

CITY OF SAN ANGELO REQUEST FOR BID

RFB No: TR-01-15

**Traffic Division
Thermoplastic Striping**

RFB SUBMITTAL DEADLINE
August 19, 2015/2:00 PM, Local Time

**Contract Documents
Specifications**



**City of San Angelo
72 West College Avenue
San Angelo, Texas 76903**

This Table of Contents is intended as an aid and not as a comprehensive listing of the Bid package. Bidders are responsible for reading the entire Bid package and complying with all specifications.

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1. INVITATION FOR BID

1.1. Scope of Work

The Traffic Division of the City of San Angelo is requesting Bids for the application of Thermoplastic Striping product for the marking of pavement, crosswalks, and railroad crossings. The Bid will be for application of approximately 70,657 linear feet of pavement markings – to be awarded in whole.

1.2. Document Availability

Bid Documents are available in the Purchasing Division for \$10 or may be downloaded at no cost from the City's website at www.cosatx.us. To locate the documents on the website go to:

- Departments & Services > Purchasing > Bid Information > RFB:TR-01-15/Thermoplastic Striping Application

1.3. Digital Format

If Respondent obtained the specifications in digital format in order to prepare a Bid, the Bid must be submitted in hard copy according to the instructions contained in this Bid package. If, in its Bid response, Respondent makes any changes whatsoever to the published Bid specifications, the Bid specification as published shall control. Furthermore, if an alteration of any kind to the Bid specification is discovered after the contract is executed and is or is not being performed; the contract is subject to immediate cancellation without recourse.

1.4. Qualification Statement

Prospective Respondents should be advised that a qualification statement may be required.

1.5. Insurance and Indemnification Requirements

Insurance and indemnification requirements applicable to this project are included within the draft Project Agreement Form included within this Bid package. Please read the bold note at the top of the first page of the draft Project Agreement Form and review the insurance and indemnification requirements listed in Sections 17-19 of that form with your insurance agent **prior** to submitting your Bid.

1.6. Bid Withdrawal

No Bid may be withdrawn within a period of 60 days after the date fixed for opening Bids.

1.7. Interpretations

All questions about the meaning or intent of the Contract Documents shall be submitted to Purchasing in writing. Replies will be issued by Addenda on the City's website. Questions received less than seven (7) days prior to the date for opening of Bids will not be answered. Only questions answered by formal written Addenda will be binding. Oral interpretations or clarifications will be without legal effect.

1.8. Delivery of Bids

1.8.1. Bid Deadline

Sealed Bids will be received until **August 19, 2015, 2:00 P.M., Local Time**. The clock located in the Purchasing Department will be the official time.

It is the sole responsibility of the contractor to ensure that the sealed submittal arrives by the specified deadline regardless of method chosen by the company for delivery.

**Faxed or electronically transmitted submittals will not be accepted
Bids not received by the deadline will be rejected.**

1.8.2. Copies

Submit: One (1) unbound original (binder clips acceptable), one (1) bound copy (3-ring, 3 inch binder) and one (1) copy in PDF format on USB Flash Drive of all required Bid forms.

1.8.3. Addressing Instructions

All Bids must be submitted in a sealed envelope/container marked as follows:

- **Top Left Hand** Corner print your Company Name/Address
- **Bottom Left Hand Corner** print, "RFB NO. TR-01-15/Thermoplastic Striping"
- Mark Delivery Envelope/Container: "Sealed Bid Enclosed"

The sealed Bid must be addressed as reflected below:

USPS: City of San Angelo
Purchasing Division, TR-01-15
72 West College Ave
San Angelo, Texas 76903

Delivery Service (UPS, FEDEX, etc): City of San Angelo
Purchasing Department, TR-01-15
72 West College Ave, Suite 330
San Angelo, Texas 76903

1.9. Addenda

Should specifications be revised prior to the deadline for submittals, the City's Purchasing Division will issue an addendum addressing the nature of the change. Respondents shall return the Addendum Acknowledgement form, signed and dated with their bid package. Addenda will be posted on the City's website as they are issued. Respondent is responsible for contacting the City or checking the City's website to determine if any addendums have been issued. Failure to consider all addendums prior to submitting a Bid shall be at the proposers own risk.

1.10. Rejection of Bids

The City of San Angelo reserves the right to reject all Bids, to waive informalities or irregularities, and to reject non-conforming, non-responsive, or conditional Bids.

1.11. Confidentiality

All Bids submitted shall remain confidential. After award, Bids will be made available for public inspection. The City shall not be responsible for the confidentiality of any trade secrets or other information contained or disclosed in the Bid unless clearly identified.

1.12. Equal Opportunity Employers

All contractors and subcontractors must be Equal Opportunity Employers. Disadvantaged and Minority Respondents are encouraged to participate.

1.13. Points of Contact

Purchasing Contact:
Julia Antilley, Purchasing Manager
City of San Angelo
72 West College Ave.
San Angelo, Texas 76903
Sapurch@cosatx.us
(325) 657-4219

Contract Administrator:
Ryan Ward, Traffic Superintendent
City of San Angelo
1792A St Ann St.
San Angelo, Texas 76905



2. INSTRUCTIONS

2.1. Bids

2.1.1. Submission of Bid

Each Bid and accompanying data shall be enclosed in a sealed opaque envelope or wrapping, addressed to the City of San Angelo, marked BID ENCLOSED and identified on the outside with the Respondent's name and with the Bid number and/or title as stated in this RFB. The Owner will not be responsible for the premature opening of any Bid which is not submitted in a satisfactory BID ENVELOPE or which is not properly addressed and identified.

If the Bid is sent by carrier (Fed Ex, UPS, etc), the sealed envelope shall be enclosed in the carrier's packaging with the notation "BID ENCLOSED" on the face thereof.

Bids shall be delivered to the designated location prior to the time and date for receipt of Bids indicated in this RFB, or the modified time and date indicated by Addendum. Bids received after the time and date for receipt of Bids will not be evaluated.

No Respondent may submit more than one offer. Multiple Bids under different names will not be accepted from one firm or association.

2.1.2. Modifications – Corrections, Deletions or Additions

No phone, fax, or email changes to Bids will be accepted. Prices cannot be changed after Bids are opened. Corrections, deletions, or additions shall be submitted in writing and delivered in a sealed envelope prior to Bid opening.

The Owner reserves the right to consider any Bid "non-responsive" if the Base Bid pricing is determined to be unreasonable or irresponsible in relation to the other submitted Bids and/or the Owner's cost estimate.

2.1.3. Bid Form

Bids by corporations must be executed in the corporate name by the president or vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal shall be affixed and attested by the secretary or an assistant secretary. The state of incorporation shall be shown below the corporate name. Bids by partnerships must be executed in the partnership name and signed by a partner; title and the official address of the partnership must be shown below the signature. Bids by joint ventures shall be signed by each participant in the joint venture or by an authorized agent of each participant.

The names of all persons signing must also be legibly printed below the signature. A Bid by a person who affixes to his signature the word "president", "secretary", "agent", or other designation without disclosing his principle may be held to be the Bid of the individual signing. When requested by Owner, evidence of the authority of the person signing shall be furnished.

All blank spaces in the Bid Form shall be filled. A Bid price shall be indicated for each item and alternative listed therein, or the words "No Bid", "No Charge", or other appropriate phrase shall be entered. Bids received without all such items completed may be considered non-responsive.

The Respondent is not required to acknowledge receipt of Addenda but shall include all addenda in Respondent's response. No alterations in Bids or alterations made to the printed forms, by erasures, interpolations, or otherwise will be acceptable unless each such alteration is signed or initialed by the Respondent.

2.1.4. Withdrawal of Bids

Bids may be modified or withdrawn by contacting the Purchasing Department and requesting withdrawal any time prior to opening of Bids. Notice must be in writing. Notices by email, fax, or phone will not be accepted.

2.1.5. Rejection of Bids

The Owner reserves the right to reject any and all Bids, and does not bind himself to accept the lowest Bid or any Bid for this work or any part thereof and shall have the right to ask for new Bids for the whole or parts, should he desire to do so.

Bids will be rejected if:

- The Bid is not received by the Bid Opening Deadline.
- The Bid is not executed by a person authorized to enter into a contract for the company.
- The Respondent is debarred or suspended from working on federal or other government projects.
- The Bid Security (Bid Bond) is not submitted or is not in the name of company submitting a Bid.

The City reserves the right to reject any or all Bids, to waive any or all informalities, and to reject nonconforming, non-responsive, or conditional Bids.

2.1.6. Award and Execution of Documents

It is **NOT** the policy of the City to purchase based on low bids alone. In evaluating Submissions, the Owner shall consider the Criteria for determining "Lowest Responsible Bidder" as defined as: one who submits the lowest bid and who has proven themselves capable of performing a contract and appears financially and technically capable of adequately performing the contract.

In evaluating Bids, the Owner shall consider the following criteria for determining the "best value":

- Was the bid received within the time and date specified in the Request for Bid (RFB)?
- Was the bid executed by a person authorized to sign for the company?
- Was pricing provided as requested?
- Does the bid meet the minimum specifications?
- Did the Contractor provide a list of references to include company or individual name, contact person, phone number?
- Does the Contractor have the financial resources to provide the necessary equipment, materials, labor, etc., to successfully complete the project?
- Can the Contractor provide a performance and payment bond in an amount equal to the total amount of the project?
- Does the Contractor have adequate staff available to complete the project within the period specified?
- Can the Contractor provide the required insurance coverage as specified?
- Does the Contractor have a satisfactory work history with the City?
- The overall purchase price,
- Respondents past experience on City projects or projects in the immediate area.

Contracts will not be awarded to companies who:

- Cannot comply with Performance Bond and Payment Bond Requirements
- Cannot comply with the Insurance Requirements

2.1.7. Bid Security

Each Bid must be accompanied by a Security Bond, Certified or Cashier's Check (on a solvent bank in the State of Texas), drawn to the order of the Owner in the sum of not less than five percent (5%) of the total amount of the Bid. The security bond must be executed by a surety meeting the requirements set forth in the General Conditions and in the name of the prime contractor. The bond shall be made payable without condition to the City of San Angelo, Texas.

2.1.8. Security Forfeiture

Failure of the selected Respondent to deliver the required Contract Documents, including the required Bonds and insurance, within thirty (30) days of the Notice of Award to the selected Respondent shall be just cause for the Owner to annul the award and declare the Bid and any guarantee thereof forfeited, not as a penalty, but as liquidation of damages to the Owner

2.1.9. Return of Security

The security of the successful Respondent will be retained until he has executed the contract agreement and furnished the required Contract Security and insurance, whereupon checks furnished as bid security will be returned. The security of any Respondent whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the day after the required documents are delivered by the selected Respondent to Owner but not to exceed 90 days after the Bid opening. Checks furnished as

bid security by other Respondents will be returned within 60 days of the Bid opening.

2.1.10. Taxes and Permits

Attention is directed to the requirements of the General Conditions regarding payment of taxes and obtaining permits. All taxes that are lawfully assessed against Owner or the selected Respondent in connection with the Work shall be paid by the Respondent. The Bid prices shall include all such taxes and the costs of all required permits. The City is exempt from State Sales Tax.

2.1.11. Examination of Contract Documents

Each Respondent shall thoroughly examine and be familiar with this document, specifications, etc. The submission of a Bid shall constitute an acknowledgment that the Respondent has thoroughly examined and is familiar with the contract documents. The failure or neglect of a Respondent to receive or examine any of the contract documents shall in no way relieve him from any obligations with respect to his Bid or to the contract. No claim for extra or additional compensation will be allowed based upon a lack of knowledge of any contract document, and the Owner will in no case be responsible for any loss or for unanticipated costs that may be suffered by the selected Respondent as a result of conditions pertaining to the work.

2.2. Familiarization with the Type of Work

Before submitting a Bid, each prospective Respondent shall familiarize themselves with the Work, local labor conditions and all laws, regulations, and other factors affecting performance of the Work. They shall carefully correlate observations with requirements of this Request and otherwise satisfy the expense and difficulties attending performance of the Work. The submission of a Bid will constitute a representation of compliance by the Respondent. There will be no subsequent financial adjustment for lack of such familiarization.

2.3. Site Investigation

The information contained in this document about topography, subsurface soils, subsurface structures, and any quantities based thereon, is furnished solely for the convenience of the Respondent as information available at the time. The accuracy of this information is not guaranteed and the Respondent is fully and solely responsible to verify pertinent information prior to Bid time. Use of the information provided in no way relieves the Respondent or others of any responsibility for loss due to inaccuracies or deviations which may be encountered.

2.4. Soils Testing Specifications

The Respondent will be allowed to conduct soils investigations within the alignment of the proposed Project as they can be coordinated with the Owner and appropriate landowners during the Bid preparation phase. All such investigations must be coordinated through the Owner.

2.5. Subcontractors and Suppliers

All Bids should include a list of proposed Subcontractors and suppliers on the form included in the Bid submission form section. **Respondents are strongly encouraged to explore utilizing area subcontractors and suppliers**

When requested by the Owner, within 24 hours of Bid opening, any Respondent so requested shall submit a list of all Subcontractors he expects to use in the work.

2.5.1. Subcontractor Qualification

Particular consideration will be given to the qualifications of each Subcontractor proposed to perform more than 5 percent (5%) of the Work.

The successful Respondent will submit to the Owner for acceptance a list of the names of subcontractors and such other persons and organizations (including those who are to furnish materials or equipment fabricated to a special design) identifying that portion of the Work to be performed by each subcontractor within fourteen (14) days of the issuance of Notice of Award.

The Owner will notify the successful Respondent in writing if there is objection to any Subcontractor, person, or organization on such list.

If the apparent low Respondent declines to make any such substitution, the contract shall not be awarded to such Respondent, but his declining to make any such substitution will not constitute grounds for sacrificing his Bid Security. Additional requirements for subcontractors are contained within the General Conditions, of this document.

The failure of the Owner to make any such objection prior to the execution and delivery of the Agreement shall constitute an acceptance of such Subcontractor, person, or organization. Such acceptance a Subcontractor, person or organization shall not: (1) constitute a waiver of any right of the Owner to reject defective Work, Material, or Equipment, or Work, Material, or Equipment not in conformance with the

requirements of the Contract Documents; or (2) constitute a waiver of Contractor's complete and total liability for any defective Work, Material, or Equipment, or Work Material or Equipment not in conformance with the requirements of the Contract Documents whether or not provided by or performed by any such Subcontractor.

If the Owner registers objection to and refuses to accept a Subcontractor, person, or organization list the successful Respondent may either (1) submit an acceptable substitute without an increase in his Bid price or (2) withdraw his Bid. If the Owner raises objection to a Subcontractor, person, or organization after the execution and delivery of the Agreement, the Contractor will submit an acceptable substitute and the Contract Price shall be increased or decreased by the reasonable difference in cost occasioned by such substitution and an appropriate Change Order shall be issued. In the event that prior objection is raised as described above, but the Contractor fails to submit an acceptable substitute prior to execution and delivery of the Agreement, no increase in Contract Price shall be allowed.

2.5.2. Suppliers

The list of Subcontractors shall also include the suppliers and manufacturers of the principal items of materials and equipment the Respondent expects to use in the Work.

2.6. Copies of Contract Documents

The selected Respondent to whom a contract is awarded will be furnished, without cost to him, five (5) copies of the specifications and five (5) sets of the drawings, together with all Addenda thereto. Additional copies of specifications and drawings may be obtained from the Owner for a fee.

2.7. Performance and Payment Bond

Having satisfied all conditions of award as set forth elsewhere in these documents, the successful Respondent shall furnish bond(s) each in a penal sum of at least the full amount of the contract as awarded in the form included in the specifications, which secures the faithful performance of the contract, and for the payment of all persons, firms or corporations to whom the selected Respondent may become legally indebted for labor, materials, tools, equipment, or service, of any nature, employed or used by him in performing the work. Such bond(s) shall bear the same date as or a date subsequent to, the date of the contract and be in the name of the prime contractor.

On each such bond the rate of premium shall be stated, together with the total amount of the premium charged. The current power of attorney for the person who signs for any surety company shall be attached to such bond.

The failure of the successful Respondent to supply the required bonds within thirty (30) days after the prescribed forms are presented for signature, or within such extended period as the Owner may grant based upon reasons determined adequate by the Owner, shall constitute a default, and the Owner may either award the contract to the next responsible bidder or re-advertise for bids or Bids, and may charge against the bidder the difference between the amount of the award and the amount for which a contract for the work is subsequently executed, irrespective of whether the amount due exceeds the amount of the Security Guarantee.

Performance and Payment Bonds shall be delivered to the City's Project Manager.

2.8. Waiver of Performance and Payment Bonds

Performance and Payment Bonds may be waived under the following circumstances:

The Owner may elect, at their option, to waive Payment Bonds if the contract sum is less than fifty-thousand (\$50,000.00) Dollars.

The Owner may elect, at their option, to waive Performance Bonds if the contract sum is one-hundred thousand (\$100,000.00) Dollars or less.

2.9. Quantities are Approximate

The quantities named in the Bid are approximate only, but these are to be used as a basis for the comparison of Bids and to determine the amount of the bonds. However, if a unit price appears to the Owner to be unbalanced to such an extent that changes in actual quantities required under the contract might result in contract price adjustments which would increase payments to the selected Respondent excessively, then the Owner may take such a condition under consideration in awarding the contract.

2.10. Employment Requirements and Wage Rates

2.10.1. General

The award of this contract shall be based in part upon payment by the selected Respondent and his Subcontractors of wage rates not less than the general prevailing rate of per diem wages for work of a

similar character in the locality in which the Work is performed, and not less than the general prevailing rate of per diem wages for legal holiday and overtime work.

The selected Respondent shall comply with all requirements of the prevailing wage law of the State of Texas, Texas Government Code, Chapter 2258, including the latest amendments thereto.

The prevailing wage law does not prohibit payment of more than the general prevailing rate of wages.

2.10.2. Records

The selected Respondent and each Subcontractor shall keep an accurate record showing the names and occupations of all laborers, workers, and mechanics employed, together with the actual wages paid to each worker. At all reasonable hours, such records shall be open to inspection by the representatives of Owner.

2.10.3. Penalty

If the selected Respondent or any Subcontractor fails to comply with the prevailing wage law, he shall forfeit to Owner sixty dollars (\$60.00) per day for each laborer, workman, or mechanic who is paid less than the specified rate, pursuant to §2258.023 of the Texas Government Code.

2.10.4. Hours of Labor

The selected Respondent shall comply with all requirements of the hours of work on public works defined by Texas Government Code §650.001, including the latest amendments thereto, as an eight (8) hour work day. Violation of this provision is punishable by fine and imprisonment pursuant to §650.003 of the Texas Government Code.

2.10.5. Veterans Preference

Pursuant to Texas Government Code, §657.004, the selected Respondent shall give preference in employment to honorably discharged veterans who were engaged in the services of the United States in time of war or conflict and who are and have been citizens of Texas for not less than five (5) years.

2.10.6. Prevailing Wage and Hour Decision

Chapter 2258 of the Texas Government Code requires contractors and subcontractors performing work on public works contracts to pay wages at a rate consistent with the rate prevailing in the area. Under federal law, the United States Department of Labor is required to maintain a prevailing Wage and Hour decision for each geographical area. Compliance with the published decision meets the requirements of the Texas Government Code.

Additionally, all contractors and subcontractors performing work on municipal contracts or federally assisted contracts in excess of \$2,000 must pay their laborers and mechanics not less than the prevailing wage rates and fringe benefits for corresponding classes of laborers and mechanics employed on similar projects in the area.

If the Wage Decision lists fringe benefits, you must either provide the benefits or pay the hourly equivalent in cash in addition to the predetermined wage.

Labor classifications not appearing on the Wage Decision will be deferred to the U.S. Department of Labor (DOL) for approval.

Attached below is the latest Prevailing Wage and Hour Decision currently applicable. The selected Respondent will be responsible for compliance with the applicable portion of Davis-Bacon and Related Acts and any such decision applicable at the timework is performed.

General Decision Number: TX150007 01/02/2015 TX7

Superseded General Decision Number: TX20140007

State: Texas

Construction Types: Heavy and Highway

Counties: Armstrong, Carson, Crosby, Ector, Irion, Lubbock, Midland, Potter, Randall, Taylor and Tom Green Counties in Texas.

HEAVY & HIGHWAY CONSTRUCTION PROJECTS

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of \$10.10 for 2015 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.10 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/02/2015

* SUTX2011-002 08/02/2011

	Rates	Fringes
CEMENT MASON/CONCRETE		
FINISHER (Paving & Structures)...	\$ 13.55	
ELECTRICIAN.....	\$ 20.96	
FORM BUILDER/FORM SETTER		
Paving & Curb.....	\$ 12.36	
Structures.....	\$ 13.52	
LABORER		
Asphalt Raker.....	\$ 12.28	
Flagger.....	\$ 9.30	
Laborer, Common.....	\$ 10.30	
Laborer, Utility.....	\$ 11.80	
Work Zone Barricade		
Servicer.....	\$ 10.30	
POWER EQUIPMENT OPERATOR:		
Asphalt Distributer.....	\$ 14.87	
Asphalt Paving Machine.....	\$ 13.40	
Broom and Sweeper.....	\$ 11.21	
Crane, Lattice Boom 80		
Tons or Less.....	\$ 16.82	
Crawler Tractor Operator....	\$ 13.96	
Excavator, 50,000 lbs or		
less.....	\$ 13.46	
Front End Loader Operator,		
Over 3 CY.....	\$ 12.77	
Front End Loader, 3CY or		
less.....	\$ 12.28	
Loader/Backhoe.....	\$ 14.18	
Mechanic.....	\$ 20.14	
Milling Machine.....	\$ 15.54	
Motor Grader, Rough.....	\$ 16.15	
Motor Grader, Fine.....	\$ 17.49	
Pavement Marking Machine....	\$ 16.42	
Reclaimer/Pulverizer.....	\$ 12.85	

Roller, Asphalt.....	\$ 10.95
Roller, Other.....	\$ 10.36
Scraper.....	\$ 10.61
Spreader Box.....	\$ 12.60
Servicer.....	\$ 13.98
Steel Worker (Reinforcing).....	\$ 13.50

TRUCK DRIVER

Lowboy-Float.....	\$ 14.46
Single Axle.....	\$ 12.74
Single or Tandem Axle Dump..	\$ 11.33
Tandem Axle Tractor with Semi.....	\$ 12.49

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION



3. PERFORMANCE AGREEMENT (DRAFT)

NOTICE

This is the City's standard form of agreement for projects of this type. The specified insurance requirements in Section 19 are applicable to this project. After Bids are opened and City has determined its recommendation, a final Contract for your signature will be prepared. The appropriate sections will be completed with an accurate summary of the description of work to be awarded and the Bid price recommended to Council, including all alternates, options and addenda to be awarded. Any special provisions included in the Bid documents will be added in Section 27 of this Contract. This Contract must be finalized by City, and signed by Contractor, prior to the award of the Bid by the City Council.

CONTRACT FOR

CONSTRUCTION PROJECT RFB No. TR-01-15

This Contract is entered into this ____ day of _____, 2015 (but effective as of _____, 2015) ("effective date") by and between the City of San Angelo, a home-rule municipal corporation of the State of Texas ("City") and _____, a _____, ("Contractor").

RECITALS:

A. City has issued a Request for Sealed Construction Bid No. RFB TR-01-15, Traffic Division Thermoplastic Striping ("RFB No. TR-01-15") for road striping services within the City limits. The RFB and Contractor's Bid are sometimes referred to herein collectively as the Contract Documents ("Contract Documents"), which are by this reference incorporated herein and made a part of this Agreement.

B. The Council of the City of San Angelo approved the selection of Contractor on _____, 2015, and authorized the City Manager to negotiate and execute a contract, under the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the mutual covenants and promises herein contained, City and Contractor agree as follows:

TERMS:

1. RECITALS AND INCORPORATIONS: The recitals are true and correct and are hereby incorporated into and made a part of this Agreement. Contract documents are hereby incorporated into and made a part of this Agreement as if fully set out herein and attached hereto as Exhibit “A”.

2. STATEMENT OF WORK:

A. Contractor shall be responsible for completing Work described in (“RFB No. TR-01-15”) for application of road striping services within the City limits as specified in the Contract Documents.

B. Contractor shall provide all labor for preparing the worksite and furnish all material, accessories, labor, and equipment necessary for completing the construction, replacement and installation; and, all other Work specified in the technical specification documents and drawings included with the Contract Documents incorporated herein by reference in Section 7. of this Agreement and in accordance with the terms and conditions set forth herein and within those Contract Documents.

3. TIME OF PERFORMANCE: Contractor agrees to substantially complete Work within Thirty (30) consecutive calendar days (“Contract Time”) after the date Work commences as established by the Notice to Proceed. Contractor further agrees that approval for beginning Work on the project will not be given and that Work will not start until all required bonds and insurance certificates specified in the bid documents have been received and approved by City.

4. LIQUIDATED DAMAGES: City and Contractor recognize that the time of performance is of the essence in this Agreement and that City will suffer financial loss if Work is not substantially complete within the time specified in Section 3. above, plus any extensions

thereof allowed. Both parties hereto also recognize the delays, expense, and difficulties involved in proving in a legal proceeding the actual loss suffered by City if Work is not substantially complete on time. Accordingly, instead of requiring such proof, City and Contractor agree that a reasonable estimate of liquidated damages for any delay (but not as a penalty) would be for Contractor to pay City Four Hundred Twenty-Six and 59/100 Dollars (\$426.59) for each calendar day that expires after the time specified in Section 3. until Work is substantially complete. Therefore, Contractor shall pay City as liquidated damages Four Hundred Twenty-Six and 59/100 Dollars (\$426.59) for each calendar day that expires after the time specified in Section 3. until Work is substantially complete.

5. CONTRACT PRICE: City shall pay to Contractor for performance of Work embraced in this Agreement, and Contractor shall accept as full compensation therefore, the Bid Price of _____ Dollars (_____) subject to adjustment only as provided by approved change order, for all Work covered by and included in the contract award; payment thereof to be made in current funds in the manner provided in Section 6. Payment Procedure.

6. PAYMENT PROCEDURE: Contractor shall submit Applications for Payment in accordance with the General Conditions as shown in RFB No. TR-01-15 and City shall process the Applications for Payment in accordance with the General Conditions, except that progress payments and the final payment under this Agreement shall be made as set forth below:

A. Progress Payments. City shall make progress payments of the Contract Price on the basis of Contractor's Application for Payment on or about the thirtieth (30th) day after submittal of the Application for Payment each month as provided below. All progress payments shall be based upon the progress of Work measured as provided for in the General Conditions.

B. Final Payment. Upon completion and acceptance of Work by City in accordance with the General Conditions, City shall pay the remainder of the Contract Price.

7. CONTRACT DOCUMENTS: The following documents from City are incorporated

herein by reference for all purposes, as if fully set out verbatim:

- Request for Bid No. TR-01-15 Traffic Division Thermoplastic Striping (“RFB No. TR-01-15”)
- Contractor’s Bid
- All of the documents, conditions, specifications, technical data, drawings, requirements and addenda comprising said Bid Invitation Number as of the time this Agreement is entered by Contractor and City.

8. **CONTRACTOR’S REPRESENTATIONS:** In order to induce City to enter into this Agreement, Contractor makes the following representations to City:

A. Contractor has familiarized itself with the nature and extent of the Contract Documents, Work, and with all local conditions and federal, state and local laws.

B. Contractor has made, or caused to be made, examinations and investigations of information as it deems necessary for the performance of Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations or similar data are, or will be required by Contractor for such purposes.

C. Contractor has given City advanced written notice of all conflicts, errors, or discrepancies that it has discovered in the Contract Documents prior to bidding and the written resolution thereof by City is acceptable to Contractor.

D. Contractor is skilled and experienced to responsibly perform the type of Work described in the Contract Documents in a timely manner.

9. **COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS:** Contractor understands that Contracts between private entities and local governments are subject to certain laws and regulations, including laws pertaining to public records, conflict of interest,

recordkeeping, etc. City and Contractor agree to comply with and observe all applicable laws, codes and ordinances as they may be amended from time to time.

10. OWNERSHIP OF DOCUMENTS: Contractor understands and agrees that any information, document, report or any other material whatsoever which is given by City to Contractor or which is otherwise obtained or prepared by Contractor pursuant to or under the terms of this Agreement is and shall at all times remain the property of City. Contractor agrees not to use any such information, document, report or material for any other purpose whatsoever without the written consent of City, which may be withheld or conditioned by City in its sole discretion.

11. AUDIT AND INSPECTION RIGHTS:

A. City may, at reasonable times, and for a period of up to three (3) years following the date of final payment by City to Contractor under this Agreement, audit, or cause to be audited, those books and records of Contractor which are related to Contractor's performance under this Agreement. Contractor agrees to maintain all such books and records at its principal place of business for a period of three (3) years after final payment is made under this Agreement.

B. City may, at reasonable times during the term hereof, inspect Contractor's facilities and perform such tests, as City deems reasonably necessary, to determine whether the goods or services required to be provided by Contractor under this Agreement conform to the terms hereof, if applicable. Contractor shall make available to City all reasonable facilities and assistance to facilitate the performance of tests or inspections by City representatives. All tests and inspections shall be subject to, and made in accordance with, the provisions of the City of San Angelo Code of Ordinances, as same may be amended or supplemented from time to time.

12. AWARD OF CONTRACT: Contractor represents and warrants to City that it has not employed or retained any person or company employed by City to solicit or secure this Agreement and that it has not offered to pay, paid, or agreed to pay any person any fee,

commission, percentage, brokerage fee, or gift of any kind contingent upon or in connection with the award of this Agreement.

13. PUBLIC RECORDS: Contractor understands that the public shall have access, at all reasonable times, to all documents and information pertaining to City contracts, and agrees to allow access by City and the public to all documents subject to disclosure under applicable law. Contractor's failure or refusal to comply with the provisions of this section shall result in the immediate cancellation of this Agreement by City.

14. DEFAULT: If Contractor fails to comply with any term or condition of this Agreement, or fails to perform any of its obligations hereunder, then Contractor shall be in default. Upon the occurrence of a default hereunder, City in addition to all remedies available to it by law, may immediately, upon written notice to Contractor, terminate this Contract whereupon all payments, advances, or other compensation paid by City to Contractor while Contractor was in default shall be immediately returned to City. Contractor understands and agrees that termination of this Agreement under this section shall not release Contractor from any obligation accruing prior to the effective date of termination. Should Contractor be unable or unwilling to commence to perform Work within the time provided or contemplated herein, then, in addition to the foregoing, Contractor shall be liable to City for all expenses incurred by City in preparation and negotiation of this Agreement, as well as all costs and expenses incurred by City in the re-procurement of Work, including consequential and incidental damages.

15. CITY'S TERMINATION RIGHTS:

A. City shall have the right to terminate this Agreement, in its sole discretion, at any time, by giving written notice to Contractor at least five (5) business days prior to the effective date of such termination. In such event, City shall pay to Contractor compensation for Work rendered and expenses incurred prior to the effective date of termination. In no event shall City be liable to Contractor for any additional compensation, other than that provided herein, or for

any consequential or incidental damages.

B. City shall have the right to terminate this Agreement, without notice or liability to Contractor, upon the occurrence of an event of default hereunder. In such event, City shall not be obligated to pay any amounts to Contractor and Contractor shall reimburse to City all amounts received while Contractor was in default under this Agreement.

16. RESOLUTION OF CONTRACT DISPUTES: Contractor understands and agrees that all disputes between Contractor and City based upon an alleged violation of the terms of this Agreement by City shall be submitted to City Manager for his resolution, prior to Contractor being entitled to seek judicial relief in connection therewith. In the event that the amount of compensation hereunder exceeds Fifty Thousand Dollars (\$50,000.00), the City Manager's decision shall be approved or disapproved by the City Council. Contractor shall not be entitled to seek judicial relief unless: (i) Contractor has first received City Manager's written decision, approved by the City Council if the amount of compensation hereunder exceeds Fifty Thousand Dollars (\$50,000.00); or (ii) a period of sixty (60) days has expired, after submitting to the City Manager a detailed statement of the dispute, accompanied by all supporting documentation [ninety (90) days if City Manager's decision is subject to City Council approval]; or (iii) City has waived compliance with the procedure set forth in this section by written instruments, signed by the City Manager.

17. INSURANCE:

A. Contractor shall, at all times during the term hereof, maintain such insurance coverage as may be required by City. All such insurance, including renewals, shall be subject to the approval of City for adequacy of protection and evidence of such coverage shall be furnished to City on Certificates of Insurance indicating such insurance to be in force and effect and providing that it will not be canceled during the performance of Work under this Agreement without thirty (30) calendar days prior written notice to City. Completed Certificates of

Insurance shall be filed with City prior to the performance of services hereunder, provided however, that Contractor shall at any time upon request file duplicate copies of the policies of such insurance with City.

B. If in the judgment of City, prevailing conditions warrant the provision by Contractor of additional liability insurance coverage or coverage which is different in kind, City reserves the right to require the provision by Contractor of an amount of coverage different from the amounts or kind previously required and shall afford written notice of such change in requirements thirty (30) days prior to the date on which the requirements shall take effect. Should the Contractor fail or refuse to satisfy the requirement of changed coverage within thirty (30) days following City's written notice, this Agreement shall be considered terminated on the date that the required change in policy coverage would otherwise take effect.

18. INDEMNIFICATION:

A. GENERAL INDEMNIFICATION: CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS CITY AND ITS OFFICIALS, EMPLOYEES AND AGENTS (COLLECTIVELY REFERRED TO AS "INDEMNITEES") AND EACH OF THEM FROM AND AGAINST ALL LOSS, COSTS, PENALTIES, FINES, DAMAGES, CLAIMS, EXPENSES (INCLUDING ATTORNEY'S FEES) OR LIABILITIES (COLLECTIVELY REFERRED TO AS "LIABILITIES") ASSERTED BY ANY PERSON OR PERSONS, INCLUDING AGENTS OR EMPLOYEES OF CONTRACTOR OR CITY BY REASON OF ANY INJURY TO OR DEATH OF ANY PERSON OR DAMAGE TO OR DESTRUCTION OR LOSS OF ANY PROPERTY ARISING OUT OF, RESULTING FROM, OR IN CONNECTION WITH (I) THE PERFORMANCE OR NON-PERFORMANCE OF THE SERVICES CONTEMPLATED BY THIS AGREEMENT WHICH IS OR IS ALLEGED TO BE DIRECTLY OR INDIRECTLY CAUSED, IN WHOLE OR IN PART, BY ANY ACT, OMISSION, DEFAULT OR NEGLIGENCE (WHETHER ACTIVE OR PASSIVE) OF CONTRACTOR OR ITS EMPLOYEES, AGENTS OR SUB-CONTRACTORS (COLLECTIVELY REFERRED TO AS "CONTRACTOR"), REGARDLESS OF WHETHER IT IS, OR IS ALLEGED TO BE, CAUSED IN WHOLE OR PART (WHETHER JOINT, CONCURRENT OR CONTRIBUTING) BY ANY ACT, OMISSION, DEFAULT OR NEGLIGENCE (WHETHER ACTIVE OR PASSIVE) OF THE INDEMNITEES, OR ANY OF THEM OR (II) THE FAILURE OF CONTRACTOR TO COMPLY WITH ANY OF THE PARAGRAPHS HEREIN OR THE FAILURE OF CONTRACTOR TO CONFORM TO STATUTES, ORDINANCES, OR OTHER REGULATIONS OR REQUIREMENTS OF ANY GOVERNMENTAL AUTHORITY, FEDERAL OR STATE, IN CONNECTION WITH THE PERFORMANCE OF THIS AGREEMENT OR SUSTAINED IN OR UPON THE PREMISES, OR AS A RESULT OF ANYTHING CLAIMED TO BE DONE OR ADMITTED TO BE DONE BY CONTRACTOR HEREUNDER. CONTRACTOR EXPRESSLY AGREES TO INDEMNIFY AND HOLD HARMLESS THE INDEMNITEES, OR ANY OF THEM, FROM AND AGAINST ALL LIABILITIES WHICH MAY BE ASSERTED BY AN EMPLOYEE OR FORMER EMPLOYEE OF CONTRACTOR, OR ANY OF ITS SUB-CONTRACTORS, AS PROVIDED ABOVE, FOR WHICH CONTRACTOR'S LIABILITY TO SUCH EMPLOYEE OR FORMER EMPLOYEE WOULD OTHERWISE BE LIMITED TO PAYMENTS UNDER STATE WORKERS' COMPENSATION OR SIMILAR LAWS. THIS INDEMNIFICATION SHALL SURVIVE THE TERM OF THIS AGREEMENT AS LONG AS ANY LIABILITY

COULD BE ASSERTED. NOTHING HEREIN SHALL REQUIRE CONTRACTOR TO INDEMNIFY, DEFEND, OR HOLD HARMLESS ANY INDEMNIFIED PARTY FOR THE INDEMNIFIED PARTY'S OWN GROSS NEGLIGENCE OR WILLFUL MISCONDUCT.

B. PROSPECTIVE APPLICATION. ANY AND ALL INDEMNITY PROVIDED FOR IN THIS AGREEMENT SHALL SURVIVE THE EXPIRATION OF THIS AGREEMENT AND THE DISCHARGE OF ALL OTHER OBLIGATIONS OWED BY THE PARTIES TO EACH OTHER HEREUNDER AND SHALL APPLY PROSPECTIVELY NOT ONLY DURING THE TERM OF THIS AGREEMENT BUT THEREAFTER SO LONG AS ANY LIABILITY COULD BE ASSERTED IN REGARD TO ANY ACTS OR OMISSIONS OF CONTRACTOR IN PERFORMING UNDER THIS AGREEMENT.

C. RETROACTIVE APPLICATION. THE INDEMNITY PROVIDED FOR IN THIS AGREEMENT SHALL EXTEND NOT ONLY TO CLAIMS AND ASSESSMENTS OCCURRING DURING THE TERM OF THIS AGREEMENT BUT RETROACTIVELY TO CLAIMS AND ASSESSMENTS WHICH MAY HAVE OCCURRED DURING THE TERM OF PREVIOUS AGREEMENTS BETWEEN CITY AND CONTRACTOR.

19. INSURANCE REQUIREMENTS:

A. General Conditions. The following conditions shall apply to all insurance policies obtained by Contractor for the purpose of complying with this Agreement.

- 1) Satisfactory Companies. Coverage shall be maintained with insurers and under forms of policies satisfactory to City and with insurers licensed to do business in Texas.
- 2) Named Insureds. All insurance policies required herein shall be drawn in the name of Contractor, with City, its council members, board and commission members, officials, agents, guests, invitees, consultants and employees named as additional insureds, except on Workers' Compensation coverage.
- 3) Waiver of Subrogation. Contractor shall require its insurance carrier(s), with respect to all insurance policies, to waive all rights of subrogation against City, its council members, board and commission members, officials, agents, guests, invitees, consultants and employees.
- 4) Certificates of Insurance. At or before the time of execution of this Agreement, Contractor shall furnish City's Risk Manager with certificates of insurance as evidence that all of the policies required herein are in full force and effect and provide the required coverage and limits of insurance. All certificates of insurance shall

clearly state that all applicable requirements have been satisfied. The certificates shall provide that any company issuing an insurance policy shall provide to City not less than thirty (30) days advance notice in writing of cancellation, non-renewal, or material change in the policy of insurance. In addition, Contractor and insurance company shall immediately provide written notice to City's Risk Manager upon receipt of notice of cancellation of any insurance policy, or of a decision to terminate or alter any insurance policy. Certificates of insurance and notices of cancellations, terminations, or alterations shall be furnished to City's Risk Manager at City Hall, 72 W. College Ave., San Angelo, Texas 76903.

- 5) Contractor's Liability. The procurement of such policy of insurance shall not be construed to be a limitation upon Contractor's liability or as a full performance on its part of the indemnification provisions of this Agreement. Contractor's obligations are, notwithstanding any policy of insurance, for the full and total amount of any damage, injury, or loss caused by or attributable to its activities conducted at or upon the premises. Failure of Contractor to maintain adequate coverage shall not relieve Contractor of any contractual responsibility or obligation.
- 6) Subcontractors' Insurance. Contractor shall cause each Subcontractor and Sub-Sub-Contractor of Contractor to purchase and maintain insurance of the types and in the amounts specified below. Contractor shall require Subcontractors and Sub-Subcontractors to furnish copies of certificates of insurance to City's Risk Manager evidencing coverage for each Subcontractor and Sub-Subcontractor.

B. Types And Amounts Of Insurance Required. Contractor shall obtain and continuously maintain in effect at all times during the term hereof, at Contractor's sole expense, insurance coverage as follows with limits not less than those set forth below:

- 1) Commercial General Liability. This policy shall be occurrence-type policy and shall protect Contractor and additional insureds against all claims arising from bodily injury, sickness, disease or death of any person (other than Contractor's employees) and damage to property of City or others arising out of the act or omission of Contractor or its agents and employees. This policy shall also include protection against claims for the contractual liability assumed by Contractor under the paragraph of this Agreement entitled "Indemnification," including completed operations, products liability, contractual coverage, broad form property coverage, explosion, collapse, underground, premises/operations, and independent contractors [to remain

in force for two (2) years after final payment].

Coverage limits shall not be less than:

\$1,000,000.00	General Aggregate
\$1,000,000.00	Products- Completed Operations
\$1,000,000.00	Personal & Advertising Injury
\$1,000,000.00	Each Occurrence
\$ 100,000.00	Fire Damage (any one fire)

- 2) Business Automobile Liability. This policy shall protect Contractor and the additional insureds against all claims for injuries to members of the public and damage to property of others arising from the use of motor vehicles and shall cover operation on and off the premises of all motor vehicles licensed for highway use, whether they are owned, non-owned or hired. Coverage limits shall not be less than:

\$1,000,000.00	Combined Single Limit
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- 3) Workers' Compensation and Employer's Liability. If Contractor hires any employees, Contractor shall maintain Workers' Compensation and Employer's Liability insurance, which shall protect Contractor against all claims under applicable state workers' compensation laws and employer's liability. The insured shall also be protected against claim for injury, disease or death of employees which for any reason, may not fall within the provisions of a workers' compensation law. Coverage shall not be less than:

Statutory Amount	Workers' Compensation
\$ 100,000.00	Employer's Liability, Each Accident
\$ 100,000.00	Employer's Liability, Disease - Each Employee
\$ 500,000.00	Employer's Liability, Disease - Policy Limit

The foregoing requirement will not be applicable if, and so long as, Contractor qualifies as a self-insurer under the rules and regulations of the commission or agency administering the workers' compensation program in Texas and furnishes evidence of such qualification to City in accordance with the notice provisions of this Agreement. If Contractor uses contract labor, Contractor shall require its subcontractor to maintain the above referenced coverage and furnish copies of certificates of insurance as required herein.)

20. **INDEPENDENT CONTRACTOR:** Nothing contained in this Agreement is intended

to, or shall be construed in any manner, as creating or establishing the relationship of employer/employee between the parties. Contractor shall at all times remain an independent contractor with respect to the services to be performed under this Agreement. City shall be exempt from payment of all unemployment compensation, FICA, retirement, life and/or medical insurance and workers' compensation insurance on Contractor's employees.

21. NONDISCRIMINATION: Contractor represents and warrants to City that Contractor does not and will not engage in discriminatory practices and that there shall be no discrimination in connection with Contractor's performance under this Agreement on account of race, color, sex, religion, age, handicap, marital status or national origin. Contractor further covenants that no otherwise qualified individual shall, solely by reason of his/her race, color, sex, religion, age, handicap, marital status or national origin, be excluded from participation in, be denied services, or be subject to discrimination under any provision of this Agreement.

22. VERIFICATION OF EMPLOYMENT ELIGIBILITY: Contractor must comply with the Immigration Reform and Control Act (IRCA) and may not knowingly obtain labor or services of an unauthorized alien. Contractor -- not City -- must verify eligibility for employment as required by IRCA.

23. AMENDMENTS: City or Contractor may amend this Agreement at any time provided that such amendments make specific reference to this Agreement, and are executed in writing, signed by a duly authorized representative of both organizations, and approved by City. Such amendments shall not invalidate this Agreement, nor relieve or release City or Contractor from their respective obligations under this Agreement.

24. ASSIGNMENT: No assignment by a party hereto of any rights under, or interest in, the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically, but without limitation, moneys that may become due, and moneys that are due, may not be assigned without such prior consent (except to the extent

that this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

25. SUCCESSORS AND ASSIGNS: This Agreement shall be binding upon the parties hereto, their heirs, executors, legal representatives, successors, or assigns.

26. NOTICES: Communication and details concerning this Agreement shall be directed to the following representatives:

CITY:

City of San Angelo
Attn: Ryan Ward
1729A St Ann St.
San Angelo, Texas 76905
(325) 657-4377

CONTRACTOR:

Attn: _____

Phone: (____) ____-____
Email: _____

Before City shall be liable to Contractor or any of its successors or assigns for any alleged breach of this Agreement, notice must first be given City within six (6) months of the date Contractor alleges the breach occurred. Such notice shall be in accordance with and provide substantially the same information as required for notice of tort claims as specified in Article 1.500 of the City of San Angelo Code of Ordinances.

27. MISCELLANEOUS PROVISIONS:

A. Remedies: In the event of default by Contractor under the Contract Documents, City shall have all rights and remedies afforded to it at law or in equity to enforce the terms of the Contract Documents; however, arbitration is not an available remedy to resolve any disputes arising under this Agreement unless City and Contractor mutually agree to such remedy in a separate written Agreement. The exercise of any one right or remedy shall be without prejudice to the enforcement of any other right or remedy allowed at law or in equity.

B. Attorneys' Fees: If any action at law or in equity is necessary by either City or

Contractor to enforce or interpret the terms of the Contract Documents, the party prevailing on the majority of issues shall be entitled to reasonable attorneys' fees and costs and any necessary disbursements in addition to any other relief to which the prevailing party is entitled.

C. Conflicts: This Agreement, the documents required to be provided, and the Contract Documents constitute the entire Agreement between the parties hereto and supersede any prior written or oral Agreements and understandings between the parties. If any provision of this Agreement, the General Conditions, the Specifications or any other provision contained within the Contract Documents conflicts, or is inconsistent with any other provision of the Contract Documents, then the conflict or inconsistency will be resolved first by reference to the terms of this Agreement, then to the General Conditions to this Agreement and then finally to the Specifications therein, unless a federal law, regulation or restriction would require otherwise, in which case the federal provision would control.

D. Severability: If any provision of this Agreement is held invalid or unenforceable, the remainder of the Agreement shall not be affected thereby and all other parts of this Agreement shall nevertheless be in full force and effect.

E. Venue: This Agreement, including the Contract Documents, is governed by the laws of the State of Texas. Venue for any suit or claim or cause of action arising out of or related to Work covered by this Agreement shall be in Tom Green County, Texas.

F. Counterparts: This Agreement may be executed in two or more counterparts, each of which shall constitute an original but all of which, when taken together, shall constitute one and the same Agreement.

G. Enforcement: This Agreement shall be construed and enforced according to the laws of the State of Texas.

H. Headings: Titles and paragraphs are for convenient reference and are not a part of this Agreement.

I. No Waiver: No waiver or breach of any provision of this Agreement shall constitute a waiver of any subsequent breach of the same or any other provision hereof, and no waiver shall be effective unless made in writing.

J. Governing Laws: Should any provision, paragraph, sentence, word or phrase contained in this Agreement be determined by a court of competent jurisdiction to be invalid, illegal or otherwise unenforceable under the laws of the State of Texas or the City of San Angelo, such provision, paragraph, sentence, word or phrase shall be deemed modified to the extent necessary in order to conform with such laws, or if not modifiable, then same shall be deemed severable, and in either event, the remaining terms and provisions of this Agreement shall remain unmodified and in full force and effect or limitation of its use.

K. Applicable Law: This Agreement and the Contract Documents are subject to all applicable federal and state laws, statutes, codes, rules and regulations and local ordinances, rules and regulations.

28. CONTINGENCY CLAUSE: Funding for this Agreement is contingent on the availability of funds and continued authorization for program activities and the Agreement is subject to amendment or termination due to lack of funds, reduction of funds and/or change in regulations, upon thirty (30) days notice.

29. ENTIRE CONTRACT: This Agreement constitutes the sole and entire Agreement between the parties hereto. No modification or amendment hereto shall be valid unless in writing and executed by properly authorized representatives of the parties hereto.

30. REAFFIRMATION OF REPRESENTATIONS: Contractor hereby reaffirms all of the representations contained in RFB No. TR-01-15.

[Signature Page to Follow]

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by their respective officials thereunto duly authorized, this the day and year above written.

CONTRACTOR:

By: _____
_____, _____

ATTEST:

(SEAL)

CITY:

City of San Angelo

By: _____
Daniel Valenzuela, City Manager

ATTEST:

Bryan Kendrick, City Clerk

(SEAL)

**CONTRACT FOR
TRAFFIC DIVISION THERMOPLASTIC STRIPING
BETWEEN
CITY OF SAN ANGELO & _____
RFB No. TR-01-15**

Approved as to Content:

Approved as to Form:

Julia Antilley, Purchasing Manager

Theresa James, City Attorney

Approved as to Content:

Approved as to Insurance Requirements:

Ryan Ward, Traffic Operations
Superintendent

Marion McMinn, Risk Manager



4. GENERAL CONDITIONS

4.1. General

The conditions contained herein are generally applicable to the Work described. Contractor and the City agree to interpret and enforce the terms and conditions contained within this section only insofar as they are applicable to the Work.

4.1.1. Definitions

Wherever used in these General Conditions or in the other Contract Documents, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

Agreement

The written agreement between the City and the Contractor covering the Work to be performed, including the Request for Bid, the Contractor's Bid, and the Bonds.

Architect

The "Architect" shall be the City or any individual, partnership, firm or corporation duly authorized by The City to be responsible for the architectural aspects of the Work.

Award

The acceptance, by the City, of the successful Respondent's Bid.

Bid

The written offer of the Respondent setting forth the prices to perform the contemplated Work and furnish the necessary labor, Equipment, Materials and other incidentals necessary to perform the contemplated Work in accordance with the provisions of the Plans and Specifications.

Respondent

Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a Bid for the work contemplated.

Bond(s)

The approved form(s) of security furnished by the Contractor and his/her surety in accordance with the terms set forth in the Bid and as may otherwise be requested of the Contractor in the Contract Documents.

Calendar Day

A "Calendar Day" is any day of the week or month, no days being excepted.

Change Order

A written order to the Contractor signed by the City covering changes in the plans, specifications, or Bid quantities and establishing the basis of payment and contract time adjustment, if any, for the work affected by such changes. The work, covered by a change order, shall be within the scope of the contract.

Contract Documents

The Agreement, Plans, Specifications, Drawings, and Field Changes, or any related addenda to the Agreement, Supplemental Agreement(s), Plans, Specifications, or Field Changes.

Contract Price

The total monies payable to the Contractor under the Contract Documents.

Contract Time

The number of calendar days or completion date stated in the Contract for the completion of the Work.

Contractor

The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the Work and for the payment of all legal debts pertaining to the Work who act as directly or through lawful agents or employees to complete the Work.

Engineer

The "Engineer" shall be the City or any individual, partnership, firm or corporation duly authorized by the City to be responsible for the engineering aspects of the Work.

Equipment

All machinery, together with the necessary supplies for upkeep and maintenance, and also all tools and apparatus necessary for the proper construction and acceptable completion of the Work.

Extra Work

An item of work not provided for in the Contract Documents as previously modified by Change Order or Supplemental Agreement, but which is found by the City to be necessary to complete the Work within the intended scope of the Contract Documents as previously modified.

Field Change

A Field Change may be issued in the form of:

- (a) A written amendment of the Contract Documents signed by both parties,
- (b) A Change Order,
- (c) A written clarification or interpretation issued by the City in accordance with Section 2.0.13, or
- (d) A written order for a minor change or alteration in the Work issued by the City.

A Field Change may only be issued after execution of the Agreement.

Field Order

A written order issued by the City which clarifies, interprets the Contract Documents or minor changes in the Work.

Materials

Any substance specified for use in the construction of the Work.

Owner

A public body or authority, corporation, association, partnership, or individual for whom the Work is to be performed. For this Agreement, the "City" is the City of San Angelo.

Partial Payment Estimate

A form detailing the amount of Work done to date and covering previous payments, retainage, etc. This estimate is usually issued on a monthly basis.

Plans

The official drawings or exact reproductions which show the location, character, dimensions and details of the Work to be done and which are to be considered as a part of the Contract Documents, supplementary to the Specifications.

Project

All duties and Work to be performed as provided in the Contract Documents.

Resident Project Representative

The "Resident Project Representative" shall be the City or any individual, partnership, firm or corporation duly authorized by the City who is assigned to the Project, or any part thereof, and who shall be responsible for observing the progress and quality of the Work, or any portion of the Work, on the behalf of the City.

Shop Drawings

All drawings, diagrams, illustrations, brochures, schedules, and other data which are prepared by the Contractor, a Subcontractor, manufacturer, supplier, or distributor which illustrate the Equipment, Material, or some portion of the Work.

Specifications

A part of the Contract Documents containing the written directions and requirements for completing the Work. Standards for specifying materials or testing which are cited in the Contract Documents by reference shall have the same force and effect as if included in the Contract Documents physically.

Subcontractor

An individual, firm, or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work.

Supplemental Agreement

A written agreement between the Contractor and the City covering (1) work that would increase or decrease the total amount of the Agreement as awarded or (2) work that is not within the scope of the Contract Documents.

Work

Any and all obligations, duties, and responsibilities necessary to the successful completion of the Project assigned to or undertaken by the Contractor under the Contract Documents, including the furnishing of all labor, Materials, Equipment, and other incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the Contract Documents.

Work Day

A "Work Day" is defined as a calendar day excluding Saturdays, Sundays, and legal holidays authorized in the list prepared for the City of San Angelo for use of its employees, in which weather or other conditions not under the control of the Contractor will permit the performance of the principal units of work underway for a continuous period of not less than 7 hours between 8:00 a.m. and 5:00 p.m.

Work Week

The "Work Week" shall consist of a period of seven (7) successive calendar days to begin and end as specified by the Contractor.

4.2. Notice to Proceed and the Preconstruction Conference

No work shall be performed until issuance of a written notice to proceed by the City. The Notice to Proceed shall be issued only upon completion of the Preconstruction Meeting and all related requirements are complete.

4.3. Ownership, Copies of Documents, and Record Documents

All Specifications, Plans, and copies thereof furnished by the City shall remain the property of the City. They shall not be used on another project.

The Contractor will keep one record copy of all Specifications, Plans, Field Changes, Shop Drawings, and any addenda thereto at the site in good order and annotated to show all changes made during the construction process. These shall be available to the City and shall be delivered to the City upon completion of the Project.

4.4. Cooperation Between Contractors

When separate contracts are let within the limits of any one project, each Contractor shall conduct the work so as not to interfere with or hinder the progress or completion of the work being performed by other contractors. The Contractor will afford the other contractors who are parties to such direct contracts (or the City, if he is performing the additional work himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of work, and shall properly connect and coordinate his Work with theirs. If any part of the Contractor's Work depends upon the work of any such other contractor or the City for proper execution or results, the Contractor will inspect the work and promptly report any defects or deficiencies in writing to the City. Failure to make such a report shall constitute an acceptance of the other work as fit and proper for the Work, except as to defects and deficiencies which may appear in the other work after the execution of his Work.

The Contractor will do all cutting, fitting, and patching of his Work that may be required to make its several parts come together properly and fit it to receive or be received by such other work. The Contractor will not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of the City.

Each Contractor involved shall assume all liability, financial or otherwise, in connection with the Agreement with City and shall protect and hold harmless the City from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced by the Contractor because of the presence and operations of other contractors working within the limits of the same project.

If the performance of additional work by other contractors or the City is not noted in the Contract Documents prior to the Award of the Agreement, written notice thereof shall be given to the Contractor prior to starting any such additional work. If the Contractor believes that the performance of such additional work by the City or others involves him in additional expense or entitles him to an extension of the Contract Time, he may make a claim therefore as provided for herein.

4.5. Subcontracts

The Contractor will not employ any Subcontractor (whether initially or as a substitute) against whom the City

may have objection, nor will the Contractor be required to employ any Subcontractor against whom he has objection.

The Contractor will be fully responsible for all acts and omissions of his Subcontractors and of persons directly or indirectly employed by them and of persons for whose acts any of them may be liable to the same extent that he is responsible for the acts and omissions of persons directly employed by him. Nothing in the Contract Documents shall create any contractual relationship between any Subcontractor and the City or any obligation on the part of the City to pay or to see to the payment of any moneys due any Subcontractor, except as may otherwise be required by law. The City may furnish to any Subcontractor, to the extent practicable, evidence of amounts paid to the Contractor on account of specific work done.

4.6. Patent Fees and Royalties

The Contractor will pay all license fees and royalties and assume all costs incident to the use of any invention, design, process, or device which is the subject of patent right or copyrights held by others.

CONTRACTOR WILL INDEMNIFY AND HOLD HARMLESS THE CITY AND ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY THE CITY FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES, AND EXPENSES (INCLUDING ATTORNEY'S FEES) ARISING OUT OF ANY INFRINGEMENT OF SUCH RIGHTS DURING OR AFTER COMPLETION OF THE WORK, AND SHALL DEFEND ALL SUCH CLAIMS IN CONNECTION WITH ANY ALLEGED INFRINGEMENT OF SUCH RIGHTS.

4.7. Permits, Laws, Taxes, and Regulations

The Contractor will secure and pay for all construction permits and licenses and will pay all governmental and public utility charges and inspection fees necessary for the prosecution of the Work. The Contractor will give all notices and comply with all laws, ordinances, rules, and regulations applicable to the Work. If the Contractor observes that the Specifications or Plans are at variance therewith, he will give prompt written notice thereof to the City and any necessary changes shall be adjusted by an appropriate Field Change. If the Contractor performs any Work knowing it to be contrary to such laws, ordinances, rules, and regulations, and without such notice to the City, he will bear all costs arising therefrom.

The Contractor will pay all sales, consumer, and other similar taxes required by the law of the place where the Work is to be performed, or of the place from which any portion of the Equipment or Materials is obtained.

4.8. Availability of Lands

The City will provide, as indicated in the Contract Documents and not later than the date when needed by the Contractor, the lands upon which the Work is to be done, rights-of-way for access thereto, and such other lands which are designated for the use of the Contractor. Easements for permanent structures or permanent changes in existing facilities will be secured and paid for by the City, unless otherwise specified in the Contract Documents. If the Contractor believes that any delay in the City's furnishing these lands or providing such easements entitles him to an extension of the Contract Time, he may make a claim therefore as provided herein. The Contractor will provide all additional lands and access thereto that may be required for temporary construction facilities or storage of Materials and Equipment.

4.9. Use of Premises

The Contractor will confine his equipment, the storage of materials and equipment, and the operations of his workers to areas permitted by law, ordinances, permits, or the requirements of the Contract Documents, and shall not unreasonably encumber the premises with materials or equipment.

4.10. City's Status During Construction

All instructions of the City, or its duly appointed representative, to the Contractor shall be issued directly to the Contractor.

The City will make periodic visits to the site to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. The efforts of the City will be directed toward providing assurance that the completed Project will conform to the requirements of the Contract Documents, but City will not be responsible for the Contractor's failure to perform the Work in accordance with the Contract Documents. On the basis of on-site observations, the City, or its duly appointed representative, will keep informed of the progress of the Work and will endeavor to guard it against defect and deficiencies.

The City will have authority to disapprove or reject Work which is unsatisfactory, faulty, or defective, or does not conform to the requirements of the Contract Documents or does not meet the requirements of any inspection, test, or approval set forth herein. The City will also have authority to require special inspection or

testing of the Work as provided herein, whether or not the Work is fabricated, installed, or completed.

Neither the City's authority to act under this subsection, nor any decision made by him in good faith, either to exercise or not exercise such authority, shall give rise to any duty or responsibility of the City to the Contractor, any Subcontractor, any of their agents or employees, or any other person performing any of the Work.

4.11. City's Interpretations and Decisions

The City will issue with reasonable promptness such clarifications or interpretations (in the form of drawings or otherwise) as may be determined necessary for the proper execution of the Work, such clarifications and interpretations to be consistent with or reasonably inferable from the overall intent of the Contract Documents. If the Contractor believes that a written clarification and interpretation entitles him to an increase in the Contract Price, he may make a claim therefore as provided herein. The City will be the interpreter of the terms and conditions of the Contract Documents and the judge of the performance thereunder.

4.12. Tests and Inspections Required by Law

If the Contract Documents, laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction require any Work to be inspected, tested, or approved by someone other than the City, the Contractor will give prompt and timely notice of readiness to the City. The Contractor will furnish the required certificates of inspection, testing, or approval to the City. All such tests will be in accordance with the methods prescribed by the American Society for Testing and Materials or such other applicable organization as may be required by law or the Contract Documents. If any such Work required to be inspected, tested, or approved is covered up without written approval or consent of the City, it must be uncovered for observation at the Contractor's expense, if so directed by the City. The costs directly attributable to such uncovering, exposure, observation, inspection, testing, approvals and reconstruction shall be borne in full by the Contractor.

Any Work which fails to meet the requirements of any such test, inspection, or approval, and any Work which meets the requirements of any such test or approval but does not meet the requirements of the Contract Documents shall be considered defective.

Observations by the City shall not relieve the Contractor from his obligations to perform the Work in accordance with the requirements of the Contract Documents.

4.13. Contractor's Supervision and Superintendence

The Contractor will supervise and direct the Work efficiently and with his best skill and attention. He will be solely responsible for the means, methods, techniques, safety, sequences, and procedures of construction. Before undertaking the Work, he will carefully study and compare the Contract Documents and check and verify all figures shown thereon and all field measurements. He will immediately file a written report to the City concerning any conflict, error, or discrepancy which he may discover. The Contractor will be responsible for seeing that the finished Work complies accurately with the Contract Documents. The Contractor shall give constant attention to the Work to facilitate the progress thereof, and he shall cooperate with the City and its authorized representatives, including, but not limited to, the Engineer, Resident Project Representative, inspectors, and with other Contractors in every way possible.

The Contractor shall have a competent superintendent on the Work at all times who is fully authorized as his/her agent on the Work. All communications given to the superintendent shall be as binding as if given to the Contractor. The Contractor, or his superintendent, shall be capable of reading and thoroughly understanding the Plans and Specifications and shall receive and fulfill instructions from the City or its authorized representative.

The Contractor will provide competent, suitably qualified personnel to lay out the Work and perform construction as required by the Contract Documents. He will at all times maintain good discipline and order among his employees at the site.

4.14. Safety and Protection

The Contractor will be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. He will take all necessary safety precautions and will provide the necessary protection to prevent damage, injury, or loss to:

- (a) all employees on the Work and other persons who may be affected thereby,
- (b) all Work and all Materials or Equipment to be incorporated into the Work, whether in storage on or off the site, and

(c) other property at the site or adjacent thereto, including but not limited to shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

The Contractor will erect and maintain all necessary safeguards as required by the conditions and progress of the Work, including posting danger signs and other warnings against hazards and promulgating safety regulations. He will notify City of adjacent utilities, in writing, when prosecution of the Work may affect them. When the use or storage of explosives or other hazardous materials is necessary for the prosecution of the Work, the Contractor will exercise the utmost care and will carry on such activities under the supervision of properly qualified personnel. All damage, injury, or loss to any person or property caused, directly or indirectly, in whole or in part, by the Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, will be remedied by the Contractor. The Contractor shall comply with the requirements of the Occupational Safety Standards and any other applicable standards that may be set forth by federal, state, municipal, or any other governmental or regulatory agency.

The Contractor will designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated in writing by the Contractor to the City.

In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the City, is obligated to act, at his discretion, to prevent threatened damage, injury, or loss. He will give the City prompt written notice of any significant changes in the Work or deviations involved. If the Contractor believes that additional emergency work by him, which arose from causes beyond his control, entitles him to an increase in the Contract Price or an extension of the Contract Time he may make a claim therefore as provided herein.

4.15. Access to the Work and Uncovering Finished Work

The City and his representatives will at all times have access to the Work. The Contractor will provide proper facilities for such access and observation of the Work and also for any inspection or testing thereof by others.

If any Work is covered contrary to the request of the City, it must be uncovered for observation and replaced at the Contractor's expense, if requested by the City.

If any Work has been covered which the City has not specifically requested to observe prior to its being covered, or if the City considers it necessary or advisable that covered Work be inspected or tested by others, the Contractor, at the City's request, will uncover, expose, or otherwise make available for observation, inspection or testing that portion of the Work in question. The Contractor will furnish all necessary labor, material, and equipment.

If it is found that such Work is defective or does not meet the requirements of the Contract Documents, the Contractor will bear all the expenses of such uncovering, exposure, observation, inspection, testing, and professional services. An appropriate Change Order shall be issued deducting all such costs from the Contract Price. If, however, such Work is found not to be defective and meets the requirements of the Contract Documents, the Contractor may request and will be granted an increase in the Contract Price or extension of the Contract Time as compensation, but only for the amount or time directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction.

4.16. Changes in the Work

Without invalidating the Agreement, the City may, at any time or from time to time, order additions, deletions, or revisions in the Work as may be necessary or desirable to complete the work originally intended in an acceptable manner. These alterations that are for work within the general scope of the Contract Documents shall be covered by Change Orders issued by the City. Upon receipt of a Change Order, the Contractor will proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents and as directed by the City. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made.

The City may authorize minor changes or alterations in the Work not involving extra cost and not inconsistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order. If the Contractor believes that any minor change or alteration authorized by the City entitles him to an increase in the Contract Price, he may make a claim.

No work relating to a Change Order shall commence until the work has been approved by the City. Change Order approvals shall be as follows:

- Less than \$24,999.99 shall be approved by the Department Director or his designee.
- \$25,000.00 to \$49,999.99 shall be approved by the City Manager or his designee.
- \$50,000.00 and greater shall require approval by the City Council

No contract shall be increased by more than 25% of the amount originally awarded by the City Council.

Additional work performed by the Contractor without authorization of a Change Order will not entitle him to an increase in the Contract Price or an extension of the Contract Time, except in the case of an emergency as provided herein.

The City will execute any appropriate Change Order covering changes in the Work the City determines to be reasonably necessary.

4.17. Changes of Contract Price

The Contract Price constitutes the total compensation payable to the Contractor for performing the Work. All duties, responsibilities, and obligations assigned to or undertaken by the Contractor shall be at his expense without change in the Contract Price.

The Contract Price may only be authorized by a Change Order. If the Contractor is entitled by the Contract Documents to make a claim for an increase in the Contract Price, his claim shall be made in writing and delivered to the City within 15 days of the occurrence of the event giving rise to the claim.

The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined by the City in one of the following ways:

- (a) Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of items involved.
- (b) By mutual acceptance of a lump sum.
- (c) By cost and a mutually acceptable fixed amount for overhead and profit, or
- (d) If required by the City, the Contractor shall submit an itemized cost breakdown together with supporting data.

The amount of credit to be allowed by the Contractor to the City for any such change which results in a net decrease in cost will be the amount of the actual net decrease as determined by the City. When both additions and credits are involved in any one change, the approved overhead and profit shall be figured on the basis of the net increase, if any.

4.18. Extra Work

Should acceptable completion of the Work require the Contractor to perform an item of work for which no basis of payment has been provided in the original Contract Documents or previously issued Change Orders or supplemental agreements, then same shall be called "Extra Work". Extra Work that is within the general scope of the Contract shall be covered by written Change Order. Change Orders for such Extra work shall contain agreed unit prices for performing the Change Order work in accordance with the requirements specified in the Change Order, and shall contain any adjustment to the Contract Time that, in the City's opinion, is necessary for completion of such Extra Work.

Extra Work that is necessary for acceptable completion of the Project, but is not within the general scope of the Work covered by the original Contract Documents shall be covered by a "Supplemental Agreement". Any claim for payment of Extra Work that is not covered by written agreement (Change Order or Supplemental Agreement) shall be rejected by the City.

4.19. Unauthorized Work

WORK DONE CONTRARY TO THE INSTRUCTIONS OF THE CITY, WORK DONE BEYOND THE LINES SHOWN OR AS GIVEN IN THE CONTRACT DOCUMENTS, OR ANY EXTRA WORK DONE WITHOUT AUTHORITY, WILL BE CONSIDERED AS UNAUTHORIZED AND WILL NOT BE PAID FOR UNDER THE PROVISIONS OF THE AGREEMENT. WORK SO DONE MAY BE ORDERED REMOVED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

4.20. Neglected Work

If the Contractor should neglect to prosecute the Work in accordance with the Contract Documents and progress schedule, the City, after three (3) days written notice to the Contractor, may make good such deficiencies, and the cost thereof including compensation for additional professional services shall be charged against the Contractor. A Change Order shall be issued incorporating the necessary revisions in the Contract Documents and including an appropriate reduction in the Contract Price. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor will pay the difference to the City.

4.21. Conformity with Contract Documents

All Work, Materials, and Equipment furnished shall be in reasonably close conformity with the lines, grades, grading sections, cross sections, dimensions, material requirements, and testing requirements that are specified (including specified tolerances) in the Contract Documents.

If the City finds the Materials or Equipment furnished, Work performed, or the finished product not within reasonably close conformity with the Contract Documents but that the portion of the Work affected will, in The City's opinion, result in a finished product having an acceptable level of safety, economy, durability, and workmanship, the City shall determine, in its sole discretion, whether the affected Work will be accepted and remain in place. The City will determine the basis of acceptance and will provide for an adjustment in the Contract Price for the affected portion of the Work. The City's determination and recommended Contract Price adjustments will be based on good engineering judgment and such tests or retests as are, in the City's opinion, needed. Changes in the Contract Price shall be covered by a Change Order or Supplemental Agreement as applicable.

If the City finds the Materials and Equipment furnished, Work performed, or the finished product are not in reasonably close conformity with the Contract Documents and have resulted in an unacceptable finished product, the affected Work, Materials or Equipment shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the City's written orders.

For the purpose of this subsection, the term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the Work in strict compliance with the requirements of the Contract Documents.

4.22. Change of Contract Time

The Contract Time may only be changed by a Change Order. If the Contractor is entitled by the Contract Documents to make a claim for an extension in the Contract Time, his claim shall be in writing delivered to the City within ten (10) days of the occurrence of the event giving rise to the claim. All claims for adjustment in the Contract Time shall be determined by the City. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.

The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of the Contractor. Such delays shall include, but not be restricted to, acts or neglect by any separate Contractor employed by the City, fires, floods, labor disputes, epidemics, abnormal weather conditions, or acts of God.

Time limits stated in the Contract Documents are the essence of the Agreement. The provisions of this Section shall not exclude recovery for damages (including compensation for additional professional services) for delay by either the Contractor or the City.

4.23. Warranty and Guarantee Regarding Defective Work

The Contractor warrants and guarantees to the City that all Materials or Equipment will be new unless otherwise specified and that all Work will be of good quality and free from faults or defects and in accordance with the requirements of the Contract Documents and of any inspections, test, or approvals referred to herein. All unsatisfactory or faulty Work and all Work not conforming to the requirements of the Contract Documents or of such inspections, tests, or approvals shall be considered defective. Prompt notice of all defects shall be given to the Contractor. All defective Work, whether or not in place, may be rejected.

If required by the City prior to approval of final payment, the Contractor will promptly, without cost to the City, either correct any defective Work, whether or not fabricated, installed, or completed, or remove it from the site and replace it with non-defective Work. If the Contractor does not correct such defective Work or remove and replace such rejected Work within a reasonable time, as required by written notice from the City, the City may have the deficiency corrected or the rejected Work removed and replaced. All direct or indirect costs of such correction or removal and replacement, including compensation for additional professional services shall be paid by the Contractor, and an appropriate Change Order shall be issued deducting all such costs from the

Contract Price of Work to be performed under the agreement. Should no further Work be required under the agreement Contractor shall pay all amounts owing. The Contractor will also bear the expenses of making good all work of others destroyed or damaged by his correction, removal, or replacement of his defective Work.

Prior to the expiration of one (1) year after the date of completion and final payment for Work or any portion of Work described within these Contract Documents (or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents), if any Work is found to be defective, the Contractor will, promptly without cost to the City and in accordance with the City's written instruction, either correct such defective Work, or, if it has been rejected by the City, remove it from the site and replace it with non-defective Work. If the Contractor does not promptly comply with the terms of such instructions, the City may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, will be paid by the Contractor. In such case, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract Price of any additional Work to be performed. If the acceptance occurs after approval of final payment, an appropriate amount shall be paid by the Contractor.

4.24. Waivers of Claims and Continuing Obligations

The Contractor's obligation to perform the Work and complete the Project in accordance with the Contract Documents shall be absolute. Neither approval of any payment by the City, nor the issuance of a certificate of Completion, nor any payment by the City to the Contractor under the Contract Documents, nor any use by the City, nor any act of acceptance by the City nor any failure to do so, nor any correction of faulty or defective Work by the City shall constitute an acceptance of Work not in accordance with the Contract Documents.

The Acceptance of Final Payment by the Contractor shall constitute a waiver of all claims by the Contractor against the City other than those previously made in writing and still unsettled.

4.25. City's Right to Stop or Suspend Work

The City may order the Contractor to stop the Work, or any portion thereof, if the Work is defective, the Contractor fails to supply sufficient skilled workmen or suitable Materials or Equipment or to provide adequate supervision, or if the Contractor fails to make prompt payment to Subcontractors or for labor, Materials or Equipment or for any other similar cause when necessary to protect the integrity of the Work. The City may suspend the Work until the cause for the order has been eliminated. No additional Contract Time and no increase in Contract Price will be awarded in this case.

The City may, at any time and without fault of the Contractor, suspend the Work or any portion thereof for a period of not more than ninety (90) days by notice in writing to the Contractor and the City shall fix the date on which Work shall be resumed. The Contractor will resume the Work on the date so fixed. The Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time directly attributable to any suspension if he makes a claim therefore as provided herein.

4.26. City's Right to Terminate

The City may, by written notice, terminate this contract in whole or in part at any time, either for the City's convenience or because of failure to fulfill the contract obligations. Upon receipt of such notice, services shall be immediately discontinued (unless the notice directs otherwise) and all materials as may have been accumulated in performing this contract shall be delivered to the City.

(a) If the termination is for the convenience of the City, an equitable adjustment in the contract price shall be made, but no amount shall be allowed for anticipated profit on unperformed services.

(b) If the termination is due to failure to fulfill the contractor's obligations, the City may take over the work and prosecute the same to completion by contract or otherwise. In such case, the Contractor shall be liable to the City for any additional cost occasioned to the City thereby.

(c) If, after notice of termination for failure to fulfill contract obligations, it is determined that the contractor has not so failed, the termination shall be deemed to have been effected for the convenience of the City. In such event, adjustment in the contract price shall be made as provided in subsection (a) of this clause.

(d) The rights and remedies of the sponsor provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

4.27. Contractor's Right to Stop Work or Terminate

If, through no act or fault of the Contractor, the Work is suspended for a period of more than ninety (90) days, or

the City fails to act as directed in the Contract Documents or fails to pay the Contractor any authorized amount, then the Contractor may, upon seven (7) days written notice to the City, terminate the Agreement and recover from the City payment for all Work executed, reasonable expenses and profit. In lieu of terminating the Agreement, if the City has acted in the aforesaid manner, the Contractor may upon seven (7) days notice to the City stop the Work until he has been paid all amounts then due.

4.28. Assignment and Subletting

The Contractor agrees to retain personal control and will give personal attention to the fulfillment of this Agreement and will not sublet or assign, by power of attorney or otherwise, said Agreement without the written consent of the City. No part or feature of the Work will be sublet to anyone objectionable to the City. The subletting of any portion or feature of the Work, or Materials required in the performance of this Agreement, shall not relieve the Contractor from full obligation to the City.

4.29. Abandonment by Contractor

In case the Contractor should abandon the Work and fail or refuse to resume the Work within ten (10) days after written notification from the City or if the Contractor fails to comply with the orders of the City, when such orders are consistent with the Contract Documents, then, where performance and payment bonds exist, the Surety on the Bonds shall be notified in writing and directed to complete the Work, and a copy of said notice shall be delivered to the Contractor.

After receiving said notice of abandonment, the Contractor shall not remove from the Work any machinery, Equipment, tools, Materials, or supplies then on the job, but the same, together with any Materials and Equipment under contract for the Work, may be held for use on the Work by the City or the Surety on the performance and payment bonds, or another Contractor in completion of the Work, and the Contractor shall not receive any rental or credit therefore (except when used in connection with Extra Work, where credit shall be allowed as provided in this Agreement), it being understood that the use of such Equipment and Materials will ultimately reduce the cost to complete the Work and be reflected in the final settlement. Where there is no performance and payment bond provided or in case the Surety should fail to commence compliance with the notice for completion provided for, within ten (10) days after service of such notice, the City may provide for completion of the Work in either of the following elective manners:

(a) The City may employ such labor and use such Equipment, tools, Materials, and supplies as the City deems necessary to complete the Work and charge the expense of such labor, machinery, Equipment, tools, Materials and supplies to the Contractor. The expense(s) so charged shall be deducted and paid by the City out of such moneys as may be due, or that may thereafter become due by virtue of this Agreement. In case such expense is less than the sum which would have been due had the Work been completed by the Contractor, then said Contractor shall receive the difference. In case such expense is greater than the sum which would have been payable under this Agreement, then the Contractor or his Surety shall pay the amount of such excess to the City;

or

(b) The City may let the Agreement for the completion of the Work under substantially the same terms and conditions provided for in this Agreement. In case of any increase in cost to the City under the new agreement, such increase shall be charged to the Contractor and the Surety. However, should the cost of the Work be less, the Contractor and his Surety shall be credited with the difference.

In the event the statement of accounts shows that the cost to complete the Work is less than the Contract Price; or when the Contractor or his Surety shall pay the balance shown to be due by them to the City, then all machinery, Equipment, tools, Materials or supplies left on the site of the Work shall be turned over to the Contractor or his Surety. Should the cost to complete the Work exceed the Contract Price, and the Contractor or his Surety fail to pay the amount due the City within the time designated hereinabove, and there remains any machinery, equipment, tools, materials, or supplies on the site of the Work, notice, together with an itemized list of such equipment and materials, shall be mailed to the Contractor and his Surety. Such property shall be held at the risk of the Contractor and his Surety. After fifteen (15) days from the date of said notice, the City may sell such machinery, equipment, tools, materials, or supplies and apply the net sum derived from such sale to the credit of the Contractor and his Surety. Such sale may be made at either public or private sale, with or without notice, as the City may elect. The City shall release any machinery, equipment, tools, materials, or supplies, which remain on the Work and belong to persons other than the Contractor or his Surety, to their proper Owners.

4.30. Abandonment by City

In case the City shall fail to comply with the terms of this Agreement, and should fail or refuse to comply with said terms after the expiration of ten (10) days of receipt of written notification, the Contractor may suspend or

wholly abandon the Work, and may remove there from all machinery, tools, and equipment, and all materials that have not been included in payments to the Contractor and have not been wrought into the Work. Thereupon, the City shall make an estimate of the total amount earned by the Contractor, which estimate shall include the value of all Work actually completed (at the prices stated in the attached Bid where unit prices are used), the value of all partially completed Work at a fair and equitable price, and the amount of all Extra Work performed at the prices agreed upon, or provided for by the terms of this Agreement, and a reasonable sum to cover the cost of any provisions made by the Contractor to carry the whole Work to completion and which cannot be utilized. The City shall then make final statement of the balance due by deducting from the above estimate all previous payments, and all other sums that may be retained by the City. City shall pay on or before thirty (30) days after the date of notification the balance shown by said final statement as due.

4.31. Worker's Compensation Insurance Requirements

4.31.1. Definitions

Certificate of Coverage ("Certificate") - A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (DWC-81, DWC-82, DWC-83, or DWC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the Project.

Duration of the Project - includes the time from the beginning of the work on the Project until the Contractor's/person's work on the Project has been completed and accepted by the City. Persons providing services on the Project ("Subcontractor" in Texas Labor Code, Section 406.096) - includes all persons or entities performing all or part of the services the Contractor has undertaken to perform on the Project, regardless of whether that person contracted directly with the Contractor and regardless of whether that person has employees. This includes, without limitation, independent Contractor, Subcontractors, leasing companies, motor carriers, Owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the Project. "Services" include, without limitation, providing, hauling, or delivering Equipment or Materials, or providing labor, transportation, or other service related to a Project. "Services" does not include activities unrelated to the Project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

4.31.2. Workers' Compensation Insurance Coverage

The Contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, meeting the statutory requirements of Texas Workers' Compensation Act, Title 5 Subchapter A of the Texas Labor Code for all employees of the Contractor providing services on the Project, for the duration of the Project.

- A.** The Contractor must provide a certificate of coverage to the City prior to issuance of Notice to Proceed.
- B.** If the coverage period shown on the Contractor's current certificate of coverage ends during the duration of the Project, the Contractor must, prior to the end of the coverage period, file a new certificate of coverage with the City showing that coverage has been extended.
- C.** The **Contractor** shall obtain from each person or entity providing services on a Project, and provide to the City:
 - (1)** a certificate of coverage, prior to that person beginning work on the Project, so the City will have on file certificates of coverage showing coverage for all persons providing services on the Project; and
 - (2)** no later than seven (7) days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the Project.
- D.** The **Contractor** shall retain all required certificates of coverage for the duration of the Project and for one year thereafter.
- E.** The Contractor shall notify the City in writing by certified mail or personal delivery, within ten (10) days after the **Contractor** knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the Project.
- F.** The Contractor shall post on each Project site a notice, in the text, form and manner prescribed by the Division of Workers' Compensation, informing all persons providing services on the Project that

they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

- G. By providing or causing to be provided a certificate of coverage, the Contractor is representing to the City that all **employees** of the Contractor who will provide services on the Project will be covered by workers' compensation coverage for the duration of the Project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of self-insured, with the Division of Self-Insurance Regulation. Providing false or misleading information may subject the Contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.
- H. The **Contractor's** failure to comply with any of these provisions is a breach of contract which entitles the City to declare the contract void if the Contractor does not remedy the breach within ten (10) days after receipt of notice of breach.

4.31.3. Failure to Maintain Adequate Insurance Coverage

In the event that City learns that Contractor has workers (whether employees, volunteers or contract labor) present at the site or working in any manner on this Project who are not covered at all times by the required coverages for workers' compensation, Contractor shall be assessed a penalty of \$500.00 per day, per worker, until Contractor provides a certificate of coverage which documents the required coverage for such workers. Contractor shall further immediately remove any such workers from the job site.

In the event that City learns that Contractor has failed to maintain any of the insurance coverages required herein such failure to maintain required coverage shall be taken into account in determining whether Contractor is a responsible Respondent for purposes of future Bids made on projects let by City. The foregoing remedies shall be in addition to and not in lieu of any other remedies available at law or in equity to City.

4.32. Contract Measurement and Payment

4.32.1. Quantities and Measurements

No extra or customary measurements of any kind will be allowed, but only the actual measured or computed length, area, solid contents, number, and weight shall be considered, unless otherwise specifically provided.

4.32.2. Estimated Quantities

The Contract Documents are intended to show clearly all Work to be done and Material and Equipment to be furnished hereunder. Where the evaluation quantities are shown for the various classes of the Work, they are to be used only as a basis for comparing the Bids offered for the Work. It is understood and agreed that the actual amount of the Work to be done and Material and Equipment to be furnished under the Project Agreement will not be reflected by these evaluation quantities. The basis for payment shall be for the actual amount of the Work done and the Material and Equipment furnished under the terms contained within the Project Agreement. Where payment is based on the unit price method, the Contractor agrees that he will make no claim for damages, or anticipated profits on account of any differences which may be found between the quantities of the Work actually done, the Material and Equipment actually furnished under the Project Agreement and the evaluation quantities provided.

4.32.3. Price of Work

In consideration of the furnishing of all the necessary labor, Equipment, and Material, and the completion of all Work by the Contractor, and on the completion of all Work and of the delivery of all Material and Equipment embraced in this Agreement in full conformity with the Specifications and stipulations contained within the Contract Documents, the City agrees to pay the Contractor the prices set forth in the Bid hereto attached, which has been made a part of this Agreement. The Contractor hereby agrees to receive such prices in full for furnishing all Material, Equipment and all labor required for the aforesaid Work, also for all expense incurred by him, and for well and truly performing the same and the whole thereof in the manner and according to this Agreement and the Contract Documents. The unit prices provided in the Bid shall be the actual unit price for each item when considering the cost of providing all labor, material, equipment, resources, and profit to be recovered by the Contractor for such Work and without consideration of association with any other item of Work.

4.32.4. Partial Payment Estimates

The Contractor shall subdivide the Work into component parts by location described in sufficient detail to serve as the basis for payment during the contract time.

4.32.5. Payment

Contractor shall submit Applications for Payment in accordance with the General Conditions as and City shall process the Applications for Payment in accordance with the General Conditions.

1) Progress Payments. City shall make progress payments of the Contract Price on the basis of Contractor's applications for payment on or about the thirtieth (30th) day after submittal of the application for payment each month in accordance with Chapter 2251, Texas Government Code, and as provided below. All progress payments shall be based upon the progress of the Work, measured as provided for in the General Conditions.

- a) Prior to Substantial Completion, progress payments shall be in an amount equal to 95% of the amount request in the Application for Payment, with 5% remaining as City's retainage for the project, to be released by City in accordance with the General Conditions.
- b) Upon substantial completion as described in the General Conditions, City shall pay an amount sufficient to increase total payments to Contractor to 95% of the Contract Price, less such amounts, if any, City determines should be deducted in accordance with the General Conditions.

2) Final Payment. Upon completion and acceptance of the Work by City in accordance with the General Conditions, City shall pay the remainder of the Contract Price.

The City shall pay the total amount of the Contractor's statement to the Contractor on or before the expiration of the 30th day following receipt of a valid payment application, less all further sums that may be retained, withheld or delayed by the City under the terms of this Agreement.

4.32.6. Warranty of Title

The Contractor warrants and guarantees that clear ownership title to all Work, Materials, and Equipment covered by a Partial Payment Estimate, whether incorporated in the Project or not, will have passed to the City prior to making the Partial Payment Estimate free and clear of all liens, claims, security interests, and encumbrances (hereinafter in these General Conditions referred to as "Liens"); and that no Work, Materials, or Equipment covered by a Partial Payment Estimate will have been acquired by the Contractor or by any other person performing the Work at the site or furnishing materials and equipment for the Project subject to an agreement under which an interest therein or encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

4.32.7. Approval of Payments

The Partial Pay Estimate shall be based on on-site observations of the Work completed; that the quality of the Work is in accordance with the Contract Documents; and that the Contractor is entitled to payment of the amount approved. However, by such payment, the City shall not thereby be deemed to have represented that he made exhaustive or continuous on-site inspections to check the quality or the quantity of the Work, or that he has reviewed the means, methods, techniques, sequences, and procedures of construction or that he has made any examination to ascertain how or for what purpose the Contractor has used the moneys paid or to be paid to him on account of the Contract Price.

The City may nullify any such payment previously requested to such extent as may be necessary to provide protection from loss because:

- (a) the Work is defective, neglected, or omitted,
- (b) claims have been filed or there is reasonable evidence indicating the probable filing thereof,
- (c) the Contract Price has been reduced because of Change Orders or Field Changes,
- (d) the City has been required to correct defective Work or complete neglected Work.
- (e) unsatisfactory prosecution of the Work, including failure to clean up as required herein.
- (f) material installation has not been tested as required by the terms of the Contract Documents.

4.32.8. Payments Withheld

The City may, because of subsequently discovered evidence, withhold or nullify payment to such extent as may be necessary for protection from loss on account of:

- (a) Defective Work not remedied.
- (b) Claims filed or reasonable evidence that the filing of a claim is likely.
- (c) Failure of the Contractor to make payments properly to sub-contractors for Material, Equipment or labor.
- (d) Damage to another Contractor.
- (e) Failure to carry out testing of material installation, if required.

When the above grounds are removed, or the Contractor provides a Surety bond satisfactory to the City, which will protect the City in the amount withheld, payment shall be made.

4.32.9. Delayed Payments

Should the City fail to make payment to the Contractor of the sum named in any statement when payment is due, or should the City fail to issue any statement on or before the date required, then the City shall pay to the Contractor, in addition to the sum shown as due by such statement, interest at the rate of six (6%) percent per annum until fully paid. Payment of interest on the amount owed shall fully liquidate any injury to the Contractor growing out of such delay in payment. The right is expressly reserved to the Contractor in the event payments are not promptly made to treat the Agreement as abandoned and recover compensation unless such payments are withheld as otherwise authorized in the Contract Documents.

4.33. Project Requirements

4.33.1. Line and Grade

Lines and grades for construction are as directed in the Contract Documents. Any questions, alterations, or adjustments must be directed through the City.

4.33.2. Working Day

Work on the site shall be done only during the Work Day, except for emergencies or as otherwise approved by the City. This Agreement is established with the intent that no Work shall be permitted on weekends or legal holidays except in cases of extreme emergency and then only with the written permission of the City.

Work performed outside of the standard Work Day hours of the City, 8:00 a.m. to 5:00 p.m., will require the permission of the City. The Contractor will be charged a fee of \$25.00 per hour for overtime inspection services when work is performed outside these hours on a "Work Day" with a minimum fee of \$50.00 per occurrence. The Contractor will be charged a fee of \$25.00 per hour with a minimum of \$100.00 per daily occurrence for inspection services when work is performed on a weekend or a holiday.

4.33.3. Character of Employees

The Contractor agrees to employ only orderly and competent employees, skillful in the performance of the type of Work required under this Agreement, to do the Work; and agrees that whenever the City shall inform the Contractor in writing that any employee or employees are, in its opinion, incompetent or disorderly, such employee or employees shall be discharged from the Work and shall not again be employed on the Work without the written consent of the City.

4.33.4. Physical and Subsurface Conditions

The Contractor will promptly notify the City in writing of any subsurface or latent physical conditions at the site differing materially from those indicated in the Contract Documents. The City will promptly investigate those conditions and determine if further surveys or subsurface tests are necessary. Promptly thereafter, the City will obtain the necessary additional surveys and tests and furnish copies to the Contractor. If the City finds that the results of such surveys or tests indicate subsurface or latent physical conditions differing significantly from those indicated in the Contract Documents, a Change Order shall be issued incorporating the necessary revisions.

4.33.5. Reference Points

The City will establish such general reference points as will enable the Contractor to proceed with the Work. The Contractor will be responsible for the layout of the Work and will protect and preserve the established reference points and will make no changes or relocations without the prior written approval of the City. He will report to the City whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations. The Contractor will replace and accurately relocate all reference points so lost, destroyed, or moved. All utilities shown on drawings are schematic only. The Contractor is solely responsible for verification of existence and location of all utilities within the Project site prior to

construction.

4.34. Materials

4.34.1. Materials and Equipment

The Contractor shall furnish and pay for all labor, Materials, Equipment, tools, transportation, construction equipment, fuel, power, light, heat, telephone, water, sanitary facilities, and all other incidentals required to complete the Work in accordance with the Contract Documents. All Materials and Equipment used in the construction of the Work shall conform fully to the Contract Documents and be approved by the City. Any Materials or Equipment placed before approval of the City shall be removed, if directed by the City, and replaced with approved Materials or Equipment, at the expense of the Contractor.

If required the Contractor will furnish satisfactory evidence as to the kind and quality of Materials and Equipment to be used. If authorized by The City, the Contractor may use a substitute that is equal to any Material or Equipment specified. No substitute shall be ordered or installed without the written approval of the City.

All Materials and Equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, or processors, except as otherwise specifically provided in the Contract Documents. The Contractor shall provide start-up services for all major equipment.

4.34.2. Right of the City to Modify Equipment and/or Methods

If at any time the methods or Equipment used by the Contractor are found to be inadequate to secure the quality of Work or the rate of progress required under this Agreement, or the working force of the Contractor is inadequate for securing the progress herein specified, the City may order the Contractor in writing to improve their character and efficiency, or to increase force or Equipment or both, and the Contractor shall comply with such order. Such authority of the City, however, is for the sole benefit of the City in order to secure completion in conformity with this Agreement. It shall remain the sole duty and responsibility of the Contractor to take adequate precautions in his operation for the safety of persons and property. No failure of the City to notify the Contractor of deficient or negligent methods or Equipment shall excuse or relieve the Contractor of sole liability for damage to the property or improvements of the City by reason of his neglect or omission.

4.34.3. City Furnished Materials

The Contractor shall furnish all Materials required to complete the Work, except those specified herein (if any) to be furnished by the City. City-furnished Materials shall be made available to the Contractor at the location specified in the Contract Documents. All costs of handling, transportation from the specified location to the site of Work, storage, and installing City furnished Materials shall be included in the unit price proposed for the contract item in which such City-furnished Material is used.

After any City furnished Material has been delivered to the location specified, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies that may occur during the Contractor's handling, storage, or use of such City-furnished Material. The City will deduct from any monies due or to become due the Contractor any cost incurred by the City in making good such loss due to the Contractor's handling, storage, or use of City-furnished Materials.

4.34.4. Material Storage

Materials shall be so stored as to assure the preservation of their quality and fitness for the Work. When considered necessary by the City, Materials shall be placed on wooden platforms or other hard, clean, and dry surfaces and not in contact with the ground, and shall be placed under cover. Stored materials, even though approved before storage, may again be inspected prior to their use in the Work. Stored materials shall be located to facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the City or its Resident Project Representative. Materials to be stored on the site of the Work shall not create an obstruction to the public, nor shall they interfere with the free and unobstructed movement of vehicular traffic associated with the site. The storage of the Materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the City or its representative. Private property shall not be used for storage purposes without written permission of the City. The Contractor shall make all arrangements and bear all expenses for the storage of Materials on private property.

All storage sites shall be restored to their original condition by the Contractor at his/her entire expense, except as otherwise agreed to by the City.

4.34.5. Sources of Supply and Quality of Materials

The source of supply of each of the Materials shall be approved by the City before delivery is started and may be sampled and tested to determine compliance with the specifications before delivery is started. If it is found that sources of supply previously approved do not produce uniform and satisfactory products, or if the product from any source proves unacceptable at any time, the Contractor shall furnish Materials from other approved sources. Only Materials conforming to the requirements of the Contract Documents and approved by the City shall be used in the Work. No material which after approval has in any way become unfit for use shall be incorporated in the Work.

Throughout the specifications where reference is made to ASTM, AASHTO, or bulletins of the Texas Department of Transportation for the quality of Materials or sampling and testing, the latest standard, tentative standard, or bulletin issued prior to the date of the Bid shall govern.

4.34.6. Samples and Tests

All Materials shall be inspected, tested, and approved by the City, and any Work in which Materials are used without prior test and approval may be ordered removed and replaced at the Contractor's expense. The Contractor shall furnish a complete written statement of the origin, composition, and manufacture of any or all Materials that are to be used in the Work.

4.34.7. Defective Materials

All Materials not conforming to the requirements of the Contract Documents will be rejected and shall be removed immediately from the site of the Work. Rejected Materials in which the defects have been subsequently corrected, shall have the status of new Material. Upon failure on the part of the Contractor to comply with the provisions of this item, the City will have authority to remove and replace defective Material and to deduct the cost of removal and replacement from any payment due or to become due to the Contractor.

4.35. Project Meetings

4.35.1. Pre-Construction Meeting

Prior to the commencement of Work, a pre-construction conference will be held with the City at a mutually agreed upon time and location. The conference shall be attended by:

Contractor and his superintendent
Principal Subcontractors
Representatives of principal suppliers and manufacturers as appropriate
Representatives of the City
Others as requested by the Contractor or the City

Unless previously submitted to the City, the Contractor shall bring to the conference each of the following:

Material Sources
Materials Test Results and Certification
List of Equipment to be utilized
Description of Procedures and Work Crews

The agenda will include:

Contractor's tentative schedules
Critical Work sequencing
Transmittal, review, and distribution of Contractor's submittals
Field decisions and Change Orders
Use of premises, office and storage areas, security, housekeeping, and City's needs
Major equipment deliveries and priorities
Maintaining record documents
Processing applications for payment
Contractor's assignments for safety and first aid

The sequence of operations to be followed shall be prepared by the Contractor for approval by the City. The sequence shall meet the job requirements for Completion Time and shall conform to the requirements set forth in the Contract Documents.

4.36. Construction Administration

4.36.1. Notices to City and Authorities

The Contractor shall notify Owners of adjacent property and utilities in writing and sufficiently in advance when prosecution of the Work may affect them. When it is necessary to temporarily deny access by Owners or tenants to their property, or when any utility service connection must be interrupted, the Contractor shall give notices in writing and sufficiently in advance to enable the affected persons to provide for their needs. Notices will conform to any applicable local ordinance, shall be provided in writing, and will include appropriate information concerning the interruption and instructions on how to limit their inconvenience.

4.36.2. Notification of Street Closing

Where the Contractor has cause to close a street or thoroughfare for purposes of construction, the City shall be provided reasonable advance notice, in writing, prior to such actions for approval and coordination with appropriate agencies.

4.36.3. Detours and Barricading

The Contractor shall be responsible for providing barricading for all work areas during the construction of this Project. Unless provided by the City in the Technical Specifications contained within the contract documents, the Contractor shall prepare and submit a barricading plan to the City for City's approval. City's approval shall be for routing and for length of time of barricading only. Plans shall be prepared by a Professional Engineer, Registered in the State of Texas, and show all necessary barricades, signs, etc., required to provide a safe work site. Plans shall be based on the recommendations in the Manual of Uniform Traffic Control Devices for control of traffic in a construction area. It shall be the total responsibility of Contractor to maintain the barricades, lights, signs, and all other items involved in the detouring of traffic.

Contractor shall provide appropriate barricades for use at night, and shall maintain all lighted barricades for the duration of the project. Contractor shall designate an employee who will be responsible for the maintenance of the barricades and lighting system on a twenty four (24) hour basis, and shall provide a phone number where the responsible party can be reached on a twenty four (24) hour basis.

4.36.4. Convenience to Traffic/Mobile Operations

When the Agreement requires the maintenance of vehicular traffic on an existing road, street, or highway during the Contractor's performance of the Work, the Contractor shall keep such road, street, or highway open to all traffic as provided herein and shall provide such maintenance as may be required to accommodate traffic. The Contractor shall furnish, erect, and maintain barricades, warning signs, flag persons, and other traffic control devices in reasonable conformity with the manual of Uniform Traffic Control Devices for Streets and Highways (published by the United States Government Printing Office) and in accordance with attachment TCP3-1, unless otherwise specified herein. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets, or highway.

The Contractor shall make his own estimate of all labor, Materials, Equipment, and incidentals necessary for providing the maintenance of vehicular traffic as specified in this subsection. The cost of maintaining vehicular traffic specified in this subsection shall not be measured or paid for directly, but shall be included in the various contract items.

One-half of the traveled portions of the road must be open to traffic at all times unless otherwise approved by the City. Work that will require less than one day to complete shall not be performed on major or collector streets between 7:00 a.m. to 9:00 a.m., 12:00pm to 1:00pm or 4:00 p.m. to 6:00 p.m., or other peak congestion periods as determined by the City.

4.36.5. Unfavorable Construction Conditions

During unfavorable weather, wet ground, or other unsuitable construction conditions, the Contractor shall confine his operations to Work which will not be affected adversely by such conditions. No portion of the Work shall be constructed under conditions which would affect adversely the quality or efficiency thereof unless special means or precautions are taken by the Contractor to perform the work in a proper and satisfactory manner.

4.36.6. Cleaning Up

The Contractor shall keep the premises free at all times from accumulations of waste materials, rubbish, and other debris resulting from the Work. The Contractor will restore to their original or better condition those portions of the site not designated for alteration by the Contract Documents.

The Contractor shall provide adequate trash receptacles about the work site, and shall promptly empty the containers when filled. Construction materials, such as concrete forms and scaffolding shall be neatly

stacked by the Contractor when not in use. The Contractor shall promptly remove splattered concrete, asphalt, oil, paint, corrosive liquids, and cleaning solutions from surfaces to prevent marring or other damage.

Volatile wastes shall be properly stored in approved containers and removed daily. Wastes shall not be buried or burned on the site or disposed of into storm drains, sanitary sewers, streams, or waterways. All wastes shall be removed from the site and disposed of in a manner complying with local, state, and federal laws. Adequate cleanup will be condition for recommendation of progress payment applications.

Upon completion of the Work and before acceptance and final payment will be made, the Contractor shall remove from and about the site all machinery, equipment, tools, surplus and discarded and waste materials, debris, rubbish, temporary structures, and stumps or portions of trees. He shall cut all brush and woods within the limits indicated and shall leave the site in a neat and presentable condition, ready for occupancy by the City.

4.36.7. Restoration of Work Site

In the event that a work site is closed, the Contractor shall immediately commence operations to restore the Work site to its proper conditions; such work to be completed within twenty-four (24) hours. In the event such restoration is not done, the City shall be authorized to take charge of the Work and restore the premises to its proper condition and shall be entitled to recover from the Contractor the actual expenses incurred by the City in restoring the premises, including, but not limited to, cost of labor, materials, overhead, rental of any equipment used by the City in restoring the site, and attorney's fees for such purposes.

4.36.8. Site Administration

The Contractor shall be responsible for all areas of the work site, and all Subcontractors in the performance of the Work. The Contractor will exert full control over the actions of all employees and other persons with respect to the use and reservation of property and existing facilities, except such controls as may be specifically reserved to the City or others. The Contractor has the right to exclude from the site all persons who have no purpose related to the Work or its inspection, and may require all persons on the site (except the City's employees) to observe the same regulations as he requires of his employees.

4.36.9. Load Restrictions

The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the Work. A special permit will not relieve the Contractor of liability for damage that may result from the moving of material or equipment. The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base or structure before the expiration of the curing period. The Contractor shall be responsible for all damage done by his/her hauling equipment and shall correct such damage at his/her own expense.

4.37. Applicable Codes

References in the Contract Documents to local codes mean codes used, required, or adopted by the City of San Angelo, Texas, the State of Texas or the federal government.



5. SPECIFICATIONS

5.1. Specifications

The following specifications and drawings are applicable to this project:

- Texas Department of Transportation Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges adopted by the Texas Department of Transportation on June 1, 2004. Where duplicate specifications and or details exist, City of San Angelo Specifications and Details as adopted on January 29, 2008 shall govern.

All Pavement Markings Type 1 Reflective Thermoplastic

ITEM NO	DESCRIPTION	QUANTITY	UNITS
666 2002	REFL PAV MRK TY I (W) 4" (BRK) (090MIL)	1310	LF
666 2035	REFL PAV MRK TY I (W) 8" (SLD)(090MIL)	5520	LF
666 2104	REFL PAV MRK TY I (Y) 4" (BRK) (90MIL)	1640	LF
666 2110	REFL PAV MRK TY I (Y) 4" (SLD) (90MIL)	59500	LF
666 2219	PAVEMENT SEALER (ARROW)	14	EA
666 2220	PAVEMENT SEALER (WORD)	14	EA
666 2228	PAVEMENT SEALER RR XING	14	EA
668 2104	PREFAB PAV MRK TY C (W) (18") (SLD)	872	LF
668 2105	PREFAB PAV MRK TY C (W) (24") (SLD)	1815	LF
668 2106	PREFAB PAV MRK TY C (W) (ARROW)	13	EA
668 2107	PREFAB PAV MRK TY C (W) (DBL ARROW)	1	EA
668 2112	PREFAB PAV MRK TY C (W) (RR XING)	14	EA
668 2116	PREFAB PAV MRK TY C (W) (WORD)	14	EA
672 2012	REFL PAV MRKR TY I-C	100	EA
672 2015	REFL PAV MRKR TY II-A-A	1600	EA

5.2. Locations

Arrow & Only Locations			
Street	Cross Street	ARROW EA	ONLY EA
Southland Blvd.	Southwest Blvd.	4	4
Southland Blvd.	Sherwood Way	3	3
Southland Blvd.	Knickerbocker Rd.	3	3
Martin Luther King Dr.	14th St.	2	2
E. 18th St.	Main St.	2	2
	TOTAL	14	14



Crosswalk Locations		
Street	Cross Street	LF
Southland Blvd.	Southwest Blvd.	216
4613 Southland Blvd.	N/A	48
800 Spaulding St.	N/A	60
Spaulding St.	N. Pope St.	96
Bradford St.	E. 22nd St.	114
Bradford St.	E. 23rd St.	78
	TOTAL	612

Railroad Crossing Locations		
Street	Cross Street	Number
Spaulding	Baze	4
Browning	Harris	3
Koberlin	Baze	4
Preusser	Baze	3
	TOTAL	14

Speed Bar Locations		
Street	Cross Street	LF
4513 Southland Blvd.	N/A	48
4702 Southland Blvd.	N/A	48
Martin Luther King Dr.	W. 8th St.	48
Martin Luther King Dr.	332 W. 9th St.	48
332 W. 9th St.	N/A	36
220 N. Pope St.	N/A	40
Spaulding St.	N. Browning St.	64
719 Spaulding St.	N/A	64
224 N. Browning St.	N/A	40
2218 N. Poe St.	N/A	36
2202 N. Poe St.	N/A	36
1255 E. 22nd St.	N/A	40
1135 E. 22nd St.	N/A	40
Bradford St.	E. 22nd St.	40
Bradford St.	E. 24th St.	40
1148 E. 23rd St.	N/A	36
1150 E. 24th St.	N/A	36
1256 E. 24th St.	E. 24th St.	36
5705 Melrose Ave.	N/A	48
5687 Melrose Ave.	N/A	48
	TOTAL	872



CITY OF SAN ANGELO
PURCHASING DEPARTMENT
72 West College Avenue, San Angelo, Texas 76903
Tel: (325) 657-4219

6. BID FORMS

Submit: One (1) unbound original (binder clips acceptable), one (1) bound copy (3 inch 3 ring binder) and one (1) copy in PDF format on CD or USB Flash Drive of all required Bid forms.

Please present forms in the following order:

1. Bid Tab (REQUIRED)
2. Bid Bond (REQUIRED)
3. Addendum Acknowledgement (if applicable)
4. Disclosure of Certain Relationships (REQUIRED)
5. Debarment and Suspension Certification (REQUIRED)
6. Contractor References (REQUIRED)
7. Local Experience
8. Local Area Experience
9. List Of Subcontractors And Suppliers (REQUIRED)
10. Vendor Compliance With Reciprocity On Non-Resident Respondents (REQUIRED)
11. Contractor Bonding and Insurance References (REQUIRED)
12. Company Contact Information (REQUIRED)
13. IRS W-9 Form (REQUIRED)



Bid Sheet
RFB No.: TR-01-15/Thermoplastic Striping

Pursuant to the foregoing Notice to Respondents, the undersigned Respondent hereby proposes to do all work and furnish all necessary superintendence, labor, machinery, equipment, tools, and materials, and whatever else may be necessary to complete all work upon which he has proposed, as provided by the attached specifications and shown on the plans, and binds himself on acceptance of this Bid to execute an Agreement and Bonds according to the accompanying forms, for performing and completing the said work within the time stated, and furnishing all required guarantees, for the following prices to-wit:

ITEM NO	DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	EXTENDED PRICE
666 2002	REFL PAV MRK TY I (W) 4" (BRK) (090MIL)	LF	1310		
666 2035	REFL PAV MRK TY I (W) 8" (SLD)(090MIL)	LF	5520		
666 2104	REFL PAV MRK TY I (Y) 4" (BRK) (90MIL)	LF	1640		
666 2110	REFL PAV MRK TY I (Y) 4" (SLD) (90MIL)	LF	59500		
666 2219	PAVEMENT SEALER (ARROW)	EA	14		
666 2220	PAVEMENT SEALER (WORD)	EA	14		
666 2228	PAVEMENT SEALER RR XING	EA	14		
668 2104	PREFAB PAV MRK TY C (W) (18") (SLD)	LF	872		
668 2105	PREFAB PAV MRK TY C (W) (24") (SLD)	LF	1815		
668 2106	PREFAB PAV MRK TY C (W) (ARROW)	EA	13		
668 2107	PREFAB PAV MRK TY C (W) (DBL ARROW)	EA	1		
668 2112	PREFAB PAV MRK TY C (W) (RR XING)	EA	14		
668 2116	PREFAB PAV MRK TY C (W) (WORD)	EA	14		
672 2012	REFL PAV MRKR TY I-C	EA	100		
672 2015	REFL PAV MRKR TY II-A-A	EA	1600		
CONTINGENCY					\$17,500
TOTAL:					



CITY OF SAN ANGELO
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In case of discrepancy in the proposed price, the unit amounts shall govern.

It is understood the quantities of work to be done at unit prices are approximate and are intended for Bid purposes only. Unit quantities may be adjusted to determine final contract amount.

Note: in the event funding for this project is not available, no contract will be awarded

Upon receipt of the written "Notice of Award", the Respondent will execute the agreement within fifteen (15) days and deliver the required insurance certificates, and payment and/or performance bonds

Respondent hereby agrees to commence work under this contract after _____ **2015 and to complete the project by _____, 2015.** Respondent further agrees to pay as liquidated damages the sum of **\$426.59** for each consecutive calendar day to complete the work beyond the allotted time or as extended by an approved Change Order.

Respondent understands the City/Agent reserves the right to reject any irregular Bid and the right to waive technicalities if such waiver is in the best interest of the City/Agent and conforms to State and local laws and ordinances pertaining to the letting of construction contracts.

(Seal if Respondent is a Corporation)

Company

Signature

Printed Name & Title

Address

City, State Zip Code

Date

Note: Agents must provide evidence of authority to bind corporation.

Addendum Acknowledgment

Receipt is hereby acknowledged of the following addenda to the Contract documents.

Addendum No. 1 Dated _____ Received _____

Addendum No. 2 Dated _____ Received _____

Addendum No. 3 Dated _____ Received _____

(Seal if Respondent is a Corporation)

Company

Signature

Printed Name & Title

Address

City, State Zip Code

Date

Note: Agents must provide evidence of authority to bind corporation.



CITY OF SAN ANGELO
PURCHASING DEPARTMENT
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Disclosure of Certain Relationships

NOTICE TO VENDORS

Effective January 1, 2006, Chapter 176 of the Texas Local Government Code requires that any vendor or person considering doing business with a local governmental entity make certain disclosures concerning any affiliation or business relationship that might cause a conflict of interest with the local governmental entity. The provisions of Chapter 176 and the Form CIQ questionnaire that you must complete to comply with this law, are available at the Texas Ethics Commission website at [http://www.ethics.state.tx.us/whasnew/confliict forms.htm](http://www.ethics.state.tx.us/whasnew/confliict%20forms.htm).

A current list of City of San Angelo and City of San Angelo Development Corporations officers is available in the office of the City of San Angelo City Clerk's office located in Room 201 of City Hall or on the City's website at <http://sanangelotexas.org>. If you are considering doing business with the City of San Angelo or the City of San Angelo Development Corporation and have an affiliation or business relationship that requires you to submit a completed Form CIQ, it must be filed with the records administrator (City Clerk) of the City of San Angelo not later than the seventh (7th) business day after the date you become aware of facts that require the form to be filed. See Section 176.006, Texas Local Government Code. It is a Class C misdemeanor to violate this provision.

By Submitting a response to a City of San Angelo or City of San Angelo Development Corporation Request for Bids, Request for Bids, or Request for Qualifications or by conducting business with either of those two entities, you are representing that you are in compliance with the requirements of Chapter 176 of the Texas Local Government Code.

Julia Antilley
Purchasing Manager

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor or other person doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 1491, 80th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code by a person who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the person meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. See Section 176.006, Local Government Code.

A person commits an offense if the person knowingly violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.

OFFICE USE ONLY

Date Received

1 Name of person who has a business relationship with local governmental entity.

2 ☐ Check this box if you are filing an update to a previously filed questionnaire.

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)

3 Name of local government officer with whom filer has employment or business relationship.

Name of Officer

This section (item 3 including subparts A, B, C & D) must be completed for each officer with whom the filer has an employment or other business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the filer of the questionnaire?

☐ Yes

☐ No

B. Is the filer of the questionnaire receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?

☐ Yes

☐ No

C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership of 10 percent or more?

☐ Yes

☐ No

D. Describe each employment or business relationship with the local government officer named in this section.

4

Signature of person doing business with the governmental entity

Date

THIS FORM MUST BE RETURNED WITH THE BID

Adopted 06/29/2007

Local Government Officers Of The City Of San Angelo

As defined by Chapter 176 of the Texas Local Government Code

(Revised 05/19/15)

For purposes of completion of the required Conflict of Interest Questionnaire for the City of San Angelo (required by all Vendors who submit bids/proposals), Local Government Officers are:

City of San Angelo City Council:

Mayor: Dwain Morrison, Mayor

Councilmembers: Rodney Fleming, SMD 1
Marty Self, SMD 2
Johnny Silvas, SMD 3 and Mayor Pro-Tempore
Lucy Gonzales, SMD 4
Elizabeth Grindstaff, SMD5
Charlotte Farmer, SMD 6

City Manager: Daniel Valenzuela

City of San Angelo Development Corporation officers are:

Scott Tankersley, President
John Edward Bariou, Jr. - First Vice President
Tony Villarreal - Second Vice President
Daniel Anderson - Director
Richard Crisp - Director
Tommy Hiebert - Director
Juan Flores – Director

Executive Director: Roland Peña

Debarment and Suspension Certification

MUST BE RETURNED WITH THE BID

- (1) The prospective primary participant certifies to the best of its knowledge and belief that it and its principals:
- (a) Are not presently debarred, suspended, proposed for disbarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) Have not within a three-year period preceding this application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within a three-year period preceding this application had one or more public transactions (Federal, State, or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective primary participant shall attach an explanation to this Bid.

Company

Signature

Printed Name & Title

Address

City, State Zip Code

Date

INSTRUCTIONS FOR CERTIFICATION

1. By signing and submitting this Bid, the prospective participant is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the determination whether to enter into this transaction. However, failure of the prospective participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the City of San Angelo determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available, the City of San Angelo may terminate this transaction for cause.
4. The prospective participant shall provide immediate written notice to the City of San Angelo to which this Bid is submitted if at any time the prospective participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "Bid," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549(13 CFR Part 145). You may contact the City of San Angelo for assistance in obtaining a copy of these regulations.
6. The prospective participant agrees by submitting this Bid that, should the proposed transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the City of San Angelo.
7. The prospective participant further agrees by submitting this Bid that it will include the clause titled "Certification Regarding Debarment and Suspension" provided by the City of San Angelo, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the ineligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the City of San Angelo, the City of San Angelo may terminate this transaction for cause.

Intentionally Left Blank



CITY OF SAN ANGELO
PURCHASING DEPARTMENT
72 West College Avenue, San Angelo, Texas 76903
Tel: (325) 657-4219

Contractor References

MUST BE RETURNED WITH THE BID-DO NOT SUBSTITUTE FORMS

References: Name five (5) or more projects of similar work, giving owner's name, owner's representative's name, project architect's name, and telephone numbers for each. References must be provided for owners of similar size and scope as the proposed City project.

REFERENCE ONE

Government/Company Name: _____
Location: _____
Contact Person and Title: _____
Telephone Number: _____
Scope of Work: _____
Contract Amounts: _____
Contract Period: _____

REFERENCE TWO

Government/Company Name: _____
Location: _____
Contact Person and Title: _____
Telephone Number: _____
Scope of Work: _____
Contract Amounts: _____
Contract Period: _____

REFERENCE THREE

Government/Company Name: _____
Location: _____
Contact Person and Title: _____
Telephone Number: _____
Scope of Work: _____
Contract Amounts: _____
Contract Period: _____

(OVER)

REFERENCE FOUR

Government/Company Name: _____

Location: _____

Contact Person and Title: _____

Telephone Number: _____

Scope of Work: _____

Contract Amounts: _____

Contract Period: _____

REFERENCE FIVE

Government/Company Name: _____

Location: _____

Contact Person and Title: _____

Telephone Number: _____

Scope of Work: _____

Contract Amounts: _____

Contract Period: _____



Local Experience

List **five (5)** similar projects that your company has completed **for City of San Angelo (or in the immediate area)**,

REFERENCE ONE

GOVERNMENT/COMPANY NAME: _____
LOCATION: _____
CONTACT PERSON AND TITLE: _____
TELEPHONE NUMBER: _____
SCOPE OF WORK: _____
CONTRACT PERIOD: _____

REFERENCE TWO

GOVERNMENT/COMPANY NAME: _____
LOCATION: _____
CONTACT PERSON AND TITLE: _____
TELEPHONE NUMBER: _____
SCOPE OF WORK: _____
CONTRACT PERIOD: _____

REFERENCE THREE

GOVERNMENT/COMPANY NAME: _____
LOCATION: _____
CONTACT PERSON AND TITLE: _____
TELEPHONE NUMBER: _____
SCOPE OF WORK: _____
CONTRACT PERIOD: _____
CONTRACT PERIOD: _____

REFERENCE FOUR

GOVERNMENT/COMPANY NAME: _____
LOCATION: _____
CONTACT PERSON AND TITLE: _____
TELEPHONE NUMBER: _____
SCOPE OF WORK: _____
CONTRACT PERIOD: _____

REFERENCE FIVE

GOVERNMENT/COMPANY NAME: _____

LOCATION: _____

CONTACT PERSON AND TITLE: _____

TELEPHONE NUMBER: _____

SCOPE OF WORK: _____

CONTRACT PERIOD: _____



Local Area Experience

List **five (5)** similar projects that your company has completed within 150 miles of San Angelo. Do not list projects for **City of San Angelo (or in the immediate area)**,

REFERENCE ONE

GOVERNMENT/COMPANY NAME: _____
LOCATION: _____
CONTACT PERSON AND TITLE: _____
TELEPHONE NUMBER: _____
SCOPE OF WORK: _____
CONTRACT PERIOD: _____

REFERENCE TWO

GOVERNMENT/COMPANY NAME: _____
LOCATION: _____
CONTACT PERSON AND TITLE: _____
TELEPHONE NUMBER: _____
SCOPE OF WORK: _____
CONTRACT PERIOD: _____

REFERENCE THREE

GOVERNMENT/COMPANY NAME: _____
LOCATION: _____
CONTACT PERSON AND TITLE: _____
TELEPHONE NUMBER: _____
SCOPE OF WORK: _____
CONTRACT PERIOD: _____
CONTRACT PERIOD: _____

REFERENCE FOUR

GOVERNMENT/COMPANY NAME: _____
LOCATION: _____
CONTACT PERSON AND TITLE: _____
TELEPHONE NUMBER: _____
SCOPE OF WORK: _____
CONTRACT PERIOD: _____

REFERENCE FIVE

GOVERNMENT/COMPANY NAME: _____

LOCATION: _____

CONTACT PERSON AND TITLE: _____

TELEPHONE NUMBER: _____

SCOPE OF WORK: _____

CONTRACT PERIOD: _____



List of Subcontractors and Suppliers

List any subcontractors and suppliers you intend to use on this project and the categories of work they will perform. **Respondents are strongly encouraged to explore utilizing area subcontractors and suppliers.** Make as many copies of this form as necessary to cover all categories of work.

Category of Work: General Contractor % of Proposed Contract Amount: _____

Business Name: _____

Contact Name: _____

Telephone: _____

Address, City, State, Zip: _____

Category of Work: _____ % of Proposed Contract Amount: _____

Business Name: _____

Contact Name: _____

Telephone: _____

Address, City, State, Zip: _____

Category of Work: _____ % of Proposed Contract Amount: _____

Business Name: _____

Contact Name: _____

Telephone: _____

Address, City, State, Zip: _____

Category of Work: _____ % of Proposed Contract Amount: _____

Business Name: _____

Contact Name: _____

Telephone: _____

Address, City, State, Zip: _____

Category of Work: _____ % of Proposed Contract Amount: _____

Business Name: _____

Contact Name: _____

Telephone: _____

Address, City, State, Zip: _____

Category of Work: _____ % of Proposed Contract Amount: _____

Business Name: _____

Contact Name: _____

Telephone: _____

Address, City, State, Zip: _____

Category of Work: _____ % of Proposed Contract Amount: _____

Business Name: _____

Contact Name: _____

Telephone: _____

Address, City, State, Zip: _____

Category of Work: _____ % of Proposed Contract Amount: _____

Business Name: _____

Contact Name: _____

Telephone: _____

Address, City, State, Zip: _____

Category of Work: _____ % of Proposed Contract Amount: _____

Business Name: _____

Contact Name: _____

Telephone: _____

Address, City, State, Zip: _____

Category of Work: _____ % of Proposed Contract Amount: _____

Business Name: _____

Contact Name: _____

Telephone: _____

Address, City, State, Zip: _____

Percentages should total to 100%

THIS FORM MUST BE RETURNED WITH THE BID



CITY OF SAN ANGELO
PURCHASING DEPARTMENT
72 West College Avenue, San Angelo, Texas 76903
Tel: (325) 657-4219

Vendor Compliance With Reciprocity On Non-Resident Respondents
MUST BE RETURNED WITH THE BID

Government Code 2252.002 provides that, in order to be awarded a contract as low Respondent, a non-resident Respondent must bid or offer Bids on projects for construction, improvements, supplies or services in Texas at an amount lower than the lowest Texas resident Respondent by the same amount that a Texas resident Respondent would be required to underbid a non-resident Respondent in order to obtain a comparable contract in the state in which the non-resident's principal place of business is located. A non-resident Respondent is a contractor whose corporate offices or principal place of business is outside of the state of Texas. This requirement does not apply to a contract involving Federal funds. The appropriate blanks in Section A must be filled out by all out-of-state or non-resident Respondents in order for your Bid to meet specifications. The failure of out-of-state or non-resident contractors to do so will automatically disqualify that Respondent. Resident Respondents must check the blank in Section B.

- A. Non-resident vendors in _____ (give state), our principal place of business, are required to be _____ percent lower than resident Respondents by state law. A copy of the statute is attached.

Non-resident vendors in _____ (give state), our principal place of business, are not required to underbid resident Respondents.

- B. Our principal place of business or corporate offices are in the State of Texas: _____ .

RESPONDENT:

Company

Signature

Printed Name & Title

Address

City, State Zip Code

Date

Contractor Bonding and Insurance References

MUST BE RETURNED WITH THE BID

Bonding Company: _____

Mailing Address: _____

City, State Zip Code: _____

Telephone No: _____

Email Address: _____

=====

Insurance Company: _____

Mailing Address: _____

City, State Zip Code: _____

Telephone No: _____

Email Address: _____



CITY OF SAN ANGELO
PURCHASING DEPARTMENT
72 West College Avenue, San Angelo, Texas 76903
Tel: (325) 657-4219

Company Contact Information

Contact Name, Title _____
Company: _____
Address: _____
City: _____ State/Zip: _____
Phone: _____ Fax: _____
E-Mail: _____

Attached IRS form W-9

DIAGRAMS TO FOLLOW:

- Crosswalk Style: continental style, dimensions of 6 feet long with 4' spacing
- Railroad Crossing Pavement Markings, RCPM-09
- Barricade & Construction, BC-14
- Pavement Markings, PM-12
- Traffic Control Plan, TCP 3-1
- Street Maps

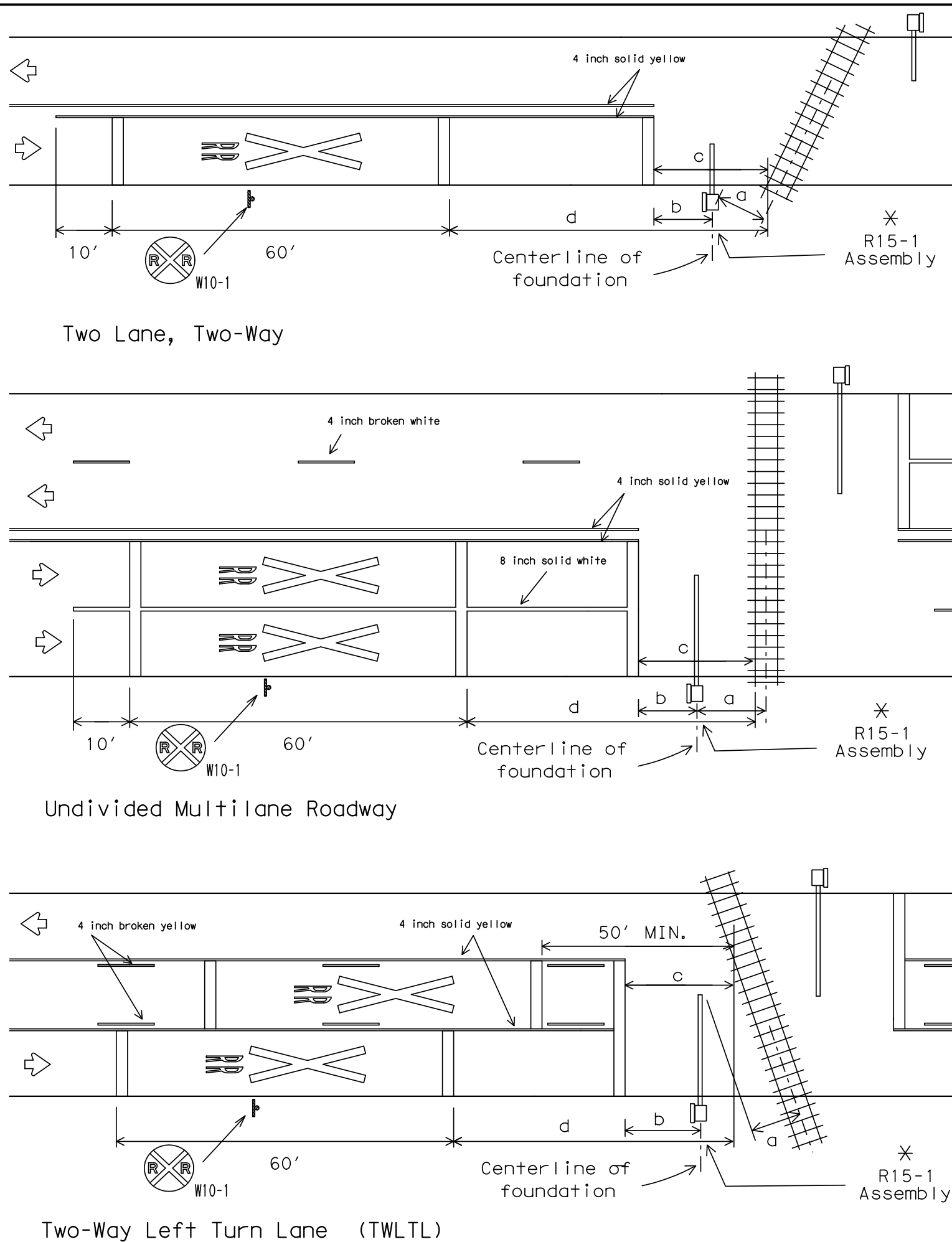
Crosswalk Style Diagram



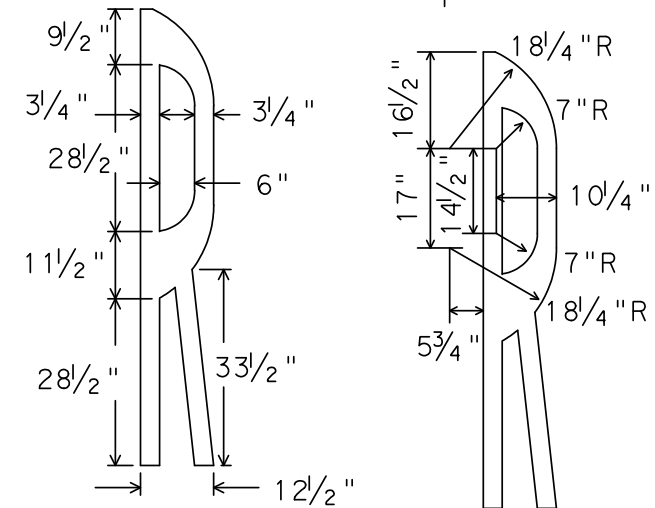
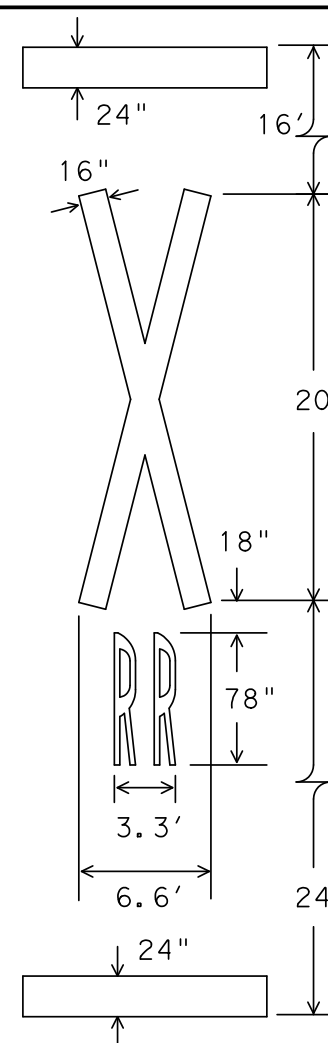
Crosswalk layout will be the Continental style, dimensions of 6 feet long with approximately 4' spacing.

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- a = 12 feet minimum, 15 feet usual, if active warning devices are present. Distance "a" should be measured from the centerline of * R15-1 assembly to the centerline of nearest track.
- b = Stop lines should be approximately 8 feet in advance of the active warning devices. Stop line should be approximately 15 feet from near rail if only passive devices (R15-1, plus R15-2 when applicable) are present.
- c = 15 feet desirable minimum. R15-1 should be placed between stop line and rails with adequate distance provided for "a".
- ** d =
- | Approach Speed (mph) | Desirable Placement (feet) |
|----------------------|----------------------------|
| 20 | 190 |
| 25 | 290 |
| 30 | 415 |
| 35 | 515 |
| 40 | 615 |
| 45 | 715 |
| 50 | 815 |
| 55 | 915 |
| 60 | 1065 |
| 65 | 1165 |
| 70 | 1215 |
- ** Local conditions may require alternate placement locations.



To be placed as shown in typical details when pavement markings are installed.



Where Pavement markings are not installed: Placement of the Highway-Rail Grade Crossing Advance Warning sign shall be in accordance with Chapter 2A and Table 2C-4 Condition (B) of the TMUTCD. (see note#2)

- ### ESTIMATED QUANTITIES
- (for Contractor Information ONLY)
- #### 24 INCH WHITE TRANSVERSE MARKINGS AND STOP LINES
- | No. of Approach Lanes (Include TWLTL) | LANE WIDTH (FT) | | | |
|---------------------------------------|-----------------|-----|-----|-----|
| | 11 | 12 | 13 | 14 |
| 1 | 33 | 36 | 39 | 42 |
| 2 | 66 | 72 | 78 | 84 |
| 3 | 99 | 108 | 117 | 126 |
| 4 | 132 | 144 | 156 | 168 |
- 4 INCH SOLID YELLOW NO PASSING LINE = "d" - "c" + 70
For: Two Lane, Two-Way, Single Lane Approach per Direction
- 8 INCH SOLID WHITE LANE LINE = "d" - "a" + 70
For: Two-Way or One-Way Traffic, 2 or More Approach Lanes in Same Direction (Do NOT Include TWLTL)
- #### GENERAL NOTES
- The pavement markings on an approach to a railroad grade crossing shall consist of:
 - The RR Xing symbol,
 - Three transverse 24" lines, and
 - Lane lines: a solid no passing line for two-way traffic approaches, or solid lane lines for multilane approaches.
 - Identical markings shall be placed in each approach lane on all paved approaches to highway-rail grade crossings where signals or automatic gates are located, and at all other highway-rail grade crossings where the posted or statutory highway speed is 40 mph or greater. Pavement markings shall not be required at highway-rail grade crossings where the posted or statutory highway speed is less than 40 mph, or in urban areas, if an engineering study indicates that other installed devices provide suitable warning and control.
 - For bidding purposes, the RR Xing symbol will be measured and paid for as for each lane in place. The transverse markings and lane lines will be measured and paid for by the lineal foot.
 - Centerlines shall be yellow, other markings shall be white.
 - Approach lanes less than 8 foot width shall NOT have markings.
 - Markings should NOT be placed where less than 110 feet of approach roadway is available for placement.
 - RR Xing symbols should be placed approximately in the center of the approach lane.
 - All transverse markings, including stop lines, shall be placed at right angles to the centerline and across all approach lanes.
 - Existing non-standard markings shall be removed to the fullest extent possible so as not to leave a discernable marking, by any method approved by the engineer. OVERPAINTING WILL NOT BE ALLOWED.
 - Additional markings and placement details may be found in the TMUTCD, Appendix H.
 - The Engineer may require additional longitudinal markings if the distance between the stop lines is greater than 80 feet. Markings are not required across or between the rails unless specified elsewhere in the plans.

R15-1
Assembly

- May consist of one or more of the following:
- R15-1 Crossbuck Sign
 - R15-2 Multiple Track Sign
 - R15-4 Report Sign
 - Mast Flashers
 - Canilevers
 - Gates



RAILROAD CROSSING PAVEMENT MARKING TYPICAL DETAILS

RCPM-09

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4-92	REVISED	CHG	SECT	HIGHWAY
8-95				
2-96				
8-09				

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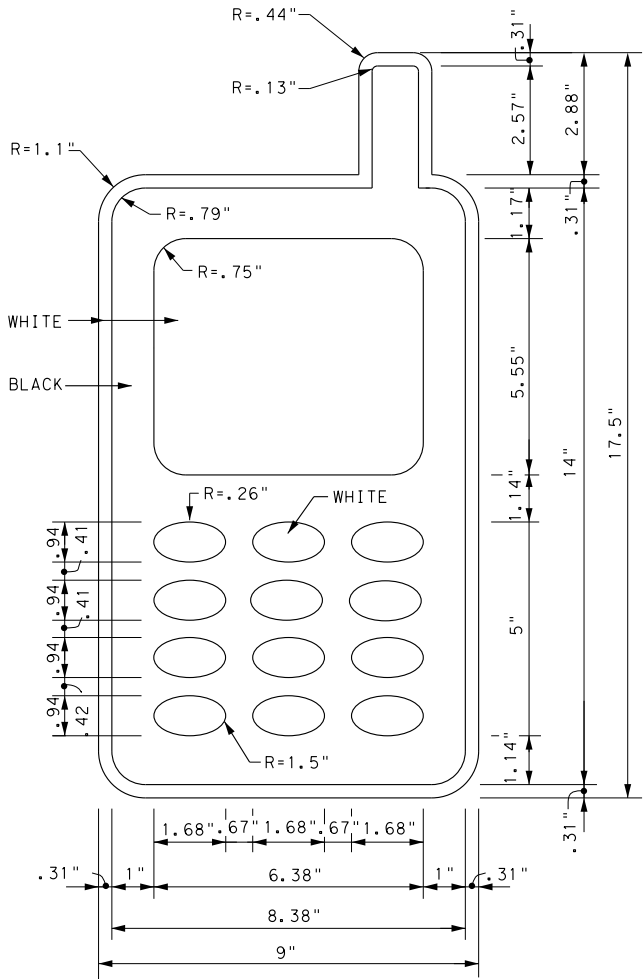
BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

- The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
- The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
- The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
- Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
- When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
- The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
- All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
- The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
- As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER (see Sign Detail G20-10T) and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. However, the TRAFFIC FINES DOUBLE sign will not be required on projects consisting solely of mobile operation work, such as striping or milling edgeline rumble strips. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.
- Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.
- The Engineer has the final decision on the location of all traffic control devices.
- Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY APPAREL NOTES:

- Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.

DATE:
FILE:



COLORS:
YELLOW
BACKGROUND
BLACK
BORDER AND
LEGEND

ORANGE
BACKGROUND
BLACK
LEGEND,
BORDER
AND SYMBOL



3.0" Radius, 1.25" Border, 0.75" Indent, Black on Yellow;
[STAY ALERT] Font: D
3.0" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
[TALK OR TEXT LATER] Font: C specified length;

SIGN DETAIL (G20-10T)

Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found on-line at the web address given below or by contacting:

Texas Department of Transportation
Traffic Operations Division - TE
Phone (512) 416-3118

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT
<http://www.txdot.gov>

COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

SHEET 1 OF 12



Traffic
Operations
Division
Standard

BARRICADE AND CONSTRUCTION
GENERAL NOTES
AND REQUIREMENTS

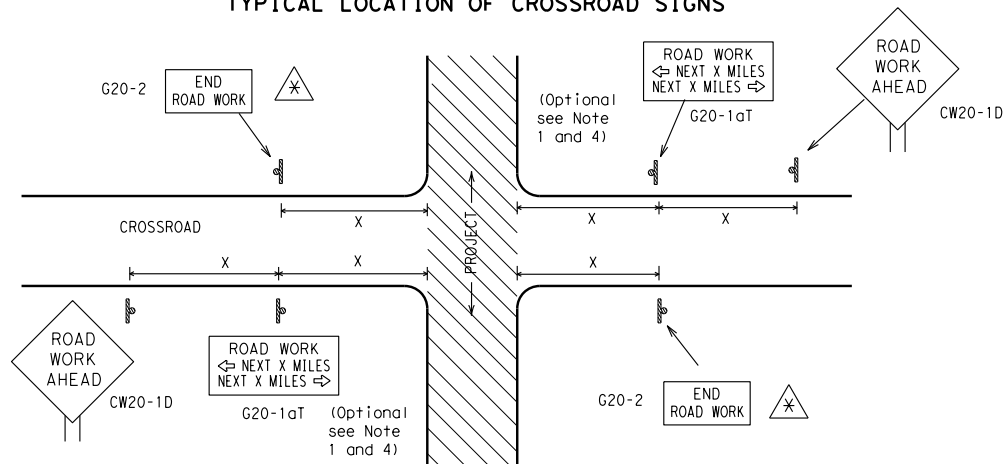
BC (1) - 14

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© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
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9-07	7-13								
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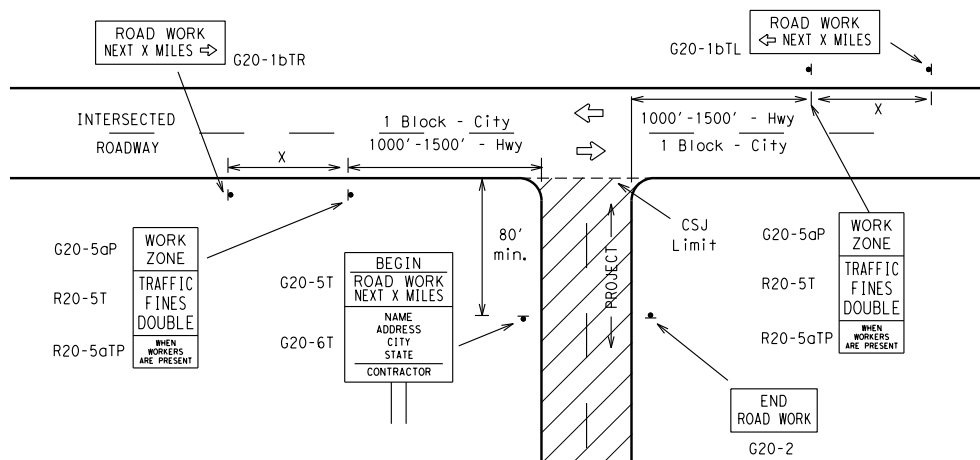
TYPICAL LOCATION OF CROSSROAD SIGNS



May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of Engineer. (See note 2 below)

- The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
- The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume. This information shall be shown in the plans.
- Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
- The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
- Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
- When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

- The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
- If construction closes the road at a T-intersection the Contractor shall place the "CONTRACTOR NAME" (G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow (G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR) signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING^{1,5,6}

Sign Number or Series	SIZE		SPACING	
	Conventional Road	Expressway/ Freeway	Posted Speed MPH	Sign Δ Spacing "X" Feet (Apprx.)
CW20 ⁴	48" x 48"	48" x 48"	30	120
CW21			35	160
CW22			40	240
CW23			45	320
CW25			50	400
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"	55	500 ²
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"	60	600 ²
			65	700 ²
			70	800 ²
			75	900 ²
			80	1000 ²
			*	* ³

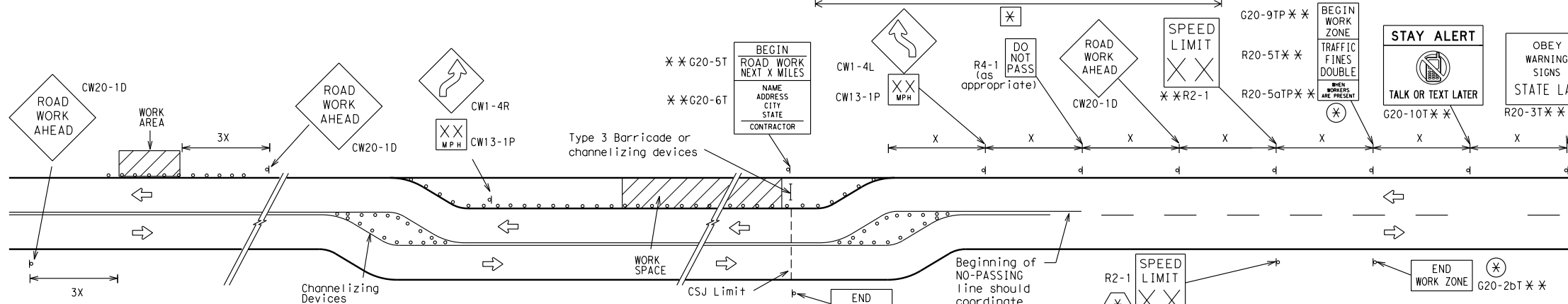
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

Δ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

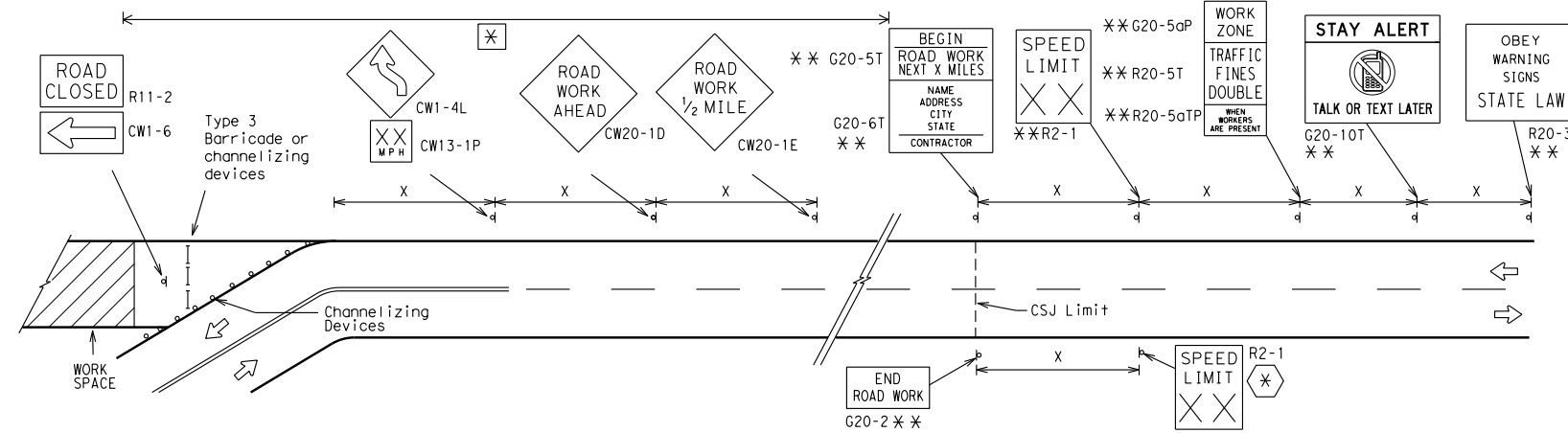
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer. See Note 2 under "Typical Location of Crossroad Signs".
- Only diamond shaped warning sign sizes are indicated.
- See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

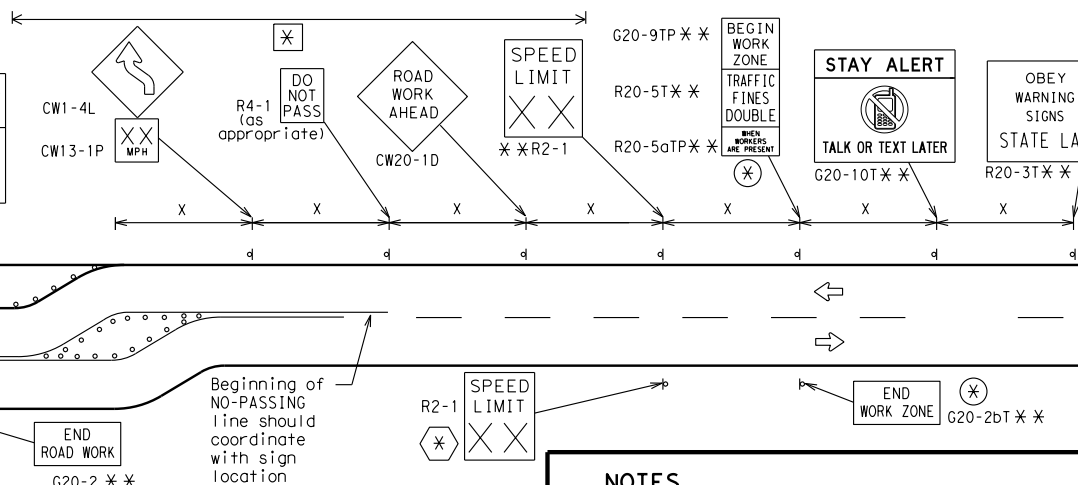


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

Required CSJ Limit signing. See Note 10 on BC(1). TRAFFIC FINES DOUBLE signs will not be required on projects consisting solely of mobile operations work.

Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.

Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND

—	Type 3 Barricade
○ ○ ○	Channelizing Devices
—	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

SHEET 2 OF 12



BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC (2) - 14

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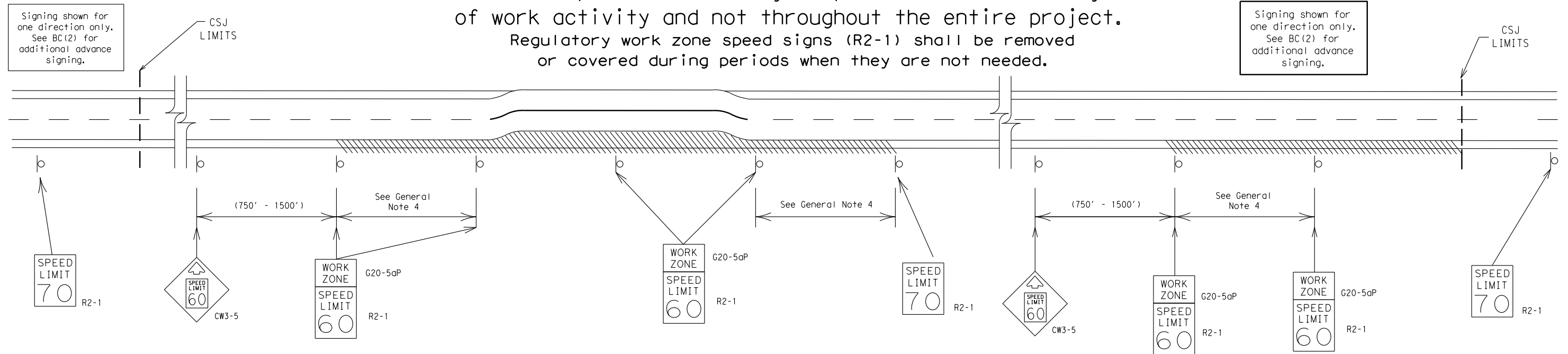
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TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project. Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

- rough road or damaged pavement surface
- substantial alteration of roadway geometrics (diversions)
- construction detours
- grade
- width
- other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the travelled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered. (See Removing or Covering on BC(4)).

GENERAL NOTES

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
- Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
- Frequency of work zone speed limit signs should be:

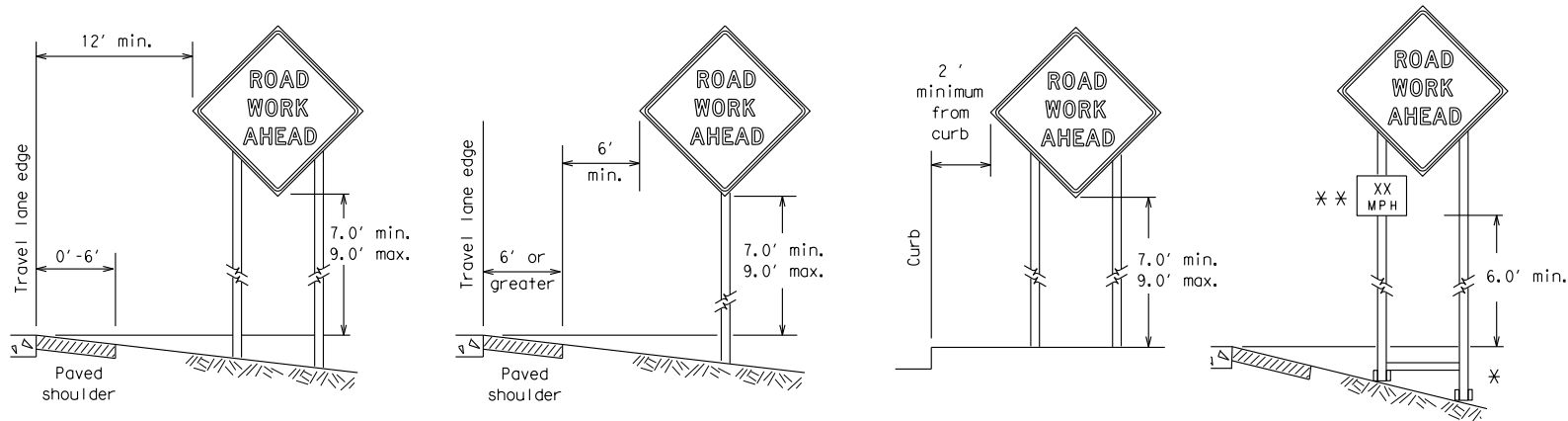
40 mph and greater	0.2 to 2 miles
35 mph and less	0.2 to 1 mile
- Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
- Fabrication, erection and maintenance of the "ADVANCE SPEED LIMIT" (CW3-5) sign, "WORK ZONE" (G20-5aP) plaque and the "SPEED LIMIT" (R2-1) signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
- Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
- Techniques that may help reduce traffic speeds include but are not limited to:
 - Law enforcement.
 - Flagger stationed next to sign.
 - Portable changeable message sign (PCMS).
 - Low-power (drone) radar transmitter.
 - Speed monitor trailers or signs.
- Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
- For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

SHEET 3 OF 12

		Traffic Operations Division Standard	
BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT			
BC (3) - 14			
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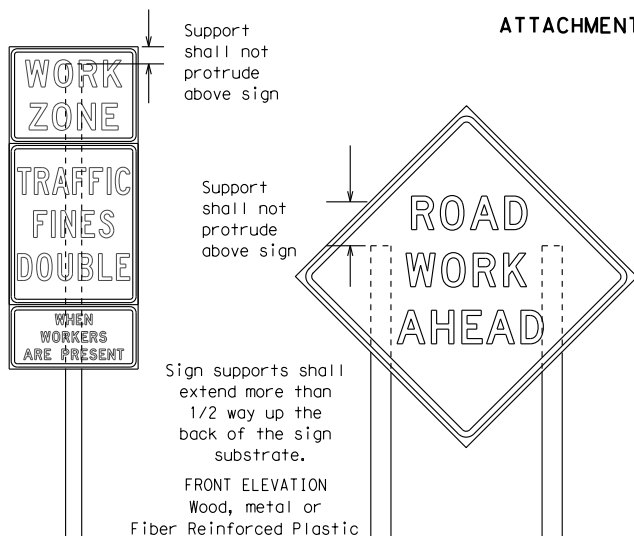
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



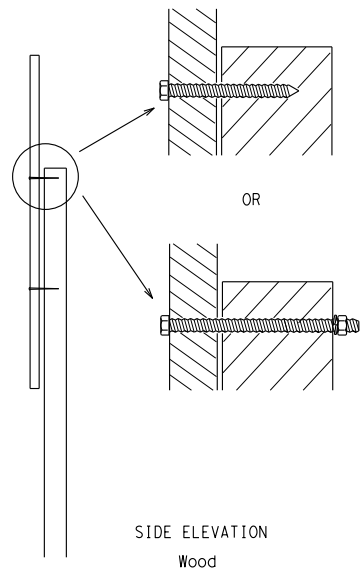
✱ When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

✱✱ When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS



Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the splice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

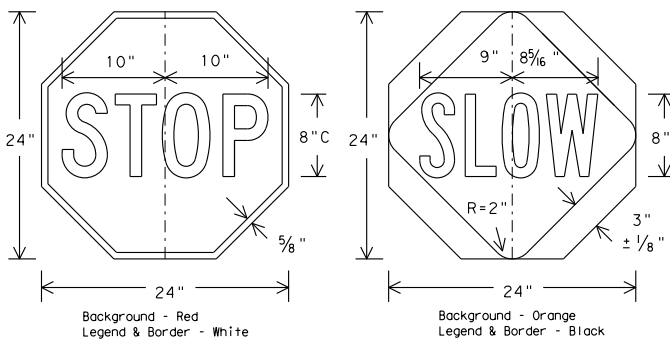


Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

STOP/SLOW PADDLES

- STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24" as detailed below.
- When used at night, the STOP/SLOW paddle shall be retroreflectORIZED.
- STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
- Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

- Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
- When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition.
- When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
- If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
- If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC sheets or the CWZTCD. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
- Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
- Wooden sign posts shall be painted white.
- Barricades shall NOT be used as sign supports.
- All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
- The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
- The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
- The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
- Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
- The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

- The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
 - Long-term stationary - work that occupies a location more than 3 days.
 - Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
 - Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
 - Short, duration - work that occupies a location up to 1 hour.
 - Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

- The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
- The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
- Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
- Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
- Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

- The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

- The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
- "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
- All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

- All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
- White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
- Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

- All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

- When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
- Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
- Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
- When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
- Burlap shall NOT be used to cover signs.
- Duct tape or other adhesive material shall NOT be affixed to a sign face.
- Signs and anchor stubs shall be removed and holes backfilled upon completion of work.


SIGN SUPPORT WEIGHTS

- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
- Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
- Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
- Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
- Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
- Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

- Flags may be used to draw attention to warning signs. When used the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

SHEET 4 OF 12



Texas Department of Transportation

Traffic Operations Division Standard

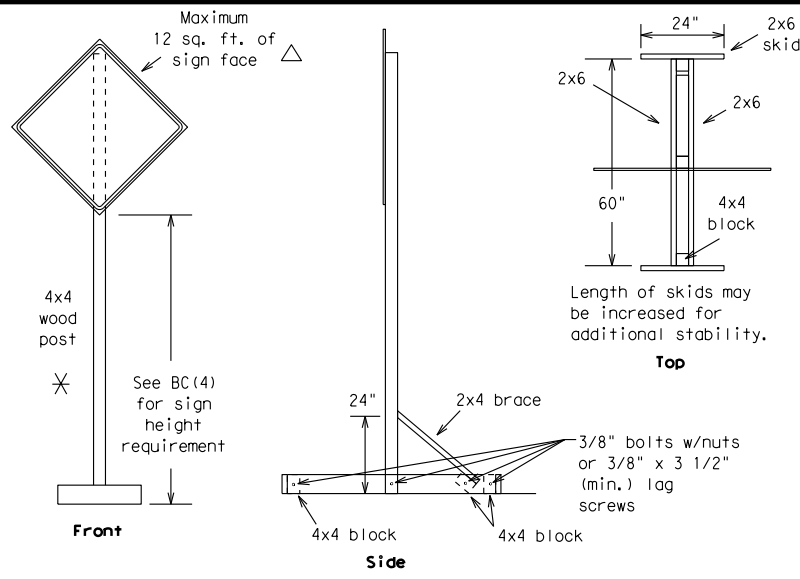
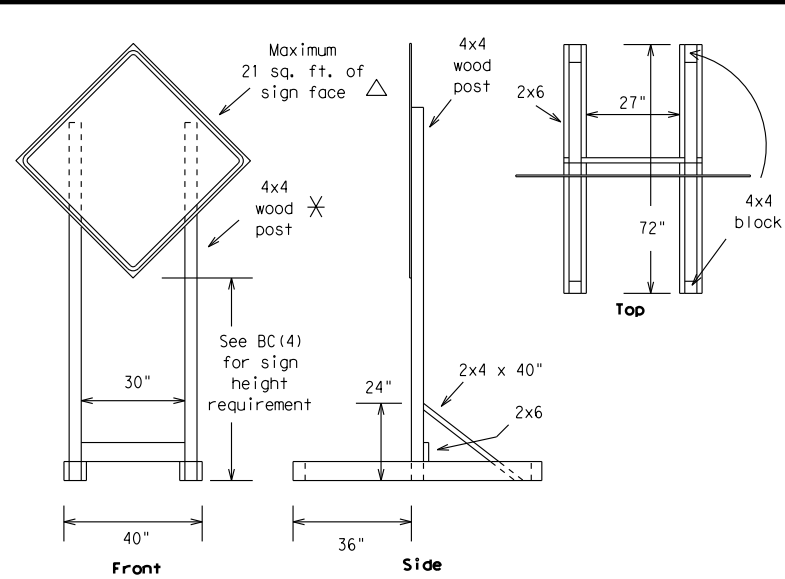
BARRICADE AND CONSTRUCTION

TEMPORARY SIGN NOTES

BC (4) - 14

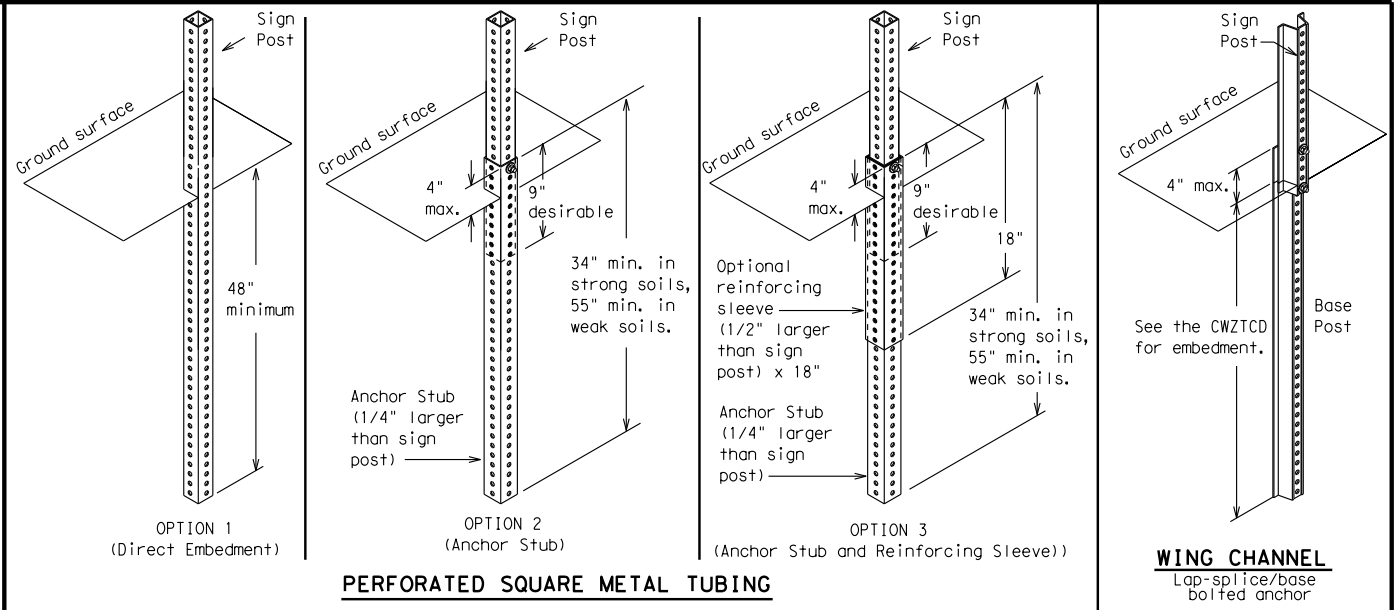
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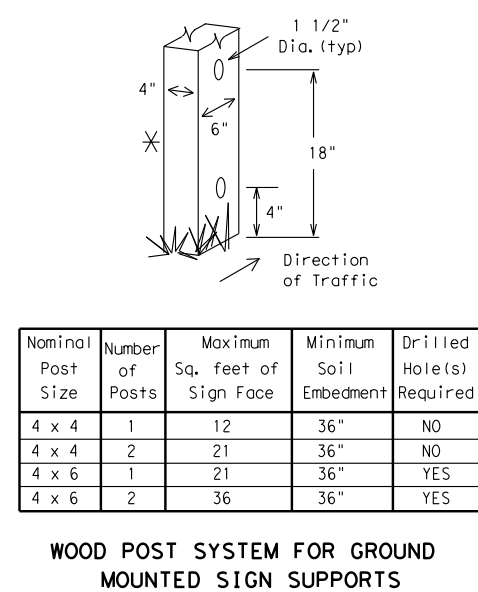
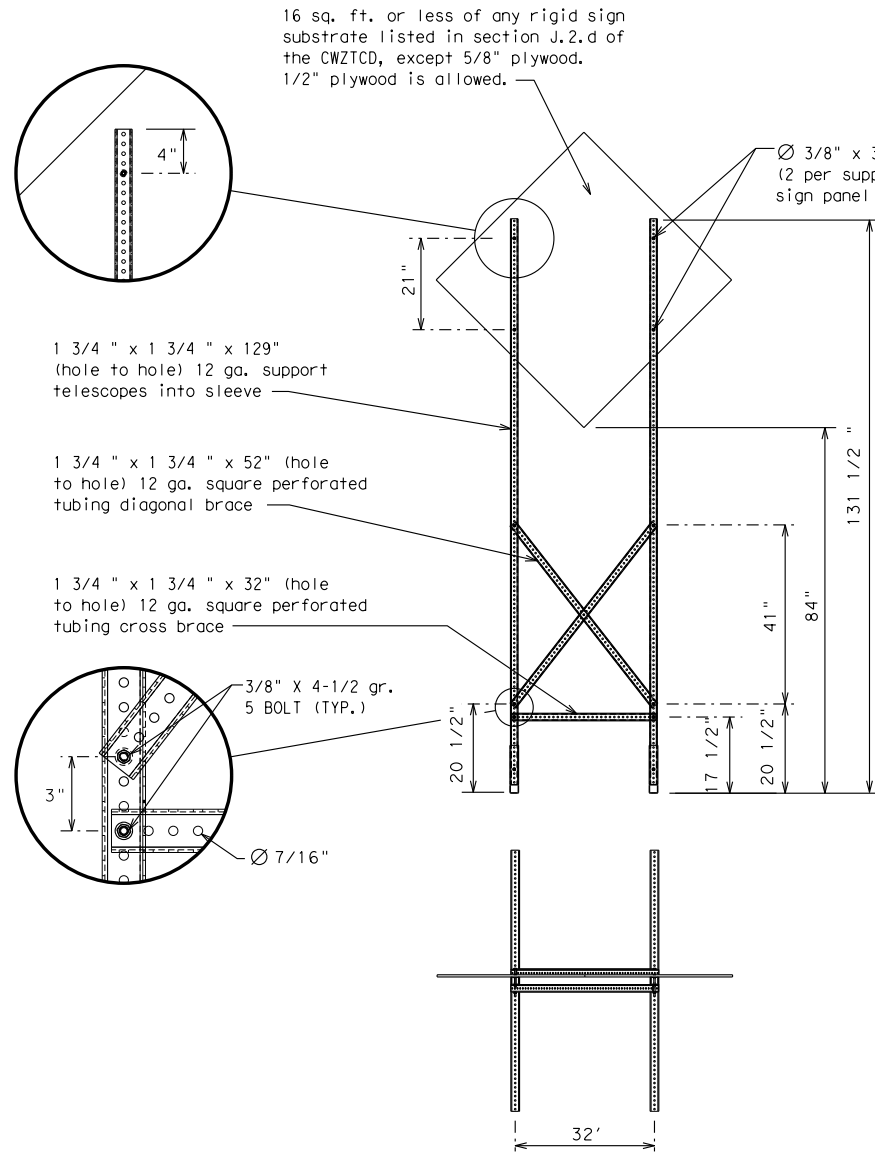
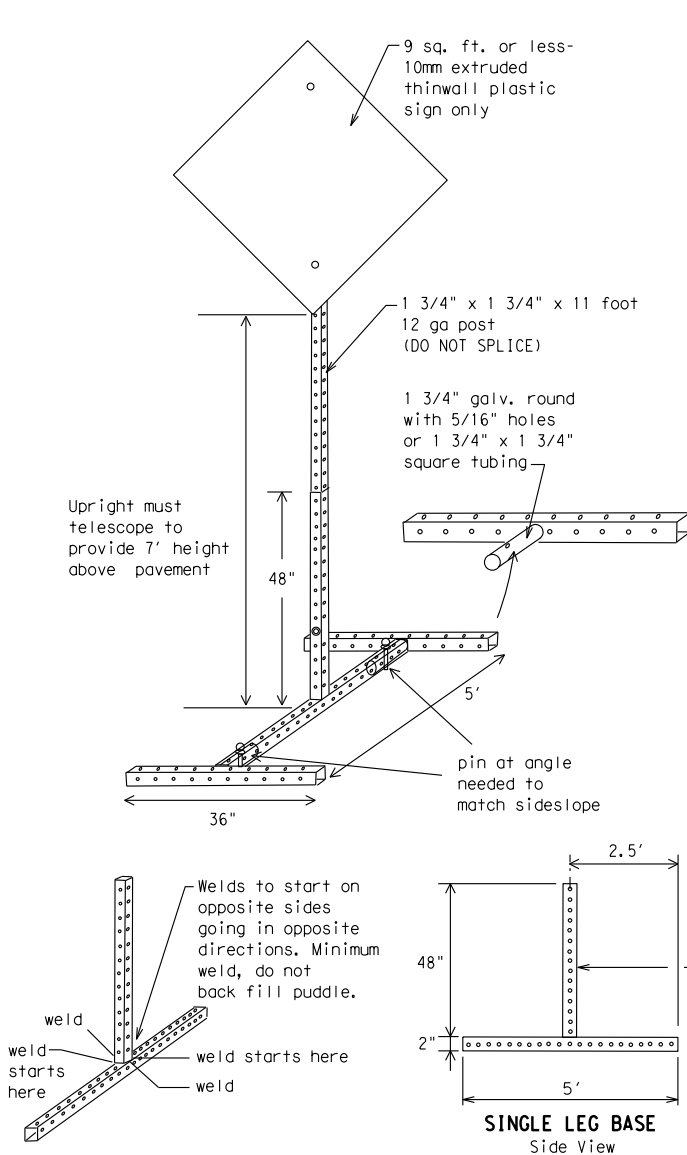
SKID MOUNTED WOOD SIGN SUPPORTS

LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS □



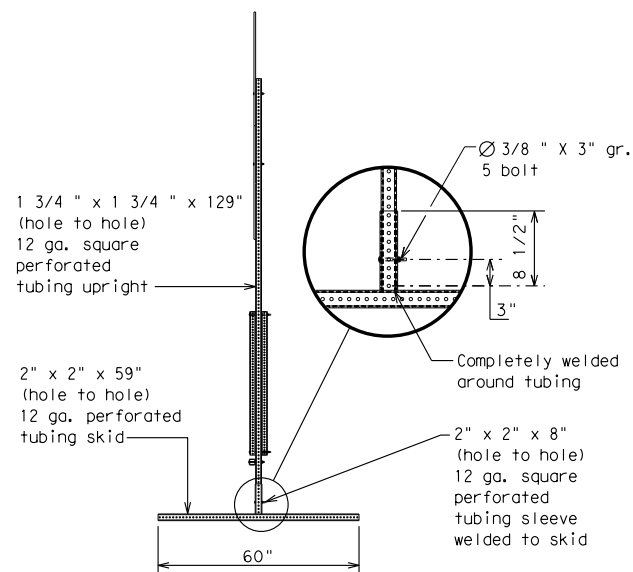
GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support.
The maximum sign square footage shall adhere to the manufacturer's recommendation.
Two post installations can be used for larger signs.



WOOD POST SYSTEM FOR GROUND MOUNTED SIGN SUPPORTS

Nominal Post Size	Number of Posts	Maximum Sq. feet of Sign Face	Minimum Soil Embedment	Drilled Hole(s) Required
4 x 4	1	12	36"	NO
4 x 4	2	21	36"	NO
4 x 6	1	21	36"	YES
4 x 6	2	36	36"	YES



WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

GENERAL NOTES

- Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
- No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
- When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

- See BC(4) for definition of "Work Duration."
- ✱ Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.
- △ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12



BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5) - 14

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SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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DATE: FILE:

WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

- The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
- Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
- Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
- Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
- Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
- When in use the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
- The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
- The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
- Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
- Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
- Do not use the word "Danger" in message.
- Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
- Do not display messages that scroll horizontally or vertically across the face of the sign.
- The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
- PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
- Each line of text should be centered on the message board rather than left or right justified.
- If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

WORD OR PHRASE	ABBREVIATION	WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD	Major	MAJ
Alternate	ALT	Miles	MI
Avenue	AVE	Miles Per Hour	MPH
Best Route	BEST RTE	Minor	MNR
Boulevard	BLVD	Monday	MON
Bridge	BRDG	Normal	NORM
Cannot	CANT	North	N
Center	CTR	Northbound	(route) N
Construction Ahead	CONST AHD	Parking	PKING
CROSSING	XING	Road	RD
Detour Route	DETOUR RTE	Right Lane	RT LN
Do Not	DONT	Saturday	SAT
East	E	Service Road	SERV RD
Eastbound	(route) E	Shoulder	SHLDR
Emergency	EMER	Slippery	SLIP
Emergency Vehicle	EMER VEH	South	S
Entrance, Enter	ENT	Southbound	(route) S
Express Lane	EXP LN	Speed	SPD
Expressway	EXPWY	Street	ST
XXXX Feet	XXXX FT	Sunday	SUN
Fog Ahead	FOG AHD	Telephone	PHONE
Freeway	FRWY, FWY	Temporary	TEMP
Freeway Blocked	FWY BLKD	Thursday	THURS
Friday	FRI	To Downtown	TO DWNTN
Hazardous Driving	HAZ DRIVING	Traffic	TRAF
Hazardous Material	HAZMAT	Travelers	TRVLRS
High-Occupancy	HOV	Tuesday	TUES
Vehicle		Time Minutes	TIME MIN
Highway	HWY	Upper Level	UPR LEVEL
Hour(s)	HR, HRS	Vehicles (s)	VEH, VEHS
Information	INFO	Warning	WARN
It Is	ITS	Wednesday	WED
Junction	JCT	Weight Limit	WT LIMIT
Left	LFT	West	W
Left Lane	LFT LN	Westbound	(route) W
Lane Closed	LN CLOSED	Wet Pavement	WET PVMT
Lower Level	LWR LEVEL	Will Not	WONT
Maintenance	MAINT		

Roadway designation # IH-number, US-number, SH-number, FM-number

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

FREEWAY CLOSED X MILE
ROAD CLOSED AT SH XXX
ROAD CLSD AT FM XXXX
RIGHT X LANES CLOSED
CENTER LANE CLOSED
NIGHT LANE CLOSURES
VARIOUS LANES CLOSED
EXIT CLOSED
MALL DRIVEWAY CLOSED
XXXXXXXX BLVD CLOSED

Other Condition List

FRONTAGE ROAD CLOSED	ROADWORK XXX FT	ROAD REPAIRS XXXX FT
SHOULDER CLOSED XXX FT	FLAGGER XXXX FT	LANE NARROWS XXXX FT
RIGHT LN CLOSED XXX FT	RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE
RIGHT X LANES OPEN	MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT
DAYTIME LANE CLOSURES	LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT
I-XX SOUTH EXIT CLOSED	DETOUR X MILE	ROUGH ROAD XXXX FT
EXIT XXX CLOSED X MILE	ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN
RIGHT LN TO BE CLOSED	BUMP XXXX FT	US XXX EXIT X MILES
X LANES CLOSED TUE - FRI	TRAFFIC SIGNAL XXXX FT	LANES SHIFT

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

MERGE RIGHT	FORM X LINES RIGHT
DETOUR NEXT X EXITS	USE XXXXX RD EXIT
USE EXIT XXX	USE EXIT I-XX NORTH
STAY ON US XXX SOUTH	USE I-XX E TO I-XX N
TRUCKS USE US XXX N	WATCH FOR TRUCKS
WATCH FOR TRUCKS	EXPECT DELAYS
EXPECT DELAYS	PREPARE TO STOP
REDUCE SPEED XXX FT	END SHOULDER USE
USE OTHER ROUTES	WATCH FOR WORKERS
STAY IN LANE	

Location List

AT FM XXXX
BEFORE RAILROAD CROSSING
NEXT X MILES
PAST US XXX EXIT
XXXXXXXX TO XXXXXXXX
US XXX TO FM XXXX

Warning List

SPEED LIMIT XX MPH
MAXIMUM SPEED XX MPH
MINIMUM SPEED XX MPH
ADVISORY SPEED XX MPH
RIGHT LANE EXIT
USE CAUTION
DRIVE SAFELY
DRIVE WITH CARE

** Advance Notice List

TUE-FRI XX AM- X PM
APR XX- XX X PM-X AM
BEGINS MONDAY
BEGINS MAY XX
MAY X-X XX PM - XX AM
NEXT FRI-SUN
XX AM TO XX PM
NEXT TUE AUG XX
TONIGHT XX PM- XX AM

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

- Only 1 or 2 phases are to be used on a PCMS.
- The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
- A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
- A Location Phase is necessary only if a distance or location is not included in the first phase selected.
- If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
- For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

FULL MATRIX PCMS SIGNS

- When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
- When symbol signs, such as the "Flagger Symbol" (CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
- When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
- A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

WORDING ALTERNATIVES

- The words RIGHT, LEFT and ALL can be interchanged as appropriate.
- Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
- EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
- Highway names and numbers replaced as appropriate.
- ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
- AHEAD may be used instead of distances if necessary.
- FT and MI, MILE and MILES interchanged as appropriate.
- AT, BEFORE and PAST interchanged as needed.
- Distances or AHEAD can be eliminated from the message if a location phase is used.

SHEET 6 OF 12



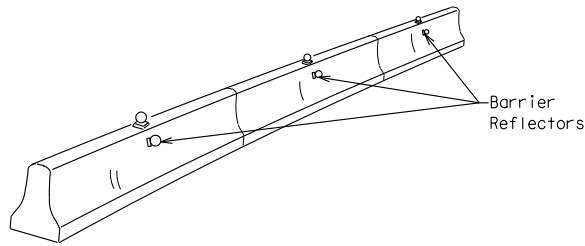
BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC (6) - 14

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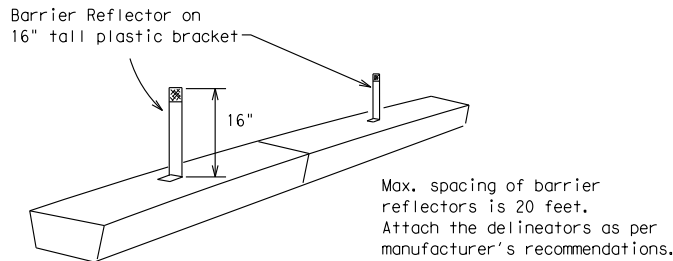
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.

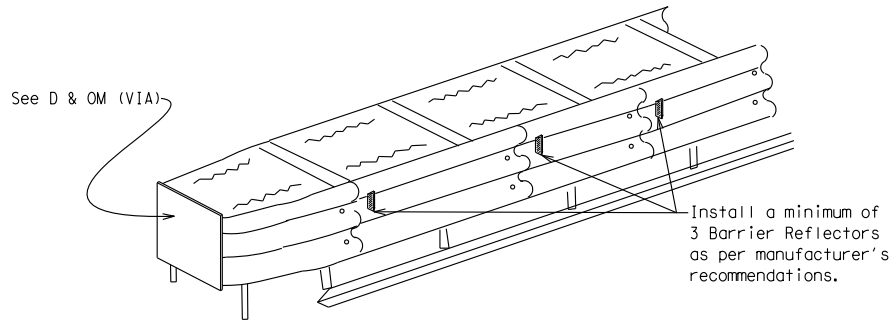


CONCRETE TRAFFIC BARRIER (CTB)

- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
- Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional) while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
- When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
- Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
- Maximum spacing of Barrier Reflectors is forty (40) feet.
- Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
- Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
- Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
- Single slope barriers shall be delineated as shown on the above detail.



LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet crashworthy standards as defined in the National Cooperative Highway Research Report 350. Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

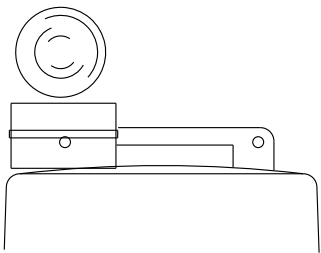
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B_{FL} or C_{FL} Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
- Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
- The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
- When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
- When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
- The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

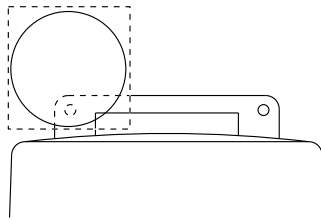
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
- Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
- Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
- Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
- The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

- A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
- The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
- The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
- Round reflectors shall be fully reflectorized, including the area where attached to the drum.
- Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
- The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
- When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
- The warning reflector should be mounted on the side of the handle nearest approaching traffic.
- The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.



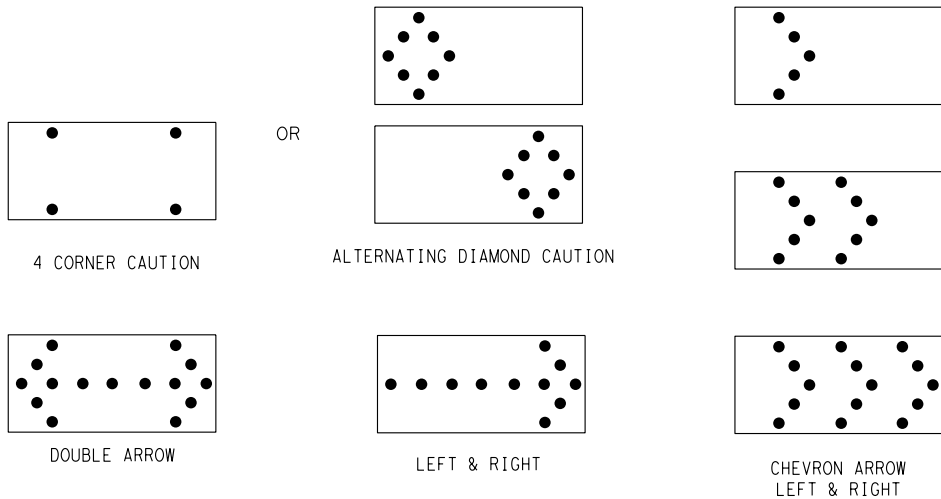
Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

- The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
- Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
- The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
- The Flashing Arrow Board should be able to display the following symbols:



- The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
- The straight line caution display is NOT ALLOWED.
- The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
- Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
- The sequential arrow display is NOT ALLOWED.
- The flashing arrow display is the TxDOT standard; however, the sequential Chevron display may be used during daylight operations.
- The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
- A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
- A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
- Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION
Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

FLASHING ARROW BOARDS

SHEET 7 OF 12

TRUCK-MOUNTED ATTENUATORS

- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the National Cooperative Highway Research Report No. 350 (NCHRP 350) or the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CWZTCD for a list of approved TMAs.
- TMAs are required on freeways unless otherwise noted in the plans.
- A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
- The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

BC (7) - 14

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GENERAL NOTES

- For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
- For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
- For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
- Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
- The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

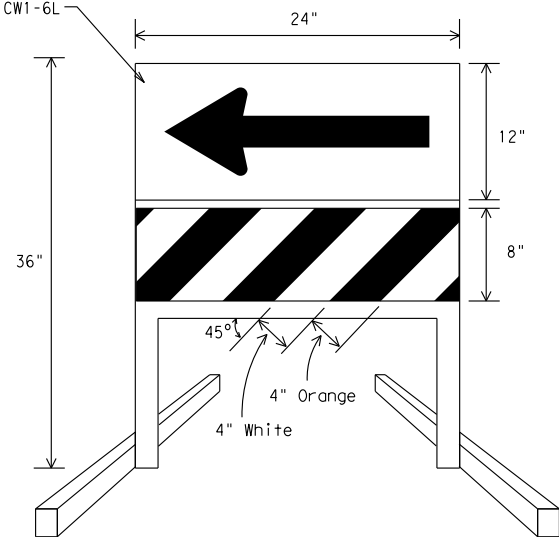
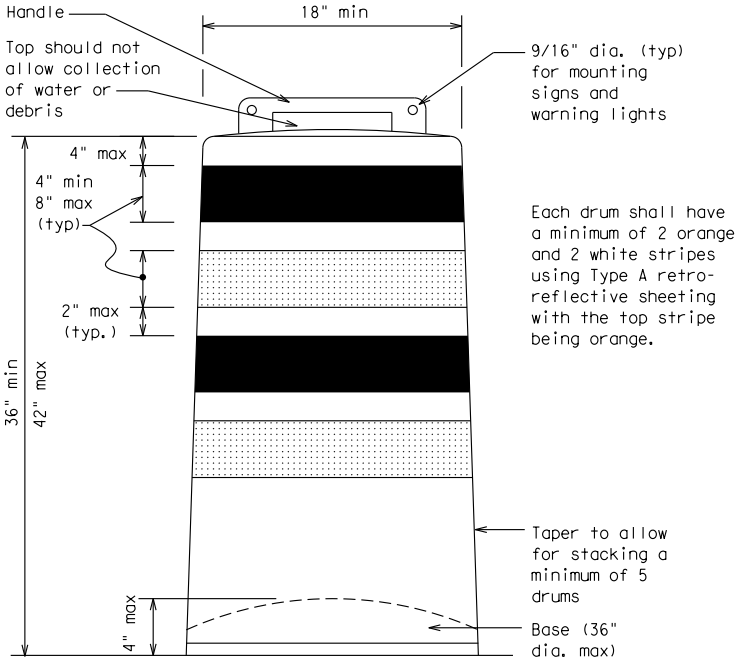
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
- Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
- Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
- The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
- The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
- Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
- Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
- Drum body shall have a maximum unballasted weight of 11 lbs.
- Drum and base shall be marked with manufacturer's name and model number.

RETROREFLECTIVE SHEETING

- The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A reflective sheeting shall be supplied unless otherwise specified in the plans.
- The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

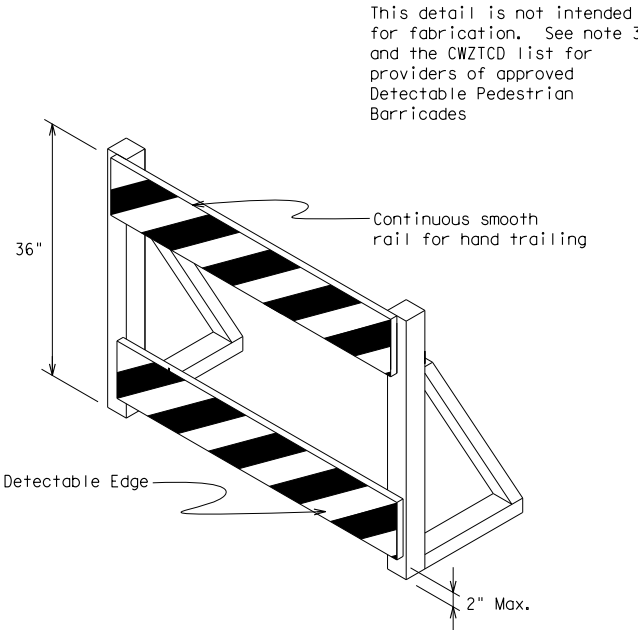
BALLAST

- Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
- Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
- Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
- The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
- When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
- Ballast shall not be placed on top of drums.
- Adhesives may be used to secure base of drums to pavement.



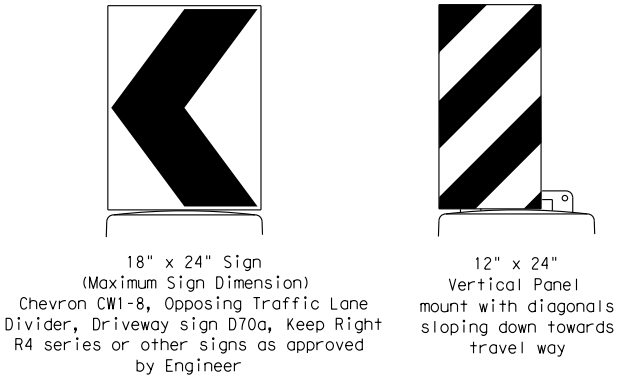
DIRECTION INDICATOR BARRICADE

- The Direction Indicator Barricade may be used in tapers, transitions, and other areas where specific directional guidance to drivers is necessary.
- If used, the Direction Indicator Barricade should be used in series to direct the driver through the transition and into the intended travel lane.
- The Direction Indicator Barricade shall consist of One-Direction Large Arrow (CW1-6) sign in the size shown with a black arrow on a background of Type B_{FL} or Type C_{FL} Orange retroreflective sheeting above a rail with Type A retroreflective sheeting in alternating 4" white and orange stripes sloping downward at an angle of 45 degrees in the direction road users are to pass. Sheeting types shall be as per DMS 8300.
- Double arrows on the Direction Indicator Barricade will not be allowed.
- Approved manufacturers are shown on the CWZTCD List. Ballast shall be as approved by the manufacturers instructions.



DETECTABLE PEDESTRIAN BARRICADES

- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.
- Where pedestrians with visual disabilities normally use the closed sidewalk, a device that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
- Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
- Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)" and should not be used as a control for pedestrian movements.
- Warning lights shall not be attached to detectable pedestrian barricades.
- Detectable pedestrian barricades may use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

- Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
- Chevrons and other work zone signs with an orange background shall be manufactured with Type B_{FL} or Type C_{FL} Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
- Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
- Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
- Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
- Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
- Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
- R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

SHEET 8 OF 12



Traffic
Operations
Division
Standard

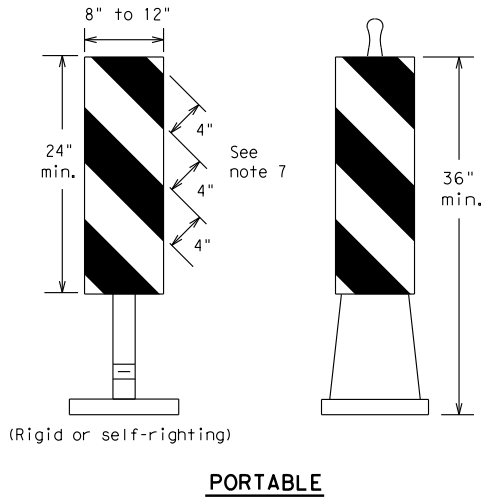
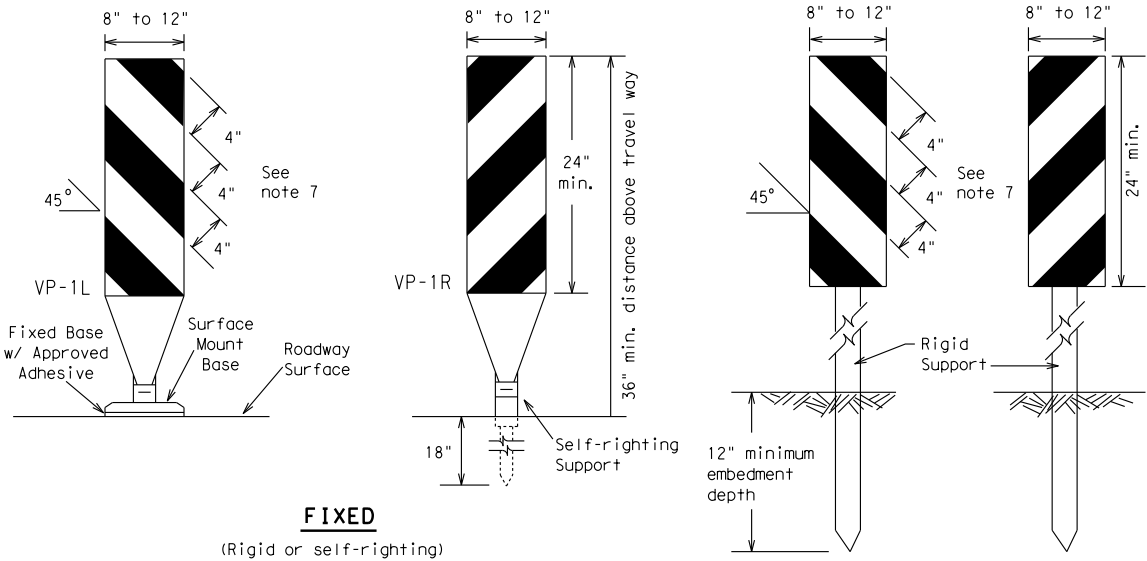
BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (8) - 14

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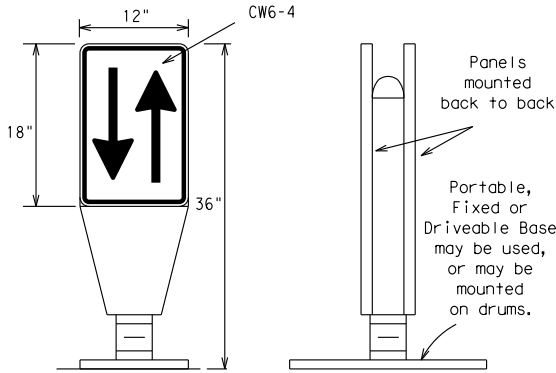
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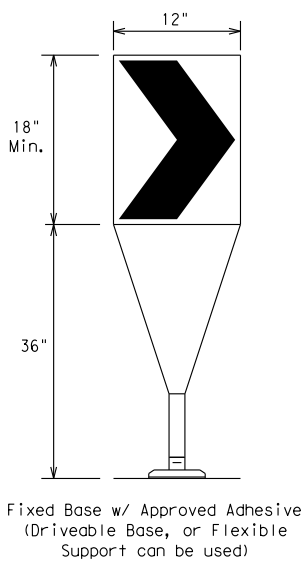
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual Appendix B "Treatment of Pavement Drop-offs in Work Zones" for additional guidelines on the use of VP's for drop-offs.
3. VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

VERTICAL PANELS (VPs)



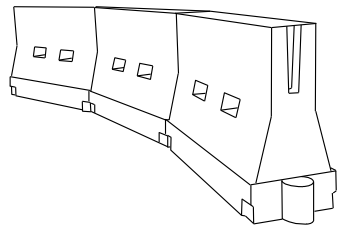
1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. For Long Term Stationary use on tapers or transitions on freeways and divided highways self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS



LONGITUDINAL CHANNELIZING DEVICES (LCD)

1. LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10) placed near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate NCHRP 350 crashworthiness requirements based on roadway speed and barrier application.
2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
3. Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS

GENERAL NOTES

1. Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
3. Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
4. The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
7. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.

Posted Speed *	Formula	Minimum Desirable Taper Lengths * *			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

* **Taper lengths have been rounded off.
L=Length of Taper (FT.) W=Width of Offset (FT.)
S=Posted Speed (MPH)

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (9) - 14

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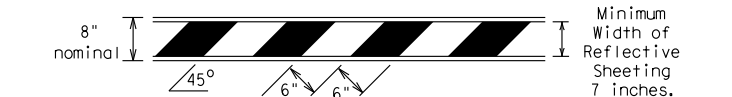
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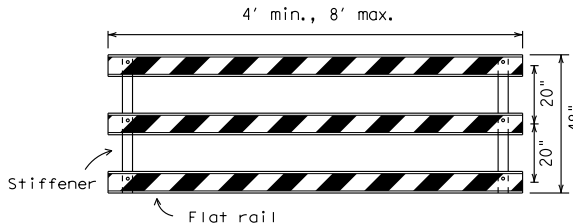
TYPE 3 BARRICADES

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. 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.
9. Sheeting for barricades shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.

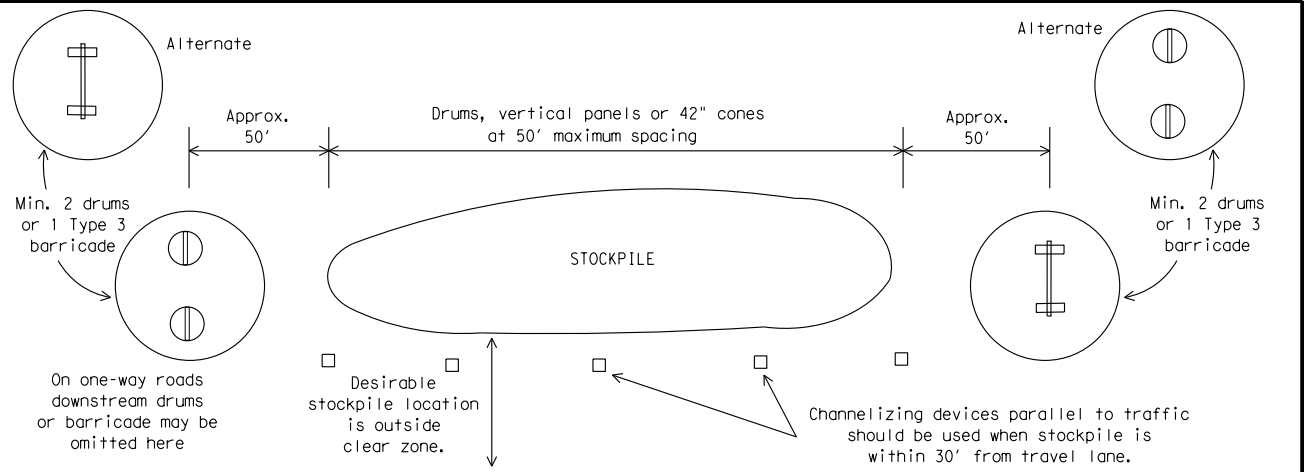


TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



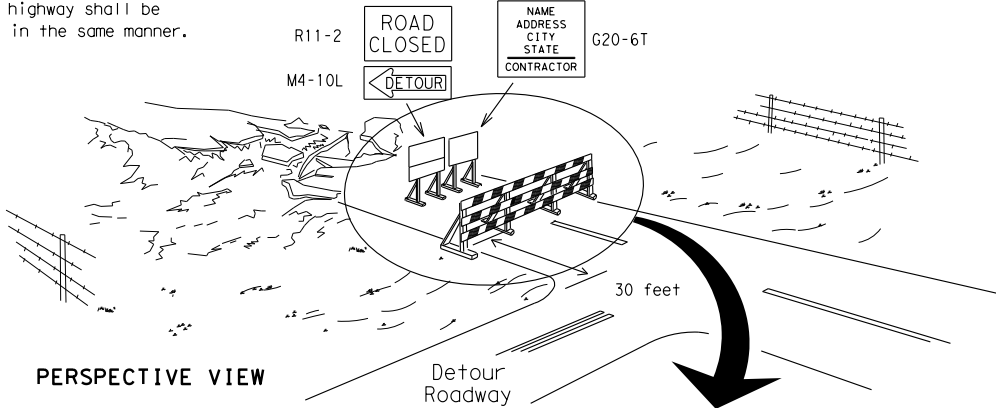
Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

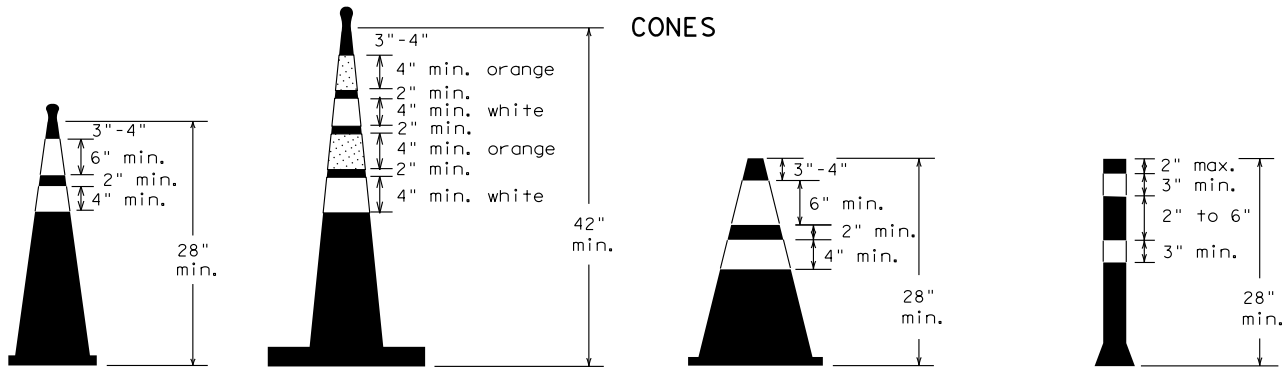
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.

Barricade striping should slant downward in the direction of detour.

1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

PLAN VIEW

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



Two-Piece cones

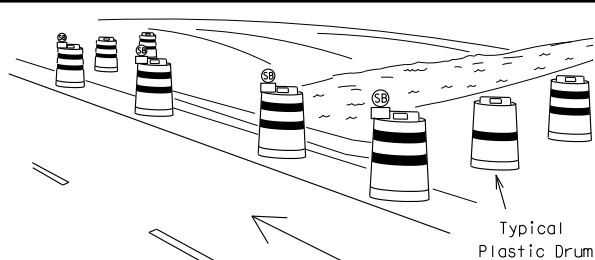
One-Piece cones

Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.

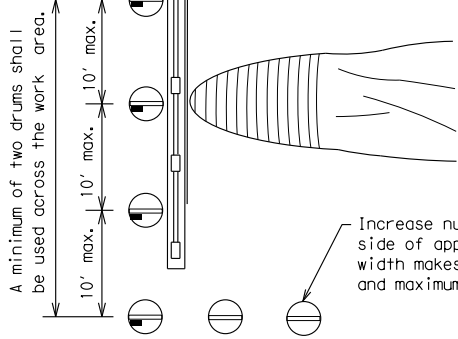
42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers used at night shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.



PERSPECTIVE VIEW

These drums are not required on one-way roadway

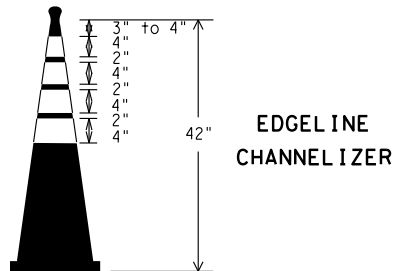


PLAN VIEW

Increase number of plastic drums on the side of approaching traffic if the crown width makes it necessary. (minimum of 2 and maximum of 4 drums)

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS


THIS DEVICE SHALL NOT BE USED ON PROJECTS LET AFTER MARCH 2014.



EDGELINE CHANNELIZER

1. This device is intended only for use in place of a vertical panel to channelize traffic by indicating the edge of the travel lane. It is not intended to be used in transitions or tapers.
2. This device shall not be used to separate lanes of traffic (opposing or otherwise) or warn of objects.
3. This device is based on a 42 inch, two-piece cone with an alternate striping pattern: four 4 inch retroreflective bands, with an approximate 2 inch gap between bands. The color of the band should correspond to the color of the edgeline (yellow for left edgeline, white for right edgeline) for which the device is substituted or for which it supplements. The reflectorized bands shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
4. The base must weigh a minimum of 30 lbs.

SHEET 10 OF 12

 Texas Department of Transportation		Traffic Operations Division Standard	
BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES			
BC (10) - 14			
FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DN: TxDOT CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB HIGHWAY
REVISIONS			
9-07	8-14	DIST	COUNTY SHEET NO.
7-13			

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DATE:
FILE:

WORK ZONE PAVEMENT MARKINGS

GENERAL

1. The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
2. Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
3. Additional supplemental pavement marking details may be found in the plans or specifications.
4. Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
5. When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
6. When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
7. All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

1. Raised pavement markers are to be placed according to the patterns on BC(12).
2. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

PREFABRICATED PAVEMENT MARKINGS

1. Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
2. Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

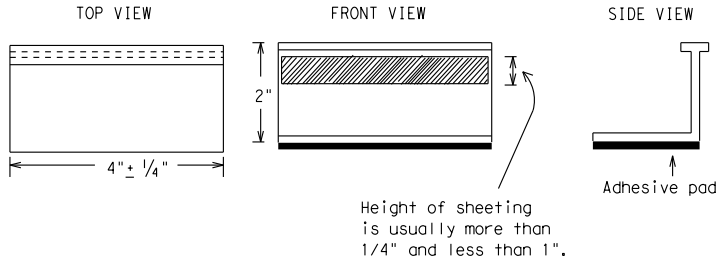
MAINTAINING WORK ZONE PAVEMENT MARKINGS

1. The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
2. Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
3. The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
4. Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

REMOVAL OF PAVEMENT MARKINGS

1. Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
2. The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
3. Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
4. The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
5. Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
6. Blast cleaning may be used but will not be required unless specifically shown in the plans.
7. Over-painting of the markings SHALL NOT BE permitted.
8. Removal of raised pavement markers shall be as directed by the Engineer.
9. Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
- 10.Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

Temporary Flexible-Reflective
Roadway Marker Tabs



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

1. Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
2. 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 "A" or "B" below may be imposed to assure quality before placement on the roadway.
 - A. Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
 - B. Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
3. Small design variances may be noted between tab manufacturers.
4. See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS


1. Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
2. All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
3. Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
YELLOW - (two amber reflective surfaces with yellow body).
WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

SHEET 11 OF 12



Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC (11) - 14

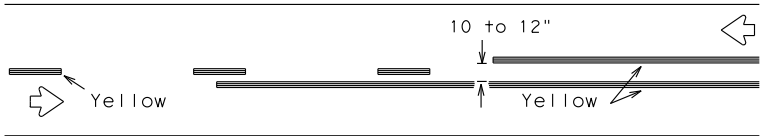
FILE:	bc-14.dgn	DN:	TxDOT	CK:	TxDOT	DN:	TxDOT	CK:	TxDOT
© TxDOT	February 1998	CONT	SECT	JOB	HIGHWAY				
REVISIONS		DIST		COUNTY		SHEET NO.			
2-98	9-07								
1-02	7-13								
11-02	8-14								

105

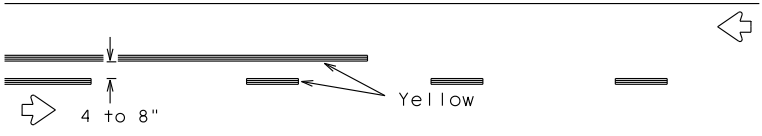
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DATE: FILE:

PAVEMENT MARKING PATTERNS

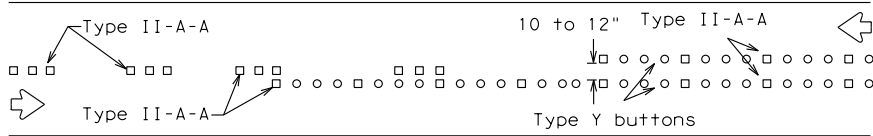


REFLECTORIZED PAVEMENT MARKINGS - PATTERN A

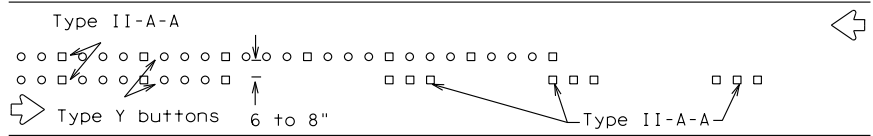


REFLECTORIZED PAVEMENT MARKINGS - PATTERN B

Pattern A is the TxDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectORIZED pavement markings.

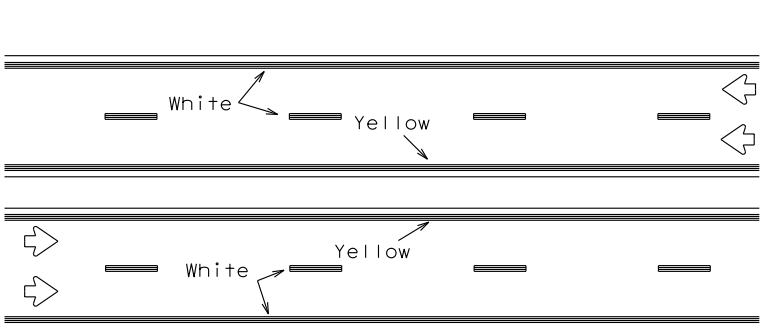


RAISED PAVEMENT MARKERS - PATTERN A



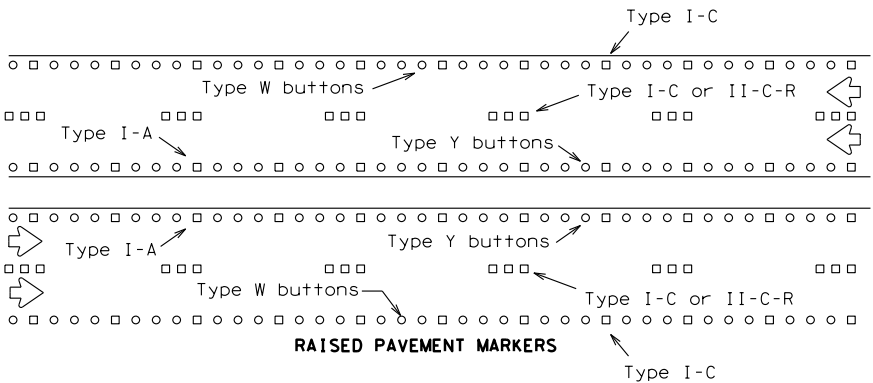
RAISED PAVEMENT MARKERS - PATTERN B

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



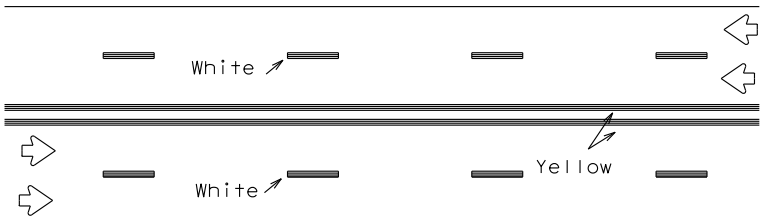
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.



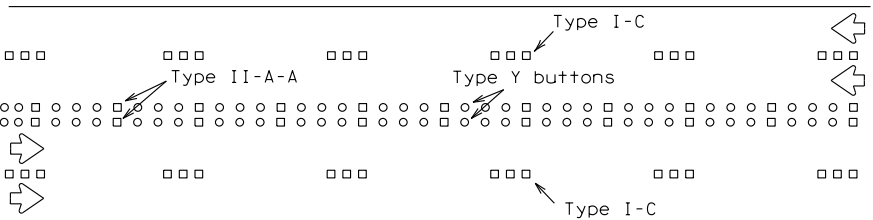
RAISED PAVEMENT MARKERS

EDGE & LANE LINES FOR DIVIDED HIGHWAY



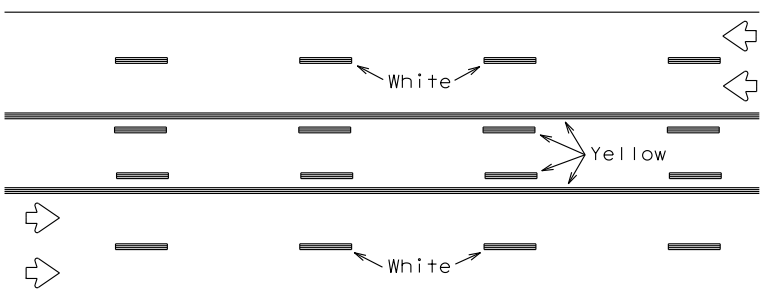
REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.



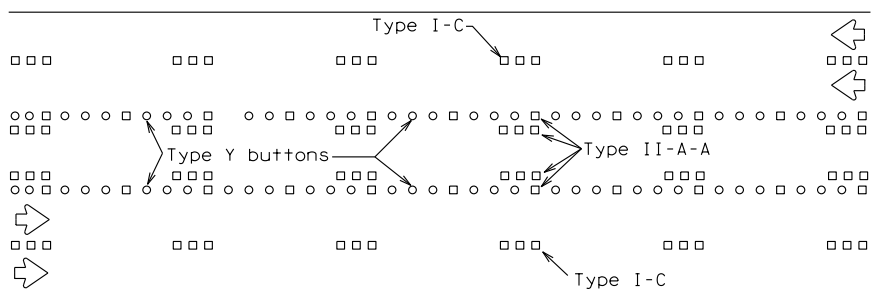
RAISED PAVEMENT MARKERS

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

Prefabricated markings may be substituted for reflectORIZED pavement markings.

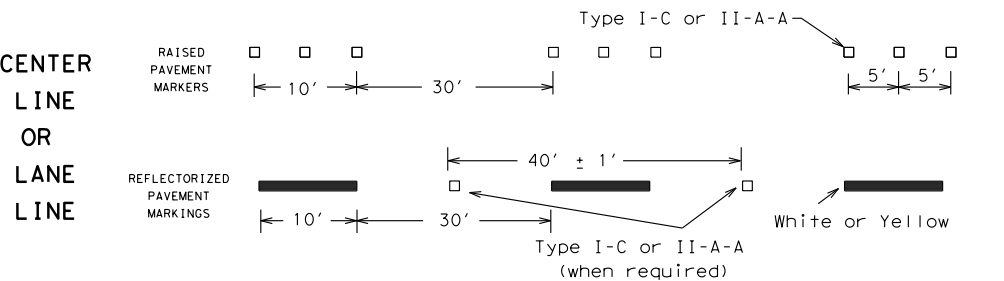
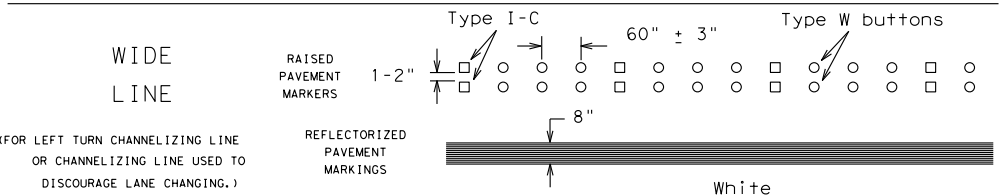
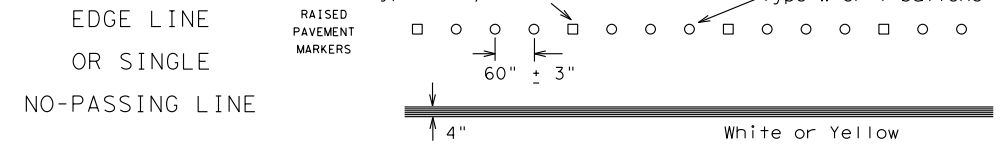
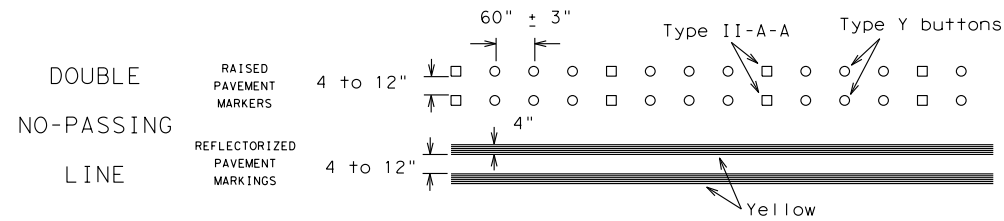


RAISED PAVEMENT MARKERS

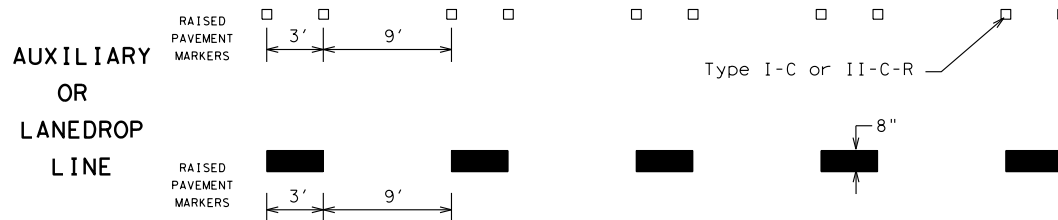
TWO-WAY LEFT TURN LANE

STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

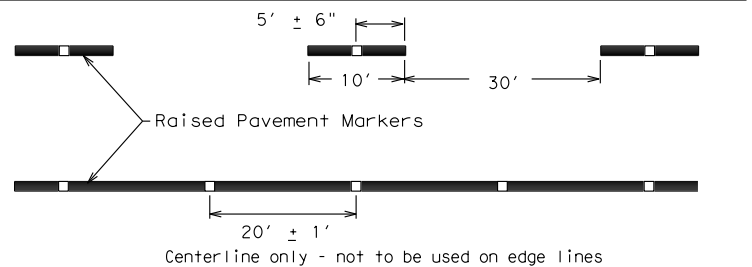


BROKEN LINES



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



SHEET 12 OF 12

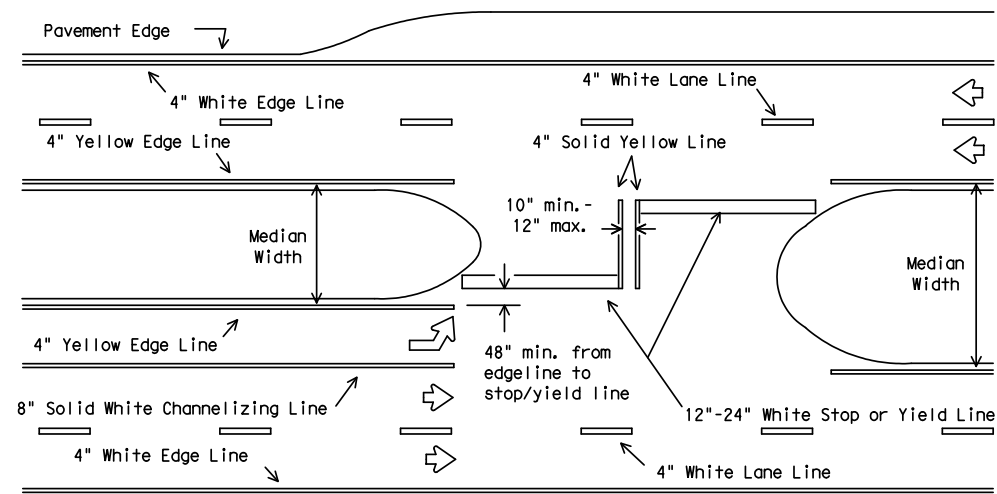
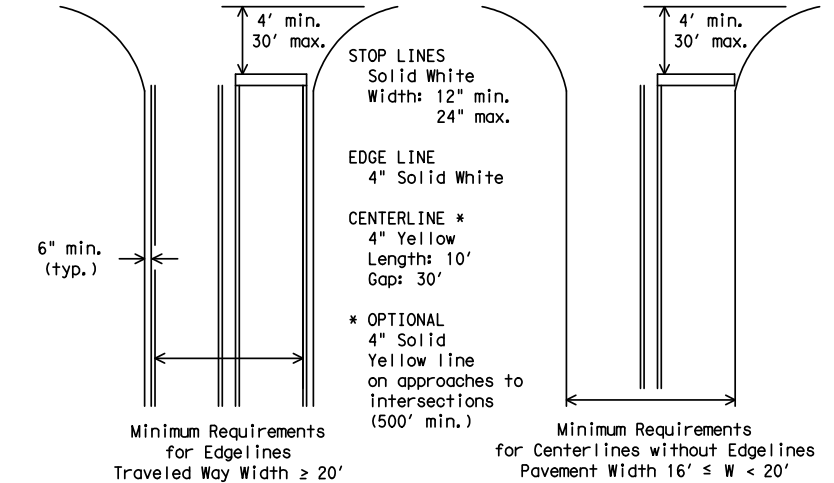
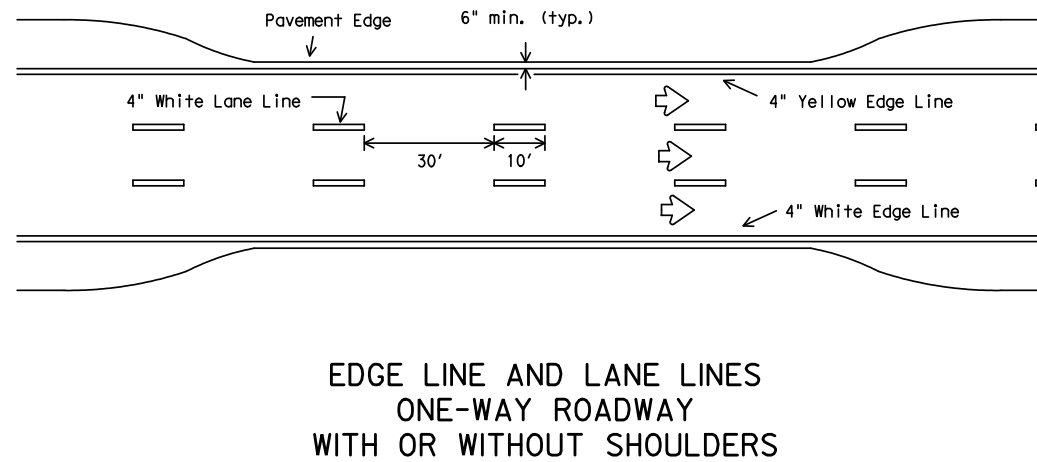
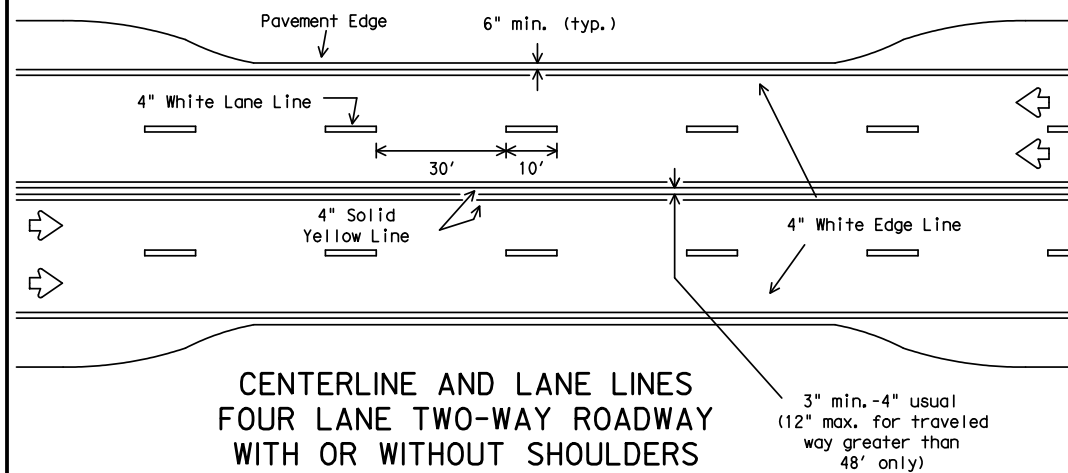
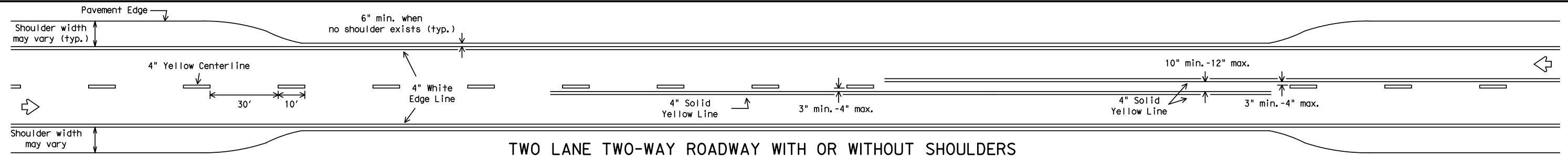


BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

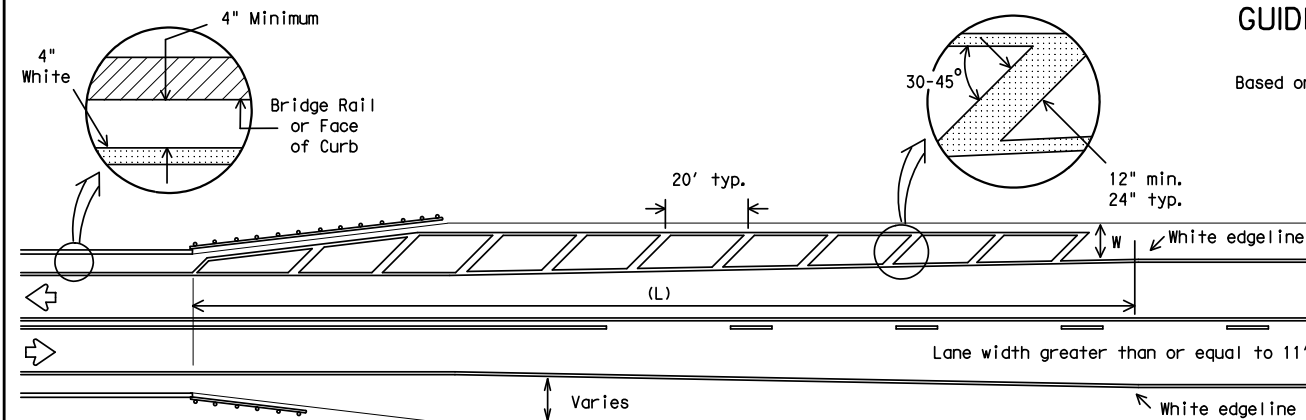
BC (12) - 14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DN: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
1-97 9-07	REVISIONS			
2-98 7-13				
11-02 8-14				
	DIST	COUNTY		SHEET NO.

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All medians shall be field measured to determine the location of necessary striping. Stop/Yield bars and centerlines shall be placed when the median width is greater than 30 ft. The median width is defined as the area between two roadways of a divided highway measured from edge of traveled way to edge of traveled way. The median excludes turn lanes. The median width might be different between intersections, interchanges and of opposite approaches of the same intersection. The narrow median width will be the controlling width to determine if markings are required.



NOTES:

1. No-passing zone on bridge approach is optional but if used, it shall be a minimum 500 feet long.
2. For crosshatching length (L) see Table 1.
3. The width of the offset (W) and the required crosshatching width is the full shoulder width in advance of the bridge.
4. The crosshatching is not required if delineators or barrier reflectors are used along the structure.
5. For guard fence details, refer elsewhere in the plans.

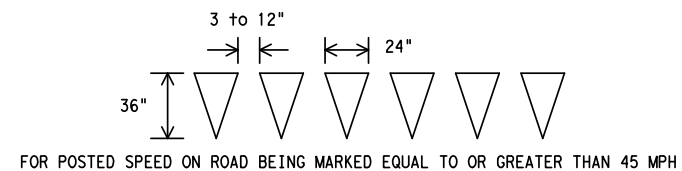
ROADWAYS WITH REDUCED SHOULDER WIDTHS ACROSS BRIDGE OR CULVERT

GENERAL NOTES

1. Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should typically be placed a minimum of 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.
2. The traveled way includes only that portion of the roadway used for vehicular travel and not the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to inside of edgeline of a two lane roadway.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



YIELD LINES



TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-12

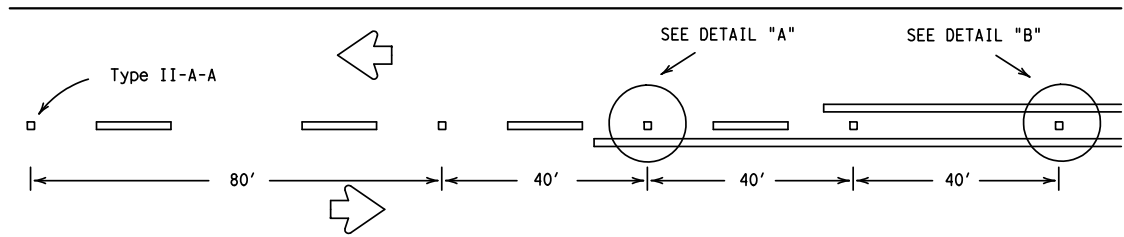
© TxDOT November 1978		DN: TXDOT		CK: TXDOT		DW: TXDOT		CK: TXDOT	
REVISONS		CONT		SECT		JOB		HIGHWAY	
8-95 2-12									
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8-00		DIST		COUNTY				SHEET NO.	
3-03									

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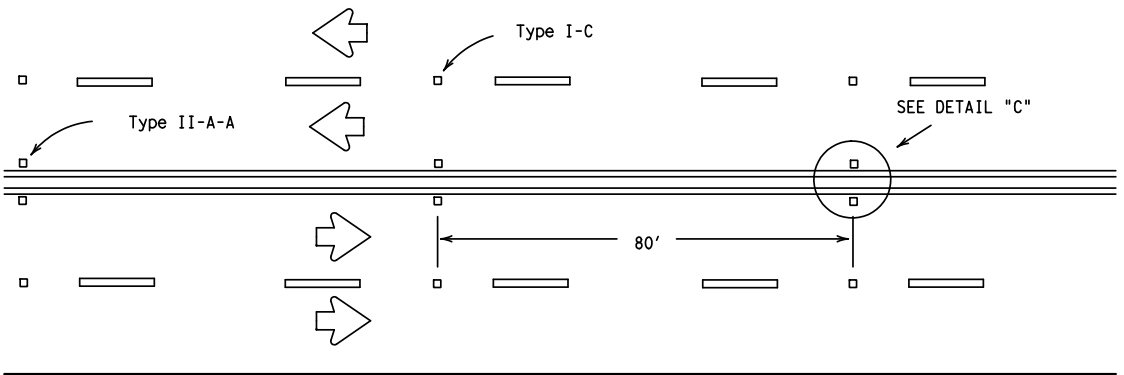
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REFLECTIVE RAISED PAVEMENT MARKERS
FOR VEHICLE POSITIONING GUIDANCE

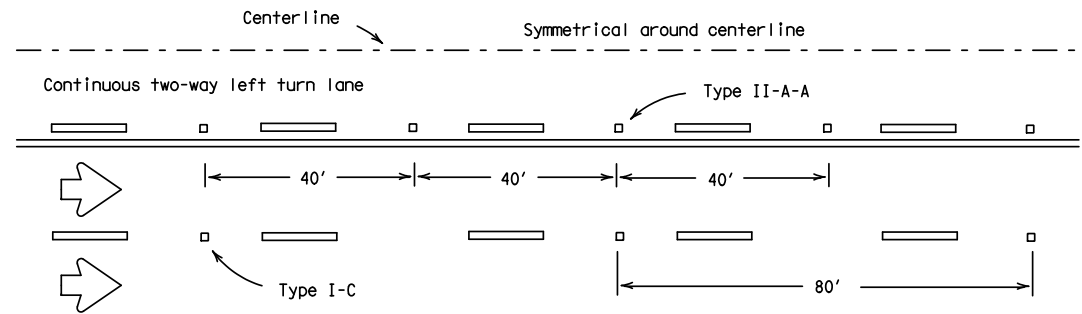
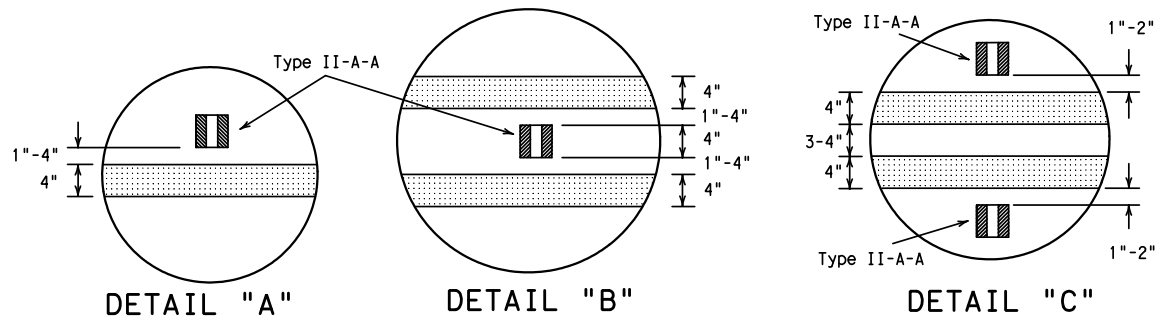


CENTERLINE FOR ALL TWO LANE ROADWAYS

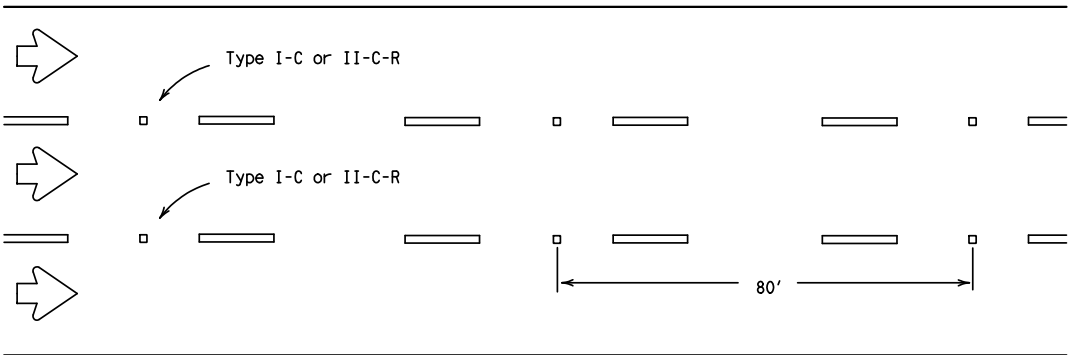


CENTERLINE & LANE LINES
FOR FOUR LANE TWO-WAY HIGHWAYS

Raised pavement marker Type I-C, clear face toward normal traffic, shall be placed on 80-foot centers.



CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE

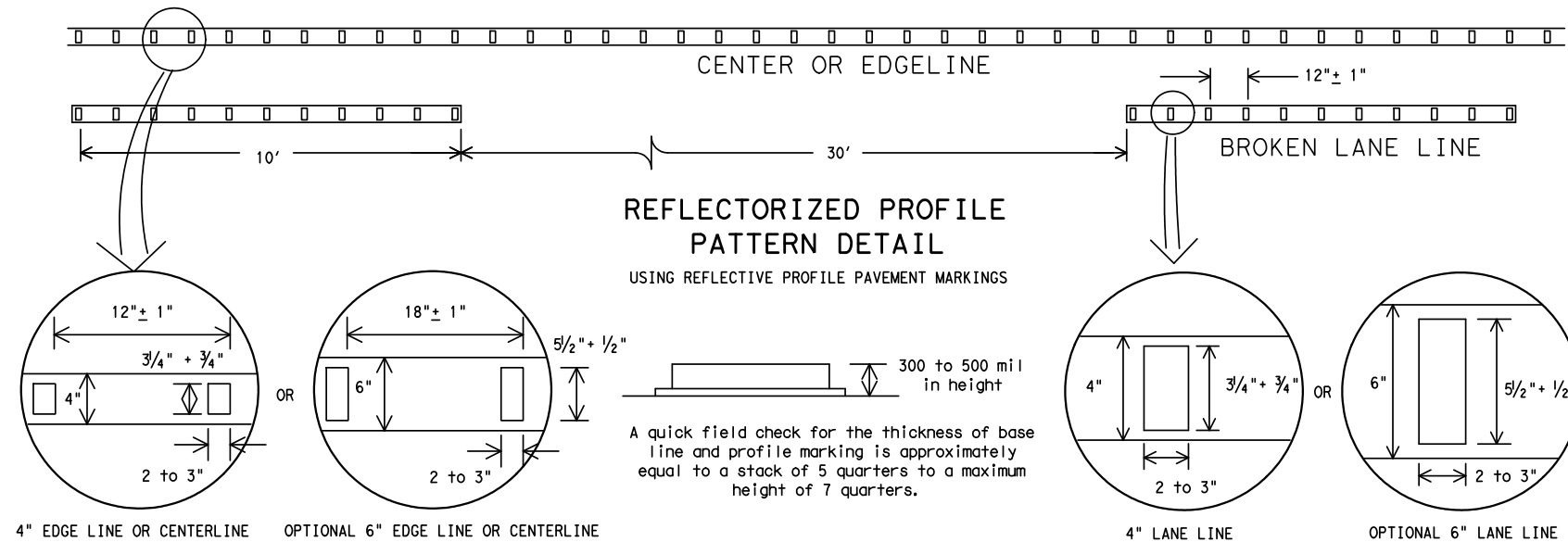


LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.

GENERAL NOTES

- All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
- On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

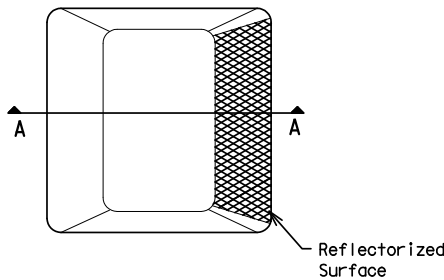


NOTE:

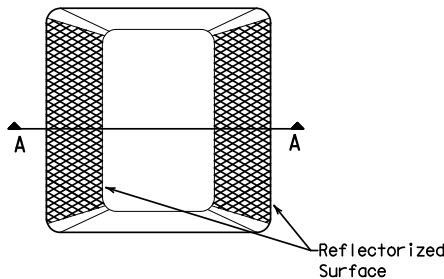
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

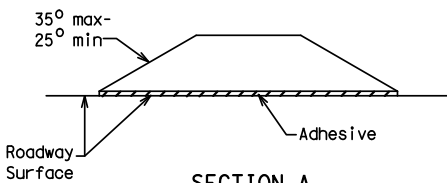
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



RAISED PAVEMENT MARKERS



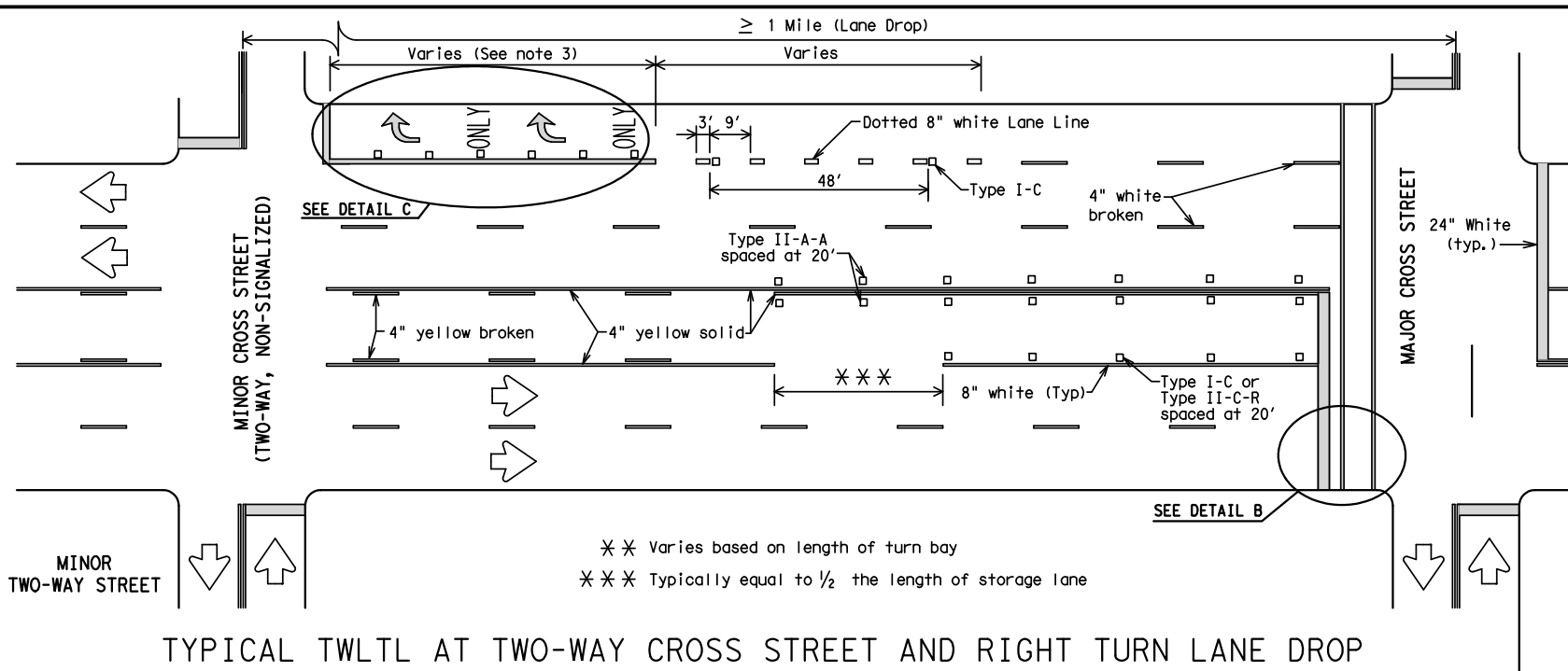
POSITION GUIDANCE USING
RAISED MARKERS
REFLECTORIZED PROFILE
MARKINGS

PM(2)-12

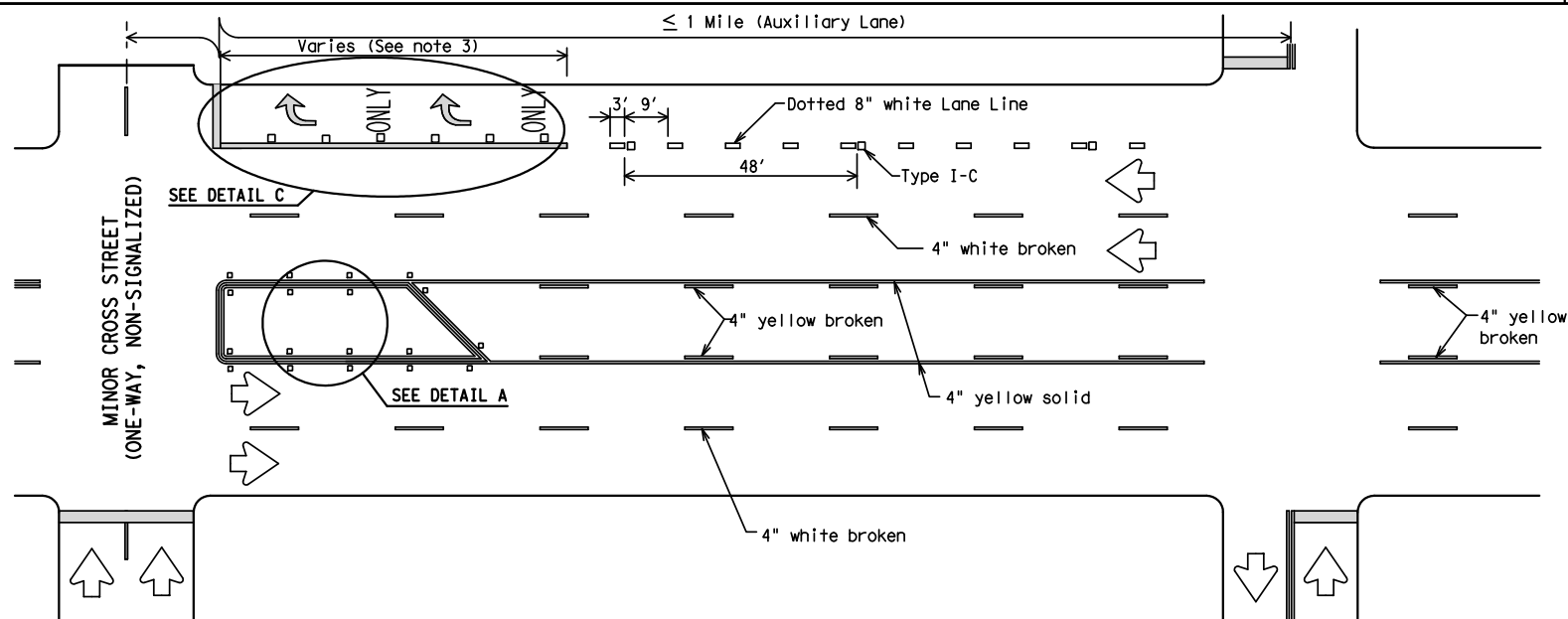
© TxDOT April 1977		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
4-92	2-10				
5-00	2-12				
8-00					
2-08					
		DIST	COUNTY		SHEET NO.

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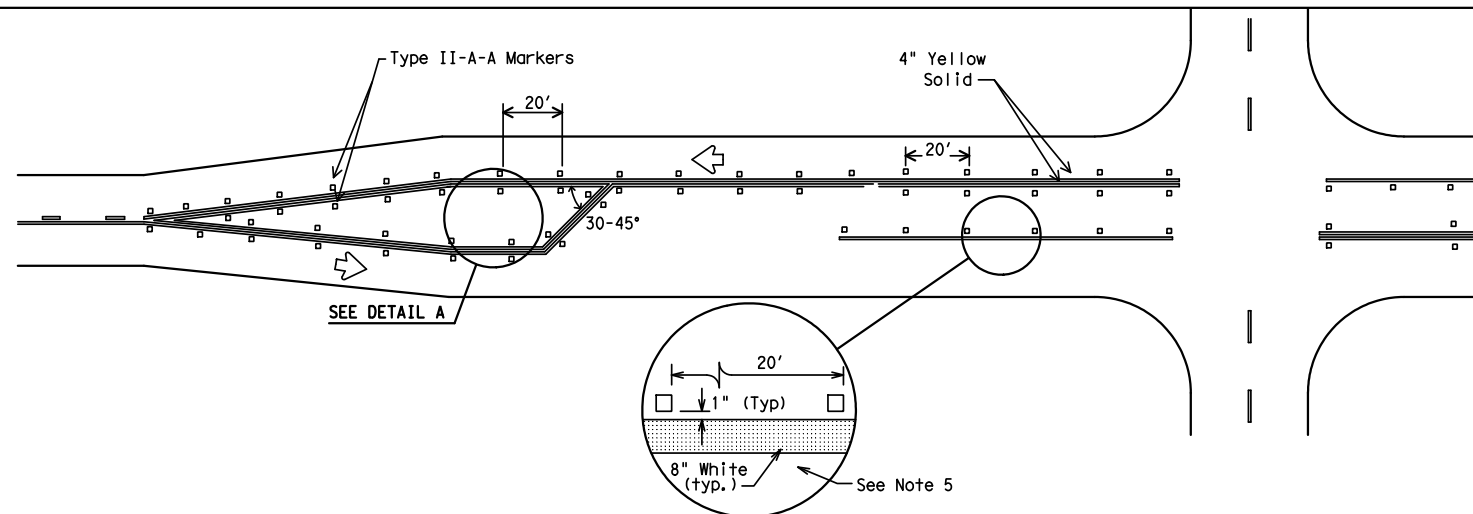
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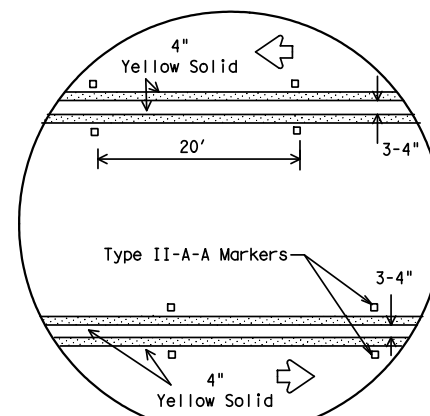
TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



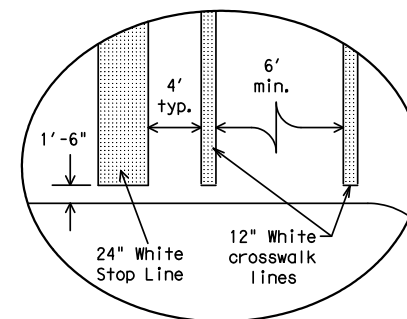
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



TYPICAL TWO-LANE HIGHWAY INTERSECTION WITH LEFT TURN BAYS



DETAIL A

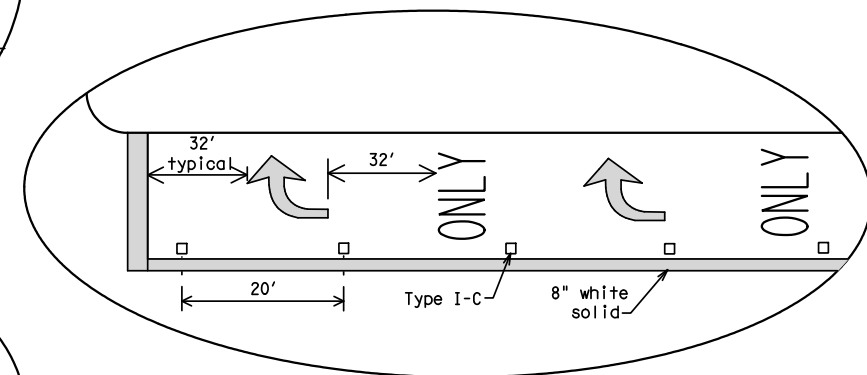


DETAIL B

Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



DETAIL C

GENERAL NOTES

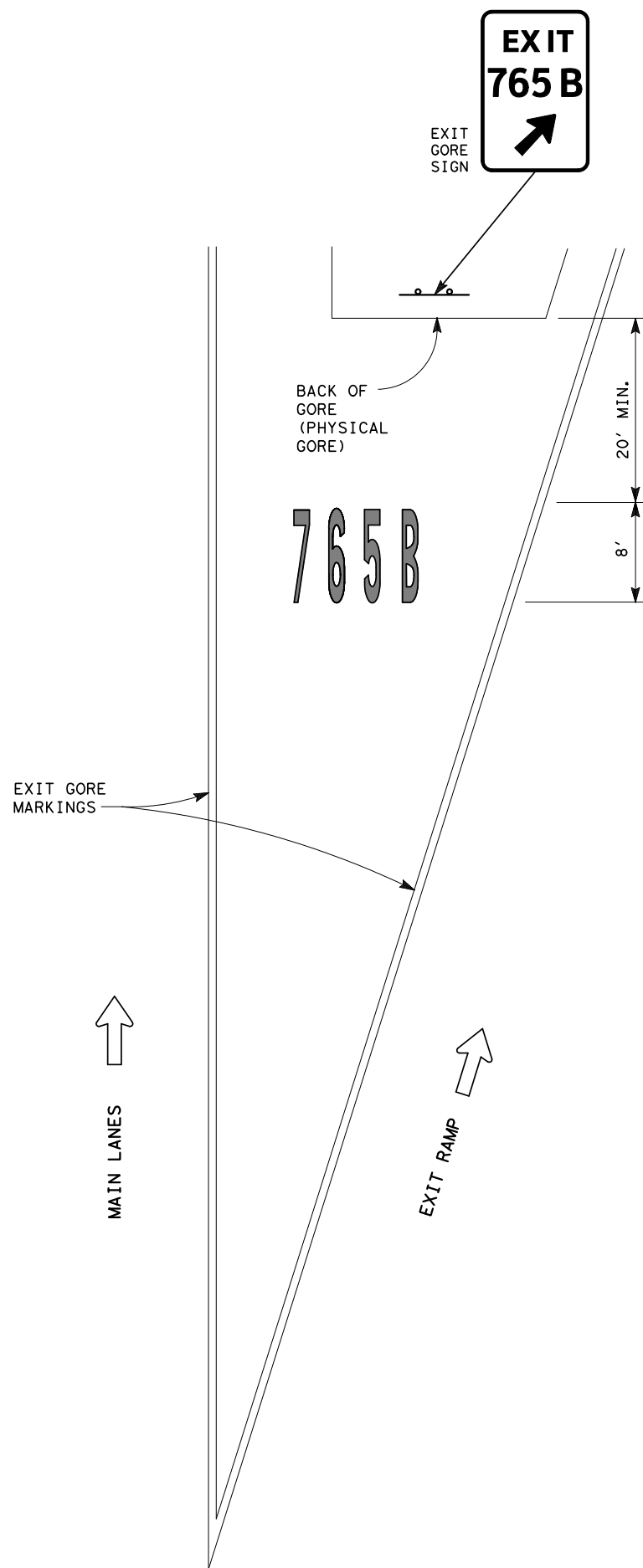
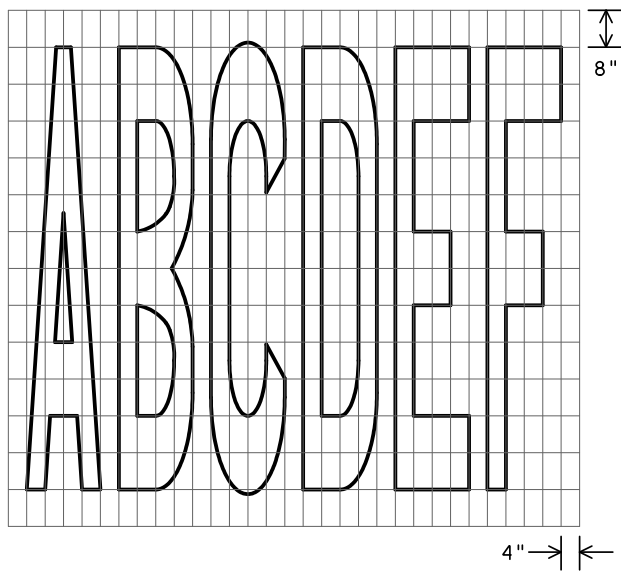
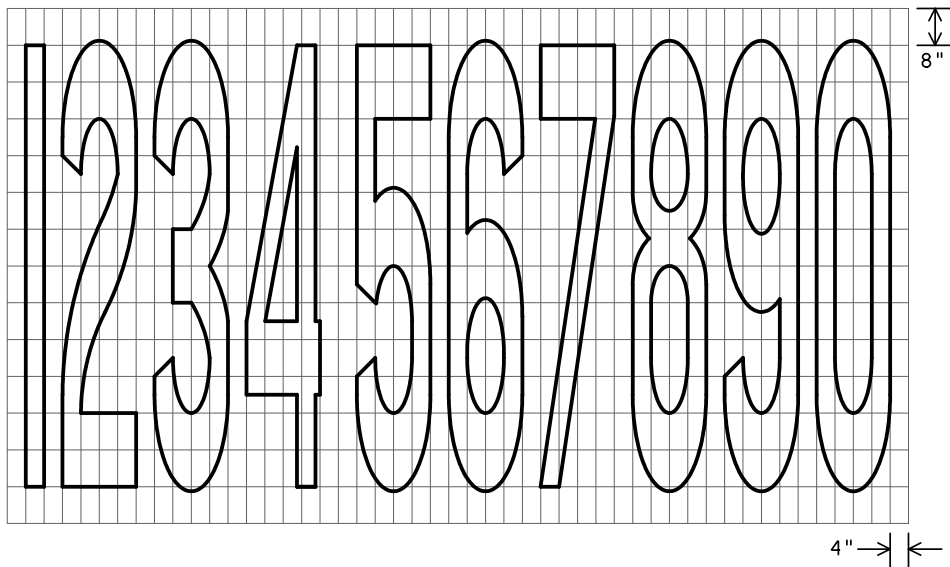
- Refer elsewhere in plans for additional RPM placement and details.
- Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows as shown in the Standard Highway Sign Designs for Texas.
- When lane used word and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
- Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used.
- Raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Raised pavement marker Type II-C-R with divided highways and raised medians.
- A two-way left-turn (TWLTL) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.



PAVEMENT MARKINGS FOR TWO-WAY LEFT TURN LANES DIVIDED HIGHWAYS AND RURAL LEFT TURN BAYS

PM(3)-12

© TxDOT April 1998		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
5-00	2-12				
8-00					
3-03					
2-10					
		DIST	COUNTY		SHEET NO.



GENERAL NOTES

1. Minimum 8 foot white markings should be used, unless otherwise noted.
2. Spacing between letters and numbers should be approximately 4 inches.
3. Pavement markings are to be located as specified elsewhere in the plans.
4. All pavement marking materials shall meet the required Departmental Material Specifications or as specified in these plans.



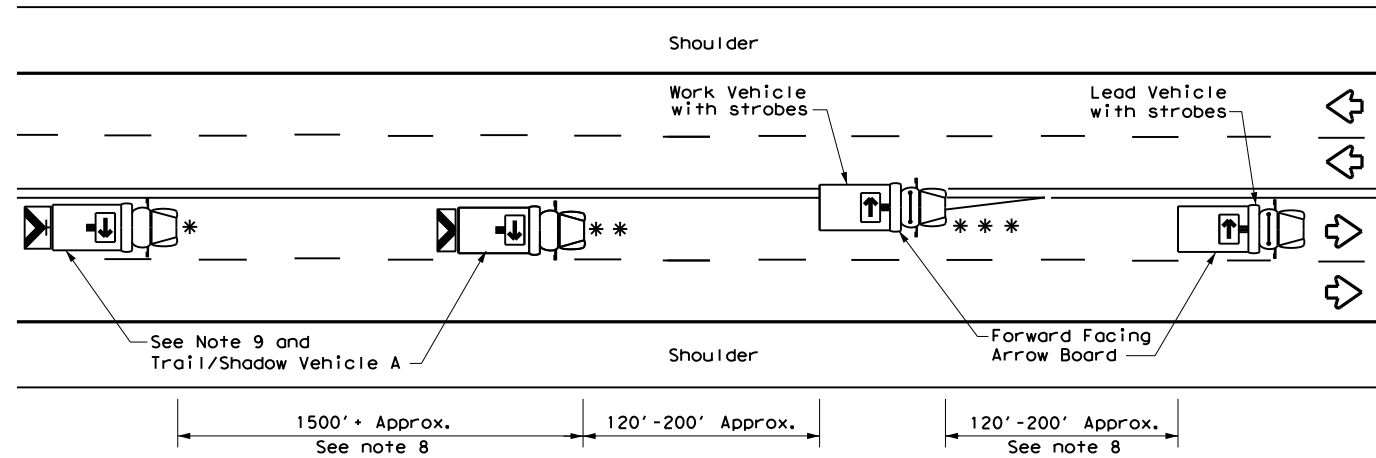
EXIT NUMBER GORE MARKINGS FOR AERIAL VIEW DETAIL

PM(4)-12

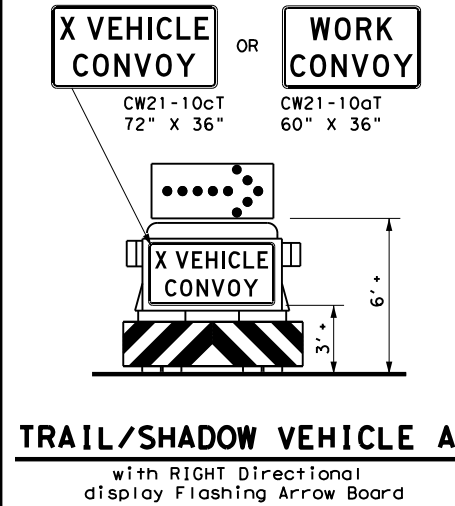
© TxDOT April 2006		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
2-10					
2-12					
		DIST	COUNTY		SHEET NO.

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DATE:
FILE:



TCP (3-1a)
UNDIVIDED MULTILANE ROADWAY

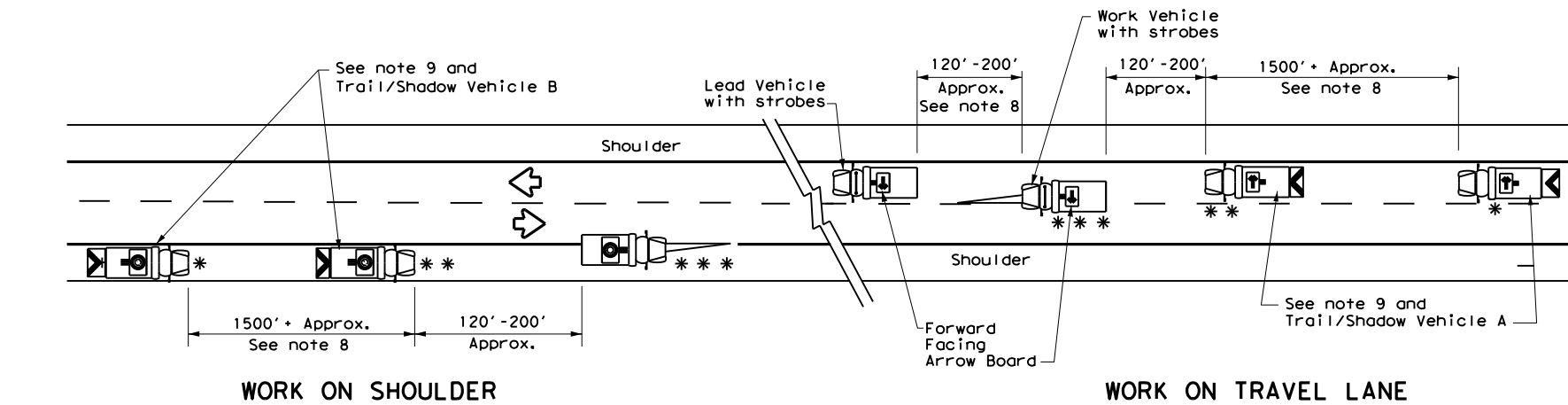


LEGEND				
*	Trail Vehicle	ARROW BOARD DISPLAY		
**	Shadow Vehicle			
***	Work Vehicle		RIGHT Directional	
	Heavy Work Vehicle		LEFT Directional	
	Truck Mounted Attenuator (TMA)		Double Arrow	
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)	

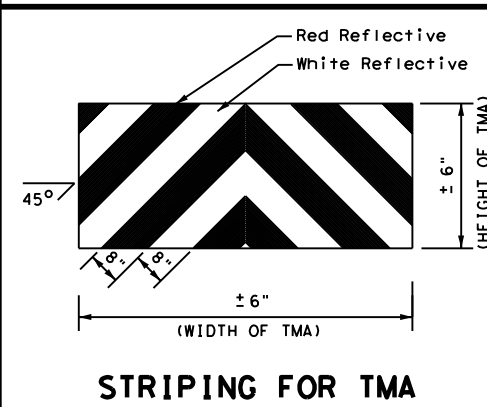
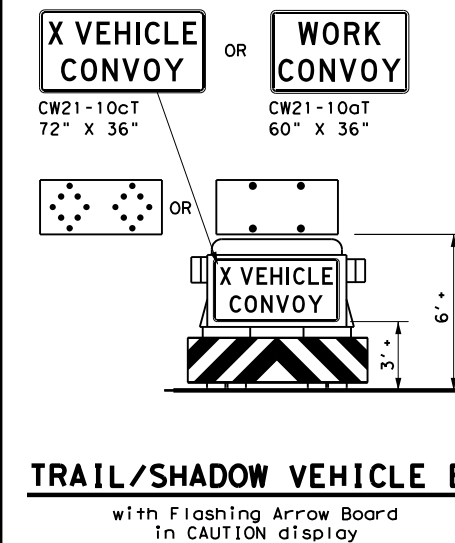
TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>


GENERAL NOTES

1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used the WORK vehicle must be equipped with an arrow board. The Engineer will determine if the LEAD VEHICLE and/or TRAIL VEHICLE are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. "X VEHICLE CONVOY" (CW21-10cT) or "WORK CONVOY" (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" X 48" diamond shaped "WORK CONVOY" (CW21-10T) or "X VEHICLE CONVOY" (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The "X VEHICLE CONVOY" sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a "DO NOT PASS" (R4-1) sign should be placed on the back of the rearmost protection vehicle.



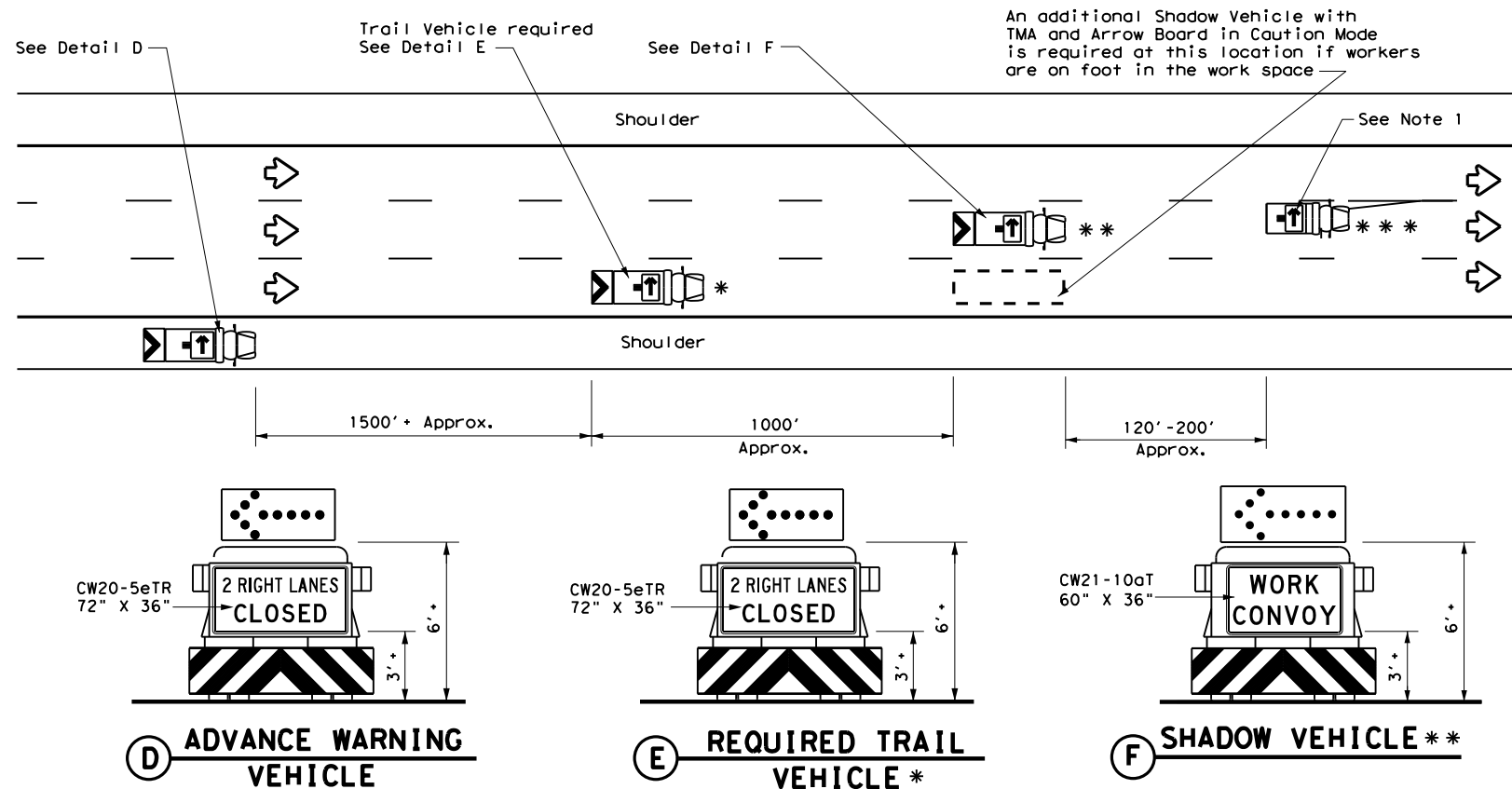
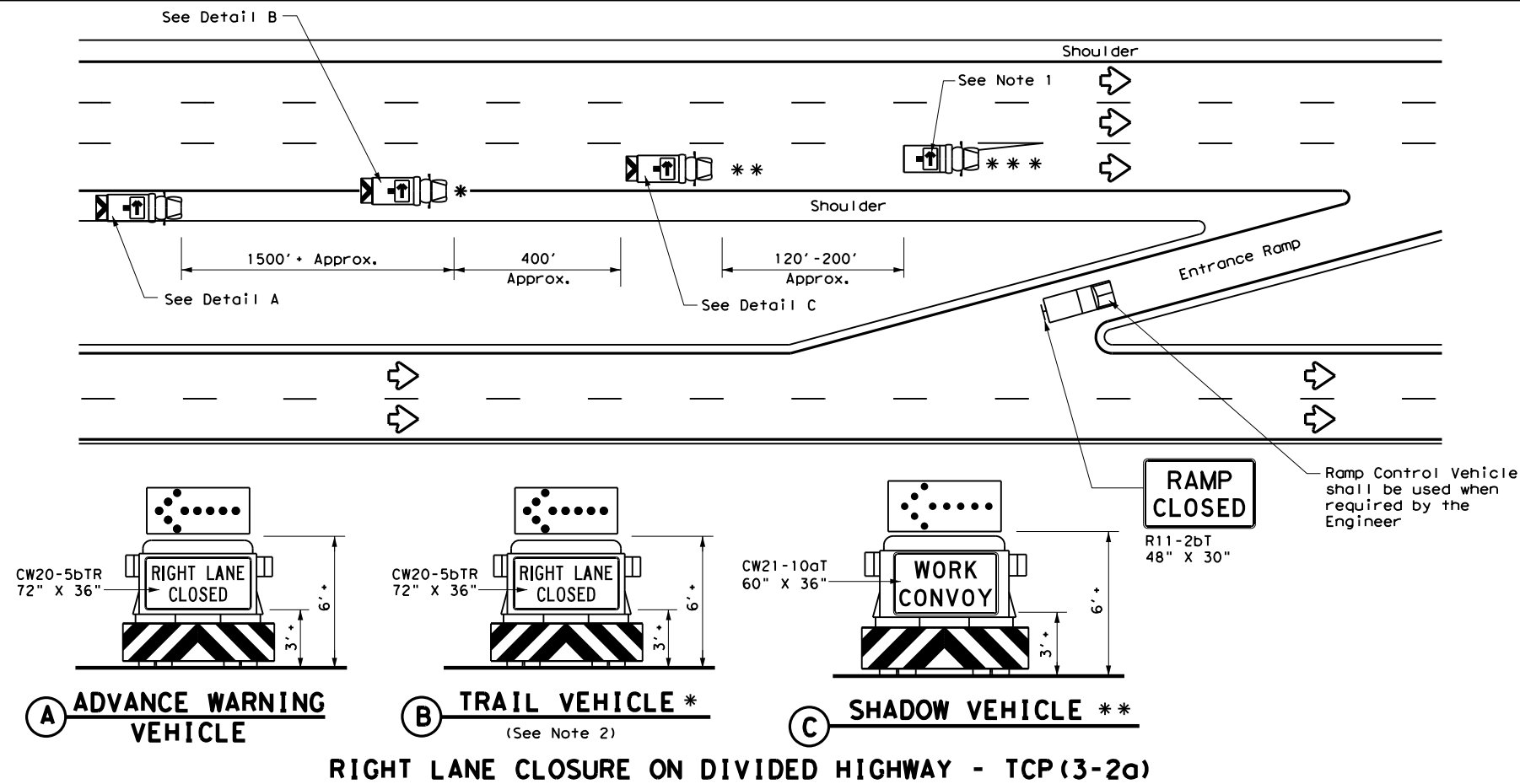
TCP (3-1b)
TWO-WAY ROADWAY WITH PAVED SHOULDERS



 Texas Department of Transportation		Traffic Operations Division Standard	
TRAFFIC CONTROL PLAN MOBILE OPERATIONS UNDIVIDED HIGHWAYS			
TCP (3-1) - 13			
FILE: tcp3-1.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
© TxDOT December 1985 REVISIONS 2-94 4-98 8-95 7-13 1-97	CONT	SECT	JOB
	DIST	COUNTY	SHEET NO.

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FILE:

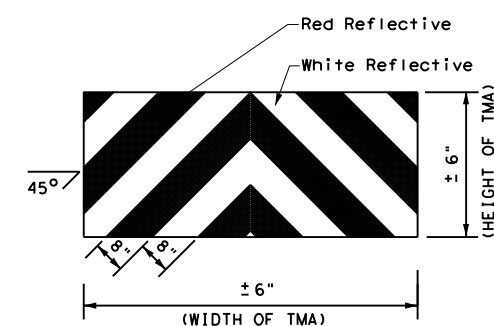


LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)


TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

GENERAL NOTES

- ADVANCE WARNING, TRAIL and SHADOW vehicles shall be equipped with Type B or Type C flashing arrow boards as per the Barricade and Construction (BC) standards. Arrow boards on WORK vehicles will be optional based on the type of work being performed. The arrow boards shall be operated from inside the vehicle.
- For TCP(3-2a) the Engineer will determine if the TRAIL VEHICLE is required based on prevailing roadway conditions, traffic volume, and sight distance restrictions. All other vehicles shown for both TCP(3-2a) and TCP(3-2b) are required.
- The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
- The use of truck mounted attenuators (TMA) on the ADVANCE WARNING, SHADOW, and TRAIL vehicles are required.
- Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DMS 8300, Type A.
- Each vehicle shall have two-way radio communication capability.
- When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
- Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE may vary according to terrain, work activity and other factors.
- Standard 48" X 48" diamond shaped warning signs with the same message as those shown may be used where adequate mounting space exists.
- The signs shown should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or a truck mounted changeable message sign (TMCMS) with a minimum character height of 12", and displaying the same legend may be substituted for these signs. An appropriate directional arrow display, simulating the size and legibility of the flashing arrow board, must be used in the second phase of the PCMS/TMCMS message. When this is done, the arrow board will not be required on the Advance Warning Vehicle.
- Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
- The principles on this sheet may be used to close lanes from the left side of the roadway considering the number of lanes, shoulder width, sight distance, and ramp frequency.
- Signs and flashing arrow board modes shall be appropriately altered when implementing left lane closures or interior closures which close the left lanes.
- The Advance Warning Vehicle may straddle the edgeline when shoulder width makes it necessary.

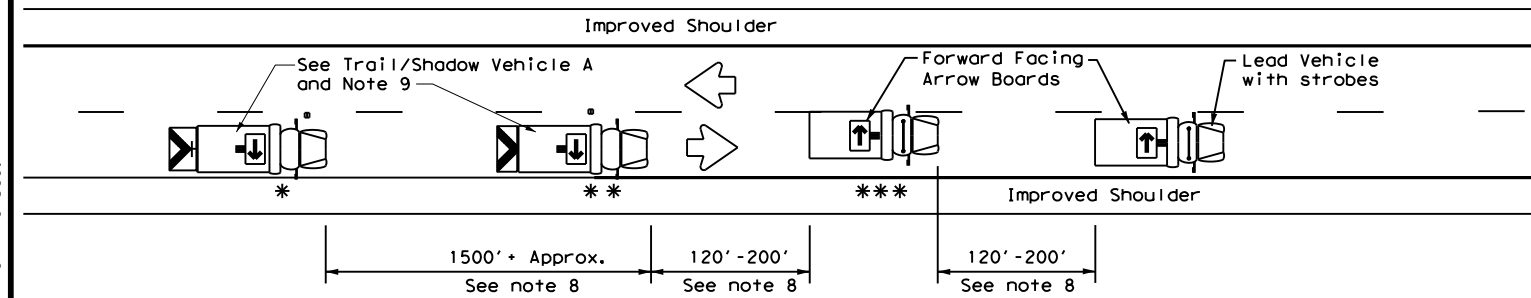


STRIPING FOR TMA

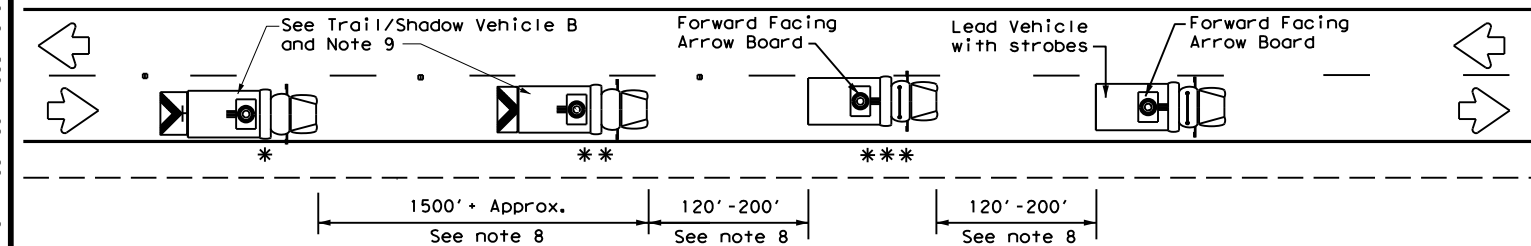
 Texas Department of Transportation		Traffic Operations Division Standard			
<div>TRAFFIC CONTROL PLAN</div> <div>MOBILE OPERATIONS</div> <div>DIVIDED HIGHWAYS</div> <div>TCP (3-2) - 13</div>					
FILE: tcp3-2.dgn		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT December 1985		CONT	SECT	JOB	HIGHWAY
REVISIONS					
2-94	4-98				
8-95	7-13				
1-97					
		DIST	COUNTY		SHEET NO.

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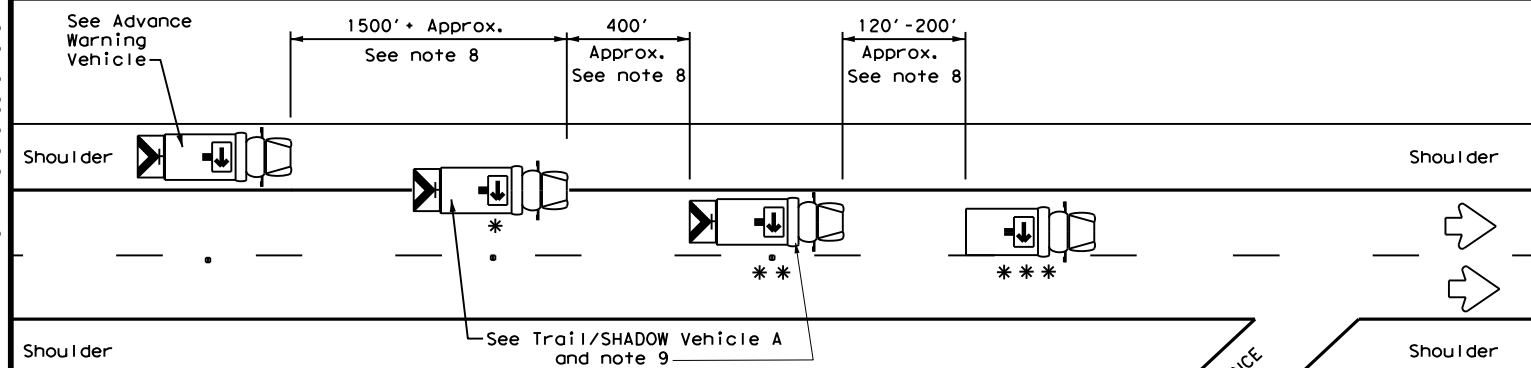
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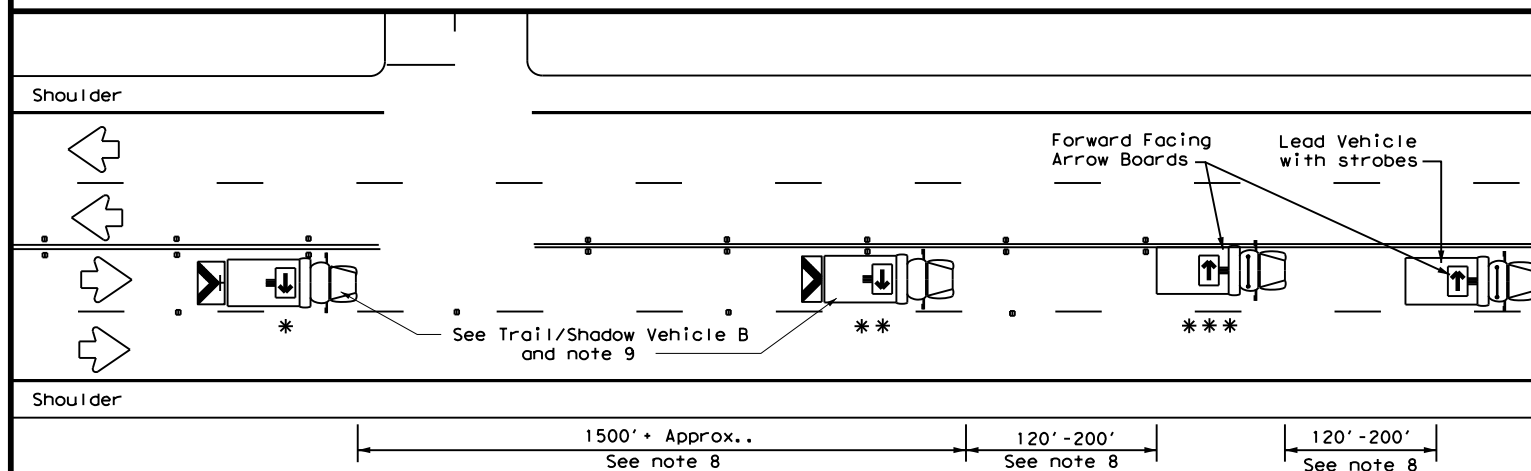
TCP (3-3a)
**TWO LANE HIGHWAY WITH PAVED SHOULDERS
(WORK ON TRAVEL LANE)**



TCP (3-3b)
**TWO LANE HIGHWAY WITHOUT PAVED SHOULDERS
(WORK ON TRAVEL LANE)**

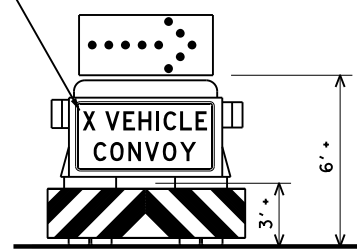


TCP (3-3c)
DIVIDED MULTILANE HIGHWAY



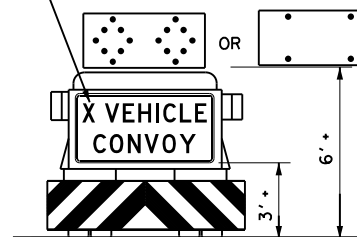
TCP (3-3d)
UNDIVIDED MULTILANE HIGHWAY

X VEHICLE CONVOY OR **WORK CONVOY**
CW21-10cT 72" X 36" CW21-10aT 60" X 36"

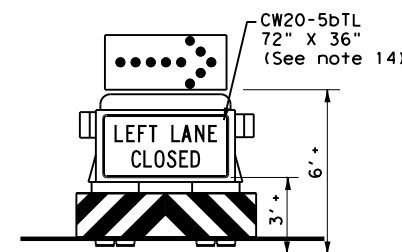


TRAIL/SHADOW VEHICLE A
with RIGHT Directional display
Flashing Arrow Board

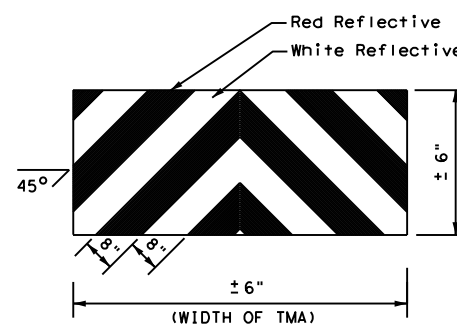
X VEHICLE CONVOY OR **WORK CONVOY**
CW21-10cT 72" X 36" CW21-10aT 60" X 36"



TRAIL/SHADOW VEHICLE B
with Flashing Arrow Board
in Caution Mode



ADVANCE WARNING VEHICLE



STRIPING FOR TMA

LEGEND

* * *	Trail Vehicle	ARROW BOARD DISPLAY	
* * *	Shadow Vehicle		
* * *	Work Vehicle	RIGHT	RIGHT Directional
	Heavy Work Vehicle	LEFT	LEFT Directional
	Truck Mounted Attenuator (TMA)	DOUBLE	Double Arrow
	Traffic Flow	CAUTION	CAUTION (Alternating Diamond or 4 Corner Flash)

TYPICAL USAGE

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
✓				

GENERAL NOTES

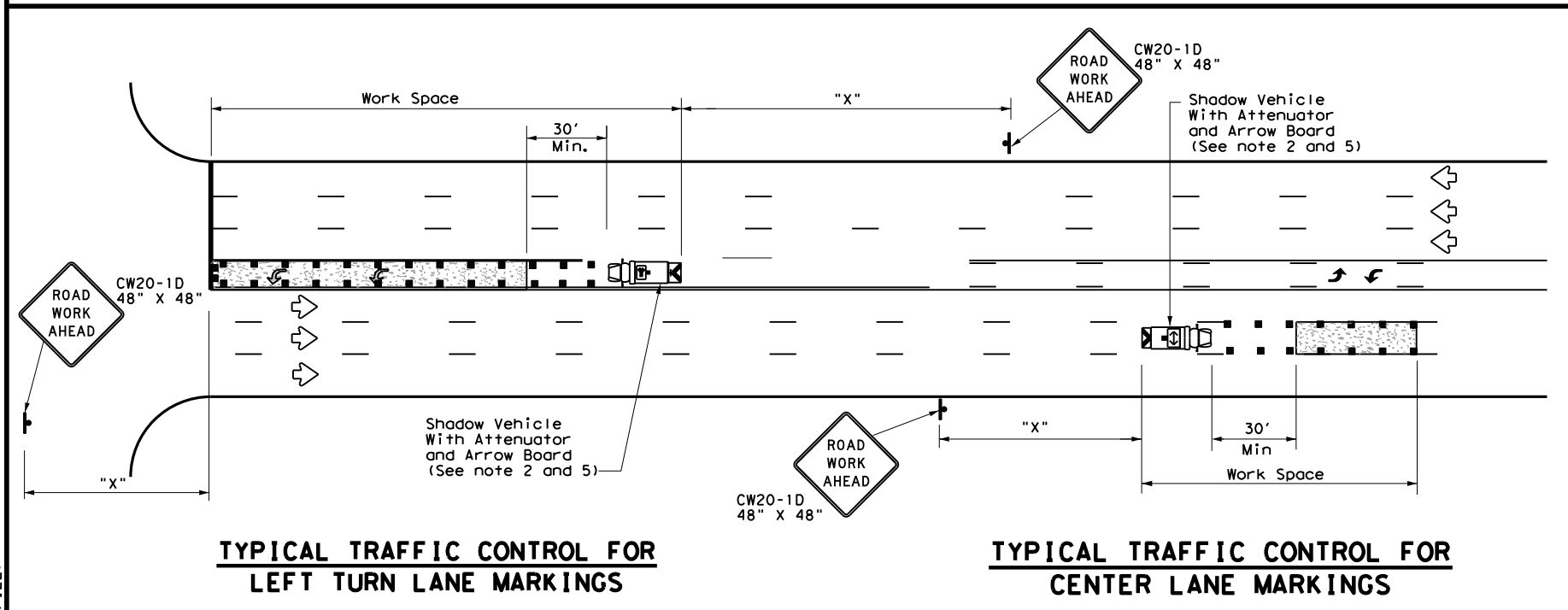
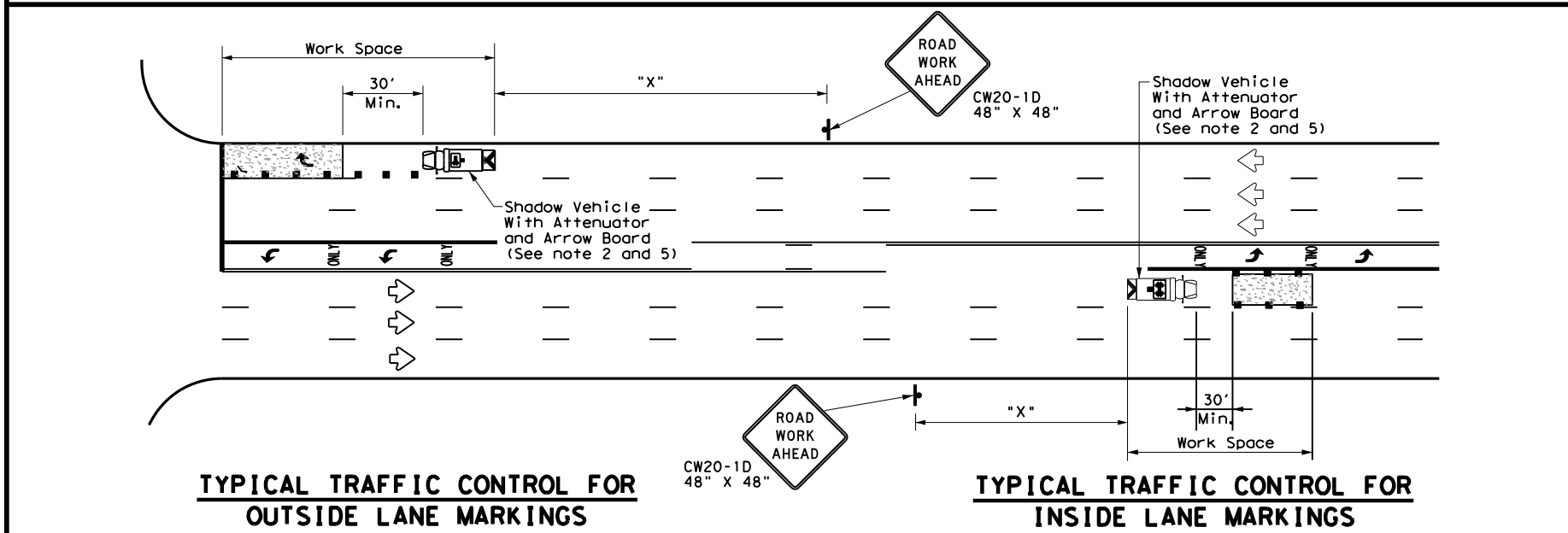
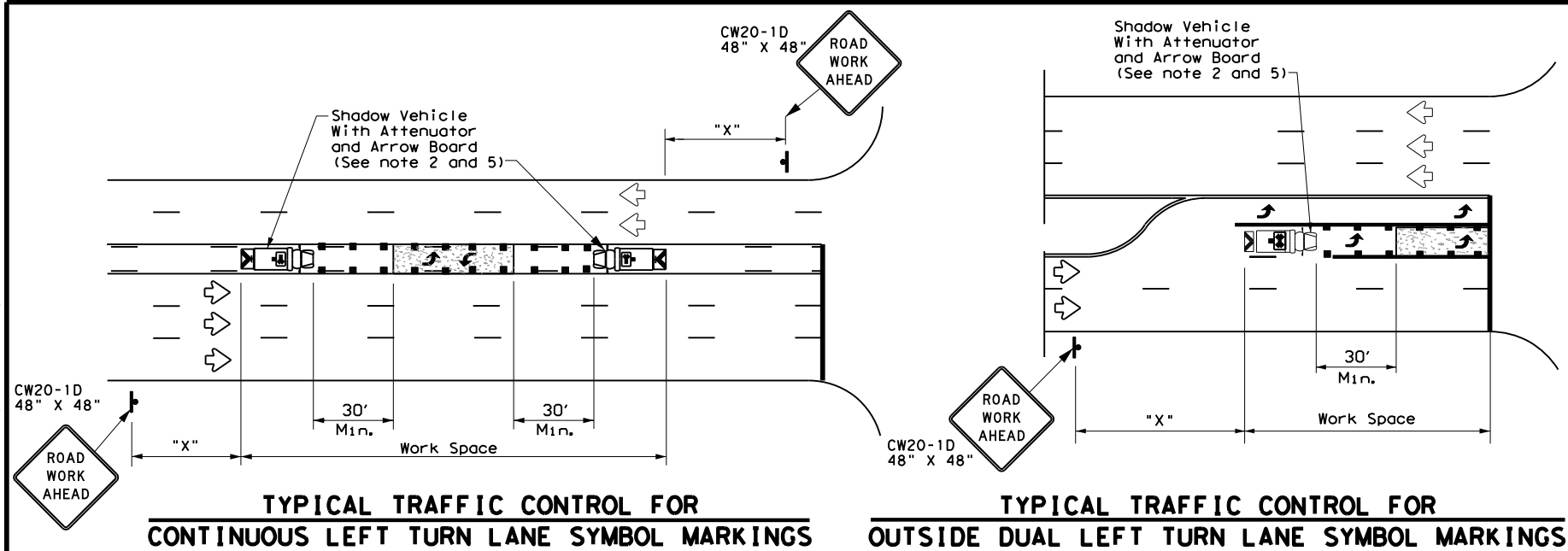
1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used on two way roads the WORK vehicle must have an arrow board. For divided roadways, the arrow board on the WORK vehicle is optional based on the type of work being performed. The Engineer will determine if the LEAD vehicle and/or TRAIL vehicle are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating, or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE, ADVANCE WARNING and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. X VEHICLE CONVOY (CW21-10cT) or WORK CONVOY (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" x 48" diamond shaped WORK CONVOY (CW21-10T) or X VEHICLE CONVOY (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The X VEHICLE CONVOY sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. For divided highways with two or three lanes in one direction, the appropriate LEFT LANE CLOSED (CW20-5bTL), RIGHT LANE CLOSED (CW20-5bTR), or CENTER LANE CLOSED (CW20-5dT) sign should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or truck mounted changeable message sign (TMCMS) with a minimum character height of 12", and displaying the same legend may be substituted for these signs. An appropriate directional arrow display, simulating the size and legibility of the flashing arrow board may be used in the second phase of the PCMS/TMCMS message. When this is done, the arrow board will not be required on the Advance Warning Vehicle.
11. A double arrow shall not be displayed on the arrow board on the Advance Warning Vehicle.
12. For divided highways with three or four lanes in each direction, use TCP(3-2).
13. Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
14. The Advance Warning Vehicle may straddle the edgeline when Shoulder width makes it necessary.
15. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a DO NOT PASS (R4-1) sign should be placed on the back of the rearmost protection vehicle.

TRAFFIC CONTROL PLAN MOBILE OPERATIONS RAISED PAVEMENT MARKER INSTALLATION/ REMOVAL TCP (3-3) - 14

FILE:	tcp3-3.dgn	DN:	TxDOT	CK:	TxDOT	OW:	TxDOT	CK:	TxDOT
© TxDOT	September 1987	CONT	SECT	JOB	HIGHWAY				
2-94	4-98								
8-95	7-13								
1-97	7-14								

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DATE: FILE:



LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		Channelizing Devices

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only

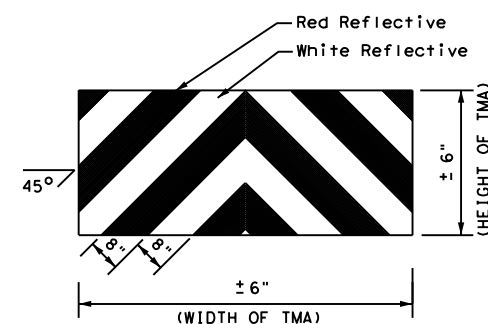
** Taper lengths have been rounded off.

L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
✓				

GENERAL NOTES

1. This traffic control plan is for use on conventional roads posted at 45 mph or less and is intended for mobile operations that move continuously or intermittently (stopping up to approximately 15 minutes) such as short-line striping and in-lane rumble strips. When activities are anticipated to take longer amounts of time or traffic conditions warrant, a short duration or short-term stationary traffic control plan should be used.
2. A Truck Mounted Attenuator shall be used on Shadow Vehicle. Striping on the back panel of all truck mounted attenuators shall be 8" red and white reflective sheeting placed in an inverted "V" design. Reflective sheeting shall meet or exceed the reflectivity and color requirements of departmental material specification DMS-8300, Type A.
3. All traffic control devices shall be in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD), latest edition.
4. The use of yellow rotating beacons or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the drivers side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
5. Flashing arrow board shall be used on Shadow Vehicle. Flashing arrow board shall be Type B or Type C as per BC Standards. The arrow board operation shall be controlled from inside the truck.



STRIPING FOR TMA

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN

MOBILE OPERATIONS FOR

ISOLATED WORK AREAS

UNDIVIDED HIGHWAYS

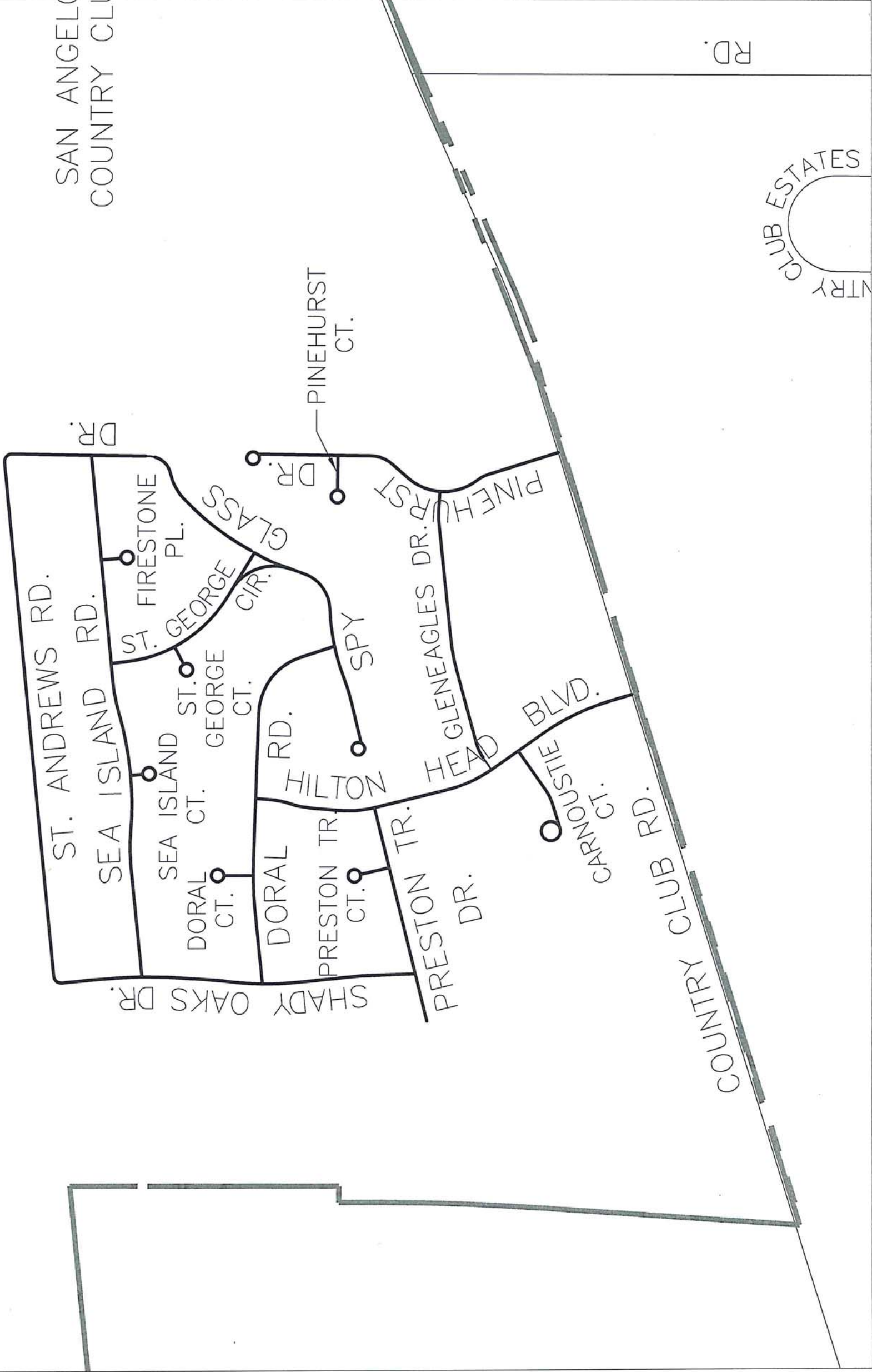
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© TxDOT July, 2013	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY	SHEET NO.	



Estimated surface area: 69,197 SY

Base Bid Section 1



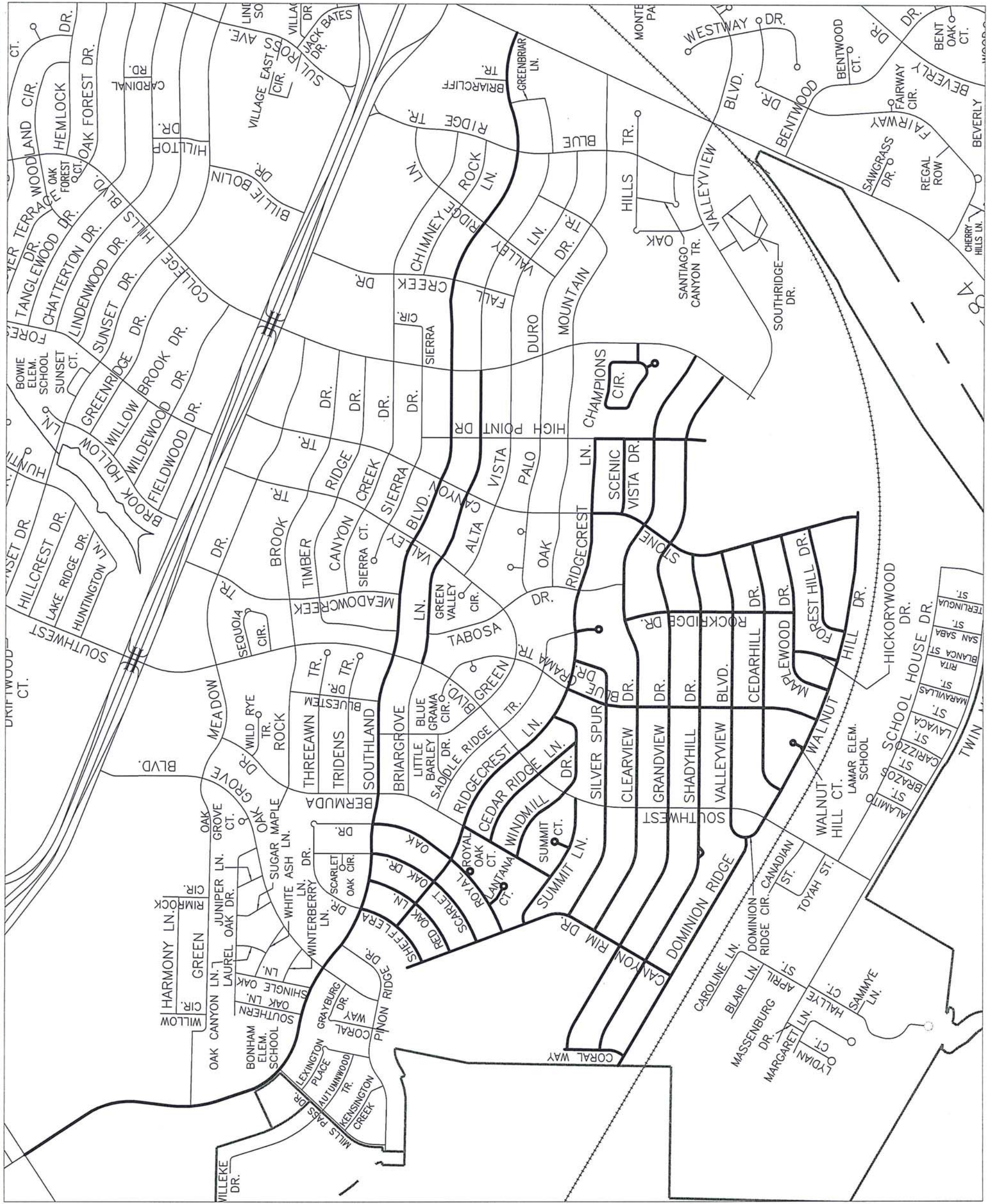


1" = 2000'

Lake Nasworthy Area

Estimated surface area: 195,076 SY

Base Bid Section 2



1" = 1000'

Southland Boulevard Area

Estimated surface area: 335,650 SY

Base Bid Section 3



1" = 1000'

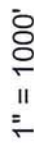
F.M. HWY. 853

Upper Bluffs Area

Estimated surface area: 149,014 SY

Base Bid Section 4





Estimated surface area: 404,148 SY

Base Bid Section 5

