LINDSAY™ | INSTALLATION MANUAL

TAU-M WIDE™, 72"

Redirective Non-Gating Crash Cushion

+ Partially Reuseable Design
+ MASH TL-3 compliant
+ Able to Cover 72" Hazards

For Lindsay Guides:

Download on the App Store

GET IT ON Google Play

P/N 1836811 Rev A (ECN 63432)

lindsay.com

Important For Your Safety

We have provided important safety messages in this manual. ALWAYS read and obey all safety messages.

 This is the safety alert symbol.

This symbol alerts you to hazards that can kill or hurt you and others. All safety messages will be preceded by the safety alert symbol and the word “DANGER”, “WARNING”, or “CAUTION”.

These words mean:

DANGER **IMMEDIATE HAZARDS THAT WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.**

WARNING **Hazards or unsafe practices that COULD result in severe personal injury or death.**

CAUTION Hazards or unsafe practices that COULD result in minor personal injury or product or property damage.

This manual must be available to the person(s) overseeing and/or assembling the crash cushion system at all times. For additional copies, or if you have any questions about any portion of this manual, see below to contact Lindsay Transportation Solutions.

Contact Information

Lindsay Transportation Solutions

U.S. Toll Free: (888) 800-3691 or +1 (707) 374-6800

THIS MANUAL MAY BE UPDATED PERIODICALLY. PLEASE ENSURE THAT YOU ARE USING THE LATEST VERSION OF THE MANUAL, WHICH IS AVAILABLE (I) BY SCANNING THE QR CODE ON THE COVER OR (II) BY VISITING

https://www.lindsay.com/usca/en/infrastructure/resources/product-manuals/

Standard Limited Warranty

Lindsay Transportation Solutions, Inc. (collectively with its parent company Lindsay Corporation and all other subsidiaries and affiliates directly and indirectly owned by Lindsay Corporation, "LTS") has tested the impact performance of certain of its barriers, crash cushion systems, and other highway safety hardware at an ISO-certified crash testing laboratory under controlled conditions pursuant to the test matrix criteria of NCHRP 350, MASH or EN-1317, as applicable, as designated by the American Association of State Highway and Transportation Officials ("AASHTO") and the Federal Highway Administration ("FHWA"), or the European Committee for Standardization ("CEN"). Such tests do not replicate every possible crash scenario and they are not intended to represent the performance of barriers, crash cushion systems, and other highway safety hardware when impacted in every real world impact condition or by every vehicle type. It is widely recognized that there are impact conditions that exceed the performance expectations of all highway safety equipment.

The products with which this limited warranty is provided (the "Products") are intended to be installed, operated, and maintained in a manner not inconsistent with instructional materials provided by LTS, the AASHTO Roadside Design Guide (as applicable), and state and federal guidelines (as applicable). Selection and proper installation, operation, and maintenance of any highway safety product, including the Products, is the responsibility of the highway authority and state department of transportation.

LTS EXPRESSLY DISCLAIMS ANY WARRANTY OR LIABILITY FOR CLAIMS ARISING BY REASONS OF DEATH OR PERSONAL INJURY OR DAMAGE TO PROPERTY RESULTING FROM ANY IMPACT, COLLISION OR HARMFUL CONTACT WITH THE PRODUCTS OR NEARBY HAZARDS OR OBJECTS BY ANY VEHICLE, OBJECTS, OR PERSONS, REGARDLESS OF WHETHER THE PRODUCTS WERE INSTALLED IN CONSULTATION WITH LTS OR BY THIRD PARTIES.

LTS warrants that any Product or component part manufactured by LTS will be free from defects in material or workmanship. LTS will replace free of cost any Product or component part manufactured by LTS that contains such a defect.

THE FOREGOING WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES NOT EXPRESSLY SET FORTH HEREIN, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

LTS, in its sole discretion, may elect to disclaim the foregoing warranty benefits with respect to (i) any Products that have been inspected and determined by LTS, in its sole discretion, (a) to have been subject to improper storage, accident, misuse, or unauthorized alterations, or (b) that have not been installed, operated, and maintained in accordance with approved procedures and guidelines (including but not limited to instructions included in materials provided by LTS and the AASHTO Roadside Design Guide) and (ii) any components manufactured by the Buyer.

LTS' LIABILITY UNDER THIS WARRANTY IS EXPRESSLY LIMITED TO REPLACEMENT FREE OF COST (IN THE FORM AND UNDER THE TERMS ORIGINALLY SHIPPED), OR TO REPAIR BY LTS, OF PRODUCTS OR PARTS NOT COMPLYING WITH LTS SPECIFICATIONS, OR, AT LTS' ELECTION, TO THE REPAYMENT OF AN AMOUNT EQUAL TO THE PURCHASE PRICE OF SUCH PRODUCTS OR PARTS, WHETHER SUCH CLAIMS ARE FOR BREACH OF WARRANTY OR NEGLIGENCE. LTS SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, OR SPECIAL LOSSES, DAMAGES, OR EXPENSES OF ANY KIND, INCLUDING, WITHOUT LIMITATION, ANY SUCH LOSSES, DAMAGES, OR EXPENSES ARISING DIRECTLY OR INDIRECTLY FROM THE SALE, HANDLING, OR USE OF THE PRODUCTS FROM ANY OTHER CAUSE RELATING THERETO, OR FROM PERSONAL INJURY OR LOSS OF PROFIT.

Any claim by the Buyer with reference to Products sold hereunder for any cause shall be deemed waived by the Buyer unless LTS is notified in writing, in the case of defects apparent on visual inspection, within ninety (90) days from the delivery date, or, in the case of defects not apparent on visual inspection, within twelve (12) months from the said delivery date. Products claimed to be defective may be returned prepaid to LTS' plant for inspection in accordance with return shipping instructions that LTS shall furnish to the Buyer forthwith upon receipt of the Buyer's notice of claim. If the claim is established, LTS will reimburse that Buyer for all carriage costs incurred hereunder.

W030587 Rev. 11 revised October 16, 2017

LINDSAY™ | 18135 Burke Street, Ste 100 | Omaha, NE 68022 | Tel. +1 (402) 829-6800 | Fax. +1 (402) 829-6334

TAU-M Wide™,72" Crash Cushion

Impact Performance Limitations and Warnings

Lindsay Transportation Solutions, LLC (LTS), developed the TAU-M Wide™, 72", a fully redirective crash cushion, to the latest standards defined in the American Association of State Highway and Transportation Officials (AASHTO) Manual for Assessing Safety Hardware (MASH), Second Edition, 2016, for Test Level 3 impacts.

Testing was conducted at Safe Technologies, LLC, under the direction of Holmes Solutions, an ISO-certified crash test laboratory, pursuant to the test matrix criteria for non-gating redirective crash cushions outlined in MASH.

According to MASH, testing guidelines cannot include all possible impact conditions that may be experienced in real life. The test matrix represents the 85th percentile of impact speeds and impact angles, the 5th and 95th percentile of vehicle weights, and critical impact points that are believed to represent the worst practical conditions.

Real life crashes may result in different outcomes than seen during crash testing due to the limitless variety of combinations of impact conditions.

The TAU-M Wide™, 72" Crash Cushion is intended to be installed, operated, and maintained in a manner consistent with instructional materials provided by LTS, the AASHTO Roadside Design Guide, and applicable state and federal guidelines. Selection and proper installation, operation, and maintenance of any road safety product, including the TAU-M Wide™, 72" Crash Cushion, is the responsibility of the highway authority and state department of transportation.

Impacts that deviate from the MASH test matrix criteria or involve an improperly installed, operated, or maintained TAU-M Wide™, 72" Crash Cushion may result in significantly different outcomes than those experienced in testing. For the avoidance of doubt, LTS makes no representations or warranties with respect to the performance of the TAU-M Wide™, 72" Crash Cushion (i) in impacts that deviate from the MASH test matrix criteria and/or (ii) if not installed, operated, and maintained as directed in instructional materials provided by LTS, the AASHTO Roadside Design Guide, and applicable state and federal guidelines.

If you need additional information, or have questions about the TAU-M Wide™, 72" Crash Cushion, please call the LTS Customer Service Department at (866) 404-5049 (U.S. toll free) or (707) 374-6800.

Table of Contents

TAU-M Wide™, 72" System Overview

The TAU-M Wide™, 72" is a redirective, non-gating crash cushion designed to meet the latest test standards defined in the Manual for Assessing Safety Hardware (MASH), Second Edition, 2016, for Test Level 3 impacts.

This product was developed to protect motorists when impacting hazards up to 72 in (1830 mm) wide without the use of transitions or hazard modifications. Utilizing transitions and/or modifying standard hazard profiles may allow wider hazards to be protected.

The product utilizes a cable anchoring system, deflection limiters, bulkheads and telescoping thrie-beam panels forming six collapsible bays. The bays contain a varying number of Energy Absorbing Cartridges (EAC) to absorb kinetic energy and contain vehicles during head on impacts while the side panels redirect vehicles during side impacts.

The product is comprised of a Backstop arrangement, four Deflection Limiters, a Front Cable Anchor, two Cables, seven EACs, four End Panel Mounts, a Front Bulkhead Assembly, three Type A Bulkhead Assemblies, two Type B Bulkhead Assemblies, twenty Sliding Panels, four End Panels, two Saddles, two Tube Spacers, two Stop Plates, four Tow Hooks, a Delineation Bracket and a Hardware Kit.

The product weighs approximately 4,007 lbs (1815 kg), is 261-1/2 in (6650 mm) Long (measured from the front edge of the Front Cable Anchor to the back edges of the End Panels), has a nominal Height of 33-1/4 in (845 mm), is 55-1/4 in (1400 mm) Wide at the Front and 87-1/2 in Wide at the Rear.

The product utilizes the profile of standard corrugated thrie beam panels which enable the application of standard transition methods to various roadside hardware and barrier systems. A proprietary transition using nested angled and standard end panels was tested and is available.

This product was tested with a typical delineation decal. Alternate delineation patterns/stickers may be placed on the delineation plate which is part of the front support assembly.

This product was tested with an identification decal for product identification, component tracking and quality control.

This product was tested with an ImpactAlert device affixed to the downstream side of the backstop. The ImpactAlert is an optional device that monitors and detects vehicle impacts and sends notifications via SMS text or e-mail to designated repair crew or DOTs. It does not affect the capacity, function, or performance of the crash cushion.

Recommended Tools

NOTE: This list of tools, safety equipment, and traffic control equipment is a general recommendation and should not be considered a comprehensive list. Depending on the specific characteristics of the job site and the complexity of the repair or assembly, more or less tools may be necessary.

NOTE: For restoring a crashed system additional tools and machines may be required, such as a tow truck , shackle and tow rope.

Required Tools

- Tape Measure
- Chalk Line
- Marking Paint
- Rotary Hammer
- Wrenches
  1-5/16"
  1-1/4"
  1-1/8"
  9/16"
- Impact Wrench (1/2" drive min)
  (pneumatic or electric)
- Compressed Air
- 7/8 in (22 mm) Diameter Wire Brush
- 1/2" Drive Torque Wrench
  min. 500 ft-lbf (680 N-m)
- 1/2" Drive Sockets
  1-5/16" (normal)
  1-1/4" (deep)
  1-1/8" (deep)
  9/16" (deep)
- Masonry Bit
  7/8 in (22 mm) diameter x
  24 in (609 mm) long

Provided Tools

- Cable Socket
- 2-3/4" Cable Swage Key

Optional Tools

- 7/8"x36" (22mm x 915mm) masonry drill bit
- Ratchet drive extensions
- Combination wrench
- Ratchet wrench
- Electric drill with 7/8 in (22 mm) rebar cutter drill bit.
- Sledge hammer
- Pry bar

Safety Equipment

- Safety Glasses
- Hearing Protection
- Gloves
- Steel Toe Boots
- Hard Hat
- Safety Vest
- Dust Mask

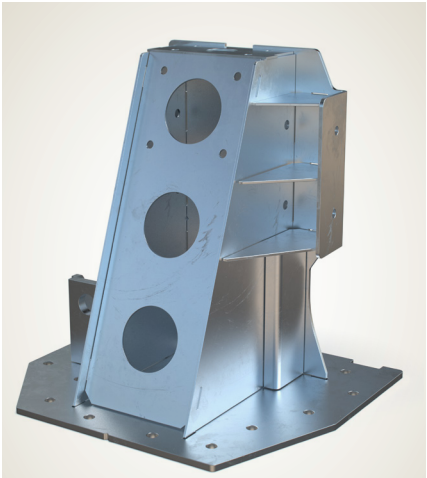
Traffic Control Equipment

- Traffic Control Equipment
- Traffic Control Plan

72" Parts Identification

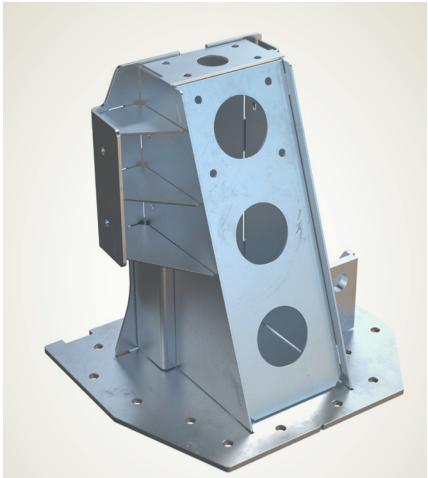
⚠ WARNING **Use only Lindsay Transportation Solutions parts that are specified by Lindsay Transportation Solutions for use with the TAU-M Wide™, 72" System. Do not use or co-mingle parts from other TAU-II™ and TAU-M™ systems including Non-Lindsay Transportation Solution systems. Such configurations have not been tested nor have they been approved for use. The use of unspecified parts is prohibited and could result in severe personal injury or death.**

NOTE: Hardware not shown.



BACKSTOP LEFT

1834269



BACKSTOP RIGHT

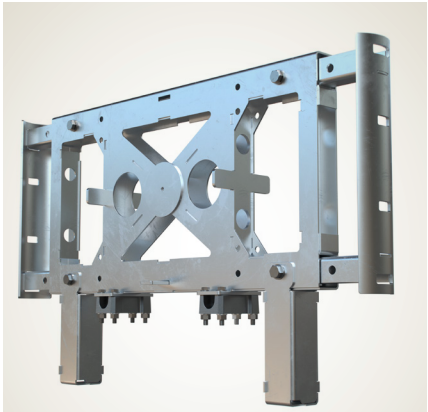
1834271

BACKSTOP BRACE

1833859

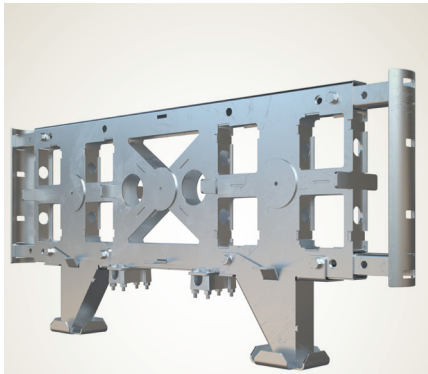
FRONT SUPPORT

1834750



BULKHEAD A

1832189



BULKHEAD B

1832461

72" Parts Identification (Cont.)

NARROW LEG

1833357

REINFORCED LEG

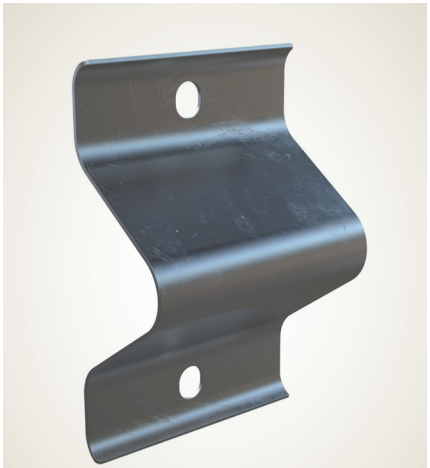
1833506

TUBE SPACER

1835155

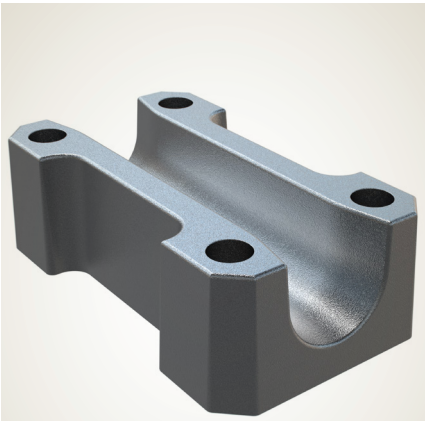
STOP PLATE

1834752



SADDLE

1823926

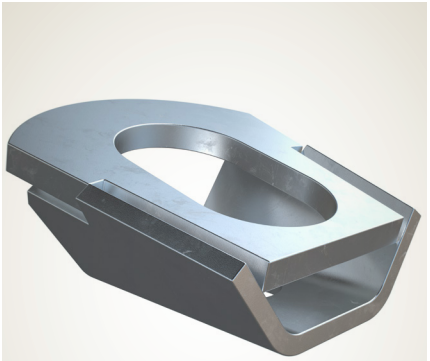


CABLE GUIDE

BSI-1707032-00

CARTRIDGE

B010722



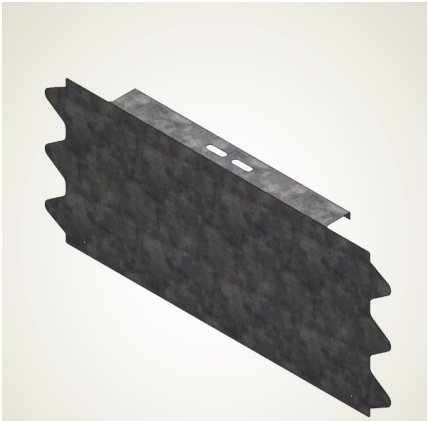
TOW HOOK

BSI-1711051-00

MULTI POSITION PANEL MOUNT

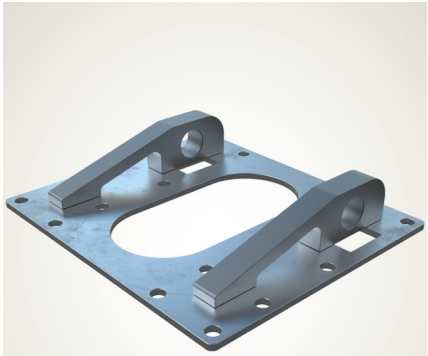
1832479

72" Parts Identification (Cont.)



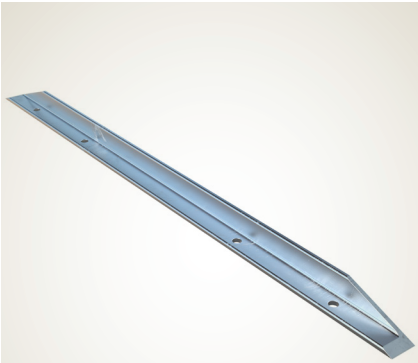
DELINEATION PANEL

1834781



ANCHOR PLATE

1835758

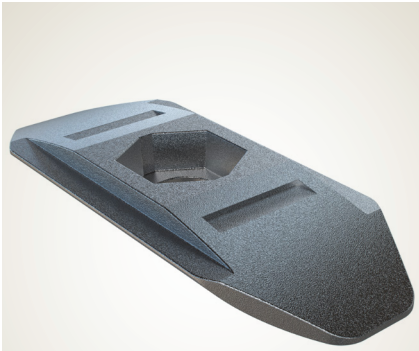


DEFLECTION LIMITER

1823938

CABLE

1832580

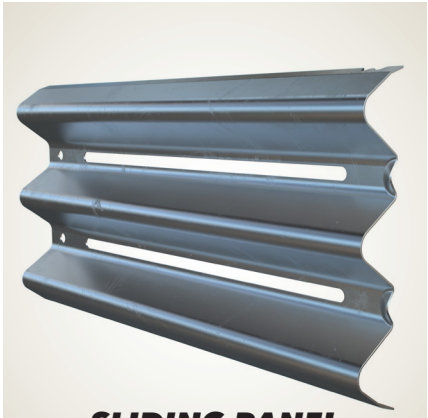


PANEL SLIDER

1827166

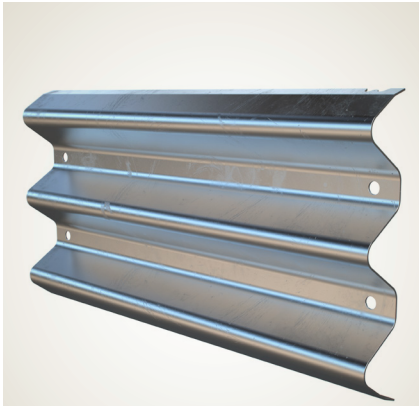
SPRING

1834754



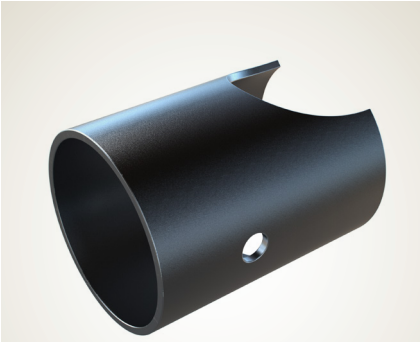
SLIDING PANEL

BSI-1708019-00



END PANEL

BSI-1708030-00



END PANEL MOUNT

1832477

Bill of Materials, 1834751

Overall System

Item #	Part #	Description	QTY
	1834751	SYSTEM, TAU-M WIDE 72"	
1	1834750	ASSEMBLY, FRONT 72" TAU-M WIDE	1
1.1	1834747	WELDMENT, FRONT SUPPORT 72"	1
1.2	2000118	WSHR 5/8 F436 STRUCT GALV	2
1.3	2001793	C-scr HH 5/8-11 x 2 GR5 GEOMET	2
1.4	BSI-1209011-00	LEG, FRONT SUPPORT	2
2	1832189	ASSEMBLY, BULKHEAD A	3
2.1	BSI-2001957	C-Scr HH 1/2-13 x 3-1/4", Gr5 GEOMET	4
2.2	2001791	WASHER SL, 1/2" STANDARD, FINISH: GEOMET	16
2.3	2001797	NUT HN 1/2-13 GR5 GEOMET	8
2.4	1832479	MOUNT, MULTI POSITION PANEL	2
2.5	1833357	WELDMENT, NARROW LEG	2
2.6	1833520	BOLT, 3/4-10X4-1/2 GR5 HEX	4
2.7	2001789	NUT HN 3/4-10 GR5 GEOMET	4
2.8	2001790	WASHER FLAT 3/4 Std GEOMET	8
2.9	BSI-1707032-00	GALVANIZED CABLE GUIDE, TAU-M	2
2.10	1832180	WELDMENT, BULKHEAD A	1
3	1832461	ASSEMBLY, BULKHEAD B	2
3.1	BSI-2001957	C-Scr HH 1/2-13 x 3-1/4", Gr5 GEOMET	8
3.2	2001791	WASHER SL, 1/2" STANDARD, FINISH: GEOMET	16
3.3	2001789	NUT HN 3/4-10 GR5 GEOMET	6
3.4	2001790	Washer Flat 3/4 Std GEOMET	12
3.5	2001797	NUT HN 1/2-13 GR5 GEOMET	8
3.6	1832479	MOUNT, MULTI POSITION PANEL	2
3.7	1833506	WELDMENT, REINFORCED LEG	2
3.8	1833520	BOLT, 3/4-10X4-1/2 GR5 HEX	6
3.9	1833816	WELDMENT, BULKHEAD B	1
3.10	BSI-1707032-00	GALVANIZED CABLE GUIDE, TAU-M	2
4	1823938	ANGLE, DEFLECTION LIMITER TMW	4
5	1834781	PANEL, TMW-A DELINEATION	1
6	B010722	CARTRIDGE, TAU-II, TYPE B ENERGY ABSORBING	7
7	BSI-1708019-00	SLIDING PANEL, GALVANIZED, TAU-M	20
8	BSI-1708030-00	END PANEL, THRIE-BEAM, GALVANIZED, TAU-II-M	4
9	1832477	END PANEL MOUNT, TAU-M WIDE	4
10	1827166	SLIDER	24
11	1829086	BOLT, 3/4-10 X 6.75 A325 HEX	16
12	2001790	Washer Flat 3/4 Std GEOMET	64
13	2001789	NUT HN 3/4-10 GR5 GEOMET	36
14	1834645	BOLT, 3/4-10 X3-1/4 A325 HEX	8
15	1834754	SPRING, 4.00"L COMPRESSION	20

Bill of Materials, 1834751 (continued)

Item #	Part #	Description	QTY
16	1835155	TUBE, SPACER	2
17	1823926	SADDLE, TAU-M WIDE PANEL	2
18	1824115	WASHER, 3/8 FLAT	8
19	1829369	SCREW,3/8-16X4,HX	4
20	2001809	NUT HN, 3/8-16, GR5	4
21	2001795	C-SCR HH 3/4-10 X 2 GR5 GEOMET	4
22	1823982	SCREW,3/4-10X3.5" Gr5 HEX CAP	4
23	1832580	CABLE, 1-1/8" 220in	2
24	1834269	WELDMENT, L BACKSTOP	1
25	1834271	WELDMENT, R BACKSTOP	1
26	1833859	WELDMENT BACKSTOP CROSS BRACE	1
27	1835758	TMW,FRONT CABLE ANCHOR	1
28	1834752	PLATE, STOP	1
29	1834943	BOLT, 3/4-10 X 6 A325 HEX	4
30	BSI-1711051-00	TOW HOOK, GALVANIZED, TAU-M	4
31	1338470	SCREW,#10X3/4,HEX,SELF-DR	2

72" Spare Parts Kits

KIT	K001005	TAU-II FRONT SUPPORT LEG KIT	
1.4	BSI-1209011-00	FRONT SUPPORT LEG	2
1.3	2001793	C-Scr HH 5/8-11 x 2 Gr5 GEOMET	2
1.2	2000118	WASHER SAE 5/8" GEOMET	2

KIT	1837006	BULKHEAD A SUPPORT LEG KIT	
2.5	1833357	WELDMENT, NARROW LEG	1
2.6	1833520	BOLT, 3/4-10 X 4-1/2 GR5 HEX	1
12	2001790	`WASHER FLAT 3/4 STD GEOMET	2
13	2001789	NUT HN 3/4-10 GR5 GEOMET	1

KIT	1837007	BULKHEAD B SUPPORT LEG KIT	
3.7	1833506	WELDMENT, REINFORCED LEG	1
3.8	1833520	BOLT, 3/4-10 X 4-1/2 GR5 HEX	2
23	2001790	`WASHER FLAT 3/4 STD GEOMET	4
13	2001789	NUT HN 3/4-10 GR5 GEOMET	2

KIT	BSI-1808033-KT	CABLE GUIDE KIT	
2.9	BSI-1707032-00	CABLE GUIDE, GALVANIZED	1
2.1	BSI-2001957	C-Scr HH 1/2-13 x 3-1/4", Gr5 GEOMET	4
2.2	2001791	WASHER SL, 1/2" STANDARD, FINISH: GEOMET	8
2.3	2001797	NUT HN, 1/2-13, Gr5, FINISH GEOMET	4

72" Parts Kits (continued)

KIT	1837008	MULTI POSISTION PANEL MOUNT KIT	
2.4	1832479	MOUNT, MULTI POSITION PANEL	2
2.6	1833520	BOLT, 3/4-10 X 4-1/2 GR5 HEX	2
2.7	2001789	NUT HN 3/4-10 GR5 GEOMET	4
2.8	2001790	WASHER FLAT 3/4 STD GEOMET	2

KIT	1836686	SLIDER KIT WITH SPRING	
10	1827166	SLIDER	2
11	1829086	BOLT, 3/4-10 X 6.75 A325 HEX	2
12	2001790	`WASHER FLAT 3/4 STD GEOMET	4
13	2001789	NUT HN 3/4-10 GR5 GEOMET	2
15	1834754	SPRING, 4.00"L COMPRESSION	2

KIT	1836695	TUBE SPACER KIT	
16	1835155	TUBE, SPACER	2
19	1829369	SCREW,3/8-16X4,HX	4
20	2001809	NUT HN, 3/8-16, GR5	4
18	1824115	WASHER, 3/8 FLAT	8

KIT	1836682	TOW HOOK KIT	
30	BSI-1711051-00	TOW HOOK, GALVANIZED, TAU-M	4
29	1834943	BOLT, 3/4-10 X 6 A325 HEX	4
12	2001790	`WASHER FLAT 3/4 STD GEOMET	8
13	2001789	NUT HN 3/4-10 GR5 GEOMET	4
15	1834754	SPRING, 4.00"L COMPRESSION	4

KIT	1837004	WIDE ANCHOR EPOXY KIT	
	1831957	ADHESIVE, RED HEAD A7+ 28oz	3
	1831958	DISPENSER, RED HEAD 28oz	1
	1835802	CONTAINER,HINGED LID,GREEN	1

KIT	1837002	ANCHOR KIT	
	B011001	THREADED ANCHOR	60
	2001380	WSHR 3/4 F436 FLAT RD STRUCT	60
	2001399	NUT HN 3/4-10 HVY A563 HD GALV	60

Preparation

Foundation

For foundation requirements refer to drawing 1836528 (found later in this manual).

Alternatives to this foundation design shall be evaluated and approved by the Project Engineer.

Anchoring Specifications

The TAU-M Wide™, 72" system uses galvanized threaded rods and epoxy to anchor the Backstop arrangement, the Deflection Limiters and the Front Cable Anchor to the concrete foundation.

The following are minimum requirements for the TAU-M Wide foundation and anchoring. For proposed alternatives contact Lindsay prior to usage for approval.

Concrete Foundation Material	Per LTS drawing 1832159
Concrete Foundation Depth	150 mm (6 in) with reinforcement Or 200 mm (8 in) without reinforcement
Concrete Foundation Size	Per LTS drawing 1836528
Concrete Anchors	19 mm (3/4 in) ASTM A307 threaded rod
Concrete Anchor Embedment Depth	146 mm (5.75 in) minimum

System Torque Chart

CONCRETE INSTALLATION	
Anchor Bolts	45 ft-lbs (60 N-m)
Cables	500 ft-lbs (680 N-m)*
SYSTEM COMPONENTS	
Cable Guides	30 ft-lbs (48 N-m)
End Panel Mounts to Backstop	70 ft-lbs (95 N-m)

* Using a torque wrench is always the preferred method to tighten hardware.

If a torque wrench with the capacity to torque 500 ft-lbs is not available, alternative methods may be followed to approximate this torque specification.

- 72" (1.8m) wrench extension with 100 lbs (45 kg) applied 12" (30.5 cm) from the end.
- 42" (1.1m) wrench extension with 200 lbs (90 kg) applied 12" (30.5 cm) from the end.

Adhesives

MANUFACTURER	MODEL
Hilti	HIT RE-500 HIT HY-200 HIT HY-100
Simpson	SET-3G AT-3G AT-XP
RedHead	A7+
Adhesives Technology	Ultrabond HS-1CC

Important Notes

Ensure the TAU-M Wide™, 72" system is properly transitioned in accordance with Federal, State, and Local standards.

The TAU-M Wide™, 72" system requires a transition in bi-directional traffic. See **Transition Drawings** section at the end of the manual for acceptable transition configurations.

TAU-M Wide™, 72" is a free standing system in unidirectional traffic and does not require a transition.

Sign Convention

- The term Upstream = Towards the Front Support
- The term Downstream = Towards the Backstop

Installing the System

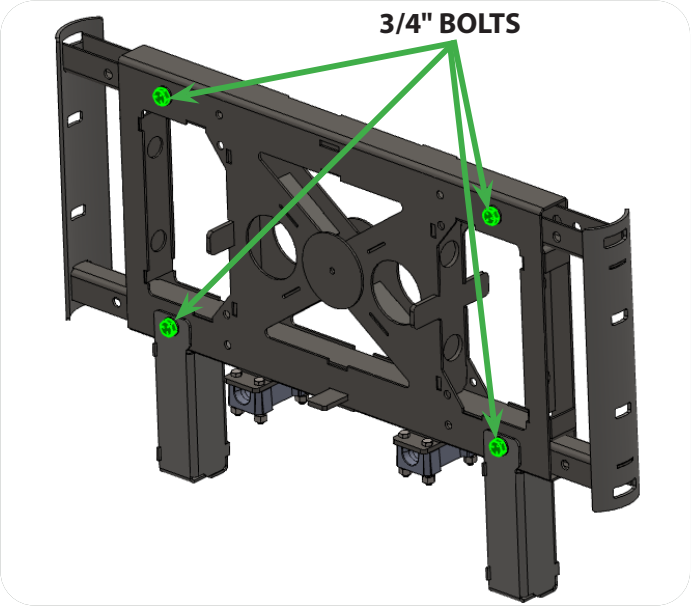
Pre-Adjustment of Bulkheads

⚠ DANGER **FOR LIFTING PURPOSES ENSURE LIFTING DEVICES CAN SUPPORT THE WEIGHT OF 4000 LBS (1815 KG).**

NOTE: Bulkheads may ship pre-assembled. Before heading to install site, confirm bulkheads are properly adjusted.

1.1 A system contains three Bulkhead type A's and two Bulkhead type B's. Each of the Bulkheads are configured differently.

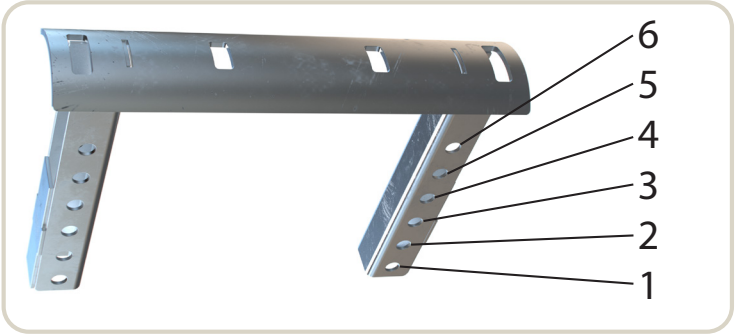
1.2 If adjustment is required remove 4x ¾" bolts



1.3 Pull wings out to correct location using the table and pictorial shown below.

1.4 Reinstall 4 x ¾" Bolts. Torque bolts to 70 ft-lbs (95 N-m).

BULKHEAD TYPE	BAY	WING POSITION
A	1	3rd Hole
	2	2nd Hole
	3	1st Hole
B	4	6th Hole
	5	5th Hole



TAU-M Wide™, 72" System Onsite Installation Instructions

⚠ DANGER **HOLES MUST BE DRILLED TO DEPTH AND CLEARED OF DEBRIS TO ENSURE PROPER ANCHORAGE ADHESION IS ACHIEVED.**

⚠ CAUTION Wear proper Personal Protective Equipment (PPE) when drilling and clearing debris.

With the proper foundation in place, anchor the Backstop, Deflection Limiters, and Front Cable Anchor according to the foundation drawing 1836528 and the specifications found in the "Anchoring Specifications" section of this manual.

Ensure proper lifting equipment and techniques are used when moving components into place.

Anchoring the TAU-M Wide™, 72" System

Position the Backstop components, Deflection Limiters and the Front Cable Anchor on the foundation per drawing 1836528. The foundation drawings show positioning. Using the actual parts as templates, either mark the holes to be drilled or drill through the parts acting as guides. Hole diameter and depth depends on the foundation and the anchoring compound used. Prepare the holes as specified by the anchoring compound manufacturer.

NOTE: Anchor holes should be drilled using air-flushed rotary percussive drilling equipment. If diamond core or non-percussive drills are used, the hole must be thoroughly scoured using a coarse wire flue brush.

NOTE: Depending on the type of hazard and/or transition requirements the Backstop (item 1) may need to be spaced away from the hazard for access to the cable lug later in the installation process. Refer to Preperation - Transition section.

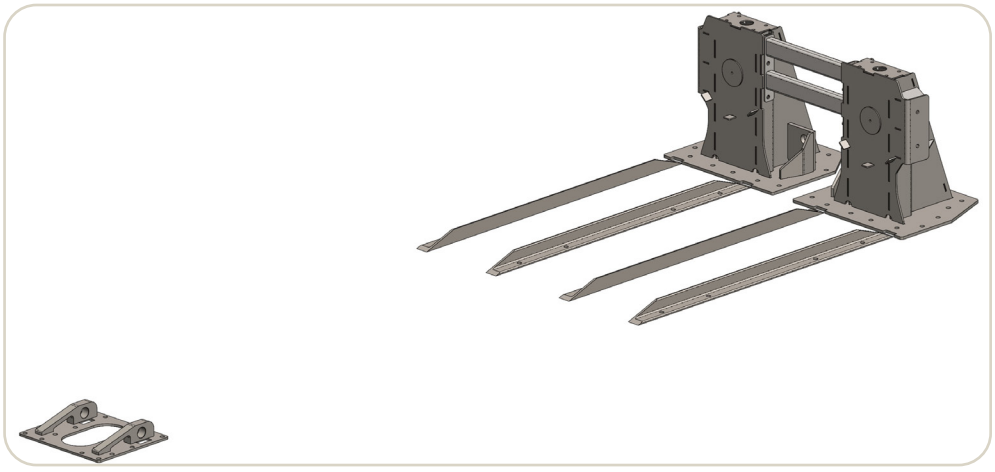
Step 1 - Backstop, Deflection Limiters & Front Cable Anchor Installation

1.1 Connect the Left and Right Backstop Towers using the Backstop Brace and associated hardware as shown in the Assembly Drawing. Position the Backstop arrangement

1.2 Note Deflection Limiters fit in appropriate slots in the base of the backstop.

1.3 Once the Compact Backstop, Deflection Limiters and Front Cable Anchor are positioned, mark and drill into the foundation at all hole locations. Drill 7/8" (22mm) hole diameter for supplied epoxy. If other epoxy is used, follow manufacturer's recommendations for 3/4" (19 mm) threaded rod. See **Anchor Specifications** section.

1.4 Clear holes of debris with compressed air and brush. Wear PPE.

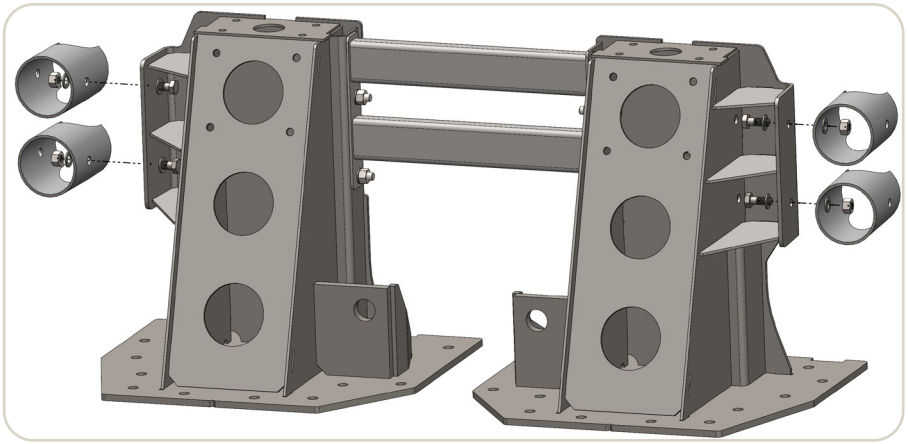


PRO-TIP: Preassemble threaded anchor, nut and washer with 3-4 threads on top of the nut.

1.5 Using the supplied hardware kit, fill cleared holes with epoxy and insert threaded rods with washer and nut into each drilled hole. Allow to cure per manufacturer's instruction. Cure time will vary based on ambient temperature. Some epoxies cure very quickly. It is recommend you add anchor to hole as soon as it is filled with epoxy

NOTE: Torque anchor bolts AFTER epoxy has been cured per manufacturer's requirements found on epoxy cartridge. For full system torque specifications, see **Anchor Specifications** section for torque values. You may proceed with install while waiting on epoxy to cure.

Step 2 - End Panel Mount Installation



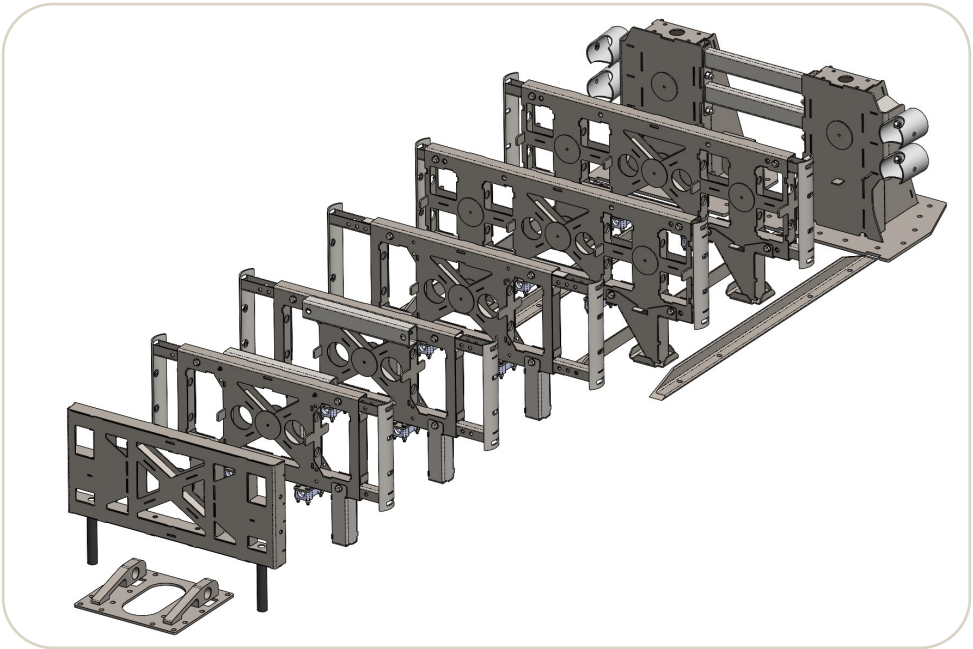
2.1 Install End Panel Mounts using the hardware kit to the Backstop Arrangement as shown. Torque to 70 ft-lbs (95 N-m).

NOTE: Ensure End Panel Mounts are horizontal as shown. Cutout faces upstream.

Step 3 - Positioning Bulkheads

3.1 Space Bulkheads approximately 31 in (790 mm) (center-to-center) apart from each other as well as from the End Panel Mount bolt holes.

3.2 The system uses two type of Bulkheads with the Panel Mounts adjusted as needed based on spacing.



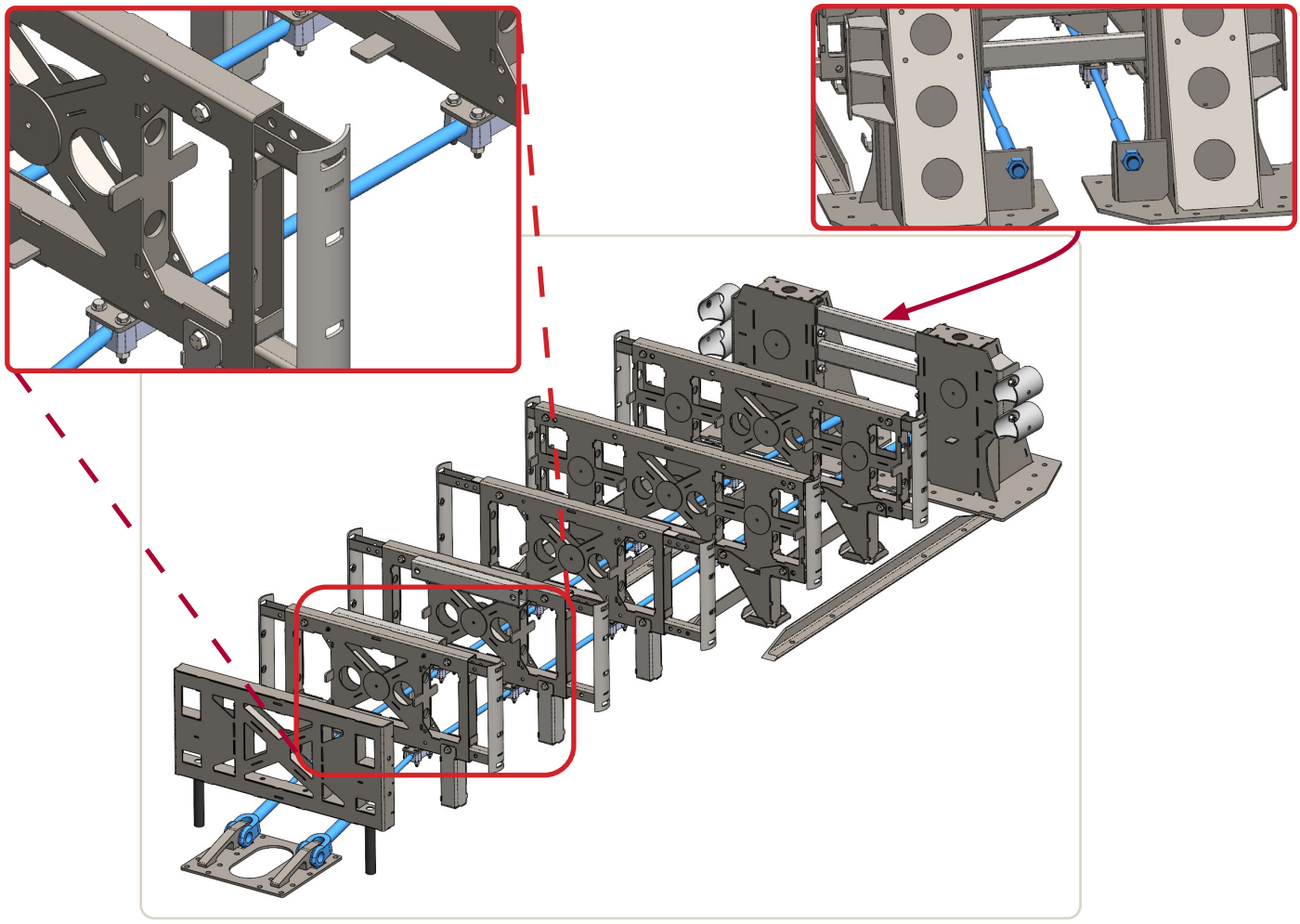
If not pre-adjusted, remove the bolts and adjust the Panel Mounts as described earlier in this manual.

3.3 See assembly drawing for proper spacing and adjustment of Bulkhead. See **Pre-Adustment of Bulkheads** section.

3.4 Place front support at start of system. Front support is not adjustable like bulkheads, and is not connected to the cables.

NOTE: Final position of Bulkheads will be set when Sliding Panels are installed.

Step 4 - Cable Installation



4.1 Pass Cable Assemblies under the mid support and on the inside of the legs.

4.2 Pass threaded end of Cable Assemblies through the Compact Backstop cable lug. Secure with nut provided with the Cable Assemblies. **DO NOT TIGHTEN.**

4.3 Secure clevis end of Cable Assemblies to Front Cable Anchor as shown above.

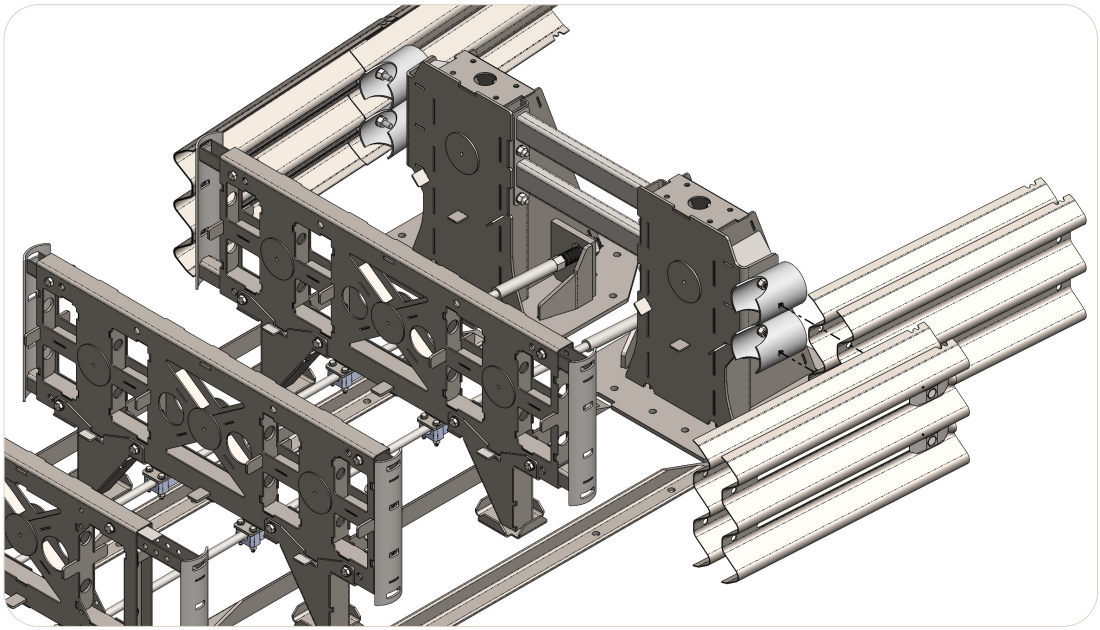
4.4 Secure Cable Assemblies to Bulkhead using Cable Guide Kit as shown. Torque cable guide fasteners according to System Torque Chart.

Step 5 - Panel Installation

⚠ WARNING **Sliding Panel must be lapped over the End Panel.**

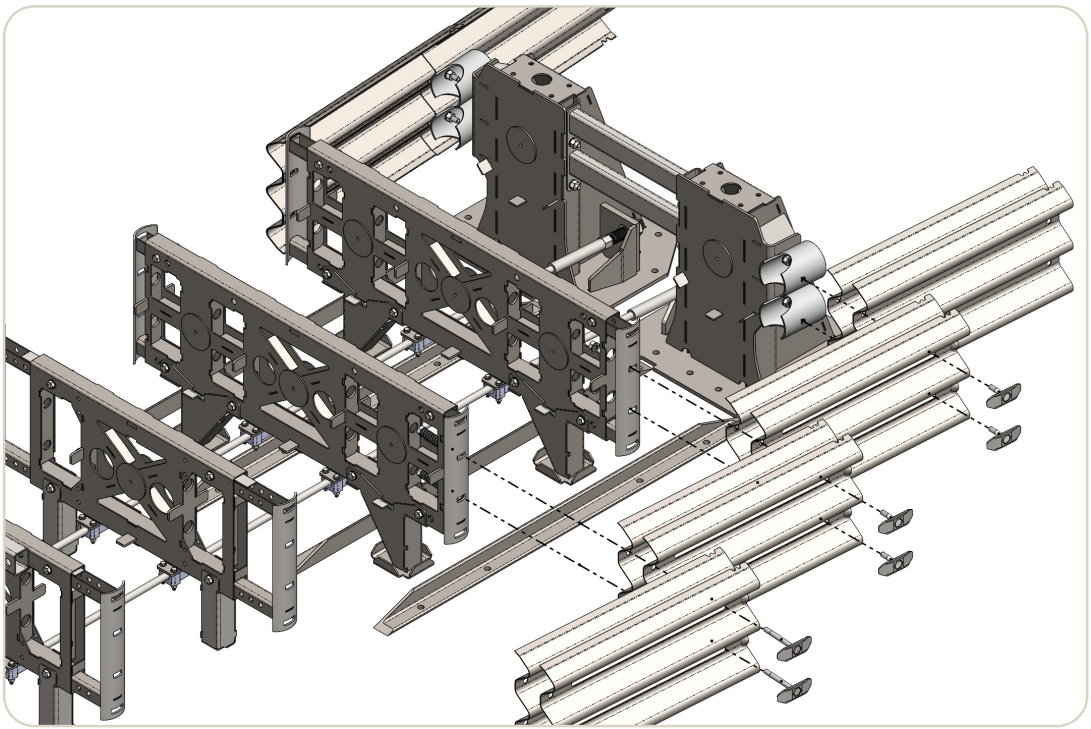
⚠ WARNING **Proceeding panel must overlap on the outside.**

5.1 Install the End Panels to the End Panel Mounts with two Sliding Panels lapped on the outside oriented with the "M" notch downstream. Fasteners should be fully tightened and bottomed out on threads.



5.2 Install the proceeding Sliding Panels using the provided Slider Kit and Slider as shown. **Hand tighten only.**

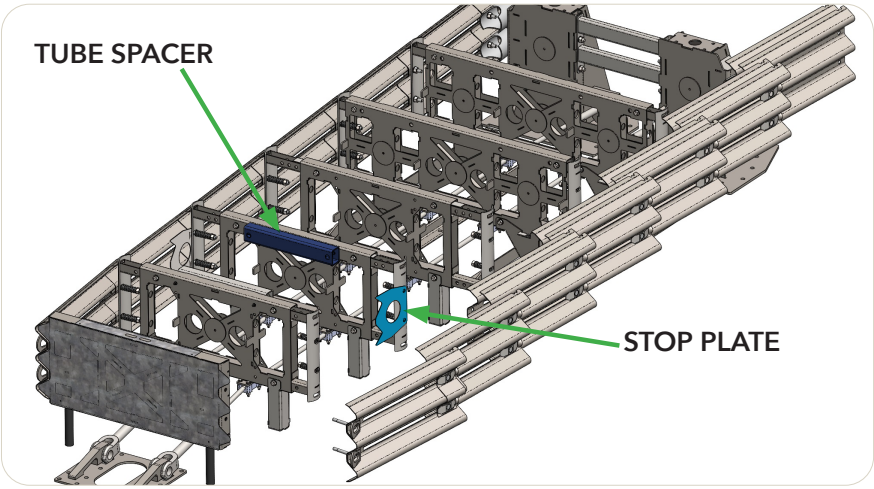
NOTE: Ensure that the "M" notch is positioned downstream on the panel.



5.3 Progress to the next upstream Bulkhead and overlap the slots with the corresponding holes on the previous panel and secure with the Slider Kit.

5.4 Pull Midsupport upstream to ensure panel slots are fully extended.

NOTE: Back 5 sets of panels are double stacked. See assembly drawing for details.



5.5 Continue adding panels on both sides of system until all panels are installed.

NOTE: Add stop plates (item 28) to 2nd Bulkhead behind front support, this is to be installed under the panels see assembly drawing for details.

5.6 Install Tube Spacers (item 16) to 1st and 2nd Bulkhead behind front support.

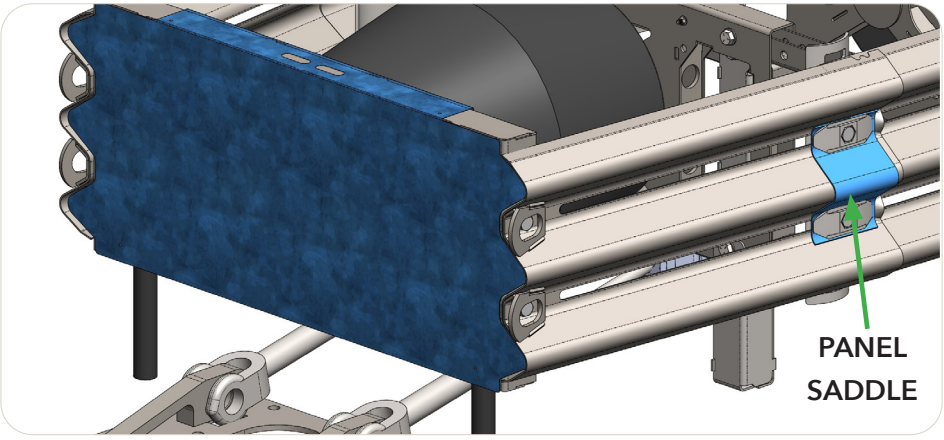
Step 6 - Panel Saddle and Front Support Installation

6.1 Add legs to front support.

6.2 When installing the last Bulkhead, install a Saddle on top of the Sliding Panel (as shown below), on both sides of the system.

6.3 Once the last Bulkhead has been installed, install the Front Support by attaching the two Sliding Panels using the Tow Hooks and associated hardware.

NOTE: Tow Hooks have the crescent end facing upstream.



6.4 Attach Delineation Bracket to the Front Support as shown.

PRO-TIP : Hook the top of the bracket over the Front Support frame first, then push the bracket flush to the Front Support face and align the delineation slot with the Front Support holes.

6.5 Secure delineation panel with the self-tapping screws provided using the pre-drilled holes as a template.

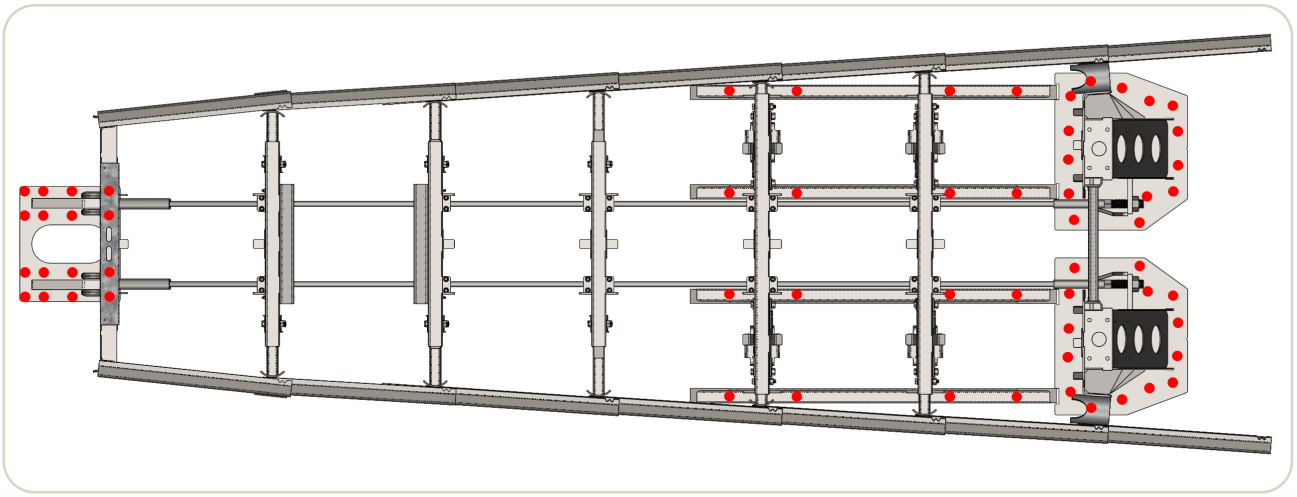
6.6 Apply delineation decal as per Federal, State, or Local Standards.

Step 7 - Torque Anchors

⚠ WARNING **Torque anchors to proper specifications after epoxy has cured.**

7.1 Ensure that the epoxy has cured per manufacturer's instruction. See epoxy cartridge.

7.2 Torque anchors to 45 ft-lbs (160 N-m).



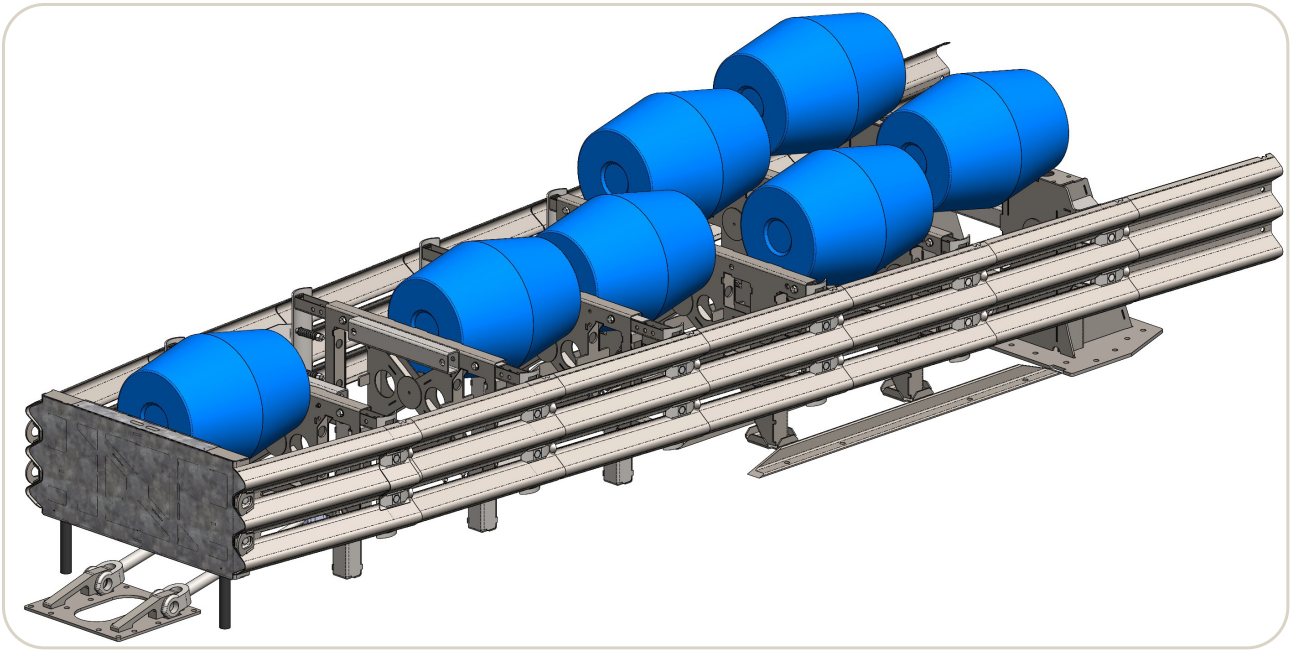
Step 8 - Install Energy Absorbing Cartridges

⚠ WARNING **EACs must be seated fully onto the tabs in each bay and in the correct orientation.**

8.1 Drop in Energy Absorbing Cartridges (EACs) (item 6) into each bay.

8.2 Ensure that the two venting holes are facing towards the backstop.

8.3 Ensure that the text "THIS SIDE UP" on cartridges is facing upward.

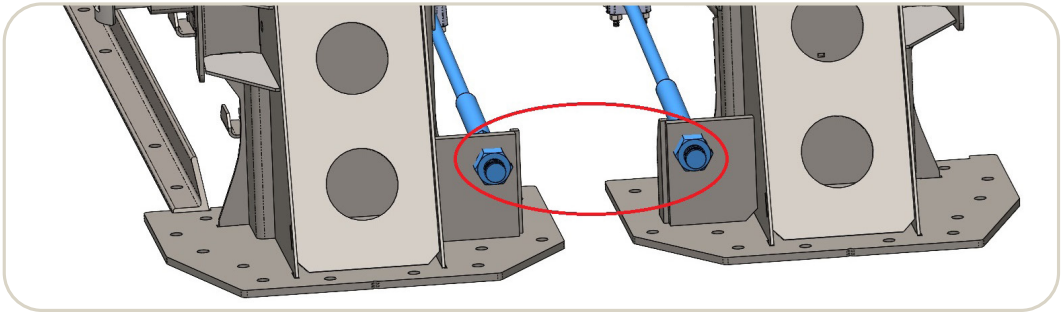


Step 9 - Torque Cables

DANGER **TORQUE CABLES TO PROPER SPECIFICATIONS.**

9.1 Ensure that the Cable Guides are fully seated and the clevis end of Cable Assemblies are secured to the Front Cable Anchor.

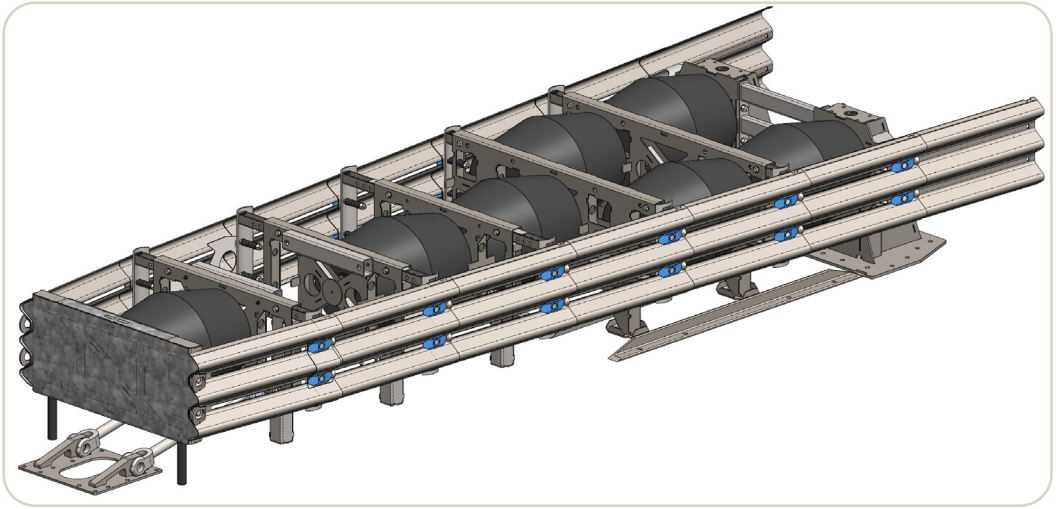
9.2 Use the provided socket and cable swage key (or pipe wrench of adequate size) to prevent Cable Assembly from spinning while tightening nut. Torque each Cable Assembly to 500 ft-lbs (680 N-m).

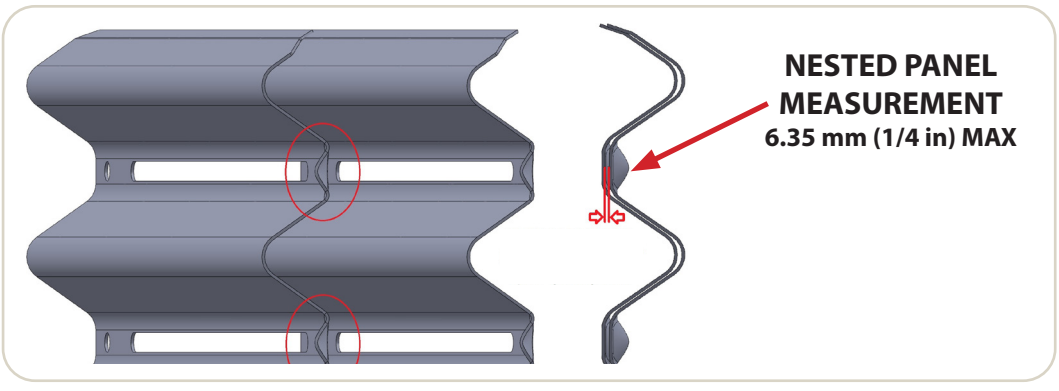


Step 10 - Tighten Slider Bolts

DANGER **PANELS MUST BE FULLY NESTED AND SLIDER BOLTS TIGHTENED TO ENSURE PROPER FUNCTION OF PANELS.**

10.1 Tighten the Slider bolts on all Bulkheads. There is no torque requirement for the Slider bolts. Ensure panels are fully nested, and the nut is bottomed out on the bolt threads.





Install Transition

Install any needed transitions per approved drawing.

Inspector Checklist

Confirm all items in the checklist have been properly completed and hardware is tightened.

Concrete Installation Checklist

INSPECTION		
DATE	BY	ITEM
		Delineation Bracket is attached to Front Support.
		Ensure Panel saddle is installed.
		Tow Hooks are installed with crescent end facing upstream.
		Deflection Limiters are installed and spaced per drawing.
		Cable Guides are seated flush on Bulkhead Assemblies.
		Cable Guide Torque 30 ft-lbf (48 N-m).
		Ensure double panels are added to last 5 panel locations.
		Sliding Panel lapping with "M" notch downstream side towards backstop.
		Sliding Panels must overlap the preceding downstream panel on outside.
		Slider bolts are tightened to the ends of the threads.
		End Panel Mounts are parallel to the end panels with "U" cut out facing upstream.
		End Panel Mount torque spec. 70 ft-lbf (95 N-m).
		Cables are torqued to 500ft-lbf (680 N-m). No visible sagging.
		EACs are seated correctly on tabs.
		Text on the EACs are facing upward, two vent holes facing towards backstop.
		Anchor bolts torque to 45 ft-lbs (60 N-m)
Inspector signature:		Date:

Maintenance Inspection

Crash cushions, like all roadside safety hardware, require inspection to ensure they are in acceptable working condition. Regular inspections of the TAU-M Wide™, 72" system is recommended and shall be made by the local highway authority.

Frequency of the inspections shall be made based on site conditions, traffic volumes, and crash history. Please follow the local guidelines for frequency of inspections to ensure adequate repairs are made to the system. Walk-up inspections are recommended at least twice a year. The TAU-M Wide™, 72" system shall be inspected for damage after every impact.

Repairs shall be made accordingly using Lindsay Transportation Solutions components as specified in the product drawings.

Visual Drive-By Inspections {Recommended Frequency - Monthly)

Check for:

- System damage
- Misalignment of panels
- Missing components
- Damage from vandalism

Walk-Up Inspections (Recommended Frequency - Twice a Year)

Before performing walk-up inspections, ensure traffic control is deployed in accordance with local guidelines.

Check for:

- System damage
- Misalignment of panels
- Missing components
- Vandalism
- Sagging cables
- Clear and dispose of any debris in and around the system
- Frayed cable
- Loose hardware

After inspection is complete, ensure all items identified during the inspection process are corrected. The TAU-M Wide™, 72" system shall be returned to proper condition as outlined in the installation instructions.

Maintenance Inspection Checklist

WALK-UP INSPECTION	
ITEM	**COMMENT**
System Damage	
Misalignment of panels.	
Missing components.	
Vandalism.	
Sagging cables	
Clear and dispose of any debris in and around the system	
Frayed cable.	
Loose hardware.	
Inspector Signature:	Date:
Print Name:	Location:

Long-Term Storage

Store materials under cover in dry, well-ventilated conditions, away from door ways open to the environment.

Supplied epoxy has a storage and shelf life of 12 months. See epoxy container or manufacture website for storage details.

Provide adequate ventilation between stacked pieces. Elevate and separate articles stacked outdoors with Tube Spacers (poplar, ash, spruce).

Incline parts to allow for maximum drainage.

Avoid stacking material directly on soil or decaying vegetation.

For crated items, remove the lids to provide better ventilation and drying of the galvanized parts. Customers will need to remove kits packed in cardboard boxes from the crates and store them inside.

“THIS PAGE IS INTENTIONALLY LEFT BLANK”

Drawings, Transitions

There are multiple approved transition configurations for the TAU-M Wide™, 72" system including but not limited to those in the following pages. Single sided transitions are shown. Combinations of different transitions for the left and right side are allowed depending on the traffic configuration. For additional information or details for a specific application, contact Lindsay Transportation Solutions.

Transitions connecting to portable or temporary concrete barriers require the barrier to be anchored in place. See **Drawings** for additional details.

Placement and installation of the TAU-M Wide™, 72" system and transitions must be accomplished in accordance with the guidelines and recommendations set forth in the "AASHTO Road Side Design Guide" FHWA memorandum and other state and local standards.

Drawings

Transitions

Details for Rigid Hazards

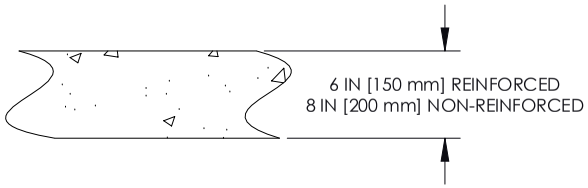
Details for Guardrail

FOUNDATION SPECIFICATIONS

THE TAU-M AND TAU-XR WIDE HAZARD EXTENSIONS HAVE BEEN DESIGNED TO ATTACH TO CONCRETE FOUNDATIONS.

ANCHORAGE DETAILS APPLY TO STANDARD ANCHORS - ¾" THREADED ROD AND ADHESIVE. ANCHOR LENGTHS AND EMBEDMENT DEPTHS MAY VARY FOR ALTERNATIVE ANCHORS.

CONCRETE PAD

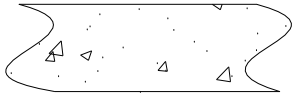


FOUNDATION:
MINIMUM 6 IN. [150 mm] REINFORCED CONCRETE PAD OR 8 IN. [200 mm] NON-REINFORCED CONCRETE PAD.

ANCHORAGE: 3/4 IN. [20 mm] GALVANIZED ANCHOR WITH 5 3/4 IN. [146 mm] MINIMUM EMBEDMENT

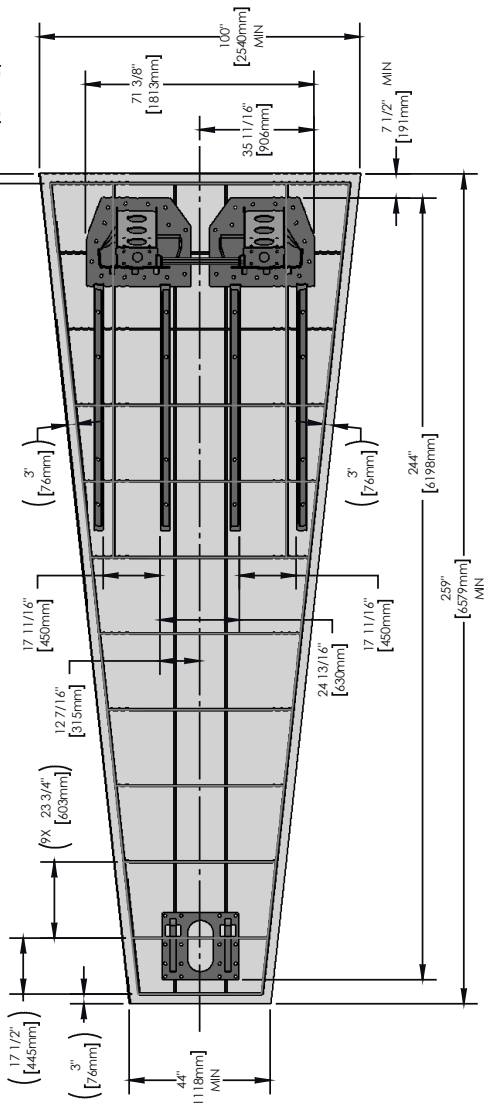
MATERIAL SPECIFICATIONS

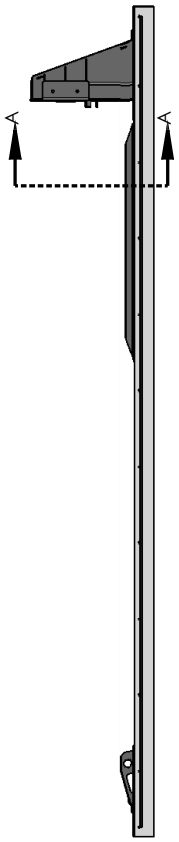
CONCRETE



STONE AGGREGATE CONCRETE MIX, 4,000 PSI [28 MPa] MINIMUM COMPRESSIVE STRENGTH (SAMPLING PER ASTM C31-84 OR ASTM C42-84A, TESTING PER ASTM C39-84)

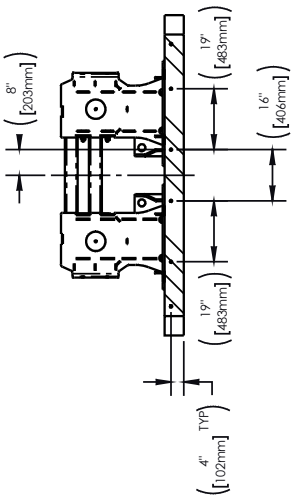
Drawings 1836528 - FOUNDATION DRAWING





NOTES: UNLESS OTHERWISE SPECIFIED.

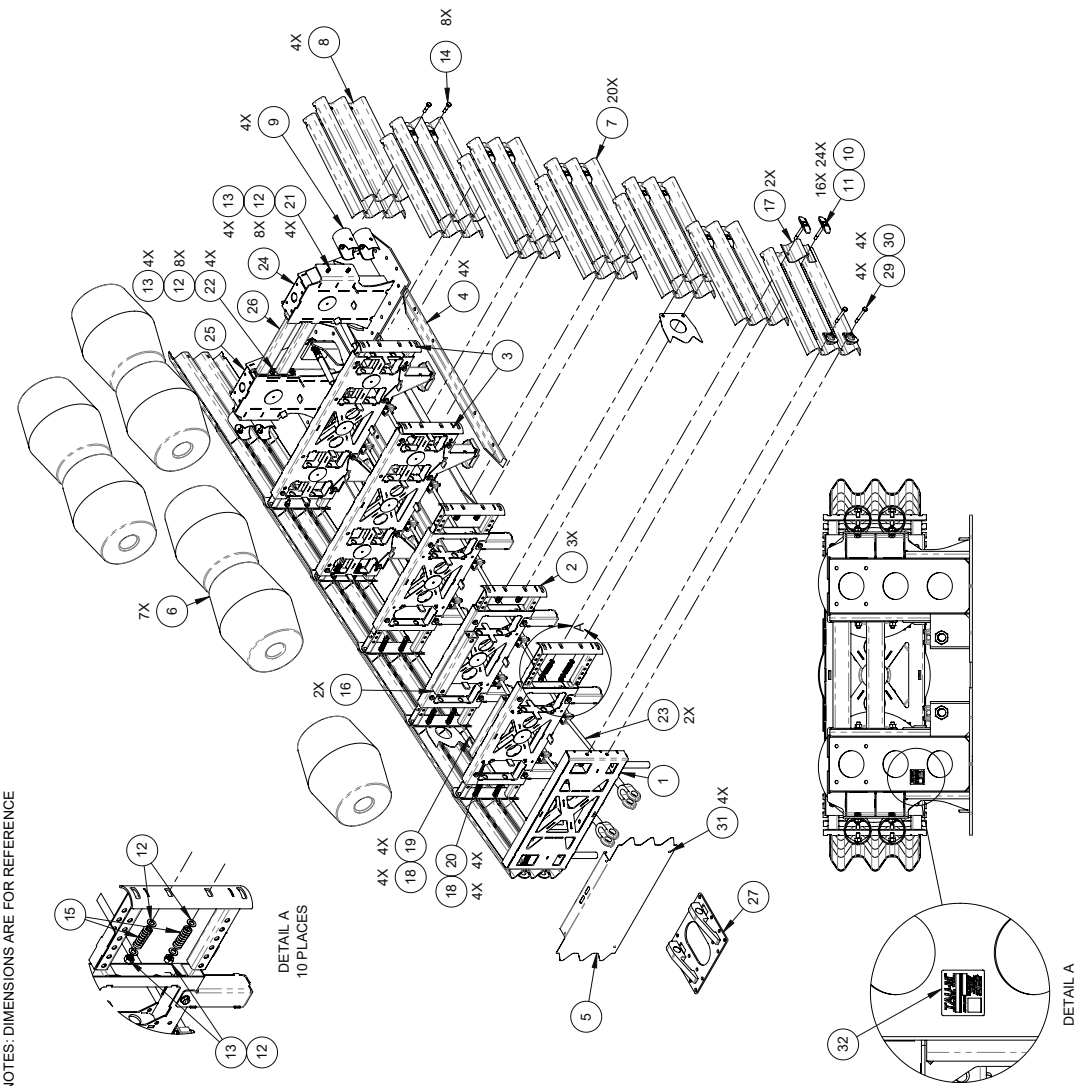
1. DIMENSIONS ARE IN INCHES. DIMENSIONS IN [] BRACKETS ARE IN mm.
2. FOUNDATION MATERIAL, SPECIFICATIONS, AND ANCHORAGE MUST BE IN ACCORDANCE WITH LTS FOUNDATION SPECIFICATIONS FOR CONRETE PAD. REFERENCE FOUNDATION SPECIFICATION DRAWING FOR DETAILS.
3. THE CONCRETE REINFORCEMENT SHOWN IS RECOMMENDED TO ENSURE ADEQUATE FOUNDATION INTEGRITY FOR PROPER IMPACT PERFORMANCE. VARIATIONS MAY BE REVIEWED AND DETERMINATIONS MADE AS TO EQUIVALENCE BY PROJECT ENGINEER.
4. ALL REBAR IS #5 [15mm]
5. FOUNDATION MUST BE PLACED IN AND SURROUNDED BY AASHTO SOIL, ASPHALT, OR CONCRETE.



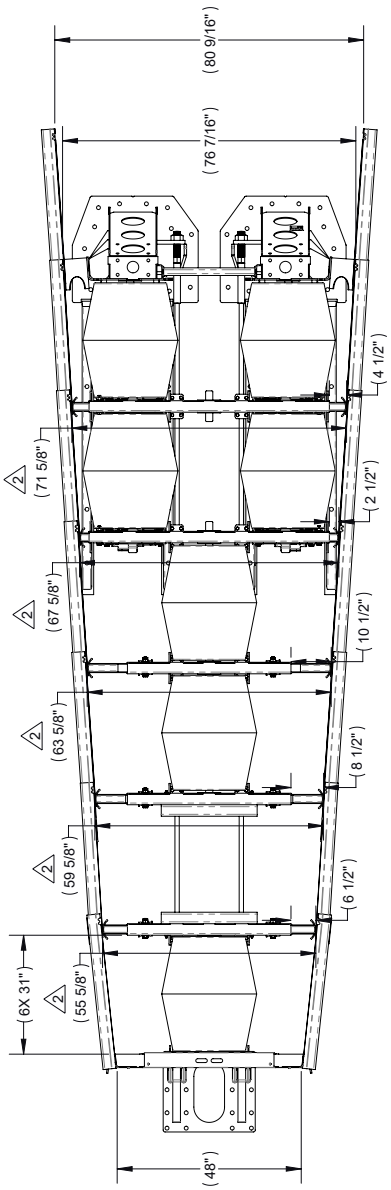
Drawings 1834751 - TAU-M Wide™, 72"

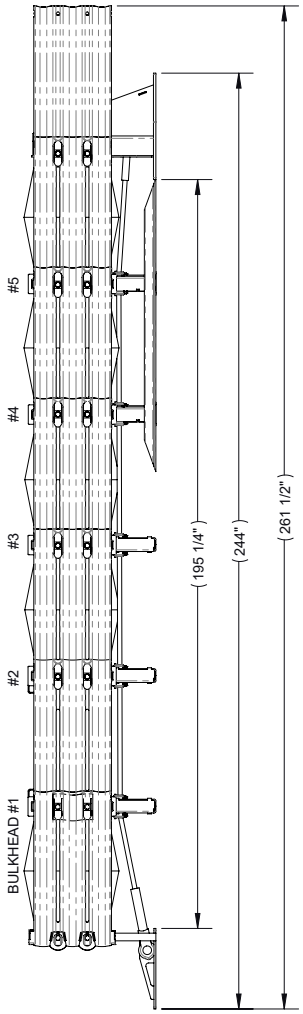
LINDSAY

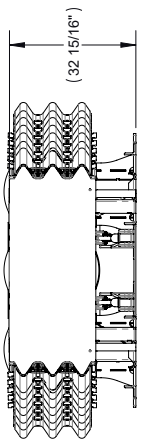
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
1	1834750	ASSEMBLY, FRONT 72" TAU-M WIDE	1	EA
2	1832189	ASSEMBLY, BULKHEAD A	3	EA
3	1832461	ASSEMBLY, BULKHEAD B	2	EA
4	1823938	ANGLE, DEFLECTION LIMITER TMW	4	EA
5	1834781	PANEL, TMW-A DELINEATION	1	EA
6	B010722	CARTRIDGE, TAU-II, TYPE B ENERGY ABSORBING	7	EA
7	BSI-1708019-00	SLIDING PANEL, GALVANIZED, TAU-M	20	EA
8	BSI-1708030-00	END PANEL, THRIE-BEAM, GALVANIZED, TAU-II-M	4	EA
9	1832477	END PANEL MOUNT, TAU-M WIDE	4	EA
10	1827166	SLIDER, PANEL	24	EA
11	1829086	BOLT, 3/4-10 X 6.75 A325 HEX	16	EA
12	2001790	Washer Flat 3/4 Std GEOMET	64	EA
13	2001789	NUT HN 3/4-10 GR5 GEOMET	36	EA
14	1834645	BOLT, 3/4-10 X3-1/4 A325 HEX	8	EA
15	1834754	SPRING, 4.00"L COMPRESSION	20	EA
16	1835155	TUBE, SPACER	2	EA
17	1823926	SADDLE, TAU-M WIDE PANEL	2	EA
18	1824115	WASHER, 3/8 SAE Gr8, FLAT	8	EA
19	1829369	SCREW, 3/8-16 X 4", HEX CAP	4	EA
20	2001809	NUT HN, 3/8-16, GR5	4	EA
21	2001795	C-SCR HH 3/4-10 X 2 GR5 GEOMET	4	EA
22	1823982	SCREW,3/4-10X3.5" Gr5 HEX CAP	4	EA
23	1832580	CABLE, 1-1/8" 220in	2	EA
24	1834271	WELDMENT, R BACKSTOP	1	EA
25	1834269	WELDMENT, L BACKSTOP	1	EA
26	1833859	WELDMENT BACKSTOP CROSS BRACE	1	EA
27	1835758	TMW,FRONT CABLE ANCHOR	1	EA
28	1834752	PLATE, STOP	2	EA
29	1834943	BOLT, 3/4-10 X 6 A325 HEX	4	EA
30	BSI-1711051-00	TOW HOOK, GALVANIZED, TAU-M	4	EA
31	1338470	SCREW,#10X3/4,HEX, SELF-DR	4	EA
32	1833987	LABEL, TAU-M WIDE ID	1	EA

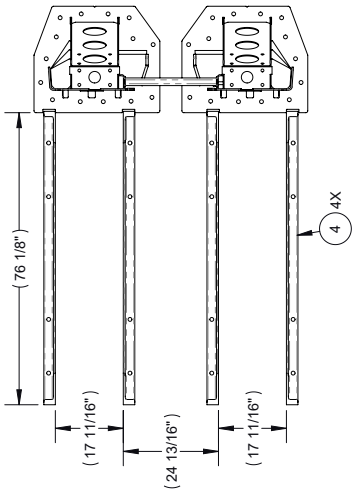


Drawings 1834751 - TAU-M Wide™, 72", Page 2









NOTES: DIMENSIONS ARE FOR REFERENCE

1. THE PANEL MOUNTS SHOULD EXTEND EQUAL LENGTHS ON THE LEFT AND RIGHT SIDES BEYOND THE ENDS OF THE BULKHEADS.

2. USE THE MEASUREMENTS SHOWN TO ENSURE PROPER SPACING AT EACH BULKHEAD AND ALIGN THE CLOSEST HOLE ON PANEL MOUNT TO HOLE IN BULKHEAD TO INSTALL HARDWARE.

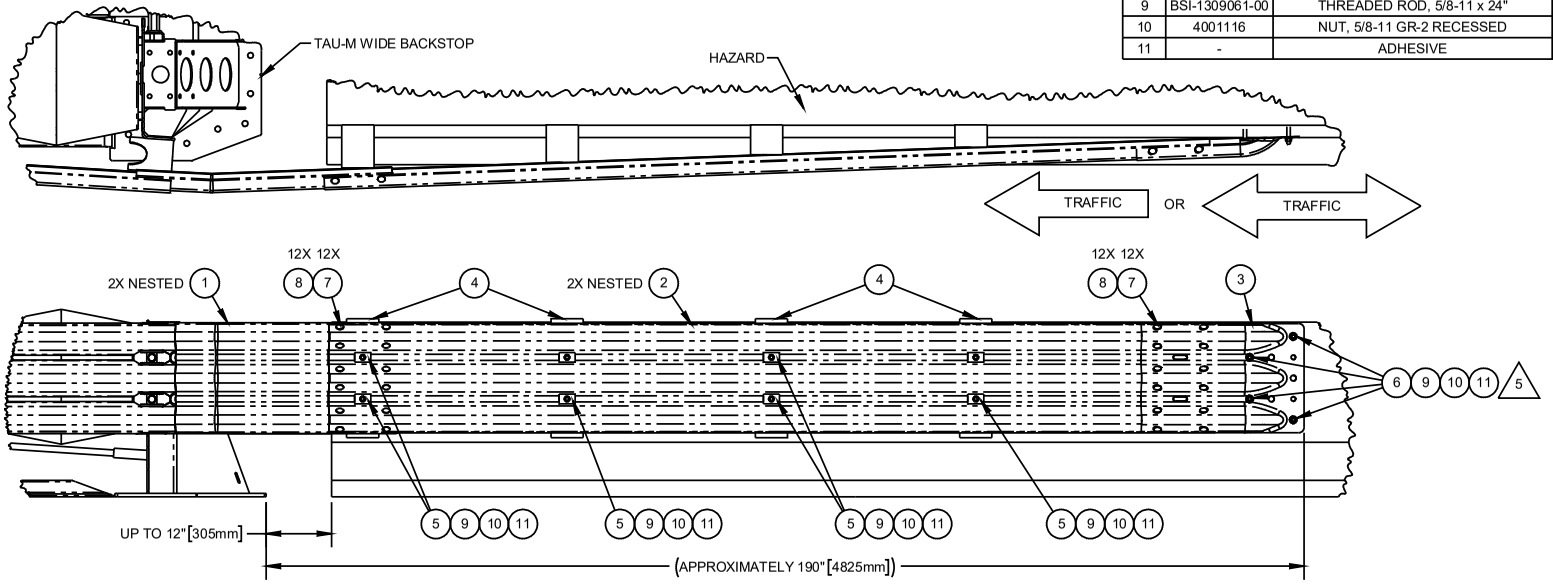
Transitions 1836440 - ANGLED TRANSITION END PANEL, FULL LENGTH THRIE BEAM

NOTES:

1. TAU-M WIDE SYSTEM TO BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.
2. TAU-M WIDE END PANEL REPLACED WITH ANGLED END PANELS. TAU-M WIDE SLIDING PANEL MUST OVERLAP THE ANGLED END PANELS REGARDLESS OF TRAFFIC DIRECTION IN ORDER TO ENSURE PROPER FUNCTION OF TAU-M WIDE SYSTEM. ANGLED END PANELS, THRIE BEAM PANELS, AND THRIE BEAM TERMINAL CONNECTOR TO BE LAPPED ACCORDING TO TRAFFIC DIRECTION.
3. ANGLED END PANELS, THRIE BEAM PANELS, AND THRIE BEAM TERMINAL CONNECTOR ARE SPLICED TOGETHER WITH STANDARD GUARDRAIL HARDWARE. SPLICE BOLT SLOTS IN OVERLAPPED PANELS MAY BE FIELD DRILLED AS NECESSARY FOR BOLT ALIGNMENT.
4. ANGLED END PANEL AND THRIE BEAM PANEL ARE CONNECTED TO HAZARD THROUGH BLOCKOUTS AND UTILIZE RECTANGULAR WASHERS PER AASHTO M180.
5. THRIE BEAM TERMINAL CONNECTOR ANCHORED TO HAZARD IN A MINIMUM OF 4 LOCATIONS RECOMMENDED AS SHOWN. ALTERNATIVE HOLES IN THRIE BEAM TERMINAL CONNECTOR MAY BE USED AS NECESSARY TO AVOID INTERNAL STRUCTURE OF HAZARD.
6. ALTERNATIVE MECHANICAL OR CHEMICALLY BONDED ANCHORS THAT MEET OR EXCEED 10170LBF [45.24KN] DESIGN STRENGTH IN TENSION AND 5288LBF [23.52KN] DESIGN STRENGTH IN SHEAR MAY BE USED.
7. BLOCKOUTS TO BE FIELD TRIMMED OR BUILT UP AS NECESSARY. BLOCKOUTS MAY BE OMITTED WHERE THERE IS MINIMAL GAP BETWEEN TRANSITION PANELS AND HAZARD.
8. APPLIES TO VERTICAL, SAFETY SHAPE, AND SINGLE SLOPE HAZARD PROFILES. TRANSITIONS CONNECTING TO PORTABLE OR TEMPORARY CONCRETE BARRIERS REQUIRE THE BARRIER TO BE ANCHORED IN PLACE. SEE ANCHORING DRAWINGS FOR ADDITIONAL DETAILS.

LINDSAY				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
1	1821932	END PANEL ANGLED, SPLICE	2	EA
2	1830067	THRIE BEAM, 12'-6", 4SPA, 12GA	2	EA
3	4002049	THRIE-BEAM TERMINAL CONNECTOR	1	EA
4	4002050	THRIE BEAM WOOD BLOCK OUT 6x8	4	EA
5	4002051	GRDRAIL WSHR Rect AASHTO FWR03	8	EA
6	2001636	WASHER, 5/8 F436 STRUCT	4	EA
7	4001115	GUARDRAIL BOLT 5/8-11X 1 1/4	24	EA
8	4001116	NUT, 5/8-11 GR-2 RECESSED	24	EA

ANCHORS - NOT INCLUDED (SEE NOTE 6)				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
9	BSI-1309061-00	THREADED ROD, 5/8-11 x 24"	12	EA
10	4001116	NUT, 5/8-11 GR-2 RECESSED	12	EA
11	-	ADHESIVE	-	-



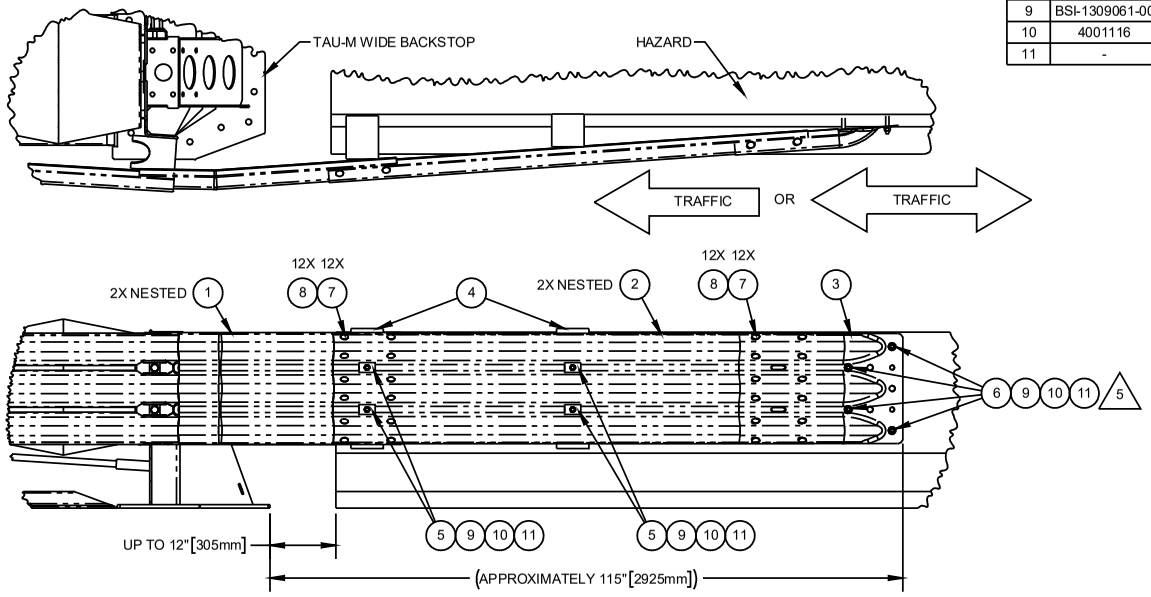
RIGHT SIDE TRANSITION SHOWN
MAY ALSO BE APPLIED TO LEFT SIDE

NOTES:

1. TAU-M WIDE SYSTEM TO BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.
2. TAU-M WIDE END PANEL REPLACED WITH ANGLED END PANELS. TAU-M WIDE SLIDING PANEL MUST OVERLAP THE ANGLED END PANELS REGARDLESS OF TRAFFIC DIRECTION IN ORDER TO ENSURE PROPER FUNCTION OF TAU-M WIDE SYSTEM. ANGLED END PANELS, THRIE BEAM PANELS, AND THRIE BEAM TERMINAL CONNECTOR TO BE LAPPED ACCORDING TO TRAFFIC DIRECTION.
3. ANGLED END PANELS, THRIE BEAM PANELS, AND THRIE BEAM TERMINAL CONNECTOR ARE SPLICED TOGETHER WITH STANDARD GUARDRAIL HARDWARE. SPLICE BOLT SLOTS IN OVERLAPPED PANELS MAY BE FIELD DRILLED AS NECESSARY FOR BOLT ALIGNMENT.
4. ANGLED END PANEL AND THRIE BEAM PANEL ARE CONNECTED TO HAZARD THROUGH BLOCKOUTS AND UTILIZE RECTANGULAR WASHERS PER AASHTO M180.
5. THRIE BEAM TERMINAL CONNECTOR ANCHORED TO HAZARD IN A MINIMUM OF 4 LOCATIONS RECOMMENDED AS SHOWN. ALTERNATIVE HOLES IN THRIE BEAM TERMINAL CONNECTOR MAY BE USED AS NECESSARY TO AVOID INTERNAL STRUCTURE OF HAZARD.
6. ALTERNATIVE MECHANICAL OR CHEMICALLY BONDED ANCHORS THAT MEET OR EXCEED 10170LBF [45.24KN] DESIGN STRENGTH IN TENSION AND 5288LBF [23.52KN] DESIGN STRENGTH IN SHEAR MAY BE USED.
7. BLOCKOUTS TO BE FIELD TRIMMED OR BUILT UP AS NECESSARY. BLOCKOUTS MAY BE OMITTED WHERE THERE IS MINIMAL GAP BETWEEN TRANSITION PANELS AND HAZARD.
8. APPLIES TO VERTICAL, SAFETY SHAPE, AND SINGLE SLOPE HAZARD PROFILES. TRANSITIONS CONNECTING TO PORTABLE OR TEMPORARY CONCRETE BARRIERS REQUIRE THE BARRIER TO BE ANCHORED IN PLACE. SEE ANCHORING DRAWINGS FOR ADDITIONAL DETAILS.

LINDSAY				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
1	1821932	END PANEL ANGLED, SPLICE	2	EA
2	1830066	THRIE BEAM, HALF, 2SPA, 12GA	2	EA
3	4002049	THRIE-BEAM TERMINAL CONNECTOR	1	EA
4	4002050	THRIE BEAM WOOD BLOCK OUT 6x8	2	EA
5	4002051	GRDRAIL WSHR Rect AASHTO FWR03	4	EA
6	2001636	WASHER, 5/8 F436 STRUCT	4	EA
7	4001115	GUARDRAIL BOLT 5/8-11X 1 1/4	24	EA
8	4001116	NUT, 5/8-11 GR-2 RECESSED	24	EA

ANCHORS - NOT INCLUDED (SEE NOTE 6)				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
9	BSI-1309061-00	THREADED ROD, 5/8-11 x 24"	8	EA
10	4001116	NUT, 5/8-11 GR-2 RECESSED	8	EA
11	-	ADHESIVE	-	-



RIGHT SIDE TRANSITION SHOWN
MAY ALSO BE APPLIED TO LEFT SIDE

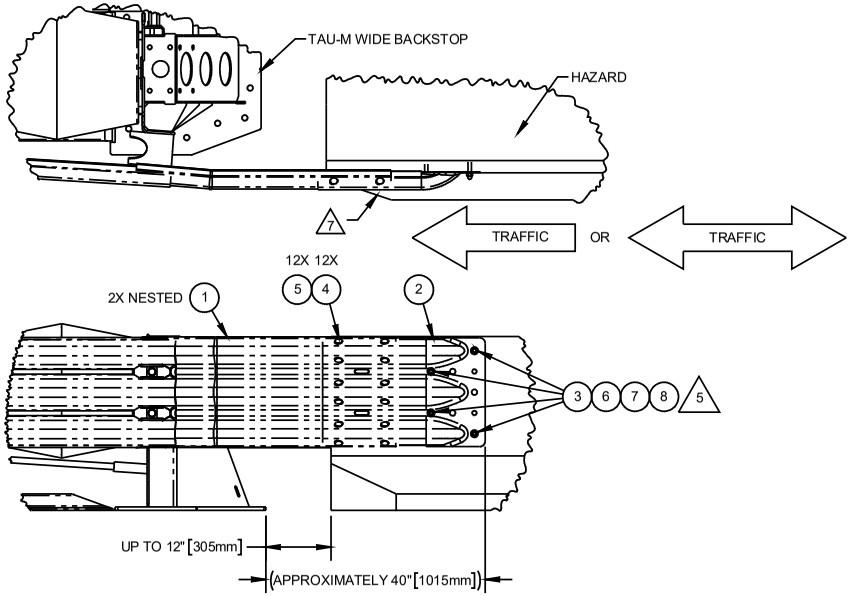
Transitions 1836473 - ANGLED TRANSITION END PANEL, END SHOE

NOTES:

1. TAU-M WIDE SYSTEM TO BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.
2. TAU-M WIDE END PANEL REPLACED WITH ANGLED END PANELS. TAU-M WIDE SLIDING PANEL MUST OVERLAP THE ANGLED END PANELS REGARDLESS OF TRAFFIC DIRECTION IN ORDER TO ENSURE PROPER FUNCTION OF TAU-M WIDE SYSTEM. ANGLED END PANELS AND THRIE BEAM TERMINAL CONNECTOR TO BE LAPPED ACCORDING TO TRAFFIC DIRECTION.
3. ANGLED END PANELS AND THRIE BEAM TERMINAL CONNECTOR ARE SPLICED TOGETHER WITH STANDARD GUARDRAIL HARDWARE. SPLICE BOLT SLOTS IN OVERLAPPED PANELS MAY BE FIELD DRILLED AS NECESSARY FOR BOLT ALIGNMENT.
4. THRIE BEAM TERMINAL CONNECTOR ANCHORED TO HAZARD IN A MINIMUM OF 4 LOCATIONS RECOMMENDED AS SHOWN. ALTERNATIVE HOLES IN THRIE BEAM TERMINAL CONNECTOR MAY BE USED AS NECESSARY TO AVOID INTERNAL STRUCTURE OF HAZARD.
5. ALTERNATIVE MECHANICAL OR CHEMICALLY BONDED ANCHORS THAT MEET OR EXCEED 10170LBF [45.24KN] DESIGN STRENGTH IN TENSION AND 5288LBF [23.52KN] DESIGN STRENGTH IN SHEAR MAY BE USED.
6. APPLIES TO VERTICAL, SAFETY SHAPE, AND SINGLE SLOPE HAZARD PROFILES. TRANSITIONS CONNECTING TO PORTABLE OR TEMPORARY CONCRETE BARRIERS REQUIRE THE BARRIER TO BE ANCHORED IN PLACE. SEE ANCHORING DRAWINGS FOR ADDITIONAL DETAILS.
7. IF APPROACH TRAFFIC IS PRESENT WITH THIS TRANSITION, TOE OF SAFETY SHAPE OR SINGLE SLOPE HAZARD PROFILES MUST BE CHAMFERED. CHAMFER IS NOT REQUIRED IF ONLY REVERSE TRAFFIC IS PRESENT.

LINDSAY				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
1	1821932	END PANEL ANGLED, SPLICE	2	EA
2	4002049	THRIE-BEAM TERMINAL CONNECTOR	1	EA
3	2001636	WASHER, 5/8 F436 STRUCT	4	EA
4	4001115	GUARDRAIL BOLT 5/8-11X 1 1/4	12	EA
5	4001116	NUT, 5/8-11 GR-2 RECESSED	12	EA

ANCHORS - NOT INCLUDED (SEE NOTE 5)				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
6	BSI-1309061-00	THREADED ROD, 5/8-11 x 24"	8	EA
7	4001116	NUT, 5/8-11 GR-2 RECESSED	8	EA
8	-	ADHESIVE	-	-

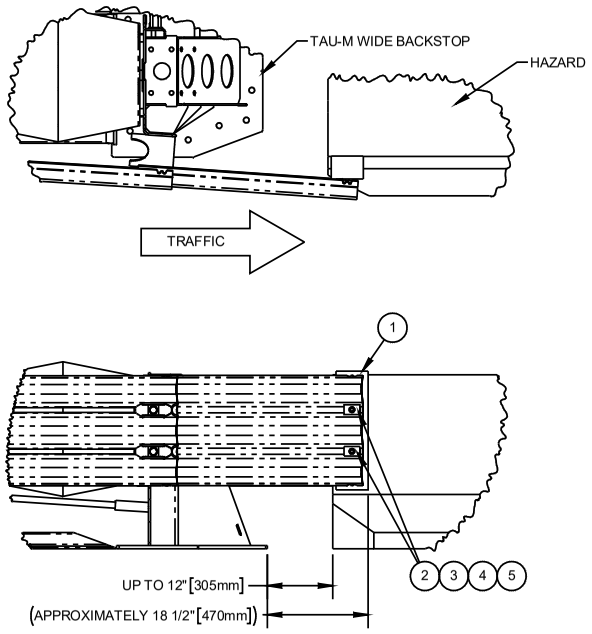


RIGHT SIDE TRANSITION SHOWN
MAY ALSO BE APPLIED TO LEFT SIDE

NOTES:
1. TAU-M WIDE SYSTEM TO BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.
2. NESTED TAU-M WIDE END PANELS ARE CONNECTED TO HAZARD THROUGH BLOCKOUTS AND UTILIZE RECTANGULAR WASHERS PER AASHTO M180.
3. ALTERNATIVE MECHANICAL OR CHEMICALLY BONDED ANCHORS THAT MEET OR EXCEED 10170LBF [45.24KN] DESIGN STRENGTH IN TENSION AND 5288LBF [23.52KN] DESIGN STRENGTH IN SHEAR MAY BE USED.
4. BLOCKOUT TO BE FIELD TRIMMED OR BUILT UP AS NECESSARY.
5. APPLIES TO VERTICAL, SAFETY SHAPE, AND SINGLE SLOPE HAZARD PROFILES. TRANSITIONS CONNECTING TO PORTABLE OR TEMPORARY CONCRETE BARRIERS REQUIRE THE BARRIER TO BE ANCHORED IN PLACE. SEE ANCHORING DRAWINGS FOR ADDITIONAL DETAILS.

LINDSAY				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
1	4002050	THRIE BEAM WOOD BLOCK OUT 6x8	1	EA
2	4002051	GRDRAIL WSHR Rect AASHTO FWR03	2	EA

ANCHORS - NOT INCLUDED (SEE NOTE 3)				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
3	BSI-1309061-00	THREADED ROD, 5/8-11 x 24"	2	EA
4	4001116	NUT, 5/8-11 GR-2 RECESSED	2	EA
5	-	ADHESIVE	-	-



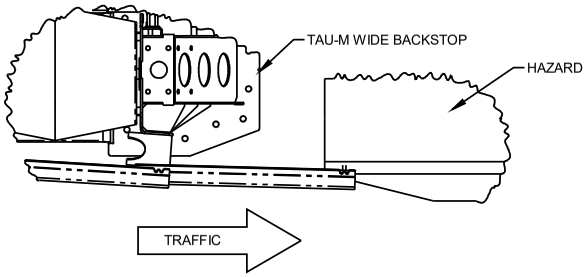
RIGHT SIDE TRANSITION SHOWN
MAY ALSO BE APPLIED TO LEFT SIDE

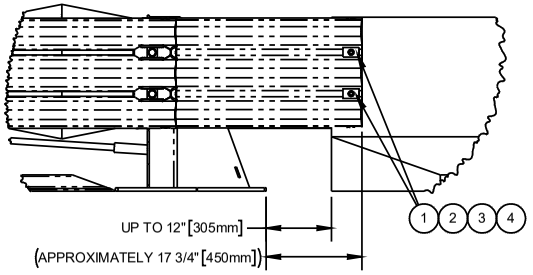
Transitions 1836529 - TRANSITION DETAILS FOR RIGID HAZARDS

NOTES:
1. TAU-M WIDE SYSTEM TO BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.
2. NESTED TAU-M WIDE END PANELS ARE CONNECTED TO HAZARD AND UTILIZE RECTANGULAR WASHERS PER AASHTO M180.
3. ALTERNATIVE MECHANICAL OR CHEMICALLY BONDED ANCHORS THAT MEET OR EXCEED 10170LBF [45.24KN] DESIGN STRENGTH IN TENSION AND 5288LBF [23.52KN] DESIGN STRENGTH IN SHEAR MAY BE USED.
4. APPLIES TO VERTICAL AND SAFETY SHAPE HAZARD PROFILES. TRANSITIONS CONNECTING TO PORTABLE OR TEMPORARY CONCRETE BARRIERS REQUIRE THE BARRIER TO BE ANCHORED IN PLACE. SEE ANCHORING DRAWINGS FOR ADDITIONAL DETAILS.

LINDSAY				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
1	4002051	GRDRAIL WSHR Rect AASHTO FWR03	2	EA

ANCHORS - NOT INCLUDED (SEE NOTE 3)				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
2	BSI-1309061-00	THREADED ROD, 5/8-11 x 24"	2	EA
3	4001116	NUT, 5/8-11 GR-2 RECESSED	2	EA
4	-	ADHESIVE	-	-

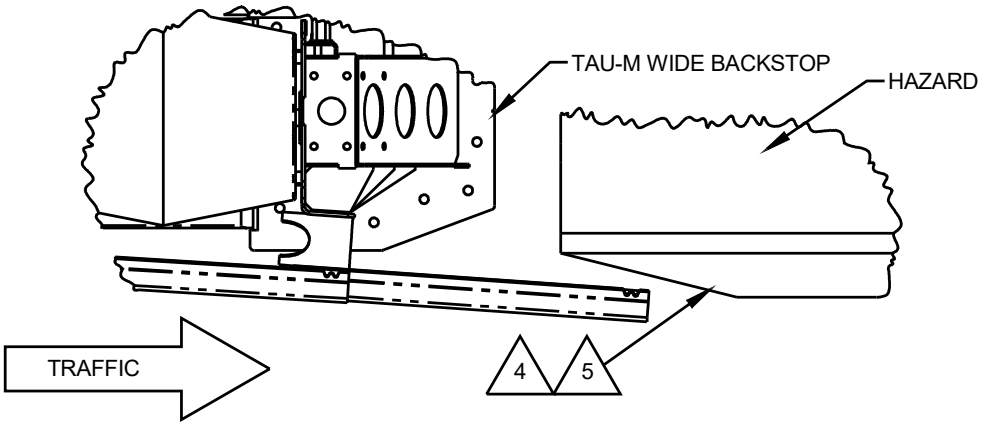


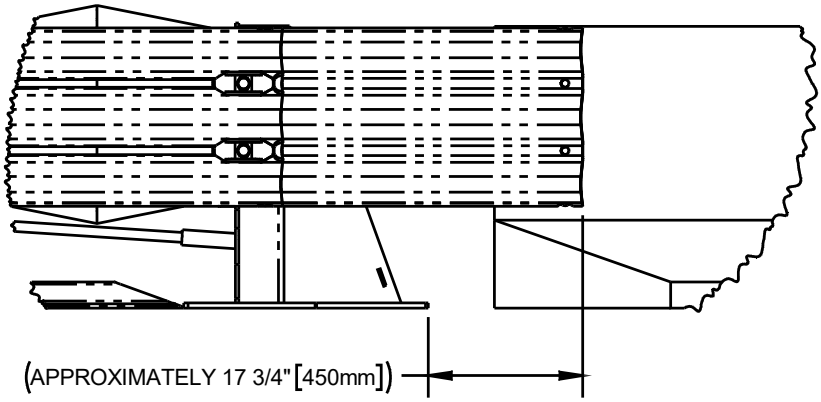


RIGHT SIDE TRANSITION SHOWN
MAY ALSO BE APPLIED TO LEFT SIDE

Transitions 1836534 - NO TRANSITION, UNANCHORED STANDARD END PANEL

NOTES:
1. TAU-M WIDE SYSTEM TO BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.
2. NESTED TAU-M WIDE END PANELS ARE NOT REQUIRED TO CONNECT TO HAZARD.
3. APPLIES TO VERTICAL, SAFETY SHAPE, AND SINGLE SLOPE HAZARD PROFILES.
4. TOE OF SAFETY SHAPE OR SINGLE SLOPE HAZARD PROFILES MUST BE CHAMFERED IF THE TOE EXTENDS BEYOND THE SYSTEM WIDTH.
5. VERTICAL HAZARD PROFILES RECOMMENDED TO CHAMFER CORNER IF THE CORNER IS WITHIN 4" OF THE SYSTEM WIDTH.

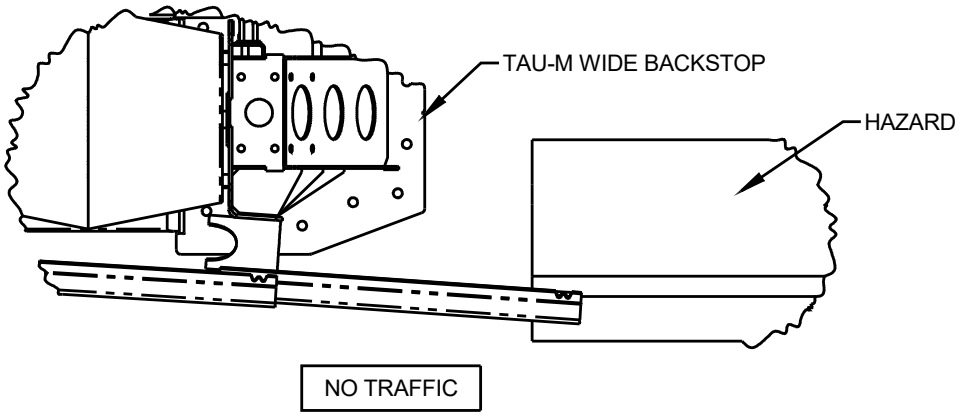


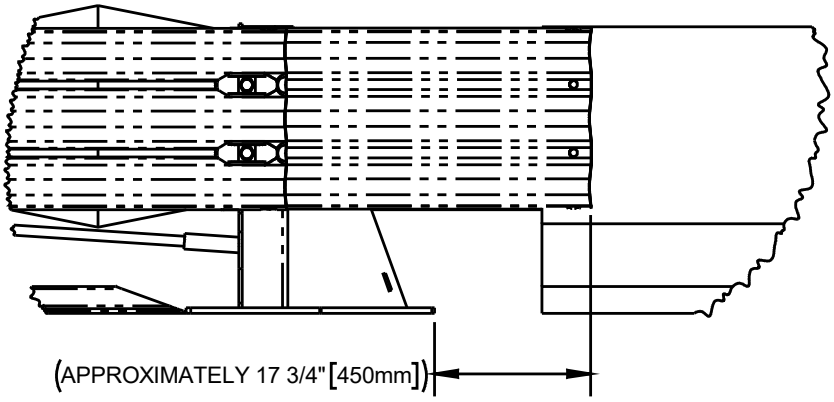


RIGHT SIDE TRANSITION SHOWN
MAY ALSO BE APPLIED TO LEFT SIDE

Transitions 1836567 - NO TRANSITION, NON-TRAFFIC SIDE

NOTES:
1. TAU-M WIDE SYSTEM TO BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.
2. NESTED TAU-M WIDE END PANELS ARE NOT REQUIRED TO BE CONNECTED TO HAZARD
3. APPLIES TO VERTICAL, SAFETY SHAPE, AND SINGLE SLOPE HAZARD PROFILES.



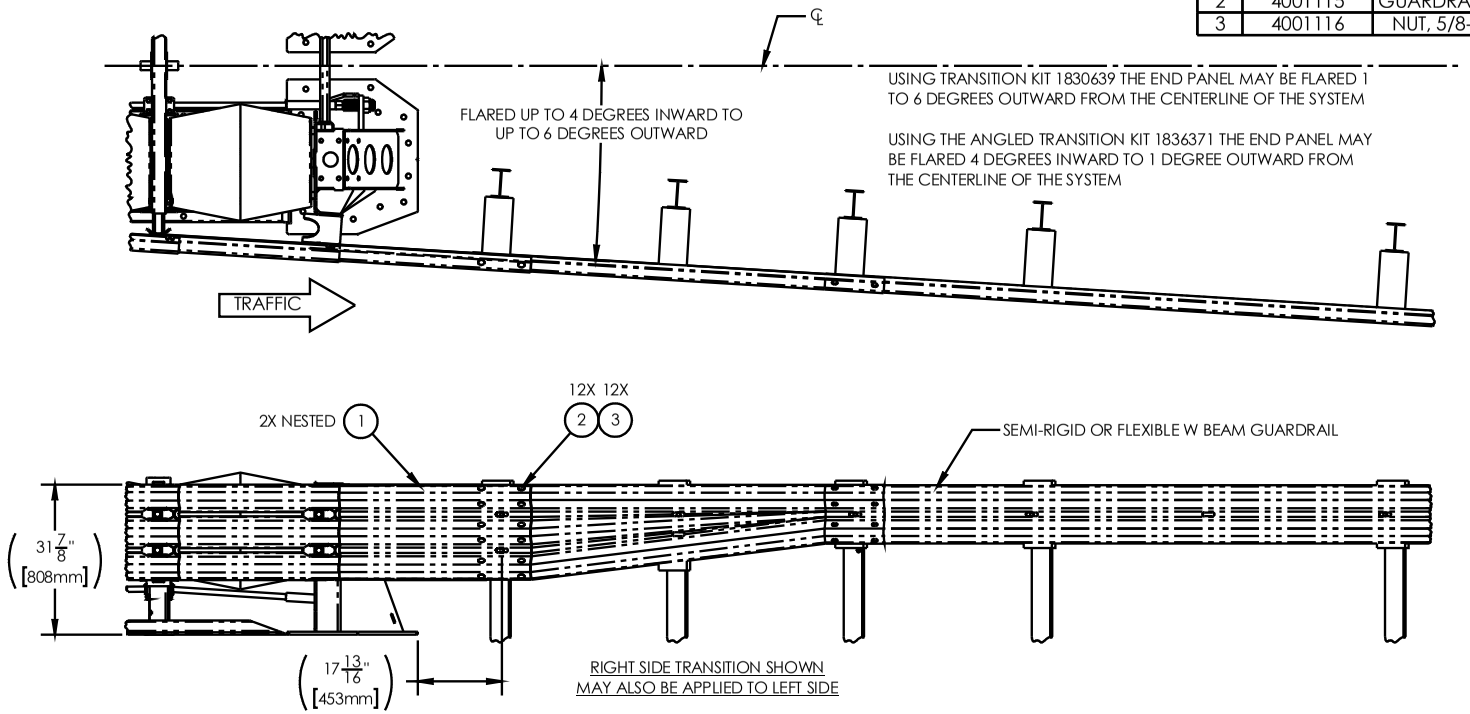


RIGHT SIDE TRANSITION SHOWN
MAY ALSO BE APPLIED TO LEFT SIDE

NOTES:
1. TAU-M WIDE SYSTEM TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
2. TAU-M WIDE END PANEL REPLACED WITH TRANSITION END PANELS. TAU-M WIDE SLIDING PANEL MUST OVERLAP THE TRANSITION END PANELS REGARDLESS OF TRAFFIC DIRECTION IN ORDER TO ENSURE PROPER FUNCTION OF TAU-M WIDE SYSTEM. TRANSITION END PANELS AND W-THRIE BEAM TRANSITION SECTION TO BE LAPPED ACCORDING TO TRAFFIC DIRECTION.
3. FOR GUARDRAIL TRANSITIONS, THE TAU-M WIDE SYSTEM SHOULD BE CONSIDERED RIGID.
4. W-THRIE BEAM TRANSITION SECTION AND W-BEAM GUARDRAIL INCLUDING POSTS AND BLOCKOUTS ARE SHOWN FOR REFERENCE AND MUST BE PER LOCAL STANDARDS.
5. BLOCKOUTS MAY BE BUILT UP OR TRIMMED AS NECESSARY TO TRANSITION TO ALLOWABLE TAU-M WIDE SYSTEM WIDTH.
6. GUARDRAIL MAY BE FLARED AFTER TAU-M WIDE END PANEL BASED ON LOCAL STANDARDS

1830639				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
1	1830055	THRIE BEAM, END TRANS, 12GA	2	EA
2	4001115	GUARDRAIL BOLT 5/8-11X 1 1/4	12	EA
3	4001116	NUT, 5/8-11 GR-2 RECESSED	12	EA

1836371				
ITEM	PART NUMBER	DESCRIPTION	QTY.	UNIT
1	1821932	END PANEL ANGLED, SPLICE	2	EA
2	4001115	GUARDRAIL BOLT 5/8-11X 1 1/4	12	EA
3	4001116	NUT, 5/8-11 GR-2 RECESSED	12	EA

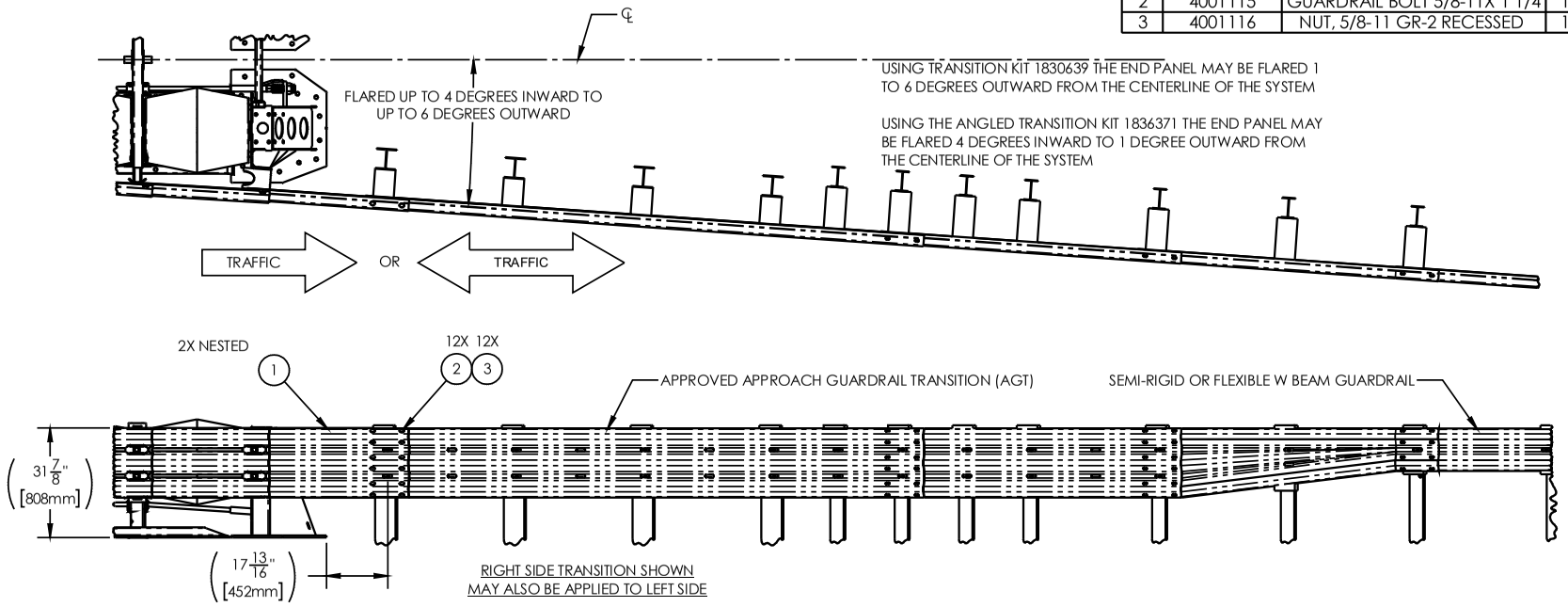


Transitions 1836399 - TAU-M Wide™, 72" STIFF TRANS W-BEAM

NOTES:
1. TAU-M WIDE SYSTEM TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
2. TAU-M WIDE END PANEL REPLACED WITH TRANSITION END PANELS. TAU-M WIDE SLIDING PANEL MUST OVERLAP THE TRANSITION END PANELS REGARDLESS OF TRAFFIC DIRECTION IN ORDER TO ENSURE PROPER FUNCTION OF TAU-M WIDE SYSTEM. TRANSITION END PANELS AND W-THRIE BEAM TRANSITION SECTION TO BE LAPPED ACCORDING TO TRAFFIC DIRECTION.
3. FOR GUARDRAIL TRANSITIONS, THE TAU-M WIDE SYSTEM SHOULD BE CONSIDERED RIGID.
4. APPROACH GUARDRAIL TRANSITION AND W-BEAM GUARDRAIL INCLUDING POSTS AND BLOCKOUTS ARE SHOWN FOR REFERENCE AND MUST BE PER LOCAL STANDARDS.
5. BLOCKOUTS MAY BE BUILT UP OR TRIMMED AS NECESSARY TO TRANSITION TO ALLOWABLE TAU-M WIDE SYSTEM WIDTH.
6. GUARDRAIL MAY BE FLARED AFTER TAU-M WIDE END PANEL BASED ON LOCAL STANDARDS

1830639				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
1	1830055	THRIE BEAM, END TRANS, 12GA	2	EA
2	4001115	GUARDRAIL BOLT 5/8-11X 1 1/4	12	EA
3	4001116	NUT, 5/8-11 GR-2 RECESSED	12	EA

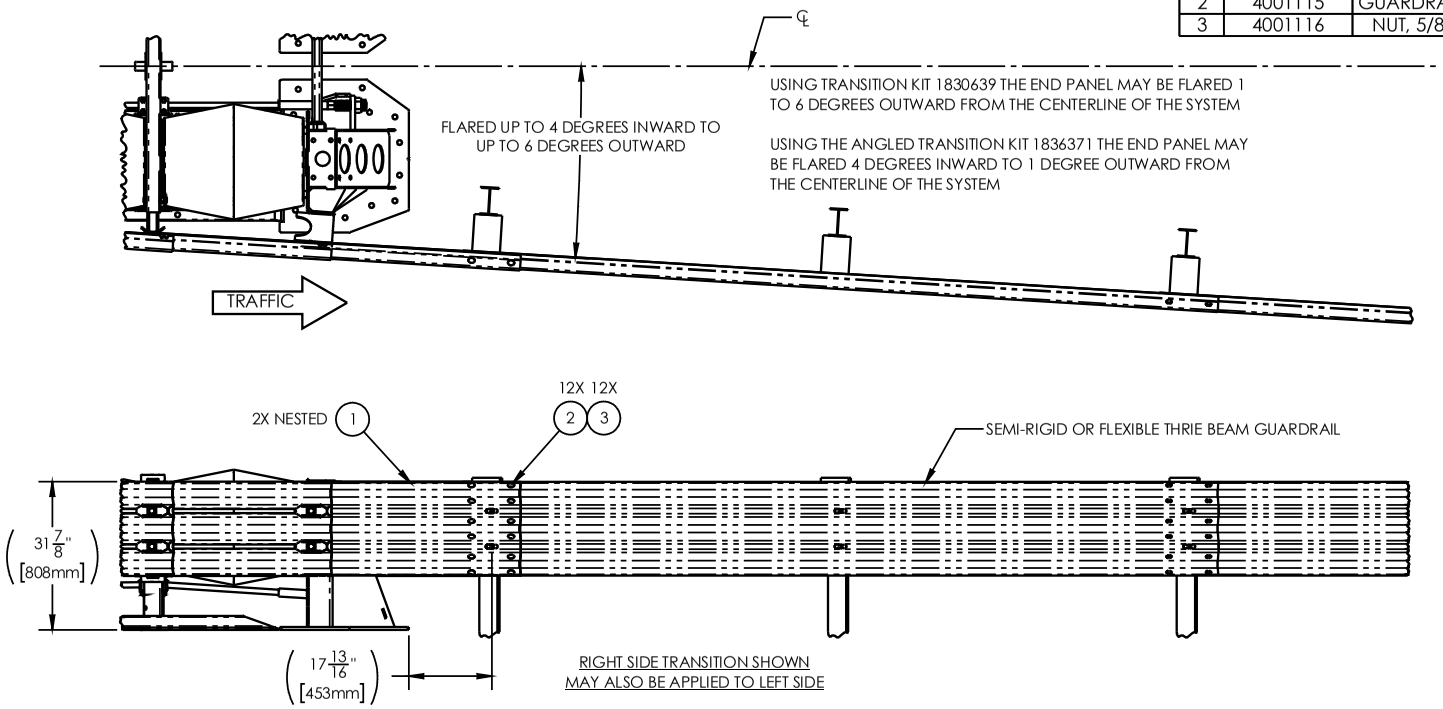
1836371				
ITEM	PART NUMBER	DESCRIPTION	QTY.	UNIT
1	1821932	END PANEL ANGLED, SPLICE	2	EA
2	4001115	GUARDRAIL BOLT 5/8-11X 1 1/4	12	EA
3	4001116	NUT, 5/8-11 GR-2 RECESSED	12	EA



NOTES:
1. TAU-M WIDE SYSTEM TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
2. TAU-M WIDE END PANEL REPLACED WITH TRANSITION END PANELS. TAU-M WIDE SLIDING PANEL MUST OVERLAP THE TRANSITION END PANELS REGARDLESS OF TRAFFIC DIRECTION IN ORDER TO ENSURE PROPER FUNCTION OF TAU-M WIDE SYSTEM. TRANSITION END PANELS AND THRIE BEAM TRANSITION SECTION TO BE LAPPED ACCORDING TO TRAFFIC DIRECTION.
3. FOR GUARDRAIL TRANSITIONS, THE TAU-M WIDE SYSTEM SHOULD BE CONSIDERED RIGID.
4. THRIE-BEAM GUARDRAIL INCLUDING POSTS AND BLOCKOUTS ARE SHOWN FOR REFERENCE AND MUST BE PER LOCAL STANDARDS.
5. BLOCKOUTS MAY BE BUILT UP OR TRIMMED AS NECESSARY TO TRANSITION TO ALLOWABLE TAU-M WIDE SYSTEM WIDTH.
6. GUARDRAIL MAY BE FLARED AFTER TAU-M WIDE END PANEL BASED ON LOCAL STANDARDS

1830639				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
1	1830055	THRIE BEAM, END TRANS, 12GA	2	EA
2	4001115	GUARDRAIL BOLT 5/8-11X 1 1/4	12	EA
3	4001116	NUT, 5/8-11 GR-2 RECESSED	12	EA

1836371				
ITEM	PART NUMBER	DESCRIPTION	QTY.	UNIT
1	1821932	END PANEL ANGLED, SPLICE	2	EA
2	4001115	GUARDRAIL BOLT 5/8-11X 1 1/4	12	EA
3	4001116	NUT, 5/8-11 GR-2 RECESSED	12	EA

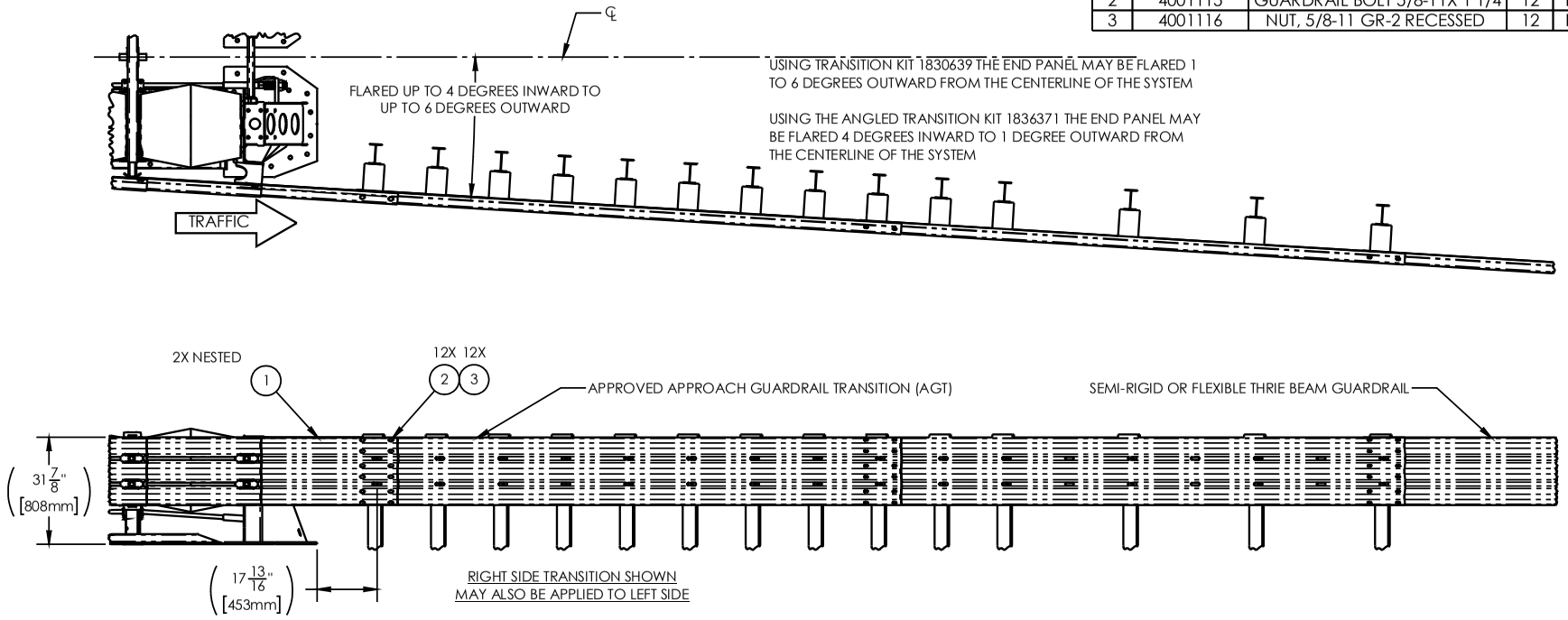


Transitions 1836409 - TAU-M Wide™, 72" STIFF TRANS THRIE

NOTES:
1. TAU-M WIDE SYSTEM TO BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
2. TAU-M WIDE END PANEL REPLACED WITH TRANSITION END PANELS. TAU-M WIDE SLIDING PANEL MUST OVERLAP THE TRANSITION END PANELS REGARDLESS OF TRAFFIC DIRECTION IN ORDER TO ENSURE PROPER FUNCTION OF TAU-M WIDE SYSTEM. TRANSITION END PANELS AND THRIE BEAM TRANSITION SECTION TO BE LAPPED ACCORDING TO TRAFFIC DIRECTION.
3. FOR GUARDRAIL TRANSITIONS, THE TAU-M WIDE SYSTEM SHOULD BE CONSIDERED RIGID.
4. APPROACH GUARDRAIL TRANSITION AND THRIE BEAM GUARDRAIL INCLUDING POSTS AND BLOCKOUTS ARE SHOWN FOR REFERENCE AND MUST BE PER LOCAL STANDARDS.
5. BLOCKOUTS MAY BE BUILT UP OR TRIMMED AS NECESSARY TO TRANSITION TO ALLOWABLE TAU-M WIDE SYSTEM WIDTH.
6. GUARDRAIL MAY BE FLARED AFTER TAU-M WIDE END PANEL BASED ON LOCAL STANDARDS

1830639				
ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
1	1830055	THRIE BEAM, END TRANS, 12GA	2	EA
2	4001115	GUARDRAIL BOLT 5/8-11X 1 1/4	12	EA
3	4001116	NUT, 5/8-11 GR-2 RECESSED	12	EA

1836371				
ITEM	PART NUMBER	DESCRIPTION	QTY.	UNIT
1	1821932	END PANEL ANGLED, SPLICE	2	EA
2	4001115	GUARDRAIL BOLT 5/8-11X 1 1/4	12	EA
3	4001116	NUT, 5/8-11 GR-2 RECESSED	12	EA



Revisions

DATE	ECN	PUBLISHED ECN	REVISION	DESCRIPTION OF CHANGE
08/20/2025	63432	63432	A	New release

LINDSAY™

18135 Burke Street, Suite 100 | Omaha, NE 68022
+1 (402) 829-6800 | U.S. Toll Free: (888) 800-3691

lindsay.com

P/N 1836811 Rev A (ECN 63432)