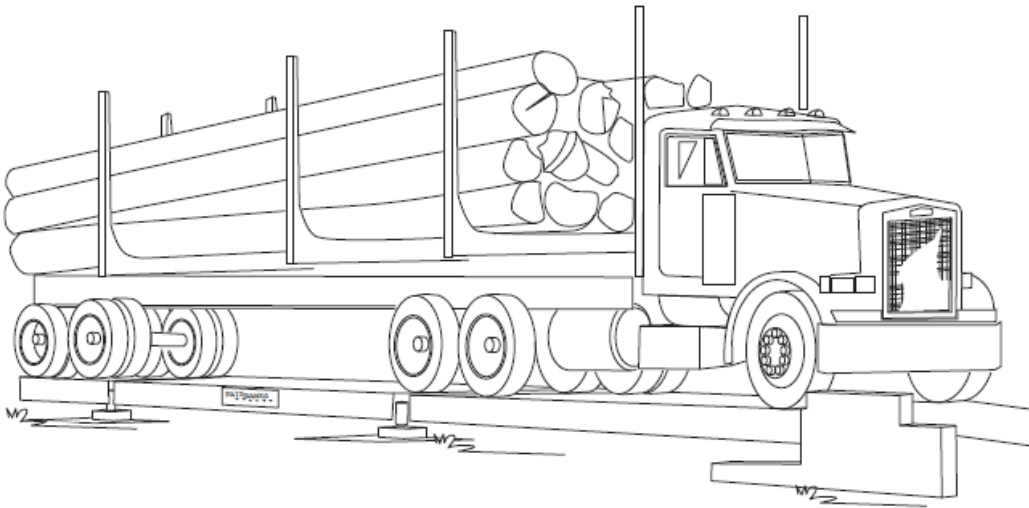


Falcon Series

Cover Plated Scale

8555 Field Pour
8565 Steel Deck





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, Thurman Scale 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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Ammendment Record

Cover Plated Truck Scale 8555 and 8565 Series

Installation Manual Document 51656

Manufactured by
Thurman Scale

Rev. #	Date	Update
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Section 1: General Information

1.1. Introduction

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

For a proper Thurman Scale installation(s), use the following resources:

- Methods and Procedures FF-2267 /101732 (Appendix I)
- The Certified Prints/setting plans supplied with the scale
- This Installation Manual, **51656**

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.)

1.2. Description

The Modular Steel Deck and Field Pour truck scales are available in various lengths from 10 to 120 feet, and widths from 10 feet to 12 feet.

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 of the 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.

1.3. Load Cell Technical Specifications

Capacity	66,000 lbs. (w/ 5 1/2" LC)	100,000 lbs (w/ 6.00" LC)
Type	5.5" (66k) or 6.00"(100k) Stainless Steel Rocker Column (RC Cells)	
Sealing	Complete hermetic sealing; cable entry sealed by four (4) water-tight gland bushings	
Material	Stainless Steel	
Rating	IP69K	
Resistance	1,000 Ohms	
Operating Temperature	-10 to +40°C (-14 to 104°F)	
Output	2.0 mV/V	
Combined Error	≤0.02%	
Zero Balance (FSO)	1.0%	
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	

1.4. 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	Falcon = 1/4" plate Falcon HD = 3/8" plate	Falcon = 10" thick Falcon HD = 12" thick

Approval	NTEP CC# 96-089 MC# AM-4949
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Section 2: Installation

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

2.1. Preparation for Installations -- All Models

Tools, Equipment, and Materials Required:

- ☐ Certified Prints
- ☐ Mobile Crane of sufficient capacity to safely lift and place the weigh bridge modules.*
- ☐ Four (4) Lifting Chains/Cables with Hooks*
 - Equal in length (20 ft.) to safely lift and install the modules.

NOTE: These MUST be requested in advance from the Crane Service Company!

- ☐ Machinists Levels (Starrett # 134 & 132-6)
- ☐ Hand Tools:
 - Wrenches and Sockets
 - 15/16" ▪ 1 1/8"
 - 1 1/2" ▪ 3/4:" Hex Wrench
- ☐ Hammer Drill with 5/8" bit, 36" 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

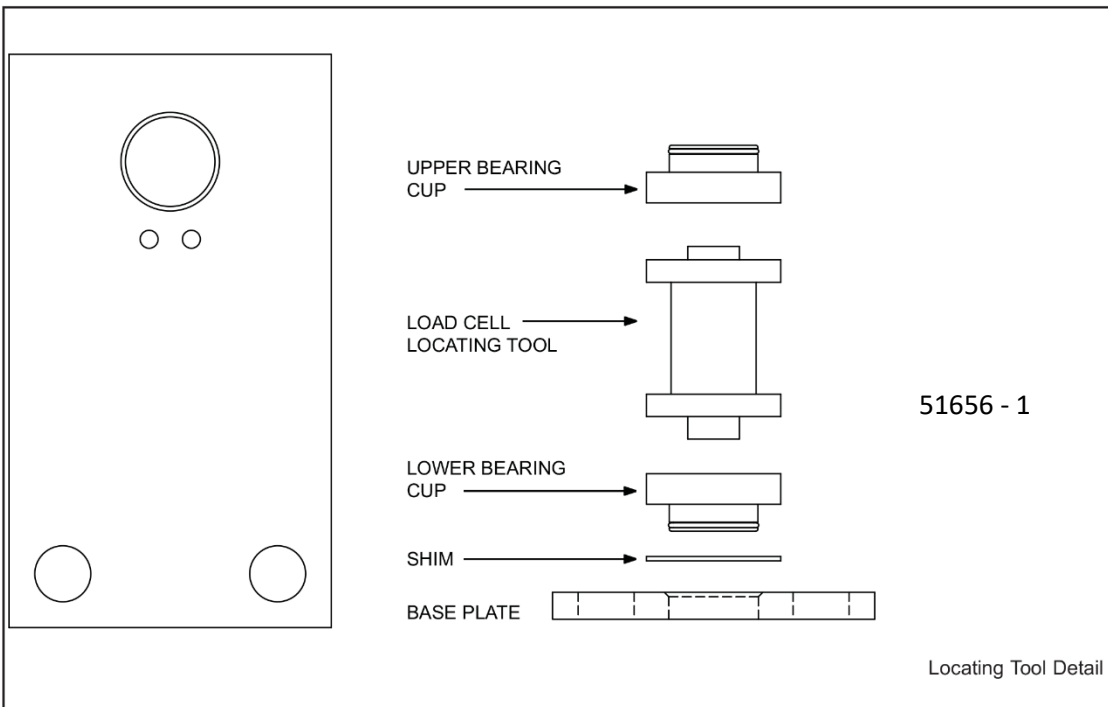
- Enterpac model A360 coupler
- Enterpac model FZ1630 reducer
- Available at www.enerpac.com
- ☐ 100' steel tape measure, Stringline and/or chalkline
- ☐ Prybars
- ☐ Grease and anti-seize (**see note below**)

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

- ☐ Load cell locating tools, one for each load cell, available for purchase through Customer Service.
 - Part No. **71717** for 5.5" Load Cell
 - Part No. **107118** for 6" Load Cell
- ☐ 4" x 4" x 12' timbers (supplied) for field pour models

2.2. Installing the Foundation

1. 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.
2. Put a 3/16" shim on the lower cups, grease the outsides, then insert them into lower cups. 5 ½" or 6" load cells have a pin which must be aligned between the two roll pins in the base plate.
3. Place the upper cup with greased "O" ring on the edge of the upper foundation next to each base plate.
4. Place the load cell locating tool next to each base plate.
See Diagram 51656-1 (below)

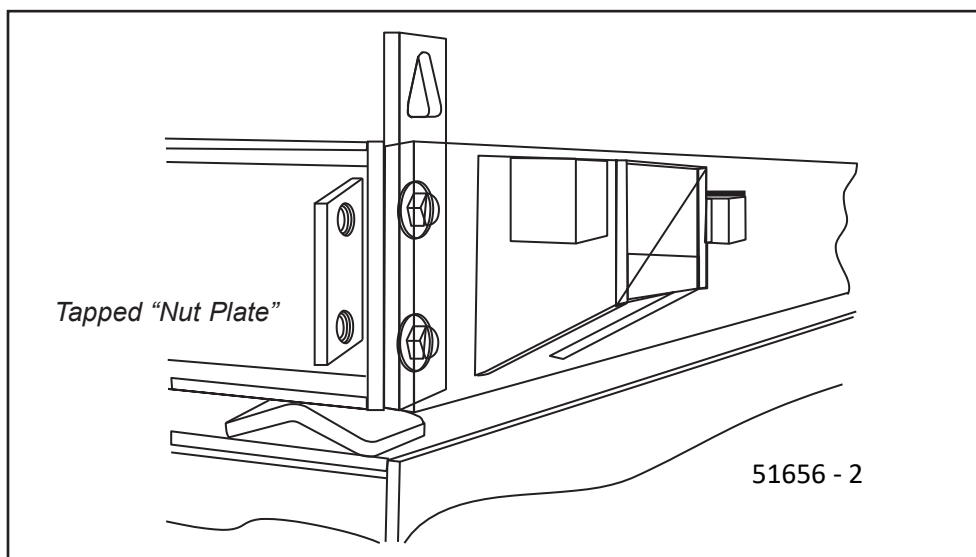


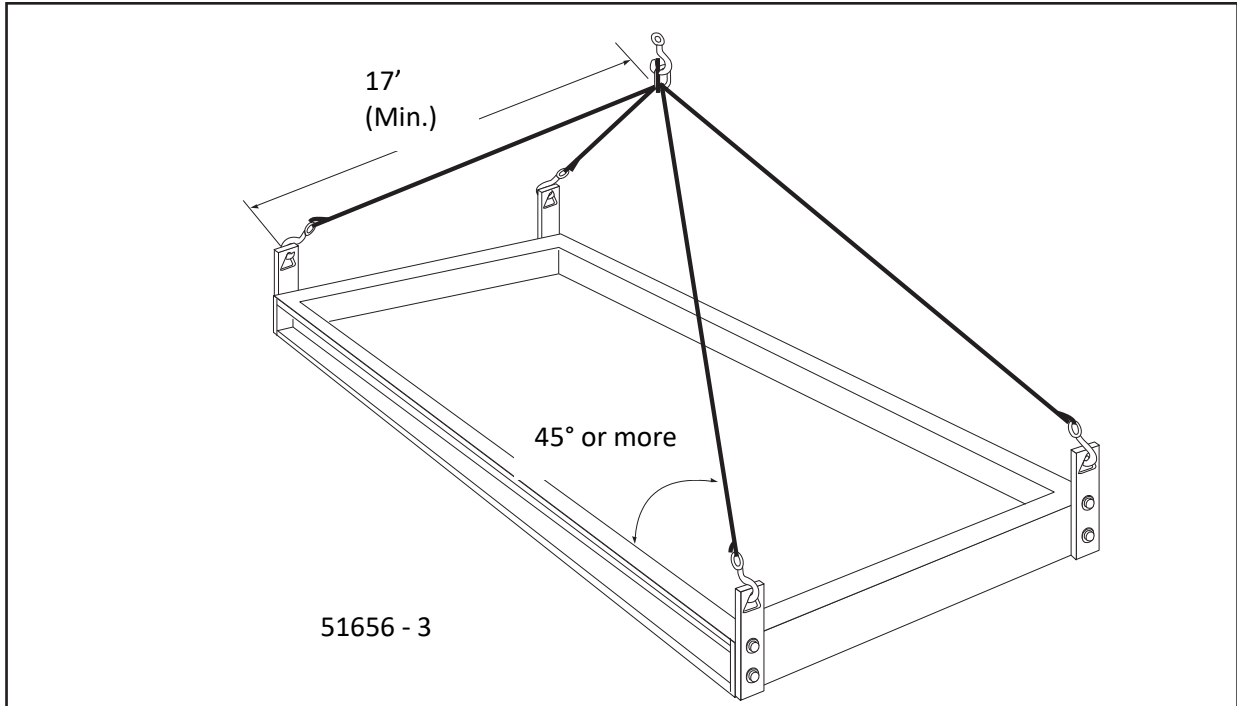
Note: If this is a field pour installation, see [Section 3](#) of this manual.

2.3. Setting the Modules

2.3.1. Preparing The Modules For Lifting

The Pit style modules must have lifting brackets installed at each corner before they can be lifted. Use only the high-strength bolts provided or parts from the factory. Tighten the bolts as tight as possible.





2.3.2. Setting The Center Module:

5. Always set the center module into place 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 do NOT have a left-right orientation and have 'unmarked' ends. The center module may be installed facing either direction as long as it is in the center. The other modules will set upon the center module from either end.

6. Place blocks that will set the modules at a height slightly less than the finished height as safety blocks or for setting modules on.

7. 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.

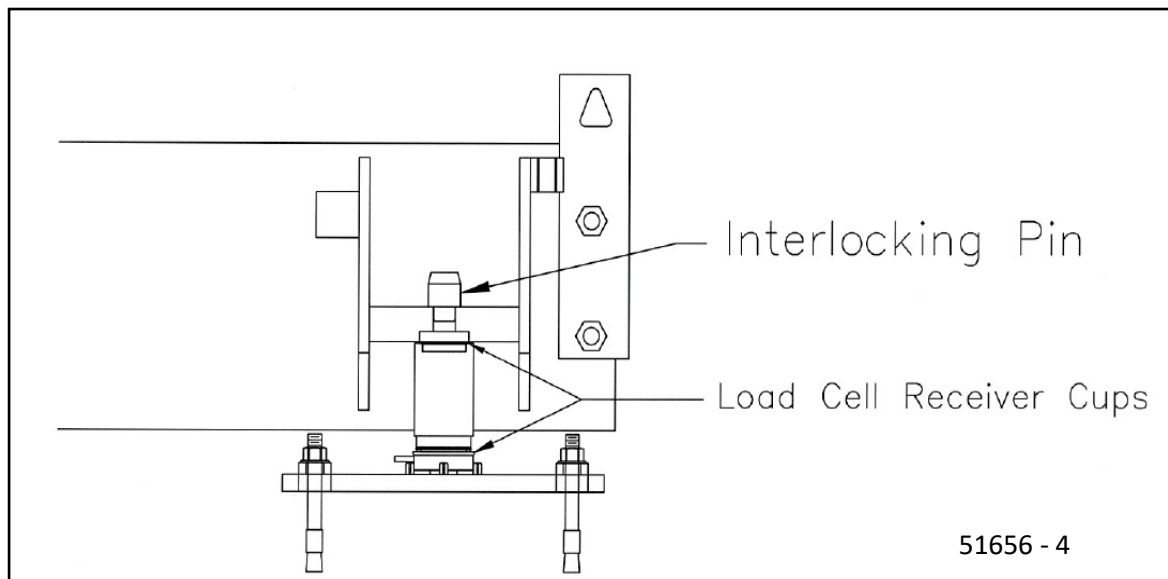
- d. Lower the module while holding the locating tool upright and guiding the bottom of the tool into the lower cup.
- e. When the center module is set on all four locating tools, keep tension on the cables until the module is centered and straight.
- f. Use hydraulic jacks to lift the unit slightly and shift the base plates to get the locating tools plumb and the bottom flange **FLUSH** with the side of the cup.

OPTION 2

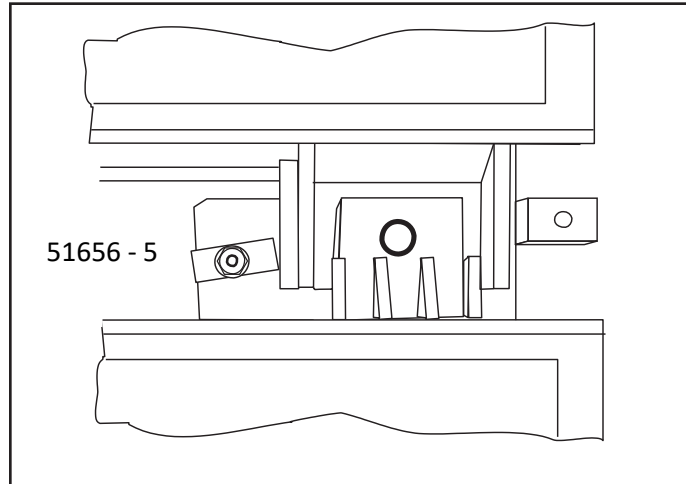
- a. **Set the modules on the blocks first, then onto the locating tools.**
- b. When the module is set on the blocks, keep tension on the cables until the module is properly aligned.
- c. Use hydraulic jacks to lift the unit slightly, then install the locating tools. Shift the base plates to get the 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.

2.3.3. Setting End Modules

- a. Interlocking Pin
 - Drive an interlocking pin into each load cell bracket of the center module.
- b. Module Placement



- Guide the modules into place with the supporting blocks on the end of the module coming to rest on the center module load cell bracket interlocking pins. Lower the other end of the module onto the load cell locating tools or blocks.

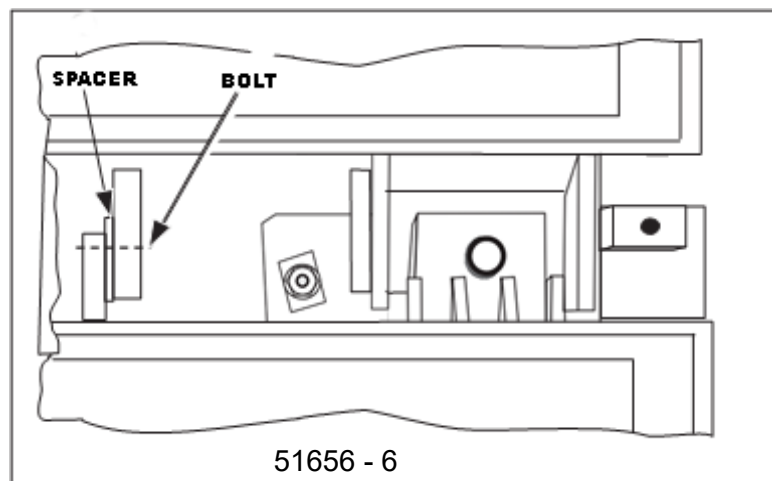


1. Before releasing tension on the cables, check the alignment of the end modules to the center module and to the end wall.

- Ensure end modules are aligned with the center module and the foundation.

2. Connecting the Modules:

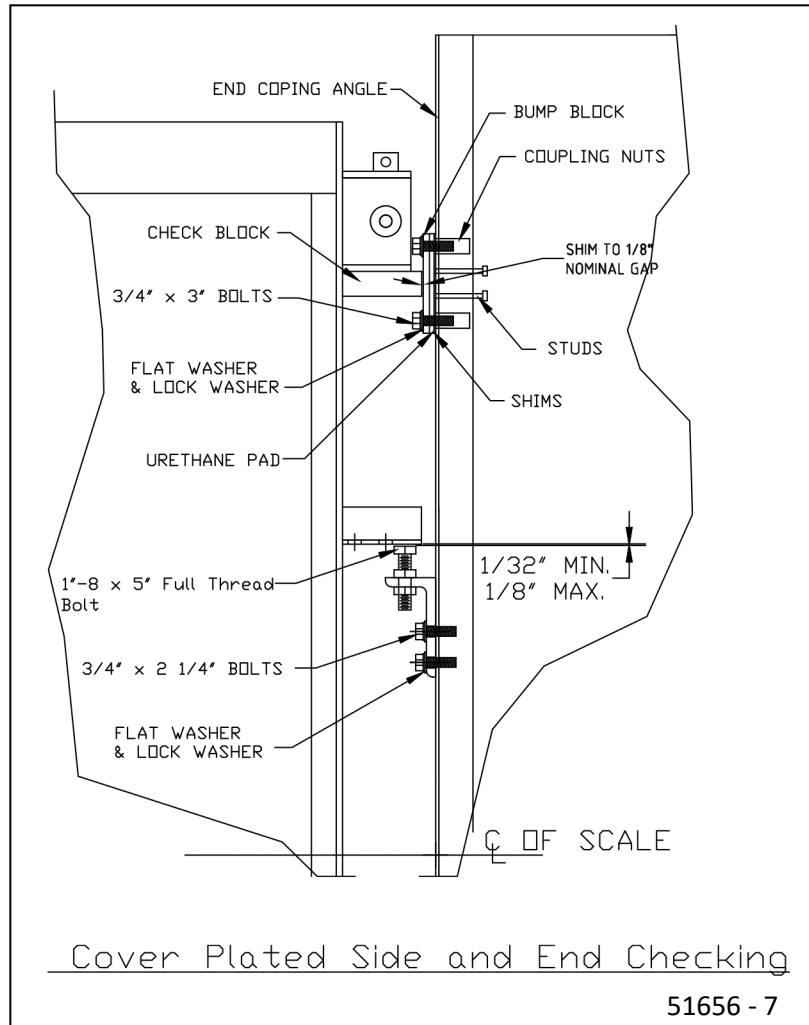
- Bolt the modules' channels together using the $\frac{1}{2}$ " x 4" x 6" spacers and 1" x 3" bolts. Insert the $\frac{1}{2}$ " x 4" x 6" spacer plates between the channels. The bolts go through the back-to-back channels and the spacer. Snug the bolts, but do not tighten them yet.



3. Checking Adjustment

a. Adjust End Checking

- Use the end checking shims provided to adjust end checking so that they touch and prevent movement.


b. Install the side checking brackets:

- Bolt the brackets onto the end copings per the Certified drawings.
- Set the bolts so that they touch the channels they bump against.

4. Base Plate Completion:

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

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.*

5. Installing Load Cells:

- a. Unpack the load cells and mark each calibration certificate with the cell location/position.
- b. Starting at one end of the assembled platform, place hydraulic jacks at the corners so the section can be lifted off the locating tool (2 hydraulic jacks may be required).
- c. 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, provided with the load cell(s).

CAUTION: *Always wear eye protection!!*

- d. The cell has 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.

NOTE: *Anti rotation must be positioned to the **inside** of the scale.*

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 the proper amount of 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 bolts should be torqued to 690 ft lbs.
- f. Load cell cables:
 - Route the load cell cables through the holes in the channels to the SSC/PPS mounting bar location in the center. Install the strain relief 'clamps' for load cell cables on the strain relief base that is welded onto the scale.



6. Final Checking Adjustment:

- a. Adjust End Checking
 - Remove shims on end checking to allow $\frac{1}{16}$ " to $\frac{1}{8}$ " clearance.
- b. Adjust side checking bolts to allow $\frac{1}{16}$ " clearance from channel.

Section 3: Field Pour Installation

The Field Pour modules' 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.

3.1. Concrete Specifications

Use the Certified Prints for all concrete specifications.

3.2. 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 elevation 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. *See drawing on page 16.*

3.3. 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 Section 2C of this manual, starting with the center module.
3. Wedge additional shims as required under the end of the shoring timbers to ensure tight contact between the scale frame and the shoring.

**** WARNING ****

The modules MUST be set on locating tools. Do NOT support load cell bracket with lumber, as this will cause warping.

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

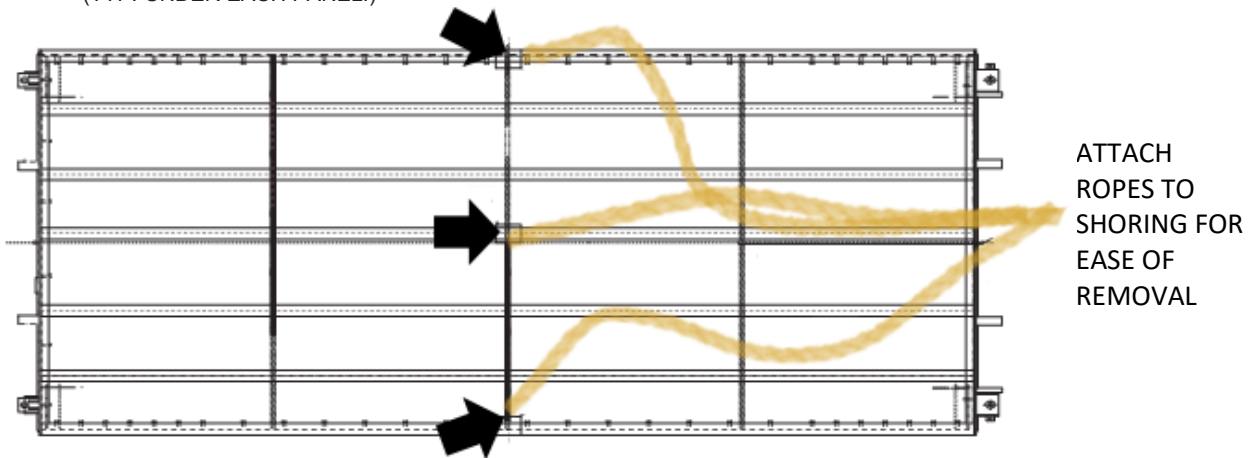
4. Pour the concrete. A spud-type vibrator is required to remove any air bubbles and to work the material into all of the corners.

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.*

5. A “rough broom finish” is recommended. Crown concrete 1/4" to allow drainage.
 - Allow the concrete to cure until the required minimum strength as specified on the Certified Prints is achieved.
6. After the concrete has cured, remove all of the shoring. The modules will have to be lifted so the shoring can be removed.

Shoring Instructions

PLACE (3) SHORING BEAMS ALONG THE CENTER LINE OF THE PANEL. ONE UNDER THE CENTER BEAM AND ONE UNDER EACH OUTSIDE BEAM.
(TYP. UNDER EACH PANEL.)



NOTE: *IN ORDER TO PREVENT PANEL PAINT FROM STICKING TO THE WOOD SHORING BLOCK, PLACE A PIECE OF TINFOIL ON TOP OF EACH SHORING BLOCK. (BETWEEN BLOCK AND PANEL.)*

CONCRETE POURING & FINISHING INSTRUCTIONS:

1. SHORE UNDER EACH PANEL BEFORE POURING CONCRETE AS DESCRIBED ABOVE. SHORING IS NOT REQUIRED FOR 10' AND 15' PANELS.
2. MASK THE GAPS BETWEEN MODULES WITH DUCT TAPE. IF THE SCALE IS MOUNTED FLUSH WITH THE GROUND (PIT), MASK BETWEEN THE SCALE AND FOUNDATION WALL

ALSO.

3. POUR CONCRETE IN EACH MODULE. USE 4000 PSI CONCRETE MINIMUM.
NOTE: DO NOT CAST UNLESS TEMPERTURE IS ABOVE 40 DEGREES FAHRENHEIT. USE A VIBRATOR TO ASSURE A THOROUGH FILL. SCRAPE THE EXCESS CONCRETE FROM EACH MODULE WITH A BOWED 2" X 4" 12'-0" LG. THE BOW WILL CROWN THE MODULE AT THE CENTER TO PROVIDE FOR PROPER DRAINAGE.
4. FINISH THE CONCRETE DECK WITH A BULL FLOAT AND HAND TROWEL OR BROOM TO A DESIRABLE FINISH.
5. REMOVE DUCT TAPE AND CLEAN THE EXCESS CONCRETE FROM THE SIDES OF THE SCALE.
6. IN ORDER TO FURTHER INCREASE THE CONCRETE DECK TENSILE CAPACITY, MOIST CURE FOR SEVEN DAYS USING WET BURLAP IN CONJUNCTION WITH POLYETHYLENE SHEETING.
7. DO NOT USE OR CALIBRATE THE SCALE UNTIL THE DECK IS CURED (21-28 DAYS), OR HAS REACHED 4000 PSI MINIMUM.

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 intoervice. 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.*

7. 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

8. Set end wall checking at $\frac{1}{8}$ " maximum, $\frac{1}{16}$ " minimum gap.
 - Set side wall checking at $\frac{1}{16}$ " gap.

Section 4: Electrical Installation

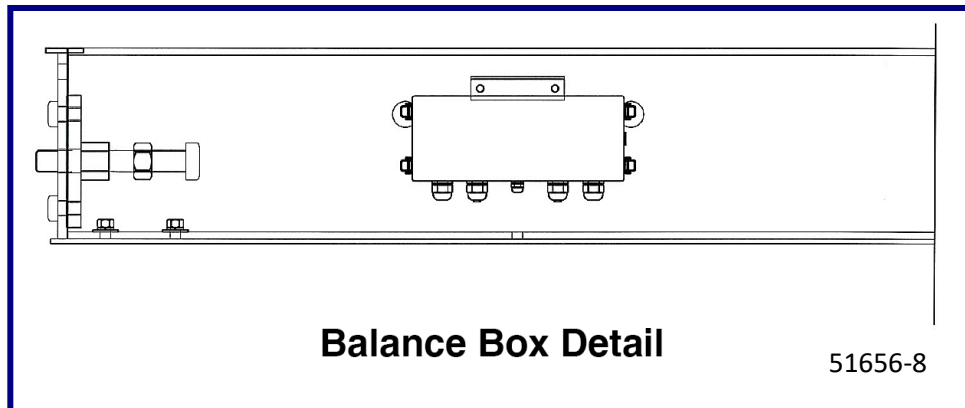
4.1. Balance Box 21912 Installation for Analog Instruments

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.
- Reference manual 51211 (Analog Sectional Controller Installation Manual) for full 21912 wiring details.

Follow these steps to mount the **ANALOG MODEL BOX**:

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 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)**.*

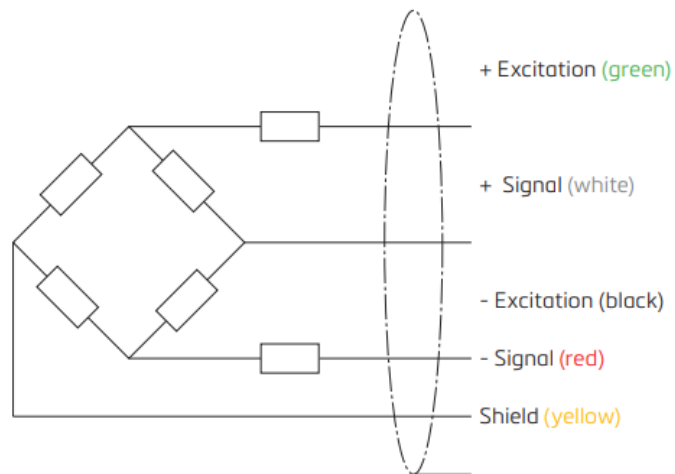
- This will allow separate connections to go in each direction toward the ends of the scale.

NOTE: See **Bulletin 50113** for complete details on installing ACC 529 SVP.

4.2.1. 21912 Load Cell Wiring

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

COLOR	DESCRIPTION
Black	– Excitation
Green	+ Excitation
Red	– Signal
White	+ Signal



4.2.2. 21912 Cells-to-Junction Box Wiring

TERMINAL	COLOR	TB3 AND TB4
1	Black	– Excitation
2	Green	+ Excitation
3	Yellow	Shield
4	White	+ Signal
5	Red	– Signal

4.2.3. 21912 Box-to-Box Wiring

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

4.2.4. 21912 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, 21912 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 **ACC 529 SVP**.

1. Prepare the cable ends in the standard manner.
 - Use [Appendix II & III](#) for wiring instructions of all 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 using 21912

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 SSC and PPS for Intalogix Systems

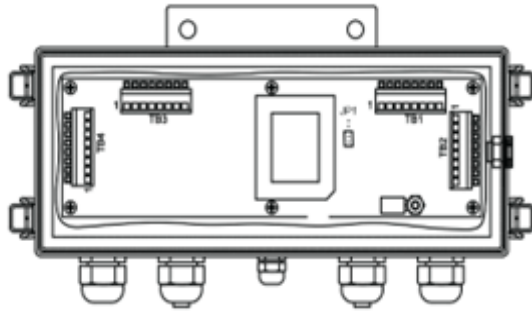
Intalogix™ systems use Smart Sectional Controllers (SSC)s and Pit Power Supplies (PPSs) for load cell excitation and signal processing.

- 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).

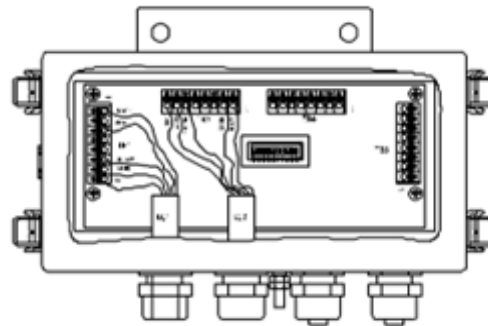
See [Appendix IV](#) to connect PPS and SSC, or use the appropriate service manual for the Instrument being installed.

4.3. Wiring SSCs and PPSs for Intalogix Systems, Continued



Pit Power Supply

Part # **31519**



Smart Sectional Controller

Part #**26168** w/o float

4.3.1. SSCs (Smart Sectional Controllers)

SSC CONNECTIONS

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

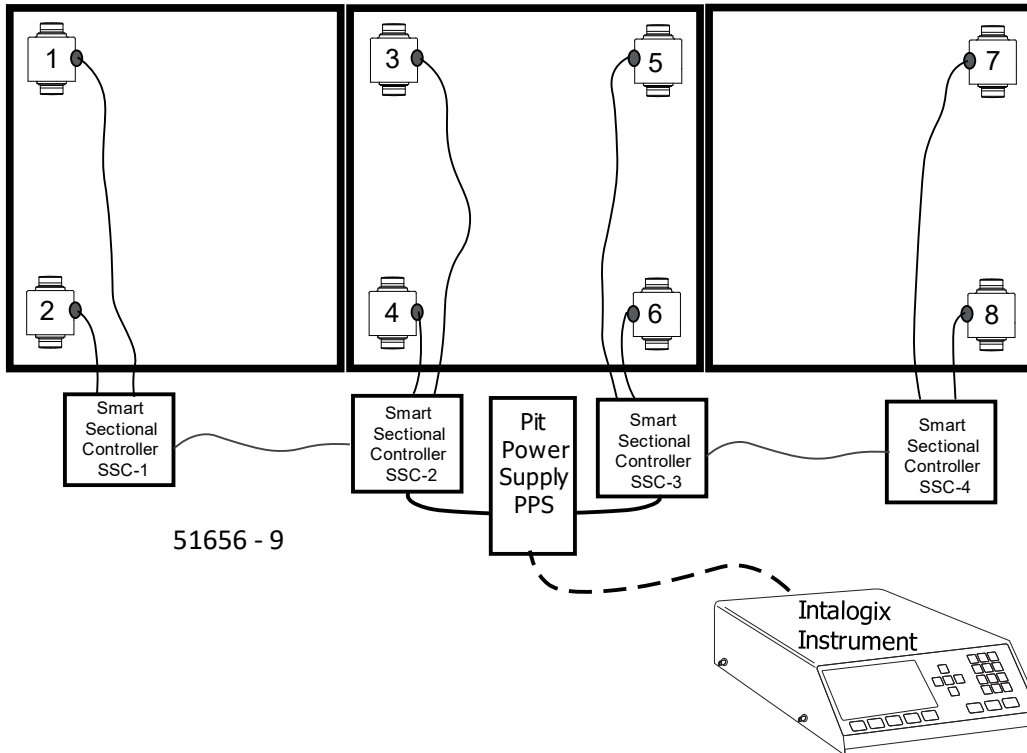
Each SSC has connections for two (2) incoming load cells, labeled **TB1** and **TB2**.

- 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**.

Below is an example of a four (4) section scale with Intalogix™, displaying the 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 SSC and PPS 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: 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 4per 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

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

Section 6: Parts and Parts Replacement

6.1. Parts

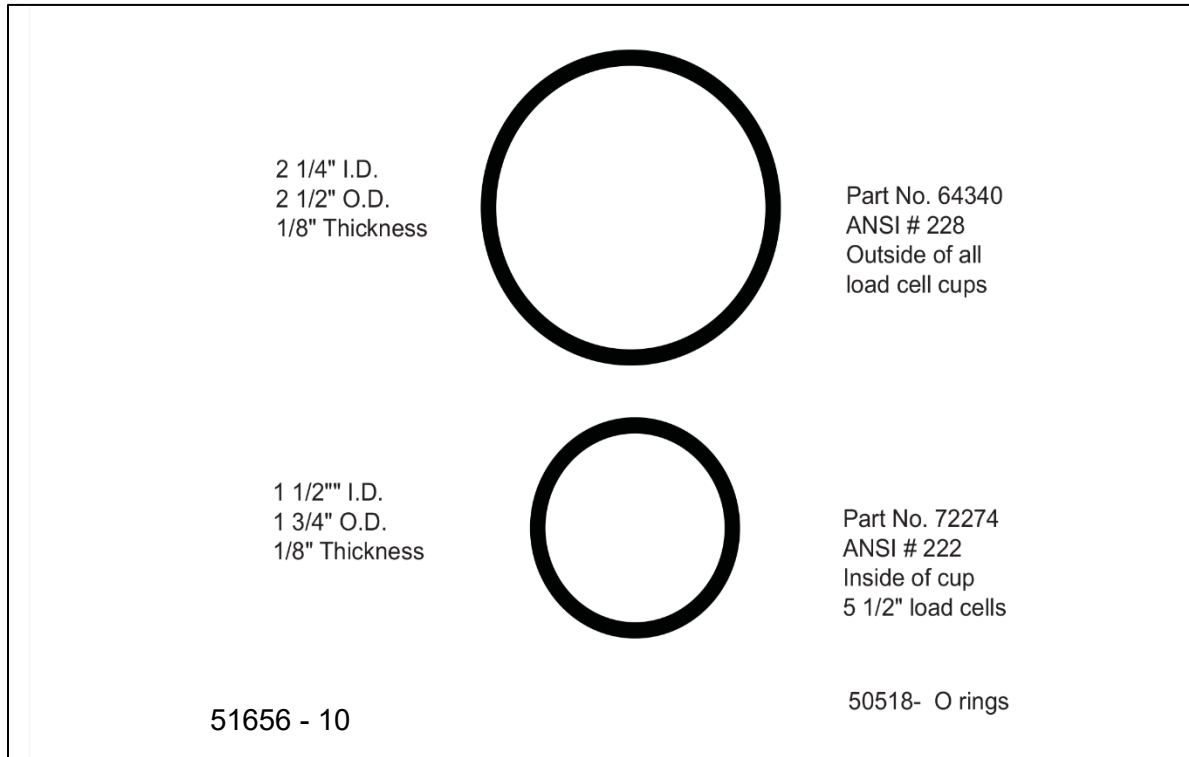
Part No.	Description
76708	1 1/8" -7 x 8" Threaded Rod, Zinc (module-module)
54788	1 1/8" Lock Washer (module-module)
54306	1 1/8" SAE Flat Washer (module-module)
177193	Load Cell Base Plate
61743	Clamp Bar Washer (Base Plates)
62857	5/8" x 6" Anchor Bolts (Wedge Type)
55010	Ground Rod Kit
73682	Shim, 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 Load Cell Hardware

177245 – 66k Load Cell

Part No.	Description
177245	66k :Load Cell
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



177194 – 100k Load Cell

Part No.	Description
177194	100k Load Cell
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 No.	Qty	Description
70510	1	Load Cell, 66k (30t)
70511	1	Receiver Cup, 5½" LOWER (w/ anti-rotation pin)
70512	1	Receiver Cup, 5½", UPPER
80453	1	Load Cell, 100k (50t)
87481	1	Receiver Cup, 6" LOWER (w/ anti-rotation pin)
87482	1	Receiver Cup, 6" UPPER

6.4.2. Startup / Commissioning Spare Parts

Part No.	Qty	Description
70510	1	Load Cell, 66k (30t)
70511	1	Receiver Cup, 5½" LOWER (w/ anti-rotation pin)
70512	1	Receiver Cup, 5½", UPPER
80453	1	Load Cell, 100k (50t)
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, 66k (30t)
70511	1	Receiver Cup, 5½" LOWER (w/ anti-rotation pin)
70512	1	Receiver Cup, 5½", UPPER
80453	1	Load Cell, 100k (50t)
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

6.5. Replacing a 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) closest to the "defective" cell location.
3. Disassemble the strain relief device, then remove the old cell.
4. Check upper and lower receiving cups for damage. Replace as necessary and reapply grease.
5. Insert the new cell into the upper receiving cup and position the anti-rotation pin.
6. Carefully lower the hydraulic jack(s) until the cell is set into the lower cup.
7. Remove the cover of the SSC/Jct box, then loosen the gland bushing to free the cable.
8. Remove the old cell wires and connect new cell wires in the balance Box/SSC. Seal the cover and tighten all gland nuts with a wrench to secure.
9. Test and adjust scale as necessary.

Section 7: Accessories

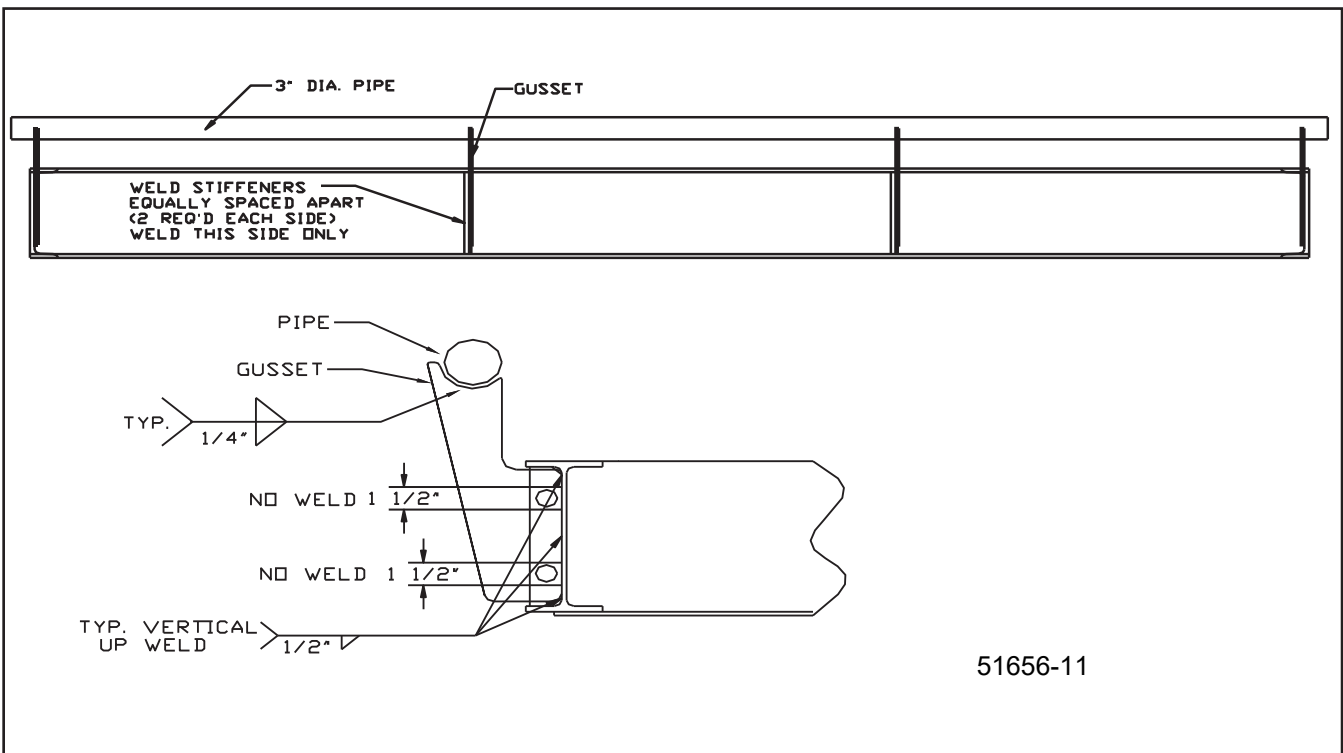
Rub-Rails: These accessories come in Factory-installed and Field-installed types. (*Does not apply to a scale installed in a pit with the deck at grade*)

7.1. 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.

**** WARNING ****

Thurman does NOT recommend using foundation- or ground-installed guide rails along the sides of a truck scale platform. Damage may occur to the scale if a truck hits the guide rail, transferring damaging forces to the platform and the checking system. Use of this style guide rail will void 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:**
- | | |
|---|--|
| ☐ Certified drawings and site plan | ☐ 2' to 4' level |
| ☐ 100' and 25' steel tapes | ☐ Hammer and concrete nails Laser |
| ☐ or builders level if possible | ☐ String line (construction string) |
| ☐ Straight edge for pit foundations (2 x 4, very straight and 4" wider than pit walls) | |
| ☐ Construction paint (up-side-down type, for marking concrete). | |

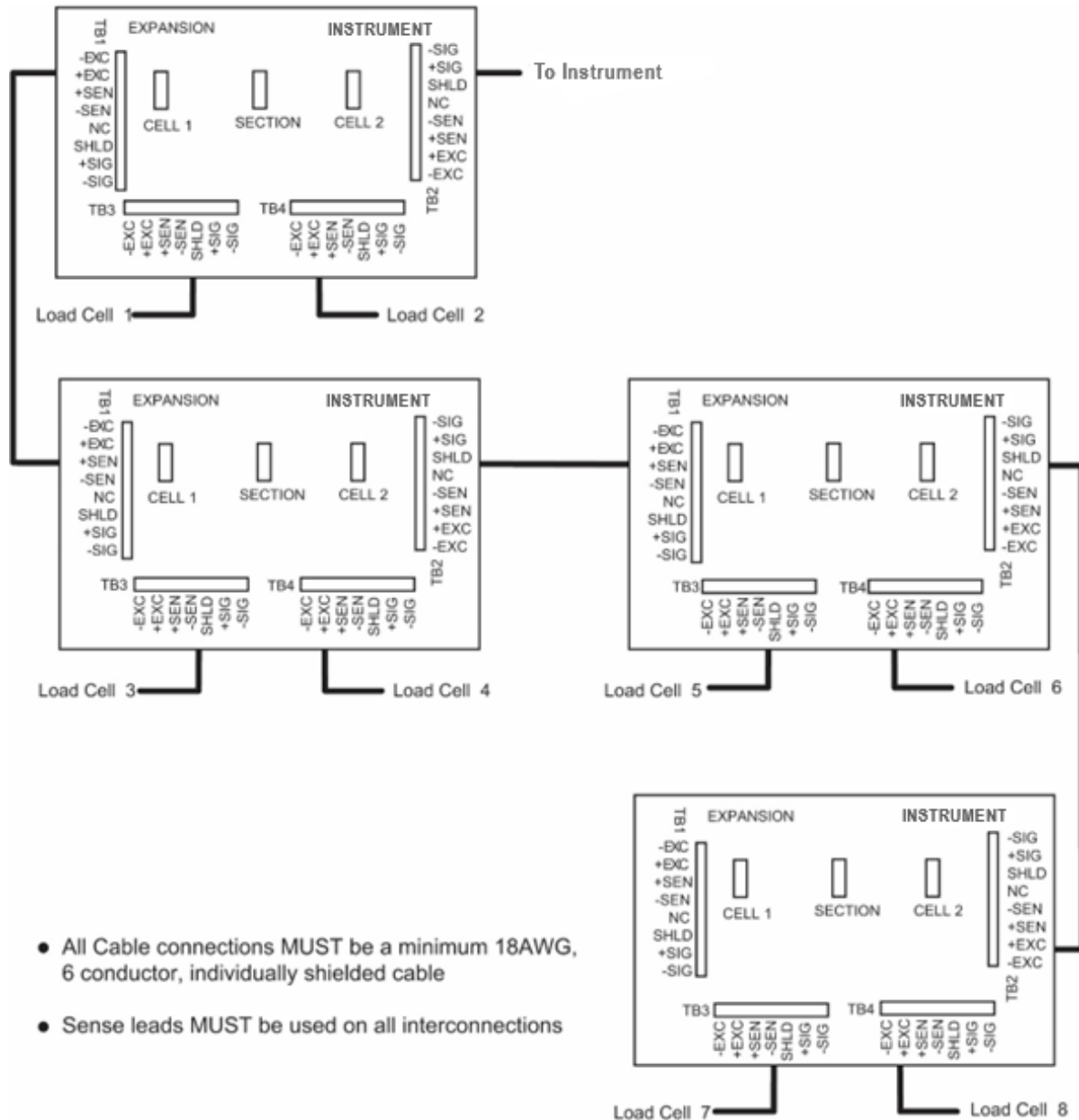
Perform the following Foundation Checks. Refer to Methods and Procedures for complete description of each step. Recommended to copy check list and keep in job file. ALWAYS familiarize yourself with the **CERTIFIED** foundation prints for the job you are working on as model numbers and specifications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

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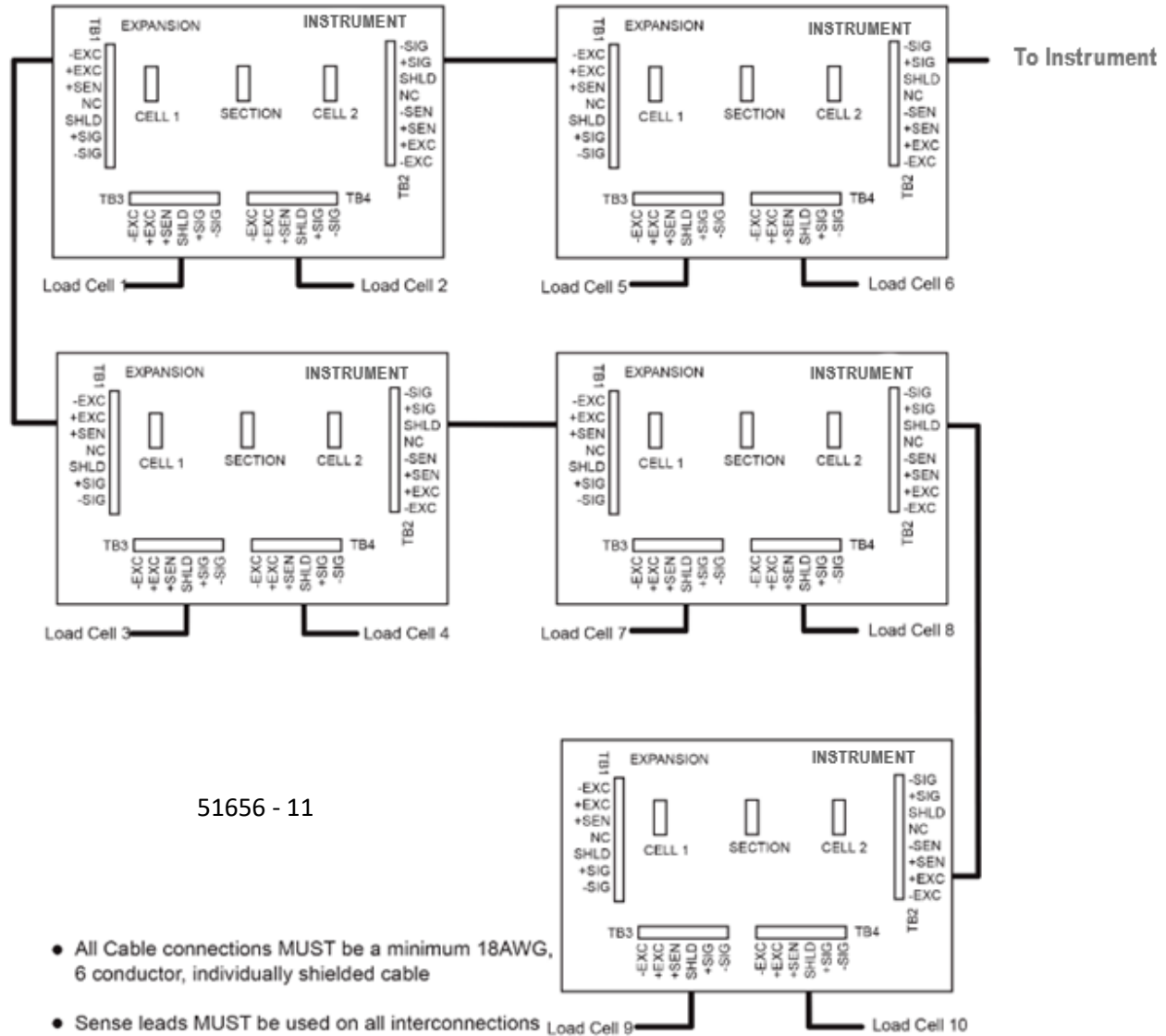
Issue #1

Appendix II: 4-Section Analog Scale



4-Section Analog

Appendix III: 5-Section Analog Scale



5-Section Analog

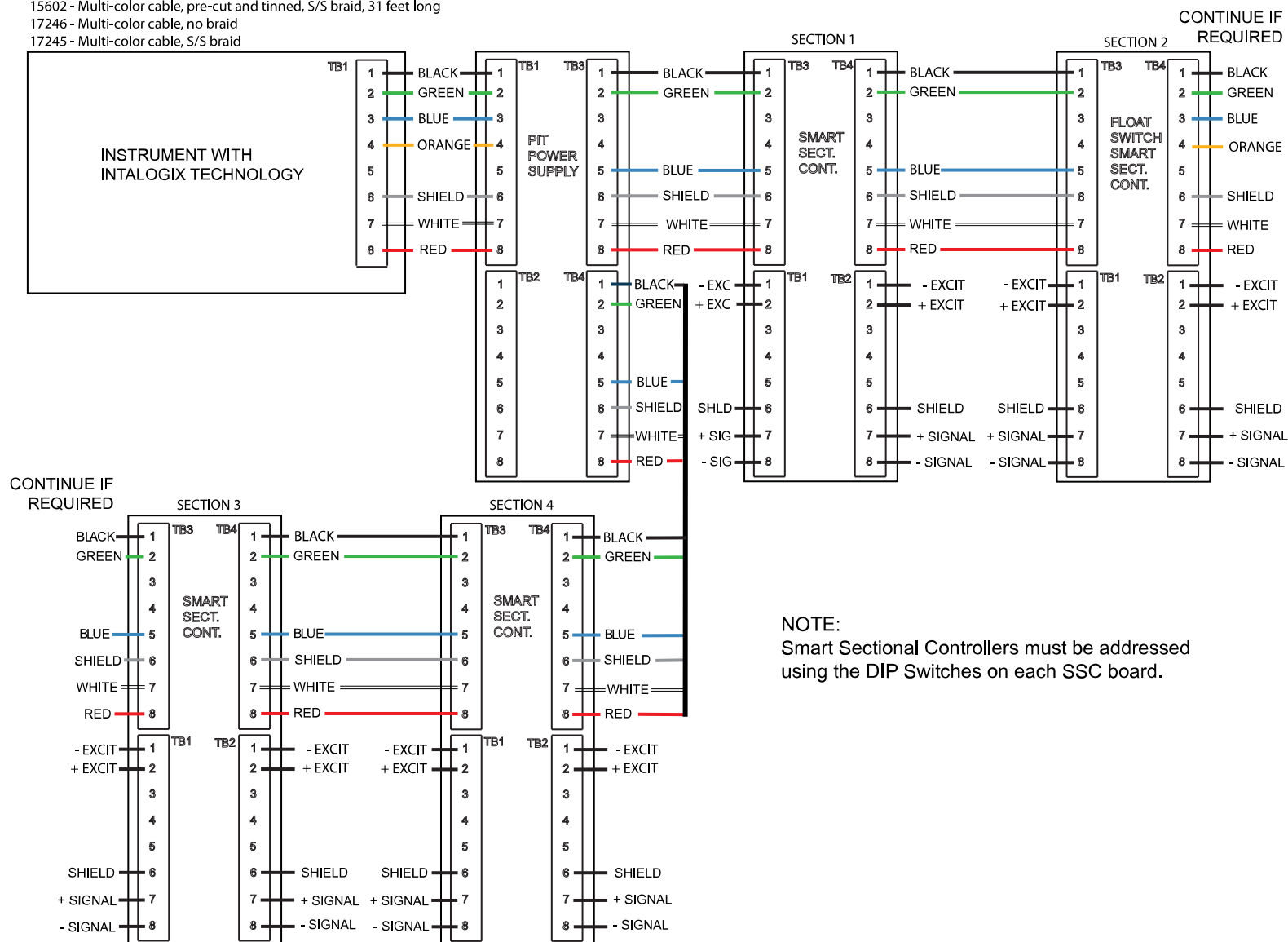
Appendix IV: 4-Section Intalogix Scale

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15602 - Multi-color cable, pre-cut and tinned, S/S braid, 31 feet long

17246 - Multi-color cable, no braid

17245 - Multi-color cable, S/S braid





Manufactured by Thurman Scale
www.ThurmanScale.com

Cover Plated Series Truck Scale
Series 8555 & 8565

Installation Manual
Document 51656