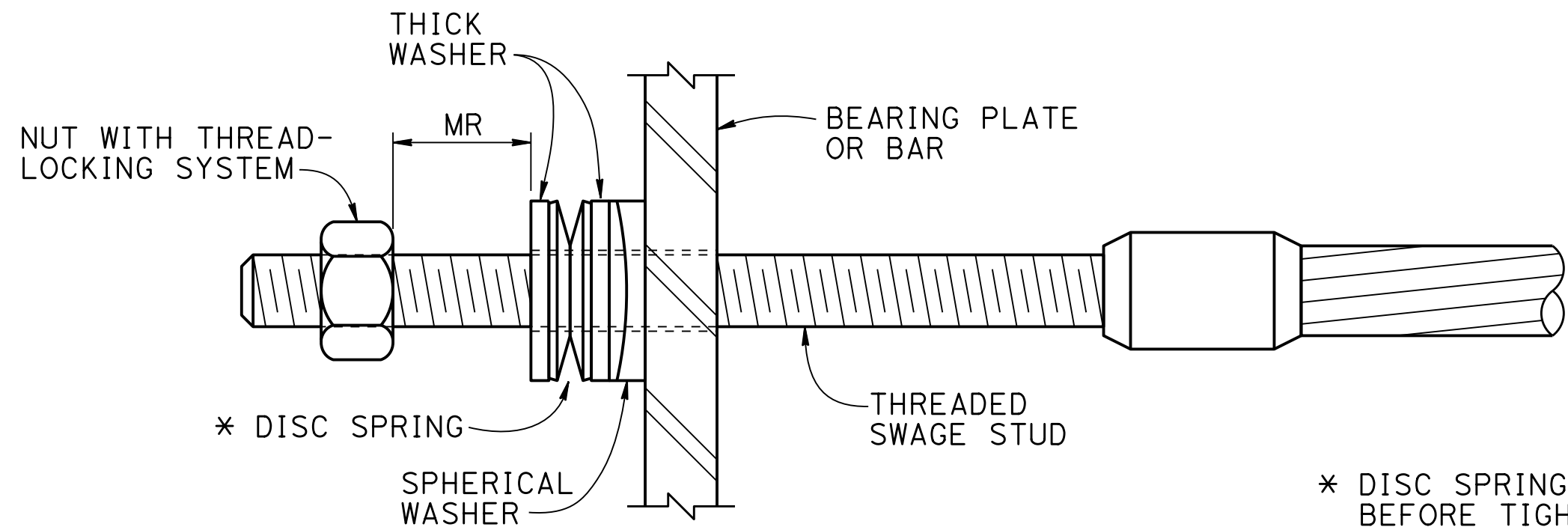
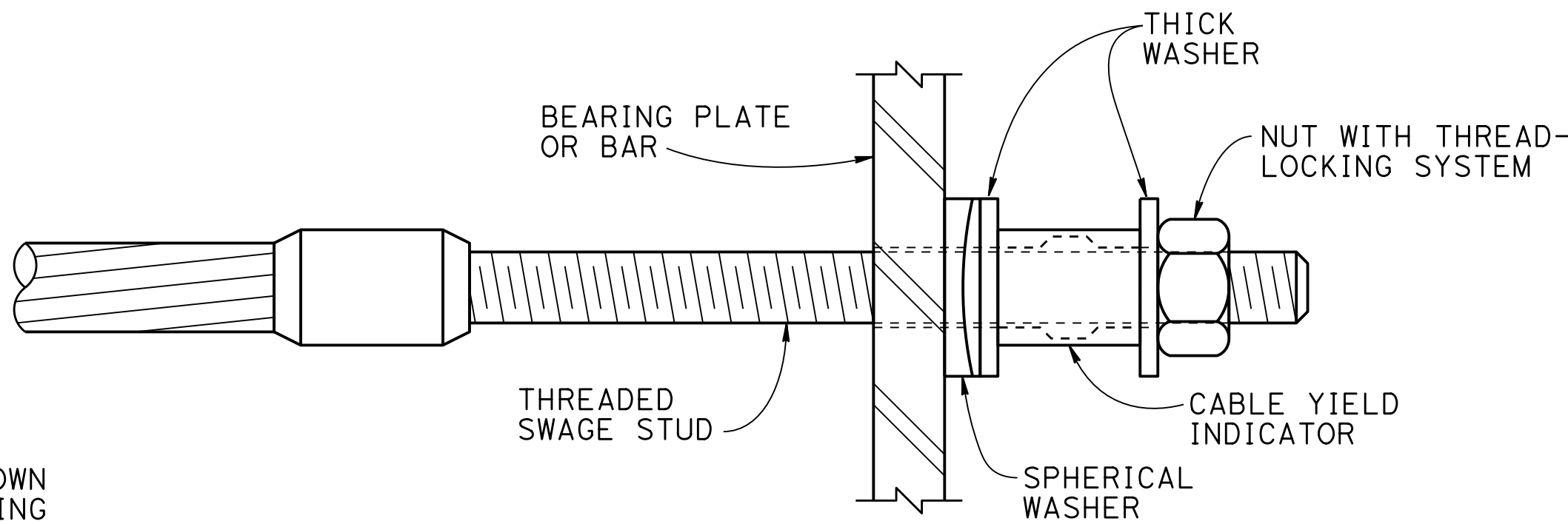




DISC SPRING HARDWARE
6" = 1'-0"



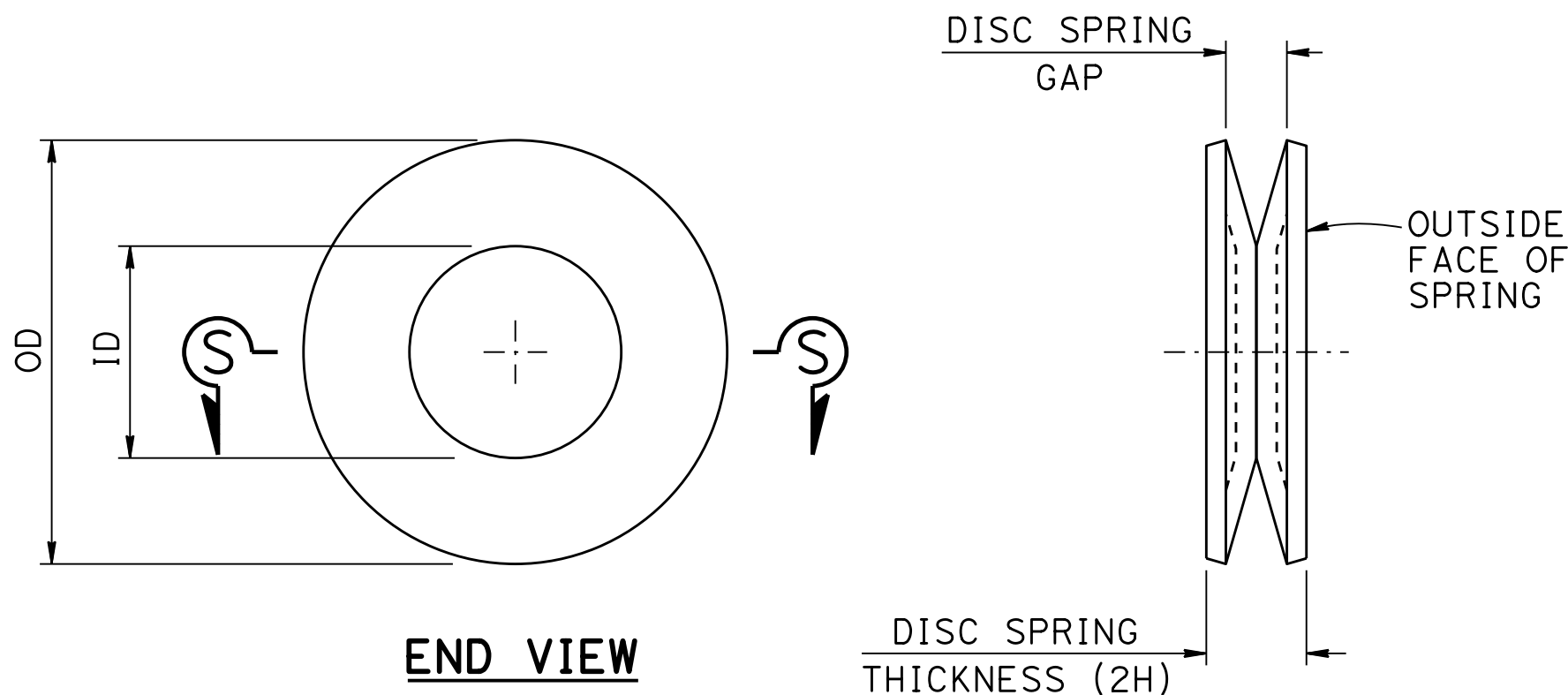
CABLE YIELD INDICATOR HARDWARE
6" = 1'-0"

- NOTES:
- Place the Cable Yield Indicator Hardware on the supported side of the Hinge. Place the Disc Spring Hardware on the Hinge Seat side.
 - All exposed, non-painted hardware must be galvanized. Dimensions shown are before galvanizing except as noted.
 - Nuts must not be set until after the completion of prestressing for CIP prestressed bridges.
 - In corrosive environments, add a Locking Nut instead of the Thread-Locking System.

RESTRAINER UNIT INSTALLATION PROCEDURE

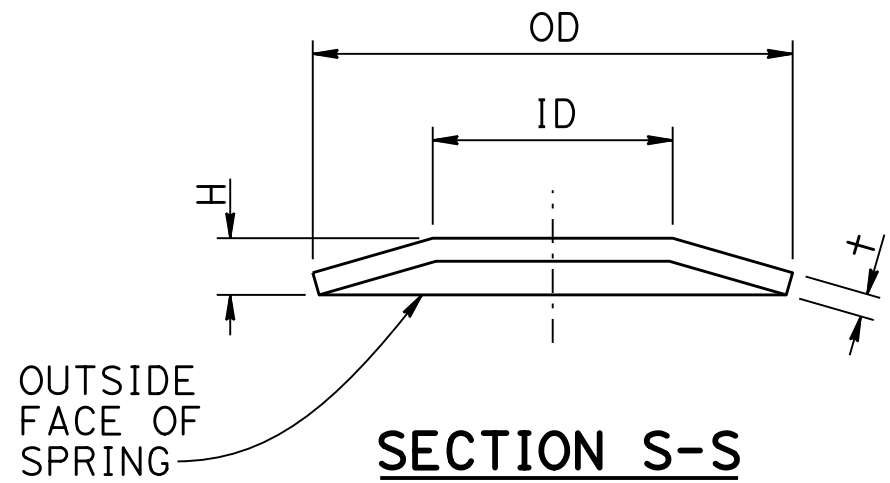
For typical straight Restrainers, girder to opposite girder alignment:

- Install Spherical Washers, Thick Washers, Cable Yield Indicator and Nut with Thread-Locking System on the supported side.
- Install Spherical Washers, Thick Washers, Disc Spring and Nut on the Hinge Seat side.
- Tighten the Nuts on the Hinge Seat side of Restrainer units until the Disc Springs collapse and there is no gap remaining between the discs.
- Place Thread-Locking System on the Threaded Stud and back off the Nut from the Disc Springs a distance equal to the maximum additional amount that the Hinge is expected to open, relative to existing ambient conditions, for the Movement Range (MR) shown.



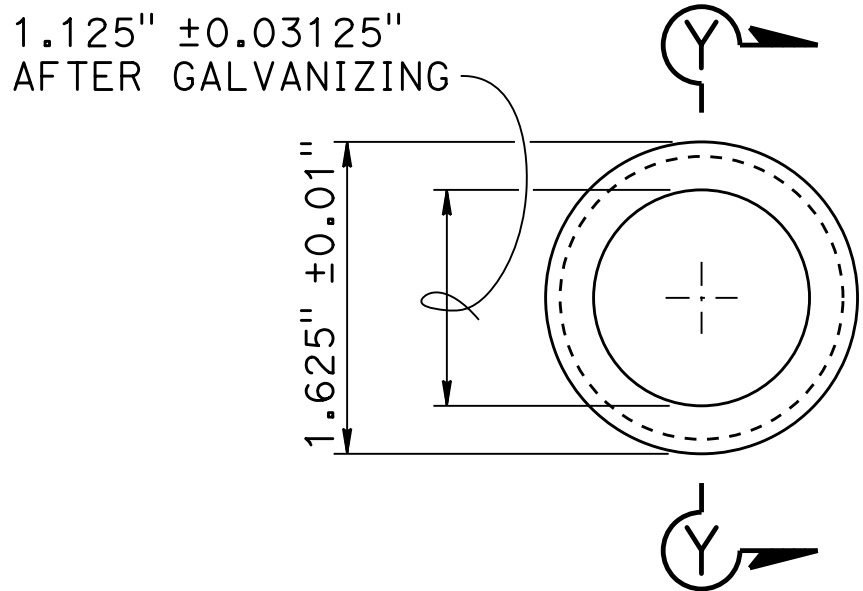
END VIEW

ASSEMBLED SPRING
Before Nut Tightening



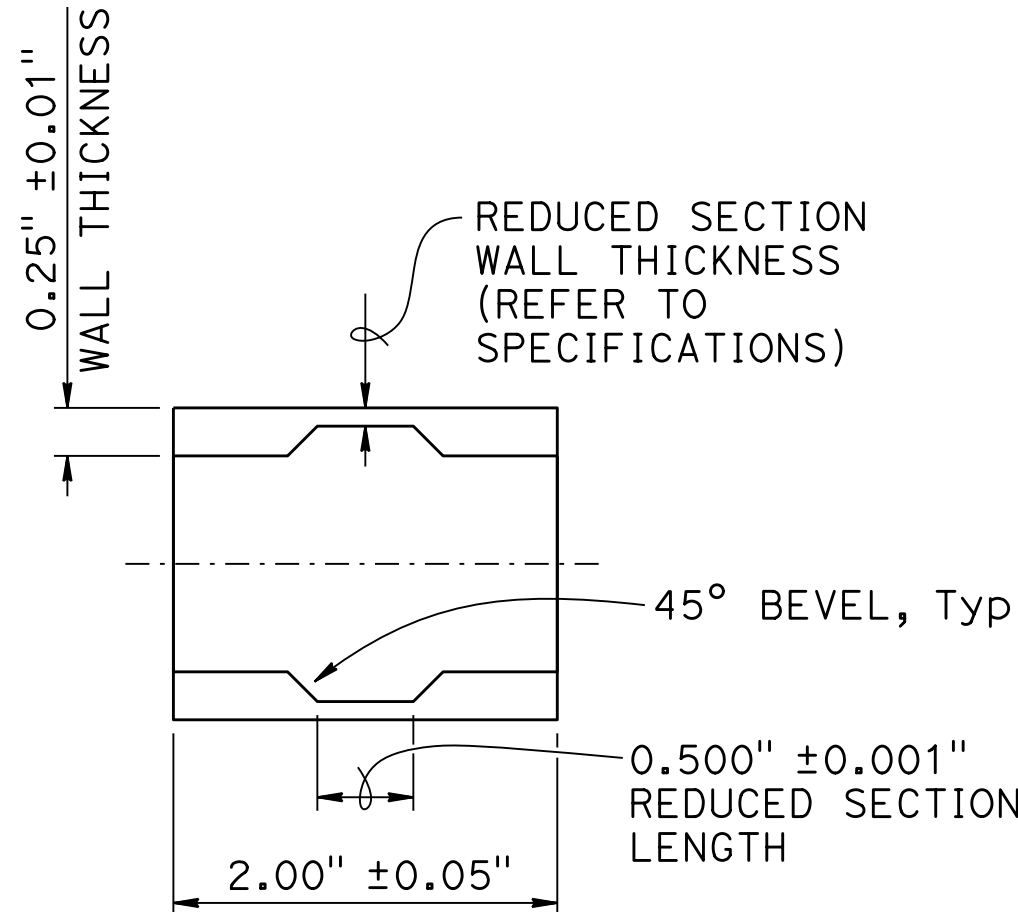
SECTION S-S
Single Disc

DISC SPRING
1" = 1"

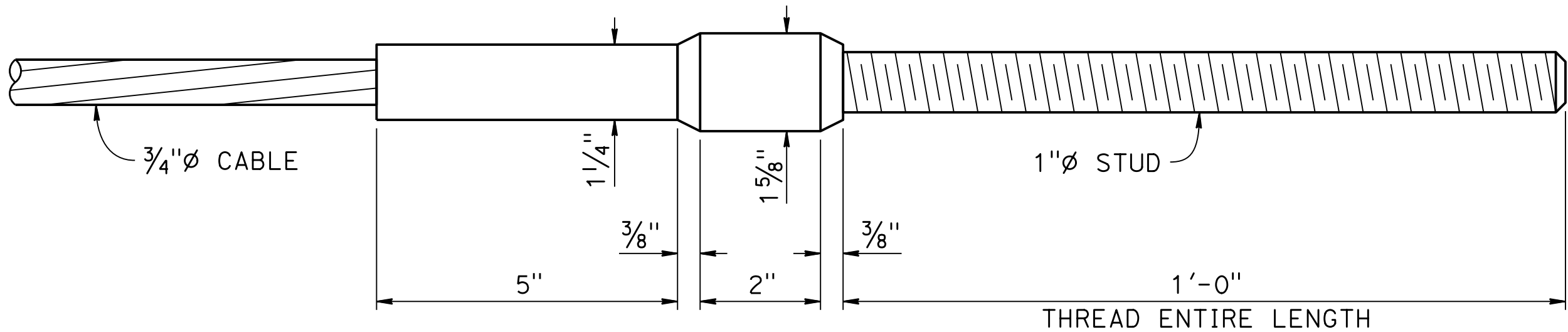


END VIEW

CABLE YIELD INDICATOR
1" = 1"



SECTION Y-Y



CABLE END SWAGE STUD DETAIL
6" = 1'-0"

DISC SPRING AND WASHER DIMENSIONS

RESTRAINER LENGTH	DISC SPRING					SPHERICAL WASHER			THICK WASHER		
L (ft)	ID	OD	t	H	COLOR CODE	ID	OD	NOMINAL THICKNESS	ID	OD	t (Min)
00.0 - 25.0	1.125	2.00	0.065	0.130	WHITE	1.125	2.00	0.75	1.125	2.00	0.25
25.1 - 31.9	1.125	2.00	0.084	0.136	RED	1.125	2.00	0.75	1.125	2.00	0.25
32.0 - 37.9	1.125	2.00	0.097	0.145	BLUE	1.125	2.00	0.75	1.125	2.00	0.25
37.9 < L	1.125	2.50	0.120	0.180	YELLOW	1.125	2.50	0.75	1.125	2.50	0.25

Restrainer Length (L) :
Use effective cable length, measured from the outer faces of Bearing Plates or Bar.
See Bridge detail sheets for approximate length.

Use ASTM F436, Standard Specification for Hardened Steel Washers for all
OD and ID dimensions for washers and disc springs.

Dimensions are inches unless otherwise noted.