



TOUGHMesh

- Instructions -
(Fitting Fabrication)

TM-I-02_A02

INSTALLATION INSTRUCTION

CTI-S50034_A



CT INNOVATIONS

Horizontal Tee From Sraight Sections Installation

TOUGHMesh Fitting

STEP 1:

Prepare the first tray and smoothly cut the threads of one wire side section as shown in Figure 1, cut the required segments "P" as indicated in the table. Force must be applied to make an approximately 45deg bend on the "B" segment.

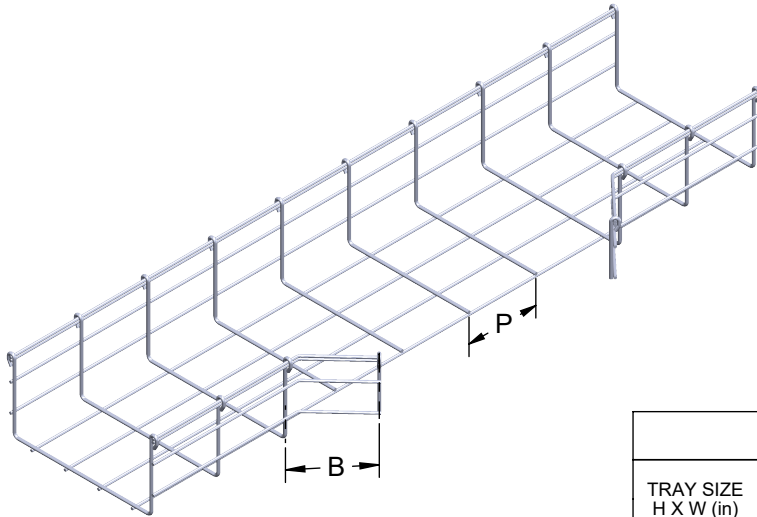


FIGURE 1

STEP 2:

Prepare the second tray and smoothly cut the threads of both wire side section as shown in Figure 2, cut the required segments "Q" as indicated in the table. Force must be applied to make an approximately 45deg bend on the "B" segment.

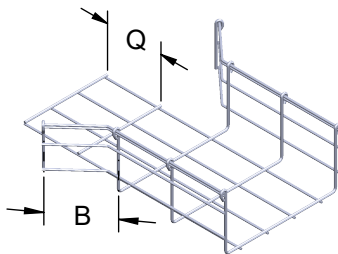


FIGURE 2

TRAY SIZE H X W (in)	SPLICE CHART			NO. OF SEGMENTS TO BE REMOVED	
	WASHER SPLICE KIT QTY		HOLD DOWN KIT	P	Q
	SIDERAIL	BOTTOM			
2X2	2	1	-	1	1
2X4	2	1	-	2	1
2X6	2	1	4	3	1
2X8	2	1	-	3	1
2X10	2	1	4	4	1
2X12	2	1	-	4	1
2X16	2	2	-	5	1
2X18	2	2	4	6	1
2X20	2	2	-	6	1
2X24	2	2	-	7	1
4X4	2	2	-	2	1
4X6	2	2	4	3	1
4X8	2	3	-	3	1
4X10	2	3	4	4	1
4X12	2	4	-	4	1
4X16	2	4	-	5	1
4X18	2	4	4	6	1
4X20	2	5	-	6	1
4X24	2	5	-	7	1
6X8	4	2	-	3	1
6X10	4	2	4	4	1
6X12	4	3	-	4	1
6X16	4	3	-	5	1
6X18	4	3	4	6	1
6X20	4	4	-	6	1
6X24	4	4	-	7	1



Horizontal Tee From Straight Sections Installation

TOUGHMesh Fitting

STEP 3:

Position the two straight sections as shown in Figure 3, use the washer splice kits to fix the bottom wire sections and details A & B to fix the wire side section.

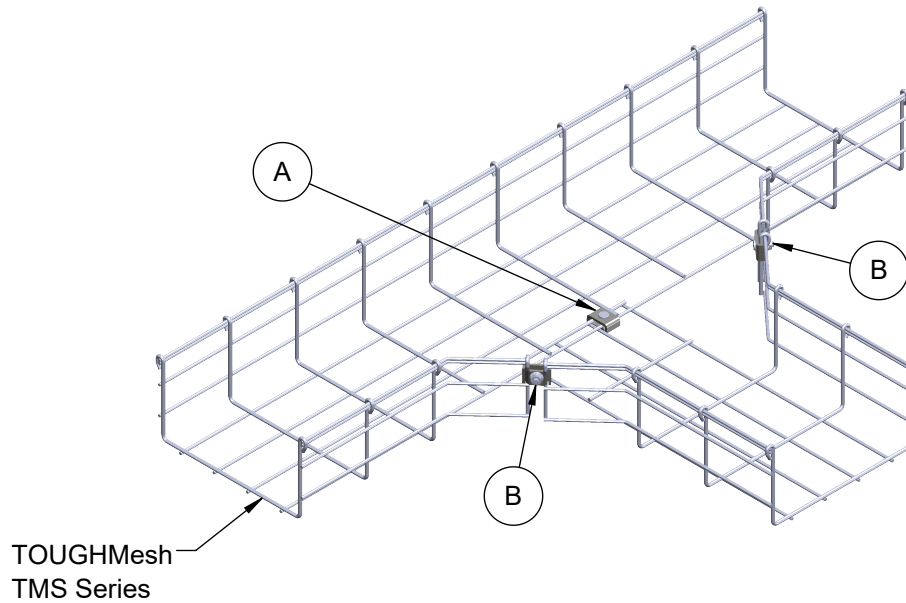
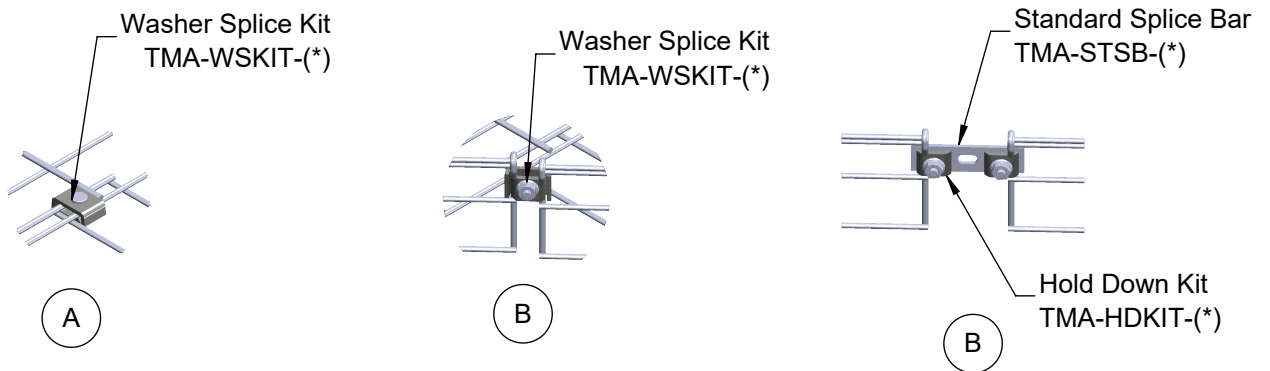


FIGURE 3



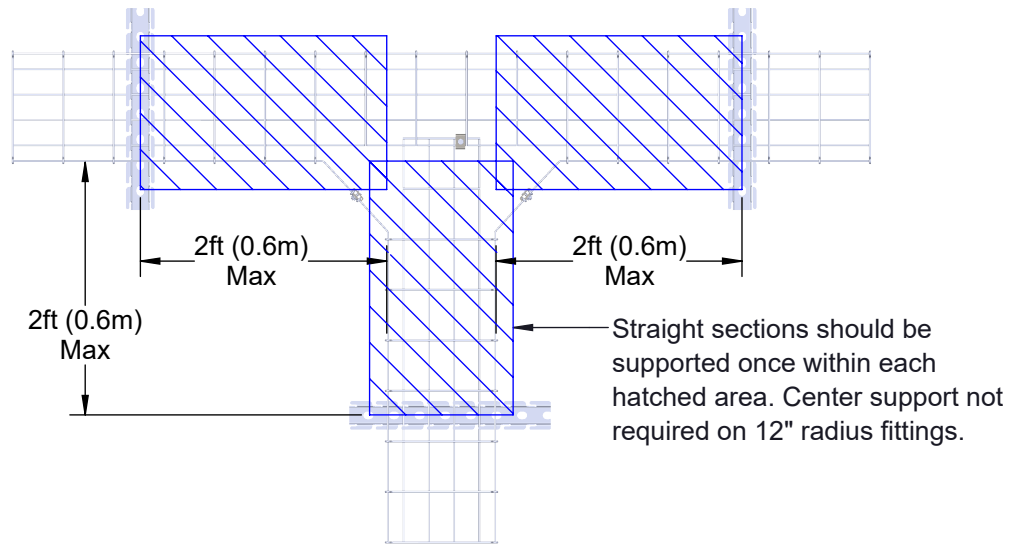


Horizontal Tee From Straight Sections Installation

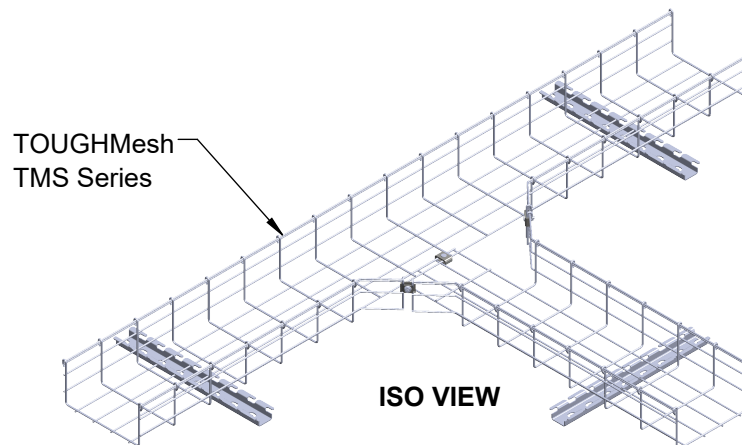
TOUGHMesh Fitting

STEP 4:

Provide support on each side within 2ft from the splice location per NEMA VE-2.



PLAN VIEW



ISO VIEW

FIGURE 4

INSTALLATION INSTRUCTION

CTI-S50035_A



CT INNOVATIONS

Horizontal Cross From Sraight Sections Installation

TOUGHMesh Fitting

STEP 1:

Prepare the first tray and smoothly cut the threads of one wire side section as shown in Figure 1, cut the required segments "P" as indicated in the table. Force must be applied to make an approximately 45deg bend on the "B" segment.

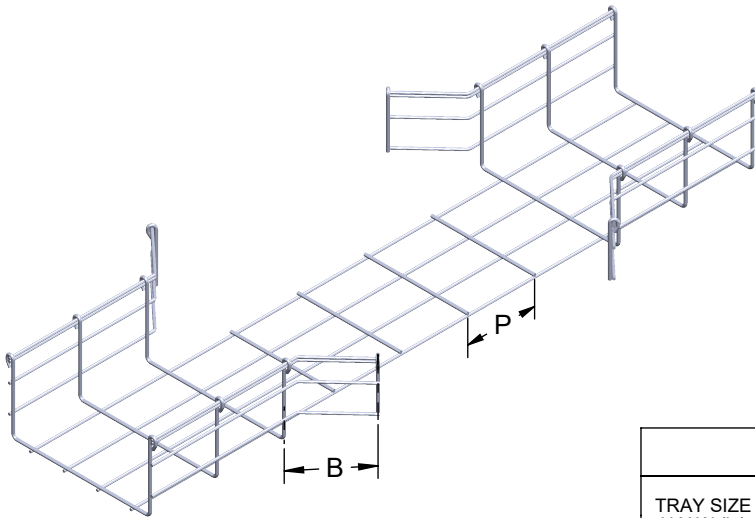


FIGURE 1

STEP 2:

Prepare the second tray and smoothly cut the threads of both wire side section as shown in Figure 2, cut the required segments "Q" as indicated in the table. Force must be applied to make an approximately 45deg bend on the "B" segment.

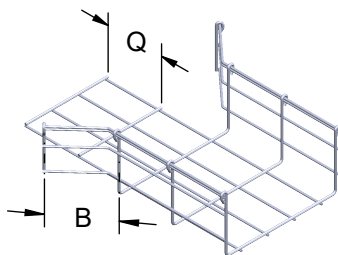


FIGURE 2

TRAY SIZE H X W (in)	SPLICE CHART			NO. OF SEGMENTS TO BE REMOVED	
	WASHER SPLICE KIT QTY		HOLD DOWN KIT	P	Q
	SIDERAIL	BOTTOM			
2X2	4	2	-	1	1
2X4	4	2	-	2	1
2X6	4	2	8	3	1
2X8	4	2	-	3	1
2X10	4	2	8	4	1
2X12	4	2	-	4	1
2X16	4	4	-	5	1
2X18	4	4	8	6	1
2X20	4	4	-	6	1
2X24	4	4	-	7	1
4X4	4	4	-	2	1
4X6	4	4	8	3	1
4X8	4	4	-	3	1
4X10	4	6	8	4	1
4X12	4	8	-	4	1
4X16	4	8	-	5	1
4X18	4	8	8	6	1
4X20	4	10	-	6	1
4X24	4	10	-	7	1
6X8	8	4	-	3	1
6X10	8	4	8	4	1
6X12	8	6	-	4	1
6X16	8	6	-	5	1
6X18	8	6	8	6	1
6X20	8	8	-	6	1
6X24	8	8	-	7	1

INSTALLATION INSTRUCTION

CTI-S50035_A



CT INNOVATIONS

Horizontal Cross From Straight Sections Installation

TOUGHMesh Fitting

STEP 3:

Position the two straight sections as shown in Figure 3, use the washer splice kits to fix the bottom wire sections and details A & B to fix the wire side section.

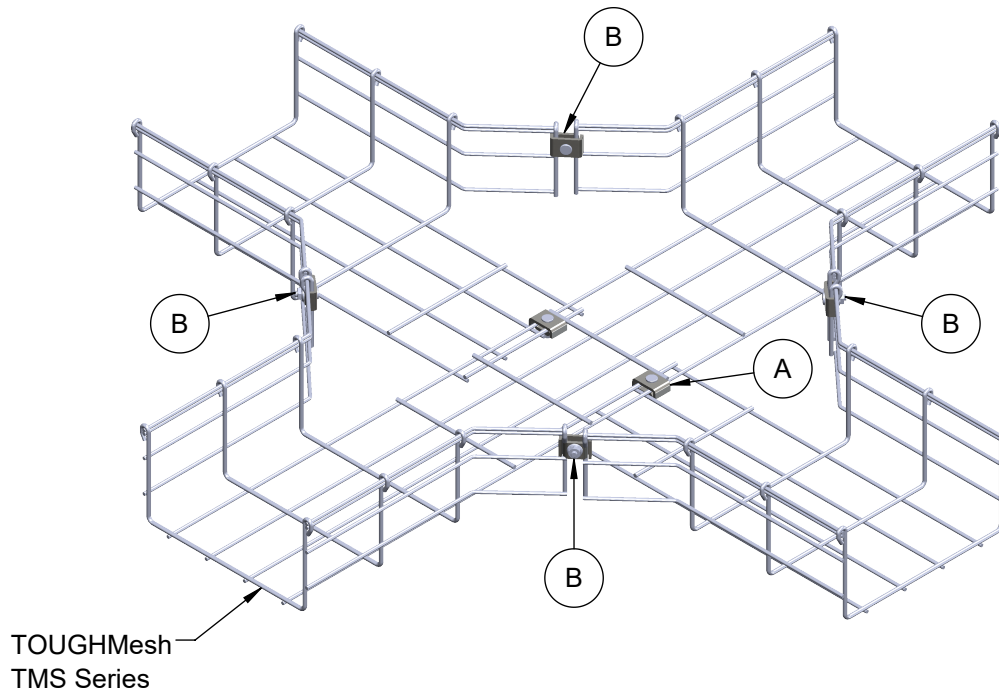
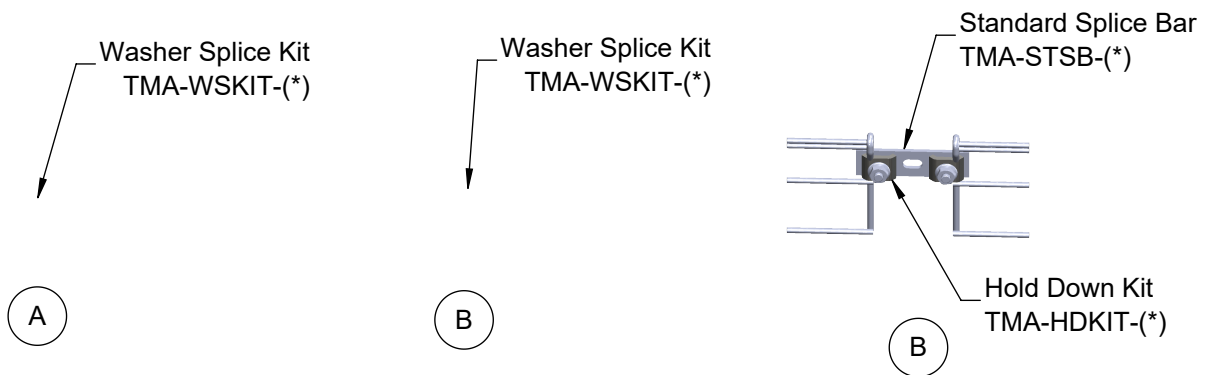


FIGURE 3





Horizontal Cross From Straight Sections Installation

TOUGHMesh Fitting

STEP 4:

Provide support on each side within 2ft from the splice location per NEMA VE-2.

Straight sections should be supported once within each hatched area. Center support not required on 12" radius fittings.

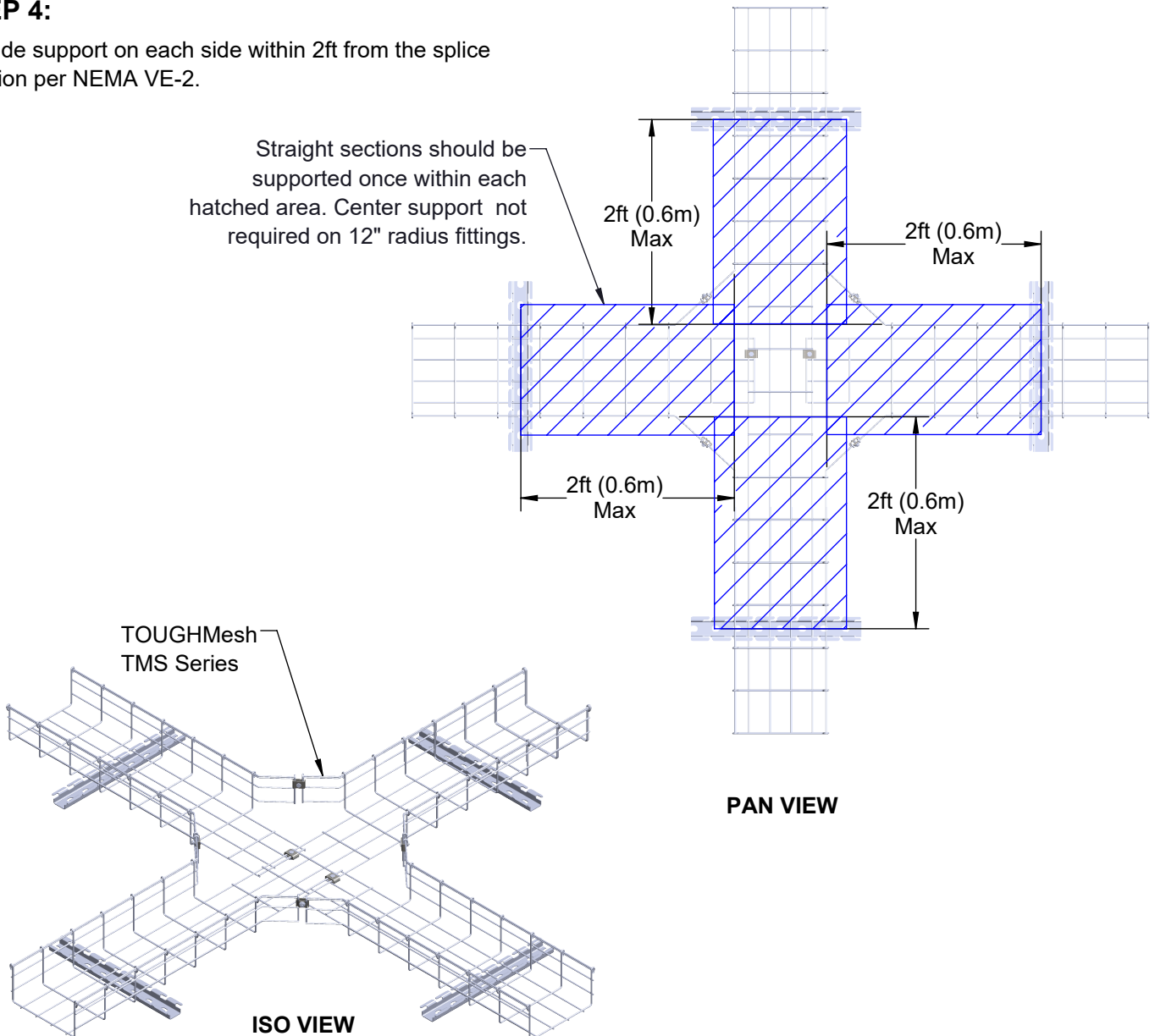


FIGURE 4

INSTALLATION INSTRUCTION

CTI-S50036_A



CT INNOVATIONS

Straight Reducer From Straight Sections

Installation

TOUGHMesh Fitting

STEP 1:

Prepare the first tray (larger width) and cut only the 90° elbow of the cross wire section as shown in Figure 1. Force must be applied to make an inward bend on the "B" segment.

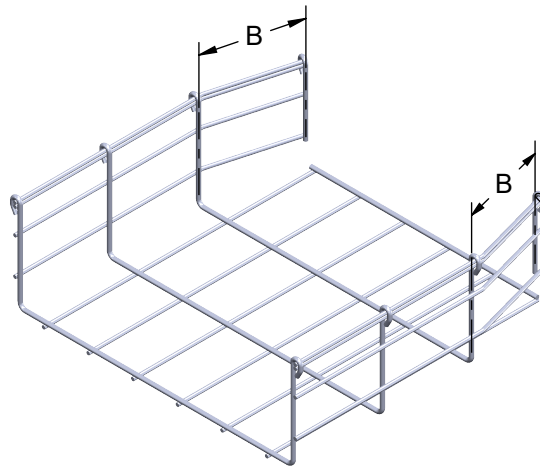


FIGURE 1

STEP 2:

Prepare the second tray (smaller width) and cut only the 90° elbow of the cross wire section as shown in Figure 2. Force must be applied to make an outward bend on the "B" segment.

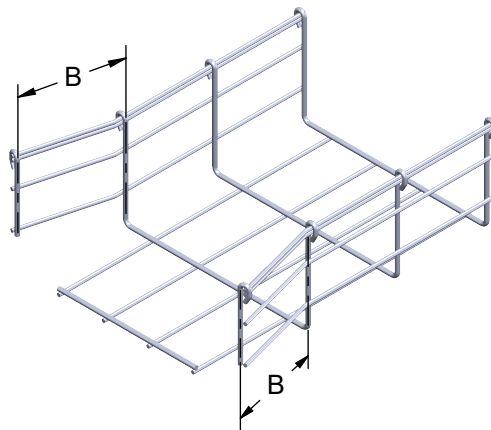


FIGURE 2

SPLICE CHART

TRAY SIZE H X W (in)	WASHER SPLICE KIT QTY	
	SIDERAIL	BOTTOM
2X2	2	1
2X4	2	1
2X6	2	1
2X8	2	1
2X10	2	1
2X12	2	1
2X16	2	2
2X18	2	2
2X20	2	2
2X24	2	2
4X4	2	2
4X6	2	2
4X8	2	3
4X10	2	3
4X12	2	4
4X16	2	4
4X18	2	4
4X20	2	5
4X24	2	5
6X8	4	2
6X10	4	2
6X12	4	3
6X16	4	3
6X18	4	3
6X20	4	4
6X24	4	4

INSTALLATION INSTRUCTION

CTI-S50036_A



CT INNOVATIONS

Straight Reducer From Straight Sections

Installation

TOUGHMesh Fitting

STEP 3:

Position the two straight sections as shown in Figure 3, use the washer splice kits to fix the bottom wire sections and detail B to fix the wire side section.

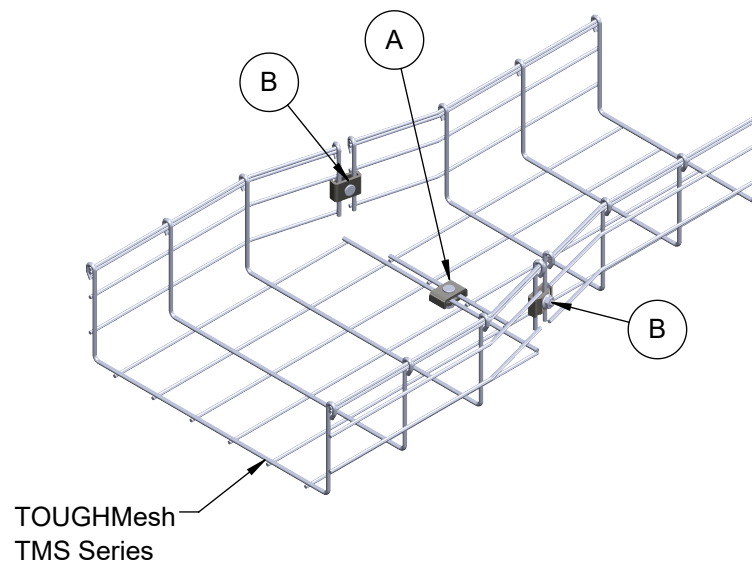
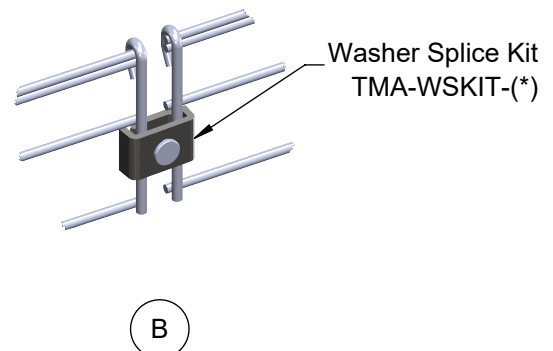
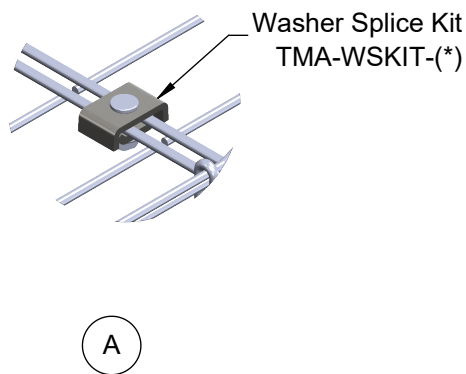


FIGURE 3



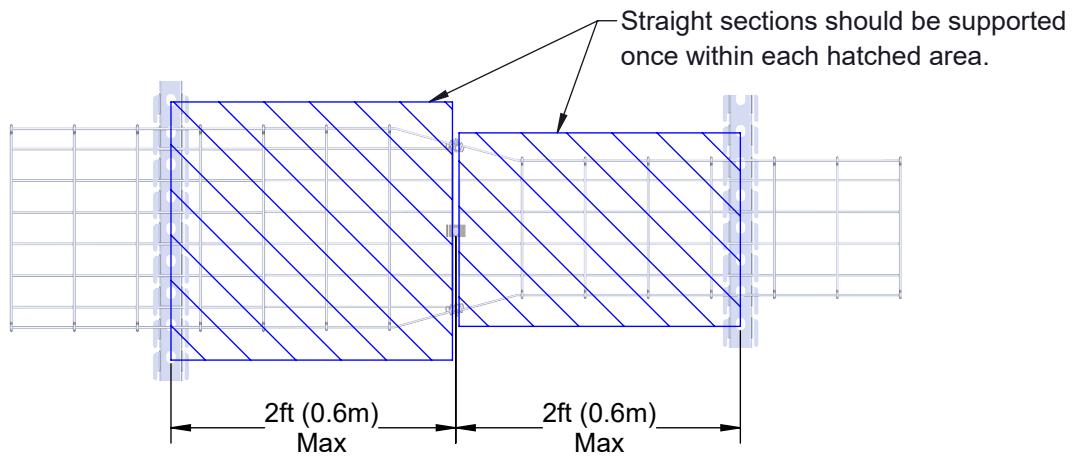


Straight Reducer From Straight Sections Installation

TOUGHMesh Fitting

STEP 4:

Provide support on each side within 2ft from the splice location per NEMA VE-2.



PLAN VIEW

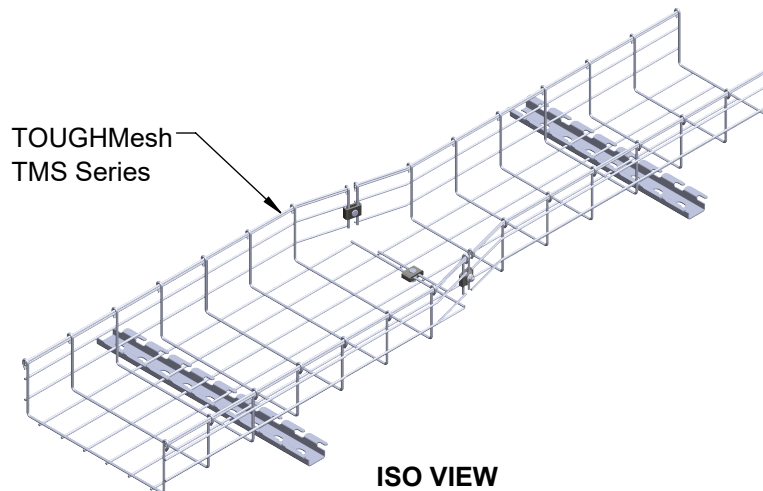


FIGURE 4

INSTALLATION INSTRUCTION

CTI-S50037_A



CT INNOVATIONS

Left/Right Reducer From Straight Sections

Installation

TOUGHMesh Fitting

STEP 1:

Prepare the first tray (larger width) and cut only the 90° elbow of the cross wire section as shown in Figure 1. Force must be applied to make an inward bend on the "B" segment.

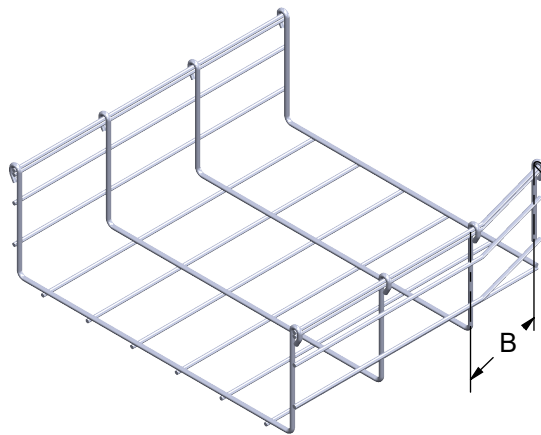


FIGURE 1

STEP 2:

Prepare the second tray (smaller width) and cut only the 90° elbow of the cross wire section as shown in Figure 2. Force must be applied to make an outward bend on the "B" segment.

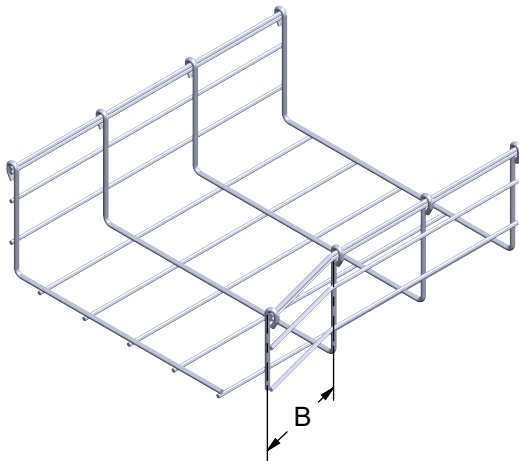


FIGURE 2

SPLICE CHART			
TRAY SIZE H X W (in)	WASHER SPLICE KIT QTY		Splice Bar Kit
	SIDERAIL	BOTTOM	
2X2	2	1	1
2X4	2	1	1
2X6	2	1	1
2X8	2	1	1
2X10	2	1	1
2X12	2	1	1
2X16	2	2	1
2X18	2	2	1
2X20	2	2	1
2X24	2	2	1
4X4	2	2	1
4X6	2	2	1
4X8	2	3	1
4X10	2	3	1
4X12	2	4	1
4X16	2	4	1
4X18	2	4	1
4X20	2	5	1
4X24	2	5	1
6X8	4	2	1
6X10	4	2	1
6X12	4	3	1
6X16	4	3	1
6X18	4	3	1
6X20	4	4	1
6X24	4	4	1

INSTALLATION INSTRUCTION

CTI-S50037_A



CT INNOVATIONS

Left/Right Reducer From Straight Sections

Installation

TOUGHMesh Fitting

STEP 3:

Position the two straight sections as shown in Figure 3, use washer splice kits to fix the bottom and one side rail while use splice bar kit for the bended side section.

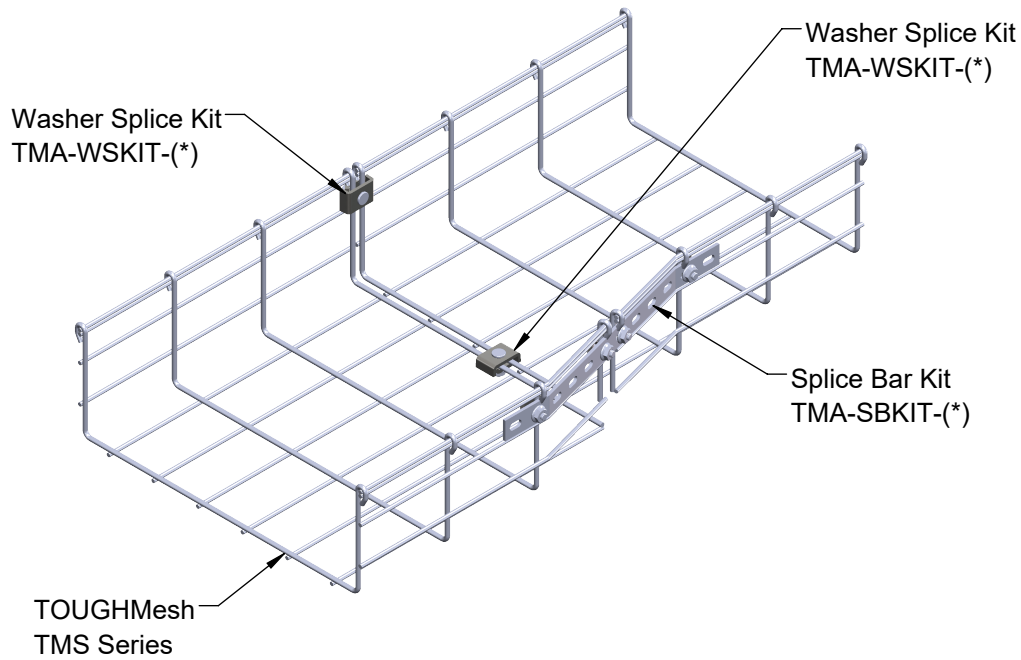


FIGURE 3



Left/Right Reducer From Straight Sections

Installation

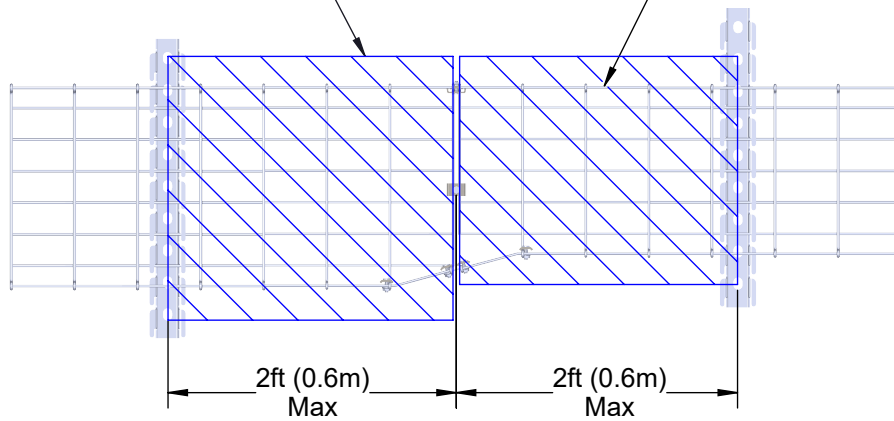
TOUGHMesh Fitting

STEP 4:

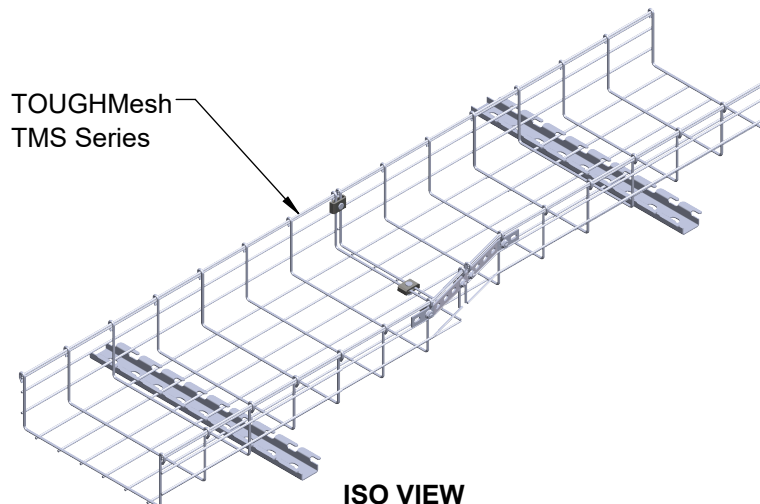
Provide support on each side within 2ft from the splice location per NEMA VE-2.

Straight sections should be supported once within each hatched area.

TOUGHMesh
TMS Series



PLAN VIEW



ISO VIEW

FIGURE 4

INSTALLATION INSTRUCTION

CTI-S50038_A



CT INNOVATIONS

Vertical Inside/Outside From Straight Sections Installation

TOUGHMesh Fitting

STEP 1:

Prepare the TOUGHMesh tray and cut the side rail longitudinal wires on the "B" segments as shown in Figure 1.

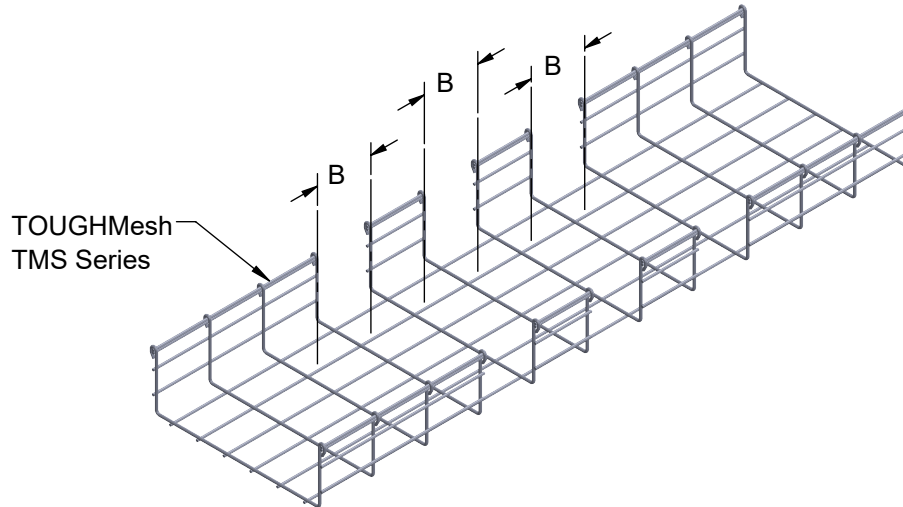
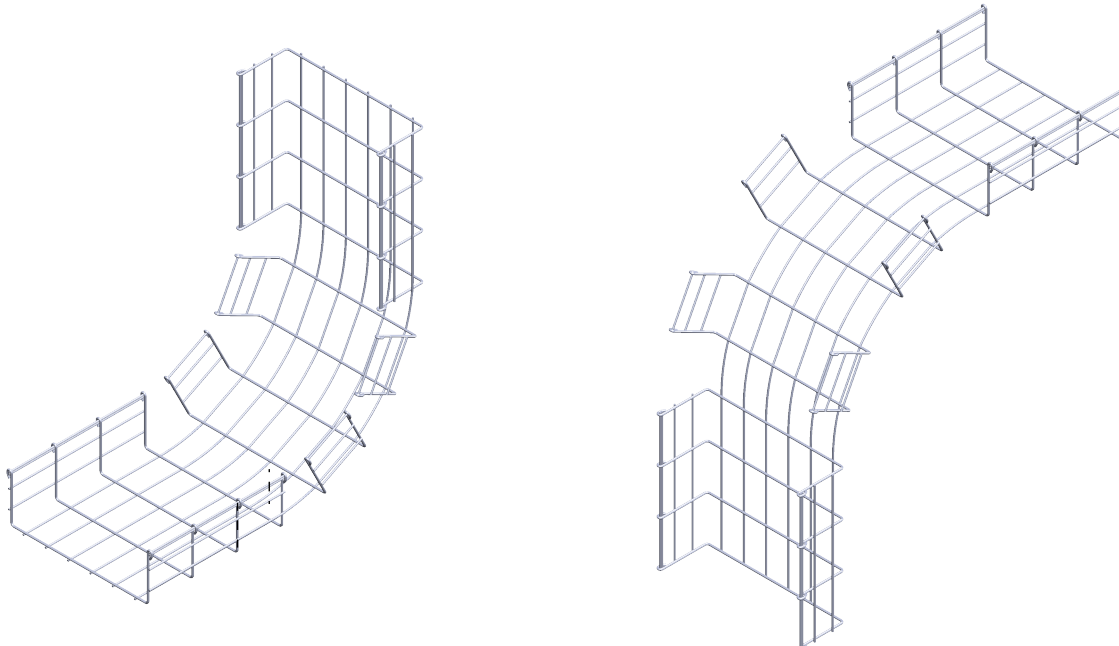


FIGURE 1

STEP 2:

Force must be applied to make a bend on the "B" segments to achieved the desired angle.



90° Vertical Inside Bend

90° Vertical Outside Bend

INSTALLATION INSTRUCTION

CTI-S50038_A



CT INNOVATIONS

Vertical Inside/Outside From Straight Sections

Installation

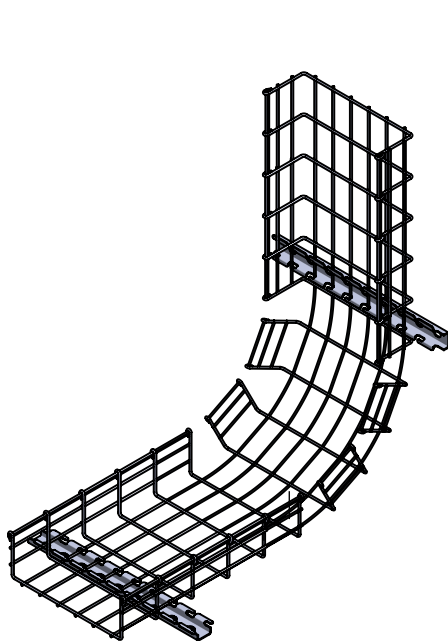
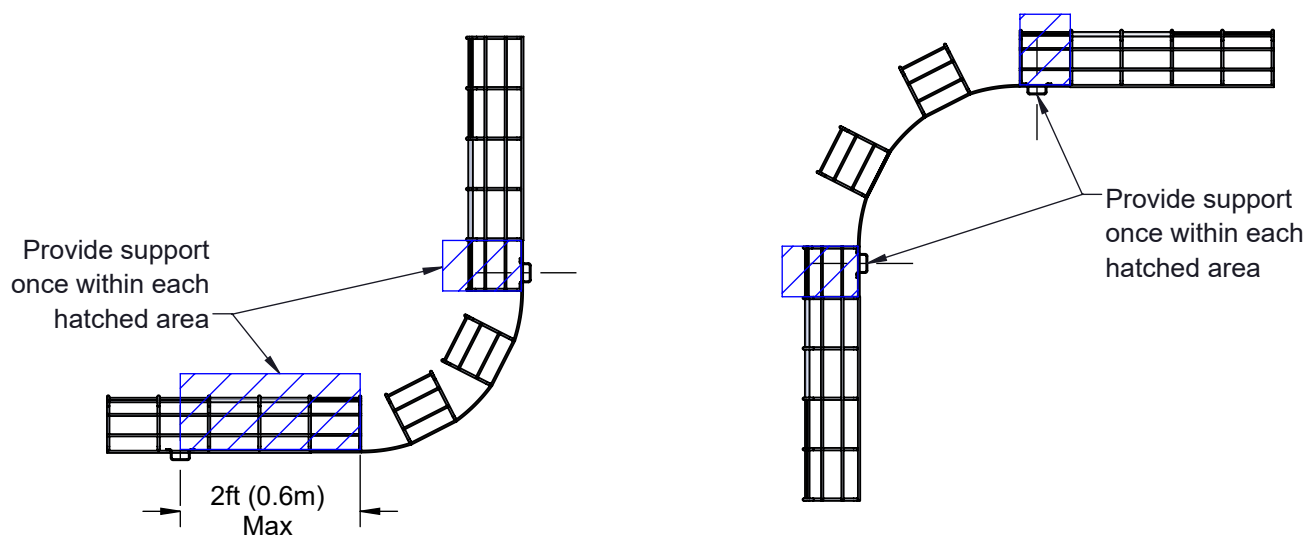
TOUGHMesh Fitting

STEP 3:

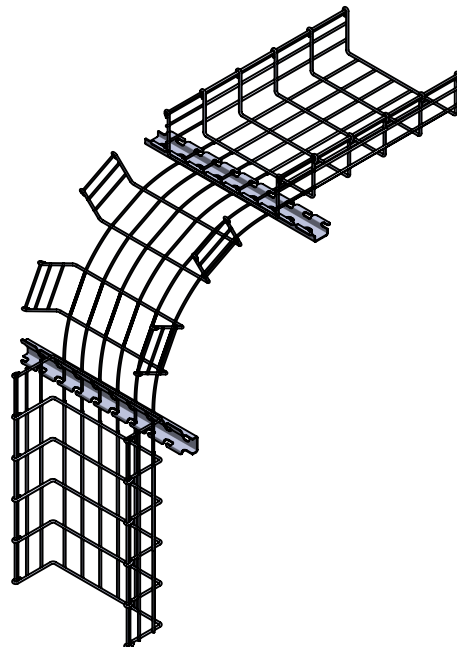
Provide support per NEMA VE-2.

Vertical Outside Bend: Provide support on both end of the elbow.

Vertical Inside Bend: Provide support at the top of the bend and provide support within 2ft of the lower extremity of the elbow.



90° Vertical Inside Bend



90° Vertical Outside Bend

INSTALLATION INSTRUCTION

CTI-S50039_A



CT INNOVATIONS

90° Horizontal Bend Installation

TOUGHMesh Fitting

STEP 1:

Smoothly cut the horizontal threads of the base leaving only the side thread on one side as shown in the Figure 1. Cut the required "P" segments as indicated in the splice chart table.

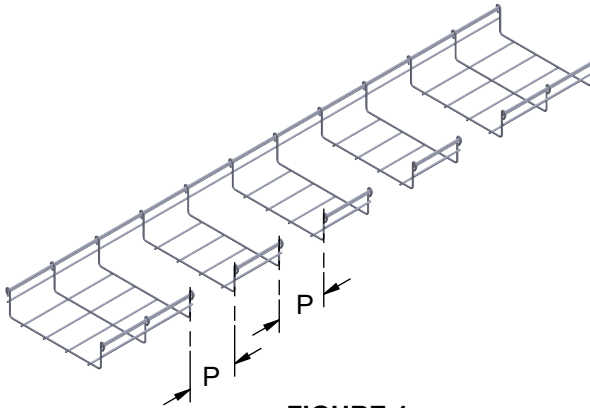


FIGURE 1

SPLICE CHART		
TRAY WIDTH (in)	WASHER SPLICE KIT QTY	NO. OF SEGMENTS TO BE REMOVED
2	1	1
4	2	2
6	3	3
8	4	4
10	5	5
12	6	6
16	7	7
20	9	9
24	11	11

STEP 2:

Force must be applied to make a bend in such a way that the "P" points are joined. Use washer splice kit to connect each segment as shown in Detail A.

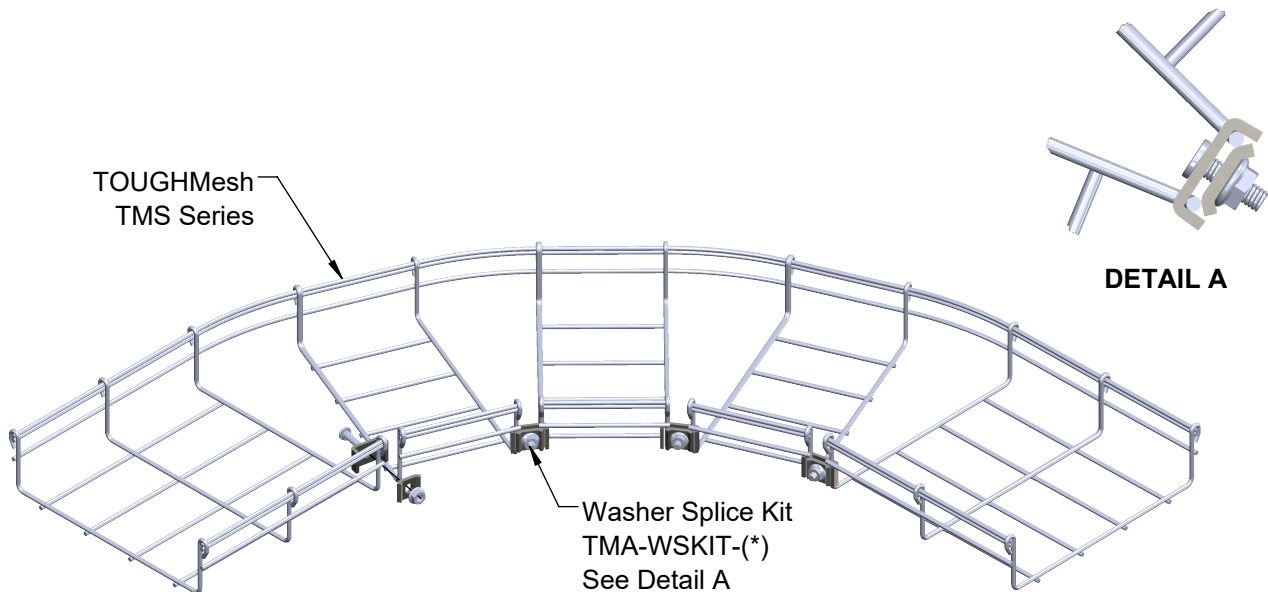


FIGURE 2

INSTALLATION INSTRUCTION

CTI-S50039_A



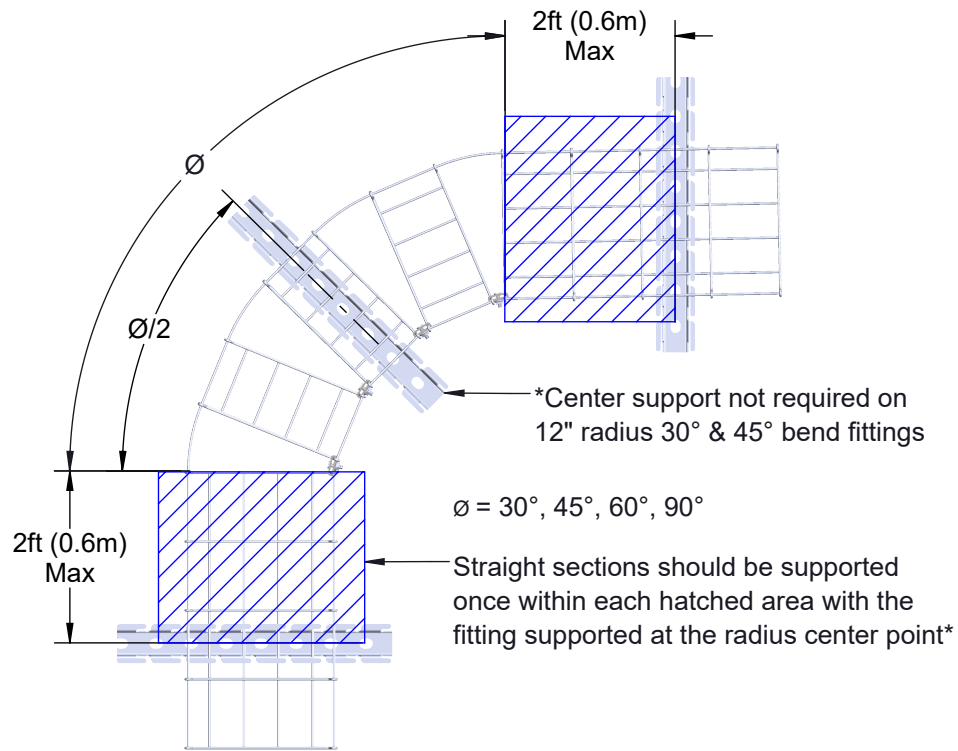
CT INNOVATIONS

90° Horizontal Bend Installation

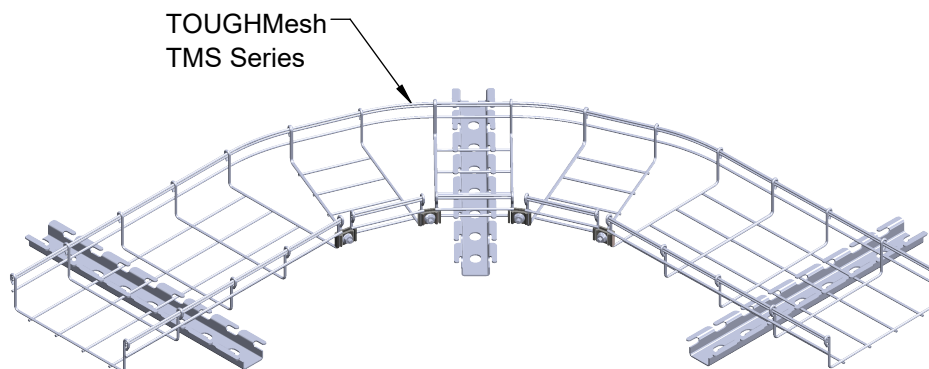
TOUGHMesh Fitting

STEP 3:

Provide support on each side within 2ft from the splice location per NEMA VE-2.



PLAN VIEW



ISO VIEW

INSTALLATION INSTRUCTION

CTI-S50040_A



CT INNOVATIONS

45° Horizontal Bend Installation

TOUGHMesh Fitting

STEP 1:

Smoothly cut the horizontal threads of the base leaving only the side thread on one side as shown in the Figure 1. Cut the required "P" segments as indicated in the splice chart table.

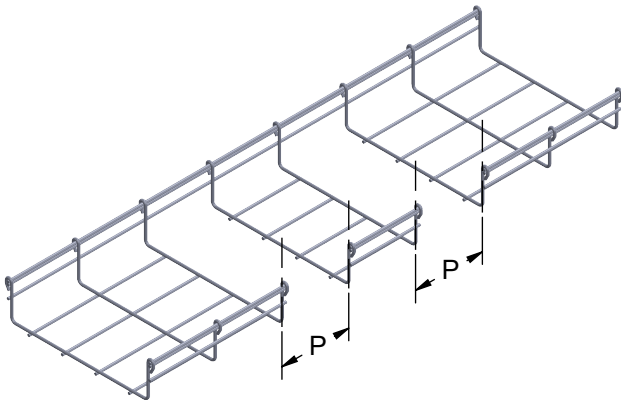
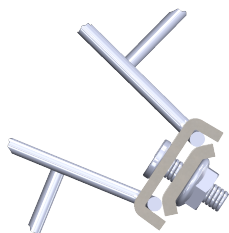


FIGURE 1

SPlice CHART (UL Classified)		
TRAY WIDTH (in)	WASHER SPlice KIT QTY	NO. OF SEGMENTS TO BE REMOVED
2	1	1
4	2	2
6	3	3
8	4	4
10	5	5
12	6	6
16	7	7
20	9	9
24	11	11
28	13	13

STEP 2:

Force must be applied to make a bend in such a way that the "P" points are joined. Use washer splice kit to connect each segment, see chart for the no. of accessories. See Fig. 3 for the correct way to install the washer splice kit.



DETAIL A

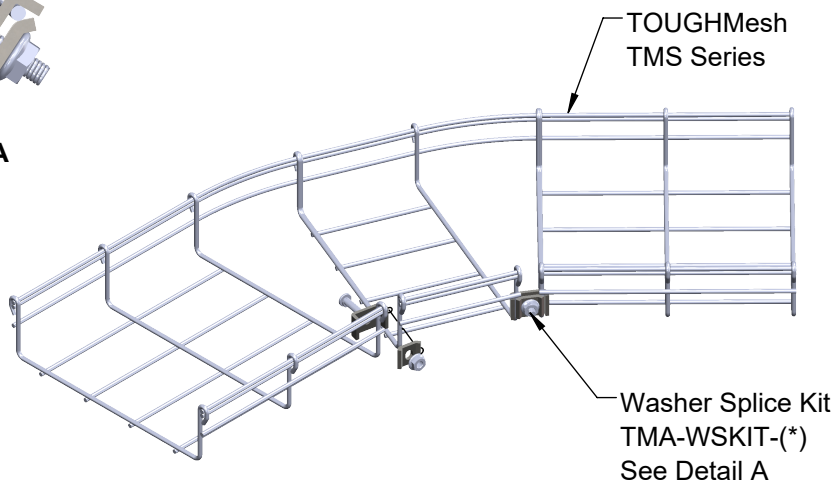


FIGURE 2

INSTALLATION INSTRUCTION

CTI-S50040_A



CT INNOVATIONS

45° Horizontal Bend Installation

TOUGHMesh Fitting

STEP 3:

Provide support on each side within 2ft from the splice location per NEMA VE-2.

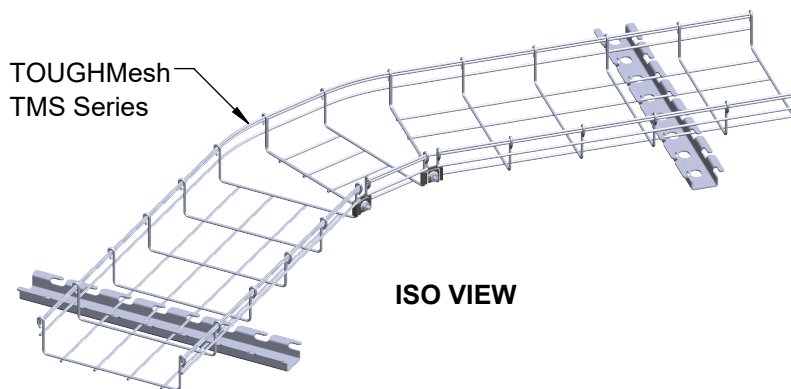
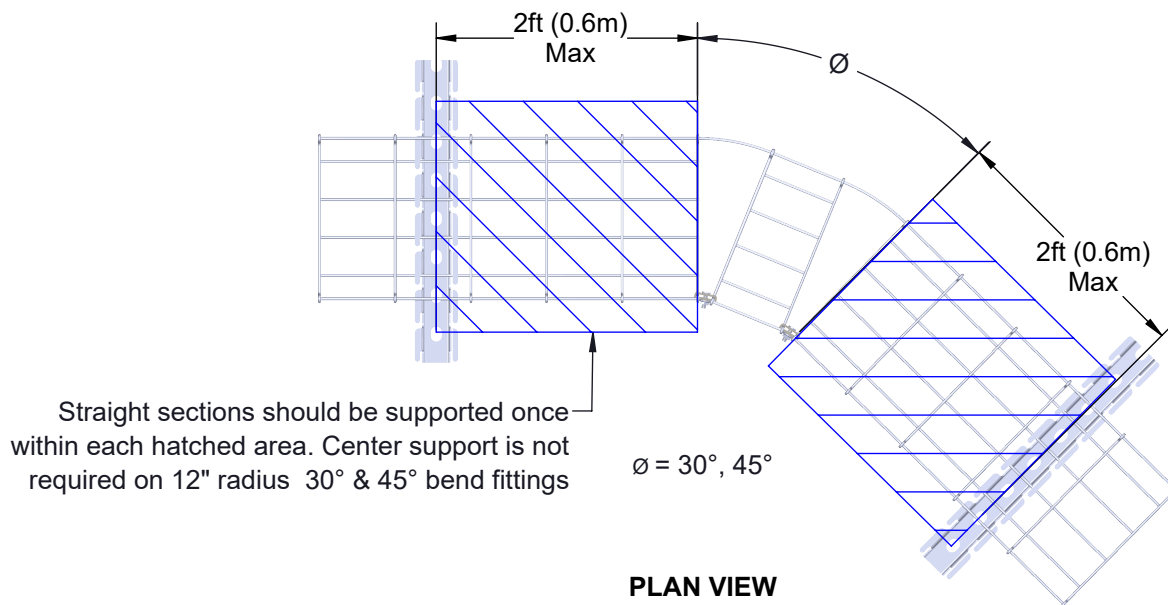


FIGURE 3

INSTALLATION INSTRUCTION

CTI-S50041_A



CT INNOVATIONS

90° Horizontal Bend From Straight Sections

Installation

TOUGHMesh Fitting

STEP 1:

Smoothly cut the threads of one wire side section as shown in the figure, cut the required segments "P" as indicated in the table.

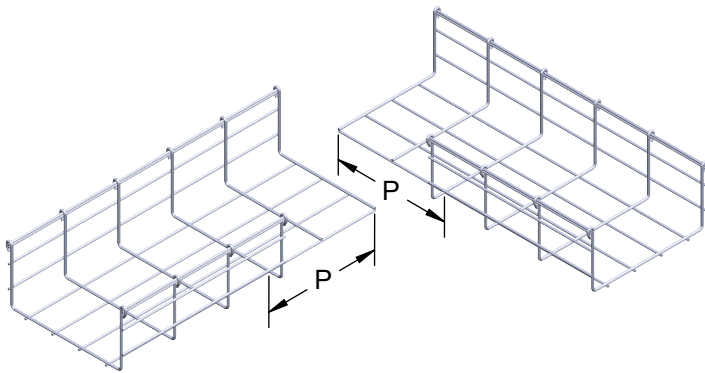


FIGURE 1

SPLICE CHART		
TRAY WIDTH (in)	WASHER SPLICE KIT QTY	NO. OF SEGMENTS "P" TO BE REMOVED
4	2	1
6	2	2
8	2	2
12	2	3
16	2	4
20	2	5
24	2	6
28	2	7

STEP 2:

Position the two straight sections as shown in Figure 2, use the washer splice kits to fix the bottom wire sections.

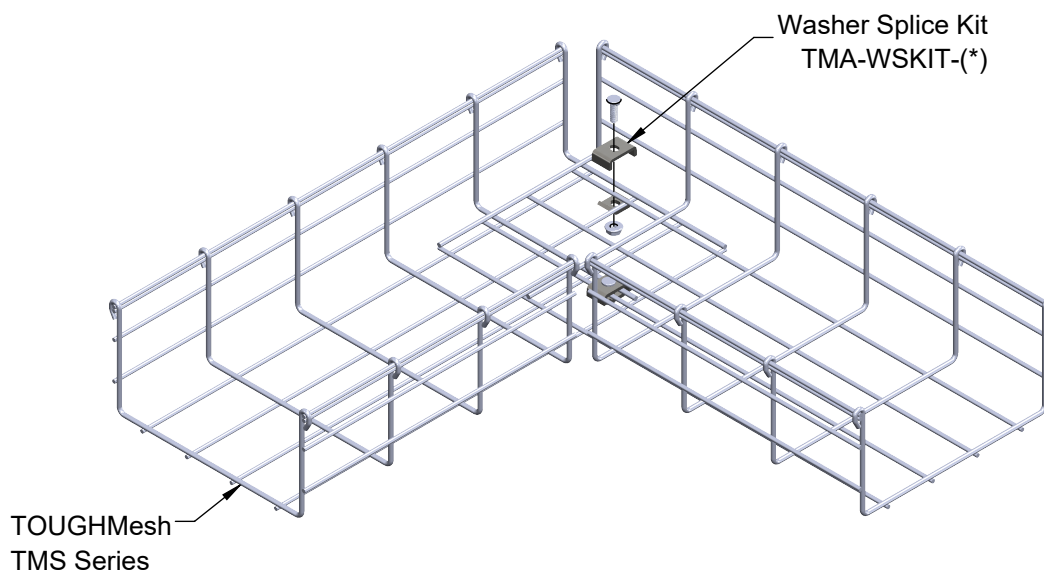


FIGURE 2



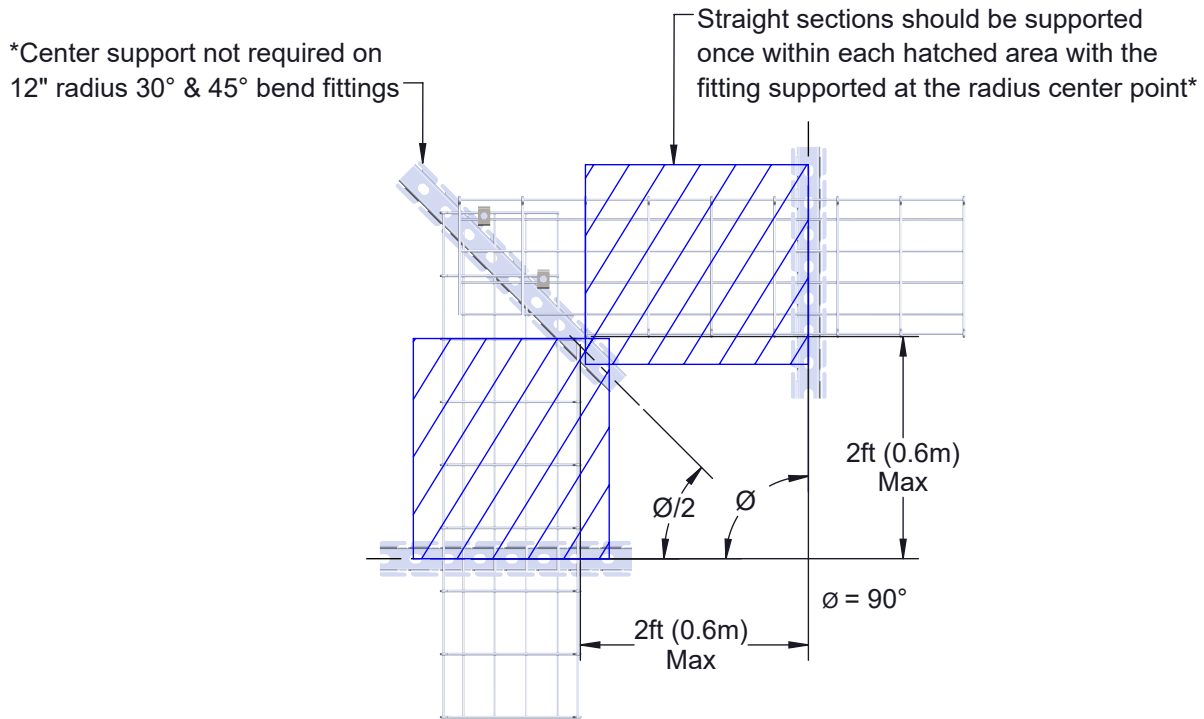
90° Horizontal Bend From Straight Sections

Installation

TOUGHMesh Fitting

STEP 3:

Provide support on each side within 2ft from the splice location per NEMA VE-2.



PLAN VIEW

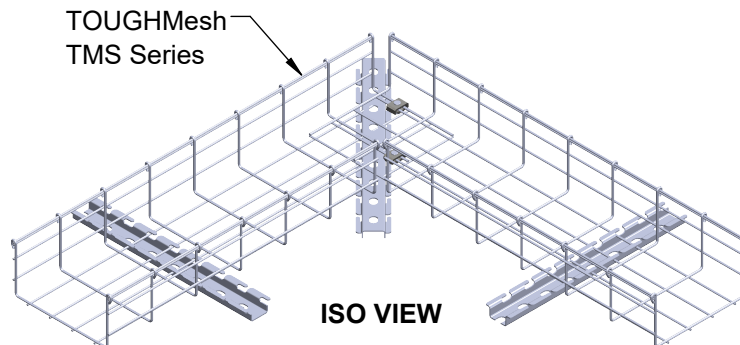


FIGURE 3

INSTALLATION INSTRUCTION

CTI-S50042_A



CT INNOVATIONS

TRAPEZE HANGER SUPPORT

TOUGHMesh Accessories

STEP 1:

Determine the required length of the TOUGHStrut channel based on the width of the TOUGHMesh tray to be supported (See Table 1). Once identified, align the TOUGHStrut Channel, Hex Nut, Square Washer and Threaded Rod as shown in Figure 1.

TOUGHMesh P/N	TOUGHMesh WIDTH (in)	TOUGHStrut P/N	TOUGHStrut LENGTH (in)
TMS-(H)X2X10-(*)	2	TS2158-08-(*)	8
TMS-(H)X4X10-(*)	4	TS2158-10-(*)	10
TMS-(H)X6X10-(*)	6	TS2158-12-(*)	12
TMS-(H)X8X10-(*)	8	TS2158-14-(*)	14
TMS-(H)X10X10-(*)	10	TS2158-16-(*)	16
TMS-(H)X12X10-(*)	12	TS2158-18-(*)	18
TMS-(H)X16X10-(*)	16	TS2158-22-(*)	22
TMS-(H)X18X10-(*)	18	TS2158-24-(*)	24
TMS-(H)X20X10-(*)	20	TS2158-26-(*)	26
TMS-(H)X24X10-(*)	24	TS2158-28-(*)	28

(H) - Insert TOUGHMesh Tray Height (2, 4, 6 H)

(*) - Insert Material/Finish

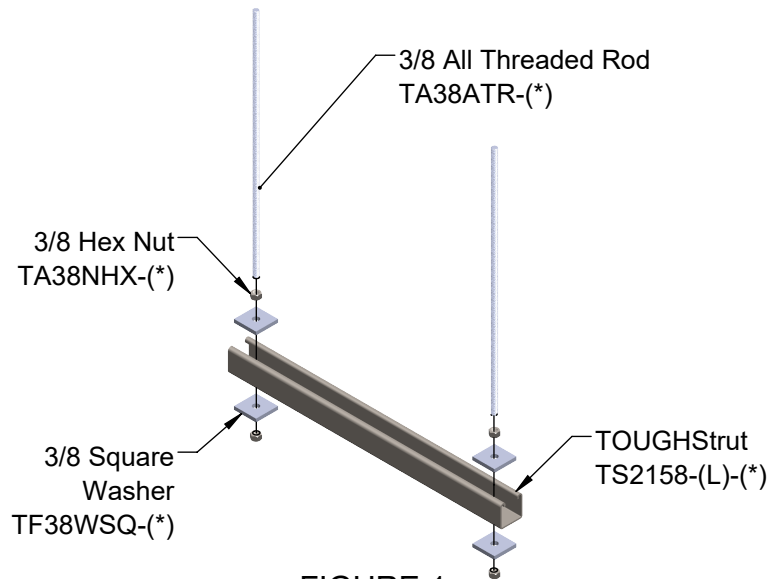


FIGURE 1

STEP 2:

Once the assembly is set to the required elevation, torque the hex nut to 19ft-lbs.

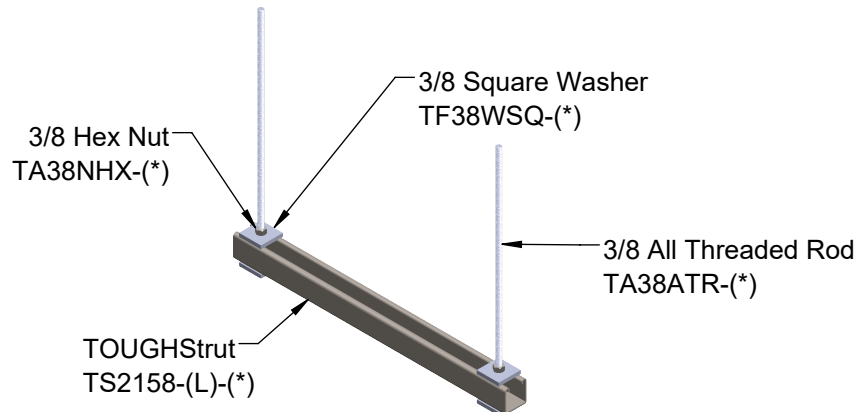


FIGURE 2

INSTALLATION INSTRUCTION

CTI-S50042_A



CT INNOVATIONS

TRAPEZE HANGER SUPPORT

TOUGHMesh Accessories

STEP 3:

Install the TOUGHMesh tray and align the Flat Cross Washer with the tray bottom wire and install the hardware as shown.

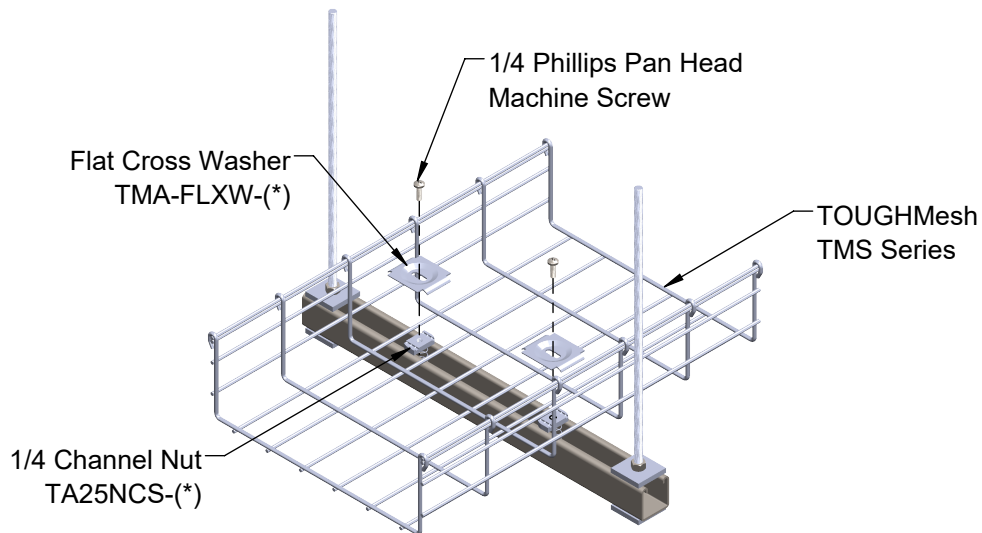


FIGURE 3

STEP 4:

Hold down clamp installation: Torque the hardware to 6ft-lbs.

Hold down expansion guide installation: Torque the hardware to 5ft-lbs.

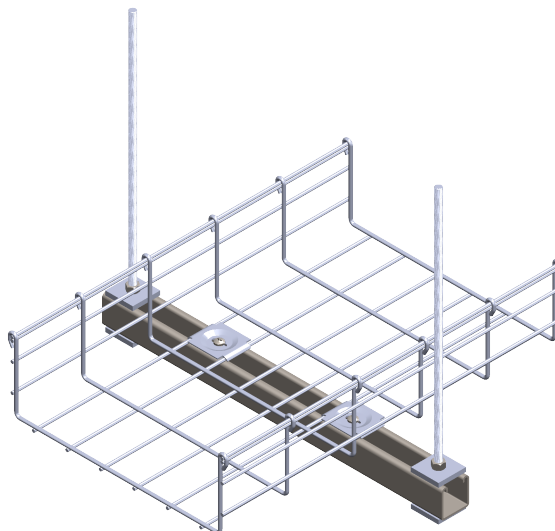


FIGURE 4



FLOOR MOUNTED SUPPORT

TOUGHMesh Accessories

STEP 1:

Identify the required length of the TOUGHStrut channel (See Table 1) based on the width of the cable tray to be supported and install as shown below using 3/8 anchor.

TABLE 1			
TOUGHMesh P/N	TOUGHMesh WIDTH (in)	TOUGHStrut P/N	TOUGHStrut LENGTH (in)
TMS-(H)X2X10-(*)	2	TS2158-08-(*)	8
TMS-(H)X4X10-(*)	4	TS2158-10-(*)	10
TMS-(H)X6X10-(*)	6	TS2158-12-(*)	12
TMS-(H)X8X10-(*)	8	TS2158-14-(*)	14
TMS-(H)X10X10-(*)	10	TS2158-16-(*)	16
TMS-(H)X12X10-(*)	12	TS2158-18-(*)	18
TMS-(H)X16X10-(*)	16	TS2158-22-(*)	22
TMS-(H)X18X10-(*)	18	TS2158-24-(*)	24
TMS-(H)X20X10-(*)	20	TS2158-26-(*)	26
TMS-(H)X24X10-(*)	24	TS2158-28-(*)	28

(H) - Insert TOUGHMesh Tray Height (2, 4, 6 H)

(*) - Insert Material/Finish

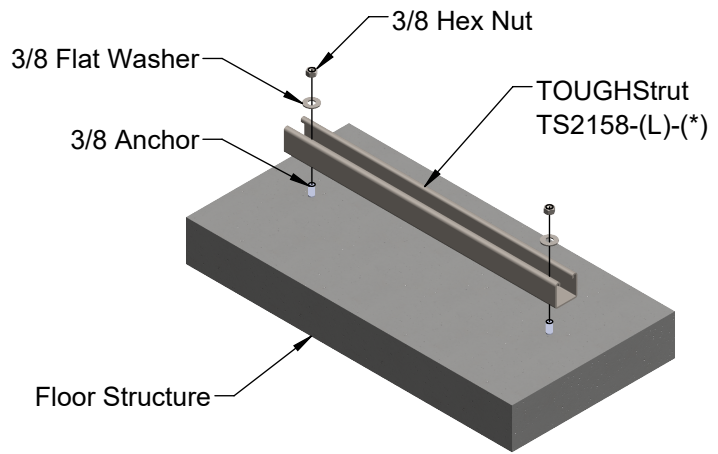


FIGURE 1

STEP 2:

Torque anchor nuts to 19ft-lbs.

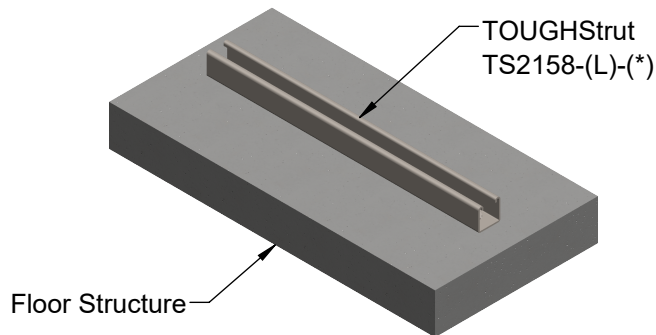


FIGURE 2

INSTALLATION INSTRUCTION

CTI-S50043_A



CT INNOVATIONS

FLOOR MOUNTED SUPPORT

TOUGHMesh Accessories

STEP 3:

Install the TOUGHMesh tray and align the Flat Cross Washer with the tray bottom wire and install the hardware as shown.

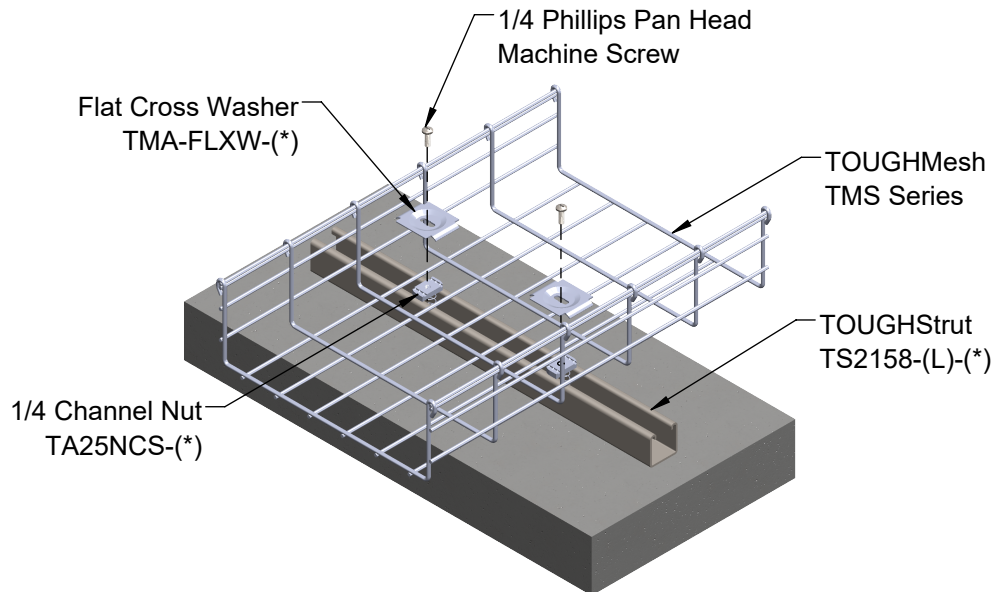


FIGURE 3

STEP 4:

Hold down clamp installation: Torque the hardware to 6ft-lbs.

Hold down expansion guide installation: Torque the hardware to 5ft-lbs.

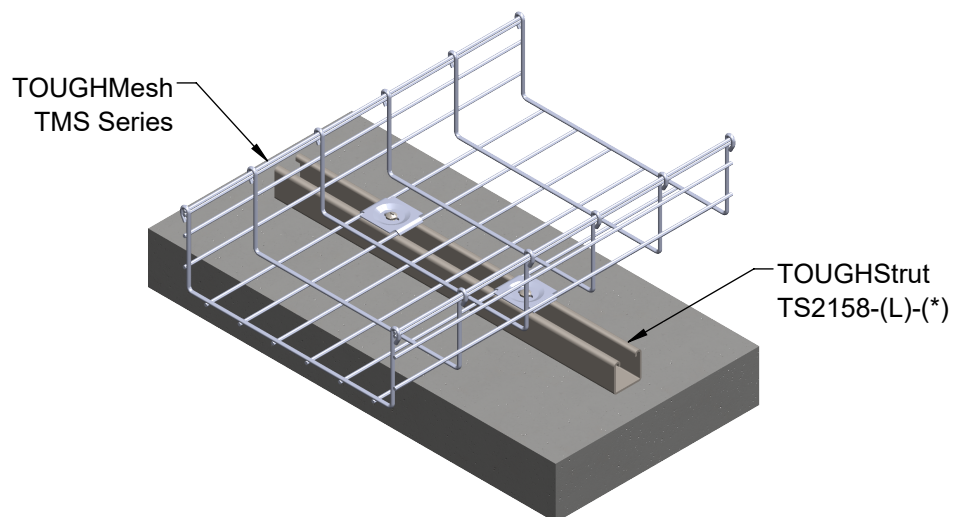


FIGURE 4