



U.S. Department
of Transportation

Federal Highway
Administration

SEP 19 1990

400 Seventh St., S.W.
Washington, D.C. 20590

Refer to: HNG-14

Mr. Robert A. Sik
Vice President, Akron Foundry Company
2728 Wingate Avenue
P.O. Box 27028
Akron, Ohio 44319-0009

Dear Mr. Sik:

Thank you for your letter of August 29 to Mr. James H. Hatton requesting the Federal Highway Administration's (FHWA) acceptance of your chart summarizing our previous letters of acceptance for Akron Foundry cast aluminum transformer bases. Your facsimile message of September 12 transmitted a revised version of the chart which addressed our comments discussed by telephone. We agree that a chart such as this would greatly simplify the process of determining which of your hardware configurations have been accepted for use on Federal-aid highway projects.

Your company's chart indicates new part numbers for your aluminum transformer bases. The designations are simplified to avoid confusion with the bases accepted under the old 1975 American Association of State Highway and Transportation Officials (AASHTO) breakaway criteria. The "transformer base part number" now shows a sequential number (TB1, TB2, TB3) and the height of the base.

We find this chart (revised 9-12-90, copy enclosed) to be an accurate summary of FHWA's acceptances of the breakaway performance of the hardware listed.

We also take this opportunity to correct errors in each of our three acceptance letters to you dated August 6, 1990. In the first of these letters, the pole type for Test-15 (Feralux CS-370) was aluminum rather than steel. On the other two letters, the pole type indicated for Test-16 (Pole Lite Model F-1302 and Akron Foundry Number TB-AF-5-9) should also be changed to aluminum. On Enclosure II, to each of the three letters, the base bottom bolt circle diameter for Test-12 should be 17.25 inches instead of 15 inches.

Sincerely yours,

L. A. Staron
Chief, Federal-Aid and Design Division

Enclosure

Note to FHWA Field Offices:

The following caution labels and drawings relate to the breakaway hardware covered by FHWA/1985 AASHTO acceptance letters listed in the Akron Foundry chart dated 10-12-90. Also included are caution labels for hardware accepted under the 1975 AASHTO specifications.



AKRON FOUNDRY COMPANY

ALUMINUM TRANSFORMER BASES

1975 F.H.W.A. ACCEPTANCE

TRANSFORMER BASE PART NO.	MAX. BOTTOM B.C.	BOTTOM BOLT CIRCLE RANGE	MAX. POLE HGT. MAX. POLE WGT.	BASE HEIGHT	AASHTO SPECIFICATIONS	FHWA ACCEPTANCE	TOP BOLT CIRCLE RANGE	★ ULTIMATE TESTED STATIC LOAD (FT. LBS.) TESTED ON MAXIMUM DESIGNED TOP & BOTTOM BOLT CIRCLES ACROSS CORNERS WITH DOOR OPENING IN TENSION	OLD PART NUMBER
TB1-20"	15.00	15.00	51'-8" 867	20"	1975	4-16-82	11.0/13.0	47,000 FT. LBS. ★ ACTUAL TEST LOAD (NOT DESIGN LOAD)	TB1-AF 1315 I.W.
TB1-20" MODIFIED	15.00	10.5/12.0	51'-3" 628	20"	1975	1-13-84 8-29-85	" "	SEE NOTE NO. 1	TB1-AF MODIFIED I.W.
TB2-20"	12.00	12.00	42'-8" 620	20"	1975	3-1-85	10.0/12.0	40,000 FT. LBS. ★ ACTUAL TEST LOAD (NOT DESIGN LOAD)	TB2-AF 1012 I.W.
TB2-20"	UNDER 12.00	10.0/12.0	" "	20"	1975	8-2-85	" "	SEE NOTE NO. 1	TB2-AF 1012 I.W.
TB3-20"	17.25	17.25	51'-4" 762	20"	1975	3-13-86	13.0/15.0	65,000 FT. LBS. ★ ACTUAL TEST LOAD (NOT DESIGN LOAD)	TB3-AF 1517 I.W.
TB3-20"	UNDER 17.25	15.0/17.25	" "	20"	1975	3-13-86	" "	SEE NOTE NO. 1	TB3-AF 1517 I.W.

1985 F.H.W.A. ACCEPTANCE

TB1-17"	15.00	15.00	55'-5" 950	17"	1985	5-30-90	10.5/13.5	47,000 FT. LBS. ★ ACTUAL TEST LOAD (NOT DESIGN LOAD)	
TB1-17" MODIFIED	15.00	10.50	42'-0" 832	17"	1985	1-12-89	" "	SEE NOTE NO. 1	
TB2-17"	12.00	12.00	40'-10" 550	17"	1985	5-30-90	10.0/12.0	40,000 FT. LBS. ★ ACTUAL TEST LOAD (NOT DESIGN LOAD)	
TB2-17"	UNDER 12.00	10.0/12.0	" "	17"	1985	1-24-90	" "	SEE NOTE NO. 1	
TB3-17"	17.25	17.25	55'-5" 900	17"	1985	8-6-90	13.0/15.0	65,000 FT. LBS. ★ ACTUAL TEST LOAD (NOT DESIGN LOAD)	
TB3-17"	17.25	15.0	50'-0" 778	17"	1985	1-24-90	" "	SEE NOTE NO. 1	

NOTE NO. 1: MUST BE TESTED BY POLE MFG'S CONDITIONS TO FAILURE ON SPECIFIC COMBINATIONS OF TOP AND BOTTOM BOLT CIRCLES TO CUSTOMER REQUIREMENTS
 SEE CAUTION LABELS AFFIXED INSIDE WALL OPPOSITE DOOR OPENING FOR PROPER WASHER SIZES & MOUNTING INSTRUCTIONS. ALL BASES MUST BE SHIMMED LEVEL TO GROUND FOUNDATION THEN MOUNTING NUTS TORQUED TO 150 FT. LBS.

ALL BASES ARE 2 PC. WELDMENTS WITH INTERNALLY WELDED INSIDE CORNERS/MATERIAL 356 T6 IN CONFORMANCE TO ASTM B106-87 ALUMINUM ALLOY PERMANENT MOLD CASTINGS
 ALL BASES SUPPLIED WITH CAST ALUMINUM OR PLASTIC ACCESS DOOR WITH CUSTOMER SPECIFIED OPTIONAL SCREW TYPE.

★ ★ BOTH ALUMINUM AND PLASTIC DOORS SUPPLIED WITH OR WITHOUT STAINLESS STEEL HINGE. (SPECIFY "H" FOR HINGE REQUIREMENT AFTER PART NUMBER.
 OPTIMUM TESTED MAXIMUM CAPABILITIES OF EACH BASE CAN ONLY BE ACHIEVED WHEN BOTH TOP AND BOTTOM MAXIMUM BOLT CIRCLES ARE USED AS INDICATED WITH POLE BASE PLATES EQUAL TO SIZE AND CONTOUR OF EACH T-BASE. POLE PLATE THICKNESS TO BE SPECIFIED AND DETERMINED BY POLE MANUFACTURING DISTRIBUTOR.

CAUTION: DIFFERENT BOLT CENTER COMBINATIONS HAVE DIFFERENT MAXIMUM LOAD CAPABILITIES

★ ★ S.S. HINGES SUPPLIED ON PLASTIC DOOR FOR THE NEW 17" HIGH BASES ONLY

P. 3
SEP 13 '90 12:02 AKRON FOUNDRY CO 216 745-7999

TB1-17'

CAUTION:

1985 AASHTO

BEFORE INSTALLATION, USER SHOULD CONSULT WITH AUTHORIZED DISTRIBUTOR REGARDING USER'S PROPOSED APPLICATION, LOAD REQUIREMENTS AND INSTALLATION METHODS. FAILURES CAN RESULT FROM USER'S MISAPPLICATION OR IMPROPER INSTALLATION

TO APPROACH OPTIMUM STATIC LOADS, USE THE LARGEST POSSIBLE BOLT CIRCLES AND USE STEEL WASHER SIZES SPECIFIED BELOW:

FOR 15" DIA. BOTTOM GROUND BOLT CIRCLES:

USE 2 3/4 DIA. x 1/2 TK. WASHER

FOR ALL MOUNTINGS UNDER 15" DIA.

SEE SPECIAL MOUNTING INSTRUCTIONS

TORQUE GROUND MOUNTING NUTS TO 150 FT. LBS.

SHIM BASE LEVEL WHEN REQUIRED BEFORE TORQUING MOUNTING NUTS

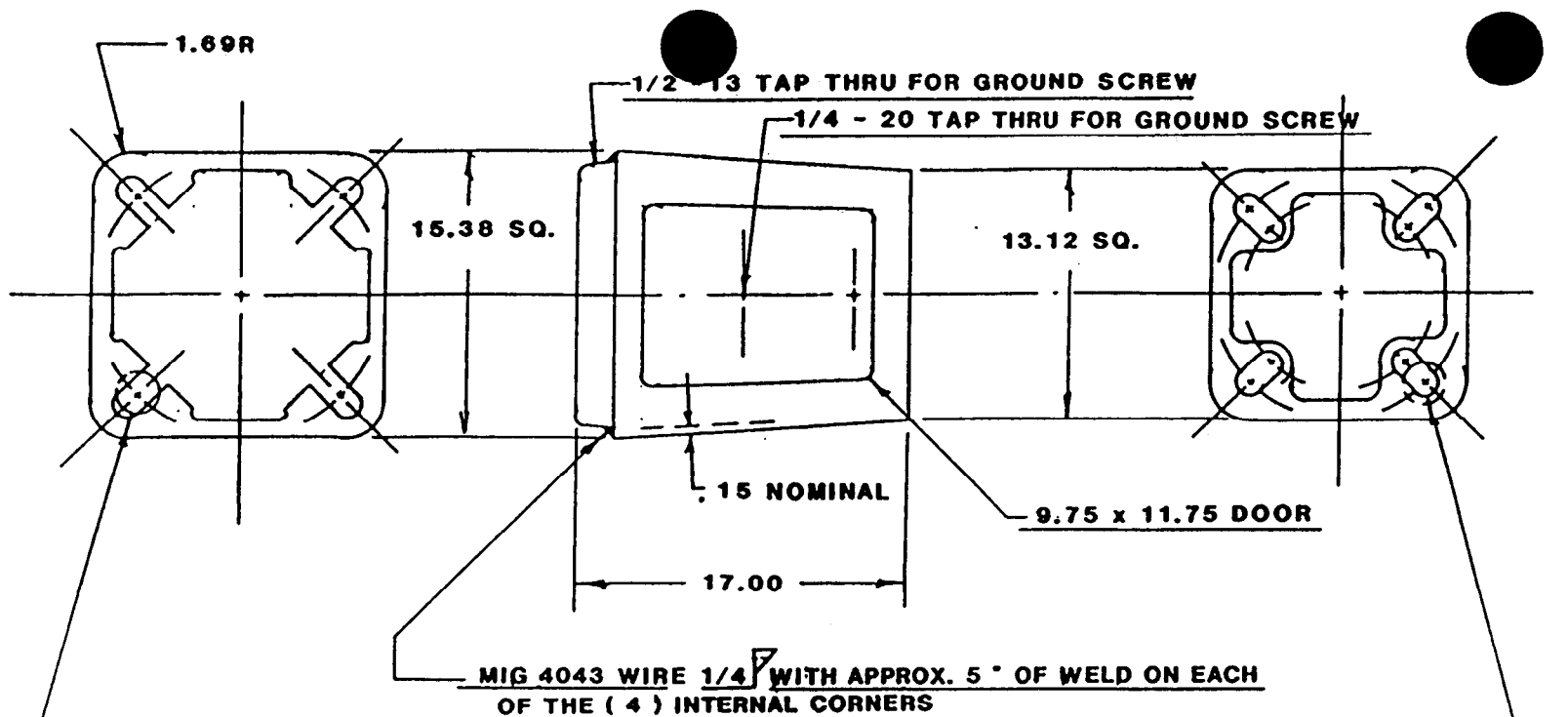
FOR 10 1/2' DIA. THRU 13 1/2" DIA. TOP BOLT CIRCLES:

USE 2 1/2 DIA. x 3/8 TK. OR 2 3/4 DIA. x 1/2 TK. WASHERS

BREAKAWAY BASE

**APPROVED BY F.H.W.A. TO 1985
AASHTO REQUIREMENTS**

1985



2 3/4 DIA. x 1 1/16 I.D. x 1/2 TK. STEEL WASHERS FOR 1" DIA. ANCHORAGE

OR 1 5/16 DIA. I.D. FOR 1 1/4 DIA. ANCHORAGE

4 PLS. EQ. SPACED ON 13.00 DIA. TO 15.00 DIA. BOTTOM GROUND B.C.

2 1/2 DIA. X 1 1/16 x 3/8 TK. OR 2 3/4 DIA. x 1 1/16 x 1/2 TK. STEEL WASHERS

4 PLS. EQ. SPACED ON 10.50 DIA. THRU 13.500 DIA. B.C.

DOOR SUPPLIED/BLANK OR LOGO IN ALUMINUM OR PLASTIC WITH OR WITHOUT HINGE

ST'D 1/4 -20 S.S.HEX. SCREW OR VANDAL SCREW TO FIT YOUR SPECIFICATIONS

ALL WASHERS TO BE ZINC MECHANICAL COATED PER ASTM B 695 - 85 CLASS 50

356 T-6 ALUMINUM ALLOY / S.S. WHEELABRATED FINISH CHEMICAL AND PHY. CERTS TO BE SUPPLIED WITH EACH SHIPMENT

ADHESIVE BREAKAWAY AND CAUTION LABELS TO APPEAR
ON INSIDE WALL OPPOSITE DOOR OPENING

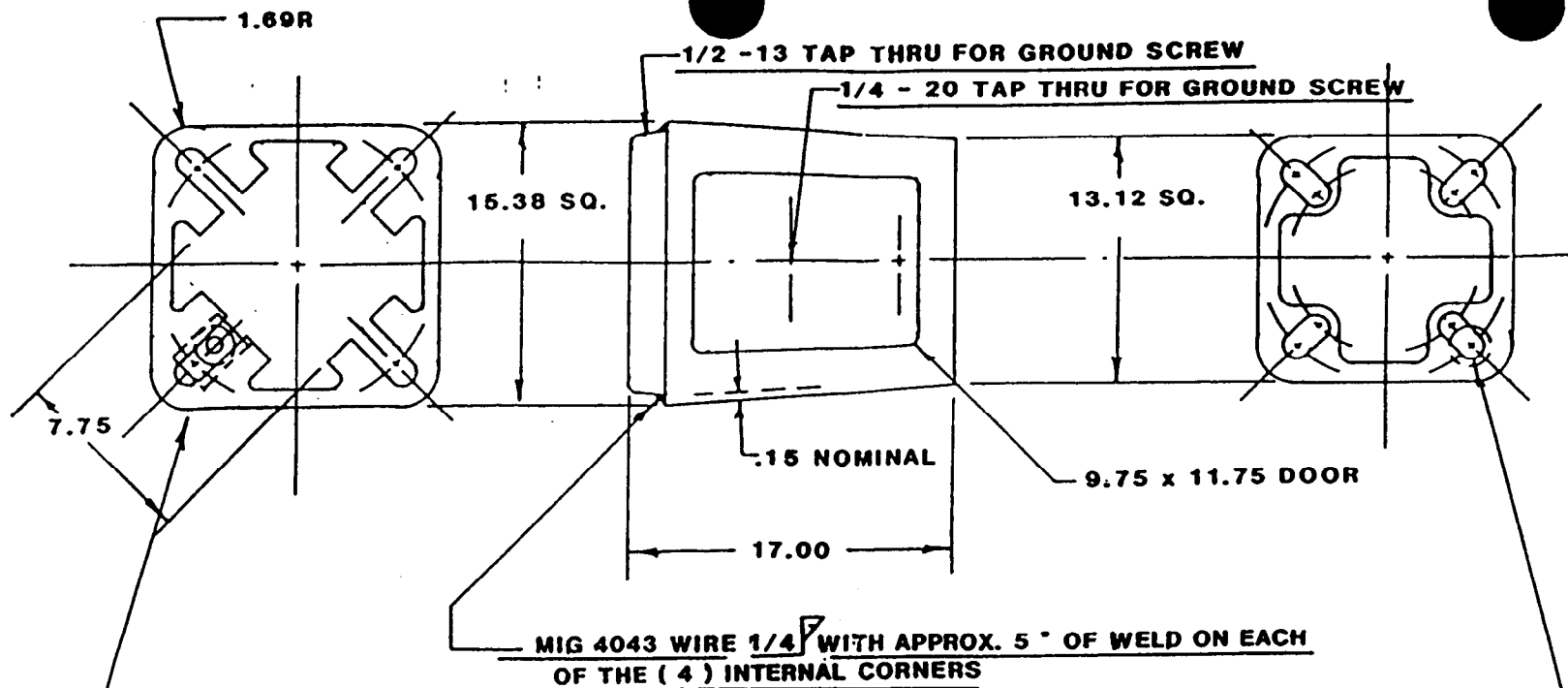
AKRON FOUNDRY CO.

1985 AASHTO T-BASE

1-25-88

TB1-17"

MATERIAL MELTED AND MANUFACTURED IN THE USA. CASTINGS PRODUCED IN THE USA.



2 1/2 DIA. x 1 1/16 I.D. x 3/8 TK. STEEL WASHERS ON TOP OF 5/8 x 2 3/4 x 4 1/4
RECTANGULAR STEEL WASHERS 4 PLS. EQ. SPACED ON 10.50 DIA. THRU 12.94 DIA.
BOTTOM GROUND MOUNT B.C. "SEE SPECIAL MOUNTING INSTRUCTIONS" TB1 - AF MODIFIED -17 I.W.

2 1/2 DIA. x 1 1/16 I.D. x 3/8 TK. OR 2 3/4 DIA. x 1 1/16 TK. x 1/2 TK. STEEL WASHERS
4 PLS. EQ. SPACED ON 10.50 DIA. THRU 13.50 DIA. B.C.

DOOR SUPPLIED/BLANK OR LOGO IN ALUMINUM OR PLASTIC WITH OR WITHOUT HINGE
STD 1/4 -20 S.S.HEX. SCREW OR VANDAL SCREW TO FIT YOUR SPECIFICATIONS

ALL WASHERS TO BE ZINC MECHANICAL COATED PER ASTM B 695 - 85 CLASS 50

356 T-6 ALUMINUM ALLOY / S.S. WHEELABRATED FINISH CHEMICAL AND PHY. CERTS TO BE SUPPLIED WITH EACH SHIPMENT

ADHESIVE BREAKAWAY AND CAUTION LABELS TO APPEAR
ON INSIDE WALL OPPOSITE DOOR OPENING

AKRON FOUNDRY CO.	
1985 AASHTO T-BASE	
1-25-88	TB1-17" MODIFIED

CAUTION:

BEFORE INSTALLATION, USER SHOULD CONSULT WITH AUTHORIZED DISTRIBUTOR REGARDING USER'S PROPOSED APPLICATION, LOAD REQUIREMENTS AND INSTALLATION METHODS. FAILURES CAN RESULT FROM USER'S MISAPPLICATION OR IMPROPER INSTALLATION

TO APPROACH OPTIMUM STATIC LOADS, USE THE LARGEST POSSIBLE BOLT CIRCLES AND USE STEEL WASHER SIZES SPECIFIED BELOW:

FOR 10' DIA. THRU 12' DIA. BOTTOM BOLT CIRCLES:

USE 2 3/4 DIA. x 1/2 TK. WASHER

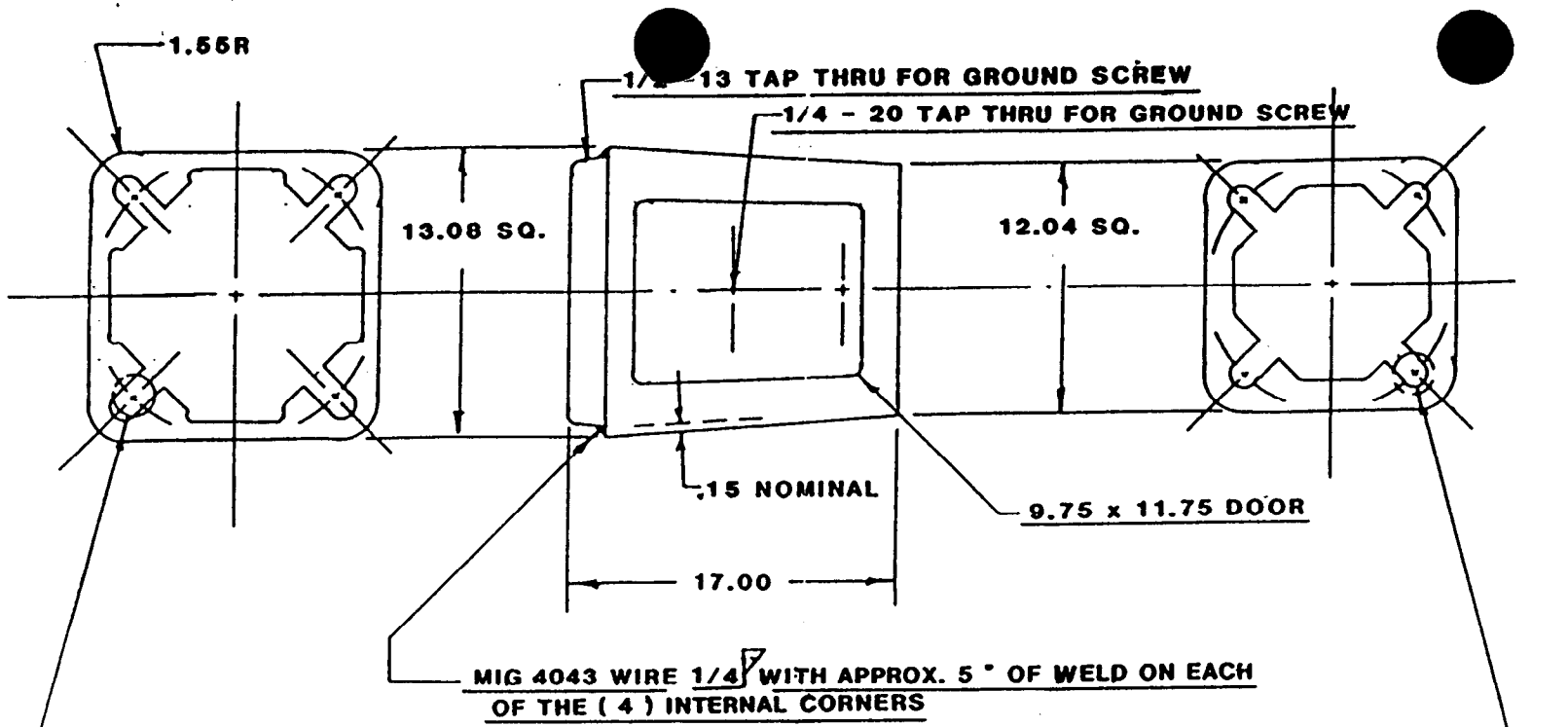
**TORQUE GROUND MOUNTING NUTS TO 150 FT. LBS.
SHIM BASE LEVEL WHEN REQUIRED BEFORE TORQUING MOUNTING NUTS**

FOR 10' DIA. THRU 12' DIA. TOP BOLT CIRCLES:

USE 2 1/2 DIA. x 3/8 TK. OR 2 3/4 DIA. x 1/2 TK. WASHERS

BREAKAWAY BASE

**APPROVED BY F.H.W.A. TO 1985
AASHTO REQUIREMENTS**



2 3/4 DIA. x 1 1/16 I.D. x 1/2 TK. STEEL WASHERS FOR 1" DIA. ANCHORAGE
4 PLS. EQ. SPACED ON 10.00 DIA. THRU 12.00 DIA. GROUND B.C.

2 1/2 DIA. x 1 1/16 I.D. x 3/8 TK. OR 2 3/4 DIA. x 1 1/16 I.D. x 1/2 TK. STEEL WASHERS
4 PLS. EQ. SPACED ON 10.00 DIA. THRU 12.00 DIA. B.C.

DOOR SUPPLIED/BLANK OR LOGO IN ALUMINUM OR PLASTIC WITH OR WITHOUT HINGE
ST'D 1/4 -20 S.S.HEX. SCREW OR VANDAL SCREW TO FIT YOUR SPECIFICATIONS

ALL WASHERS TO BE ZINC MECHANICAL COATED PER ASTM B 695 - 85 CLASS 50

356 T-6 ALUMINUM ALLOY / S.S. WHEELABRATED FINISH CHEMICAL AND PHY. CERTS TO BE SUPPLIED WITH EACH SHIPMENT

ADHESIVE BREAKAWAY AND CAUTION LABELS TO APPEAR
ON INSIDE WALL OPPOSITE DOOR OPENING

AKRON FOUNDRY CO.	
1985 AASHTO T-BASE	
1-25-88	TB2-17"

TB3-17'

CAUTION:

1985 AASHTO

BEFORE INSTALLATION, USER SHOULD CONSULT WITH AUTHORIZED DISTRIBUTOR REGARDING USER'S PROPOSED APPLICATION, LOAD REQUIREMENTS AND INSTALLATION METHODS. FAILURES CAN RESULT FROM USER'S MISAPPLICATION OR IMPROPER INSTALLATION

TO APPROACH OPTIMUM STATIC LOADS, USE THE LARGEST POSSIBLE BOLT CIRCLES AND USE STEEL WASHER SIZES SPECIFIED BELOW:

FOR 17 1/4" DIA. BOTTOM GROUND BOLT CIRCLES:

USE 2 3/4 DIA. x 1 5/16 I.D. x 1/2 TK. WASHER

**TORQUE GROUND MOUNTING NUTS TO 150 FT. LBS.
SHIM BASE LEVEL WHEN REQUIRED BEFORE TORQUING MOUNTING NUTS**

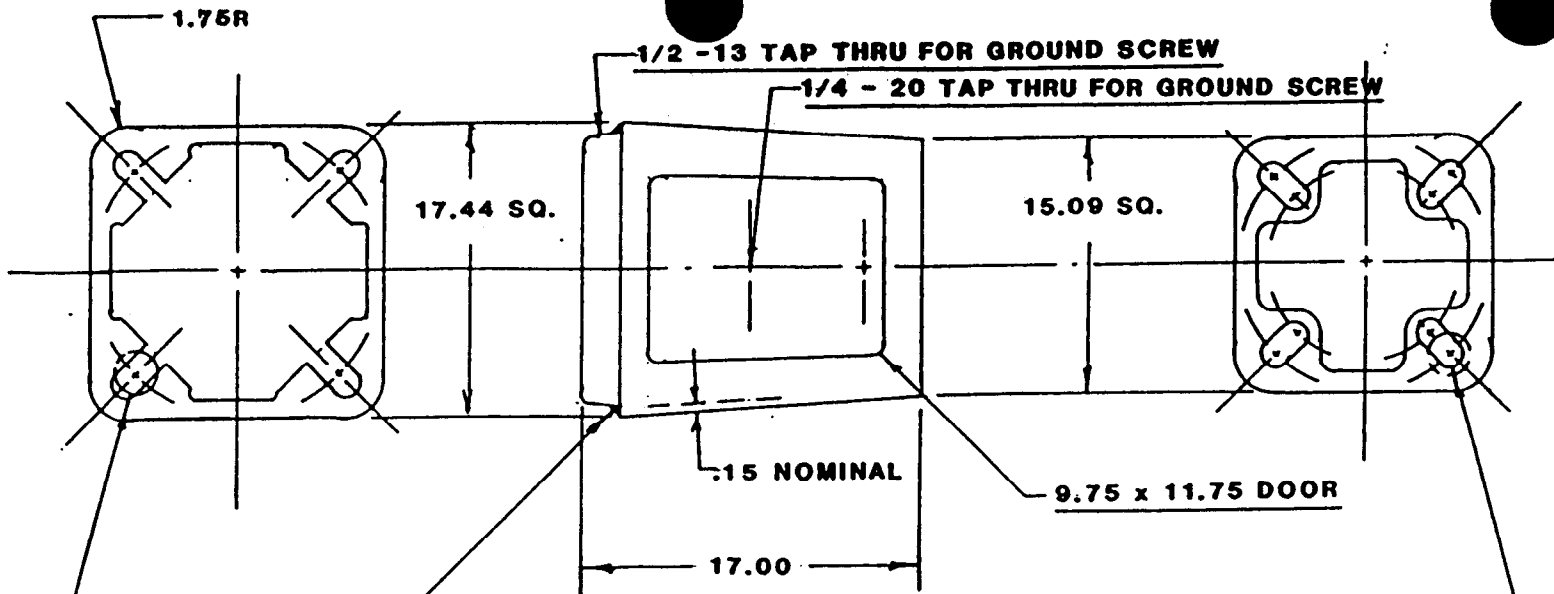
FOR 13" DIA. THRU 15 1/8" DIA. TOP BOLT CIRCLES:

USE 2 3/4 DIA. x 1 5/16 I.D. x 1/2 TK. WASHER

BREAKAWAY BASE

**APPROVED BY F.H.W.A. TO 1985
AASHTO REQUIREMENTS**

1985



MIG 4043 WIRE 5/16
WITH APPROX. 5" OF WELD ON EACH OF THE (4) INTERNAL CORNERS

2 3/4 DIA. x 1 5/16 x 1/2 TK. STEEL WASHERS FOR 1 1/4 DIA. ANCHORAGE
4 PLS, EQ, SPACED ON 15.00 DIA. THRU 17.25 DIA. BOTTOM GROUND B.C.

WHEN ADDITIONAL STATIC LOADING IS REQUIRED ON 15.00 DIA. B.C. APPLICATIONS USE 5/8 x 2 3/4 x 4 1/4
RECTANGULAR STEEL WASHER UNDER 2 3/4 x 1 1/16 I.D. x 1/2 TK. WASHERS FOR 1" DIA. GROUND MOUNTING B.C.

2 3/4 DIA. x 1 5/16 I.D. x 1/2 TK. STEEL WASHERS 4 PLS. EQ. SPACED ON 13.00 DIA. THRU 15.12 DIA. B.C.

DOOR SUPPLIED/BLANK OR LOGO IN ALUMINUM OR PLASTIC WITH OR WITHOUT HINGE
.6TD 1/4 -20 S.S.HEX. SCREW OR VANDAL SCREW TO FIT YOUR SPECIFICATIONS

ALL WASHERS TO BE ZINC MECHANICAL COATED PER ASTM B 695 - 85 CLASS 50

356 T-6 ALUMINUM ALLOY / S.S. WHEELABRATED FINISH CHEMICAL AND PHY. CERTS TO BE SUPPLIED WITH EACH SHIPMENT

ADHESIVE BREAKAWAY AND CAUTION LABELS TO APPEAR
ON INSIDE WALL OPPOSITE DOOR OPENING

AKRON FOUNDRY CO.

1985 AASHTO T-BASE

1-25-88

TB3-17"

TB2- 20'

CAUTION:

1975 AASHTO

BEFORE INSTALLATION, USER SHOULD CONSULT WITH AUTHORIZED DISTRIBUTOR REGARDING USER'S PROPOSED APPLICATION, LOAD REQUIREMENTS AND INSTALLATION METHODS. FAILURES CAN RESULT FROM USER'S MISAPPLICATION OR IMPROPER INSTALLATION

TO APPROACH OPTIMUM STATIC LOADS, USE THE LARGEST POSSIBLE BOLT CIRCLES AND USE STEEL WASHER SIZES SPECIFIED BELOW:

FOR 10' DIA. THRU 12' DIA. BOTTOM BOLT CIRCLES:

USE 2 3/4 DIA. x 1/2 TK. WASHER

**TORQUE GROUND MOUNTING NUTS TO 160 FT. LBS.
SHIM BASE LEVEL WHEN REQUIRED BEFORE TORQUING MOUNTING NUTS**

FOR 10' DIA. THRU 12' DIA. TOP BOLT CIRCLES:

USE 2 1/2 DIA. x 3/8 TK. OR 2 3/4 DIA. x 1/2 TK. WASHERS

BREAKAWAY BASE

**APPROVED BY F.H.W.A. TO 1975
AASHTO REQUIREMENTS**

1975

TB1-20*

CAUTION:

1975 AASHTO

BEFORE INSTALLATION, USER SHOULD CONSULT WITH AUTHORIZED DISTRIBUTOR REGARDING USER'S PROPOSED APPLICATION, LOAD REQUIREMENTS AND INSTALLATION METHODS. FAILURES CAN RESULT FROM USER'S MISAPPLICATION OR IMPROPER INSTALLATION

TO APPROACH OPTIMUM STATIC LOADS, USE THE LARGEST POSSIBLE BOLT CIRCLES AND USE STEEL WASHER SIZES SPECIFIED BELOW:

FOR 15' DIA. BOTTOM GROUND BOLT CIRCLES:

USE 2 3/4 DIA. x 1/2 TK. WASHER

FOR ALL MOUNTINGS UNDER 15' DIA.

SEE SPECIAL MOUNTING INSTRUCTIONS

TORQUE GROUND MOUNTING NUTS TO 150 FT. LBS.

SHIM BASE LEVEL WHEN REQUIRED BEFORE TORQUING MOUNTING NUTS

FOR 11' THRU 13' DIA. TOP BOLT CIRCLES:

USE 2 1/2 DIA. x 3/8 TK. OR 2 3/4 DIA. x 1/2 TK. WASHER

BREAKAWAY BASE

**APPROVED BY F.H.W.A. TO 1975
AASHTO REQUIREMENTS**

1975

TB3-20'

CAUTION:

1975 AASHTO

BEFORE INSTALLATION, USER SHOULD CONSULT WITH AUTHORIZED DISTRIBUTOR REGARDING USER'S PROPOSED APPLICATION, LOAD REQUIREMENTS AND INSTALLATION METHODS. FAILURES CAN RESULT FROM USER'S MISAPPLICATION OR IMPROPER INSTALLATION

TO APPROACH OPTIMUM STATIC LOADS, USE THE LARGEST POSSIBLE BOLT CIRCLES AND USE STEEL WASHER SIZES SPECIFIED BELOW:

FOR 17 1/4" DIA. BOTTOM GROUND BOLT CIRCLES:

USE 2 3/4" DIA. x 1 5/16" I.D. x 1/2" TK. WASHER

TORQUE GROUND MOUNTING NUTS TO 160 FT. LBS.

SHIM BASE LEVEL WHEN REQUIRED BEFORE TORQUING MOUNTING NUTS

FOR 13" DIA. THRU 16 1/8" DIA. TOP BOLT CIRCLES:

USE 2 3/4" DIA. x 1 5/16" I.D. x 1/2" TK. WASHER

BREAKAWAY BASE

**APPROVED BY F.H.W.A. TO 1975
AASHTO REQUIREMENTS**

1975