

**SAN ANTONIO WATER SYSTEM
2013 REHABILITATION WORK ORDER CONSTRUCTION CONTRACT 2
SAWS JOB NO. 13-4505
SAWS SOLICITATION NO. B-13-016-DB**

ADDENDUM NO. 1
January 18, 2013

This addendum, applicable to work designed above, is an amendment to the bidding and specification documents and as such shall be a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the addendum number and issue date in the spaces provided on all submitted copies of the proposal.

Addenda Purpose:

- 1.0 MODIFICATION TO BID PROPOSAL AND SPECIAL CONDITIONS:**
See attached revised Bid Proposal and Special Conditions.
- 2.0 ADDITION OF TXDOT DETAILS:**
Please include attached TxDOT Details in specification.
- 3.0 TO PROVIDE NOTES FROM PRE-BID MEETING:**
Meeting Notes are attached for information only. The pre-bid meeting sign-in sheet has been posted previously on the SAWS website.

ACKNOWLEDGEMENT BY BIDDER

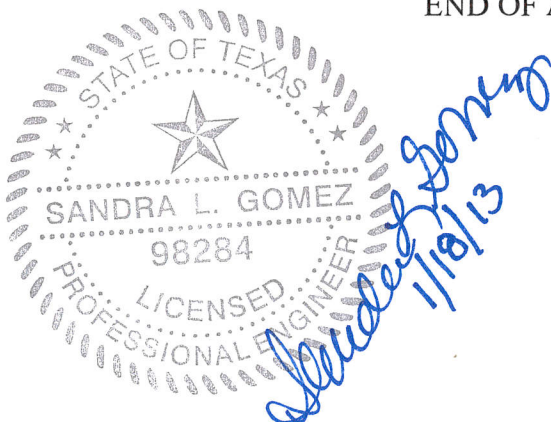
Each bidder is requested to acknowledge receipt of this Addendum No. 1 by his/her signature affixed hereto and to file same and attach with his/her bid.

The undersigned acknowledges receipt of this Addendum No. 1 and the bid submitted herewith is in accordance with the information and stipulations set forth.

DATE

SIGNATURE

END OF ADDENDUM NO. 1



AD 1-1

Addendum 1

PROPOSAL

PROPOSAL OF _____, a corporation a
 partnership consisting of _____
 and an individual doing business as _____

TO THE SAN ANTONIO WATER SYSTEM:

Pursuant to Instruction and Invitations to Bidders, the undersigned proposes to furnish all labor and materials as specified and perform the work required for the rehabilitation of sanitary sewer mains by pipe bursting, cured-in-place pipe, and sliplining methods and required appurtenances for San Antonio Water System (SAWS) in accordance with the Plans and Specifications for the 2013 Rehabilitation Work Order Construction Contract 2, Job No. 13-4505. The undersigned acknowledges and understands that all projects are unspecified at the time of bidding, all quantities are estimated, and it is the intent of this proposal and quantities herein to establish a unit price for various line items to be paid the Contractor by SAWS on an annual basis. No change in the unit price will be made, regardless of the actual quantity of the item of work performed. The work will be performed for the following prices to wit:

Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
103.1	Remove Concrete Curb _____ Dollars and _____ Cents	LF	25	_____	_____
103.3	Remove Sidewalks and Driveways _____ Dollars and _____ Cents	SF	25	_____	_____
200.1	Flexible Base (6" Compacted Depth, Type A) _____ Dollars and _____ Cents	SY	100	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
202.1	Prime Coat _____ Dollars and _____ Cents	GAL	20	_____	_____
203.1	Tack Coat _____ Dollars and _____ Cents	GAL	20	_____	_____
205.2	Hot Mix Asphaltic Pavement, Type B (6" Pavement Thickness) _____ Dollars and _____ Cents	SY	20	_____	_____
205.2	Hot Mix Asphaltic Pavement, Type B (8" Pavement Thickness) _____ Dollars and _____ Cents	SY	20	_____	_____
205.3	Hot Mix Asphaltic Pavement, Type C (1.5" Pavement Thickness) _____ Dollars and _____ Cents	SY	20	_____	_____
205.3	Hot Mix Asphaltic Pavement, Type C (2" Pavement Thickness) _____ Dollars and _____ Cents	SY	20	_____	_____
205.4	Hot Mix Asphaltic Pavement, Type D (1.5" Pavement Thickness) _____ Dollars and _____ Cents	SY	100	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
205.4	Hot Mix Asphaltic Pavement, Type D (2" Pavement Thickness)				
	_____ Dollars				
	and _____ Cents	SY	100	_____	_____
206.1	Asphalt Treated Base (10" Compacted Depth)				
	_____ Dollars				
	and _____ Cents	SY	100	_____	_____
208.1	Salvaging, Hauling, and Stockpiling Reclaimable Asphaltic Pavement (1.5" Depth)				
	_____ Dollars				
	and _____ Cents	SY	100	_____	_____
208.1	Salvaging, Hauling, and Stockpiling Reclaimable Asphaltic Pavement (2" Depth)				
	_____ Dollars				
	and _____ Cents	SY	100	_____	_____
247	Flexible Base - Type A, Grade I with 2% Cement (TxDOT Spec.)				
	_____ Dollars				
	and _____ Cents	CY	50	_____	_____
340	HMAC Pavement Type "C" (10" Compacted Depth, TxDOT Spec.)				
	_____ Dollars				
	and _____ Cents	CY	15	_____	_____
500.1	Concrete Curb				
	_____ Dollars				
	and _____ Cents	LF	25	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
500.4	Concrete Curb and Gutter _____ Dollars and _____ Cents	LF	10	_____	_____
502.1	Concrete Sidewalks – Conventionally Formed _____ Dollars and _____ Cents	SY	25	_____	_____
503.1	Portland Cement Concrete Driveway _____ Dollars and _____ Cents	SY	15	_____	_____
503.2	Portland Cement Concrete Driveway - Commercial _____ Dollars and _____ Cents	SY	15	_____	_____
503.4	Asphaltic Concrete Driveway _____ Dollars and _____ Cents	SY	15	_____	_____
504.1	Concrete Median _____ Dollars and _____ Cents	SY	5	_____	_____
504.2	Concrete Directional Island _____ Dollars and _____ Cents	SY	5	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
505.1	Concrete Riprap (5" Thick) _____ Dollars and _____ Cents	SY	10	_____	_____
506.1	Concrete Retaining Walls - Combination Type _____ Dollars and _____ Cents	CY	5	_____	_____
508.1	Relocating Wire Fence _____ Dollars and _____ Cents	LF	5	_____	_____
509.1	Metal Beam Guard Rail _____ Dollars and _____ Cents	LF	5	_____	_____
511.3	Replacing with Hot Mix Asphaltic Concrete Pavement (2" Type D & 10" Type B) _____ Dollars and _____ Cents	SY	50	_____	_____
511.3	Replacing with Hot Mix Asphaltic Concrete Pavement (3" Type D & 10" Type B); _____ Dollars and _____ Cents	SY	25	_____	_____
515	Topsoil _____ Dollars and _____ Cents	CY	15	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
516.1	Bermuda Sodding _____ Dollars and _____ Cents	CY	15	_____	_____
516.2	St. Augustine Sodding _____ Dollars and _____ Cents	SY	15	_____	_____
518.1	Shrubs _____ Dollars and _____ Cents	EA	5	_____	_____
518.2	Landscaping/Flower Beds _____ Dollars and _____ Cents	SY	15	_____	_____
520.1	Hydromulching (Residential or Commercial) _____ Dollars and _____ Cents	SY	15	_____	_____
530.1	Barricades, Signs and Traffic Handling _____ Dollars and _____ Cents	EA	15	_____	_____
550.1	Trench Excavation Safety Protection _____ Dollars and _____ Cents	LF	50	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
553	Storm Water Pollution Prevention Plan (SW3P) _____ Dollars and _____ Cents	EA	5	_____	_____
805	Traffic Control Plan (1 per work order, if required) _____ Dollars and _____ Cents	EA	15	_____	_____
850	Sanitary Sewer Structure, Type B Structure (0'-6') _____ Dollars and _____ Cents	EA	1	_____	_____
850	Extra Depth, Type B Structure (>6' Depth) _____ Dollars and _____ Cents	VF	1	_____	_____
850	Sanitary Sewer Structure, Type C Structure (0'-6') _____ Dollars and _____ Cents	EA	1	_____	_____
850	Extra Depth, Type C Structure (>6' Depth) _____ Dollars and _____ Cents	VF	1	_____	_____
851	Adjusting Existing Manholes _____ Dollars and _____ Cents	EA	10	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
852.1	Sanitary Sewer Manhole (0'-6') _____ Dollars and _____ Cents	EA	10	_____	_____
852.2	Sanitary Sewer Drop Manhole (0'-6') _____ Dollars and _____ Cents	EA	1	_____	_____
852.3	Extra Depth Manholes (>6') _____ Dollars and _____ Cents	VF	5	_____	_____
853	Sanitary Sewer Manholes, Glass-fiber reinforced polyester (FRP) _____ Dollars and _____ Cents	EA	1	_____	_____
854	Sanitary Sewer Laterals _____ Dollars and _____ Cents	LF	50	_____	_____
854.1	Two-Way Sanitary Sewer Clean-out _____ Dollars and _____ Cents	EA	10	_____	_____
855	Reconstruction of Existing Manhole _____ Dollars and _____ Cents	EA	10	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
858	Concrete Encasement, Cradles, Saddles and Collars _____ Dollars				
	and _____ Cents	CY	20	_____	_____
865	Sewer Main Television Inspection (8" through 15" Diameter) _____ Dollars				
	and _____ Cents	LF	10,000	_____	_____
865	Sewer Main Television Inspection (18" through 24" Diameter); _____ Dollars				
	and _____ Cents	LF	250	_____	_____
865	Sewer Main Television Inspection (27" through 36" Diameter) _____ Dollars				
	and _____ Cents	LF	25	_____	_____
865	Sewer Main Television Inspection (42" through 48" Diameter) _____ Dollars				
	and _____ Cents	LF	25	_____	_____
865	Sewer Main Television Inspection (54" through 60" Diameter) _____ Dollars				
	and _____ Cents	LF	25	_____	_____
868.1	Sewer Main Cleaning - Normal (8" through 15" Diameter) _____ Dollars				
	and _____ Cents	LF	5,000	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
868.1	Sewer Main Cleaning - Normal (18" through 24" Diameter) _____ Dollars and _____ Cents	LF	250	_____	_____
868.1	Sewer Main Cleaning - Normal (27" through 36" Diameter) _____ Dollars and _____ Cents	LF	25	_____	_____
868.1	Sewer Main Cleaning - Normal (42" through 48" Diameter); _____ Dollars and _____ Cents	LF	25	_____	_____
868.1	Sewer Main Cleaning - Normal (54" through 60" Diameter) _____ Dollars and _____ Cents	LF	25	_____	_____
868.1	Sewer Main Cleaning - Mechanical (8" through 15" Diameter) _____ Dollars and _____ Cents	LF	1,500	_____	_____
868.1	Sewer Main Cleaning - Mechanical (18" through 24" Diameter) _____ Dollars and _____ Cents	LF	250	_____	_____
868.1	Sewer Main Cleaning - Mechanical (27" through 36" Diameter); _____ Dollars and _____ Cents	LF	25	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
868.1	Sewer Main Cleaning - Mechanical (42" through 48" Diameter) _____ Dollars				
	and _____ Cents	LF	25	_____	_____
868.1	Sewer Main Cleaning - Mechanical (54" through 60" Diameter) _____ Dollars				
	and _____ Cents	LF	25	_____	_____
900.1	Pipe Bursting 8" Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	7,000	_____	_____
900.1	Pipe Bursting 10" Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	1,500	_____	_____
900.1	Pipe Bursting 12" Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	3,000	_____	_____
900.1	Pipe Bursting 15" Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	500	_____	_____
900.1	Pipe Bursting 18" Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	50	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
900.1	Pipe Bursting 21" Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	25	_____	_____
900.1	Pipe Bursting 24" Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	25	_____	_____
900.1	Pipe Bursting 27" Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	25	_____	_____
900.1	Pipe Bursting 30" Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	10	_____	_____
900.1	Pipe Bursting 33" Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	10	_____	_____
900.1	Pipe Bursting 36" Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	10	_____	_____
900.5	Upsizing of Main by Pipe Bursting (Greater than One Size), all sizes, all depths _____ Dollars				
	and _____ Cents	LF	25	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
901.1	Install 8" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	1,000	_____	_____
901.	Install 10" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	700	_____	_____
901.1	Install 12" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	700	_____	_____
901.1	Install 15" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	25	_____	_____
901.1	Install 18" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	25	_____	_____
901.1	Install 21" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	25	_____	_____
901.1	Install 24" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	25	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
901.1	Install 27" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	25	_____	_____
901.1	Install 30" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	10	_____	_____
901.1	Install 33" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	10	_____	_____
901.1	Install 36" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	10	_____	_____
901.1	Install 42" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	5	_____	_____
901.1	Install 48" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	5	_____	_____
901.1	Install 54" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	5	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
901.1	Install 60" CIPP Sanitary Sewer Pipe, all depths _____ Dollars				
	and _____ Cents	LF	5	_____	_____
910.1	Manhole Rehabilitation (Standard Manholes 4 ft. in Diameter) _____ Dollars				
	and _____ Cents	VF	1,000	_____	_____
910.2	Sewer Structure Rehabilitation (Non-circular Manholes, and Manholes greater than 4 ft in diameter) _____ Dollars				
	and _____ Cents	SF	500	_____	_____
1001	Flow Management (24" diameter) including up to 1,000 linear feet of piping per Each (up to 1 per work order) _____ Dollars				
	and _____ Cents	EA	1	_____	_____
1001	Flow Management (27" diameter) including up to 1,000 linear feet of piping per Each (up to 1 per work order) _____ Dollars				
	and _____ Cents	EA	1	_____	_____
1001	Flow Management (30" or 33" diameter) including up to 1,000 linear feet of piping per Each (up to 1 per work order) _____ Dollars				
	and _____ Cents	EA	1	_____	_____
1001	Flow Management (36" diameter) including up to 1,000 linear feet of piping per Each (up to 1 per work order) _____ Dollars				
	and _____ Cents	EA	1	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
1001	Flow Management (42" diameter) including up to 1,000 linear feet of piping per Each (up to 1 per work order) _____ Dollars and _____ Cents	EA	1	_____	_____
1001	Flow Management (48" diameter) including up to 1,000 linear feet of piping per Each (up to 1 per work order) _____ Dollars and _____ Cents	EA	1	_____	_____
1001	Flow Management (54" diameter) including up to 1,000 linear feet of piping per Each (up to 1 per work order) _____ Dollars and _____ Cents	EA	1	_____	_____
1001	Flow Management (60" diameter) including up to 1,000 linear feet of piping per Each (up to 1 per work order) _____ Dollars and _____ Cents	EA	1	_____	_____
1001.1	Flow Management (24" Diameter) Piping per Linear Foot Over 1000 LF; per Linear Foot _____ Dollars and _____ Cents	LF	15	_____	_____
1001.1	Flow Management (27" Diameter) Piping per Linear Foot Over 1000 LF; per Linear Foot _____ Dollars and _____ Cents	LF	15	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
1001.1	Flow Management (30" or 33" Diameter) Piping per Linear Foot Over 1000 LF; per Linear Foot _____ Dollars and _____ Cents	LF	15	_____	_____
1001.1	Flow Management (36" Diameter) Piping per Linear Foot Over 1000 LF; per Linear Foot _____ Dollars and _____ Cents	LF	5	_____	_____
1001.1	Flow Management (42" Diameter) Piping per Linear Foot Over 1000 LF; per Linear Foot _____ Dollars and _____ Cents	LF	5	_____	_____
1001.1	Flow Management (48" Diameter) Piping per Linear Foot Over 1000 LF; per Linear Foot _____ Dollars and _____ Cents	LF	5	_____	_____
1001.1	Flow Management (54" Diameter) Piping per Linear Foot Over 1000 LF; per Linear Foot _____ Dollars and _____ Cents	LF	5	_____	_____
1001.1	Flow Management (60" Diameter) Piping per Linear Foot Over 1000 LF; per Linear Foot _____ Dollars and _____ Cents	LF	5	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
1100	Sliplining Existing Sanitary Sewer, 36" Diameter (all depths) _____ Dollars				
	and _____ Cents	LF	10	_____	_____
1100	Sliplining Existing Sanitary Sewer, 42" Diameter (all depths) _____ Dollars				
	and _____ Cents	LF	10	_____	_____
1100	Sliplining Existing Sanitary Sewer, 48" Diameter (all depths) _____ Dollars				
	and _____ Cents	LF	10	_____	_____
1100	Sliplining Existing Sanitary Sewer, 54" Diameter (all depths) _____ Dollars				
	and _____ Cents	LF	10	_____	_____
1100	Sliplining Existing Sanitary Sewer, 60" Diameter (all depths) _____ Dollars				
	and _____ Cents	LF	10	_____	_____
1103.1	Point repairs for 8" or 10" Diameter, (0'-10' depth) including up to 10 LF of piping _____ Dollars				
	and _____ Cents	EA	20	_____	_____
1103.1	Point repairs for 8" or 10" Diameter, (10'-15' depth) including up to 10 LF of piping _____ Dollars				
	and _____ Cents	EA	10	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
1103.1	Point repairs for 8" or 10" Diameter, (>15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	5	_____	_____
1103.1	Point repairs for 12" or 15" Diameter, (0'-10' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	5	_____	_____
1103.1	Point repairs for 12" or 15" Diameter, (10'-15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	2	_____	_____
1103.1	Point repairs for 12" or 15" Diameter, (>15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	2	_____	_____
1103.1	Point repairs for 18" or 21" Diameter, (0'-10' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	2	_____	_____
1103.1	Point repairs for 18" or 21" Diameter, (10'-15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	2	_____	_____
1103.1	Point repairs for 18" or 21" Diameter, (>15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
1103.1	Point repairs for 24" or 27" Diameter, (0'-10' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 24" or 27" Diameter, (10'-15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 24" or 27" Diameter, (>15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 30" or 33" Diameter, (0'-10' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 30" or 33" Diameter, (10'-15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 30" or 33" Diameter, (>15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 36" or 42" Diameter, (0'-10' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
1103.1	Point repairs for 36" or 42" Diameter, (10'-15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 36" or 42" Diameter, (>15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 48" Diameter, (0'-10' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 48" Diameter, (10'-15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 48" Diameter, (>15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 54" Diameter, (0'-10' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 54" Diameter, (10'-15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
1103.1	Point repairs for 54" Diameter, (>15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 60" Diameter, (0'-10' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 60" Diameter, (10'-15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.1	Point repairs for 60" Diameter, (>15' depth) including up to 10 LF of piping _____ Dollars and _____ Cents	EA	1	_____	_____
1103.2	Extra length point repair, 8" or 10" Diameter, all depths _____ Dollars and _____ Cents	LF	50	_____	_____
1103.2	Extra length point repair, 12" or 15" Diameter, all depths _____ Dollars and _____ Cents	LF	25	_____	_____
1103.2	Extra length point repair, 18" or 21" Diameter, all depths _____ Dollars and _____ Cents	LF	15	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
1103.2	Extra length point repair, 24" or 27" Diameter, all depths _____ Dollars and _____ Cents	LF	5	_____	_____
1103.2	Extra length point repair, 30" or 33" Diameter, all depths _____ Dollars and _____ Cents	LF	5	_____	_____
1103.2	Extra length point repair, 36" or 42" Diameter, all depths _____ Dollars and _____ Cents	LF	5	_____	_____
1103.2	Extra length point repair, 48" Diameter, all depths _____ Dollars and _____ Cents	LF	2	_____	_____
1103.2	Extra length point repair, 54" Diameter, all depths _____ Dollars and _____ Cents	LF	2	_____	_____
1103.2	Extra length point repair, 60" Diameter, all depths _____ Dollars and _____ Cents	LF	2	_____	_____
1103.3	Obstruction Removal by Excavation, 8" or 10" Diameter, all depths _____ Dollars and _____ Cents	EA	5	_____	_____

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Solicitation No. B-13-016-DB

Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
1103.3	Obstruction Removal by Excavation, 12" or 15" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Excavation, 18" or 21" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Excavation, 24" or 27" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Excavation, 30" or 33" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Excavation, 36" or 42" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Excavation, 48" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Excavation, 54" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
1103.3	Obstruction Removal by Excavation, 60" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Remote Device, 8" or 10" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Remote Device, 12" or 15" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Remote Device, 18" or 21" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Remote Device, 24" or 27" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Remote Device, 30" or 33" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Remote Device, 36" or 42" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
1103.3	Obstruction Removal by Remote Device, 48" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Remote Device, 54" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Remote Device, 60" Diameter, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1103.3	Obstruction Removal by Person Entry, all depths _____ Dollars and _____ Cents	EA	1	_____	_____
1109	Service Reconnection, all depths (w/ remote control cut device) _____ Dollars and _____ Cents	EA	50	_____	_____
1109	Service Reconnection, (w/ open cut excavation, 0'-10' depth, including up to 10 LF of lateral) _____ Dollars and _____ Cents	EA	90	_____	_____
1109	Service Reconnection, (w/ open cut excavation, 10'-15' depth, including up to 10 LF of lateral) _____ Dollars and _____ Cents	EA	25	_____	_____

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Item No.	Description (Unit Price to be written in Words)	Unit	Quantity	Unit Price (Figures)	Total Price (Figures)
1109	Service Reconnection, (w/ open cut excavation, >15' depth, including up to 10 LF of lateral) _____ Dollars and _____ Cents	EA	10	_____	_____
1109	Service Reconnection, all depths (person entry) _____ Dollars and _____ Cents	EA	2	_____	_____
4438	Flowable Fill _____ Dollars and _____ Cents	CY	100	_____	_____

Bid Summary

TOTAL SAWS JOB NO. 13-4505 (SEWER): \$ _____

 BIDDER'S SIGNATURE & TITLE

 FIRM'S NAME (TYPE OR PRINT)

 FIRM'S ADDRESS

 FIRM'S PHONE NO. /FAX NO.

 FIRM'S EMAIL ADDRESS

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The Contractor herein acknowledges receipt of the following:
Addendum Nos. _____

OWNER RESERVES THE RIGHT TO ACCEPT THE OVERALL MOST RESPONSIBLE BID.

The bidder offers to construct the Project in accordance with the Contract Documents for the contract price, and to complete the Project within **365** calendar days from notice to proceed date or until funds are exhausted from the contract. **The bidder understands and accepts the provisions of the contract Documents relating to liquidated damages of the project if not completed on time.**
Complete the additional requirements of the Proposal which are included on the following pages.

SC-1.0 SCOPE OF WORK

I. General

The San Antonio Water System (hereinafter referred to as “SAWS” or “the System”) is soliciting Bids for the purpose of retaining an organization to provide construction services for the rehabilitation of existing SAWS sanitary sewer facilities using pipe bursting, cured-in-place pipe (CIPP), and sliplining methods on a work order construction contract basis.

Contractor shall anticipate a period of careful planning in close coordination with SAWS prior to beginning any work to fully develop procedures and standards for the work that will be performed. Employee safety, workmanship standards, and maintaining the integrity of SAWS operations with minimal disruption will be the key areas to be addressed prior to beginning work.

II. Terms and Conditions

Term of Contract: The Sewer Rehabilitation Construction Contract term will be for 365 calendar days from the notice to proceed, or until funds are exhausted from the contract, subject to funding and approval by the System’s Board of Trustees.

Bid Proposal: The Contractor shall include in his Bid Proposal all labor, equipment, material, tools, supplies and incidentals necessary to complete all work required by this Contract in accordance with the following current specifications: San Antonio Water System (SAWS) Specifications for Water and Sanitary Sewer Construction; Texas Department of Transportation (TxDOT) Standard Specifications for Construction of Highways, Streets and Bridges; the City of San Antonio (CoSA) Standard Specification for Public Works Construction; and any specifications and special conditions specified herein.

Instructions to Bidders:

1. Item 5(f) on page IB-2 of the Instructions to Bidders shall be removed and replaced with the following:

“The Bidder is required to submit as part of the bid a letter from the insurance provider stating provider’s commitment to insure the Contractor for the types of coverage’s or an Insurance Certificate to be in conformance with the types of coverage’s noted in General Conditions Section 5.7 – Contractor’s Insurance Requirements, if awarded the contract.”

2. Item 23 on page IB-7 of the Instructions to Bidders shall be removed and replaced with the following:

“To assist the San Antonio Water System in performing the bidder evaluation and subsequent recommendation of award, each and every bidder **must submit the following with their bid**. Failure to provide the required information may result in determining a non-responsive bidder:

- (a) A complete financial statement for your organization that was prepared within the past 12 months, by an independent Certified Public Accountant, and a point of contact for your banking institution.
- (b) An information packet on company showing experience, organization and equipment.
- (c) A statement regarding ability to complete the project within the schedule taking into account existing commitments.
- (d) Record of performance submittals as required by Special Conditions Section SC-3.1.”
- (e) A completed and signed W-9 Request for Taxpayer Identification Number and Certification form.

Contract Requirements:

1. CONTRACTOR shall make available up to four (4) independent crews able to work simultaneously on work orders.
2. CONTRACTOR will name one individual as coordinator or primary contact to resolve all problems that may arise during the term of the Contract. This individual shall be highly experienced and knowledgeable of the functionality of their company’s sewer rehabilitation work, and shall be available two (2) weeks prior to the starting date of the Contract to assure smooth transition between contractors, if necessary.
3. CONTRACTOR will provide adequate internal control procedures to protect SAWS from financial loss, resulting from any aspect of administering this Contract.
4. CONTRACTOR shall be available to attend meetings and make presentations as requested by SAWS.
5. At the pre-construction meeting, Contractor shall provide SAWS with an emergency 24 hour telephone number for evenings, weekends, and holidays.

SC-2.0 CONSTRUCTION MATERIALS

Unless otherwise specified herein, the Contractor shall furnish all construction materials in accordance with the current San Antonio Water System Specifications for Water and Sanitary Sewer Construction; Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges; the City of San

Antonio Standard Specifications for Public Works Construction; the latest revision of the San Antonio Water System Material Specifications; and specifications herein necessary for the execution and completion of this contract.

SC-3.0 PROJECT REQUIREMENTS

SC-3.1 Record of Performance Submittals: Information required in this section **must be submitted with the bid**. Any bid package that does not include this information may be determined to be non-responsive. The Bidder shall meet the following minimum qualifications for performing sewer rehabilitation work:

1. The Bidder shall have completed a minimum of five (5) trenchless Work Order type projects where Bidder has performed a minimum of fifty percent (50%) of the rehabilitation work.
2. The Bidder shall have successfully completed all of the following:
 - A. Successful rehabilitation of a minimum of 20,000 linear feet of 18-inch diameter or greater sewer pipe AND a minimum of 5,000 linear feet of 24-inch diameter or greater sewer pipe by utilizing similar pipe bursting/crushing methods as is required to accomplish the work on this project. The Bidder shall also have experience in the pipe bursting/crushing method to upsize an existing sewer pipe diameter to a larger diameter. Proof of at least five (5) projects that involved upsizing sewer mains by pipe bursting/crushing method are required.
 - B. Successful rehabilitation of a minimum of 10,000 linear feet of 48-inch diameter or greater sewer pipe utilizing similar CIPP methods as is required to accomplish the work on this project.
 - C. Successful rehabilitation of a minimum of 1,000 linear feet of 42-inch diameter or greater sewer pipe utilizing similar sliplining methods as is required to accomplish the work on this project.

To verify Bidder's experience information, provide a list of individuals familiar with the above referenced projects who can verify, as the owner or engineer, the above information is true and correct. Provide verified telephone numbers, project names, project size and scope, project cost, project start and stop dates, pipe materials and sizes installed, and the equipment and methods utilized on the project.

The Bidder shall be required to have at least one crew and one superintendent that is qualified in the method of rehabilitation being performed on each work order job site during rehabilitation activities

SC-3.2 Performance Time. The Construction Time (Calendar Days) for each individual work order will be determined by SAWS and discussed between

SAWS and the Contractor for concurrence prior to project commencement. SAWS has the final approval over the duration of the construction schedule. No work orders will be issued prior to the notice to proceed. It is the Contractor's responsibility to provide enough work force to accomplish the work orders and workload assigned and complete the work in accordance with the provided schedule. Work orders issued during the term of this contract that have not been completed prior to the expiration of the term shall remain in effect until they are completed.

- SC-3.3 Specifications. All work performed in connection with the job plans and specifications shall be in accordance with the current San Antonio Water System Specifications for Water and Sanitary Sewer Construction, these Special Conditions, the current Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges, the current City of San Antonio Standard Specifications for Public Works Construction any Railroad Permit requirements, and any requirements or specifications specified herein.
- SC-3.4 Schedule of Operations. For each individual work order, Contractor shall furnish to the Engineer a construction progress schedule setting forth the information required by the General Conditions of the Contract. Contractor shall send the construction progress schedule along with written notification to the Engineer and SAWS representative and obtain approval prior to starting work. In addition, Contractor shall submit an updated construction progress schedule weekly to the Engineer and to SAWS Inspector.
- SC-3.5 Cleanup. The Contractor shall maintain at all times during the course of work a neat and orderly area of construction operations. Unless otherwise specified herein, complete cleanup behind construction operations shall be as established in the field by the Construction Inspector. The final acceptance inspection shall not be conducted until the Contractor has completed final cleanup operations. The governing right-of-way entities Inspector/Representative shall accompany the San Antonio Water System Construction Inspector during the final acceptance inspection.
- SC-3.6 Special Risk Exposure(s) Necessitating Additional Requirements: SAWS GCCC-Section 5.7. Contractor's Insurance Requirements adequately specifies the lines of insurance coverage in keeping with the above Assessment results with one exception: please waive Section 5.7.1.1.8 – Builder's Risk line of coverage.

SC-4.0 CONSTRUCTION OPERATIONS

SC-4.1 Permits. SAWS is responsible for obtaining all necessary City of San Antonio (CoSA) street cut and CoSA right-of-way permits. The Contractor is solely responsible for obtaining all other necessary permits and inspections. Cost of obtaining and fulfilling these permits are the responsibility of the Contractor and are subsidiary to various items in the project, unless a separate bid item for such is included in the bid proposal.

- A. City of San Antonio Right-of-Way Use Permits. SAWS will pay only for the first permit of each project that is within the right-of-way of COSA. If a permit extension is required, the Contractor must notify SAWS a minimum of 10 working days prior to the expiration date of the permit. If the permit expires and needs to be reapplied for, the Contractor will be required to reimburse SAWS for the cost of the permit. In addition, the Contractor is responsible to reimburse SAWS for all permit fines or fees that are associated with improper traffic control, barricades, safety issues, or violations issued by the COSA under the approved permit. SAWS retains the right to withhold future work orders until all permit fines and/or expired permit fees are reimbursed to SAWS.
- B. Railroad Permits. The Contractor shall be aware that portions of the work being performed may be within the Union Pacific Railroad's ('the Railroad') right-of-way (ROW). The Contractor must submit a written scheduling request to the Railroad's scheduling agent. The Contractor's written request must be delivered to the Railroad's scheduling agent:

Mr. John Van Gelder
Assistant Manager
Real Estate Department
Union Pacific Railroad Company
1400 Douglas Street, Stop 1690
Omaha, NE 68179-1690
Fax: 402-544-8532

The Railroad may provide, at the Contractor's expense, an inspector and flagman to oversee the work within the railroad ROW. No payment shall be made for the efforts expended by the Contractor with the Railroad. The Contractor is responsible for meeting all requirements of the Railroad. The costs for services described herewith shall not be paid separately, but shall be included in the relevant bid items established in the bid proposal.

The Contractor shall at all times abide by the conditions outlined in the Pipeline Crossing Agreement between SAWS and the Railroad. SAWS will furnish a copy of the Pipeline Crossing Agreement to the Contractor upon execution or at the pre-construction meeting, whichever comes first.

SAWS will pay for the License Fee, as well as obtain the License from the Railroad.

At all times during construction, installation and repair or removal of a pipeline or wire line the Contractor must obtain and maintain Railroad Protective Liability Insurance written on ISO occurrence form CG 00 35 12 04 (or a substitute form providing equivalent coverage) on behalf of the Railroad as named insured, with a limit of \$2,000,000.00 per occurrence and an aggregate of \$6,000,000.00. A binder stating that the policy is in place must be submitted to the Railroad, as well as the SAWS' Risk Manager before the work may be commenced and until the original policy is forwarded to the Railroad.

SC-4.2 General Notes. The following general notes shall be adhered to.

1. All materials and construction procedures within the scope of this contract shall be approved by the San Antonio Water System (SAWS) and comply with the following as applicable.
 - A. Current Texas Commission on Environmental Quality (TCEQ) Design Criteria for Sewerage Systems [30 TAC 217.1-217.17, 30 TAC 217.51-217.58, , and 30 TAC 217.59-217.68 and 30 TAC 213].
 - B. Current TXDOT "Standard Specifications for Construction of Highways, Streets and Drainage."
 - C. Current "San Antonio Water System Standard Specifications for Water and Sanitary Sewer Construction."
 - D. Current City of San Antonio "Standard Specifications for Public Works Construction."
 - E. Current Bexar County Specifications.
 - F. Current City of San Antonio "Right-of-Way Ordinance and Criteria Manual".
 - G. Any governing jurisdiction's laws and regulations.
2. The Contractor/Superintendent is to notify and make arrangements with the SAWS, COSA, TxDOT or other jurisdiction's representative and involve the home resident and/or property owners 48 hours prior to excavation or start of project. *For projects located within the Edwards Aquifer Recharge Zone, the Contractor must contact the local TCEQ representative at 210-403-4073 to coordinate project schedule and issues.*
3. The existence and location of underground utilities indicated on the plans are taken from the best records available and are not guaranteed to be accurate. The Contractor/Superintendent is responsible for maintaining,

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supporting, and protecting the integrity of underground utilities and power poles during construction, and is required to call the following numbers 48 hours before beginning any excavation.

San Antonio Water System	233-2010
COSA Drainage	207-8048
COSA Traffic Signal Operations	207-7720
Texas State Wide one Call Locator	1-800-545-6005
Bexar Metropolitan Water District	354-6536

Where High Voltage Overhead Power Lines are in close proximity to the work, the Contractor shall be in accordance with the requirements of Chapter 752 of the Texas Health & Safety Code.

4. If damaged, the Contractor shall be responsible for restoring existing features at the project site, including but not limited to existing utilities, concrete rip-rip, concrete drainage structures, curbs, streets, driveways, sidewalks, signs, pavements, sprinkler systems, fences, vegetation, landscaping, etc. to its original or better condition. (No Separate Pay Item)
5. Trench excavation protection shall be accomplished as required by the provisions of Part 1926, Subpart P-Excavation, Trenching, and Shoring of The Occupational Safety and Health's Standards and Interpretations. The Contractor shall also comply with the provisions included in Item 550, Trench Excavation Safety Protection, of the current San Antonio Water System Specifications for Water and Sanitary Sewer Construction.
6. Contractor shall adhere to the requirements of the latest City of San Antonio Tree Ordinance. Adherence to the City of San Antonio Tree Ordinance will not be measured and paid for separately, but shall be considered subsidiary to other bid items.

SC-4.3 Barricades, Signs and Traffic Handling. Payment for line Item 530 Barricades, Signs and Traffic Handling will be made by the contract unit bid price of "Each". Contractor shall be compensated for one (1) barricades, signs and traffic handling item per work order. If off duty police officers are required, payment for off duty police officers shall be considered subsidiary to Item 530 Barricades, Signs, and Traffic Handling (no separate pay item).

SC-4.4 Traffic Control Plan. Payment for line item 805 Traffic Control Plan will be made by the contract unit bid price of "Each". If a traffic control plan is required, Contractor may be compensated for up to one (1) traffic control plan per each work order.

SC-4.5 Wheelchair Ramps. All work associated with the construction of wheelchair ramps shall be in accordance with the requirements of Item 502.1 Concrete

Sidewalks and/or Item 500 Concrete Curbing of the City of San Antonio Standard Specifications for Public Works Construction. In addition, these items shall include the construction of all wheelchair ramps in accordance to the details that are attached herein. The measurement and payment of wheelchair ramps shall be inclusive as stated within these specific items of Concrete Sidewalks and Concrete Curbing/ machine Laid Curb. All payment shall include full compensation for preparing the subgrade; furnishing and placing all material, joints, backfill, excavation, concrete, reinforcement, expansion joints, form work, tools, labor, equipment, and any incidentals necessary, to complete the work.

SC-5.0 Work Orders.

- I. All work order projects that will be issued under this contract are unspecified at the time of bidding, all quantities are estimated in the proposal, and it is the intent of the proposal and quantities to establish a fixed unit price for various line items to be paid to the Contractor by SAWS during the term of this contract. No change in the unit price will be made, regardless of the actual quantity of the item or complexity of work performed during the initial term of the contract.
- II. SAWS does not guarantee that each bid item in this contract will be used on the assigned work orders.
- III. A work order is defined as a document authorizing the completion of an individual project or specific task. The work order includes specific line items and quantities that the contractor will perform which will be charged against the contract.
- IV. SAWS does not guarantee that a work order will be given within any specific timeline. SAWS also reserves the right to limit the number of work orders given out at any time.
- V. The volume of work orders provided to the contractor will be at SAWS sole determination and among other things, be dependent on the completion of previous work orders. If previous work orders are not completed to the satisfaction of SAWS or work orders currently under construction are behind schedule, additional work orders may not be assigned to the contractor until all other work is completed or back on schedule.

- VI. Meetings
 1. A mandatory pre-construction meeting or conference may be held by SAWS for each work order issued. This meeting or conference may be required to plan and discuss the scope of the work order.

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2. A mandatory project coordination meeting may be held with project inspector and affected entities such as CoSA Right of Way Dept., Railroad, TxDOT, etc.
- VII. The Contractor will be responsible for the development of the Storm Water Pollution Prevention Plan and an approved Traffic Control Plan, if required for the work order. The Contractor will also be responsible for providing SAWS with an approved Flow Management plan for each work order.
- VIII. Work orders shall be submitted by the owner representative. It is the intent of the owner to include up to three individual projects within each work order, but the Owner is not limited to this amount. Work Orders due to urgency may be issued individually.
- IX. Payment will be made on a work order basis. No payment will be made prior to the City of San Antonio (or other regulatory body) and San Antonio Water System final approvals.
- X. A 48-hour mobilization response time will be required for each work order issued under this contract. Contractor shall mobilize within 48 hours of receiving a written work order under this contract. Mobilization will not be paid for separately and shall be considered subsidiary to other bid items.
- XI. Contractor shall provide owner with an emergency 24 hour telephone number for evenings, weekends, and holidays by the first working day of the project. This telephone number must be a commercial answering service. The answering service must be able to contact the Contractor and the Contractor must respond back to the owner within two hours of the initial contact.
- XII. The Contractor shall submit pre and post-construction videos in accordance to SAWS Standard Specification Item 866 and special specification 865 sewer main pre-television inspection.
- XIII. Contractor shall submit to the owner the schedule of operations as set forth in SC-3.4 and in SAWS Standard Specification Item 1110 Progress Schedule. A schedule of operation and progress is needed for each work order.
- XIV. All Quality Assurance testing services (material proctor tests, density tests, concrete tests) required shall be performed by a third party under the direction of SAWS. Such testing should be coordinated with SAWS, Contractor, and the SAWS Representative. Such testing does not relieve the Contractor from responsibility for quality control of the project work.
- XV. The Contractor shall comply with this specification documentation.
- XVI. The Contractor shall submit all record drawings as required to SAWS inspections.
- XVII. Completion Report:
 1. Contractor shall submit a completion report to SAWS when each work order is completed.
 2. The completion report shall include but not limited to the following:

- Pre and post MPEG-1 format and written to CD/DVD video and video logs.
- Complete invoices including all sub contractors identifying all unit price items utilized (quantity, description, and unit price and total dollar amount) on each respective project within the work order. The quantity must be agreed on with the SAWS inspector.
- Any test and/or submittals specified in this contract documents such as density tests, structural properties, etc. that are required.

XVIII. Except where bid items are specifically provided in the Proposal, payment to the Contractor to accommodate the requirements specified herein shall be included in the unit price costs for the items bid and shall be considered to be subsidiary to the various items of work under this contract if so specified in the Standard or Special Specifications.

SC-6.0 ARTICLE V. CONTRACT RESPONSIBILITIES

SC-6.1 Contractor's Insurance Requirements, Page GC-18; The following sentence is to be added at the end of Section 5.7.1.1.5 Contractor's Insurance Requirements - Umbrella Liability:

*“(Specifically state which coverage form is being used for this Excess/Umbrella Liability insurance - please include whether the coverage form is Excess **or** Umbrella in the Description of Operations on the Certificate of Insurance.)”*

SC-6.2 Contractor's Insurance Requirements, Page GC-18; The following sentence is to be added at the end of Section 5.7.1.1.7 Contractor's Insurance Requirements - Contractor's Pollution Liability

*“(Specifically state which coverage form is being used for this Contractor's Pollution Liability insurance - please include whether the coverage form is on an Occurrence Basis **or** Claims Made form in the Description of Operations on the Certificate of Insurance which accompanies your bid/response. If the coverage form is Claims Made also include the “Retro-date” of the policy coverage.)”*

SC-6.3 Construction Stakes, Page GC-23; Replace paragraph 5.16.1 with the following:

“The Contractor will be supplied with the appropriate benchmark information, but construction staking will be the responsibility of the Contractor. Detailed transfers of elevation, line and grades to structures and other features of the

Work shall be the responsibility of the Contractor. The Contractor shall be responsible for providing SAWS with a copy of cut sheets for sanitary sewer lines prior to excavation.”

SC-7.0 ARTICLE VIII. CONTRACT TIME COMPLETION

SC-7.1 Commencement of Work, Page GC-31; Replace paragraph 8.1 with the following:

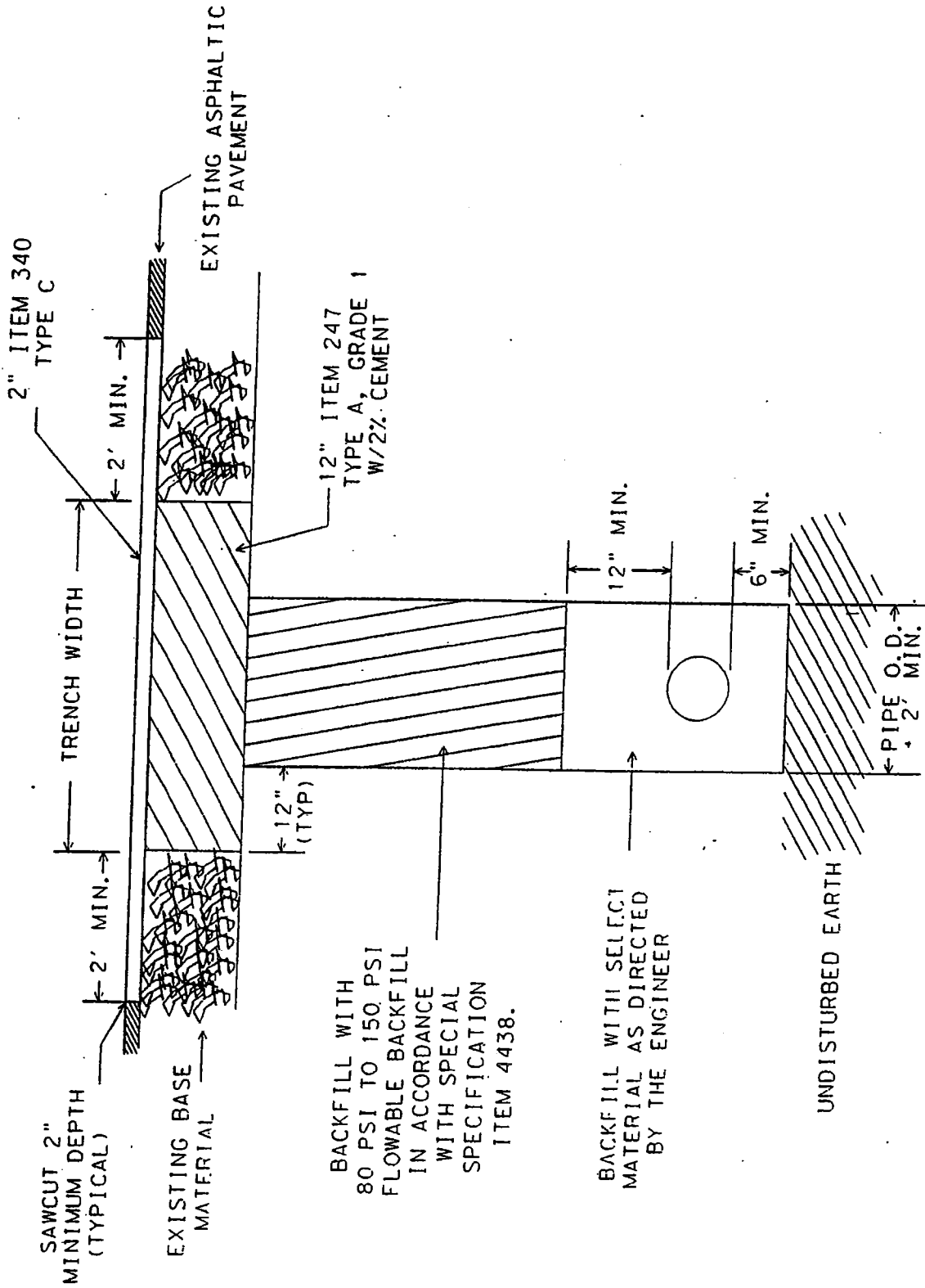
“The Work called for in each Work Order of this Contract shall be commenced by Contractor within 48 hours after issuance of each Work Order by SAWS. SAWS reserves the right to change this time frame if a special situation shall arise on a work order. Under no circumstances shall the Work commence prior to Contractor's receipt of a SAWS issued Work Order. Computation of Work Order Time will begin 48 hours after issuance of a Work Order unless specified otherwise in the Work Order.

Prior to commencement of work and before the 48 hour period as referenced above, a project pre construction meeting will be held for each work order that is issued. Commencement of work on a work order prior to a project preconstruction meeting will not be allowed.”

SC-7.2 Liquidated Damages for Failure to Complete on Time, Page GC-32; Replace paragraph 8.6 with the following:

“The Contractor agrees that time is of the essence on this Contract and that for each day of delay beyond the number of days agreed upon for the completion of the work order, after due allowance for such extension of time as is provided for under the provisions of the preceding paragraph 8.5, the Owner may withhold permanently from the Contractor’s total compensation, not as a penalty but as liquidated damages, the sum per day given in the following schedule. For purpose of assessing liquidated damages, the amount of the contract noted on the table below is defined as the original contract sum awarded.”

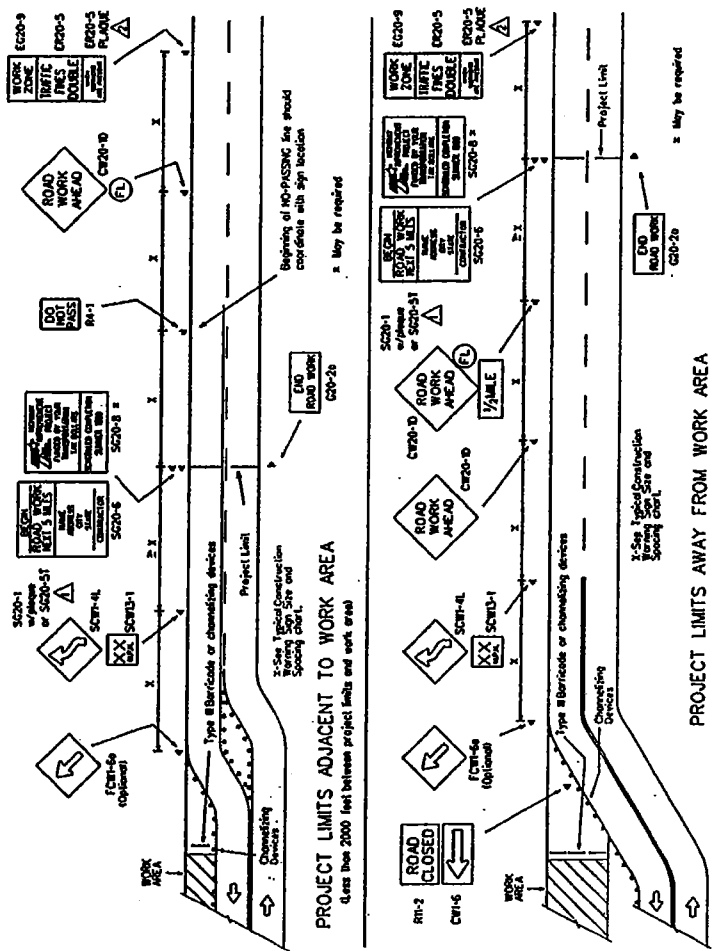
TxDOT TRENCH REPLACEMENT DETAIL



TRENCH WITH PAVED SURFACE DETAIL
 (FOR TRENCHES LESS THAN 6' WIDE)
 (NTS)

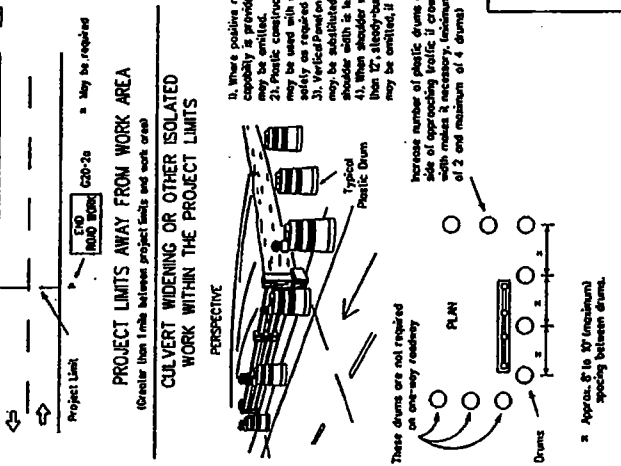
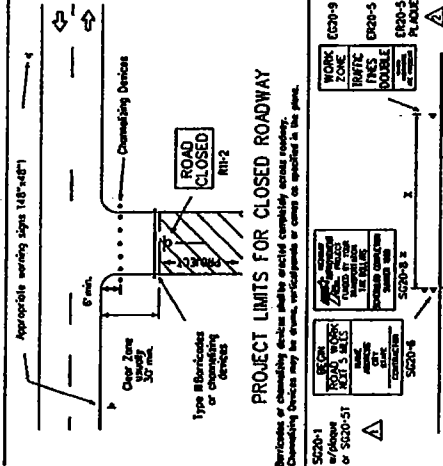
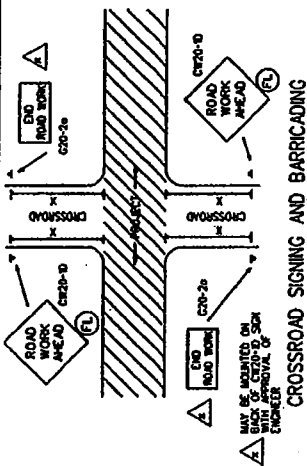
BARRICADE AND CONSTRUCTION STANDARDS

PROJECT LIMIT TRAFFIC CONTROL DEVICES



PROJECT LIMIT GENERAL NOTES

1. Signs and warning lights shall be attached to the sign support using a 1/2" bolt (minimum of 2 bolts) for each sign. Signs shall be maintained on the sign support.
2. Warning lights shall be maintained as directed by the Engineer.
3. Signs shall be maintained on the sign support as directed by the Engineer.
4. As a general rule, additional traffic control devices in advance of the project limits should only be used in those cases where a work area, a detour, or a potentially hazardous location is less than 2000 feet inside the project limits.
5. The traffic control devices used in the above illustrations are examples only. Field conditions and engineering judgment should dictate the most appropriate traffic control devices to be used. Any variation in the use of the devices shall be approved by the Engineer.
6. As indicated above, the BECOM ROAD WORK NEXT X MILES, CONTRACTION and DO ROAD WORK signs shall be erected at or near the project limits and the WORK ZONE TRAFFIC FRES DOUBLE sign shall be erected in advance of the project limits. These signs should be placed to provide adequate advance warning of the project limits.
7. With the exception of an advance project sign, the Engineer may place any other signs at the project limits and the work area.
8. The contractor shall be responsible for the placement of all signs at the project limits and the work area.
9. The BECOM ROAD WORK NEXT X MILES sign shall be placed at the project limits and the BECOM ROAD WORK NEXT X MILES sign shall be placed at the work area.
10. Signs should be based on the "Texas Information Uniform Traffic Control Devices for Streets and Highways" (TMUTCD).
11. The Standard Public Information sign (S200-8) shall be included at the project limits when repair activities, in the plan, refer to SMD Structures for approved mounting facilities.



CROSSROAD SIGNING AND BARRICADING

1. Except as noted elsewhere in this plan, the minimum signing on a crossroad approach shall be one C200-D ROAD WORK AHEAD sign and one C200-D ROAD WORK AHEAD sign.
2. The minimum signing on a crossroad approach shall be one C200-D ROAD WORK AHEAD sign and one C200-D ROAD WORK AHEAD sign.
3. The minimum signing on a crossroad approach shall be one C200-D ROAD WORK AHEAD sign and one C200-D ROAD WORK AHEAD sign.
4. The minimum signing on a crossroad approach shall be one C200-D ROAD WORK AHEAD sign and one C200-D ROAD WORK AHEAD sign.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING

Speed Limit (mph)	Sign Size (ft)	Sign Spacing (ft)	Sign Spacing (ft)	Sign Spacing (ft)	Sign Spacing (ft)	Sign Spacing (ft)	Sign Spacing (ft)	Sign Spacing (ft)	Sign Spacing (ft)
30	30	30	30	30	30	30	30	30	30
35	35	35	35	35	35	35	35	35	35
40	40	40	40	40	40	40	40	40	40
45	45	45	45	45	45	45	45	45	45
50	50	50	50	50	50	50	50	50	50
55	55	55	55	55	55	55	55	55	55
60	60	60	60	60	60	60	60	60	60
65	65	65	65	65	65	65	65	65	65
70	70	70	70	70	70	70	70	70	70
75	75	75	75	75	75	75	75	75	75

STANDARD PLANS

TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

BARRICADE AND CONSTRUCTION STANDARDS

ADVANCE SIGNING
CROSSROAD SIGNING
WARNING LIGHTS

BC(1)-99

10/99 Revision
Added "BEOM" to CROSSROAD NEXT X MILES sign
Added "WESH" WORDS ARE PRESENT" phrase

GENERAL NOTES

FOR TYPE III BARRICADES

Type III barricades are to be used at each end of construction projects closed to all traffic. Barricades extending across a roadway should have stripes that are placed in the direction toward which traffic must be diverted. Barricades extending along a roadway should have stripes that are placed perpendicular to the direction of travel. The stripes should be placed on the back side of the barricade. Striping of ribs, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope to the right. Identification markings may be shown only on back side of barricade ribs. Maximum height of letters shall be 1 inch. Barricades should be placed parallel to traffic, unless an alternate clear zone is provided (see BC11).

Barricades shall be made using pre-qualified materials. A list of compliant products and their sources may be obtained by writing or faxing:

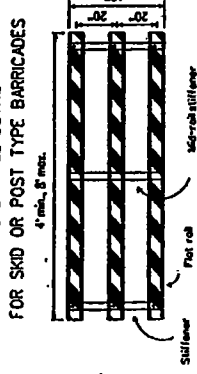
Standards Engineer
Traffic Operations Division - TE
Texas Department of Transportation
125 East 10th Street
Austin, Texas 78701-2143
Phone (512) 416-3700
Fax (512) 416-3761
E-mail TRF-STANDARDS@dot.state.tx.us

Barricades shall NOT be used as a sign support.

TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

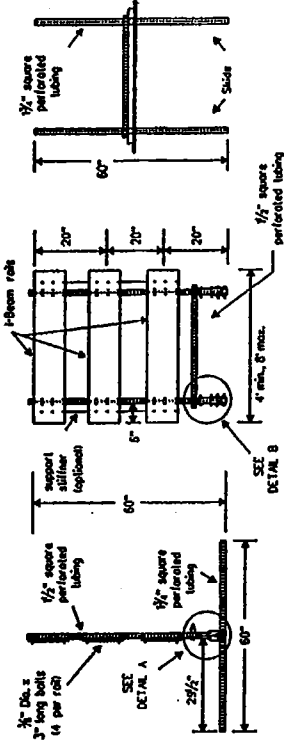


Stiffener may be inside or outside of support.

* For dimensions of components refer to TAB01 approved products list.

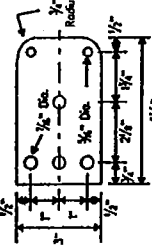
TYPE III BARRICADE (SKID)

PERFORATED STEEL/WOOD/PLASTIC TYPE III BARRICADE OPTION

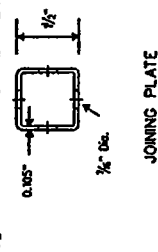


NOTE: If flat rails are used, refer to Wood/Plastic Option for vertical placement of rails.

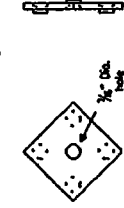
SPLICE PLATE



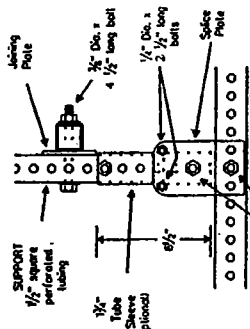
1/2" PERFORATED SQUARE STEEL TUBE



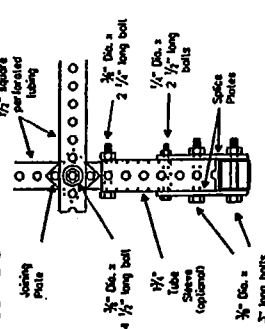
JOINING PLATE



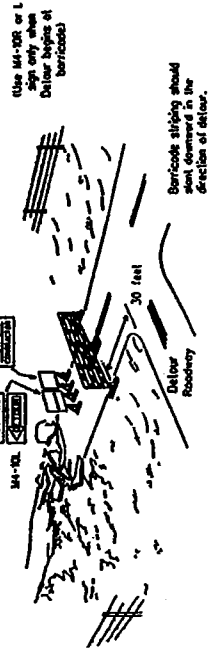
DETAIL A



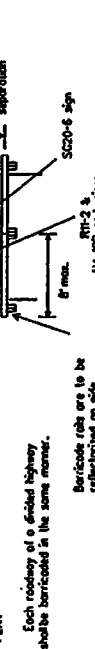
DETAIL B



PERSPECTIVE



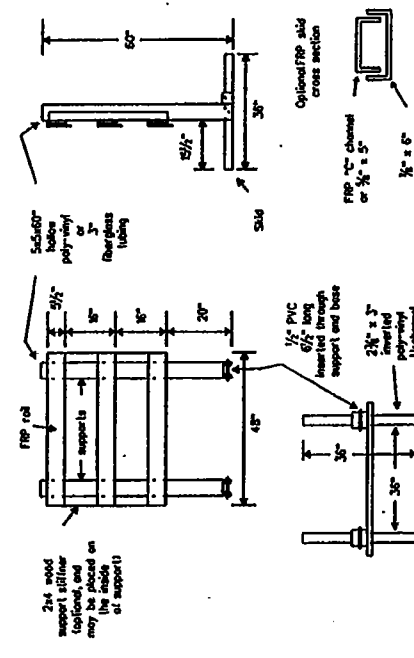
PLAN



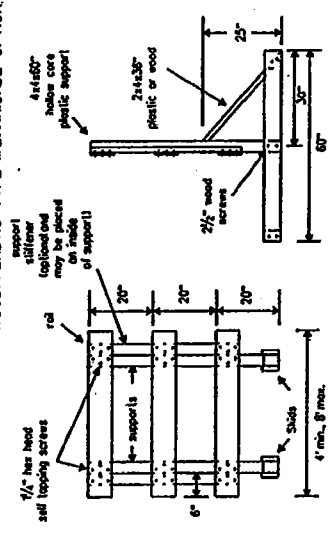
1. R11-2 and M4-10 signs should be mounted on independent supports at 7 feet mounting height in center of roadway.

2. Advance signing, including construction warning signs, and detour signing should be specified elsewhere in the plans.

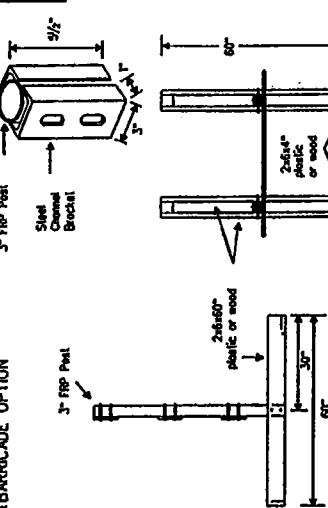
PLASTIC/FIBERGLASS TYPE III BARRICADE OPTION



WOOD/PLASTIC TYPE III BARRICADE OPTION



WOOD/PLASTIC/FIBERGLASS TYPE III BARRICADE OPTION



STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

BARRICADE AND CONSTRUCTION STANDARDS

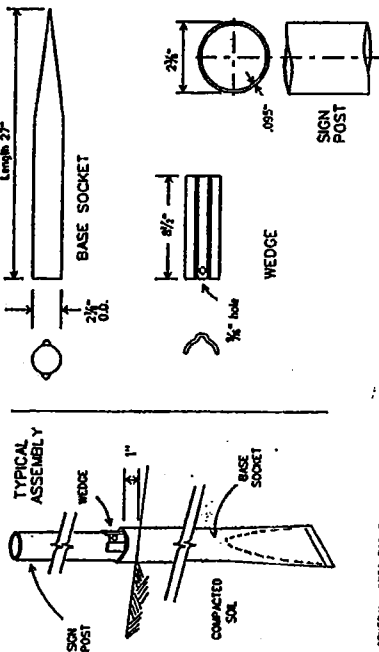
BARRICADES (SKID MOUNT TYPE)

BC(2)-98

DATE	BY	CHKD	APP'D
10/1/98	J. B. B.	J. B. B.	J. B. B.
10/1/98	J. B. B.	J. B. B.	J. B. B.
10/1/98	J. B. B.	J. B. B.	J. B. B.
10/1/98	J. B. B.	J. B. B.	J. B. B.

TYPE III BARRICADE (POST TYPE)

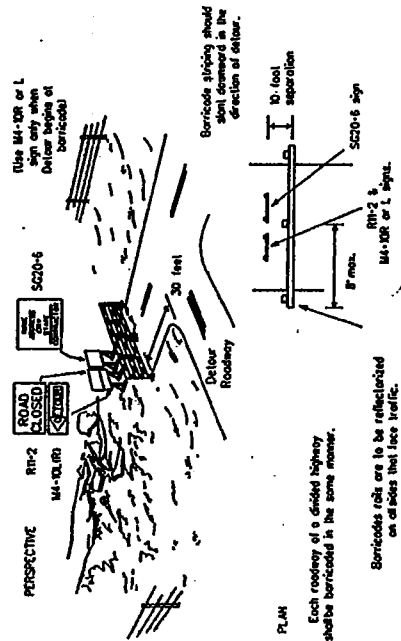
POZ-LOC (Driveable)



GENERAL NOTES FOR THE WALL TUBE TYPE SIGN SUPPORT:

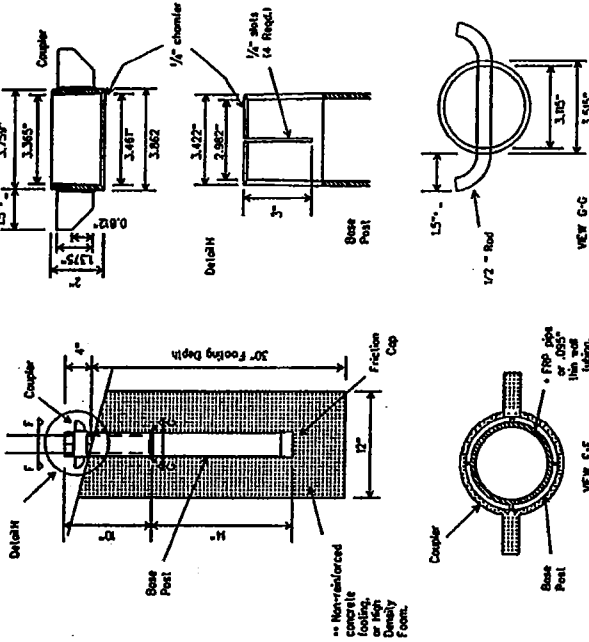
1. The BASE SOCKET is formed from 2 1/2" O.D. x 10 gauge galvanized pipe.
2. The WEDGE is formed from 11 gauge steel perforated per ASTM A325.
3. The SIGN POST is 2.25" O.D. x 0.095" thick wall tubing.
4. Steel supports shall be made from new material and shall be corrosion resistant. Steel supports shall be galvanized in accordance with ASTM Designations A103 or A525 (D-90 or better).
5. Supports shall be straight with 1/2" per 5 feet of length and shall have a smooth, uniform finish free from defects affecting strength or appearance. Any bolt holes and altered ends shall be ground when installed.
6. Bolts, nuts, washers and other miscellaneous hardware shall be galvanized in accordance with ASTM Designation A33 Class C or D, or B635 Class 50.
7. Barricade support systems used on this sheet may be suitable for only certain soil types. The contractor is responsible for selecting the appropriate support system for soil conditions on each project.

TYPE III BARRICADE (POST TYPE) TYPICAL APPLICATION



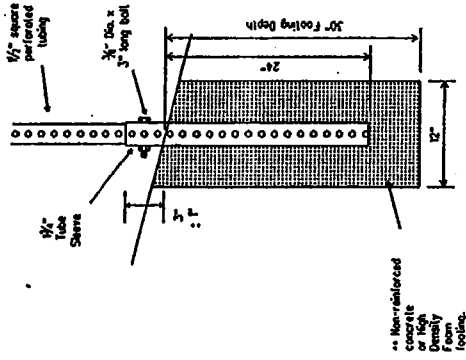
1. RR-2 and M4-10 signs should be mounted on independent supports of 7 foot mounting height in center of roadway.
2. Advance signs, including construction warning signs, and detour signs shall be as specified elsewhere in the plans.

UNIVERSAL ANCHOR SYSTEM



- Plastic insert must be used with 1/8" thick wall tubing.
- Footing and base post should be removed and bolted if barricade is removed.

SQUARE TUBING



• Non-reinforced concrete or high strength precast footing.

Barricades shall NOT be used as a sign support.

Barricades shall be made using pre-purchased materials. A list of component products and their sources may be obtained by writing or telephoning:

Standards Engineer
Traffic Operations Division - 1E
Texas Department of Transportation
425 East 11th Street
Austin, Texas 78701-2483
Phone (512) 462-3300
Fax (512) 462-3361
E-mail TRF-STANDARDS@dot.state.tx.us

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division
BARRICADE AND CONSTRUCTION STANDARDS

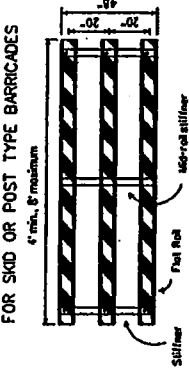
BARRICADES (POST TYPE) BC(3)-98

DATE	REVISION	BY	CHKD	APP'D
01/07/00	1

TYPICAL STRIPING DETAIL FOR BARRICADE RAIL

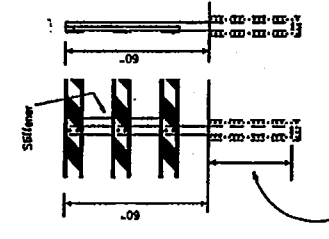


TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES



• For dimensions of components refer to TAB01 approved products list.

TYPE III BARRICADE (POST)



See foundation details above.

GENERAL NOTES:

1. Sign Supports attached on this sheet have been crash tested and are approved bracketry systems. TADOT will not approve any other bracketry systems that do not cover the structural features of the sign support systems.
2. Sign support systems approved by FHWA may be used as approved field sign supports, on long or short term projects, with the "Texas Manual on Uniform Traffic Control Devices for Streets and Highways" (TMUDOT). The Contractor shall provide all necessary details and drawings for the sign support system. From FHWA approved sign support systems and drawings on this sheet.
3. Sign support systems listed on this sheet may be suitable for only certain soil types. The contractor is responsible for selecting appropriate sign support systems for soil conditions on each project.
4. Baricades shall NOT be used on sign supports.

WORK ZONE SIGNS

GENERAL
Standard signs shall be used as required by the BC Standard sheets, the plans, or as directed by the Engineer to regulate, warn, and guide traffic. All signs, signs and erection shall be in strict accordance with the "Texas Manual on Uniform Traffic Control Devices for Streets and Highways" (TMUDOT). The Contractor shall submit each sign as directed by the Engineer.

The Contractor may use other sign designs shown on the BC Standard Sheets, or those sign designs shown in the "Standard Highway Sign Designs for Texas" (SSSD). All work zone signs provided for in the TMUDOT shall not be used at the site unless approved by the Engineer.

SIZES OF SIGNS

On secondary roads or city streets where speeds are low, smaller size construction warning signs may be used with the written approval of the Engineer and if the sign size is in accordance with the "Traffic Warning Sign Size and Spacing Chart" shown on page 6C-11 of the TMUDOT, Part IV.

SPLICES

All wooden sign posts fabricated from 2 or more pieces shall have one or more plywood cleats, 1/2 inch thick by 6 inches wide, fastened to the back of the sign and extending fully around the sign. Wood sign posts shall not be spliced.

REFLECTIVE SHEETING

Reflective signs shall be constructed of retroreflective sheeting meeting the color and reflectivity requirements of TADOT Material Specification DMS 8300 or DMS 8300. Day only is defined as a device that is used only during daylight hours.

Type A, B, or C sheeting may be used for all sign applications. Type A sheeting shall be used for all sign applications. Type C sheeting shall be used for all other applications.

The above categories of sheeting grades to different type signs shall apply unless otherwise specified in the plans.

SIGN LETTERS

All sign lettering shall be clear, open rounded type capital letters as approved by and as published by the International Association of Professional Sign and Lettering artists of first class workmanship equivalent to that of the Department standard signs.

WORK DURATION TECHNOLOGIES defined by the "Texas Manual on Uniform Traffic Control Devices" Part IV

- Long-term Stationary - occupies a location 3 or more days.
- Intermediate Stationary - occupies a location 1 to 3 days.
- Short-term Stationary - daylight work that occupies a location from 1 to 12 hours.
- Short Duration - occupies a location up to 1 hour.

SUPPORTS AND MOUNTING HEIGHT

The bottom of Long-term / Intermediate-term signs shall be at least 7 feet above the paved surface. The bottom of Short-term / Short Duration signs shall be at least 6 feet above the paved surface. The bottom of Stationary signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the pavement surface. Short-term / Short Duration signs may be used for a few of Short-term / Short Duration signs. Short-term / Short Duration signs shall be used only during daylight and removed at the end of the workday. Regulatory signs shall be used at all times. Regulatory signs shall be mounted at least 7 feet above the paved surface regardless of work location.

SIGN SUPPORT WEIGHTS

When sign supports require the use of weights to keep from turning over, the use of some type of sandbags is recommended. The use of pieces of rock, concrete, iron, steel or other solid objects shall not be permitted. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.

REMOVING OR COVERING

When sign messages may be confusing or no longer apply, the signs shall be removed or completely replaced. When signs are removed the materials shall be disposed, such as heavy metal black plastic. Signs shall not be used to cover signs. Signs shall be removed upon completion of the work.

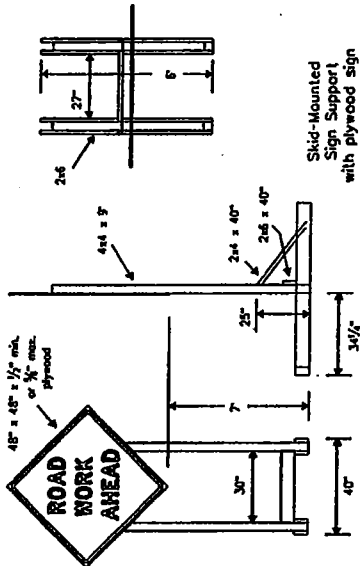
Duct tape or other adhesive material shall not be affixed to sign faces.

Only pre-qualified products shall be used. A list of acceptable products and their sources may be obtained by writing or faxing:

Standards Engineer Division - TE
Traffic Operations Unit
125 East 10th Street
Austin, Texas 78701-2483
Phone (512) 465-3120
Fax (512) 465-3361
E-mail: TE-STANDARDS@dot.state.tx.us

LONG/INTERMEDIATE TERM STATIONARY PORTABLE SIGN SUPPORTS

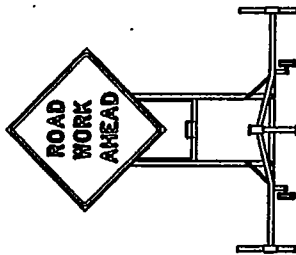
7 Foot Mounting Height (SKID MOUNTED)



Refer to acceptable products Est. (POST TYPE)

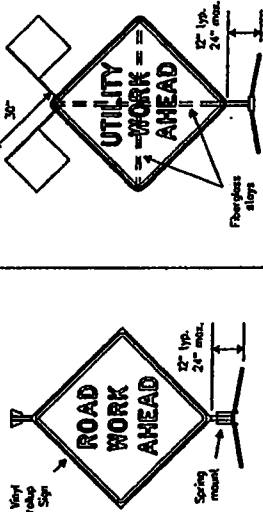
WHEELED PORTABLE SIGN SUPPORT

with plywood sign (Minimum thickness 3/4 inch) TADOT Design

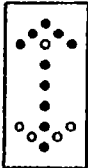


SHORT TERM STATIONARY / SHORT DURATION PORTABLE SIGN SUPPORTS

1 Foot Mounting Height



TYPICAL FLASHING ARROW PANEL



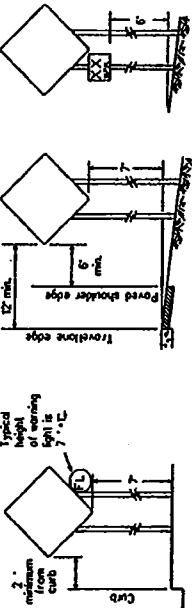
For traffic to move right.

ATTENTION: Arrow panels shall be equipped with automatic dimming devices.

1. The Advance Warning Flashing Arrow Panel should be used for advance clearance (trucks, roadways) or other situations where the construction activities on the highway may, or may not, be used on long-term projects, detours, detours, or work on shoulders unless the CAUTION mode is used.
2. Necessary lights, baricades or other traffic control devices should be used in conjunction with the Advance Warning Arrow Panel.
3. The Arrow Panel should have the capability of the following display sequences: LEFT ARROW, RIGHT ARROW, LEFT and RIGHT ARROW and CAUTION. The CAUTION mode consists of four corner lamps flashing simultaneously.
4. The four corner lamps shall have a minimum 50 percent dimming from rated lamp output. The dimming shall be achieved by the use of a dimming device. The dimming shall not exceed 40 lumens per square foot. The dimming shall be achieved by the use of a dimming device. The dimming shall not exceed 40 lumens per square foot. The dimming shall be achieved by the use of a dimming device. The dimming shall not exceed 40 lumens per square foot.
5. Minimum turn "on time" shall be approximately 50 percent for the flashing arrow and 25 percent for the sequential chevron.
6. The TADOT standard is the flashing arrow, however, the sequential chevron may be used during night operations. The sequential chevron should NOT be used.

REQUIREMENTS	TYPE	SIZE	MINIMUM	MAXIMUM	MILE NUMBER OF	MILE VISIBILITY
B	30" x 60"	U	3	7	1/4	1 mile
C	48" x 96"	S	15	15	1/4	1 mile

TYPICAL MINIMUM CLEARANCES FOR LONG/INTERMEDIATE TERM SIGNS

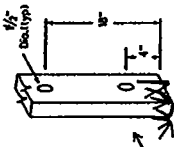


It is the intent of these plans to provide positive guidance to motorists through the project limits by the use of signs, pavement markings, delineation devices and/or other traffic control devices. All traffic control devices shall conform with the "Texas Manual on Uniform Traffic Control Devices for Streets and Highways."

WOOD POST SYSTEM FOR FIXED SIGN SUPPORTS

Nominal Post No. of Sq. Feet of Sign (Height)	Minimum	Drilled	Yes	No	Direction at Traffic
4 x 4	1	12	35"	no	
4 x 4	2	21	35"	no	
4 x 6	1	21	36"	yes	
4 x 6	2	35	36"	yes	

Size Posts Sign Face Embedment Required



STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

BARRICADE AND CONSTRUCTION STANDARDS

SIGN SUPPORTS		BC(4)-99	
01001	February 1999	1-13	1-13
01002	February 1999	1-13	1-13
01003	February 1999	1-13	1-13
01004	February 1999	1-13	1-13
01005	February 1999	1-13	1-13
01006	February 1999	1-13	1-13
01007	February 1999	1-13	1-13
01008	February 1999	1-13	1-13
01009	February 1999	1-13	1-13
01010	February 1999	1-13	1-13

10/99 Revision
Added 2 post support
4 x 6 sign support

GENERAL NOTES:

1. Channeling devices on self-righting supports may be a vertical pipe, opposing line divider or chevron.
2. Channeling devices on self-righting supports shall be used at locations defined elsewhere in the Plans, these devices and devices shall be used in the same manner as Traffic Control Devices.
3. Channeling devices on self-righting supports are frequently used in work zone areas where channeling devices are frequently used. The channeling devices shall be installed in close proximity to traffic and are available for use on high or low speed roadways. Devices should not be placed within 12 inches of the roadway edge. Spacing and placement shall be uniform and in accordance with the "Texas MUTCD".
4. Self-righting supports shall be used in close condition and shall be replaced with new devices or broken devices and bases as necessary.
5. Devices shall be erected by method shown on this sheet and as approved by the Engineer.
6. Portable bases shall be fabricated from virgin and/or recycled rubber. Approximate weight of portable bases shall be 35 lbs.
7. Pavement surfaces shall be prepared in a manner that will ensure proper loading of cones and fixed mount bases to the pavement surface. Repairs shall be made prior to application and applied as per manufacturer's instructions. Adhesives shall be prepared and applied as per manufacturer's instructions. Adhesives shall be prepared and applied as per manufacturer's instructions. Adhesives shall be prepared and applied as per manufacturer's instructions.
8. Application and removal of devices shall not cause detrimental effects to the pavement surface, including permanent surface degradation or surface integrity. Drivable bases shall not be permitted on pavement surfaces. All application and removal procedures of fixed bases shall be approved by the Engineer.
9. These devices should not be used for other purposes and shall be returned to the firm "Corridorco, Signs, and Traffic Hoarding".

CONES

1. Traffic cones and tubular markers shall be a minimum of 28 inches in height when used on freeways or used at night-time. Orange shall be the predominant color of cones and tubular markers. They should be kept clean and bright for maximum visibility. Cones shall have a minimum weight of 9/lbs.
2. For reflective material, the reflective material shall be applied to the surface which will display the same approximate color day and night. When used at night, appropriate personnel shall be present at all times to ensure cones and tubular markers remain in their proper location and in an upright position.
3. Fabrication of cones shall be a minimum 5 inch band placed of least 3 inches but not more than 4 inches from the top, represented by a minimum 4 inch band placed a minimum of 2 inches from the top. The maximum height of the cones shall be a maximum of 2 inches from the top with a maximum of 6 inches between bands.
4. One-piece cones or tubular markers are generally suitable for temporary usage up to 8 hours with other channeling devices such as vertical panels, frame or two-piece cones for long term usage. Care should be taken to ensure that they remain in their proper location and in an upright position.
5. Self-righting supports shall be used in close condition and shall be replaced with new devices or broken devices and bases as necessary.

DRMS Refer to BC(5).

SPECIFICATION REFERENCE TABLE
MATERIALS AND TEST SPECIFICATIONS (0-9)
PLAN SURFACE REFLECTIVE SHEETING, TYPE C
(HIGH SPECIFIC INTENSITY)

Only pre-qualified products shall be used. A list of compliant products and their sources may be obtained by writing, calling or faxing:

Standard Engineer
Traffic Operations Division - TE
Texas Department of Transportation (TxDOT)
123 East 10th Street
Austin, Texas 78701
Phone (512) 485-3500
Fax (512) 485-3500
E-mail: TIF-STANDARD @ mailgw01.state.texas

Period	Formulas	Minimum Diameter of Top	Minimum Diameter of Base	Minimum Diameter of Sign Spacing
30	$150' \sqrt{2}$	150'	180'	120'
35	$165' \sqrt{2}$	165'	205'	125'
40	$180' \sqrt{2}$	180'	225'	130'
45	$195' \sqrt{2}$	195'	245'	135'
50	$210' \sqrt{2}$	210'	265'	140'
55	$225' \sqrt{2}$	225'	285'	145'
60	$240' \sqrt{2}$	240'	305'	150'
65	$255' \sqrt{2}$	255'	325'	155'
70	$270' \sqrt{2}$	270'	345'	160'
75	$285' \sqrt{2}$	285'	365'	165'
80	$300' \sqrt{2}$	300'	385'	170'
85	$315' \sqrt{2}$	315'	405'	175'
90	$330' \sqrt{2}$	330'	425'	180'
95	$345' \sqrt{2}$	345'	445'	185'
100	$360' \sqrt{2}$	360'	465'	190'
105	$375' \sqrt{2}$	375'	485'	195'
110	$390' \sqrt{2}$	390'	505'	200'
115	$405' \sqrt{2}$	405'	525'	205'
120	$420' \sqrt{2}$	420'	545'	210'
125	$435' \sqrt{2}$	435'	565'	215'
130	$450' \sqrt{2}$	450'	585'	220'
135	$465' \sqrt{2}$	465'	605'	225'
140	$480' \sqrt{2}$	480'	625'	230'
145	$495' \sqrt{2}$	495'	645'	235'
150	$510' \sqrt{2}$	510'	665'	240'
155	$525' \sqrt{2}$	525'	685'	245'
160	$540' \sqrt{2}$	540'	705'	250'
165	$555' \sqrt{2}$	555'	725'	255'
170	$570' \sqrt{2}$	570'	745'	260'
175	$585' \sqrt{2}$	585'	765'	265'
180	$600' \sqrt{2}$	600'	785'	270'
185	$615' \sqrt{2}$	615'	805'	275'
190	$630' \sqrt{2}$	630'	825'	280'
195	$645' \sqrt{2}$	645'	845'	285'
200	$660' \sqrt{2}$	660'	865'	290'
205	$675' \sqrt{2}$	675'	885'	295'
210	$690' \sqrt{2}$	690'	905'	300'
215	$705' \sqrt{2}$	705'	925'	305'
220	$720' \sqrt{2}$	720'	945'	310'
225	$735' \sqrt{2}$	735'	965'	315'
230	$750' \sqrt{2}$	750'	985'	320'
235	$765' \sqrt{2}$	765'	1005'	325'
240	$780' \sqrt{2}$	780'	1025'	330'
245	$795' \sqrt{2}$	795'	1045'	335'
250	$810' \sqrt{2}$	810'	1065'	340'
255	$825' \sqrt{2}$	825'	1085'	345'
260	$840' \sqrt{2}$	840'	1105'	350'
265	$855' \sqrt{2}$	855'	1125'	355'
270	$870' \sqrt{2}$	870'	1145'	360'
275	$885' \sqrt{2}$	885'	1165'	365'
280	$900' \sqrt{2}$	900'	1185'	370'
285	$915' \sqrt{2}$	915'	1205'	375'
290	$930' \sqrt{2}$	930'	1225'	380'
295	$945' \sqrt{2}$	945'	1245'	385'
300	$960' \sqrt{2}$	960'	1265'	390'
305	$975' \sqrt{2}$	975'	1285'	395'
310	$990' \sqrt{2}$	990'	1305'	400'
315	$1005' \sqrt{2}$	1005'	1325'	405'
320	$1020' \sqrt{2}$	1020'	1345'	410'
325	$1035' \sqrt{2}$	1035'	1365'	415'
330	$1050' \sqrt{2}$	1050'	1385'	420'
335	$1065' \sqrt{2}$	1065'	1405'	425'
340	$1080' \sqrt{2}$	1080'	1425'	430'
345	$1095' \sqrt{2}$	1095'	1445'	435'
350	$1110' \sqrt{2}$	1110'	1465'	440'
355	$1125' \sqrt{2}$	1125'	1485'	445'
360	$1140' \sqrt{2}$	1140'	1505'	450'
365	$1155' \sqrt{2}$	1155'	1525'	455'
370	$1170' \sqrt{2}$	1170'	1545'	460'
375	$1185' \sqrt{2}$	1185'	1565'	465'
380	$1200' \sqrt{2}$	1200'	1585'	470'
385	$1215' \sqrt{2}$	1215'	1605'	475'
390	$1230' \sqrt{2}$	1230'	1625'	480'
395	$1245' \sqrt{2}$	1245'	1645'	485'
400	$1260' \sqrt{2}$	1260'	1665'	490'
405	$1275' \sqrt{2}$	1275'	1685'	495'
410	$1290' \sqrt{2}$	1290'	1705'	500'
415	$1305' \sqrt{2}$	1305'	1725'	505'
420	$1320' \sqrt{2}$	1320'	1745'	510'
425	$1335' \sqrt{2}$	1335'	1765'	515'
430	$1350' \sqrt{2}$	1350'	1785'	520'
435	$1365' \sqrt{2}$	1365'	1805'	525'
440	$1380' \sqrt{2}$	1380'	1825'	530'
445	$1395' \sqrt{2}$	1395'	1845'	535'
450	$1410' \sqrt{2}$	1410'	1865'	540'
455	$1425' \sqrt{2}$	1425'	1885'	545'
460	$1440' \sqrt{2}$	1440'	1905'	550'
465	$1455' \sqrt{2}$	1455'	1925'	555'
470	$1470' \sqrt{2}$	1470'	1945'	560'
475	$1485' \sqrt{2}$	1485'	1965'	565'
480	$1500' \sqrt{2}$	1500'	1985'	570'
485	$1515' \sqrt{2}$	1515'	2005'	575'
490	$1530' \sqrt{2}$	1530'	2025'	580'
495	$1545' \sqrt{2}$	1545'	2045'	585'
500	$1560' \sqrt{2}$	1560'	2065'	590'
505	$1575' \sqrt{2}$	1575'	2085'	595'
510	$1590' \sqrt{2}$	1590'	2105'	600'
515	$1605' \sqrt{2}$	1605'	2125'	605'
520	$1620' \sqrt{2}$	1620'	2145'	610'
525	$1635' \sqrt{2}$	1635'	2165'	615'
530	$1650' \sqrt{2}$	1650'	2185'	620'
535	$1665' \sqrt{2}$	1665'	2205'	625'
540	$1680' \sqrt{2}$	1680'	2225'	630'
545	$1695' \sqrt{2}$	1695'	2245'	635'
550	$1710' \sqrt{2}$	1710'	2265'	640'
555	$1725' \sqrt{2}$	1725'	2285'	645'
560	$1740' \sqrt{2}$	1740'	2305'	650'
565	$1755' \sqrt{2}$	1755'	2325'	655'
570	$1770' \sqrt{2}$	1770'	2345'	660'
575	$1785' \sqrt{2}$	1785'	2365'	665'
580	$1800' \sqrt{2}$	1800'	2385'	670'
585	$1815' \sqrt{2}$	1815'	2405'	675'
590	$1830' \sqrt{2}$	1830'	2425'	680'
595	$1845' \sqrt{2}$	1845'	2445'	685'
600	$1860' \sqrt{2}$	1860'	2465'	690'
605	$1875' \sqrt{2}$	1875'	2485'	695'
610	$1890' \sqrt{2}$	1890'	2505'	700'
615	$1905' \sqrt{2}$	1905'	2525'	705'
620	$1920' \sqrt{2}$	1920'	2545'	710'
625	$1935' \sqrt{2}$	1935'	2565'	715'
630	$1950' \sqrt{2}$	1950'	2585'	720'
635	$1965' \sqrt{2}$	1965'	2605'	725'
640	$1980' \sqrt{2}$	1980'	2625'	730'
645	$1995' \sqrt{2}$	1995'	2645'	735'
650	$2010' \sqrt{2}$	2010'	2665'	740'
655	$2025' \sqrt{2}$	2025'	2685'	745'
660	$2040' \sqrt{2}$	2040'	2705'	750'
665	$2055' \sqrt{2}$	2055'	2725'	755'
670	$2070' \sqrt{2}$	2070'	2745'	760'
675	$2085' \sqrt{2}$	2085'	2765'	765'
680	$2100' \sqrt{2}$	2100'	2785'	770'
685	$2115' \sqrt{2}$	2115'	2805'	775'
690	$2130' \sqrt{2}$	2130'	2825'	780'
695	$2145' \sqrt{2}$	2145'	2845'	785'
700	$2160' \sqrt{2}$	2160'	2865'	790'
705	$2175' \sqrt{2}$	2175'	2885'	795'
710	$2190' \sqrt{2}$	2190'	2905'	800'
715	$2205' \sqrt{2}$	2205'	2925'	805'
720	$2220' \sqrt{2}$	2220'	2945'	810'
725	$2235' \sqrt{2}$	2235'	2965'	815'
730	$2250' \sqrt{2}$	2250'	2985'	820'
735	$2265' \sqrt{2}$	2265'	3005'	825'
740	$2280' \sqrt{2}$	2280'	3025'	830'
745	$2295' \sqrt{2}$	2295'	3045'	835'
750	$2310' \sqrt{2}$	2310'	3065'	840'
755	$2325' \sqrt{2}$	2325'	3085'	845'
760	$2340' \sqrt{2}$	2340'	3105'	850'
765	$2355' \sqrt{2}$	2355'	3125'	855'
770	$2370' \sqrt{2}$	2370'	3145'	860'
775	$2385' \sqrt{2}$	2385'	3165'	865'
780	$2400' \sqrt{2}$	2400'	3185'	870'
785	$2415' \sqrt{2}$	2415'	3205'	875'
790	$2430' \sqrt{2}$	2430'	3225'	880'
795	$2445' \sqrt{2}$	2445'	3245'	885'
800	$2460' \sqrt{2}$	2460'	3265'	890'
805	$2475' \sqrt{2}$	2475'	3285'	895'
810	$2490' \sqrt{2}$	2490'	3305'	900'
815	$2505' \sqrt{2}$	2505'	3325'	905'
820	$2520' \sqrt{2}$	2520'	3345'	910'
825	$2535' \sqrt{2}$	2535'	3365'	915'
830	$2550' \sqrt{2}$	2550'	3385'	920'
835	$2565' \sqrt{2}$	2565'	3405'	925'
840	$2580' \sqrt{2}$	2580'	3425'	930'
845	$2595' \sqrt{2}$	2595'	3445'	935'
850	$2610' \sqrt{2}$	2610'	3465'	940'
855	$2625' \sqrt{2}$	2625'	3485'	945'
860	$2640' \sqrt{2}$	2640'	3505'	950'
865	$2655' \sqrt{2}$	2655'	3525'	955'
870	$2670' \sqrt{2}$	2670'	3545'	960'
875	$2685' \sqrt{2}$	2685'	3565'	965'
880	$2700' \sqrt{2}$	2700'	3585'	970'
885	$2715' \sqrt{2}$	2715'	3605'	975'
890	$2730' \sqrt{2}$	2730'	3625'	980'
895	$2745' \sqrt{2}$	2745'	3645'	985'
900	$2760' \sqrt{2}$	2760'	3665'	990'
905	$2775' \sqrt{$			

WORK ZONE PAVEMENT MARKINGS

GENERAL

The Contractor shall be responsible for maintaining work zone and installing pavement markings on all roadways open to traffic within the project limits unless otherwise stated in the plans. Color, placement, dimensions and materials shall be in accordance with the Texas Department of Transportation Manual for Traffic Control and Work Zone Supplemental pavement marking details may be found in the plans or specifications.

Work zone pavement markings shall consist of guidemarks, short term markings and/or standard pavement markings. Unless otherwise shown in the plans, materials used for work zone pavement markings shall be thermoplastic, raised pavement markers, prefabricated pavement marking material, temporary flexible-reflective roadway markers, or reflective sheeting, as approved by the Engineer. Thermoplastic shall not be used for removable markings.

All roadways to be opened to traffic shall be marked with short term markings or standard markings to be shown in the plans, at the end of each day's operation. Unless otherwise shown in the plans or approved in writing by the Engineer, all concrete surfaces shall have standard markings in place prior to opening to traffic.

Standard pavement markings shall be installed in accordance with the Texas Standard Uniform Traffic Control Devices (MUTCD) and as shown on the plans. When short term markings are used on the plans, short term markings shall conform with the MUTCD, the plans and details as shown on the Standard W215(P)M.

All asphaltic surfaces which are to be opened to traffic shall be marked with thermoplastic markings immediately following placement and final curing of the course. Concrete surfaces shall be marked with temporary flexible-reflective roadway marker tabs or raised temporary construction raised pavement markers at 40 foot spacing.

Guidemarks shall be placed in proper alignment with the final location of future pavement markings. Any guidemarks not in agreement with pavement markings shall be removed by the Contractor at the Contractor's expense. Guidemarks shall not be used to simulate signage.

When inclement weather prohibits the application of short term markings or standard markings as called for on the plans, upon approval of the Engineer, guidemarks may be considered as temporary short term markings for asphaltic surfaces. The placement of pavement markings as shown on the plans may be delayed until such time that weather permits application of pavement markings.

When standard pavement markings are not in place and the roadway is to be opened to traffic, DO NOT PASS signs shall be placed to mark the beginning of the section where the markings are to be placed. PASS WITH CARE signs shall be erected to mark the beginning of the sections where passing is permitted.

RAISED PAVEMENT MARKERS

Raised pavement markers are to be placed according to the plan. Raised pavement markers shall be used as standard pavement markings at 10 foot spacing unless otherwise shown in the requirements of plan. RAISED PAVEMENT MARKERS.

Unless otherwise shown on the plans, raised pavement markers shall not be allowed for words, symbols, and shapes, dogeared or V-trapezoid lines.

PREFABRICATED PAVEMENT MARKINGS

Removable prefabricated pavement markings shall be a multiple of manufacturer and product code or designation shown on the list of approved materials covered by the Department Materials Specification D-9-8241.

Non-removable prefabricated pavement markings (flatback) shall be a multiple of manufacturer and product code or designation shown on the list of approved materials covered by the Specification T-6007 350-74-01.

The list of approved prefabricated work zone pavement marking materials may be obtained from TxDOT Central Services Division.

MAINTENANCE

The Contractor will be responsible for maintaining work zone pavement markings within the project limits. Work Zone Pavement Markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control devices. The markings should provide a visible reference for motorists. The markings should be maintained in good condition at all times. The markings should be maintained in good condition at all times. The markings should be maintained in good condition at all times. The markings should be maintained in good condition at all times.

REMOVAL OF PAVEMENT MARKINGS

Removal of pavement markings includes centerline, channeling lines, lane lines, edge lines, words, arrows, symbols and raised pavement markers.

Pavement markings that are no longer applicable and which may create confusion or direct a motorist (down or into the closed portion of the roadway), shall be removed or obliterated before the roadway is open to traffic. The above shall not apply to detours of a short duration of a few hours, where flaggers and/or additional channeling devices are used in lieu of markings to guide motorists. Channeling devices and the detour is to be maintained during daylight.

Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernible marking, by any method that does not materially damage the surface or texture of the pavement. The removal of pavement markings may require resurfacing or sandblasting portions of the roadway, normally without traffic. Subject to the approval of the Engineer, any method that does not materially damage the surface or texture of the pavement may be used. Best cleaning methods shall be used but shall not specifically shown in the plans. Overlapping of the markings SHALL NOT BE PERMITTED. Removal of raised pavement markers shall be as directed by the Engineer.

Removal of existing pavement markings and markers will be paid for directly in accordance with the item "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS" unless otherwise stated elsewhere in the plans.

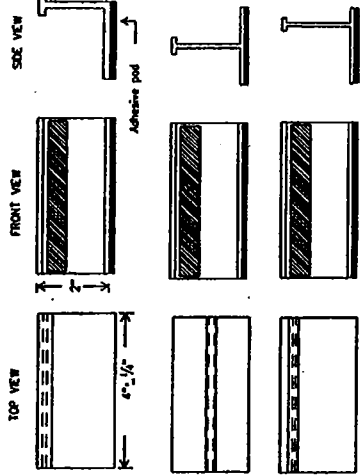
SPECIFICATION REFERENCE TABLE

ADHESIVE FOR PAVEMENT MARKERS	D-9-4300
ADHESIVE FOR PAVEMENT MARKERS	D-9-8300
ADHESIVE FOR PAVEMENT MARKERS	D-9-8241
TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS	D-9-8242
ADHESIVE FOR GUIDEMARKS	D-9-4300
ADHESIVE FOR GUIDEMARKS	D-9-8300
ADHESIVE FOR GUIDEMARKS	D-9-8241
ADHESIVE FOR GUIDEMARKS	D-9-8242

REGULATION PROCEDURES MAY BE OBTAINED BY WRITING:

GENERAL SERVICES DIVISION
TEXAS DEPARTMENT OF TRANSPORTATION (T-5007)
125 EAST 10th STREET
AUSTIN, TX 78701-2483

Temporary Flexible-Reflective Roadway Marker Tabs



Height of sheeting will be determined by contractor manufacturer. (Usually more than 1/4 inch and less than 1 inch).

STAPLES OR NAILS SHALL NOT BE USED TO SECURE TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS TO THE PAVEMENT SURFACE.

Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of Department Materials Specification D-9-8242.

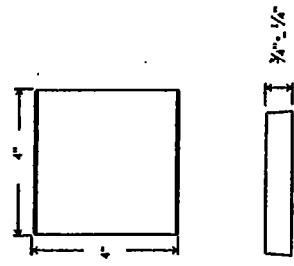
Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "X" or "Q" below may be imposed to ensure quality before placement on the roadway.

A) Select five (5) or more tabs at random from each lot or manufacturer and test in accordance with the Construction Materials and Tests section in the Department Specifications.

B) Select five (5) tabs and submit to the following test.

All five (5) tabs of 24 inch intervals on an asphaltic pavement in a straight line, using a medium size passenger vehicle or pickup, run over the markers with front and rear wheels at a speed of 25 to 40 miles per hour, four times in each direction. No more than one foot of the reflective surfaces shall be lost or displaced as a result of this test.

Temporary Construction Raised Pavement Markers used as Guidemarks:



The above temporary construction raised pavement marker is shown for illustration purposes only and not intended to specify any particular product.

Temporary construction raised pavement markers used as guidemarks shall be of design and manufacture approved by the Engineer.

All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.

Adhesive for guidemarks shall be bituminous mastic/epoxy applied or bit/rubber pad for asphalt surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:

- YELLOW - (Use amber reflective surfaces with white body).
- WHITE - (Use clear reflective surfaces with white body).

Dimensions indicated on this sheet are typical and approximate. Variations in size and height may occur between markers or devices made by manufacturers, by as much as 1/2 inch, unless otherwise noted.

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

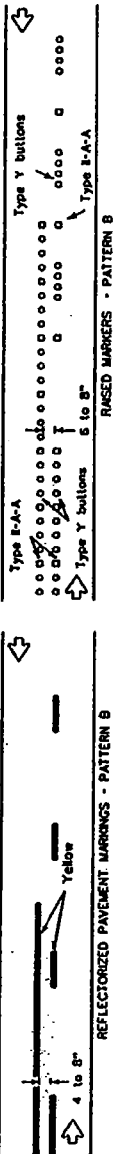
BARRICADE AND CONSTRUCTION STANDARDS

PAVEMENT MARKINGS BC(7)-98

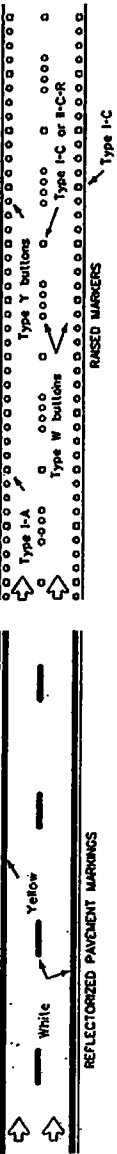
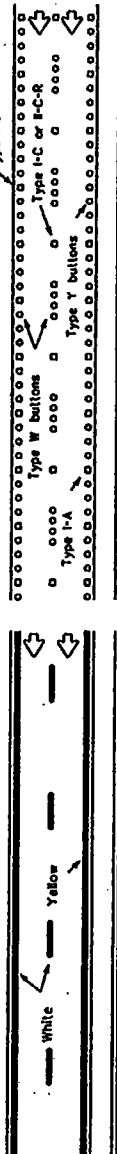
DATE	APR 1992	BY	DLN	CD	MS
REV	1	DATE	1-97	BY	DLN
REV	2	DATE	2-98	BY	DLN

PAVEMENT MARKING PATTERNS

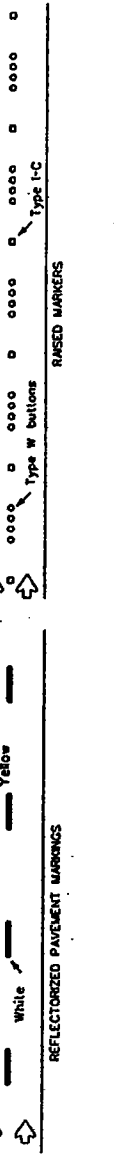
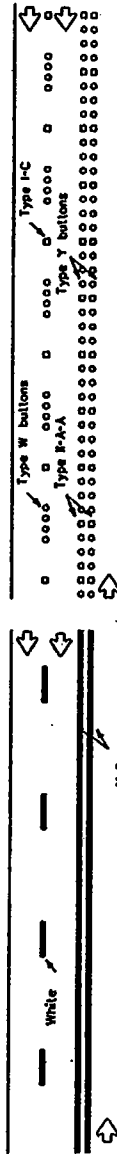
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO LANE TWO-WAY HIGHWAYS



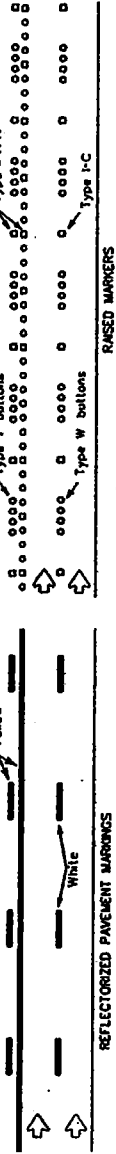
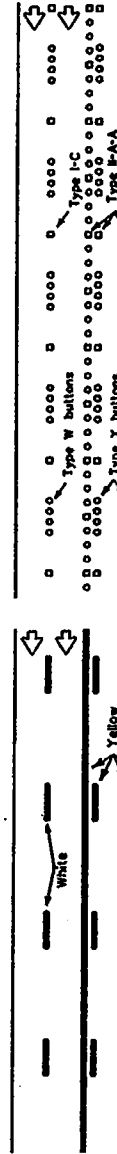
EDGE & LANE LINES FOR DIVIDED HIGHWAY



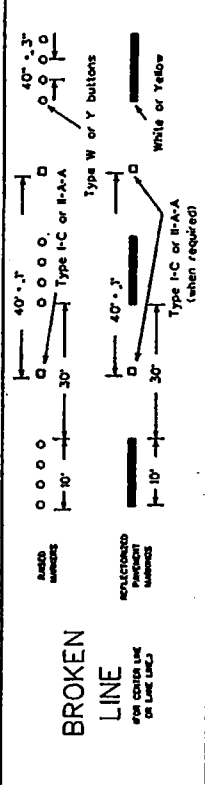
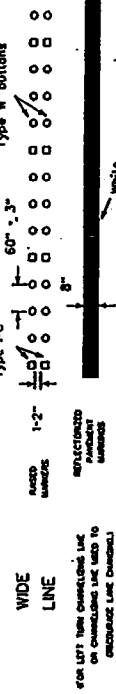
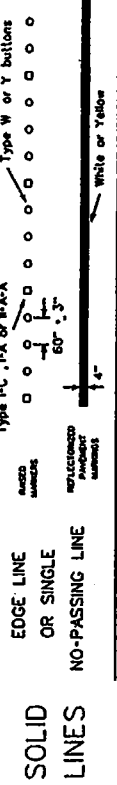
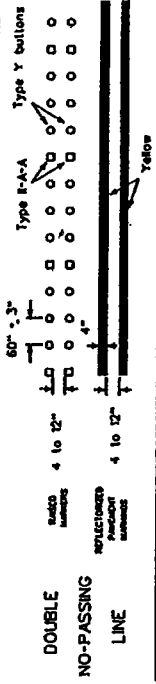
LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



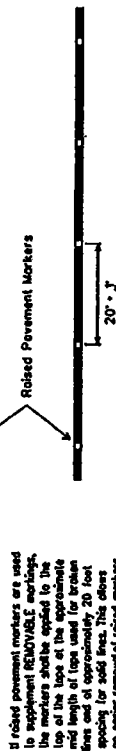
TWO-WAY LEFT TURN LANE



STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS



If raised pavement markers are used in conjunction with reflective pavement markings, the markers should be applied to the top of the lane at the appropriate mid length of lane used for travel lines and of approximately 20 foot spacing for solid lines. This allows an easier removal of raised markers and tape.

NOTES:
Pattern A is the Department Standard, however Pattern B may be used if approved by the Engineer.
Prefabricated markings may be substituted for reflectorized pavement markings.

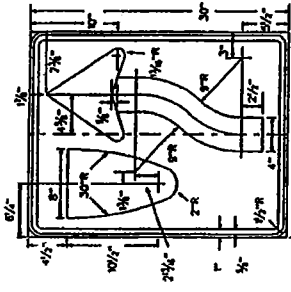
Reflected pavement markings used as standard pavement markings shall meet the requirements of Type "RAISED PAVEMENT MARKERS" and "SPOTTY AND ADHESIVES".

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

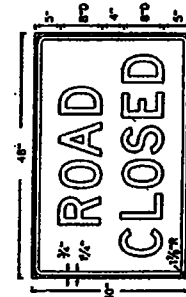
BARRICADE AND CONSTRUCTION STANDARDS

PAVEMENT MARKINGS BC(8)-98

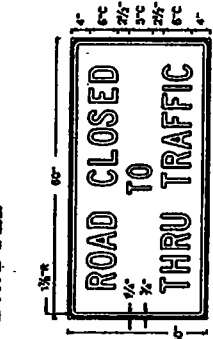
DATE	BY	CHK'D	APP'D
10/10/92	JMS	WJS	WJS
10/10/92	JMS	WJS	WJS
10/10/92	JMS	WJS	WJS



R4-7
(R4-8)
24" X 30"
Letters - Black
Border - Black
Background - White Red.



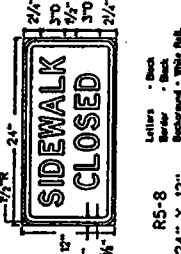
R11-2
48" X 30"
Letters - Black
Border - Black
Background - White Red.
Alternate to the legend
STREET R11-2S
RAMPI R11-2R
BRIDGE R11-2B



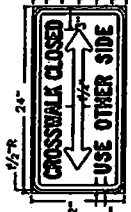
R11-4
60" X 30"
Letters - Black
Border - Black
Background - White Red.



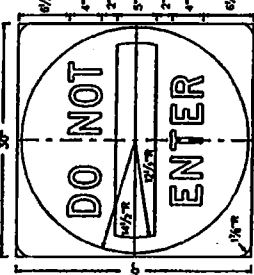
R5-7
24" X 12"
Letters - Black
Border - Black
Background - White Red.



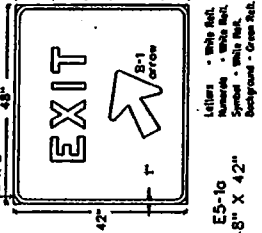
R5-8
24" X 12"
Letters - Black
Border - Black
Background - White Red.



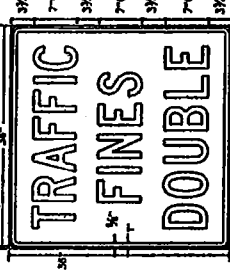
R5-9
24" X 12"
Letters - Black
Border - Black
Background - White Red.
a reduce spacing etc



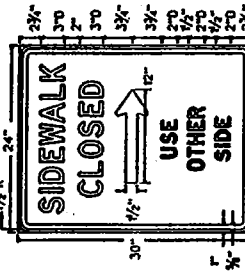
RS-1
30" X 30"
Letters - White Red.
Border - White Red.
Background - Red Red.



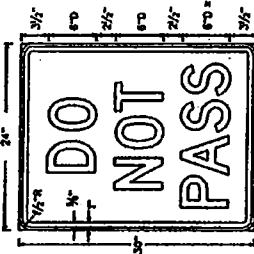
ES-1g
48" X 42"
Letters - White Red.
Border - White Red.
Background - Green Red.



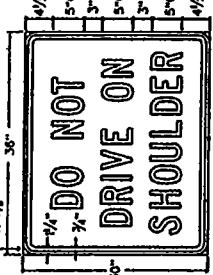
R20-5
24" X 30"
Letters - Black
Border - Black
Background - White Red.



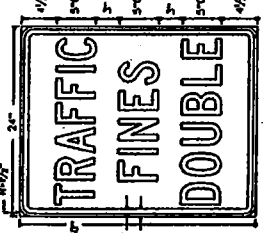
R5-8T
24" X 30"
Letters - Black
Border - Black
Background - White Red.



R4-1
24" X 30"
Letters - Black
Border - Black
Background - White Red.
a reduce spacing etc



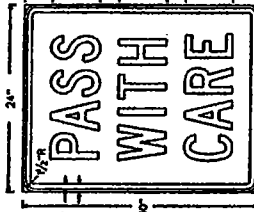
R4-3g
36" X 30"
Letters - Black
Border - Black
Background - White Red.



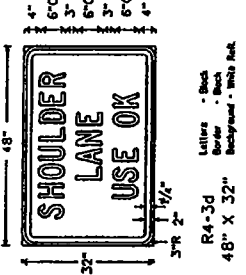
R20-5
36" X 30"
Letters - Black
Border - Black
Background - White Red.



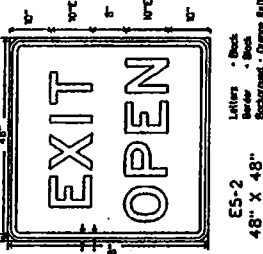
R20-5
24" X 12"
Letters - Black
Border - Black
Background - White Red.



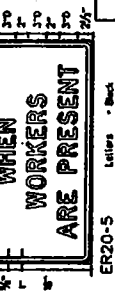
R4-2
24" X 30"
Letters - Black
Border - Black
Background - White Red.



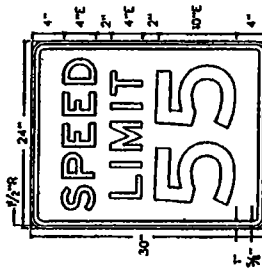
R4-3d
48" X 32"
Letters - Black
Border - Black
Background - White Red.



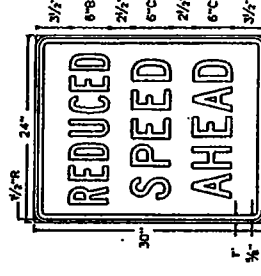
ES-2
48" X 48"
Letters - Black
Border - Black
Background - Green Red.



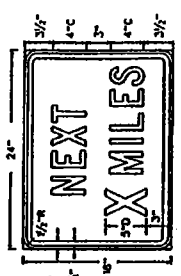
ER20-5
36" X 18"
Letters - Black
Border - Black
Background - White Red.



R2-1
24" X 30"
Letters - Black
Border - Black
Background - White Red.



R2-5g
24" X 30"
Letters - Black
Border - Black
Background - White Red.



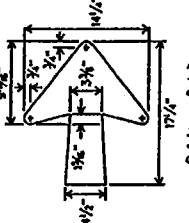
R20-1
24" X 18"
Letters - Black
Border - Black
Background - White Red.

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

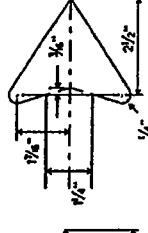
BARRICADE AND CONSTRUCTION STANDARDS

REGULATORY AND GUIDE SIGNS BC(19)-99

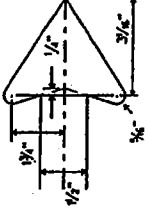
DATE	REVISED	BY	REASON
10/99			Added new sign



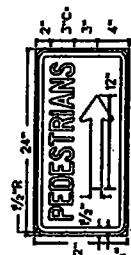
B-1 Arrow Detail



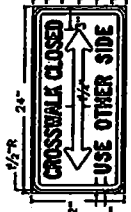
B-1 Arrow Detail



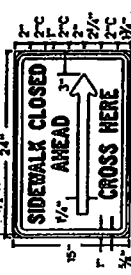
B-1 Arrow Detail



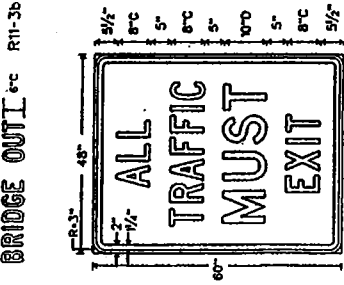
R5-7T
24" X 12"
Letters - Black
Border - Black
Background - White Red.
a reduce spacing etc



R5-9
24" X 12"
Letters - Black
Border - Black
Background - White Red.
a reduce spacing etc

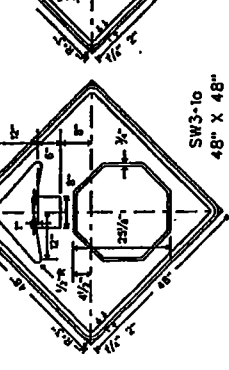
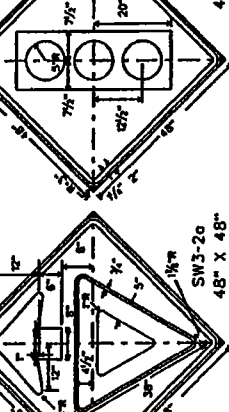
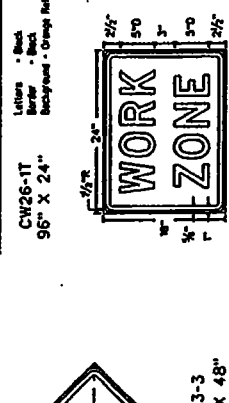
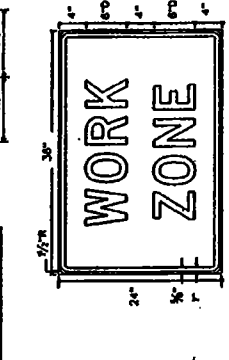
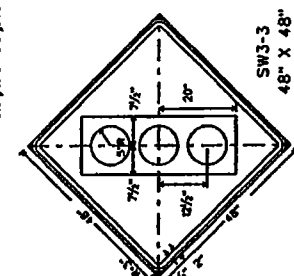
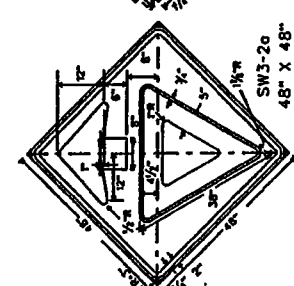
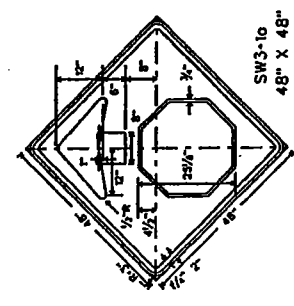
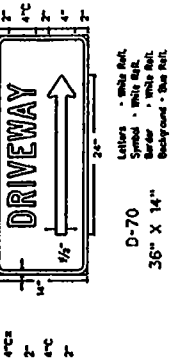
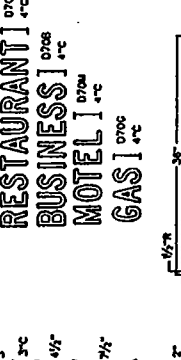
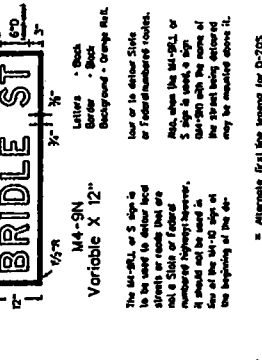
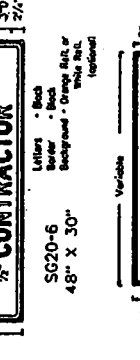
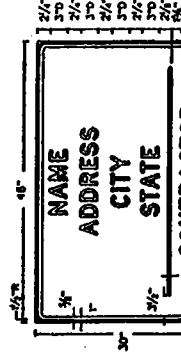
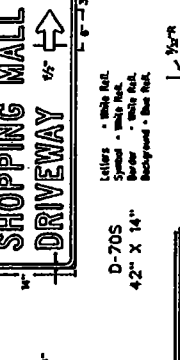
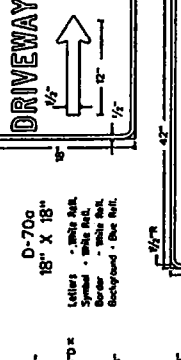
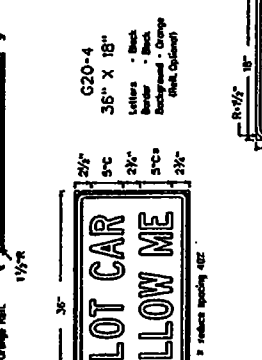
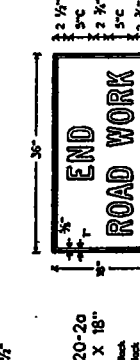
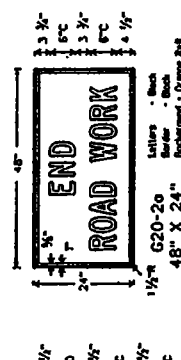
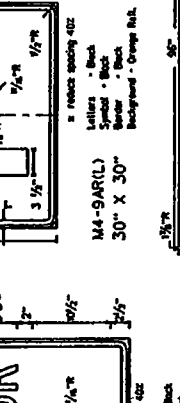
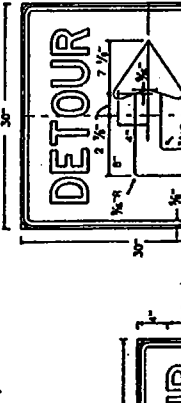
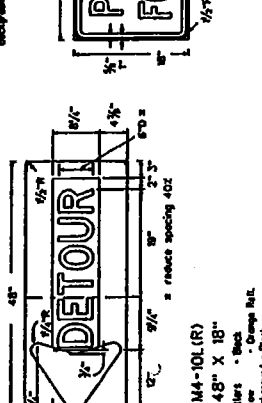
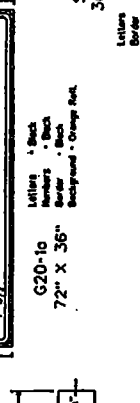
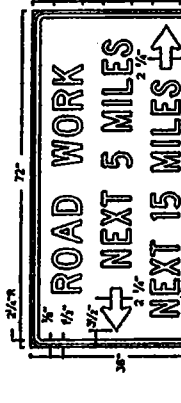
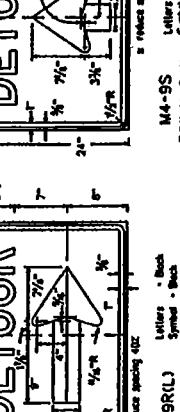
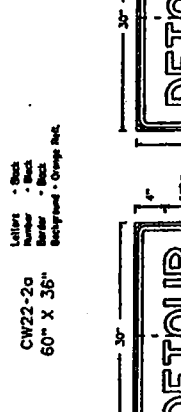
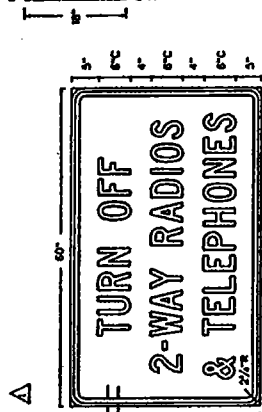
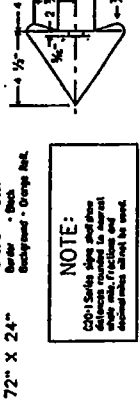
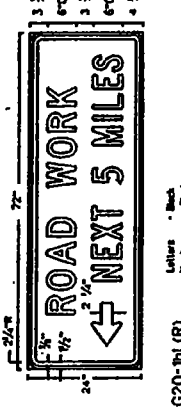
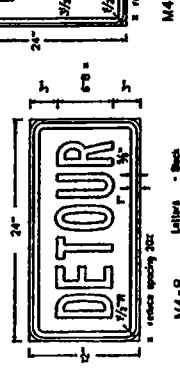
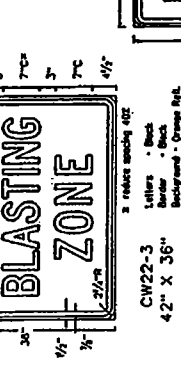
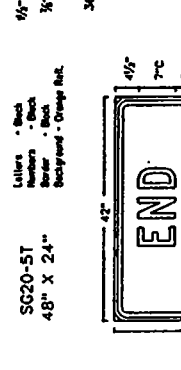
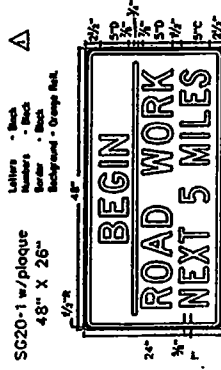
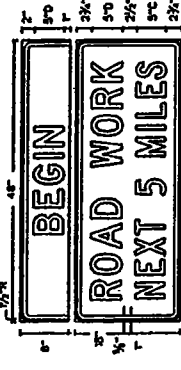


R5-9a
24" X 15"
Letters - Black
Border - Black
Background - White Red.



R3-22
48" X 60"
Letters - Black
Border - Black
Background - White Red.

R11-3b
Alternate to the legend



STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

BARRICADE AND CONSTRUCTION STANDARDS

CONTRACTOR INFORMATION
DETOURS & WARNING SIGNS BC(9A)-99

DATE	BY	CHKD	APP'D

NOTE:
C201 Signs are placed on the left side of the road in the direction of travel.

Border and Arrows - Black
Symbol - White Border on Red Background with Yellow Reflective
Background - Yellow Reflective

Border and Arrows - Black
Symbol - Red Border on White Background with Yellow Reflective
Background - Yellow Reflective

Symbolized Border - Black
Top Circle - Red Reflective
Bottom Circle - Green Reflective
Background - Yellow Reflective

Letters - Black
Border - Black
Background - Orange Red

Letters - Black
Border - Black
Background - Orange Red

Letters - Black
Border - Black
Background - Orange Red

Letters - Black
Border - Black
Background - Orange Red

10/99 Revision
Added new sign

Alternate first line legend for D-705
RESTAURANT D708
BUSINESS D706
MOTEL D704
GAS D702

M4-9N
Variable X 12"
Letters - Black
Border - Black
Background - Orange Red

G20-4
36" X 18"
Letters - Black
Border - Black
Background - Orange Red (Red, Optional)

G20-20
48" X 24"
Letters - Black
Border - Black
Background - Orange Red

G20-10
72" X 36"
Letters - Black
Border - Black
Background - Orange Red

M4-10L(R)
48" X 18"
Letters - Black
Border - Black
Background - Black

CW22-20
60" X 36"
Letters - Black
Border - Black
Background - Orange Red

CW22-3
42" X 36"
Letters - Black
Border - Black
Background - Orange Red

D-700
18" X 18"
Letters - White Red
Symbol - White Red
Border - White Red
Background - Blue Red

D-705
42" X 14"
Letters - White Red
Symbol - White Red
Border - White Red
Background - Blue Red

M4-9AR(L)
30" X 30"
Letters - Black
Border - Black
Background - Orange Red

M4-9S
30" X 24"
Letters - Black
Symbol - Black
Border - Black
Background - Orange Red

M4-9R(L)
30" X 24"
Letters - Black
Symbol - Black
Border - Black
Background - Orange Red

M4-8
24" X 12"
Letters - Black
Border - Black
Background - Orange Red

D-700
18" X 18"
Letters - White Red
Symbol - White Red
Border - White Red
Background - Blue Red

D-705
42" X 14"
Letters - White Red
Symbol - White Red
Border - White Red
Background - Blue Red

M4-9AR(L)
30" X 30"
Letters - Black
Border - Black
Background - Orange Red

M4-9S
30" X 24"
Letters - Black
Symbol - Black
Border - Black
Background - Orange Red

M4-9R(L)
30" X 24"
Letters - Black
Symbol - Black
Border - Black
Background - Orange Red

M4-8
24" X 12"
Letters - Black
Border - Black
Background - Orange Red

D-700
18" X 18"
Letters - White Red
Symbol - White Red
Border - White Red
Background - Blue Red

D-705
42" X 14"
Letters - White Red
Symbol - White Red
Border - White Red
Background - Blue Red

M4-9AR(L)
30" X 30"
Letters - Black
Border - Black
Background - Orange Red

M4-9S
30" X 24"
Letters - Black
Symbol - Black
Border - Black
Background - Orange Red

M4-9R(L)
30" X 24"
Letters - Black
Symbol - Black
Border - Black
Background - Orange Red

M4-8
24" X 12"
Letters - Black
Border - Black
Background - Orange Red

D-700
18" X 18"
Letters - White Red
Symbol - White Red
Border - White Red
Background - Blue Red

D-705
42" X 14"
Letters - White Red
Symbol - White Red
Border - White Red
Background - Blue Red

M4-9AR(L)
30" X 30"
Letters - Black
Border - Black
Background - Orange Red

M4-9S
30" X 24"
Letters - Black
Symbol - Black
Border - Black
Background - Orange Red

M4-9R(L)
30" X 24"
Letters - Black
Symbol - Black
Border - Black
Background - Orange Red

M4-8
24" X 12"
Letters - Black
Border - Black
Background - Orange Red

D-700
18" X 18"
Letters - White Red
Symbol - White Red
Border - White Red
Background - Blue Red

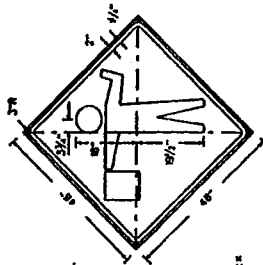
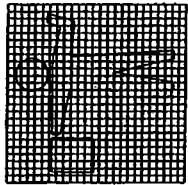
D-705
42" X 14"
Letters - White Red
Symbol - White Red
Border - White Red
Background - Blue Red

M4-9AR(L)
30" X 30"
Letters - Black
Border - Black
Background - Orange Red

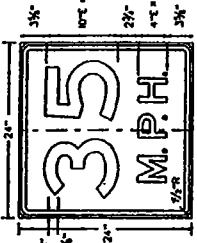
M4-9S
30" X 24"
Letters - Black
Symbol - Black
Border - Black
Background - Orange Red

M4-9R(L)
30" X 24"
Letters - Black
Symbol - Black
Border - Black
Background - Orange Red

M4-8
24" X 12"
Letters - Black
Border - Black
Background - Orange Red



FCW20-70
48" X 48"



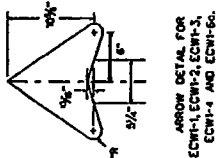
SCW13-1
24" X 24"

STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

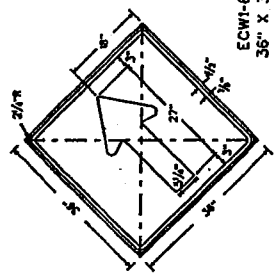
BARRICADE AND CONSTRUCTION
STANDARDS

CONSTRUCTION WARNING SIGNS BC(9B)-98

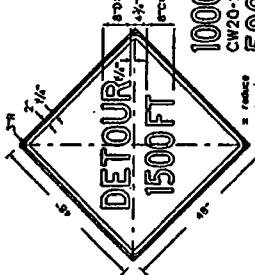
DATE	BY	CHK'D	APP'D



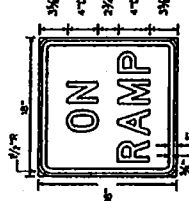
ARROW DETAIL FOR
ECW1-1, ECW1-2, ECW1-3,
ECW1-4 AND ECW1-6.



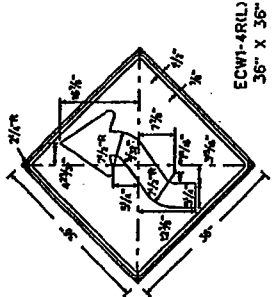
ECW1-6a
36" X 36"



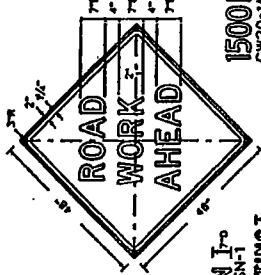
1000 FT I^{ec}
CW20-28
500 FT I^{ec}
CW20-2C
AHEAD I^{ec}
CW20-2D



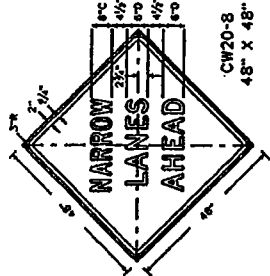
CW13-4
18" X 18"



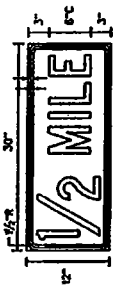
ECW1-4R(L)
36" X 36"



1500 FT I^{ec}
CW20-1A
1000 FT I^{ec}
CW20-1B
500 FT I^{ec}
CW20-1C

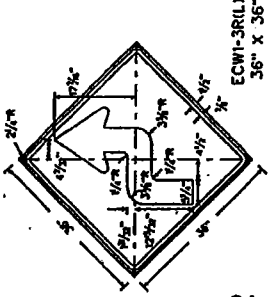


CW20-8
48" X 48"

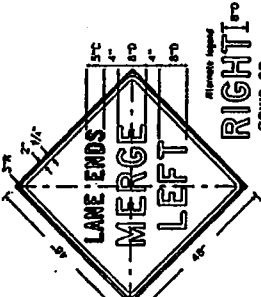


Distance Plaque
30" X 12"

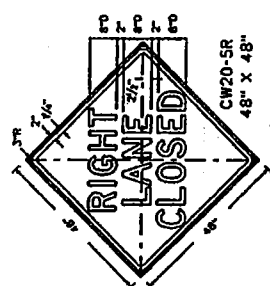
1 MILE^{ec} 1000 FT^{ec}
1500 FT^{ec} 500 FT^{ec}



ECW1-3R(L)
36" X 36"

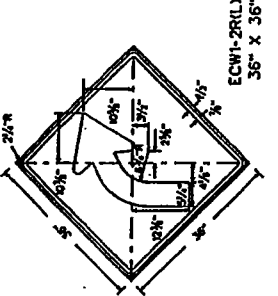


RIGHT I^{ec}
SCW9-2R

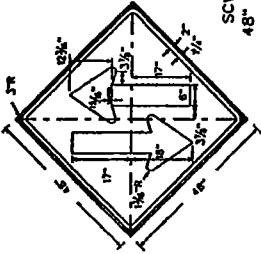


LEFT I^{ec}
CW20-5L

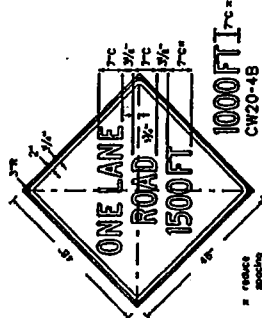
GENERAL NOTES:
All signs detailed on this
sheet shall have black
border, legend and/or
symbol on a orange Type C
reflective background.



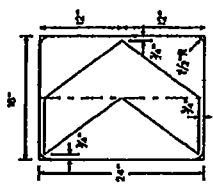
ECW1-2R(L)
36" X 36"



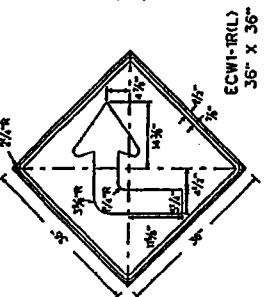
SCW6-3
48" X 48"



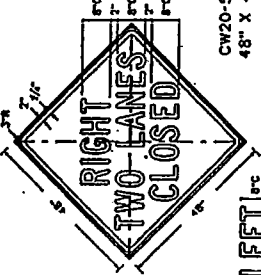
1000 FT I^{ec}
CW20-4B
500 FT I^{ec}
CW20-4C
AHEAD I^{ec}
CW20-4D



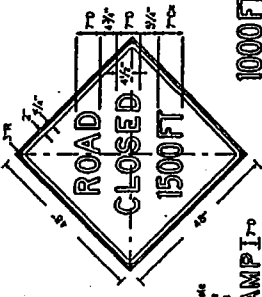
CW12-8
18" X 24"



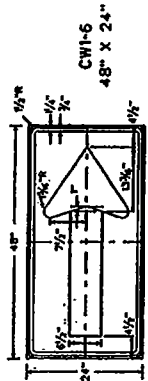
ECW1-1R(L)
36" X 36"



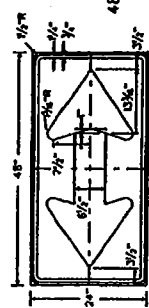
LEFT I^{ec}
CW20-5aR
48" X 48"



1000 FT I^{ec}
CW20-3B
500 FT I^{ec}
CW20-3C
AHEAD I^{ec}
CW20-3D

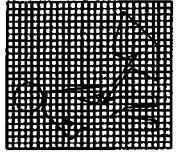
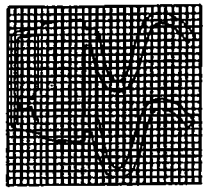
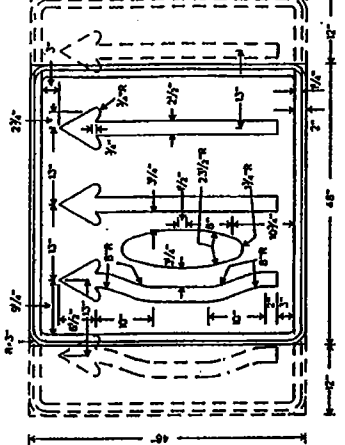
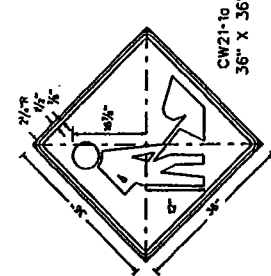
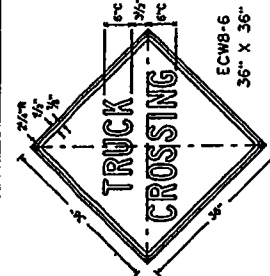
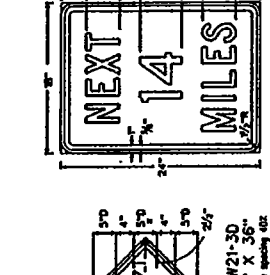
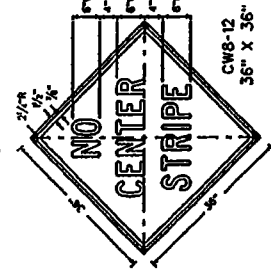
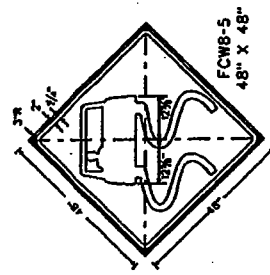
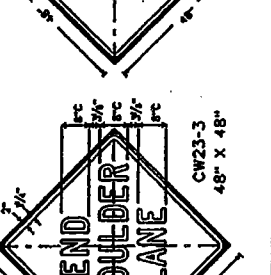
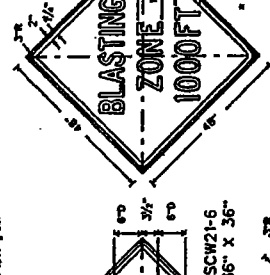
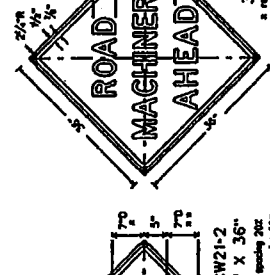
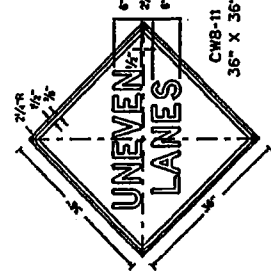
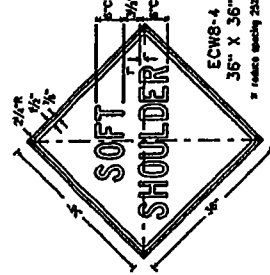
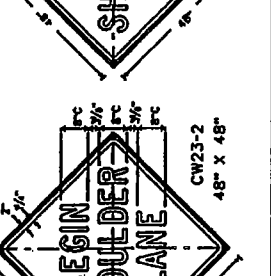
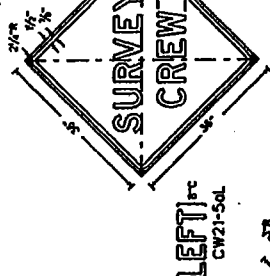
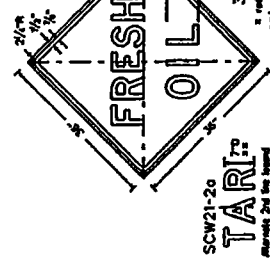
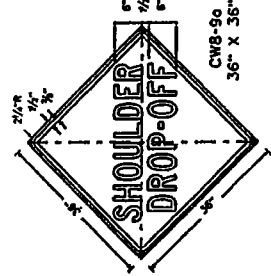
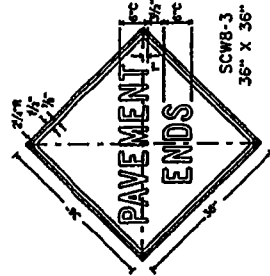
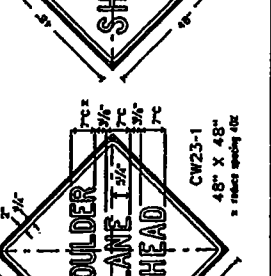
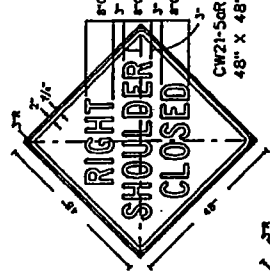
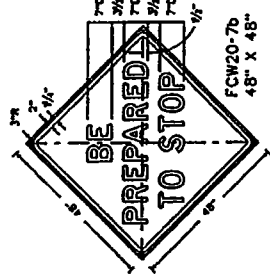
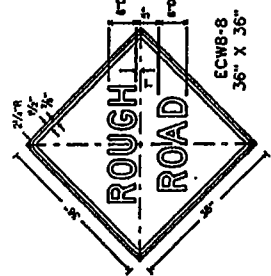
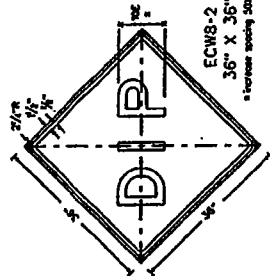
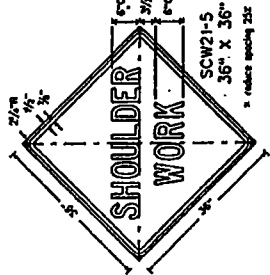
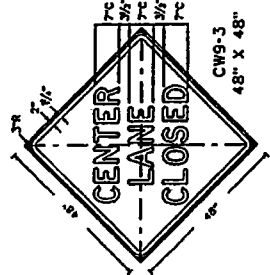
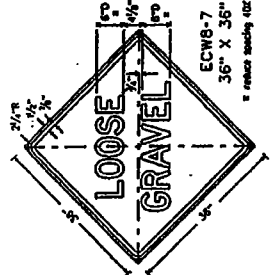
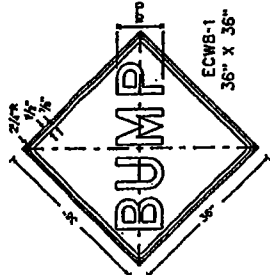


CW11-6
48" X 24"



CW11-7
48" X 24"

RAMPI I^{ec}
CW20P-3
FRWY I^{ec}
CW20F-3
STREET I^{ec}
CW20ST-3



STANDARD PLANS
TEXAS DEPARTMENT OF TRANSPORTATION
Traffic Operations Division

BARRICADE AND CONSTRUCTION STANDARDS

CONSTRUCTION WARNING SIGNS BC(9C)-98

DATE	REVISION	BY	CHK	APP
10/15/01	1

GENERAL NOTES:
All signs detailed on this sheet shall have Black border, legend and/or symbol on orange type C reflective background.

**NON-MANDATORY PRE-BID MEETING NOTES
SAN ANTONIO WATER SYSTEM
2013 REHABILITATION WORK ORDER CONSTRUCTION CONTRACT 2
SAWS JOB NO. 13-4505
SAWS SOLICITATION NO. B-13-016-DB**

I. MEETING TIME/PLACE

- Thursday, January 17, 2013, 10:00 a.m.
- SAWS, Tower II, Conference Room CR-C339

II. PROJECT DISCUSSION

1. This is an emergency type contract so 48-hour response is expected on all work orders. 48- Hour mobilization will not be paid separately and shall be considered subsidiary to other bid items.
2. The intent of this contract is to rehabilitate sanitary sewer lines using trenchless methods.
3. All work orders shall be designed trenchless and the contractor that wins this work order contract is expected to perform a majority of the work.
4. The contractor is expected to maintain work on each work order until it's complete and multiple work orders may be issued at one time.
5. Work orders can be issued on any side of town. Projects are unspecified.
6. There may be work orders for a variety of diameters.
7. All work hours may be necessary for this contract. This includes restricted hours, night work, and weekend work.
8. Please be familiar with SAWS standard specs and the specs for this contract.
9. Flow Management such as bypass pumping is subsidiary to other bid items for mains smaller than 24-inches. 24-inches and large, payment will be measured by length of rehabbed main, not bypass discharge main.
10. Please be sure to read the special conditions. If you do not meet all the criteria, your bid will be rejected.
11. The SMWB participation for this project is 17%.