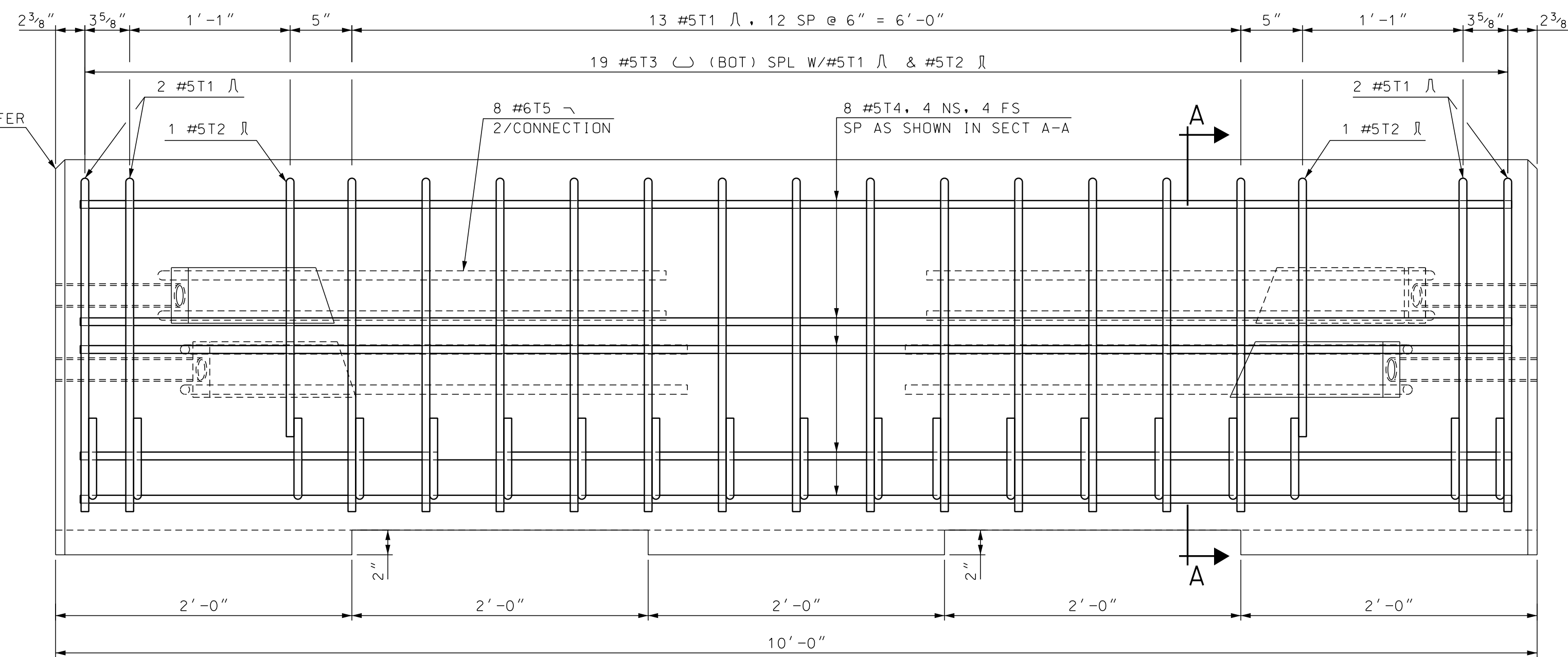
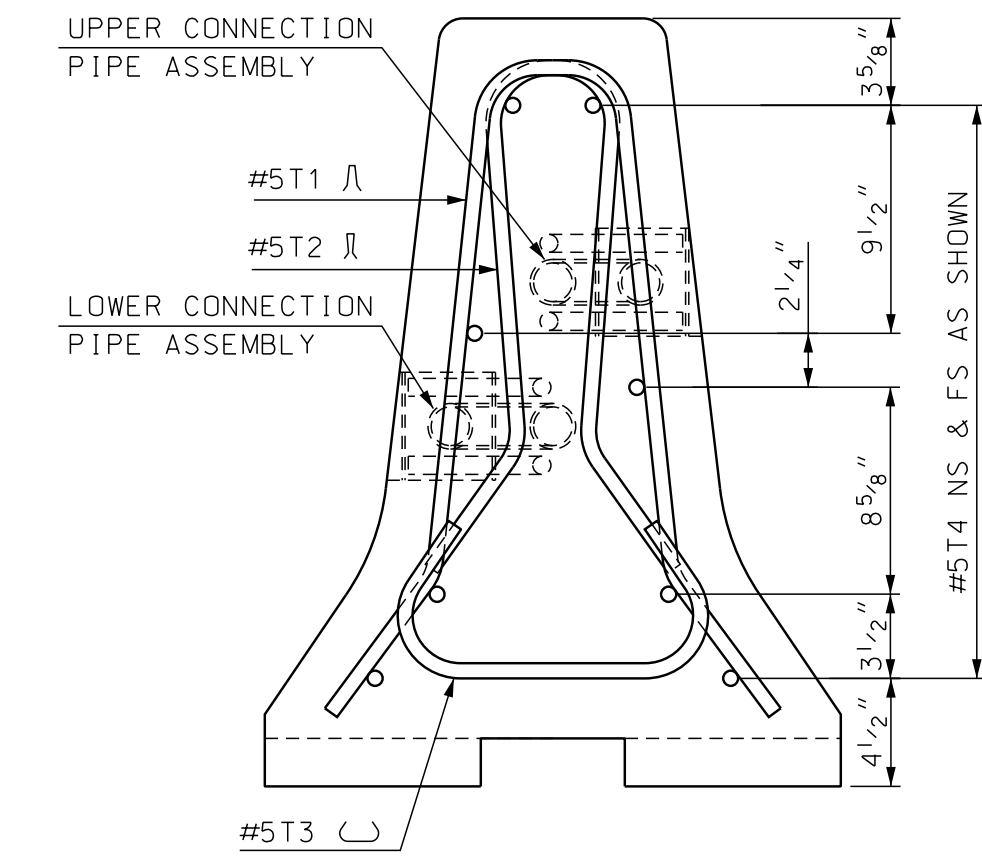


END VIEW
SCALE: 1 1/2" = 1'-0"

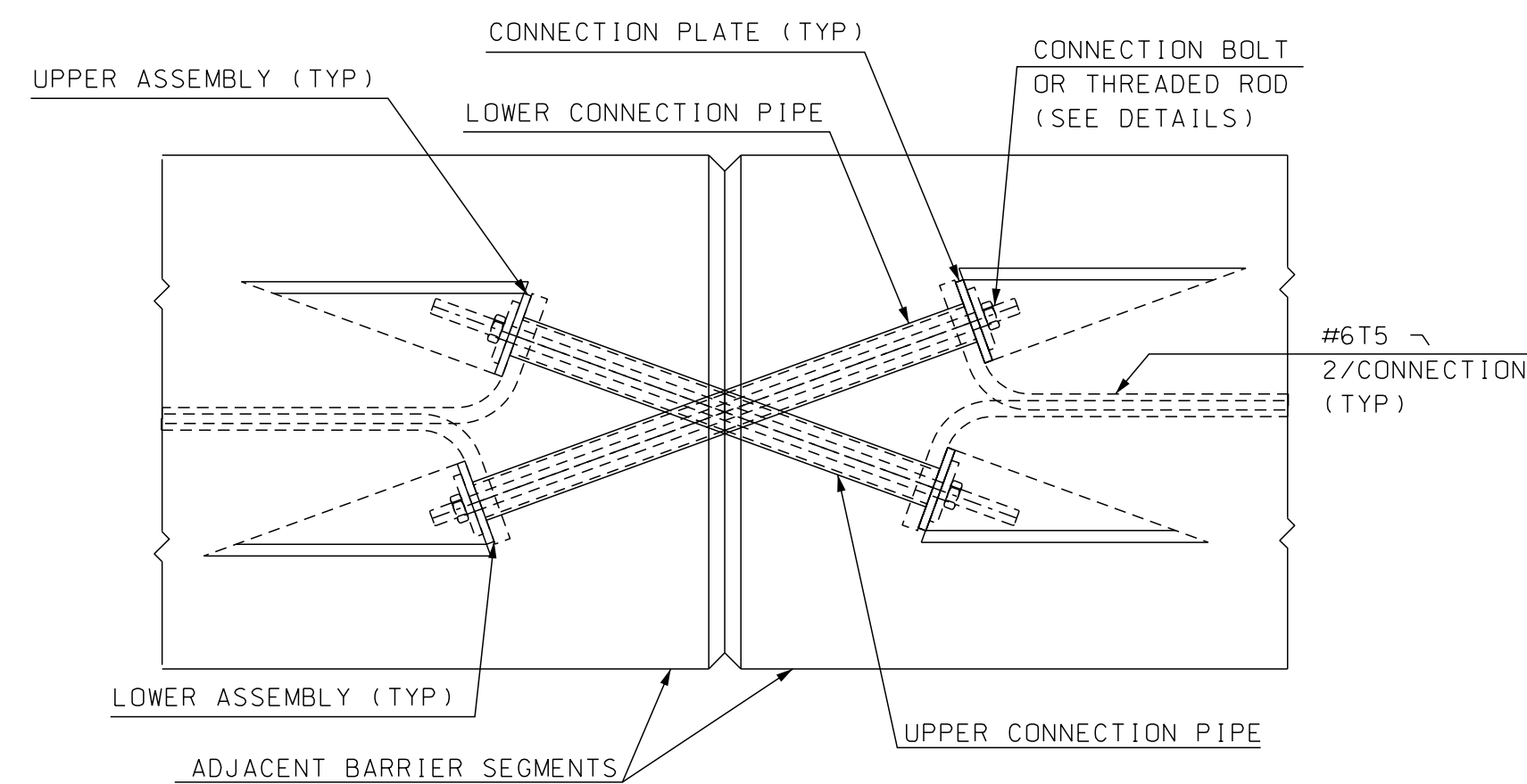


ELEVATION
SCALE: 1 1/2" = 1'-0"

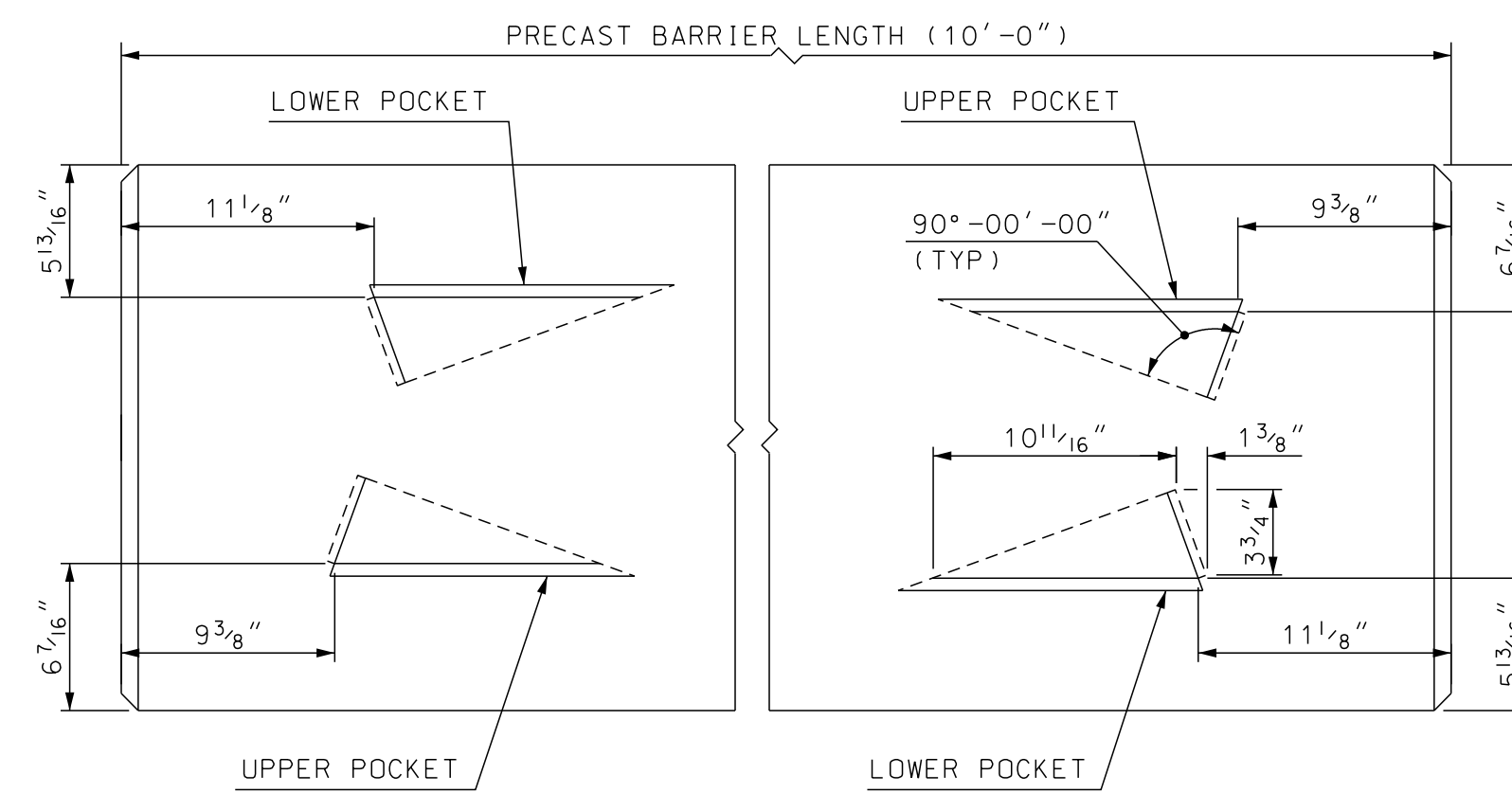


SECTION A-A
SCALE: 1 1/2" = 1'-0"

NOTE: CONNECTION HARDWARE SHALL NOT EXTEND BEYOND THE CONCRETE FACE OF BARRIER



TYPE X JOINT CONNECTION DETAILS
SCALE: 1 1/2" = 1'-0"



TOP VIEW CONNECTION POCKETS
SCALE: 1 1/2" = 1'-0"

NO MODIFICATIONS SHOULD BE MADE TO THIS SHEET

BARRIER WEIGHT APPROX. 2.38 TONS

ONLY FOR USE WITH HIGHWAY STANDARD PLAN GR-23, PCB NCHRP 350
SEE NOTICE TO CONTRACTORS "SUNSETTING OF NON-MASH PCB ON THE NHS"

SUBDIRECTORY	DGN LOCATOR	SHEET SCALE
standard/english/barrier	X-Bolt Barrier	AS NOTED

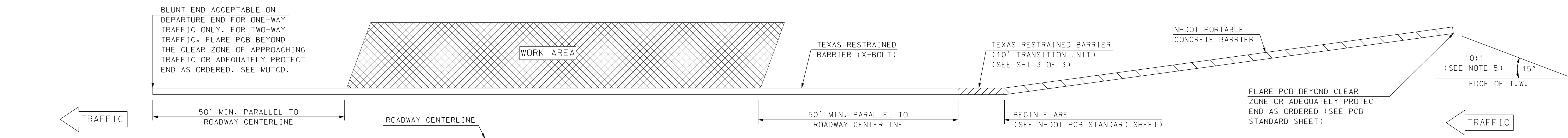
GENERAL NOTES:

- PORTABLE CONCRETE BARRIER SHALL BE FURNISHED BY THE CONTRACTOR AND PAID FOR AS ITEM 606.41741, PORTABLE CONCRETE BARRIER FOR TRAFFIC CONTROL (BRIDGE). CONCRETE BARRIER AND ALL ATTACHMENTS SHALL BE FABRICATED IN ACCORDANCE WITH SPECIAL PROVISIONS. ALL BARRIER UNITS SHALL BE 10' LONG.
- PORTABLE CONCRETE BARRIER DETAILS, AS SHOWN ON THESE PLANS, ARE IN COMPLIANCE WITH REQUIREMENTS PER UPDATED NCHRP REPORT 350 FOR TEST NO 3-11 (MASH TEST LEVEL 3), CRASH TESTED BY TEXAS A&M UNIVERSITY SYSTEM, MAY 2005, AND ACCEPTED PER REPORT FHWA/TX-05/0-4692-1.
- THE BARRIER HAS BEEN CRASH TESTED WITH A 27" DYNAMIC DEFLECTION WHICH WILL ALLOW THE BARRIER TO BE PLACED A MINIMUM 12" FROM THE EDGE OF THE DECK.
- USAGE OF THE TEXAS X-BOLT BARRIER REQUIRES A MINIMUM OF 100 LINEAR FEET (10 - 10' UNITS). THE X-BOLT BARRIER SHALL EXTEND A MINIMUM OF 50' BEYOND THE BRIDGE AT EACH END, PARALLEL TO THE ROADWAY CENTERLINE. THE ENDS OF THE BARRIER SHALL CONNECT TO THE TRANSITION UNIT AND THEN TO NHDOT PCB FLARED OUT THE REQUIRED CLEAR ZONE AS SHOWN ON SHEET 2 OF 3.
- THE CONNECTION BOLTS AT THE BARRIER JOINTS SHALL BE TIGHTENED TO THE "TURN OF THE NUT" METHOD IN ACCORDANCE WITH SECTION 550.3.11.6.4 OF NHDOT STANDARD SPECIFICATIONS. AFTER INSTALLATION, ALL X-BOLT JOINTS SHALL BE CHECKED BY THE CONTRACT ADMINISTRATOR CONFIRMING THEY MEET THE TIGHTENED REQUIREMENT.
- THE TEXAS X-BOLT BARRIER MAY BE INSTALLED WITH A 125' MINIMUM RADIUS OF CURVATURE AND A RELATIVE ANGLE OF 4 DEGREES BETWEEN THE 10' UNITS.
- THE CONTRACTOR SHALL FURNISH AND INSTALL APPROVED RETROREFLECTIVE DELINEATORS AT 25-FOOT INTERVALS ALONG TOP AND/OR ONE FOOT DOWN THE SIDE OF PORTABLE CONCRETE BARRIER, SUBSIDIARY TO ITEM 606.41741 (SEE STANDARD NO. DL-1 OF NHDOT STANDARD PLANS FOR ROAD CONSTRUCTION). THE COLOR OF THE DELINEATORS SHALL, IN ALL INSTANCES, CONFORM TO THE COLOR OF THE EDGE LINE MARKINGS. DELINEATOR SUPPLEMENT, BUT DO NOT REPLACE, THE NEED FOR RETROREFLECTIVE SOLID EDGE LINE MARKINGS.

MATERIAL NOTES:

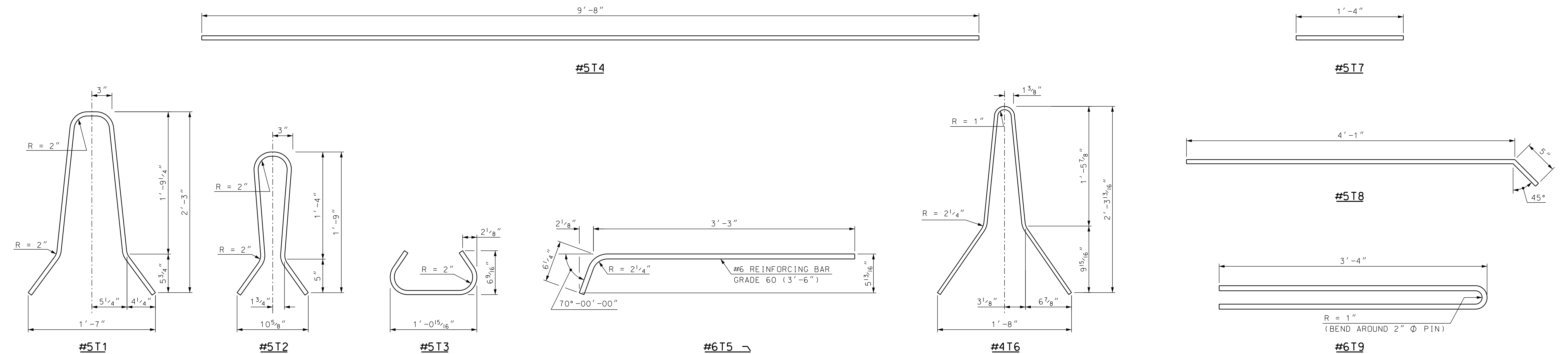
- BARRIERS SHALL BE LIGHT COLORED CLASS AA CONCRETE, WITH COMPRESSIVE STRENGTH OF 4000 psi, AND SHALL HAVE A SMOOTH UNIFORM SURFACE FREE OF DEFECTS AND IRREGULARITIES. CASTING DATE SHALL BE SHOWN ON BARRIER. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4", UNLESS OTHERWISE NOTED.
- ALL REINFORCING STEEL SHALL BE AASHTO M31 (ASTM A615) GRADE 60. ALL REINFORCEMENT SHALL HAVE 1 3/4" MINIMUM CLEAR COVER, UNLESS OTHERWISE NOTED.
- CONNECTION BOLTS SHALL BE 7/8" Ø GALVANIZED HIGH STRENGTH THREADED RODS CONFORMING TO ASTM A325. STEEL PIPES, PLATE WASHERS, AND CONNECTION PLATES SHALL BE GALVANIZED ASTM A36 STEEL.
- ALL STEEL FOR CONNECTIONS SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 550.

STATE OF NEW HAMPSHIRE					
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN					
TOWN XX	BRIDGE NO. XXXXXX			STATE PROJECT XX	
LOCATION XX					
TEXAS RESTRAINED BARRIER (X-BOLT) (1 OF 3)					BRIDGE SHEET
					XX OF XX
DESIGNED	TXDOT	12/10	CHECKED	NHDOT	4/18
DRAWN	GMC	1/18	CHECKED	NHDOT	4/18
QUANTITIES	XXX	XX/XX	CHECKED	XXX	XX/XX
ISSUE DATE	5/15/18	FEDERAL PROJECT NO.		SHEET NO.	TOTAL SHEETS
REV. DATE	6/1/20	-----			

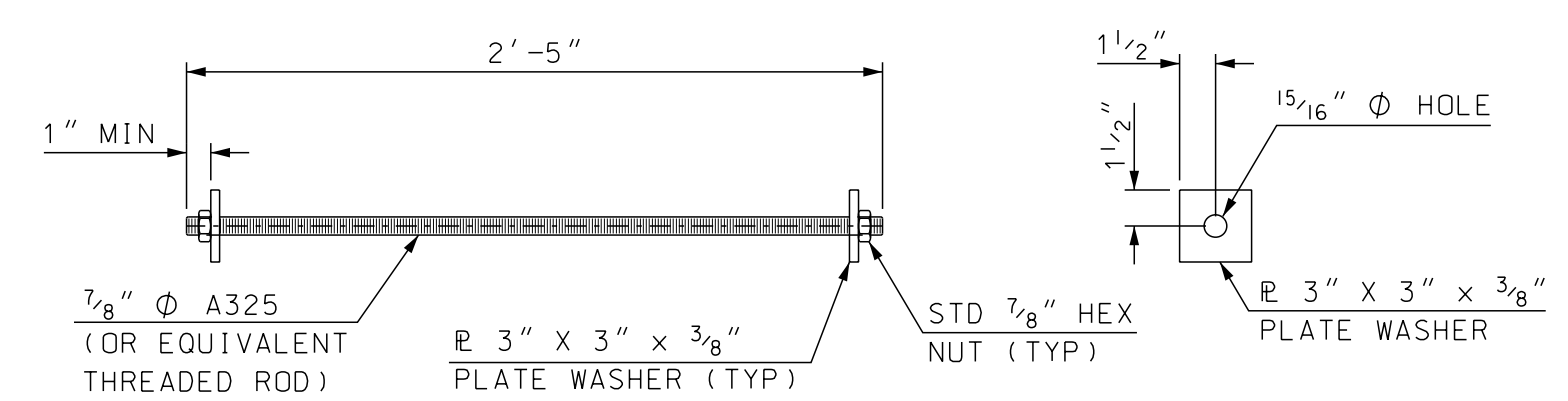


TRAFFIC OR TRAFFIC
(SEE NOTE ABOVE)

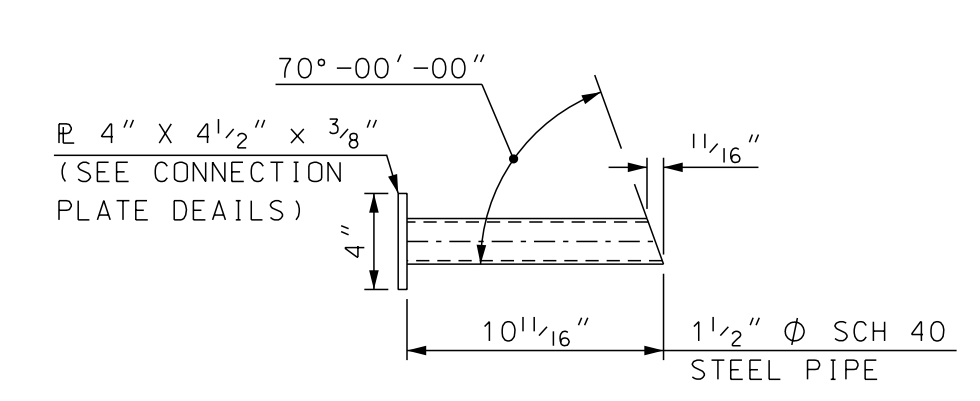
PLAN - BARRIER LAYOUT
(NTS)



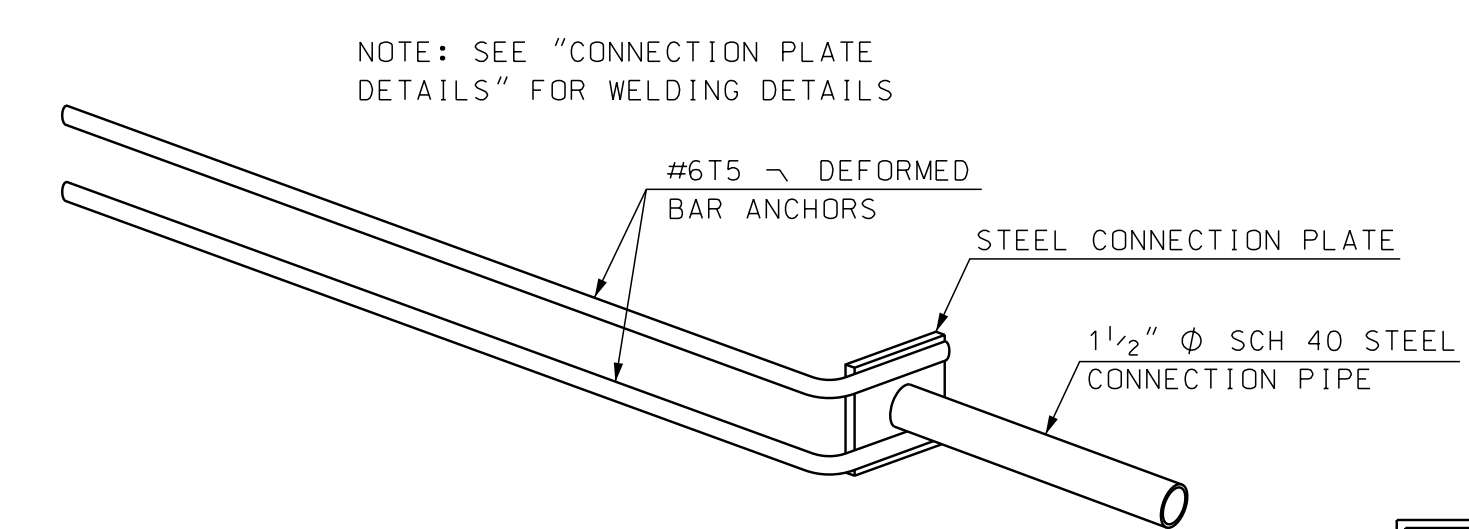
BENDING SCHEDULE
SCALE: 1 1/2" = 1'-0"



CONNECTION BOLT OR THREADED ROD DETAILS
SCALE: 1 1/2" = 1'-0"



UPPER CONNECTION PIPE DETAIL
SCALE: 1 1/2" = 1'-0"



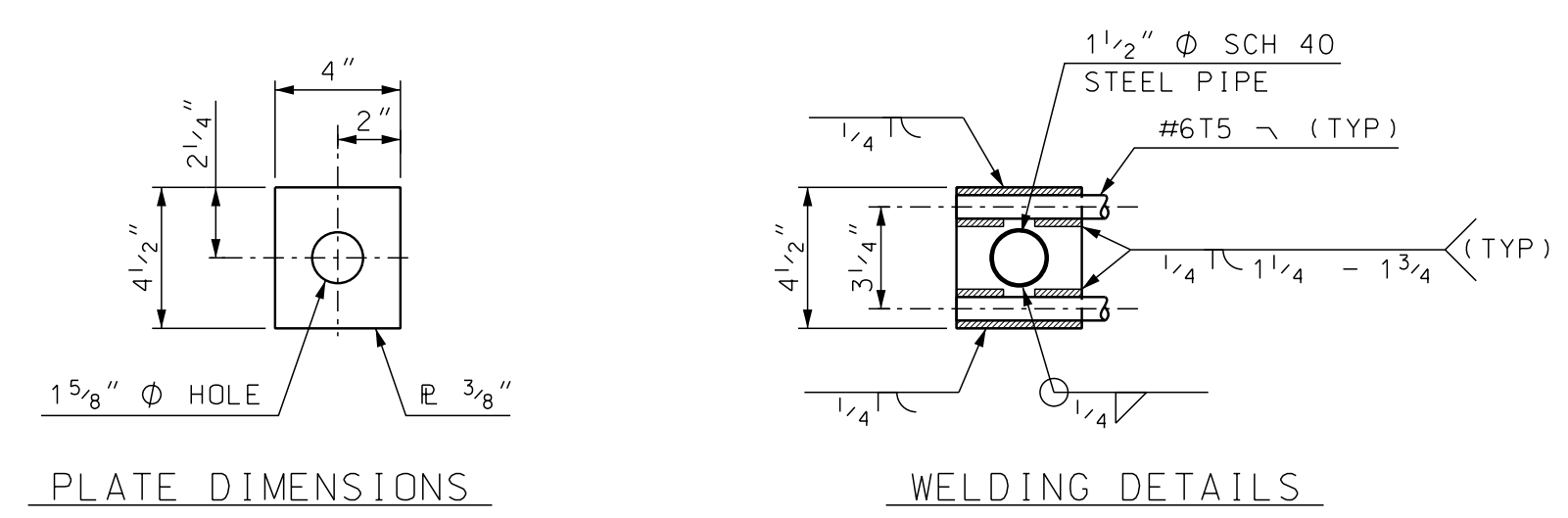
ISOMETRIC VIEW OF TYPICAL WELD ASSEMBLY
SCALE: N.T.S.

REBAR SCHEDULE TEXAS X-BOLT (10' BARRIER)

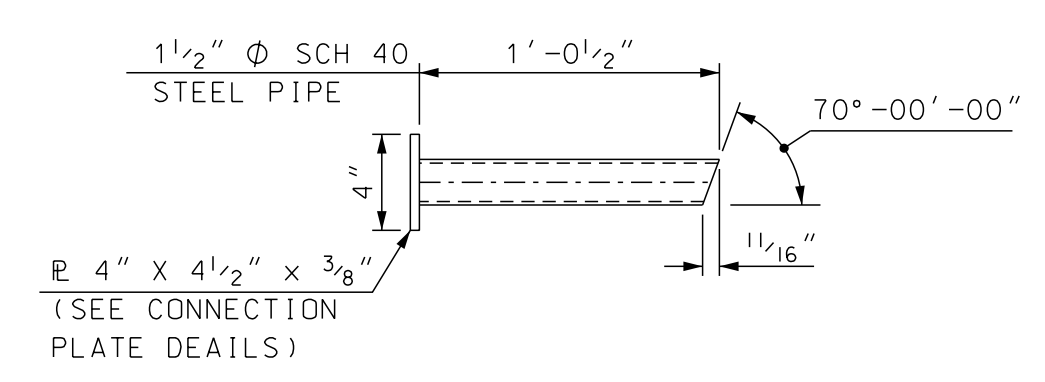
MK	QTY	LENGTH
T1	#5	17 5'-2"
T2	#5	2 4'-0"
T3	#5	19 2'-1"
T4	#5	8 9'-8"
T5	#6	8 3'-9"

REBAR SCHEDULE TRANSITION (10' BARRIER)

MK	QTY	LENGTH
T1	#5	9 5'-2"
T2	#5	1 4'-0"
T3	#5	10 2'-1"
T4	#5	8 9'-8"
T5	#6	4 3'-9"
T6	#4	4 5'-2"
T7	#5	4 1'-4"
T8	#5	2 4'-6"
T9	#6	3 6'-10"



CONNECTION PLATE DETAILS
SCALE: 2" = 1'-0"



LOWER CONNECTION PIPE DETAIL
SCALE: 1 1/2" = 1'-0"

ONLY FOR USE WITH HIGHWAY STANDARD PLAN GR-23, PCB NCHRP 350
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NO MODIFICATIONS SHOULD BE MADE TO THIS SHEET

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

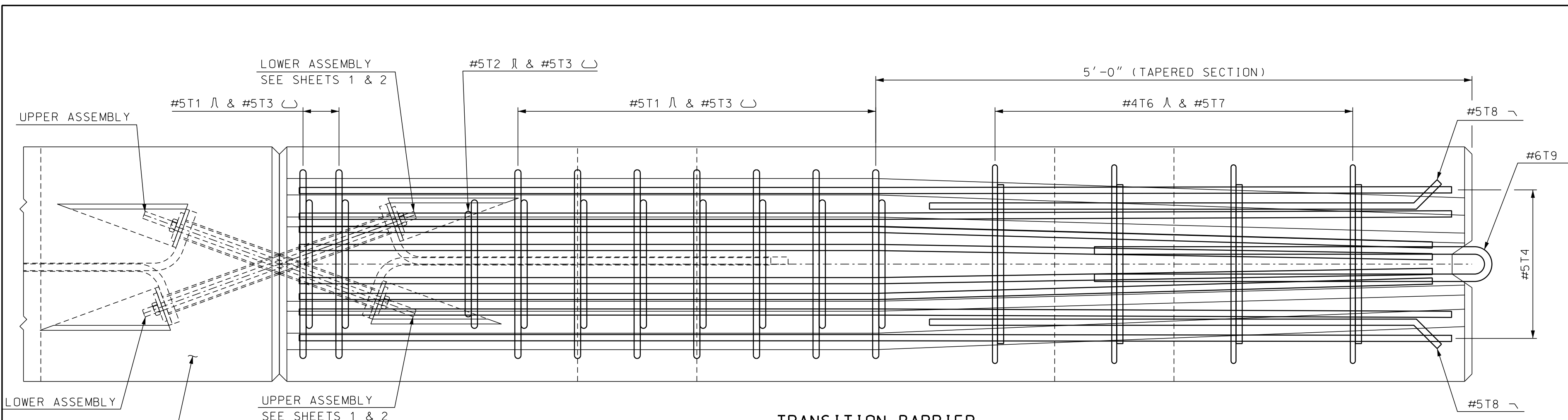
TOWN XX BRIDGE NO. XXXXXX STATE PROJECT XX

LOCATION XX

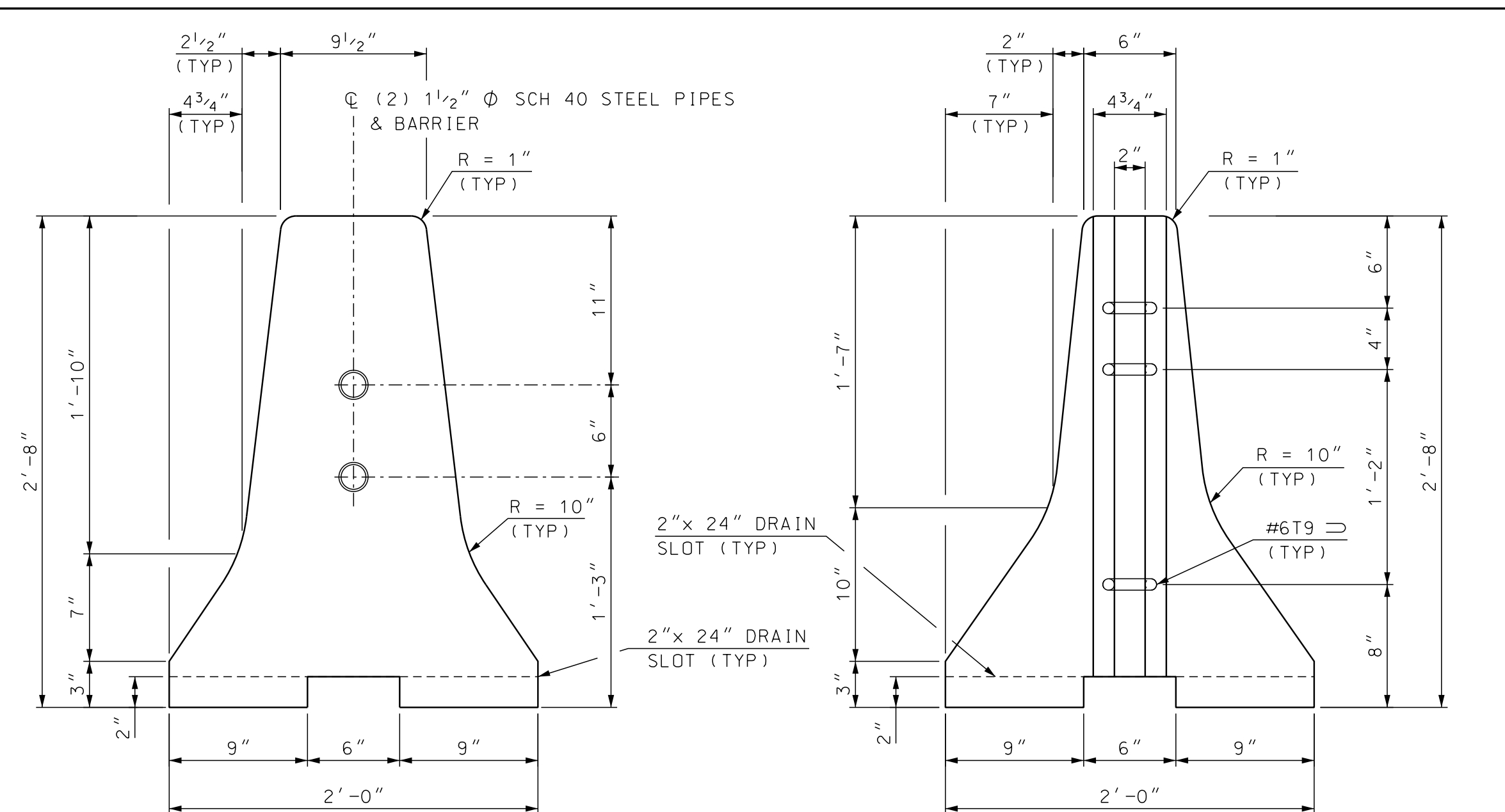
TEXAS RESTRAINED BARRIER (X-BOLT) (2 OF 3)

REVISIONS AFTER PROPOSAL	BY	DATE	CHECKED	BY	DATE	BRIDGE SHEET
	DESIGNED	TXDOT 12/10	CHECKED	NHDOT 4/18		XX OF XX
	DRAWN	GMC 1/18	CHECKED	NHDOT 4/18		FILE NUMBER
	QUANTITIES	XXX	CHECKED	XXX	XX/XX	XX-X-X
	ISSUE DATE	5/15/18	FEDERAL PROJECT NO.		SHEET NO.	TOTAL SHEETS
	REV. DATE	6/1/20	-----			

SUBDIRECTORY	DGN LOCATOR	SHEET SCALE
standard/english/barrier	X-Bolt Barrier	AS NOTED

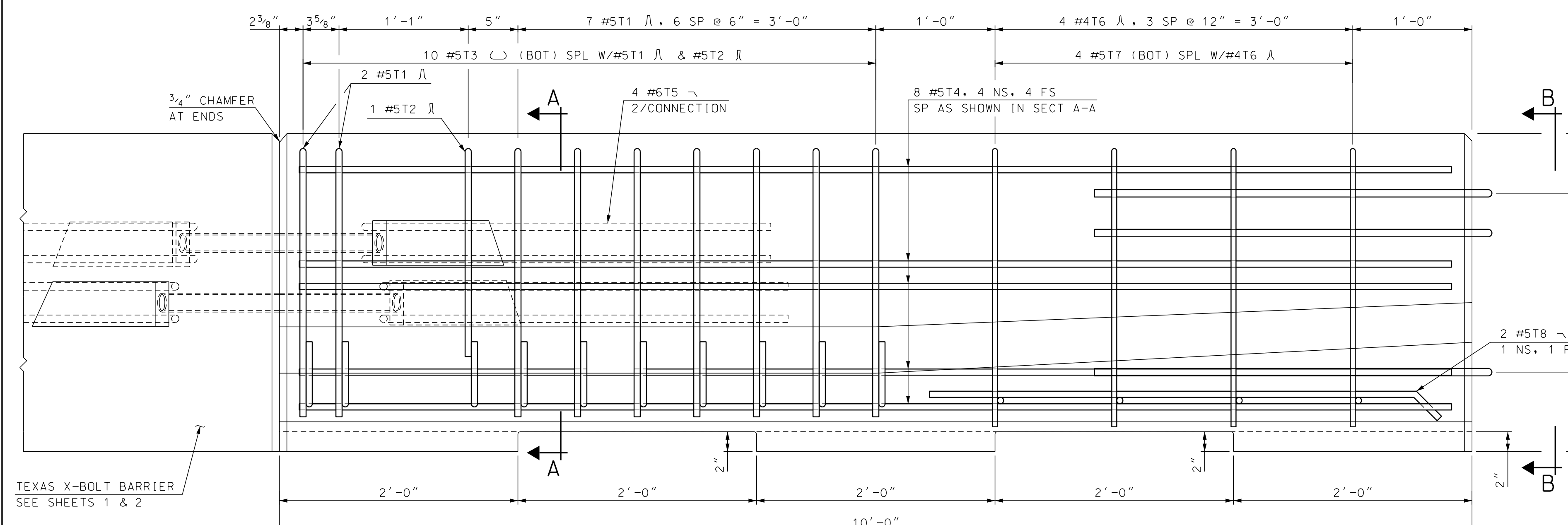


TRANSITION BARRIER
PLAN
 SCALE: 1 1/2" = 1'-0"

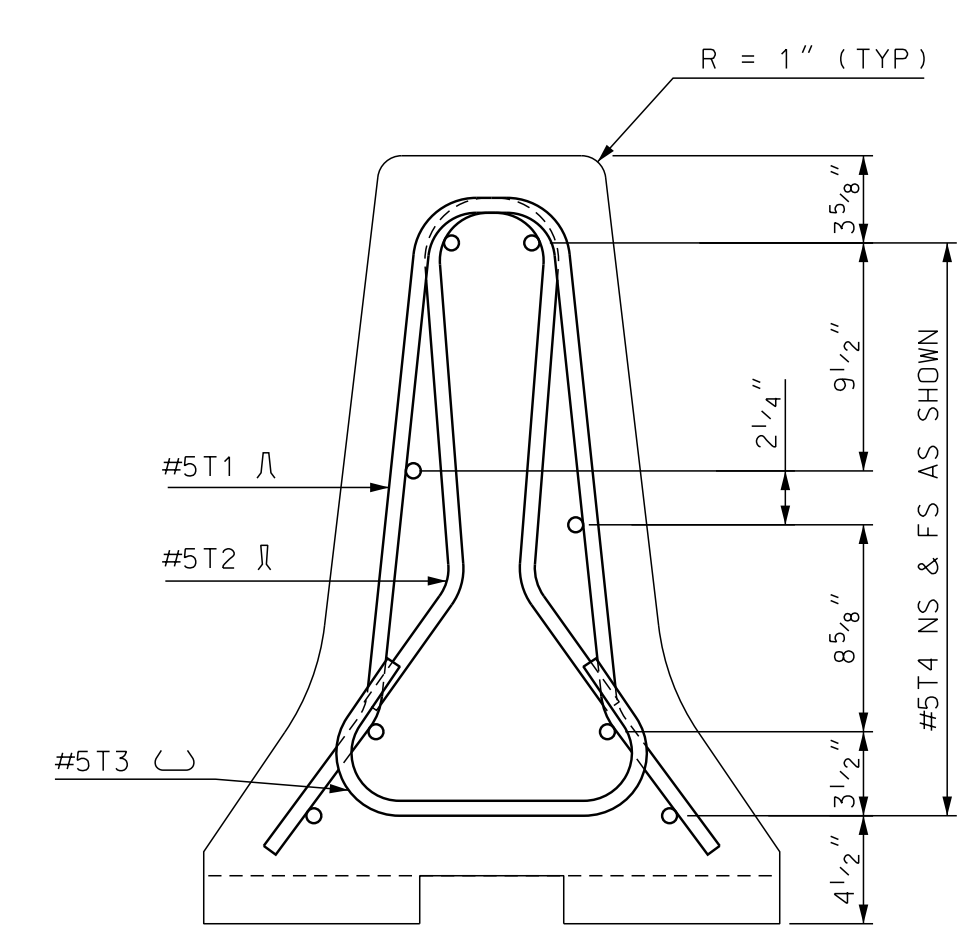


END VIEW SECTION A-A
 SCALE: 1 1/2" = 1'-0"

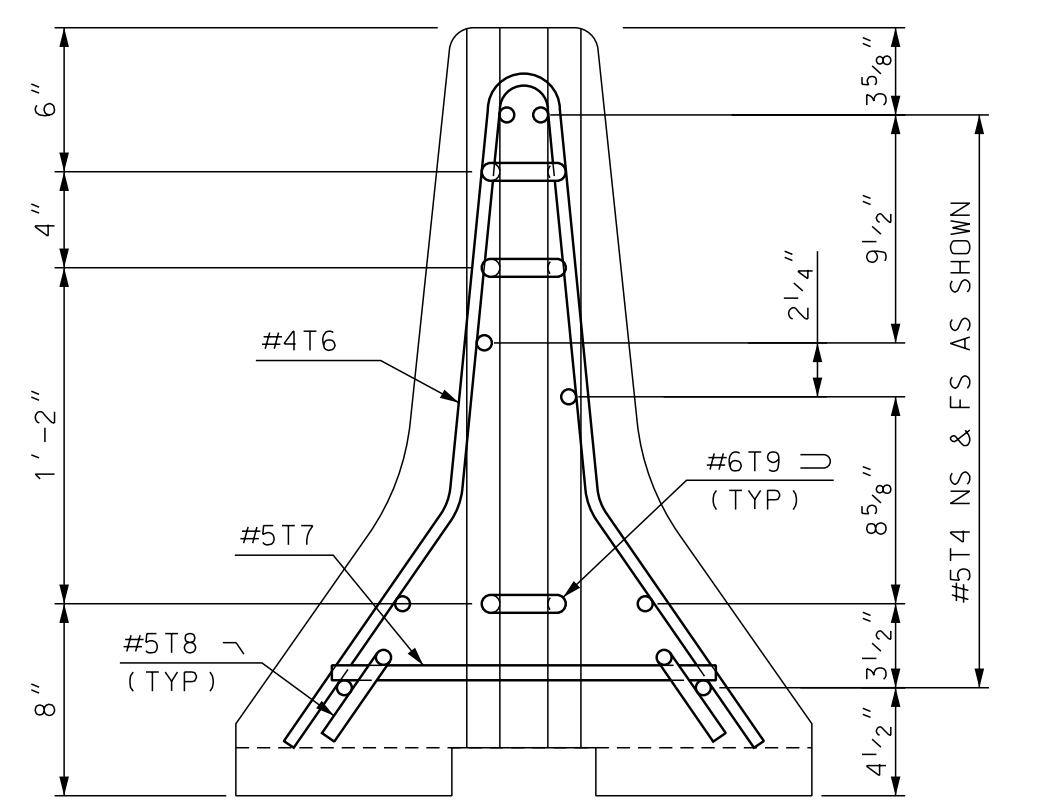
VIEW B-B
 SCALE: 1 1/2" = 1'-0"



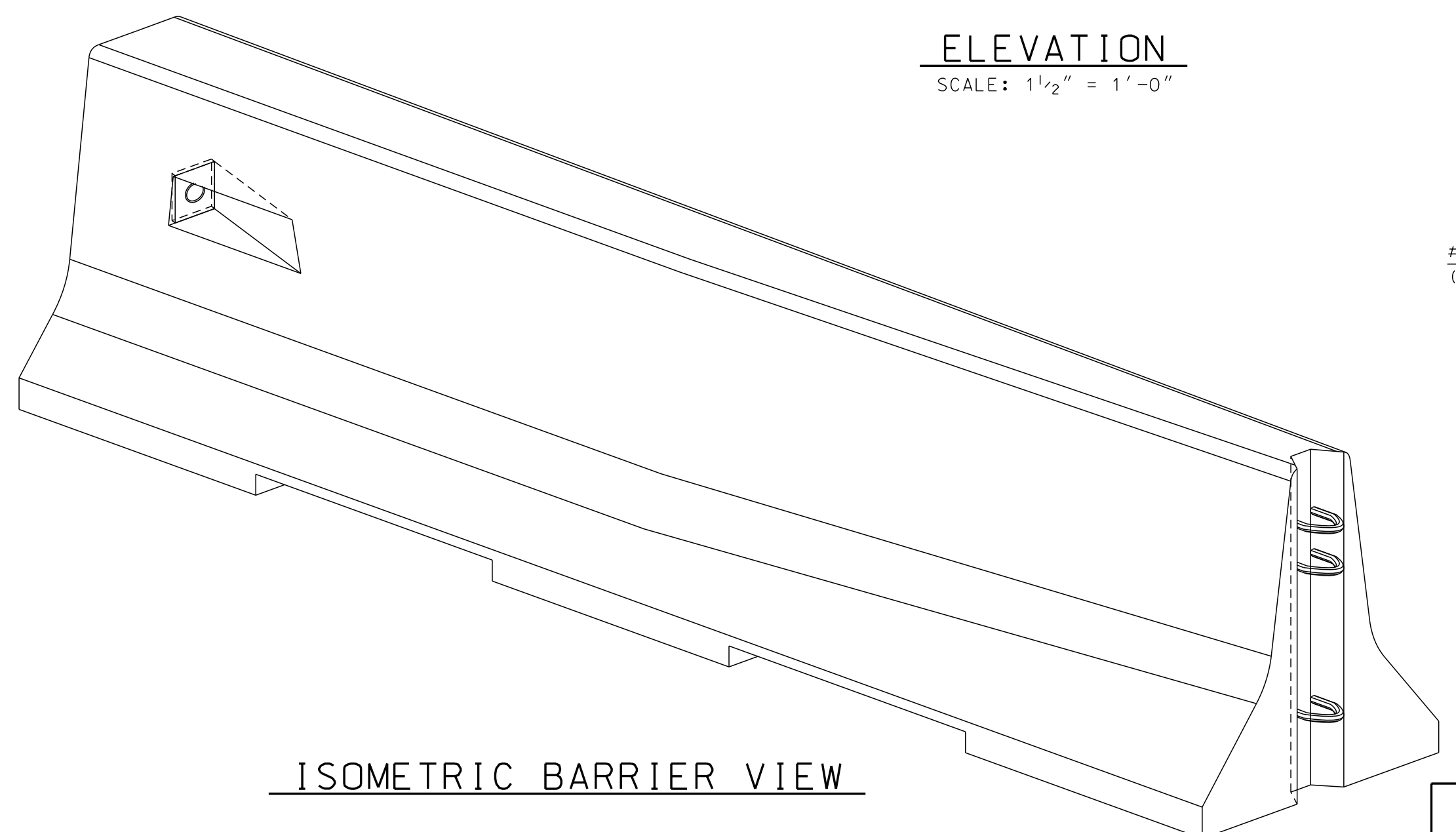
TRANSITION BARRIER
ELEVATION
 SCALE: 1 1/2" = 1'-0"



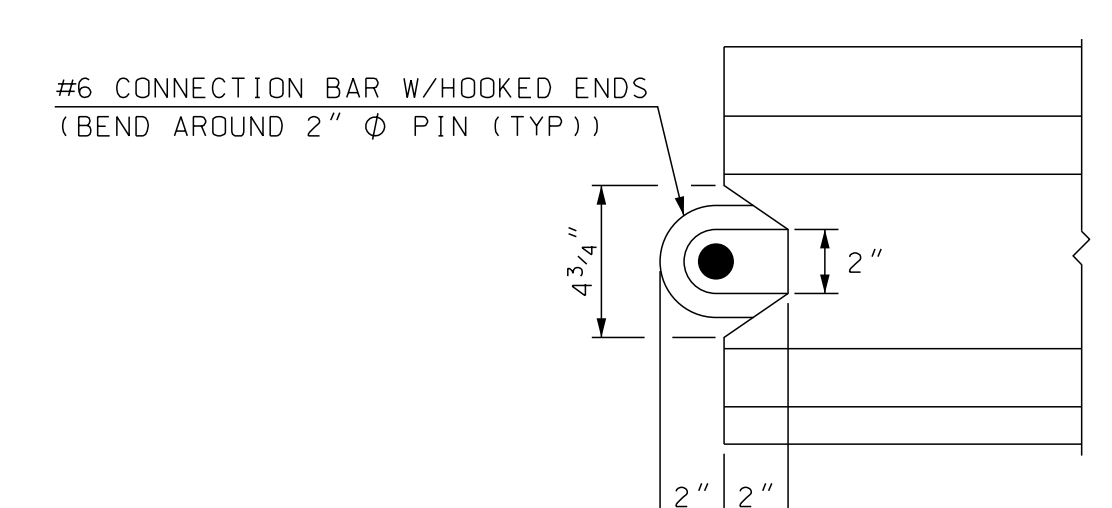
SECTION A-A
 SCALE: 1 1/2" = 1'-0"



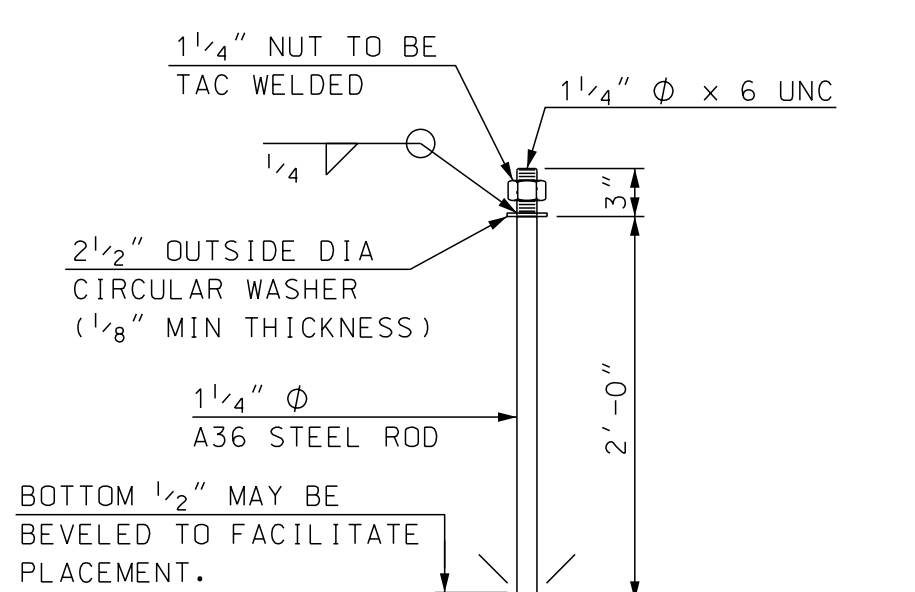
VIEW B-B
 SCALE: 1 1/2" = 1'-0"



ISOMETRIC BARRIER VIEW



END NOTCH DETAIL
 (AT VIEW B-B)
 SCALE: 2" = 1'-0"



CONNECTOR PIN ASSEMBLY
 SCALE: 1" = 1'-0"

NO MODIFICATIONS SHOULD BE MADE TO THIS SHEET

NOTES

1. TEXAS RESTRAINED BARRIER (TRANSITION UNIT) SHALL BE PAID FOR UNDER ITEM 606.41741, PORTABLE CONCRETE BARRIER FOR TRAFFIC CONTROL (BRIDGE).
2. SEE SHEET 1 OF 3 FOR NOTES AND SHEET 2 OF 3 FOR REBAR SCHEDULE.

ONLY FOR USE WITH HIGHWAY STANDARD PLAN GR-23, PCB NCHRP 350
 SEE NOTICE TO CONTRACTORS "SUNSETTING OF NON-MASH PCB ON THE NHS"

STATE OF NEW HAMPSHIRE					
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN					
TOWN	XX	BRIDGE NO.	XXXXXX	STATE PROJECT	XX
LOCATION	XX				
TEXAS RESTRAINED BARRIER (X-BOLT) (3 OF 3)					BRIDGE SHEET
REVISIONS AFTER PROPOSAL					XX OF XX
DESIGNED	TXDOT	DATE	CHECKED	NHDOT	DATE
DRAWN	GMC	12/10	CHECKED	NHDOT	4/18
QUANTITIES	XXX	XX/XX	CHECKED	XXX	XX/XX
ISSUE DATE	5/15/18	FEDERAL PROJECT NO.		SHEET NO.	TOTAL SHEETS
REV. DATE	6/1/20	-----			

BARRIER WEIGHT APPROX. 2.28 TONS

SUBDIRECTORY	DGN LOCATOR	SHEET SCALE
standard/english/barrier	X-Bolt Barrier	AS NOTED