the bottom of the tool into the lower cup.

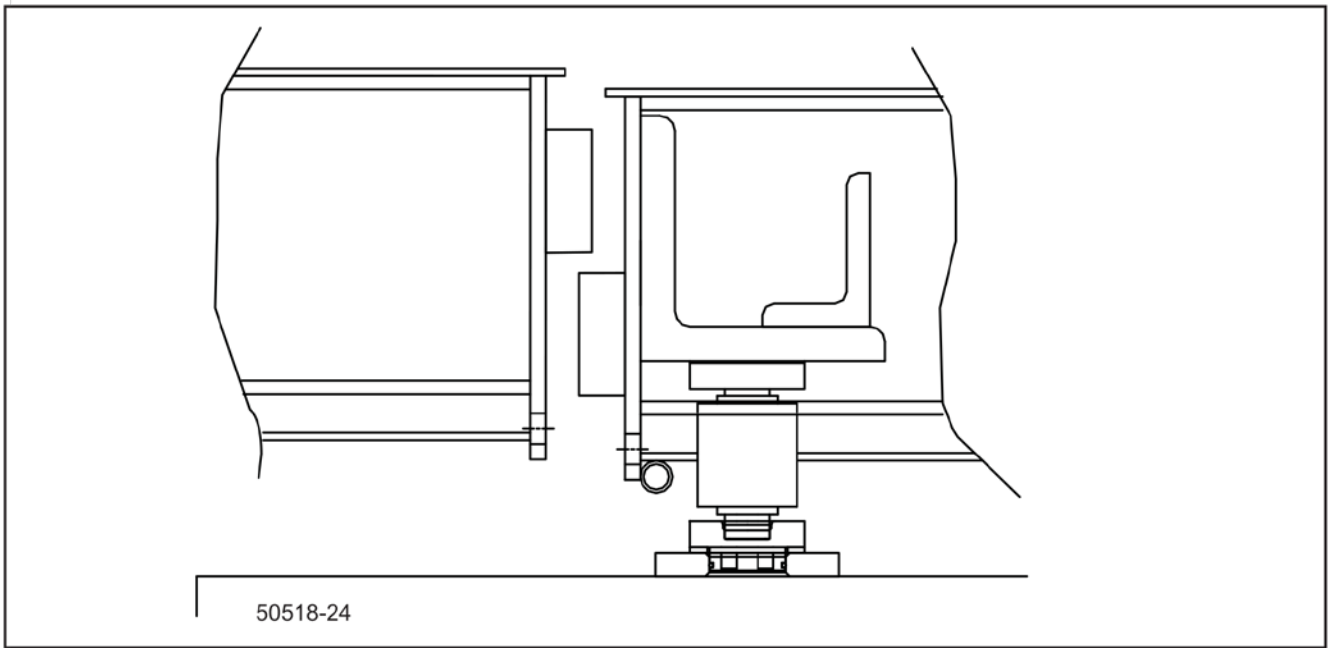
- When the center module is set on all four locating tools, keep tension on the cables until the module is centered and straight.
- Use hydraulic jacks to lift the unit slightly and shift the base plates to get the locating tools plumb and the top and bottom flanges FLUSH with the sides of the cup.

OPTION 2:

- Set the modules on the blocks first, then onto the locating tools.
 - When the module is set on the blocks, keep tension on the cables until the module is properly aligned.
 - Use hydraulic jacks to lift the unit slightly then install the locating tools. Shift the base plates to get the tools plumb and the top and bottom flanges FLUSH with the sides of the cup.
- c. Measure from each side of each end of the module, to the end walls, to be certain the module is plumb and square before removing tension.
- d. Once the tension on the lift cables is released, remove the lift cables.

5. Setting End Modules

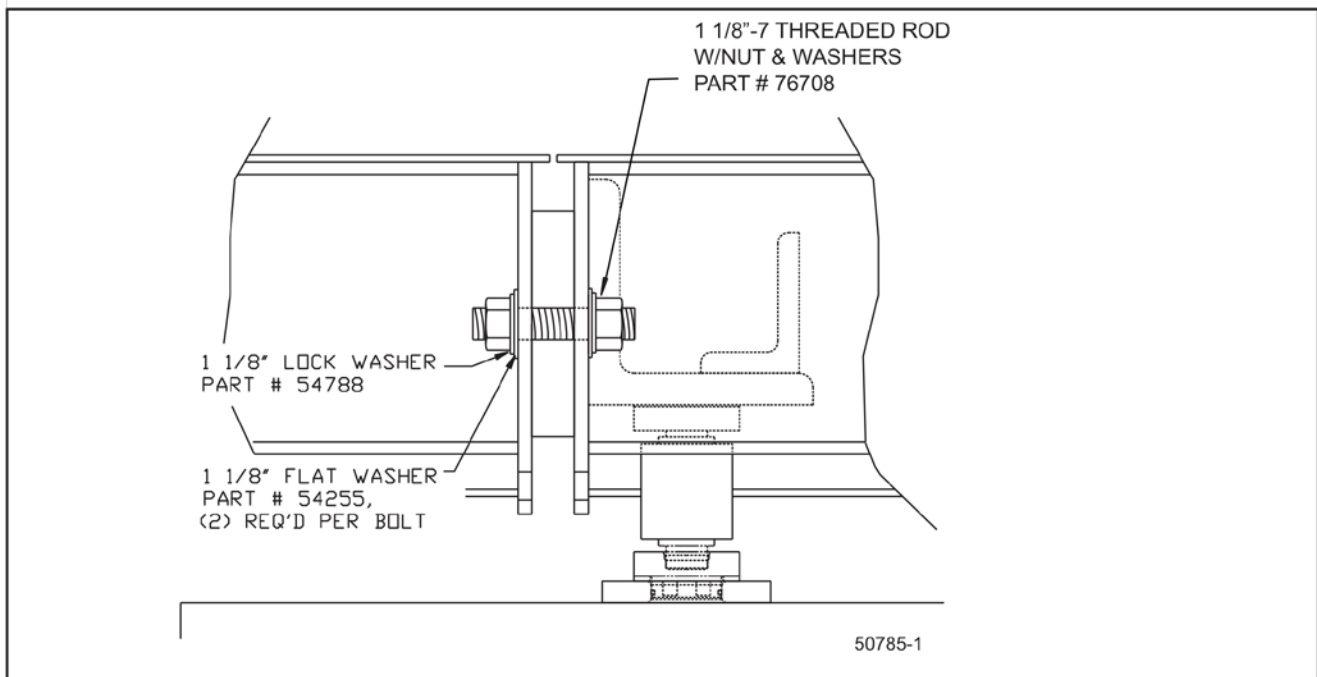
- a. Module Placement
- Guide the modules into place with the supporting blocks on the end of the module coming to rest on the supporting blocks of the center module. Lower the other end of the module onto the load cell locating tools or blocks. (see *Figure 50518-24*).



- b. Before releasing tension on the cables, check the alignment of the end modules to the center module and to the end wall.
 - Use the provided shims to set height and fill any gaps on the supporting blocks to get the modules aligned.
- c. Repeat this process for the other end of the module or for the Interior Module.

6. Connecting the Modules:

- Bolt the modules together using the 1-1/8" x 7" full-thread rod, lock washer, flat washers and nut provided. Remember to shim the supporting blocks if necessary to align modules. Snug nuts, but do not fully tighten them yet (see *Figure 50785-1*).

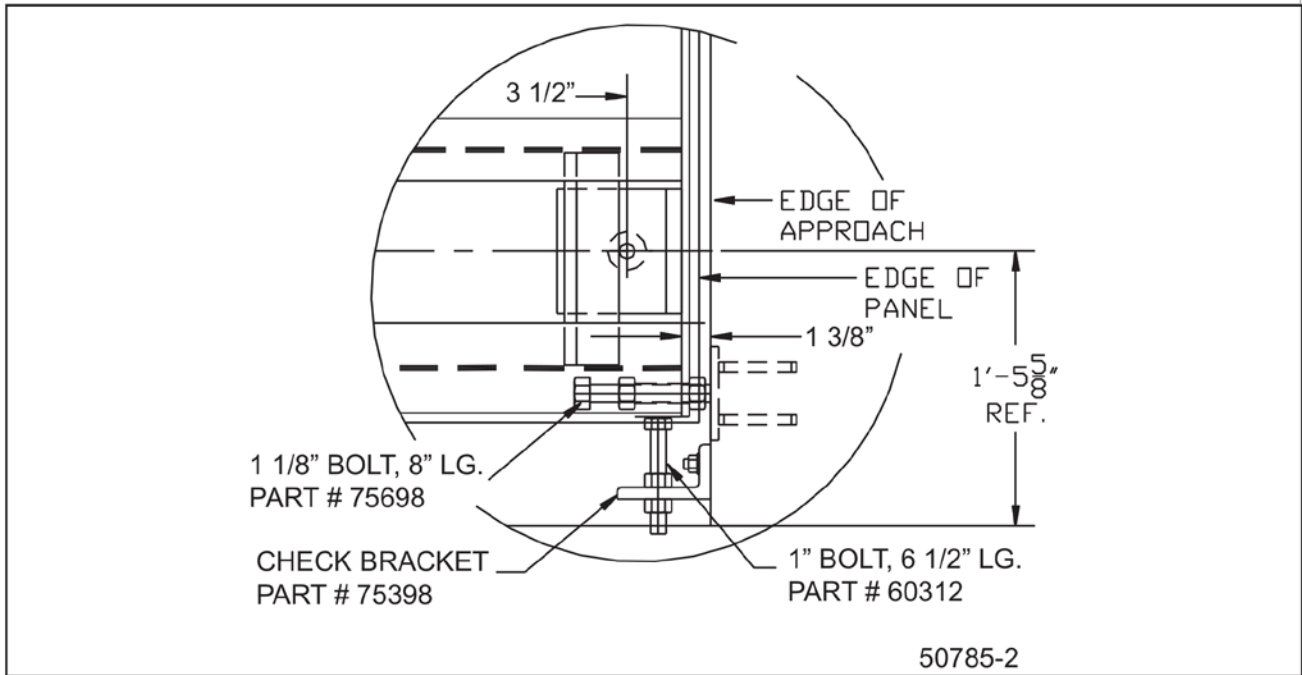


**** Warning ****

Module-to-module bolts MUST be installed correctly and torqued properly after all lifting, etc. is completed. Do NOT substitute or omit bolts.

7. Checking Adjustment (see Figure 50785-2).

- a. Adjust End Checking
 - Adjust the End Checking Bolts so that they touch and prevent movement.
- b. Install the side checking brackets:
 - Bolt the brackets to the end checking plates embedded in the end walls per Certified prints. Set the bolts so that they touch the block they bump against.



8. Base Plate Completion:

- Check that all locating tools are properly aligned and flush with the receiver cups. Drill the holes for the outside base plate anchors using a hammer drill and the 5/8" drill bit. Tap the anchors into clean holes and tighten the nuts securely.

9. Installing Load Cells:

- Unpack the load cells and mark each calibration certificate with the load cell location/position.
- Starting at one end of the assembled platform, place hydraulic jacks at the corners so the section can be lifted off the locating tool. (Two (2) hydraulic jacks may be required).
- Lift the platform so the load cell locating tool can be removed from the upper and lower bearing cups. Once removed, fill both cups with grease.

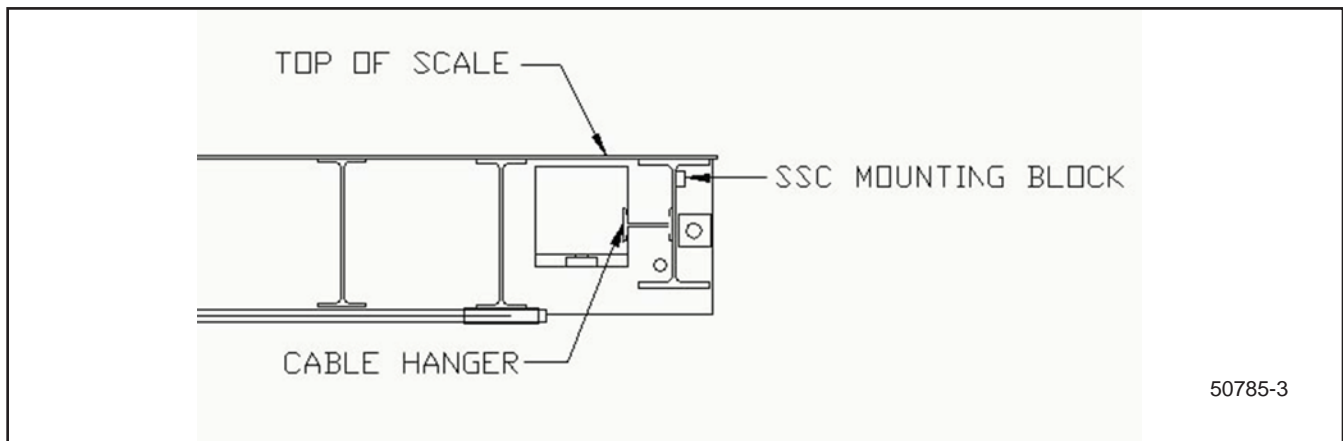
~Caution~

Use eye protection!

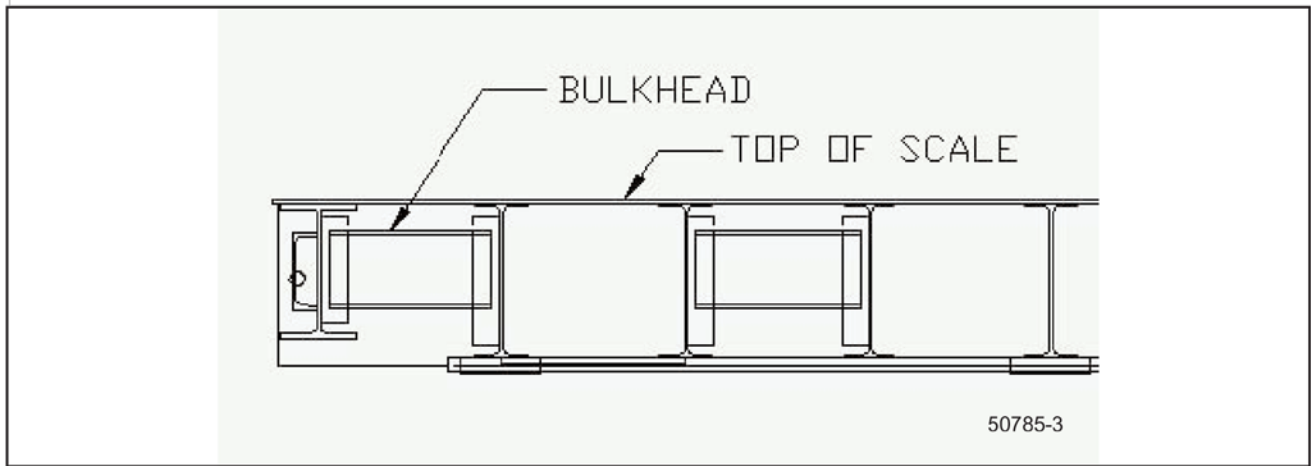
- d. For 5½” or 6” load cells the bottom of the cell has two flatsides which must be aligned with the flats in the lower cup. Carefully lower the scale (hydraulic jacks) while seating the bottom of the cell into the lower cup. Check the scale's level and height, particularly at the approaches. Use the load cell shims provided to adjust load cell cups for correct height and to ensure that all cells share an equal amount of the load. Center section cells will have up to twice the deadload of end section cells.
- e. Once satisfied with height and level, tighten the module-to-module bolts.
 - The nuts should be torqued to 500 ft lbs.

f. Load cell cables

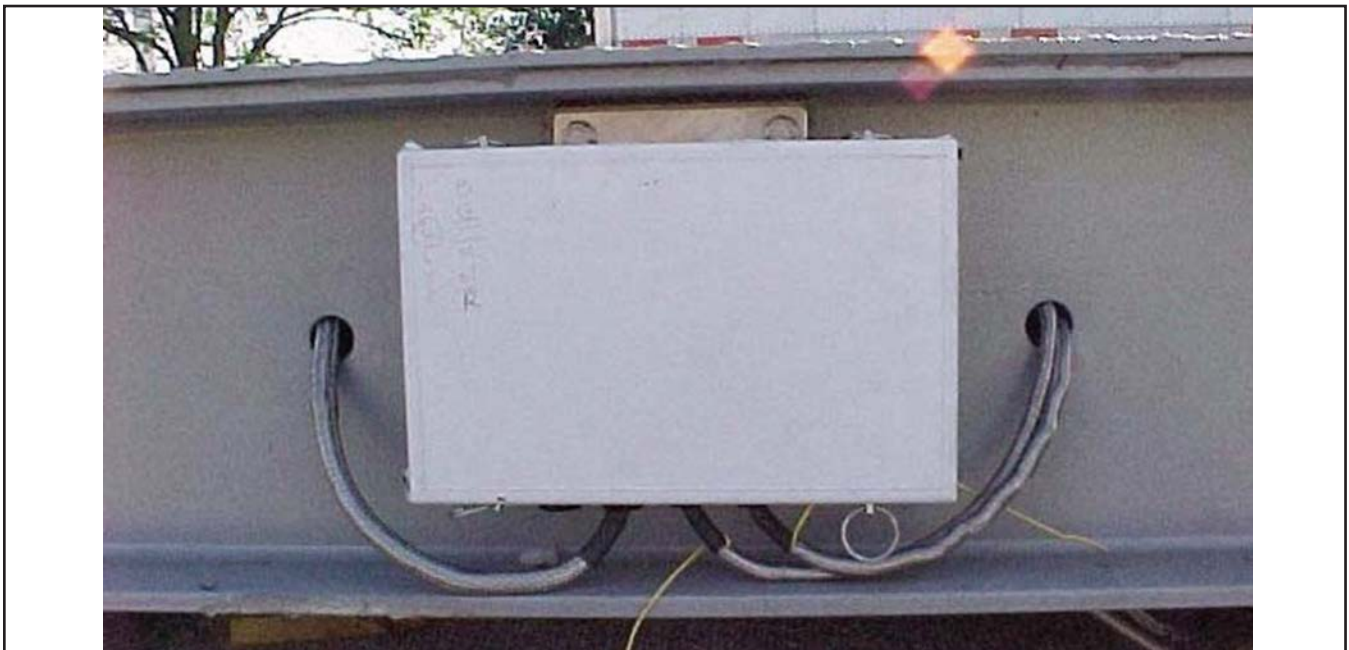
- Introduction: Cable protection on truck scales is extremely important to the reliability of the scale. It is imperative for all cables to be installed off of the ground and out of sight. The Talon truck scale has been designed to accommodate this type of cable protection. Described in this section is the manufacturer's recommended installation procedure for installing and protecting cables on the Talon Truck Scale.
- Cable Hangers: Behind every SSC or PPS mounting block is a cable hanger. These cable hangers are used to hang excess load cell and interconnecting cables (see Figure 50785-3).



- Bulkheads: In the middle of the module or bridges are bulkheads. These bulkheads are part of the bridge's orthotropic design. Cables may be run over them to keep the cables off the ground. Run the interconnecting cable between the top of the bulkhead and the bottom of the deck plate (see Figure 50785-3).



- Complete installation: Once all cables have been run and wiring is complete (see Section 4), tighten all the cables and hang them on the cable hangers to get them out of sight and off the ground. In a correct installation, the only cables visible are those coming out of the holes in the side beam to the SSC or PPS. See below.



10. Final Checking Adjustment:

- a. Adjust End Checking
 - Adjust the End Checking Bolts to allow $1/16$ " to $1/8$ " clearance.
- b. Adjust side checking bolts to allow $1/16$ " clearance from Bumper Block.

Section 3: Field Pour Installation

A. Introduction

The Field Pour module's installation is much the same as the other models with some minor variations. The basic procedure is to install the foundation for the scale, install the base plates, position and level the shoring, install the platform modules with locator tools in place, pour the deck, cure the concrete, then install the load cells.

B. Concrete Specifications

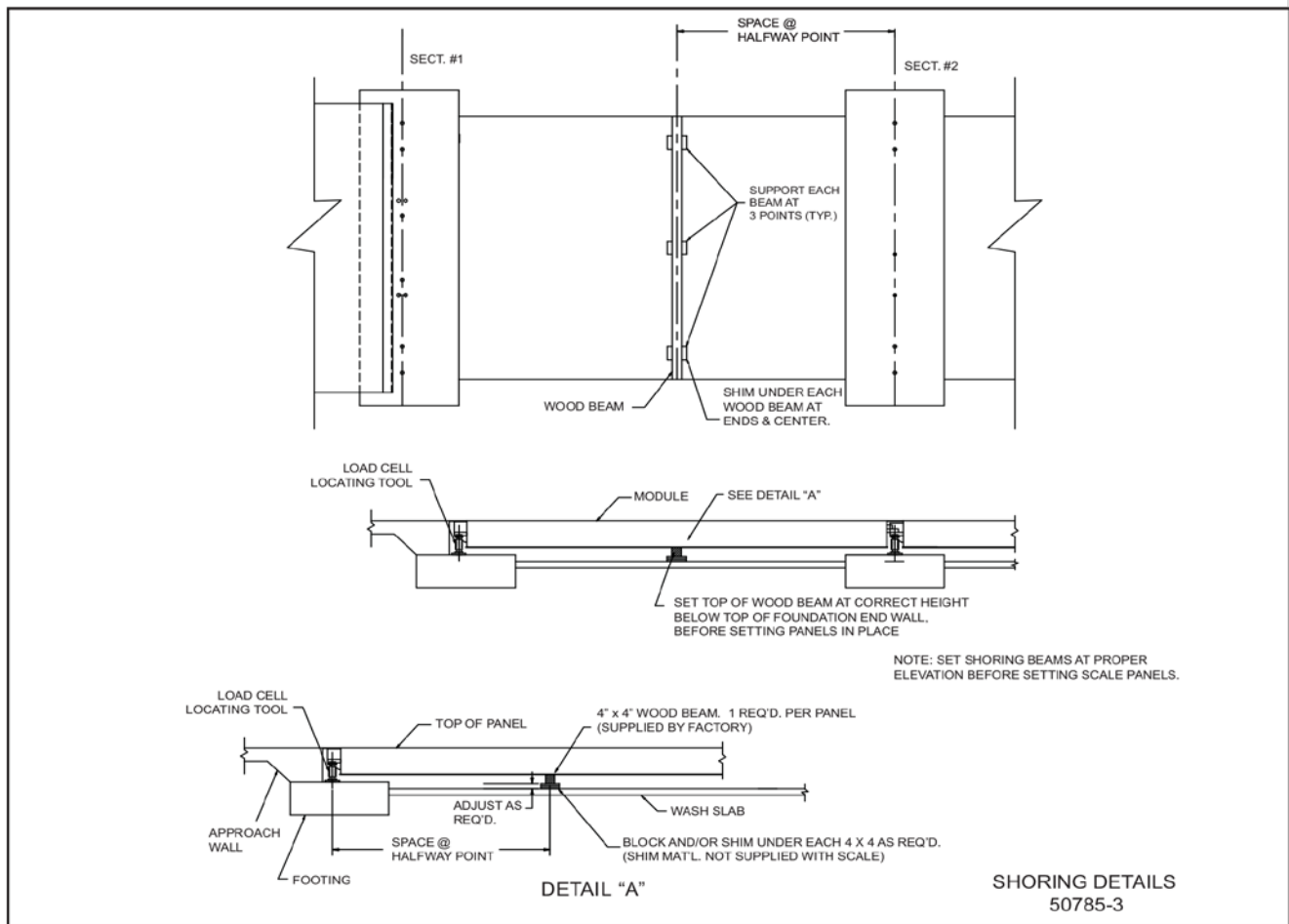
Note: *Field-Pour scales are poured, formed and cured with locating tools in place. Do NOT install load cells until cure strength is reached.*

- *Typically 28-30 days. Use a core sample to confirm this.*

Use the Certified Prints for all concrete specifications.

C. Shoring

The recommended shoring is made up of the provided 4" x 4" timbers 12 feet long. The crown of the shoring timbers should be up. The actual dimensions of the timbers will depend on the distance from the foundation floor to the bottom of the modules. Shims should be placed under each end and center of the shoring beams to achieve proper elevation. The shoring timbers should be located equally spaced between the load cells.



D. Setting the field pour modules

1. The shoring timbers should be placed before setting scale modules. Using the approach walls as the reference, place the shoring timbers so they will be at the same elevation as the bottom of the weigh bridge. A tight string between the approach walls could be used.
2. Install the modules as outlined in the previous sections of this manual, starting with the center module.

* * Warning * *

The modules MUST be set on the locating tools. Do not support the load cell bracket with lumber, as this will cause the module to twist or warp.

3. Wedge additional shims as required under the end of the shoring timbers to ensure tight contact between the scale frame and the shoring.

~Caution~

Make sure the edge beams of the scale are straight and not bowed down, or in, before pouring the concrete deck. Do not install the load cells before the concrete deck is cured.

4. Pour the concrete. A spud-type vibrator is required to remove any air bubbles and to work the material into all of the corners.
5. A rough "broom" finish is recommended. Crown the concrete 1/4" to allow for drainage. Allow the concrete to cure until the required minimum strength as specified on the Certified prints is achieved.

~Caution~

At the time the deck is poured, samples must be taken for later testing. At the end of 14 days, test the first sample. A sample must pass the test at 4,000 psi before the scale can be placed into service. A copy of the test report must be retained as part of the customer record in the service center or distributor location otherwise warranty will be void.

6. After the concrete has cured, remove all of the shoring. The modules will have to be lifted so the shoring can be removed.

*** * Warning * ***

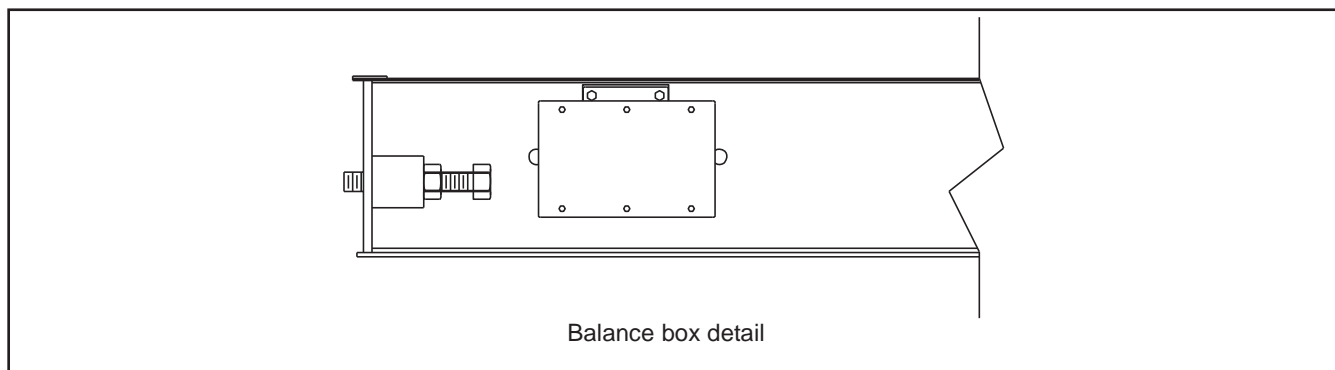
Place hydraulic jacks ONLY at the CORNERS of the modules. Hydraulic jacks must be placed on opposite sides to lift the module in a level position. Lifting mid span or between load cells will cause cracks in the concrete.

7. Install the load cells in place of the locator tools.

Section 4: Electrical Installation

A. Balance Box 21912, Installation for Analog Indicators

1. Introduction: Balance box 21912 is intended to be installed at the platform, one box per section.
2. Description: Each Stainless Steel balance box has four (4) terminal blocks to connect two (2) load cells and two (2) cables for connection to the analog instrument. Load cells and sections are adjusted by means of adjusting potentiometers.
3. Installation:
 - a. Boxes: The box has tabs for bolting to mounting brackets on the side of the modules.
Attach the ground wire lug to one of the mounting bolt studs.
Tighten securely to provide a good electrical ground.



- b. Wiring: Cable used in all wiring **must be a minimum of 18 AWG**. Use cable 17204 or equivalent. The balance boxes are interconnected from TB4 to TB3 beginning at the end section where the interface cable conduit enters the scale. An alternate method if the conduit enters the scale in the middle is to use 14478 Instrument SVP. This will allow separate connections to go in each direction toward the ends of the scale. See Bulletin 50513 for the wiring diagrams.

B. Load Cell Wiring Color Codes

**5 ½" RC 30t (66,000 lbs) Load Cell (PN 70510) LCF-HR4020-2A
Color Code:**

Color	Description
Black	(-) Excitation
Green	(+) Excitation
Red	(-) Signal
White	(+) Signal
Yellow	Shield

6" RC 100k Load Cell (PN 80453) LCF-HR4020 -21 Color Code:

Color	Description
Black	(-) Excitation
Green	(+) Excitation
Red	(-) Signal
White	(+) Signal
Yellow	Shield

C. Wiring

1. Cells to Junction Box

Terminal	TB3	TB4
1	(-) EXC	(-) EXC
2	(+) EXC	(+) EXC
6	Shield	Shield
7	(+) SIG	(+) SIG
8	(-) SIG	(-) SIG

2. Box to Box

Terminal	TB1
1	(-) EXC
2	(+) EXC
3	(+) SENSE
4	(-) SENSE
6	SHIELD
7	(+) SIG
8	(-) SIG

3. Box to Instrument:

Terminal	TB2
1	(-) EXC
2	(+) EXC
3	(+) SENSE
4	(-) SENSE
6	SHIELD
7	(+) SIG
8	(-) SIG

Note: *The Full Electronic scales have been designed to provide protection from the effects of moisture. The load cells have been calibrated with the cable attached and therefore the cable should NOT be cut. The cable is connected directly to the balance box or SSC through a sealed bushing which MUST be tightened properly to keep water/moisture out of the box. All cabling should have a drip loop at the cell or box entry location to help prevent water entry. On all boxes, particularly stainless steel, the black plastic fittings have "O" rings that can be forced out of position if the bushing itself is not tight. To prevent this, first tighten the inner nut securing the bushing in the hole, then insert cable and carefully tighten the gland until it is very snug. Do not over-tighten where bushing turns. Secure the cover.*

Note: *Balance Boxes must have one (1) ground rod in the pit for proper grounding.*

~Caution~

Inadequate grounding will prevent the surge voltage protection from functioning properly.

4. Indicator Cable Connection, Balance Box

The two (2) cables from the two (2) center section boxes will enter the 14478 Instrument SVP and terminate there. The cable from the indicator will connect at 14478 Instrument SVP as well. Prepare the cable ends in the standard manner. Use Appendix II for wiring instructions of all pit balance boxes. Connect the indicator interface cable to the instrument in the scale house per the instructions in the appropriate indicator service manual.

5. Adjusting cells/sections

Try to install load cells of matching outputs in sections to reduce side-to-side errors. When calibrating, place weights directly over the cell or directly on the section being tested. Adjust the potentiometers for the correct cell or section to compensate for differences.

D. Wiring SSCs and PPSs for Intalogix™ systems

1. Introduction

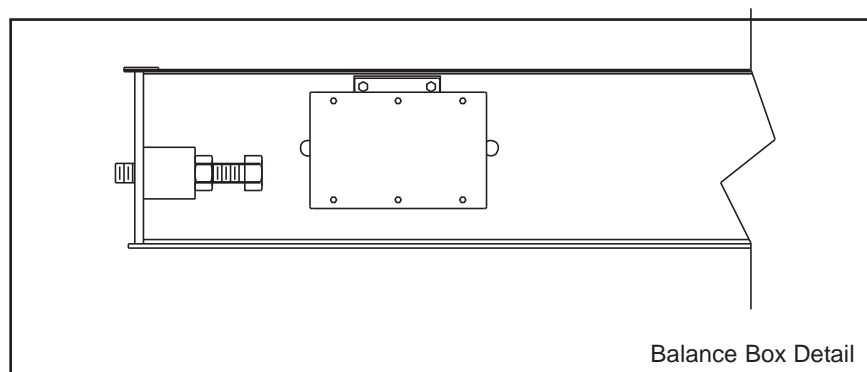
Intalogix™ systems utilize smart sectional controllers (SSC)s and pit power supplies (PPS)s for load cell excitation and signal processing.

2. Description

There is one (1) SSC per section and one (1) PPS for the entire platform (unless the number and resistance of the cells require a 2nd pit power supply). SSC boxes have four (4) terminals two (2) for load cells and two (2) for inter-connecting to other SSC boxes or terminating to a pit power supply. All cell/section/scale adjustments are made via the Intalogix™ system instrument.

3. Installation

- a. Boxes: The box has tabs for bolting to adapters on the side of the modules.
- b. Wiring: Cable used in all wiring must be a minimum of 18 AWG. Use cable 17204 or 17246. Use appropriate service manual for the Indicator being installed, or Appendix III to connect PPSs and SSCs.



E. Smart Sectional Controller

Wire cells into each sections SSC per the appropriate manual. Remember, odd numbered cells go to TB 1 location, and even numbered cells go to TB 2 location. Load cell drain wires connect to ground lug on the sectional controller box exterior.

Note: Intalogix™ installations utilize a different numbering system for load cells because of digital addressing of the SSCs. Number the load cells as follows: With respect to the following starting position, face the platform from where the indicator is located. The cell at the upper left (far side) of the platform is Cell 1. The cell positions along the far side will be odd cell number; the near side locations will be even cell numbers.

Note: SSCs have connections for 2 load cells, TB 1 and TB 2. The odd numbered cell should go to TB1 connection, and the even numbered cell to TB2 connection.

F. Grounding, SSCs

1. Intalogix™ systems must have two (2) ground rods in the pit for proper connection. Pit power supplies use a ground separate from the steel and SSC ground rod.

G. Indicator-to-Pit Power Supply Cable Connection

Prepare the cable ends in the standard manner. Use the appropriate manual for wiring instructions of all pit SSCs and power supplies. Connect the indicator interface cable to the instrument in the scale house per the instructions in the appropriate indicator service manual.

Section 5: Maintenance

A. *Scale Maintenance*

1. Check for accumulations of solid material under the scale which may affect the accuracy, i.e., ice, frozen mud, debris.
2. Check to see that the customer has cleaned under the platform regularly.
3. Inspect load cells for damage to the ends/cables, check cups and "O" rings for damage.
4. The load cell bearing cups should be inspected, cleaned and greased periodically.
5. Inspect and adjust all check bolts using anti-seize on the threads.

B. *Mechanical Faults*

1. Check all clearances around the scale for any obstructions of interference with the free movement of the platform.
2. Check all check bolt clearances both with and without a concentrated load over each section, one at a time.
3. Check all load cells for plumb and level.
4. Inspect the boxes for leaks, the interior should be clean and dry. If there is moisture inside, clean then dry it out thoroughly. Check all connections at the terminal blocks to ensure they are tight.

Section 6: Parts & Parts Replacement

A. Parts List

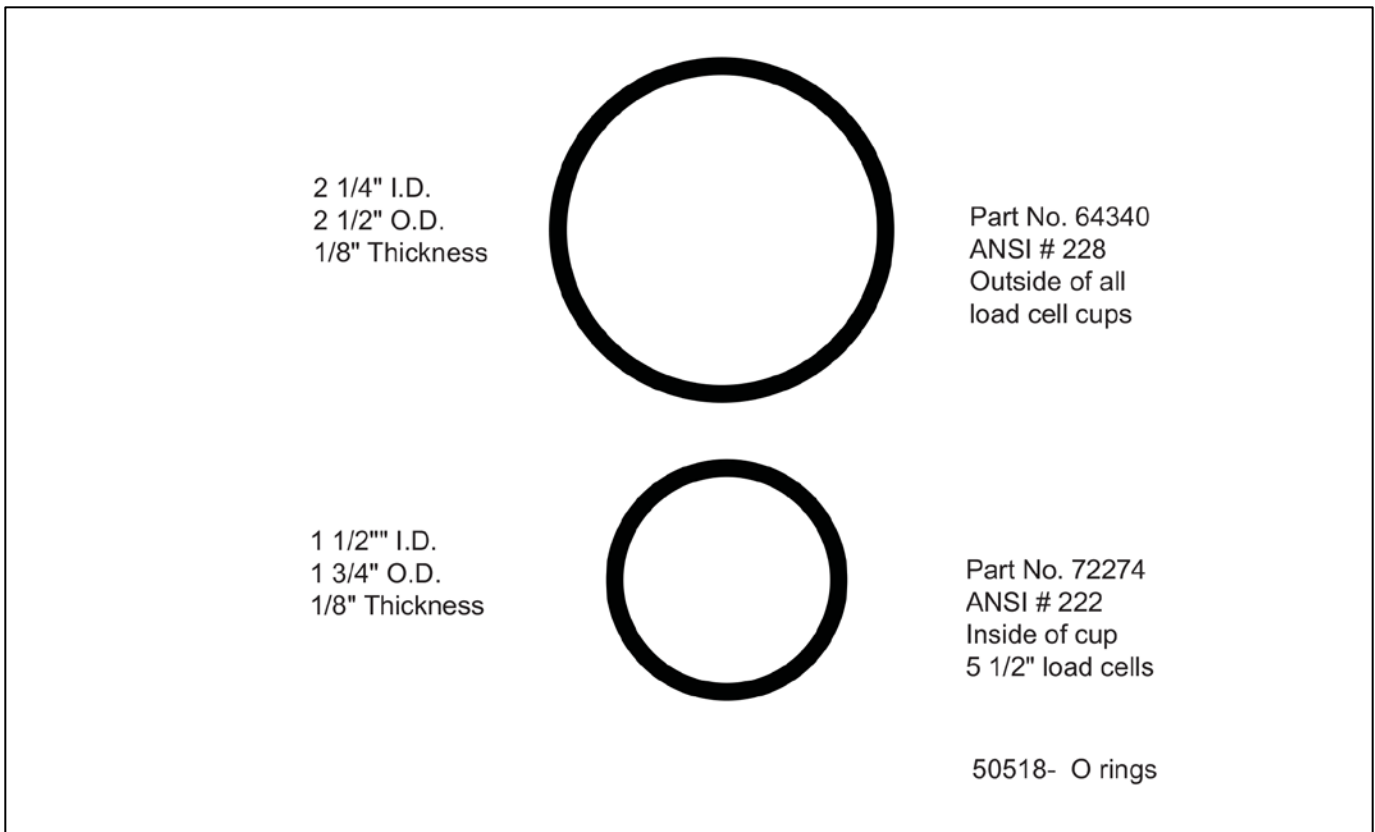
Part No.	Description
76708	1 1/8" -7 x 8" Threaded Rod, Zinc (module-module)
54788	1 1/8" Lock Washer (module-module)
54306	1 1/8" SAE Flat Washer (module-module)
85593	Load Cell Base Plate
61743	Clamp Bar Washer (base plates)
62857	5/8" x 6" Anchor Bolts (<i>wedge type</i>).
55010	Ground Rod Kit
73682	Shim, receiver cup, 1/16"
64338	Shim, receiver cup, 1/8"
64334	Shim, receiver cup, 3/16"
75398	Side check bracket w/bumper bolts (1" x 6 1/2")
79747	Rub Rail PVC End Caps
105297	Rub Rail Plugs

B. Load Cells and Load Cell Hardware

LCF-HR4020-2A FLINTEC

Part No.	Description	Scale Type
70510	Load Cell, 5 1/2" RC, 30t,1000 Ohm, 2 mV/V	
72274	"O" Ring, 5 1/2", INSIDE of Cup,*ANSI #222	HV
64340	"O" Ring, 5 1/2",OUTSIDE of Cup*ANSI #228	HV
70511	Receiver Cup, 5 1/2" LOWER (w/ anti-rotation pin)	HV
70512	Receiver Cup, 5 1/2", UPPER	HV
64382	Roll Pin, 1/2" x 2 1/2" anti-rotation, baseplate	HV
63981	Anti-Rotation Pin, LOWER Receiver Cup 3/8" x 2 1/2"	HV
71717	Locating Tool 5 1/2"	HV

C. "O" Rings, Actual Size



LCF-HR4020-21 FLINTEC

80453 Load Cell, 6" RC, 100k,1000 Ohm, 2 mV/V

72274	"O" Ring, 5½", INSIDE of Cup,*ANSI #222	HVX
64340	"O" Ring, 5½",OUTSIDE of Cup*ANSI #228	HVX
70511	Receiver Cup, 5½" LOWER (w/ anti-rotation pin)	HVX
70512	Receiver Cup, 5½", UPPER	HVX
87481	Receiver Cup, 6" LOWER (w/ anti-rotation pin), ECO 607	HVX
87482	Receiver Cup, 6" UPPER, ECO 607	HVX
64382	Roll Pin, ½" x 2½" anti-rotation, baseplate	HVX
63981	Anti-Rotation Pin, LOWER Receiver Cup ¾" x 2½"	HVX
107118	Locating Tool 6"	HVX

* **ANSI# XXX:** Defines a standard "O" ring size. "O" rings may be obtained at many hardware, hydraulic, or plumbing supply house by using the number.

* **ECO 607:** Effective Date: Jan. 2008 changed from **70511** and **70512 Cups** to **87481** and **87482 Cups** on HVX with 6" 100k Cells. This cup change increases the height of the scale by one-half an inch +½".

D. Replacing an RC load cell

1. Remove power from the instrument.
2. Lift the scale using a proper sized and rated hydraulic jack(s) at the corner(s) closet to the defective load cell location.
3. Check upper and lower receiving cups, and "O" rings for damage. Replace as necessary and reapply grease.

*** * Warning * ***

Lift scales ONLY at the corners. On field pour scales, use two (2) properly rated hydraulic jacks at opposite sides, and at the corners, lift the section in a level manner.

4. Insert the new cell into the upper receiving cup and position the anti-rotation pin.
5. Carefully lower the hydraulic jack(s) until the cell is set into the lower cup.
6. Remove the cover of the SSC/Jct box, then loosen the gland bushing to free the cable. Remove the old cell wires and connect new cell wires in the balance Box/SSC. Secure the cover.
7. Test and adjust scale as necessary.

E. General Load Cell Information

Load Cell Part No.	Description	Comments
70510	5½"	2 mV/V, 66k or 30t,1000 Ohm
80453	6"	2 mV/V, 100k 1000 Ohm

Rub-Rails: These accessories are available in Factory-installed and Field-installed types.

A. Field Installed Rub Rail Installation:

- Use the print with the accessory for actual measurements.

- Clean (remove primer) the areas to be welded for good penetration.
- Weld stiffeners to the side weldments.
- Bolt the gussets to the stiffeners and end weldments.
- Weld pipe to the gussets.
- Clean and paint (paint provided) all weld areas.

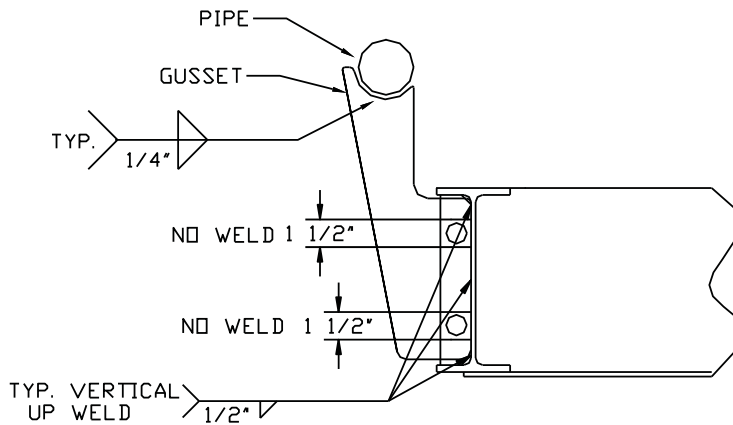
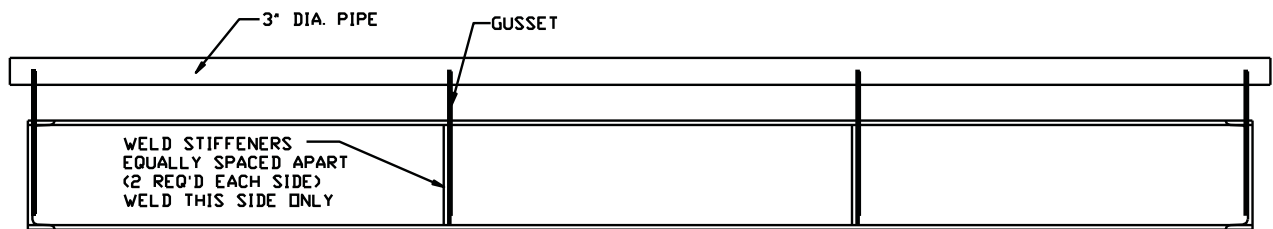
Section 7: Accessories

A. Field Installed Rub Rail Installation

**** Warning ****

Fairbanks does NOT recommend using foundation-mounted guide rails along the sides of this truck scale platform. Damage may occur to the scale if a truck hits the guide rail, transferring damaging force to the platform and the checking system.

Use of this type guide rail will void product warranty.



50518-19

APPENDIX I: Foundation Check List



Foundation Inspection

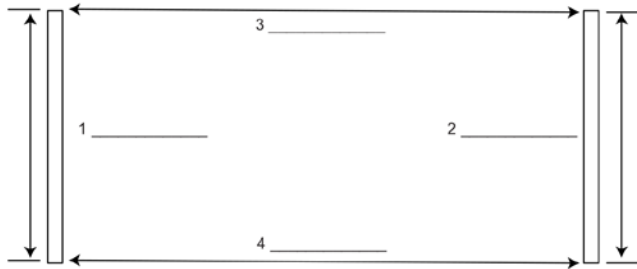
FOUNDATION FIELD CHECK LIST (Field Form)

A Foundation Inspection **should ALWAYS** be performed prior to scale installation and to **confirm** correct foundation construction. If possible this should be done prior to scale shipment.

- Tools required**
- | | |
|---|--|
| <input type="checkbox"/> Certified drawings and site plan | <input type="checkbox"/> 2' to 4' level |
| <input type="checkbox"/> 100' and 25' steel tapes | <input type="checkbox"/> Hammer and concrete nails |
| <input type="checkbox"/> Laser or builders level if possible | <input type="checkbox"/> String line (construction string) |
| <input type="checkbox"/> Straight edge for pit foundations (2 x 4, very straight and 4" wider than pit walls) | |
| <input type="checkbox"/> Construction paint (up-side-down type, for marking concrete). | |

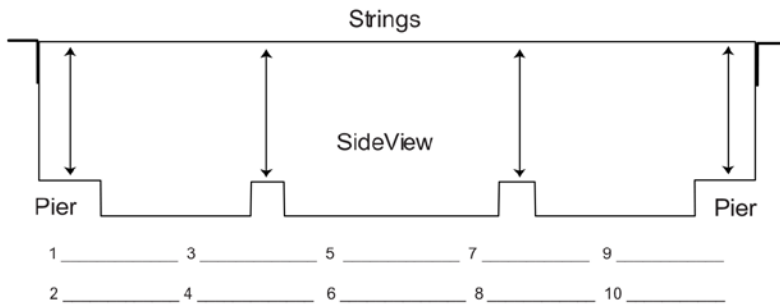
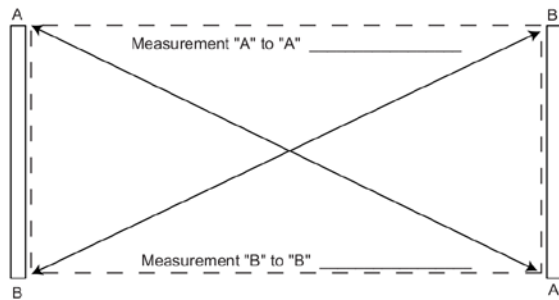
Perform the following Foundation Checks. Refer to Methods and Procedures for complete description of each step. Recommended to copy check list and keep in job file. ALWAYS familiarize yourself with the **CERTIFIED** foundation prints for the job you are working on as model numbers and specifications are subject to change.

- 1. **Site Plan and Certified Prints** should be thoroughly reviewed to confirm accurate locations to the scale and all extra items (scoreboards, lights, poles, etc.) that are included in the bid or contract.
- 2. **Check for truck and crane access**, overhead wires, fences, green concrete, etc.
- 3. **Dimensional length and width check**; check all 4 sides and record on chart (other side).
- 4. **Diagonal measurements** check to verify that the foundation is square and record on chart (other side). These measurements should be equal, or within 1/2". Greater error could result in the scale not fitting in the foundation.
- 5. **Check ALL pier heights** to make sure they are the proper elevation and record on chart (other side). Too high and the scale will not fit correctly, too low could result in excessive shimming.
- 6. **In pit foundations check walls to verify they are straight.** Straight walls are very important, but are even more critical for modular scales like the Titan Series.
- 7. **Verify conduit locations** and pull strings (if needed).
- 8. **Verify ground rod locations.**
- 9. **Verify that drains and sump openings** are piped correctly and are clear of debris.
- 10. **Check the end coping** to ensure they are centerline and that the coping is correct for the scale being installed (10', 11' or 12' width, etc). Check all coping, side and end, for hollow areas.
- 11. **Verify location of any and all required embeds or pre-installed baseplates** (i.e., Hwy System, RR scales, etc). All of these dimensions will be located on the Certified foundation prints.
- 12. **Layout** - To help in locating pre-installed baseplates, embeds, load-cell centerlines, etc., refer to Methods and Procedures section on Layout. **See other side for foundation & Layout charts.**



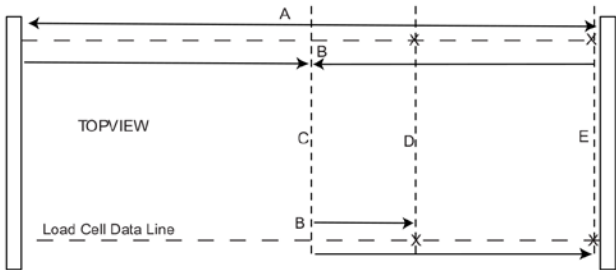
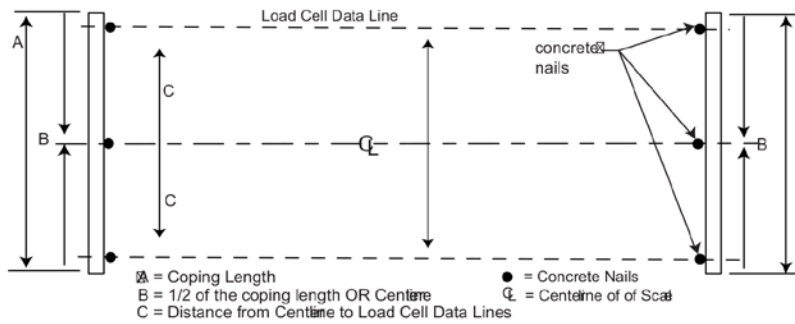
Length & Width Check

Diagonal Measurements Check



Pier Height Check

Longitudinal Layout

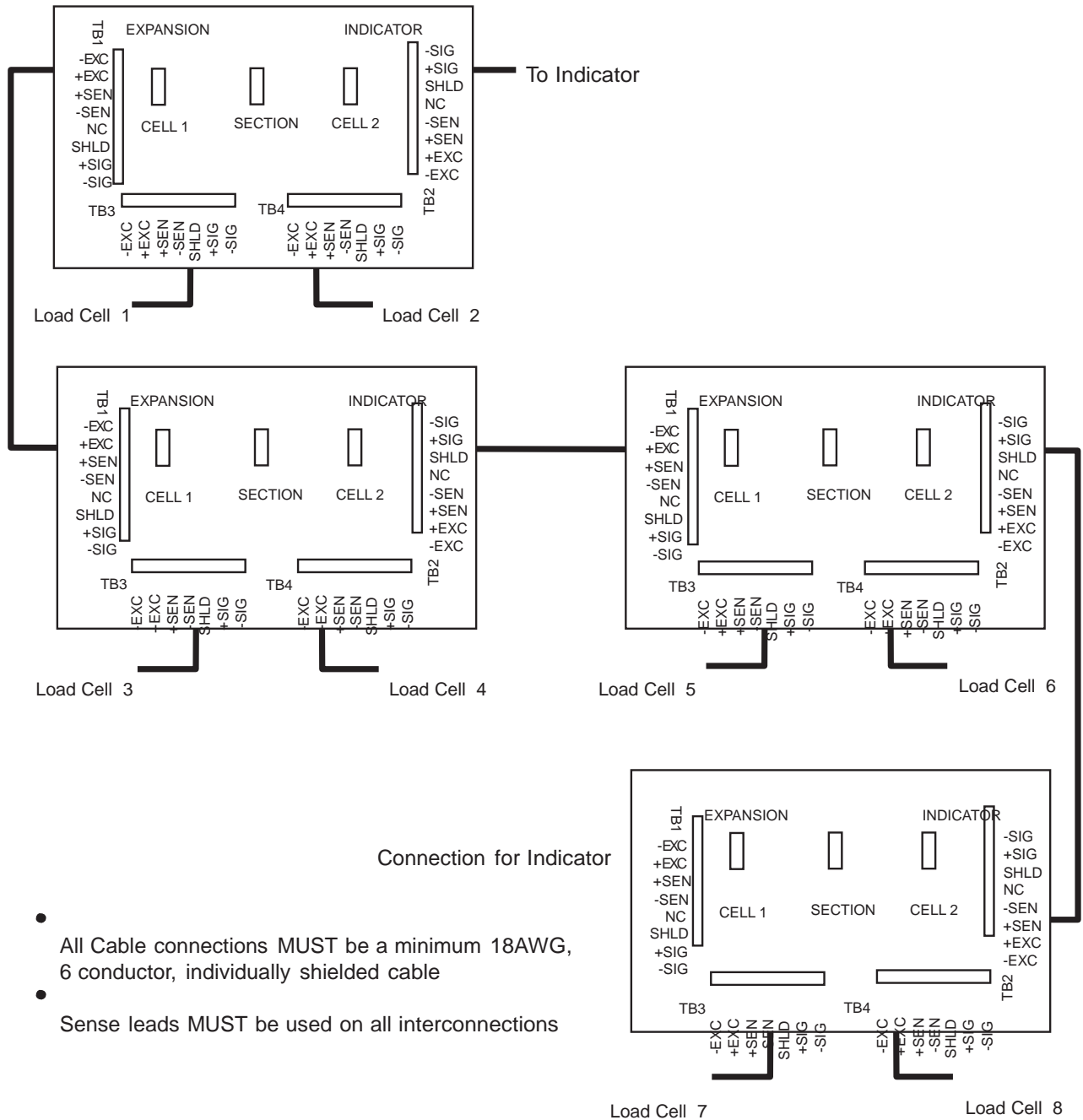


Lateral Layout

FF-2267

Issue #1

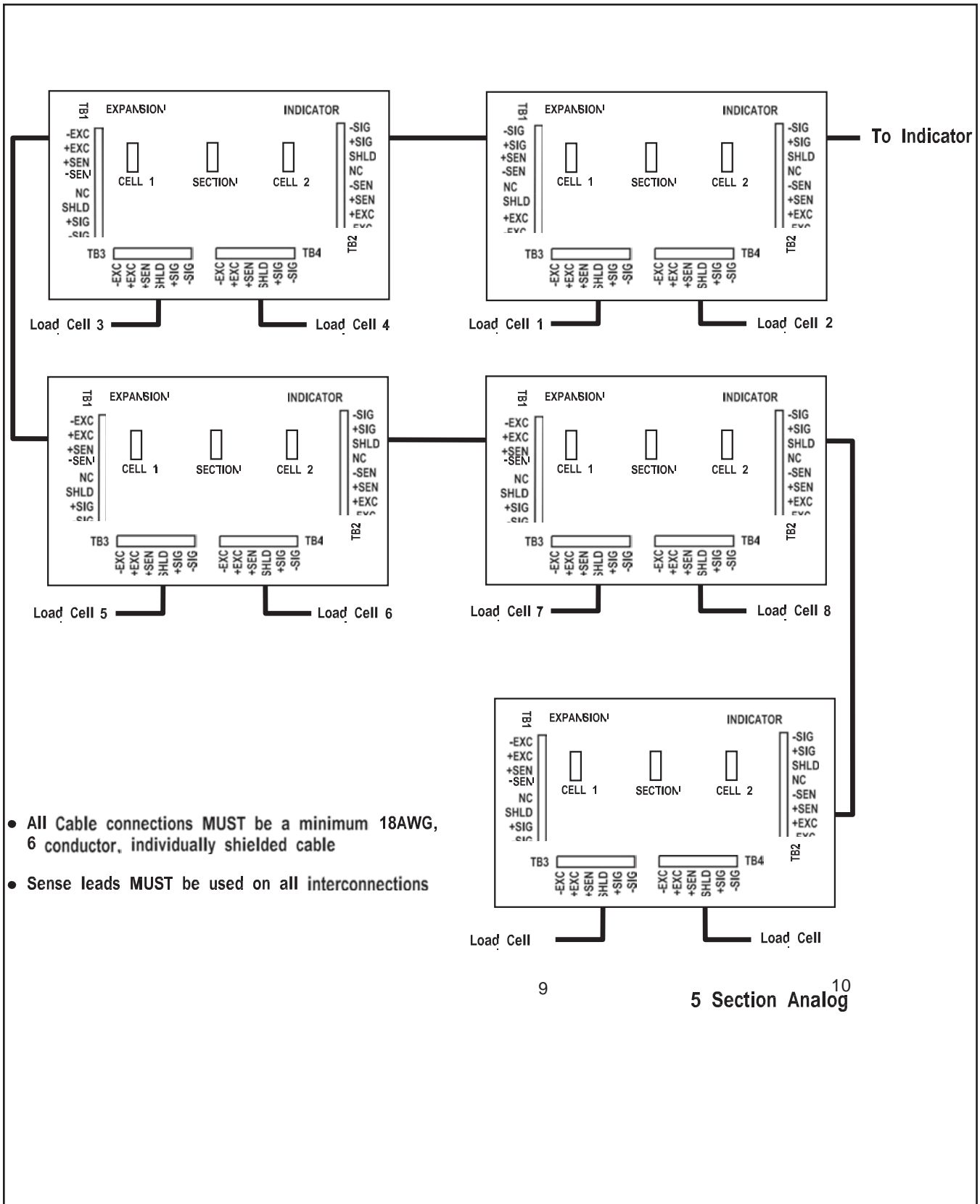
Appendix II: Four Section Analog Scale



- All Cable connections MUST be a minimum 18AWG, 6 conductor, individually shielded cable
- Sense leads MUST be used on all interconnections

4 Section Analog

Appendix III: Five Section Analog Scale



Appendix IV: Four Section Intalogix Scale

