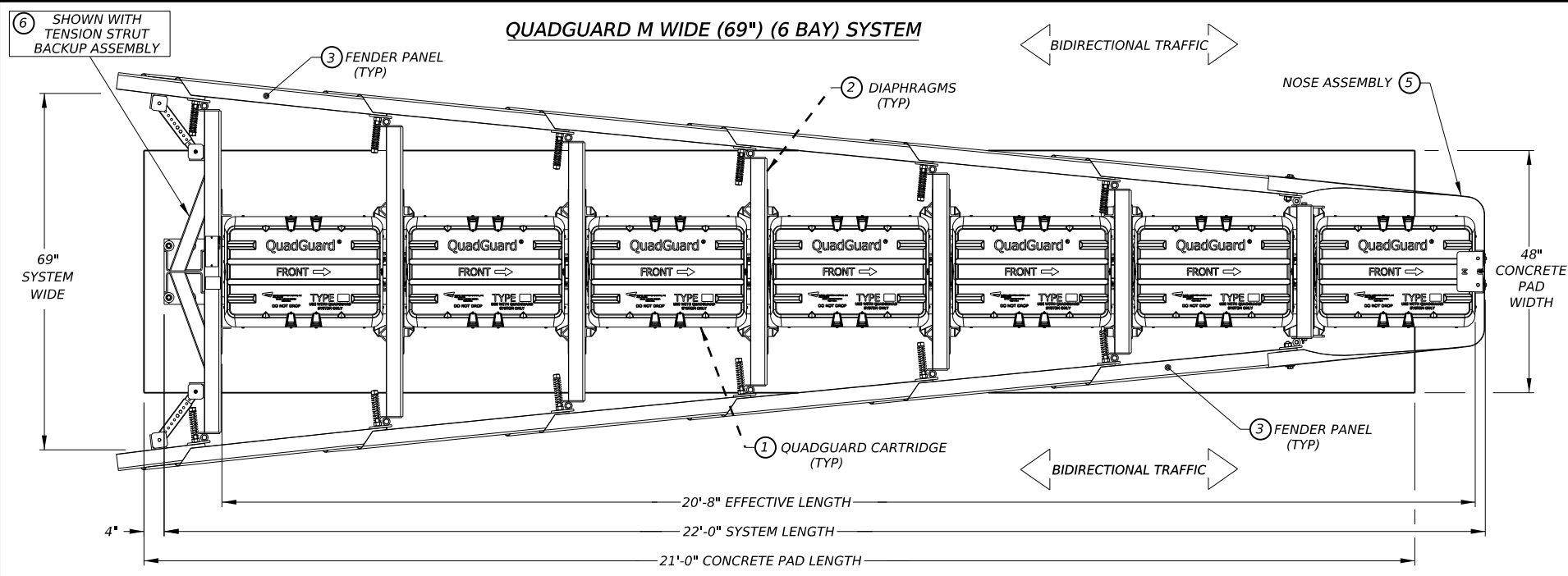


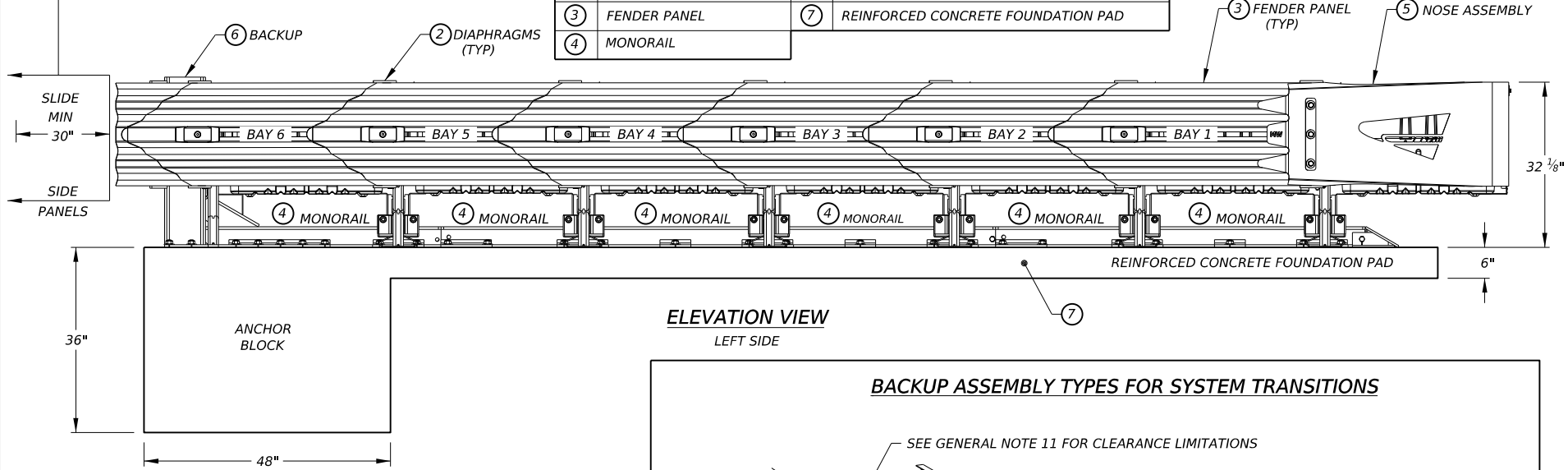
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**PLAN VIEW**

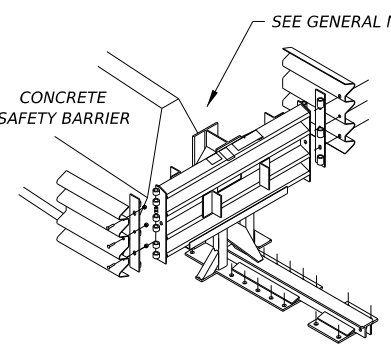
KEY	DESCRIPTION	KEY	DESCRIPTION
①	QUADGUARD CARTRIDGE	⑤	NOSE ASSEMBLY
②	DIAPHRAGM	⑥	TYPE OF BACKUP
③	FENDER PANEL	⑦	REINFORCED CONCRETE FOUNDATION PAD
④	MONORAIL		

NOTE: PROVISION SHALL BE MADE FOR REAR FENDER SIDE PANELS TO SLIDE REARWARD UPON IMPACT, 30" MIN.



**ELEVATION VIEW  
LEFT SIDE**

**BACKUP ASSEMBLY TYPES FOR SYSTEM TRANSITIONS**



**⑥ TENSION STRUT BACKUP**

SYSTEM TRANSITIONS TYPES	
1	QUAD-BEAM TO W-BEAM RAIL
2	QUAD-BEAM TO THRIE-BEAM RAIL
3	QUAD-BEAM TO CONCRETE SAFETY BARRIER
4	QUAD-BEAM TO SINGLE SLOPE BARRIER
5	QUAD-BEAM TO CONCRETE END SHOE
6	QUAD-BEAM TO CONCRETE BRIDGE RAIL

NOTE: TRANSITION ASSEMBLIES FOR THE QUADGUARD M WIDE TO THRIE-BEAM OR W-BEAM FENCE REQUIRES I-BEAM POSTS:  
ALL POSTS W6X8.5/9 I-BEAMS (78" LONG).

NOTES:  
CONTACT THE MANUFACTURER WITH SITE SPECIFIC DATA (SSD) FOR THE CORRECT BACKUP ASSEMBLY AND TRANSITION PANELS OR SIDE PANELS USED FOR STANDARD AND BI-DIRECTIONAL INSTALLATIONS:  
AT DIVIDED-HIGHWAY MEDIANS OR UNDIVIDED ROADWAYS WHERE THE SYSTEM IS EXPOSED TO IMPACTS FROM ONE OR TWO DIFFERENT DIRECTIONS OF TRAFFIC FLOW.

NOTES:  
CONTACT THE MANUFACTURER WITH SITE SPECIFIC DATA (SSD) FOR CONCRETE PAD AND ANCHOR BLOCK INSTALLATION REQUIREMENTS.

A MANUFACTURER'S DRAWING PACKAGE UNIQUE AND SPECIFIC FOR THE QUADGUARD M WIDE FIELD INSTALLATION AND INFORMATION REGARDING THE TYPE OF BACKUP ASSEMBLY REQUIRED FOR THE TRANSITION WILL BE PROVIDED BY THE MANUFACTURER TO THE ENGINEER AND INSTALLER.

6" REINFORCED CONCRETE PAD REQUIRES THE INSTALLATION OF AN ANCHOR BLOCK AS SHOWN ON THE MANUFACTURER'S DRAWING PACKAGE.

8" NON-REINFORCED CONCRETE PAD MAY NOT REQUIRE AN ANCHOR BLOCK, IF THE PAD IS INSTALLED AGAINST AN IMMOVABLE CONCRETE BACKUP.

CONCRETE PAD AND ANCHOR BLOCK COMBINATIONS SHALL BE CONFIRMED WITH THE MANUFACTURER BASED UPON SITE SPECIFIC DATA (SSD).

NOTE:  
THE QUADGUARD M WIDE 6-BAY SYSTEM TESTED TO MASH TL-3.

TL-3 MODEL #	QM10069 (627515)	CARTRIDGE TYPES IN BAYS	
BAYS	6	TYPE I	TYPE II
DIAPHRAGMS	6	4	3
WIDTH	69"	REAR	FRONT

**GENERAL NOTES**

- FOR SPECIFIC INFORMATION REGARDING INSTALLATION AND TECHNICAL GUIDANCE OF THE SYSTEM, CONTACT: TRINITY HIGHWAY - ENERGY ABSORPTION INC. AT 1(888)323-6374 OR WEBSITE [www.trinityhighway.com](http://www.trinityhighway.com).
- SEE THE RECENT QUADGUARD M WIDE PRODUCT DESCRIPTION ASSEMBLY MANUAL FOR IMPACT PERFORMANCE CHARACTERISTICS AND DESIGN LIMITATIONS AND THE DRAWING PACKAGE FOR THE SIX (6) BAY WIDE [69"] SYSTEM BEFORE INSTALLING THE QUADGUARD M WIDE AT ANY GIVEN LOCATION.
- COMPONENTS FOR THE QUADGUARD M WIDE BACKUP AND REINFORCING DETAILS ARE SHOWN ON THE QUADGUARD M WIDE PRODUCT DESCRIPTION & ASSEMBLY MANUAL.
- THE INSTALLATION AREA SHOULD BE FREE OF CURBS, ELEVATED OBJECTS, OR DEPRESSIONS.
- FOR PERMANENT APPLICATIONS, QUADGUARD M WIDE SHOULD BE ASSEMBLED ON AN EXISTING OR FRESHLY PLACED AND CURED CONCRETE BASE 28MPa [4,000 PSI] MINIMUM. QUADGUARD M WIDE SYSTEM MAY ALSO BE ASSEMBLED ON REINFORCED OR NON-REINFORCED CONCRETE ROADWAY (MINIMUM 8" THICK).
- CONCRETE PAD SHALL BE 6" MIN. REINFORCED 28MPa [4,000 PSI] (P.C.) OR 8" MIN. NON-REINFORCED 28MPa [4,000 PSI] CONCRETE ROADWAY MEASURING AT LEAST 12'-0" WIDE BY 50'-0" LONG. ANCHOR BLOCK IS NOT REQUIRED WHEN USING 8" CONCRETE PAD INSTALLED AGAINST AN IMMOVABLE STRUCTURE, E.G. CONCRETE WALL.
- IF THE CROSS-SLOPE VARIES MORE THAN 2% OVER THE LENGTH OF THE SYSTEM, THE CONCRETE PAD WILL REQUIRE LEVELING. MAXIMUM PERMISSIBLE CROSS-SLOPE IS 8%.
- FOR BI-DIRECTIONAL TRAFFIC: THE LOCATION AND OR WIDTH OF THE QUADGUARD M WIDE IS RESTRICTED. AS BI-DIRECTIONAL TRAFFIC APPROACHES THE REAR OF THE QUADGUARD M WIDE, THE QUADGUARD M WIDE SHOULD NOT EXTEND FURTHER INTO THE TRAFFIC-SIDE OF THE BARRIER THAN THE OBSTACLE. ANY TRANSITION INSTALLED MUST EITHER BE TANGENT TO BOTH QUADGUARD M WIDE AND OBSTACLE OR MUST ANGLE TOWARD FIELD SIDE OF THE BARRIER.
- SYSTEM TRANSITION: APPROPRIATE TRANSITION PANELS OR SIDE PANELS WILL BE REQUIRED FOR PROPER IMPACT PERFORMANCE. THE CORRECT PANEL(S) TO USE WILL DEPEND ON THE DIRECTION OF TRAFFIC FLOW AND WHAT TYPE OF BARRIER OR ROAD FEATURE THE QUADGUARD M WIDE SYSTEM IS SHIELDING. SEE THE QUADGUARD M WIDE PRODUCT DESCRIPTION & ASSEMBLY MANUAL FOR FURTHER DETAILS.
- THE QUADGUARD M WIDE SYSTEM SHOULD BE INSTALLED APPROXIMATELY PARALLEL WITH THE BARRIER.
- FOR THE TENSION STRUT BACKUP, THE DISTANCE BETWEEN THE BACK OF BACKUP AND THE BARRIER WALL SHOULD NOT EXCEED 7" IN ANY CASE.
- THE WIDE QUADGUARD M WIDE SYSTEM IS ONLY AVAILABLE IN A 69" WIDTH AND HAS A 6-BAY SYSTEM THAT HAS BEEN TESTED TO MASH TEST LEVEL 3.
- IF THE OUTSIDE WIDTH OF OBSTACLE(S) BEING SHIELDED IS 53" OR GREATER, THE OUTSIDE OF OBSTACLE(S) MUST BE CHAMFERED. SEE THE QUADGUARD M WIDE PRODUCT DESCRIPTION & ASSEMBLY MANUAL FOR FURTHER DETAILS.
- SEE THE "QUADGUARD M WIDE 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.

**FOUNDATION & ANCHORING REQUIREMENTS  
FOUNDATION TYPES: A & B**

FOUNDATION TYPE:A REINFORCED CONCRETE PAD OR ROADWAY	
FOUNDATION:	6" MINIMUM DEPTH WITH ANCHOR BLOCK (P.C.C.)
ANCHORAGE:	7" STUDS EMBEDDED 5 1/2" - APPROVED ADHESIVE
FOUNDATION TYPE:B REINFORCED OR NON-REINFORCED CONCRETE PAD OR ROADWAY	
FOUNDATION:	8" MINIMUM DEPTH (P.C.C.)
ANCHORAGE:	7" STUDS EMBEDDED 5 1/2" - APPROVED ADHESIVE

KEY:  
COMPACTED SUBBASE (C.S.)  
PORTLAND CEMENT CONCRETE (P.C.C.)

NOTE: SEE TRINITY'S PRODUCT DESCRIPTION ASSEMBLY MANUAL FOR THE APPROVED ADHESIVE.

TENSION STRUT BACKUP MAY NOT BE USED IN ASPHALT CONCRETE (A.C.). SEE TRINITY'S PRODUCT DESCRIPTION ASSEMBLY MANUAL FOR MORE INFORMATION.

NOTE:  
THIS STANDARD IS A BASIC REPRESENTATION OF THE QUADGUARD QG M WIDE SYSTEM AND IS NOT INTENDED TO REPLACE THE PRODUCT DESCRIPTION ASSEMBLY MANUAL.

**REUSABLE**

		<b>Design Division Standard</b>	
<b>TRINITY HIGHWAY ENERGY ABSORPTION QUADGUARD M WIDE (MASH TL-3) QG (M) (W) -21</b>			
FILE:	qgmw21.dgn	DN:	TxDOT
© TxDOT:	JULY 2021	CK:	KM
REVISIONS		DW:	SS
		CR:	CL
		CONT:	SECT
		JOB:	HIGHWAY
		DIST:	COUNTY
			SHEET NO.

DATE:  
FILE: