



**REVIEW NOTES**  
**ROCHESTER ER BRF 0162(18) – BRIDGE NO. 19**  
**TEMPORARY TRAFFIC BARRIER DRAWINGS**  
**May 21, 2014**

**RE:** Temporary Traffic Barrier Drawings received from Schultz Construction on 5/14/2014.

**VHB Project No.:** 57517.00

*These notes accompany the review of the Temporary Traffic Barrier Drawings reviewed by VHB on 5/20/2014.*

General Notes

1. The clear zone shown on the contract documents is based on the fact that there is guardrail present along the west side of VT 100.
2. If there is no guardrail the clear zone for a posted speed limit of 45 mph or less is 14' beyond the edge of the travel way (the white line) and the side slope extending down from the edge of the roadway would be 1V:4H or shallower.
3. The end of the temporary concrete barrier should extend 14' beyond the edge of the travel way (the white line) and the side slope behind and approaching the temporary traffic barrier should be 1V:4H.
4. The termination point for the temporary concrete barrier should be moved further to the north to the gravel pull off where it is possible to meet these requirements or an energy absorption attenuator should be used. The end of the temporary concrete barrier to the south requires an energy absorption attenuator.
5. See the following sheets for additional comments.



# REVIEW NOTES

## ROCHESTER ER BRF 0162(18) – BRIDGE NO. 19 TEMPORARY TRAFFIC BARRIER DRAWINGS May 21, 2014

SUBMITTAL REVIEW								
<input type="checkbox"/>	Reviewed and approved but only for conformance to the Construction Contract Documents.							
<input checked="" type="checkbox"/>	Revise and Resubmit							
<p>Corrections or comments made during this review do not relieve the Contractor or his Designer from compliance with professional requirements or for responsibility for the adequacy of the submittal information. This check is only for review of general conformance with industry standards and general compliance with the information given in the Contract Documents. VHB has not conducted a detailed review of the submittal and has not performed calculations or assessed the adequacy of loads, design criteria, quantities, dimensions, etc. Approval of the submittal does not constitute VHB's approval of any construction means, methods or techniques. These remain the responsibility of the Contractor.</p>								
<hr/> <table> <tr> <td rowspan="3"></td> <td><i>Vanasse Hangen Brustlin, Inc.</i></td> <td>Job Number: 57517.00</td> </tr> <tr> <td>7056 US Route 7 • Post Office Box 120</td> <td>Reviewed By: S.E. Burbank</td> </tr> <tr> <td>North Ferrisburgh, VT 05473 802.425.7788</td> <td>Date: May 21, 2014</td> </tr> </table>			<i>Vanasse Hangen Brustlin, Inc.</i>	Job Number: 57517.00	7056 US Route 7 • Post Office Box 120	Reviewed By: S.E. Burbank	North Ferrisburgh, VT 05473 802.425.7788	Date: May 21, 2014
	<i>Vanasse Hangen Brustlin, Inc.</i>		Job Number: 57517.00					
	7056 US Route 7 • Post Office Box 120		Reviewed By: S.E. Burbank					
	North Ferrisburgh, VT 05473 802.425.7788	Date: May 21, 2014						

This submittal review is for sheets 1-9, inclusive, of the “Barrier Clear Zone” submittal received on 5/14/2014.

Vermont Agency of Transportation

# RECEIVED

ON: **May 15, 2014**

and Checked for

# CONFORMANCE

BY: Jennifer Fitch DATE: 05/21/2014



# SCHULTZ

May 15, 2014

State of Vermont  
VTRANS Construction Section  
61 Valley View  
Rutland, VT 05701

Rochester ER BRF 0162(18)  
VT 73 Bridge # 19  
Re: Temporary Concrete Barrier

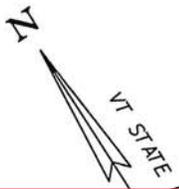
Attn: Christopher Williams, R.E.

Mr. Williams,

W.M. Schultz Construction Inc. (WMSCI) would like to request VTRANS to allow us to eliminate where required the use of Energy Absorption Impact Attenuators. WMSCI will extend and locate the end of our Temporary Concrete Barrier outside of the clear zone in our Traffic Control Plan as per the attached drawings. Concrete barrier supplied by WMSCI will meet the requirements of VTRANS specification section 621 for Temporary Concrete Barrier. The use of the barrier tapered past the clear zone removes the possibility of a direct head on collision with the blunt end and also maintains traffic in the designated path of travel. This allows us to have equipment access to the site by being able to efficiently open and then close the last piece of barrier. For existing field conditions if required barrier setup can and will be adjusted and modified as directed by the Resident Engineer. If you have any questions or require additional information please contact us.

Sincerely,  
W.M. Schultz Construction, Inc.

Michael D. Garn  
Asst. Project Manager



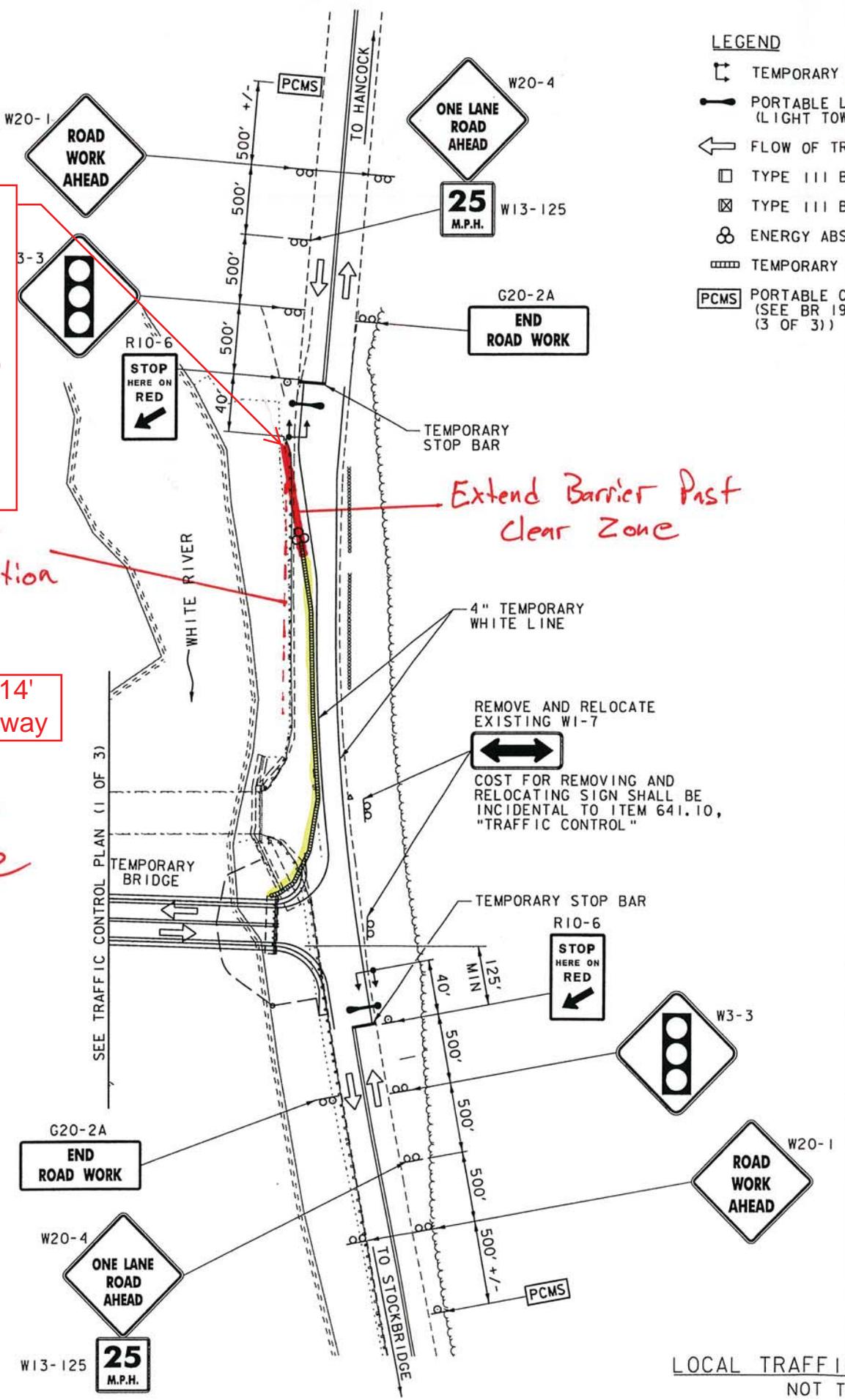
- LEGEND**
- TEMPORARY
  - PORTABLE LIGHT TOWER
  - FLOW OF TRAFFIC
  - TYPE III B
  - ENERGY ABSORBER
  - TEMPORARY BARRIER
  - PORTABLE C (SEE BR 19 (3 OF 3))

Extend end of temporary traffic barrier north to the gravel pull-off and place 14' beyond the travel way (white line) with a side slope of 1V:4H or provide an energy absorption attenuator.

Approx. Clear Zone Location

Clear Zone is 14' beyond travel way

Not to Scale



Extend Barrier Past Clear Zone

REMOVE AND RELOCATE EXISTING W1-7  
 COST FOR REMOVING AND RELOCATING SIGN SHALL BE INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL"

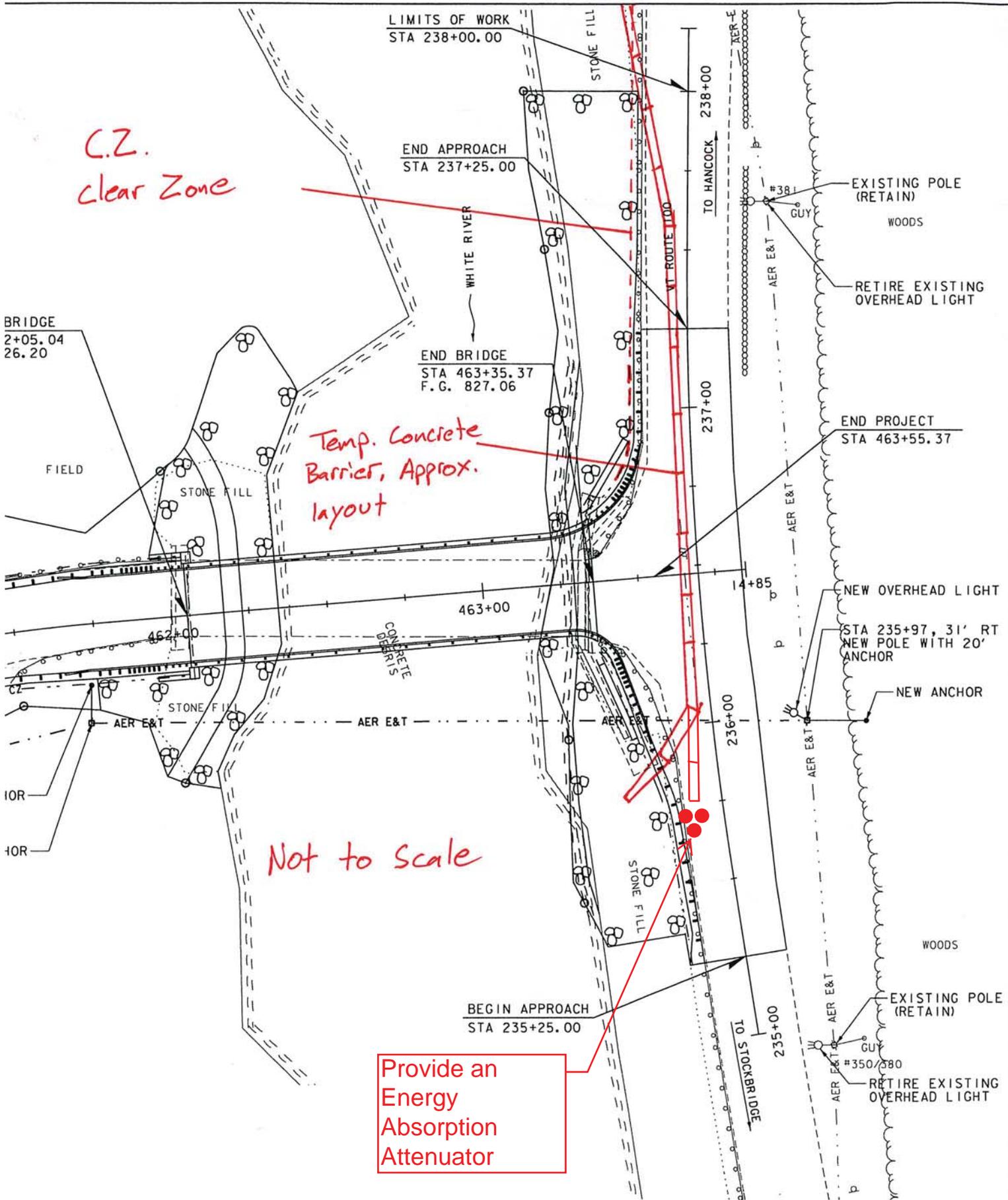
LOCAL TRAFFIC NOT TO

C.Z.  
Clear Zone

Temp. Concrete  
Barrier, Approx.  
layout

Not to Scale

Provide an  
Energy  
Absorption  
Attenuator



PROJECT NAME:	ROCHESTER
PROJECT NUMBER:	ER BR F 0162(18)
FILE NAME:	zllc332bdr_utility.dgn
PROJECT LEADER:	S.E. BURBANK
DESIGNED BY:	C.L. CILLEY
BR 19 UTILITY LAYOUT SHEET (2 OF 2)	
PLOT DATE:	9/3/2013
DRAWN BY:	C.L. CILLEY
CHECKED BY:	D.M. PECK
SHEET	195 OF 238



March 26, 1999

Refer to: HMHS-B52

Mr. John Dallain  
Vice-President  
EASI-SET INDUSTRIES  
Post Office Box 300  
Midland, Virginia 22728

Dear Mr. Dallain:

In your March 12 letter to Mr. Richard Powers of my staff, you requested the Federal Highway Administration's (FHWA) acceptance of your J-J Hooks temporary barrier connection when used with either a New Jersey or F-shape concrete barrier. To support your request, you sent copies of a Texas Transportation Institute report dated March 1999 entitled "NCHRP Report 350 Test 3-11 of the J-J Hooks Jersey Shape Portable Concrete Barrier", by Menges, Booth, Williams, and Schoeneman. You also sent us video tapes of the test that was run.

The barrier tested was a standard height (813 mm) New Jersey shape portable concrete barrier. Each segment was 3658-mm long and connected together by steel J-J hooks cast into each segment. These "hooks" were formed from 10-mm thick steel plates which were connected through the barrier by three No.16 ASTM A706 Grade 60 reinforcing bars. Additional reinforcement in the barrier consisted of welded wire fabric throughout its length. Design details are shown in Enclosure 1 for the New Jersey shape and in Enclosure 2 for the F-shape.

NCHRP Report 350 test 3-11 was run on a free-standing installation comprised of 16 connected segments totaling 58.56 m in length. The impact point was approximately 21.2 m from the upstream end or 1.2 m upstream from the joint between segment 7 and segment 8. Maximum deflection under this test set-up was reported as 1.3 m. The test vehicle was contained and redirected upright and all appropriate Report 350 evaluation criteria were met. Summary data from this test are shown in Enclosure 3.

Based on our review of the information you submitted, we find the J-J hook design to meet the requirements for an NCHRP Report 350 test level 3 (TL-3) barrier when used with 3658-mm long portable New Jersey shape concrete barriers or with an F-shape concrete barrier having the same base width (600 mm) as the tested New Jersey design. Since the J-J Hook design is

proprietary, its use on Federal-aid projects, except exempt projects not on the National Highway System, remains subject to the conditions listed in Title 23, Code of Federal Regulations, Section 635.411 when its use is specified by the contracting authority. Please do not hesitate to call Mr. Powers at (202) 366-1320 should you have any questions regarding this letter.

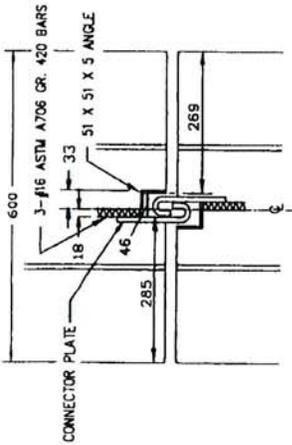
Sincerely yours,

(original signed by Dwight A. Horne)

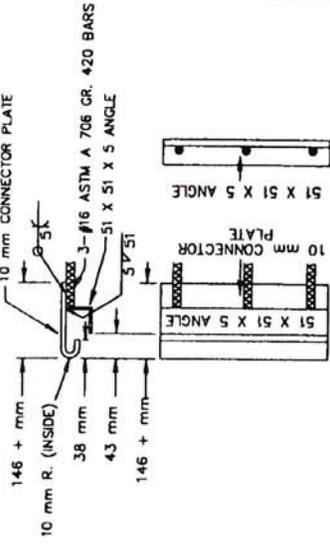
Dwight A. Horne  
Director, Office of Highway Safety Infrastructure

3 Enclosures





J-J HOOK DETAIL



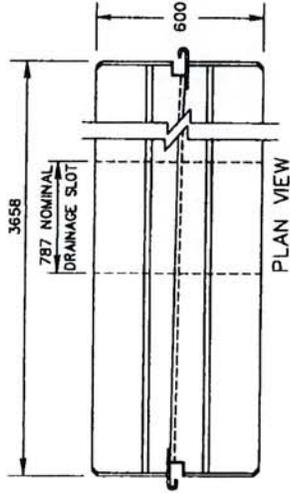
CONNECTOR PLATE DETAIL

J - J HOOK

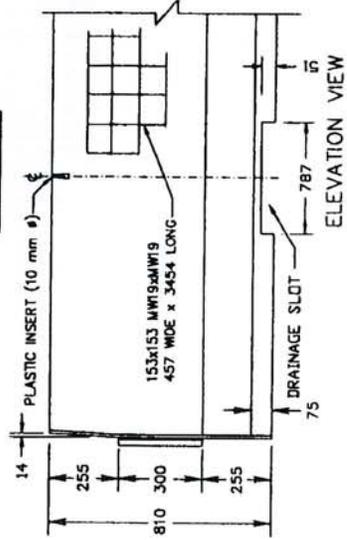
NOTES:

1. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS DRAWING ARE IN MILLIMETERS.
2. CONCRETE STRENGTH = 5000 PSI (34 MPa) MIN.
3. ASTM A36 STEEL PLATE.
4. ASTM A185 W.W.F. FOR CONCRETE.
5. ASTM A706 GRADE 420 REBARS.
6. J-J HOOKS PATENTED DESIGN AS MANUFACTURED BY SMC, MIDLAND VA. OR OTHER AUTHORIZED EASI-SET<sup>SM</sup> MANUFACTURERS
7. J-J HOOKS TO BE NON-GALVANIZED FOR TEMPORARY LOCATIONS. J-J HOOKS TO BE GALVANIZED FOR PERMANENT LOCATION
8. BARRIER SHOWN IS NOT TO BE USED ON BRIDGE DECK.

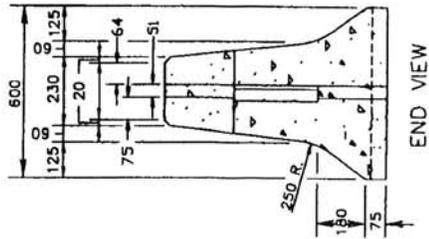
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PLAN VIEW



ELEVATION VIEW



END VIEW

CONTRACTOR:

PROJECT NO.:

J-J HOOKS<sup>SM</sup> POSITIVE CONNECTION  
F-SHAPE DESIGN  
PORTABLE CONCRETE BARRIER

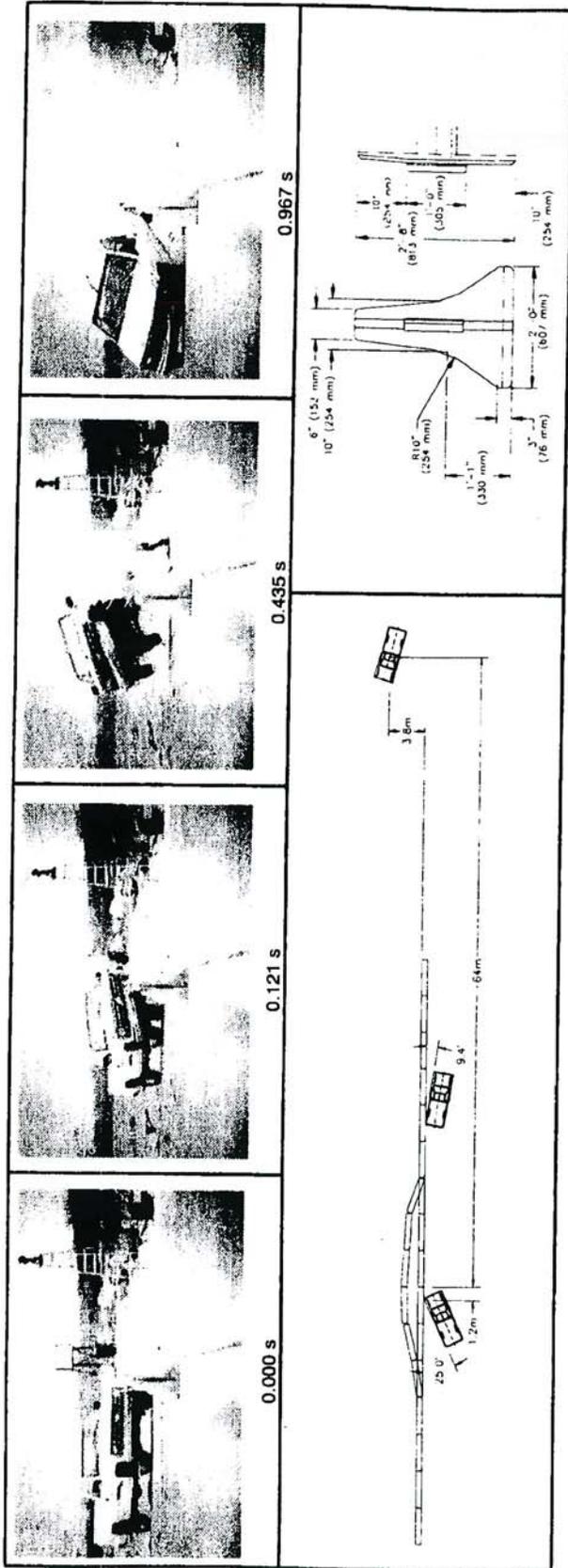
EASI-SET INDUSTRIES

DATE	REVISION	INT.

DATE: 2-11-99

U.S. Pat. No. 5,666,461; 5,666,462; 5,666,463; 5,666,464; 5,666,465; 5,666,466; 5,666,467; 5,666,468; 5,666,469; 5,666,470; 5,666,471; 5,666,472; 5,666,473; 5,666,474; 5,666,475; 5,666,476; 5,666,477; 5,666,478; 5,666,479; 5,666,480; 5,666,481; 5,666,482; 5,666,483; 5,666,484; 5,666,485; 5,666,486; 5,666,487; 5,666,488; 5,666,489; 5,666,490; 5,666,491; 5,666,492; 5,666,493; 5,666,494; 5,666,495; 5,666,496; 5,666,497; 5,666,498; 5,666,499; 5,666,500; 5,666,501; 5,666,502; 5,666,503; 5,666,504; 5,666,505; 5,666,506; 5,666,507; 5,666,508; 5,666,509; 5,666,510; 5,666,511; 5,666,512; 5,666,513; 5,666,514; 5,666,515; 5,666,516; 5,666,517; 5,666,518; 5,666,519; 5,666,520; 5,666,521; 5,666,522; 5,666,523; 5,666,524; 5,666,525; 5,666,526; 5,666,527; 5,666,528; 5,666,529; 5,666,530; 5,666,531; 5,666,532; 5,666,533; 5,666,534; 5,666,535; 5,666,536; 5,666,537; 5,666,538; 5,666,539; 5,666,540; 5,666,541; 5,666,542; 5,666,543; 5,666,544; 5,666,545; 5,666,546; 5,666,547; 5,666,548; 5,666,549; 5,666,550; 5,666,551; 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Sheet 1 of 1



<b>General Information</b>	Texas Transportation Institute	
Test Agency	400001-ES11	
Test No.	02/05/99	
Date		
<b>Test Article</b>	Portable Concrete Barrier	
Type	J-J Hooks™ Jersey Shape PCB System	
Name	58.6	
Installation Length (m)	16 Segments 3.66 m Long Reinforced	
Material or Key Elements	Jersey Shape Concrete Barriers	
	Concrete Pavement, Dry	
<b>Soil Type and Condition</b>		
Test Vehicle		
Type	Production	
Designation	2000P	
Model	1993 Chevrolet 2500 pickup truck	
Mass (kg)		
Curb	2052	
Test Inertial	2000	
Dummy	No Dummy	
Gross Static	2000	
<b>Impact Conditions</b>		
Speed (km/h)	101.0	
Angle (deg)	25.0	
<b>Exit Conditions</b>		
Speed (km/h)	75.2	
Angle (deg)	9.4	
<b>Occupant Risk Values</b>		
Impact Velocity (m/s)		
x-direction	5.9	
y-direction	5.1	
THIV (km/h)	24.8	
<b>Ridedown Accelerations (g's)</b>		
x-direction	-3.7	
y-direction	5.7	
PHD (g/s)	5.7	
ASI	0.99	
Max. 0.050-s Average (g's)		
x-direction	-6.5	
y-direction	7.8	
z-direction	-3.0	
<b>Test Article Deflections (m)</b>		
Dynamic	1.30	
Permanent	1.30	
<b>Vehicle Damage</b>		
Exterior		
VDS	11LFQ3	
CDC	11FLEK3 & 11LYEW3	
Maximum Exterior Vehicle Crush (mm)	340	
Interior		
OCDI	LF0001000	
Max. Occ. Compart.		
Deformation (mm)	32	
<b>Post-Impact Behavior</b>		
(during 1.0 s after impact)		
Max. Yaw Angle (deg)	43	
Max. Pitch Angle (deg)	-13	
Max. Roll Angle (deg)	25	

Figure 12. Summary of Results for test 400001-ES11, NCHRP Report 350 test 3-1-1.

