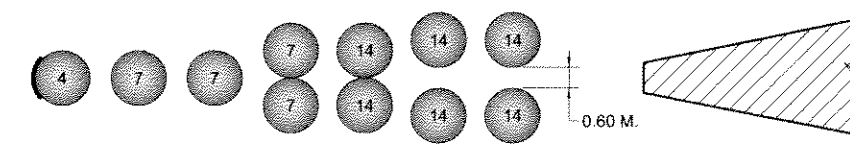


SITE CONDITIONS AND PLACEMENT REQUIREMENTS

CONDITION	REQUIREMENTS	ILLUSTRATION
1. ANGLE OF ARRAY IN RELATION TO CENTER LINE OF OBSTACLE.	NOT MORE THAN 10°	
2. BIDIRECTIONAL TRAFFIC	OFFSET ARRAY TO AVOID IMPACT TO THE REAR MODULE FROM WRONG-WAY VEHICLES	
3. MODULE SPACING: MODULE TO MODULE MODULE TO HAZARD	0.15 USUAL 0.30 - 0.60	
4. "COFFIN" CORNER	SHIELD 0.75 OUTSIDE OF HAZARD	
5. SLOPING SITES (LATERAL AND LONGITUDINAL)	10:1 MAXIMUM	
6. CURBS AND RAISED ISLANDS	NO MORE THAN 4" HIGH (REMOVE IF POSSIBLE)	

GENERAL NOTES:

- REAR MODULES SHALL OVERLAP (IN WIDTH) THE FIXED OBJECT ON EACH SIDE BY A MINIMUM OF 0.75M.
- MODIFICATION OF ARRAY: WHEN PROXIMITY OF TRAFFIC LANES EXCLUDE THE USE OF A WIDER BARRIER, THE FRONT OF THE BARRIER MAY RETAIN THE STANDARD WIDTH, BUT THE REAR CAN BE WIDENED BY SPACING AS SHOWN IN THIS DIAGRAM.
 
- BARRIER CAN BE PLACED AT ANY DISTANCE FROM THE SHOULDER BOTH AT ROADSIDE AND IN MEDIAN SITES FROM 0 TO 9.00M. DEPENDING ON THE LOCATION OF THE HAZARDOUS FIXED OBJECT. ANGLING OF THE BARRIER TOWARD ON-COMING TRAFFIC WILL BE FROM 3 TO 10 DEGREES DEPENDING ON SPACE AVAILABLE.
- WHENEVER POSSIBLE, CURBS 0.10 M. AND HIGHER SHOULD BE REMOVED FROM HAZARDOUS SITES. HOWEVER, WHEN REMOVAL IS NOT POSSIBLE, MODULES CAN BE SEPARATED ALONG THE BARRIER AXIS TO FIT THE SITUATION.
- LONGITUDINAL SPACING OF MODULES MAY BE INCREASED WHERE SPACE PERMITS. FOR EXAMPLE, 0.60 M. OR EVEN 0.90 M. SPACING OF SOME THE MODULES MAY PERMIT THE DESIGN ENGINEER TO EXPLOIT ALL THE SPACE ALLOCATED FOR AN ENERGY-ABSORBING BARRIER.
- THE ENTIRE AREA OF THE CRASH CUSHION INSTALLATION AND APPROACHES SHALL BE GRADED SO THAT THE MAXIMUM SLOPE DOES NOT EXCEED 10:1 IN ANY DIRECTION.
- ALL SAND WEIGHTS ARE NOMINAL.
- EACH MODULE IS TO CONTAIN AMOUNT OF SAND INDICATED, SUPPORTED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
- MODULES SHALL BE PLACED ON ASPHALT CONCRETE, OR CONCRETE SURFACE OR GRASS AREAS.
- WEIGHT OF SAND AND OUTLINE OF EACH MODULE SHALL BE PAINTED ON THE SURFACE AT EACH MODULE LOCATION.
- MODULE BLOCKING, EPOXIED TO THE DECK SURFACE, IS REQUIRED FOR ALL MODULES PLACED ON BRIDGE DECKS. TWO ACCEPTABLE ALTERNATIVES ARE SHOWN, OTHER ALTERNATIVES RECOMMENDED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER WILL BE ACCEPTED.
- OBJECT MARKER SHEETING SHALL BE CONSIDERED AS SUBSIDIARY OBLIGATION OF THE CONTRACTOR COVERED UNDER PAY ITEMS FOR STANDARD SPECIFICATION 620-TRAFFIC IMPACT ATTENUATOR.
- CONTRACTORS, SUBCONTRACTORS OR SUPPLIERS WHO WISH TO INCLUDE THEIR PRODUCTS INTO THE APPROVED LIST, MUST SUBMIT THE FOLLOWING INFORMATION FOR CONSIDERATION OF THE AUTHORITY: COPY OF FHWA LETTER OF ACCEPTANCE THAT THE DEVICE COMPLIES WITH THE NCHRP REPORT 350 REQUIREMENTS, PRODUCT AND MANUFACTURER NAMES, FULL DESCRIPTION OF PRODUCT, DRAWINGS INCLUDING DIMENSIONS OF ALL COMPONENTS, COMPLETE MATERIAL DESCRIPTION, AND OTHER PERTINENT INFORMATION.



COMMONWEALTH OF PUERTO RICO
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY AND TRANSPORTATION AUTHORITY

STANDARD DRAWING APPROVED BY:

DATE: 12/1/10

ASSISTANT EXECUTIVE DIRECTOR
FOR INFRASTRUCTURE

DATE: 1/25/10

ASSISTANT EXECUTIVE DIRECTOR
FOR TRAFFIC AND TOLL ROADS

IMPACT ATTENUATOR
MODULES

IA-01

JANUARY 2010