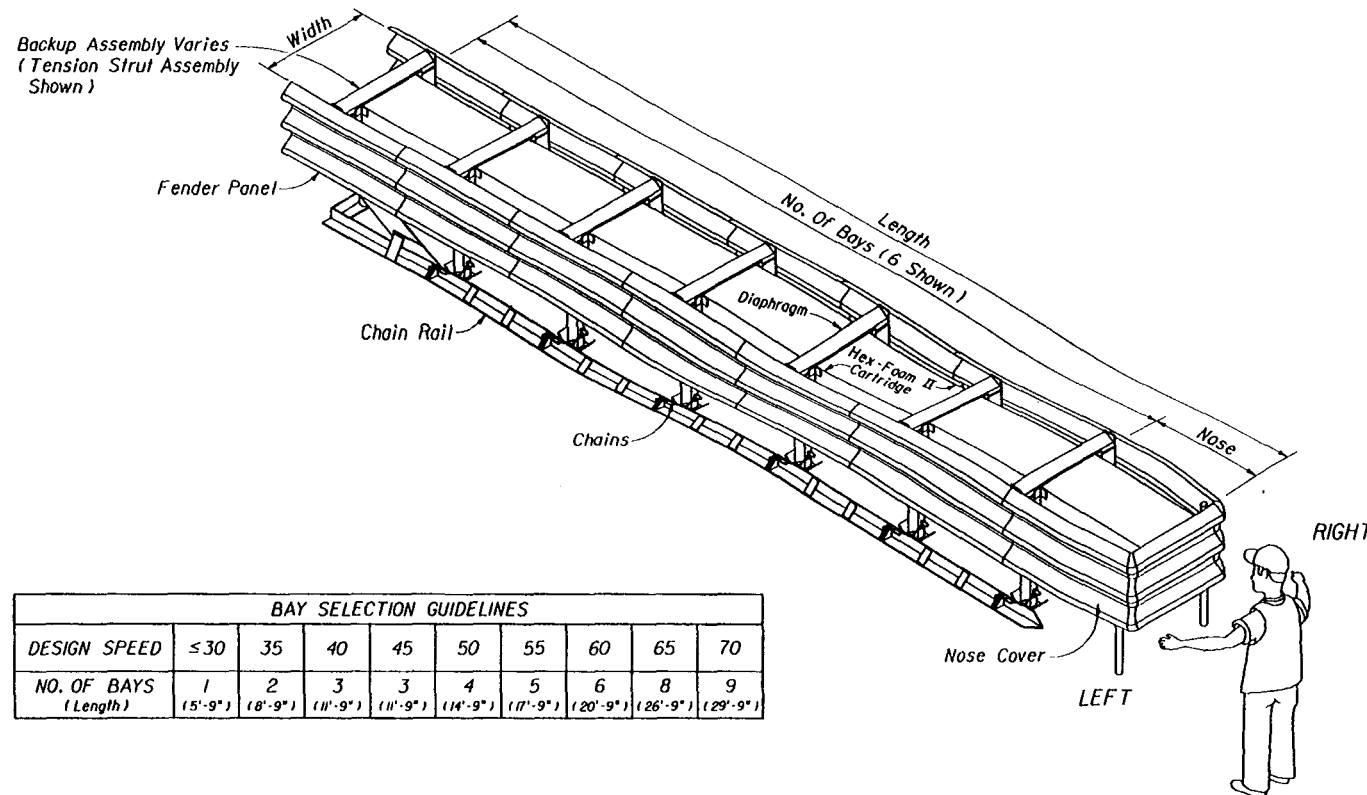


## INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	General System Features And Bay Selection Guidelines
2	Concrete Backup Wall Assembly
3	Tension Strut Backup Assembly
4	Wide Flange Backup Assembly
5	Concrete Barrier Wall Backup Assembly
6	Transition Assembly Features



## GENERAL SYSTEM FEATURES AND BAY SELECTION GUIDELINES

## GENERAL NOTES

- The energy absorbing system represented on this standard drawing is a proprietary design by Energy Absorption Systems, Inc. and marketed under the trade name G-R-E-A-T, short for Guard Rail Energy Absorbing Terminal. Any infringement on the rights of the designer shall be the sole responsibility of the user.
- This standard drawing is produced by the Florida Department of Transportation solely for use by the Department and its assignees. This standard drawing provides the general graphics and information necessary to field identify component parts of the G-R-E-A-T System (G-R-E-A-T) and their incorporation into a whole system.
- This standard drawing is sufficient for plan details for the G-R-E-A-T installed as a free standing system or installed in connection with concrete barrier walls and other fixed barrier systems, and precludes the requirement for shop drawing submittals unless the plans otherwise call for such submittals.
- The G-R-E-A-T shall be assembled and installed in accordance with the manufacturers detailed drawings, procedures and specifications.
- The G-R-E-A-T is available in 2'-0", 2'-6" and 3'-0" widths. Each of these widths can be matched to any of the four backup assemblies shown in this index. The four backup assemblies are to be utilized as follows:
  - Independent systems:
    - Concrete backup wall assemblies.
    - Tension strut backup assemblies.
    - Wide flange backup assemblies.
  - Dependent systems:
    - Concrete barrier wall backup assemblies.
  - Combination systems:
    - Any of the independent systems (a) above with thrie beam/W-beam side panel transition assembly connected to single face or double face guardrail systems.
    - Dependent systems (b) above with bracket assemblies and transition panels connected to safely shaped concrete barrier wall systems.
 Variations from the uses described above shall be constructed as detailed in the plans and/or as required by shop drawings.
- Only the G-R-E-A-T Hex-Foam II cartridges shall be used in all bays and the nose section.
- Concrete foundations and backup blocks shall be constructed with 4000 psi min. compressive strength concrete.
- The G-R-E-A-T shall be constructed on cross slopes 12.5:1 or flatter.
- All metallic components shall meet the galvanizing requirements for guardrail, Index No. 400.
- The G-R-E-A-T System will be paid for under the contract unit price for Impact Attenuator Vehicular (GREAT), Each.

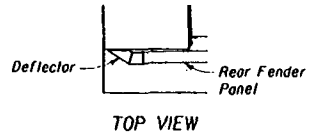
## DESIGN NOTES AND GUIDELINES

- The G-R-E-A-T System (G-R-E-A-T) is designed to cushion automobile end-on hits and to redirect automobiles from side hits. The G-R-E-A-T is designed to shield narrow fixed hazards or the ends of other fixed barrier systems. The number of bays to be used in a specific unit will be determined by the design speed, except where the Engineer determines that another speed is more applicable. The unit width will be determined by the width of the object to be shielded or by the connecting barrier system. The backup assembly for a specific unit will be determined by either (a) the unit standing free of the object to be shielded or (b) the barrier system(s) to which it is connected.
- The G-R-E-A-T is a restorable system that is particularly suited to shielding hazards subject to high speed traffic, high volume traffic, and/or traffic with a history of frequent errant vehicle departures from the roadway or the potential exists for such departures. The G-R-E-A-T alone is not suited to shielding a wide hazard. The G-R-E-A-T is particularly suited to shielding hazards where the approach space is limited, and, is particularly suited to conditions where the terminal must be located close to the traffic lane.
- Currently the Department does not recognize other proprietary items as being equally suitable alternatives to the G-R-E-A-T, and until such alternatives are available, the G-R-E-A-T need not be bid against other proprietary items.

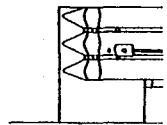
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
ROAD DESIGN

## G-R-E-A-T SYSTEM

Designed By	MFG/MG	Date	10/91	Approved By	<i>[Signature]</i>
Drawn By	JBW	Date	10/91	State Roadway Design Engineer	
Checked By	JNG/REA	Date	10/91	Rev./Ver. No.	
F.H.R.A. Approved:			92	Sheet No.	1 of 6
				Index No.	431



TOP VIEW



SIDE VIEW

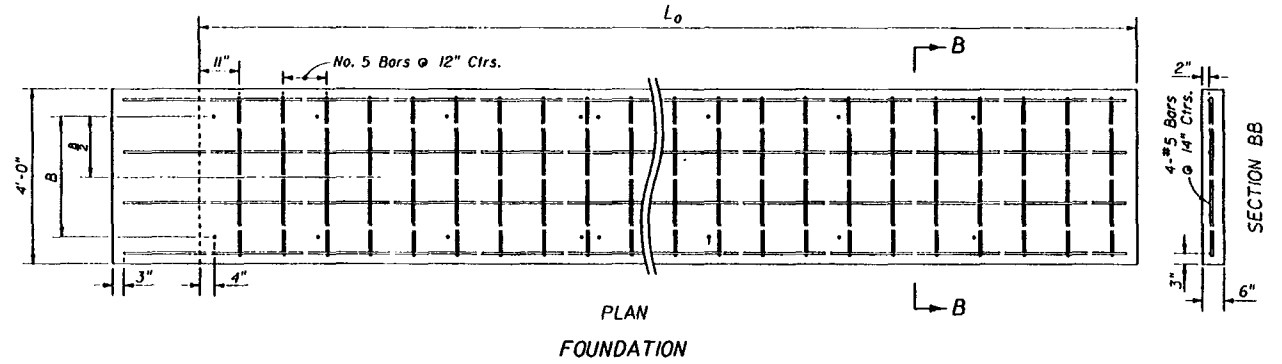
Note: Deflector required on left side for bidirectional facilities unless extension or transition panel called for.

INSET

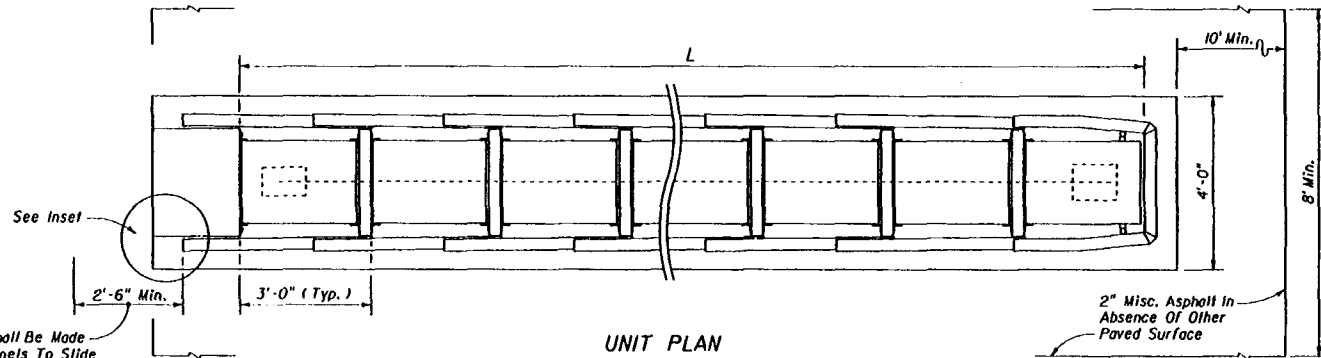
ASSEMBLY LENGTHS		
NO. OF BAYS	L (Bays)	L <sub>0</sub> (Foundation)
1	5'-9"	6'-6"
2	8'-9"	9'-6"
3	11'-9"	12'-6"
4	14'-9"	15'-6"
5	17'-9"	18'-6"
6	20'-9"	21'-6"
7	23'-9"	24'-6"
8	26'-9"	27'-6"
9	29'-9"	30'-6"
10	32'-9"	33'-6"
11	35'-9"	36'-6"
12	38'-9"	39'-6"

A (Assembly Width)	B (Anchor Bolt Ctrs.)
2'-0"	2'-3"
2'-6"	2'-9"
3'-0"	3'-3"

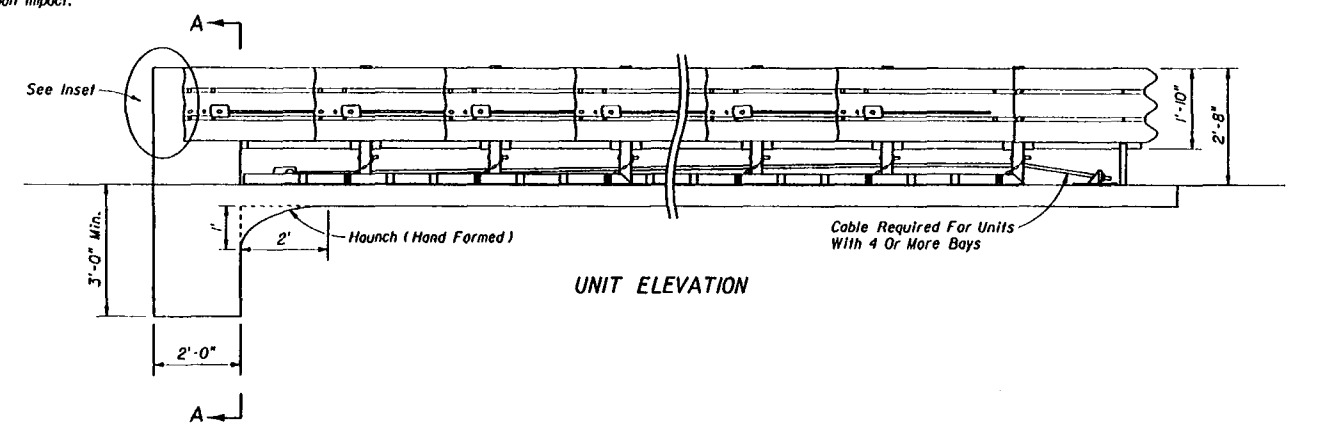
Note: Bolt longitudinal spacing to be in accordance with the manufacturers installation drawings and specifications.



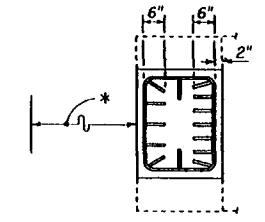
PLAN FOUNDATION



UNIT PLAN

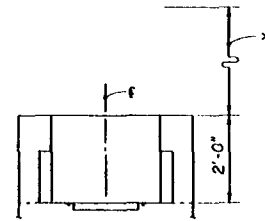


UNIT ELEVATION

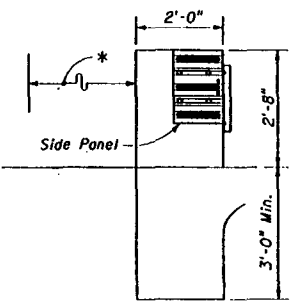


REINFORCEMENT

\* Any shielding required behind the back-up wall shall be constructed in accordance with the roadway plans.

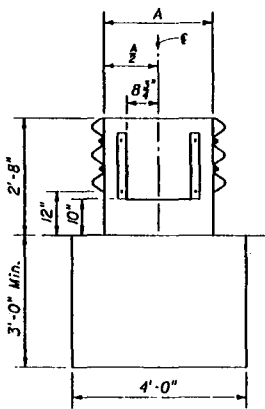


PLAN



SIDE VIEW

WALL DETAILS



SECTION AA

Provision Shall Be Made For Rear Panels To Slide Rearward Upon Impact.

NOTES

1. For the number of bays required see table, Sheet 1.
2. See Transition Assembly Features for guardrail connections.
3. For design information see the General Notes.

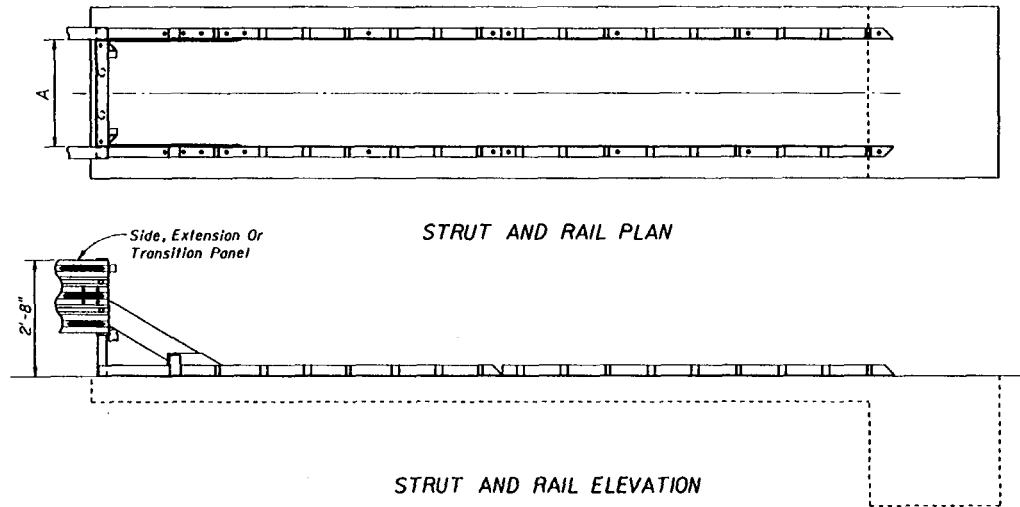
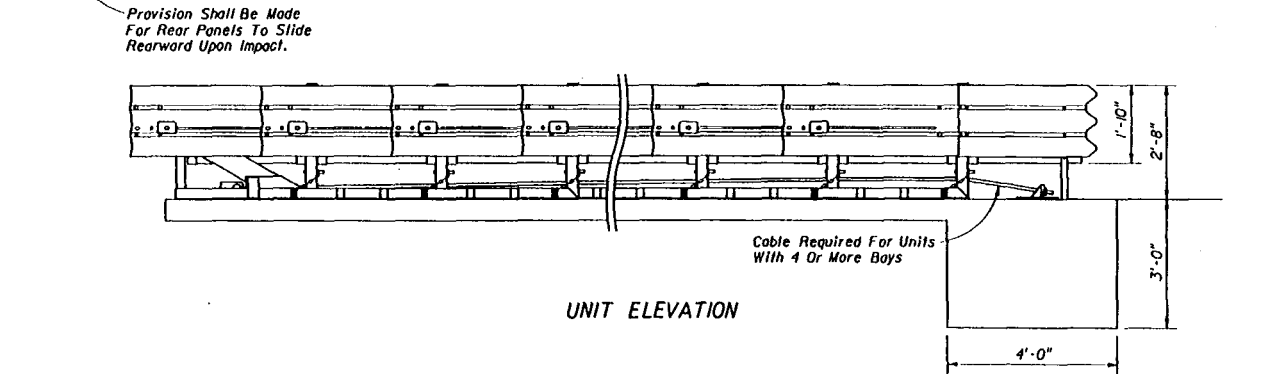
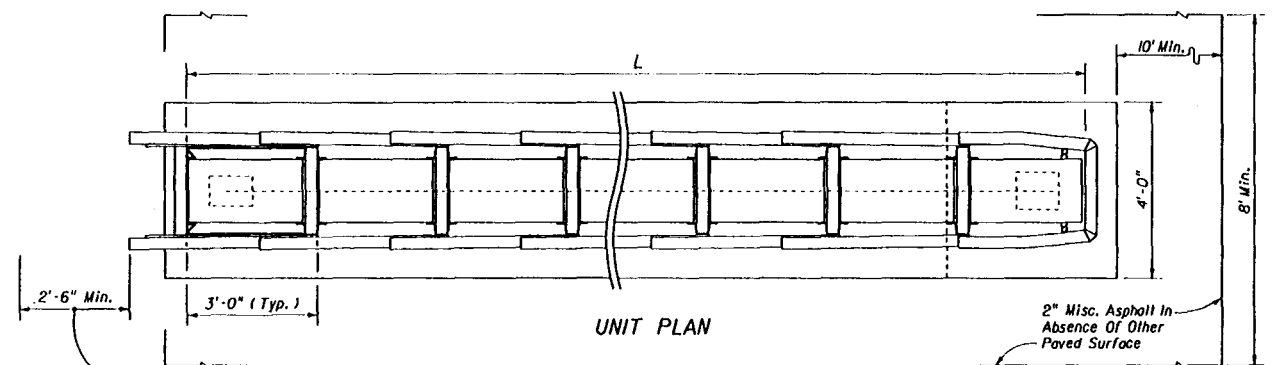
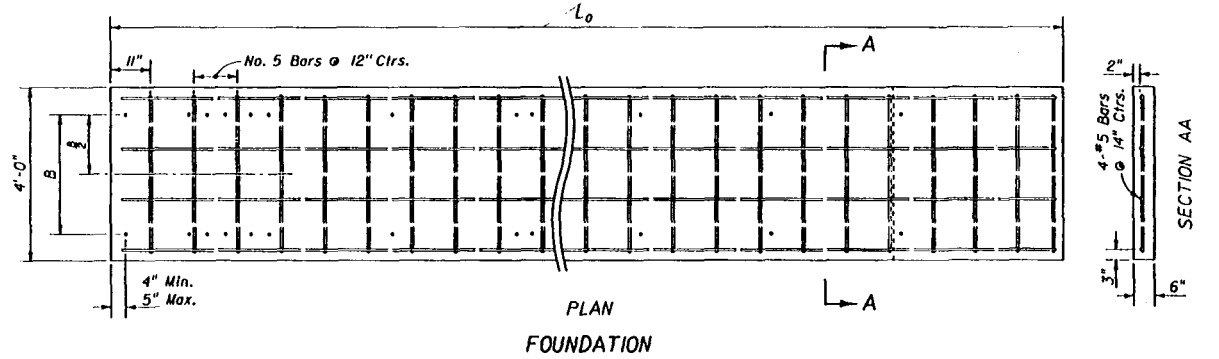
CONCRETE BACKUP WALL ASSEMBLY

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD DESIGN			
<b>G-R-E-A-T SYSTEM</b>			
Designed By	MFG/MG	Date	10/91
Drawn By	JBW	Date	10/91
Checked By	JW/RR	Revision No.	10/91
Approved By		Freddie Simmons State Roadway Design Engineer	
F.H.W.A. Approved		92	2 of 6
			431

A (Assembly Width)	B (Anchor Ball Ctrs.)
2'-0"	2'-3"
2'-6"	2'-9"
3'-0"	3'-3"

Note: Ball longitudinal spacing to be in accordance with the manufacturer's installation drawings and specifications.

ASSEMBLY LENGTHS		
NO. OF BAYS	L (Bays)	L <sub>0</sub> (Foundation)
1	5'-9"	10'-0"
2	8'-9"	10'-0"
3	11'-9"	13'-0"
4	14'-9"	16'-0"
5	17'-9"	19'-0"
6	20'-9"	22'-0"
7	23'-9"	25'-0"
8	26'-9"	28'-0"
9	29'-9"	31'-0"
10	32'-9"	34'-0"
11	35'-9"	37'-0"
12	38'-9"	40'-0"



- NOTES
1. For the number of bays required see table, Sheet 1.
  2. See Transition Assembly Features for guardrail connections.
  3. For design information see the General Notes.

### TENSION STRUT BACKUP ASSEMBLY

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
ROAD DESIGN

**G-R-E-A-T SYSTEM**

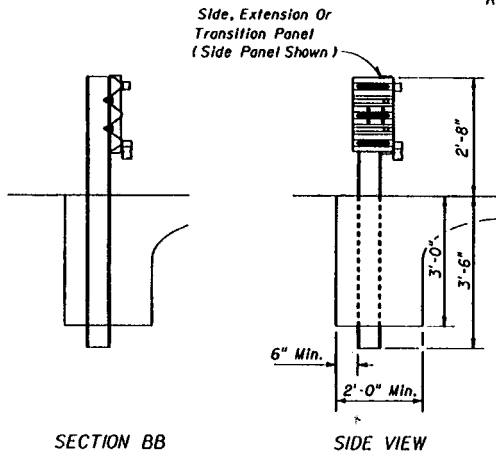
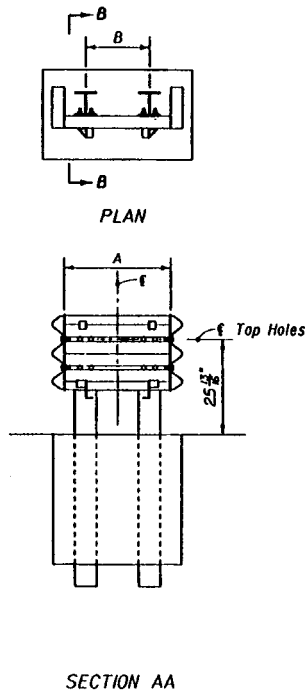
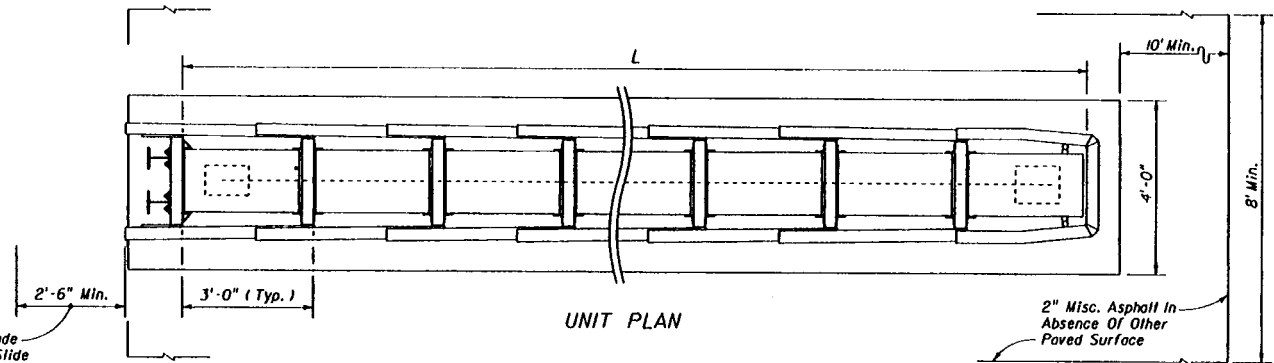
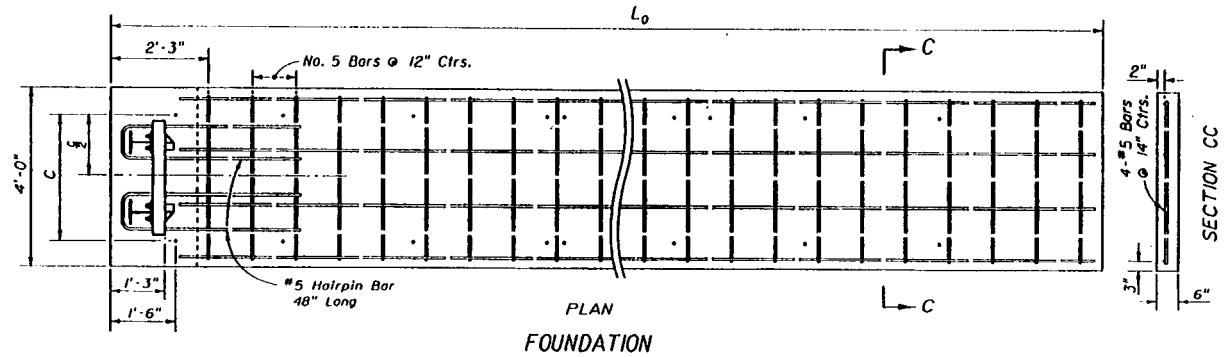
Designed By	MFG/MG	Date	10/91	Approved By	<i>[Signature]</i>
Drawn By	JRW	Date	10/91	State Roadway Design Engineer	
Checked By	JMG/REB	Date	10/91	Revision No.	Sheet No.
F.H.W.A. Approved				92	3 of 6

431

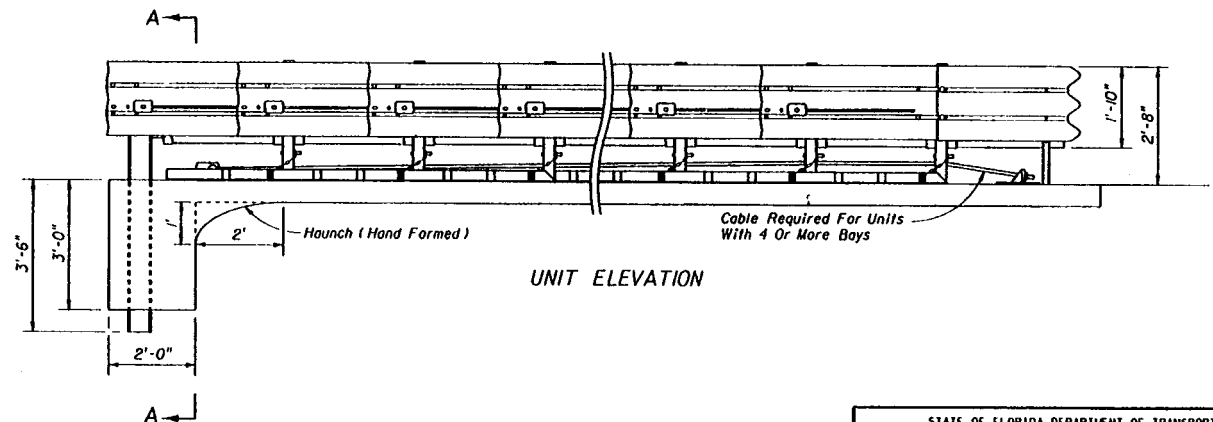
ASSEMBLY LENGTHS		
NO. OF BAYS	L (Bays)	L <sub>0</sub> (Foundation)
1	5'-9"	7'-9"
2	8'-9"	10'-9"
3	11'-9"	13'-9"
4	14'-9"	16'-9"
5	17'-9"	19'-9"
6	20'-9"	22'-9"
7	23'-9"	25'-9"
8	26'-9"	28'-9"
9	29'-9"	31'-9"
10	32'-9"	34'-9"
11	35'-9"	37'-9"
12	38'-9"	40'-9"

A (Assembly Width)	B (Post Spacing)	C (Anchor Bolt Ctrs.)
2'-0"	1'-0"	2'-3"
2'-6"	1'-6"	2'-9"
3'-0"	2'-0"	3'-3"

Note: Bolt longitudinal spacing to be in accordance with the manufacturer's installation drawings and specifications.



Provision Shall Be Made For Rear Panels To Slide Rearward Upon Impact.

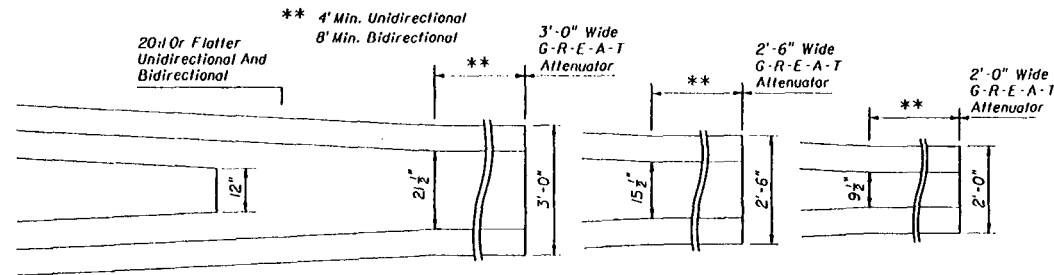


NOTES

1. For the number of bays required see table, Sheet 1.
2. See Transition Assembly Features for guardrail connections.
3. For design information see the General Notes.

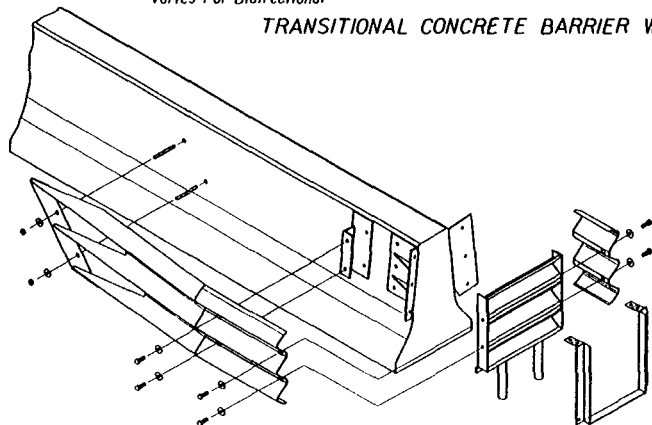
WIDE FLANGE BACKUP ASSEMBLY

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD DESIGN			
<b>G-R-E-A-T SYSTEM</b>			
Designed By	MFG/MG	Date	10/98
Drawn By	JBW	Date	10/98
Checked By	AC/RER	Date	10/98
Approved By		Revision No.	Sheet No.
<i>Freddie Jimenez</i> State Roadway Design Engineer		92	4 of 6
F.H.W.A. Approved:			431



Note: See Index 410 for free end reinforcement and for additional wall information (Detail I).

**TRANSITIONAL CONCRETE BARRIER WALL BACKUP**



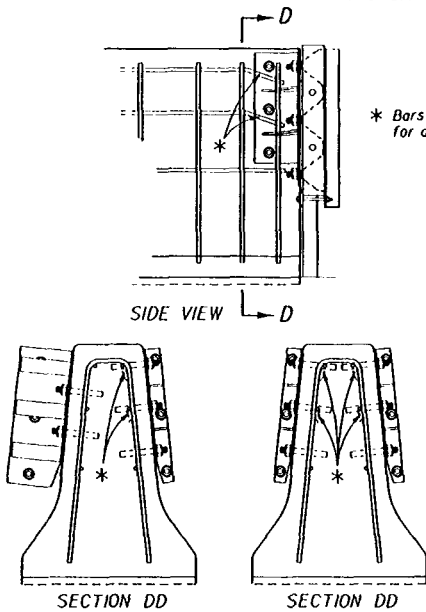
PICTORIAL VIEW

A (Assembly Width)	B (Anchor Bolt Ctrs.)
2'-0"	2'-3"
2'-6"	2'-9"
3'-0"	3'-3"

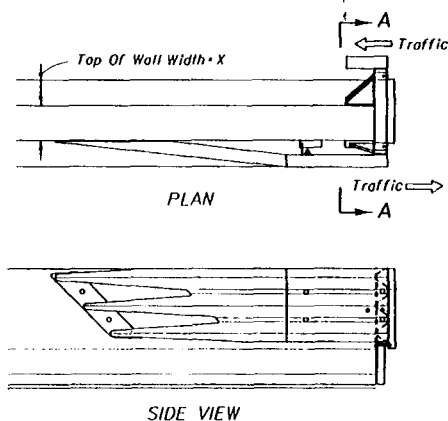
Note: Bolt longitudinal spacing to be in accordance with the manufacturers installation drawings and specifications.

NO. OF BAYS	ASSEMBLY LENGTHS	
	L (Bays & Nose Section)	L <sub>0</sub> (Foundation)
1	5'-9"	6'-6"
2	8'-9"	9'-6"
3	11'-9"	12'-6"
4	14'-9"	15'-6"
5	17'-9"	18'-6"
6	20'-9"	21'-6"
7	23'-9"	24'-6"
8	26'-9"	27'-6"
9	29'-9"	30'-6"
10	32'-9"	33'-6"
11	35'-9"	36'-6"
12	38'-9"	39'-6"

\* Bars to be field bent for anchor bolt clearance

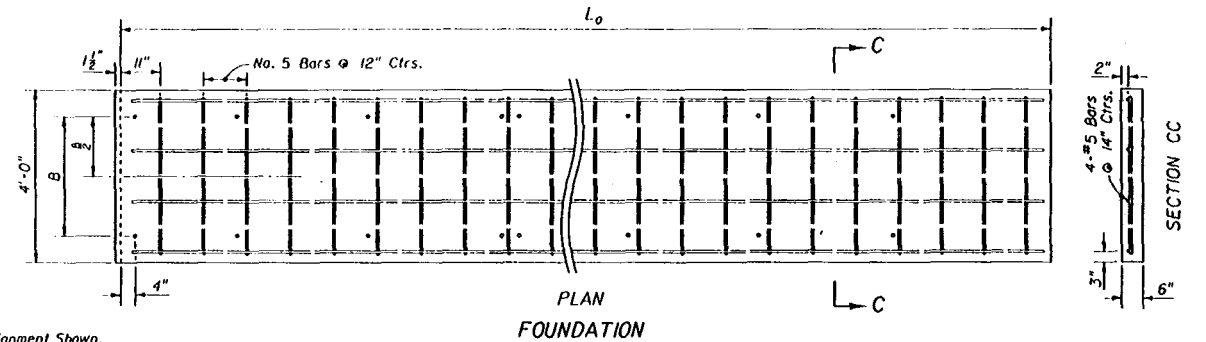


BIDIRECTIONAL UNIDIRECTIONAL  
FIELD BENDING OF WALL REINFORCEMENT

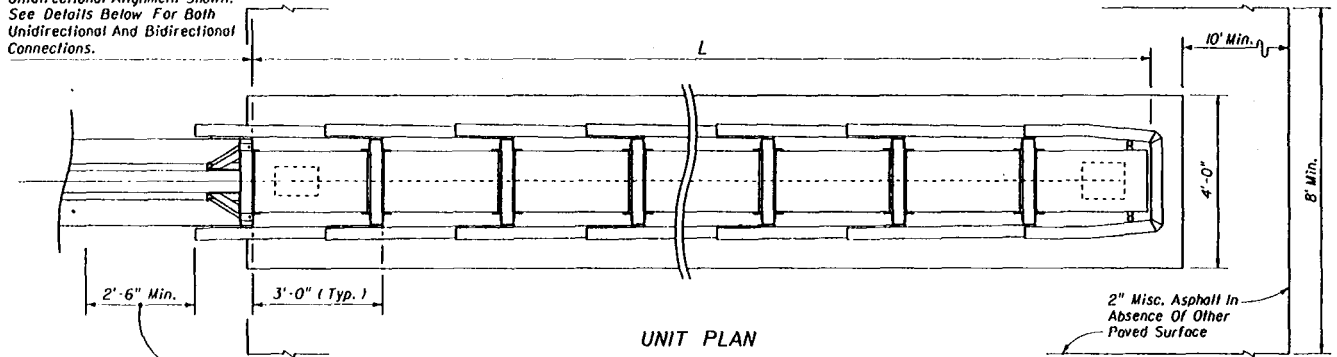


BIDIRECTIONAL UNIDIRECTIONAL  
CONCRETE BARRIER WALL BACKUP ASSEMBLY

Unidirectional Alignment Shown. See Details Below For Both Unidirectional And Bidirectional Connections.

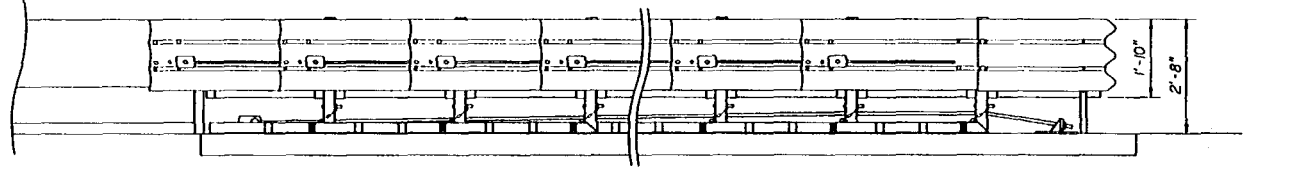


PLAN FOUNDATION



UNIT PLAN

This Area To Remain Clear Of Obstructions To Provide Space For Fender Panels To Slide Rearward.

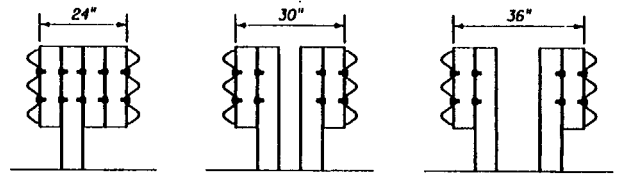


UNIT ELEVATION

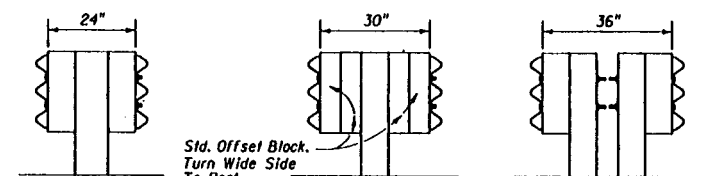
**NOTES**

1. This backup assembly applies to single and double face F-Shape and single face New Jersey (NJ) Shape concrete barrier walls (double face F-Shape detailed). Adaptable to single face F-Shape walls by bracket adjustment. See Index No. 410 for barrier wall information.
2. Concrete barrier wall free end reinforcement required with G-R-E-A-T system connection; See Index No. 410.
3. For the number of bays required see table, Sheet I.
4. For design information see the General Notes.

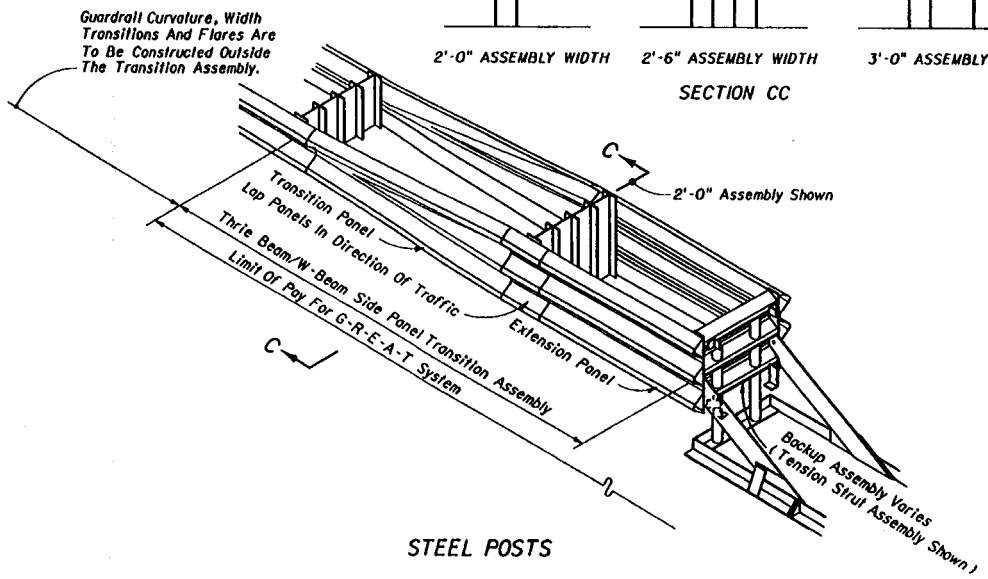
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD DESIGN			
<b>G-R-E-A-T SYSTEM</b>			
Designed By	MFG/MG	Date	11/91
Drawn By	JBM	Checked By	JVG/REB
Checked By	JVG/REB	Revision No.	92
Approved By	Freddie Sumner State Roadway Design Engineer		Sheet No. 5 of 6
F.H.W.A. Approved			Index No. 431



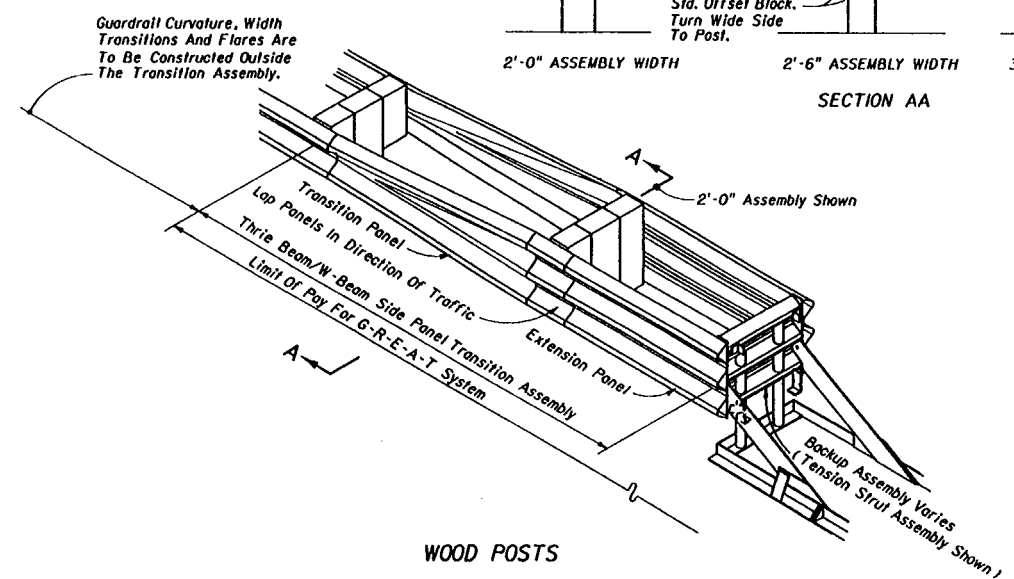
2'-0" ASSEMBLY WIDTH    2'-6" ASSEMBLY WIDTH    3'-0" ASSEMBLY WIDTH  
SECTION CC



2'-0" ASSEMBLY WIDTH    2'-6" ASSEMBLY WIDTH    3'-0" ASSEMBLY WIDTH  
SECTION AA

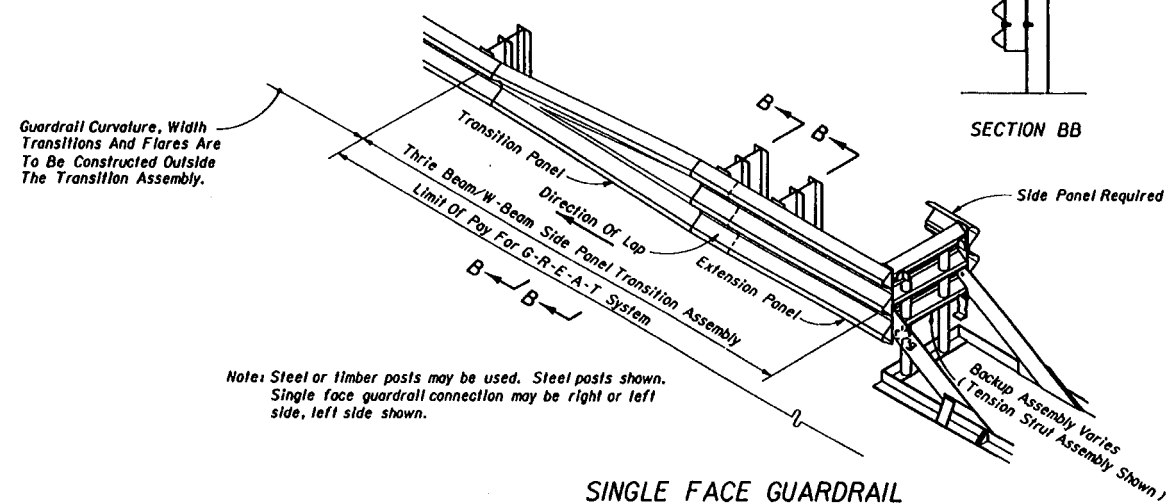


STEEL POSTS



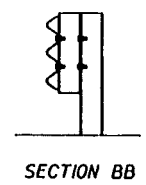
WOOD POSTS

DOUBLE FACE GUARDRAIL



Note: Steel or timber posts may be used. Steel posts shown. Single face guardrail connection may be right or left side, left side shown.

SINGLE FACE GUARDRAIL



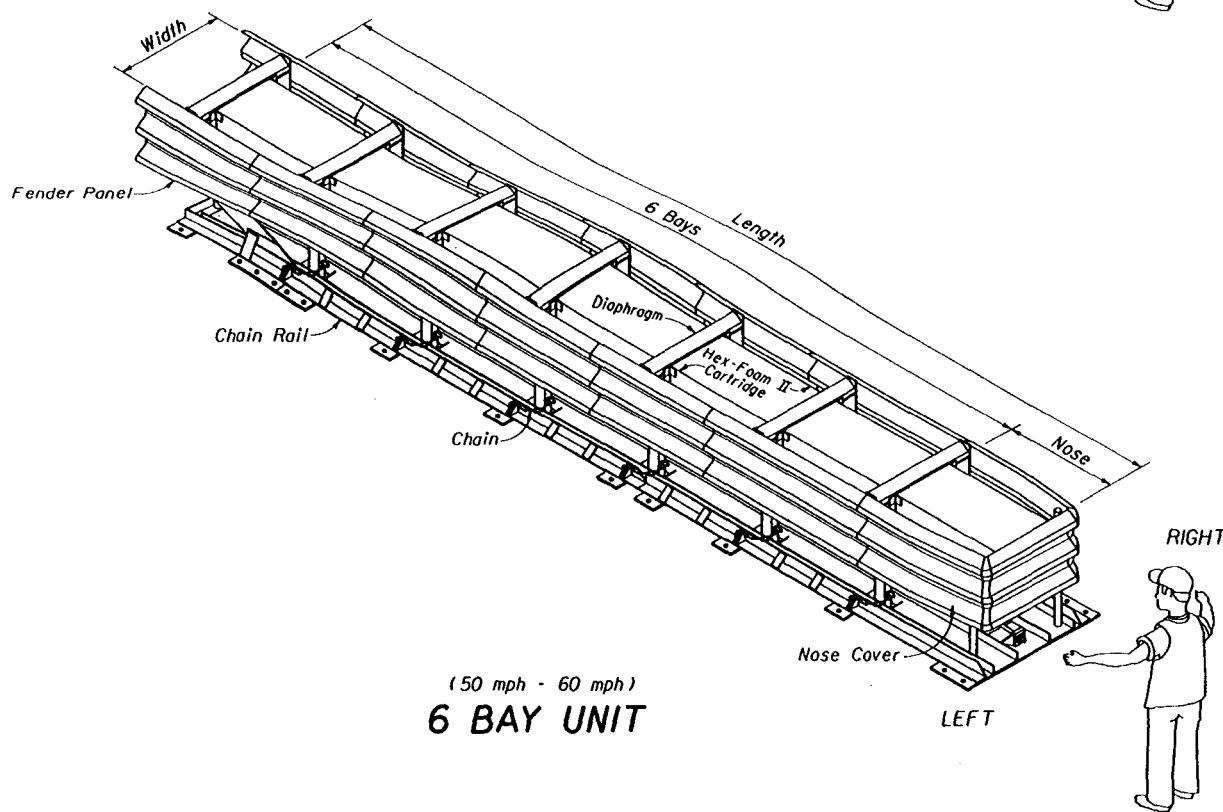
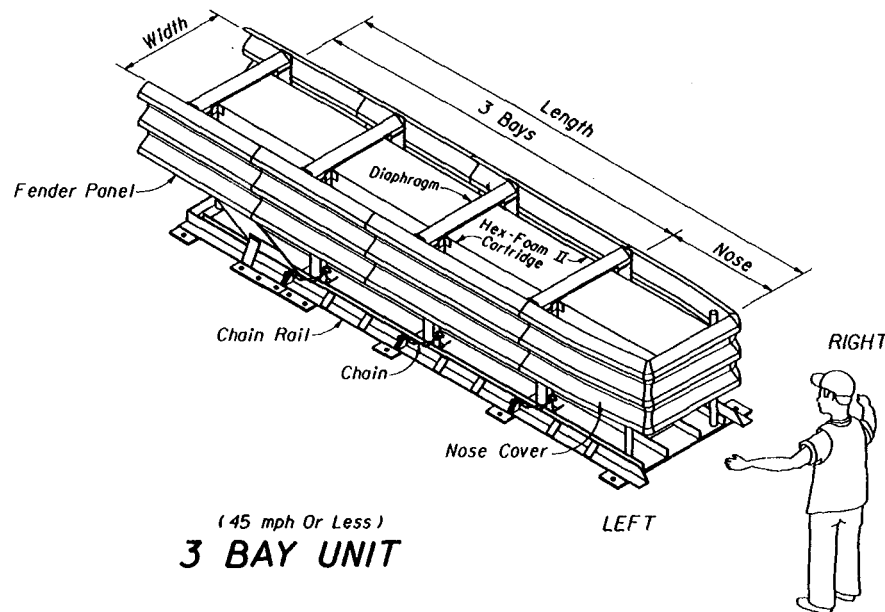
SECTION BB

NOTES

1. The Thrie Beam/W-Beam Side Panel Assembly required for all Concrete Backup, Tension Strut Backup and Wide Flange Backup assembly connections to guardrail, unless other connection called for in the plans.
2. For additional information see the General Notes and assembly details.

TRANSITION ASSEMBLY FEATURES

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD DESIGN			
<b>G-R-E-A-T SYSTEM</b>			
Designed By	MFG/MG	Date	10/91
Drawn By	JBW	Date	10/91
Checked By	MGR/REA	Date	10/91
Approved By		[Signature]	
F.H.W.A. Approved		Revision No.	6 of 6
		Sheet No.	431



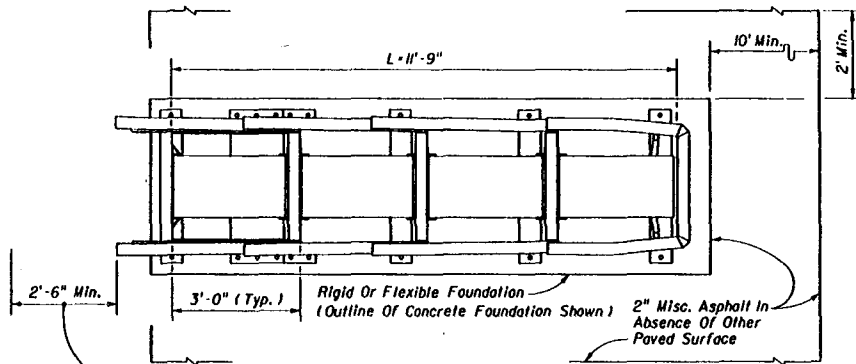
**GENERAL NOTES**

1. The energy absorbing system represented on this standard drawing is a proprietary design by Energy Absorption Systems, Inc. and marketed under the trade name G-R-E-A-T<sub>CZ</sub>, short for Construction Zone Guard Rail Energy Absorbing Terminal. Any infringement on the rights of the designer shall be the sole responsibility of the user.
2. This standard drawing is produced by the Florida Department Of Transportation solely for use by the Department and its assignees. This standard drawing provides the general graphics and information necessary to field identify component parts of the G-R-E-A-T<sub>CZ</sub> System (G-R-E-A-T<sub>CZ</sub>) and their incorporation into a whole system.
3. This standard drawing is sufficient for plan details for the G-R-E-A-T<sub>CZ</sub> installed as a free standing system or installed in connection with concrete barrier walls and other fixed barrier systems, and precludes the requirement for shop drawing submittals unless the plans otherwise call for such submittals.
4. The G-R-E-A-T<sub>CZ</sub> shall be assembled and installed in accordance with the manufacturers detailed drawings, procedures and specifications.
5. The standard widths for the 3-bay and 6-bay G-R-E-A-T<sub>CZ</sub> are 2'-0" and 2'-6".
6. Connection between the G-R-E-A-T<sub>CZ</sub> and guardrail shall be as shown in the 'Transition Assembly Features' on Index No. 431. For concrete barrier wall with unidirectional traffic there is no connection between the G-R-E-A-T<sub>CZ</sub> and the wall, The G-R-E-A-T<sub>CZ</sub> should abut the end of the wall, but a space not to exceed 11" is allowed. For concrete barrier wall with bidirectional traffic, the transitional panel shown on the "Tension Strut Backup Assembly 'Insert'" details shall be the only connection between the G-R-E-A-T<sub>CZ</sub> and the wall. Variation from the connections described above shall be as detailed in the plans or as prescribed by the manufacturer.
7. Only the G-R-E-A-T<sub>CZ</sub> Hex-Foam II cartridges shall be used in all bays and the nose section.
8. The G-R-E-A-T<sub>CZ</sub> shall be constructed on cross slopes 12.5:1 or flatter.
9. All metallic components shall meet the galvanizing requirements for guardrail, Index No. 400.
10. Both chemical bolt anchors (MP-3 anchors) and anchor pins are supplied with each G-R-E-A-T<sub>CZ</sub> unit purchase. For units that are relocated and require reset anchorage, the user shall reinstall the unit with manufacturer supplied new MP-3 anchors or anchor pins, or, with other anchors as approved by the G-R-E-A-T<sub>CZ</sub> manufacturer.
11. G-R-E-A-T<sub>CZ</sub> units that have been impacted by vehicles but are to be repaired and remain in service shall have design condition anchorages when restorations are complete. Units with disturbed anchors can be repositioned over undisturbed foundation and reset, or, reset in place with the disturbed portions of their foundations restored to design condition. All disturbed MP-3 anchors are to be replaced; any disturbed anchor pin that remains undamaged can be reused.
12. The G-R-E-A-T<sub>CZ</sub> manufacturer's 'Driveable Pile Anchor System' (DPA system) is not a part of this standard. Any use of the DPA System will require shop drawing approval.
13. The cost for foundations, subgrade preparation and miscellaneous asphalt shown on this index shall be included in the cost for the G-R-E-A-T<sub>CZ</sub> system. The G-R-E-A-T<sub>CZ</sub> System will be paid for under the contract unit price for Impact Attenuator, Vehicular, With Spare Parts (GREAT) (TEMP), Each.

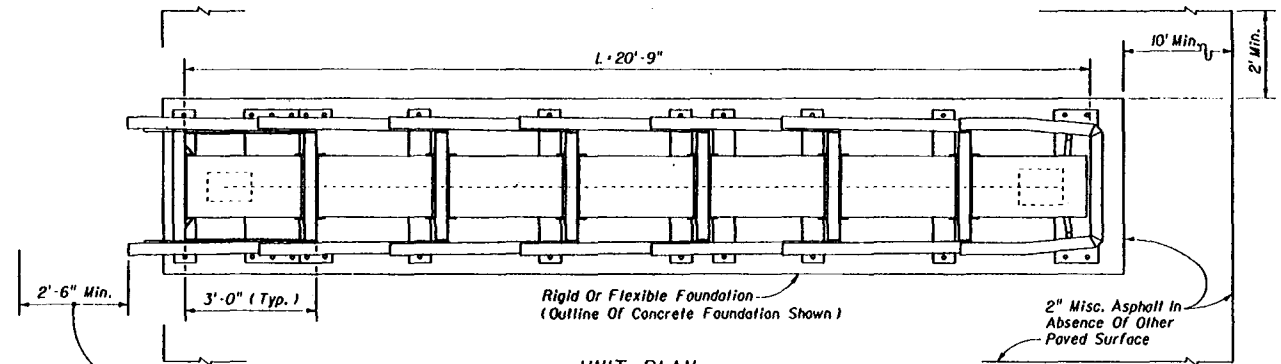
**DESIGN NOTES AND GUIDELINES**

1. The G-R-E-A-T<sub>CZ</sub> System (G-R-E-A-T<sub>CZ</sub>) is designed to cushion automobile end-on hits and to redirect automobiles from side hits. The G-R-E-A-T<sub>CZ</sub> is designed to shield narrow fixed hazards or the ends of other fixed barrier systems. The 6 Bay Unit shall be used for work zone speeds of 50 mph and above, up to and including 60 mph. The 3 Bay Unit can be used for work zone speeds of 45 mph or less.
2. The G-R-E-A-T<sub>CZ</sub> is a restorable system that is particularly suited to shielding hazards subject to high speed traffic, high volume traffic, and/or traffic with a history of frequent errant vehicle departures from the roadway or the potential exists for such departures. The G-R-E-A-T<sub>CZ</sub> alone is not suited to shielding a wide hazard. The G-R-E-A-T<sub>CZ</sub> is particularly suited to shielding hazards where the approach space is limited; and, is particularly suited to conditions where the terminal must be located close to the traffic lane.
3. Currently the Department does not recognize other proprietary items as being equally suitable alternatives to the G-R-E-A-T<sub>CZ</sub>, and until such alternatives are available, the G-R-E-A-T<sub>CZ</sub> need not be bid against other proprietary items.

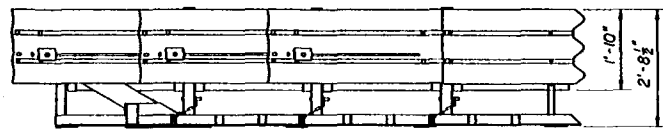
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD DESIGN					
<b>CONSTRUCTION ZONE G-R-E-A-T</b>					
Designed By	HMS	Date	Approved By		
Drewn By	MFG/JVC	10/91	 Freddie Summers State Roadway Design Engineer		
Checked By	JVG/REB	10/91			
F.W.N.A. Approved:			Revision No.	Sheet No.	Page No.
			92	1 of 5	439



UNIT PLAN



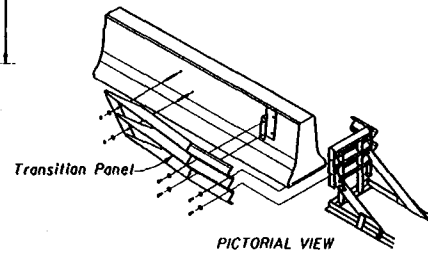
UNIT PLAN



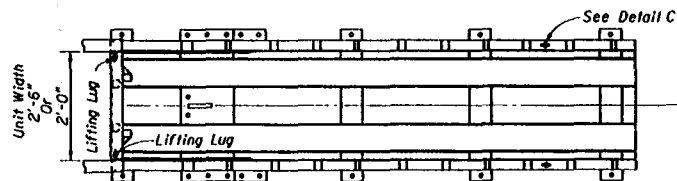
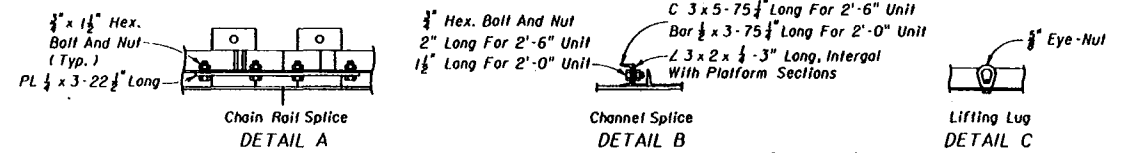
UNIT ELEVATION



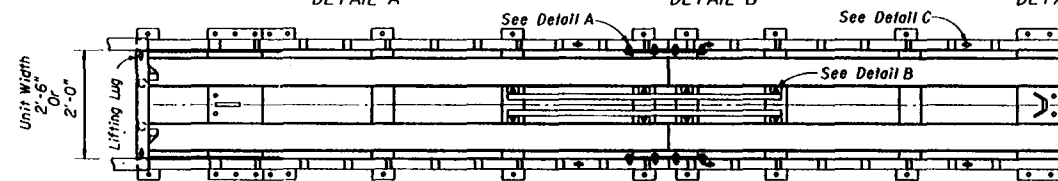
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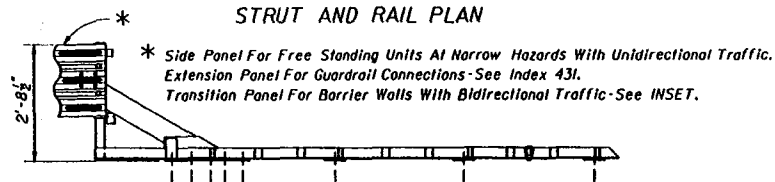
PICTORIAL VIEW  
INSET



STRUT AND RAIL PLAN

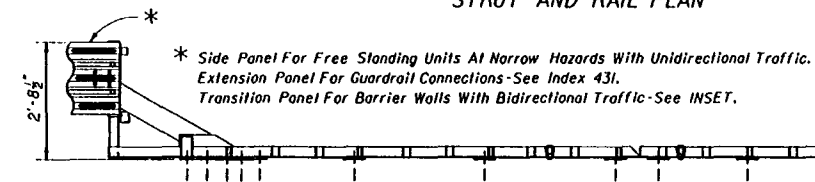


STRUT AND RAIL PLAN



STRUT AND RAIL ELEVATION

3 BAY UNIT



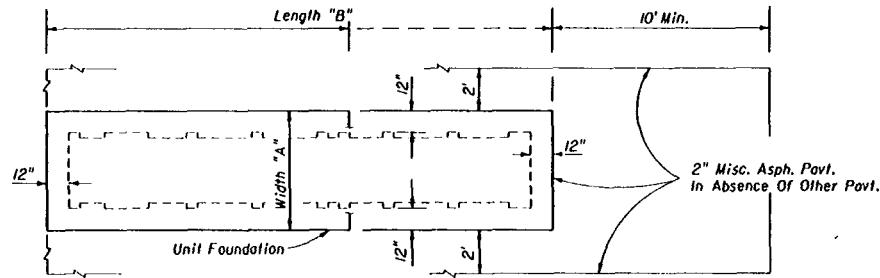
STRUT AND RAIL ELEVATION

6 BAY UNIT

TENSION STRUT BACKUP ASSEMBLY

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD DESIGN					
<b>CONSTRUCTION ZONE G-R-E-A-T</b>					
Designed By	MFG/JGC	Date	11/91	Approved By	<i>Freddy Lumina</i>
Drawn By	JBW	Date	11/91	State Roadway Design Engineer	
Checked By	AG/RER	Date	11/91	Revision No.	Sheet No.
F.H.W.A. Approved:				92	2 of 5
				Index No.	439

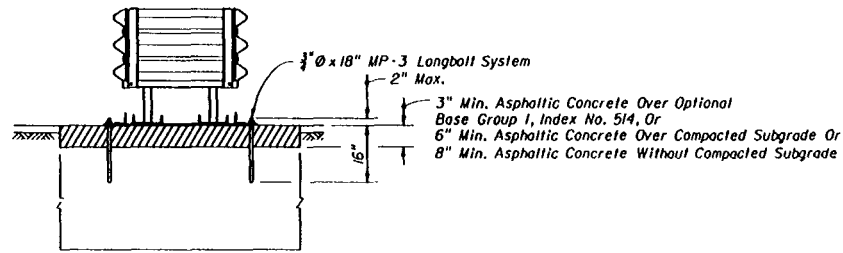




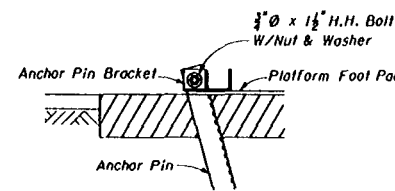
FOUNDATION DIMENSIONS			
UNIT		Width	Length
Boys	Width	"A"	"B"
3	2'-0"	5'-0"	14'-2 $\frac{1}{4}$ "
	2'-6"	5'-6"	14'-2 $\frac{1}{4}$ "
6	2'-0"	5'-0"	23'-2 $\frac{1}{4}$ "
	2'-6"	5'-6"	23'-2 $\frac{1}{4}$ "

PLAN

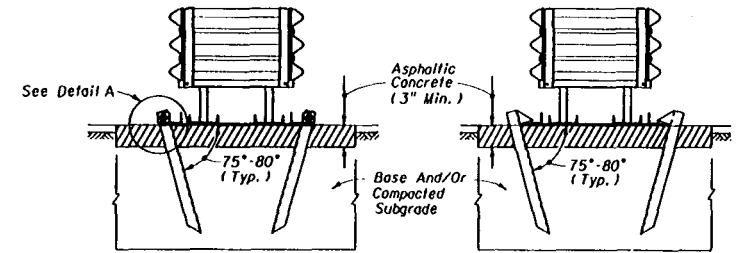
FOUNDATION PAD & MISCELLANEOUS ASPHALT PAVEMENT



SECTION CC

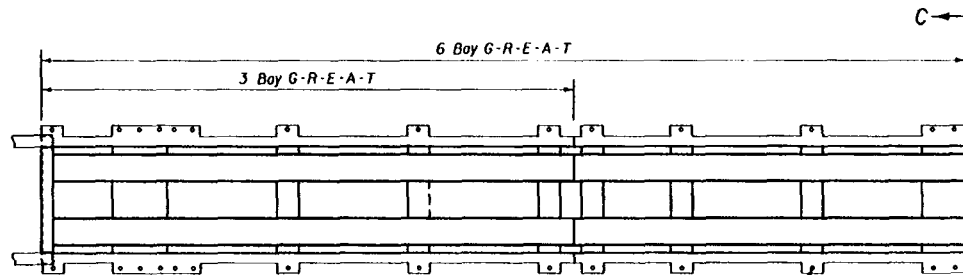


DETAIL A



SECTION AA

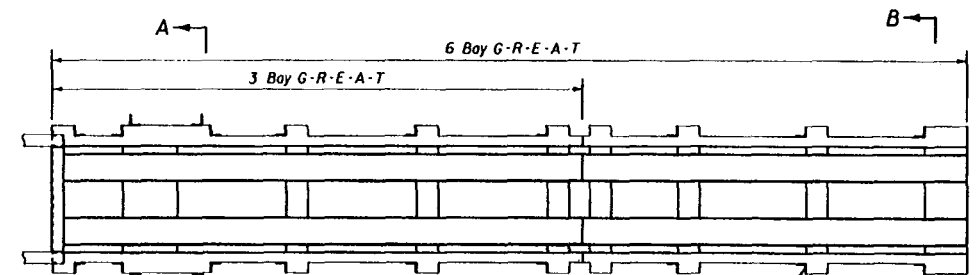
SECTION BB



PLAN

Anchor Bolt Locations  
(28 For 6 Boy Unit,  
18 For 3 Boy Unit)

MP-3 LONGBOLT ANCHOR SYSTEM



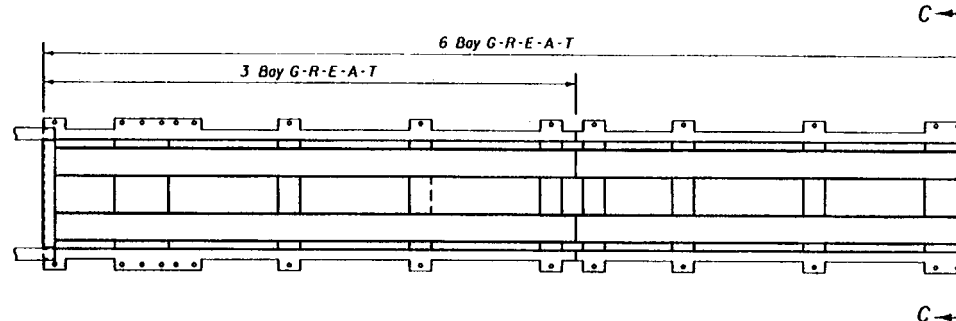
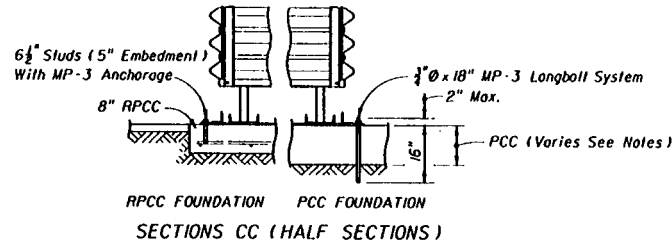
PLAN

Anchor Pin  
(22 For 6 Boy Unit,  
16 For 3 Boy Unit)

ANCHOR PIN SYSTEM

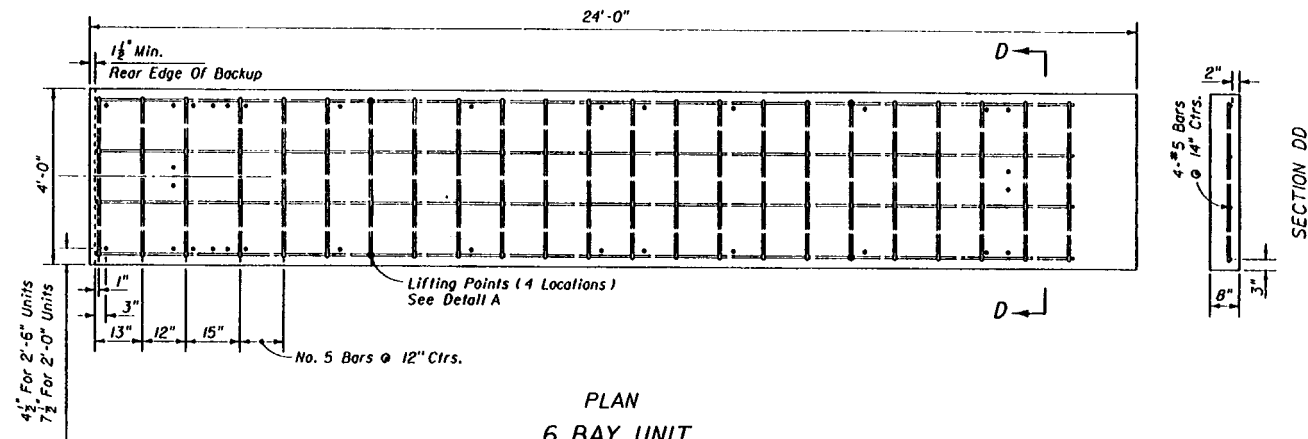
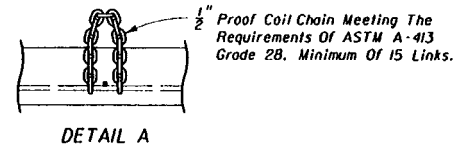
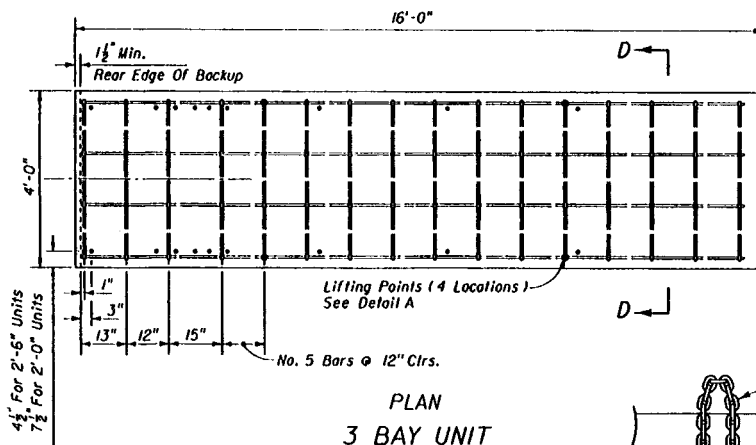
FLEXIBLE FOUNDATIONS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD DESIGN				
CONSTRUCTION ZONE G-R-E-A-T				
Designed By	WFG/HC	Date	11/91	
Drawn By	JBW	Date	11/91	
Checked By	JG/RER	Date	11/91	
Approved By		 Freddie J. Amos State Roadway Design Engineer		
F.H.R.A. Approved:		92	3 of 5	439



RIGID FOUNDATION NOTES

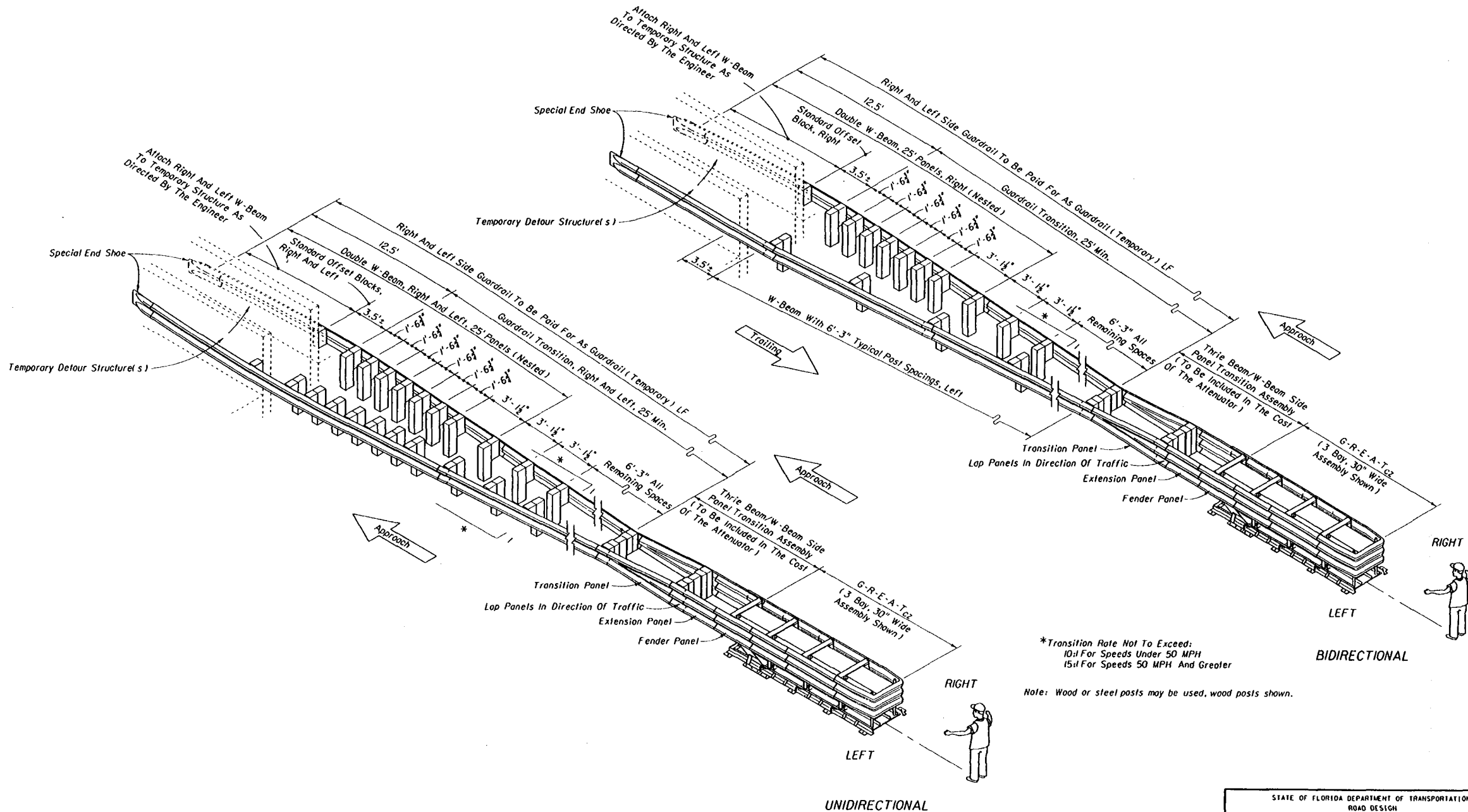
- The reinforced portland cement concrete (RPCC) foundation is designed to make the G-R-E-A-T a transportable system. The slab foundation shall be constructed with 4000 psi min. compressive strength concrete. The slab shall be sealed so the top of the slab is flush with the surface intended for approaching vehicles. The surrounding surface shall be paved as shown in this index on the 'Unit Plan' for the 'Tension Strut Backup Assembly'. The G-R-E-A-T shall be anchored exclusively with the 6 1/2" MP-3 anchor system supplied with the G-R-E-A-T unit, unless another anchor is supplied or approved by the G-R-E-A-T manufacturer.
- The nonreinforced portland cement concrete (PCC) foundation shall be Class I concrete, having plan dimensions equal to or greater than those for the RPCC foundation. The PCC foundation utilization options are as follows: (a) Poured in place as an expendable slab, having a thickness of not less than 6"; disposal of the slab will be as approved by the Engineer, (b) Project constructed roadway PCC pavement, or, (c) Existing 9" PCC roadway pavement.  
The utilization option applied shall be as approved by the Engineer on a site specific basis. The top of the PCC foundation shall be flush with the surface intended for approaching vehicles. In absence of surrounding pavement the surrounding surface shall be paved as shown in this index on the 'Unit Plan' for the 'Tension Strut Backup Assembly'.  
The G-R-E-A-T installed on PCC pavement shall be anchored only with the MP-3 Longball system supplied with the G-R-E-A-T unit. Holes for the 18" anchors shall be drilled through both existing and new pavements. When the G-R-E-A-T is removed from the project pavement or from existing pavement that is to remain in place, the longball anchor shall be cut off flush with the top of the pavement, unless the plans call for other treatment.
- For additional information see the General Notes.



REINFORCED CONCRETE PAD SYSTEM (RPCC)

RIGID FOUNDATIONS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD DESIGN				
<b>CONSTRUCTION ZONE</b> <b>G-R-E-A-T</b>				
Designed By	W/G/JMG	Date	11/91	Approved By
Drawn By	JBW	Date	11/91	<i>J. J. ...</i> State Roadway Design Engineer
Checked By	JMG/REB	Date	11/91	Revision No.
F.H.W.A. Approved:		92	4 of 5	Index No. 439



\*Transition Rate Not To Exceed:  
 10:1 For Speeds Under 50 MPH  
 15:1 For Speeds 50 MPH And Greater

Note: Wood or steel posts may be used, wood posts shown.

# GUARDRAIL TRANSITION TO TEMPORARY DETOUR STRUCTURES

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD DESIGN					
<b>CONSTRUCTION ZONE G-R-E-A-T</b>					
Designed By	MFC/STO	Date	12/93	Approved By	<i>Cheddi Johnson</i>
Drawn By	HKH	Date	12/93	State Roadway Design Engineer	
Checked By	JJC	Date	12/93	Revision No.	Sheet No.
F.H.W.A. Approved:				94	5 of 5
				439	