

Notes: (1) ASTM A193 Grade B7 is acceptable as a substitute for Grade 5 threaded rod.  
 (2) Shim box beam as needed with 22.2mm i.d.-82.6mm o.d. x 9.5mm thick Grade 5 washer.


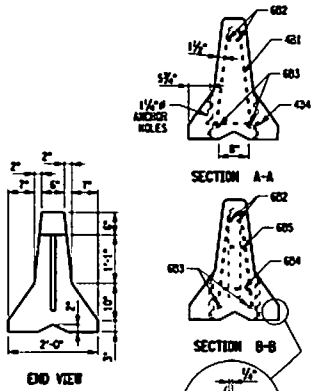
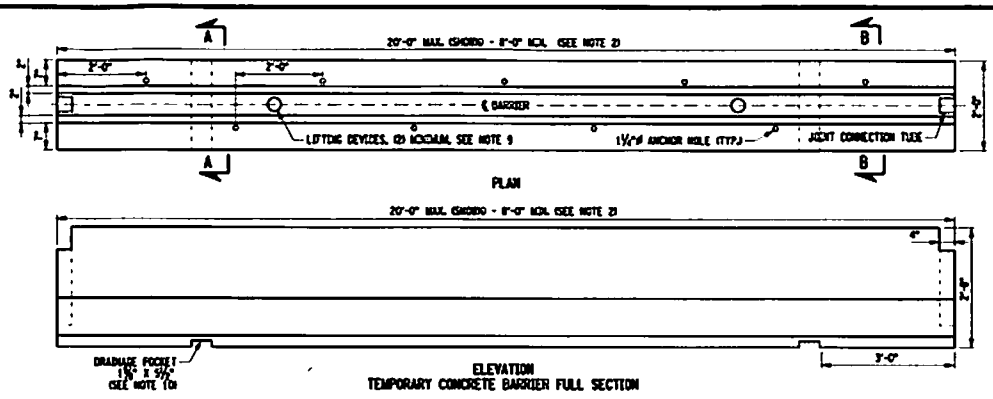
	<b>Box Beam Stiffened, Temporary Concrete Barrier</b>	SHEET 9 of 11
	Stiffener	DATE 2/27/2008
<b>Midwest Roadside Safety Facility</b>	DWG NAME: NY: DD: TempBarrier_B2_metal	DRAWN BY: DPA
	SCALE Name: UNITS: mm	REV. BY: KSP/RSF

Figure 21. Box Beam Stiffener Details, Test NYTCB-1

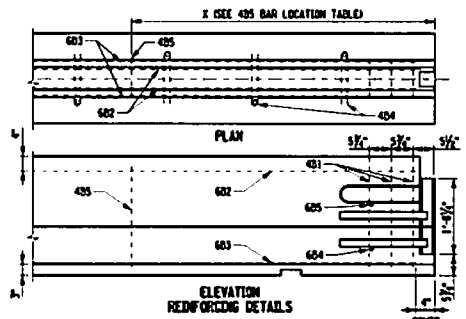
FILE NAME = C:\G001\G001.dwg  
 DATE/TIME = 08-25-2008 14:57  
 USER = jlabbe



- NOTES:
- TEMPORARY CONCRETE BARRIER SHALL BE PRECAST IN ACCORDANCE WITH THE REQUIREMENTS OF STD-405 PRECAST CONCRETE BARRIER.
  - TEMPORARY CONCRETE BARRIER SHALL BE PRECAST UNITS OF ONE OF THE FOLLOWING NOMINAL LENGTHS 8', 10', 12', 14', 16', 18', 20'.
  - STEEL PLATE REINFORCEMENT SHALL BE ASTM A305, ASTM GRADE 345 STEEL. THESE REINFORCEMENT SHALL BE ASTM A305, GRADE B OR C, AND REINFORCING BARS SHALL BE A615, GRADE 420. EPOXY BARS ARE NOT REQUIRED.
  - ALL WELDING SHALL BE PERFORMED BY A WELDER QUALIFIED IN ACCORDANCE WITH SECTION 8 OF THE NYS STEEL CONSTRUCTION MANUAL.
  - SURFACES TO BE WELDED SHALL BE FREE OF SLAG, RUST, MOISTURE, GREASE OR ANY OTHER MATERIAL THAT WILL PREVENT PROPER WELDING OR PRODUCE OBJECTIONABLE FUMES.
  - WELDING SHALL BE SHIELDED METAL ARC WELDING USING PROPERLY DRIED 1/8" E7018 ELECTRODES CONFORMING TO THE REQUIREMENTS OF SECTION 7 OF THE NYS STEEL CONSTRUCTION MANUAL.
  - THE NUMBER AND PLACEMENT OF THE 424 AND 425 BARS WILL VARY WITH THE LENGTH OF THE BARRIER SEGMENT.
  - CONCRETE CLEAR COVER FOR REINFORCING BARS SHALL BE 1 1/2" UNLESS OTHERWISE SPECIFIED.
  - A NOMINAL OF 02 TPO RECESSED LIFTING DEVICES, EACH WITH THE CAPACITY TO LIFT A MASS OF 6 TONS INCLUDING SHALL BE INSTALLED ON EACH SEGMENT. SEGMENT MASS IS APPROXIMATELY 400 LBS/FT.
  - ONE DRAINAGE POCKET SHALL BE INCLUDED IN THE CENTER OF 8'-0" AND 10'-0" SEGMENTS. TPO DRAINAGE POCKETS IN ALL OTHER SEGMENTS.
  - CONNECTION KEY COVER PLATE SHALL BE INSTALLED FLUSH WITH THE BARRIER TOP.
  - 1/2" ASTM A305 ANCHOR PINS SHALL BE PLACED IN FOUR ANCHOR HOLES OF EACH SEGMENT TO BE JOINED.
  - BASED ON SEGMENT LENGTH AND MAXIMUM JOINT ROTATION, TEMPORARY CONCRETE BARRIER CAN ONLY BE INSTALLED TO THE FOLLOWING NOMINAL RADII: 8' - 92', 10' - 115', 12' - 138', 14' - 161', 16' - 184', 18' - 207', 20' - 230'.

**FULL SECTION BAR LIST**

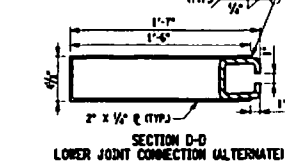
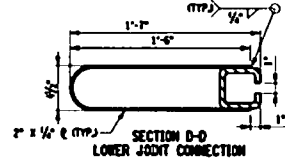
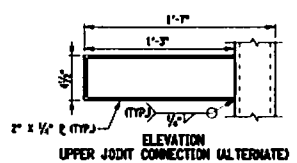
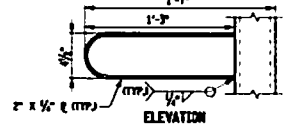
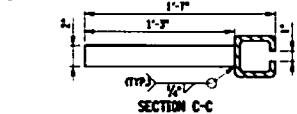
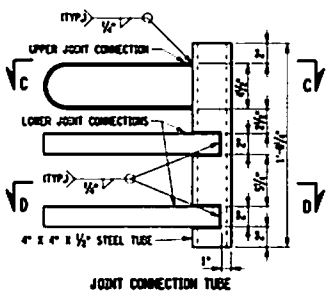
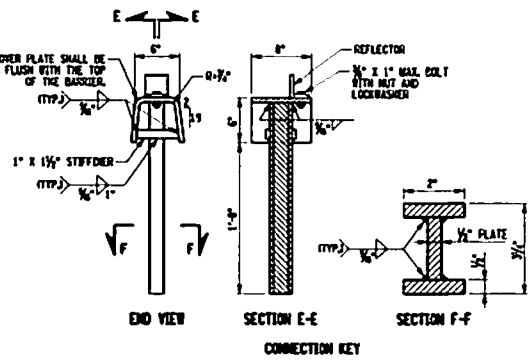
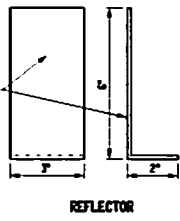
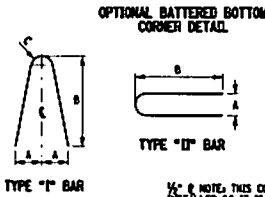
MARK	SIZE	NUMBER PER SECTION	LENGTH	TYPE	A	B	C	LOCATION
421	4	6	4'-11"	1	5"	20"	1"	STIRRUPS
424	4	SEE TABLE	2'-1"	1	4"	18 1/2"		ANCHOR RECESS WOODS
425	4	1 PER ACCESS	4'-11"	1	5"	20"	1"	STIRRUPS
602	6	2	SEE NOTE 7	STR.				LONGITUDINAL TOP
603	6	2	SEE NOTE 7	STR.				LONGITUDINAL BOTTOM
604	6	2	1'-2"	STR.				TRANSVERSE BOTTOM
605	6	2	6"	STR.				TRANSVERSE TOP



**495 BAR LOCATION TABLE**

NOMINAL LENGTH OF BARRIER UNIT	X	NO. EACH SECTION
20'	6'-11"	2
18'	6'-5"	2
16'	5'-11"	2
14'	5'	1
12'	6"	1
10'	5'	1
8'	N/A	0

\*X = DISTANCE FROM END OF BARRIER TO 495 BAR



STATE OF NEW YORK  
 DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY STANDARD SHEET

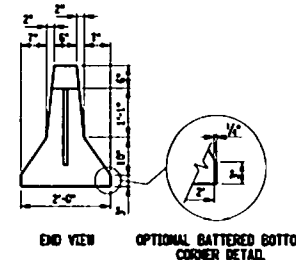
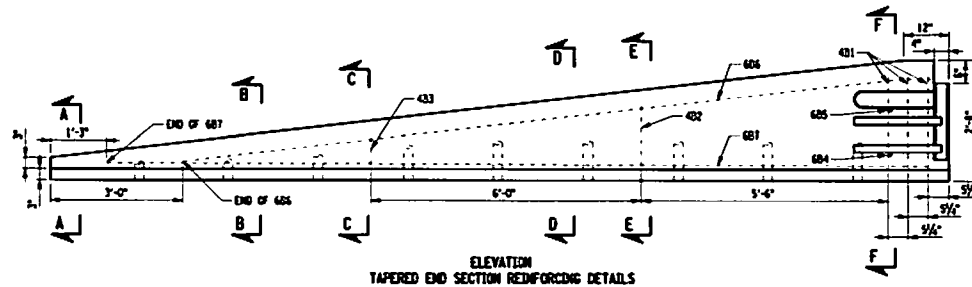
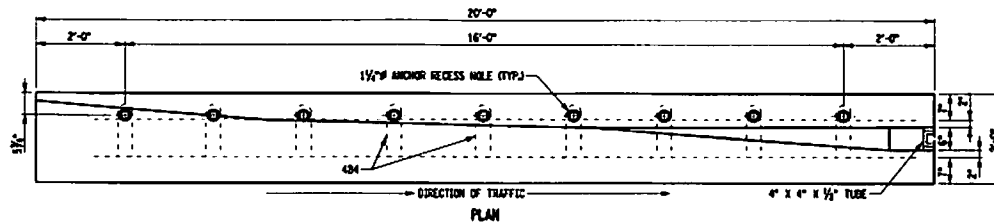
TEMPORARY CONCRETE BARRIER  
 (SHEET 1 OF 3)

APPROVED SEPTEMBER 30, 2009  
 ISSUED UNDER ED 09-025

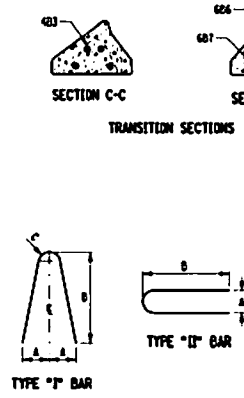
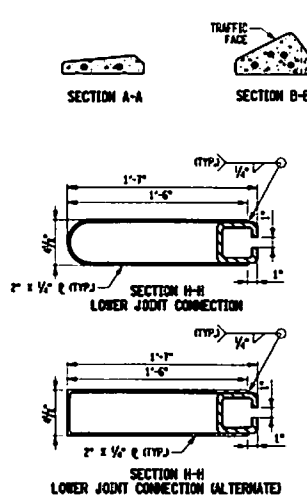
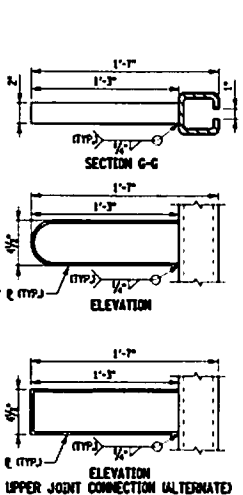
151 J. F. TYNAN, P.E.  
 DEPUTY CHIEF ENGINEER  
 CONSTRUCTION

619-01

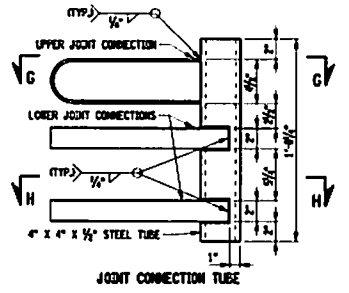
EFFECTIVE DATE: 01/07/10



- NOTES:
- TEMPERARY CONCRETE BARRIER SHALL BE PRECAST IN ACCORDANCE WITH THE REQUIREMENTS OF SP4-02, PRECAST CONCRETE BARRIER.
  - STEEL PLATE SHALL BE ASTM A36M, ASTM GRADE 345. TUBE STEEL SHALL BE ASTM A500 GRADE B OR C, AND REINFORCING BARS SHALL BE ASTM GRADE 420.
  - ALL WELDING SHALL BE PERFORMED BY A QUALIFIED WELDER IN ACCORDANCE WITH SECTION 8 OF THE NYS STEEL CONSTRUCTION MANUAL.
  - SURFACES TO BE WELDED SHALL BE FREE OF SLAG, RUST, MOISTURE, GREASE OR ANY OTHER MATERIAL THAT WILL PREVENT PROPER WELDING OR PRODUCE COLLECTIONABLE FLAMES.
  - WELDING SHALL BE SHIELDED METAL ARC WELDING USING PROPERLY DRIED  $\frac{1}{8}$ " E7018 ELECTRODES CONFORMING TO THE REQUIREMENTS OF SECTION 7 OF THE NYS STEEL CONSTRUCTION MANUAL.
  - CONCRETE CLEAR COVER FOR REINFORCING BARS SHALL BE  $1\frac{1}{2}$ " UNLESS OTHERWISE SPECIFIED.
  - A MINIMUM OF 02 TWO RECESSED LIFTING DEVICES, WITH THE CAPACITY TO LIFT A MASS OF 6 TONS EACH, SHALL BE INSTALLED ON EACH SEGMENT.
  - $1\frac{1}{8}$ " ASTM A36M ANCHOR PINS SHALL BE PLACED IN FOUR RECESSES OF EACH SEGMENT TO BE FORMED.
  - CONNECTION KEY COVER PLATE SHALL BE INSTALLED FLUSH WITH THE BARRIER TOP.
  - THE DETAILS SHOWN FOR THE END SECTIONS ON THIS SHEET ARE FOR APPROACH ENDS WHICH ARE TO BE LOCATED TO THE LEFT OF THE TRAFFIC FLOW ON ONE-WAY OPERATIONS OR BETWEEN OPPOSING FLOWS OF TRAFFIC ON TWO-WAY OPERATIONS. WHEN AN APPROACH END IS TO BE LOCATED TO THE RIGHT OF THE TRAFFIC FLOW, THE END SEGMENT SHALL BE CONSTRUCTED SO THAT IT IS OPPOSITE-HAND REVERSED IN ALL CONSTRUCTION, ANCHOR HOLE LOCATIONS AND REINFORCEMENTS.
  - ALL CORNERS ON THE TOP OF THE SEGMENT SHALL BE ROUNDED TO A  $1\frac{1}{2}$ " RADIUS. THE SEGMENT SHALL HAVE A SMOOTH TRANSITION TO A 6" END-OF-SECTION HEIGHT. ALL END SECTIONS SHALL BE FORMED UNLESS OTHERWISE NOTED.



TAPERED END SECTION BAR LIST								
MARK	SIZE	NUMBER PER SECTION	LENGTH	TYPE	A	B	C	LOCATION
481	13	3	4'-11"	I	5"	20"	1"	STIRRUPS
482	13	1	2'-3"	I	5"	18"	1"	STIRRUPS
483	13	1	1'-6"	I	5"	8"	1"	STIRRUPS
484	13	9	2'-1"	II	4"	15/16"		HOOKS
604	19	1	1'-2"	STR.				
605	19	1	6"	STR.				
606	19	2	16'-7"	STR.				TRANSVERSE (TOP)
607	19	2	18'-2"	STR.				TRANSVERSE (BOTTOM)



FILE NAME: C:\WORK\BTR\107-01-01\107-01-01.dwg  
DATE/TIME: 01/07/10 11:07  
USER: jfthomas

STATE OF NEW YORK  
DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY STANDARD SHEET

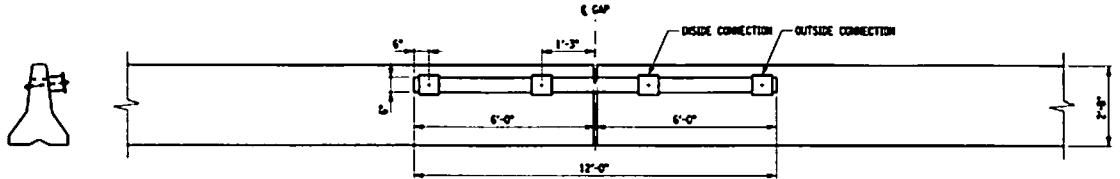
TEMPERARY CONCRETE BARRIER  
(SHEET 2 OF 3)

APPROVED SEPTEMBER 30, 2009 ISSUED UNDER ED 09-025

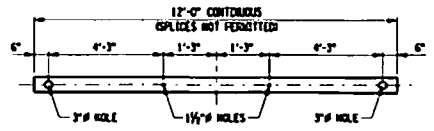
J. F. THOMAS, P.E.  
DEPUTY CHIEF ENGINEER  
CONSTRUCTION

619-01

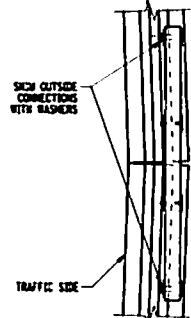
EFFECTIVE DATE: 01/07/10



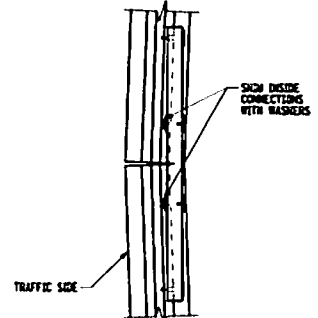
SIDE VIEW  
(CONSTRUCTION SIDE)



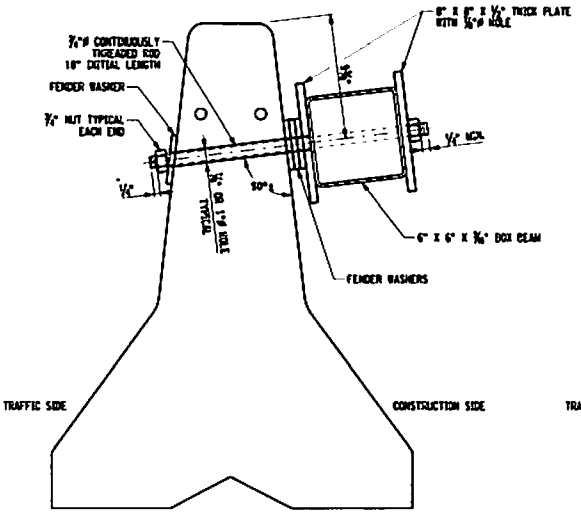
BOX BEAM GUESS RAD.  
HOLE LAYOUT DETAIL



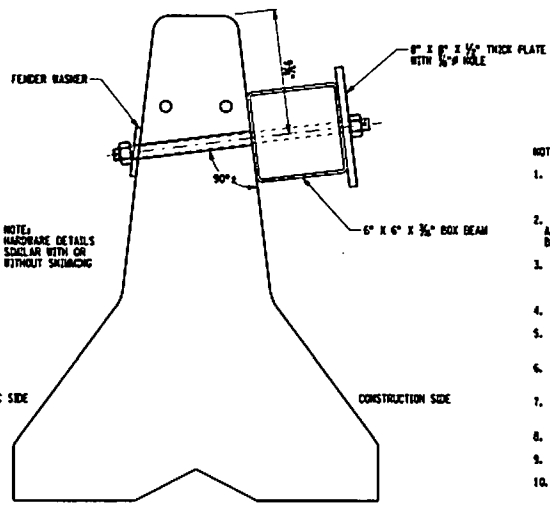
PLAN VIEW  
TCB CURVING  
TOWARD TRAFFIC



PLAN VIEW  
TCB CURVING  
AWAY FROM TRAFFIC



SECTION WITH SHIMMING




SECTION WITHOUT SHIMMING

BOX BEAM STIFFENING OF TEMPORARY CONCRETE BARRIER

NOTES:

- TEMPORARY CONCRETE BARRIER (TCB) SHALL BE PRECAST IN ACCORDANCE WITH THE REQUIREMENTS OF §104-05 PRECAST CONCRETE BARRIER AND STANDARD SHEET TITLED "TEMPORARY CONCRETE BARRIER - SHEET 1 OF 3" AND "TEMPORARY CONCRETE BARRIER - SHEET 2 OF 3".
- BOX BEAM SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF §110-21, BOX BEAM RAILING AND MEDIUM BARRIER, RAIL.S. A. HOWEVER, THE BOX BEAM NEED NOT BE WEIR. B. THE GALVANIZING REMAINING ON THE OLD PIECES SHALL BE SUFFICIENT TO ENSURE THE STEEL IS STRUCTURALLY INTACT.
- TCB WITH BOX BEAM STIFFENER SHALL BEGIN AT LEAST 50'-0" PRIOR TO BE CONTINUOUS THROUGH AND EXTEND AT LEAST 50'-0" BEYOND THE AREA REQUIRING LIMITED DEFLECTIONS. WHERE SPACE LIMITS SUCH EXTENDING, THE FIRST/LAST TCB SEGMENT SHOULD BE FORMED WITH 4 PINS ON THE CONSTRUCTION SIDE.
- TEMPORARY CONCRETE BARRIER WITH BOX BEAM STIFFENER MAY ONLY BE USED WITH TCB SEGMENTS 14'-0" OR LONGER.
- TEMPORARY CONCRETE BARRIER MAY ONLY BE INSTALLED TO THE FOLLOWING MINIMUM RADII: 14'-0" SEGMENT - 161'-0" RADIUS, 16'-0" SEGMENT - 184'-0" RADIUS, 18'-0" SEGMENT - 207'-0" RADIUS, AND 20'-0" SEGMENT - 230'-0" RADIUS.
- WHERE TEMPORARY CONCRETE BARRIERS ARE PLACED ON A RADIUS, THE RESULTING GAPS BETWEEN THE BOX BEAM AND CONCRETE BARRIER SHALL BE SHIMMED.
- THE SHIMMING SHALL CONSIST OF 6" X 6" X 1/2" SQUARE PLATE, AND FENDER WASHERS AS NEEDED TO SHIM THE BOX BEAM STIFFENER TO THE TCB.
- FENDER WASHERS SHALL BE 3" NOMINAL O.D.
- HARDWARE OTHER THAN THE BOX BEAM NEED NOT BE GALVANIZED.
- THE PRESENCE OF NORMAL HOLES DRILLED PER THIS SHEET WILL NOT AFFECT THE RELIABILITY OF THE CONCRETE SEGMENTS.

FILE NAME: 619-618-000  
DATE/TIME: 04-03-2010 18:46  
USER: jcm

 <b>STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION</b>	
U.S. CUSTOMARY STANDARD SHEET	
<b>TEMPORARY CONCRETE BARRIER (SHEET 3 OF 3)</b>	
APPROVED SEPTEMBER 1, 2010 /S/ J.F. TYMAN, P.E. DEPUTY CHIEF ENGINEER (CONSTRUCTION)	ISSUED UNDER ED 10-034  <b>619-01</b>

EFFECTIVE DATE: 01/06/11