### PARTS LIST

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<td>PANEL/strap ASSY</td>
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<td>TRANSITION STRAP ASSY</td>
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### NOTES
1. MANUFACTURER RECOMMENDS THAT THE 1905 [75.00] SECTION DIRECTLY BEHIND THE BRS BE PARALLEL TO THE CENTERLINE OF THE UNIT (A MAX FLARE OF 3 DEG IS PERMISSIBLE).
2. THE QUADRAFORM DOWNSTREAM FROM THE BRS SHOULD BE TAPERED & TRANSITIONED AS NECESSARY TO CREATE BRS ATTACHMENT REQUIREMENTS AS SHOWN IN SECTION A-A & NOTE 1 ABOVE.
3. THE BRAKEMASTER SYSTEM MUST BE ATTACHED TO A 3810 (150.00) MIN SECTION OF TRAFFIC BARRIER WITH PANEL ON BOTH SIDES OF 152 (6.00) MIN STEEL OR WOODEN POSTS & BLOCKOUTS FOR PROPER IMPACT PERFORMANCE.
4. DURING AN IMPACT, THE FENDER PANELS MAY FLARE AS MUCH AS 1219 (48.00) ON BOTH SIDES.
5. MANUFACTURER RECOMMENDS CROSS SLOPE NOT TO EXCEED 8% (5 DEG.) (12:1).
6. IN COMPLIANCE WITH THE AAR #1988 ROADSIDE DESIGN GUIDE, MANUFACTURER RECOMMENDS REMOVAL OF ALL CURVES AND GLANDS FOR PROPER IMPACT PERFORMANCE.
7. STREAMFLOW GUARDRAIL MUST BE ANCHORED TO WITHSTAND A TENSION OF 534 KN [120,000 LBS] WHICH COULD DEVELOP DURING A SIDE ANGLE IMPACT.
8. CAUTION: DO NOT ATTACH THE BRAKEMASTER SYSTEM DIRECTLY TO A RIGID CONCRETE BARRIER. A GUARDRAIL TRANSITION SECTION IS REQUIRED CONTACT ENERGY ABSORPTION SYSTEMS AT (312) 667-7540 FOR MORE INFORMATION.
9. UNITS OF MEASURE ARE MILLIMETERS (INCHES) UNLESS OTHERWISE NOTED.

### DESIGN SPEED

**AVERAGE GS:**
- Design Speed: 10 mph (4.6 m/s)
- Est Force on Backup Structure: 5 kips

### REFERENCES

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**NOTE:**
- WESTERN MICHIGAN UNIVERSITY
- BRAKEMASTER SYSTEMS, INC.
- 312-667-7540

**GENERAL ASSEMBLY**

- UNIDIRECTIONAL SYSTEM

**REFERENCE NUMBER:**
- 1/8" x 1'-0" K

**REVISIONS:**
- Dated: 12-6-98

**MODEL NO.**
- 10416865R55
### Parts List

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### Notes

1. Manufacturer recommends that the 9105 (25.0 ft) section directly behind the BRS be installed to the centerline of the unit (a max flare of 3 deg is permissible).

2. The guardrail downstream from the BRS should be tapered and transitioned as necessary to create BRS attachment requirements as shown in section A-A and note 1 above.

3. The Brakemaster System must be attached to a 5B10 (150.0 min) section of traffic barrier with panel on both sides of 452 (5.00 min) weld or wooden posts & blockouts for proper impact performance.

4. During an impact the fender panels max 1/16" out as much as 12/16 [48.00] on both sides.

### Design Speed

- 96 mph

### Project Info

- Design: Speed 96 mph
- Project: 96 mph
- Color: Red
- Manufacturer: Brakemaster Systems, Inc.
- General Assembly Type: (Bidirectional System)

### References

- BIDIRECTIONAL INSTALLATION SHOWN
- OHIO DEPARTMENT OF TRANSPORTATION
  - APPROVED
  - REJECTED
  - FURTHER REVIEW AND RESUBMIT

- DATE: 3-6-98

- MANUFACTURER RECOMMENDS CROSS SLOPE NOT TO EXCEED 6% (5 deg) (12.1)
- IN CONFORMITY WITH THE AASHO 1989 ROADWAY DESIGN CODE, MANUFACTURER RECOMMENDS REMOVAL OF ALL CURBS AND PLAIN FOR PROPER IMPACT PERFORMANCE.
- DOWNSRSTEAM GUARDRAIL MUST BE ANCHORED TO WHIENS AND A TENSION OF 534 MN (120,000 LBS) WHICH COULD DEVELOP DURING A SIDE ANGLE IMPACT.
- CAUTION: DO NOT ATTACH THE BRAKEMASTER SYSTEM DIRECTLY TO A ROAD CONCRETE BARRIER.A GUARDRAIL TRANSITION SECTION IS REQUIRED. CONTACT ENERGY ABSORPTION SYSTEMS AT (312) 467-6750 FOR FURTHER INFORMATION.
- UNITS OF MEASUREMENT ARE MILLIMETERS (INCHES) UNLESS OTHERWISE NOTED.

### Model No.

- 106106BRSS5

### Engineering and Research Department

**Brakemaster Systems, Inc.**

**Energy Absorption Systems Inc.**

**(Bidirectional System)**
NOTE:
DURING AN IMPACT, THE FENDER PANELS MAY FLARE OUT AS MUCH AS 1219 (48.00) ON BOTH SIDES.

NEW OR EXIST GUARDRAIL
(SEE NOTE 2)

CAUTION: DO NOT ATTACH THE BRAKEMASTER SYSTEM DIRECTLY TO A RIGID CONCRETE BARRIER. A GUARDRAIL TRANSITION SECTION IS REQUIRED. CONTACT ENERGY ABSORPTION SYSTEMS AT (312) 467-6750 FOR MORE INFORMATION.

W-BEAM GUARDRAIL

ELEVATION
(LEFT SIDE)

UNIDIRECTIONAL INSTALLATION SHOWN

OHIO DEPARTMENT OF TRANSPORTATION
1. REJECTED
2. REVISE AND RESUBMIT

DATE 3-6-98

MODEL NO. 1061066R55

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

BRAKEMASTER
(UNIDIRECTIONAL)
W/ FOUNDATION TUBES

Scale: (1,32) 3/8" = 1'-0"

92-00-81

Sheet No.
NOTE:
DURING AN IMPACT, THE FENDER PANELS MAY FLARE OUT AS MUCH AS 1219 [48 00 I ON BOTH SIDES

NEW OR EXIST GUARDRAIL
(SEE NOTE 2)

CAUTION: DO NOT ATTACH THE BRAKEMASTER SYSTEM DIRECTLY TO A RIGID CONCRETE BARRIER. A GUARDRAIL TRANSITION SECTION IS REQUIRED. CONTACT ENERGY ABSORPTION SYSTEMS AT (312) 467-6750 FOR MORE INFORMATION.

9957 [33'-8"]

ELEVATION
(LEFT SIDE)

BIDIRECTIONAL INSTALLATION SHOWN

OHIO DEPARTMENT OF TRANSPORTATION

APPROVED

REJECT

REVISE AND RESUBMIT

By: [Signature]
DATE: 13-6-98

MODEL NO. 106106BRS5

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

BRAKEMASTER
(BIDIRECTIONAL)
W/ FOUNDATION TUBES
NOTES:
1. TIGHTEN NUTS 1/2 TURN BEYOND SNUG
2. EXTRA HOLES IN ITEM 2 ARE FOR ±50mm (2") TOLERANCE.
3. DIMENSIONS ARE IN mm (inches).

Revisions

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OHD DEPARTMENT OF TRANSPORTATION
BY APPROVED
REJECTED
REVIEW AND RESUBMIT

DATE: 5/3/96

ASSEMBLY NO. 9202024-0000

ENERGY ABSORPTION SYSTEMS, INC.
ENGINEERING AND RESEARCH DEPARTMENT

ANCHOR ASSY, FOUNDATION TUBE,
6 1/2 FT., BRS

1/18  9202024-0000  1 of 1  0