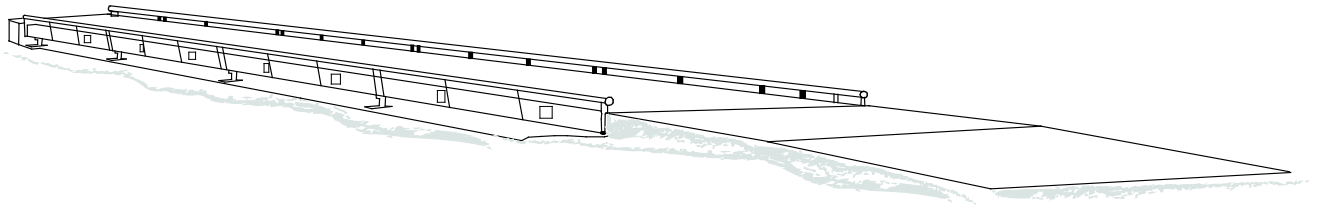




Instructional Manual

Talon Series Motor Truck Scale

HV Series
HVX Series



Amendment Record

Talon Series Motor Truck Scale HV and HVX Series

Service Manual Document 51608

Manufactured by
Fairbanks Scales Inc.

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Section 1: General Information

1.1. Introduction

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

For correct Talon Scale installation, use these tools.

- Methods and Procedures FF-2267 / 101732 (Appendix I).
- The Certified prints/setting plans supplied with the scale.
- This Instruction Manual, **51608**.

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.

1.1.1. Load Cell Technical Specifications

Capacity	66,000 lbs. (w/ 5 1/2" LC)	100,000 lbs (w/ 6.00" LC)
Type	5 1/2" or 6.00" Stainless Steel Rocker Column (RC Cells)	
Sealing	Complete hermetic sealing; cable entry sealed by four (4) water-tight gland bushings	
Material	Stainless Steel	
Rating	NEMA 6P (IP68 / 69K)	
Resistance	1,000 Ohms	
Operating Temperature	-40 to 80 °C (-40 to 176 °F)	
Output	2.0 mV/V	2.0 mV/V
Combined Error	≤0.02%	
Zero Balance (FSO)	≤ ±5% RO	
Excitation	5 to 15 VDC	
Ultimate Overload	300%	
Cable Length	15'	
Cable Protection	Stainless Steel Sheathing	
Approvals	NTEP CC# 97-078 Factory Mutual (FM) Approved	

1.1.2. Platform Specifications

Deck Dimensions	Widths: 10', 11' and 12' Standard Lengths: 10' to 120' Standard — Custom sizes also available.	
Scale Capacity	60 tons to 150 tons	
CLC	90,000 and 100,000	
Sections	2 thru 7	
Deck Construction	Steel	Field Pour Concrete
Module Construction	Structural Steel	
Deck Thickness	HV = 1/4" plate HVX 3/8" plate	HV=10" thick HVX=12" thick
Approval	NTEP CC# 96-089 MC# AM-4949	

1.1.3. Scale Description

The **TALON 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"**.
- All modules are assembled and welded at the factory.

Locate the scale so that trucks can approach and exit easily.

- Smooth and level approaches are required at each end of the platform to reduce loading shock and facilitate scale testing.
- 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.***
 - *The first ten feet (10') must be level and on the same plane as the scale platform.*
- The platform should be visible from the instrument location.
- It must be built so surface water will drain easily, and not collect under the scale.

1.1.4. Users' Responsibility

- ✓ **All electronic and mechanical calibrations and/or adjustments required for making this equipment perform to accuracy and operational specifications should be performed by trained service personnel.**
- ✓ **Absolutely no physical or electrical modifications other than selection of standard options and accessories are to be made to this equipment.**
- ✓ **Electrical connections other than those specified may not be performed, and physical alterations (holes, etc.) are not allowed.**



Please call your local
FAIRBANKS SCALES REPRESENTATIVE
For any question, problems, or comments.

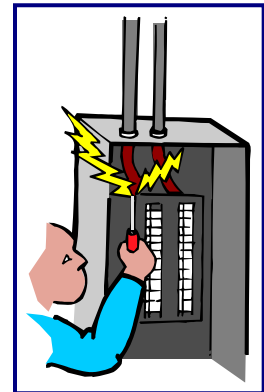
Section 2: Installation

2.1. General Service Policy

- Instructions within this manual apply to the instrument and its specific accessories. Installation procedures for printers and other peripherals are given in manuals specifically provided for those units. The instructions include a pre-installation checkout which must be performed either at the service center before the technician goes to the site, or at the site before he places the equipment in service.
- All electronic and mechanical calibrations and/or adjustments required to make this equipment perform to accuracy and operational specifications are considered to be part of the installation, and are included in the installation charge. **Only those charges which are incurred as a result of the equipment's inability to be adjusted or calibrated to performance specifications may be charged to warranty.**

All load cells, load cell cables, and all interconnecting cables used for the scale components **must be located a minimum of thirty-six inches (36") away from all single and multiple phase high energy circuits and electric current-carrying conductors.**

- This includes, but is not limited to **digital weight instruments, junction boxes, sectional controllers, and power supplies.**
- This includes any peripheral devices, such as **printers, remote displays, relay boxes, remote terminals, card readers, and auxiliary data entry devices.**
- Scale components themselves must also be at least **thirty-six inches (36") away** from other high energy components, including the following devices.
- Any machinery with outputs of **120, 240, or 480 VAC.**
- High voltage wiring runs and stations, AC power transformers, overhead or buried cables, electric distribution panels, electric motors, florescent and high intensity lighting which utilize ballast assemblies, electric heating equipment, traffic light wiring and power, and all relay boxes.
- Scale components are not designed to operate on internal combustion engine driven electric generators and other similar equipment.
 - This includes all digital weight Instruments and peripheral devices.
- Electric arc welding can severely damage scale components, such as digital weight Instruments, junction boxes, sectional controllers, power supplies, and load cells.
- The Service Technician's responsibility that all personnel are fully trained and familiar with the equipment's capabilities and limitations before the installation is considered complete.



2.2. Standard Installation Steps

Standard installation consists of these steps.

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

2.3. Pre-Installation Guidelines

*The following points should be checked and discussed with the **Area Sales Manager and/or customer**, if necessary, before the technician goes to the site and installs the equipment.*

- If the installation process might disrupt normal business operations, inform the customer to schedule arrangements.
- Is properly-grounded power available at the installation location?
- Be sure that the equipment operator(s) are available for training.
- The service technician reviews the recommended setup with the Area Sales Manager or Area Service Manager, and together they identify all necessary variations to satisfy the customer's particular application.

Follow these guidelines when unpacking all equipment.

- Check in all components and accessories according to the customer's order.
- Remove all components from their packing material, checking against the invoice that they are accounted for and not damaged.
 - Advise the shipper immediately, if damage has occurred.
 - Order any parts necessary to replace those which have been damaged.
 - Keep the shipping container and packing material for future use.
 - Check the packing list.
- Collect all necessary installation manuals for the equipment and accessories.
- Open the equipment and perform an inspection, making certain that all hardware, electrical connections, and printed circuit assemblies are secure.
- Do not reinstall the cover if the final installation is to be performed after the pre-installation checkout.



2.4. Checklist of Tools, Equipment, and Materials

Listed below are the approximate maximum weights of scale modules. This applies to all models.

- Steel Modules – 4 tons
- Field Pour Modules – 3 tons
 - With Concrete – 12.5 to 15 tons (+/- 5%)

The following lists all the needs of a standard installation.

- ☐ Certified Prints
- ☐ Mobile Crane of sufficient capacity to safely lift and place the weigh bridge modules.
Requested in advance from crane vendor
- ☐ Four (4) Lifting Chains/Cables with Hooks*
 - Equal in length (20 ft.) to safely lift and install the modules.*
- ☐ Machinists Levels (Starrett # 134 & 132-6)
- ☐ Hand Tools
- ☐ Hammer Drill with 5/8" Bit, 24" long
- ☐ Low profile hydraulic jacks (2)
 - Hydraulic Jacks that have sufficient capacity plus (+) a safety factor for the model of scale you are installing.
 - Recommended Jacks:
 - Enterpac model CUSP50 cylinder
 - Enterpac model P141 pump
 - Enterpac model HB9206Q hose
 - Enterpac model A360 coupler
 - Enterpac model FZ1630 reducer
 - Available at www.enerpac.com
- ☐ 100' Steel Tape Measure–String-line and / or chalk-line
- ☐ Pry-bars
- ☐ Grease and anti-seize (**see note below**)

NOTE: Grease for load cell cups: equal to *Super Lube White Grease* (food grade)

- ☐ Load Cell Locating Tools (one per load cell)
 - Part No. **71717** for 5.5" Load Cell

- Part No. **107118** for 6" Load Cell

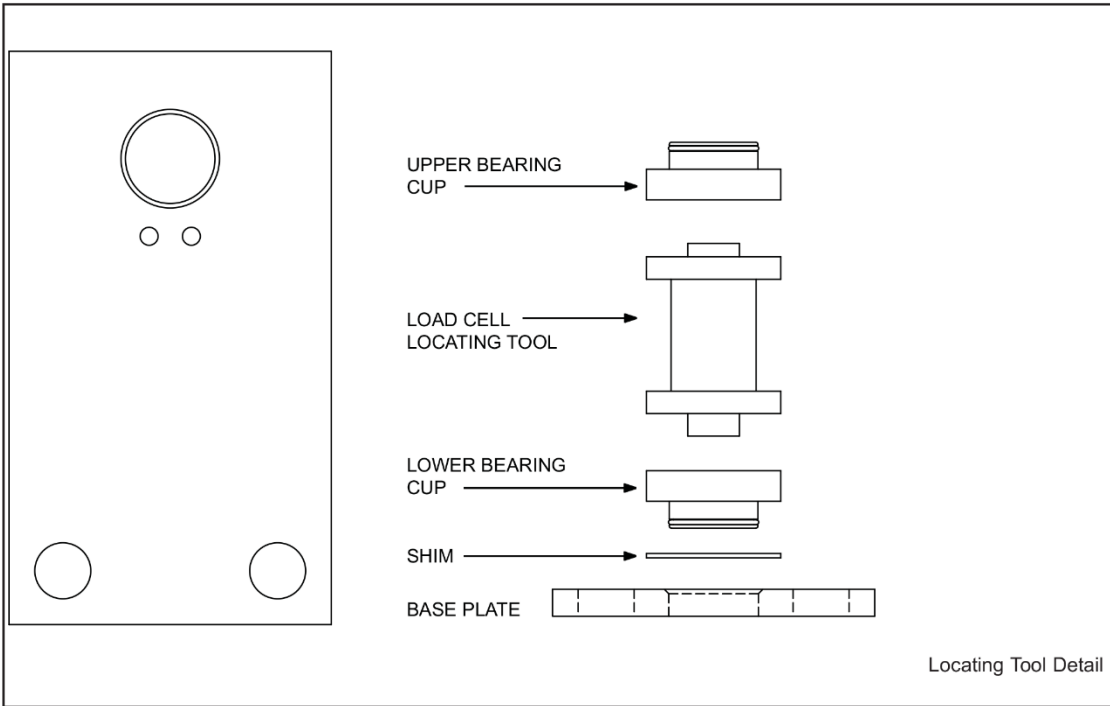
□ Timbers for Field Pour Shoring, **4" x 4" x 12'**

2.5. Installation

2.5.1. Installing the Foundation

*Noted below are the steps to a **STANDARD FOUNDATION INSTALLATION**.*

- The foundation must be checked for accuracy using Foundation Inspection.
 - Before installing any part of the scale **Field Check List, FF-2267 / 101732**.
 - See **APPENDIX I: FOUNDATION CHECKLIST**.
1. 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.
 2. Re-check the locations of each base plate against the Certified prints.
 - Insert two ½" roll pins into each lower cup for anti-rotation.
 3. For 5 ½" 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.
 4. Put a 3/16" shim on the lower cups, grease the outsides, then insert them into lower cups for 5 ½" or 6" load cells have a pin which must be aligned between the two roll pins in the base plate.
 5. Place the upper cup with greased "O" ring on the edge of the upper foundation next to each base plate.
 6. Place the Load Cell Locating Tool next to each Base Plate.



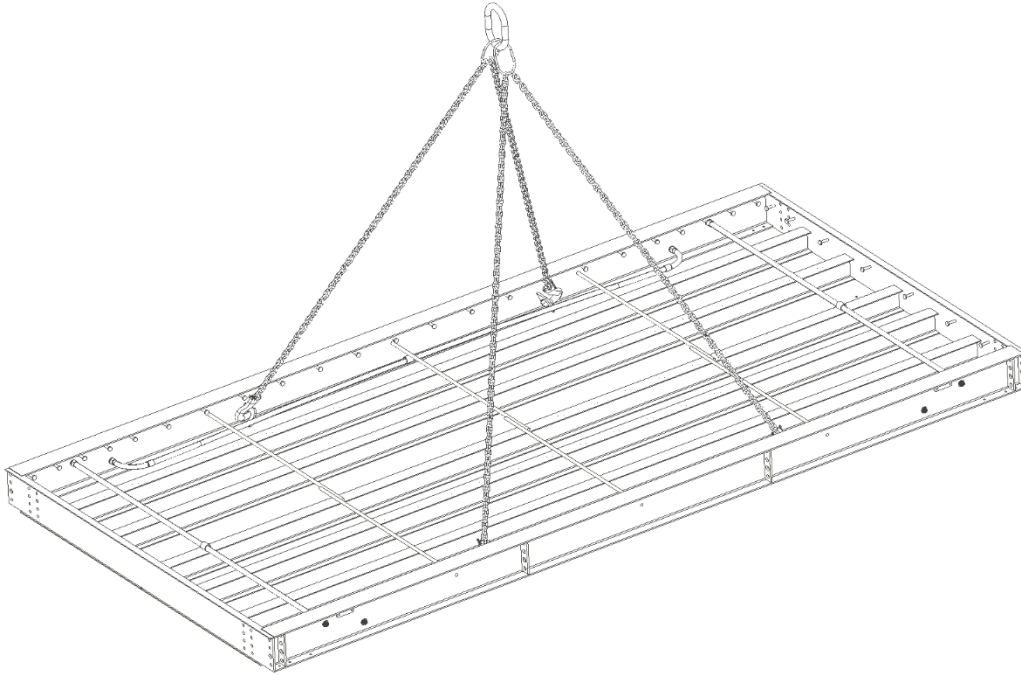
2.5.2. Setting the Modules

1. Steel Deck Scales

- a. Prepare the modules for lifting
- b. The modules use a “lifting hook & receiver” method to safely and easily rig the scale for lifting.
- c. Open box on truck labeled “Lifting Hooks” and insert a lifting hook into each slanted receiver near the “Lift Here” labels on the sides of the scales.
- d. After the lifting hook is securely in place, proceed to rig the lifting points at the operator’s preference following safety guidelines on the bulletin included in the box.
- e. The scale should be balanced properly when all four hooks are used.
- f. Once the module is set into place, slide the hooks out and repeat for next module.

2. Field Pour Scales

- a. Modules are provided with lifting lugs on the inside of the outer beams. Hook chains or straps as preferred by operator to lift scale.
- b. No bolts are required.
- c. The scale should be properly balanced when all four lugs are used evenly.



2.5.3. Setting the Center Module

1. Always set the center module into place first.
 - The center module has 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.
2. 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.
3. Lift the center module to a location above the four-center load cell base plates.

OPTION 1

- a. Set the module directly on the locating tools and the blocks will act as safety stands.
- b. Install a Load Cell Bearing Cup with “O” rings into the upper receiver of each corner, grease will help hold the cup in place.
- c. Insert the upper end of the locating tool over the upper cup on the module.
- d. Lower the module while holding the locating tool upright and guiding the bottom of the tool into the lower cup.
- e. When the center module is set on all four locating tools, keep tension on the cables until the module is centered and straight.

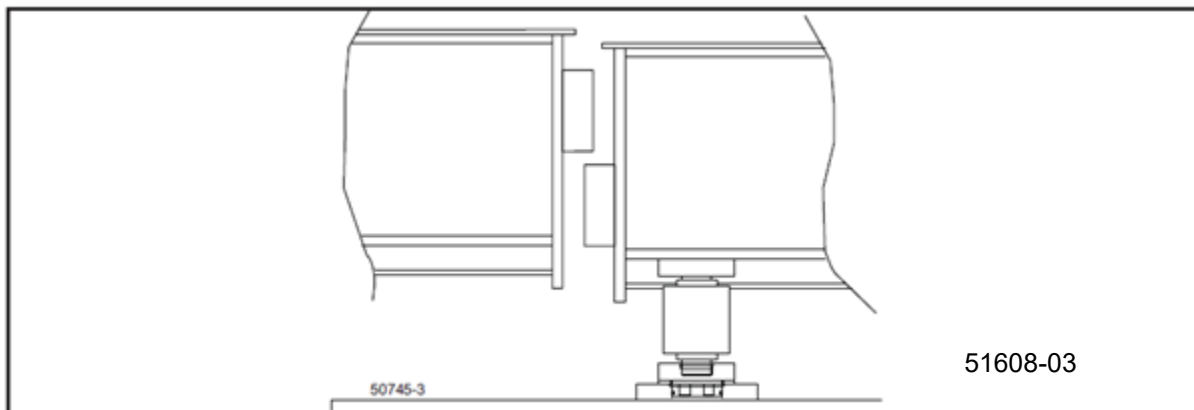
- f. Use hydraulic jacks to lift the unit slightly and shift the base plates to get the locating tools plumb and the bottom flange **FLUSH** with the side of the cup.

OPTION 2

- a. Set the modules on the blocks first, then onto the locating tools.
- b. When the module is set on the blocks, keep tension on the cables until the module is properly aligned.
- c. 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.
- d. Measure from each side of each end of the module to the end walls. Be certain the module is plumb and square before removing tension.
- e. Once the tension on the lift cables is released, remove the lift cables.

2.5.4. Setting End Modules

1. 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.
2. Lower the other end of the module onto the load cell locating tools or blocks (see below).

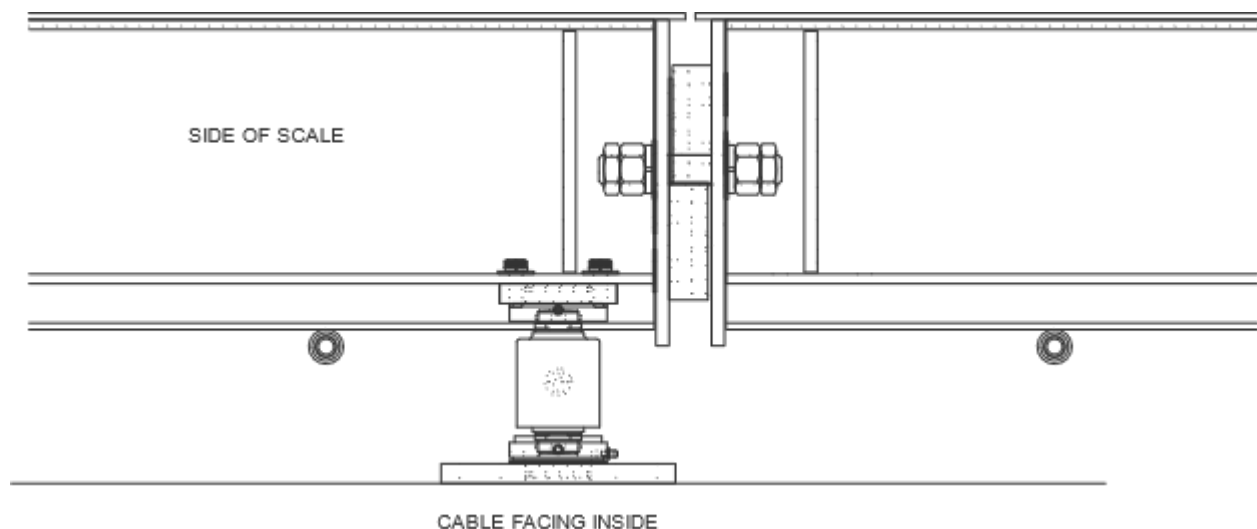
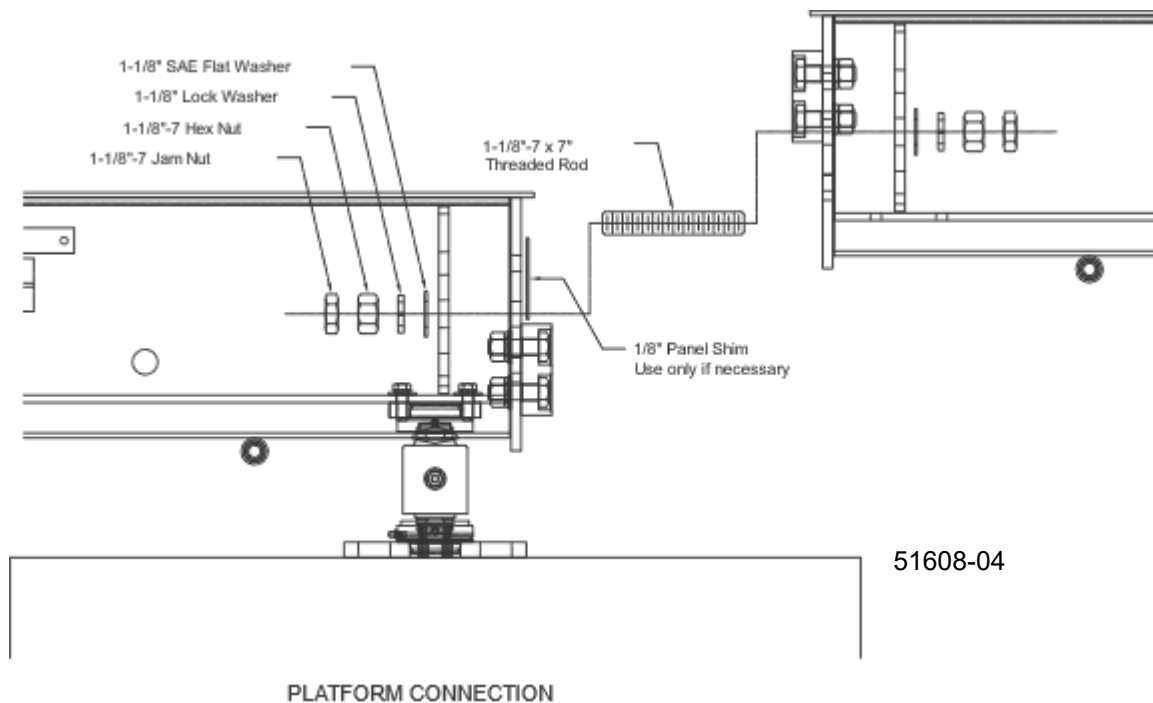


3. Before releasing tension on the cables, check the alignment of the end modules to the center module and to the end wall.
 - Use the shims provided to set height and fill any gaps on the supporting blocks to get the modules aligned.

Repeat this process for the other end of the module, or for the Interior Module.

2.5.5. Connecting the Modules

1. Bolt the modules together using the 1-1/8" x 7" full-thread rod, lock washer, flat washers and nut provided.
2. Shim the supporting blocks, as needed to align modules.
3. Snug the nuts, but do not fully tighten them yet.



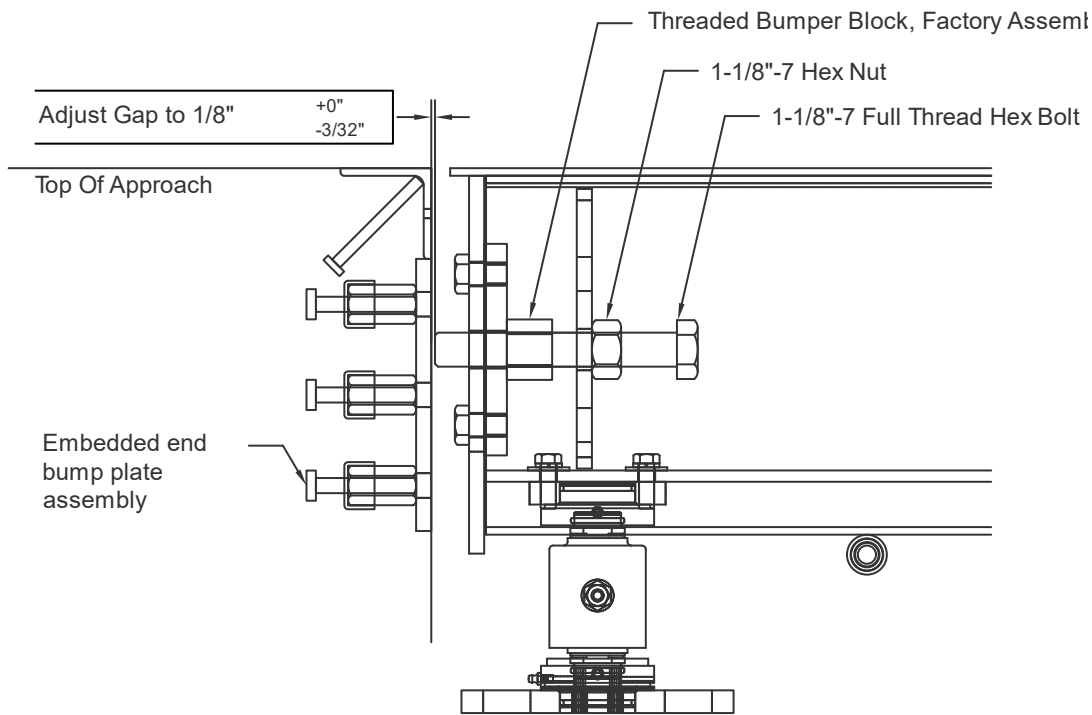
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WARNING!

Module-to-module bolts *MUST* be installed correctly and torqued properly after all steps are completed.
Do NOT substitute or omit any bolts.

2.5.6. Checking Adjustment

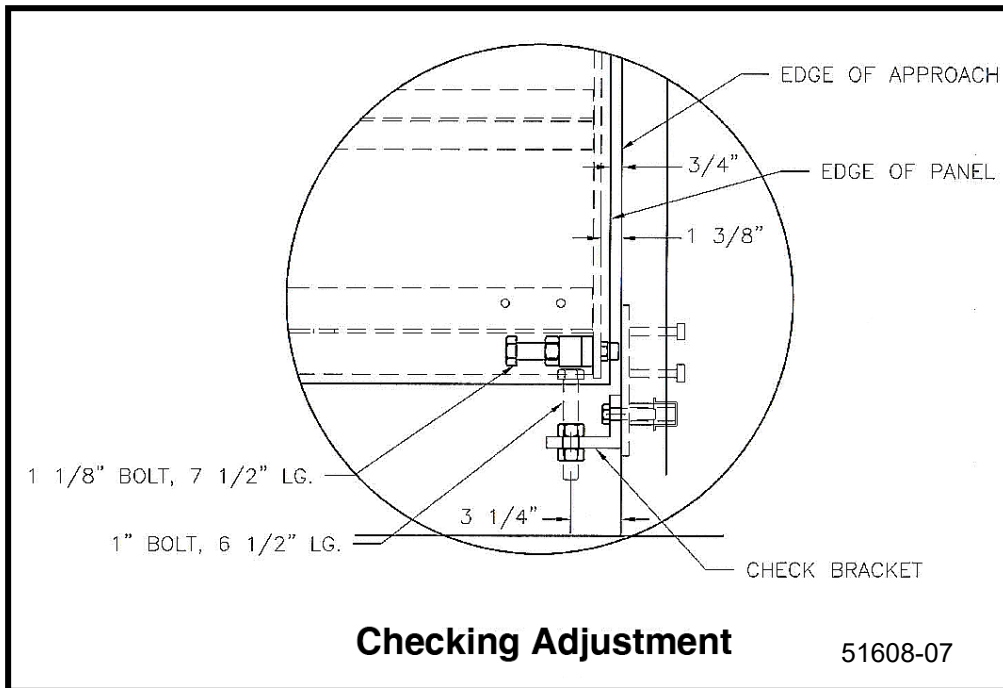
1. Adjust the **End Checking**.
 - Set the **End Checking Bolts** so that they touch and prevent movement.
2. Install the Side Checking Brackets.
3. Bolt the brackets to the end checking plates embedded in the end walls according to the Certified Prints.
 - Set the bolts so that they touch the block they bump against.



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END CHECKING DETAIL

2.5.7. Base Plate Completion



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

2.5.8. Installing Load Cells

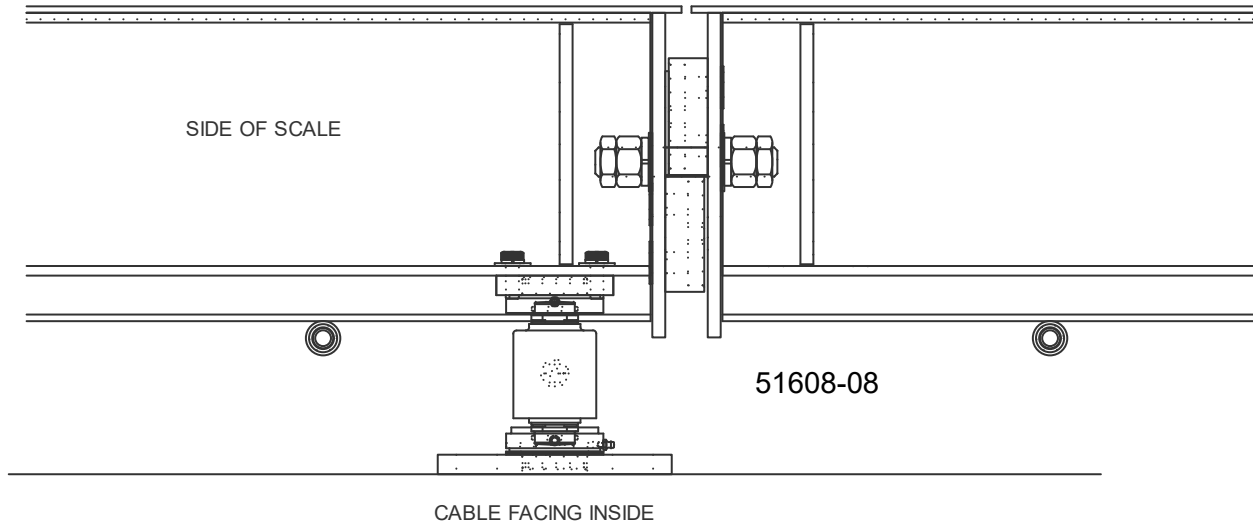
For 5 1/2" or 6" load cells, the bottom of the cell has two flat sides which must be aligned with the flats in the lower cup. Carefully lower the scale (hydraulic jacks) while seating the bottom of the cell into the lower cup.

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.



2.5.8. Installing Load Cells, Continued

NOTE: Anti rotation must be positioned to the inside of scale. See illustration below:

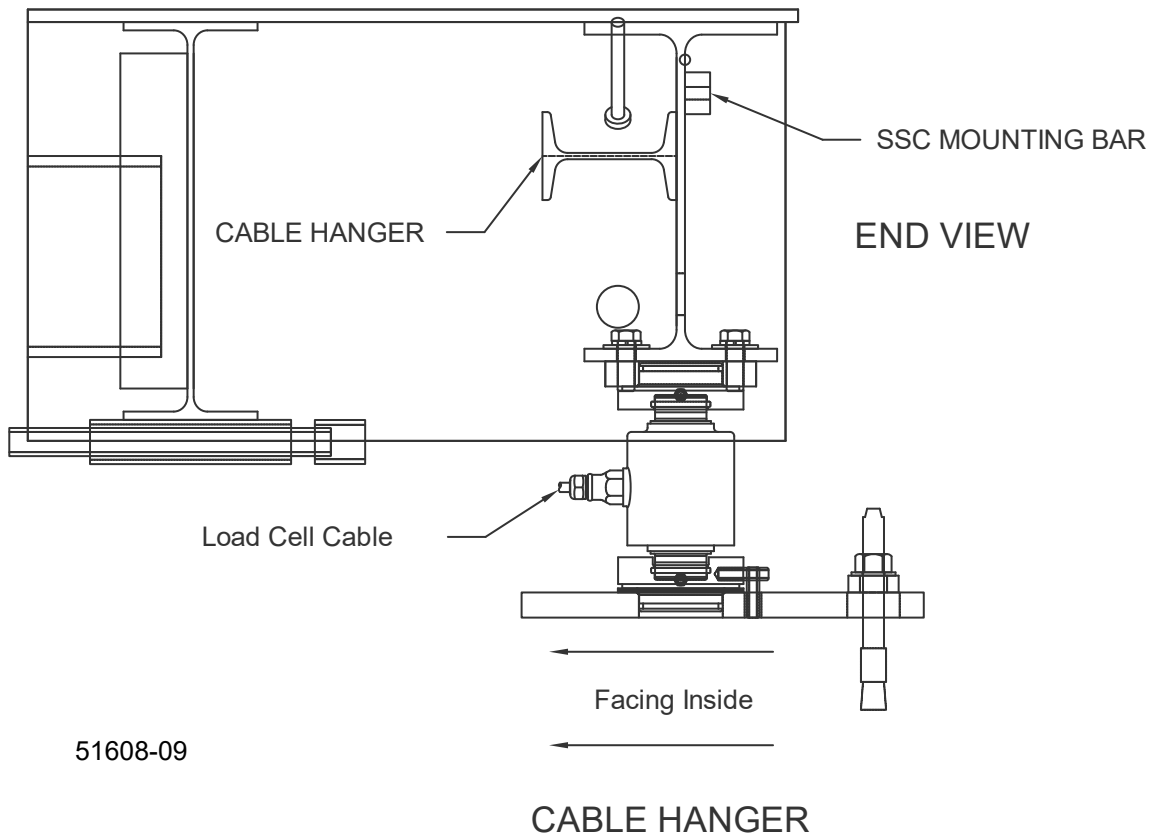


2.5.9. Load Cell Cables

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.

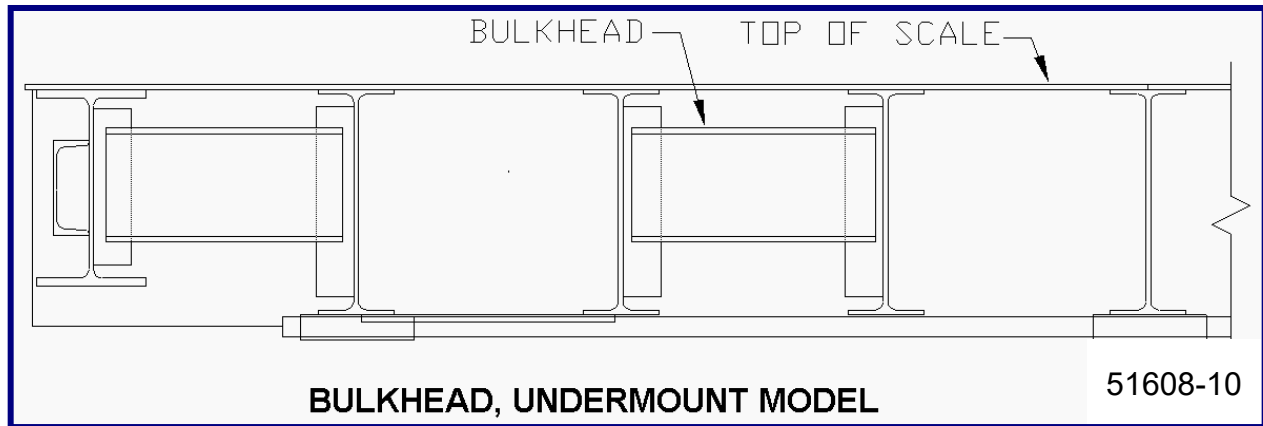
CABLE HANGERS

Cable Hangers are located behind every SSC or PPS mounting block for all excess load cell and interconnecting cables.



CABLE ROUTING

1. Route the load cell cables through the conduits that go across the bottom of the scale laterally. Route the junction box interface cables through the conduits that run longitudinally along the inside web of the side beams.
2. Once all wiring is complete, fasten all the cables together and hang them safely out of sight on the cable hanger.
 - In a correct installation, the only cables visible are those coming out of the holes in the side beam to the SSC or PPS.



2.5.10.Final Checking Adjustment

1. Adjust the **End Checking Bolts** to allow **1/16"** to **1/8"** clearance.
2. Adjust the **Side Checking Bolts** to allow **1/16"** clearance from Bumper Block.

Section 3: Field Pour Installation

3.1. Introduction

The Field Pour module's installation is much the same as the other models, with some minor variations.

The basic procedure is outlined below.

- B. Install the foundation for the scale.**
- C. Install the base plates.**
- D. Position and level the shoring.**
- E. Install the platform modules with locator tools in place.**
- F. Pour the deck and cure the concrete.**
- G. Install the load cells.**

Field-Pour scales are poured, formed and cured with locating tools in place.

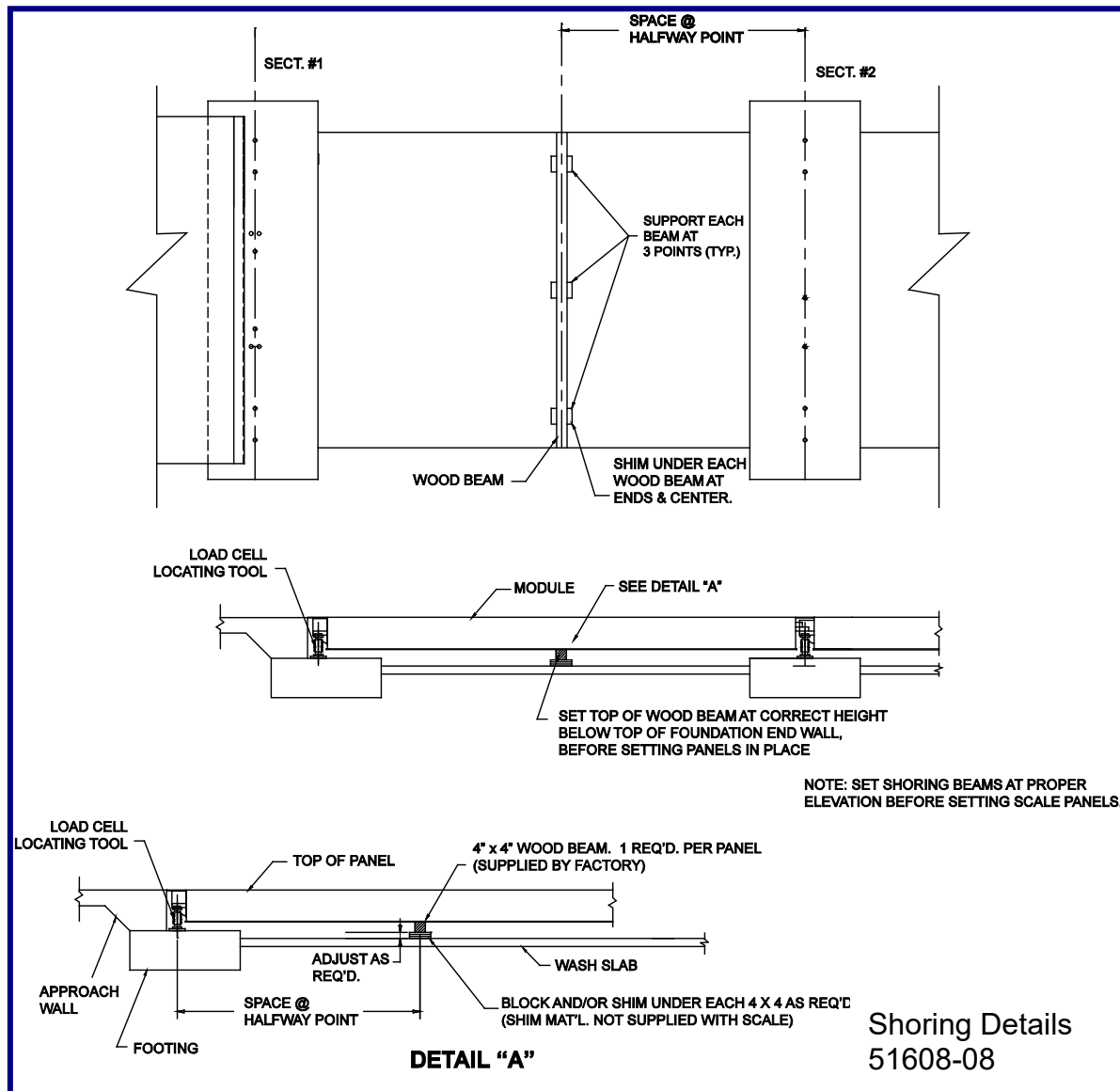
- Install the load cells **ONLY AFTER** cure strength is reached.
- Cure strength is typically **28-30 days**.
 - Use a **concrete test cylinder samples** to confirm this.
- Use the **Certified Prints** for all concrete specifications.

3.2. Installation

3.2.1. Shoring

Recommended shoring is made up of the provided **4" x 4" x 12' timbers**.

- The crown of the shoring timbers should be up.
- The actual dimensions of the timbers depends on the distance from the foundation floor to the bottom of the modules.
- The shoring timbers should be located equally spaced between the load cells.
- Shims should be placed under each end and center of the shoring beams to achieve proper elevation.



3.2.2. Setting the Field Pour Modules

NOTE: *The shoring timbers should be placed before setting scale modules.*

*Follow these steps to set up the **Field Pour Modules**.*

1. 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.
 - Use a tight string between the approach walls for alignment.
 - Install the modules as outlined in the previous sections, 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.

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.

2. Pour and finish the concrete.
 - a. Remove any air bubbles and work the material into all of the corners with a spud-type vibrator.
 - b. Use a rough "broom" finish for the surface.
 - c. Crown the concrete one quarter inch (1/4") to allow for drainage.
 - d. Allow the concrete to cure until the required minimum strength as specified on the Certified Prints is achieved.

3.2.2. Setting the Field Pour Modules, Continued

NOTE: Plug all weep holes in the module pans before pouring concrete.

I M P O R T A N T

Take samples at the time the deck is poured,
used 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.

3. After the concrete has cured, remove all of the shoring.
 - Lift the modules so the shoring can be removed.
4. Install the load cells in place of the locator tools.

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.

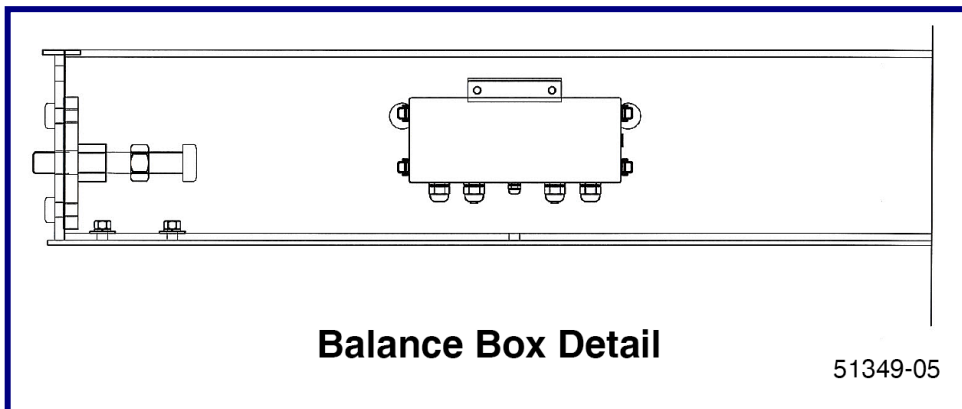
Lifting mid span or between load cells will cause cracks
in the concrete.

Section 4: Electrical Installation

4.1. Balance Box (21912) for Analog Instruments

Installed the Balance Box (21912) at the platform, one box per section.

- Each Stainless Steel Balance Box has four (4) terminal blocks connecting two (2) load cells and two (2) cables to the analog instrument.
 - Load cells and sections are adjusted by potentiometers.
1. Mount the Box thru the tabs to the mounting brackets on the side of the modules.
 2. Attach the ground wire lug to one of the mounting bolt studs.
 3. Tighten the wire lug securely to provide a good electrical ground.



4.2. Wiring for Analog Instruments

NOTE: All cable wiring must be a minimum of **18 AWG (17204)** or equivalent).

1. Connect the Balance Boxes from **TB4** to **TB3**
2. Attach this either at the **end section** where the interface cable conduit enters the scale

OR...

If the conduit enters the scale in the middle, use **Instrument SVP (14478)**.

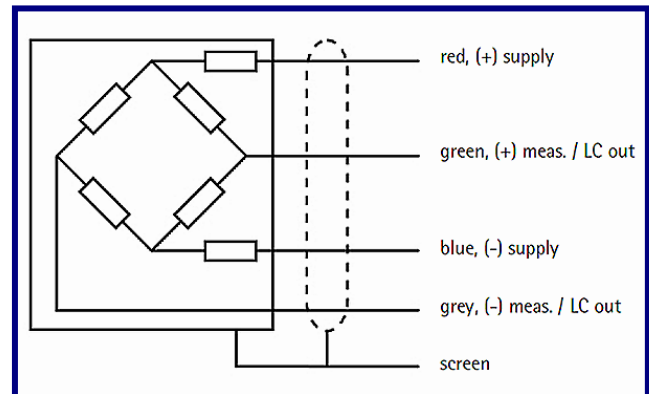
- This will allow separate connections to go in each direction toward the ends of the scale.

NOTE: See **Bulletin 50810** for complete wiring diagrams.

4.2.1. Load Cell Wiring

This applies to both the **66K** and the **100K** Load Cells.

COLOR	DESCRIPTION
Blue	– Excitation
Red	+ Excitation
Gray	– Signal
Green	+ Signal



4.2.2. Cells-to-Junction Box Wiring

TERMINAL	COLOR	TB3 AND TB4
1	Blue	– Excitation
2	Red	+ Excitation
3	Shield	Shield
4	Green	+ Signal
5	Gray	– Signal

4.2.3. Box-to-Box Wiring

TERMINAL	TB1
1	– Excitation
2	+ Excitation
3	+ Sense
4	– Sense
6	Shield
7	+ Signal
8	– Signal

4.2.4. Box-to-Instrument

TERMINAL	TB2
1	– Excitation
2	+ Excitation
3	+ Sense
4	– Sense
6	Shield
7	+ Signal
8	– Signal

NOTE: Balance Boxes must attach to one (1) ground rod in the pit.

Inadequate grounding prevents the surge protector from functioning properly.

4.2.5. Preventing Moisture Entry

The Full Electronic scales have been designed to provide protection from the effects of moisture.

- Load cells are calibrated with the cable attached. **DO NOT EVER cut the cable.**
- 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.

4.2.6. Instrument Cable Connection, Balance Box

The two (2) cables from the two (2) center section boxes, as well as the instrument cable, will enter and terminate at the **Instrument SVP (14478)**.

1. Prepare the cable ends in the standard manner.
 - Use **Appendix II** for wiring instructions of all pit balance boxes.
2. Connect the instrument interface cable to the instrument in the scale house according to the instructions in the appropriate instrument service manual.

4.2.7. Adjusting Cells and 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.

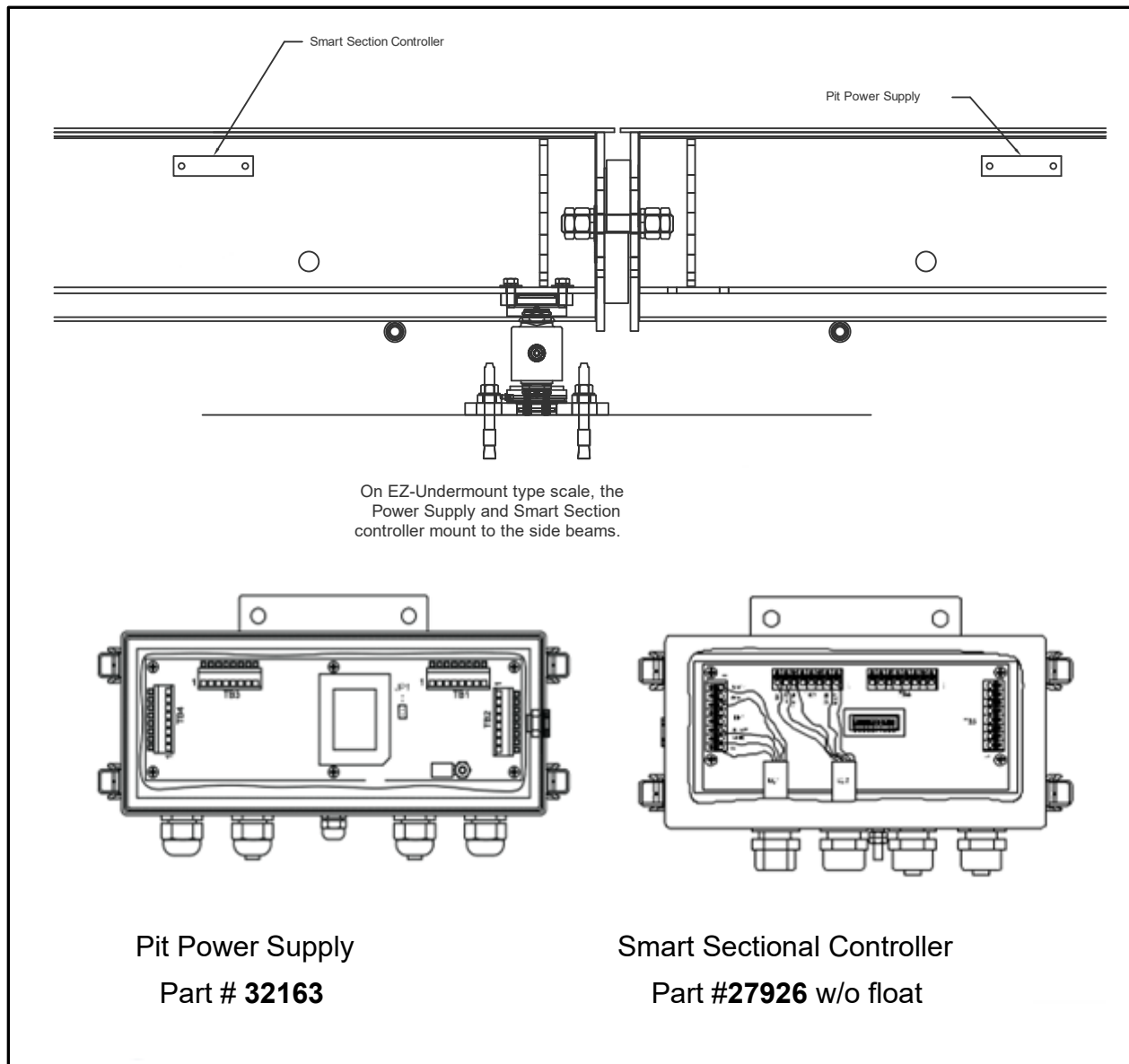
4.3. Wiring SSCs and PPSs for Intalogix Systems

Intalogix™ systems use Smart Sectional Controllers (SSC)s and Pit Power Supplies (PPSs) for load cell excitation and signal processing.

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

1. Mount the Box thru the tabs to the mounting brackets on the side of the modules.
2. Wire the cable using a minimum of **18 AWG** (17204 or 17246).
 - See the following page for wiring diagrams.
 - See **Appendix III** to connect PPSs and SSCs, or use the appropriate service manual for the Instrument being installed.

4.3. Wiring SSCs and PPSs for Intalogix Systems, Continued



4.3.1. SSCs (Smart Sectional Controllers)

SSC CONNECTIONS

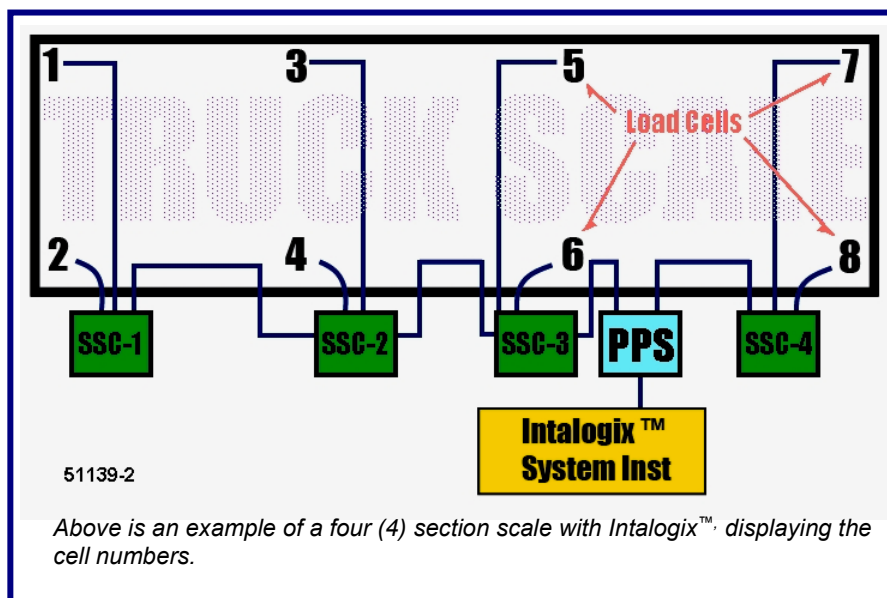
Wire the cells into each section's SSC according to the appropriate manual.

Each SSC has connections for two (2) incoming load cells, labeled **TB1** and **TB2**.

- The **odd** numbered cell goes to **TB1**.
- The **even** numbered cell goes to **TB2**.
- **Load cell drain wires** connect to ground lug on the sectional controller box exterior.

4.3.2. Cell Numbering

- Intalogix™ Technology installations use a specific numbering system for load cells because of digital addressing of the SSCs.
- With respect to the following starting position, face the platform where the instrument is located.
- The cell at the **upper-left** (far side) of the platform is **Cell One (1)**.
- The cell positions along the **far side** have **odd cell numbers**.
- The **near side locations** have **even cell numbers**.



4.3.3. Grounding

Intalogix™ Technology systems must have **two (2) ground rods** in the pit for proper connection.

- The **PPS** supplies one ground for the **weighbridge**, and connects the other to the **SSC**.
- For accurate operation and protection against damage from lightning strikes, all of the components of the system must be properly grounded.

Use the following guidelines to correctly ground the system:

- Use **8 AWG** or larger wire, or **braided ground straps**.
- All ground connections should be **two feet (2')**, or as short as possible.
- The SSCs and PPSs housing attaches in a clean electrical connection **to the platform frame**. The platform frame is then connected to a pit ground rod.
- The insulated **WHITE WIRE** from the PPS connects directly to the separate ground rod.
- The **117 VAC SVP Unit** connects to a known good ground at the instrument location.
- Use a voltmeter to test the electrical power source available.
- The **Neutral-to-Ground** voltage level must be **0.2 VAC or less**.
- If unsure, or if the testing reveals higher than 0.2 VAC, install a separate ground rod at the **SVP location**, connecting it with braided cable or 8 AWG wire

CAUTION

Proper grounding is REQUIRED
so the Surge Voltage Protection (SVP) adequately shields the
scale from lightning and other electrical interferences!

Section 5: Service & Maintenance

5.1. 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 and/or excessive or uneven wear.
4. The load cell bearing cups should be inspected, cleaned and greased at least TWICE per year.
5. Inspect and adjust all check bolts using anti-seize on the threads.
6. Inspect and tighten all connecting and cover plate hardware for proper tightness.

5.2. 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.

5.3. Load Cell Replacement

1. Remove all power from the instrument.
2. Lift the scale using a proper sized and rated hydraulic jack(s) at the corner(s) closest to the defective load cell location.
3. Check upper and lower receiving cups. Replace as necessary and reapply grease.
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/Balance 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.
7. Test and adjust scale as necessary.
8. **Secure the cover.**

Section 6: Parts

6.1. Parts

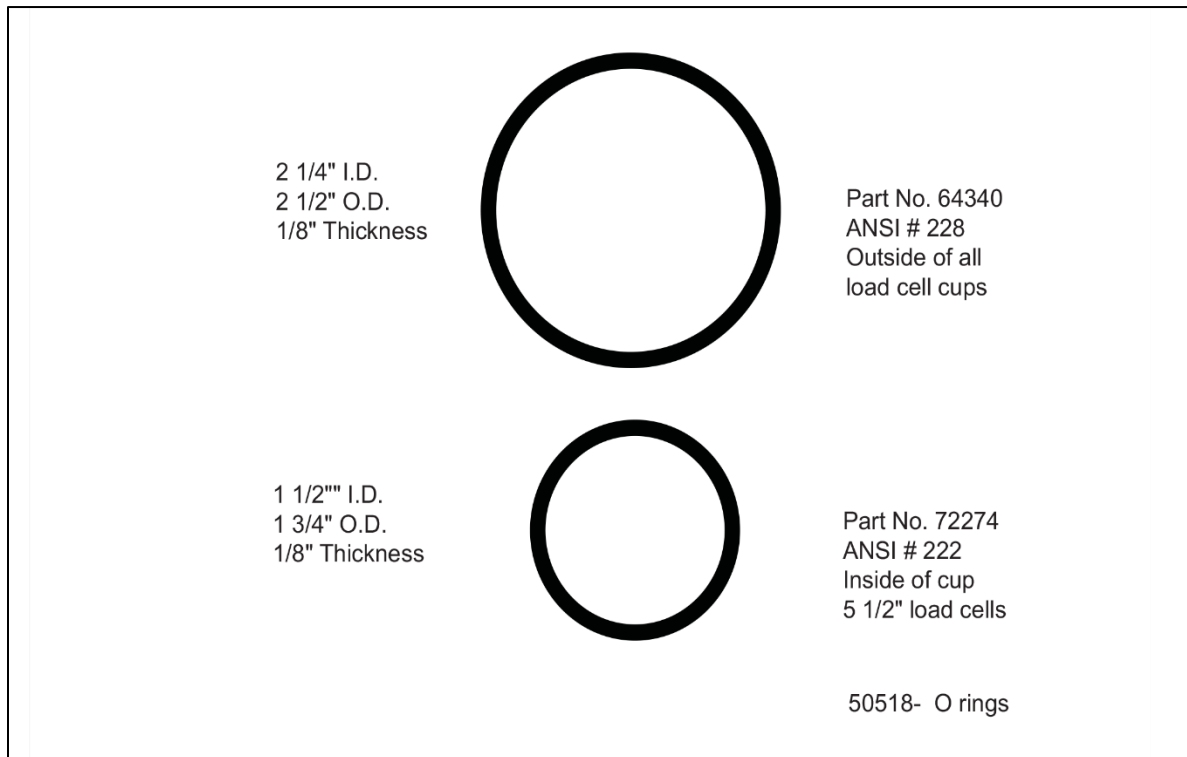
PART NO.	DESCRIPTION
76708	1 1/8" -7 x 8" Threaded Rod, Zinc (module-module)
54788	1 1/8" Lock Washer (module-module)
54306	1 1/8" SAE Flat Washer (module-module)
85593	Load Cell Base Plate
61743	Clamp Bar Washer (Base Plates)
62857	5/8" x 6" Anchor Bolts (Wedge Type)
55010	Ground Rod Kit
73682	Shim, 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

6.2. Load Cells and Hardware

70510 – 66k Load Cell

PART NO.	DESCRIPTION
72274	"O" Ring, 5 1/2", INSIDE of Cup,*ANSI #222
64340	"O" Ring, 5 1/2",OUTSIDE of Cup*ANSI #228
70511	Receiver Cup, 5 1/2" LOWER (w/ anti-rotation pin)
70512	Receiver Cup, 5 1/2", UPPER
64382	Roll Pin, 1/2" x 2 1/2" anti-rotation, baseplate
63981	Anti-Rotation Pin, LOWER Receiver Cup 3/8" x 2 1/2"
71717	Locating Tool 5 1/2"
107011	Load Cell Boot (1)

6.3. "O" Rings, Actual Size



80453 – 100k Load Cell

Part No.	Description
72274*	"O" Ring, 5 1/2", INSIDE of Cup,*ANSI #222
64340*	"O" Ring, 5 1/2", OUTSIDE of Cup,*ANSI #228
70511	Receiver Cup, 5 1/2" LOWER (w/ anti-rotation pin)
70512	Receiver Cup, 5 1/2", UPPER
87481	Receiver Cup, 6" LOWER (w/ anti-rotation pin), ECO 607
87482	Receiver Cup, 6" UPPER, ECO 607
64382	Roll Pin, 1/2" x 2 1/2" anti-rotation, baseplate
63981	Anti-Rotation Pin, LOWER Receiver Cup 3/8" x 2 1/2"
107118	Locating Tool 6"
107011	Load Cell Boot (1)

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

6.4. Spare Parts

6.4.1. Recommended Spare Parts (Choose 66k OR 100k)

Part	Qty	Description
70510	1	Load Cell, 60k (30t)
70511	1	Receiver Cup, 5½" LOWER (w/ anti-rotation pin)
70512	1	Receiver Cup, 5½", UPPER
80453	1	Load Cell, 100k
87481	1	Receiver Cup, 6" LOWER (w/ anti-rotation pin)
87482	1	Receiver Cup, 6" UPPER

6.4.2. Startup / Commissioning Spare Parts

Part	Qty	Description
70510	1	Load Cell, 60k (30t)
70511	1	Receiver Cup, 5½" LOWER (w/ anti-rotation pin)
70512	1	Receiver Cup, 5½", UPPER
80453	1	Load Cell, 100k
87481	1	Receiver Cup, 6" LOWER (w/ anti-rotation pin)
87482	1	Receiver Cup, 6" UPPER

6.4.3. 2-Year Spare Parts List

Part	Qty	Description
70510	1	Load Cell, 60k (30t)
70511	1	Receiver Cup, 5½" LOWER (w/ anti-rotation pin)
70512	1	Receiver Cup, 5½", UPPER
80453	1	Load Cell, 100k
87481	1	Receiver Cup, 6" LOWER (w/ anti-rotation pin)
87482	1	Receiver Cup, 6" UPPER
79747	1	Rub Rail PVC End Caps (gray)
105297	1	Rub Rail plugs (yellow)

Capital Spare Parts – Not Applicable

Section 7: Accessories

7.1. Rub Rails

Rub-Rails are available for factory-installed and field-installed models. *Follow these steps for a Field Installed Rub Rail Installation.*

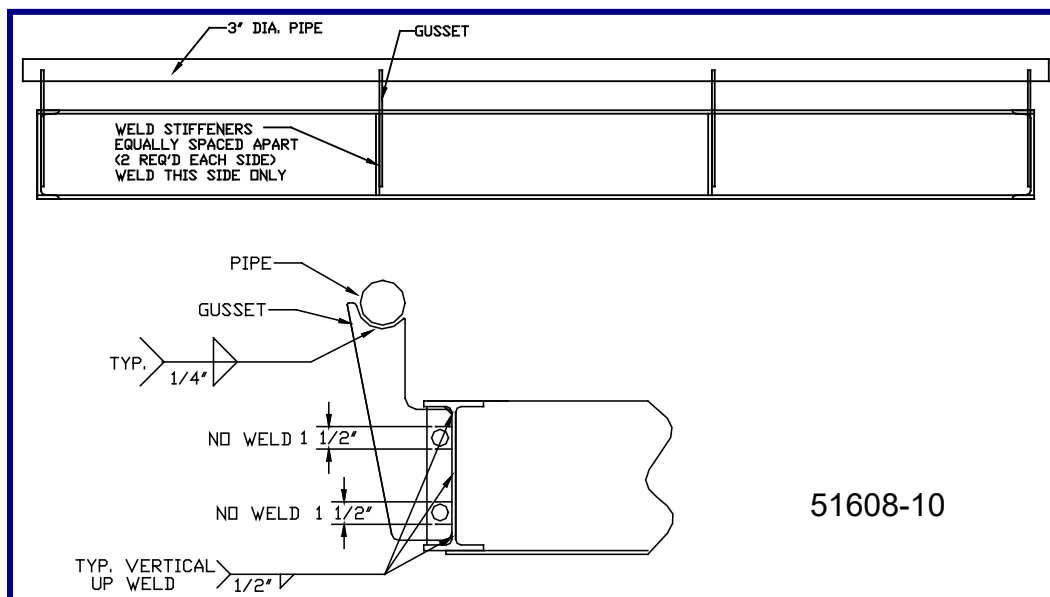
1. Use the print with the accessory for actual measurements.
2. Thoroughly clean and remove any primer around the areas to be welded.
 - This allows for good welding penetration.
3. Weld the stiffeners to the side weldments.
4. Bolt the gussets to the stiffeners and end weldments.
5. Weld the pipe to the gussets.
6. Clean and paint all welded sections of the Rub Rails.
 - This paint is normally provided.

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.

Using foundation-mounted guide rails will VOID THE PRODUCT WARRANTY.



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). | |

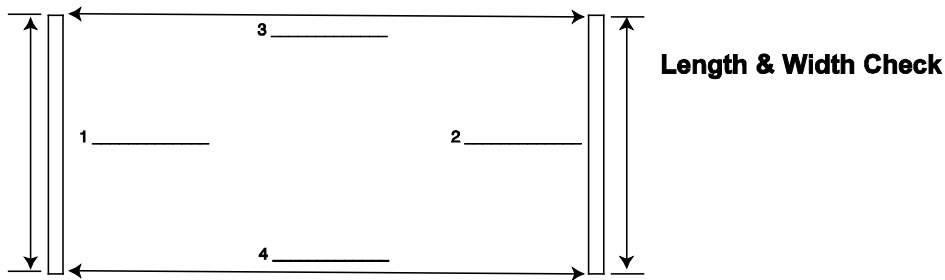
Perform the following Foundation Checks. Refer to Methods and Procedures for complete description of each step. Recommended to copy check list and keep in job file. **ALWAYS** familiarize yourself with the **CERTIFIED** foundation prints for the job you are working on as model numbers and specifications 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). To high and the scale will not fit correctly, to 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 Rodan 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.

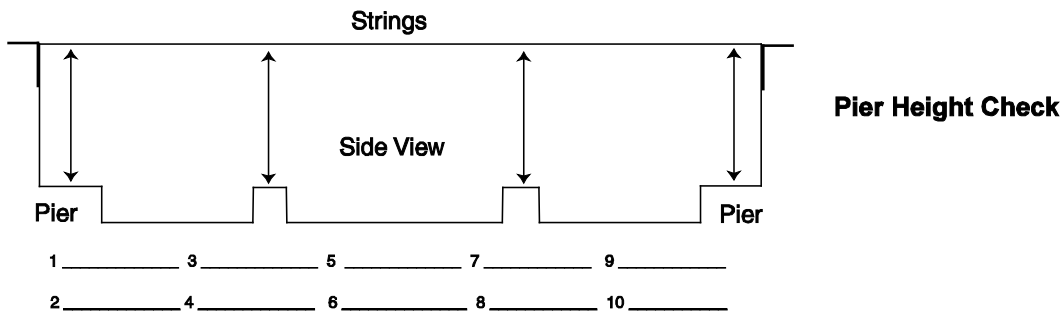
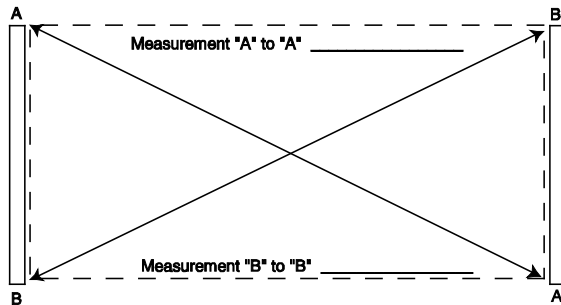
FF-2267

Issue #1

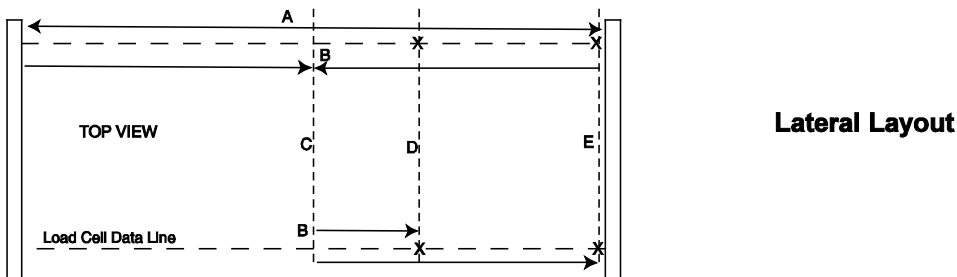
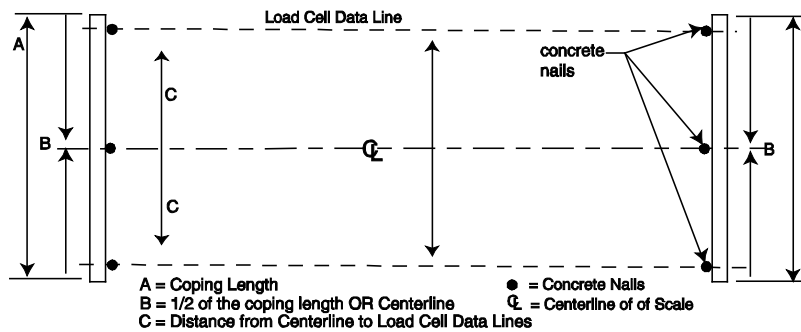
Appendix I: Foundation Check List, Continued



Diagonal Measurements Check



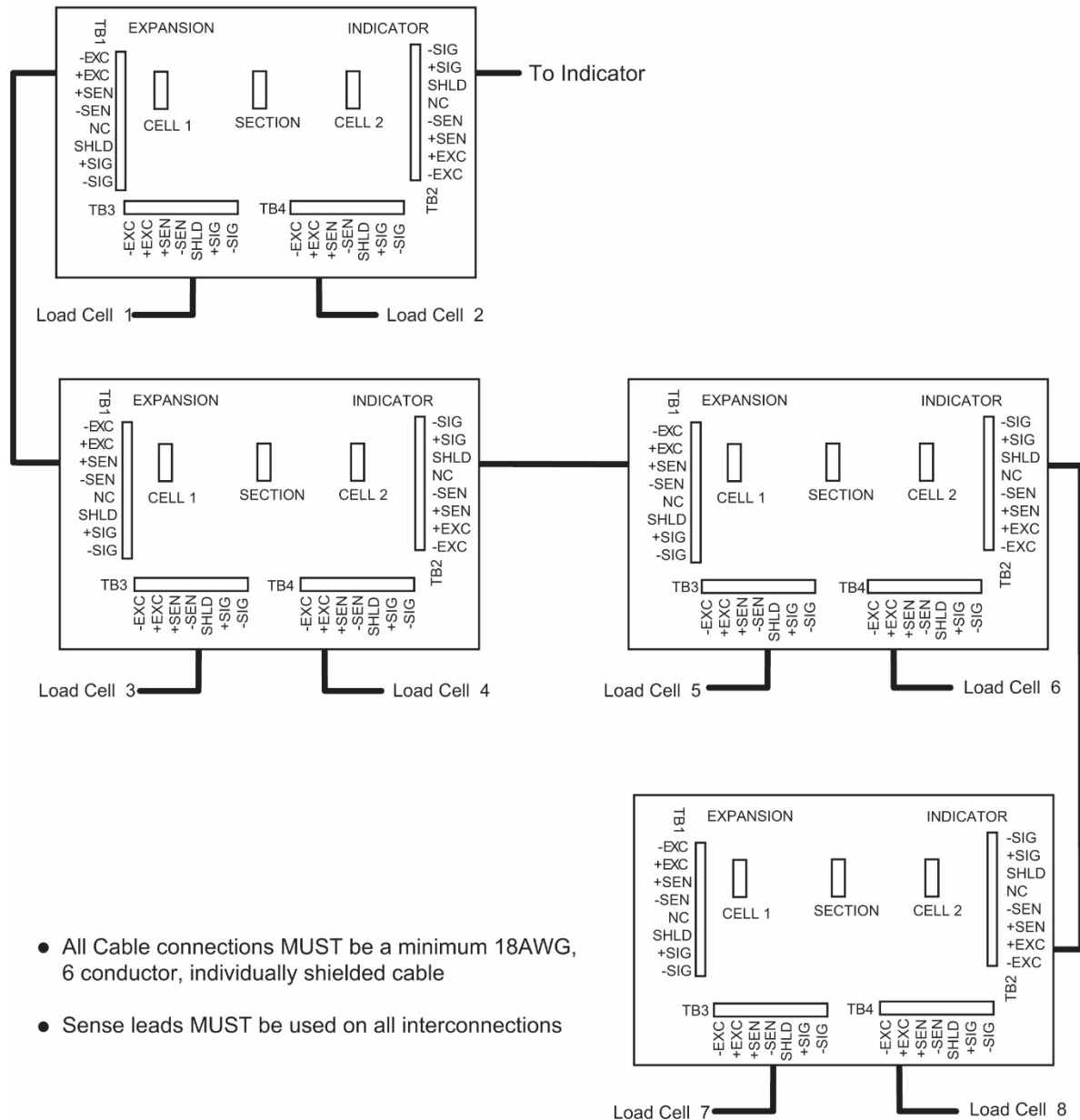
Longitudinal Layout



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Issue #1

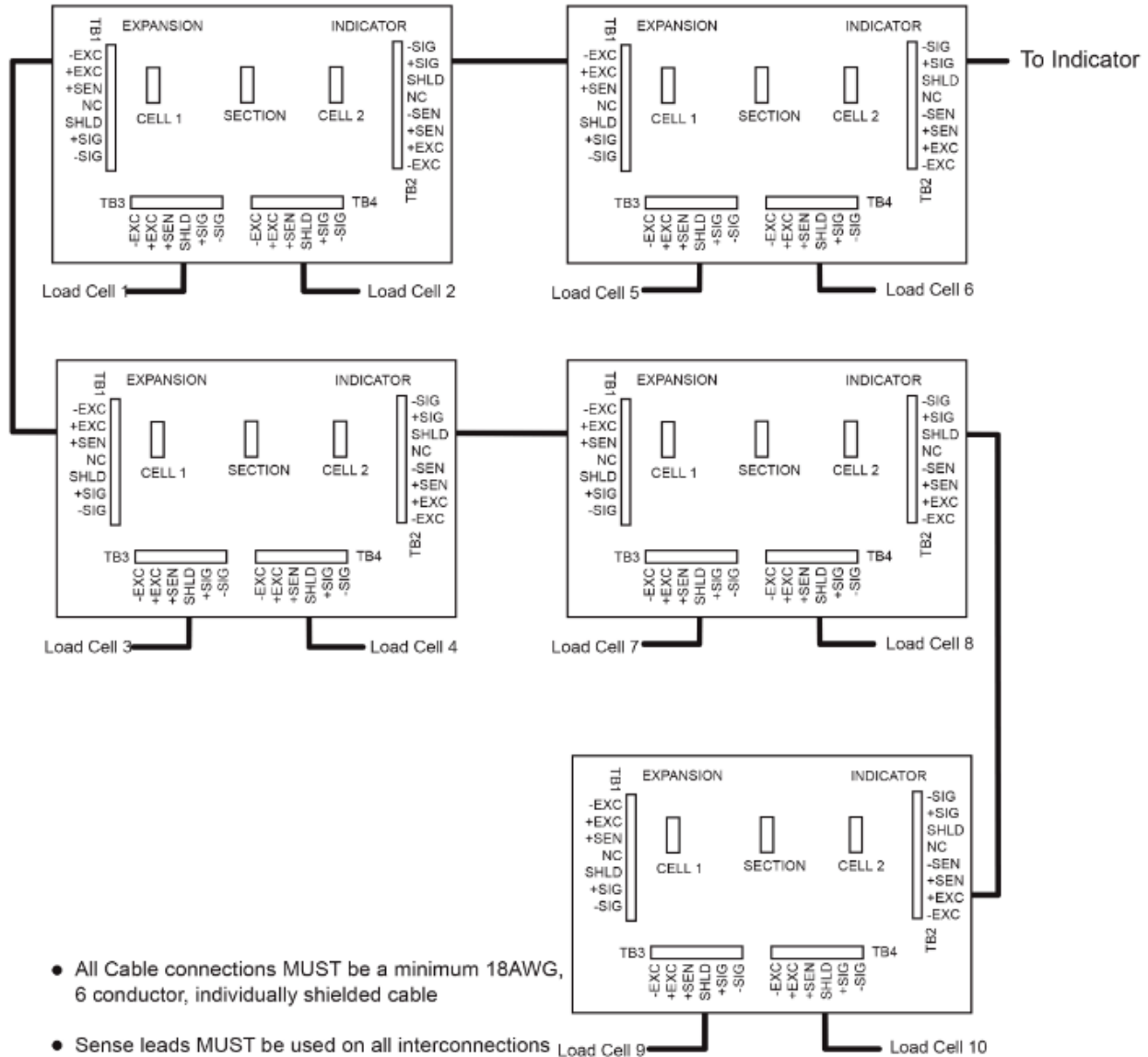
Appendix II: Four Section Analog Scale



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

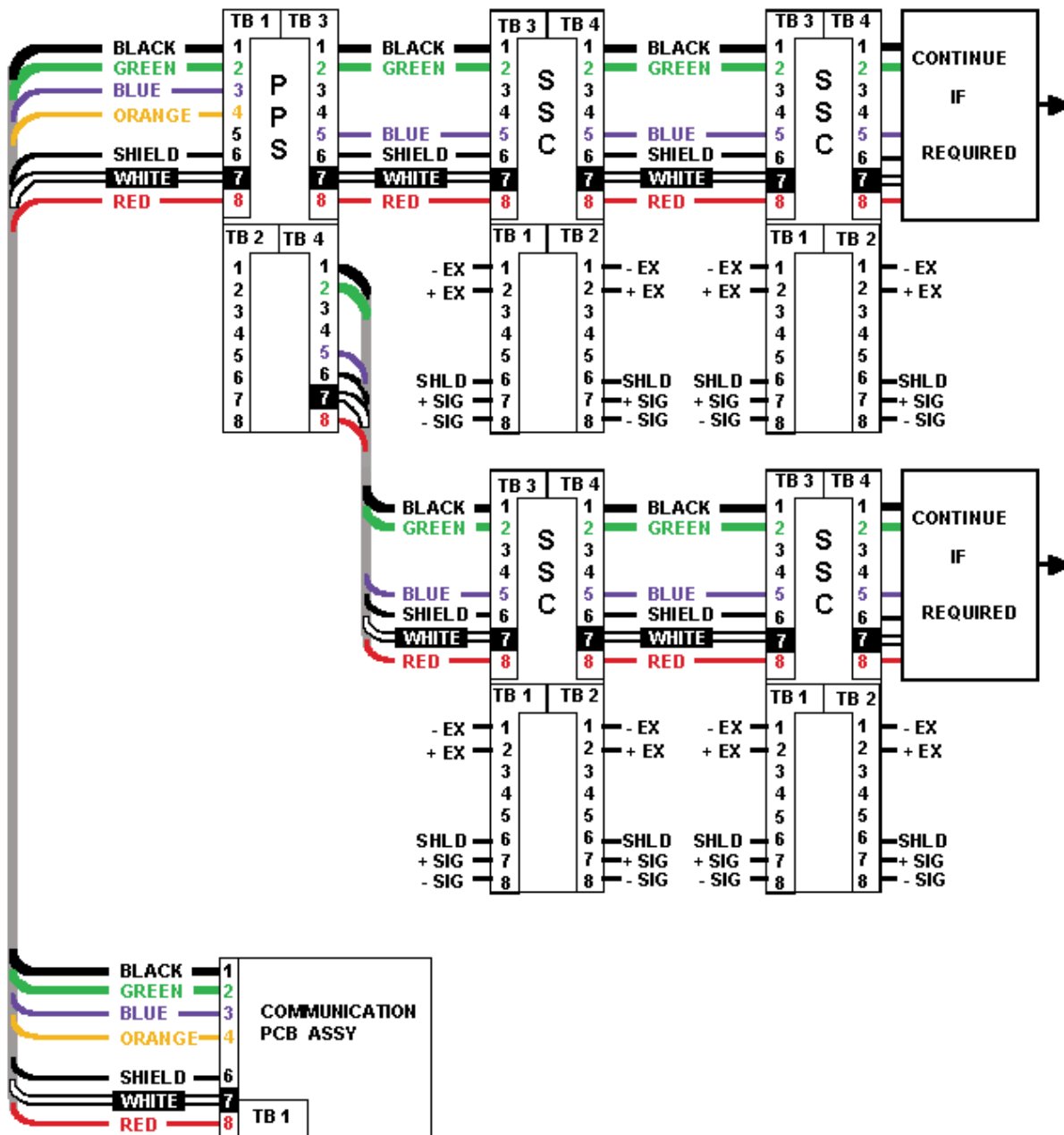
4-Section Analog

Appendix III: Five Section Analog Scale



5-Section Analog

Appendix IV: Four Section Intalogix Scale





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Talon Series Truck Scale

Instructional Manual

51608