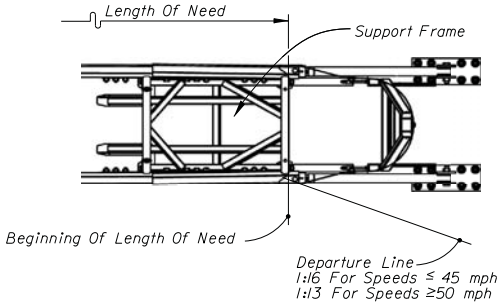
CONTENTS

DESIGN NOTES

1. The beginning of length of need shall be the point of intersection between the face of the cushion and the forward end of the Support Frame Assembly. See detail below.
2. The QUEST System is designed to Cushion vehicle end-on hits and to redirect vehicles from side hits. The QUEST System is designed to shield fixed hazards or the ends of other temporary and permanent barrier systems.
3. The QUEST System is not field-restorable for all impacts.

   Until additional replacement and repair experience is available, the QUEST System should not be permanently installed in gores of freeways and expressway mainline ramp terminals; gores of roadway forks; or other gore locations where the Engineer of Record has identified a specific history of high frequency vehicle departure from the roadway or the potential exists for such departures.
4. Currently the Department does not recognize other proprietary items as being equally suitable alternatives to the QUEST System, and until such alternatives are available, the QUEST System need not be bid against other proprietary items. However, for temporary use where the QUEST System and other approved redirective crash cushions meet or exceed the minimum requirements for a specific location, the approved crash cushions will be considered optional systems and paid for as described in General note 8 above.



NOTE 6 ALTERNATIVE:

The contractor has the option to install reflective sheeting on the nose of the crash cushion in lieu of placing the yellow Type I Object Marker 3 feet in front of the nose of the crash cushion. The sheeting to be used must be solid yellow, Type III or better, and must be a product listed on the Department's Qualified Products List (QPL). The sheeting to be applied to the nose of the crash cushion shall be a minimum of 360 square inches with a minimum height of 15 inches.

April 30, 2009

GENERAL NOTES FOR QUEST SYSTEM

1. The energy absorbing system represented on these Qualified Products List (QPL) drawings is a proprietary design by Energy Absorption Systems, Inc. and marketed under the name QUEST System. Any infringement on the rights of the designer shall be the sole responsibility of the user.

   The Quest system is available in units meeting the requirements of NCHRP 350 Test Level 2 and Test Level 3. There is also a high speed unit that was crash tested at 115km/h (72 mph).

   The Test Level 2 units may be used where speeds are 45 mph or less.

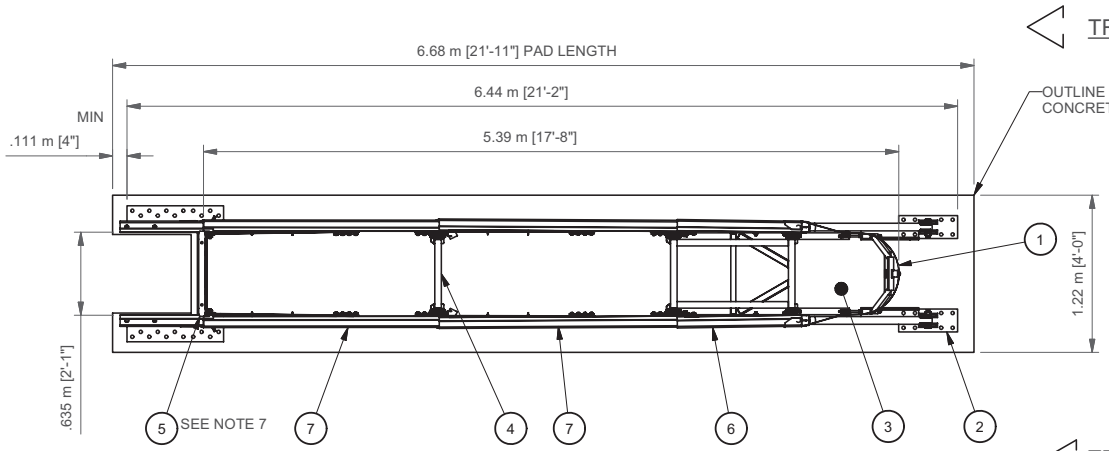
   The Test Level 3 and 115 units may be used for any speed.
2. The QUEST System is a redirective, non-gating crash cushion designed to shield hazards 24"-36" in width.
3. The QUEST System shall be assembled and installed in accordance with these approved drawings and the manufacturer's details, procedures and specifications. The Contractor shall certify that all materials furnished meet the specified requirements.
4. The QUEST System shall be constructed parallel to the approach travel lane and on cross slopes of 8% or flatter.
5. All metallic components shall meet the galvanizing requirements for guardrail, Index No. 400.
6. A yellow Type I Object Marker shall be centered 3' in front of the nose of the QUEST System. Mounting hardware shall be in conformance with Index Nos. 11860 and 11865. The cost of the Object Marker shall be included in the cost of the QUEST System.
7. Quantity for payment is based on each independent location as called for in the plans or as directed by the Engineer. The cost for manufacturer's transition hardware, foundations and subgrade preparation will be included in the cost of the QUEST System.
8. Permanent units will be paid for under the contract unit price for Crash Cushion-Vehicular Impact Attenuator (QUEST), EA; temporary units, will be paid for under the Contract unit price for Temporary Crash Cushion (Redirective Option), LO.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

QUEST SYSTEM

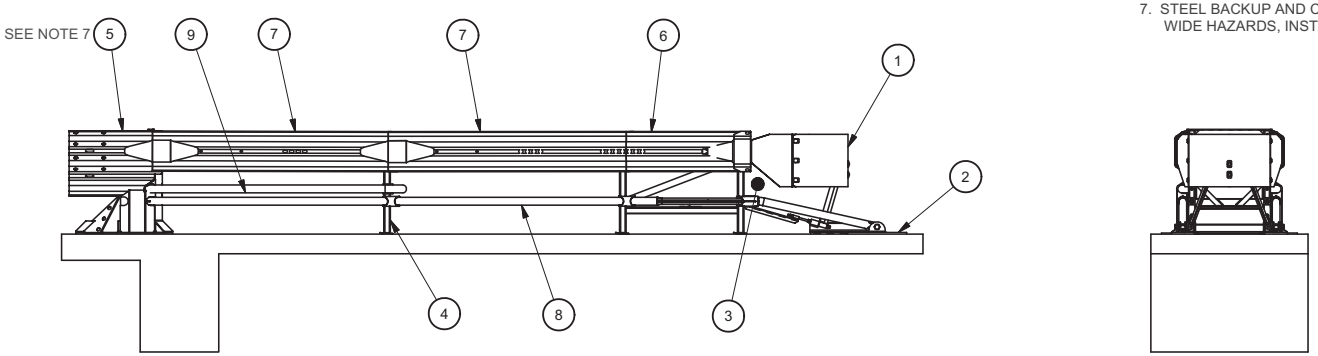
DATE: 11/12/08

QPL No. S544-0035



PLAN

NOTES:
1. IN COMPLIANCE WITH THE AASHTO 2002 ROADSIDE DESIGN GUIDE MANUFACTURER RECOMMENDS REMOVAL OF ALL CURBS AND ISLANDS TO ENSURE PROPER IMPACT PERFORMANCE.
2. PROVISION SHALL BE MADE FOR REAR RAILS TO SLIDE REARWARD UPON IMPACT 1.82m [6' 0"] MIN.
3 CAUTION: THE QUEST SYSTEM MUST BE CORRECTLY ANCHORED FOR PROPER IMPACT RFORMANCE. ATTACH SYSTEM USING ONE OF THE FOLLOWING: (QTY. 30) 178 [7] STUDS MAY BE USED TO ATTACH SYSTEM TO 28 MPa [4000 PSI] MIN P.C. CONCRETE PER THE FOLLOWING MINIMUMS.**
   A) 152 [6.00] REINFORCED PAD PER REFERENCE DRAWING 3562015-0000.
   B) 203 [8.00] NON-REINFORCED ROADWAY, MEASURING AT LEAST 3.66m [12' 0"] WIDE BY 15.24m [50' 0"] LONG, SEE DWG 3562007-0000.
   C) 180 [7.00] REINFORCED DECK STRUCTURE, SEE DWG 3562007-0000 (QTY 38) 457 [18] THREADED RODS MAY BE USED TO INSTALL SYSTEM ON ASPHALT.**
   ** REFER TO THE QUEST TL-2 INSTALLATION INSTRUCTIONS FOR FOUNDATION SPECIFICATIONS.
4. SEE THE "QUEST TL-2 SYSTEM PRODUCT MANUAL" FOR A DESCRIPTION OF ITS IMPACT PERFORMANCE CHARACTERISTICS AND DESIGN LIMITATIONS BEFORE PLACING A SYSTEM AT A GIVEN SITE. INFORMATION AND COPIES OF ABOVE MANUAL ARE AVAILABLE BY CALLING CUSTOMER SERVICE DEPARTMENT AT (888) 323-6374.
5. WHERE NECESSARY, THE CUSTOMER SHALL SUPPLY AN ADEQUATE TRANSITION FROM THE QUEST TL-2 SYSTEM TO THE OBJECT BEING SHIELDED.
6. ANCHOR BOLTS NOT INCLUDED IN MODEL NUMBER. ORDER SEPARATELY.
7. STEEL BACKUP AND CONCRETE PAD SPECIFICALLY DESIGNED TO NEST AROUND 24" WIDE HAZARDS, INSTALL ACCORDINGLY TO ENSURE PROPER IMPACT PERFORMANCE.



ELEVATION
LEFT SIDE

KEY

1 NOSE	6 BAY 1 PANNEL
2 FRONT ANCHOR	7 BAY 2-3 PANEL
3 BAY 1	8 SHAPER RAIL
4 DIAPHRAGM	9 REAR RAIL
5 BACKUP	

Revision	Date	Rev	By	Chk.	App.

REFERENCES

QUEST SYSTEM ASSEMBLY	TD35024-TL-2
SUPPORT FRAME BAY 1	3562013-0000
DIAPHRAGM ASSY BAYS 1&2	3562016-0000
TRIGGER ASSY	3562014-0000
CONCRETE PAD	3562018-0000
ANCHOR ASSY	3562007-0000

DRAWN: R. Cummins	DATE: 10/3/2006	
DESIGNED:	DATE:	
CHECKED: R. Brougher	DATE: 10/4/2006	
APPROVED: K. Looney	DATE: 10/4/2006	
FILE: TD35024-TL2 CU.idw		
NEXT ASSEMBLY:		

UNIDIRECTIONAL

ASSEMBLY N0 TD35024-TL-2 CU

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST TL-2

SCALE:	DRAWING:	SHEET:	REV
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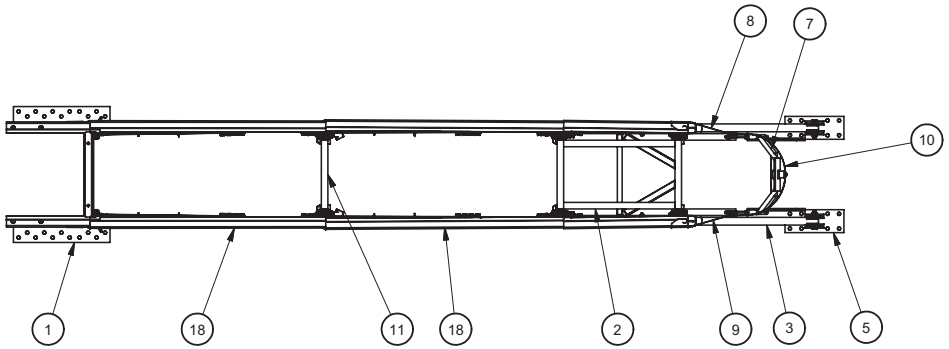

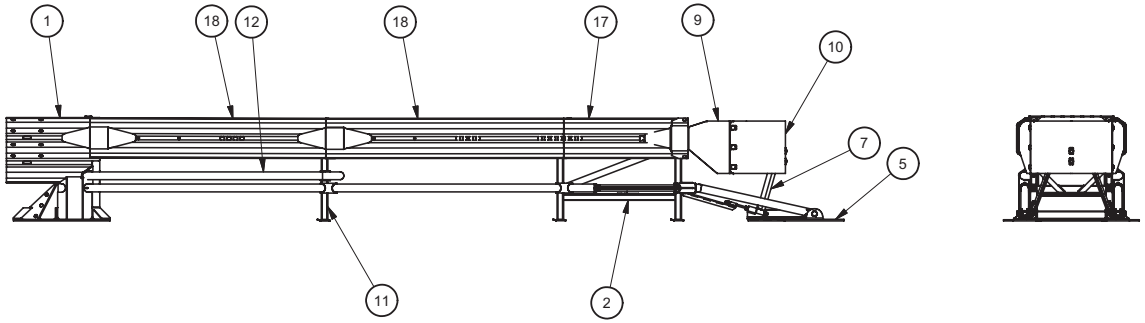

PARTS LIST

ITEM	STOCK NO.	DESCRIPTION	QTY.
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2	3562013-0000	SUPPORT FRAME ASSY,QUEST,DCM	1
3	276201L-0000	SHAPER RAIL,L,QUEST 80,G	1
4	276201R-0000	SHAPER RAIL,R,QUEST 80,G	1
5	2762015-0000	ANCHOR,FRONT,QUEST,G	2
6	2762007-0000	TRIGGER STRAP,QUEST,G	2
7	3562014-0000	TRIGGER ASSY,QUEST DCM	1
8	2762024-0000	NOSE TRANSITION,R,QUEST,G,PT	1
9	2762025-0000	NOSE TRANSITION,L,QUEST,G,PT	1
10	2762026-0000	NOSE,QUEST,G,PT	1
11	3562016-0000	DIAPHRAGM ASSY,QUEST CEN	1
12	2762055-0000	REAR RAIL,QUEST,UNCRIMPED,G	2
13	2762043-0000	STRAP,PEEL,REAR,QUEST CEN	2
14	2762045-0000	STRAP,PEEL,BAY 2,QUEST CEN	2
15	2762044-0000	FLT ST, 1/4X2 13/16X10 7/16,W/HOLES,G	2
16	2762047-0000	FLT ST 1/4X4X14,W/SLOTS,G	2
17	2762049-0000	PANEL,BAY 1,QUEST,G	2
18	2762048-0000	PANEL,BAYS,QUEST,DCM,G	4
19	2762050-0000	BRACE,PANEL,QUEST CEN,G	4
20	2706943-0300	SCREW,PN,#6-32X1 1/2,PHIL,S	8
21	2708871-1000	WASHER,BAR,1/8X1 1/4X2,ROUNDED,G	8
22	2708291-0000	WASHER,FLAT,5/8 X 1 3/4, G	6
23	2708039-0300	WASHER,FLAT,#6X5/8X.030,S	16
24	2708161-0000	WASHER,BAR,2X2X1/4,G	2
25	2708022-0100	WASHER,FLAT,3/8 ID X13/16 OD,P,HRD	32
26	2704191-0000	NUT,HX,5/8,G,RAIL	54
27	2704341-0000	NUT,HX,3/4",GR DH	8
28	2704161-0000	NUT,HX,1,G	2
29	2704031-0000	NUT,HX,3/8,G	16
30	2704351-0000	NUT,HX,5/8,G,GR DH	6
31	2704772-0300	NUT,HX,#6-32,S	16
32	2701811-0000	BOLT,RAIL,5/8X1 1/4,G	42
33	2699341-0000	BOLT,RAIL,5/8X2,G	12
34	2700011-0000	BOLT,HX,3/4X2,G5,G	4
35	2701014-0000	BOLT,HX,1X5,G8,G	2
36	2700541-0000	BOLT,HX,1X3 1/2,G5,G	2
37	2699081-0500	BOLT,HX,5/8X1 1/2,G5,G	6
38	2699251-0000	BOLT,HX,3/4X3 1/2,G5,G	2
39	2701221-0000	BOLT,HX,3/8X1,G2,G	16
40	2700651-0000	BOLT,HX,3/4X4,G5,G,ALL THRD	2
41	2705121-0000	RIVET,ST,SD68BS,3/16X1/2,DH	1
42	2735711-0000	DECAL,CAUTION,ALL PRODUCTS	1
43	2735712-3500	DECAL,PRODUCT,QUEST	1
44	2750043-0000	INSTALL INSTRUCTIONS,QUEST TL2	1
45	2735831-3500	MATERIAL SAFETY INFORMATION NOTICE	1

ASSEMBLY NO. TD35024-TL2

Revision	Date	Rev	By	Chk.	App.
31 WAS 2704771-0300	11/27/06	A	DK	JME	SPT
ITEM 43 WAS 2735712-4200	4/27/07	B	DDS	JME	KWL

DRAWN: D. Kohfeld	DATE: 8/7/2006	
DESIGNED: D. Wilkinson	DATE: 1/25/2006	
CHECKED: JME	DATE: 9/8/2006	
APPROVED: K. Looney	DATE: 9/12/2006	
FILE: TD35024-TL2.idw		
NEXT ASSEMBLY:		

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-2 (24") SYSTEM

SCALE:	DRAWING:	SHEET:	REV
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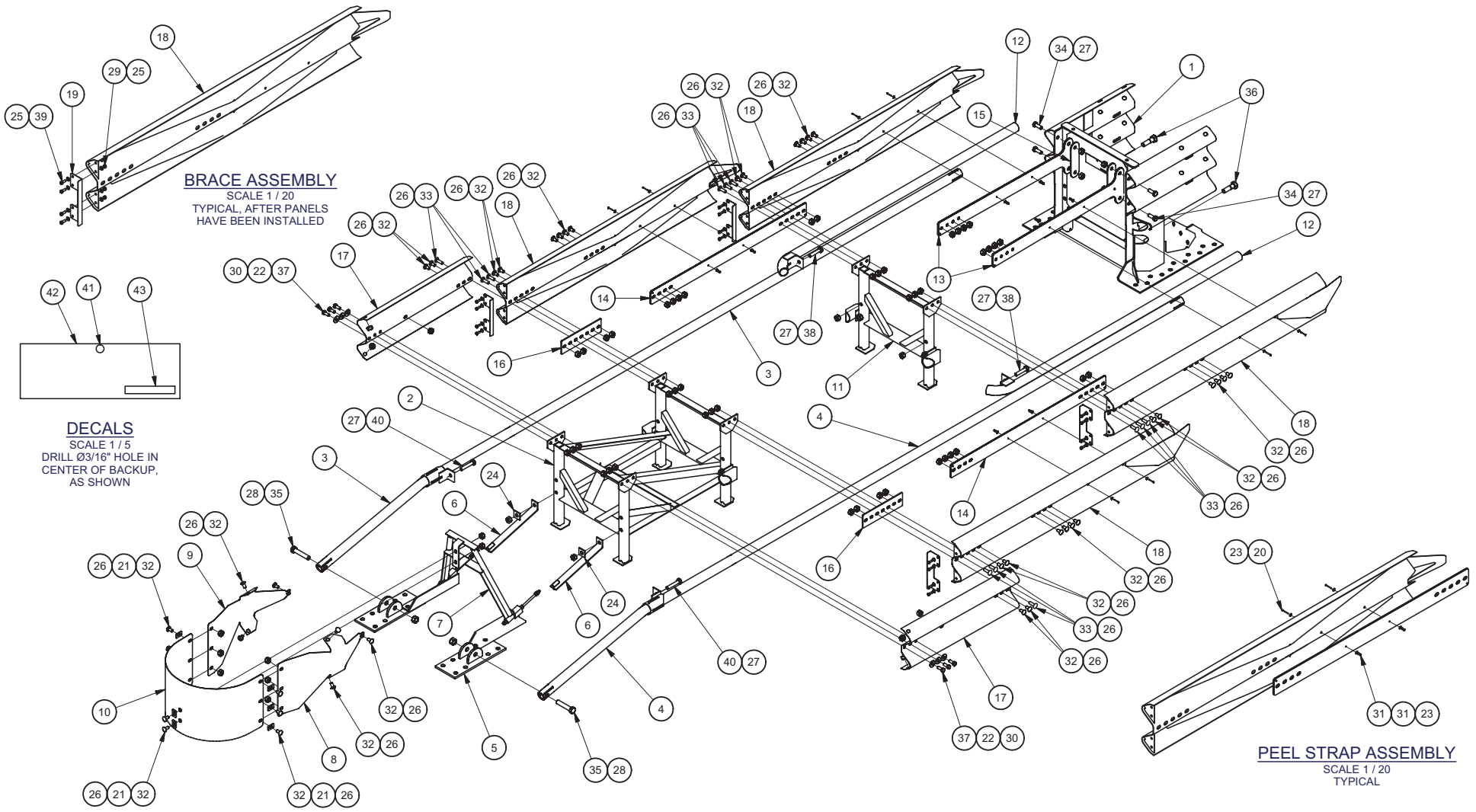

ASSEMBLY NO. TD35024-TL2

Revision	Date	Rev	By	Chk.	App.
SEE SHEET 1.	11/27/06	A	DK	JME	SPT
ITEM 43 WAS 2735712-4200	4/27/07	B	DDS	JME	KWL

DRAWN: D. Kohfeld	DATE: 8/7/2006	
DESIGNED: D. Wilkinson	DATE: 1/25/2006	
CHECKED: JME	DATE: 9/8/2006	
APPROVED: K. Looney	DATE: 9/12/2006	
FILE: TD35024-TL2.idw		
NEXT ASSEMBLY:		

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-2 (24") SYSTEM

SCALE:	DRAWING:	SHEET:	REV
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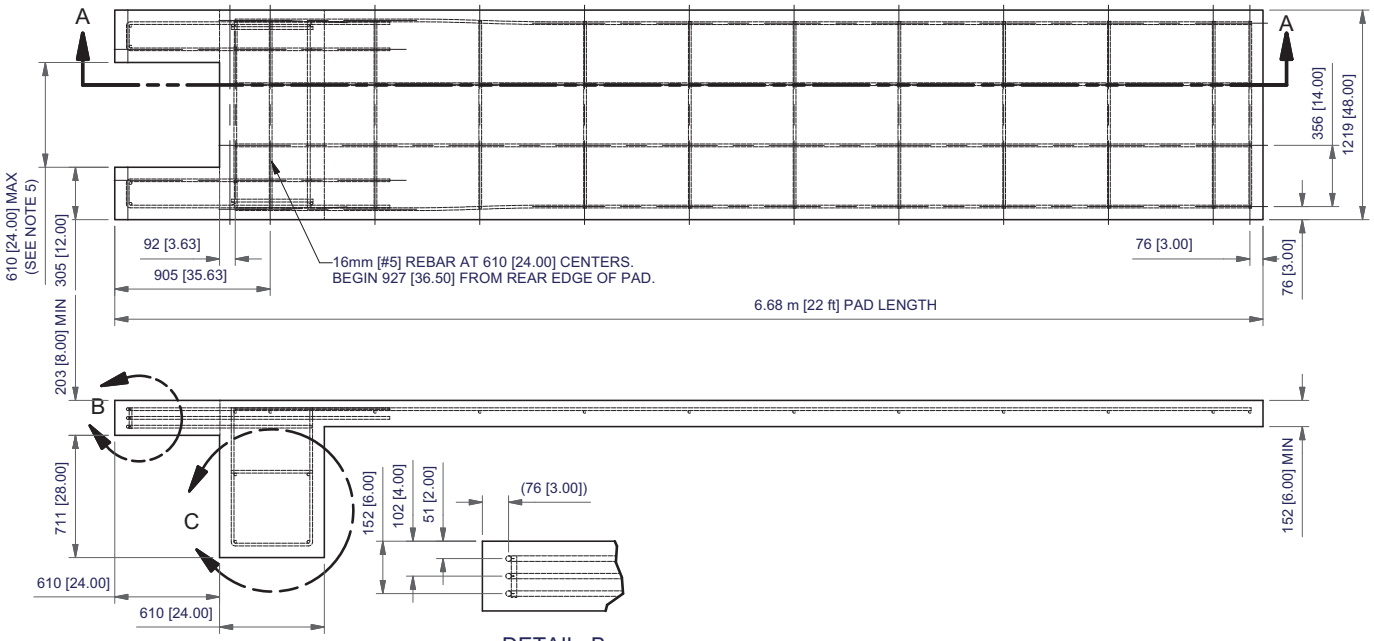
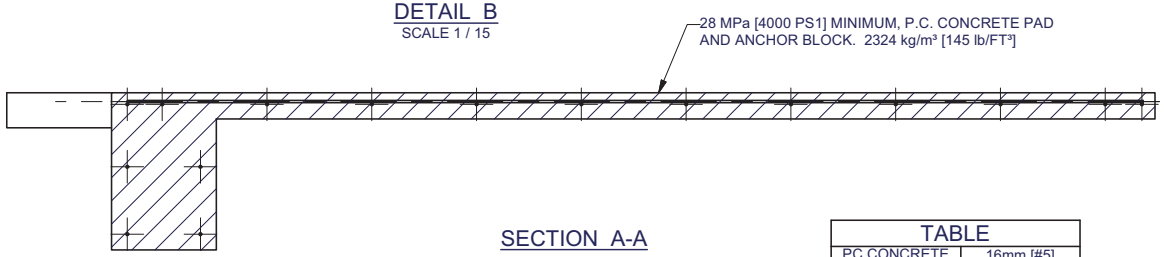
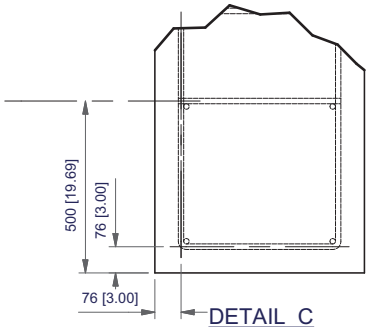


DETAIL B
SCALE 1 / 15



SECTION A-A

TABLE	
PC CONCRETE 28 MPa [4000 PSI]	16mm [#5] REBAR
1.77 m³ [2.315 yd³]	64.6 m [212']



DETAIL C
SCALE 1 / 15

NOTES:
1. CROSS SLOPE OF PAD SHALL NOT EXCEED 8% AND NOT VARY MORE THAN 2% FROM FRONT TO BACK.
2. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
3. SEE SHEET 2 FOR REBAR DETAIL.
4. THE CONCRETE PAD SHOWN IS DESIGNED TO NEST AROUND HAZARDS 610 [24.00] IN WIDTH OR LESS. MAKE PREPARATIONS TO POUR THE REAR PORTION OF THE PAD AROUND THE HAZARD.

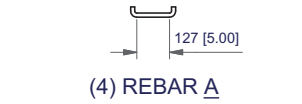
Revision	Date	Rev	By	Chk.	App.

DRAWN: R. Cummins	DATE: 9/20/2006		
DESIGNED:	DATE:		
CHECKED: K. Looney	DATE: 9/28/2006		
APPROVED: R. Brougher	DATE: 9/29/2006		
FILE: 3562018-0000.idw			
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST™ CEN 80 SYSTEM
CONCRETE PAD

SCALE:	DRAWING:	SHEET:	REV
1=30	3562018-0000	1 of 2	



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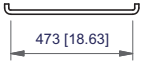

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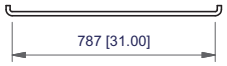

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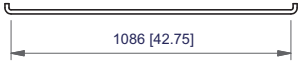
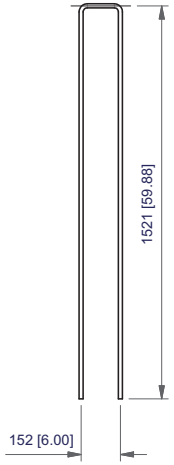


(14) REBAR D

(2) REBAR E

(2) REBAR F



(4) REBAR G

(4) REBAR H

Revision	Date	Rev	By	Chk.	App.

DRAWN: R. Cummins	DATE: 9/20/2006
DESIGNED:	DATE:
CHECKED: K. Looney	DATE: 9/28/2006
APPROVED: R. Brougher	DATE: 9/29/2006
FILE: 3562018-0000.idw	
NEXT ASSEMBLY:	

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST™ CEN 80 SYSTEM
CONCRETE PAD
FOR 24" SYSTEMS

SCALE:	DRAWING:	SHEET:	REV
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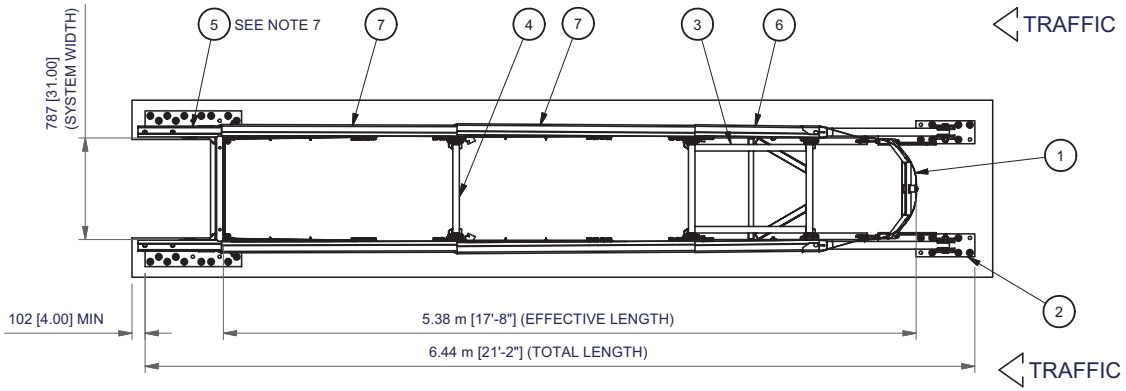
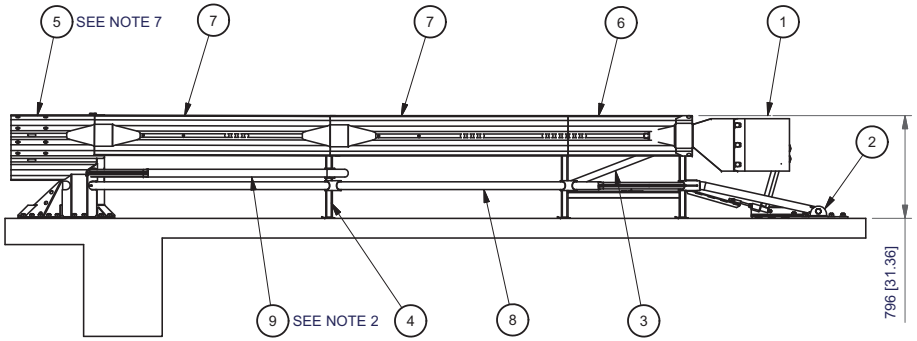


PLAN



ELEVATION
LEFT SIDE

NOTES:
1. IN COMPLIANCE WITH THE AASHTO 2002 ROADSIDE DESIGN GUIDE MANUFACTURER RECOMMENDS REMOVAL OF ALL CURBS AND ISLANDS TO ENSURE PROPER IMPACT PERFORMANCE.
2. PROVISION SHALL BE MADE FOR REAR RAILS TO SLIDE REARWARD UPON IMPACT 1.82m [6' 0"] MIN.
3 CAUTION: THE QUEST SYSTEM MUST BE CORRECTLY ANCHORED FOR PROPER IMPACT RFORMANCE. ATTACH SYSTEM USING ONE OF THE FOLLOWING:
   A. (QTY. 30) 178 [7.00] STUDS MAY BE USED TO ATTACH SYSTEM TO 28 MPa [4000 PSI] MIN P.C. CONCRETE PER THE FOLLOWING MINIMUMS.**
      1) 152 [6.00] REINFORCED PAD.
      2) 203 [8.00] NON-REINFORCED ROADWAY, MEASURING AT LEAST 3.66m [12' 0"] WIDE BY 15.24m [50' 0"] LONG.
      3) 180 [7.00] REINFORCED DECK STRUCTURE,
   B. (QTY 38) 457 [18.00] THREADED RODS MAY BE USED TO INSTALL SYSTEM ON ASPHALT.**
      ** REFER TO THE REFERENCE DRAWINGS & INSTALLATION INSTRUCTIONS FOR FOUNDATION SPECIFICATIONS.
4. SEE THE "QUEST TL-2 SYSTEM PRODUCT MANUAL" FOR A DESCRIPTION OF ITS IMPACT PERFORMANCE CHARACTERISTICS AND DESIGN LIMITATIONS BEFORE PLACING A SYSTEM AT A GIVEN SITE. INFORMATION AND COPIES OF ABOVE MANUAL ARE AVAILABLE BY CALLING CUSTOMER SERVICE DEPARTMENT AT (888) 323-6374.
5. WHERE NECESSARY, THE CUSTOMER SHALL SUPPLY AN ADEQUATE TRANSITION FROM THE QUEST TL-2 SYSTEM TO THE OBJECT BEING SHIELDED.
6. ANCHOR BOLTS NOT INCLUDED IN MODEL NUMBER. ORDER SEPARATELY.
7. STEEL BACKUP AND CONCRETE PAD SPECIFICALLY DESIGNED TO NEST AROUND 760 [30.00] WIDE HAZARDS, INSTALL ACCORDINGLY TO ENSURE PROPER IMPACT PERFORMANCE.

KEY

1 NOSE	5 BACKUP	9 REAR RAIL
2 FRONT ANCHOR	6 BAY 1 PANEL	
3 BAY 1	7 BAY 2&3 PANEL	
4 DIAPHRAGM	8 SHAPER RAIL	

Revision	Date	Rev	By	Chk.	App.

REFERENCES

	QUEST SYSTEM ASSEMBLY	TD35030-TL2
SERIAL NO.		
SALES ORDER	SUPPORT FRAME ASSY	3562025-0000
EH PROJECT	DIAPHRAGM ASSY	3562026-0000
NO. OF UNITS	TRIGGER ASSY	3562027-0000
	CONCRETE PAD	3562029-0000
	FOUNDATIONS	3562007-0000

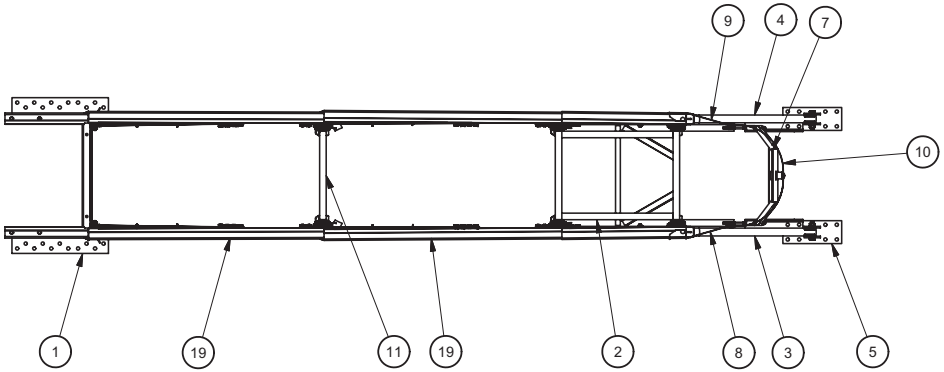
DRAWN:	D. Kohfeld	DATE:	11/29/2006
DESIGNED:		DATE:	
CHECKED:	JME	DATE:	12/13/2006
APPROVED:	SPT	DATE:	12/13/2006
FILE:	TD35030-TL2CU.idw		
NEXT ASSEMBLY:			

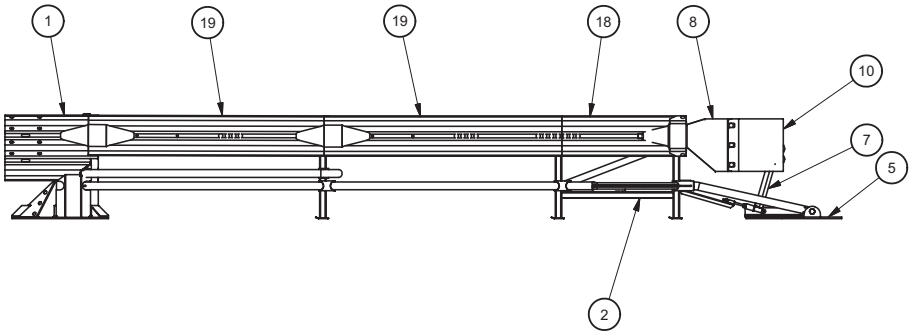
UNIDIRECTIONAL
MODEL NO. TD35030-TL2CU

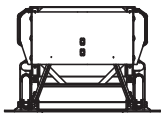
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-2 SYSTEM (30")
70 km/h [43 MPH]

SCALE:	DRAWING:	SHEET:	REV
1=40	TD35030-TL2CU	1 of 1	







PARTS LIST

ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2762067-0000	BACKUP,30,QUEST,G	1
2	3562025-0000	SUPPORT FRAME ASSY,30,QUEST	1
3	276201L-0000	SHAPER RAIL,L,QUEST 80,G	1
4	276201R-0000	SHAPER RAIL,R,QUEST 80,G	1
5	2762015-0000	ANCHOR,FRONT,QUEST,G	2
6	2762007-0000	TRIGGER STRAP,QUEST,G	2
7	3562027-0000	TRIGGER ASSY,30,QUEST	1
8	2762025-0000	NOSE TRANSITION,L,QUEST,G,PT	1
9	2762024-0000	NOSE TRANSITION,R,QUEST,G,PT	1
10	2762071-0000	NOSE,30,QUEST,G,PT	1
11	3562026-0000	DIAPHRAGM ASSY,30,QUEST	1
12	2762055-0000	REAR RAIL,QUEST,UNCRIMPED,G	2
13	2762043-0000	STRAP,PEEL,REAR,QUEST CEN	2
14	2762045-0000	STRAP,PEEL,BAY 2,QUEST CEN	2
16	2762044-0000	FLT ST, 1/4X2 13/16X10 7/16,W/HOLES,G	2
17	2762047-0000	FLT ST 1/4X4X14,W/SLOTS,G	2
18	2762049-0000	PANEL,BAY 1,QUEST,G	2
19	2762048-0000	PANEL,BAYS,QUEST,DCM,G	4
20	2762050-0000	BRACE,PANEL,QUEST CEN,G	4
21	2706943-0300	SCREW,PN,#6-32X1 1/2,PHIL,S	8
22	2708871-1000	WASHER,BAR,1/8X1 1/4X2,ROUNDED,G	8
23	2708291-0000	WASHER,FLAT,5/8 X 1 3/4, G	6
24	2708039-0300	WASHER,FLAT,#6X5/8X.030,S	16
25	2708161-0000	WASHER,BAR,2X2X1/4,G	2
26	2708022-0100	WASHER,FLAT,3/8 ID X13/16 OD,P,HRD	32
27	2704191-0000	NUT,HX,5/8,G,RAIL	54
28	2704341-0000	NUT,HX,3/4",GR DH	8
29	2704161-0000	NUT,HX,1,G	2
30	2704031-0000	NUT,HX,3/8,G	16
31	2704351-0000	NUT,HX,5/8,G,GR DH	6
32	2704772-0300	NUT,HX,#6-32,S	16
33	2701811-0000	BOLT,RAIL,5/8X1 1/4,G5,G	42
34	2699341-0000	BOLT,RAIL,5/8X2,G	12
35	2700011-0000	BOLT,HX,3/4X2,G5,G	4
36	2701014-0000	BOLT,HX,1X5,G8,G	2
37	2700541-0000	BOLT,HX,1X3 1/2,G5,G	2
38	2699081-0500	BOLT,HX,5/8X1 1/2,G5,G	6
39	2699251-0000	BOLT,HX,3/4X3 1/2,G5,G	2
40	2701221-0000	BOLT,HX,3/8X1,G2,G	16
41	2700651-0000	BOLT,HX,3/4X4,G5,G,ALL THRD	2
42	2705121-0000	RIVET,ST,SD68BS,3/16X1/2,DH	1
43	2735711-0000	DECAL,CAUTION,ALL PRODUCTS	1
44	2735712-3500	DECAL,PRODUCT,QUEST	1
45	2750043-0000	INSTALL INSTRUCTIONS,QUEST TL-2	1
46	2735831-3500	MATERIAL SAFETY INFORMATION NOTICE	1

ASSEMBLY NO. TD35030-TL2

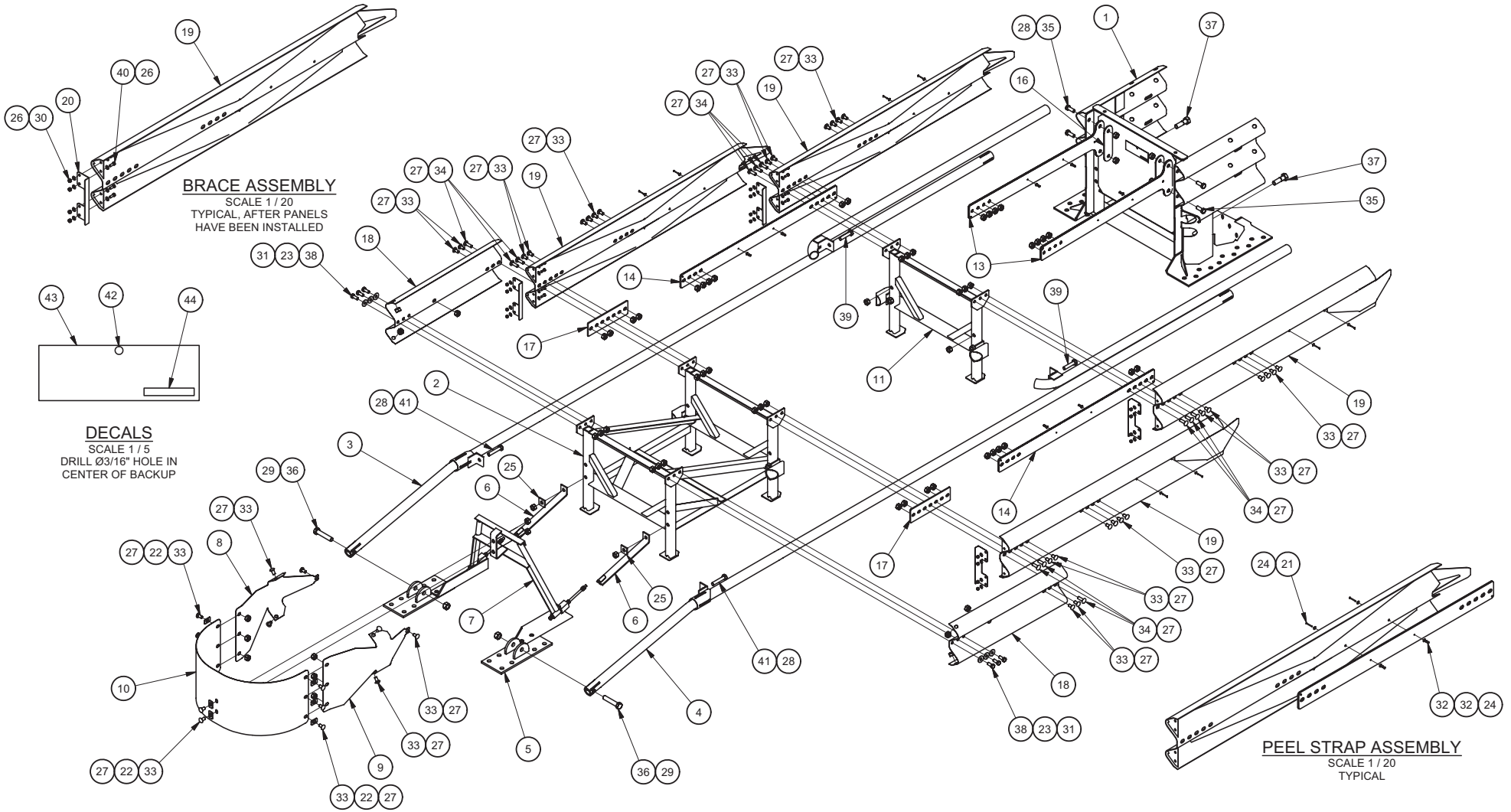
Revision	Date	Rev	By	Chk.	App.
DEL 15, 12 WAS 2762041-0000, 28 QTY WAS 10, 39 QTY WAS 4.	4/9/07	A	DK	KM	SPT

DRAWN: D. Kohfeld	DATE: 11/22/2006		
DESIGNED:	DATE:		
CHECKED: JME	DATE: 12/4/2006		
APPROVED: SPT	DATE: 12/13/2006		
FILE: TD35030-TL2.idw			
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-2 (30") SYSTEM

SCALE:	DRAWING:	SHEET:	REV
1=40	TD35030-TL2	1 of 2	A



ASSEMBLY NO. TD35030-TL2

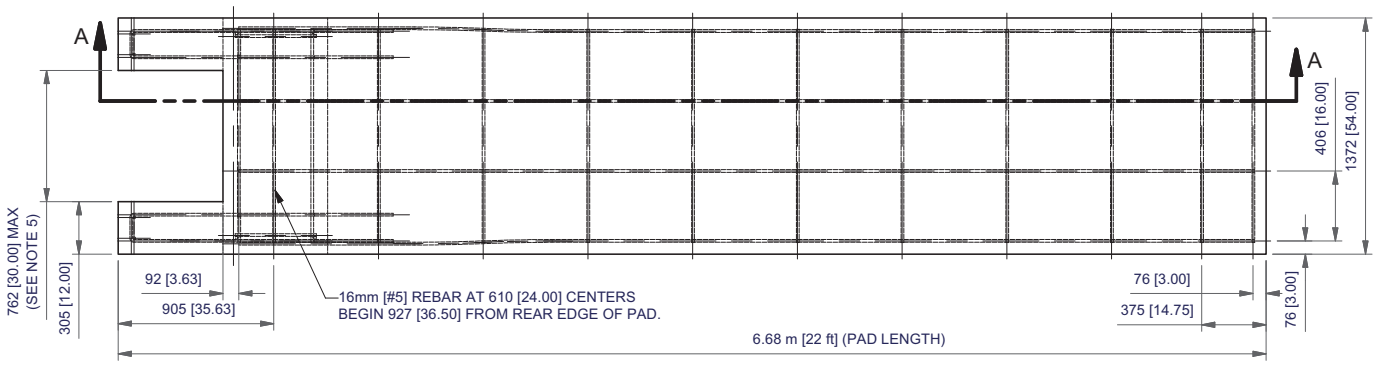
Revision	Date	Rev	By	Chk.	App.
SEE SHEET 1	4/9/07	A	DK	JME	SPT

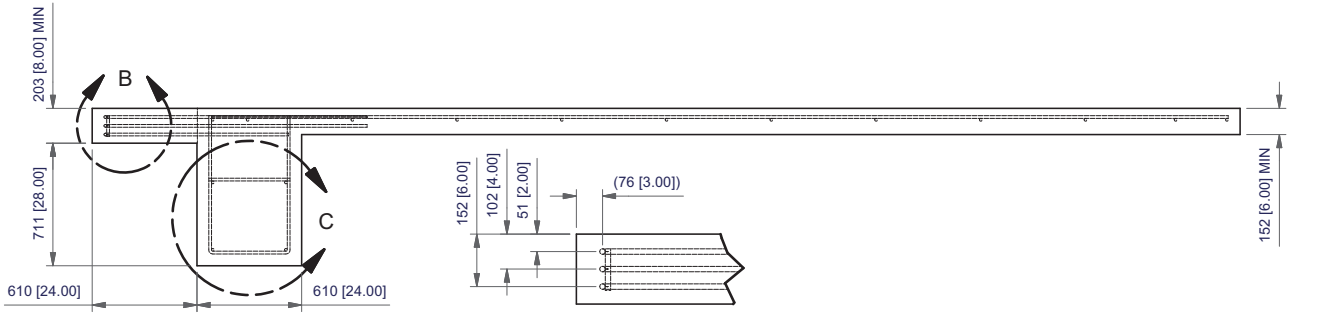
DRAWN: D. Kohfeld	DATE: 11/22/2006
DESIGNED:	DATE:
CHECKED: JME	DATE: 12/4/2006
APPROVED: SPT	DATE: 12/13/2006
FILE: TD35030-TL2.idw	
NEXT ASSEMBLY:	

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

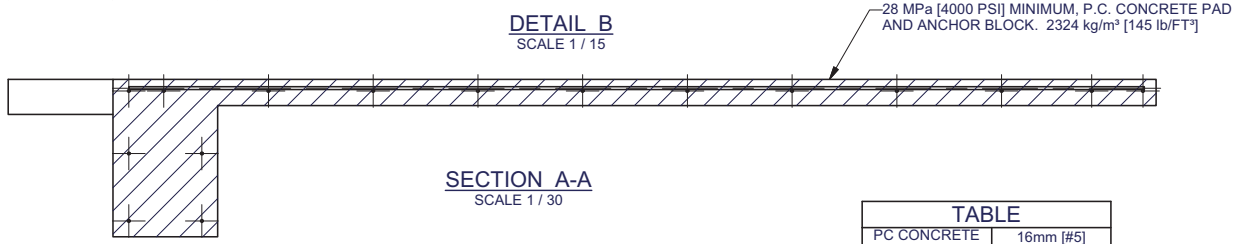
QUEST® TL-2 (30") SYSTEM

SCALE:	DRAWING:	SHEET:	REV
1=40	TD35030-TL2	2 of 2	A

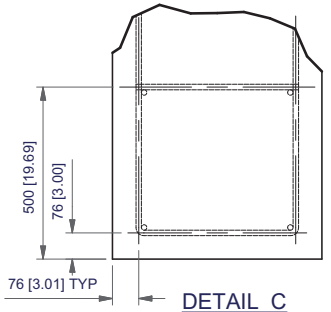




DETAIL B
SCALE 1 / 15



SECTION A-A
SCALE 1 / 30



DETAIL C
SCALE 1 / 15

TABLE	
PC CONCRETE 28 MPa [4000 PSI]	16mm [#5] REBAR
1.98 m³ [2.59 yd³]	66.1 m [216']

NOTES:
1. CROSS SLOPE OF PAD SHALL NOT EXCEED 8% AND NOT VARY MORE THAN 2% FROM FRONT TO BACK.
2. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
3. SEE SHEET 2 FOR REBAR DETAIL.
4. THE CONCRETE PAD SHOWN IS DESIGNED TO NEST AROUND HAZARDS 762 [30.00] IN WIDTH OR LESS. MAKE PREPARATIONS TO POUR THE REAR PORTION OF THE PAD AROUND THE HAZARD.

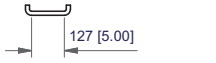
Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld	DATE: 11/30/2006		
DESIGNED:	DATE:		
CHECKED: JME	DATE: 12/1/2006		
APPROVED: SPT	DATE: 12/1/2006		
FILE: 3562029-0000.idw			
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-2 SYSTEM (30") CONCRETE PAD

SCALE:	DRAWING:	SHEET:	REV
1=30	3562029-0000	1 of 2	



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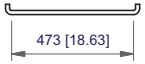

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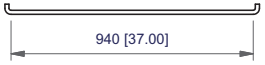

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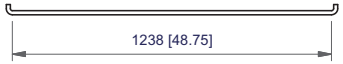

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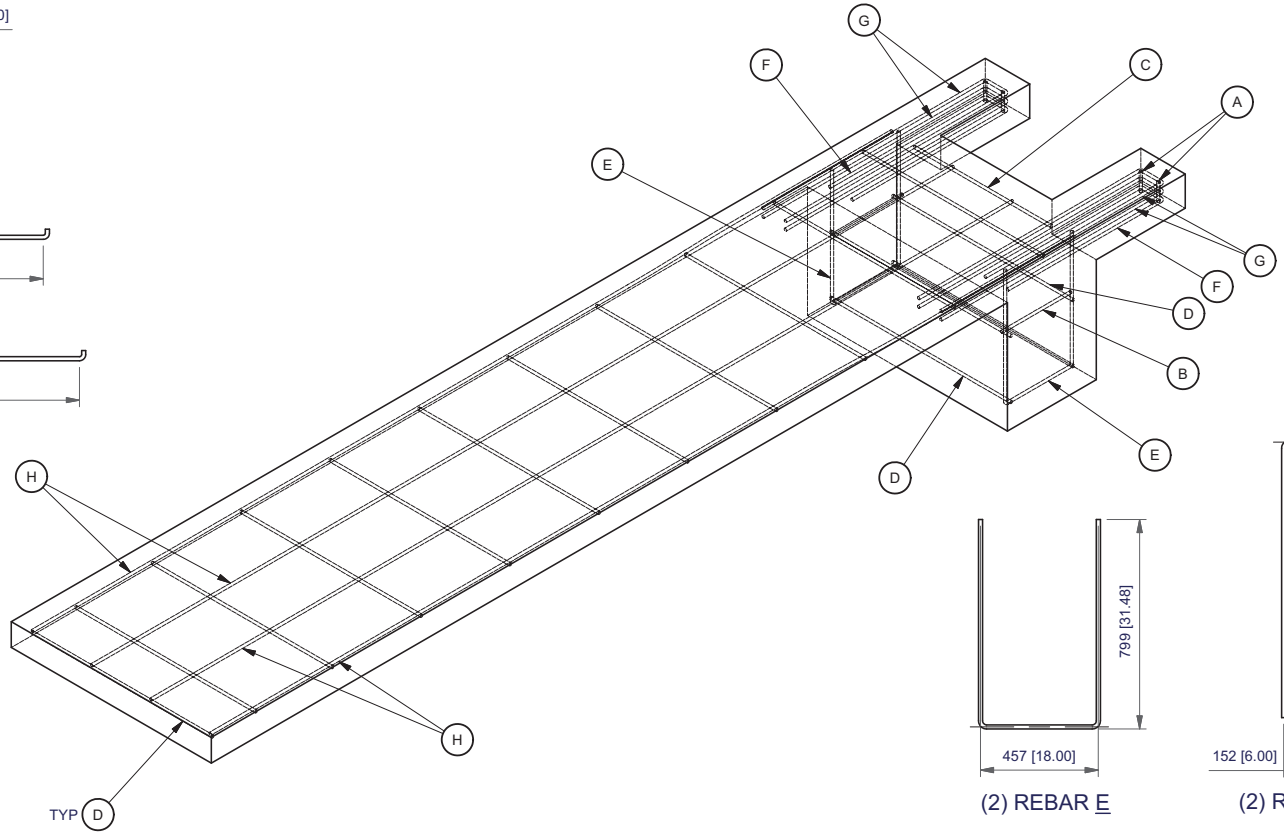

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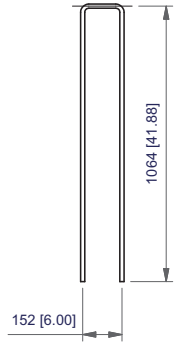

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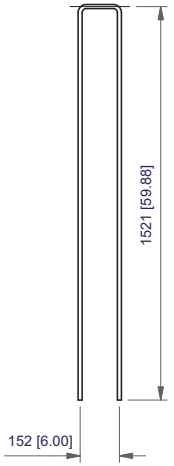


(4) REBAR G

(4) REBAR H

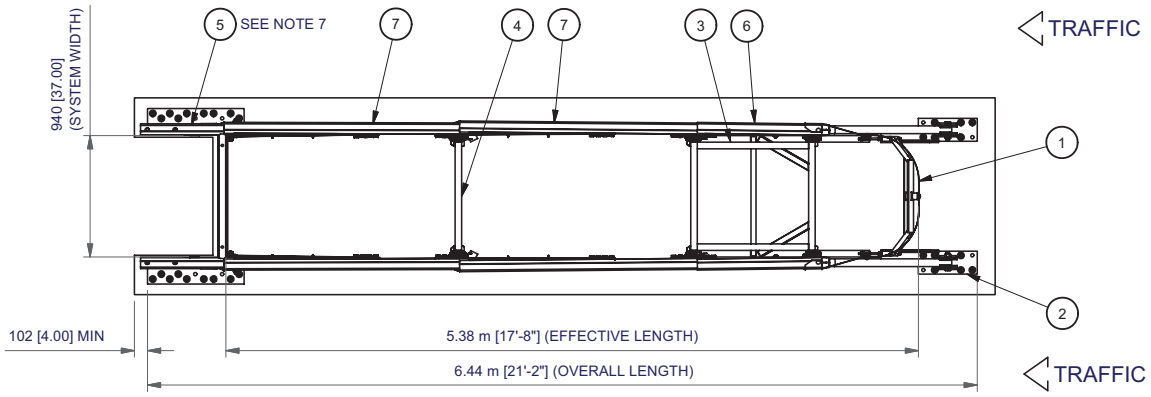
Revision	Date	Rev	By	Chk.	App.

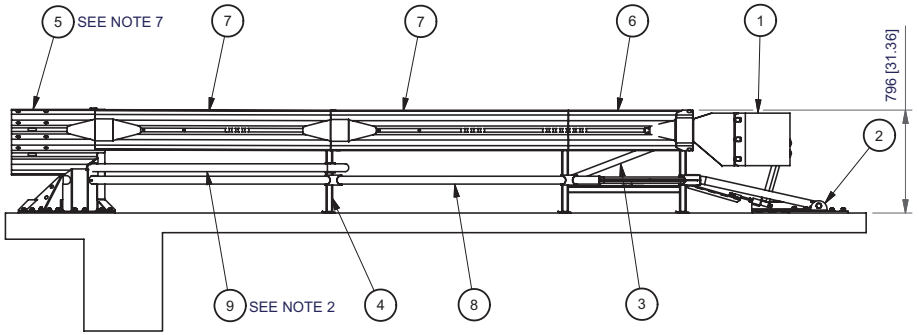
DRAWN: D. Kohfeld	DATE: 11/30/2006
DESIGNED:	DATE:
CHECKED: JME	DATE: 12/1/2006
APPROVED: SPT	DATE: 12/1/2006
FILE: 3562029-0000.idw	
NEXT ASSEMBLY:	

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-2 SYSTEM (30") CONCRETE PAD

SCALE:	DRAWING:	SHEET:	REV
1=25	3562029-0000	2 of 2	





NOTES:
1. IN COMPLIANCE WITH THE AASHTO 2002 ROADSIDE DESIGN GUIDE MANUFACTURER RECOMMENDS REMOVAL OF ALL CURBS AND ISLANDS TO ENSURE PROPER IMPACT PERFORMANCE.
2. PROVISION SHALL BE MADE FOR REAR RAILS TO SLIDE REARWARD UPON IMPACT 1.82m [6' 0"] MIN.
3 CAUTION: THE QUEST SYSTEM MUST BE CORRECTLY ANCHORED FOR PROPER IMPACT RFORMANCE. ATTACH SYSTEM USING ONE OF THE FOLLOWING:
   A. (QTY. 30) 178 [7.00] STUDS MAY BE USED TO ATTACH SYSTEM TO 28 MPa [4000 PSI] MIN P.C. CONCRETE PER THE FOLLOWING MINIMUMS.**
      1) 152 [6.00] REINFORCED PAD.
      2) 203 [8.00] NON-REINFORCED ROADWAY, MEASURING AT LEAST 3.66m [12' 0"] WIDE BY 15.24m [50' 0"] LONG.
      3) 180 [7.00] REINFORCED DECK STRUCTURE.
   B. (QTY 38) 457 [18.00] THREADED RODS MAY BE USED TO INSTALL SYSTEM ON ASPHALT.**
      ** REFER TO THE REFERENCE DRAWINGS & INSTALLATION INSTRUCTIONS FOR FOUNDATION SPECIFICATIONS.
4. SEE THE "QUEST TL-2 SYSTEM PRODUCT MANUAL" FOR A DESCRIPTION OF ITS IMPACT PERFORMANCE CHARACTERISTICS AND DESIGN LIMITATIONS BEFORE PLACING A SYSTEM AT A GIVEN SITE. INFORMATION AND COPIES OF ABOVE MANUAL ARE AVAILABLE BY CALLING CUSTOMER SERVICE DEPARTMENT AT (888) 323-6374.
5. WHERE NECESSARY, THE CUSTOMER SHALL SUPPLY AN ADEQUATE TRANSITION FROM THE QUEST TL-2 SYSTEM TO THE OBJECT BEING SHIELDED.
6. ANCHOR BOLTS NOT INCLUDED IN MODEL NUMBER. ORDER SEPARATELY.
7. STEEL BACKUP AND CONCRETE PAD SPECIFICALLY DESIGNED TO NEST AROUND 915 [36.00] WIDE HAZARDS, INSTALL ACCORDINGLY TO ENSURE PROPER IMPACT PERFORMANCE.

KEY

1 NOSE	5 BACKUP	9 REAR RAIL
2 FRONT ANCHOR	6 BAY 1 PANEL	
3 BAY 1	7 BAY 2&3 PANEL	
4 DIAPHRAGM	8 SHAPER RAIL	

Revision	Date	Rev	By	Chk.	App.

REFERENCES

	QUEST SYSTEM ASSEMBLY	TD35036-TL2
SERIAL NO.		
SALES ORDER	SUPPORT FRAME ASSY	3562019-0000
EH PROJECT	DIAPHRAGM ASSY	3562022-0000
NO. OF UNITS	TRIGGER ASSY	3562023-0000
	CONCRETE PAD	3562030-0000
	FOUNDATIONS	3562007-0000

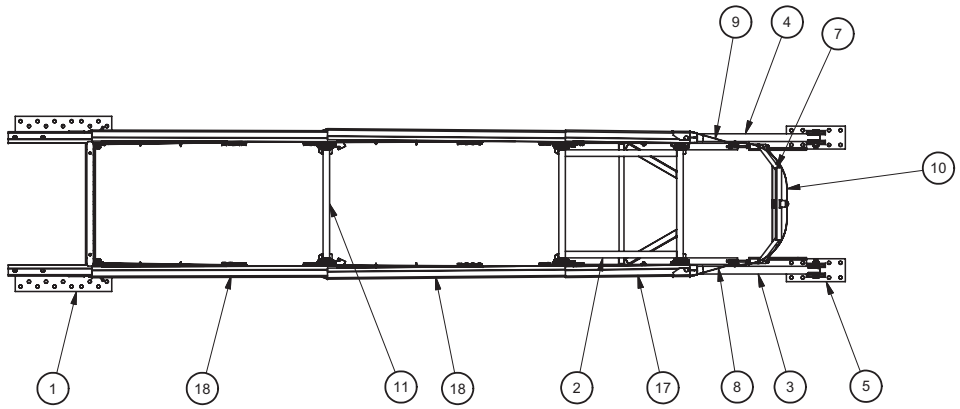
DRAWN:	D. Kohfeld	DATE:	11/29/2006
DESIGNED:		DATE:	
CHECKED:	JME	DATE:	12/13/2006
APPROVED:	SPT	DATE:	12/13/2006
FILE:	TD35036-TL2CU.idw		
NEXT ASSEMBLY:			

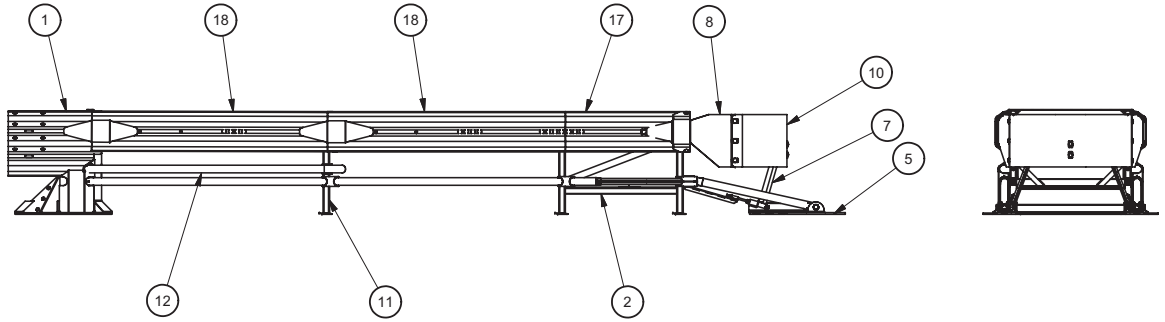
UNIDIRECTIONAL
MODEL NO. TD35036-TL2CU

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-2 SYSTEM (36")
70 km/h [43 MPH]

SCALE:	DRAWING:	SHEET:	REV
1=40	TD35036-TL2CU	1 of 1	





PARTS LIST

ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2762063-0000	BACKUP,36,QUEST,G	1
2	3562019-0000	SUPPORT FRAME ASSY,36,QUEST	1
3	276201L-0000	SHAPER RAIL,L,QUEST 80,G	1
4	276201R-0000	SHAPER RAIL,R,QUEST 80,G	1
5	2762015-0000	ANCHOR,FRONT,QUEST,G	2
6	2762007-0000	TRIGGER STRAP,QUEST,G	2
7	3562023-0000	TRIGGER ASSY,36,QUEST	1
8	2762025-0000	NOSE TRANSITION,L,QUEST,G,PT	1
9	2762024-0000	NOSE TRANSITION,R,QUEST,G,PT	1
10	2762062-0000	NOSE,36,QUEST,G,PT	1
11	3562022-0000	DIAPHRAGM ASSY,36,QUEST	1
12	2762055-0000	REAR RAIL,QUEST,UNCRIMPED,G	2
13	2762043-0000	STRAP,PEEL,REAR,QUEST CEN	2
14	2762045-0000	STRAP,PEEL,BAY 2,QUEST CEN	2
15	2762044-0000	FLT ST, 1/4X2 13/16X10 7/16,W/HOLES,G	2
16	2762047-0000	FLT ST 1/4X4X14,W/SLOTS,G	2
17	2762049-0000	PANEL,BAY 1,QUEST,G	2
18	2762048-0000	PANEL,BAYS,QUEST,DCM,G	4
19	2762050-0000	BRACE,PANEL,QUEST CEN,G	4
20	2706943-0300	SCREW,PN,#6-32X1 1/2,PHIL,S	8
21	2708871-1000	WASHER,BAR,1/8X1 1/4X2,ROUNDED,G	8
22	2708291-0000	WASHER,FLAT,5/8 X 1 3/4, G	6
23	2708039-0300	WASHER,FLAT,#6X5/8X.030,S	16
24	2708161-0000	WASHER,BAR,2X2X1/4,G	2
25	2708022-0100	WASHER,FLAT,3/8 ID X13/16 OD,P,HRD	32
26	2704191-0000	NUT,HX,5/8,G,RAIL	54
27	2704341-0000	NUT,HX,3/4",GR DH	8
28	2704161-0000	NUT,HX,1,G	2
29	2704031-0000	NUT,HX,3/8,G	16
30	2704351-0000	NUT,HX,5/8,G,GR DH	6
31	2704772-0300	NUT,HX,#6-32,S	16
32	2701811-0000	BOLT,RAIL,5/8X1 1/4,G	42
33	2699341-0000	BOLT,RAIL,5/8X2,G	12
34	2700011-0000	BOLT,HX,3/4X2,G5,G	4
35	2701014-0000	BOLT,HX,1X5,G8,G	2
36	2700541-0000	BOLT,HX,1X3 1/2,G5,G	2
37	2699081-0500	BOLT,HX,5/8X1 1/2,G5,G	6
38	2699251-0000	BOLT,HX,3/4X3 1/2,G5,G	2
39	2700651-0000	BOLT,HX,3/4X4,G5,G,ALL THRD	2
40	2701221-0000	BOLT,HX,3/8X1,G2,G	16
41	2705121-0000	RIVET,ST,SD68BS,3/16X1/2,DH	1
42	2735711-0000	DECAL,CAUTION,ALL PRODUCTS	1
43	2735712-3500	DECAL,PRODUCT,QUEST	1
44	2750043-0000	INSTALL INSTRUCTIONS,QUEST TL2	1
45	2735831-3500	MATERIAL SAFETY INFORMATION NOTICE	1

ASSEMBLY NO. TD35036-TL2

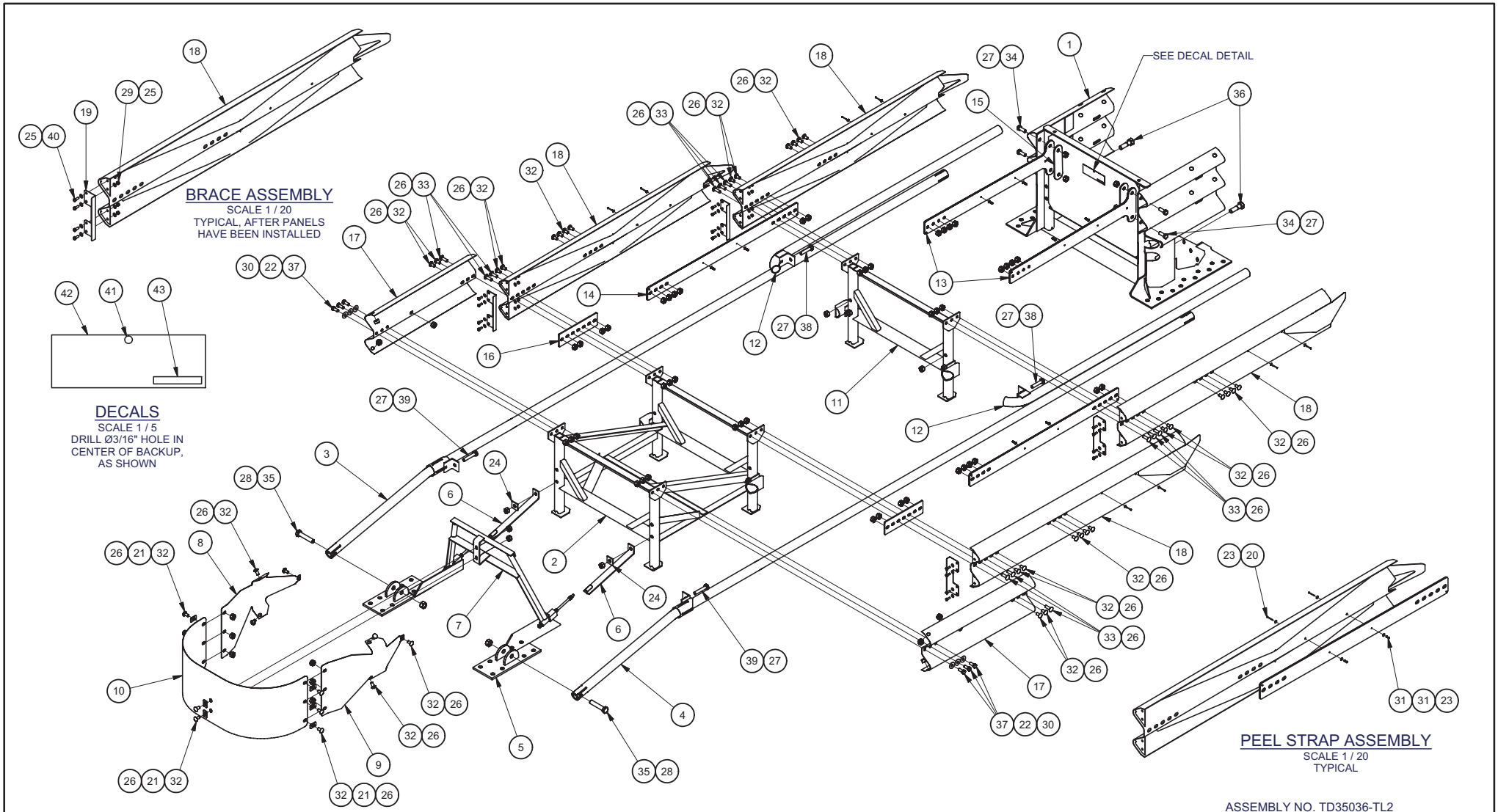
Revision	Date	Rev	By	Chk.	App.
ITEM 43 WAS 2735712-4200	4/27/07	A	DDS	JME	KWL

DRAWN: D. Kohfeld	DATE: 11/28/2006	
DESIGNED:	DATE:	
CHECKED: JME	DATE: 12/1/2006	
APPROVED: SPT	DATE: 12/1/2006	
FILE: TD35036-TL2.idw		
NEXT ASSEMBLY:		

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-2 (36") SYSTEM

SCALE:	DRAWING:	SHEET:	REV
1=40	TD35036-TL2	1 of 2	A



ASSEMBLY NO. TD35036-TL2

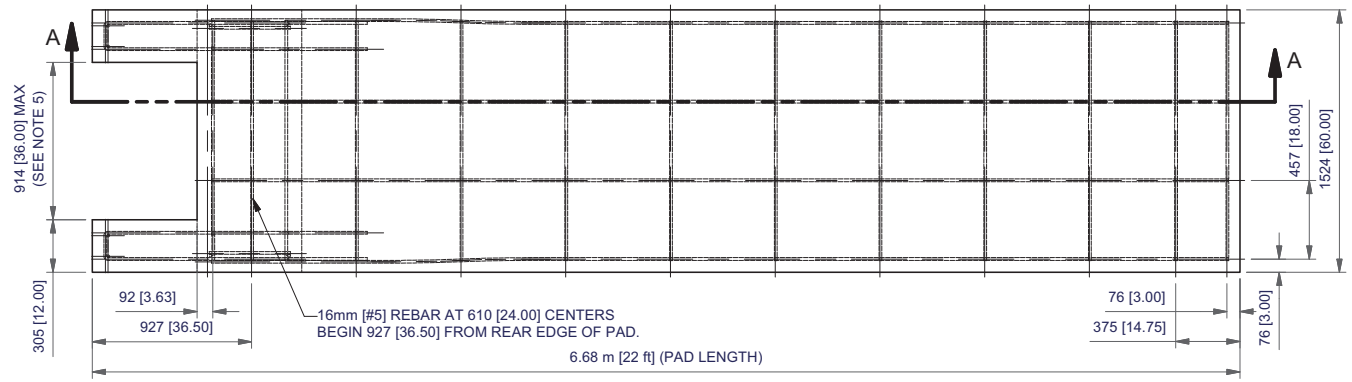
Revision	Date	Rev	By	Chk.	App.
ITEM 43 WAS 2735712-4200, ADDED DECAL DETAIL AND RELATED LEADER TEXT	4/27/07	A	DDS	JME	KWL

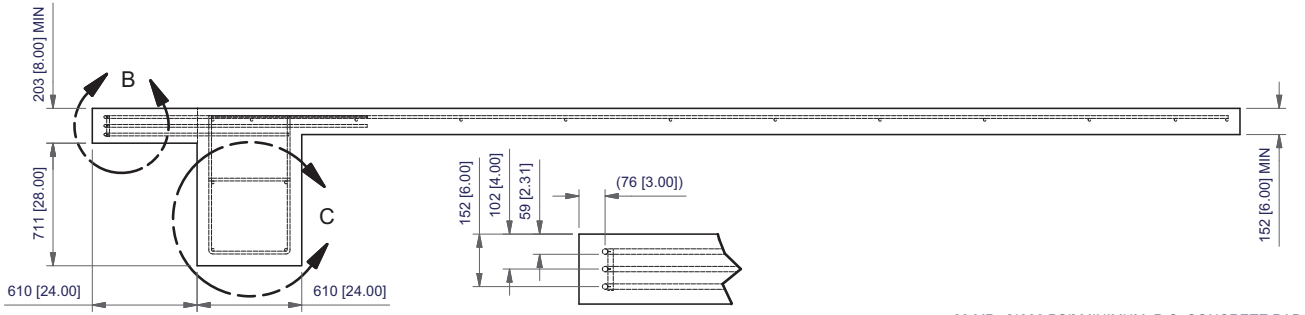
DRAWN: D. Kohfeld	DATE: 11/28/2006	
DESIGNED:	DATE:	
CHECKED: JME	DATE: 12/1/2006	
APPROVED: SPT	DATE: 12/1/2006	
FILE: TD35036-TL2.idw		
NEXT ASSEMBLY:		

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

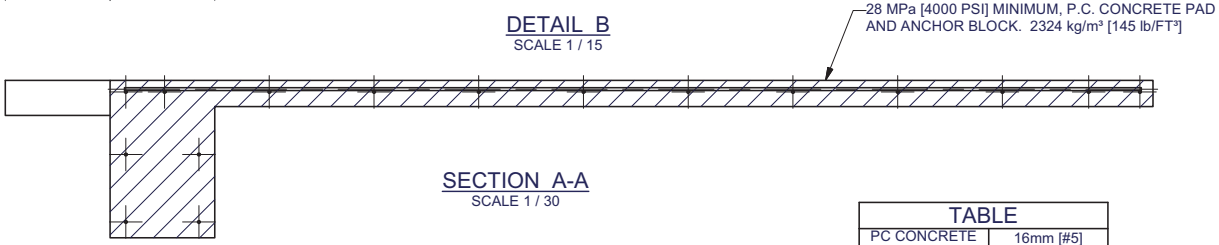
QUEST TL-2 (36") SYSTEM

SCALE:	DRAWING:	SHEET:	REV
1=25	TD35036-TL2	2 of 2	A

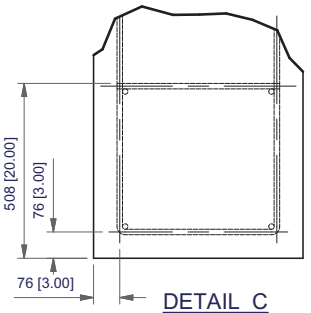




DETAIL B
SCALE 1 / 15



SECTION A-A
SCALE 1 / 30



DETAIL C
SCALE 1 / 15

TABLE	
PC CONCRETE 28 MPa [4000 PSI]	16mm [#5] REBAR
2.19 m³ [2.87 yd³]	68.5 m [225']

NOTES:
1. CROSS SLOPE OF PAD SHALL NOT EXCEED 8% AND NOT VARY MORE THAN 2% FROM FRONT TO BACK.
2. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
3. SEE SHEET 2 FOR REBAR DETAIL.
4. THE CONCRETE PAD SHOWN IS DESIGNED TO NEST AROUND HAZARDS 915 [36.00] IN WIDTH OR LESS. MAKE PREPARATIONS TO POUR THE REAR PORTION OF THE PAD AROUND THE HAZARD.

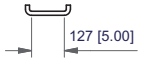
Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld	DATE: 11/30/2006		
DESIGNED:	DATE:		
CHECKED: JME	DATE: 12/1/2006		
APPROVED: SPT	DATE: 12/1/2006		
FILE: 3562030-0000.idw			
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-2 SYSTEM (36") CONCRETE PAD

SCALE:	DRAWING:	SHEET:	REV
1=30	3562030-0000	1 of 2	



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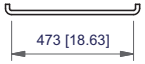

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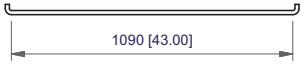

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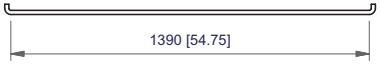

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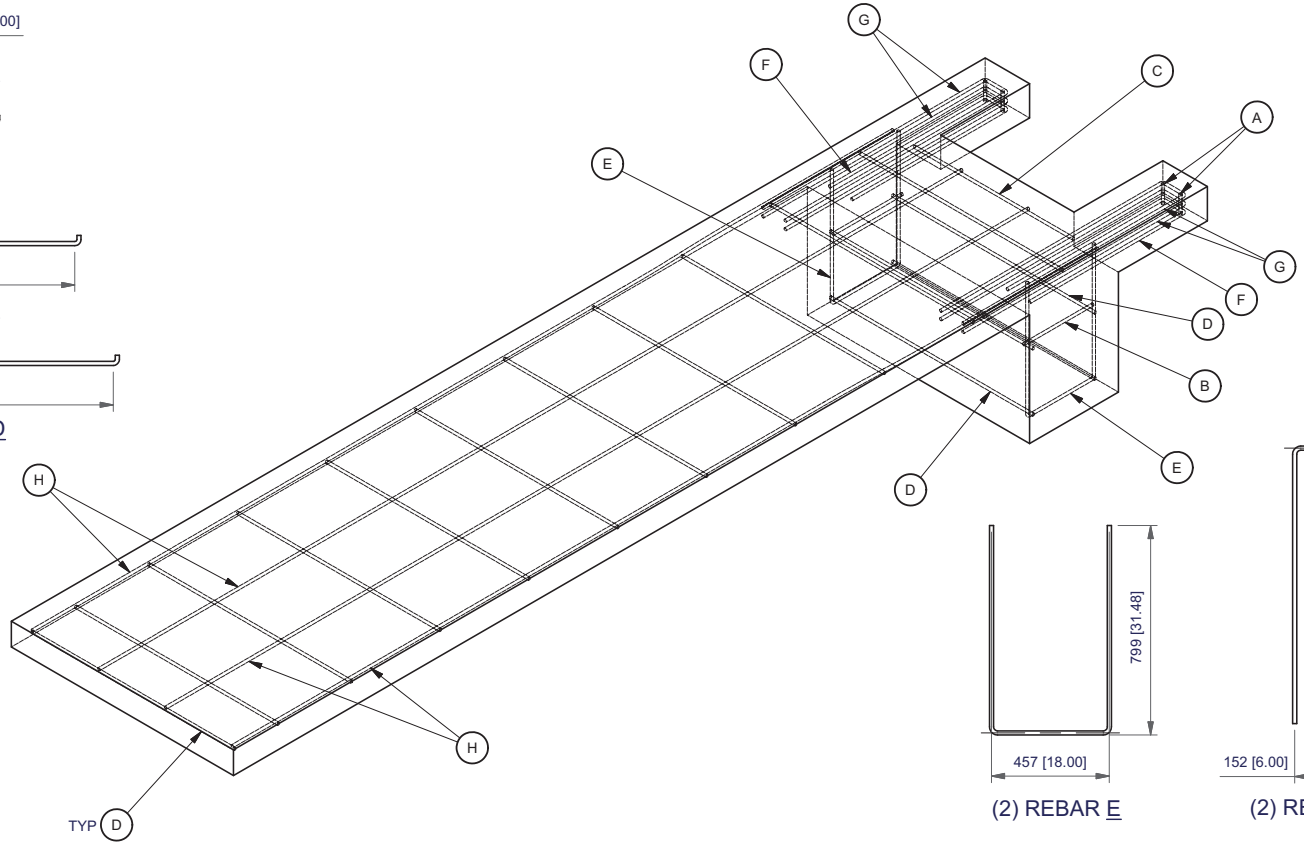
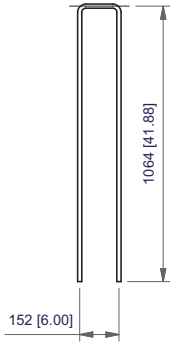
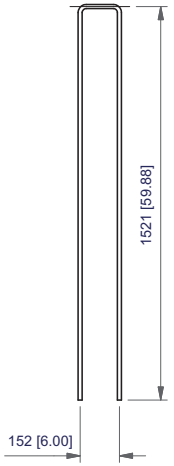


(2) REBAR E



(2) REBAR F



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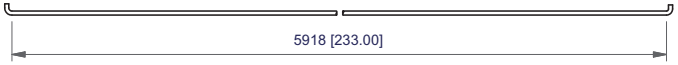


(4) REBAR H

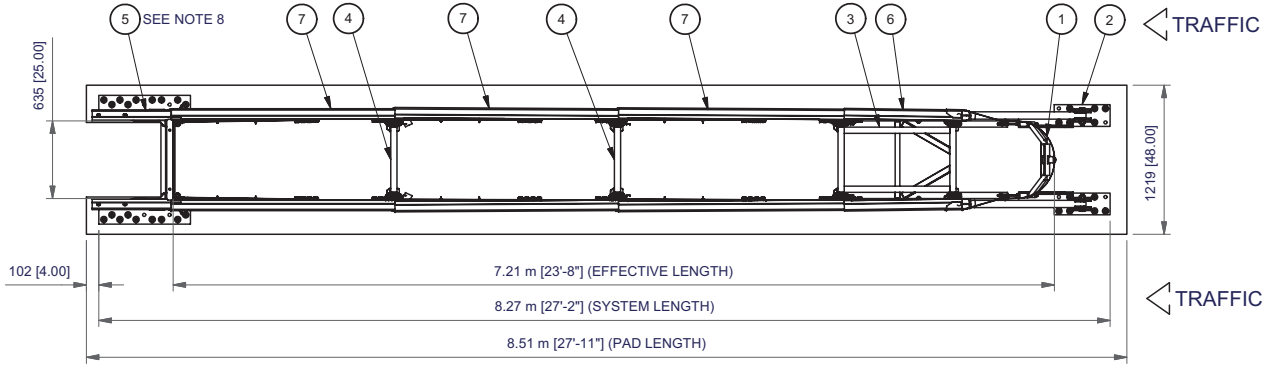
Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld	DATE: 11/30/2006
DESIGNED:	DATE:
CHECKED: JME	DATE: 12/1/2006
APPROVED: SPT	DATE: 12/1/2006
FILE: 3562030-0000.idw	
NEXT ASSEMBLY:	

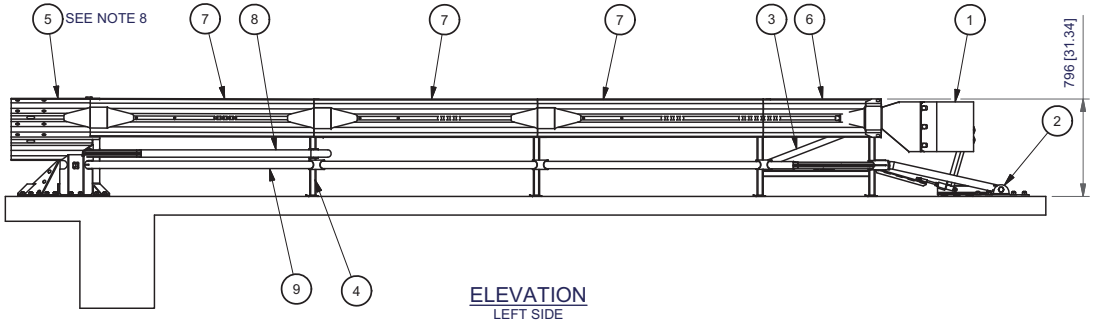
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-2 SYSTEM (36") CONCRETE PAD

SCALE:	DRAWING:	SHEET:	REV
1=25	3562030-0000	2 of 2	



PLAN



ELEVATION
LEFT SIDE

NOTES:
1. IN COMPLIANCE WITH THE AASHTO 2002 ROADSIDE DESIGN GUIDE, MANUFACTURER RECOMMENDS REMOVAL OF ALL CURBS AND ISLANDS TO ENSURE PROPER IMPACT PERFORMANCE.
2. PROVISION SHALL BE MADE FOR REAR RAILS TO SLIDE REARWARD UPON IMPACT 1.52m [5' 0"] MIN.
3 CAUTION: THE QUEST SYSTEM MUST BE CORRECTLY ANCHORED FOR PROPER IMPACT PERFORMANCE. ATTACH SYSTEM USING ONE OF THE FOLLOWING:
   A. (QTY. 30) 7" STUDS MAY BE USED TO ATTACH SYSTEM TO 28 MPa [4000 PSI] MIN P.C. CONCRETE PER THE FOLLOWING MINIMUMS.**
      1) 152 [6.00] REINFORCED PAD PER REFERENCE DRAWING .
      2) 203 [8.00] NON-REINFORCED ROADWAY, MEASURING AT LEAST 3.66m [12' 0"] WIDE BY 15.24m [50' 0"] LONG.
      3) 180 [7.00] REINFORCED DECK STRUCTURE.
   B. (QTY 38) 18" THREADED RODS MAY BE USED TO INSTALL SYSTEM ON ASPHALT.**
   ** REFER TO THE QUEST INSTALLATION INSTRUCTIONS FOR FOUNDATION SPECIFICATIONS.
4. SEE THE "QUEST SYSTEM PRODUCT MANUAL" FOR A DESCRIPTION OF ITS IMPACT PERFORMANCE CHARACTERISTICS AND DESIGN LIMITATIONS BEFORE PLACING A SYSTEM AT A GIVEN SITE. INFORMATION AND COPIES OF ABOVE MANUAL ARE AVAILABLE BY CALLING CUSTOMER SERVICE DEPARTMENT AT (888) 323-6374.
5. WHERE NECESSARY, THE CUSTOMER SHALL SUPPLY AN ADEQUATE TRANSITION FROM THE QUEST SYSTEM TO THE OBJECT BEING SHIELDED.
6. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
7. ANCHOR BOLTS NOT INCLUDED IN MODEL NUMBER. ORDER SEPARATELY.
8. STEEL BACKUP AND CONCRETE PAD SPECIFICALLY DESIGNED TO NEST AROUND 610 [24.00] WIDE HAZARDS, INSTALL ACCORDINGLY TO ENSURE PROPER IMPACT PERFORMANCE.

KEY

1 NOSE	5 BACKUP	9 REAR RAIL
2 FRONT ANCHOR	6 BAY 1 PANEL	
3 BAY 1	7 BAY 2-4 PANEL	
4 DIAPHRAGM	8 SHAPER RAIL	

Revision	Date	Rev	By	Chk.	App.

REFERENCES

QUEST SYSTEM ASSEMBLY	TD35024-TL3
SUPPORT FRAME BAY 1	3562013-0000
DIAPHRAGM ASSY BAY 1&2	3562016-0000
TRIGGER ASSY	3562014-0000
CONCRETE PAD	3562015-0000
ANCHOR ASSY	3562007-0000

SERIAL NO.
SALES ORDER
EH PROJECT
NO. OF UNITS

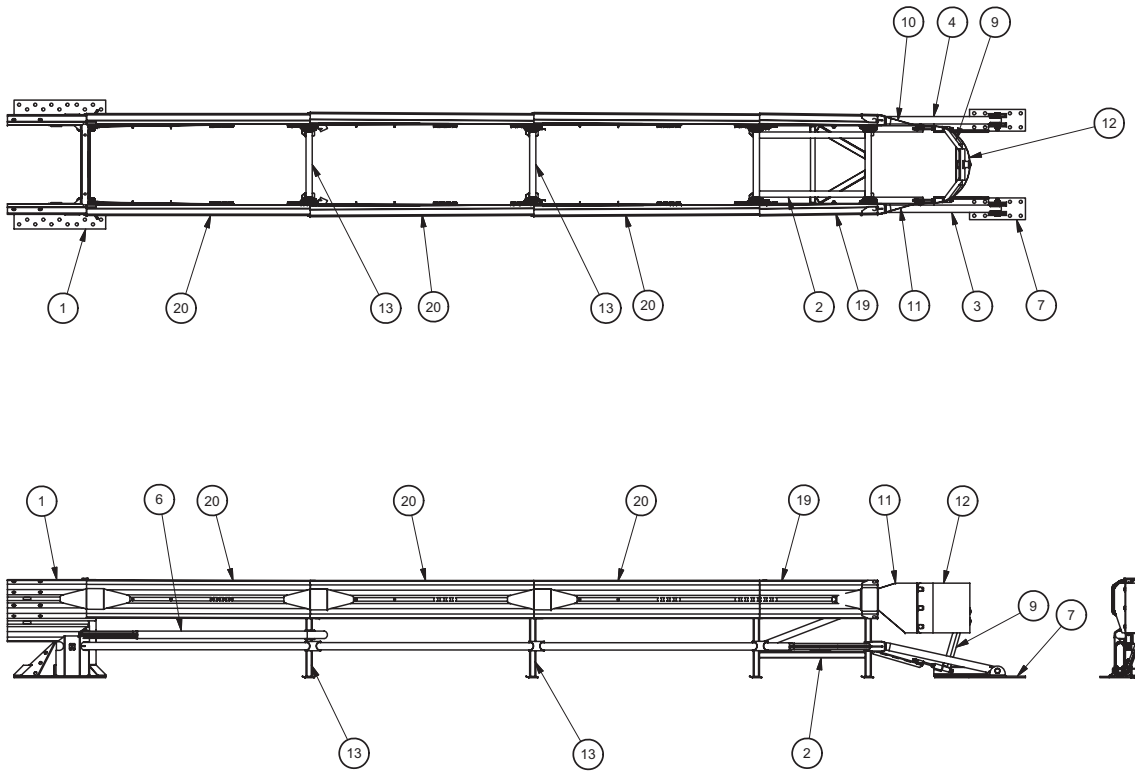
DRAWN: W. Leddington	DATE: 9/2/2008
DESIGNED: R. Brougher	DATE: 8/28/2008
CHECKED: K. Mortensen	DATE: 9/2/2008
APPROVED: R. Brougher	DATE: 9/4/2008
FILE: TD35024-TL3CU.idw	
NEXT ASSEMBLY:	

UNIDIRECTIONAL
ASSEMBLY NO. TD35024-TL3CU

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-3/100 SYSTEM (24" [610mm])
100 km/h [62 MPH]

SCALE	DRAWING	SHEET	REV
1=40	TD35024-TL3CU	1 of 1	



PARTS LIST

ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2762020-0000	BACKUP,24,QUEST,G	1
2	3562013-0000	SUPPORT FRAME ASSY,QUEST,DCM	1
3	276202L-0000	SHAPER RAIL,L,QUEST CEN,G	1
4	276202R-0000	SHAPER RAIL,R,QUEST CEN,G	1
5	2762017-0000	SHAPER,BACKUP,QUEST,G	2
6	2762041-0000	REAR RAIL,QUEST DCM,G	2
7	2762015-0000	ANCHOR,FRONT,QUEST,G	2
8	2762007-0000	TRIGGER STRAP,QUEST,G	2
9	3562014-0000	TRIGGER ASSY,QUEST DCM	1
10	2762024-0000	NOSE TRANSITION,R,QUEST,G,PT	1
11	2762025-0000	NOSE TRANSITION,L,QUEST,G,PT	1
12	2762026-0000	NOSE,QUEST,G,PT	1
13	3562016-0000	DIAPHRAGM ASSY,QUEST CEN	2
14	2762043-0000	STRAP,PEEL,REAR,QUEST CEN	2
15	2762045-0000	STRAP,PEEL,BAY 2,QUEST CEN	2
16	2762046-0000	STRAP,PEEL, BAY 3,QUEST CEN	2
17	2762044-0000	FLT ST, 1/4X2 13/16X10 7/16,W/HOLES,G	2
18	2762047-0000	FLT ST 1/4X4X14,W/SLOTS,G	2
19	2762049-0000	PANEL,BAY 1,QUEST,G	2
20	2762048-0000	PANEL,BAYS,QUEST,DCM,G	6
21	2762050-0000	BRACE,PANEL,QUEST CEN,G	6
22	2706943-0300	SCREW,PN,#6-32X1 1/2,PHIL,S	12
23	2708871-1000	WASHER,BAR,1/8X1 1/4X2,ROUNDED,G	8
24	2708161-0000	WASHER,BAR,2X2X1/4,G	2
25	2708291-0000	WASHER,FLAT,5/8 X 1 3/4, G	6
26	2708039-0300	WASHER,FLAT,#6X5/8X.030,S	24
27	2708022-0100	WASHER,FLAT,3/8 ID X13/16 OD,P,HRD	49
28	2704191-0000	NUT,HX,5/8,G,RAIL	72
29	2704341-0000	NUT,HX,3/4",GR DH	10
30	2704161-0000	NUT,HX,1,G	2
31	2704772-0300	NUT,HX,#6-32,S	24
32	2704031-0000	NUT,HX,3/8,G	24
33	2704351-0000	NUT,HX,5/8,G,GR DH	6
34	2701811-0000	BOLT,RAIL,5/8X1 1/4,G	54
35	2700011-0000	BOLT,HX,3/4X2,G5,G	4
36	2701014-0000	BOLT,HX,1X5,G8,G	2
37	2700541-0000	BOLT,HX,1X3 1/2,G5,G	2
38	2700651-0000	BOLT,HX,3/4X4,G5,G,ALL THRD	2
39	2699341-0000	BOLT,RAIL,5/8X2,G	18
40	2699081-0500	BOLT,HX,5/8X1 1/2,G5,G	6
41	2699251-0000	BOLT,HX,3/4X3 1/2,G5,G	4
42	2701221-0000	BOLT,HX,3/8X1,G2,G	24
43	2735712-3500	DECAL,PRODUCT,QUEST	1
44	2735711-0000	DECAL,CAUTION,ALL PRODUCTS	1
45	2705121-0000	RIVET,ST,SD68BS,3/16X1/2,DH	1
46	2750038-0000	INSTALL INSTRUCTIONS,QUEST	1
47	2735831-3500	MATERIAL SAFETY INFORMATION NOTICE	1

ASSEMBLY NO. TD35024-TL3

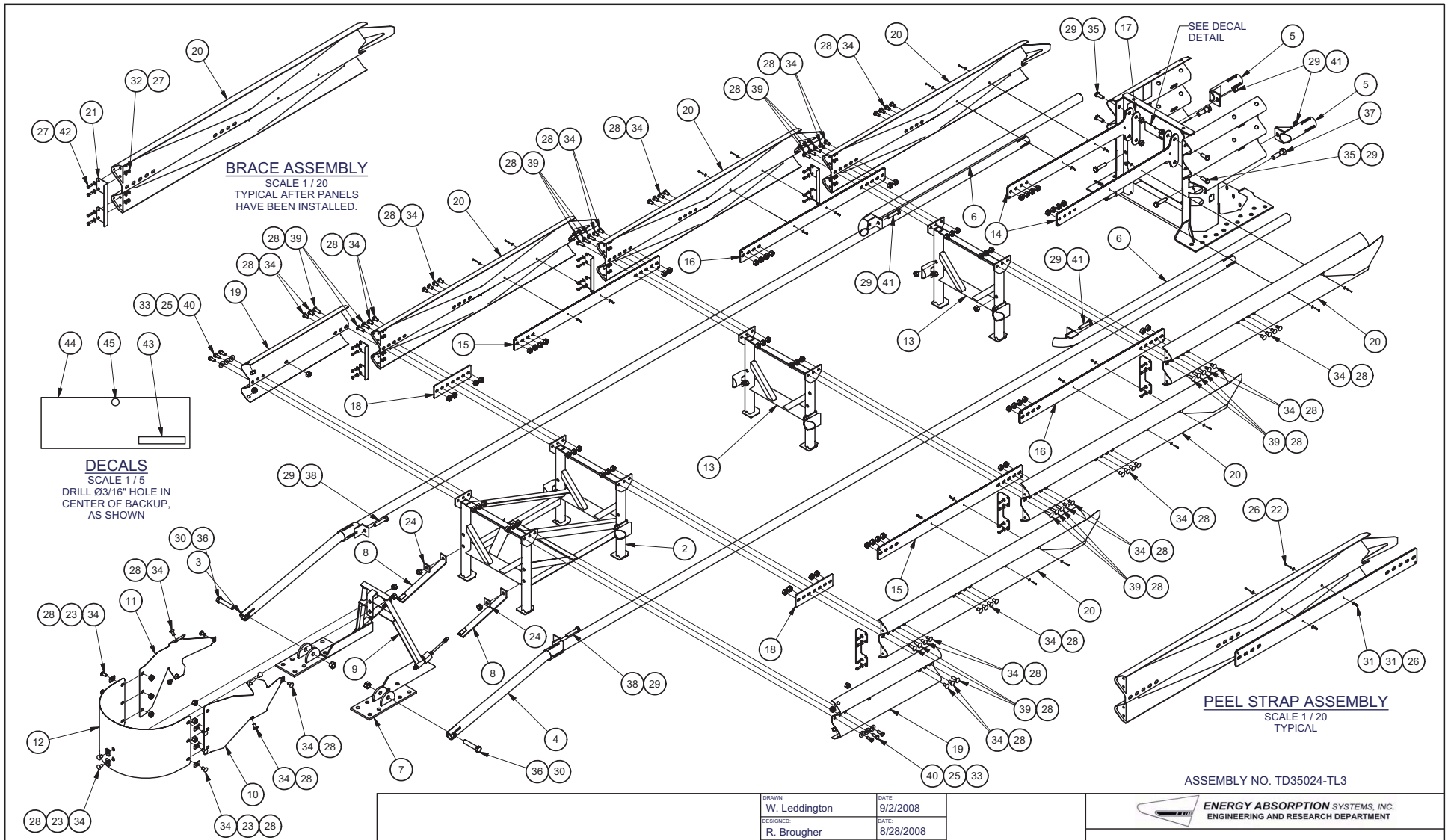
Revision	Date	Rev	By	Chk.	App.

DRAWN: W. Leddington	DATE: 9/2/2008	
DESIGNED: R. Brougher	DATE: 8/28/2008	
CHECKED: K. Mortensen	DATE: 9/2/2008	
APPROVED: R. Brougher	DATE: 9/4/2008	
FILE: TD35024-TL3.idw		
NEXT ASSEMBLY:		

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-3/100 SYSTEM (24" [610 mm])
100 km/h [62 MPH]

SCALE:	DRAWING:	SHEET:	REV
1=40	TD35024-TL3	1 of 2	



ASSEMBLY NO. TD35024-TL3

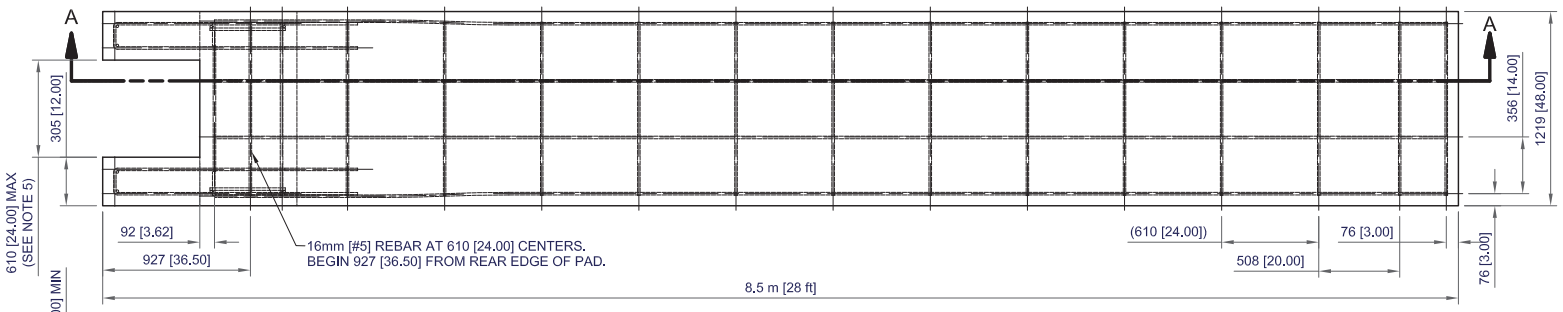
Revision	Date	Rev	By	Chk.	App.

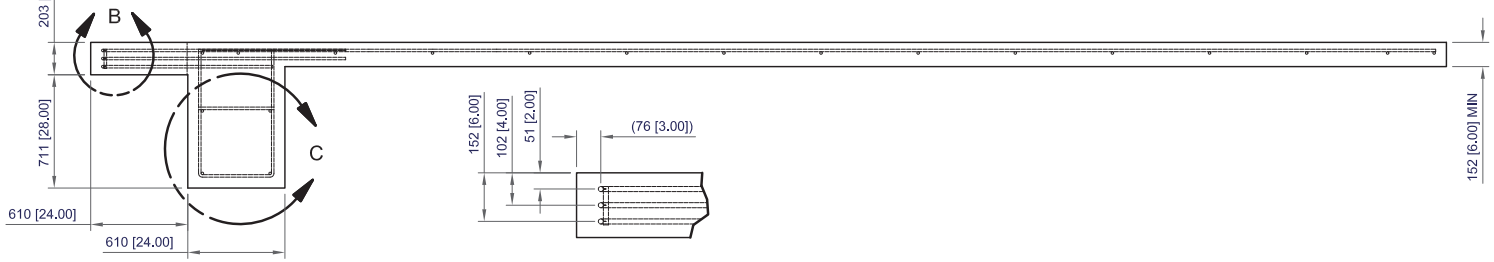
DRAWN: W. Leddington	DATE: 9/2/2008	
DESIGNED: R. Brougher	DATE: 8/28/2008	
CHECKED: K. Mortensen	DATE: 9/2/2008	
APPROVED: R. Brougher	DATE: 9/4/2008	
FILE: TD35024-TL3.idw		
NEXT ASSEMBLY:		

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

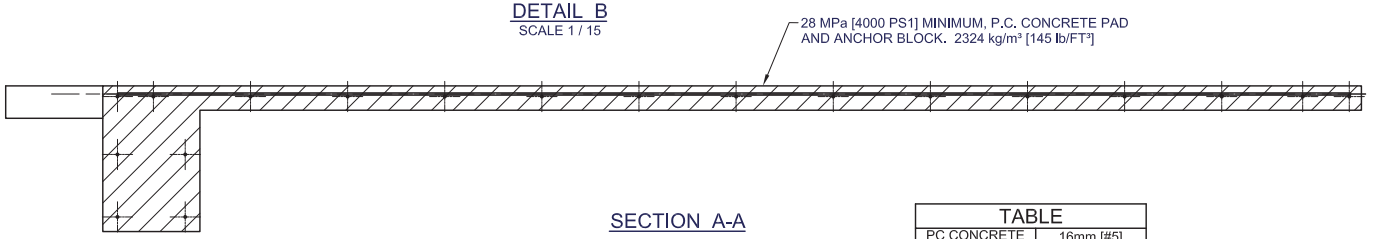
QUEST® TL-3/100 SYSTEM (24" [610 mm])
100 km/h [62 MPH]

SCALE:	DRAWING:	SHEET:	REV
1=25	TD35024-TL3	2 of 2	



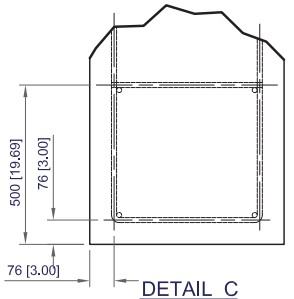


DETAIL B
SCALE 1 / 15



SECTION A-A

TABLE	
PC CONCRETE 28 MPa [4000 PSI]	16mm [#5] REBAR
2.11 m³ [2.76 yd³]	75.0 m [246' 1"]



DETAIL C
SCALE 1 / 15

NOTES:
1. CROSS SLOPE OF PAD SHALL NOT EXCEED 8% AND NOT VARY MORE THAN 2% FROM FRONT TO BACK.
2. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
3. SEE SHEET 2 FOR REBAR DETAIL.
4. THE CONCRETE PAD SHOWN IS DESIGNED TO NEST AROUND HAZARDS 610 [24.00] IN WIDTH OR LESS. MAKE PREPARATIONS TO POUR THE REAR PORTION OF THE PAD AROUND THE HAZARD.

Revision	Date	Rev	By	Chk.	App.

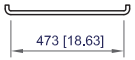
DRAWN: D. Kohfeld	DATE: 7/22/2006		
DESIGNED: D. Wilkinson	DATE: 12/27/2005		
CHECKED: JME	DATE: 9/8/2006		
APPROVED: K. Looney	DATE: 9/12/2006		
FILE: 3562015-0000.ldw			
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST SYSTEM (24" [610mm])
CONCRETE PAD
100 km/h [62 MPH} - NCHRP 350 TL-3

SCALE:	DRAWING:	SHEET:	REV
1=30	3562015-0000	1 of 2	

(4) REBAR A



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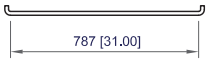
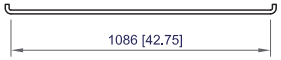


(1) REBAR C



(17) REBAR D

(2) REBAR E

(2) REBAR F

(4) REBAR G

(4) REBAR H

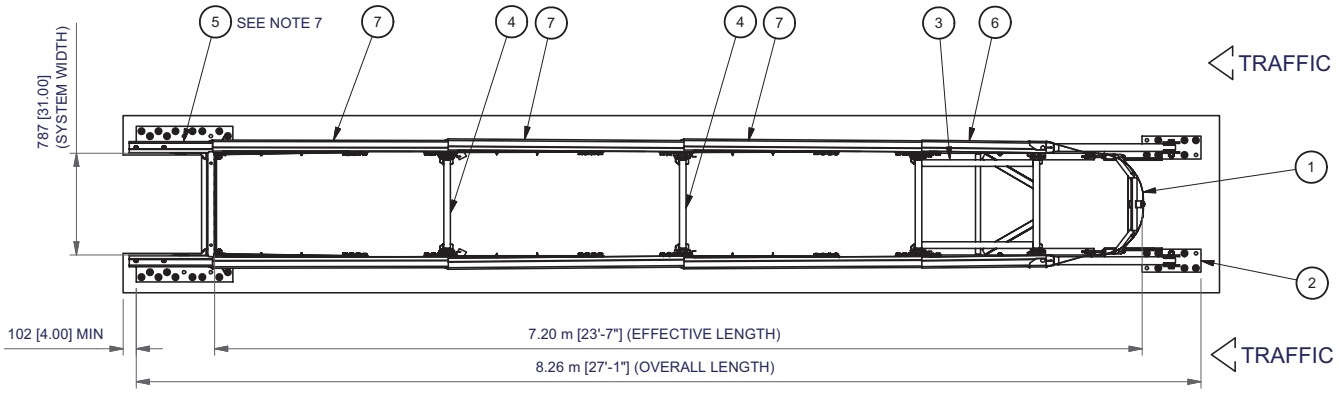
Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld	DATE: 7/22/2006
DESIGNED: D. Wilkinson	DATE: 12/27/2005
CHECKED: JME	DATE: 9/8/2006
APPROVED: K. Looney	DATE: 9/12/2006
FILE: 3562015-0000.idw	
NEXT ASSEMBLY:	

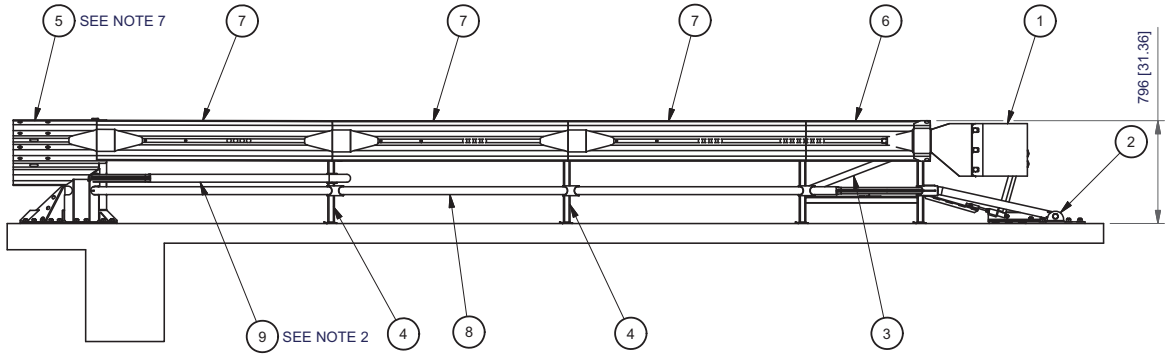
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST SYSTEM (24" [610mm])
CONCRETE PAD
100 km/h [62 MPH] - NCHRP 350 TL-3

SCALE:	DRAWING:	SHEET:	REV
1=20	3562015-0000	2 of 2	



PLAN



ELEVATION
LEFT SIDE

NOTES:
1. IN COMPLIANCE WITH THE AASHTO 2002 ROADSIDE DESIGN GUIDE, MANUFACTURER RECOMMENDS REMOVAL OF ALL CURBS AND ISLANDS TO ENSURE PROPER IMPACT PERFORMANCE.
2. PROVISION SHALL BE MADE FOR REAR RAILS TO SLIDE REARWARD UPON IMPACT 1.82m [6' 0"] MIN.
3 CAUTION: THE QUEST SYSTEM MUST BE CORRECTLY ANCHORED FOR PROPER IMPACT PERFORMANCE. ATTACH SYSTEM USING ONE OF THE FOLLOWING:
   A. (QTY. 30) 178 [7.00] STUDS MAY BE USED TO ATTACH SYSTEM TO 28 MPa [4000 PSI] MIN P.C. CONCRETE PER THE FOLLOWING MINIMUMS.**
      1) 152 [6.00] REINFORCED PAD.
      2) 203 [8.00] NON-REINFORCED ROADWAY, MEASURING AT LEAST 3.66m [12' 0"] WIDE BY 15.24m [50' 0"] LONG.
      3) 180 [7.00] REINFORCED DECK STRUCTURE.
   B. (QTY 38) 457 [18.00] THREADED RODS MAY BE USED TO INSTALL SYSTEM ON ASPHALT.**
   ** REFER TO THE REFERENCE DRAWINGS & INSTALLATION INSTRUCTIONS FOR FOUNDATION SPECIFICATIONS.
4. SEE THE "QUEST TL-3 SYSTEM 30/36 PRODUCT MANUAL" FOR A DESCRIPTION OF ITS IMPACT PERFORMANCE CHARACTERISTICS AND DESIGN LIMITATIONS BEFORE PLACING A SYSTEM AT A GIVEN SITE. INFORMATION AND COPIES OF ABOVE MANUAL ARE AVAILABLE BY CALLING CUSTOMER SERVICE DEPARTMENT AT (888) 323-6374.
5. WHERE NECESSARY, THE CUSTOMER SHALL SUPPLY AN ADEQUATE TRANSITION FROM THE QUEST TL-3 30/36 SYSTEM TO THE OBJECT BEING SHIELDED.
6. ANCHOR BOLTS NOT INCLUDED IN MODEL NUMBER. ORDER SEPARATELY.
7. STEEL BACKUP AND CONCRETE PAD SPECIFICALLY DESIGNED TO NEST AROUND 760 [30.00] WIDE HAZARDS, INSTALL ACCORDINGLY TO ENSURE PROPER IMPACT PERFORMANCE.

KEY

1 NOSE	5 BACKUP	9 REAR RAIL
2 FRONT ANCHOR	6 BAY 1 PANEL	
3 BAY 1	7 BAY 2-4 PANEL	
4 DIAPHRAGM	8 SHAPER RAIL	

Revision	Date	Rev	By	Chk.	App.

REFERENCES

	QUEST SYSTEM ASSEMBLY	TD35030-TL3
SERIAL NO.		
SALES ORDER	SUPPORT FRAME ASSY	3562025-0000
EH PROJECT	DIAPHRAGM ASSY	3562026-0000
NO. OF UNITS	TRIGGER ASSY	3562027-0000
	CONCRETE PAD	3562028-0000
	FOUNDATIONS	3562007-0000

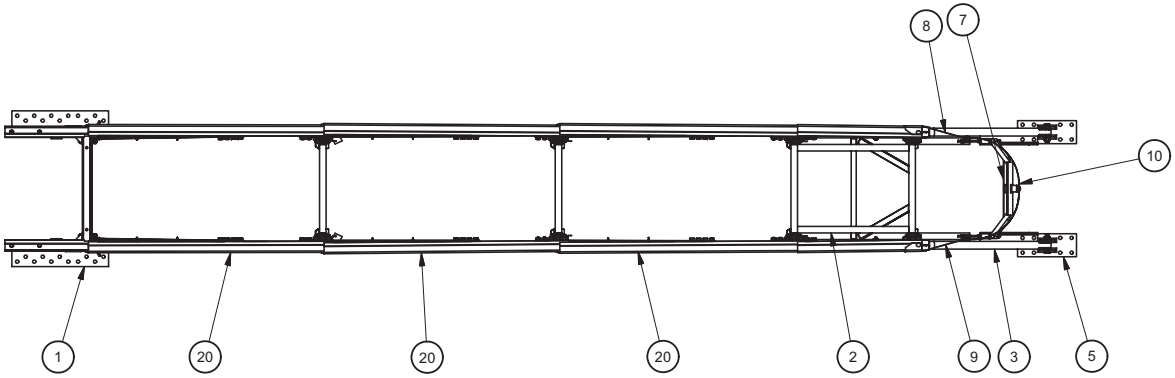
DRAWN: D. Kohfeld	DATE: 11/29/2006		
DESIGNED:	DATE:		
CHECKED: JME	DATE: 12/13/2006		
APPROVED: SPT	DATE: 12/13/2006		
FILE: TD35030-TL3CU.idw			
NEXT ASSEMBLY:			

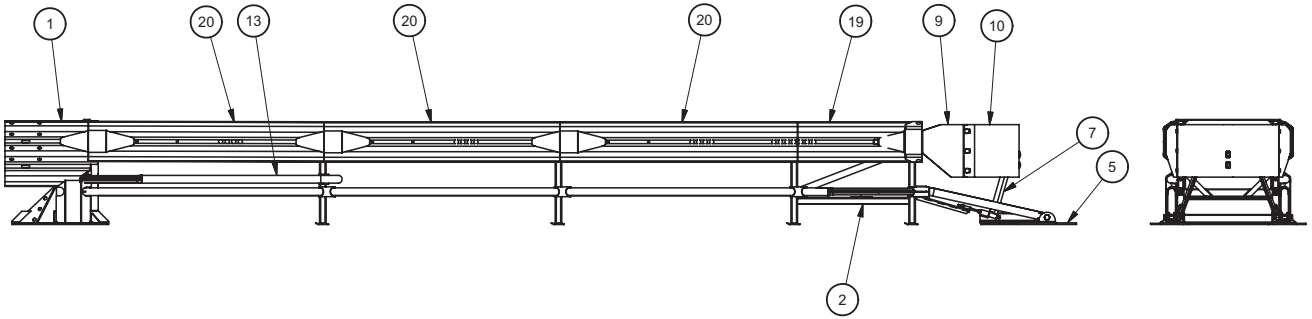
UNIDIRECTIONAL
ASSEMBLY NO. TD35030-TL3CU

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-3 SYSTEM (30")
100 km/h [62 MPH]

SCALE	DRAWING	SHEET	REV
1=40	TD35030-TL3CU	1 of 1	





PARTS LIST

ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2762067-0000	BACKUP,30,QUEST,G	1
2	3562025-0000	SUPPORT FRAME ASSY,30,QUEST	1
3	276202L-0000	SHAPER RAIL,L,QUEST CEN,G	1
4	276202R-0000	SHAPER RAIL,R,QUEST CEN,G	1
5	2762015-0000	ANCHOR,FRONT,QUEST,G	2
6	2762007-0000	TRIGGER STRAP,QUEST,G	2
7	3562027-0000	TRIGGER ASSY,30,QUEST	1
8	2762024-0000	NOSE TRANSITION,R,QUEST,G,PT	1
9	2762025-0000	NOSE TRANSITION,L,QUEST,G,PT	1
10	2762071-0000	NOSE,30,QUEST,G,PT	1
11	3562026-0000	DIAPHRAGM ASSY,30,QUEST	2
12	2762017-0000	SHAPER,BACKUP,QUEST,G	2
13	2762041-0000	REAR RAIL,QUEST DCM,G	2
14	2762043-0000	STRAP,PEEL,REAR,QUEST CEN	2
15	2762045-0000	STRAP,PEEL,BAY 2,QUEST CEN	2
16	2762046-0000	STRAP,PEEL, BAY 3,QUEST CEN	2
17	2762044-0000	FLT ST, 1/4X2 13/16X10 7/16,W/HOLES,G	2
18	2762047-0000	FLT ST 1/4X4X14,W/SLOTS,G	2
19	2762049-0000	PANEL,BAY 1,QUEST,G	2
20	2762048-0000	PANEL,BAYS,QUEST,DCM,G	6
21	2762050-0000	BRACE,PANEL,QUEST CEN,G	6
22	2706943-0300	SCREW,PN,#6-32X1 1/2,PHIL,S	12
23	2708871-1000	WASHER,BAR,1/8X1 1/4X2,ROUNDED,G	8
24	2708291-0000	WASHER,FLAT,5/8 X 1 3/4, G	6
25	2708039-0300	WASHER,FLAT,#6X5/8X.030,S	24
26	2708161-0000	WASHER,BAR,2X2X1/4,G	2
27	2708022-0100	WASHER,FLAT,3/8 ID X13/16 OD,P,HRD	48
28	2704191-0000	NUT,HX,5/8,G,RAIL	72
29	2704772-0300	NUT,HX,#6-32,S	24
30	2704341-0000	NUT,HX,3/4",GR DH	10
31	2704161-0000	NUT,HX,1,G	2
32	2704031-0000	NUT,HX,3/8,G	24
33	2704351-0000	NUT,HX,5/8,G,GR DH	6
34	2701811-0000	BOLT,RAIL,5/8X1 1/4,G5,G	54
35	2699341-0000	BOLT,RAIL,5/8X2,G	18
36	2700011-0000	BOLT,HX,3/4X2,G5,G	4
37	2701014-0000	BOLT,HX,1X5,G8,G	2
38	2700541-0000	BOLT,HX,1X3 1/2,G5,G	2
39	2699081-0500	BOLT,HX,5/8X1 1/2,G5,G	6
40	2699251-0000	BOLT,HX,3/4X3 1/2,G5,G	4
41	2701221-0000	BOLT,HX,3/8X1,G2,G	24
42	2700651-0000	BOLT,HX,3/4X4,G5,G,ALL THRD	2
43	2705121-0000	RIVET,ST,SD68BS,3/16X1/2,DH	1
44	2735711-0000	DECAL,CAUTION,ALL PRODUCTS	1
45	2735712-3500	DECAL,PRODUCT,QUEST	1
46	2750044-0000	INSTALL INSTRUCTIONS,QUEST 30/36"	1
47	2735831-3500	MATERIAL SAFETY INFORMATION NOTICE	1

ASSEMBLY NO. TD35030-TL3

Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld	DATE: 11/7/2006		
DESIGNED:	DATE:		
CHECKED: JME	DATE: 12/1/2006		
APPROVED: SPT	DATE: 12/1/2006		
FILE: TD35030-TL3.idw			
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST®TL-3 SYSTEM (30")

SCALE:	DRAWING:	SHEET:	REV
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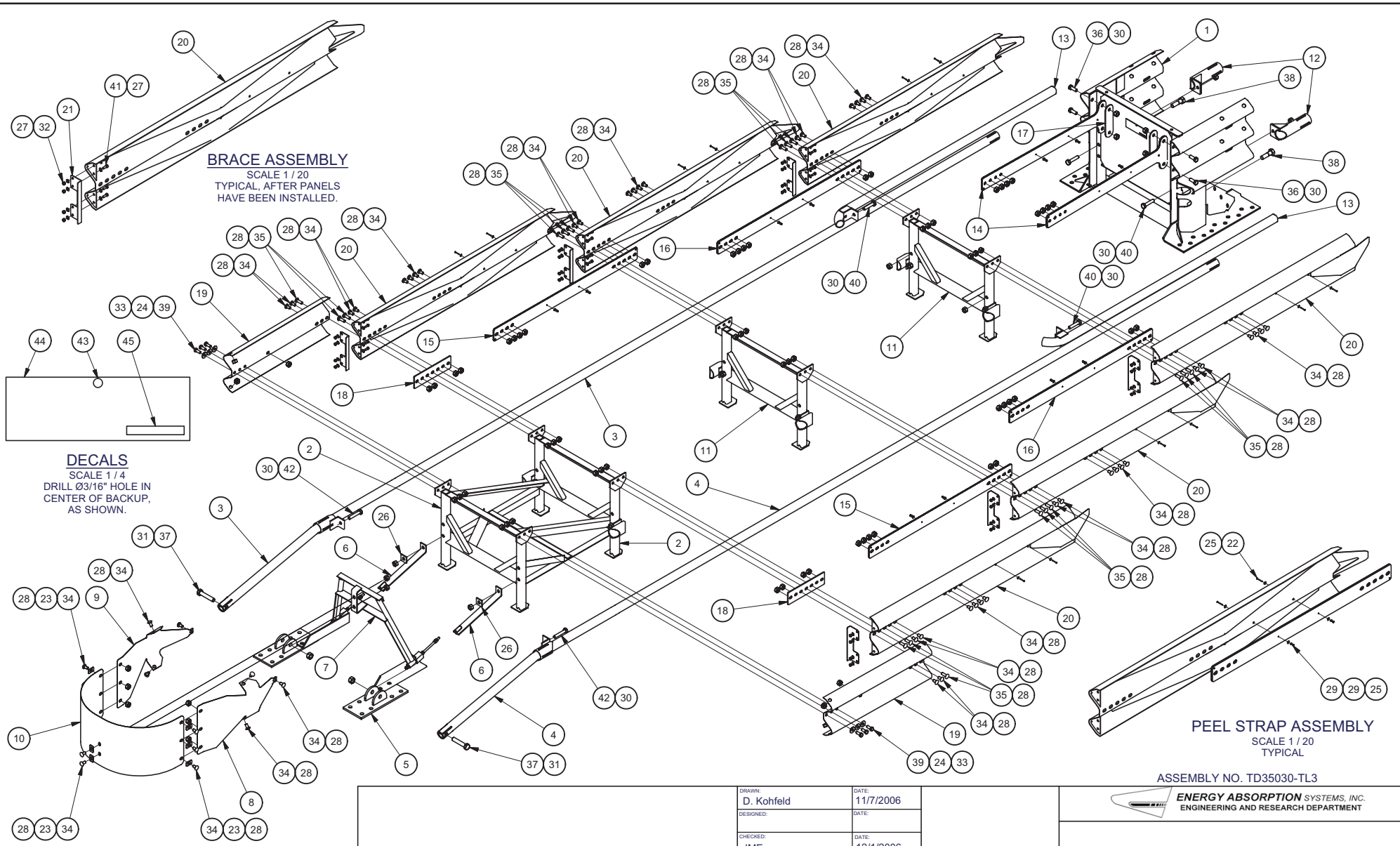


ASSEMBLY NO. TD35030-TL3

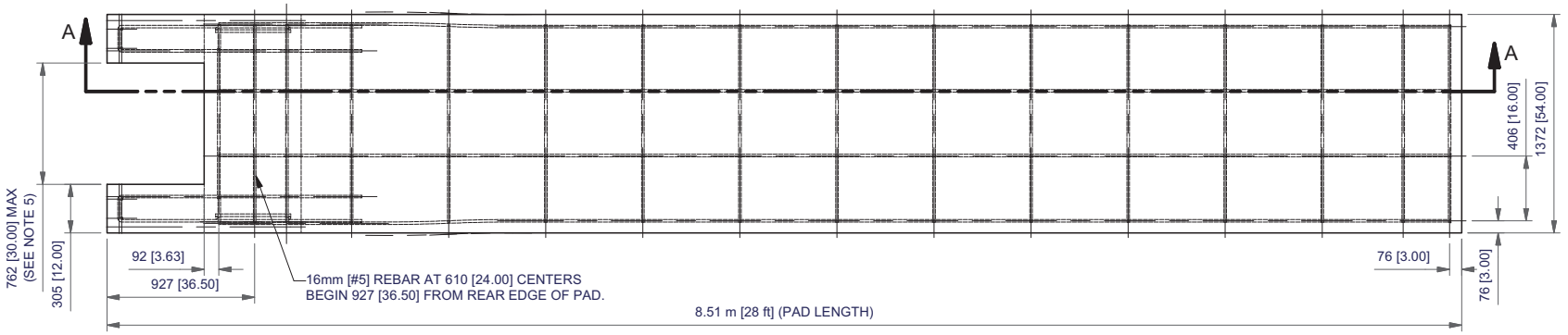
Revision	Date	Rev	By	Chk.	App.

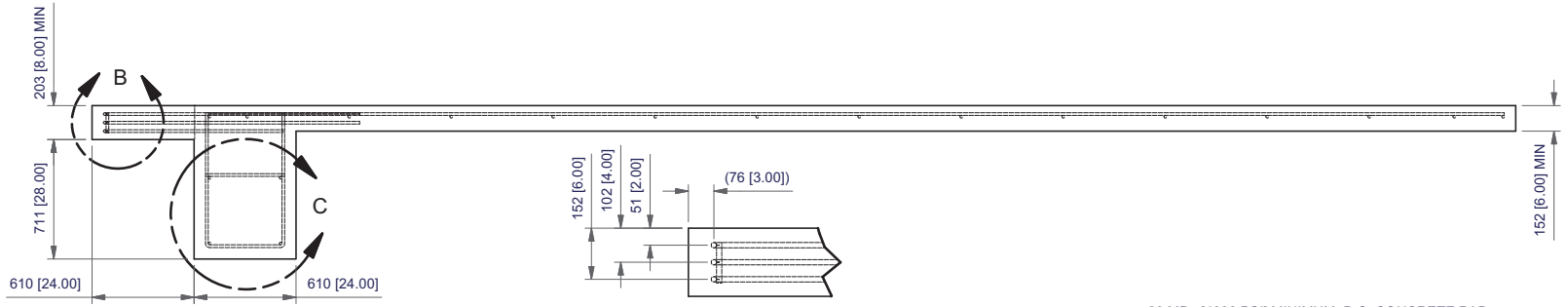
DRAWN: D. Kohfeld	DATE: 11/7/2006		
DESIGNED:	DATE:		
CHECKED: JME	DATE: 12/1/2006		
APPROVED: SPT	DATE: 12/1/2006		
FILE: TD35030-TL3.idw			
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

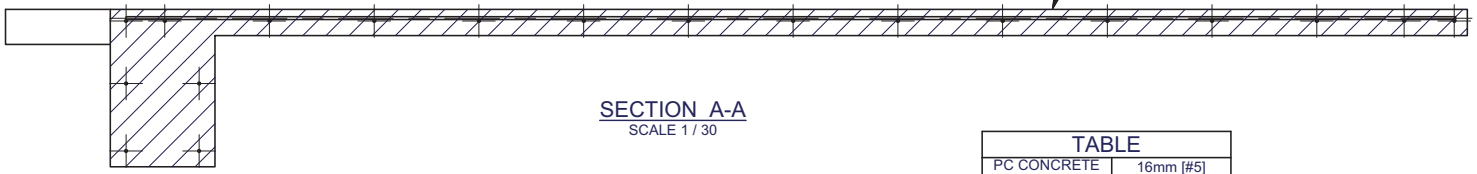
QUEST®TL-3 SYSTEM (30")

SCALE:	DRAWING:	SHEET:	REV
1=40	TD35030-TL3	2 of 2	

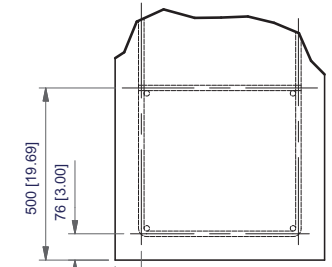




DETAIL B
SCALE 1 / 15



SECTION A-A
SCALE 1 / 30



DETAIL C
SCALE 1 / 15

TABLE	
PC CONCRETE 28 MPa [4000 PSI]	16mm [#5] REBAR
2.36 m³ [3.09 yd³]	69.8 m [228']

NOTES:
1. CROSS SLOPE OF PAD SHALL NOT EXCEED 8% AND NOT VARY MORE THAN 2% FROM FRONT TO BACK.
2. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
3. SEE SHEET 2 FOR REBAR DETAIL.
4. THE CONCRETE PAD SHOWN IS DESIGNED TO NEST AROUND HAZARDS 762 [30.00] IN WIDTH OR LESS. MAKE PREPARATIONS TO POUR THE REAR PORTION OF THE PAD AROUND THE HAZARD.

Revision	Date	Rev	By	Chk.	App.

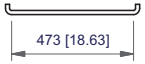
DRAWN: D. Kohfeld	DATE: 11/30/2006		
DESIGNED:	DATE:		
CHECKED: JME	DATE: 12/1/2006		
APPROVED: SPT	DATE: 12/1/2006		
FILE: 3562028-0000.idw			
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-3 SYSTEM (30") CONCRETE PAD

SCALE:	DRAWING:	SHEET:	REV
1=30	3562028-0000	1 of 2	

(4) REBAR A



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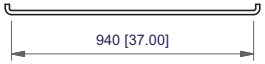

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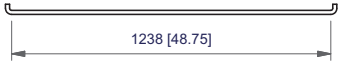
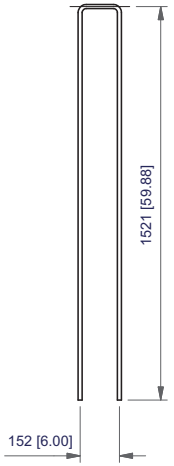


(18) REBAR D

(2) REBAR E

(2) REBAR F



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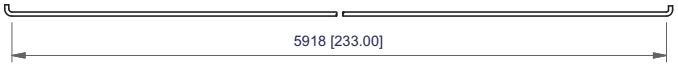


(4) REBAR H

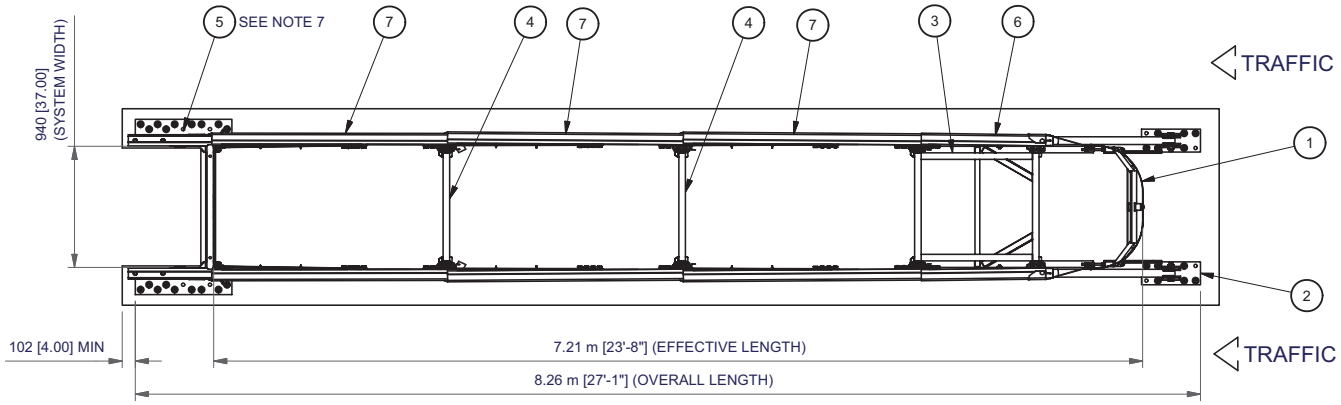
Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld	DATE: 11/30/2006
DESIGNED:	DATE:
CHECKED: JME	DATE: 12/1/2006
APPROVED: SPT	DATE: 12/1/2006
FILE: 3562028-0000.idw	
NEXT ASSEMBLY:	

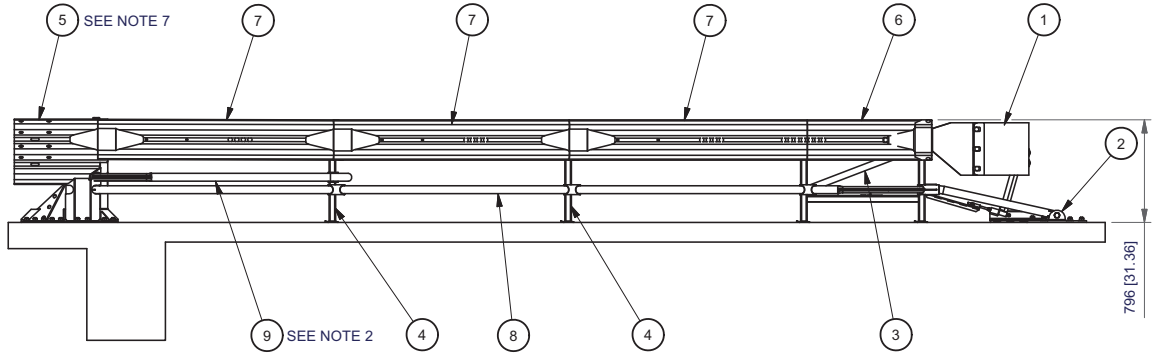
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-3 SYSTEM (30") CONCRETE PAD

SCALE:	DRAWING:	SHEET:	REV
1=25	3562028-0000	2 of 2	



PLAN



ELEVATION
LEFT SIDE

NOTES:
1. IN COMPLIANCE WITH THE AASHTO 2002 ROADSIDE DESIGN GUIDE, MANUFACTURER RECOMMENDS REMOVAL OF ALL CURBS AND ISLANDS TO ENSURE PROPER IMPACT PERFORMANCE.
2. PROVISION SHALL BE MADE FOR REAR RAILS TO SLIDE REARWARD UPON IMPACT 1.82m [6' 0"] MIN.
3. CAUTION: THE QUEST SYSTEM MUST BE CORRECTLY ANCHORED FOR PROPER IMPACT PERFORMANCE. ATTACH SYSTEM USING ONE OF THE FOLLOWING:
   A. (QTY. 30) 178 [7.00] STUDS MAY BE USED TO ATTACH SYSTEM TO 28 MPa [4000 PSI] MIN P.C. CONCRETE PER THE FOLLOWING MINIMUMS.**
      1) 152 [6.00] REINFORCED PAD PER REFERENCE.
      2) 203 [8.00] NON-REINFORCED ROADWAY, MEASURING AT LEAST 3.66m [12' 0"] WIDE BY 15.24m [50' 0"] LONG.
      3) 180 [7.00] REINFORCED DECK STRUCTURE.
   B. (QTY 38) 457 [18.00] THREADED RODS MAY BE USED TO INSTALL SYSTEM ON ASPHALT.**
   ** REFER TO THE REFERENCE DRAWINGS & INSTALLATION INSTRUCTIONS FOR FOUNDATION SPECIFICATIONS.
4. SEE THE "QUEST TL-3 30/36 SYSTEM PRODUCT MANUAL" FOR A DESCRIPTION OF ITS IMPACT PERFORMANCE CHARACTERISTICS AND DESIGN LIMITATIONS BEFORE PLACING A SYSTEM AT A GIVEN SITE. INFORMATION AND COPIES OF ABOVE MANUAL ARE AVAILABLE BY CALLING CUSTOMER SERVICE DEPARTMENT AT (888) 323-6374.
5. WHERE NECESSARY, THE CUSTOMER SHALL SUPPLY AN ADEQUATE TRANSITION FROM THE QUEST TL-3 30/36 SYSTEM TO THE OBJECT BEING SHIELDED.
6. ANCHOR BOLTS NOT INCLUDED IN MODEL NUMBER. ORDER SEPARATELY.
7. STEEL BACKUP AND CONCRETE PAD SPECIFICALLY DESIGNED TO NEST AROUND 915 [36.00] WIDE HAZARDS, INSTALL ACCORDINGLY TO ENSURE PROPER IMPACT PERFORMANCE.

KEY

1 NOSE	5 BACKUP	9 REAR RAIL
2 FRONT ANCHOR	6 BAY 1 PANEL	
3 BAY 1	7 BAY 2-4 PANEL	
4 DIAPHRAGM	8 SHAPER RAIL	

Revision	Date	Rev	By	Chk.	App.

REFERENCES

	QUEST SYSTEM ASSEMBLY	TD35036-TL3
SERIAL NO.		
SALES ORDER	SUPPORT FRAME ASSY	3562019-0000
EH PROJECT	DIAPHRAGM ASSY	3562022-0000
NO. OF UNITS	TRIGGER ASSY	3562023-0000
	CONCRETE PAD	3562024-0000
	FOUNDATIONS	3562007-0000

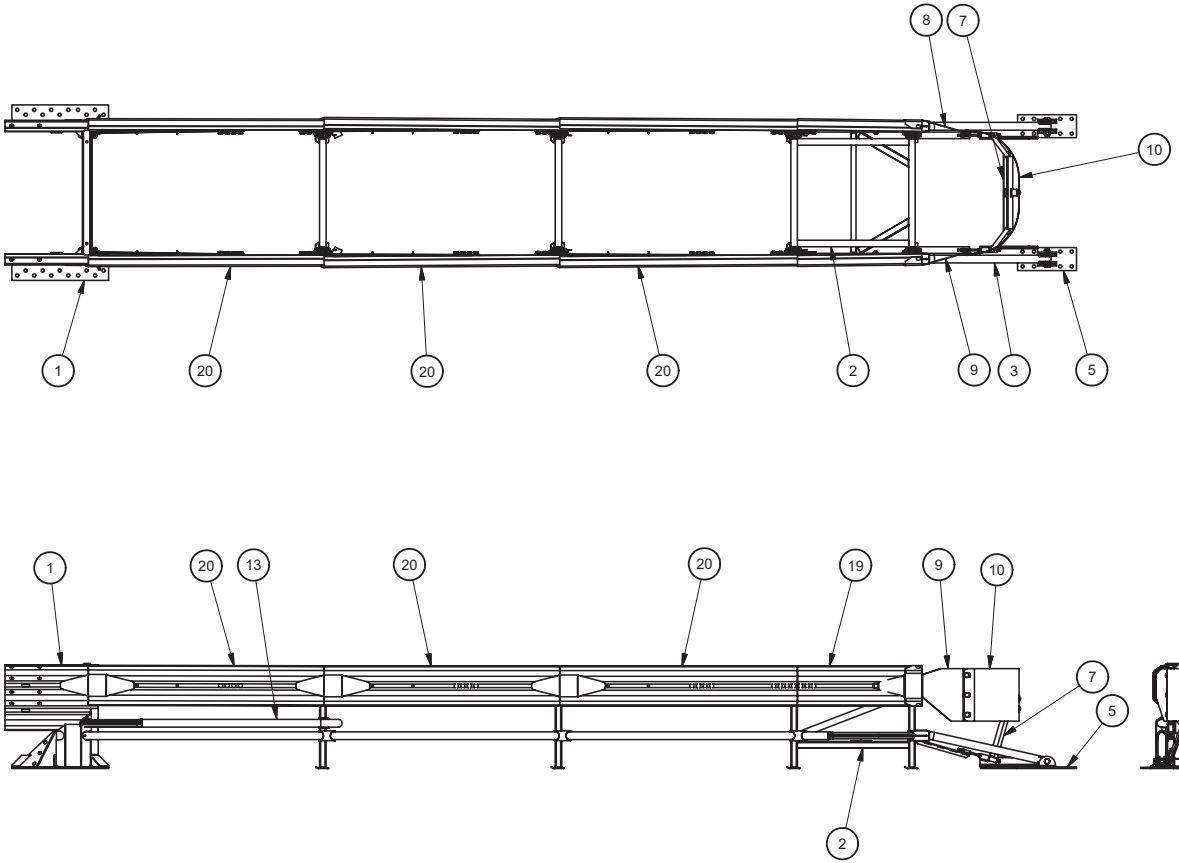
DRAWN:	D. Kohfeld	DATE: 11/29/2006
DESIGNED:		DATE:
CHECKED:	JME	DATE: 12/13/2006
APPROVED:	SPT	DATE: 12/13/2006
FILE:	TD35036-TL3CU.idw	
NEXT ASSEMBLY:		

UNIDIRECTIONAL
ASSEMBLY NO. TD35036-TL3CU

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-3 SYSTEM (36")
100 km/h [62 MPH]

SCALE:	DRAWING:	SHEET:	REV
1=40	TD35036-TL3CU	1 of 1	



PARTS LIST

ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2762063-0000	BACKUP,36,QUEST,G	1
2	3562019-0000	SUPPORT FRAME ASSY,36,QUEST	1
3	276202L-0000	SHAPER RAIL,L,QUEST CEN,G	1
4	276202R-0000	SHAPER RAIL,R,QUEST CEN,G	1
5	2762015-0000	ANCHOR,FRONT,QUEST,G	2
6	2762007-0000	TRIGGER STRAP,QUEST,G	2
7	3562023-0000	TRIGGER ASSY,36,QUEST	1
8	2762024-0000	NOSE TRANSITION,R,QUEST,G,PT	1
9	2762025-0000	NOSE TRANSITION,L,QUEST,G,PT	1
10	2762062-0000	NOSE,36,QUEST,G,PT	1
11	3562022-0000	DIAPHRAGM ASSY,36,QUEST	2
12	2762017-0000	SHAPER,BACKUP,QUEST,G	2
13	2762041-0000	REAR RAIL,QUEST DCM,G	2
14	2762043-0000	STRAP,PEEL,REAR,QUEST CEN	2
15	2762045-0000	STRAP,PEEL,BAY 2,QUEST CEN	2
16	2762046-0000	STRAP,PEEL, BAY 3,QUEST CEN	2
17	2762044-0000	FLT ST, 1/4X2 13/16X10 7/16,W/HOLES,G	2
18	2762047-0000	FLT ST 1/4X4X14,W/SLOTS,G	2
19	2762049-0000	PANEL,BAY 1,QUEST,G	2
20	2762048-0000	PANEL,BAYS,QUEST,DCM,G	6
21	2762050-0000	BRACE,PANEL,QUEST CEN,G	6
22	2706943-0300	SCREW,PN,#6-32X1 1/2,PHIL,S	12
23	2708871-1000	WASHER,BAR,1/8X1 1/4X2,ROUNDED,G	8
24	2708291-0000	WASHER,FLAT,5/8 X 1 3/4, G	6
25	2708039-0300	WASHER,FLAT,#6X5/8X.030,S	24
26	2708161-0000	WASHER,BAR,2X2X1/4,G	2
27	2708022-0100	WASHER,FLAT,3/8 ID X13/16 OD,P,HRD	48
28	2704191-0000	NUT,HX,5/8,G,RAIL	72
29	2704772-0300	NUT,HX,#6-32,S	24
30	2704341-0000	NUT,HX,3/4",GR DH	10
31	2704161-0000	NUT,HX,1,G	2
32	2704031-0000	NUT,HX,3/8,G	24
33	2704351-0000	NUT,HX,5/8,G,GR DH	6
34	2701811-0000	BOLT,RAIL,5/8X1 1/4,G5,G	54
35	2699341-0000	BOLT,RAIL,5/8X2,G	18
36	2700011-0000	BOLT,HX,3/4X2,G5,G	4
37	2701014-0000	BOLT,HX,1X5,G8,G	2
38	2700541-0000	BOLT,HX,1X3 1/2,G5,G	2
39	2699081-0500	BOLT,HX,5/8X1 1/2,G5,G	6
40	2699251-0000	BOLT,HX,3/4X3 1/2,G5,G	4
41	2701221-0000	BOLT,HX,3/8X1,G2,G	24
42	2700651-0000	BOLT,HX,3/4X4,G5,G,ALL THRD	2
43	2705121-0000	RIVET,ST,SD68BS,3/16X1/2,DH	1
44	2735711-0000	DECAL,CAUTION,ALL PRODUCTS	1
45	2735712-3500	DECAL,PRODUCT,QUEST	1
46	2750044-0000	INSTALL INSTRUCTIONS,QUEST 30/36,TL-3	1
47	2735831-3500	MATERIAL SAFETY INFORMATION NOTICE	1

ASSEMBLY NO. TD35036-TL3

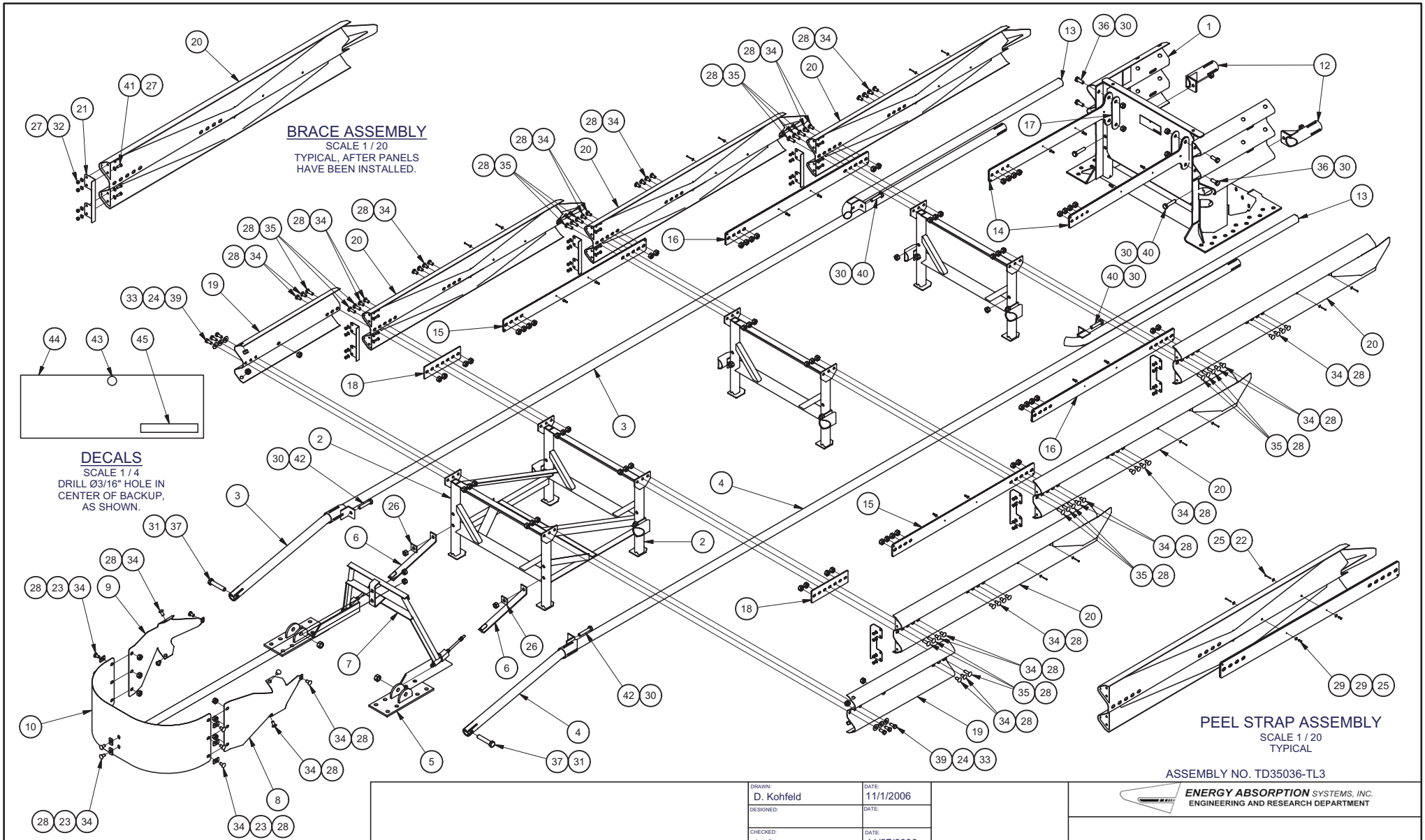
Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld — DATE: 11/1/2006
DESIGNED: — DATE:
CHECKED: A. Cox — DATE: 11/27/2006
APPROVED: SPT — DATE: 11/22/2006
FILE: TD35036-TL3.idw
NEXT ASSEMBLY:

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-3 SYSTEM (36")

SCALE: 1=40 | DRAWING: TD35036-TL3 | SHEET: 1 of 2 | REV:



ASSEMBLY NO. TD35036-TL3

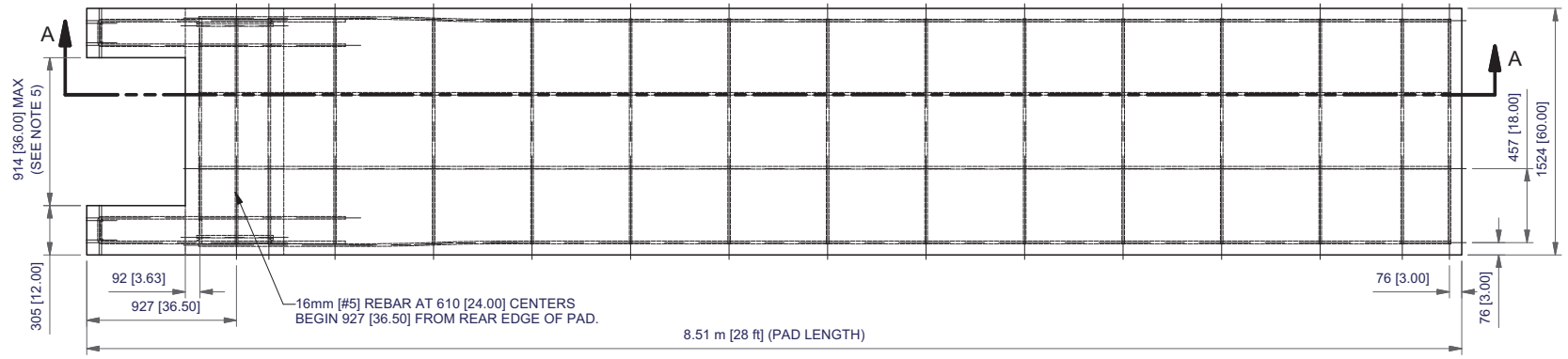
Revision	Date	Rev	By	Chk.	App.

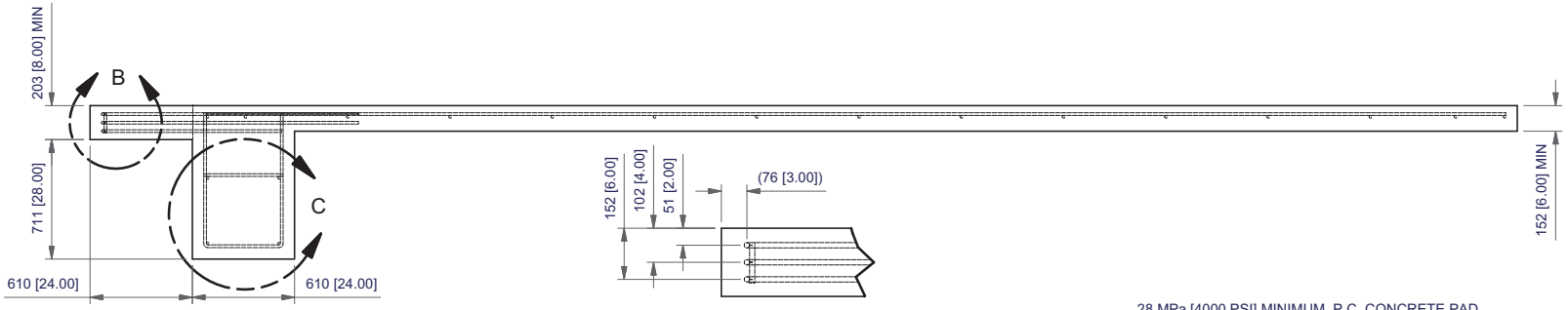
DRAWN: D. Kohfeld	DATE: 11/1/2006
DESIGNED:	DATE:
CHECKED: A. Cox	DATE: 11/27/2006
APPROVED: SPT	DATE: 11/22/2006
FILE: TD35036-TL3.idw	
NEXT ASSEMBLY:	

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

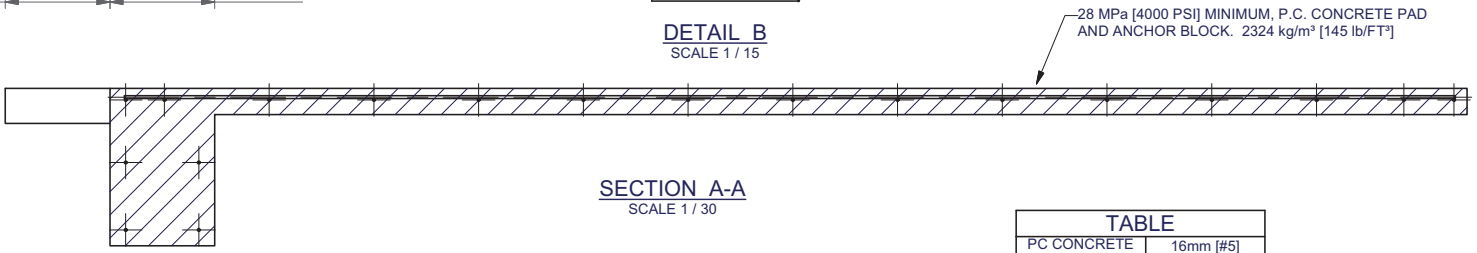
QUEST® TL-3 SYSTEM (36")

SCALE:	DRAWING:	SHEET:	REV
1=40	TD35036-TL3	2 of 2	

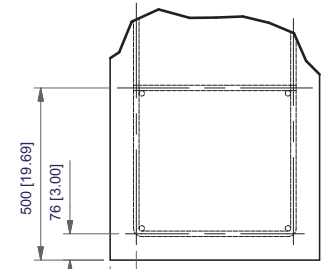




DETAIL B
SCALE 1 / 15



SECTION A-A
SCALE 1 / 30



DETAIL C
SCALE 1 / 15

TABLE	
PC CONCRETE 28 MPa [4000 PSI]	16mm [#5] REBAR
2.63 m³ [3.43 yd³]	80.0 m [262']

NOTES:
1. CROSS SLOPE OF PAD SHALL NOT EXCEED 8% AND NOT VARY MORE THAN 2% FROM FRONT TO BACK.
2. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
3. SEE SHEET 2 FOR REBAR DETAIL.
4. THE CONCRETE PAD SHOWN IS DESIGNED TO NEST AROUND HAZARDS 915 [36.00] IN WIDTH OR LESS. MAKE PREPARATIONS TO POUR THE REAR PORTION OF THE PAD AROUND THE HAZARD.

Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld	DATE: 11/30/2006		
DESIGNED:	DATE:		
CHECKED: JME	DATE: 12/1/2006		
APPROVED: SPT	DATE: 12/1/2006		
FILE: 3562024-0000.idw			
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-3 SYSTEM (36") CONCRETE PAD

SCALE:	DRAWING:	SHEET:	REV
1=30	3562024-0000	1 of 2	

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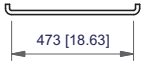

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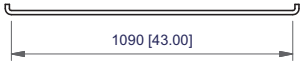

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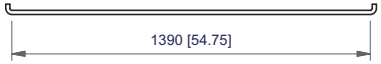
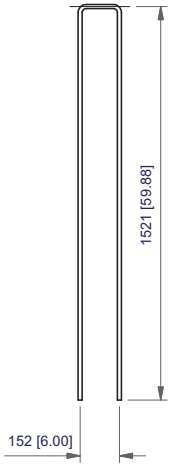


(18) REBAR D

(2) REBAR E

(2) REBAR F



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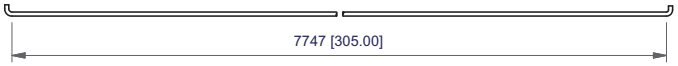


(4) REBAR H

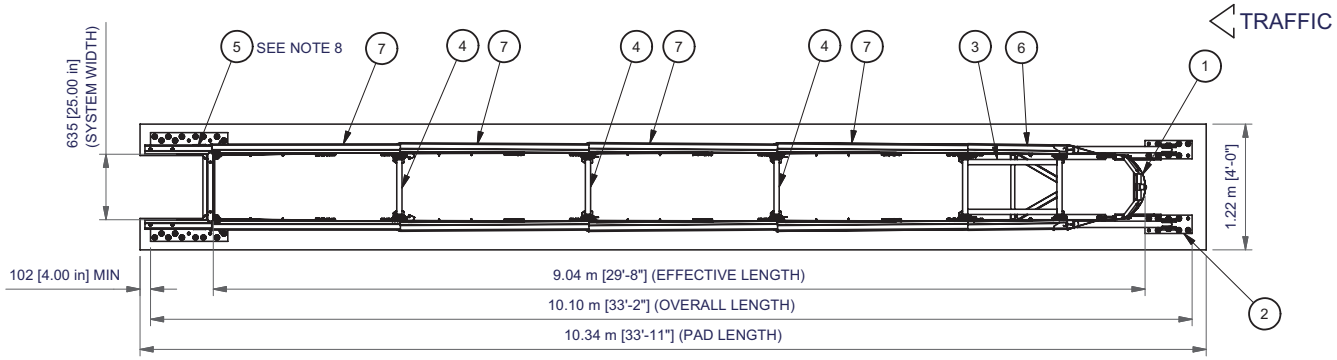
Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld	DATE: 11/30/2006
DESIGNED:	DATE:
CHECKED: JME	DATE: 12/1/2006
APPROVED: SPT	DATE: 12/1/2006
FILE: 3562024-0000.idw	
NEXT ASSEMBLY:	

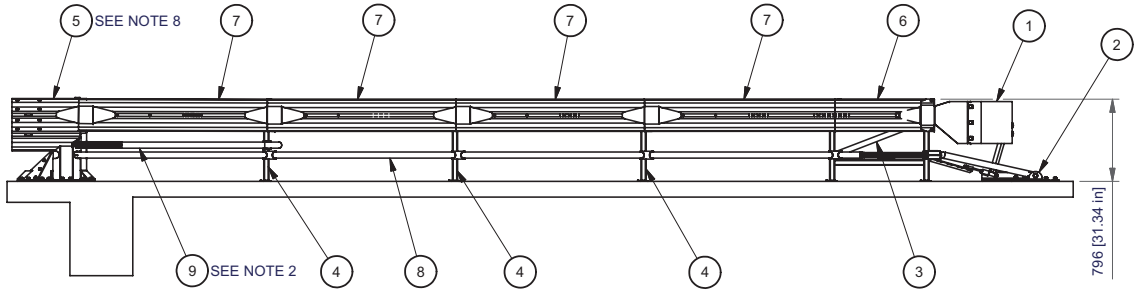
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® TL-3 SYSTEM (36") CONCRETE PAD

SCALE:	DRAWING:	SHEET:	REV
1=25	3562024-0000	2 of 2	



PLAN



ELEVATION
LEFT SIDE

NOTES:
1. IN COMPLIANCE WITH THE AASHTO 2002 ROADSIDE DESIGN GUIDE, MANUFACTURER RECOMMENDS REMOVAL OF ALL CURBS AND ISLANDS TO ENSURE PROPER IMPACT PERFORMANCE.
2. PROVISION SHALL BE MADE FOR REAR RAILS TO SLIDE REARWARD UPON IMPACT 1.82m [6' 0"] MIN.
3 CAUTION: THE QUEST 115 SYSTEM MUST BE CORRECTLY ANCHORED FOR PROPER IMPACT PERFORMANCE. ATTACH SYSTEM USING ONE OF THE FOLLOWING:
   A. (QTY. 30) 178 [7.00] STUDS MAY BE USED TO ATTACH SYSTEM TO 28 MPa [4000 PSI] MIN P.C. CONCRETE PER THE FOLLOWING MINIMUMS.**
      1) 152 [6.00] REINFORCED PAD.
      2) 203 [8.00] NON-REINFORCED ROADWAY, MEASURING AT LEAST 3.66m [12' 0"] WIDE BY 15.24m [50' 0"] LONG.
      3) 180 [7.00] REINFORCED DECK STRUCTURE.
   B. (QTY 38) 457 [18.00] THREADED RODS MAY BE USED TO INSTALL SYSTEM ON ASPHALT.**
   ** REFER TO THE REFERENCE DRAWINGS & INSTALLATION INSTRUCTIONS FOR FOUNDATION SPECIFICATIONS.
4. SEE THE "QUEST 75/110/115 SYSTEM PRODUCT MANUAL" FOR A DESCRIPTION OF ITS IMPACT PERFORMANCE CHARACTERISTICS AND DESIGN LIMITATIONS BEFORE PLACING A SYSTEM AT A GIVEN SITE. INFORMATION AND COPIES OF ABOVE MANUAL ARE AVAILABLE BY CALLING CUSTOMER SERVICE DEPARTMENT AT (888) 323-6374.
5. WHERE NECESSARY, THE CUSTOMER SHALL SUPPLY AN ADEQUATE TRANSITION FROM THE QUEST 115 SYSTEM TO THE OBJECT BEING SHIELDED.
6. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
7. ANCHOR BOLTS NOT INCLUDED IN MODEL NUMBER. ORDER SEPARATELY.
8. STEEL BACKUP AND CONCRETE PAD SPECIFICALLY DESIGNED TO NEST AROUND 610 [24"] WIDE HAZARDS, INSTALL ACCORDINGLY TO ENSURE PROPER IMPACT PERFORMANCE.

KEY

1 NOSE	5 BACKUP	9 REAR RAIL
2 FRONT ANCHOR	6 BAY 1 PANEL	
3 BAY 1	7 BAY 2-5 PANEL	
4 DIAPHRAGM	8 SHAPER RAIL	

Revision	Date	Rev	By	Chk.	App.
ADD"FOR 24" SYS"TO TITLE BLOCK DESC.	3/11/08	A	TB	KRM	PLK

SERIAL NO.
SALES ORDER
EH PROJECT
NO. OF UNITS

REFERENCES

QUEST SYSTEM ASSEMBLY	TD35024-115
SUPPORT FRAME BAY 1	3562025-0000
DIAPHRAGM ASSY BAY 2-4	3562026-0000
TRIGGER ASSY	3562027-0000
CONCRETE PAD	3562031-0000
ANCHOR ASSY	3562007-0000

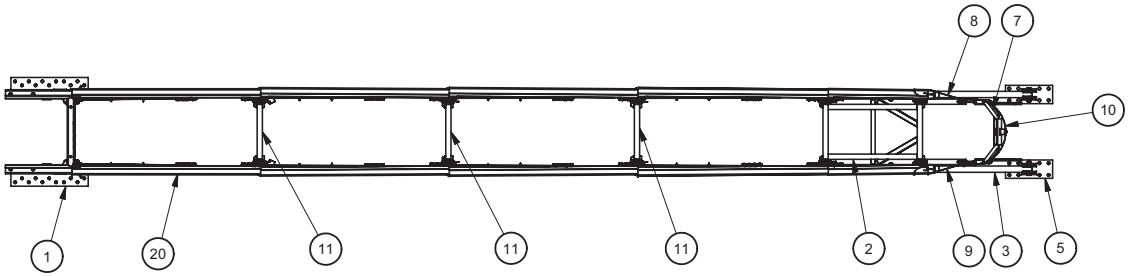
DRAWN:	D. Kohfeld	DATE: 1/22/2007
DESIGNED:		DATE:
CHECKED:	JME	DATE: 3/12/2007
APPROVED:	JFL	DATE: 3/7/2007
FILE:	TD35024-115CU.idw	
NEXT ASSEMBLY:		

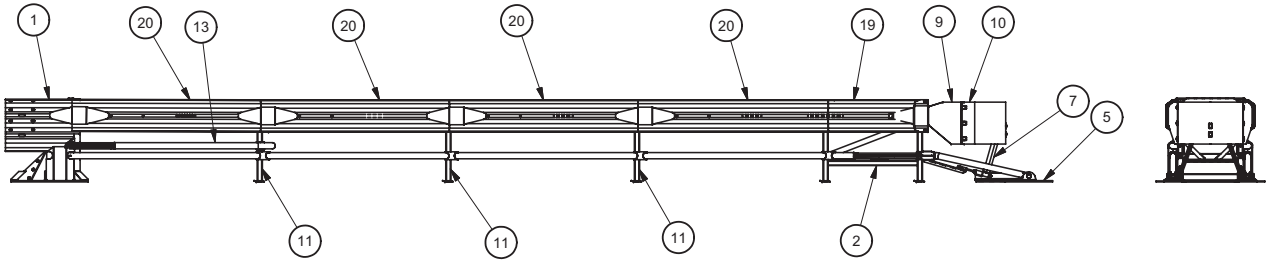
UNIDIRECTIONAL
ASSEMBLY NO. TD35024-115

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® 115 SYSTEM (610)
115 km/h [72 MPH] FOR 24" SYSTEMS

SCALE:	DRAWING:	SHEET:	REV
1=40	TD35024 -115CU	1 of 1	A





PARTS LIST

ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2762020-0000	BACKUP,24,QUEST,G	1
2	3562013-0000	SUPPORT FRAME ASSY,QUEST,DCM	1
3	276206L-0000	SHAPER RAIL,L,QUEST 115,G	1
4	276206R-0000	SHAPER RAIL,R,QUEST 115,G	1
5	2762015-0000	ANCHOR,FRONT,QUEST,G	2
6	2762007-0000	TRIGGER STRAP,QUEST,G	2
7	3562014-0000	TRIGGER ASSY,QUEST DCM	1
8	2762024-0000	NOSE TRANSITION,R,QUEST,G,PT	1
9	2762025-0000	NOSE TRANSITION,L,QUEST,G,PT	1
10	2762026-0000	NOSE,QUEST,G,PT	1
11	3562016-0000	DIAPHRAGM ASSY,QUEST CEN	3
12	2762017-0000	SHAPER,BACKUP,QUEST,G	2
13	2762041-0000	REAR RAIL,QUEST DCM,G	2
14	2762043-0000	STRAP,PEEL,REAR,QUEST CEN	2
15	2762045-0000	STRAP,PEEL,BAY 2,QUEST CEN	2
16	2762046-0000	STRAP,PEEL, BAY 3,QUEST CEN	4
17	2762044-0000	FLT ST, 1/4X2 13/16X10 7/16,W/HOLES,G	2
18	2762047-0000	FLT ST 1/4X4X14,W/SLOTS,G	2
19	2762049-0000	PANEL,BAY 1,QUEST,G	2
20	2762048-0000	PANEL,BAYS,QUEST,DCM,G	8
21	2762050-0000	BRACE,PANEL,QUEST CEN,G	8
22	2706943-0300	SCREW,PN,#6-32X1 1/2,PHIL,S	16
23	2708871-1000	WASHER,BAR,1/8X1 1/4X2,ROUNDED,G	8
24	2708291-0000	WASHER,FLAT,5/8 X 1 3/4, G	6
25	2708039-0300	WASHER,FLAT,#6X5/8X.030,S	32
26	2708161-0000	WASHER,BAR,2X2X1/4,G	2
27	2708022-0100	WASHER,FLAT,3/8 ID X13/16 OD,P,HRD	64
28	2704191-0000	NUT,HX,5/8,G,RAIL	90
29	2704772-0300	NUT,HX,#6-32,S	32
30	2704341-0000	NUT,HX,3/4",GR DH	10
31	2704161-0000	NUT,HX,1,G	2
32	2704031-0000	NUT,HX,3/8,G	32
33	2704351-0000	NUT,HX,5/8,G,GR DH	6
34	2701811-0000	BOLT,RAIL,5/8X1 1/4,G	66
35	2699341-0000	BOLT,RAIL,5/8X2,G	24
36	2700011-0000	BOLT,HX,3/4X2,G5,G	4
37	2701014-0000	BOLT,HX,1X5,G8,G	2
38	2700541-0000	BOLT,HX,1X3 1/2,G5,G	2
39	2699081-0500	BOLT,HX,5/8X1 1/2,G5,G	6
40	2699251-0000	BOLT,HX,3/4X3 1/2,G5,G	4
41	2701221-0000	BOLT,HX,3/8X1,G2,G	32
42	2700651-0000	BOLT,HX,3/4X4,G5,G,ALL THRD	2
43	2735711-0000	DECAL,CAUTION,ALL PRODUCTS	1
44	2735712-3500	DECAL,PRODUCT,QUEST	1
45	2705121-0000	RIVET,ST,SD68BS,3/16X1/2,DH	1
46	2750039-0000	INSTALL INSTRUCTIONS,QUEST 115	1
47	2735831-3500	MATERIAL SAFETY INFORMATION NOTICE	1

ASSEMBLY NO. TD35024-115

Revision	Date	Rev	By	Chk.	App.
ADDED "115 km/h..." TO TITLE BLOCK DESC.	3/10/08	A	TB	KRM	PLK

DRAWN: D. Kohfeld	DATE: 1/22/2007		
DESIGNED:	DATE:		
CHECKED: JME	DATE: 3/13/2007		
APPROVED: JFL	DATE: 3/13/2007		
FILE: TD35024-115.idw			
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® 115 SYSTEM (610)

115 km/h [72 MPH] FOR 24" SYSTEMS

SCALE:	DRAWING:	SHEET:	REV
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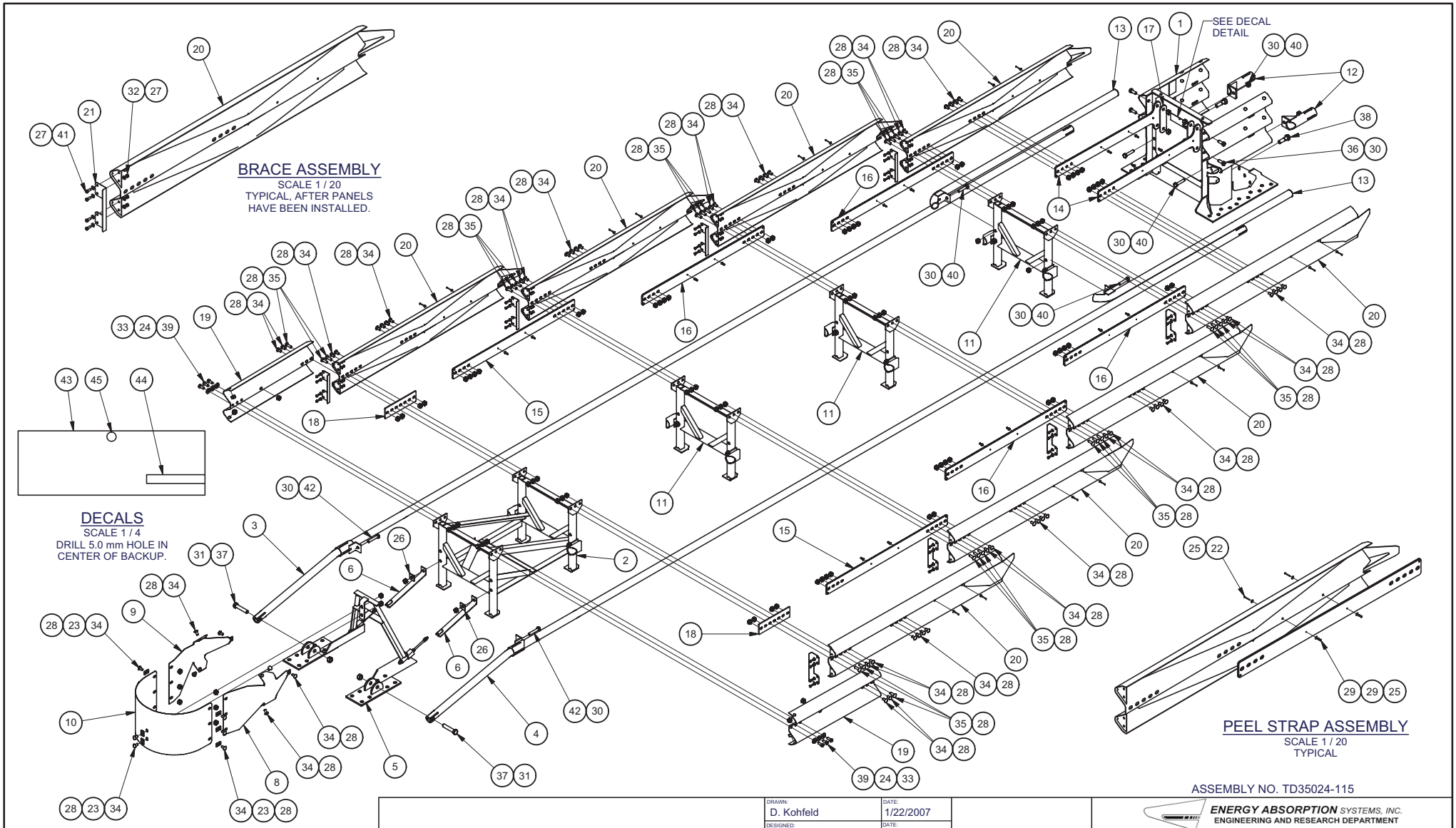


ASSEMBLY NO. TD35024-115

Revision	Date	Rev	By	Chk.	App.
ADDED "115 km/h..." TO TITLE BLOCK DESC.	3/10/08	A	TB	KRM	PLK

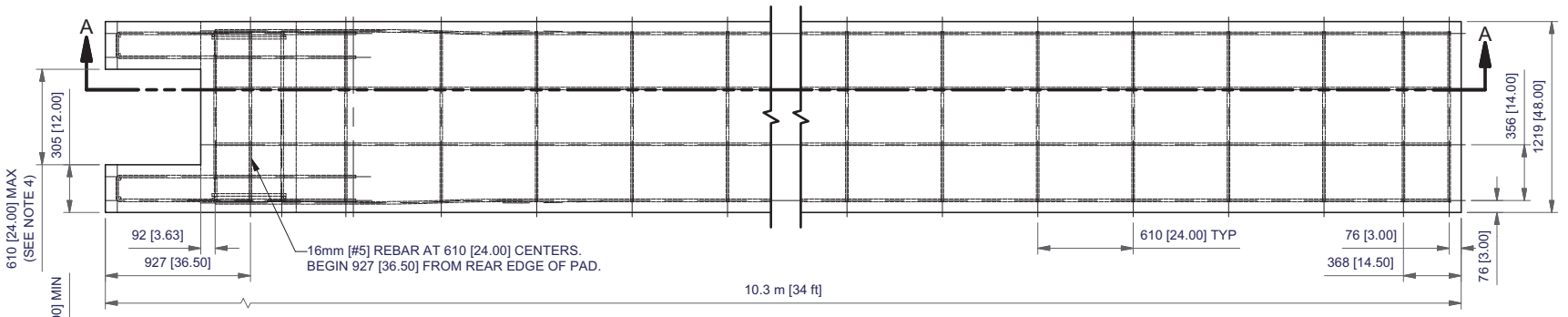
DRAWN: D. Kohfeld	DATE: 1/22/2007	
DESIGNED:	DATE:	
CHECKED: JME	DATE: 3/13/2007	
APPROVED: JFL	DATE: 3/13/2007	
FILE: TD35024-115.idw		
NEXT ASSEMBLY:		

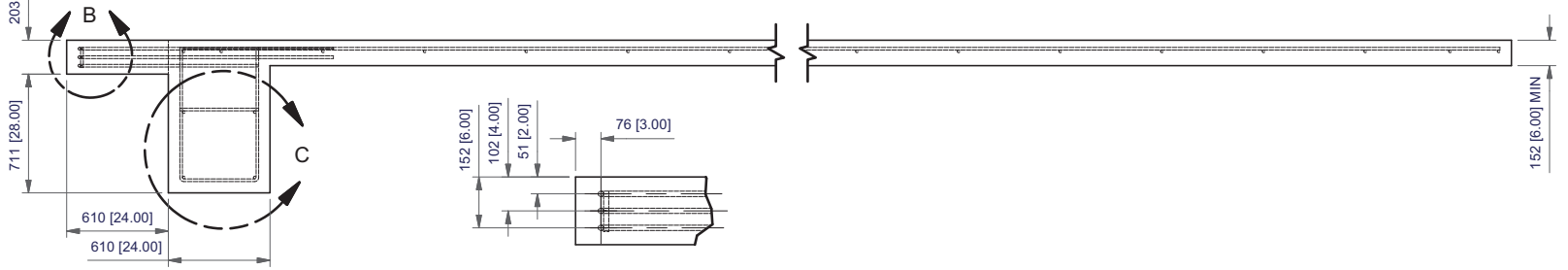
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® 115 SYSTEM (610)

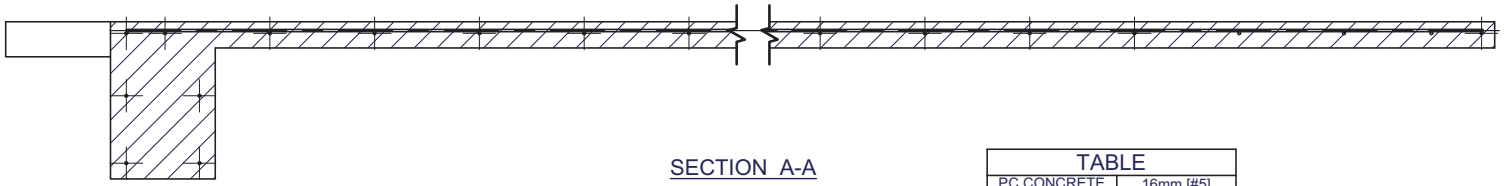
115 km/h [72 MPH] FOR 24" SYSTEMS

SCALE:	DRAWING:	SHEET:	REV
1=30	TD35024 -115	2 of 2	A



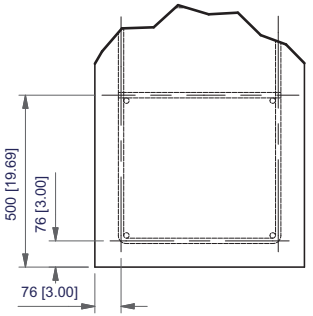


DETAIL B
SCALE 1 / 15



SECTION A-A

TABLE	
PC CONCRETE 28 MPa [4000 PSI]	16mm [#5] REBAR
2.45 m³ [3.20 yd³]	84.9 m [278' 7"]



DETAIL C
SCALE 1 / 15

NOTES:
1. CROSS SLOPE OF PAD SHALL NOT EXCEED 8% AND NOT VARY MORE THAN 2% FROM FRONT TO BACK.
2. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
3. SEE SHEET 2 FOR REBAR DETAIL.
4. THE CONCRETE PAD SHOWN IS DESIGNED TO NEST AROUND HAZARDS 610 [24.00] IN WIDTH OR LESS. MAKE PREPARATIONS TO POUR THE REAR PORTION OF THE PAD AROUND THE HAZARD.

Revision	Date	Rev	By	Chk.	App.

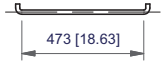
DRAWN: D. Kohfeld	DATE: 2/28/2008		
DESIGNED:	DATE:		
CHECKED: S. TRAGESER	DATE: 3/24/2008		
APPROVED: B. ECKERT	DATE: 3/24/2008		
FILE: 3562031-0000.idw			
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

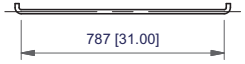
QUEST®115 SYSTEM
CONCRETE PAD FOR 24" [610 mm] SYSTEMS

SCALE:	DRAWING:	SHEET:	REV
1=30	3562031-0000	1 of 2	

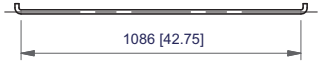
(4) REBAR A



(2) REBAR B



(1) REBAR C



(21) REBAR D

(2) REBAR E

(2) REBAR F

(4) REBAR G

(4) REBAR H

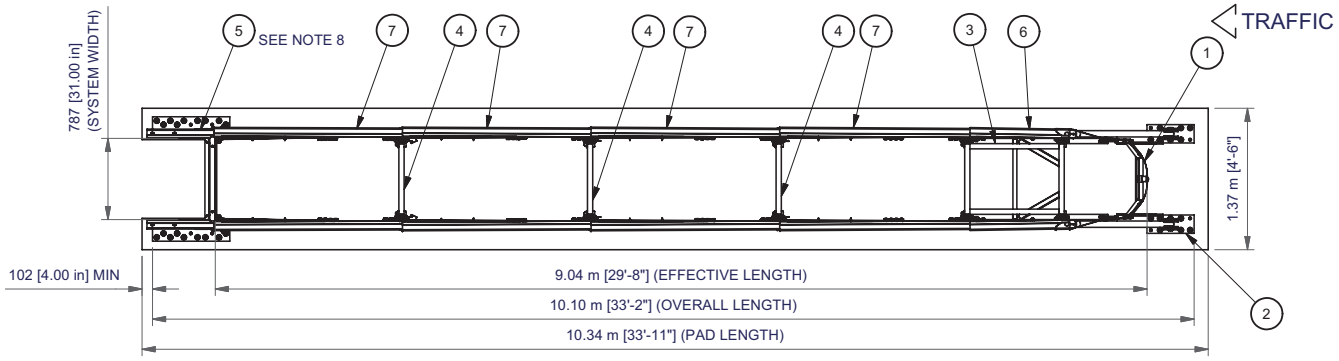
Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld	DATE: 2/28/2008	
DESIGNED:	DATE:	
CHECKED: S. TRAGESER	DATE: 3/24/2008	
APPROVED: B. ECKERT	DATE: 3/24/2008	
FILE: 3562031-0000.idw		
NEXT ASSEMBLY:		

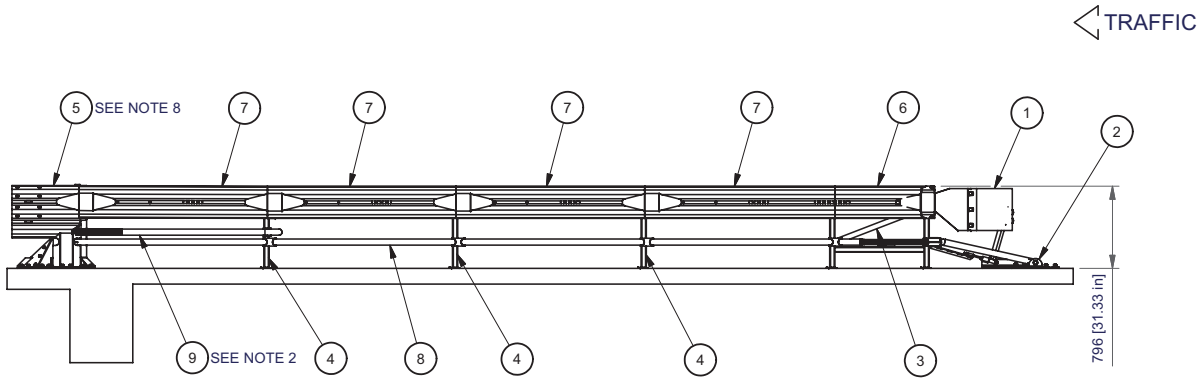
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST®115 SYSTEM
CONCRETE PAD FOR 24" [610 mm] SYSTEMS

SCALE:	DRAWING:	SHEET:	REV
1=20	3562031-0000	2 of 2	



PLAN



ELEVATION
LEFT SIDE

NOTES:
1. IN COMPLIANCE WITH THE AASHTO 2002 ROADSIDE DESIGN GUIDE, MANUFACTURER RECOMMENDS REMOVAL OF ALL CURBS AND ISLANDS TO ENSURE PROPER IMPACT PERFORMANCE.
2. PROVISION SHALL BE MADE FOR REAR RAILS TO SLIDE REARWARD UPON IMPACT 1.82m [6' 0"] MIN.
3 CAUTION: THE QUEST 115 SYSTEM MUST BE CORRECTLY ANCHORED FOR PROPER IMPACT PERFORMANCE. ATTACH SYSTEM USING ONE OF THE FOLLOWING:
   A. (QTY. 30) 178 [7.00] STUDS MAY BE USED TO ATTACH SYSTEM TO 28 MPa [4000 PSI] MIN P.C. CONCRETE PER THE FOLLOWING MINIMUMS.**
      1) 152 [6.00] REINFORCED PAD.
      2) 203 [8.00] NON-REINFORCED ROADWAY, MEASURING AT LEAST 3.66m [12' 0"] WIDE BY 15.24m [50' 0"] LONG.
      3) 180 [7.00] REINFORCED DECK STRUCTURE.
   B. (QTY 38) 457 [18.00] THREADED RODS MAY BE USED TO INSTALL SYSTEM ON ASPHALT.**
      ** REFER TO THE REFERENCE DRAWINGS & INSTALLATION INSTRUCTIONS FOR FOUNDATION SPECIFICATIONS.
4. SEE THE "QUEST SYSTEM PRODUCT MANUAL" FOR A DESCRIPTION OF ITS IMPACT PERFORMANCE CHARACTERISTICS AND DESIGN LIMITATIONS BEFORE PLACING A SYSTEM AT A GIVEN SITE. INFORMATION AND COPIES OF ABOVE MANUAL ARE AVAILABLE BY CALLING CUSTOMER SERVICE DEPARTMENT AT (888) 323-6374.
5. WHERE NECESSARY, THE CUSTOMER SHALL SUPPLY AN ADEQUATE TRANSITION FROM THE QUEST 115 SYSTEM TO THE OBJECT BEING SHIELDED.
6. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
7. ANCHOR BOLTS NOT INCLUDED IN MODEL NUMBER. ORDER SEPARATELY.
8. STEEL BACKUP AND CONCRETE PAD SPECIFICALLY DESIGNED TO NEST AROUND 760 [30"] WIDE HAZARDS, INSTALL ACCORDINGLY TO ENSURE PROPER IMPACT PERFORMANCE.

KEY

1 NOSE	5 BACKUP	9 REAR RAIL
2 FRONT ANCHOR	6 BAY 1 PANEL	
3 BAY 1	7 BAY 2-5 PANEL	
4 DIAPHRAGM	8 SHAPER RAIL	

Revision	Date	Rev	By	Chk.	App.

REFERENCES

	QUEST SYSTEM ASSEMBLY	TD35030-115
SERIAL NO.		
SALES ORDER	SUPPORT FRAME BAY 1	3562025-0000
EH PROJECT	DIAPHRAGM ASSY BAY 2-4	3562026-0000
NO. OF UNITS	TRIGGER ASSY	3562027-0000
	CONCRETE PAD	3562037-0000
	ANCHOR ASSY	3562007-0000

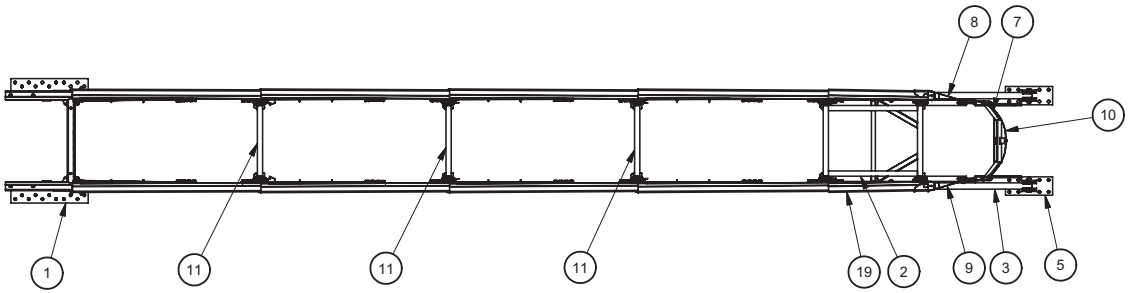
DRAWN:	D. Kohfeld	DATE: 1/22/2007
DESIGNED:		DATE:
CHECKED:	S. Trageser	DATE: 3/5/2008
APPROVED:	R. Brougher	DATE: 3/7/2008
FILE:	TD35030-115CU.idw	
NEXT ASSEMBLY:		

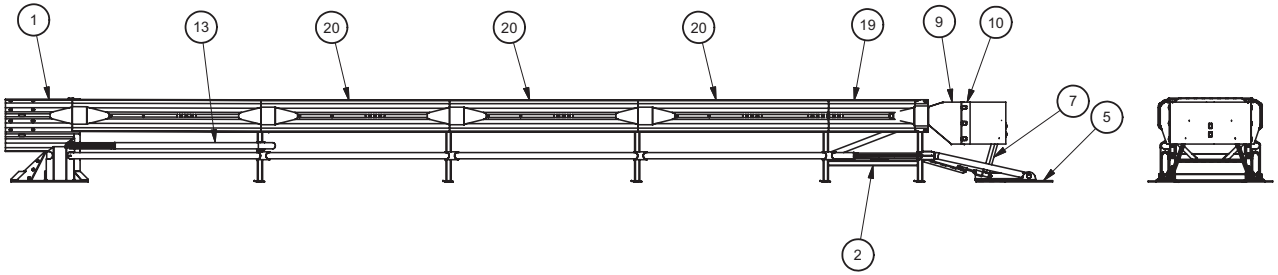
UNIDIRECTIONAL
ASSEMBLY NO. TD35030-115

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® 115 SYSTEM (760)
115 km/h [72 MPH]

SCALE:	DRAWING:	SHEET:	REV
1=40	TD35030-115CU	1 of 1	





PARTS LIST

ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2762067-0000	BACKUP,30,QUEST,G	1
2	3562025-0000	SUPPORT FRAME ASSY,30,QUEST	1
3	276206L-0000	SHAPER RAIL,L,QUEST 115,G	1
4	276206R-0000	SHAPER RAIL,R,QUEST 115,G	1
5	2762015-0000	ANCHOR,FRONT,QUEST,G	2
6	2762007-0000	TRIGGER STRAP,QUEST,G	2
7	3562027-0000	TRIGGER ASSY,30,QUEST	1
8	2762024-0000	NOSE TRANSITION,R,QUEST,G,PT	1
9	2762025-0000	NOSE TRANSITION,L,QUEST,G,PT	1
10	2762071-0000	NOSE,30,QUEST,G,PT	1
11	3562026-0000	DIAPHRAGM ASSY,30,QUEST	3
12	2762017-0000	SHAPER,BACKUP,QUEST,G	2
13	2762041-0000	REAR RAIL,QUEST DCM,G	2
14	2762043-0000	STRAP,PEEL,REAR,QUEST CEN	2
15	2762045-0000	STRAP,PEEL,BAY 2,QUEST CEN	2
16	2762046-0000	STRAP,PEEL, BAY 3,QUEST CEN	4
17	2762044-0000	FLT ST, 1/4X2 13/16X10 7/16,W/HOLES,G	2
18	2762047-0000	FLT ST 1/4X4X14,W/SLOTS,G	2
19	2762049-0000	PANEL,BAY 1,QUEST,G	2
20	2762048-0000	PANEL,BAYS,QUEST,DCM,G	8
21	2762050-0000	BRACE,PANEL,QUEST CEN,G	8
22	2706943-0300	SCREW,PN,#6-32X1 1/2,PHIL,S	16
23	2708871-1000	WASHER,BAR,1/8X1 1/4X2,ROUNDED,G	8
24	2708291-0000	WASHER,FLAT,5/8 X 1 3/4, G	6
25	2708039-0300	WASHER,FLAT,#6X5/8X.030,S	32
26	2708161-0000	WASHER,BAR,2X2X1/4,G	2
27	2708022-0100	WASHER,FLAT,3/8 ID X13/16 OD,P,HRD	64
28	2704191-0000	NUT,HX,5/8,G,RAIL	90
29	2704772-0300	NUT,HX,#6-32,S	32
30	2704341-0000	NUT,HX,3/4",GR DH	10
31	2704161-0000	NUT,HX,1,G	2
32	2704031-0000	NUT,HX,3/8,G	32
33	2704351-0000	NUT,HX,5/8,G,GR DH	6
34	2701811-0000	BOLT,RAIL,5/8X1 1/4,G	66
35	2699341-0000	BOLT,RAIL,5/8X2,G	24
36	2700011-0000	BOLT,HX,3/4X2,G5,G	4
37	2701014-0000	BOLT,HX,1X5,G8,G	2
38	2700541-0000	BOLT,HX,1X3 1/2,G5,G	2
39	2699081-0500	BOLT,HX,5/8X1 1/2,G5,G	6
40	2699251-0000	BOLT,HX,3/4X3 1/2,G5,G	4
41	2701221-0000	BOLT,HX,3/8X1,G2,G	32
42	2700651-0000	BOLT,HX,3/4X4,G5,G,ALL THRD	2
43	2735711-0000	DECAL,CAUTION,ALL PRODUCTS	1
44	2735712-3500	DECAL,PRODUCT,QUEST	1
45	2705121-0000	RIVET,ST,SD68BS,3/16X1/2,DH	1
46	2750039-0000	INSTALL INSTRUCTIONS,QUEST 115	1
47	2735831-3500	MATERIAL SAFETY INFORMATION NOTICE	1

ASSEMBLY NO. TD35030-115

Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld	DATE: 1/22/2007	
DESIGNED:	DATE:	
CHECKED: S. Trageser	DATE: 3/5/2008	
APPROVED: R. Brougher	DATE: 3/7/2008	
FILE: TD35030-115.idw		
NEXT ASSEMBLY:		

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® 115 SYSTEM (760)

SCALE:	DRAWING:	SHEET:	REV
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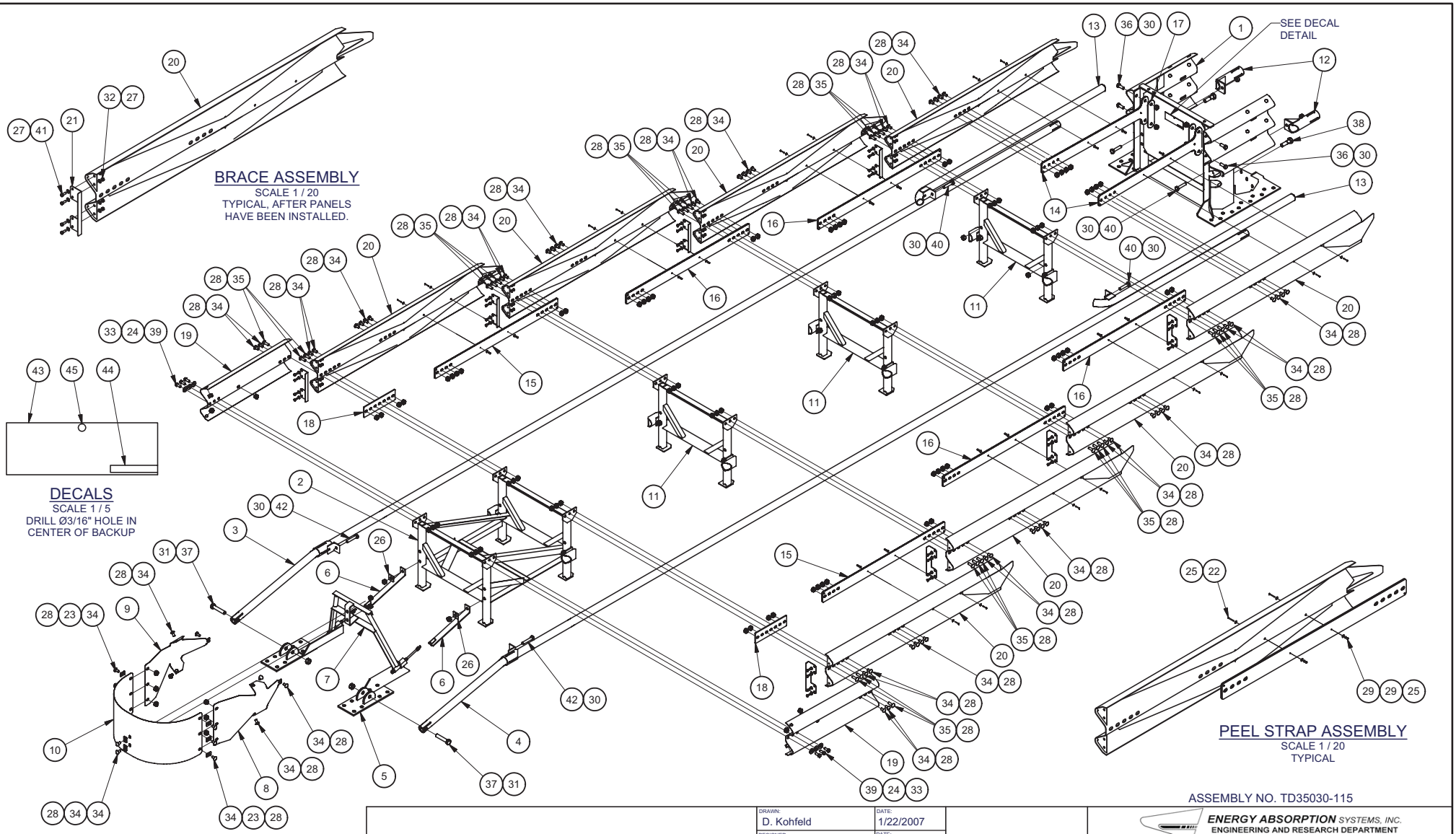

BRACE ASSEMBLY
SCALE 1 / 20
TYPICAL, AFTER PANELS HAVE BEEN INSTALLED.

DECALS
SCALE 1 / 5
DRILL Ø3/16" HOLE IN CENTER OF BACKUP

PEEL STRAP ASSEMBLY
SCALE 1 / 20
TYPICAL

ASSEMBLY NO. TD35030-115

Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld	DATE: 1/22/2007		
DESIGNED:	DATE:		
CHECKED: S. Trageser	DATE: 3/5/2008		
APPROVED: R. Brougher	DATE: 3/7/2008		
FILE: TD35030-115.idw			
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® 115 SYSTEM (760)

SCALE:	DRAWING:	SHEET:	REV
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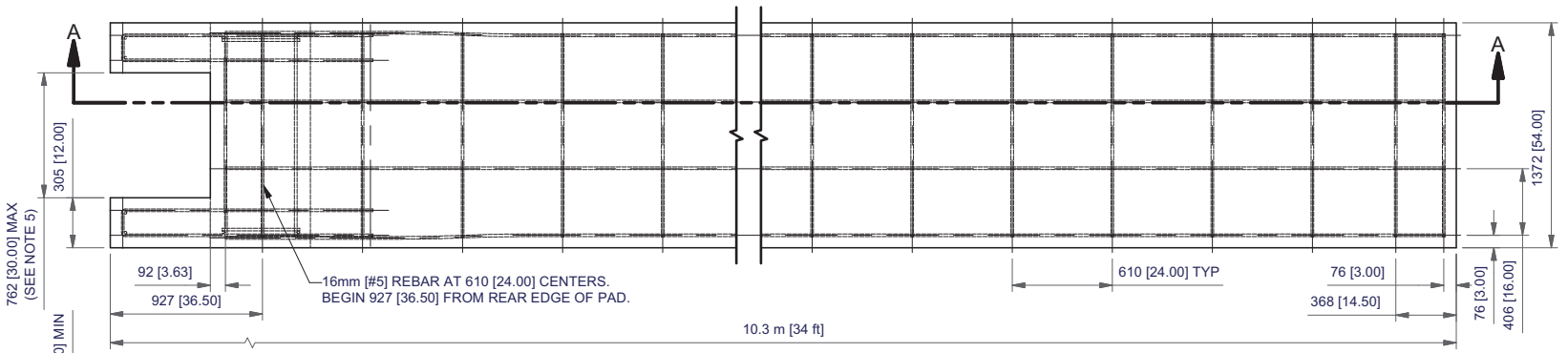
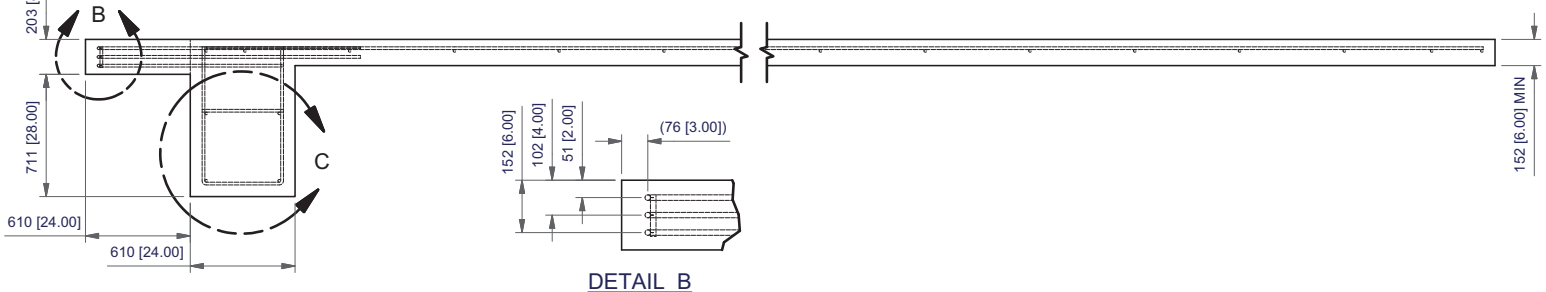
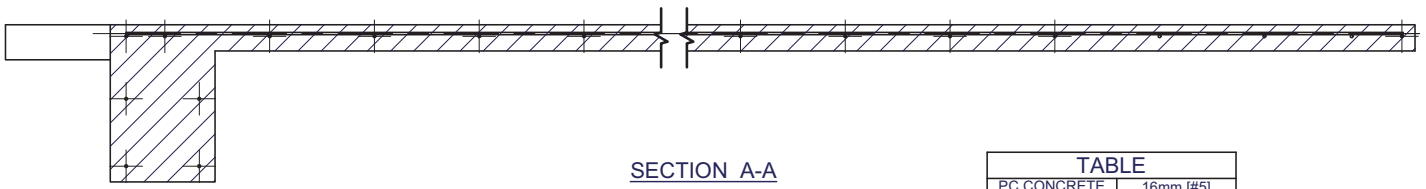


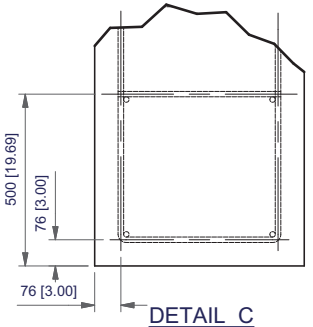


DETAIL B
SCALE 1 / 15



SECTION A-A

TABLE	
PC CONCRETE 28 MPa [4000 PSI]	16mm [#5] REBAR
2.75 m³ [3.59 yd³]	84.2 m [276' 3"]



DETAIL C
SCALE 1 / 15

NOTES:
1. CROSS SLOPE OF PAD SHALL NOT EXCEED 8% AND NOT VARY MORE THAN 2% FROM FRONT TO BACK.
2. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
3. SEE SHEET 2 FOR REBAR DETAIL.
4. THE CONCRETE PAD SHOWN IS DESIGNED TO NEST AROUND HAZARDS 762 [30.00] IN WIDTH OR LESS. MAKE PREPARATIONS TO POUR THE REAR PORTION OF THE PAD AROUND THE HAZARD.

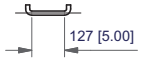
Revision	Date	Rev	By	Chk.	App.
CORRECTED TITLE BLOCK	4/23/08	A	RJV	STT	RCB

DRAWN: D. Kohfeld	DATE: 8/27/2007		
DESIGNED:	DATE:		
CHECKED:	DATE:		
APPROVED:	DATE:		
FILE: 3562037-0000.idw			
NEXT ASSEMBLY:			

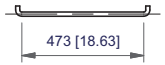
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST 115 SYSTEM
CONCRETE PAD
FOR 30" [760mm] SYSTEMS

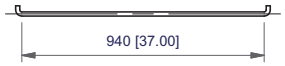
SCALE:	DRAWING:	SHEET:	REV
1=30	3562037-0000	1 of 2	A



(4) REBAR A



(2) REBAR B



(1) REBAR C

(21) REBAR D

(2) REBAR E

(2) REBAR F

(4) REBAR G

(4) REBAR H

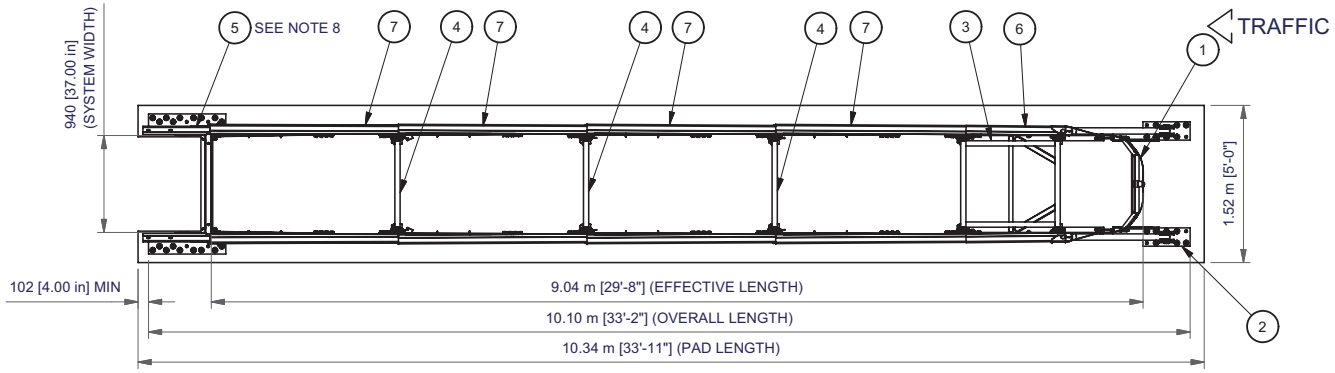
Revision	Date	Rev	By	Chk.	App.
SEE SHEET 1	4/23/08	A	RJV	STT	RCB

DRAWN: D. Kohfeld	DATE: 8/27/2007
DESIGNED:	DATE:
CHECKED:	DATE:
APPROVED:	DATE:
FILE: 3562037-0000.idw	
NEXT ASSEMBLY:	

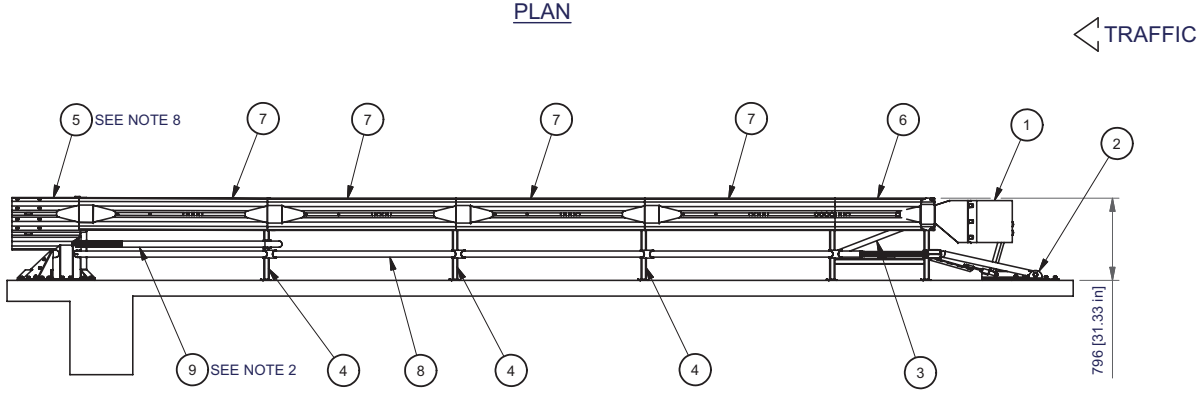
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST 115 SYSTEM
CONCRETE PAD
FOR 30" [760mm] SYSTEMS

SCALE:	DRAWING:	SHEET:	REV
1=25	3562037-0000	2 of 2	A



PLAN



ELEVATION
LEFT SIDE

NOTES:
1. IN COMPLIANCE WITH THE AASHTO 2002 ROADSIDE DESIGN GUIDE, MANUFACTURER RECOMMENDS REMOVAL OF ALL CURBS AND ISLANDS TO ENSURE PROPER IMPACT PERFORMANCE.
2. PROVISION SHALL BE MADE FOR REAR RAILS TO SLIDE REARWARD UPON IMPACT 1.82m [6' 0"] MIN.
3. CAUTION: THE QUEST 115 SYSTEM MUST BE CORRECTLY ANCHORED FOR PROPER IMPACT PERFORMANCE. ATTACH SYSTEM USING ONE OF THE FOLLOWING:
   A. (QTY. 30) 178 [7.00] STUDS MAY BE USED TO ATTACH SYSTEM TO 28 MPa [4000 PSI] MIN P.C. CONCRETE PER THE FOLLOWING MINIMUMS.**
      1) 152 [6.00] REINFORCED PAD.
      2) 203 [8.00] NON-REINFORCED ROADWAY, MEASURING AT LEAST 3.66m [12' 0"] WIDE BY 15.24m [50' 0"] LONG.
      3) 180 [7.00] REINFORCED DECK STRUCTURE.
   B. (QTY 38) 457 [18.00] THREADED RODS MAY BE USED TO INSTALL SYSTEM ON ASPHALT.**
   ** REFER TO THE REFERENCE DRAWINGS & INSTALLATION INSTRUCTIONS FOR FOUNDATION SPECIFICATIONS.
4. SEE THE "QUEST SYSTEM PRODUCT MANUAL" FOR A DESCRIPTION OF ITS IMPACT PERFORMANCE CHARACTERISTICS AND DESIGN LIMITATIONS BEFORE PLACING A SYSTEM AT A GIVEN SITE. INFORMATION AND COPIES OF ABOVE MANUAL ARE AVAILABLE BY CALLING CUSTOMER SERVICE DEPARTMENT AT (888) 323-6374.
5. WHERE NECESSARY, THE CUSTOMER SHALL SUPPLY AN ADEQUATE TRANSITION FROM THE QUEST 115 SYSTEM TO THE OBJECT BEING SHIELDED.
6. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
7. ANCHOR BOLTS NOT INCLUDED IN MODEL NUMBER. ORDER SEPARATELY.
8. STEEL BACKUP AND CONCRETE PAD SPECIFICALLY DESIGNED TO NEST AROUND 915 [36"] WIDE HAZARDS, INSTALL ACCORDINGLY TO ENSURE PROPER IMPACT PERFORMANCE.

KEY

1 NOSE	5 BACKUP	9 REAR RAIL
2 FRONT ANCHOR	6 BAY 1 PANEL	
3 BAY 1	7 BAY 2-5 PANEL	
4 DIAPHRAGM	8 SHAPER RAIL	

Revision	Date	Rev	By	Chk.	App.

REFERENCES

	QUEST SYSTEM ASSEMBLY	TD35036-115
SERIAL NO.		
SALES ORDER	SUPPORT FRAME BAY 1	3562019-0000
EH PROJECT	DIAPHRAGM ASSY BAY 2-4	3562022-0000
NO. OF UNITS	TRIGGER ASSY	3562023-0000
	CONCRETE PAD	3562038-0000
	ANCHOR ASSY	3562007-0000

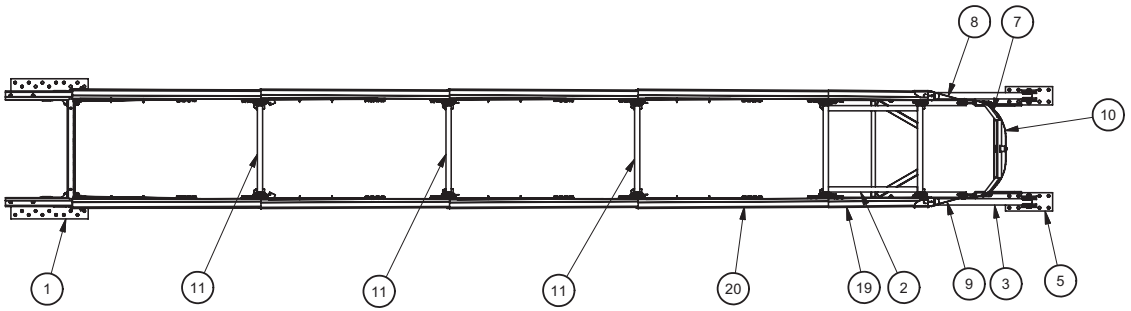
DRAWN:	D. Kohfeld	DATE:	8/30/2007
DESIGNED:		DATE:	
CHECKED:	S. Trageser	DATE:	3/7/2008
APPROVED:	R. Brougher	DATE:	3/7/2008
FILE:	TD35036-115CU.idw		
NEXT ASSEMBLY:			

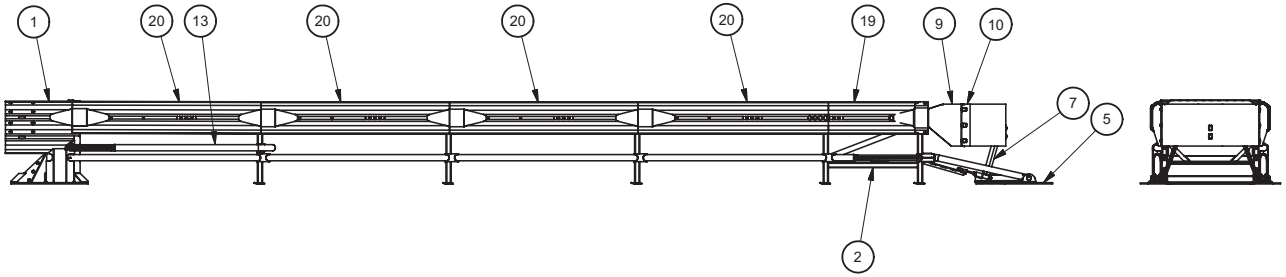
UNIDIRECTIONAL
ASSEMBLY NO. TD35036-115

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® 115 SYSTEM (915)
115 km/h [72 MPH]

SCALE:	DRAWING:	SHEET:	REV
1=40	TD35036-115CU	1 of 1	





PARTS LIST

ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2762063-0000	BACKUP,36,QUEST,G	1
2	3562019-0000	SUPPORT FRAME ASSY,36,QUEST	1
3	276206L-0000	SHAPER RAIL,L,QUEST 115,G	1
4	276206R-0000	SHAPER RAIL,R,QUEST 115,G	1
5	2762015-0000	ANCHOR,FRONT,QUEST,G	2
6	2762007-0000	TRIGGER STRAP,QUEST,G	2
7	3562023-0000	TRIGGER ASSY,36,QUEST	1
8	2762024-0000	NOSE TRANSITION,R,QUEST,G,PT	1
9	2762025-0000	NOSE TRANSITION,L,QUEST,G,PT	1
10	2762062-0000	NOSE,36,QUEST,G,PT	1
11	3562022-0000	DIAPHRAGM ASSY,36,QUEST	3
12	2762017-0000	SHAPER,BACKUP,QUEST,G	2
13	2762041-0000	REAR RAIL,QUEST DCM,G	2
14	2762043-0000	STRAP,PEEL,REAR,QUEST CEN	2
15	2762045-0000	STRAP,PEEL,BAY 2,QUEST CEN	2
16	2762046-0000	STRAP,PEEL, BAY 3,QUEST CEN	4
17	2762044-0000	FLT ST, 1/4X2 13/16X10 7/16,W/HOLES,G	2
18	2762047-0000	FLT ST 1/4X4X14,W/SLOTS,G	2
19	2762049-0000	PANEL,BAY 1,QUEST,G	2
20	2762048-0000	PANEL,BAYS,QUEST,DCM,G	8
21	2762050-0000	BRACE,PANEL,QUEST CEN,G	8
22	2706943-0300	SCREW,PN,#6-32X1 1/2,PHIL,S	16
23	2708871-1000	WASHER,BAR,1/8X1 1/4X2,ROUNDED,G	8
24	2708291-0000	WASHER,FLAT,5/8 X 1 3/4, G	6
25	2708039-0300	WASHER,FLAT,#6X5/8X.030,S	32
26	2708161-0000	WASHER,BAR,2X2X1/4,G	2
27	2708022-0100	WASHER,FLAT,3/8 ID X13/16 OD,P,HRD	64
28	2704191-0000	NUT,HX,5/8,G,RAIL	90
29	2704772-0300	NUT,HX,#6-32,S	32
30	2704341-0000	NUT,HX,3/4",GR DH	10
31	2704161-0000	NUT,HX,1,G	2
32	2704031-0000	NUT,HX,3/8,G	32
33	2704351-0000	NUT,HX,5/8,G,GR DH	6
34	2701811-0000	BOLT,RAIL,5/8X1 1/4,G	66
35	2699341-0000	BOLT,RAIL,5/8X2,G	24
36	2700011-0000	BOLT,HX,3/4X2,G5,G	4
37	2701014-0000	BOLT,HX,1X5,G8,G	2
38	2700541-0000	BOLT,HX,1X3 1/2,G5,G	2
39	2699081-0500	BOLT,HX,5/8X1 1/2,G5,G	6
40	2699251-0000	BOLT,HX,3/4X3 1/2,G5,G	4
41	2701221-0000	BOLT,HX,3/8X1,G2,G	32
42	2700651-0000	BOLT,HX,3/4X4,G5,G,ALL THRD	2
43	2735711-0000	DECAL,CAUTION,ALL PRODUCTS	1
44	2735712-3500	DECAL,PRODUCT,QUEST	1
45	2705121-0000	RIVET,ST,SD68BS,3/16X1/2,DH	1
46	2750039-0000	INSTALL INSTRUCTIONS,QUEST 115	1
47	2735831-3500	MATERIAL SAFETY INFORMATION NOTICE	1

ASSEMBLY NO. TD35036-115

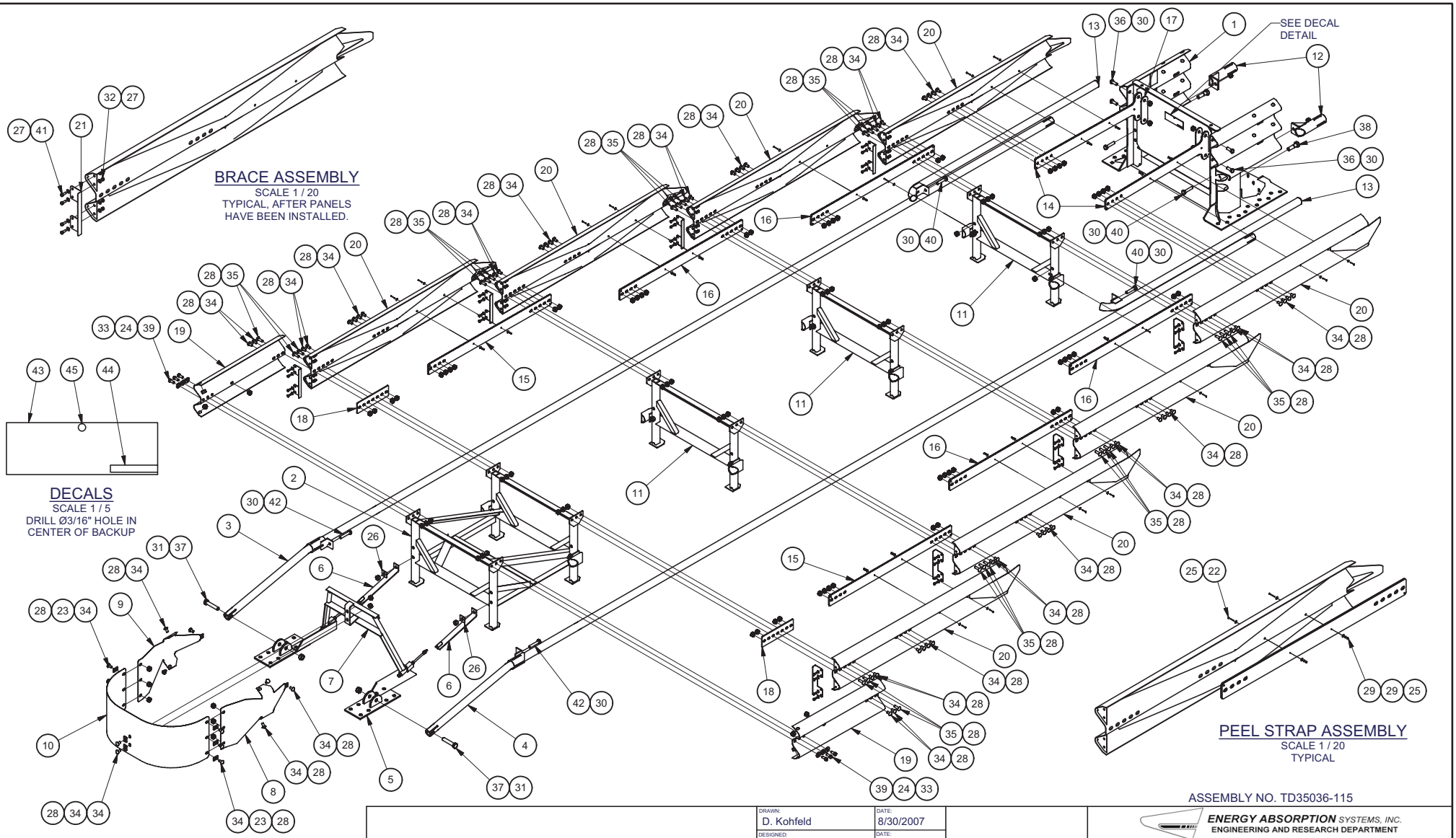
Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld — DATE: 8/30/2007
DESIGNED: — DATE:
CHECKED: S. Trageser — DATE: 3/5/2008
APPROVED: R. Brougher — DATE: 3/7/2008
FILE: TD35036-115.idw
NEXT ASSEMBLY:

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® 115 SYSTEM (915)

SCALE: 1=50 | DRAWING: TD35036-115 | SHEET: 1 of 2 | REV



ASSEMBLY NO. TD35036-115

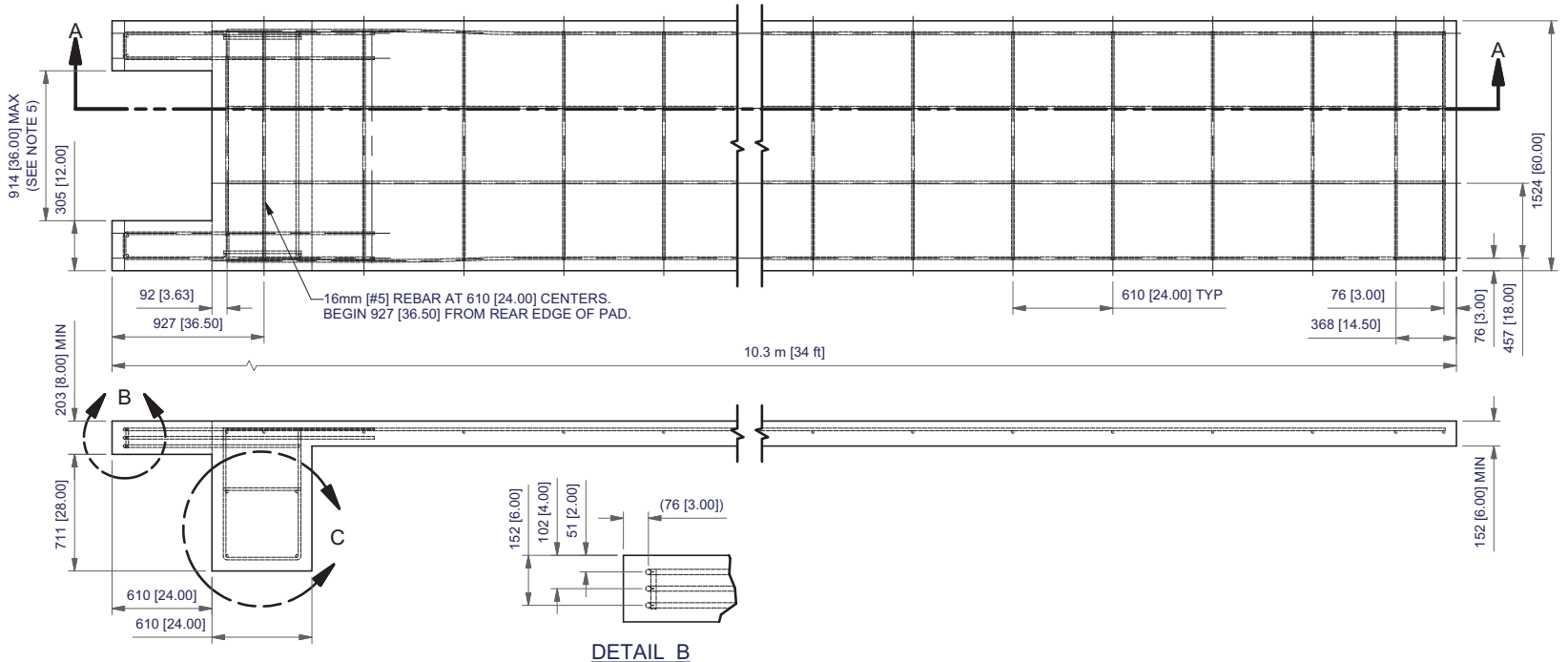
Revision	Date	Rev	By	Chk.	App.

DRAWN: D. Kohfeld	DATE: 8/30/2007	
DESIGNED:	DATE:	
CHECKED: S. Trageser	DATE: 3/5/2008	
APPROVED: R. Brougher	DATE: 3/7/2008	
FILE: TD35036-115.idw		
NEXT ASSEMBLY:		

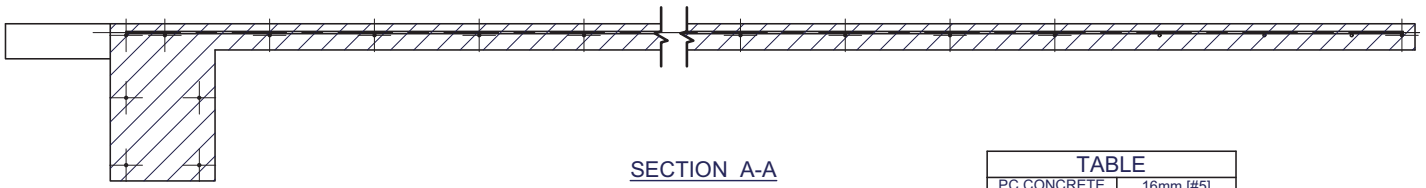
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST® 115 SYSTEM (915)

SCALE:	DRAWING:	SHEET:	REV
1=30	TD35036-115	2 of 2	

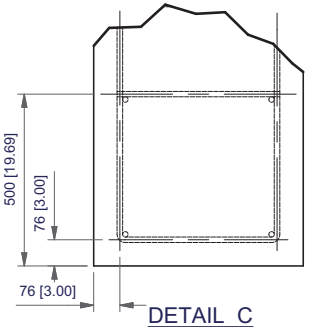


DETAIL B
SCALE 1 / 15



SECTION A-A

TABLE	
PC CONCRETE 28 MPa [4000 PSI]	16mm [#5] REBAR
3.04 m³ [3.98 yd³]	87.4 m [286' 9"]



DETAIL C
SCALE 1 / 15

NOTES:
1. CROSS SLOPE OF PAD SHALL NOT EXCEED 8% AND NOT VARY MORE THAN 2% FROM FRONT TO BACK.
2. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
3. SEE SHEET 2 FOR REBAR DETAIL.
4. THE CONCRETE PAD SHOWN IS DESIGNED TO NEST AROUND HAZARDS 915 [36.00] IN WIDTH OR LESS. MAKE PREPARATIONS TO POUR THE REAR PORTION OF THE PAD AROUND THE HAZARD.

Revision	Date	Rev	By	Chk.	App.

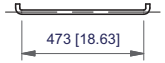
DRAWN:	D. Kohfeld	DATE:	8/30/2007
DESIGNED:		DATE:	
CHECKED:	S. Trageser	DATE:	3/5/2008
APPROVED:	R. Brougher	DATE:	3/7/2008
FILE:	3562038-0000.idw		
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST 115 SYSTEM (915) CONCRETE PAD

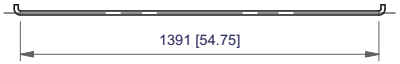
SCALE:	DRAWING:	SHEET:	REV
1=30	3562038-0000	1 of 2	

(4) REBAR A



(2) REBAR B

(1) REBAR C



(21) REBAR D

(2) REBAR E

(2) REBAR F

(4) REBAR G

(4) REBAR H

Revision	Date	Rev	By	Chk.	App.

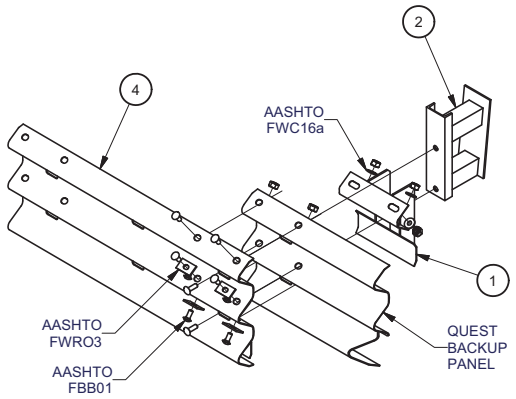
DRAWN: D. Kohfeld	DATE: 8/30/2007	
DESIGNED:	DATE:	
CHECKED: S. Trageser	DATE: 3/5/2008	
APPROVED: R. Brougher	DATE: 3/7/2008	
FILE: 3562038-0000.idw		
NEXT ASSEMBLY:		

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

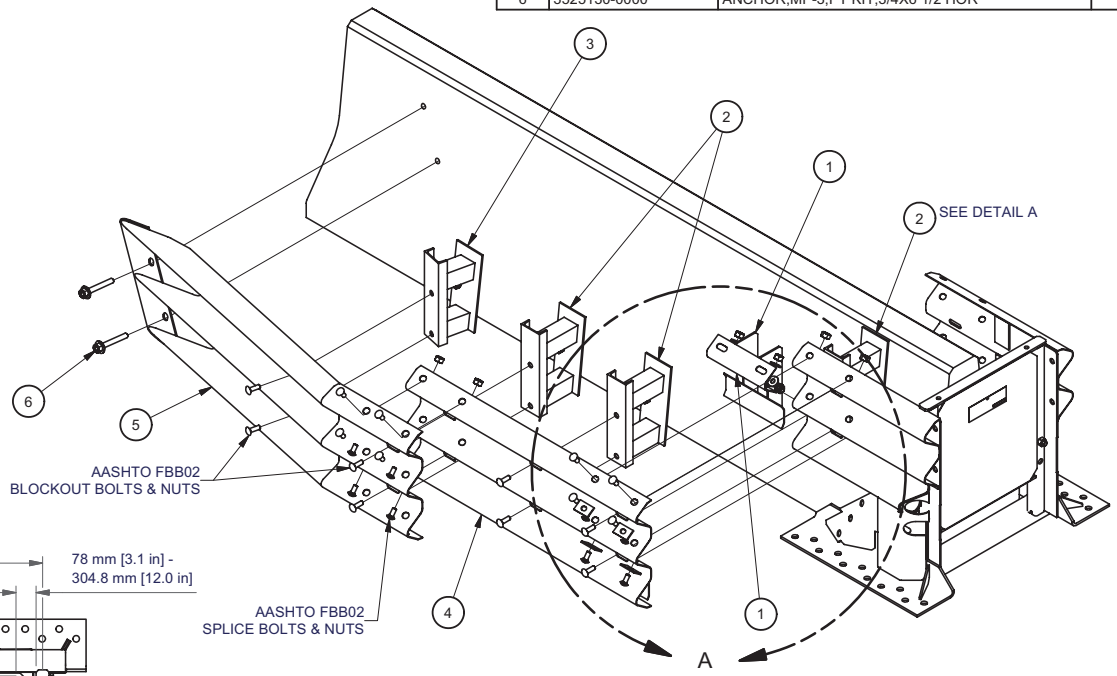
QUEST 115 SYSTEM (915)
CONCRETE PAD

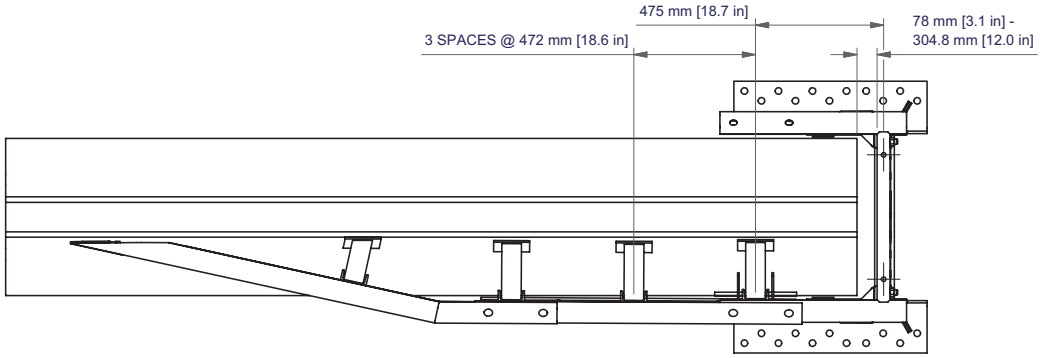
SCALE:	DRAWING:	SHEET:	REV
1=25	3562038-0000	2 of 2	

PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2762032-0000	BRACE,EXTENSION,TRANS,QUEST	1
2	2762004-0000	BRACKET,TRANS SUPPORT,9,QUEST,G	3
3	2762005-0000	BRACKET,TRANS SUP,5,ANG,L,QUEST,G	1
4	2762006-0000	PANEL,EXTENSION,50,QUEST,G	1
5	276203L-0000	PANEL,TRANSITION,9,L,QUEST,G	1
6	3525130-0000	ANCHOR,MP-3,PT KIT,3/4X6 1/2 HOR	1



DETAIL A
SCALE 1 / 20
TRANSITION BRACE (ITEM 1), PANEL (ITEM 4)
& BACKUP CONNECTION DETAIL.





ASSEMBLY NO. 356209L-0000

Revision	Date	Rev	By	Chk.	App.
#3 DESC CHANGED	4/6/06	A	DPH	JME	ACF

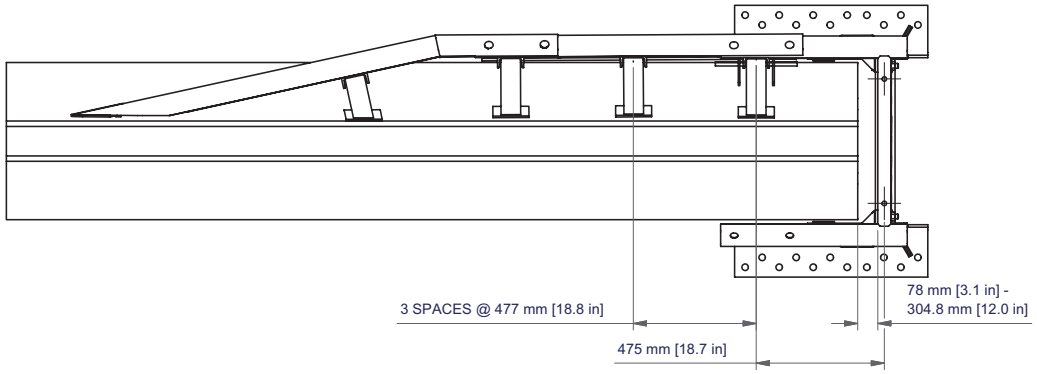
DRAWN: D. Kohfeld	DATE: 3/22/2005		
DESIGNED: D. Shipman	DATE: 3/14/2005		
CHECKED: JME	DATE: 4/6/2005		
APPROVED: D. Shipman	DATE: 4/6/2005		
FILE: 356209L-0000.idw			
NEXT ASSEMBLY:			

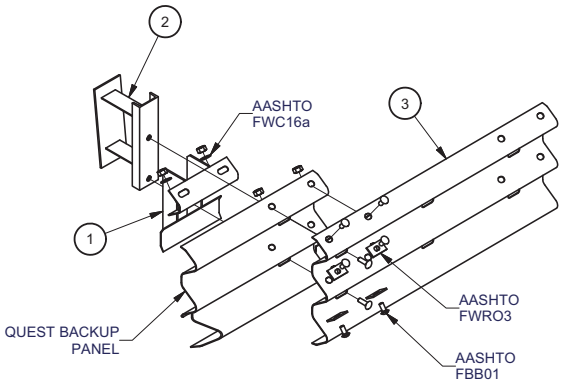
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

TRANSITION ASSY,9 OFFSET,L,QUEST

SCALE:	DRAWING:	SHEET:	REV
1=20	356209L-0000	1 of 1	A

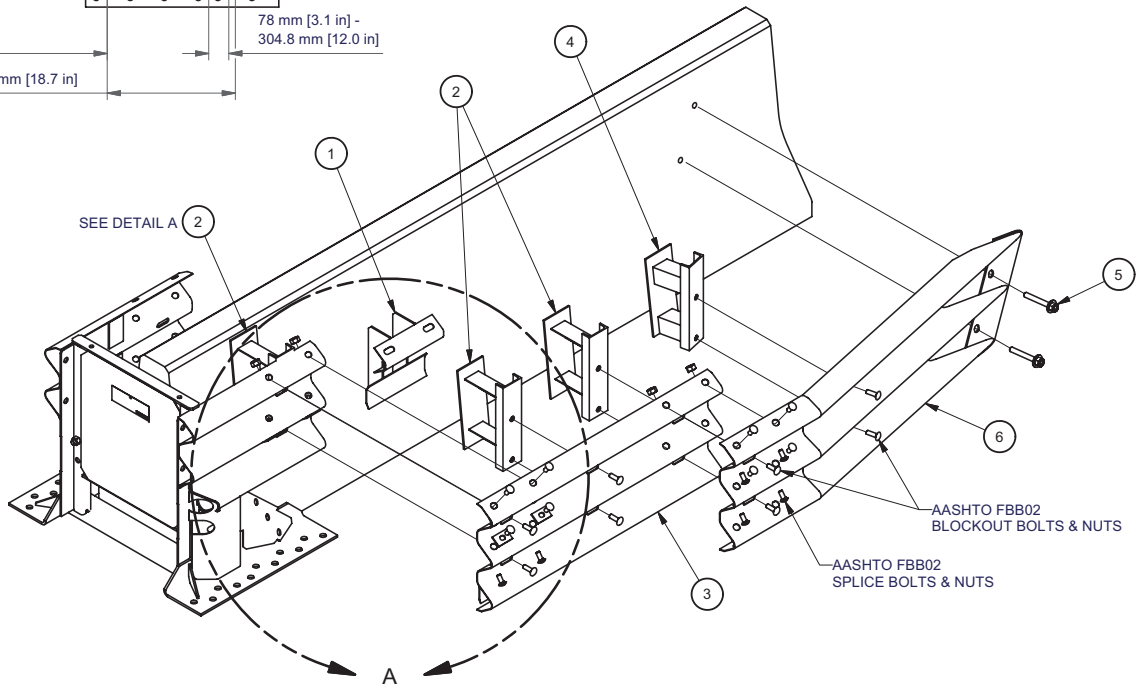
PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2762032-0000	BRACE,EXTENSION,TRANS,QUEST	1
2	2762004-0000	BRACKET,TRANS SUPPORT,9,QUEST,G	3
3	2762006-0000	PANEL,EXTENSION,50,QUEST,G	1
4	2762034-0000	BRACKET,TRANS SUP,5,ANG,R,QUEST,G	1
5	3525130-0000	ANCHOR,MP-3,PT KIT,3/4X6 1/2 HOR	1
6	276203R-0000	PANEL,TRANSITION,9,R,QUEST,G	1





DETAIL A

TRANSITION BRACE (ITEM 1), PANEL (ITEM 4)
& BACKUP CONNECTION DETAIL



ASSEMBLY NO. 352609R-0000

Revision	Date	Rev	By	Chk.	App.

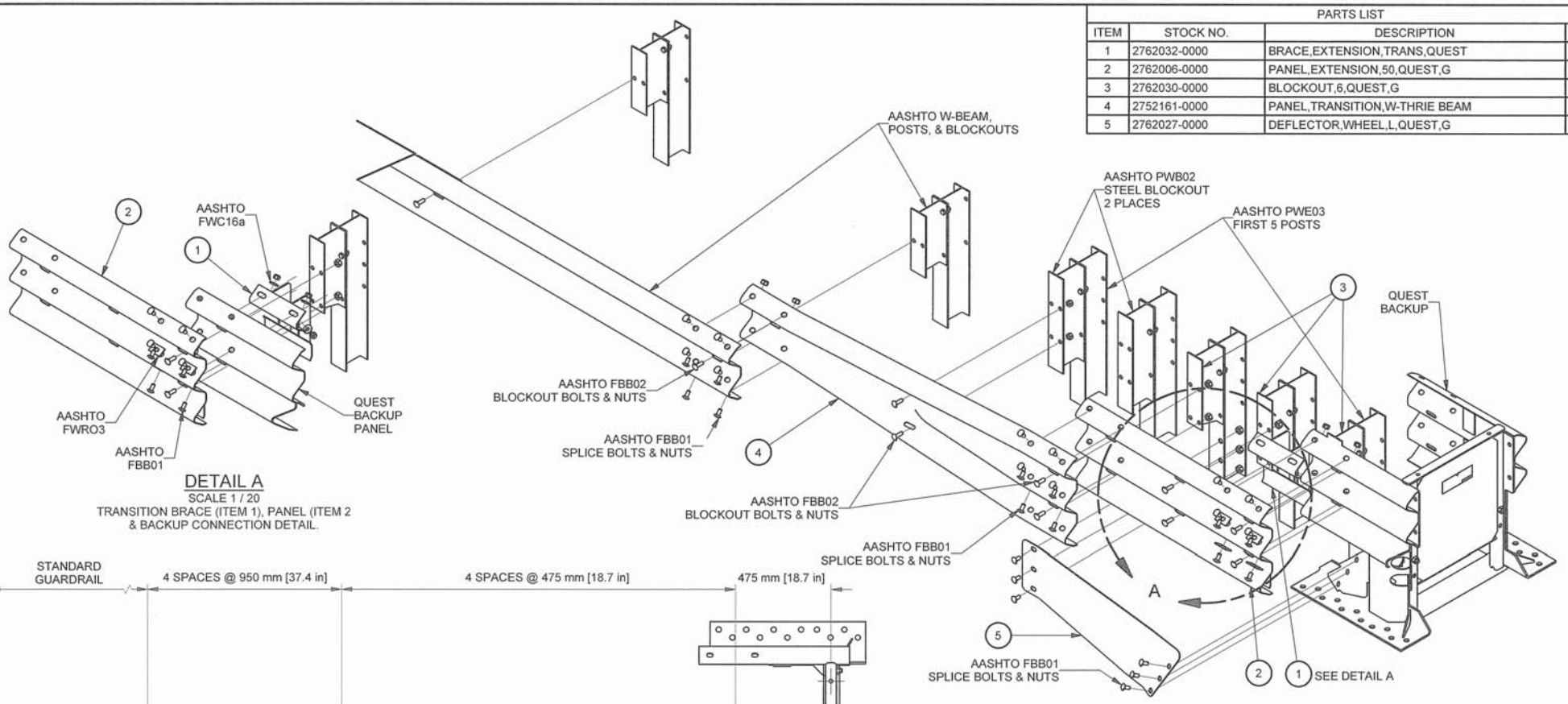
DRAWN: D. Hayes Jr	DATE: 4/5/2006		
DESIGNED: D. Shipman	DATE: 3/14/2005		
CHECKED: J. Espinoza	DATE: 4/12/2006		
APPROVED: A. Franklin	DATE: 4/12/2006		
FILE: 356209R-0000.idw			
NEXT ASSEMBLY:			

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

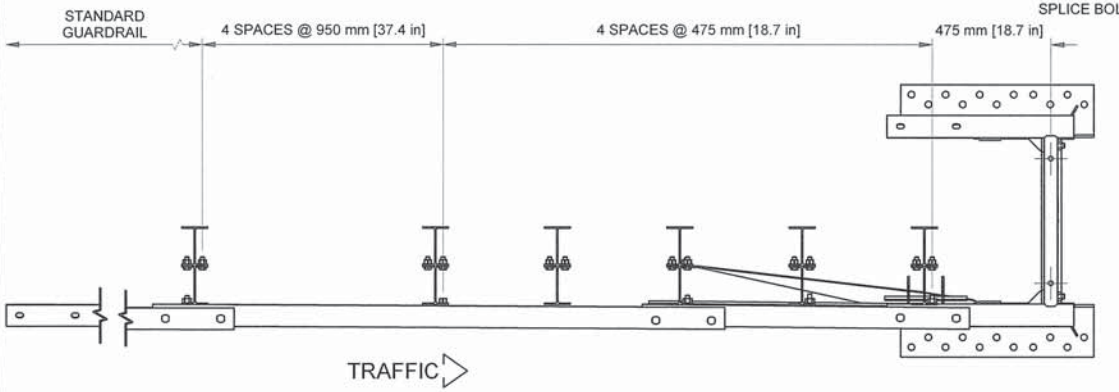
TRANSITION ASSY,9 OFFSET,R,QUEST

SCALE:	DRAWING:	SHEET:	REV
1:20	356209R-0000	1 of 1	-

PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2762032-0000	BRACE,EXTENSION,TRANS,QUEST	1
2	2762006-0000	PANEL,EXTENSION,50,QUEST,G	1
3	2762030-0000	BLOCKOUT,6,QUEST,G	3
4	2752161-0000	PANEL,TRANSITION,W-THRIE BEAM	1
5	2762027-0000	DEFLECTOR,WHEEL,L,QUEST,G	1



DETAIL A
SCALE 1 / 20
TRANSITION BRACE (ITEM 1), PANEL (ITEM 2 & BACKUP CONNECTION DETAIL.



NOTES:

1. PANEL OVERLAP SHOWN IS FOR TRAFFIC DIRECTION SHOWN. ACTUAL OVERLAP SHALL BE DETERMINED BY THE SITE CONDITIONS AND PROJECT ENGINEER PER TRAFFIC DIRECTION. USE STANDARD GUARDRAIL CONNECTION.
2. RIGHT SIDE OF ROAD APPLICATION SHOWN. ASSEMBLY MAY BE USED ON EITHER OR BOTH SIDES FOR LEFT, RIGHT, MEDIAN OR GORE APPLICATIONS. SEE NOTE 1. THIS ASSEMBLY IS NOT INCLUDED IN THE MODEL NUMBER AND MUST BE ORDERED SEPARATELY.
3. ENERGY ABSORPTION SYSTEMS, INC. SUPPLIES THE STOCK ITEMS SHOWN IN THE PARTS LIST. ALL OTHER COMPONENTS OF THE DOWNSTREAM GUARDRAIL ARE STANDARD HIGHWAY MATERIALS AND MAY BE OBTAINED FROM YOUR LOCAL HIGHWAY SUPPLY VENDORS.

ASSEMBLY NO. 3562010-0000

Revision	Date	Rev	By	Chk.	App.
ADDED NOTES	7/1/05	A	TB		

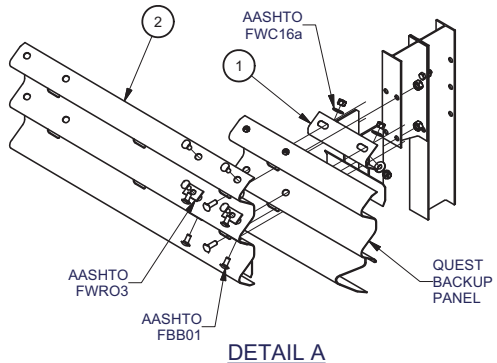
DRAWN: D. Kohfeld	DATE: 3/21/2005
DESIGNED: D. Shipman	DATE: 3/14/2005
CHECKED: JME	DATE: 4/6/2005
APPROVED: D. Shipman	DATE: 4/6/2005
FILE: 3562010-0000x.idw	
NEXT ASSEMBLY:	

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

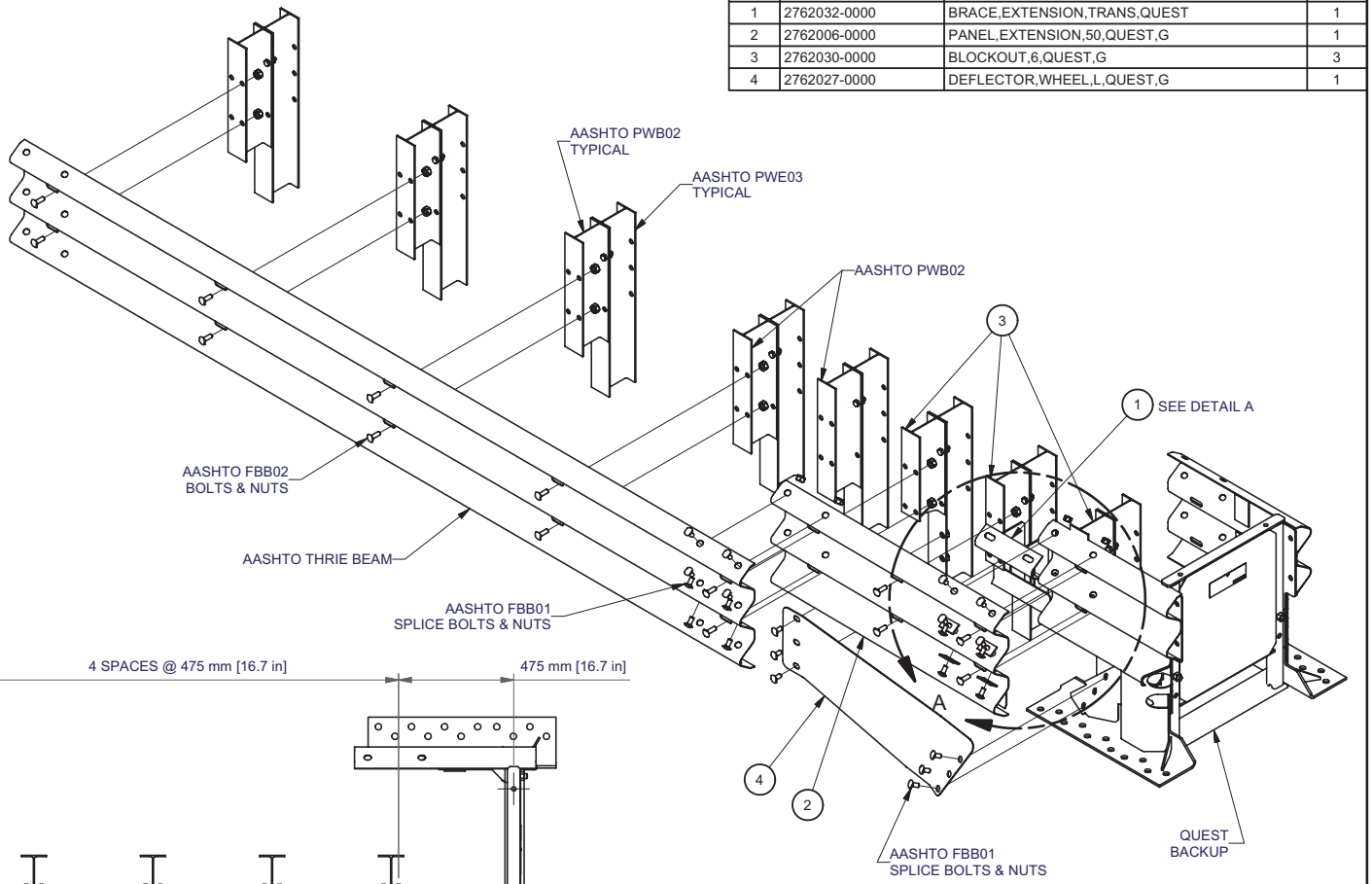
TRANSITION ASSY,THRIE-W,QUEST

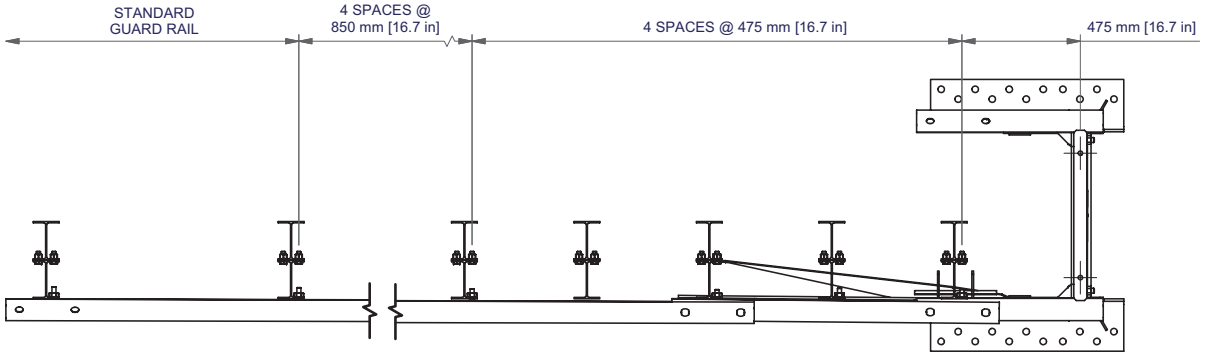
SCALE:	DRAWING:	SHEET:	REV:
1=20	3562010-0000	1 of 1	A

PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2762032-0000	BRACE,EXTENSION,TRANS,QUEST	1
2	2762006-0000	PANEL,EXTENSION,50,QUEST,G	1
3	2762030-0000	BLOCKOUT,6,QUEST,G	3
4	2762027-0000	DEFLECTOR,WHEEL,L,QUEST,G	1



DETAIL A
SCALE 1 / 20
TRANSITION BRACE (ITEM 1), PANEL (ITEM 2)
& BACKUP CONNECTION DETAIL.





ASSEMBLY NO. 3562011-0000

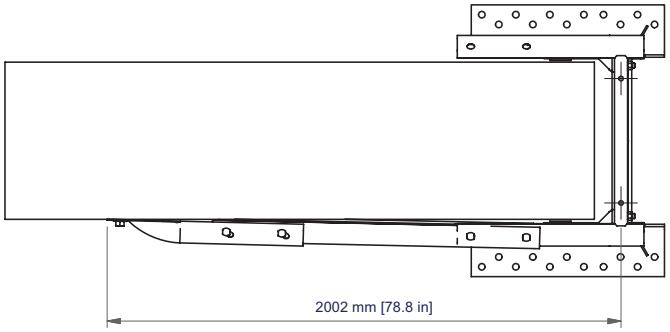
DRAWN: D. Kohfeld	DATE: 3/22/2005	
DESIGNED: D. Shipman	DATE: 3/14/2005	
CHECKED: JME	DATE: 4/6/2005	
APPROVED: D. Shipman	DATE: 4/6/2005	
FILE: 3562011-0000.idw		
NEXT ASSEMBLY:		

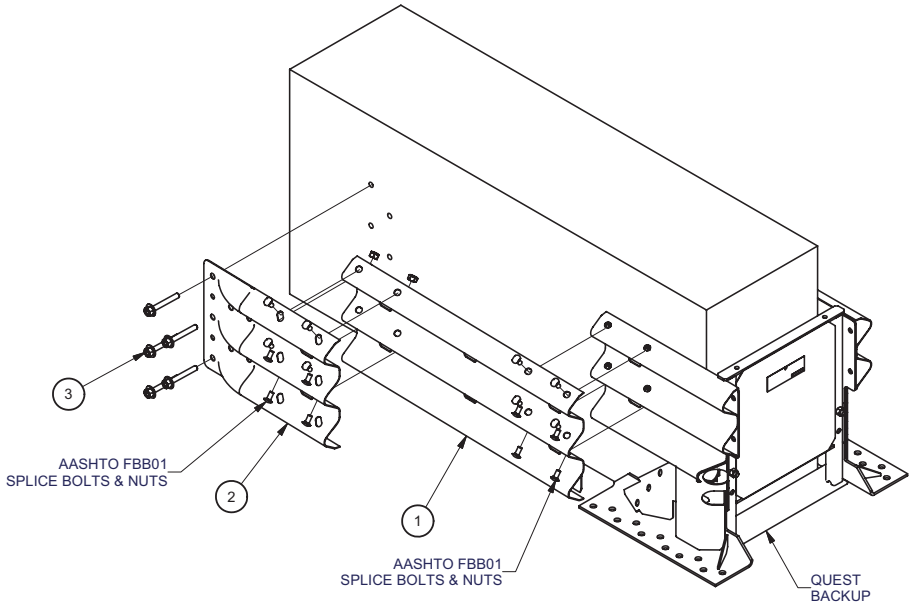
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

TRANSITION ASSY,THRIE,QUEST

SCALE:	DRAWING:	SHEET:	REV
1=20	3562011-0000	1 of 1	

PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2762006-0000	PANEL,EXTENSION,50,QUEST,G	1
2	2752431-0000	END SHOE,THRIE BEAM	1
3	3525130-0000	ANCHOR,MP-3,PT KIT,3/4X6 1/2 HOR	1





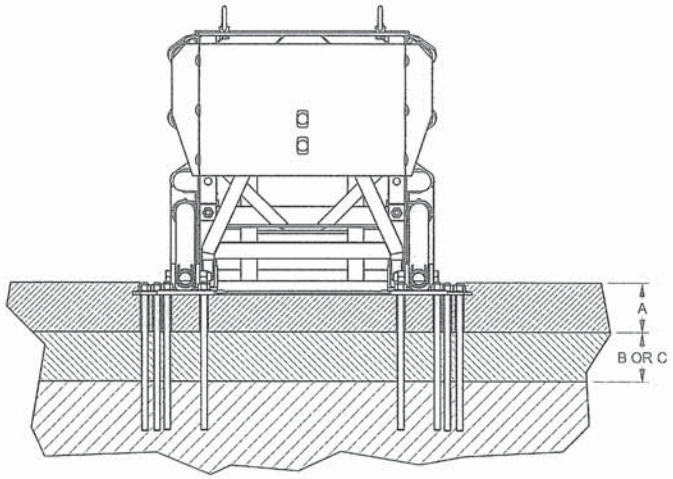
ASSEMBLY NO 3562012-0000

DRAWN: D. Kohfeld	DATE: 3/22/2005	
DESIGNED: D. Shipman	DATE: 3/14/2005	
CHECKED: JME	DATE: 4/5/2005	
APPROVED: D. SHipman	DATE: 3/29/2005	
FILE: 3562012-0000.idw		
NEXT ASSEMBLY:		

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

TRANSITION ASSY,THRIE-ENDSHOE,QUEST

SCALE:	DRAWING:	SHEET:	REV
1=20	3562012-0000	1 of 1	



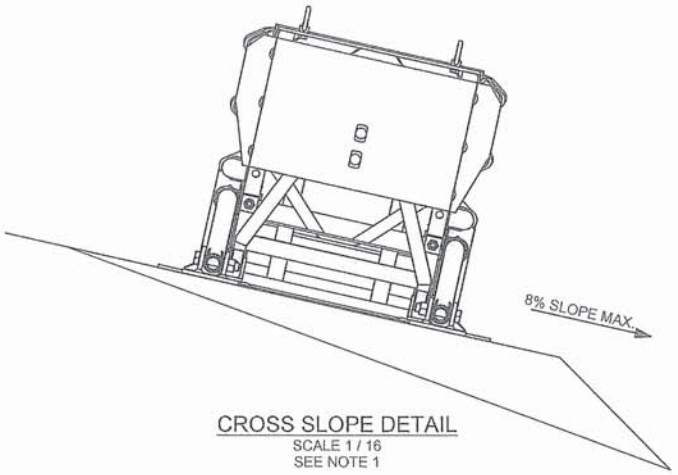
QUEST SECTION VIEW

SCALE 1 / 16

REFER TO THE QUEST INSTALLATION AND SAFETY INSTRUCTIONS FOR FURTHER INFORMATION.

MATERIALS:
- A - MISCELLANEOUS ASPHALTIC CONCRETE
- B - 28 MPA [4000 PSI] P.C. CONCRETE
- C - STABILIZED SUB-BASE PREPARED AND COMPACTED

A	B	C	REQ'D STUD LENGTH
76mm [3"]	76mm [3"]	---	460mm [18"]
152mm [6"]	---	152mm [6"]	460mm [18"]
203mm [8"]	---	---	460mm [18"]



CROSS SLOPE DETAIL

SCALE 1 / 16

SEE NOTE 1

ANCHOR SYSTEM:

1. CROSS SLOPE OF FOUNDATION SHALL NOT EXCEED 8% AND NOT VARY MORE THAN 2% FROM FRONT TO BACK.
2. USE THE ANCHOR PLATES AND BACKUP AS A TEMPLATE FOR DRILLING HOLES.
3. USE MP-3 POLYESTER ANCHOR SYSTEM, SUPPLIED BY ENERGY ABSORPTION SYSTEMS, OR APPROVED EQUAL. QUEST SYSTEMS INSTALLED ON ASPHALT MUST BE INSPECTED TO ENSURE THE ANCHORS ARE STILL PROPERLY SET FOLLOWING EACH IMPACT. RE-ANCHOR AS NECESSARY.
4. FOR ASPHALT INSTALLATIONS, EVERY ANCHOR HOLE IN BACKUP AND ANCHOR PLATES MUST HAVE AN MP-3 STUD ANCHORING IT.

ASPHALT ANCHOR ASSY. 3562008-0000

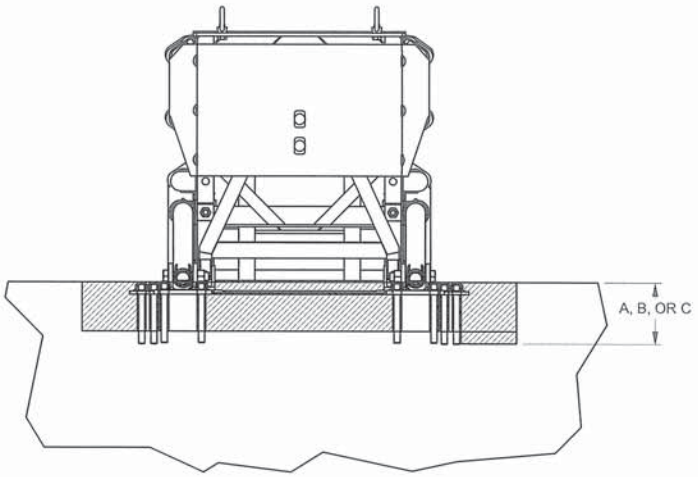
Revision	Date	Rev	By	Chk.	App.

DRAWN: T. Busse	DATE: 6/1/2006	
DESIGNED: A. Franklin	DATE: 6/1/2006	
CHECKED:	DATE: 6/2/06	
APPROVED: R. Bouglas	DATE: 6/5/06	
FILE: 3562017-0000.idw		
NEXT ASSEMBLY:		

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST™ SYSTEM
ASPHALT ANCHOR ASSEMBLY

SCALE	DRAWING	SHEET	REV
1=16	3562017-0000	1 of 2	



QUEST SECTION VIEW

SCALE 1 / 16

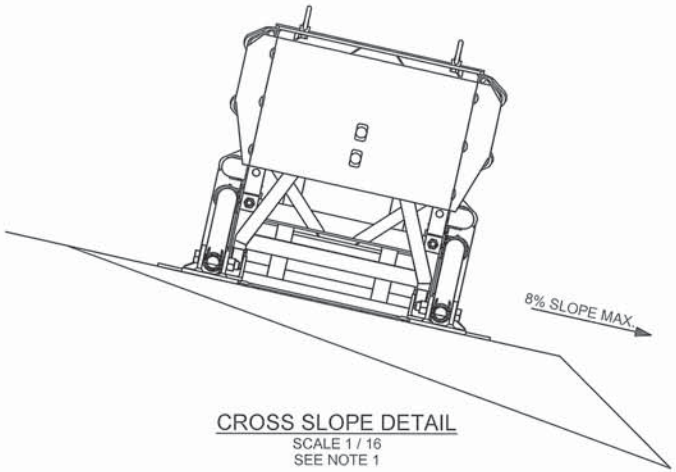
REFER TO THE QUEST INSTALLATION AND
SAFETY INSTRUCTIONS FOR FURTHER INFORMATION.

MATERIALS:

A - 152 [6.00] REINFORCED PAD PER REFERENCE DRAWING 3562006-0000.

B - 203 [8.00] NON-REINFORCED ROADWAY, MEASURING AT LEAST 3.66m [12' 0"] WIDE BY 15.24m [50' 0"] LONG, NOT SHOWN.

C - 180 [7.00] REINFORCED DECK STRUCTURE, NOT SHOWN.



CROSS SLOPE DETAIL

SCALE 1 / 16

SEE NOTE 1

ANCHOR SYSTEM:

1. CROSS SLOPE OF FOUNDATION SHALL NOT EXCEED 8% AND NOT VARY MORE THAN 2% FROM FRONT TO BACK.
2. USE THE ANCHOR PLATES AND BACKUP AS A TEMPLATE FOR DRILLING HOLES.
3. USE MP-3 POLYESTER ANCHOR SYSTEM, SUPPLIED BY ENERGY ABSORPTION SYSTEMS, OR APPROVED EQUAL. QUEST SYSTEMS INSTALLED ON CONCRETE MUST BE INSPECTED TO ENSURE THE ANCHORS ARE STILL PROPERLY SET FOLLOWING EACH IMPACT. RE-ANCHOR AS NECESSARY.
4. EVERY ANCHOR HOLE BUT TWO IN EACH OF THE BACKUP AND ANCHOR PLATE LOCATIONS MUST HAVE AN MP-3 STUD ANCHORING IT (30 OF THE 38 ANCHOR HOLES MUST BE ANCHORED). FOR CONCRETE INSTALLATIONS ONLY.

CONCRETE ANCHOR ASSY. 3562009-0000

Revision	Date	Rev	By	Chk.	App.

DRAWN: T. Busse	DATE: 6/1/2006
DESIGNED: A. Franklin	DATE: 6/1/2006
CHECKED:	DATE: 6/2/06
APPROVED: R. Bronder	DATE: 6/5/06
FILE: 3562017-0000.idw	
NEXT ASSEMBLY:	

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUEST™ SYSTEM
CONCRETE ANCHOR ASSEMBLY

SCALE:	DRAWING:	SHEET:	REV
1=16	3562017-0000	2 of 2	