

INSTALLATION INSTRUCTIONS

ANCHOR ASSEMBLY:

Note: Precise positioning of the anchors is critical to proper assembly of the system. It is recommended that actual posts be used to locate the correct position of the anchors.

1. Determine proper Break-Safe Bracket Number from the Bracket Selection Table. All posts within a sign structure shall use the same Bracket Number, determined by the length of the longest post.
2. Fabricate a flat, rigid template with four (4) 25mm (1") diameter holes located to match the specified anchor pattern of the Break-Safe Brackets attached to the signpost. See diagram below.
3. Attach four (4) Transpo Type B Female Anchors to the template using four (4) 25mm (1") diameter bolts. Ensure that each Anchor Washer is snug against the bottom of the template.
4. Lower Anchor Assembly into fresh concrete foundation, and vibrate into position such that the tops of the Anchor Washers are flush with the finished top surface of the foundation. Support the template such that all Anchors are level and in their proper locations.
5. Allow concrete to cure, and then remove the bolts and template from the top of the foundation.

HINGE ASSEMBLY:

1. Bolt upper and lower post sections together on a flat surface.
2. Drill eight (8) 20.6mm (13/16") holes in the flanges of the post sections as shown.
3. Place Hinge Plates on outer surface of the post flanges and secure with bolts, lock washers, and nuts. Ensure that upper and lower post sections are in alignment, and then tighten all nuts 1/2 turn beyond snug.

BRACKET ASSEMBLY:

1. Drill sixteen (16) 17.5mm (11/16") diameter holes in the flanges of the lower post section as shown.
2. Place Brackets squarely on outer surface of the post flanges, and secure with bolts, lock washers, nuts, and cap screws. Then, tighten all 1/2 turn beyond snug.

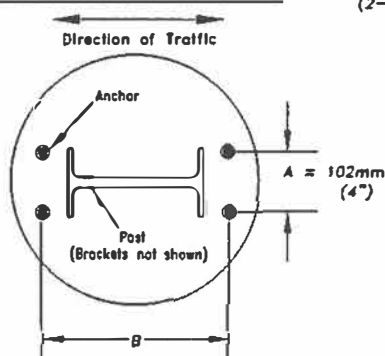
COUPLING ASSEMBLY:

1. Thread four (4) Break-Safe Couplings into Anchors. Do not tighten.
2. Suspend post assembly over foundation, insert Special Bolts through holes in the Brackets, and thread them snug into the Couplings.
3. If post is not plumb, insert Shims (14g and/or 18g) between the Couplings and Anchors, where needed.
4. Use lower wrench flats to tighten Couplings into Anchors as tight as possible using a conventional wrench. Do not use a pipe wrench. Couplings must be seated squarely.
5. Tighten Special Bolts while holding Couplings by the upper wrench flats with an additional wrench to prevent an induced torque stress across the necked portion of the Coupling. All Special Bolts shall also be tightened as tight as possible using conventional wrenches.

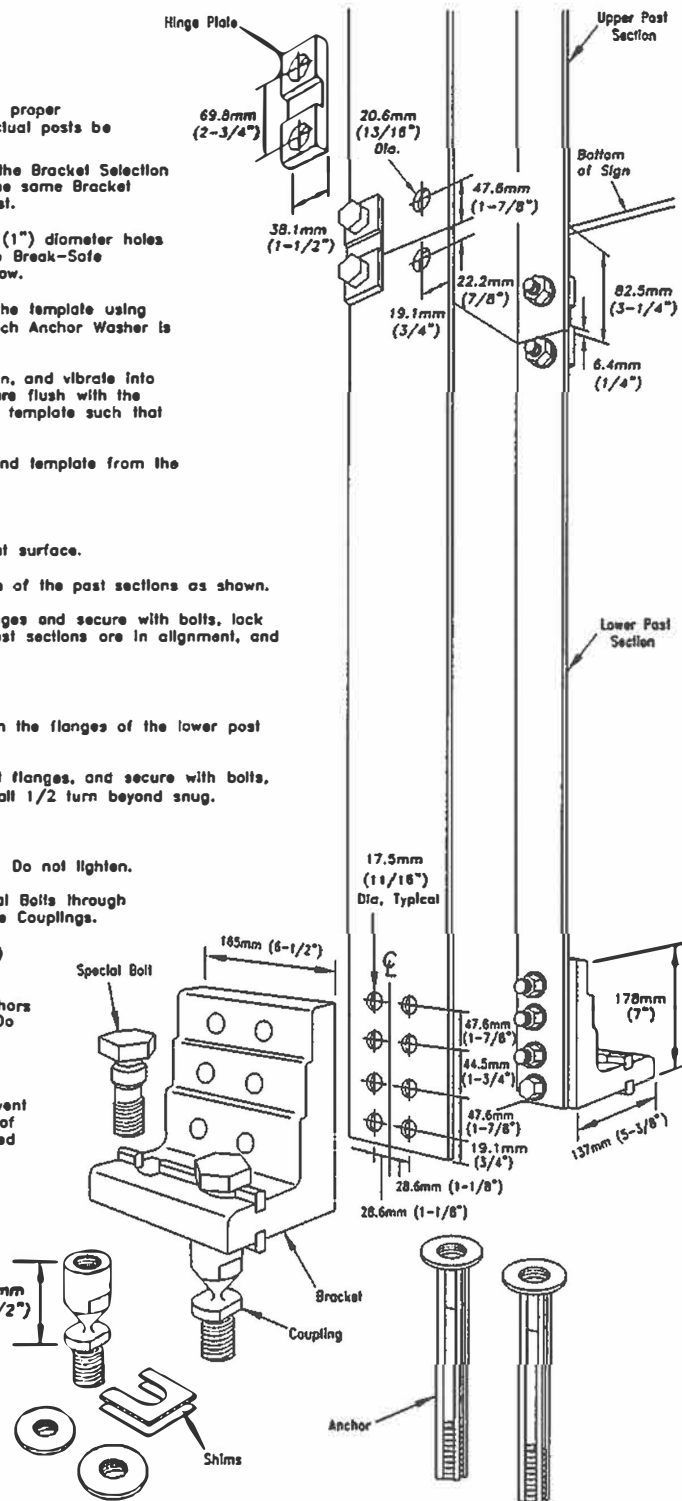
SIGN PANEL ASSEMBLY:

1. After all signposts are secured in place, attach sign panel assembly to posts in accordance with the sign manufacturer's recommendations.

PLAN VIEW OF TYPICAL FOUNDATION



- B (Bracket No. 1) = Depth of Post + 202mm (7-15/16")
 B (Bracket No. 2) = Depth of Post + 205mm (8-1/16")
 B (Bracket No. 3) = Depth of Post + 207mm (8-1/8")



Break-Safe Model B650

Breakaway Support System for Sign Posts

Scale: Not To Scale

Date: October 2004

Drawing No. BS-B650-1, -2, -3

Sheet: 2 of 2

Patent Nos. 4,528,786 and 5,596,845

INSTALLATION INSTRUCTIONS

ANCHOR ASSEMBLY:

Note: Precise positioning of the anchors is critical to proper assembly of the system. It is recommended that actual posts be used to locate the correct postion of the anchors.

1. Fabricate a flat, rigid template with four (4) 16mm (5/8”) diameter holes located to match the specified anchor pattern of the Break–Safe Brackets attached to the signpost. See diagram below.
2. Attach four (4) Transpo Type A Female Anchors to the template using four (4) 16mm (5/8”) diameter bolts. Ensure that each Anchor Washer is snug against the bottom of the template.
3. Lower Anchor Assembly into fresh concrete foundation, and vibrate into position such that the tops of the Anchor Washers are flush with the finished top surface of the foundation. Support the template such that all Anchors are level and in their proper locations.
4. Allow concrete to cure, and then remove the bolts and template from the top of the foundation.

BRACKET ASSEMBLY:

1. Drill eight (8) 14.3mm (9/16”) diameter holes in the bottom end of the post section as shown.
2. Place Brackets squarely on outer surface of the post, and secure with bolts, lock washers, and nuts. Then, tighten all 1/2 turn beyond snug.

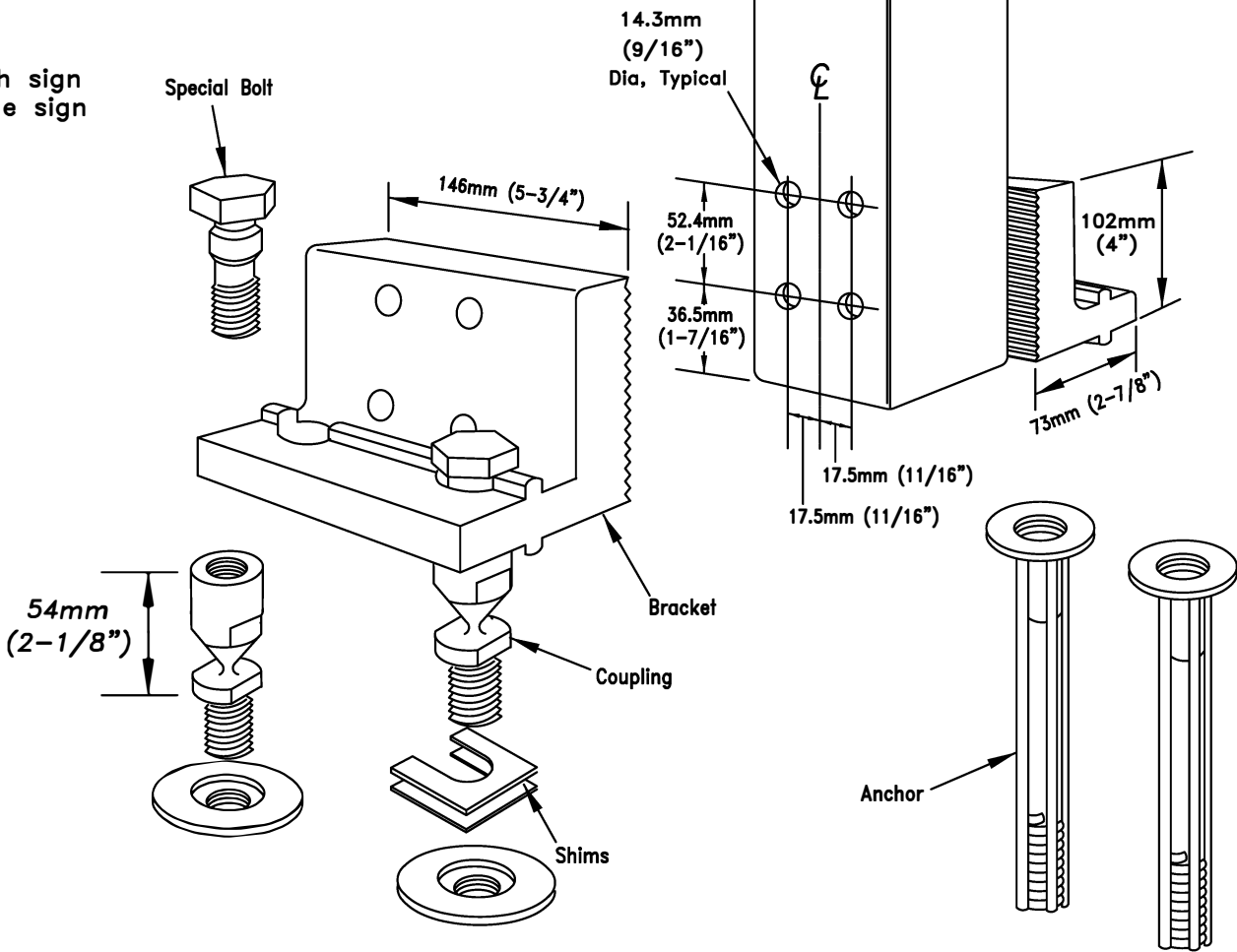
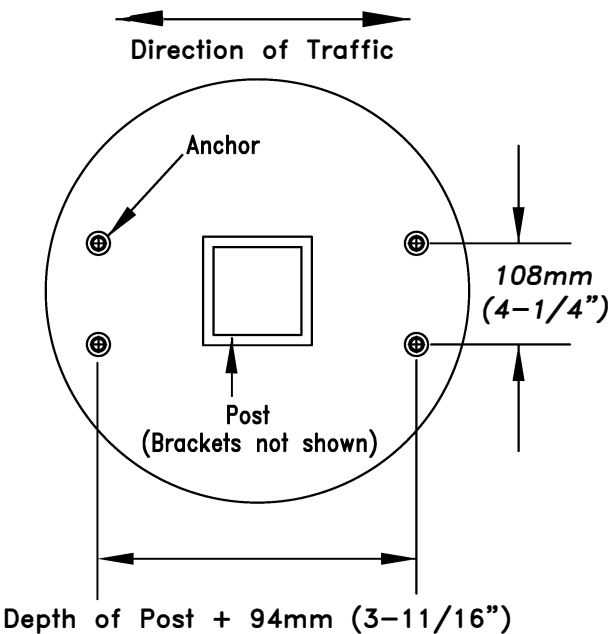
COUPLING ASSEMBLY:

1. Thread four (4) Break–Safe Couplings into Anchors. Do not tighten.
2. Suspend post assembly over foundation, insert Special Bolts through holes in the Brackets, and thread them snug into the Couplings.
3. If post is not plumb, insert Shims (14g and/or 18g) between the Couplings and Anchors, where needed.
4. Use lower wrench flats to tighten Couplings into Anchors as tight as possible using a convensional wrench. Do not use a pipe wrench. Couplings must be seated squarely.
5. Tighten Special Bolts while holding Couplings by the upper wrench flats with an additional wrench to prevent an induced torque stress across the necked portion of the Coupling. All Special Bolts shall also be tightened as tight as possible using convensional wrenches.

SIGN PANEL ASSEMBLY:

1. After all signposts are secured in place, attach sign panel assembly to posts in accordance with the sign manufacturer’s recommendations.

PLAN VIEW OF TYPICAL FOUNDATION



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New Rochelle, NY 10801
INDUSTRIES, Inc. 914-636-1000
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Break–Safe Model AS4
Breakaway Support System for Sign Posts

Scale: Not To Scale Date: January 2015

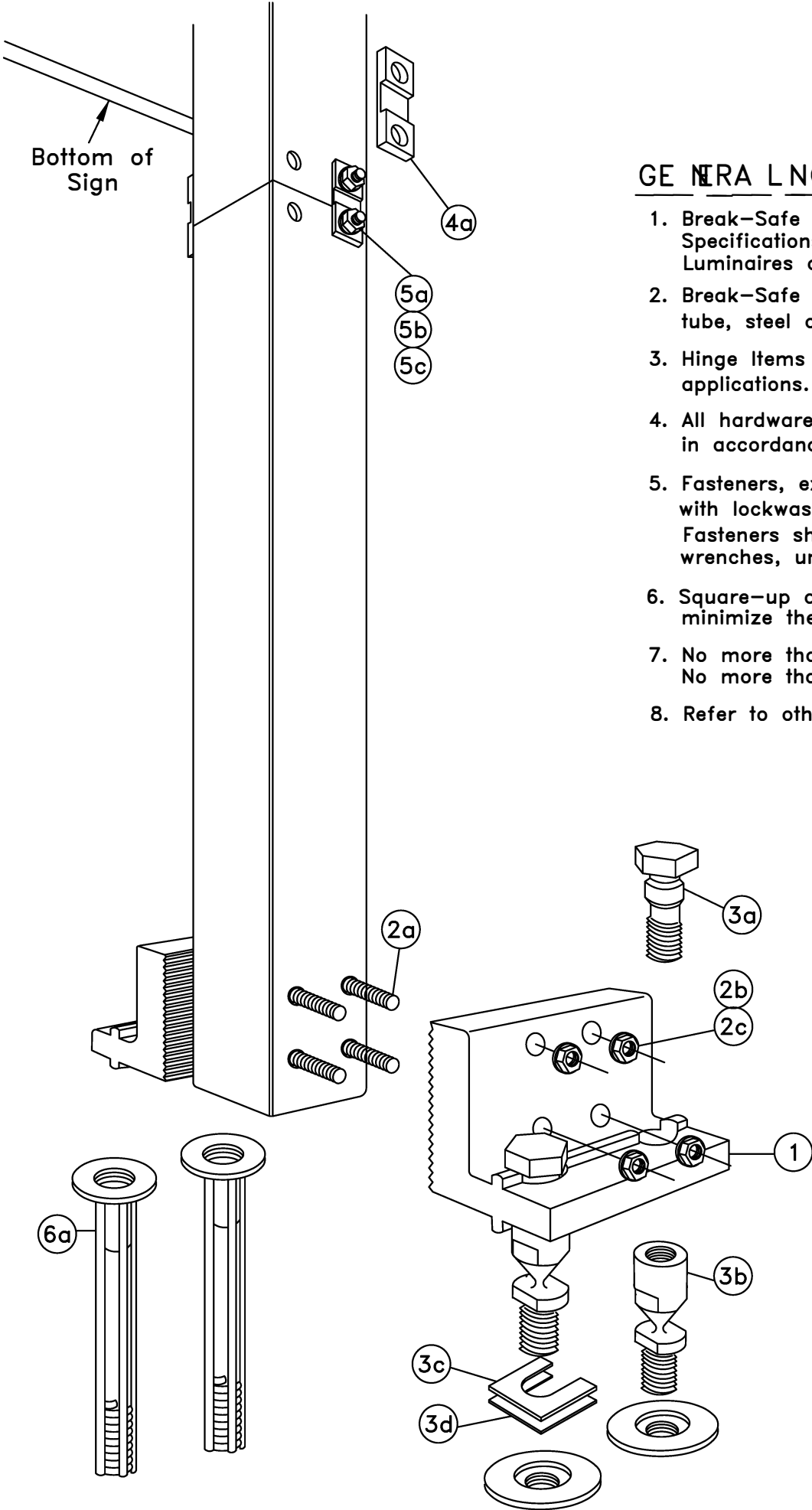
Drawing No. BS–AS4

Sheet: 2 of 2

PARTS LIST

ITEM	DESCRIPTION	SIZE/SPECIFICATIONS	QTY/ POST	PART NUMBER
	Model AS4H	6061-T6 Aluminum	1	SBMAS4H*
1	Bracket, Type AS4	6061-T6 Aluminum	2	
2	Bracket Hardware Assembly, Type AS4, includes:		1	
2a	Bolt	12.7mm(1/2")-13UNCx184mm(7-1/4"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2b	LockWasher	12.7mm(1/2"), ANSI B18-21-1, Galv. ASTM A153	4	
2c	Nut	12.7mm(1/2")-13UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	4	
3	Coupling & Special Bolt Assembly, Type A, includes:		1	SB-CALP
3a	Special Bolt	15.9mm(5/8")-11UNC, ASTM A449, Galv. ASTM A153	4	
3b	Coupling	15.9mm(5/8")-11UNC, LP, AMS 6378D, Galv. ASTM A153, Polyester Coat	4	
3c	Shim	15.9mm(5/8") Horseshoe, 14 Gauge, Galv. Steel Sheet	2	
3d	Shim	15.9mm(5/8") Horseshoe, 18 Gauge, Galv. Steel Sheet	2	
4	Hinge Assembly, Type A, includes:		1	SB-HB3
4a	Hinge Plate	Type A, AISI 4130 Steel, Galv. ASTM A123	4	
5	Hinge Hardware Assembly, Type A, includes:		1	SB-HHA
5a	Bolt	12.7mm(1/2")-13UNCx133mm(5-1/4"), Hex Head, ASTM A325, Galv. ASTM A153	4	
5b	LockWasher	12.7mm(1/2"), ANSI B18-21-1, Galv. ASTM A153	4	
5c	Nut	12.7mm(1/2")-13UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	4	
6	Anchor Assembly, Type A, includes:		1	SBAAPK
6a	Anchor	15.9mm(5/8")-11UNC, 304 S.S. Ferrule, AISI 1038 Rod, AISI 1008 Coil	4	

*Complete assembly includes line Items 1-5. Item 6, Anchors sold separately.



GENERAL NOTES:

- Break-Safe meets all requirements of "AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals."
- Break-Safe Model AS4H is designed to fit 4" (102mm) square tube, steel or aluminum signposts.
- Hinge Items 4 & 5 above are not used for single post sign applications. Use Model AS4 for single post signs.
- All hardware items are American Standard sizes, gavanized in accordance with ASTM A153.
- Fasteners, except for special bolt and coupling, are installed with lockwashers, and do not have specific torque requirements. Fasteners should be secured as tight as possible with conventional wrenches, unless noted otherwise.
- Square-up and level individual components, particularly Anchors to minimize the need for shimming between the Couplings and Anchors.
- No more than two shims shall be placed under any one coupling. No more than three shims underneath any pair of couplings.
- Refer to other side of page for complete installation instructions.



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INDUSTRIES, Inc.

The Smart Solutions Company

20 Jones Street

New Rochelle, NY 10801

914-636-1000

www.transpo.com

Break-Safe Model AS4H
Breakaway Support System for Sign Posts

Scale: Not To Scale
Date: January 2015

Drawing No. BS-AS4H
Sheet: 1 of 2

INSTALLATION INSTRUCTIONS

ANCHOR ASSEMBLY:

Note: Precise positioning of the anchors is critical to proper assembly of the system. It is recommended that actual posts be used to locate the correct position of the anchors.

1. Fabricate a flat, rigid template with four (4) 25mm (1") diameter holes located to match the specified anchor pattern of the Break-Safe Brackets attached to the signpost. See diagram below.
2. Attach four (4) Transpo Type B Female Anchors to the template using four (4) 25mm (1") diameter bolts. Ensure that each Anchor Washer is snug against the bottom of the template.
3. Lower Anchor Assembly into fresh concrete foundation, and vibrate into position such that the tops of the Anchor Washers are flush with the finished top surface of the foundation. Support the template such that all Anchors are level and in their proper locations.
4. Allow concrete to cure, and then remove the bolts and template from the top of the foundation.

HINGE ASSEMBLY: (for Multiple Post Sign Applications)

1. Butt upper and lower post sections together on a flat surface.
2. Drill eight (8) 20.6mm (13/16") holes in the flanges of the post sections as shown.
3. Place Hinge Plates on outer surface of the post flanges and secure with bolts, lock washers, and nuts. Ensure that upper and lower post sections are in alignment, and then tighten all nuts 1/2 turn beyond snug.

BRACKET ASSEMBLY:

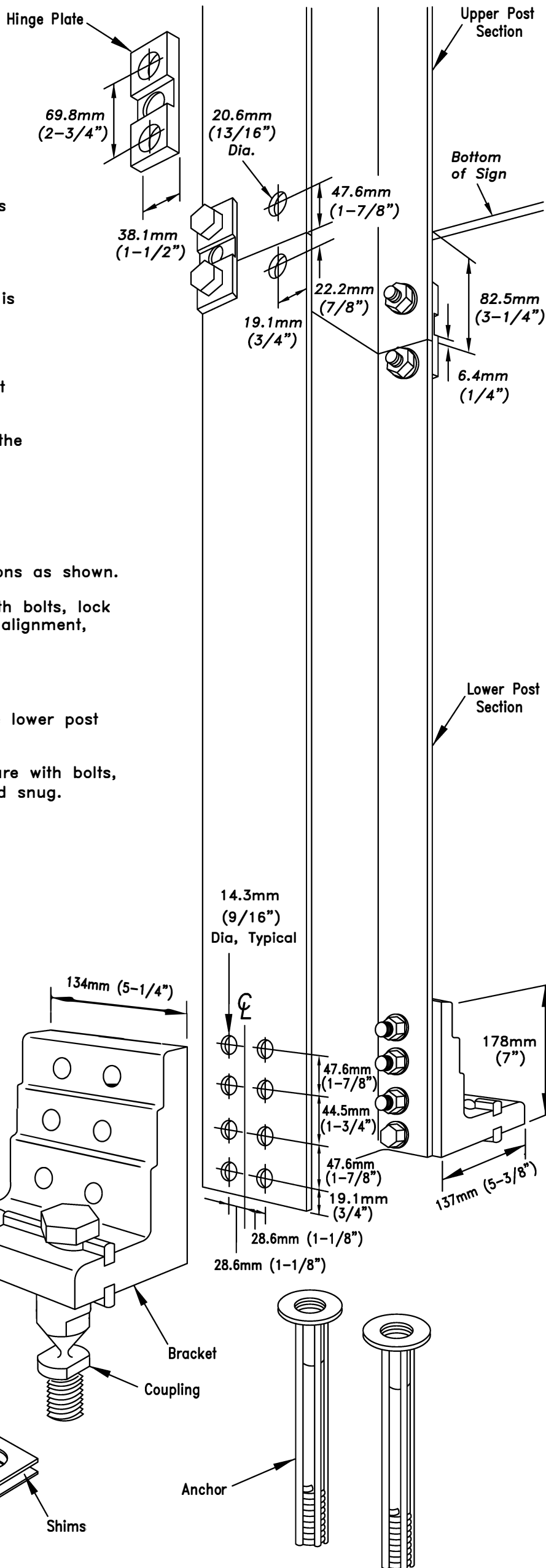
1. Drill sixteen (16) 14.3mm (9/16") diameter holes in the flanges of the lower post section as shown.
2. Place Brackets squarely on outer surface of the post flanges, and secure with bolts, lock washers, nuts, and cap screws. Then, tighten all 1/2 turn beyond snug.

COUPLING ASSEMBLY:

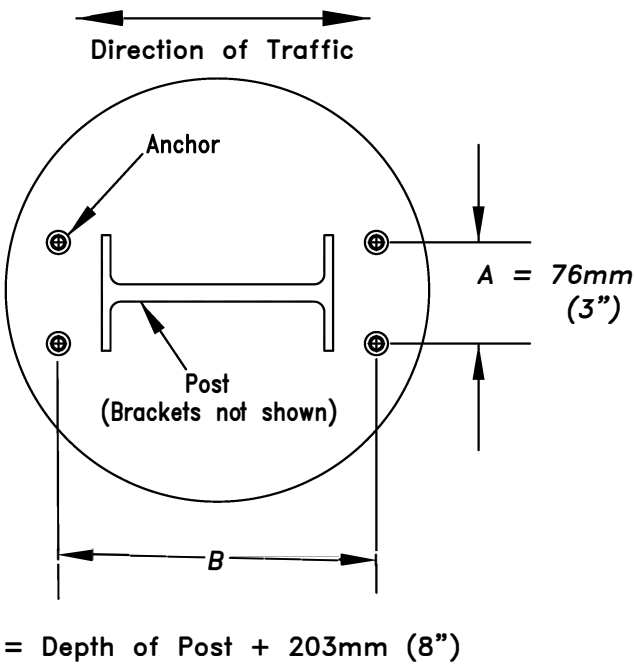
1. Thread four (4) Break-Safe Couplings into Anchors. Do not tighten.
2. Suspend post assembly over foundation, insert Special Bolts through holes in the Brackets, and thread them snug into the Couplings.
3. If post is not plumb, insert Shims (14g and/or 18g) between the Couplings and Anchors, where needed.
4. Use lower wrench flats to tighten Couplings into Anchors as tight as possible using a conventional wrench. Do not use a pipe wrench. Couplings must be seated squarely.
5. Tighten Special Bolts while holding Couplings by the upper wrench flats with an additional wrench to prevent an induced torque stress across the necked portion of the Coupling. All Special Bolts shall also be tightened as tight as possible using conventional wrenches.

SIGN PANEL ASSEMBLY:

1. After all signposts are secured in place, attach sign panel assembly to posts in accordance with the sign manufacturer's recommendations.



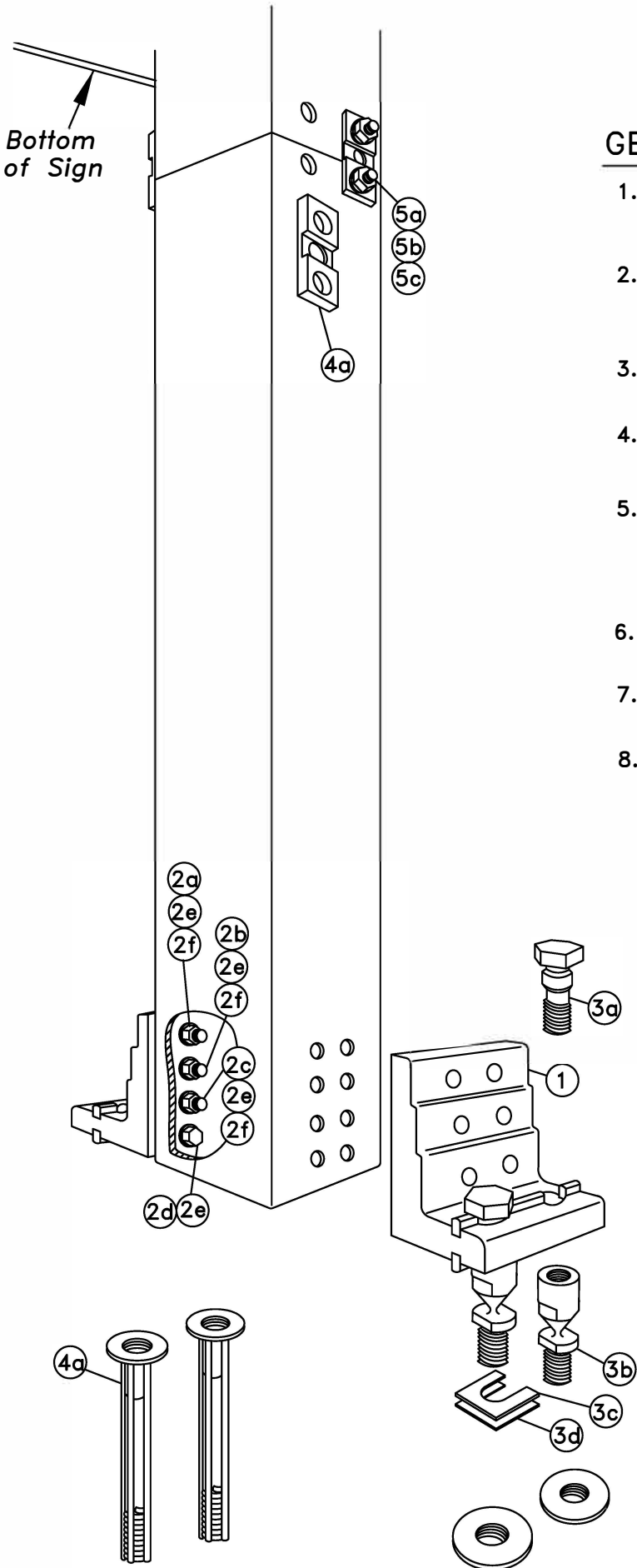
PLAN VIEW OF TYPICAL FOUNDATION



PARTS LIST

ITEM	DESCRIPTION	SIZE/SPECIFICATIONS	QTY/ POST	PART NUMBER
	Model B525	Includes Items 1–5 below.	1	SBM525*
1	Bracket, Type B525	6061–T6 Aluminum	2	
2	Bracket Hardware Assembly, Type B525, includes:		1	
2a	Bolt	12.7mm(1/2")–13UNCx63.5mm(2–1/2"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2b	Bolt	12.7mm(1/2")–13UNCx69.8mm(2–3/4"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2c	Bolt	12.7mm(1/2")–13UNCx76.2mm(3"), Hex Head, ASTM A325, Galv. ASTM A153	4	
2d	Cap Screw	12.7mm(1/2")–13UNCx31.7mm(1–1/4"), Hex Head, ASTM A307, Galv. ASTM A153	4	
2e	LockWasher	12.7mm(1/2"), ANSI B18–21–1, Galv. ASTM A153	16	
2f	Nut	12.7mm(1/2")–13UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	12	
3	Coupling & Special Bolt Assembly, Type B, includes:		1	SB–CBLP
3a	Special Bolt	25.4mm(1")–8UNC, ASTM A449, Galv. ASTM A153	4	
3b	Coupling	25.4mm(1")–8UNC, LP, AMS 6378D, Galv. ASTM A153, Polyester Coat	4	
3c	Shim	25.4mm(1") Horseshoe, 14 Gauge, Galv. Steel Sheet	2	
3d	Shim	25.4mm(1") Horseshoe, 18 Gauge, Galv. Steel Sheet	2	
4	Hinge Assembly, Type B525, includes:		1	SB–HB1
4a	Hinge Plate	Type B525, AISI 4130 Steel, Galv. ASTM A123	4	
5	Hinge Hardware Assembly, Type B, includes:		1	SB–HHB
5a	Bolt	19.0mm(3/4")–10UNCx57.1mm(2–1/4"), Hex Head, ASTM A325, Galv. ASTM A153	8	
5b	LockWasher	19.0mm(3/4"), ANSI B18–21–1, Galv. ASTM A153	8	
5c	Nut	19.0mm(3/4")–10UNC, Heavy Hex, ASTM A563 Gr. DH, Galv. ASTM A153	8	
6	Anchor Assembly, Type B, includes:		1	SBABPK
6a	Anchor	25.4mm(1")–8UNC, 304 S.S. Ferrule, AISI 1038 Rod, AISI 1008 Coil	4	

*Complete assembly includes line items 1–5. Item 6, Anchors sold separately.



GENERAL NOTES:

1. Break-Safe meets all requirements of "AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals."
2. Break-Safe Model B525 is designed to fit W6 (W150mm) and W8 (W200mm) Wide Flange I-Beam, and 5" (127mm) and 6" (150mm) Square Tube signposts.
3. Hinge Items 4 & 5 above are not used for single post sign applications.
4. All hardware items are American Standard sizes, gavanized in accordance with ASTM A153.
5. Fasteners, except for special bolt and coupling, are installed with lockwashers, and do not have specific torque requirements. Fasteners should be secured as tight as possible with conventional wrenches, unless noted otherwise.
6. Square-up and level individual components, particularly Anchors to minimize the need for shimming between the Couplings and Anchors.
7. No more than two shims shall be placed under any one coupling. No more than three shims underneath any pair of couplings.
8. Refer to other side of page for complete installation instructions.



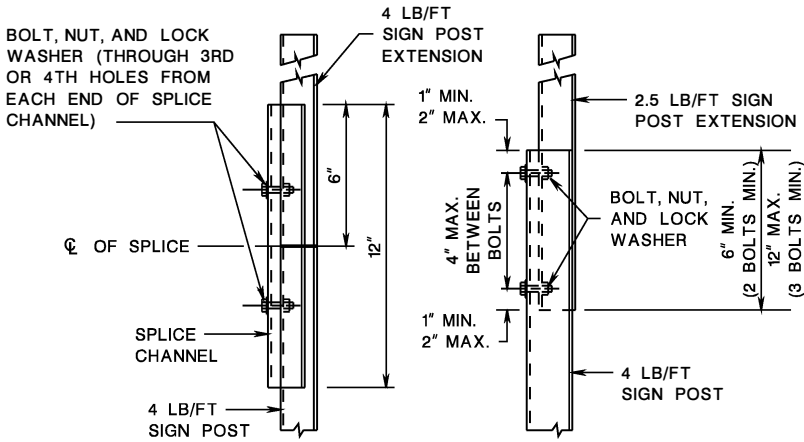
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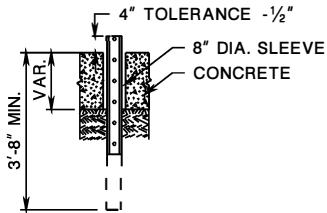
Break-Safe Model B525
Breakaway Support System for Sign Posts
for 5" & 6" Square Tube Posts

Scale: Not To Scale Date: January 2015

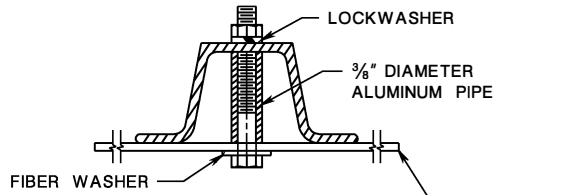
Drawing No. BS-B525S Sheet: 1 of 2



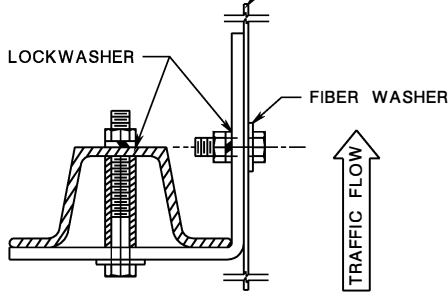
**SIGN POST EXTENSION
SPLICE DETAILS**



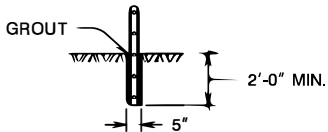
**CONCRETE
INSTALLATION**



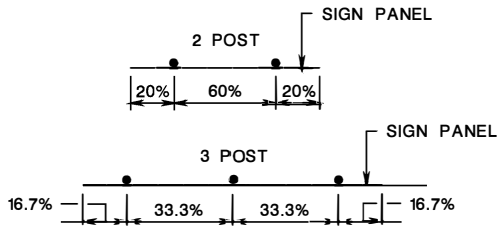
FRONT MOUNT BRACKET



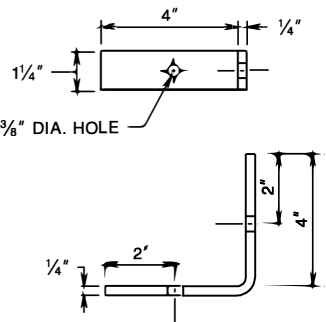
SIDE MOUNT BRACKET



**ROCK
INSTALLATION**



STEEL U-POST SPACING

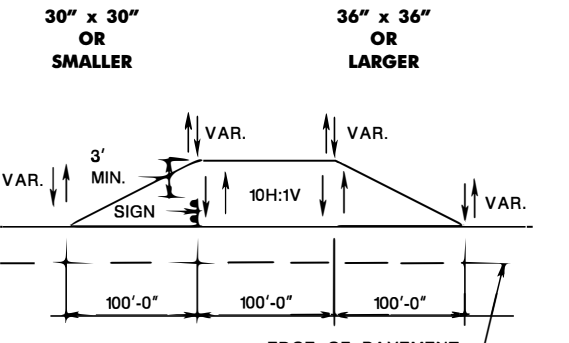
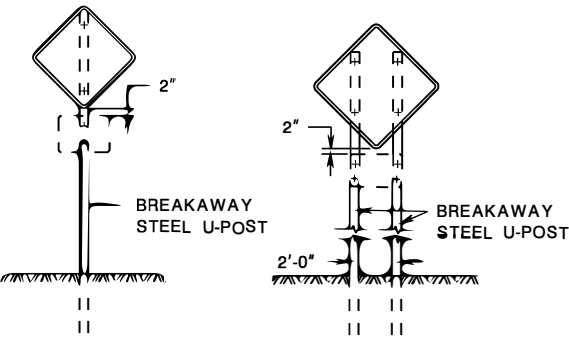
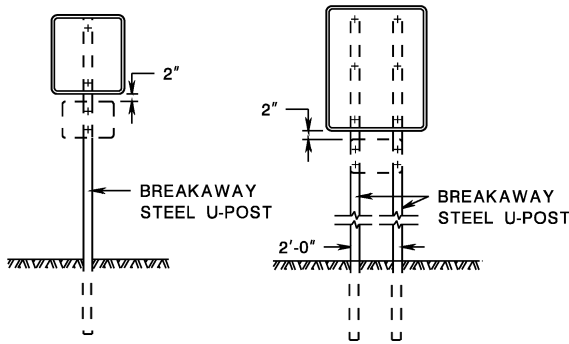
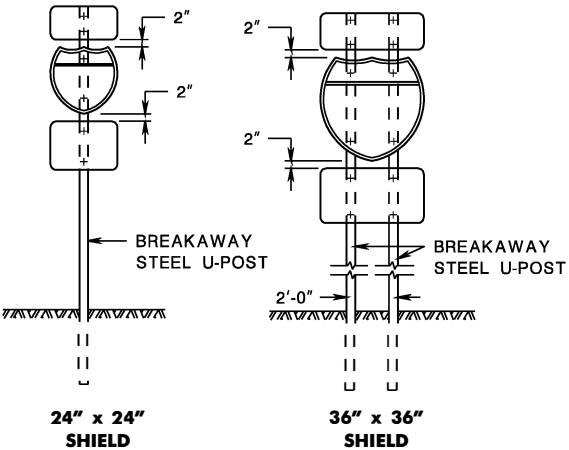


**DETAIL OF BRACKET
FOR SIDE MOUNTED SIGNS**

PANEL SIZE (W x H)	# OF POSTS	POST SIZE (LB/FT)
18" x 18"	1	2.5
18" x 24"	1	2.5
24" x 24"	1	2.5
24" x 30"	1	2.5
24" x 36"	1	2.5
30" x 24"	1	2.5
30" x 30"	1	2.5
36" x 12"	2	2.5
36" x 36" x 36"	2	2.5
30" x 36"	1	4.0

PANEL SIZE (W x H)	# OF POSTS	POST SIZE (LB/FT)
36" x 36"	2	2.5
36" x 48"	2	2.5
45" x 36"	2	2.5
48" x 24"	2	2.5
48" x 36"	2	2.5
48" x 48"	2	4.0
48" x 64" x 64"	2	2.5
60" x 36"	2	4.0
48" x 60"	2	4.0
60" x 30"	2	4.0

**U-POST SELECTION TABLE
BREAKAWAY SIGN SUPPORT**



STEEL U-POST GRADING DETAIL

GENERAL NOTES:

- ALL POSTS TO BE OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS FOR ERECTION AS STATED IN THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AND AS INDICATED BELOW.
- ALL SMALL SIGN SUPPORTS TO BE OF THE BREAKAWAY TYPE WITH EXCEPTION OF THOSE INSTALLED BEHIND GUIDE RAIL OR OTHER ROADSIDE BARRIER.
- ALL STEEL POSTS AND BRACKETS TO BE CUT, BENT, AND HOLES PUNCHED AND DRILLED BEFORE GALVANIZING. GALVINIZING TO BE ACCORDING TO ASTM A123.
- ALL STEEL U-POST SIGN SUPPORTS MUST BE INSTALLED FACING THE PREDOMINANT TRAFFIC FLOW. USE A MOUNTING BRACKET ON SIDE MOUNTED SIGNS SUCH AS "ONE WAY" SIGNS INSTALLED IN MEDIANS.
- SIGN PANEL SIZES ARE TO DETERMINE POST TYPE AND NUMBER AS SHOWN ON THIS DETAIL.
- BOLTS ARE NOT TO PROTRUDE MORE THAN 3/4" BEYOND THE NUT WHEN TIGHT, BUT ARE TO ENGAGE ALL THREADS IN THE NUT.
- WHEN SIGNS ARE INSTALLED ON SLOPES 10H:1V OR FLATTER, THE MINIMUM VERTICAL CLEARANCE REQUIREMENTS FOR SIGNS ARE:

FOR SINGLE POST INSTALLATIONS - THE MINIMUM DISTANCE BETWEEN THE EDGE OF THE PAVEMENT AND THE BOTTOM OF ANY PANEL MUST BE 7 FEET, AND THE MINIMUM DISTANCE FROM EDGE OF PAVEMENT TO THE TOP OF ANY SIGN PANEL MUST BE 9 FEET.

FOR MULTI-POST INSTALLATIONS - THE MINIMUM DISTANCE BETWEEN THE EDGE OF PAVEMENT AND THE BOTTOM OF A MAIN SIGN PANEL MUST BE 7 FEET.

SECONDARY SIGN PANELS (LAND SERVICE HIGHWAYS) - THE MINIMUM DISTANCE BETWEEN THE EDGE OF PAVEMENT AND THE BOTTOM OF A SECONDARY SIGN PANEL IS 6 FEET.

SECONDARY SIGN PANELS (INTERSTATE AND FREEWAYS) - THE BOTTOM OF THE MAIN SIGN TO BE A MINIMUM OF 8 FEET AND THE SECONDARY SIGN PANEL A MINIMUM OF 5 FEET ABOVE THE EDGE OF PAVEMENT.

WHERE GRADING OF 10H:1V OR FLATTER CANNOT BE OBTAINED, OR WHERE CURB OR BERM IS GREATER THAN 4 INCHES, THE MINIMUM VERTICAL CLEARANCE WILL BE MEASURED FROM THE GROUND LINE TO THE BOTTOM OF THE SIGN.

- THE HORIZONTAL OFFSET FROM EDGE OF PAVEMENT TO EDGE OF SIGN IS DERIVED FROM SECTION 2A.19 OF THE MUTCD AS FOLLOWS:

FOR URBAN INSTALLATIONS - IN AREAS WHERE LATERAL OFFSETS ARE LIMITED, A MINIMUM LATERAL OFFSET OF 2 FEET IS DESIRABLE. A MINIMUM OFFSET OF 1 FOOT FROM THE FACE OF THE CURB MAY BE USED IN AREAS WHERE THE SIDEWALK WIDTH IS LIMITED OR WHERE EXISTING POLES ARE CLOSE TO THE CURB.

FOR RURAL INSTALLATIONS - 6 FEET MINIMUM DESIRABLE FROM EDGE OF SHOULDER, BUT 12 FEET MINIMUM DESIRABLE FROM EDGE OF TRAFFIC OR AUXILIARY LANE.

FOR INTERSTATE AND FREEWAY INSTALLATIONS - 6 FEET MINIMUM DESIRABLE FROM EDGE OF SHOULDER, BUT NOT LESS THAN 12 FEET FROM THE EDGE OF TRAFFIC OR AUXILIARY LANE.

FOR RAMP INSTALLATIONS - 6 FEET MINIMUM FROM EDGE OF ROAD.

WHERE BEHIND GUIDE RAIL - 4 FEET MINIMUM FROM BACK OF BEAM GUIDE RAIL ELEMENT TO SIGN POST.

- DO NOT INSTALL PERMANENT SIGN SUPPORTS ON SLOPES GREATER THAN 10H:1V, EXCEPT WHERE GRADING OF 10H:1V CANNOT BE OBTAINED OR THE SIGN SUPPORTS WILL BE BEHIND A TRAFFIC BARRIER. THE SLOPE IS TO EXTEND A MINIMUM OF 3 FEET BEYOND THE OUTSIDE EDGE OF SIGN (SEE GRADING DETAIL FOR SLOPE TREATMENT).
- EXTRUDED ALUMINUM SIGN PANELS ARE NOT PERMITTED FOR USE WITH STEEL U-POST SIGN SUPPORTS.
- DO NOT PLACE STEEL U-POST SIGN SUPPORTS IN FRONT OF GUIDE RAIL AND THE POSTS MUST NOT STRADDLE GUIDE RAIL.
- TO EXTEND THE HEIGHT OF A SIGN POST, A MAXIMUM OF ONE SPLICE MAY BE MADE AND MUST BE A MINIMUM OF 9 FEET FROM THE GROUNDLINE TO CENTER LINE OF SPLICE.

**STEEL U-POST SIGN
SUPPORTS**

N.T.S.

CD-612-4

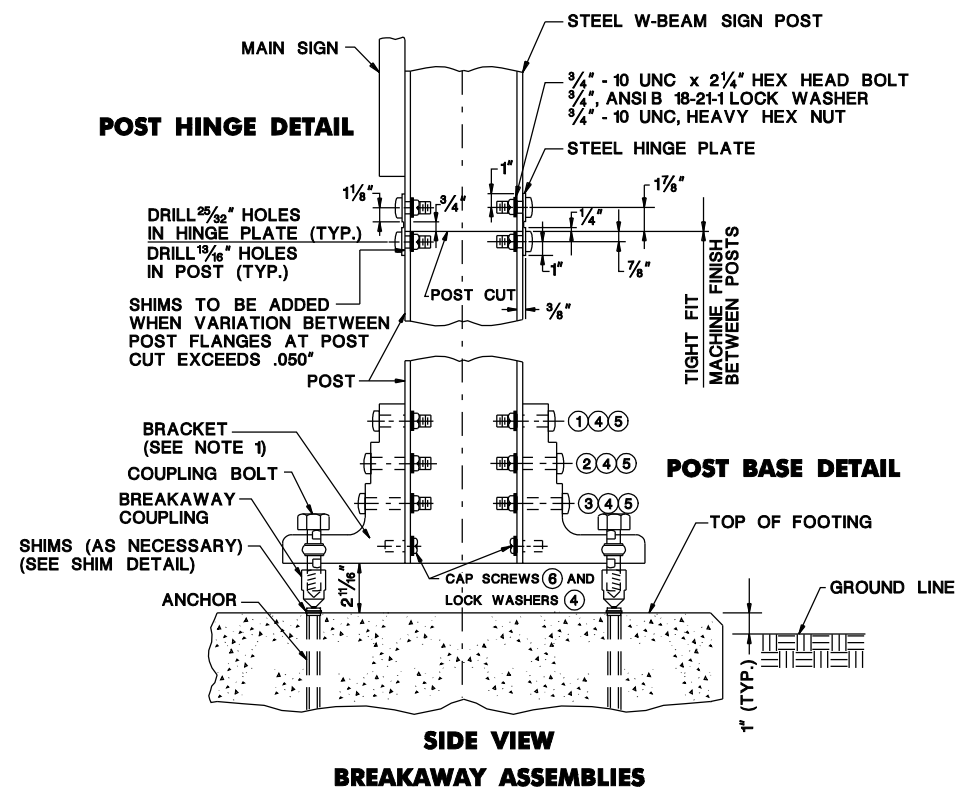
NEW JERSEY DEPARTMENT OF TRANSPORTATION

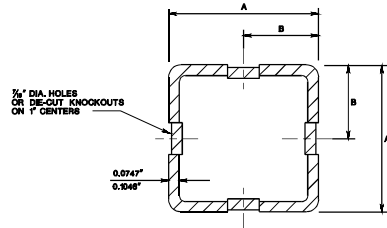
CONSTRUCTION DETAILS

CD-612-4.1



**BREAKAWAY GRADING DETAIL (SEE NOTE 7)
(PLAN VIEW)**



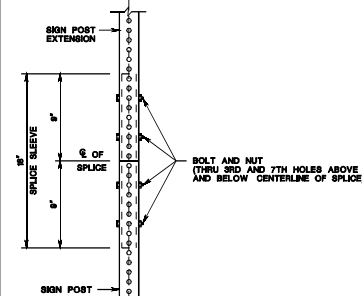
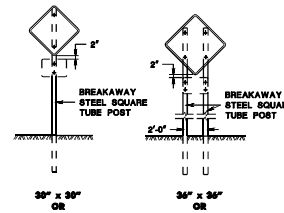
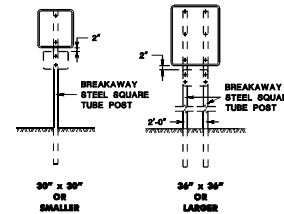
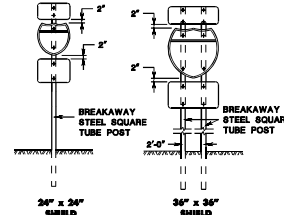


SIGN POST				ANCHOR POST				ANCHOR SLEEVE *				SPICE SLEEVE			
SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.	SIZE	DIMENSION		THICK.
2.00"	2.00"	1.000"	0.0743"	2.25"	2.25"	1.125"	0.1048"	2.50"	2.50"	1.250"	0.1048"	1.75"	1.75"	0.875"	0.0743"
2.25"	2.25"	1.125"	0.0743"	2.50"	2.50"	1.250"	0.1048"	3.00"	3.00"	1.500"	0.075"	2.00"	2.00"	1.000"	0.0743"

* ONLY REQUIRED FOR INSTALLATIONS IN CONCRETE.

SQUARE STEEL POSTS

0.1048" AND 0.0743" - 80 KSI



SPICE DETAIL

NOTES:

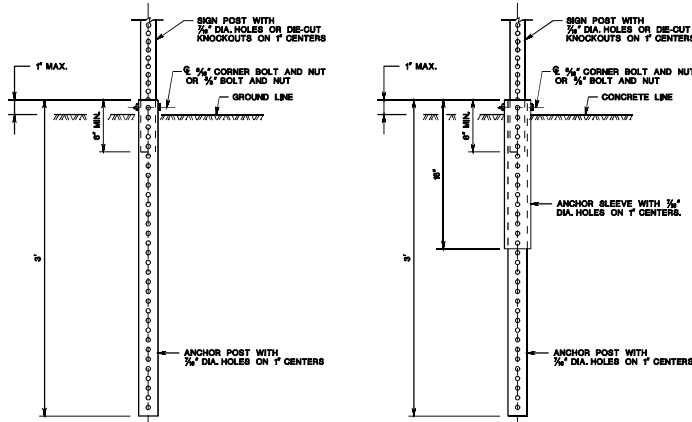
- TO EXTEND THE HEIGHT OF A SIGN POST, A MAXIMUM OF ONE SPICE MAY BE MADE.
- SIGN POST SPICES MUST BE A MINIMUM OF 9 FT. ABOVE GROUND.
- SELECT THE PROPER SIZE SPICE SLEEVE FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.

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GENERAL NOTES:

- DETERMINE THE PROPER SIZE AND NUMBER OF SIGN POSTS FROM THE APPROPRIATE GRAPH.
- PUNCH OUT APPROPRIATE KNOCKOUTS AND ATTACH THE SIGN.
- DETERMINE THE PROPER SIZE ANCHOR POST FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.
- DRIVE THE ANCHOR POST INTO THE GROUND, USING THE APPROPRIATE SIZE DRIVE GAP UNTIL ONLY ONE HOLE REMAINS ABOVE THE GROUND OR FINISHED ELEVATION OF THE CONCRETE.
- PUNCH OUT THE SIXTH KNOCKOUTS FROM THE BOTTOM OF THE SIGN POST.
- SLIDE A MINIMUM OF 8" OF THE SIGN POST INTO THE ANCHOR POST.
- ATTACH THE SIGN POST TO THE ANCHOR POST WITH ONE 5/8" CORNER BOLT AND NUT (OR ALTERNATELY ONE 5/8" BOLT AND NUT) THROUGH THE TOP HOLE OF THE ANCHOR POST.
- TIGHTEN THE BOLT AND NUT BY THE TURN-OF-THE-NUT METHOD, BRING NUT TO A SNUG CONDITION TO ENSURE THAT ALL PARTS ARE BROUGHT TOGETHER INTO FULL CONTACT WITH EACH OTHER, THEN TIGHTEN AN ADDITIONAL 1/2 TURN.
- FOR INSTALLATIONS IN CONCRETE, PLACE A 18" LONG ANCHOR SLEEVE OUTSIDE THE ANCHOR POST SO THAT THE TOP OF THE ANCHOR POST AND ANCHOR SLEEVE ARE EVEN. SELECT THE PROPER SIZE ANCHOR SLEEVE FROM THE SQUARE STEEL POSTS TABLE ON THIS SHEET.
- SIGN POSTS AND SPICE SLEEVES SHALL HAVE 3/4" DIAMETER HOLES OR DIE-OUT KNOCKOUTS ON 1" CENTERS ON ALL FOUR SIDES. ANCHOR POSTS AND ANCHOR SLEEVES SHALL HAVE 3/4" DIAMETER HOLES ON 1" CENTERS ON ALL FOUR SIDES.

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INSTALLATION DETAIL

INSTALLATION DETAIL IN CONCRETE

SIGN POST SIZE (INCHES)	DIMENSION L (INCHES)
2.00	3.0
2.25	3.5

" - 16 UNC ANCHOR BOLTS & NUTS

CADMIUM PLATED STEEL, ZINC PLATED STEEL OR ALUMINUM

SIGN POST SIZE (INCHES)	DIMENSION (INCHES)	
	A	B
2.00	1.682	1.988
2.25	1.682	1.988

" - 18 UNC CORNER BOLTS & NUTS

CADMIUM PLATED STEEL, ZINC PLATED STEEL OR ALUMINUM

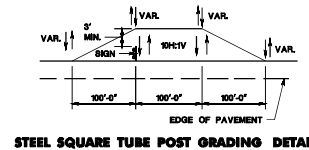
STEEL SQUARE POST SIGN SUPPORTS

N.T.S.

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NEW JERSEY DEPARTMENT OF TRANSPORTATION

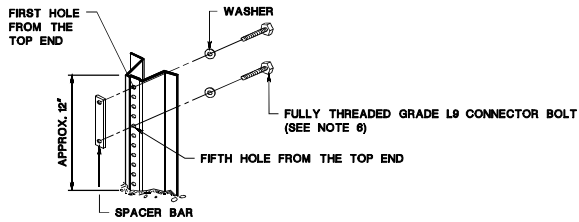
CONSTRUCTION DETAILS



STEEL SQUARE TUBE POST GRADING DETAIL

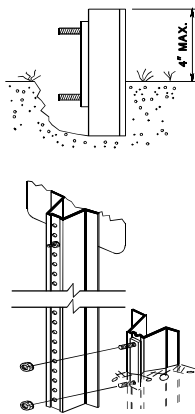
CD-612-4A.1

92A
164

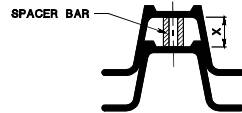
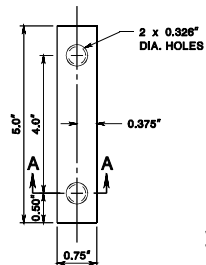


NOTES:

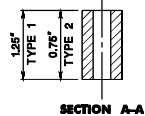
1. DRIVE ANCHOR POST ASSEMBLY TO WITHIN APPROXIMATELY 12 INCHES ABOVE GROUND LEVEL. PLACE BOLT AND WASHER IN FIRST AND FIFTH HOLES FROM THE TOP END, AND SECURE BOLTS ONTO SPACER.
2. DRIVE ANCHOR POST ASSEMBLY TO WITHIN A MAXIMUM OF 4 INCHES ABOVE GROUND LEVEL.
3. DIG OUT AROUND BACK OF ANCHOR POST ASSEMBLY TO ALLOW ROOM FOR TOP POST TO BE ATTACHED.
4. NEST TOP POST ASSEMBLY ONTO PROTRUDING ANCHOR POST ASSEMBLY BOLTS, THROUGH THE FIRST AND FIFTH HOLES FROM THE BOTTOM OF THE TOP POST.
5. PLACE AND TIGHTEN A SELF-LOCKING FLANGE NUT ON EACH BOLT. WHEN INSTALLATION IS COMPLETE, TOP OF GROUND POST NOT TO EXCEED 4 INCHES ABOVE GROUND LEVEL.
6. SIZE OF CONNECTOR BOLT FOR TYPE 1, $\frac{1}{2}$ " x $1\frac{1}{2}$ "
SIZE OF CONNECTOR BOLT FOR TYPE 2, $\frac{3}{8}$ " x 2"
7. THE CONNECTOR BOLTS ARE TO BE FULLY THREADED. EACH CONNECTOR BOLT AND NUT TO BE CLEARLY STAMPED WITH MANUFACTURER'S IDENTIFYING MARK.



**ANCHOR POST ASSEMBLY
SIGN SUPPORTS**



WHEN X IS GREATER THAN 0.75", USE TYPE 1 SPACER BAR
WHEN X IS 0.75" OR LESS, USE TYPE 2 SPACER BAR



SECTION A-A

SPACER BAR

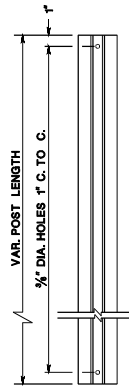
CD-612-5.1

WEIGHT * LBS./FT.	DIMENSIONS (IN)				AREA IN. ²	X-X AXIS **		Y-Y AXIS	
	"A"	"B"	"C"	"D"		I (IN. ⁴)	S (IN. ³)	I (IN. ⁴)	S (IN. ³)
2.50	1.516	3.082	1.278	0.889	0.780	0.228	0.313	0.539	0.352
4.00	1.988	3.500	1.336	0.834	1.187	0.611	0.707	1.181	0.884

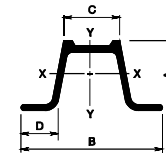
* ± 5%

** GOVERNING SECTION

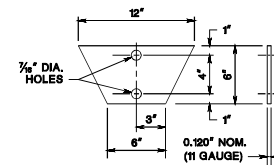
TYPE 1 STEEL U-POST PROPERTIES



**TOP POST
U-POST**



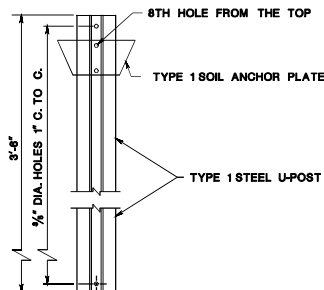
**TYPE 1 STEEL
U-POST**



**TYPE 1
SOIL ANCHOR PLATE**

NOTES:

1. ANCHOR POST AND TOP POST TO BE OF EQUAL WEIGHT / FEET.
2. SOIL ANCHOR PLATE TO BE ATTACHED TO ALL ANCHOR POSTS.
3. THE MATERIAL FOR THE SOIL ANCHOR PLATES TO BE CARBON SHEET STEEL.
4. THE STEEL "U" POST TO BE GRADE 60.



**TYPE 1
ANCHOR POST
ASSEMBLY**

CD-612-5.2

**STEEL U-POST SIGN
SUPPORTS**

N.T.S.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

CD-612-5