

| ROUTINE MAINTENANCE CONTRACT PROJECT NUMBER | | | |
|---|--------|-----|-----------|
| RMC - 6440-37-001 | | | |
| CONT | SECT | JOB | HIGHWAY |
| 6440 | 37 | 001 | US 87 |
| DIST | COUNTY | | SHEET NO. |
| SJT | CONCHO | | 1 |

INDEX OF SHEETS

SHEET NO. DESCRIPTION
SEE SHEET NO. 2

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

ROUTINE MAINTENANCE CONTRACT
RMC - 6440-37-001

US 87

CONCHO

NET LENGTH OF PROJECT = 0.001 MI

LIMITS: VARIOUS HIGHWAYS IN CONCHO, MENARD, SCHLEICHER AND SUTTON COUNTIES

FOR THE CONSTRUCTION OF MOWING OF RIGHT OF WAY

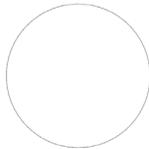
FINAL PLANS

Letting Date: _____
Name of Contractor: _____
Date Work Began: _____
Date Work Completed: _____
Date Work Accepted: _____
Final Contract Cost: _____

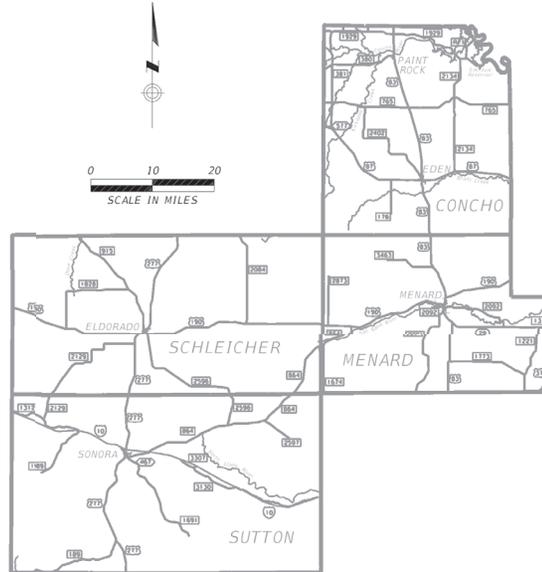
Project was built according to the Plans & Specifications.
These final plans reflect the work done and the quantities
shown thereon and on the Final Estimate are Final Quantities.

Area Engineer

Date



Summary of Change Orders:



EXCEPTIONS
NONE
EQUATIONS
NONE
RAILROAD CROSSINGS
NONE

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION
NOVEMBER 1, 2014 SHALL GOVERN ON THIS PROJECT.

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RECOMMENDED FOR LETTING:

DocuSigned by:
[Signature]
608D7E63E78F492
District Maintenance Engineer

APPROVED FOR LETTING:

DocuSigned by:
[Signature], P.E.
498B3E968D54CF
District Director of Operations

DATE: 4/6/2023 3:44:09 PM
 FILE: pw:\tsd\project\project\online.com\T10012\Documents\101 - SJT\Maintenance Project\BMC 6440-37-001 Concho Mainwy2 - DESIGN FILES\Plan Sheets\002 INDEX OF SHEETS.dgn

| No. | Sheet Title |
|--------|----------------------------------|
| | <u>DESCRIPTION</u> |
| 1 | TITLE SHEET |
| 2 | INDEX OF SHEETS |
| 3 | GENERAL NOTES |
| 4 | ESTIMATE & QUANTITY |
| 5 | SCOPE OF WORK |
| | <u>TRAFFIC CONTROL PLAN</u> |
| | <u>TRAFFIC CONTROL STANDARDS</u> |
| # 6-17 | BC(1)-21 THRU BC(12)-21 |
| # 18 | RS-TCP-05 |



THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE BY AN # HAVE BEEN ISSUED BY ME AND ARE APPLICABLE TO THIS PROJECT.

John R. Eck P.E. 7 Apr 23
 _____ DATE

| | | | |
|---------------------------|---------------|---------------------|------------------------------------|
| | | San Angelo District | |
| <h3>INDEX OF SHEETS</h3> | | | |
| SHEET 1 OF 1 | | | |
| © TxDOT 2023 REVISIONS | COUNT 6440 | SET 37 | JOB 001 COUNTY CONCHO |
| | | | HIGHWAY US 87 SHEET NO. 2 |

County: Concho

Sheet: 3

Highway: US 87

Control: 6440-37-001

GENERAL NOTES

The following Standard Sheets have been modified: none

The work consists of mowing the roadside on various highways in Concho, Menard, Schleicher and Sutton Counties.

Contractor questions on this project are to be addressed by the following individuals:

Jesus Garcia, P.E. and Randy Baiza, P.E.; email Jesus.Garcia@txdot.gov and Randy.Baiza@txdot.gov

Contractor questions will be accepted through email, phone, and in person by the above individuals.

Questions may be submitted via the Letting Pre-Bid Q&A web page. This webpage can be accessed from the Notice to Contractors dashboard located at the following address: <https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors>

All contractor questions will be reviewed by the Engineer. All questions and any corresponding responses that are generated will be posted through the same Letting Pre-Bid Q&A web page.

The Letting Pre-Bid Q&A web page for each project can be accessed by using the dashboard to navigate to the project you are interested in by scrolling or filtering the dashboard using the controls on the left. Hover over the blue hyperlink for the project you want to view the Q&A for and click on the link in the window that pops up.

Jesus Garcia, P.E. is the Supervisor in charge of the work. Direct any questions concerning the work to him at 325-446-2413(b), 325-446-9603(o), 325-215-3049(c). Direct any questions concerning the letting process to the District Maintenance Office in San Angelo at 325-947-9236. Direct any questions concerning the highways to Israel Ortegon, Maintenance Supervisor in Eden, at 325-869-2521(b), 325-869-5041(o), 325-456-7891(c).

This is a multiple work order contract.

A mowing cycle consists of the work described in an individual work order.

Each mowing cycle will commence upon the issuance of a work order by the Engineer.

The work order will specify the tracts (highways) for mowing, the number of working days to complete the mowing cycle and the date time charges begin. The working days are calculated by summing the working days assigned to each tract. See the Scope of Work for the working days assigned to each tract.

Complete each mowing cycle within the number of working days stated in the work order. Failure to finish within the allotted working days will result in liquidated damages.

County: Concho

Sheet: 3

Highway: US 87

Control: 6440-37-001

The proposal shows the total days calculated for mowing all tracts in a cycle.

Every effort has been made to include all area quantities into the mowing quantities. Any additional quantities not included will be considered subsidiary.

Provide the Engineer a telephone number to receive work related messages. Maintain a person to answer the telephone between the hours of 8:00 am and 5:00 pm. Maintain an answering machine or an answering service for those hours the person is not available. Reply to each message within twenty-four hours of its sending time.

Report or deliver to the Engineer lost and found items.

Plan sheets are under separate cover. Obtain them from reproductions firms in Austin.

Item 4, "Scope of Work"

Special Provision 004-002 is included with this contract. This provides for an option for multiyear Maintenance Contracts.

Item 6, "Control of Materials"

When allowed store materials and equipment in approved areas within the right of way.

Item 7, "Legal Relations and Responsibilities"

No significant traffic generator events have been identified.

Item 8, "Prosecution and Progress"

Perform all work during daylight hours.

Item 9, "Measurement and Payment"

The progress payment period shall end two working days before the last working day of the month. Deliver invoices to be paid as material on hand on or before the end of the progress payment period.

Item 500, "Mobilization"

There is no pay item for mobilization. Consider it subsidiary to the various bid items.

Item 502, "Barricades, Signs and Traffic Handling"

There are no pay item(s) for Item 502, "Barricades, Signs and Traffic Handling" or traffic control, except Item 6185, Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA). Consider it subsidiary to the various bid items.

Provide traffic control as shown in the accompanying TCP.

Any additional signs deemed necessary by the Engineer for traffic control are subsidiary to the various bid items.

County: Concho

Sheet: 3

Highway: US 87

Control: 6440-37-001

TxDOT will not provide or sell traffic control devices.

Item 506, "Temporary Erosion, Sedimentation, and Environmental Controls"

The project is exempt from the Texas Pollutant Discharge Elimination System (TPDES) General Permit (TXR150000). Exempt projects are those that disturb less than one acre or routine maintenance activities that maintain the original line and grade, hydraulic capacity, or original purposes of the site. No temporary erosion control measures or Storm Water Pollution Prevention Plan (SW3P) have been included in the plans.

Item 730, "Roadside Mowing"

No minimum number of mowers are required to perform mowing. Visit each site to determine daily production rates that results in completion of the work within the allocated working days for the mowing cycle. Failure to finish within the allocated working days will result in liquidated damages. If the total number of working days is not used during the completion of the work required within one cycle, the working days will not be carried forward to any cycle periods.

Non-mow areas include landscape or beautification areas.

Mowing area for medians consists of edge of pavement to edge of pavement, including small width sections by cable barrier.

Use small rigid frame mowers in urban areas behind curb & gutter where space is limited, and numerous obstructions persist. Approach the Engineer for approval of other equipment options.

Hand trimming also includes an eight feet (8') width behind metal beam guard fence and vegetation in concrete islands and riprap. Hand trim around areas of cable barrier narrower than full-width mowers. Mow around all signs, delineators, and culverts.

Set mower cutting height at five inches (5"). Re-mow any areas not cut to (5").

Completely remove dirt and trimmings from mowing equipment before crossing any county line for prevention of fire ant and bitter weed contamination.

Sharpen blades weekly during mowing cycle.

Do not park unattended equipment within thirty feet (30') of the pavement edge.



Estimate & Quantity Sheet

CONTROLLING PROJECT ID 6440-37-001

DISTRICT San Angelo
HIGHWAY US0087

COUNTY Concho

| CONTROL SECTION JOB | | 6440-37-001 | | TOTAL EST. | TOTAL FINAL |
|---------------------|----------|---------------------|------|------------|-------------|
| PROJECT ID | | A00195695 | | | |
| COUNTY | | Concho | | | |
| HIGHWAY | | US0087 | | | |
| ALT | BID CODE | DESCRIPTION | UNIT | EST. | FINAL |
| | 730-6002 | FULL - WIDTH MOWING | AC | 7,584.000 | |
| | | | | 7,584.000 | |

DATE: 4/6/2023 3:45:25 PM FILE: \\h:\stet\project\work\escoll\line.com\F00072\Documents\007 - SJT\Maintenance\Projects\RMF_8446-37-001_Concho_Mowing_2 - DESIGN_FILES\Map_Sheets\005_SCOPE OF WORK.dwg

SCOPE OF WORK

| TRACT | HIGHWAY | COUNTY | LIMITS | REFERENCE MARKER | TOTAL MILES | NUMBER OF FULL WIDTH MOWS | ACRES ONE FULL WIDTH MOW | NUMBER OF DAYS ONE FULL WIDTH MOW | 730-6002 FULL-WIDTH MOWING AC |
|--------|---------|------------|--|------------------|-------------|---------------------------|--------------------------|-----------------------------------|-------------------------------|
| 1 | US 87 | CONCHO | FROM TOM GREEN C/L TO HARDIN CREEK | 494 - 513 | 19.00 | 2 | 436 | 4.4 | 872 |
| 2 | US 87 | CONCHO | FROM EAST EDEN CITY LIMITS TO MCCULLOUGH C/L | 515 - 530 | 15.00 | 2 | 135 | 1.4 | 270 |
| 3 | SL 577 | CONCHO | FROM WEST US 87 INTER. TO EAST US 87 INTER. | 394 - 395 | 1.00 | 2 | 7 | 0.1 | 14 |
| 4 | FM 380 | CONCHO | FROM TOM GREEN C/L TO US 83 IN PAINT ROCK | 394 - 406 | 12.00 | 2 | 127 | 1.3 | 254 |
| 5 | FM 381 | CONCHO | FROM RUNNELS C/L TO LOOP 577 | 352 - 371 | 19.00 | 2 | 157 | 1.6 | 314 |
| 6 | FM 765 | CONCHO | FROM TOM GREEN C/L TO MCCULLOUGH C/L | 394 - 426 | 32.00 | 2 | 250 | 2.6 | 500 |
| 7 | FM 1929 | CONCHO | FROM TOM GREEN C/L TO COLEMAN C/L | 392 - 421 | 29.00 | 2 | 235 | 2.4 | 470 |
| 8 | FM 2134 | CONCHO | FROM FM 1929 TO US 87 | 362 - 381 | 19.00 | 2 | 183 | 1.8 | 366 |
| 9 | US 190 | SCHLEICHER | FROM MENARD C/L TO FM 2084 | 386 - 398 | 13.00 | 2 | 251 | 2.5 | 502 |
| 10 | US 190 | MENARD | FROM SCHLEICHER C/L TO US 83 | 400 - 423 | 23.00 | 2 | 208 | 2.1 | 416 |
| 11 | SH 29 | MENARD | FROM FM 2291 TO MASON C/L | 416 - 434 | 18.00 | 2 | 163 | 1.6 | 326 |
| 12 | FM 864 | MENARD | FROM US 190 TO SCHLEICHER C/L | 398 - 405 | 7.00 | 2 | 64 | 0.6 | 128 |
| 13 | FM 864 | SCHLEICHER | FROM MENARD C/L TO SUTTON C/L | 388 - 398 | 10.00 | 2 | 94 | 0.9 | 188 |
| 14 | FM 864 | SUTTON | FROM SCHLEICHER C/L TO FM 2597 | 382 - 388 | 6.00 | 2 | 57 | 0.6 | 114 |
| 15 | FM 1311 | MENARD | FROM SH 29 TO MUCCULLOUGH C/L | 396 - 401 | 5.00 | 2 | 47 | 1.5 | 94 |
| 16 | FM 2092 | MENARD | FROM BEGINNING OF STATE MAINTENANCE TO SH 29 | 412 - 426 | 14.00 | 2 | 121 | 1.2 | 242 |
| 17 | FM 2291 | MENARD | FROM US 83 TO KIMBLE C/L | 396 - 414 | 18.00 | 2 | 161 | 1.6 | 322 |
| 18 | FM 2873 | MENARD | FROM US 190 TO END OF STATE MAINTENANCE | 392 - 401 | 9.00 | 2 | 79 | 0.8 | 158 |
| 19 | US 83 | MENARD | FROM CONCHO C/L TO SH 29 | 434 - 449 | 15.00 | 2 | 121 | 1.2 | 242 |
| 20 | US 83 | CONCHO | FROM RUNNELS C/L TO NORTH EDEN CITY LIMIT | 396 - 424 | 28.00 | 2 | 204 | 1.2 | 408 |
| 20-A | US 83 | CONCHO | FROM SOUTH EDEN CITY LIMITS TO MENARD C/L | 424 - 432 | 8.00 | 2 | 204 | 1.2 | 408 |
| 21 | FM 2402 | CONCHO | FROM INT FM 765 TO INT US 83 | 364 - 384 | 20.00 | 2 | 195 | 2.0 | 390 |
| 22 | FM 176 | CONCHO | FROM INT US 87 TO END OF PAVEMENT | 376 - 382 | 6.00 | 2 | 57 | 0.6 | 114 |
| 23 | RE 11 | CONCHO | FROM FM 1929 TO END OF ROAD | 364 - 368 | 4.00 | 2 | 41 | 0.4 | 82 |
| 24 | FM 3463 | MENARD | FROM INT US 83 TO END OF PAVEMENT | 404 - 412 | 8.00 | 2 | 79 | 0.8 | 158 |
| 25 | US 190 | MENARD | FROM INT US 83 TO MUCCULLOUGH C/L | 423 - 434 | 11.00 | 2 | 116 | 1.2 | 232 |
| TOTALS | | | | | 369.00 | | 3792 | 37.6 | 7584 |

NOTES:
1) MOW THE ENTIRE WIDTH OF ROW, EXCEPT IN RUGGED AND/OR HEAVILY WOODED LOCATIONS AND NON MOW AREAS.

SCOPE OF WORK

SHEET 1 OF 1

| | | | |
|----------------------|------------------|----------------|-----------------|
| PROJECT NO: 2023 | DATE: 04/06/2023 | JOB NO: 001 | JOB NAME: US 87 |
| PROJECT NAME: 644037 | DATE: 04/06/2023 | COUNTY: CONCHO | SHEET NO: 5 |

DISCLAIMER: This standard is governed by the Texas Engineering Practice Act. The user of this standard is responsible for the accuracy of any information contained herein. The user of this standard is responsible for the accuracy of any information contained herein. The user of this standard is responsible for the accuracy of any information contained herein.

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.
- Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.
- 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 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.
- Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

- Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
- Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

| |
|---|
| 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



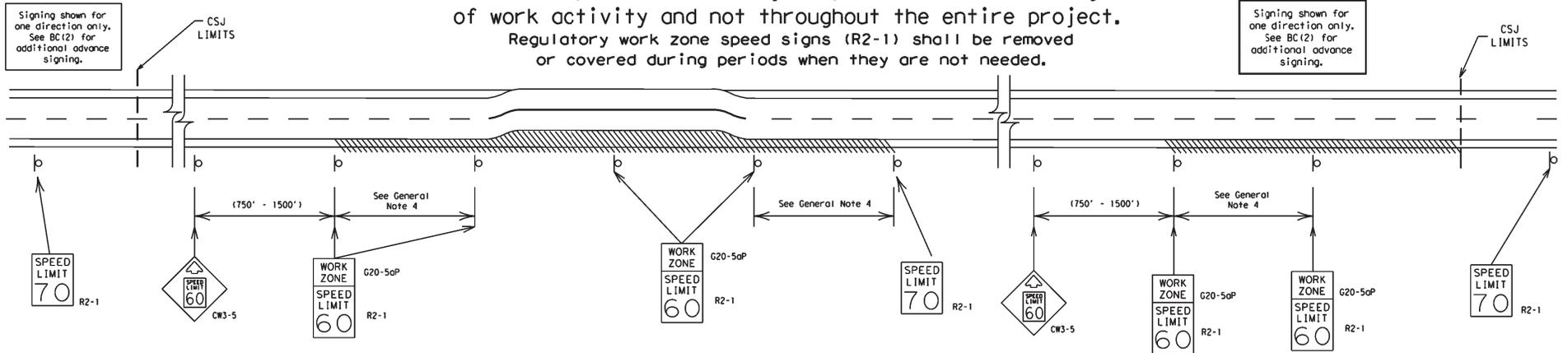
**BARRICADE AND CONSTRUCTION
 GENERAL NOTES
 AND REQUIREMENTS
 BC(1)-21**

| | | | | |
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| FILE: Dc-21.dgn | DWG: TxDOT | CHK: TxDOT | DRG: TxDOT | CRK: TxDOT |
| © TxDOT November 2002 | CONT: 6440 | SECT: 37 | JOB: 001 | US 87 |
| REVISIONS | | | | |
| 4-03 7-13 | | | | |
| 9-07 8-14 | | | | |
| 5-10 5-21 | DIST: SJT | COUNTY: CONCHO | SHEET NO.: | 6 |

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 traveled 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:
 - A. Law enforcement.
 - B. Flogger stationed next to sign.
 - C. Portable changeable message sign (PCMS).
 - D. Low-power (drone) radar transmitter.
 - E. 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



BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC (3) - 21

| | | | | |
|-----------------------|------------|------------|----------------|---------------|
| FILES: bc-21.dgn | DWG: TxDOT | CHK: TxDOT | DRG: TxDOT | CKD: TxDOT |
| © TxDOT November 2002 | CONT: 6440 | SECT: 37 | JOB: 001 | HSYWAY: US 87 |
| REVISIONS: | DIS1: 9-07 | DIS2: 0-14 | COUNTY: SJT | SHEET NO.: 8 |
| | DIS3: 7-13 | DIS4: 5-21 | COUNTY: CONCHO | |

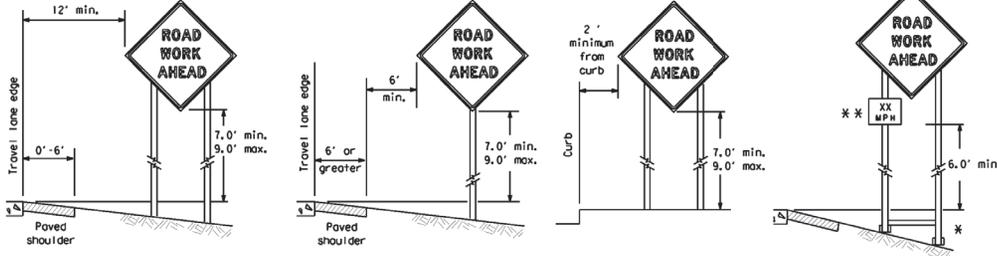
DISCLAIMER: This drawing is the property of the Texas Department of Transportation. It is provided for the use of the user only. The user shall be responsible for the accuracy of any information contained herein. The user shall be responsible for the accuracy of any information contained herein. The user shall be responsible for the accuracy of any information contained herein.

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DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT or its contractors for the use of this standard for any purpose other than that intended. This standard is not intended to be used for any purpose other than that intended.

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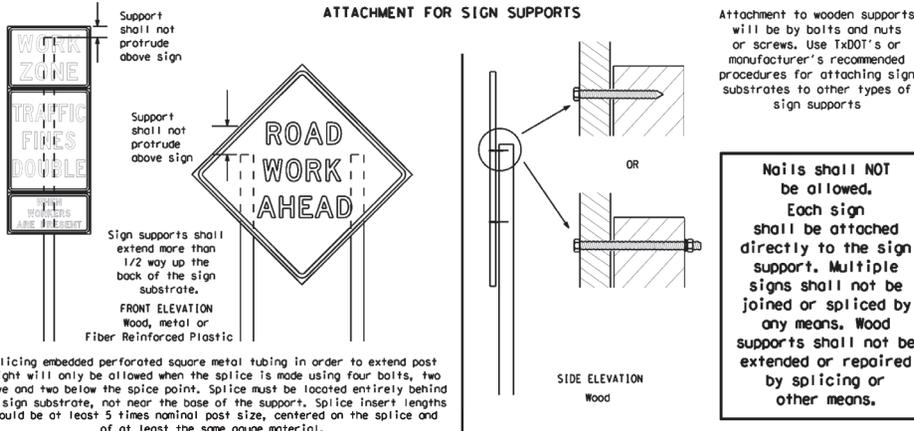
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



* When placing skid supports on uneven 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.

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 changes to 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) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. 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 heights, 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_L or Type C_L, 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 studs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

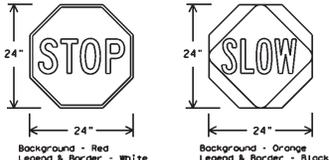
- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry cohesionless sand should be used.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects shall not 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 fire inner tubes) shall NOT be used.
- Rubber padding 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.

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".
- STOP/SLOW paddles shall be retroreflectorized when used at night.
- 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.



| SHEETING REQUIREMENTS (WHEN USED AT NIGHT) | | |
|--|--------|--|
| USAGE | COLOR | SIGN FACE MATERIAL |
| BACKGROUND | RED | TYPE B OR C SHEETING |
| BACKGROUND | ORANGE | TYPE B _L OR C _L SHEETING |
| LEGEND & BORDER | WHITE | TYPE B OR C SHEETING |
| LEGEND & BORDER | BLACK | ACRYLIC NON-REFLECTIVE FILM |

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, specific service (LOCO), 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. For details for covering large guide signs see the TS-CD standard.
- 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 standard sheets, TLRS standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets 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.

SHEET 4 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

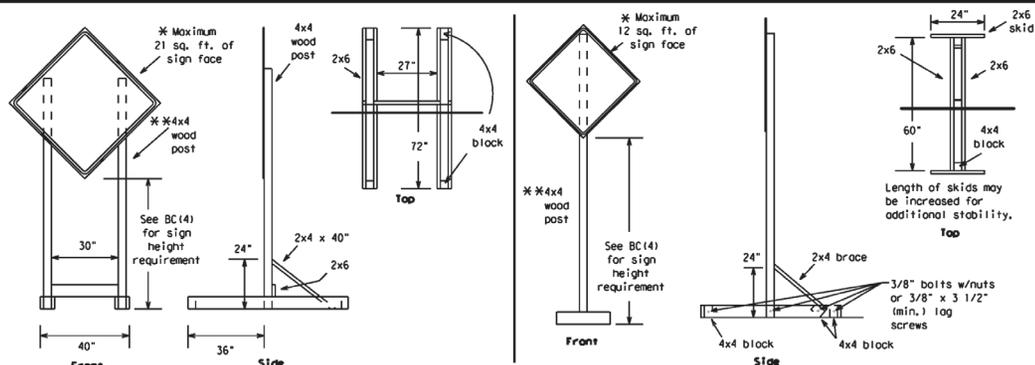
BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC (4) - 21

| | | | | | | | | | |
|-----------|---------------|------|-------|--------|-------|-----------|-------|-----|-------|
| FILES | bc-21.dgn | DWG | TXDOT | CHK | TXDOT | DRG | TXDOT | CHK | TXDOT |
| REV | November 2002 | CONT | SECT | JOB | NO | US | 87 | | |
| REVISIONS | | 6440 | 37 | 001 | | | | | |
| 9-07 | 8-14 | | | COUNTY | | SHEET NO. | | | |
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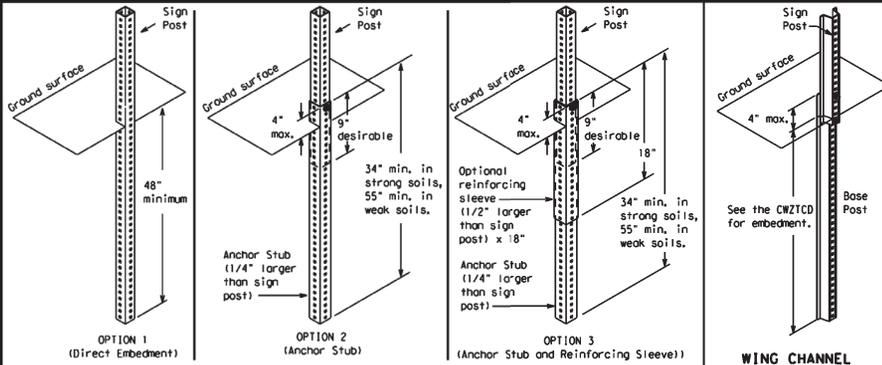
DISCLAIMER: This drawing is intended to be used as a guide only. It is governed by the terms and conditions of the contract. The user of this drawing is responsible for the accuracy of any information derived from it. The user of this drawing is responsible for the accuracy of any information derived from it. The user of this drawing is responsible for the accuracy of any information derived from it.

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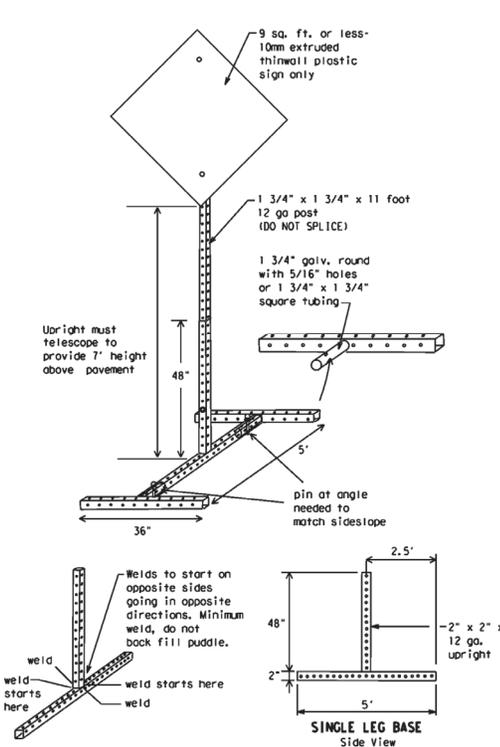
SKID MOUNTED WOOD SIGN SUPPORTS

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



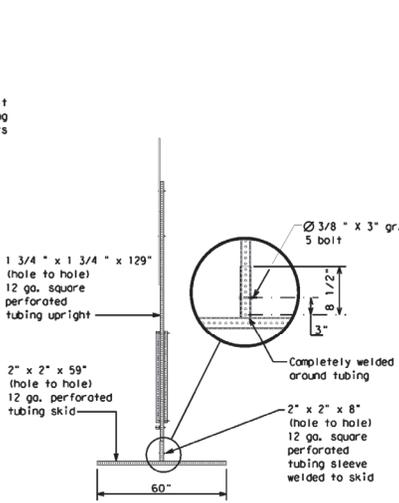
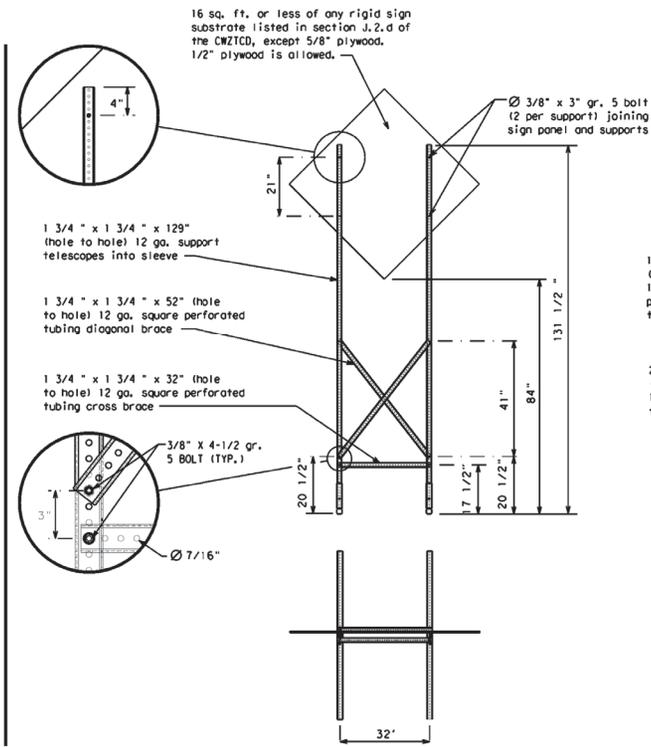
GROUND MOUNTED SIGN SUPPORTS

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.



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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



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

1. 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.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. 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) - 21

| | | | | |
|--------------------------|--------------|--------------|--------------|------------|
| FILE: Do-21.dgn | DWG: TXDOT | CHK: TXDOT | DRG: TXDOT | CRK: TXDOT |
| REV: TXDOT November 2002 | CONT: SECT | JOB: HIGHWAY | | |
| REVISIONS: 6440 37 | 001 | US 87 | | |
| 9-07 8-14 | DIST: COUNTY | CONCHO | | |
| 7-13 5-21 | SJT | CONCHO | SHEET NO. 10 | |

DISCLAIMER: The use of this roadwork sign is governed by the Texas Engineering Practice Act. No warranty of any kind is made by TxDOT or the contractor for the use of this sign. The user assumes all responsibility for the use of this sign. For more information, contact the Texas Department of Transportation, 1201 West Loop West, Austin, TX 78701.

DATE: 4/6/2023 3:47:20 PM
 FILE: pwr//redor.prflectw/ism1 line.com:TXDOT/0/documents/207 - SUT/WG/Intelligence Projects/RMC 6440-37-001 Concho Morning/2 - DESIGN FILES/Plan Sheets/2011 BC(6)-21.dgn

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 shall 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 applicable.
- 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 TMLUBD.
- 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 |
| Blowdown | BLVD | Monday | MON |
| Bridge | BRDG | Normal | NORM |
| Cannot | CANT | North | N |
| Center | CTR | Northbound | (route) N |
| Construction Ahead | CONST AHD | Parking | PKNG |
| 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 | Sloppy | 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 |
| Fee Ahead | FGC AHD | Telephone | PHONE |
| Freeway | FRWY, FWY | Temporary | TEMP |
| Freeway Blocked | FWY BLKD | Thursday | THURS |
| Friday | FRI | To Downtown | TO DWTN |
| Hazardous Driving | HAZ DRIVING | Traffic | TRAF |
| Hazardous Material | HAZMAT | Travelers | TRVLRS |
| High Occupancy | HOV | Tuesday | TUES |
| Vehicle Highway | HWY | Time Minutes | TIME MIN |
| Hour(s) | HRS, HRS | Upper Level | UPPR LEVEL |
| Information | INFO | Vehicles (s) | VEH, VEHs |
| ITS | ITS | Warning | WARN |
| Junction | JCT | Wednesday | WED |
| Left | LFT | Weight Limit | WT LIMIT |
| Left Lane | LFT LN | W | W |
| Lane Closed | LN CLOSED | Westbound | (route) W |
| Lower Level | LRR LEVEL | Wet Pavement | WET PVMT |
| Maintenance | MAINT | Will Not | WONT |

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 | | Other Condition List | |
|-----------------------------|--------------------------|--------------------------|-------------------------|
| FREEWAY CLOSED X MILE | FRONTAGE ROAD CLOSED | ROADWORK XXX FT | ROAD REPAIRS XXXX FT |
| ROAD CLOSED AT SH XXX | SHOULDER CLOSED XXX FT | FLAGGER XXXX FT | LANE NARROWS XXXX FT |
| ROAD CLSD AT FM XXXX | RIGHT LN CLOSED XXX FT | RIGHT LN NARROWS XXXX FT | TWO-WAY TRAFFIC XX MILE |
| RIGHT X LANES CLOSED | RIGHT X LANES OPEN | MERGING TRAFFIC XXXX FT | CONST TRAFFIC XXX FT |
| CENTER LANE CLOSED | DAYTIME LANE CLOSURES | LOOSE GRAVEL XXXX FT | UNEVEN LANES XXXX FT |
| NIGHT LANE CLOSURES | I-XX SOUTH EXIT CLOSED | DETOUR X MILE | ROUGH ROAD XXXX FT |
| VARIOUS LANES CLOSED | EXIT XXX CLOSED X MILE | ROADWORK PAST SH XXXX | ROADWORK NEXT FRI-SUN |
| EXIT CLOSED | RIGHT LN TO BE CLOSED | BUMP XXXX FT | US XXX EXIT X MILES |
| MALL DRIVEWAY CLOSED | X LANES CLOSED TUE - FRI | TRAFFIC SIGNAL XXXX FT | LANES SHIFT * |
| XXXXXXXX BLVD CLOSED | | | |

* 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 | Location List | Warning List | ** Advance Notice List |
|--------------------------------------|--------------------------|----------------------|------------------------|
| MERGE RIGHT | AT FM XXXX | SPEED LIMIT XX MPH | TUE-FRI XX AM - X PM |
| DETOUR NEXT X EXITS | BEFORE RAILROAD CROSSING | MAXIMUM SPEED XX MPH | APR XX - X PM-X AM |
| USE EXIT XXX | NEXT X MILES | MINIMUM SPEED XX MPH | BEGINS MONDAY |
| STAY ON US XXX SOUTH | USE I-XX E TO I-XX N | PAST US XXX EXIT | ADVISORY SPEED XX MPH |
| TRUCKS USE US XXX N | WATCH FOR TRUCKS | XXXXXX TO XXXXXX | RIGHT LANE EXIT |
| WATCH FOR TRUCKS | EXPECT DELAYS | US XXX TO FM XXXX | USE CAUTION |
| EXPECT DELAYS | PREPARE TO STOP | | DRIVE SAFELY |
| REDUCE SPEED XXX FT | END SHOULDER USE | | DRIVE WITH CARE |
| USE OTHER ROUTES | WATCH FOR WORKERS | | |
| | STAY IN LANE * | | |

** 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.

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.

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.

Traffic Safety Division Standard

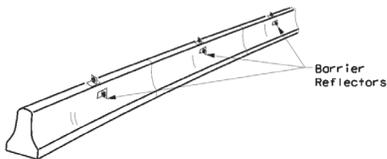
BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC (6) - 21

| | | | | | | | | | |
|---------|---------------|------|--------|-----------|---------|-----|-------|-----|-------|
| FILES | bc-21.dgn | DWG | TXDOT | CHK | TXDOT | DRG | TXDOT | CHK | TXDOT |
| REVISED | November 2002 | CONT | SECT | JOB | HIGHWAY | | | | |
| | | 6440 | 37 | 001 | US 87 | | | | |
| 9-07 | 8-14 | DIST | COUNTY | SHEET NO. | | | | | |
| 7-13 | 5-21 | SJT | CONCHO | 11 | | | | | |

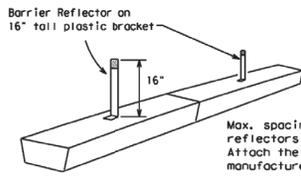
DISCLAIMER: This drawing is prepared, is governed by, and is the property of the State of Texas. The user of this drawing shall be responsible for the accuracy of the information contained herein. The user of this drawing shall be responsible for the accuracy of the information contained herein. The user of this drawing shall be responsible for the accuracy of the information contained herein.

- 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 gable 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.

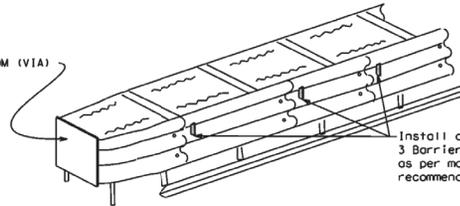


LOW PROFILE CONCRETE BARRIER (LPCB)

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.



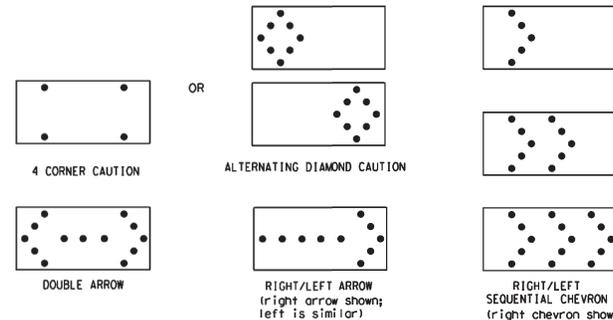
DELINEATION OF END TREATMENTS

END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet the appropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CRWZCD List for approved end treatments and manufacturers.

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 POMS 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.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

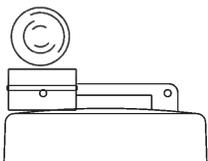
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn or mark a potentially hazardous area. Their use shall be as indicated on this sheet 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

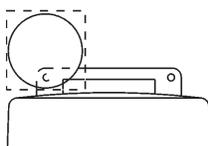
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing 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 CRWZCD.
- 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

| 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 Manual for Assessing Safety Hardware (MASH).
- Refer to the CRWZCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CRWZCD 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 on extended distance from the TMA.



Traffic Safety Division Standard

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

BC (7) - 21

| | | | | | | | | | |
|---------|---------------|------|-------|--------|--------|-----------|---------|-----|-------|
| FILES | bc-21.dgn | DWG | TxDOT | CHK | TxDOT | DWG | TxDOT | CHK | TxDOT |
| REVISED | November 2002 | CONT | SECT | 6440 | JOB | 001 | HIGHWAY | US | 87 |
| DATE | 9-07 | DIST | 0-14 | COUNTY | CONCHO | SHEET NO. | 12 | | |
| FILED | 7-13 | | 5-21 | | | | | | |

DATE: 4/6/2023 3:47:38 PM FILE: DWG/71xdotw_proj/ctw/150m1/line.com:TXDOT/2/documents/207 - SJT/Maintenance Projects/RMC 6440-37-001 Concho Mowing/2 - DESIGN FILES/Plan Sheets/2012 BC(7)-21.dgn

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act," the "Texas Transportation Code," and the "Texas Administrative Code." This standard is not intended to be used in any way that would result in a violation of any law, rule, or regulation. The user of this standard is responsible for its proper use. For more information, contact the Texas Department of Transportation, 1100 West 11th Street, Austin, Texas 78768. (512) 463-1000. TxDOT File: 6440-37-001 Concho Marking/2 - DESIGN FILES/Plan Sheets/2016 BC(11)-21.dgn

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WORK ZONE PAVEMENT MARKINGS

GENERAL

- 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.
- Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Additional supplemental pavement marking details may be found in the plans or specifications.
- Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
- 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(SIPM).
- 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.
- All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

- Raised pavement markers are to be placed according to the patterns on BC(12).
- 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

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

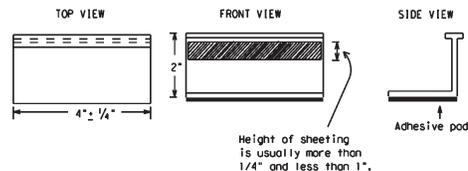
MAINTAINING WORK ZONE PAVEMENT MARKINGS

- The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
- 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.
- 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.
- 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

- 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.
- 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.
- 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".
- The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
- Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
- Blast cleaning may be used but will not be required unless specifically shown in the plans.
- Over-painting of the markings SHALL NOT BE permitted.
- Removal of raised pavement markers shall be as directed by the Engineer.
- Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
- 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

- Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
- Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
 - 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.
 - 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.
- Small design variances may be noted between tab manufacturers.
- See Standard Sheet WZ(SIPM) 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

- Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
- All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
- 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

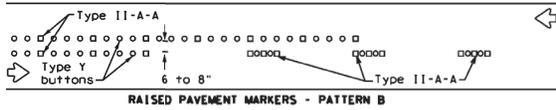
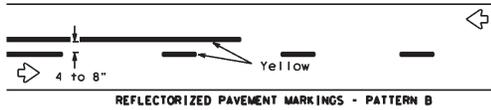
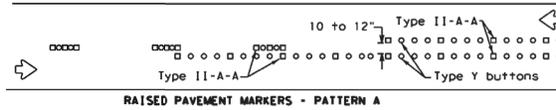
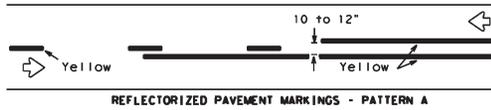


BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

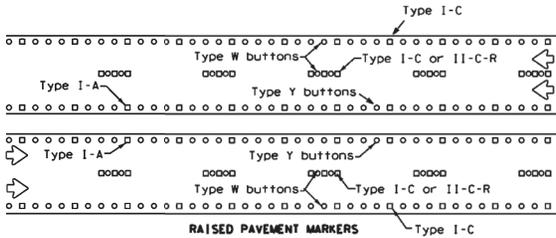
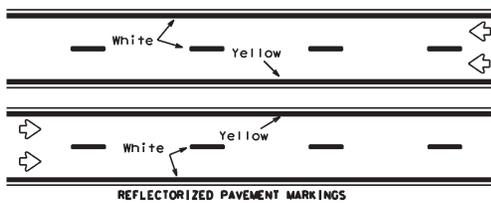
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| 1-02 | 7-13 | | DIS1 | | | COUNTY | | |
| 11-02 | 8-14 | | SJT | | CONCHO | | 16 | |

PAVEMENT MARKING PATTERNS



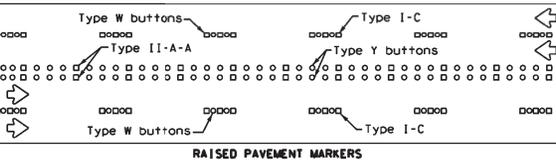
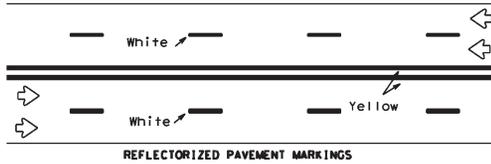
Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectORIZED pavement markings.

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



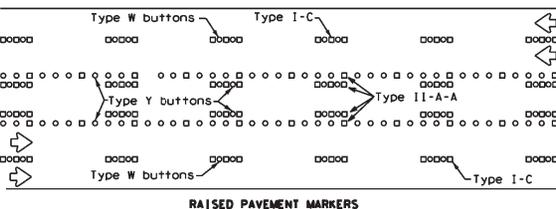
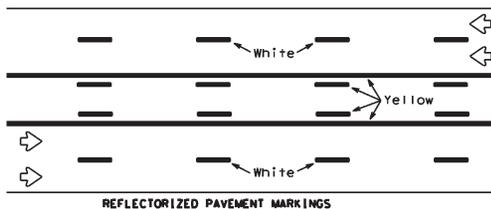
Prefabricated markings may be substituted for reflectORIZED pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



Prefabricated markings may be substituted for reflectORIZED pavement markings.

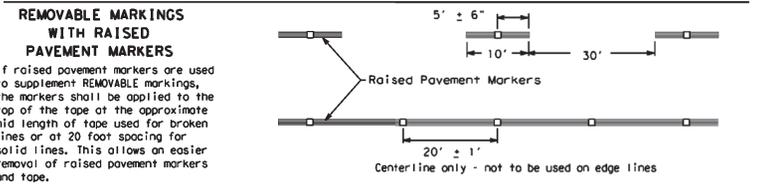
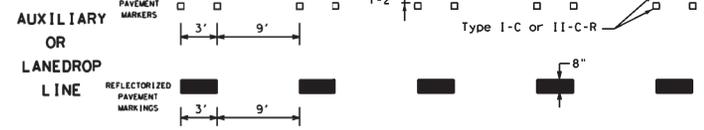
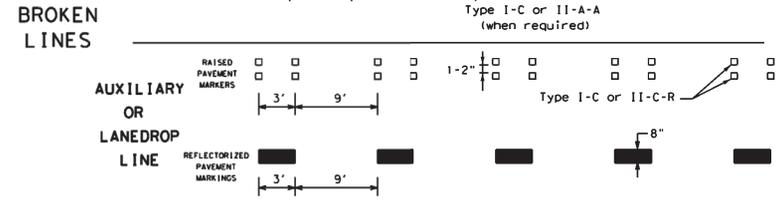
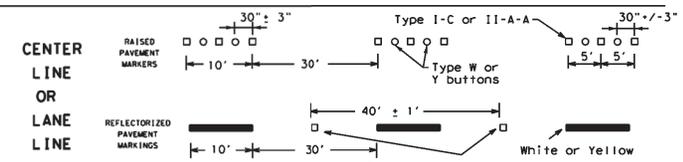
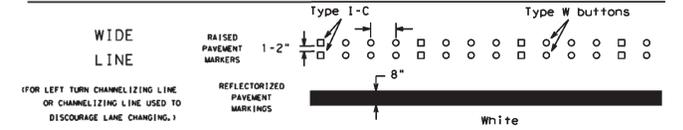
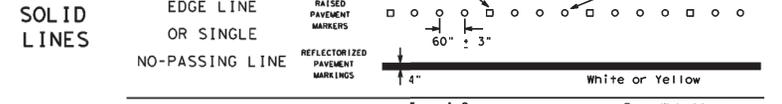
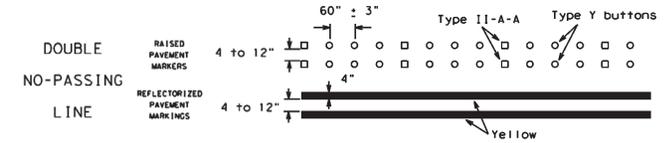
LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



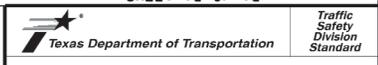
Prefabricated markings may be substituted for reflectORIZED pavement markings.

TWO-WAY LEFT TURN LANE

STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



SHEET 12 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC (12) - 21

Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

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| © TXDOT February 1998 | CONT: 6440 | SECT: 37 | JOB: 001 | US: 87 |
| REVISIONS: 1-97 9-07 5-21 | DIST: 11-02 | COUNTY: 8-14 | SJT | CONCHO |
| DATE: 4/6/2023 | 3:49:09 PM | FILE: pwt\j\tdot\proj\elect\isom\line.com\TXDOT\Documents\07 - SJT\NoInterference Projects\RMC 6440-37-001\Concho_Marking/2 - DESIGN FILES\Plan Sheets\2017 BC(12)-21.dgn | | |
| | | | | SHEET NO. 17 |

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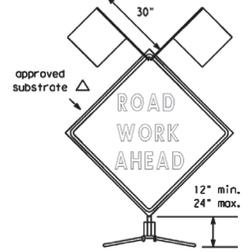
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LEVELS DISPLAYED
 1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8 3.9 4.0 4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8 4.9 5.0 5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9 6.0 6.1 6.2 6.3

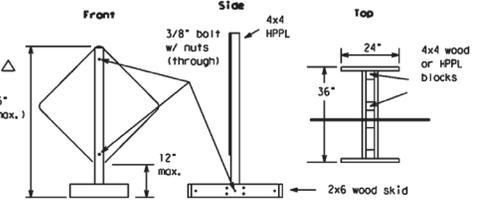
EXAMPLES OF SIGN SUPPORTS

△ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.



Flags as required by Engineer or as shown on plans

SHORT TERM DURATION, DAYTIME USE ONLY PORTABLE SIGN SUPPORTS



The upright SHALL be made of hollow-profile plastic lumber (HPPH). Wood or metal shall NOT be used. 1 Foot Mounting Height

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.

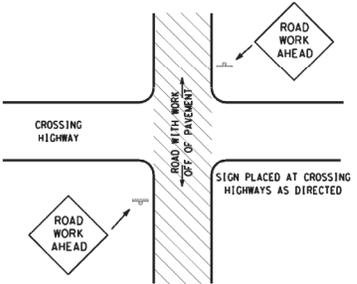
Nails will NOT be allowed.



SIGN IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS
MOWERS AHEAD SIGNS ARE USED FOR MOWING OPERATIONS.
LITTER PICKUP AHEAD, ROAD WORK AHEAD AND WORKER AHEAD SIGNS ARE USED AS DIRECTED FOR OTHER MAINTENANCE OPERATIONS WHEN ALL WORK OCCURS OFF OF THE PAVED HIGHWAY SURFACE.

ROLL-UP SIGNS CONFORMING TO DMS-8310 AND THE CWZTCD ALLOWED

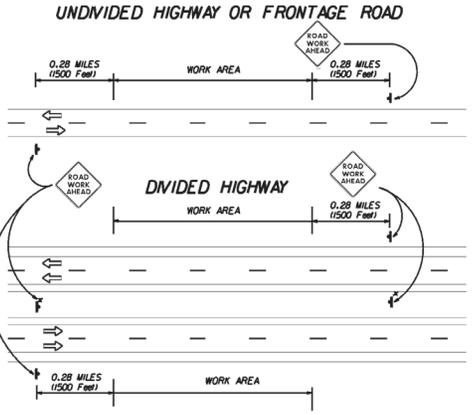
*Letter dimensions and spacing for "CW21-SPECIAL" is the same as C20-1D



TYPICAL LOCATION OF SIGNS AT HIGHWAY CROSSING

WORK AREA IS A MAXIMUM OF 2.0 MILES UNLESS OTHERWISE DIRECTED. SIGNS MAY REMAIN IN PLACE ONLY DURING DAYLIGHT HOURS. SIGNS ARE TO BE PLACED 6' TO 12' OFF OF THE PAVED SURFACE UNLESS OTHERWISE DIRECTED. ROAD WORK AHEAD SIGNS SHOWN AS EXAMPLES. ONE OF THE FOUR TYPE SIGNS WILL BE USED AS DIRECTED.

* SIGNS IN THE MEDIAN ARE REQUIRED WHEN WORK OCCURS IN MEDIAN



TRAFFIC CONTROL PLAN FOR WORK OFF OF THE PAVED SURFACE.

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.
- Nails shall NOT be used to attach signs to any support.
- 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 additional signs requested by the Engineer/Inspector shall not be subsidiary.
- 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 that the Engineer can verify the correct procedures are being followed.
- The Contractor is responsible for sign installations 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".
- 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 VII)

- The Contractor is responsible for ensuring the sign support and substrate meets crashworthiness. For mowing operation all signs and supports are Short-term Duration for daytime work.
- The Contractor shall furnish the sign sizes shown on this sheet or as directed by the Engineer.

SIGN SUBSTRATES

- The Contractor shall ensure that the sign substrate is allowed 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.
- 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 faces.

REFLECTIVE SHEETING

- Reflectorized signs shall be constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 or DMS-8310. The DMS specifications can be accessed from the following web address:
http://manuals.dot.state.tx.us/80/dynweb/colmat/Generi_CollectionView.aspx?cs=default&ts=default
- White sheeting, meeting the requirements of DMS-8300 Type C (High Specific Intensity), shall be used for signs with white background and channelizing devices.
- Orange sheeting, meeting the requirements of DMS-8300 Type E (Fluorescent Prismatic), shall be used for 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

- Signs should be removed or completely covered when not mowing.
- Duct tape or other adhesive material shall NOT be affixed to a sign face.
- Signs and supports shall be removed by the end of the day.

SIGN SUPPORT WEIGHTS

- Where sign supports 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.
- Rock, concrete, iron, steel or other solid objects will 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 for sandbags.
- Rubber ballasts (such as those used with cones or edgeline channelizers) shall NOT be used as sign support weights.
- 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 supports.
- Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

Any sign, sign support or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced or repaired as soon as possible by the Contractor at the Contractor's expense.

Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be obtained by contacting:

Standards Engineer
 Traffic Operations Division - TE
 Texas Department of Transportation
 125 East 11th Street
 Austin, Texas 78701-2483
 Phone (512) 416-3120
 Fax (512) 416-3299

Instructions to locate the "CWZTCD" on TxDOT website are:

Start at website - www.dot.state.tx.us
 Click on "About TxDOT",
 Click on "Organizational Chart",
 Click on "Traffic Operations Box",
 Click on "Compliant Work Zone Traffic Control Devices",
 Click on "View PDF".
 This site is printable.

Texas Department of Transportation
 Maintenance Division
 Standard Plans

ROADSIDE TRAFFIC CONTROL PLAN

SHEET 1 OF 1 RS-TCP-05 NOT TO SCALE

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| FILE# | RSTCP05.DGN | DATE | LJB | CHK | JC | REV. | CD | REV. NO. |
| PROJECT | C:TxDOT FEBRUARY 2005 | DATE | REVISED | DATE | REVISED | DATE | FEDERAL AID PROJECT | SHEET |
| REVISED | September 17, 2004 | | SJT | 6 | | | | 18 |
| REVISED | FEBRUARY 9, 2005 | | | | | COUNTY | CONTROL SECTION | JOB NUMBER |
| REVISED | | | | | | CONCHO | 6440 | 37 001US 87 |