Australian Government
Department of Industry, Innovation and Science

National Measurement Institute

Certificate of Approval

NMI 6/10B/58A

Issued by the Chief Metrologist under Regulation 60
of the
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the instruments herein described.

McGrath Industries Model WD70EL-300 Weighing Instrument

submitted by McGrath Industries Limited
5-9 Cartwright Road
Glen Eden Auckland 7
NEW ZEALAND

NOTE: This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

This approval has been granted with reference to document NMI R 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated July 2004.

This approval becomes subject to review on **1/02/21**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 1 approved – interim certificate issued	14/01/02
1	Pattern & variant 1 approved - certificate issued	28/02/02
2	Variants 2 & 3 approved – certificate issued	10/03/09
3	Pattern & variants 1 to 3 **reviewed** & updated – variant 4 approved – certificate issued	5/07/16

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 6/10B/58A' and only by persons authorised by the submittor.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificates No S1/0/A or No S1/0B.

The values of the performance criteria (maximum number of scale intervals etc.) applicable to the instrument shall be within the limits specified herein and in any approval documentation for the components where they are approved separately.

The pattern as approved herein or with substitute approved load cells and/or approved indicators and in other capacities, or with different platform sizes, shall comply with General Certificate of Approval No 6B/0.

Note: New instruments manufactured under this approval shall only use load cells and/or indicators with current Supplementary Certificates of Approval.

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999*.

Dr A Rawlinson

TECHNICAL SCHEDULE No 6/9C/297

1. Description of Pattern approved on 14/01/02

A McGrath Industries model WD70EL-300 class (III) non-automatic weighing instrument of 7000 kg maximum capacity with a verification scale interval of 5 kg (Figure 1).

1.1 Basework

The WD70EL-300 basework (Figure 1) is fully supported on four load cells. The load receptor is fitted with a roller deck and may be raised and lowered by means of two scissor-action hydraulic lifting mechanisms.

NOTE: The load receptor (deck) shall be in the lowered position when mass readings are taken.

The load receptor deck has maximum nominal dimensions of 2.6 × 3.5 m.

1.2 Load Cells

Four Avery Berkel model T204 load cells of 3000 kg maximum capacity are used and are mounted as shown in Figure 2. (Note that the load cell profile shown in Figure 2 is not that of the Avery Berkel model T204 cells.)

1.3 Indicator

A PT Ltd model PT200 series indicator is used which is also described in the documentation of approval NMI S420.

1.4 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	.....	
Indication of accuracy class	(III)	
Maximum capacity	*Max* ..... kg	#1
Minimum capacity	*Min* ..... kg	#1
Verification scale interval	*e* = ... kg	#1
Maximum subtractive tare	*T* = - ..... kg	#2
Serial number of the instrument	.....	
Pattern approval mark for the indicator	NMI 6/10B/58A	
Pattern approval mark for other components	.....	#3

#1 These markings shall also be shown near the display of the result if they are not already located there.

#2 This marking is required if *T* is not equal to Max.

#3 May be located separately from the other markings.

In addition, instruments shall be marked with the following, in a place clearly visible to the user:

"The deck shall be in the lowered position when a mass reading is taken", or similar wording.

1.5 Verification Provision

Provision is made for the application of a verification mark.

1.6 Sealing Provision

Provision is made for the calibration adjustments in the indicator to be sealed as described in the approval documentation for the indicator used.

2. Description of Variant 1 approved on 31/05/06

A McGrath Industries model 20FT LW weighing instrument of 14 000 kg maximum capacity with a verification scale interval of 10 kg (Figure 3) intended for the weighing of aircraft cargo containers.

2.1 Basework

The 20FT LW basework (Figure 3) is fully supported on four load cells. The load receptor is fitted with a roller deck and may be raised up to 0.5 m above ground level and lowered up to 1.5 m below ground level by means of a lifting mechanism consisting of a single hydraulic ram and a system of wire cables and pulleys.

NOTE: The load receptor (deck) shall be stationary and above ground level when mass readings are taken.

The load receptor deck has maximum nominal dimensions of 2.5 × 6.6 m.

2.2 Load Cells

Four Avery Berkel model 8708 load cells of 7000 kg maximum capacity are used and are mounted as shown in Figure 4.

2.3 Indicator

A PT Ltd model PT200 series indicator is used which is also described in the documentation of approval NMI S420.

3. Description of Variant 2 approved on 9/03/09

With four Precision Transducers model PSB 5000-C3 load cells of 5000 kg maximum capacity instead of the load cells described for the pattern and variant 1. The PSB 5000-C3 load cells are described in the documentation of approval NMI S338.

4. Description of Variant 3 approved on 9/03/09

With a PT Ltd PT200 series indicator instead of the indicators described for the pattern and variant 1. The PT200 series indicators are described in the documentation of approval NSC S420.

Note: As originally approved the instrument (pattern and variant 1) used a GEC Avery model L115 digital indicator (as described in NMI S311).

5. Description of Variant 4 approved on 5/07/16

A McGrath Industries model 20FT MH weighing instrument of 14 000 kg maximum capacity with a verification scale interval of 10 kg (Figure 5) intended for the weighing of aircraft cargo containers.

5.1 Basework

The 20FT MH basework (Figure 5) comprises a load receptor which is fully supported by wire cables from four load cells located on hoist posts. The load receptor is fitted with a roller deck and may be raised 1.3 m (e.g. from 0.5 m above ground level to 1.8 m above ground) by means of a lifting mechanism consisting of a single hydraulic ram and a system of wire cables and pulleys.

The load receptor deck has maximum nominal dimensions of 2.6 × 7.0 m.

NOTE: Weight readings shall only be taken at a fixed height of the load receptor and interlocks shall be in place to prevent weighing at other positions. Wiring and hydraulic hoses are arranged such as to not adversely influence the weighing.

5.2 Load Cells

Four PT Limited model PSB10000 load cells of 10 000 kg maximum capacity are used and are mounted as shown in Figure 6. The PSB10000 load cells are described in the documentation of approval NMI S346.

5.3 Indicator

A PT Ltd model PT200 series indicator is used as described in variant 3 and in the documentation of approval NMI S420.

TEST PROCEDURE No 6/10B/58A

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

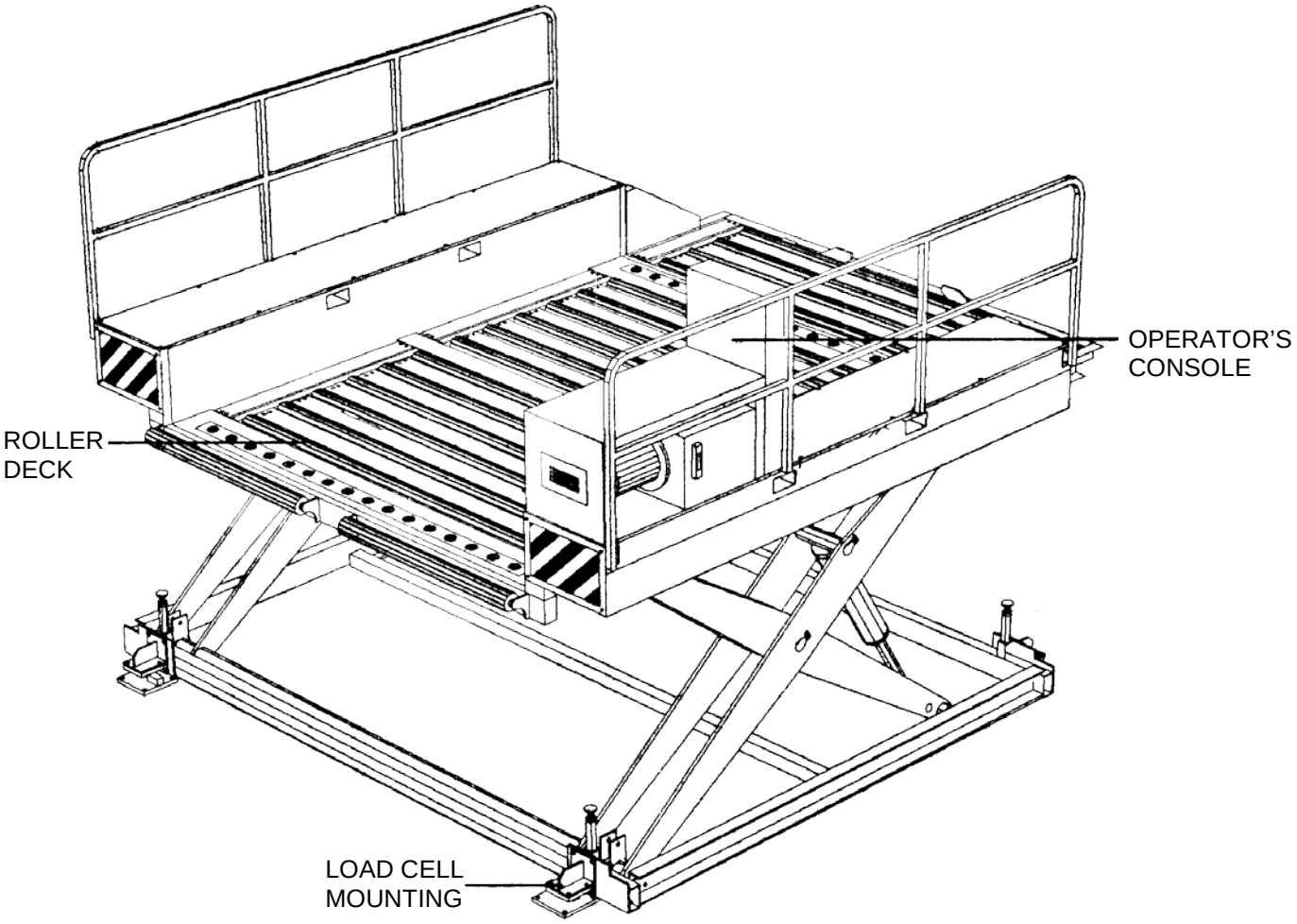
The instrument shall not be adjusted to anything other than as close as practical to zero error, even when these values are within the maximum permissible errors.

Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

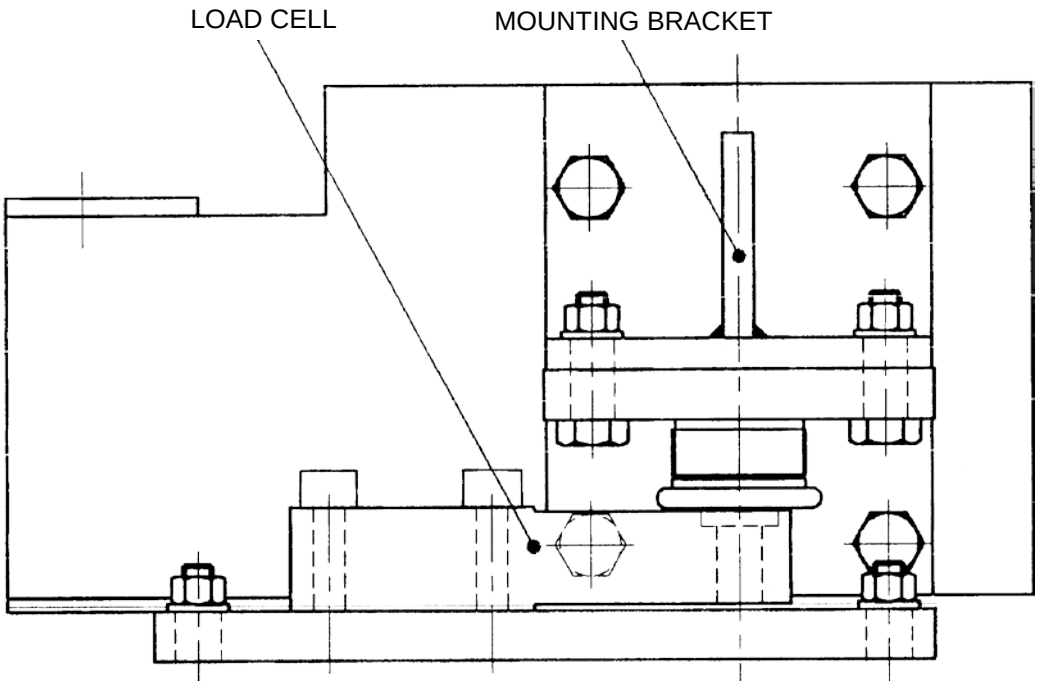
For multi-interval and multiple range instruments with verification scale intervals e_1, e_2, …, apply e_1, for zero adjustment, and for maximum permissible errors apply e_1, e_2, …, as applicable for the load.

FIGURE 6/10B/58A – 1



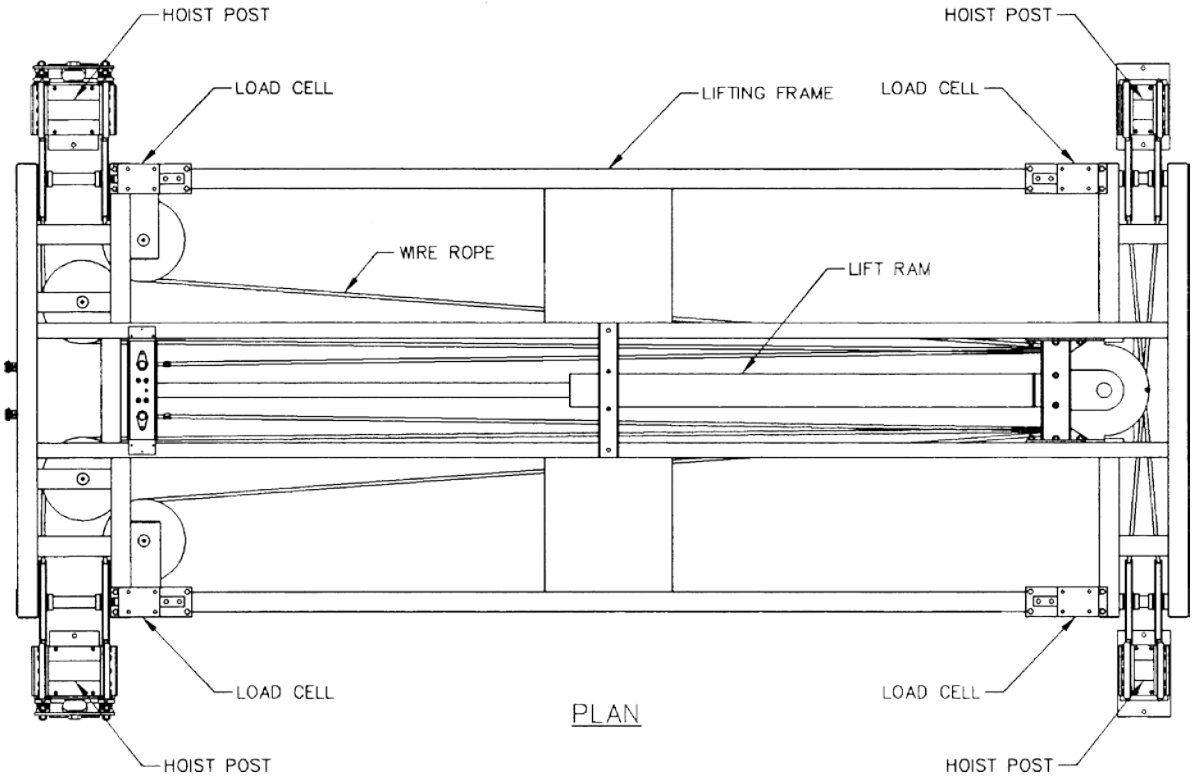
McGrath Industries Model WD70EL-300 Weighing Instrument

FIGURE 6/10B/58A – 2



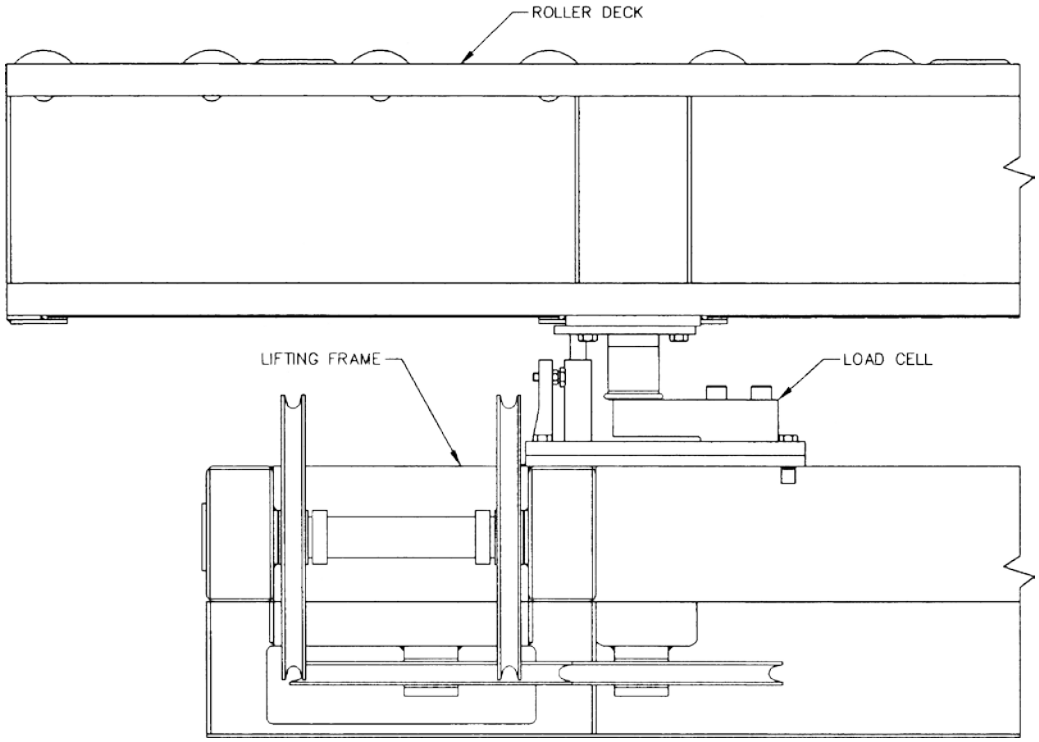
Load Cell Mounting for the Pattern

FIGURE 6/10B/58A – 3



McGrath Industries Model 20FT LW Weighing Instrument (Variant 1)

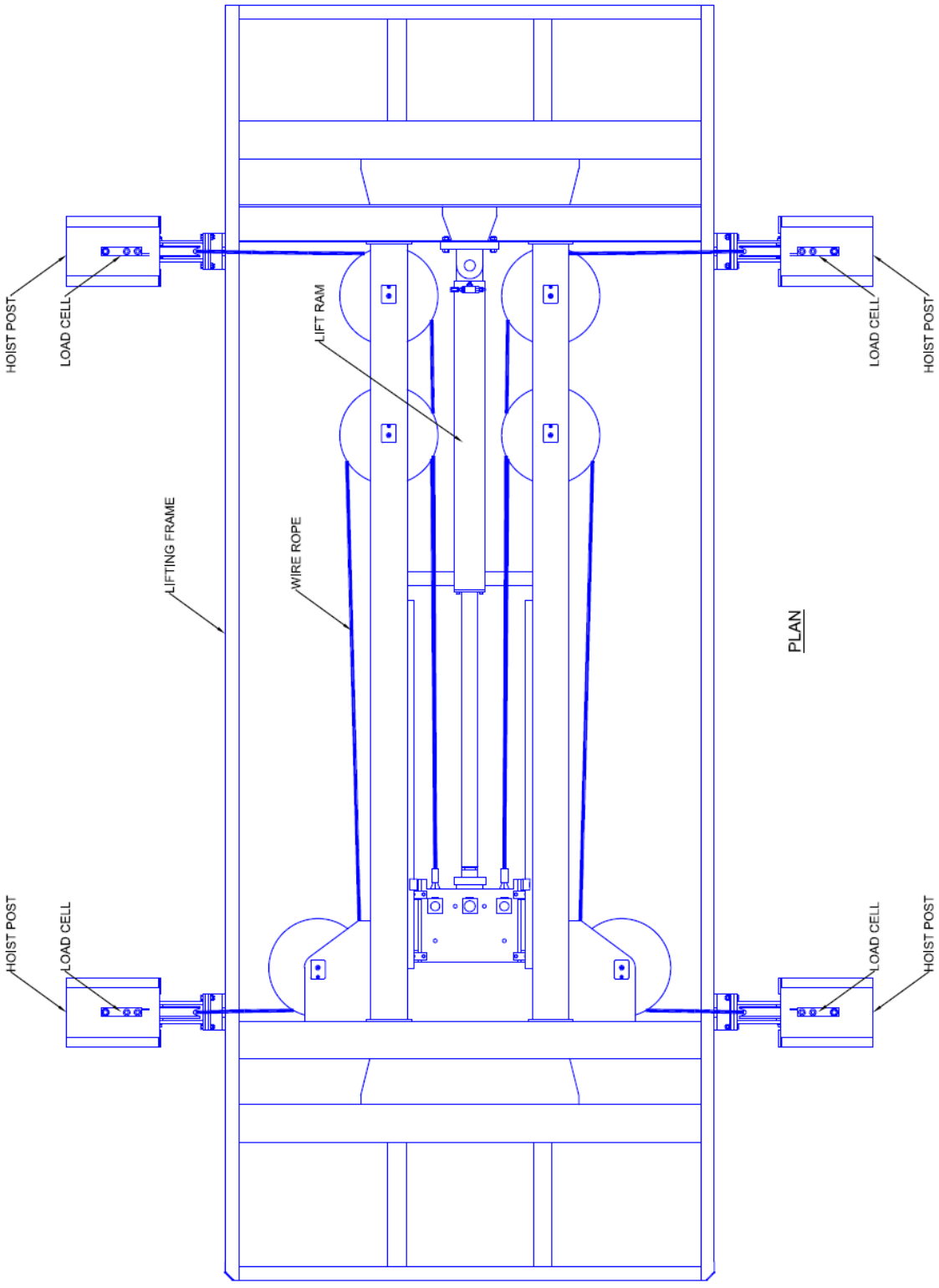
FIGURE 6/10B/58A – 4



SIDE ELEVATION

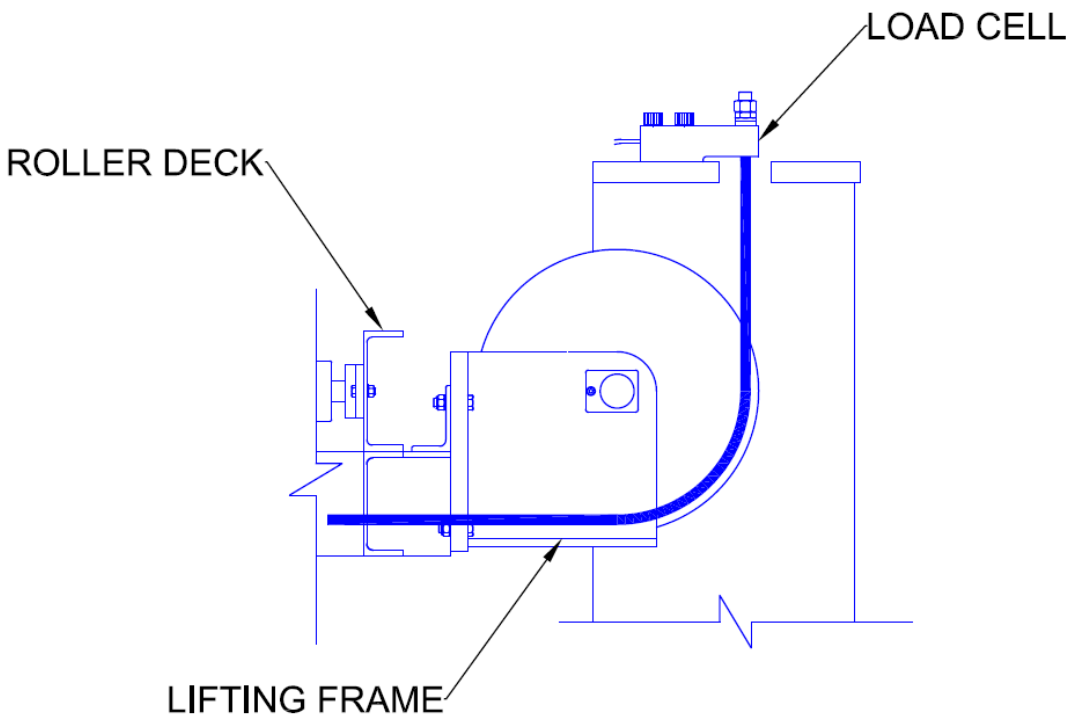
Load Cell Mounting for Variant 1

FIGURE 6/10B/58A – 5



McGrath Industries Model 20FT MH Weighing Instrument (Variant 4)

FIGURE 6/10B/58A – 6



Load Cell Mounting for Variant 4

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