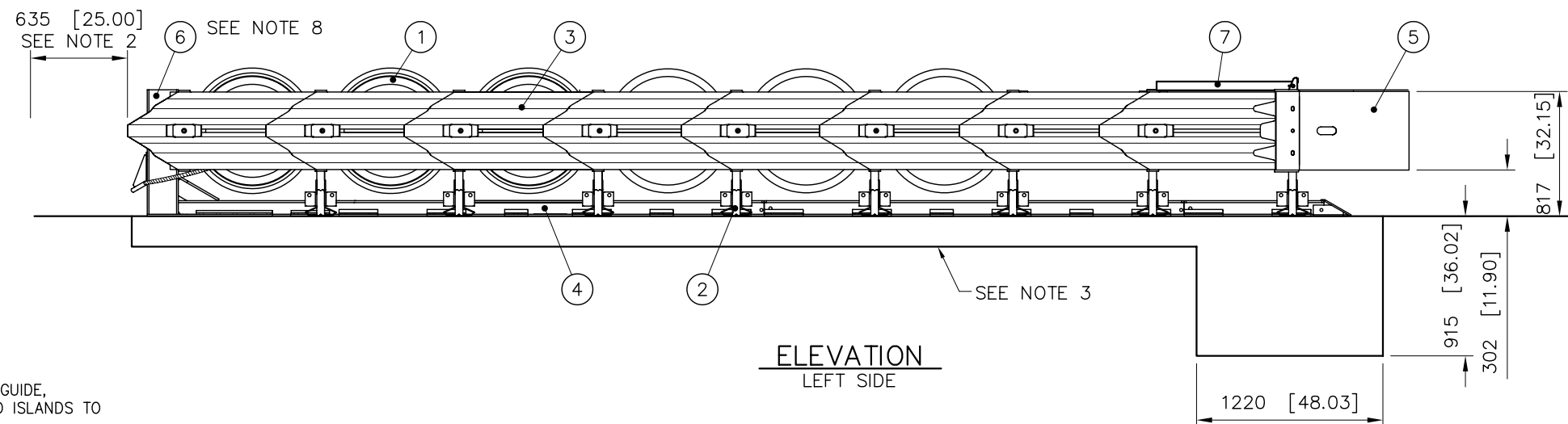


PLAN



ELEVATION
LEFT SIDE

NOTES:

- IN COMPLIANCE WITH THE AASHTO 2002 ROADSIDE DESIGN GUIDE, MANUFACTURER RECOMMENDS REMOVAL OF ALL CURBS AND ISLANDS TO ENSURE PROPER IMPACT PERFORMANCE.
- PROVISION SHALL BE MADE FOR REAR FENDER PANELS TO SLIDE REARWARD UPON IMPACT 635 [25.00] MIN.
- 150 [6.00] MIN. REINFORCED 28 MPa [4000 PSI] P.C. CONCRETE PAD OR 200 [8.00] MIN. NON-REINFORCED 28 MPa [4000 PSI] P.C. CONCRETE ROADWAY (MEASURING AT LEAST 3.7m [12'] WIDE AND 15.2m [50'] LONG).
- SEE THE "QUADGUARD ELITE SYSTEM DESIGN 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 1-888-32-ENERG.
- WHERE NECESSARY, THE CUSTOMER SHALL SUPPLY A TRANSITION FROM THE QUADGUARD SYSTEM TO THE OBJECT BEING SHIELDED.
- FOR PROPER IMPACT PERFORMANCE, THE UNIT MUST BE RESTORED TO ITS ORIGINAL LENGTH AFTER EACH IMPACT.
- UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
- BACKUP ASSEMBLY NOT INCLUDED IN MODEL NUMBER.
- CHAINS SHOWN INCLUDED ONLY ON 914 [36.00] AND WIDER SYSTEMS.
- CHAINS SHOWN INCLUDED IN BAYS 1 & 2 ONLY ON 24,30,36 SYSTEMS.

* THE 35-40-11 SH. 2 DRAWING SHOWING AN 8" REINFORCED CONCRETE PAD IS SUFFICIENT FOR THE QUADGUARD ELITE.

MODEL#	SYSTEM WIDTH
QS2408E*	610 [24.00]
QS3008E*	762 [30.00]
QS3608E*	914 [36.00]

* Y=YELLOW NOSE
G=GRAY NOSE

S.O. 1131894
8/6/2010

UNIDIRECTIONAL
MODEL NO. QS_08E (SEE CHART)

KEY	① QUADGUARD ELITE CYLINDER	④ MONORAIL	⑦ HIT INDICATOR
	② DIAPHRAGM	⑤ NOSE ASSEMBLY	
	③ FENDER PANEL	⑥ BACKUP	

Revisions	Date	Rev.	By	Ckd.	App.
ADDED CHAIN ASSY BAY 1 & 2, NOTE 10 & FENDER PANEL ASSY WAS 3540454-0000 (ECO 2496)	11/14/08	A	WWL	STT	AVB

REFERENCES	
SERIAL#	H58961, 62
SALES ORDER#	1131894
EH PROJECT#	
DESIGN SPEED	100 km/h [62 MPH]
NOSE COLOR	YELLOW
NUMBER OF UNITS	2
TRANSITION ASSY.	N/A
WHEEL DEFLECTOR ASSY.	N/A

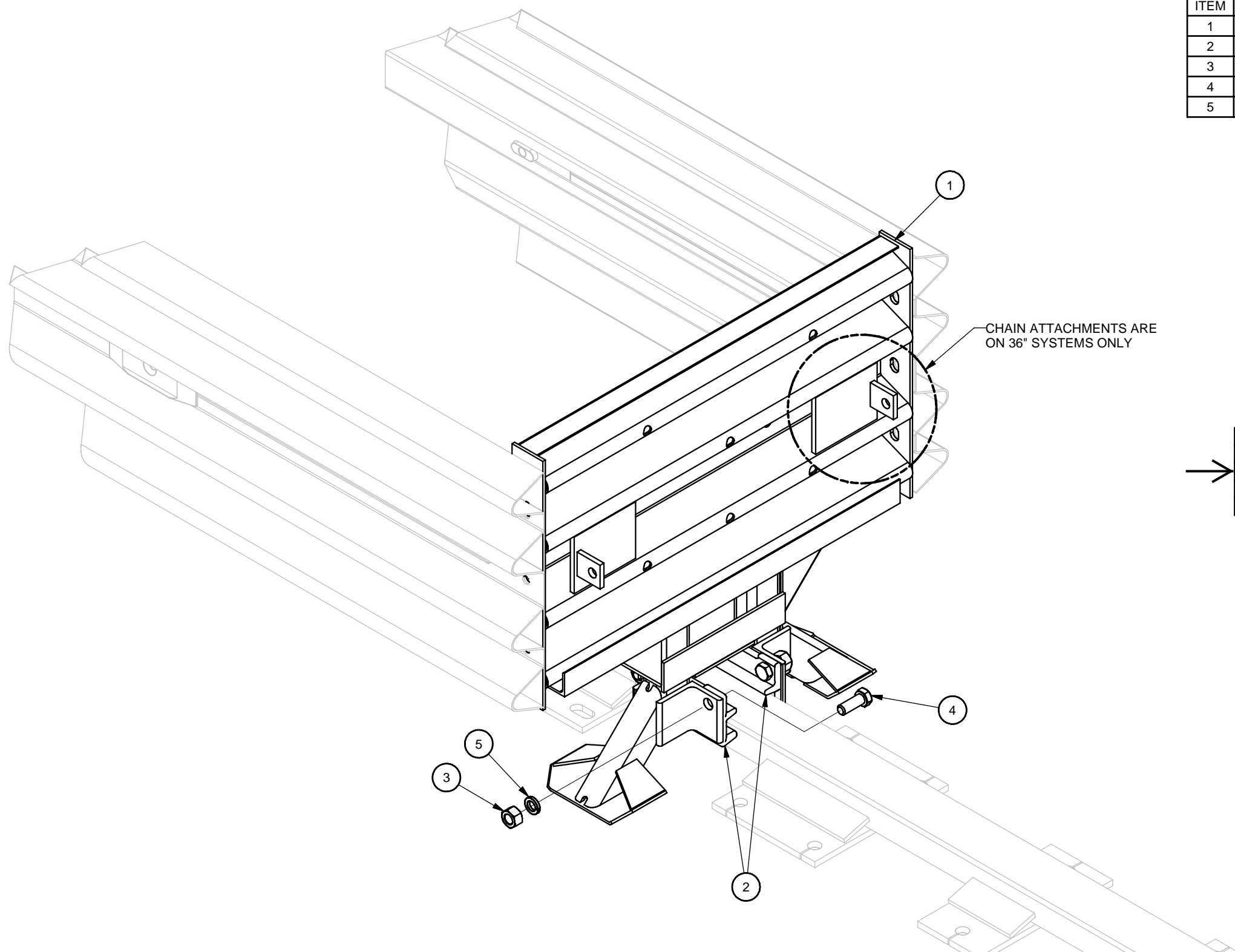
DIAPHRAGM ASSY.	3540464-0000
NOSE ASSY.	3540495-0000
FENDER PANEL ASSY.	3540585-0000
BACKUP ASSY.	3540484-0000
MONORAIL ASSY.	3540482-0000
CONCRETE PAD BAY ASSY.	3540483-0000*
CHAIN ASSY.	3540493-0000
CHAIN ASSY. BAY 1 & 2	3540491-0000
HIT INDICATOR ASSY.	3540075-0000
	3540463-0000

DRAWN:	S. TRAGESER	DATE:	12/12/06
DESIGNED:		DATE:	
CHECKED:	KRM	DATE:	12/12/06
APPROVED:	SPT	DATE:	12/12/06
CAD FILE:	QL3TSCVR8-U.dwg		

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUADGUARD® ELITE™ SYSTEM
W/ TENSION STRUT BACKUP

SCALE	1=50	DWG.	QL3TSCVR8-U	SHEET	1 OF 1	REV	A
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PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	QTY.
1	SEE TABLE	DIAPHRAGM,QB,36,G,QGE	1
2	2760091-0000	MONORAIL GUIDE,QG,G	2
3	2704341-0000	NUT,HX,3/4",GR DH	4
4	2699121-0000	BOLT,HX,3/4X2,G8,G	4
5	2708201-0000	WASHER,LOCK,3/4,G	4

CHAIN ATTACHMENTS ARE ON 36" SYSTEMS ONLY

Table		
WIDTH	ASSEMBLY NO.	ITEM 1 PART NO.
24"	3540464-0000	2761017-0000
30"	3540465-0000	2761018-0000
36"	3540466-0000	2761060-0000


ASSEMBLY NO. (SEE TABLE)

Revision	Date	Rev	By	Chk.	App.
ECO 2408: REDRAWN IN INVENTOR, ITEM 1 PART NO. IN TABLE FOR 36" WIDTH WAS 2761019-0000	6/19/08	A	DDS	DK	ARVB

REFERENCES	
DRAWN:	L. Corker
DESIGNED:	
CHECKED:	S. Trageser
APPROVED:	D. Ollom
FILE:	3540464-0000.idw
NEXT ASSEMBLY:	

DATE:	8/22/2002
DATE:	
DATE:	9/3/2002
DATE:	8/30/2002

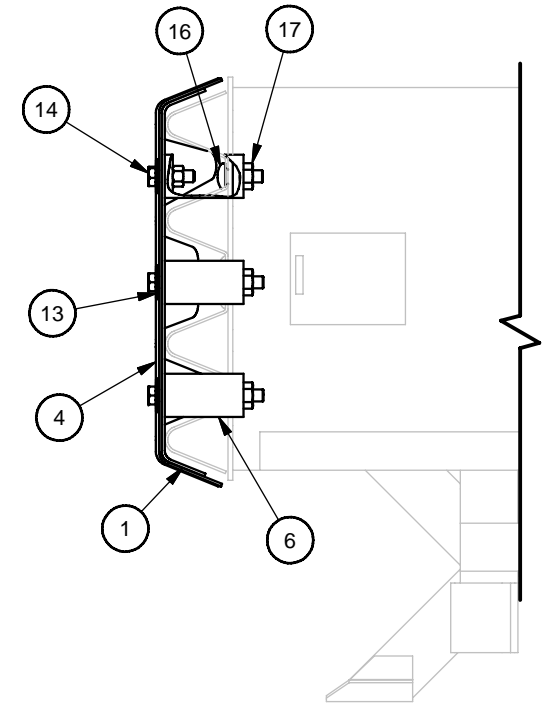
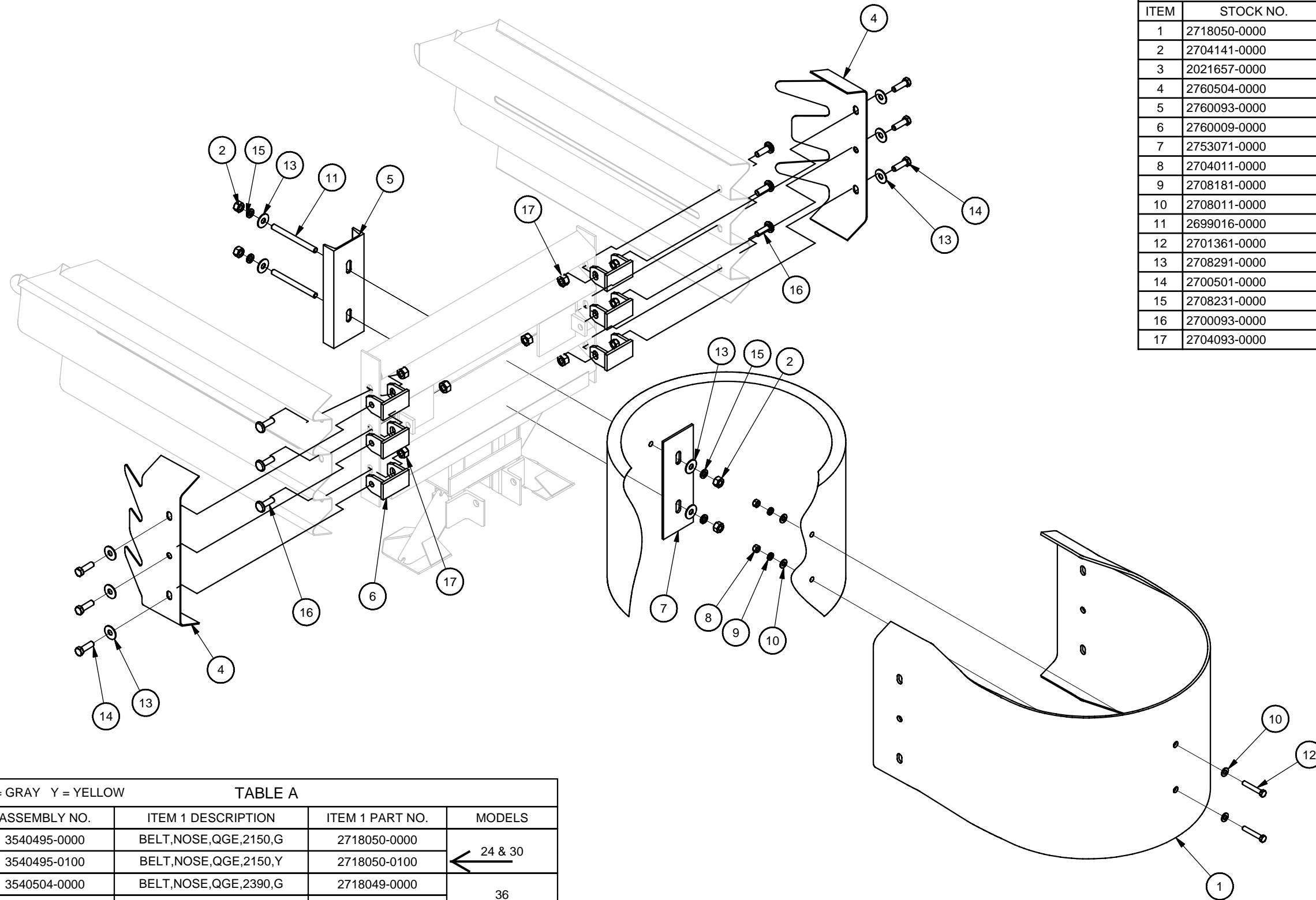
SCALE:	N.T.S.
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ENERGY ABSORPTION SYSTEMS, INC.
 ENGINEERING AND RESEARCH DEPARTMENT

QUADGUARD® ELITE™ SYSTEM
DIAPHRAGM ASSY,QGE,24,30,36

DRAWING:	3540464-0000	SHEET:	1 of 1
		REV:	A

PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2718050-0000	BELT,NOSE,84 5/8,QGE,24&30,G	1
2	2704141-0000	NUT,HX,5/8,G	4
3	2021657-0000	CYLINDER,NOSE,HDPE,28X20	1
4	2760504-0000	CLAMP,NOSE BELT,QG,G	2
5	2760093-0000	BRACKET,CHAIN MOUNT,VERT TAB,G	1
6	2760009-0000	STOP,TAB,WRAP,WELDMENT	6
7	2753071-0000	PLATE,NOSE CYLINDER,G	1
8	2704011-0000	NUT,HX,1/2,G	2
9	2708181-0000	WASHER,LOCK,1/2,G	2
10	2708011-0000	WASHER,FLAT,1/2X1 3/8,G	4
11	2699016-0000	ROD,THREADED,5/8X7,G5,G	2
12	2701361-0000	BOLT,HX,1/2X3,G2,G	2
13	2708291-0000	WASHER,FLAT,5/8 X 1 3/4, G	10
14	2700501-0000	BOLT,HX,5/8X2,G2,G	6
15	2708231-0000	WASHER,LOCK,5/8,G	4
16	2700093-0000	BOLT,SPLICE,M16X50,8.8,G	6
17	2704093-0000	NUT,HX,SPLICE,M16,G	6




SECTION A-A
SCALE 1 / 10

G = GRAY Y = YELLOW

ASSEMBLY NO.	ITEM 1 DESCRIPTION	ITEM 1 PART NO.	MODELS
3540495-0000	BELT,NOSE,QGE,2150,G	2718050-0000	← 24 & 30
3540495-0100	BELT,NOSE,QGE,2150,Y	2718050-0100	
3540504-0000	BELT,NOSE,QGE,2390,G	2718049-0000	36
3540504-0100	BELT,NOSE,QGE,2390,Y	2718049-0100	

Revision	Date	Rev	By	Chk.	App.
ITEM 12 WAS 2699841-0000, ITEM 14 WAS 2704851-0000, REMOVED ITEM 15, CHG'D QTY 2,8-10, 13.	3/22/00	A	DK	KM	SPT
ECO 2406: ITEM 2 WAS QTY. 16, 5 WAS 2760507-0000 @ QTY. 2, 6 WAS 2760251-0000 @ QTY. 2, 8 & 9 WERE QTY. 6, 10 WAS QTY. 8, 11 WAS 2699171-0000, 13 WAS QTY. 20, 14 WAS 2701994-0000, ADDED ITEMS 15-17	6/11/08	B	DDS	JME	AVB
ITEM 5 WAS: 2760010-0000 (ECO 2496)	11/13/08	C	WWL	STT	AVB

DRAWN: S. Cholda	DATE: 11/30/1998
DESIGNED:	DATE:
CHECKED: KRM	DATE: 3/2/1999
APPROVED: RBB	DATE: 3/16/1999
FILE: 3540495-0000.idw	
NEXT ASSEMBLY:	


ENERGY ABSORPTION SYSTEMS, INC.
 ENGINEERING AND RESEARCH DEPARTMENT

QUADGUARD® ELITE™ SYSTEM
NOSE ASSY,QGE,24,30 & 36,G OR Y

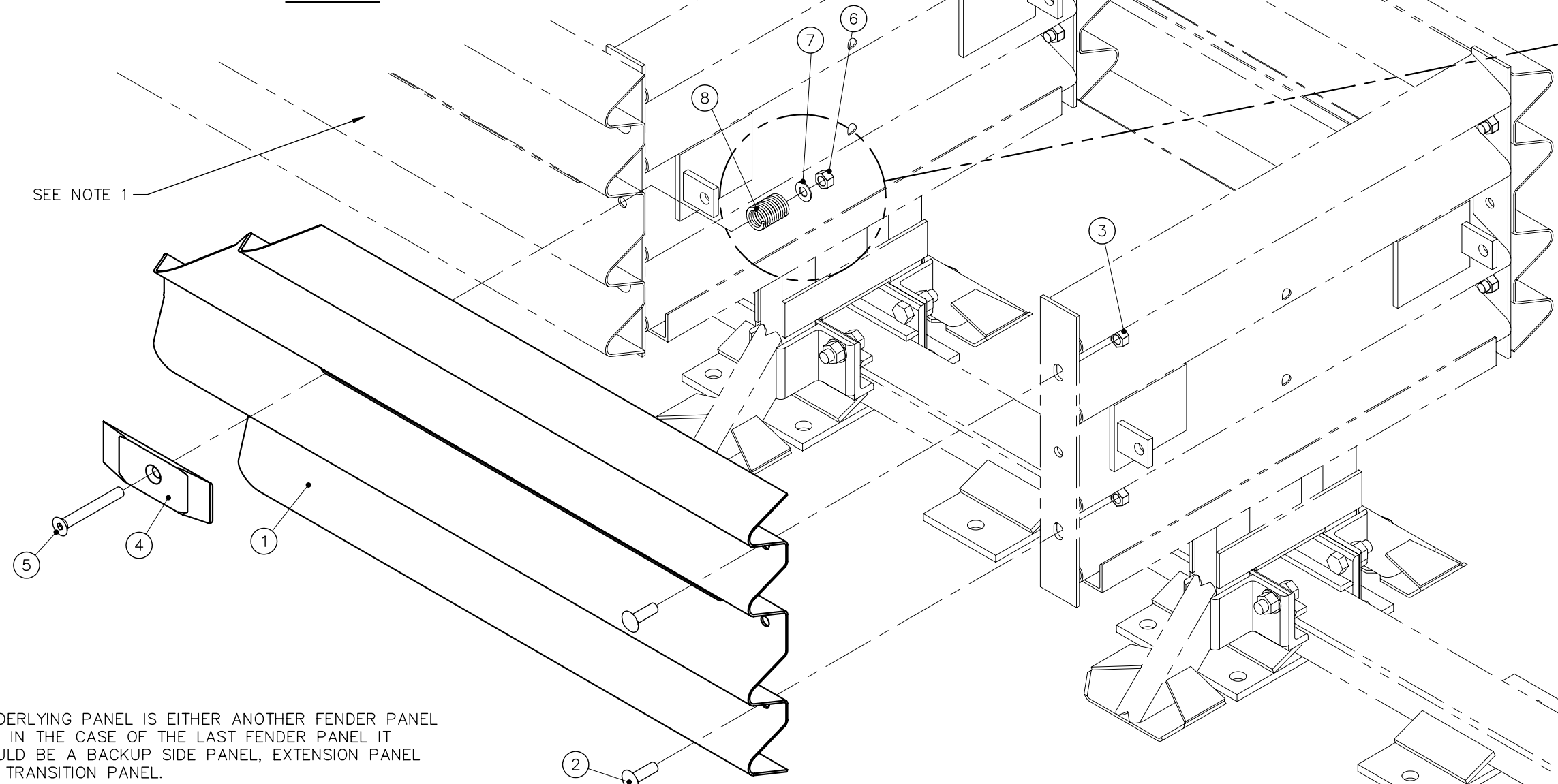
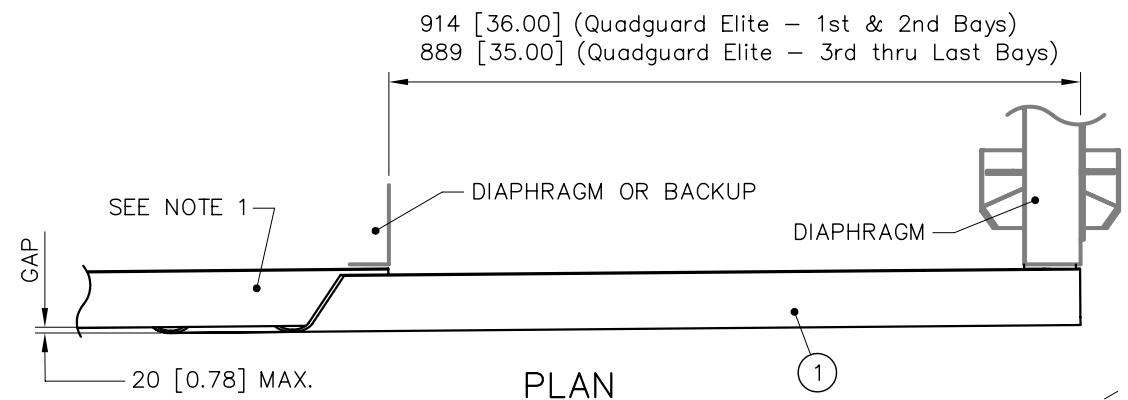
SCALE: 1=13	DRAWING: 3540495-0000	SHEET: 1 of 1	REV C
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ASSEMBLY NO. (SEE TABLE)

PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	REQ'D
1	2760081-0000	PANEL,FENDER,QG,G	1.00
2	2700093-0000	BOLT,SPLICE,M16X50,8.8,G	2.00
3	2704093-0000	NUT,HX,SPLICE,M16,G	2.00
4	2708841-0000	WASHER,MUSHROOM,FORGED,QG,G	1.00
5	2706604-0000	SCREW,FL,5/8X5,G8,G,SOCKET	1.00
6	2704141-0000	NUT,HX,5/8,G	1.00
7	2708291-0000	WASHER,FLAT,5/8X1 3/4,G	1.00
8	2715343-0000	SPRING,DIE,1 1/4 OD X5/8X1 1/2	1.00

TWO FENDER PANEL ASSEMBLIES REQUIRED PER BAY.

THE SPRING (ITEM 8) SHOULD BE COMPRESSED 1 TO 3 mm (1/16" TO 1/8") TO COMPLETE THE ASSEMBLY.



- NOTES:
1. UNDERLYING PANEL IS EITHER ANOTHER FENDER PANEL OR, IN THE CASE OF THE LAST FENDER PANEL IT COULD BE A BACKUP SIDE PANEL, EXTENSION PANEL OR TRANSITION PANEL.
 2. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.

ASSEMBLY NO. 3540585-0000

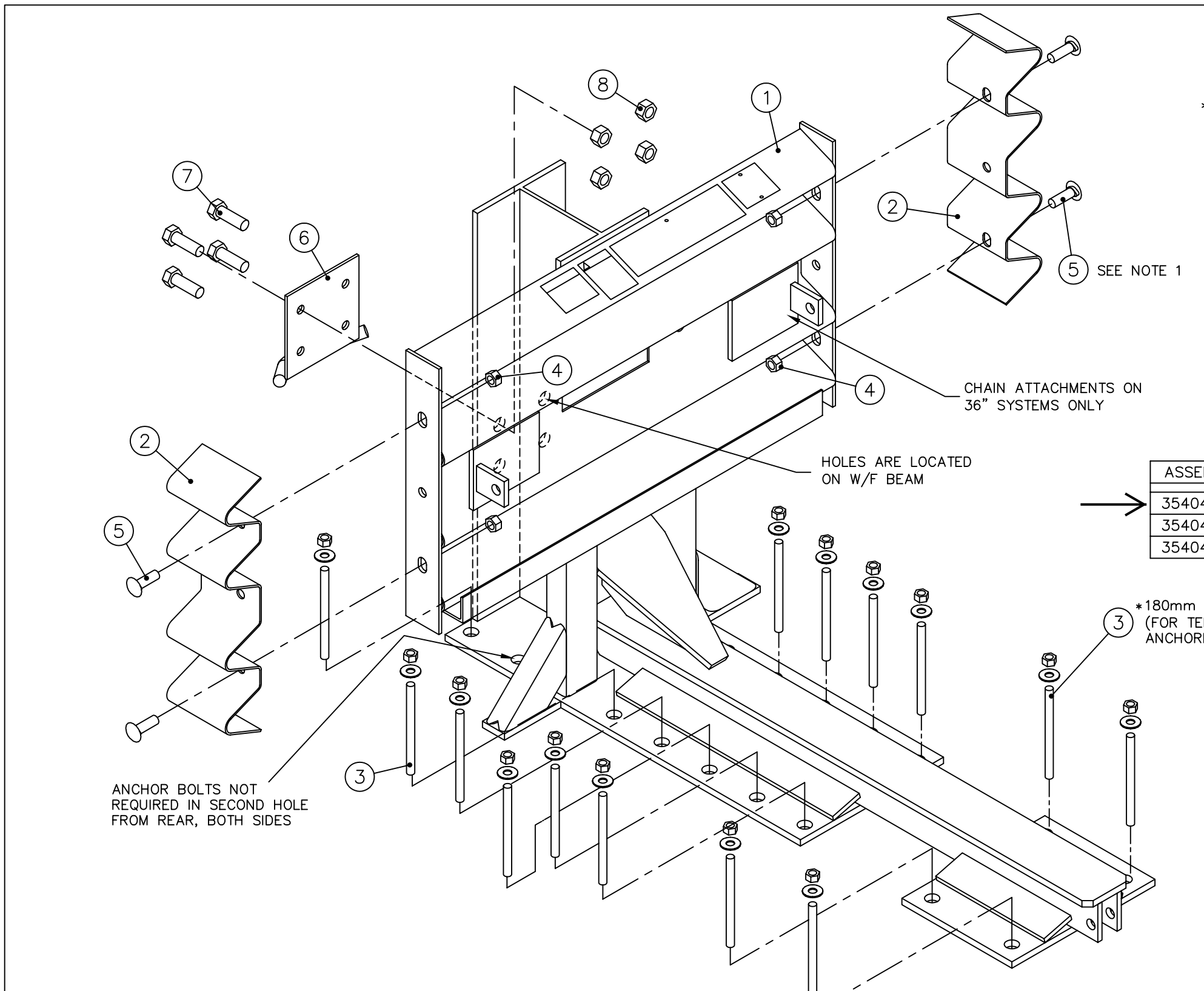
REFERENCES

DRAWN:	W. Leddington	DATE:	11/13/08
DESIGNED:	RBB	DATE:	12/8/98
CHECKED:	S. Trageser	DATE:	11/20/08
APPROVED:	A. VanBrocklin	DATE:	11/20/08
CAD FILE:	3540585-0000.dwg		
NEXT ASSEMBLY:			

 ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUADGUARD ELITE™ SYSTEM
FENDER PANEL ASSY,
24, 30 & 36

Revisions	Date	Rev.	By	Ckd.	App.



PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	REQ'D
1	SEE TABLE	BACKUP,TS,___,QG ELITE,W/DECALS	1.00
2	2760141-0000	PANEL,SIDE,QG,G	2.00
3	3525300-0000	ANCHOR,MP-3,PT-KIT,3/4X7,VT	3.00
4	2704191-0000	NUT,HX,5/8,G,RAIL	4.00
5	2699341-0000	BOLT,RAIL,5/8X2,G	4.00
6	2760524-0000	BRACKET,CABLE SUPPORT,BACKUP	1.00
7	2701381-0000	BOLT,HX,3/4X2,G2,G	4.00
8	2704091-0000	NUT,HX,3/4,G	4.00

* FOR TEMPORARY INSTALLATION, SEE NOTE BELOW AND DWG. 35-40-24L

TABLE			
ASSEMBLY NO.	ITEM	PART NUMBER	DESCRIPTION
3540484-0000	1	2760014-0000	BACKUP,TS,24,QG ELITE,W/DECALS
3540485-0000		2760024-0000	BACKUP,TS,30,QG ELITE,W/DECALS
3540486-0000		2760508-1000	BACKUP,TS,36,QG ELITE,W/DECALS


*180mm [7"] OR 460mm [18"]
(FOR TEMPORARY INSTALLATION)
ANCHORING STUDS

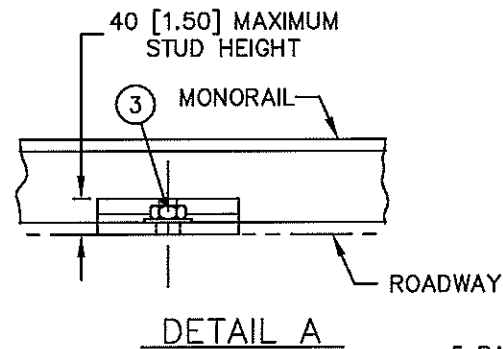
- NOTES:
1. WHEN TRANSITIONING QUADGUARD SYSTEM TO EXISTING BARRIER REFER TO THE TRANSITION ASSEMBLY DRAWINGS FOR PROPER USE OF SIDE PANEL PART NO. 2760141-0000.
 2. DIMENSIONS ARE IN MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.

ASSEMBLY NO. SEE TABLE

Revisions	Date	Rev.	By	Ckd.	App.

REFERENCES	
DRAWN:	S. VAN OGLE
DESIGNED:	R. Blaski
CHECKED:	KRM
APPROVED:	RBB
CAD FILE:	3540484-0000.dwg
NEXT ASSEMBLY:	

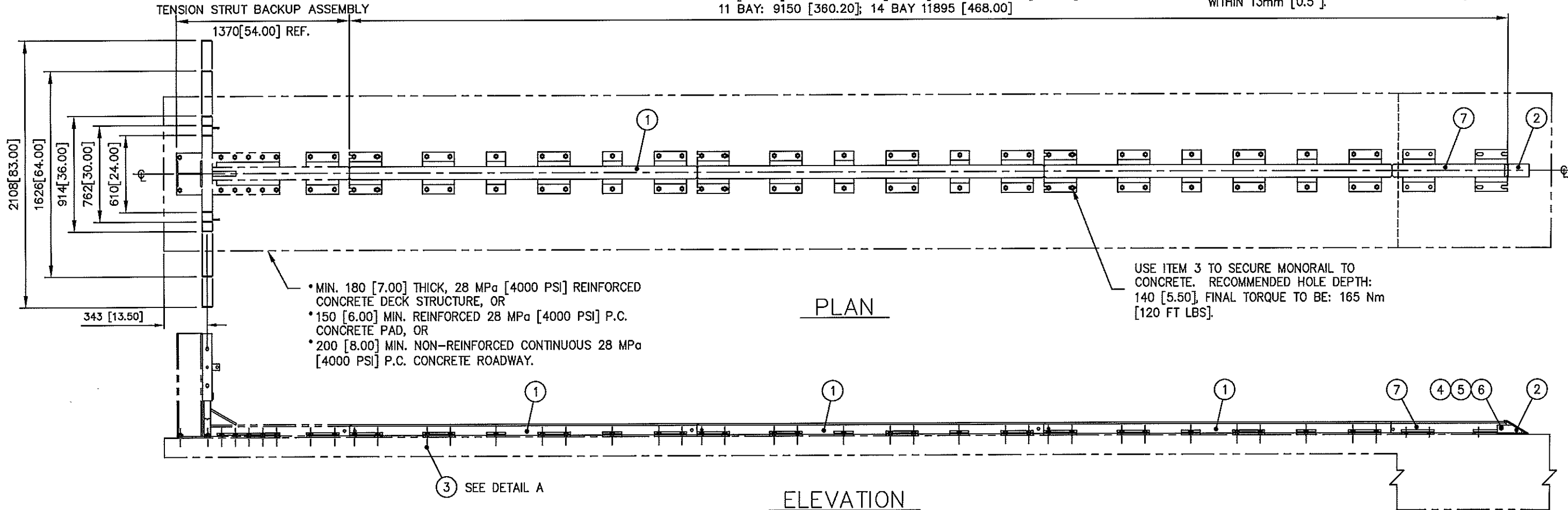
 ENERGY ABSORPTION SYSTEMS, INC. ENGINEERING AND RESEARCH DEPARTMENT	
QUADGUARD® ELITE™ SYSTEM BACKUP ASSY,TS, QGE, 24, 30, 36	
SCALE	N.T.S.
DWG.	3540484-0000
SHEET	1 of 1
REV	



PARTS LIST			5 BAY	7 BAY	8 BAY	11 BAY	14 BAY
ITEM	STOCK NO.	DESCRIPTION	REQ'D	REQ'D	REQ'D	REQ'D	REQ'D
1	2760071-0000	MONORAIL, THREE BAYS, QG, G	1.00	2.00	2.00	3.00	4.00
2	2760041-0000	END CAP, MONORAIL, QG, G	1.00	1.00	1.00	1.00	1.00
3	3525300-0000	ANCHOR, MP-3, PT-KIT, 3/4X7, VT	4.00	7.0	8.00	12.0	16.0
4	2699571-0000	BOLT, HX, 5/8X3 1/2, G5, G	1.00	1.00	1.00	1.00	1.00
5	2704141-0000	NUT, HX, 5/8, G	1.00	1.00	1.00	1.00	1.00
6	2708231-0000	WASHER, LOCK, 5/8, G	1.00	1.00	1.00	1.00	1.00
7	2760051-0000	MONORAIL, ONE BAY, QG, G	1.00	N/A	1.00	1.00	1.00

TOTAL RAIL LENGTH:
 5 BAY: 3660 [144.10]; 7 BAY: 5490 [216.10]; 8 BAY: 6405 [252.10];
 11 BAY: 9150 [360.20]; 14 BAY: 11895 [468.00]

NOTE: MONORAIL & BACKUP ASSEMBLY MUST BE STRAIGHT TO WITHIN 13mm [0.5"].



- MIN. 180 [7.00] THICK, 28 MPa [4000 PSI] REINFORCED CONCRETE DECK STRUCTURE, OR
- 150 [6.00] MIN. REINFORCED 28 MPa [4000 PSI] P.C. CONCRETE PAD, OR
- 200 [8.00] MIN. NON-REINFORCED CONTINUOUS 28 MPa [4000 PSI] P.C. CONCRETE ROADWAY.

- NOTES:
1. USE MONORAILS (ITEMS 1 & 7) AS TEMPLATES TO LOCATE MP-3 ANCHOR BOLTS (ITEM 3).
 2. CROSS SLOPE OF PAD SHALL NOT EXCEED 8% NOR VARY MORE THAN 2% FROM FRONT TO BACK.
 3. UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.
 4. EVERY STUD MUST BE EMBEDDED TO A DEPTH OF 140 [5.5]. IF REBAR IS ENCOUNTERED IN A P.C. CONCRETE PAD, DRILL THROUGH IT. IF REBAR IS ENCOUNTERED ON A DECK STRUCTURE, DO NOT DRILL THROUGH REBAR WITHOUT FIRST GETTING PERMISSION FROM A PROJECT ENGINEER.

- 5 BAY ASSEMBLY NO. 3540482-0500
- 7 BAY ASSEMBLY NO. 3540482-0700
- 8 BAY ASSEMBLY NO. 3540482-0800
- 11 BAY ASSEMBLY NO. 3540482-1100
- 14 BAY ASSEMBLY NO. 3540482-1400

REFERENCES

DRAWN:	D. Staus	DATE:	11/6/98
DESIGNED:		DATE:	
CHECKED:	KRM	DATE:	3/19/99
APPROVED:	RBB	DATE:	3/22/99
CAD FILE:	3540482-0000.dwg		
NEXT ASSEMBLY:			

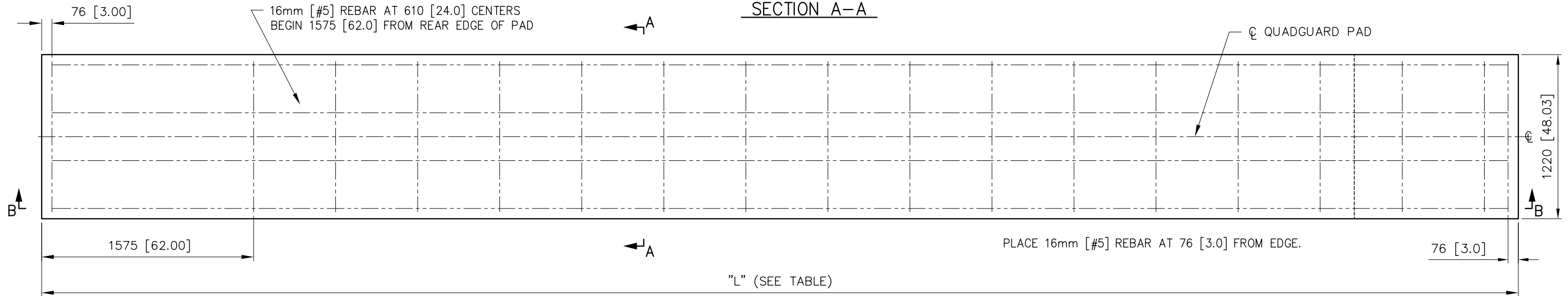
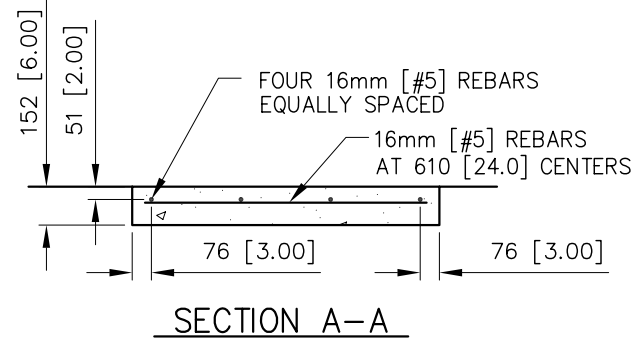
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUADGUARD® ELITE™ SYSTEM
MONORAIL ASSY, QGE
FOR 5, 7, 8, 11 & 14 BAY SYSTEMS

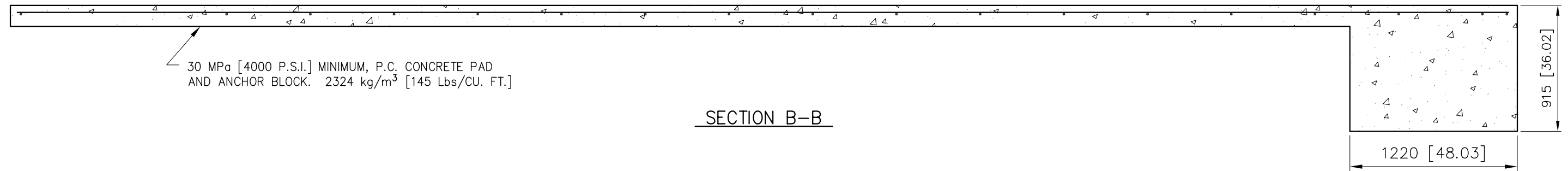
SCALE: 1:32 DWG. NO.: 3540482-0000 SHEET: 1 of 1 REV: C

Revisions	Date	Rev.	By	Ckd.	App.
REMOVED HOLES IN TOP VIEW, WAS 30 MPa	6/24/03	A	WWL	ACF	STT
ADDED 8 BAY SYSTEM	12/12/06	B	STT	KM	SPT
ADDED 5 BAY SYSTEM	04/30/08	C	STT	KM	STT

TABLE					
UNIT SIZE	"L"		REBAR REQUIRED		CONCRETE VOLUME
	m	[ft-in]	m	[ft-in]	m ³ [YARDS ³]
5 BAY	5.49	[18'-0"]	30.9	[101'-6"]	2.15 [2.8]
7 BAY	7.32	[24'-0"]	42.06	[138'-0"]	2.51 [3.3]
8 BAY	8.23	[27'-0"]	48.1	[157'-9"]	2.68 [3.6]
11 BAY	10.97	[36'-0"]	63.4	[208'-0"]	3.19 [4.2]
14 BAY	13.72	[45'-0"]	79.4	[260'-6"]	3.70 [4.9]



PLAN VIEW



SECTION B-B

NOTES:

- CROSS SLOPE OF PAD SHALL NOT EXCEED 8%, AND NOT VARY MORE THAN 2% FROM FRONT TO BACK.
- UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.

REFERENCES

DRAWN:	D. Staus	DATE:	11/6/98
DESIGNED:		DATE:	
CHECKED:	S. Trageser	DATE:	12/21/98
APPROVED:	RBB	DATE:	12/21/98
CAD FILE:	3540483-0000.dwg		
NEXT ASSEMBLY:			



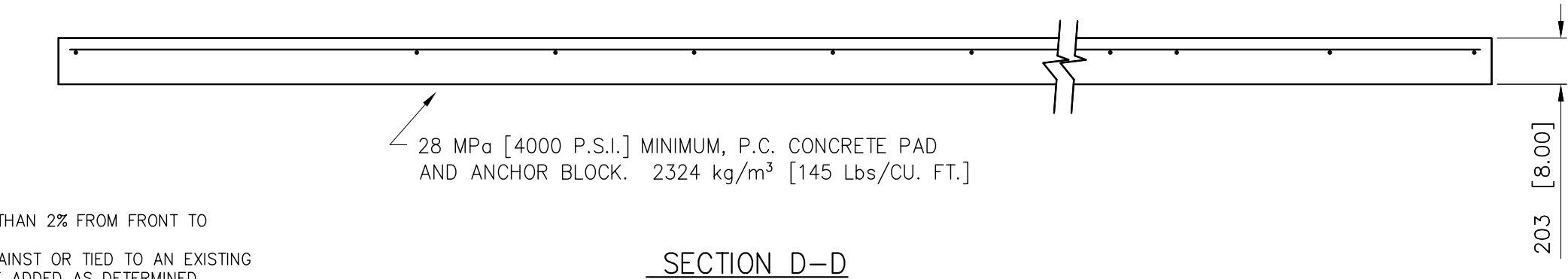
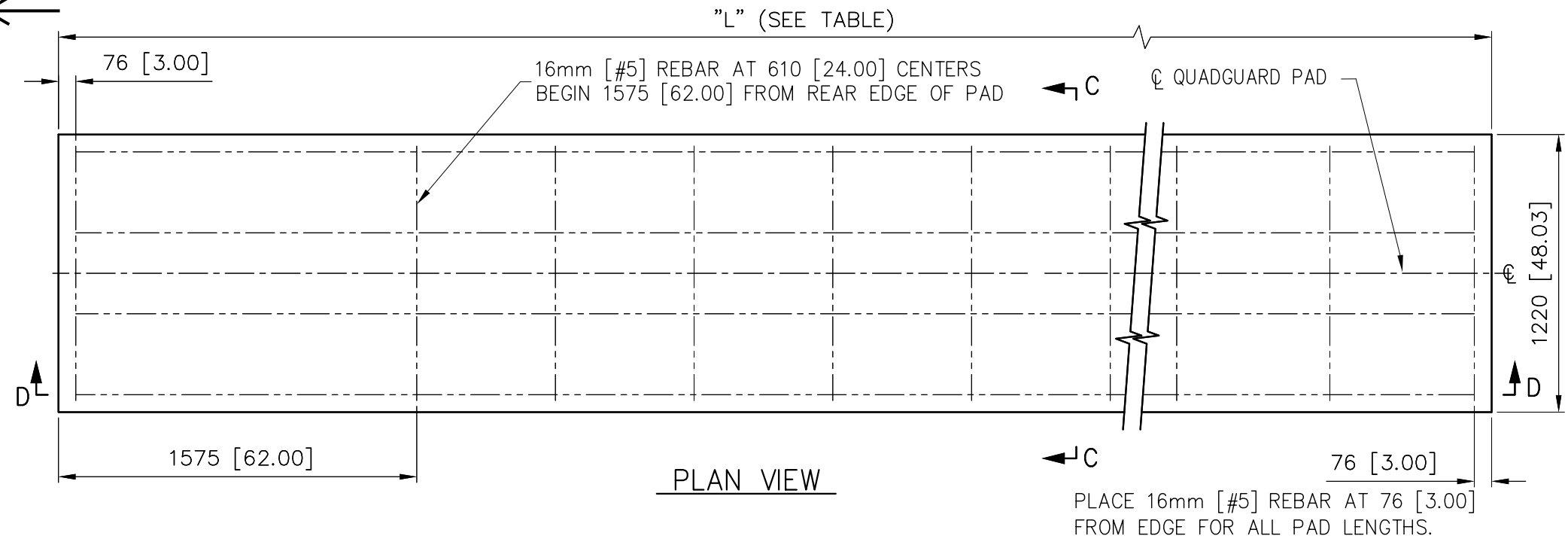
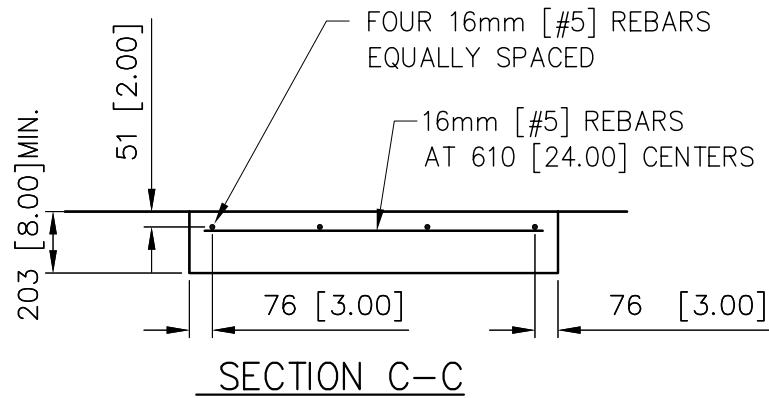
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUADGUARD® ELITE™ SYSTEM
CONCRETE PAD, QG ELITE

Revisions	Date	Rev.	By	Ckd.	App.
ADDED 8 BAYS TO TABLE	12/12/06	A	STT	KM	RCB
8.23 IN TABLE WAS 8.37	12/12/06	B	STT	KEL	RCB
ADDED 5 BAY TO TABLE	02/10/09	C	RGC	STT	RCB

SCALE	1:30	DWG.	3540483-0000	SHEET	1 of 1	REV	C
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NO. OF BAYS	"L" (PAD LENGTH)		REBAR REQUIRED		YARDS OF CONCRETE IN PAD	
	[m]	[ft-in]	[m]	[ft-in]	m ³	[YARDS ³]
1	2.74	[9'-0"]	14.83	[48'-8"]	0.7	[0.9]
2	2.74	[9'-0"]	14.83	[48'-8"]	0.7	[0.9]
3	3.66	[12'-0"]	20.73	[68'-0"]	0.9	[1.2]
4	4.57	[15'-0"]	25.50	[83'-8"]	1.2	[1.5]
5	5.49	[18'-0"]	31.39	[103'-0"]	1.4	[1.8]
6	6.40	[21'-0"]	36.17	[118'-8"]	1.6	[2.1]
7	7.32	[24'-0"]	42.06	[138'-0"]	1.8	[2.4]
8	8.23	[27'-0"]	46.84	[153'-8"]	2.1	[2.7]
9	9.14	[30'-0"]	52.73	[173'-0"]	2.3	[3.0]
10	10.06	[33'-0"]	57.51	[188'-8"]	2.5	[3.3]
11	10.97	[36'-0"]	63.40	[208'-0"]	2.7	[3.6]
12	11.89	[39'-0"]	68.17	[223'-8"]	3.0	[3.9]



28 MPa [4000 P.S.I.] MINIMUM, P.C. CONCRETE PAD AND ANCHOR BLOCK. 2324 kg/m³ [145 Lbs/CU. FT.]

NOTES:

- CROSS SLOPE OF PAD SHALL NOT EXCEED 8%, AND NOT VARY MORE THAN 2% FROM FRONT TO BACK.
- TO PREVENT SLIDING DURING AN IMPACT, PAD MUST BE INSTALLED AGAINST OR TIED TO AN EXISTING STRUCTURE. OTHERWISE ADDITIONAL BELOW GRADE SUPPORTS MUST BE ADDED AS DETERMINED NECESSARY BY THE PROJECT ENGINEER.
- UNITS OF MEASUREMENT ARE MILLIMETERS [INCHES] UNLESS OTHERWISE NOTED.

REFERENCES

DRAWN:	D. Staus	DATE:	5/15/96
DESIGNED:	W.G.K.	DATE:	3/1/96
CHECKED:	S. Trageser	DATE:	5/20/96
APPROVED:	W. G. Krage	DATE:	5/20/96
CAD FILE:	354011.DWG		
NEXT ASSEMBLY:			



ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

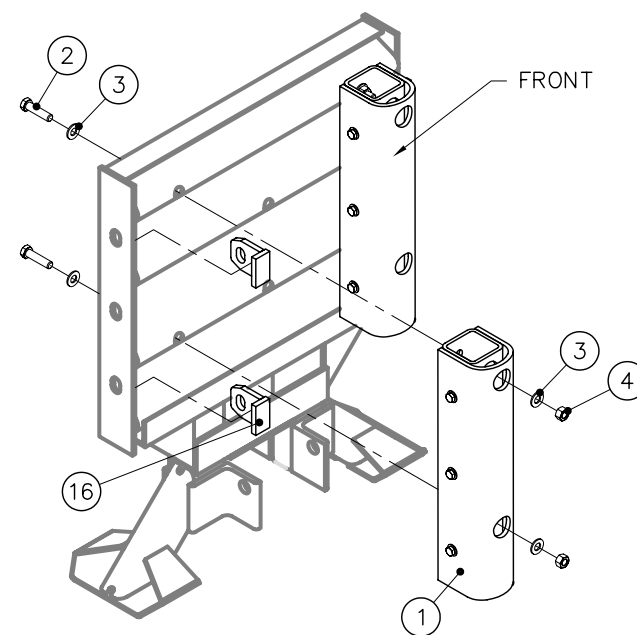
QUADGUARD® SYSTEM
OPTIONAL 8" CONCRETE PAD
FOR TENSION STRUT BACKUP

Revisions	Date	Rev.	By	Ckd.	App.
ADDED 8" PAD OPTION	12/03/03	E	RGC	STT	ACF

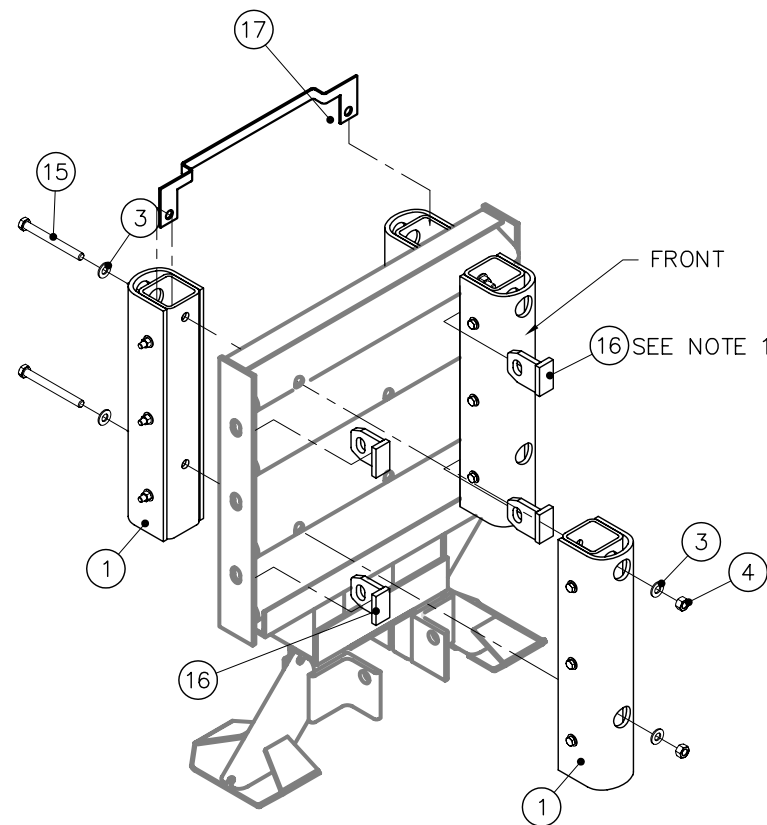
TABLE						
SYSTEM	ASSY NO.	ITEM NUMBER				
		8	9	12	13	14
		QUANTITY				
5 BAY SYSTEM	3540493-0500	3	0	6	4	8
7 BAY SYSTEM	3540493-0700	3	2	10	6	12
8 BAY SYSTEM	3540493-0800	3	3	12	7	14
11 BAY SYSTEM	3540493-1100	3	6	18	10	20
14 BAY SYSTEM	3540493-1400	3	9	24	13	26

PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	REQ'D
1	3540076-0000	BUMPER ASSEMBLY,ELITE,24,30,36	8.00
2	2701071-0000	BOLT,HX,1/2X2,G2,G	4.00
3	2708011-0000	WASHER,FLAT,1/2X1 3/8,G	24.0
4	2704011-0000	NUT,HX,1/2,G	12.0
8	3540480-0000	CYLINDER ASSY,ELITE,QE1	*
9	3540479-0000	CYLINDER ASSY,ELITE,QE2	*
12	2517217-0000	TUBE,CABLE JACKET	*
13	2742329-0102	CABLE ASSEMBLY,CYLINDER RETAINER	*
14	2698271-0000	CLAMP,WIRE ROPE,1/2	*
15	2701591-0000	BOLT,HX,1/2X5,G	8.00
16	2715077-0000	TAB,STOP	8.00
17	2760537-0000	BRACKET,HIT INDICATOR	1.00

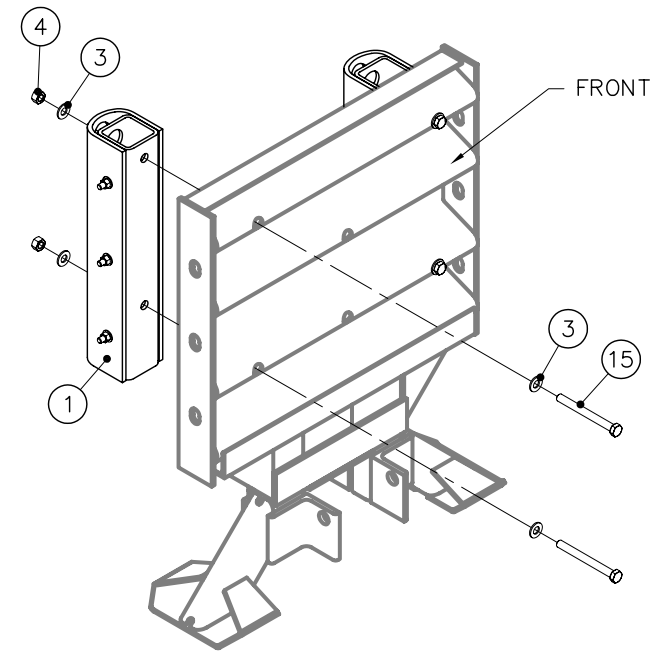
* SEE TABLE



DIAPHRAGM 3



DIAPHRAGM 2



DIAPHRAGM 1

NOTE:
1. PLACE ONLY ON DIAPHRAGMS 2 AND 3.

REFERENCES

DRAWN: D. Staus	DATE: 11/13/98
DESIGNED: RBB	DATE: 11/13/98
CHECKED: KRM	DATE: 3/19/99
APPROVED: RBB	DATE: 3/23/99
CAD FILE: 3540493-0000.dwg	
NEXT ASSEMBLY:	

ASSEMBLY NO. (SEE TABLE)



QUADGUARD® ELITE™ SYSTEM
BAY ASSY, QGE, 24,30,36

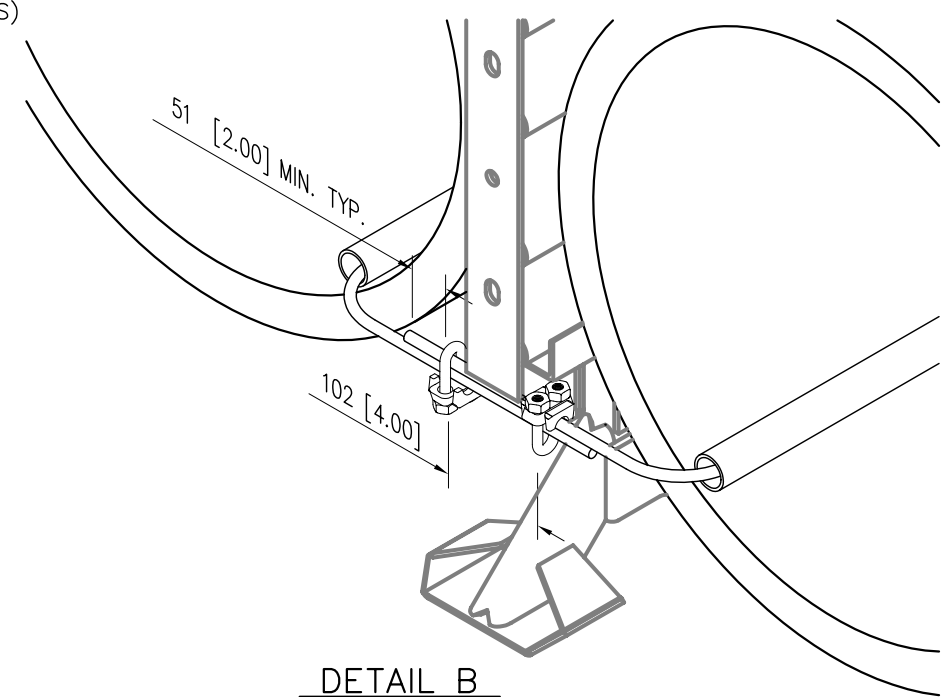
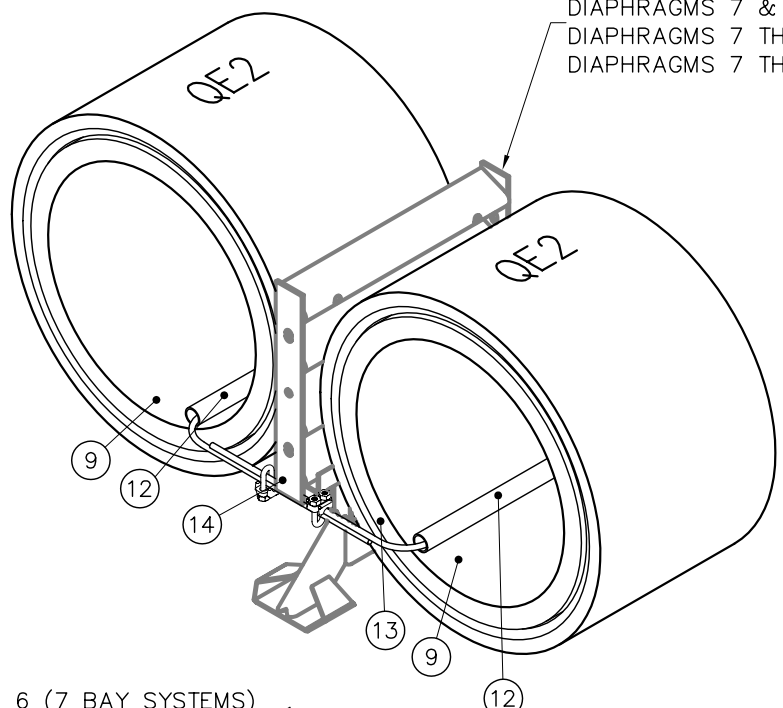
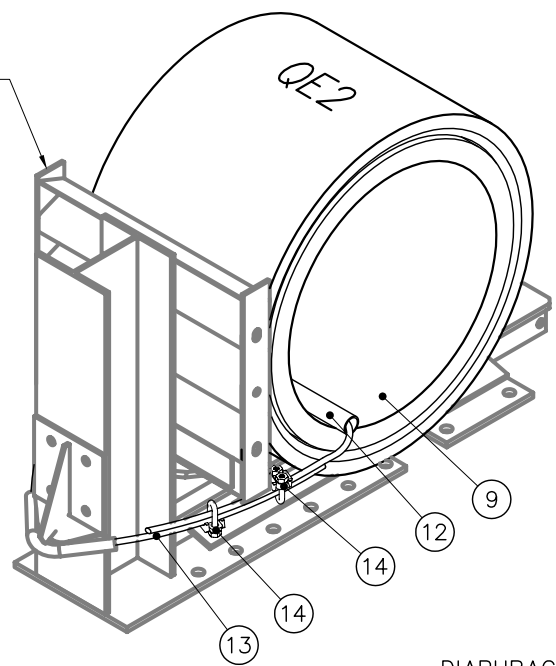
Revisions	Date	Rev.	By	Ckd.	App.
REPOSITIONED ITEM 17 TO REAR OF DIAPHRAGM	2/15/10	H	STT	KRM	FJP
ECO 2408: ITEM 1 WAS 3540574-0000, ADDED ITEM 16 AND NOTE 1	6/23/08	F	DDS	DK	ARVB
ADDED ITEM 17 (ECO 2765)	9/18/09	G	WWL	JME	FJP

PARTS LIST

ITEM	STOCK NO.	DESCRIPTION	REQ'D
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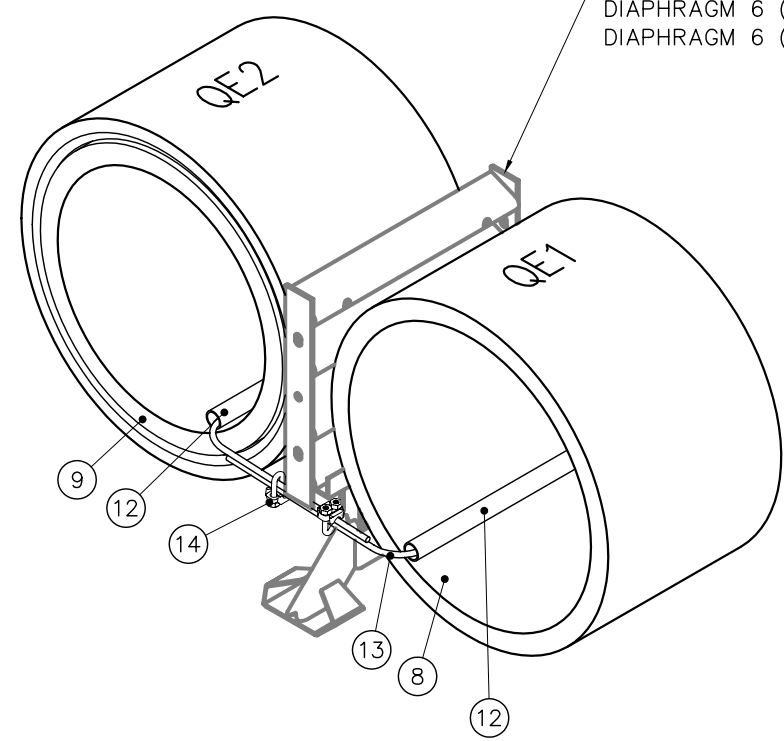
DIAPHRAGM 7 (7 BAY SYSTEMS)
 DIAPHRAGMS 7 & 8 (8 BAY SYSTEMS)
 DIAPHRAGMS 7 THRU 11 (11 BAY SYSTEMS)
 DIAPHRAGMS 7 THRU 14 (14 BAY SYSTEMS)

BACKUP

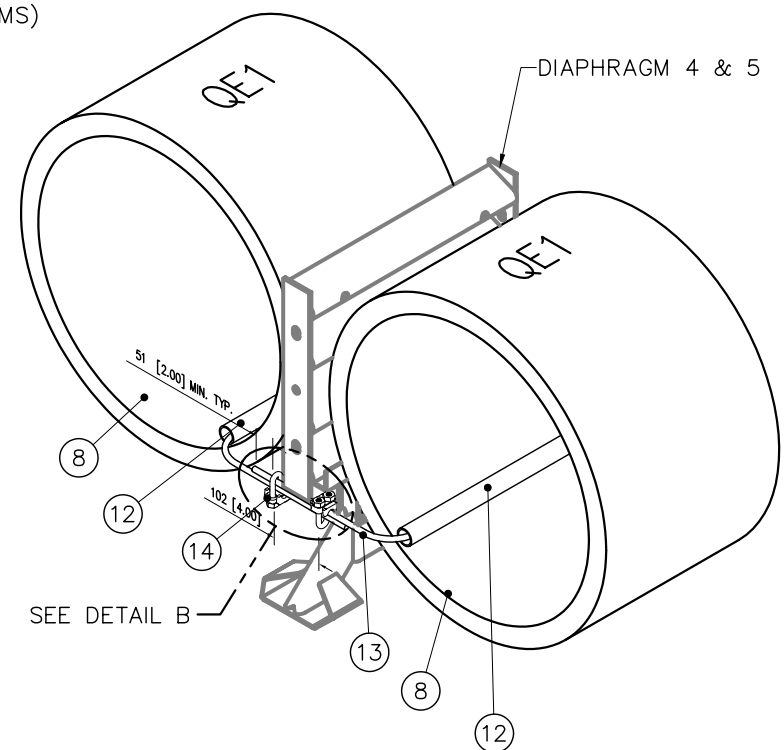


DETAIL B

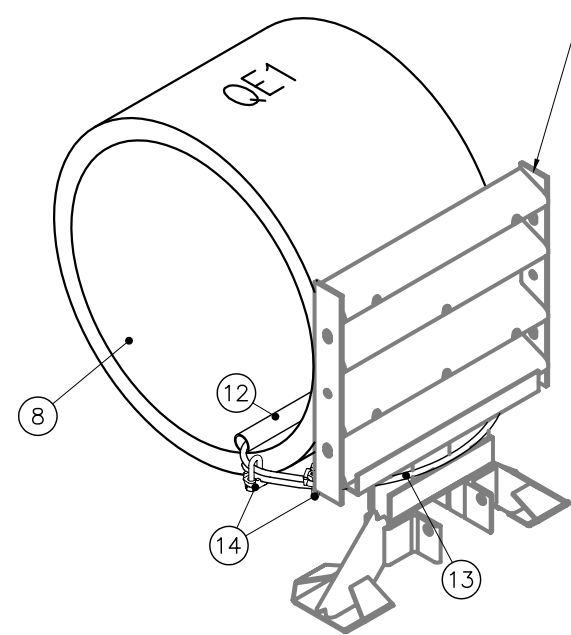
DIAPHRAGM 6 (7 BAY SYSTEMS)
 DIAPGRAGM 6 (8 BAY SYSTEMS)
 DIAPHRAGM 6 (11 BAY SYSTEMS)
 DIAPHRAGM 6 (14 BAY SYSTEMS)



DIAPHRAGM 4 & 5



DIAPHRAGM 3



NOTES:

1. REMOVE ALL SLACK IN CABLE (ITEM 13) PRIOR TO TIGHTENING THE CABLE CLAMPS (ITEM 14).
2. TORQUE THE CABLE CLAMPS (ITEM 14) TO 50 FT-LBS. DRAW DOWN BOTH NUTS EVENLY.

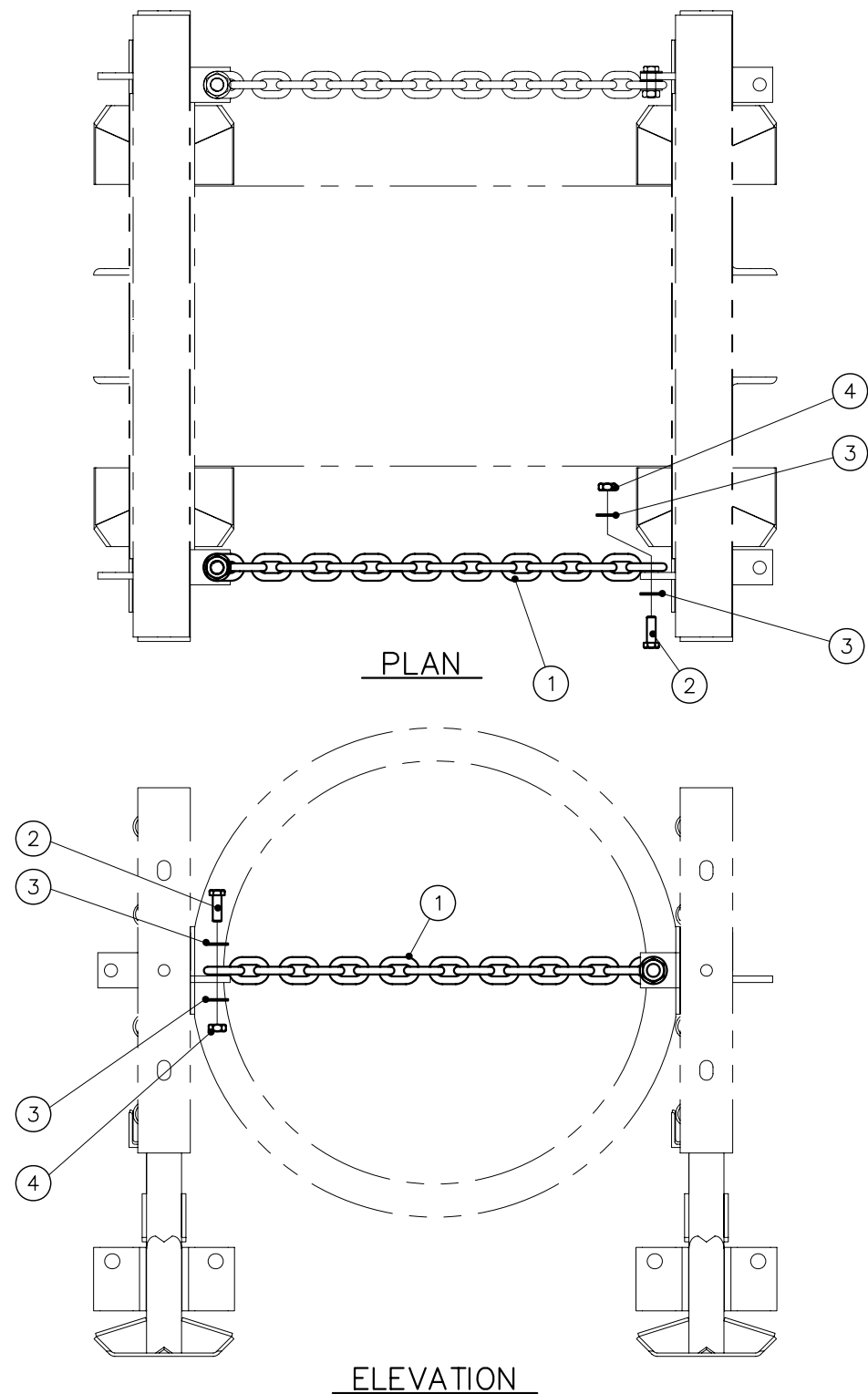
REFERENCES

DRAWN:	D. Staus	DATE:	11/13/98
DESIGNED:	RBB	DATE:	11/13/98
CHECKED:	KRM	DATE:	12/8/98
APPROVED:	RBB	DATE:	12/9/98
CAD FILE:	3540493-0000 SH02.dwg		
NEXT ASSEMBLY:			

 ENERGY ABSORPTION SYSTEMS, INC.
 ENGINEERING AND RESEARCH DEPARTMENT

QUADGUARD® ELITE™ SYSTEM
 BAY ASSY, QGE, 24,30,36

Revisions	Date	Rev.	By	Ckd.	App.
SEE SHEET 1	2/16/10	E	STT	/	/
SEE SHEET 1	6/23/08	F	DDS	DK	ARVB
SEE SHEET 1	9/18/09	G	WWL	/	/



PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	REQ'D
1	2517212-0000	CHAIN, 3/8", GRADE 40, 31, G	1.00
2	2701210-0000	BOLT, HX, 1/2X2, G5, G	2.00
3	2708011-0000	WASHER, FLAT, 1/2X1 3/8, G	4.00
4	2704011-0000	NUT, HX, 1/2, G	2.00

TABLE A	
MODEL NO.	CHAIN ASSEMBLIES REQUIRED
QS2405E	NOT APPLICABLE
QS3005E	NOT APPLICABLE
QS3605E	6
QN4805E	6
QS6905E	6
QS9005E	6
QS2407E	NOT APPLICABLE
QS3007E	NOT APPLICABLE
* QS3607E	10
QN4807E	10
* QS6907E	10
* QS9007E	10
QS2408E	NOT APPLICABLE
QS3008E	NOT APPLICABLE
* QS3608E	12
QN4808E	12
* QS6908E	12
* QS9008E	12
QS2411E	NOT APPLICABLE
QS3011E	NOT APPLICABLE
* QS3611E	18
QN4811E	18
* QS6911E	18
* QS9011E	18
QS2414E	NOT APPLICABLE
QS3014E	NOT APPLICABLE
* QS3614E	24
QN4814E	24

* TWO CHAIN ASSEMBLIES REQUIRED IN ALL BAYS EXCEPT FIRST & SECOND BAYS ON APPLICABLE SYSTEMS (SEE TABLE A).

NOTE:
1. SEE TABLE A FOR QUANTITY OF CHAIN ASSEMBLIES NEEDED.

ASSY NO. 3540491-0000



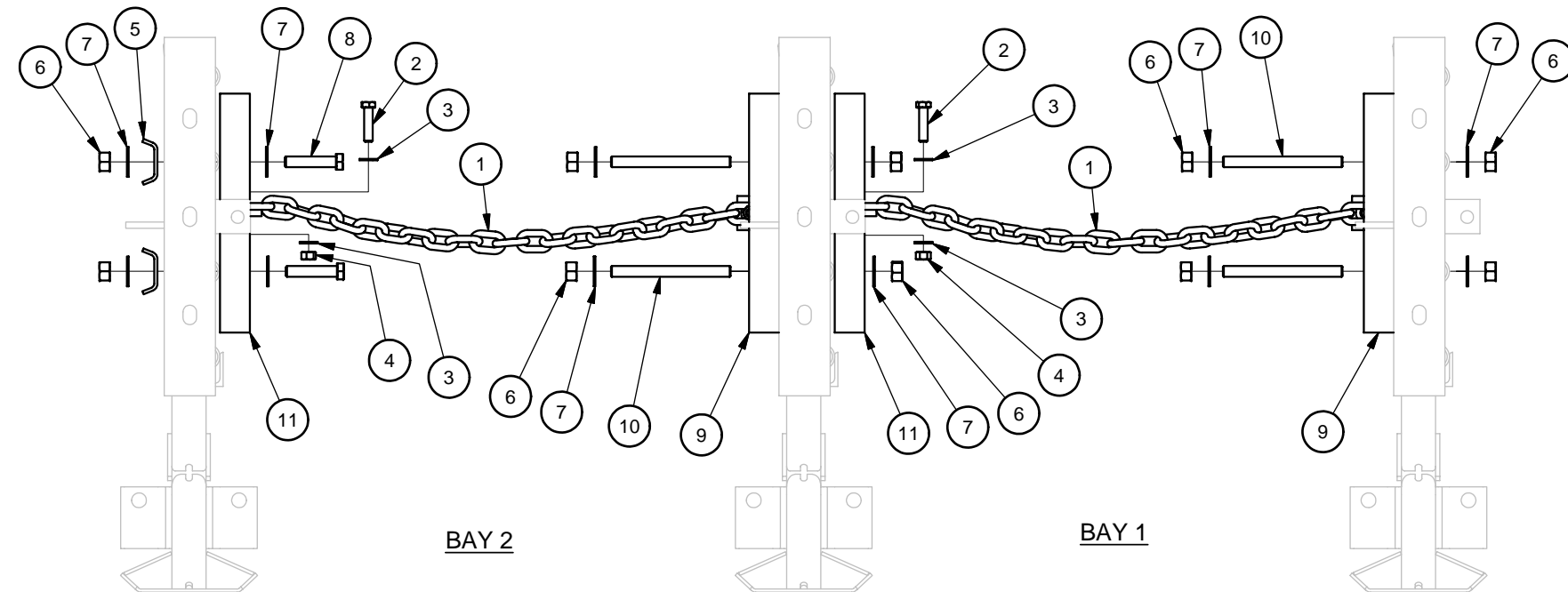
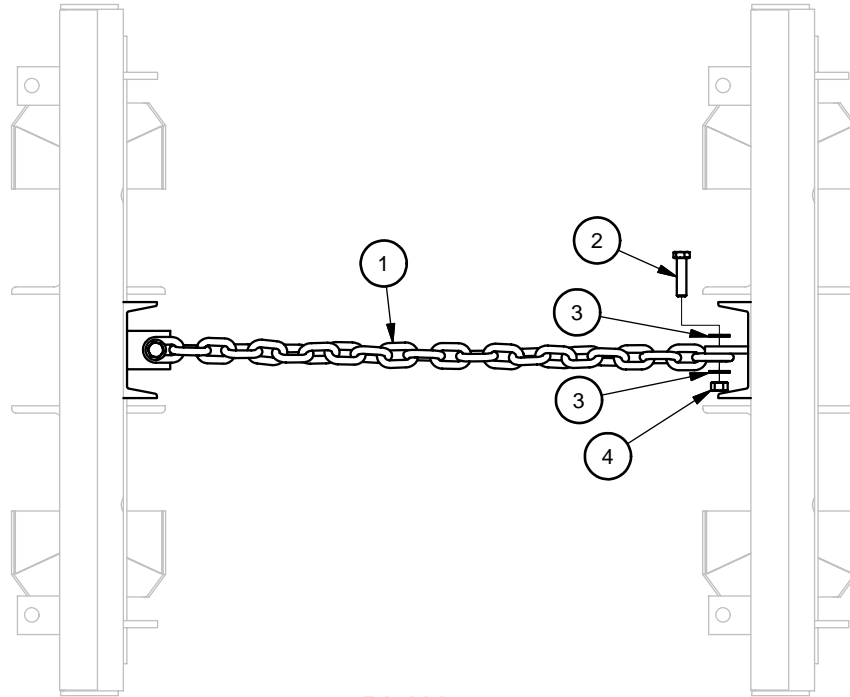
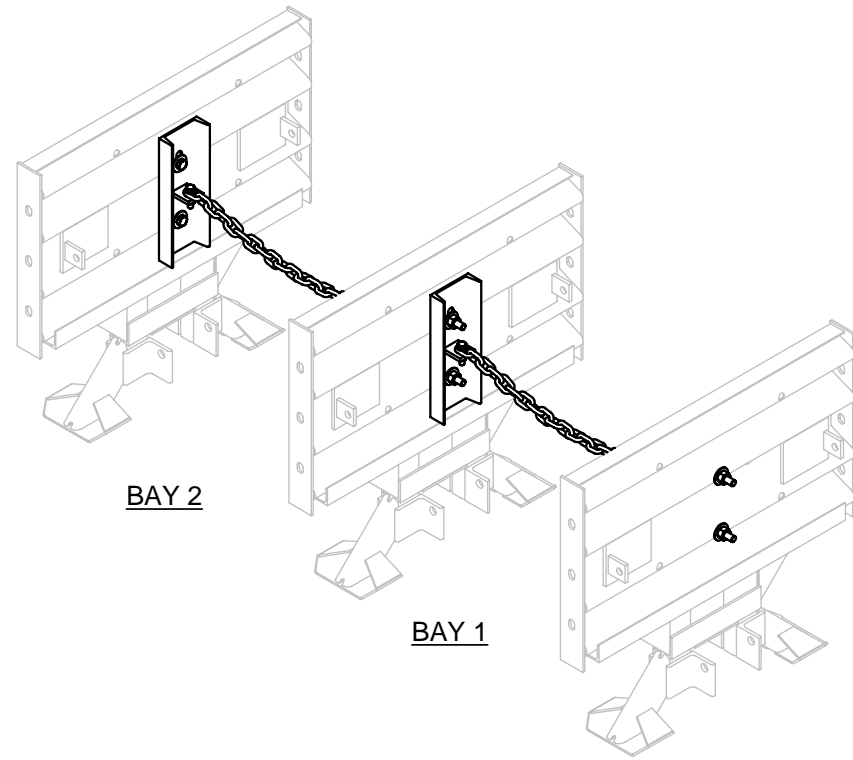
ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

CHAIN ASSY, QGE

REFERENCES

DRAWN:	S. VAN OGLE	DATE:	11/12/98
DESIGNED:	RBB	DATE:	11/12/98
CHECKED:	KRM	DATE:	3/2/99
APPROVED:	RBB	DATE:	3/16/99
CAD FILE:	3540491-0000.DWG		
NEXT ASSEMBLY:			

Revisions	Date	Rev.	By	Ckd.	App.
ADDED QN#'s TO TABLE A	06/27/07	C	RGC	STT	RCB
ADDED 5 BAY TO TABLE A	02/12/09	D	RGC	STT	RCB
ITEM 2 WAS: 2701071-0000 (ECO 2694)	7/23/09	E	WWL	STT	FJP



PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	QTY.
1	2517915-0000	CHAIN,3/8,GRADE 40,29.5,G	2
2	2701210-0000	BOLT,HX,1/2X2,G5,G	4
3	2708011-0000	WASHER,FLAT,1/2X1 3/8,G	8
4	2704011-0000	NUT,HX,1/2,G	4
5	2760507-0000	SHIM,NOSE CLAMP,G	2
6	2704141-0000	NUT,HX,5/8,G	10
7	2708291-0000	WASHER,FLAT,5/8 X 1 3/4, G	12
8	2699572-0000	BOLT,HX,5/8X3,G2,G	2
9	2760093-0000	BRACKET,CHAIN MOUNT,VERT TAB,G	2
10	2699016-0000	ROD,THREADED,5/8X7,G5,G	4
11	2760094-0000	BRACKET,CHAIN MOUNT,HORZ TAB,G	2

TABLE A	
MODEL NO.	CHAIN ASSEMBLIES REQUIRED
* QS2405E	1
* QS3005E	1
* QS3605E	1
* QS2407E	1
* QS3007E	1
* QS3607E	1
QN4807E	NOT APPLICABLE
QS6907E	NOT APPLICABLE
QS9007E	NOT APPLICABLE
* QS2408E	1
* QS3008E	1
* QS3608E	1
QN4808E	NOT APPLICABLE
QS6908E	NOT APPLICABLE
QS9008E	NOT APPLICABLE
* QS2411E	1
* QS3011E	1
* QS3611E	1
QN4811E	NOT APPLICABLE
QS6911E	NOT APPLICABLE
QS9011E	NOT APPLICABLE
* QS2414E	1
* QS3014E	1
* QS3614E	1
QN4814E	NOT APPLICABLE

* CHAIN ASSEMBLY REQUIRED IN FIRST AND SECOND BAYS ON APPLICABLE SYSTEMS (SEE TABLE A).

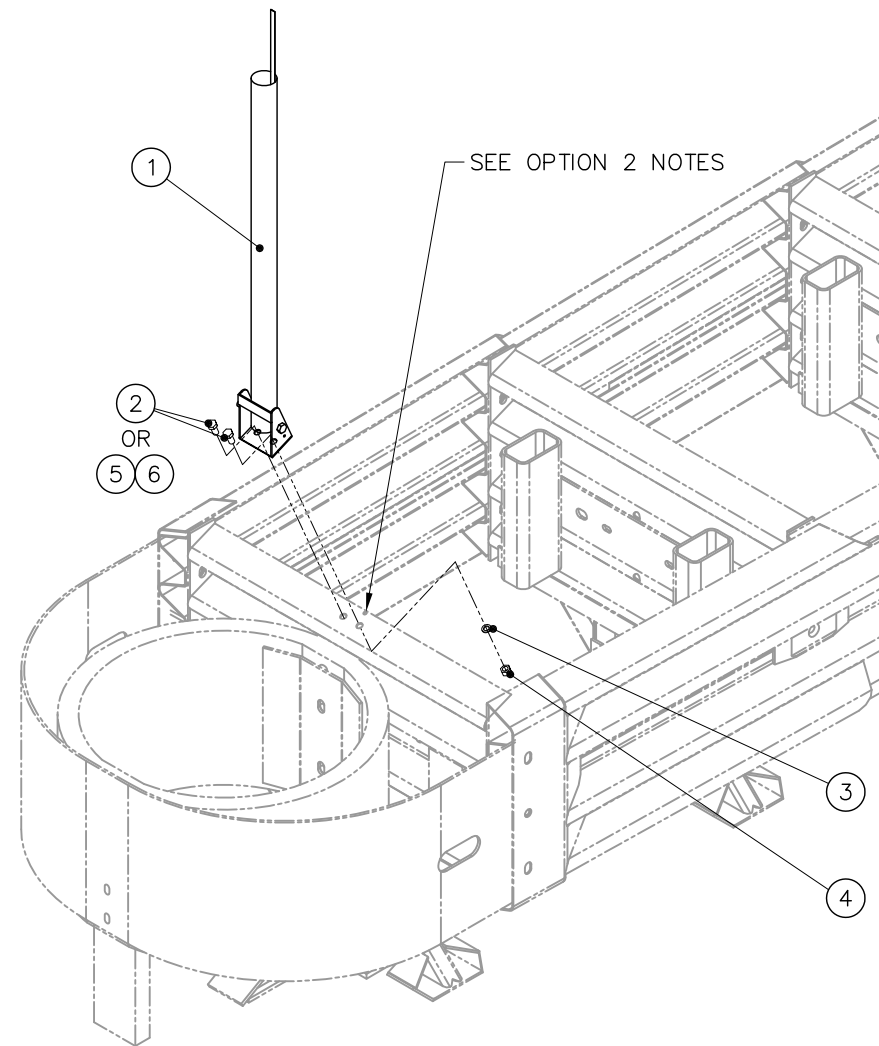
ASSEMBLY NO. 3540075-0000



CHAIN ASSY,QGE,24,30,36
BAY 1 AND 2

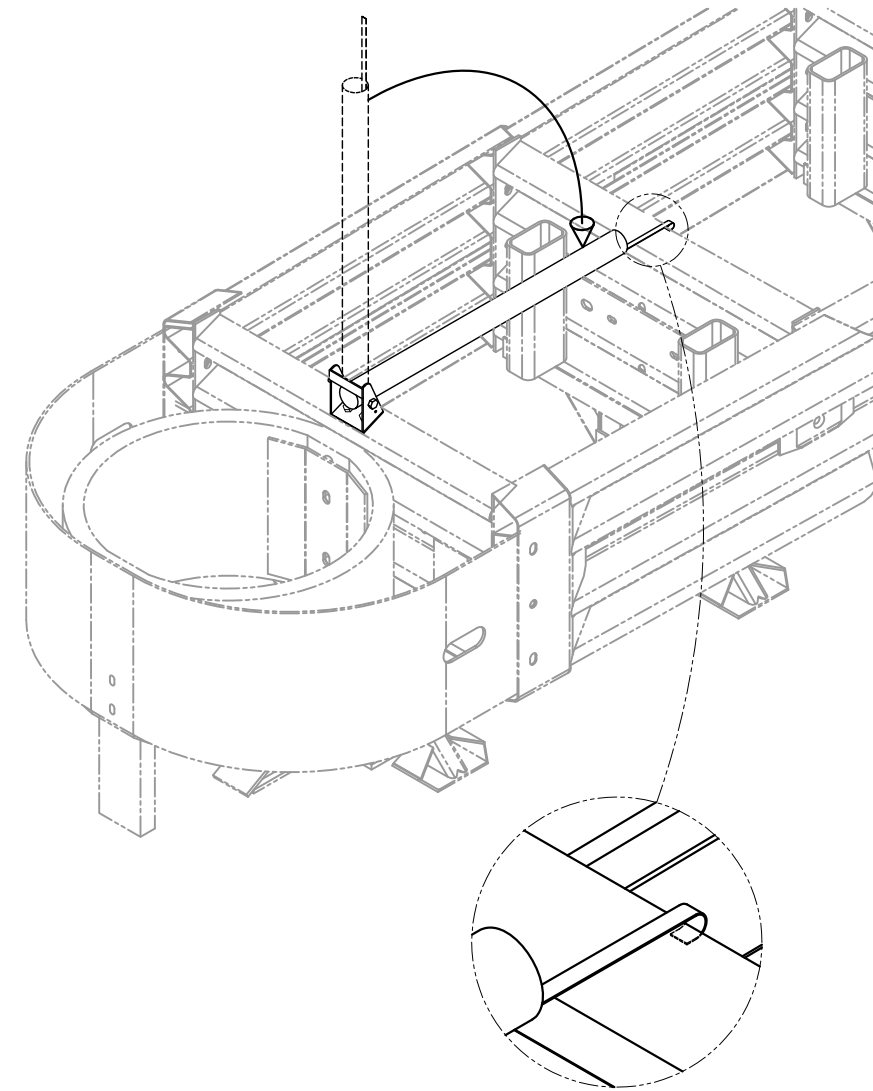
Revision	Date	Rev	By	Chk.	App.
ITEM 2 WAS 2701071-0000, ITEM 9 WAS 2760010-0000 QTY WAS 4, ADDED ITEM 11, QS2405E-QS3605E TO CHART & BAY 1 AND 2 TO DESCRIPTION (ECO2496)	11/12/08	A	WWL	LSTT	AVB

DRAWN: D. Standridge	DATE: 6/17/2008
DESIGNED: Anthony Van Brocklin	DATE: 6/3/2008
CHECKED: JME	DATE: 7/11/2008
APPROVED: AVB	DATE: 7/15/2008
FILE: 3540075-0000.idw	
NEXT ASSEMBLY:	



STEP 1: POSITION HIT INDICATOR ON 1ST DIAPHRAGM. DRILL ONE $\phi 1/4$ " HOLE AS NEEDED TO SET BRACKET TAB IN DIAPHRAGM. BRACKET SHOULD BE CENTERED ON TOP SURFACE OF DIAPHRAGM.

STEP 2: ATTACH HIT INDICATOR TO 1ST DIAPHRAGM. OPTION 1: MATCH DRILL TWO $\phi 9/16$ " HOLES AS NEEDED IN DIAPHRAGM. USE ITEMS 2, 3 & 4 TO ATTACH BRACKET. OPTION 2: USE SELF DRILLING + TAP SCREWS (ITEM 5) ALONG WITH FLAT WASHER (ITEM 6) TO ATTACH BRACKET.



STEP 3: ROTATE HIT INDICATOR TO HORIZONTAL POSITION AND BEND TRIGGER CLIP AROUND TOP OF 2ND DIAPHRAGM

PARTS LIST			
ITEM	STOCK NO.	DESCRIPTION	REQ'D
1	3540462-0000	HIT INDICATOR,LMC/ELITE	1.00
2	2701111-0000	BOLT,HX,1/2X1,G	2.00
3	2708181-0000	WASHER,LOCK,1/2,G	2.00
4	2704011-0000	NUT,HX,1/2,G	2.00
5	2706442-0600	SCREW,HWH,1/4X1,SELF DRILL/TAP,COATED	2.00
6	2708101-0000	WASHER,FLAT,1/4 X 1,G	2.00

REFERENCES

DRAWN:	T. Busse	DATE:	08/19/98
DESIGNED:	RBB	DATE:	9/11/98
CHECKED:	KM	DATE:	9/4/98
APPROVED:	RBB	DATE:	9/10/98
CAD FILE:	3540463-0000A.dwg		
NEXT ASSEMBLY:			

ASSEMBLY NO. 3540463-0000

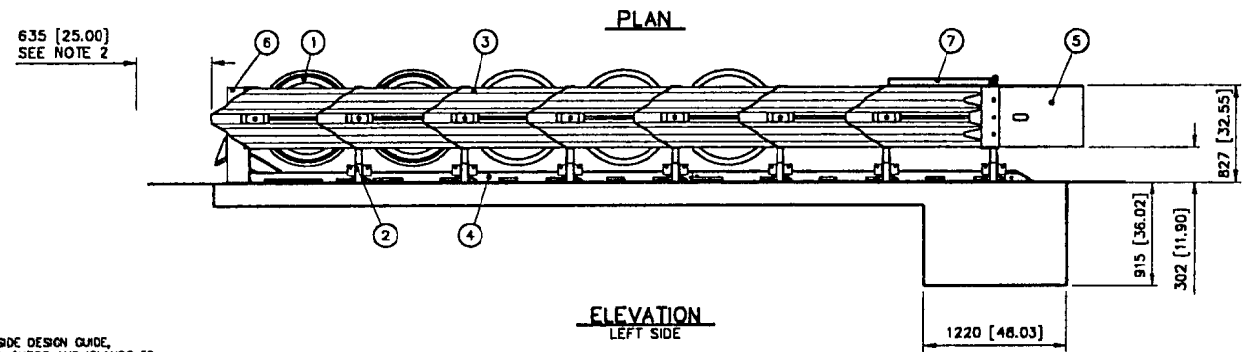
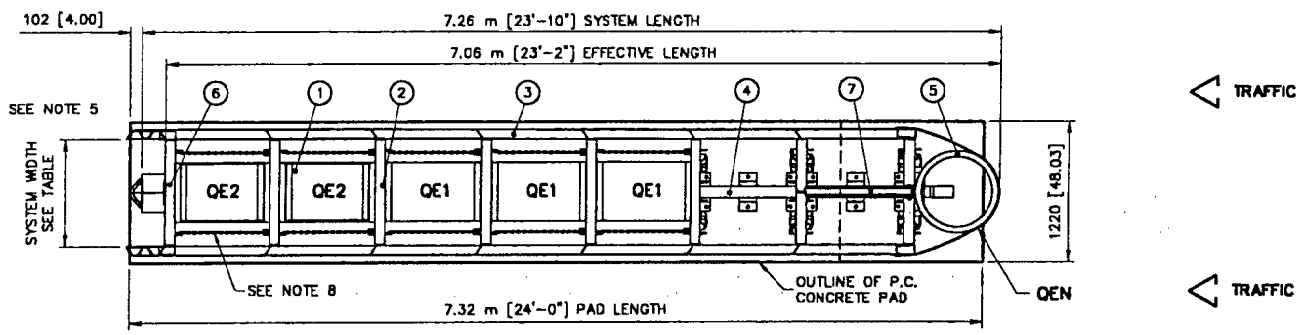


ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUADGUARD[®] LMC/ELITE SYSTEM
HIT INDICATOR, W/HARDWARE, LMC/ELITE

Revisions	Date	Rev.	By	Ckd.	App.
UPDATE TITLE BLOCK TO INCLUDE ELITE	8/7/00	A	EB	JME	SPT
ADDED ITEMS 5 & 6, AND REVISED NOTES (ECO 2765)	9/18/09	B	WWL	JME	FJP

SCALE	1:8	DWG.	3540463-0000	SHEET	1 of 1	REV	B
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- NOTES:**
- IN COMPLIANCE WITH THE AASHTO 1998 ROADSIDE DESIGN GUIDE, MANUFACTURER RECOMMENDS REMOVAL OF ALL CURBS AND ISLANDS TO ENSURE PROPER IMPACT PERFORMANCE.
 - PROVISION SHALL BE MADE FOR REAR FENDER PANELS TO SLIDE REARWARD UPON IMPACT 635 [25.00] MM.
 - 150 [6.00] MIN. REINFORCED 28 MPa [4000 PSI] P.C. CONCRETE PAD OR 200 [8.00] MIN. NON-REINFORCED 28 MPa [4000 PSI] P.C. CONCRETE ROADWAY.
 - SEE THE "QUADGUARD ELITE SYSTEM DESIGN 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 1-888-32-ENERG.

- WHERE NECESSARY, THE CUSTOMER SHALL SUPPLY A TRANSITION FROM THE QUADGUARD SYSTEM TO THE OBJECT BEING SHIELDED.
- UNITS OF MEASUREMENT ARE MILLIMETERS (INCHES) UNLESS OTHERWISE NOTED.
- BACKUP ASSEMBLY NOT INCLUDED IN MODEL NUMBER.
- CHAINS INCLUDED ONLY ON 36" SYSTEMS.

MODEL	SYSTEM WIDTH
QS2407E*	610 [24.00]
QS3007E*	762 [30.00]
QS3607E*	914 [36.00]

* Y=YELLOW NOSE
G=GRAY NOSE

UNIDIRECTIONAL
MODEL NO. QS__07E (SEE CHART)

KEY	① QUADGUARD ELITE CYLINDER	④ MONORAIL	⑦ HIT INDICATOR		
	② DIAPHRAGM	⑤ NOSE ASSEMBLY			
	③ FENDER PANEL	⑥ BACKUP			
Revisions	Date	Rev.	By	Ckd.	App.

REFERENCES

SERIAL#	FENDER PANEL ASSY.	3540454-0000
SALES ORDER#	BACKUP ASSY.	3540484-0000
EH PROJECT#	RAL ASSY.	3540482-0000
DESIGN SPEED	CONCRETE PAD	3540483-0000
NOSE COLOR	BAY ASSY.	3540483-0000
NUMBER OF UNITS	CHAIN ASSY.	3540491-0000
	HIT INDICATOR ASSY.	3540483-0000
	NOSE ASSY.	3540499-0000
	DIAPHRAGM ASSY.	3540487-0000

DESIGNED BY	S. Van Ogle	DATE	11/12/98
DESIGNED BY	R. Bloski	DATE	11/12/98
DRAWN BY	KRM	DATE	2/3/99
CHECKED BY	RBB	DATE	2/3/99
CAD FILE:	QL2TSCVR-U.dwg		

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

QUADGUARD® ELITE™ SYSTEM
W/ TENSION STRUT BACKUP

SHEET	1=40	TITLE	QL2TSCVR-U	DATE	1 of 1	REV	
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