



LIM SO Number: #####

Date: \_\_\_/\_\_\_/\_\_\_

\_\_\_ Original \_\_\_ Retest

## SHOP TEST PROCEDURE & REPORT

### DYNAMIC, VARIABLE LOAD TEST

REV0:

PROJECT: LIM Project #####  
[customer name] – Mobile Torque Tube Gate Hoists  
[customer location]

LOCATION: Lemke Industrial Machine LLC  
Finishing Shop  
143454 Cty. Hwy. NN  
Marathon, WI.

CONTACT: Cody D. Lemke  
715-846-0162  
clemke@lemkeindustrial.com

#### DEFINITIONS:

Raise Action = Completely raising the gate from the closed to open position.  
Lower Action = Completely lowering the gate from the open to closed position.  
Cycle = Complete gate raise action immediately followed by a complete gate lower action.  
Test Factor = Test fixture bearing coefficient of friction. Less than 2% load adjustment.  
Nominal Lift = Normal, everyday lift of 51,500 lbF. / 25.75 Tons (59,010 ft\*lbF.).  
That equates to 12.88 Tons per load cell / chain during Nominal Lift.  
Alarm Lift = Torque Limit 1 set at this lift: 64,400 lbF. / 32.2 Tons (73,800 ft\*lbF.).  
That equates to 16.1 Tons per load cell / chain during Alarm Lift.  
Maximum Lift = Torque Limit 2 set at this lift: 80,000 lbF. / 40.0 Tons (91,670 ft\*lbF.).  
That equates to 20.0 Tons per load cell / chain during Maximum Lift.  
Travel Speed = Approximately 2 FPM.  
Unit = Drive unit, or brake motor-reducer assembly.



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SYNOPSIS:

**Safety is important during shop load tests.** Witnesses should follow LIM’s instructions for safety, including but not limited to wearing safety glasses, standing in the correct location during the shop load test, and never reaching/leaning over equipment while it is connected to power. Do not stand closer than 15 feet from the hoist during shop load testing and never stand between the hoist and the loading equipment. Avoid equipment pinch points at all times and do not wear loose clothing, jewelry, untied shoes, etc. Be aware of your surroundings at all times, including but not limited to overhead conditions. Do not walk through the shop while on your cellphones or reviewing paperwork (including this packet); head must be up at all times while commuting through LIM facilities. Ear protection and steel-toed shoes are optional but recommended.

Confirm you have read the safety statement above by checking this box and signing below.

Print Name: \_\_\_\_\_

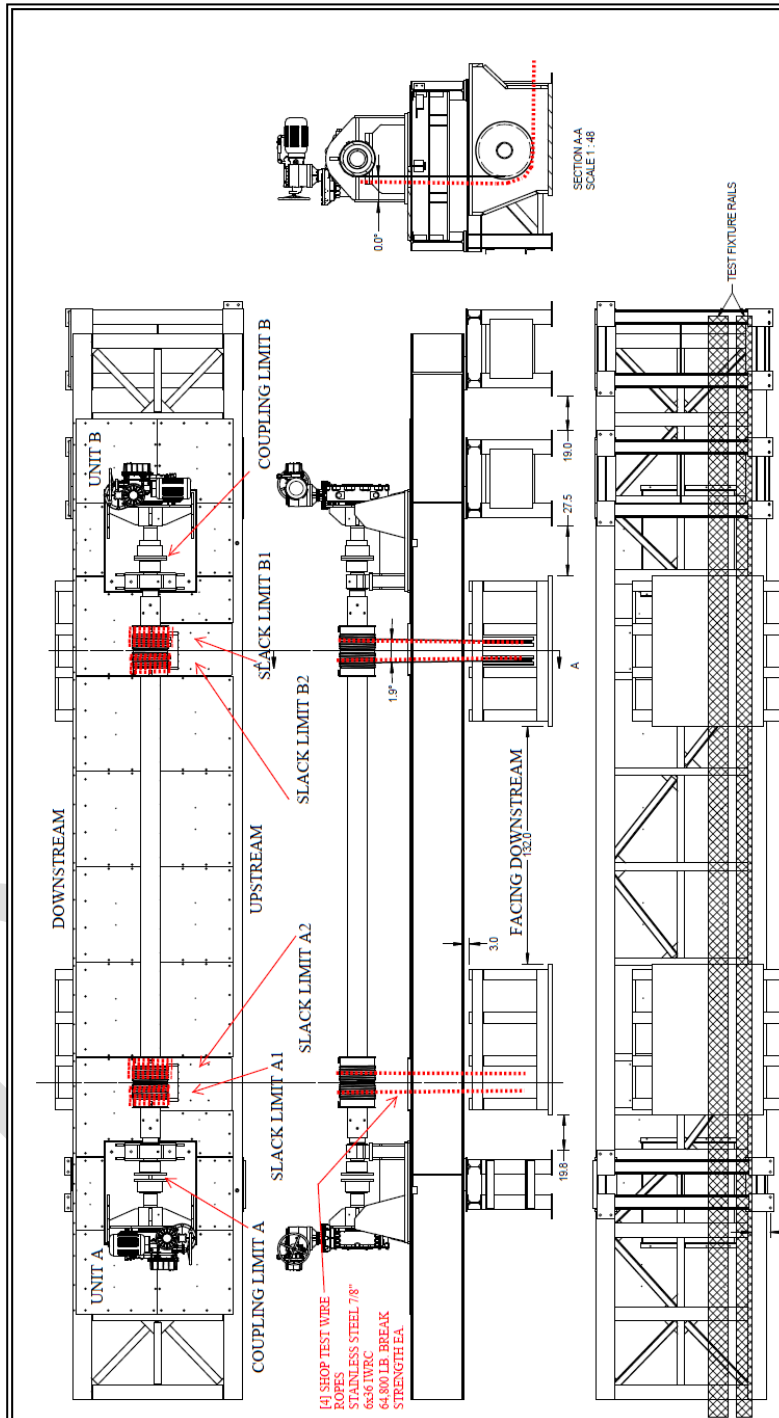
Sign Name: \_\_\_\_\_

Date: \_\_\_ / \_\_\_ / \_\_\_

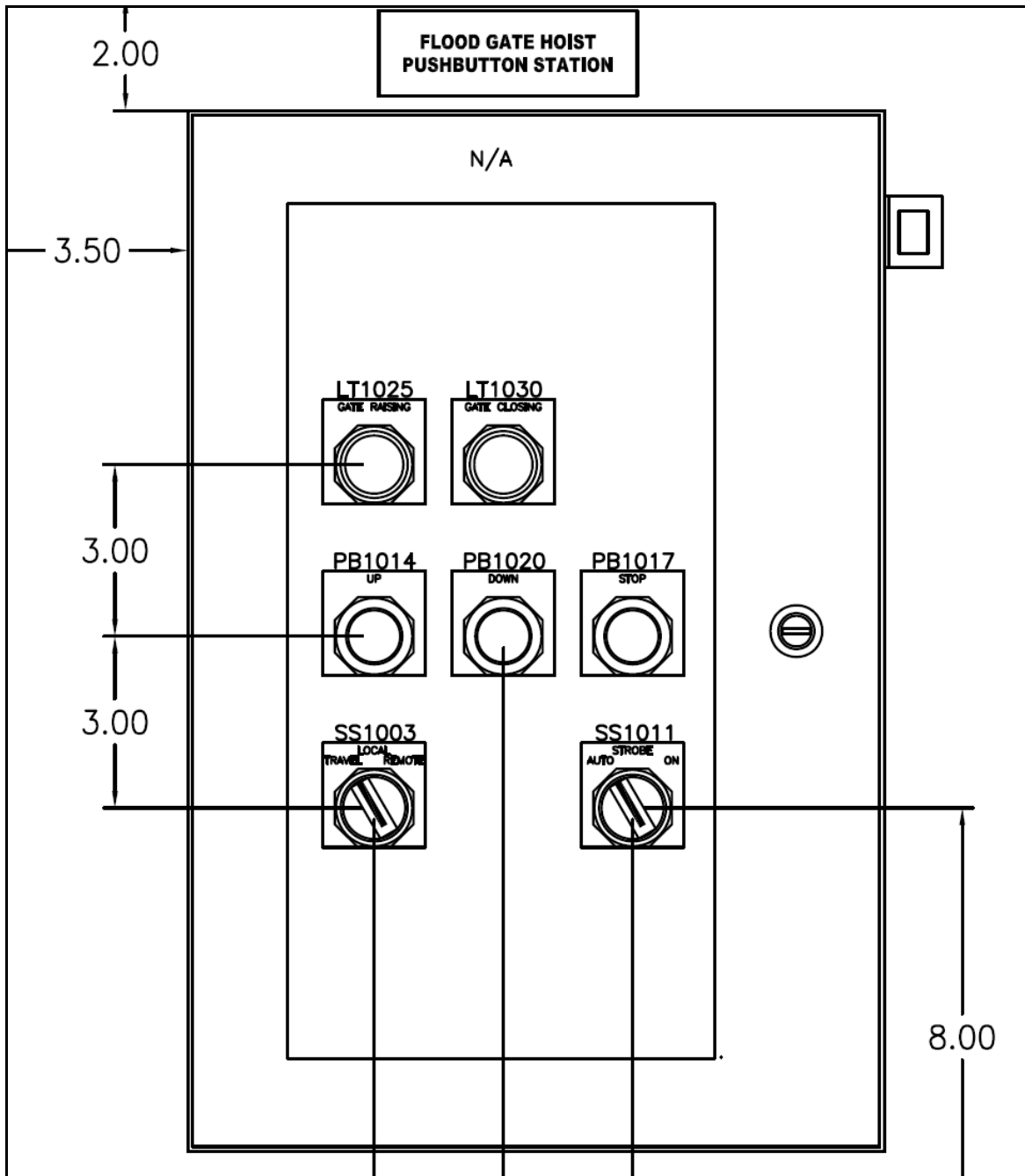
LIM will perform a witnessed shop test prior to hoist delivery. The test will demonstrate hoist drive operation, all local control features including limit switch functionality / interlocking, required consecutive cycles / run time, required loads, hold points, travel speed, and mobile cart drive operation. Hoist drive operation will be performed while the hoist is fastened to LIM’s 200 TON hydraulic loading fixture. **The loading fixture is capable of variable, dynamic loading which accurately demonstrates field conditions. The load can be gradually increased while the hoist is lifting or lowering, and the load is monitored via calibrated load cells. This allows “Torque Limit 1” and “Torque Limit 2” to be set with increased accuracy.** Cart drive operation will be performed on rails within LIM’s finishing and testing facility. Pictures and videos will be taken of key demonstrations.

An official from each party in attendance is to sign the ‘master’ test report after completion of the shop load test. LCRA has the right to determine which parties are required to sign the ‘master’ test report.

SHOP TEST LAYOUT (EXAMPLE):



LOCAL PUSHBUTTON STATION: (strokes not shown) (see control manufacturer drawings)





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DYNAMIC, VARIABLE LOAD TEST: (pictures & videos to be taken at each step, as practical)

HOIST SERIAL NUMBER: \_\_\_\_\_

1. Pre-Test Check

Voltage: (460V) \_\_\_\_\_ V  Pass  Fail \_\_\_\_\_

Amperage: (40A<) \_\_\_\_\_ A  Pass  Fail \_\_\_\_\_

Cracks, blowholes or breaks in castings or other parts:  Pass  Fail \_\_\_\_\_

Damage to electrical insulation:  Pass  Fail \_\_\_\_\_

Misalignment of machinery:  Pass  Fail \_\_\_\_\_

Weld cracks or damage:  Pass  Fail \_\_\_\_\_

Lube oil and seal leakage:  Pass  Fail \_\_\_\_\_

Extensive blisters, bare spots, rust, or scaling of finish:  Pass  Fail \_\_\_\_\_

2. With LOCAL OPERATION Selected

2.1. Meter Check:

Gate Position Indication – A: \_\_\_\_\_ ft.

2.2. Operate through [10] consecutive Cycles at Normal Lift:

Pass  Fail

2.2.1. Pilot Light Check, Normal Load, Hold & Travel Speed during Raise Action:

"Gate Raising"

Chain Load: \_\_\_\_\_ TONS Load Hold:  Pass  Fail

Travel Speed: \_\_\_\_\_

Voltage: \_\_\_\_\_ V Amperage: \_\_\_\_\_ A (29.8 FLA per Motor)

Excessive noise:  Pass  Fail \_\_\_\_\_



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Excessive heat:  Pass  Fail \_\_\_\_\_

Sticking or binding of moving parts:  Pass  Fail \_\_\_\_\_

2.2.2. Torque Limit 1 Interruption at Alarm Load, & Hold:

Chain Load at Torque Limit Trip: \_\_\_\_\_ TONS  Pass  Fail \_\_\_\_\_

Load Hold:  Pass  Fail

2.2.3. Torque Limit 2 Interruption at Maximum Load, & Hold:

Bypass Function:  Pass  Fail \_\_\_\_\_

Chain Load at Torque Limit Trip: \_\_\_\_\_ TONS  Pass  Fail \_\_\_\_\_

Load Hold:  Pass  Fail

2.2.4. Observe & Record Gate Position Indicator during Raise Action:

Reading at 1 Linear Foot: \_\_\_\_\_ 10 Linear Feet: \_\_\_\_\_

2.2.5. E-Stop Interruption:

Pass  Fail

2.2.6. Upper Travel Limit Interruption :

Pass  Fail  "Upper Limit Reached"

2.2.7. Pilot Light Check, Normal Load, Hold & Travel Speed during Lower Action:

"Gate Lowering"

Chain Load: \_\_\_\_\_ TONS Load Hold:  Pass  Fail

Travel Speed: \_\_\_\_\_

Voltage: \_\_\_\_\_ V Amperage: \_\_\_\_\_ A (29.8 FLA per Motor)

Excessive noise:  Pass  Fail \_\_\_\_\_

Excessive heat:  Pass  Fail \_\_\_\_\_

Sticking or binding of moving parts:  Pass  Fail \_\_\_\_\_

2.2.8. Alarm Load Hold:

Chain Load: \_\_\_\_\_ TONS

Load Hold:  Pass  Fail

2.2.9. Maximum Load Hold:

Bypass Function:  Pass  Fail \_\_\_\_\_

Chain Load: \_\_\_\_\_ TONS

Load Hold:  Pass  Fail

2.2.10. Observe & Record Gate Position Indicator during Lower Action:

Reading at 10 Linear Feet: \_\_\_\_\_ 1 Linear Foot: \_\_\_\_\_

2.2.11. E-Stop Interruption:

Pass  Fail

2.2.12. Lower Travel Limit Interruption:

Pass  Fail

3. Remote Selection Interruption:

Pass  Fail

4. Off Selection Interruption:

Pass  Fail

5. Hoist Auxiliary Drive Operational Check

5.1 .Electrical/Manual Operation selection lever functions:

Pass  Fail

5.2.Manual handwheel removes and adapter connects:

Pass  Fail



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5.3. System aligns using adjustable feet, and socket connects:

- Pass  Fail

5.4. Time to raise gate 10 feet: \_\_\_\_\_

5.5. Generator provides sufficient power with 85 foot power cable:

- Voltage at hoist: \_\_\_\_\_ V  Pass  Fail

5.6. Electrical/Manual Operation selection lever auto-engages when hoist is electrically operated:

- Pass  Fail

6. **With Mobile Hoist on Rails and TRAVEL OPERATION Selected**

6.1. Operate in both directions [5] times on 40 foot rail:

- Pass  Fail \_\_\_\_\_

6.2. Braking and accurate alignment of Catch Pin:

- Pass  Fail \_\_\_\_\_

7. Post-Test Check

Cracks, blowholes or breaks in castings or other parts:  Pass  Fail \_\_\_\_\_

Damage to electrical insulation:  Pass  Fail \_\_\_\_\_

Misalignment of machinery:  Pass  Fail \_\_\_\_\_

Weld cracks or damage:  Pass  Fail \_\_\_\_\_

Lube oil and seal leakage:  Pass  Fail \_\_\_\_\_

Extensive blisters, bare spots, rust, or scaling of finish:  Pass  Fail \_\_\_\_\_





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8. General Notes & Observations

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TEST WITNESS RECORD:

Name: \_\_\_\_\_

Company \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Company \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Company \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

DRAFT