



U.S. Department
of Transportation

Federal Highway
Administration

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

LS 4

JAN 12 1989

REFER TO:
HNG-14

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

Dear Mr. Sik:

This is in response to your letter of December 15, 1988, requesting that the Federal Highway Administration (FHWA) issue a new letter of acceptance for your company's TB1 series transformer bases. Conditional acceptances were granted on June 29, 1988. As a result of the FHWA adoption of Section 7 of the American Association of State Highway and Transportation Officials (AASHTO) 1985 "Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals", we are able to remove the previous restrictions on our acceptance of your company's hardware.

Enclosed with your original request, dated April 1, were seven Southwest Research Institute test reports (Project No. 06-2128-103) dated March 1988. The tests were with an instrumented 1,800-pound pendulum fitted with a 10-stage crushable nose which simulates a 1979 Volkswagen Rabbit. The measured and extrapolated results from the tests were as follows:

<u>Test No.</u>	<u>Date</u>	<u>Measured Change in velocity at 20 m.p.h.</u>	<u>Extrapolated Change in velocity at 60 m.p.h.</u>	<u>Stub Height</u>
1.	2-21-88	6.19 fps	8.24 fps	*
2.	2-21-88	7.17 fps	10.23 fps	*
3.	2-21-88	6.44 fps	14.44 fps	*
4A.	2-22-88	10.1 fps	15.76 fps	*
4B.	2-22-88	11.18 fps	16.12 fps	3.06"
5A.	2-22-88	9.33 fps	15.43 fps	5.75"
5B.	2-22-88	9.92 fps	15.61 fps	*

(Tests 4B and 5B are retests of tests 4A and 5A.)

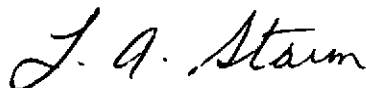
*Base broke away completely. No remains other than mounting bolts.

The enclosed Table 1 lists the test numbers and the pole types corresponding to the the tests qualifying bases TB1-AF 1315-17, TB1-AF 1315-171W, and TB1-AF Modified-17. The information shows that the actual tests and calculated changes in velocity of the pole-base combinations shown in Table 1 meet the change in velocity and stub height provisions of Section 7 of the 1985 AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals" as modified by the FHWA. (A copy of FHWA's final rule as published in the January 5, 1989, Federal Register is enclosed.)

The bases shown in Table 1 and the enclosed drawings (2) are acceptable for use on Federal-aid projects, within the range of conditions tested, if proposed by a State. These acceptances are limited to breakaway characteristics of the bases and do not cover structural features. Presumably, you will supply potential users with sufficient information on structural design and installation requirements to ensure proper base performance.

We anticipate that the States will require certification from Akron Foundry Company that castings furnished have essentially the same chemistry, mechanical properties, and geometry as the castings used in the tests and that the castings will meet the FHWA change in velocity requirements.

Sincerely yours,



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

Enclosures

Test Number	Base Number	Top Bolt Circle Diameter	Bottom Bolt Circle Diameter	Pole Type	Pole Height	Weight W/Arm & Dummy	Nominal Luminaire Mounting Height	Top Washers Outside Diameter	Top Washers Inside Diameter	Top Washers Thick-ness	Bottom Washers Outside Diameter	Bottom Washers Inside Diameter	Bottom Washers Thick-ness
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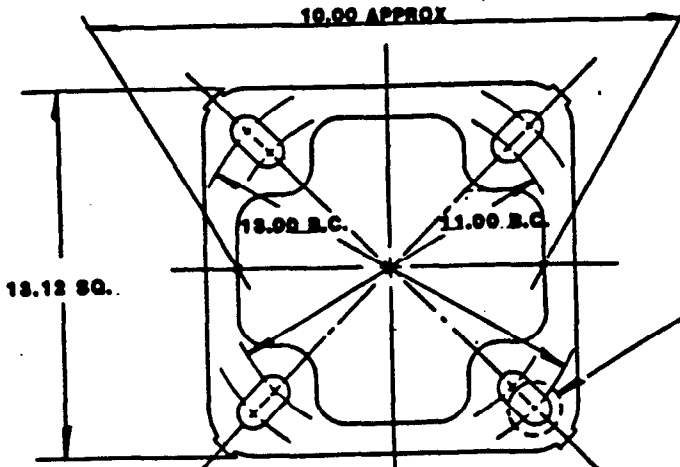
1	TB1-AF 1315-17	13"	15"	ALUMINUM	35'	437 #	42.0'	2 1/2"	1 1/16"	3/8"	2 3/4"	1 1/16"	1/2"
2	TB1-AF 1315-17 IW	13"	15"	ALUMINUM	44.5'	511 #	51.2'	2 1/2"	1 1/16"	3/8"	2 3/4"	1 1/16"	1/2"
3	TB1-AF 1315-17	13"	15"	STEEL	35'	832 #	42.0"	2 1/2"	1 1/16"	3/8"	2 3/4"	1 1/16"	1/2"
4A	TB1-AF 1315-17 IW	13"	15"	STEEL	44.5'	778 #	50.0"	2 1/2"	1 1/16"	3/8"	2 3/4"	1 1/16"	1/2"
4B	TB1-AF 1315-17 IW	13"	15"	STEEL	44.5'	778 #	50.0"	2 1/2"	1 1/16"	3/8"	2 3/4"	1 1/16"	1/2"
5A	TB1-AF MODIFIED-17	12"	10.5"	STEEL	35'	832 #	42.0'	2 1/2"	1 1/16"	3/8"	2 1/2"*	1 1/16"*	3/8"*
5B	TB1-AF MODIFIED-17	12"	10.5"	STEEL	35'	832 #	42.0'	2 1/2"	1 1/16"	3/8"	2 1/2"*	1 1/16"*	3/8"*

"IW" refers to an internal weld inside the base * assembly also requires rectangular washer: 2 3/4" x 4 1/4" x 5/8" thk

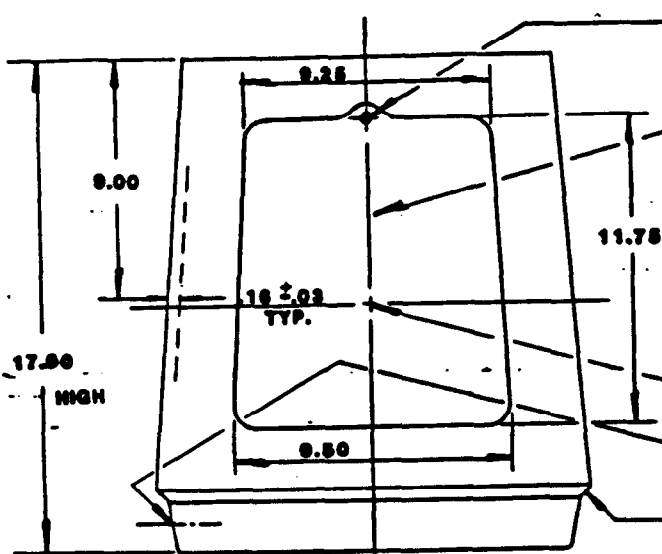
TABLE NUMBER 1

* ALL WASHERS TO BE ZINC MECHANICAL COATED PER ASTM B 895 - 85 CLASS 50

CHEMICAL & PHY. CERTS TO BE SUPPLIED WITH EACH SHIPMENT



* 2 1/2 DIA. X 3/8 THK. 1 1/16 LD. STEEL WASHER FOR 1" DIA. ANCHOR CONNECTING BOLTS OR 2 3/4 DIA. X 1/2 THK. WITH EITHER 1 1/16 OR 1 5/16 LD. STEEL WASHERS FOR EITHER 1" OR 1 1/4 DIA. CONNECTING BOLTS



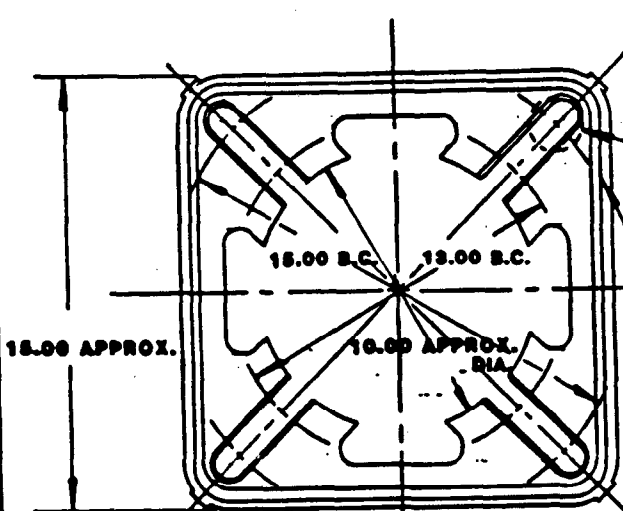
1/4-20 HEX HD. 1/2" LG. S.S. SCREW

ADHESIVE BREAKAWAY AND CAUTION INSTRUCTION LABELS APPEAR INSIDE WALL OPPOSITE DOOR OPENING

GROUND SCREW HOLE 1/4-20 TAP THRU

GROUND SCREW HOLE 1/8-18 TAP THRU

1/4 MIG 4043 WIRE



* 2 3/4 DIA. X 1/2 THK. 1 1/16 LD. STEEL WASHER FOR 1" DIA. BOLTS OR 2 3/4 DIA. X 1/2 THK. 1 5/16 LD. STEEL WASHER FOR 1 1/4 DIA. BOLTS

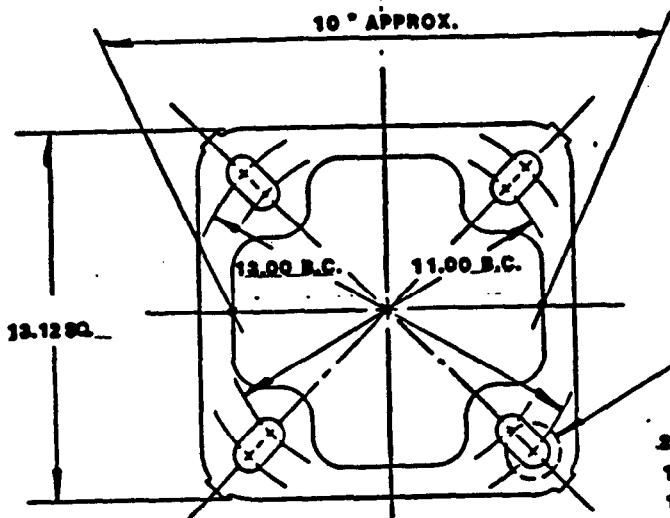
WHEN INTERNAL WELD IS REQUIRED: 4043 WIRE WITH APPROX 5" OF WELD ON EACH OF THE (4) INTERNAL CORNERS ORDER PART NO. WITH SUFFIX LW. FOR INTERNAL WELDED CORNERS

S.S. WHEELABRATED FINISH 866-T6

AKRON FOUNDRY CO.	
AL BREAKAWAY TRANSFORMER BASE	
DATE 1-25-88	JB1-AF1315-17 REVISED FOR 1800 P PENDULUM
DWN. SIK	

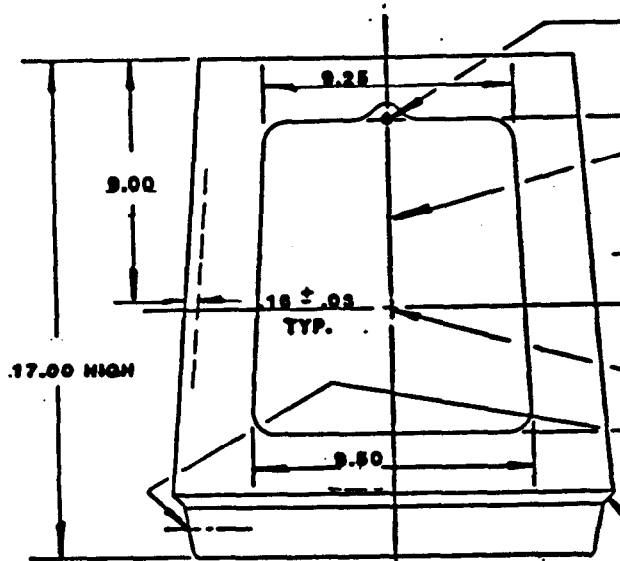
TEST #1 TO 4B

* ALL WASHERS TO BE ZINC MECHANICAL COATED PER ASTM B 695-66 CLASS 60



CHEMICAL & PHY. CERTS TO BE SUPPLIED WITH EACH SHIPMENT.

* 2 1/2 DIA. X 3/8 THK. 1 1/16 LD. STEEL WASHER FOR 1" DIA. CONNECTING BOLTS
OR
2 3/4 DIA. X 1/2 THK. WITH EITHER 1 1/16 OR 1 5/16 I.D. STEEL WASHER FOR EITHER 1" OR 1 1/4 DIA. CONNECTING BOLTS

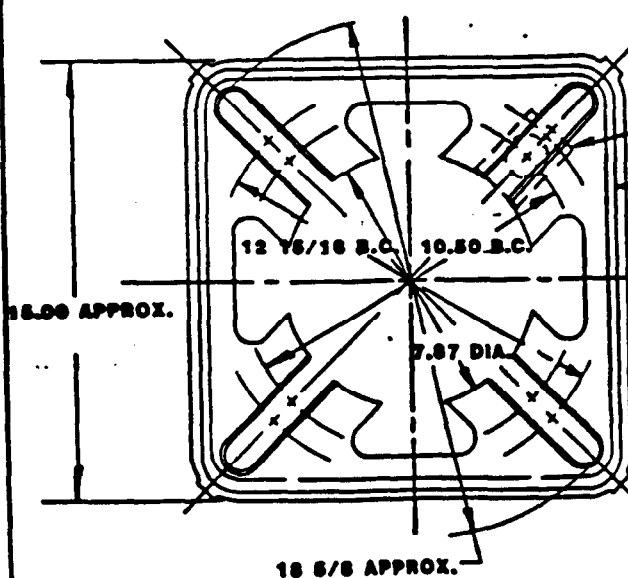


1/4-20 HEX HD. 1/2" LG. S.S. SCREW

ADHESIVE BREAKAWAY AND CAUTION INSTRUCTION LABELS APPEAR INSIDE WALL OPPOSITE DOOR OPENING ALONG WITH SPECIAL MOUNTING INSTRUCTION LABEL

GROUND SCREW HOLE 1/4 - 20 TAP THRU
GROUND SCREW HOLE 1/2 - 13 TAP THRU

1/4" MIG #4043 WIRE



* 2 1/2 DIA. X 3/8 THK. 1 1/16 LD. STEEL WASHER AND 2 3/4 X 4 1/4 X 5/8 THK. RECTANGULAR WASHER.

1/4" #4043 WIRE WITH APPROX 5" OF WELD ON EACH OF THE (4) INTERNAL CORNERS

S.S. WHEELABRATED FINISH
366-T6

AKRON FOUNDRY CO.

AL. BREAKAWAY TRANSFORMER BASE

DATE 3-1-68

DWN.-SK

TB1-MODIFIED -17

REVISED FOR 1000 φ PENDULUM

TEST #5A&B