FHWA TEXAS DIVISION	PROJECT NO.		SHEET NO.
	RMC 646433001		001
STATE	DISTRICT	COUNTY	
TEXAS	AMA	RANDALL	
CONTROL	SECTION	JOB	HIGHWAY NO.
6464	33	001	US 60, ETC.

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT
RANDALL COUNTY

HIGHWAY: US 60, ETC.

MAINTENANCE PROJECT: RMC 6464-33-001

LIMITS: VARIOUS LOCATIONS IN RANDALL COUNTY

CONSISTING OF INSTALLATION AND MAINTENANCE OF LANDSCAPING

FINAL PLANS

LETTING DATE: _____

DATE CONTRACTOR BEGAN WORK: _____

DATE WORK WAS COMPLETED & ACCEPTED: _____

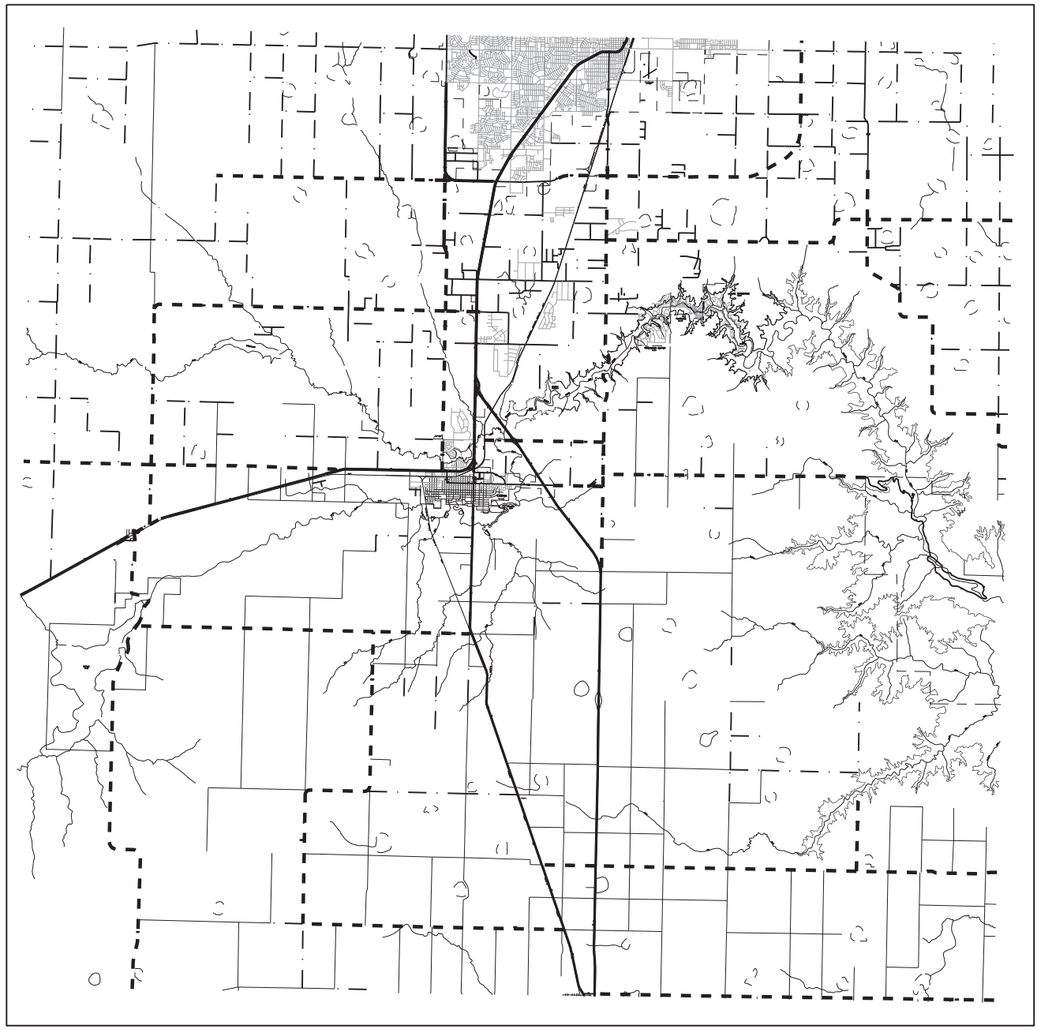
FINAL CONTRACT COST: $ _____

CONTRACTOR : _____

INDEX OF SHEETS

TRAFFIC CONTROL STANDARD SHEETS

LANDSCAPE DESIGN SHEETS



FILE: $FILE$ $TIME$
DATE: $DATE$

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED SPECIAL LABOR PROVISIONS FOR ALL STATE MAINTENANCE PROJECTS.

SUBMITTED FOR LETTING: DATE: 2/27/2024

AREA ENGINEER — DocuSigned by: Joe Crumpell 2A500C249D094BA...

RECOMMENDED FOR LETTING: DATE: 2/27/2024

DISTRICT DIRECTOR OF OPERATIONS — DocuSigned by: Wes Kimmell 4091D73729A34DC...

APPROVED FOR LETTING: DATE: 2/28/2024

DISTRICT ENGINEER — DocuSigned by: Blair Johnson 8B80E3AEB2BC43A...

GENERAL NOTES:

This project includes plan sheets that are not part of the bid proposal. Plans can be viewed online or downloaded from the web at:

http://www.txdot.gov/business/letting-bids/plans-online.html

Order plans from any of the plan reproduction companies shown on the web at:

http://www.dot.state.tx.us/business/contractors_consultants/repro_companies.htm

Information concerning the project, plans, limits and locations may also obtained by contacting Brad Buchanan at (806) 356-3284 or the Area Office in charge of this project. Plans, limits, and locations may be viewed at Contract Administration, Texas Department of Transportation District Office, 5715 Canyon Drive, Bldg. B, Amarillo, Texas 79110.

All Contractor pre-bid questions on this project are to be submitted by email to the following individual(s):

TO:	Area Engineer	Joe Chappell, P.E.	Joe.Chappell@txdot.gov
	Assistant Area Engineer	CC Sysombath, P.E.	cc.sysombath@txdot.gov
CC:	Director of Operations	Wes Kimmell, P.E.	Wes.Kimmell@txdot.gov
	Contract Specialist	Brad Buchanan	Brad.Buchanan@txdot.gov

For Q&A's on Proposals navigate to:

https://tableau.txdot.gov/views/ProjectInformationDashboard/NoticetoContractors

Use 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 of the project you want to view the Q&A for and click on the link in the window that pops up.

All relevant project documentation including CTD and cross sections (if applicable) will be posted to TxDOT District's FTP website.

https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting%20Responses/

Prior to beginning operations, a pre-construction conference will be held at the Area Office in charge of this work.

Contractor's personnel shall have all applicable training certificates for, but not limited to, concrete work, welding, SWP3, and traffic control. Certifications must be through credible

Project Number: RMC 646433001 **Sheet**

County: RANDALL **Control:** 6464-33-001

Highway: US 60 ETC.

sources, such as ACI and TxDOT. Contractor must submit certifications prior to beginning applicable work.

In the event that several contracts are awarded to the same contractor, the contractor shall be sufficiently staffed to concurrently pursue each contract.

Operation of equipment or machines near any overhead or underground utility lines shall be accomplished using established industry safety practices. The contractor shall consult with the appropriate utility company prior to beginning such work.

The contractor will be responsible for locating all utilities that may be present near construction areas. Utilities damaged by the contractor will be repaired at no additional cost to the state.

The maintenance supervisor and area engineer are listed below with the engineer's representative in charge of this contract:

Area Engineer	Address	Contact Person
Joe Chappell, P.E.	8401 S. FM 1541 Amarillo, TX 79110	(806)378-0071 (806)486-7184

Maintenance Section	Address	Maintenance Supervisor
Randall County	305 W US 60 Canyon, TX 79015	Devin White (806) 655-4372 (806) 344-6285

If portions of the right-of-way is used to store materials, equipment, and other uses with the approval of the engineer, materials, equipment, etc., must either be located outside the 30 feet traffic safety clearance zone or be adequately protected.

There are no "reference markers" within the project limits.

EQUIPMENT

The contractor shall have all necessary equipment needed to perform the work. The use of yellow rotating beacons or omni directional flashing amber warning lamps is encouraged. The warning lamps shall be mounted on the vehicles in such a manner as to allow clear visibility from all directions.

Item 7 Legal Relations and Responsibilities

No significant traffic generator events identified.

Upon completion of all work provided for in the contract for any individual project, the Engineer will inspect, and if the work is found to be satisfactory project. Such partial acceptance will be made in writing and shall in no way void or alter any terms of the contract.

No significant traffic generator events identified.

Item 8 Prosecution and Progress

Working days will be computed and charged in accordance with Article 8.3.1.4 Standard Workweek.

Item 192 Landscape Planting

For the work to be completed; Shall reference Item 192 in the TxDOT 2014 Standard Specification for Construction and Maintenance or Highways, Streets, and Bridges 2014 for specifications, dimensions, volumes. and measurements not shown.
Shall reference the Planting and Establishment Details Sheets of the plans for the planting instructions and details. All planting cultural practices and materials required for planting shall be specified and directed by the Planting Plan Sheet (1 of 3) and the General Notes. The engineer shall direct all items of work as per the plans and specification.
Reference Item 192.3. Mark all areas for tree locations as shown on the plans, as verified by the engineer. Shall mow tree planting areas to 4-inches in height before beginning any site work. Mowing shall not be paid for directly but shall be considered incidental to Item 192. Landscape Planting.

Locate and stake all underground conduits and utilities associated with but not limited to: Electrical power supply. Within the project area, mark items with a 4-foot wooden stake. Wooden stakes shall be painted florescent orange and maintained during the duration of the project. Stakes shall only be removed as directed by the engineer.

The acceptance and rejection of plants shall be in accordance with Item 192.2 as specified and directed by the standards of the ANSI -Z60.1, for the American Standard for Nursery Stock. Before taking possession of plants at delivery, all plants shall be inspected and graded as per the ANSI Z 60.1 specifications. The engineer shall reject any plant not meeting minimum sizes and dimension of the specification.

As shown on the plan sheet (1 of 3), reference the “Root Ball Preparation and Maintenance” detail. Consideration shall be given for this procedure.
As shown on the plan sheet, reference the “Tree Planting Detail.” Consideration shall be given for this procedure
.

Project Number: RMC 646433001 **Sheet**

County: RANDALL **Control:** 6464-33-001

Highway: US 60 ETC.

Compost:
Compost shall be used as the planting it soil amendment. The planting pit is also known as the hole for planting.
As shown on details sheet, the back fill for the tree pit is Type (A) backfill.
Shall use Backfill Type (A) for all project landscape sites locations.
Backfill type (A) includes 25% General Use Compost (GUC) with 75% soil taken from the pit.
Shall triple mix thoroughly. Fold back and forth the soil and the (GUC) and make fill soil mellow.
Compost shall not be paid for directly but shall be considered incidental to Item 192.Landscape Planting.
Furnish compost that has been produced by aerobic (biological) decomposition of organic matter and meets the requirements of the TxDOT specification.
Before delivery of compost, shall provide to the engineer the quality control documentation as specified. (General Use Compost) generated from composted feedstock.

Planting Pit Watering:
As shown on the plans (1 of 3) of Planting and Establishment Details.
Before tree planting begins, all open tree pits shall be pre-watered to 100% capacity of the pit.
Root stimulator is not used during the pre-watering of the pits.
Reference the (2) two dialog boxes; for root stimulator and the watering of newly planted trees.
Consideration shall be given for these procedures.
All trees shall receive root stimulator “Super Seaweed” as specified by the district horticulturalist and the engineer, or a true product approved equal. Water as specified during plant installation.
As shown on the plan sheet (1 of 3), reference the dialog box for “Vegetative Watering Schedule for Trees, Shrubs and Vines.” Consideration shall be given to this procedure.
Shall stake and secure all trees as shown on the plan sheet. Method of work and materials used, as directed by the engineer.

Mulch and Steel Edging:
As shown in the plans. To hold mulch in place, shall install an 8-foot diameter steel edging ring just outside and around the tree basin. The manufactured width of the steel edging is 6 inches. The circumference of the steel ring is calculated to 20 to 21 feet. To protect the steel from rusting, edging shall be powder coated dark green or brown by the manufacture. For the full circumference of the ring, the edging shall extend 4” evenly above the finished grade. The edging shall be reinforced and secured in place by spikes around the full circumference of the tree basin. The edging is a pay item and shall be paid for as each tree is completed and approved by the engineer.
As shown on the plan detail, cover the total area with 4 inches of medium size wood chip mulch.
Reference the planting details sheet for more information.
Mulch and the staking of trees shall not be paid for directly but shall be considered subsidiary to Item 192.

Plant Maintenance:
Reference Item 192.3.15 for plant maintenance.
When all trees at a designated construction site are 100% planted, laid by and confirmed by engineer, shall begin the 90 days of plant maintenance.

Reference Sheet 2 of 3 of the Planting and Establishment Details sheets.
EXPANDED DESCRIPTION OF 90 MAINTENANCE for Item 192.3.15: Landscape Planting Maintenance.

Watering and Maintenance.
As specified in plan sheet dialog box, water trees 3 times per week.
Consideration shall be given for these procedures.
Some months or seasonal periods of the year, the sites might not require weekly watering. Do check the site and water to keep the root ball and soils always wet. Do consult with Engineer or the TxDOT Horticulturalist for the directive. This may include the following months for consideration. November, December, January, February, March, and April. Shall continue to meter water usage and shall show the amount of water applied to each site each week. To control mulch wash out and erosion of the pit, shall use a 5/8-inch hose. Shall place on the end of the hose a screw on bubbler. Water volume shall be 15 GPM maximum.
Most important, shall keep the applied water only around the tree root ball. Do maintain only a (one half inch) mulch cover over the root ball after each water cycle. Shall document and show records to engineer. Continue to meter water usage and record the amount of water applied to site weekly.

Plant Basin Maintenance:
Shall inspect and rework mulch and pit basins every 30 days. Reshape or replace edging and mulch as directed. As shown in the planting details, sheet 1of 3, shall maintain mulch around the 8-foot diameter metal edging of the newly planted trees.

Plant Supports:
As directed by the engineer, maintain planting support stakes and the connector binding connected to the tree. Shall check and confirm that the connector binding is not rubbing and damaging the tree bark of the tree or its branches.
Shall check and confirm that the tree is plumb and secured in place.
Shall check and secure support stakes in the ground.

Plant Replacement.
As directed by the engineer, inspect, and replace monthly (First week of every month) all weakened or dead plants in planting pits.
Reference sheet 1 of 2 of the Planting and Establishment Details sheet of the plans.

Project Number: RMC 646433001 **Sheet**

County: RANDALL **Control:** 6464-33-001

Highway: US 60 ETC.

Reference the General Notes written here and within for Item 192.

Note: If during this maintenance time period plants do weaken or die, shall remove, and replace with new trees of the same specification. Once the tree replacement is confirmed, the 90 days of maintenance begins once again for the replacement. Replace dead materials as per the engineer every 30 days. Shall take ownership of dead, discarded, trees.

Note: **S**hall document items of work completed monthly. Includes metered water reports to the engineer for each landscape construction site. Shall show a work summary report every two weeks or as directed to the engineer.
At any time during all phases of landscape planting, any materials or work performed not in accordance with the plans and specifications shown, shall be replaced and / or reworked until in compliance.
Any procedures implemented incorrectly with the shown plans, specifications and general notes, shall be made correct at the contractor expense.

,
Item 193 Landscape Establishment

For the work to be completed, shall reference Item 193 in the TxDOT 2014 Standard Specification for Construction and Maintenance or Highways, Streets, and Bridges 2014 for specifications, dimensions, volumes. and measurements not shown.

Shall reference and Use the Planting and Establishment Details Sheets for the full 12 months of the establishment period. All cultural practices and materials required for establishment and maintenance are specified within and directed by the plan sheet (3 of 3) and the General Notes.

Shall reference Watering and Maintenance written above.
Shall reference Plant Basin and Worksite Maintenance written above.
Shall reference Plant Basin Maintenance written above.
Shall reference Plant Supports written above.
Shall reference Plant Replacement written above.

Mowing Trimming and Edging:

As directed by the engineer, mow vegetation in and directly around tree grass areas of the site.
Monthly, shall mow and keep the vegetation at a 6-inch height of cut.
May require additional mowing during a wet period of the growing season. Mow only when the site is dry and firm. Not cause rutting to grass areas.
As directed by the engineer and this general note; not use mowers, weed eaters or pulling of weeds within the first 8 feet around trees. Keep this area vegetation free. Shall keep the mulch

100% visible. Mow all vegetation outside of the tree edging, 20 feet out. May use weed trimers and zero turn mowers, small tractor mower, to mow vegetation outside the edging.
Not mow over the metal edging. String trim the edge only. Equipment damage to edging is not allowed. Simple damages shall be replaced at contractors expense.

Plant Basin, Bed, and Worksite Maintenance:
Shall inspect and rework planting basins every 30 days. Reshape or regrade mulch in beds. Maintain or replace mulch in the case of flooding and wind erosion.
As shown in the planting details, sheet 1of 3, shall maintain mulch around the 8-foot perimeter of the newly planted trees. Not use herbicides sprayers. Shall use handheld wick applicators when applying Glyphosate herbicide to control vegetation in tree ring area. Keep the handheld wick devise working properly with no leaks or drips. Shall keep the 8-foot zone around the new tree always vegetation free. Inspect the tree root zone area every 31 Days for vegetation development.

Plant Supports:
As directed by the engineer, maintain support stakes and the connector binding connected to the newly planted tree. Shall check and confirm that the connector binding is not rubbing and damaging the tree bark of the tree or its branches.
Shall check and confirm that the tree is plumb and secure.
Shall check and secure stakes deep in the ground.

Plant Replacement.
As directed by the engineer, inspect, and replace monthly (First week of every month) all weakened or dead plants in planting beds.
Reference sheet 1 of 3 of the Planting and Establishment Details sheet of the plans.
Reference the General Notes written here and within for Item 192.
Reference the Plant specification sheet for plant identification.

.

Item 502 Barricades, Signs, and Traffic Handling

Adjust the traffic control setup such that rumble strips are not placed in areas of heavily rutted pavements, unpaved surfaces, or horizontal curves.

The contractor shall have the option of using either plastic drums, vertical panels, grabber cones or a combination where drums are shown as channelizing devices, as approved by the engineer. Plastic drums shall be used in all transition areas in accordance with BC(8)-18 and WZ(TD)-17.

Item 6185 Truck Mounted Attenuator (TMA) and Trailer Attenuator (TA)

In addition to the shadow vehicles with truck mounted attenuator (TMA) that are specified as being required on the traffic control plan for this project, provide 0 additional shadow vehicle(s)

Project Number: RMC 646433001 **Sheet**

County: RANDALL **Control:** 6464-33-001

Highway: US 60 ETC.

with TMA for TCP (2-1)-18 and (2-2)-18 as detailed on the General Notes of this standard sheets.

Therefore, 1 total shadow vehicles with TMA will be required for this type of work. The contractor will be responsible for determining if one or more of these operations will be ongoing at the same time to determine the total number Of TMAs needed for the project.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 6464-33-001 **DISTRICT** Amarillo **COUNTY** Randall
HIGHWAY US0060

			CONTROL SECTION JOB		**6464-33-001**	TOTAL EST.	TOTAL FINAL
			PROJECT ID		**A00207618**		
			COUNTY		**Randall**		
			HIGHWAY		**US0060**		
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL		
	192-6024	PLANT MATERIAL (30 GAL) (TREE)	EA	6.000		6.000	
	192-6025	PLANT MATERIAL (45 GAL) (TREE)	EA	116.000		116.000	
	192-6068	LANDSCAPE EDGE (TYPE II)	LF	2,562.000		2,562.000	
	193-6001	PLANT MAINTENANCE	MO	12.000		12.000	
	500-6001	MOBILIZATION	LS	1.000		1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	15.000		15.000	
	6185-6002	TMA (STATIONARY)	DAY	60.000		60.000	

DATE:
FILE:

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. 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).

2. The development and design of the Traffic Control Plan (TCP)is the responsibility of the Engineer.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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.

10. 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.

11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.

12. The Engineer has the final decision on the location of all traffic control devices.

13. 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:

1. 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.

2. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.

2. 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

Texas Department of Transportation

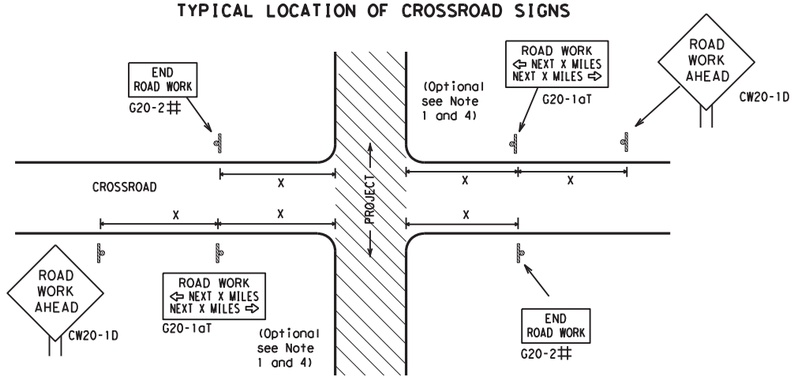
Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6464	33	001	US 60
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14	AMA	RANDALL		7
5-10 5-21				

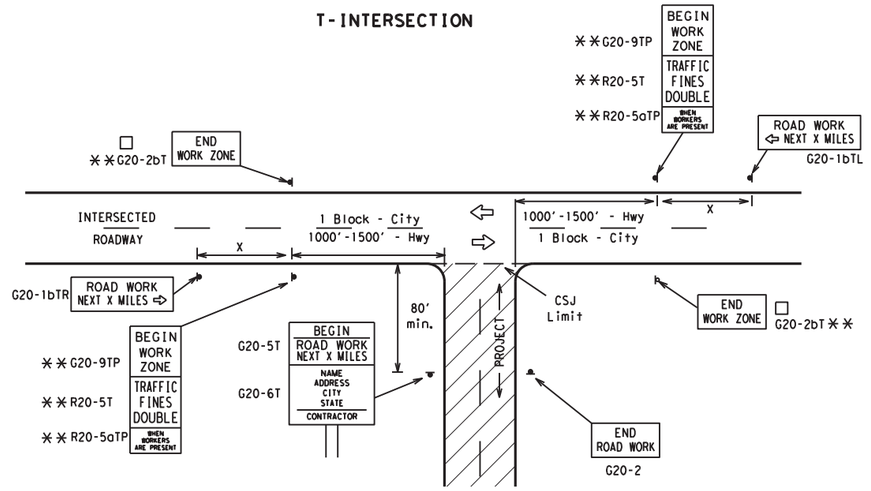
TYPICAL LOCATION OF CROSSROAD SIGNS



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

1. 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.
2. 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 as per TMUTCD Part 5. This information shall be shown in the plans.
3. 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.
4. 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.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. 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

1. 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.
2. 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]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20[4] CW21 CW22 CW23 CW25	48" x 48"	48" x 48"
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"

SPACING

Posted Speed	Sign △ Spacing "X"
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500[2]
60	600[2]
65	700[2]
70	800[2]
75	900[2]
80	1000[2]
*	*[3]

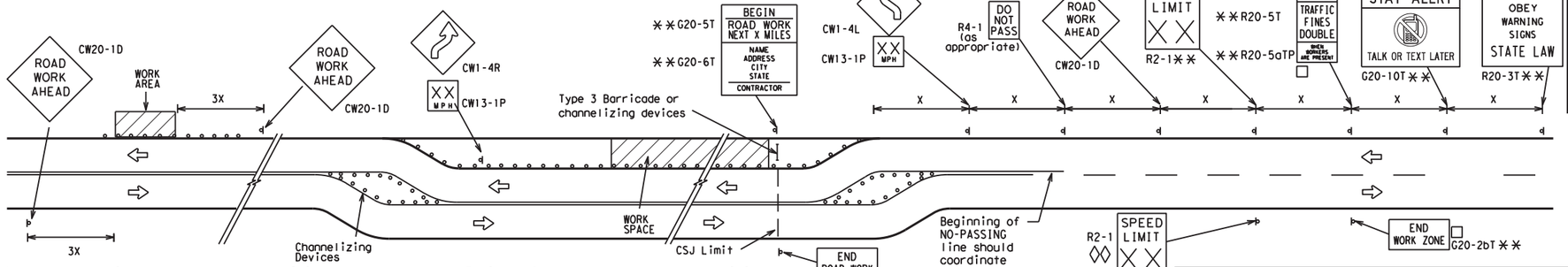
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

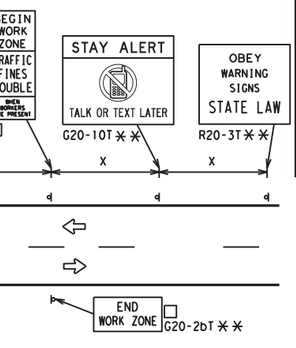
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. 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

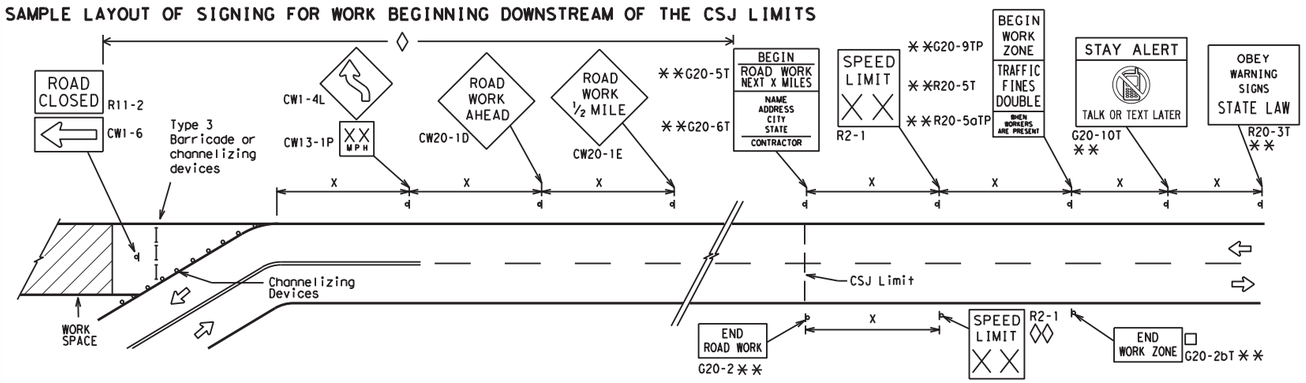


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF 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.

** CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.

◊ 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.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6464	33	001	US 60
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	AMA	RANDALL		8

DATE:
FILE:

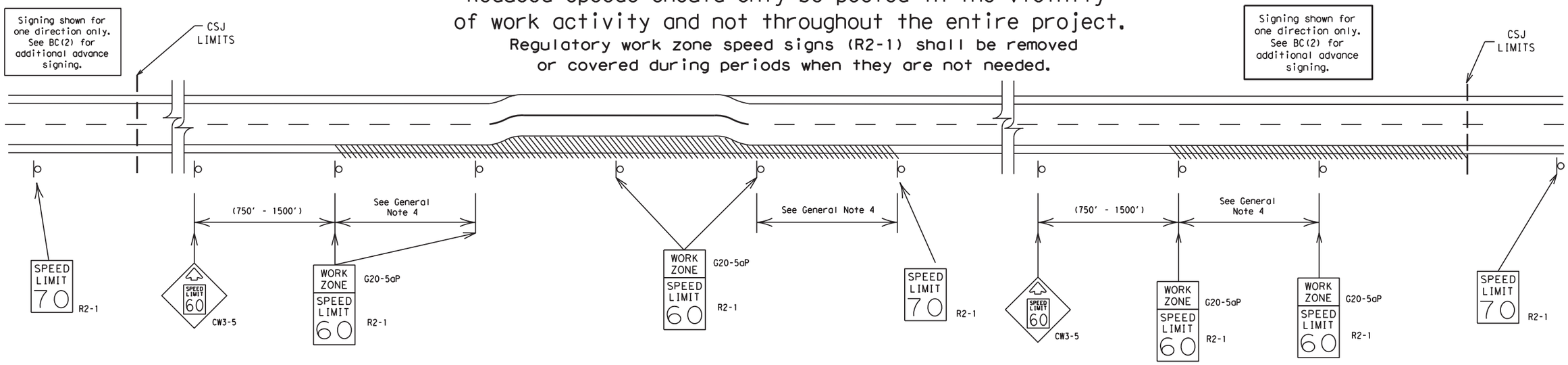
DATE:
FILE:

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:

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) 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

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. 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
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. 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.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. 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.

Texas Department of Transportation

Traffic Safety Division Standard

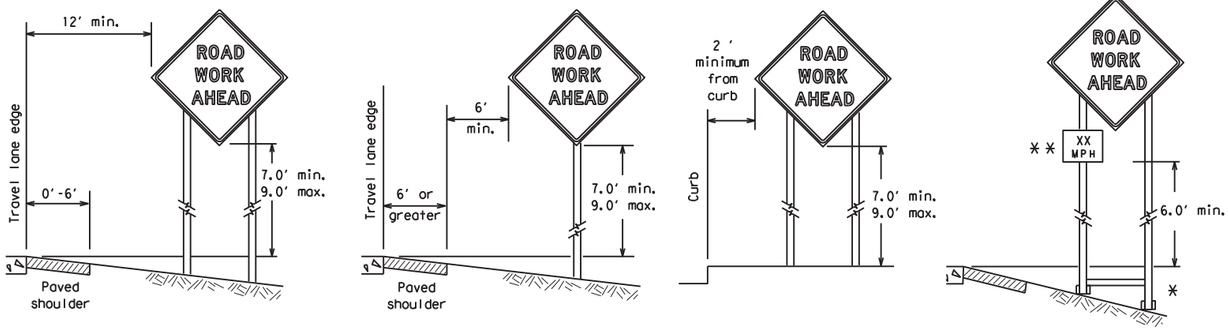
BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6464	33	001	US 60
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	AMA	RANDALL		9

DATE:
FILE:

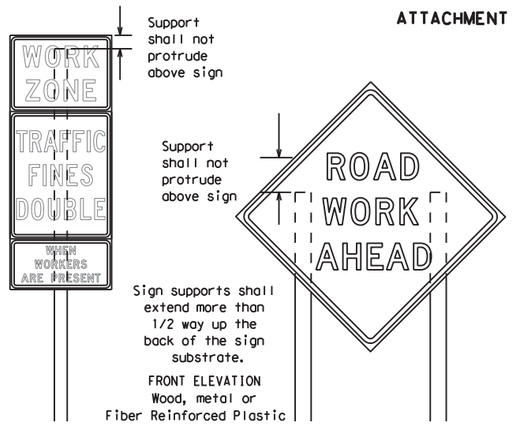
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



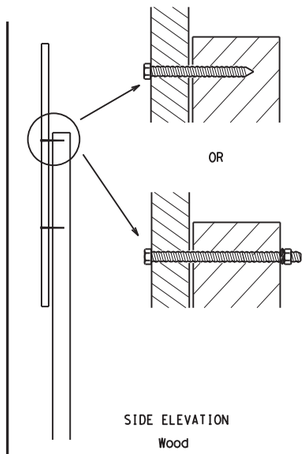
* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

* * 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



FRONT ELEVATION
Wood, metal or
Fiber Reinforced Plastic



SIDE ELEVATION
Wood

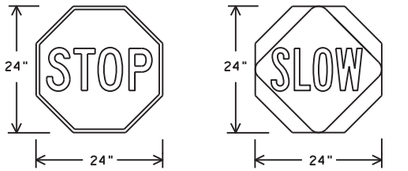
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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.

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 spice 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.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
2. STOP/SLOW paddles shall be retroreflectorized when used at night.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. 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.



Background - Red
Legend & Border - White

Background - Orange
Legend & Border - Black

SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B_{FL} OR C_{FL} 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

1. 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 (LOGO), 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.
2. 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.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. 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.
5. 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.
6. 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

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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)

1. 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.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. 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.
   c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. 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.
2. 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.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. 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.
5. 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

1. 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

1. 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.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. 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

1. 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).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. 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

1. 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

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. 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.
3. 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.
4. 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.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. 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.
7. 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.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. 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.

Texas Department of Transportation

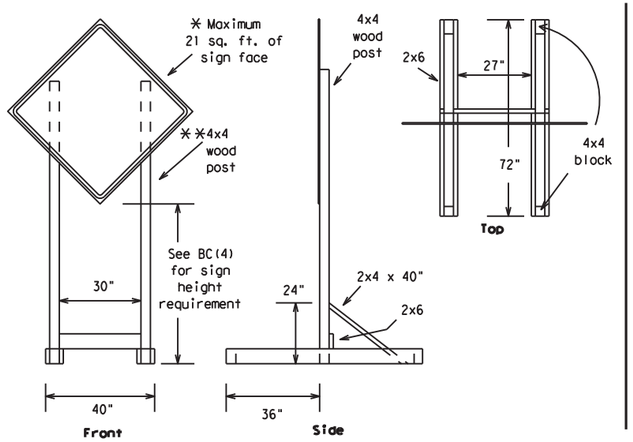
Traffic Safety Division Standard

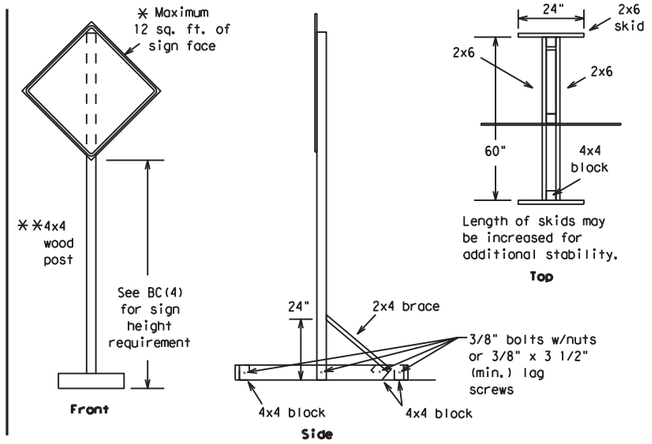
BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6464	33	001	US 60
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	AMA	RANDALL		10

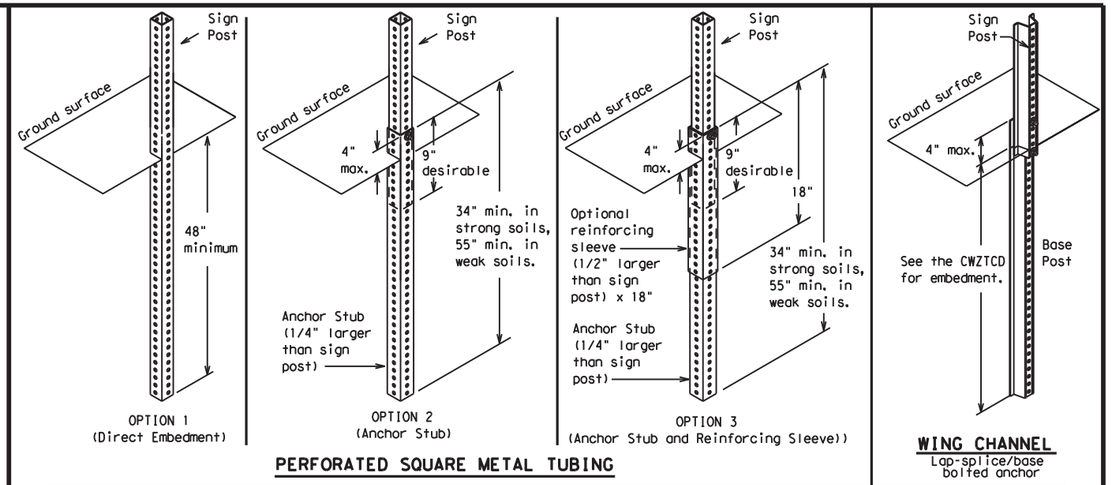
DATE:
FILE:





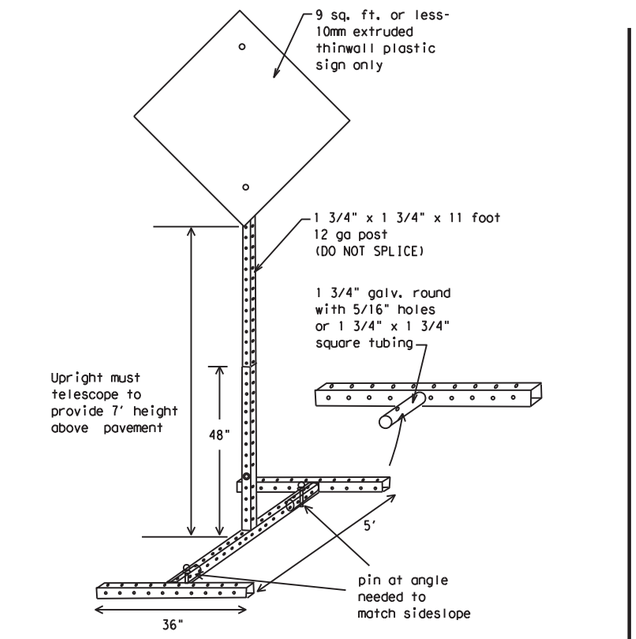
SKID MOUNTED WOOD SIGN SUPPORTS

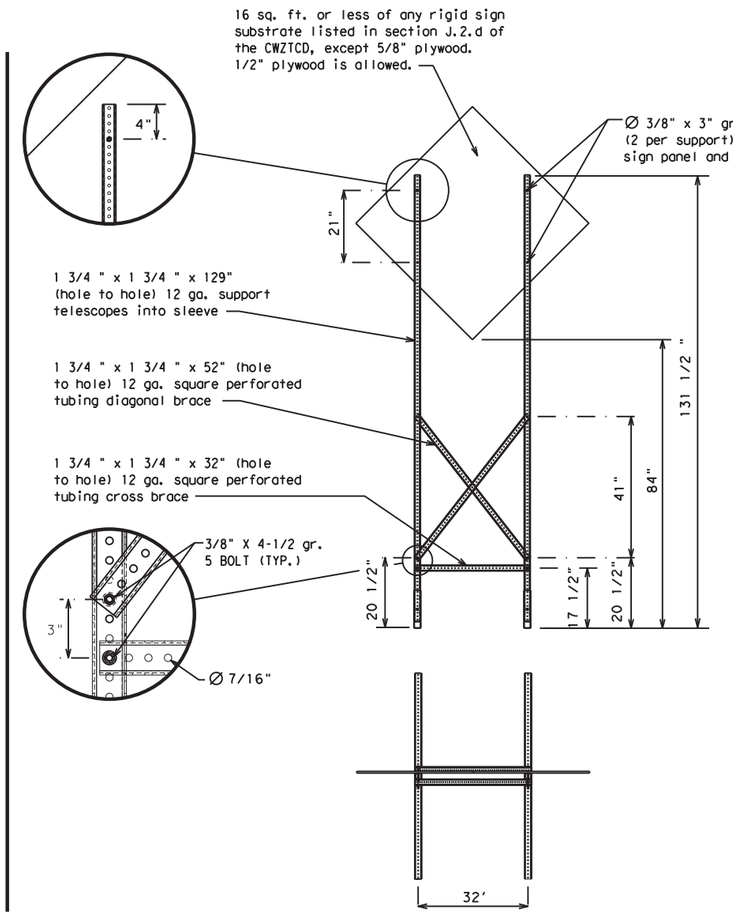
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

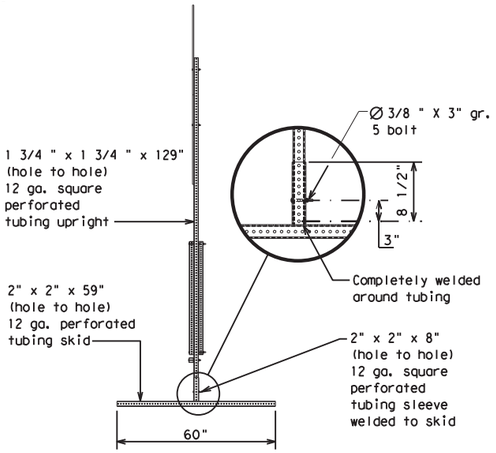


GROUND MOUNTED SIGN SUPPORTS

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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6464	33	001	US 60
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	AMA	RANDALL		11

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

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. 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.
3. 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.
4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. 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.
8. 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.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. 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.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. 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.
15. 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.
16. Each line of text should be centered on the message board rather than left or right justified.
17. 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
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy	HOV
Vehicle Highway	HWY
Hour(s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT
Major	MAJ
Miles	MI
Miles Per Hour	MPH
Minor	MNR
Monday	MON
Normal	NORM
North	N
Northbound	(route) N
Parking	PKING
Road	RD
Right Lane	RT LN
Saturday	SAT
Service Road	SERV RD
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	(route) S
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Thursday	THURS
To Downtown	TO DWNTN
Traffic	TRAF
Travelers	TRVLRS
Tuesday	TUES
Time Minutes	TIME MIN
Upper Level	UPR LEVEL
Vehicles (s)	VEH, VEHS
Warning	WARN
Wednesday	WED
Weight Limit	WT LIMIT
West	W
Westbound	(route) W
Wet Pavement	WET PVMT
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

- FREEWAY CLOSED X MILE
- FRONTAGE ROAD CLOSED
- ROAD CLOSED AT SH XXX
- SHOULDER CLOSED XXX FT
- ROAD CLSD AT FM XXXX
- RIGHT LN CLOSED XXX FT
- RIGHT X LANES CLOSED
- RIGHT X LANES OPEN
- CENTER LANE CLOSED
- DAYTIME LANE CLOSURES
- NIGHT LANE CLOSURES
- I-XX SOUTH EXIT CLOSED
- VARIOUS LANES CLOSED
- EXIT XXX CLOSED X MILE
- EXIT CLOSED
- RIGHT LN TO BE CLOSED
- MALL DRIVEWAY CLOSED
- X LANES CLOSED TUE - FRI
- XXXXXXXX BLVD CLOSED

Other Condition List

- ROADWORK XXX FT
- ROAD REPAIRS XXXX FT
- FLAGGER XXXX FT
- LANE NARROWS XXXX FT
- RIGHT LN NARROWS XXXX FT
- TWO-WAY TRAFFIC XX MILE
- MERGING TRAFFIC XXXX FT
- CONST TRAFFIC XXX FT
- LOOSE GRAVEL XXXX FT
- UNEVEN LANES XXXX FT
- DETOUR X MILE
- ROUGH ROAD XXXX FT
- ROADWORK PAST SH XXXX
- ROADWORK NEXT FRI-SUN
- BUMP XXXX FT
- US XXX EXIT X MILES
- 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
- XXXXXXX TO XXXXXXX
- 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

1. Only 1 or 2 phases are to be used on a PCMS.
2. The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
4. A Location Phase is necessary only if a distance or location is not included in the first phase selected.
5. 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.
6. 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

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.
2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
4. Highway names and numbers replaced as appropriate.
5. ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
6. AHEAD may be used instead of distances if necessary.
7. FT and MI, MILE and MILES interchanged as appropriate.
8. AT, BEFORE and PAST interchanged as needed.
9. 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

1. 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.
2. 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.
3. 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.
4. 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.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

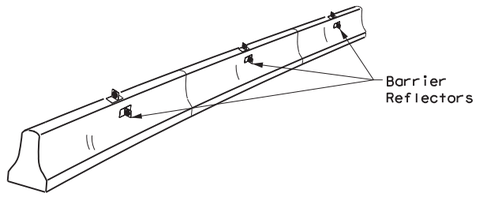
BC(6)-21

FILE:	bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS		6464	33	001	US 60
9-07 8-14		DIST	COUNTY		SHEET NO.
7-13 5-21		AMA	RANDALL		12

100

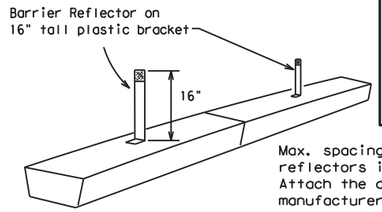
DATE:
FILE:

1. 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).
2. 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)

3. 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.
4. 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.
5. When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
6. Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
7. Maximum spacing of Barrier Reflectors is forty (40) feet.
8. Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
10. Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
11. Single slope barriers shall be delineated as shown on the above detail.

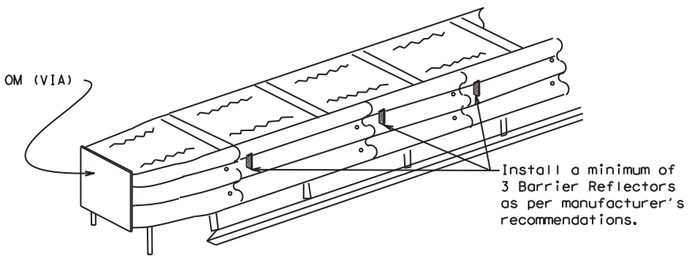


Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

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.

LOW PROFILE CONCRETE BARRIER (LPCB)

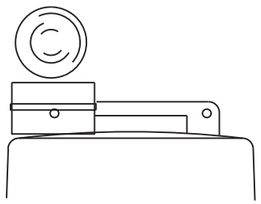


DELINEATION OF END TREATMENTS

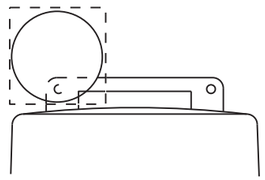
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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

WARNING LIGHTS

1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. 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.
4. 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".
5. The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
6. 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.
7. 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.
8. The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

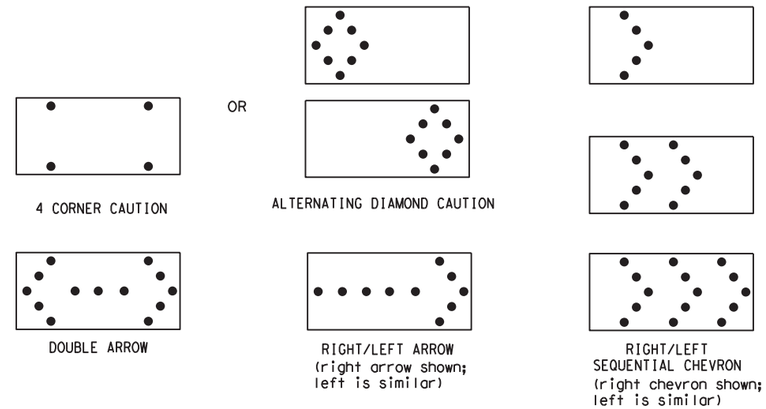
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing 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.
4. 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.
5. Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
6. Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
7. 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

1. 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.
2. 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.
3. The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
4. Round reflectors shall be fully reflectorized, including the area where attached to the drum.
5. 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.
6. 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.
7. When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
8. The warning reflector should be mounted on the side of the handle nearest approaching traffic.
9. The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

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.

1. 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.
2. 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.
3. 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.
4. The Flashing Arrow Board should be able to display the following symbols:



5. The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
6. The straight line caution display is NOT ALLOWED.
7. 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.
8. 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.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential chevron display may be used during daylight operations.
11. The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
13. 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.
14. 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

TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CWZTCD for a list of approved TMAs.
4. TMAs are required on freeways unless otherwise noted in the plans.
5. 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.
6. 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.

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6464	33	001	US 60
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	AMA	RANDALL		13

101

DATE:
FILE:

GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. 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.
3. 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.
4. 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).
5. 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.
6. 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:

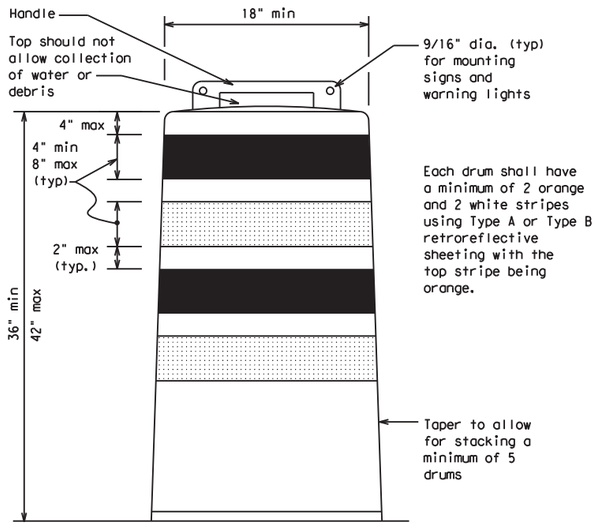
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

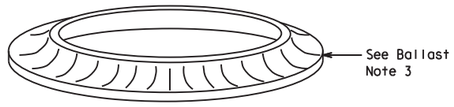
RETROREFLECTIVE SHEETING

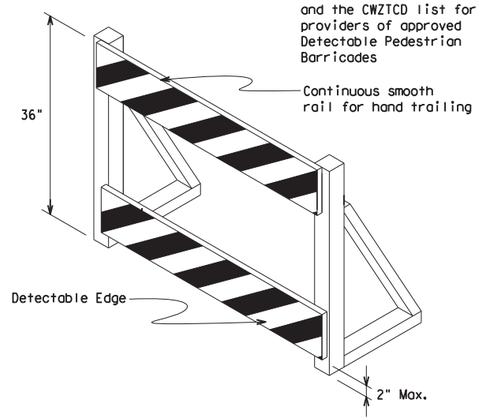
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall 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

1. 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.
2. 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.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. 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.
5. 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.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.



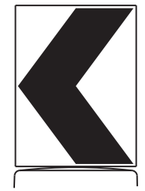




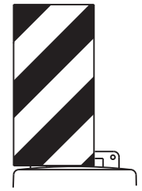
This detail is not intended for fabrication. See note 3 and the CWZTCD list for providers of approved Detectable Pedestrian Barricades

DETECTABLE PEDESTRIAN BARRICADES

1. 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. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
3. 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.
4. 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 (ADAAG)" and should not be used as a control for pedestrian movements.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades should 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.



18" x 24" Sign
(Maximum Sign Dimension)
Chevron CW1-8, Opposing Traffic Lane Divider, Driveway sign D70a, Keep Right R4 series or other signs as approved by Engineer



12" x 24"
Vertical Panel
mount with diagonals sloping down towards travel way

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. 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.
3. Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. 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.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. 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.
8. 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.

Texas Department of Transportation

Traffic Safety Division Standard

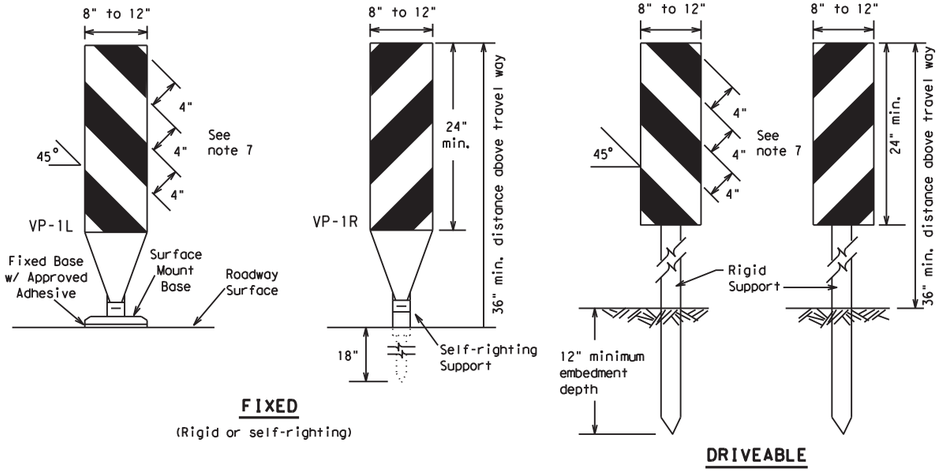
BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6464	33	001	US 60
4-03 8-14	DIST	COUNTY		SHEET NO.
9-07 5-21	AMA	RANDALL		14
7-13				

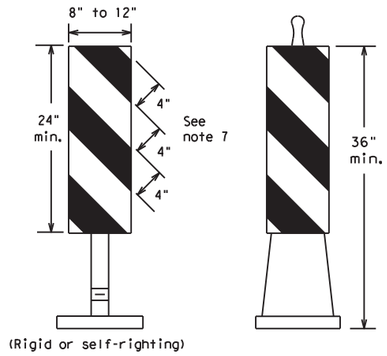
102

DATE:
FILE:



FIXED
(Rigid or self-righting)

DRIVEABLE

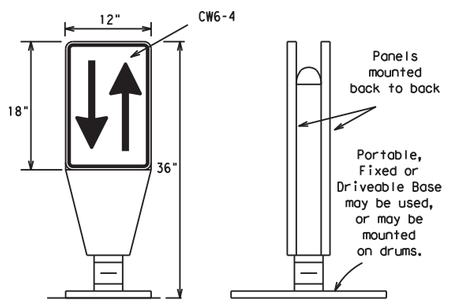


(Rigid or self-righting)

PORTABLE

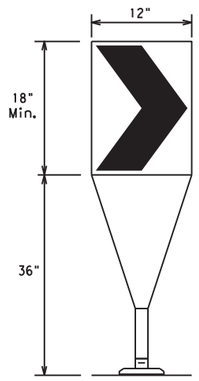
VERTICAL PANELS (VPs)

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 for additional requirements on the use 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 or Type B 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.



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)



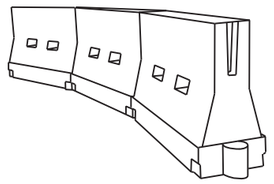
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

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.



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). Place reflective sheeting 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 Manual for Assessing Safety Hardware (MASH) 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

Posted Speed	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices 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

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

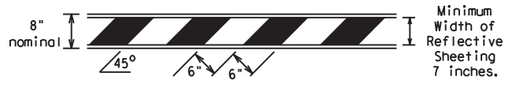
BC(9)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6464	33	001	US 60
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	AMA	RANDALL		15

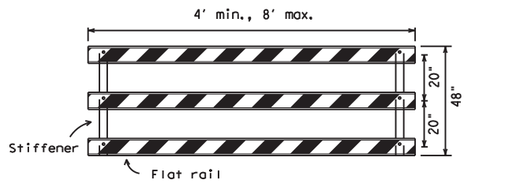
TYPE 3 BARRICADES

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 or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



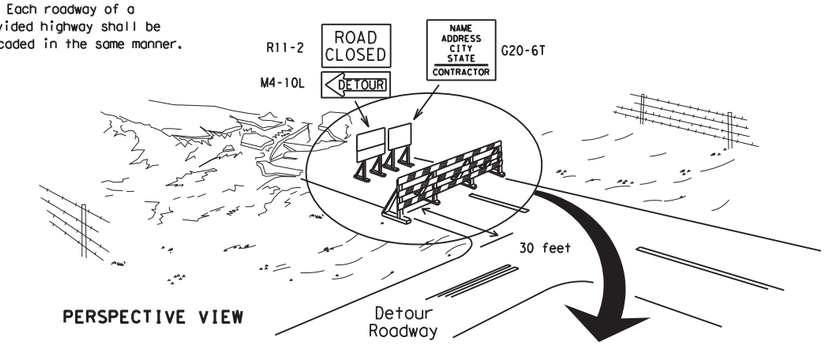
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

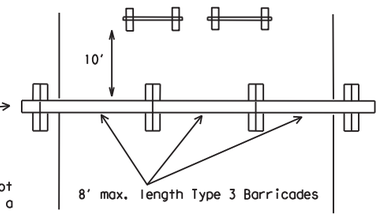
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

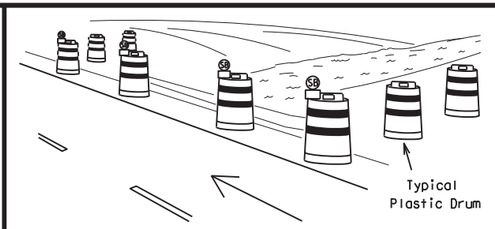
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

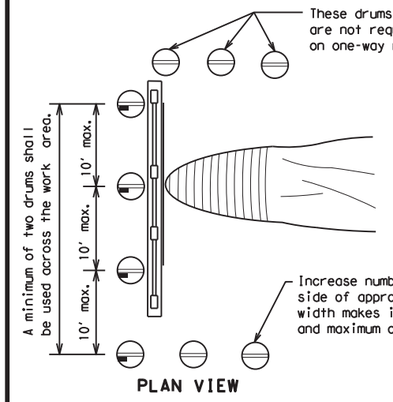
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

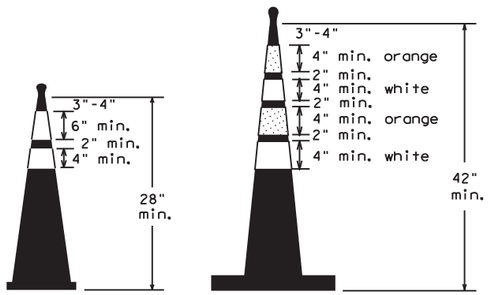
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.



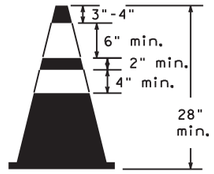
PLAN VIEW

LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

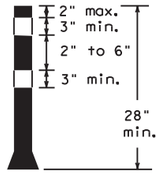
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones



One-Piece cones

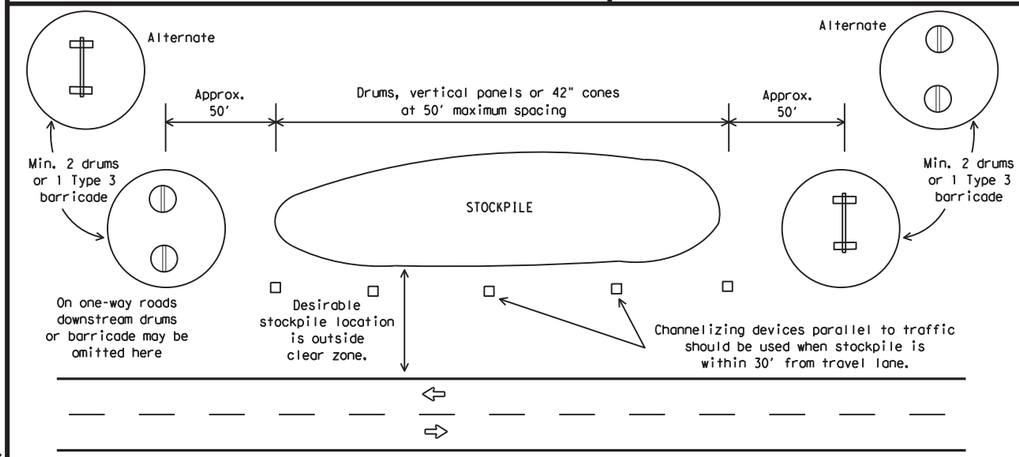


Tubular Marker

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 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 or Type B.
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.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

DATE:
FILE:

SHEET 10 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	6464	33	001	US 60
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	AMA	RANDALL		16

104

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.

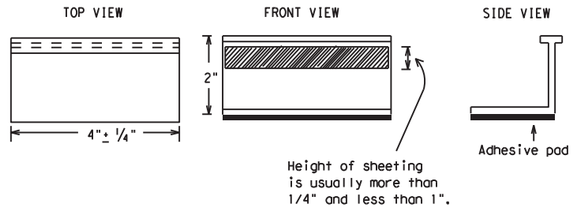
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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).

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

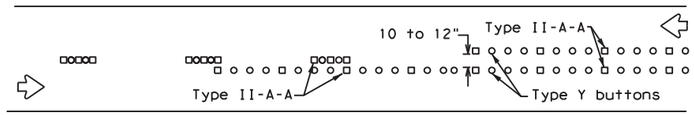
BC(11)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	6464	33	001	US 60
2-98 9-07 5-21	DIST	COUNTY		SHEET NO.
1-02 7-13	AMA	RANDALL		17
11-02 8-14				

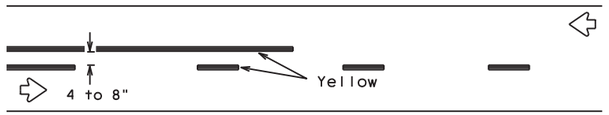
DATE:
FILE:

PAVEMENT MARKING PATTERNS

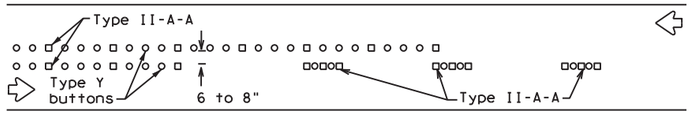
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



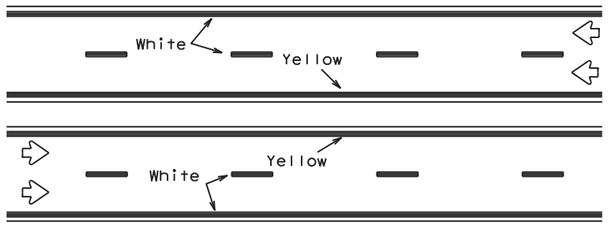
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



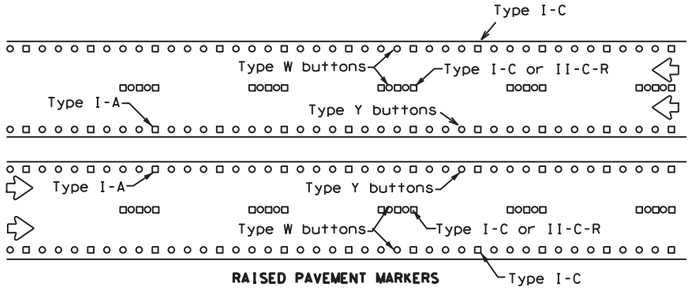
RAISED PAVEMENT MARKERS - PATTERN B

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.

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



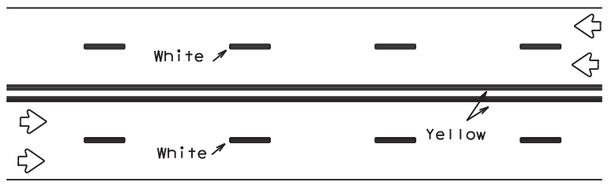
REFLECTORIZED PAVEMENT MARKINGS



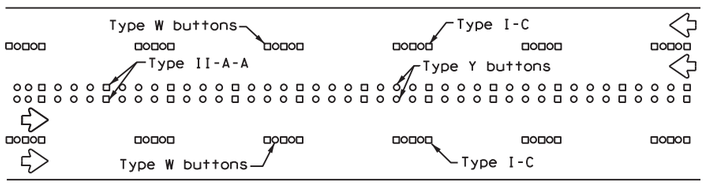
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



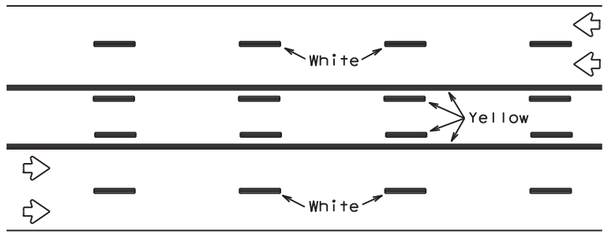
REFLECTORIZED PAVEMENT MARKINGS



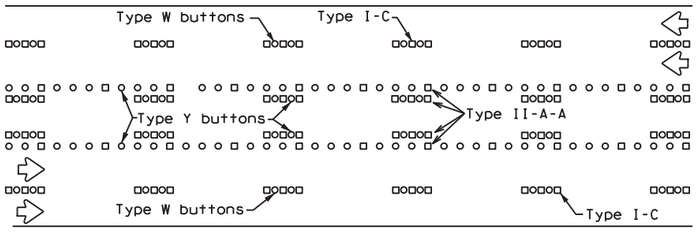
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

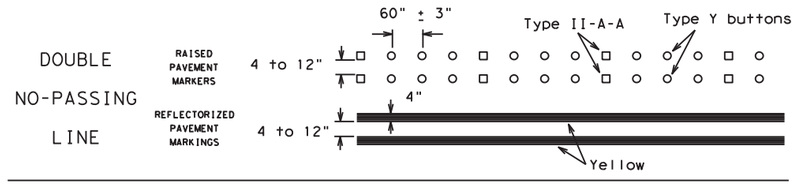
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

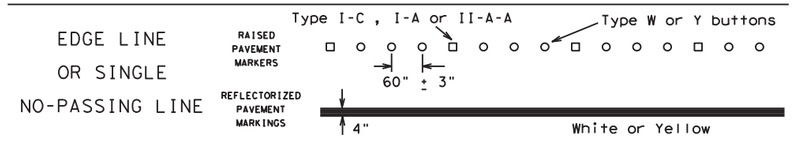
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

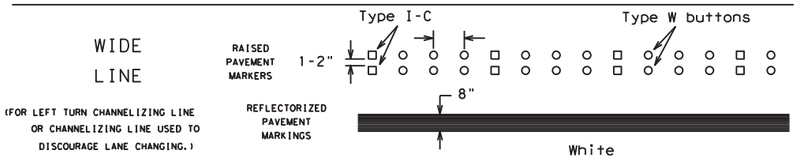


EDGE LINE OR SINGLE NO-PASSING LINE



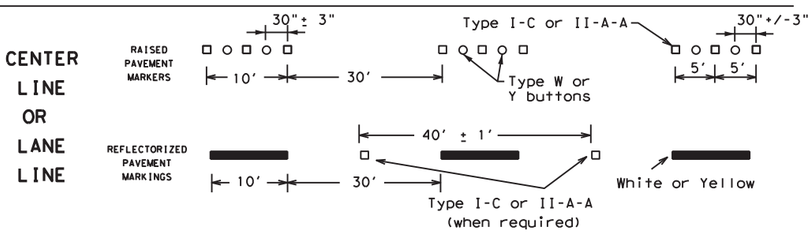
WIDE LINE

(FOR LEFT TURN CHANNELIZING LINE OR CHANNELIZING LINE USED TO DISCOURAGE LANE CHANGING.)

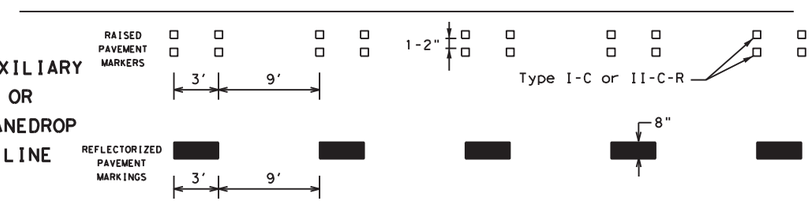


BROKEN LINES

CENTER LINE OR LANE LINE

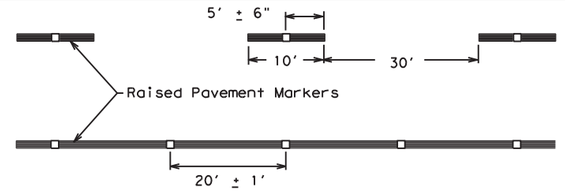


AUXILIARY OR LANEDROP LINE



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.



Centerline only - not to be used on edge lines

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."

SHEET 12 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

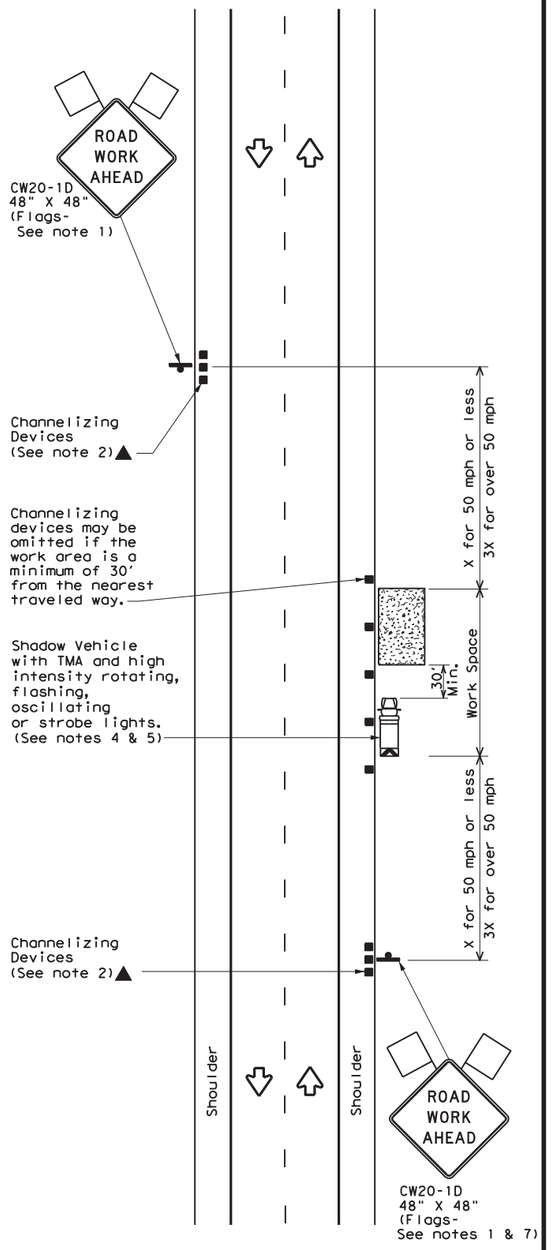
BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 1-97 9-07 5-21 2-98 7-13 11-02 8-14	6464	33	001	US 60
	DIST	COUNTY		SHEET NO.
	AMA	RANDALL		18

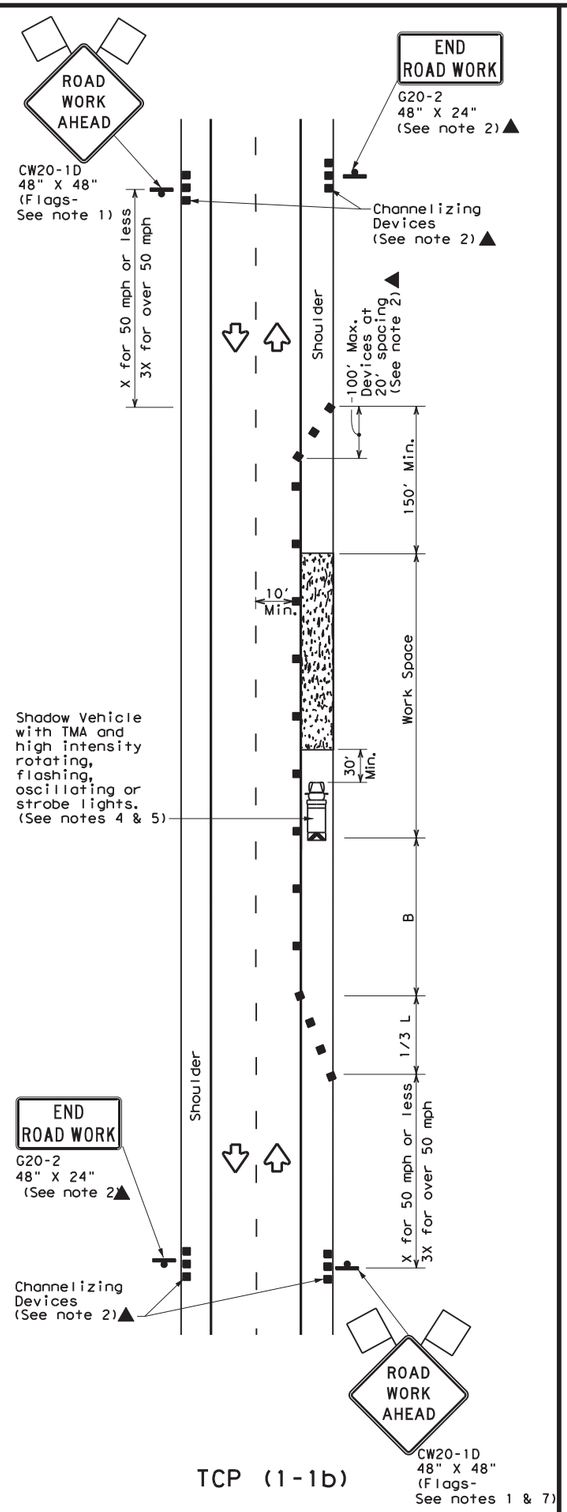
106

DATE:
FILE:



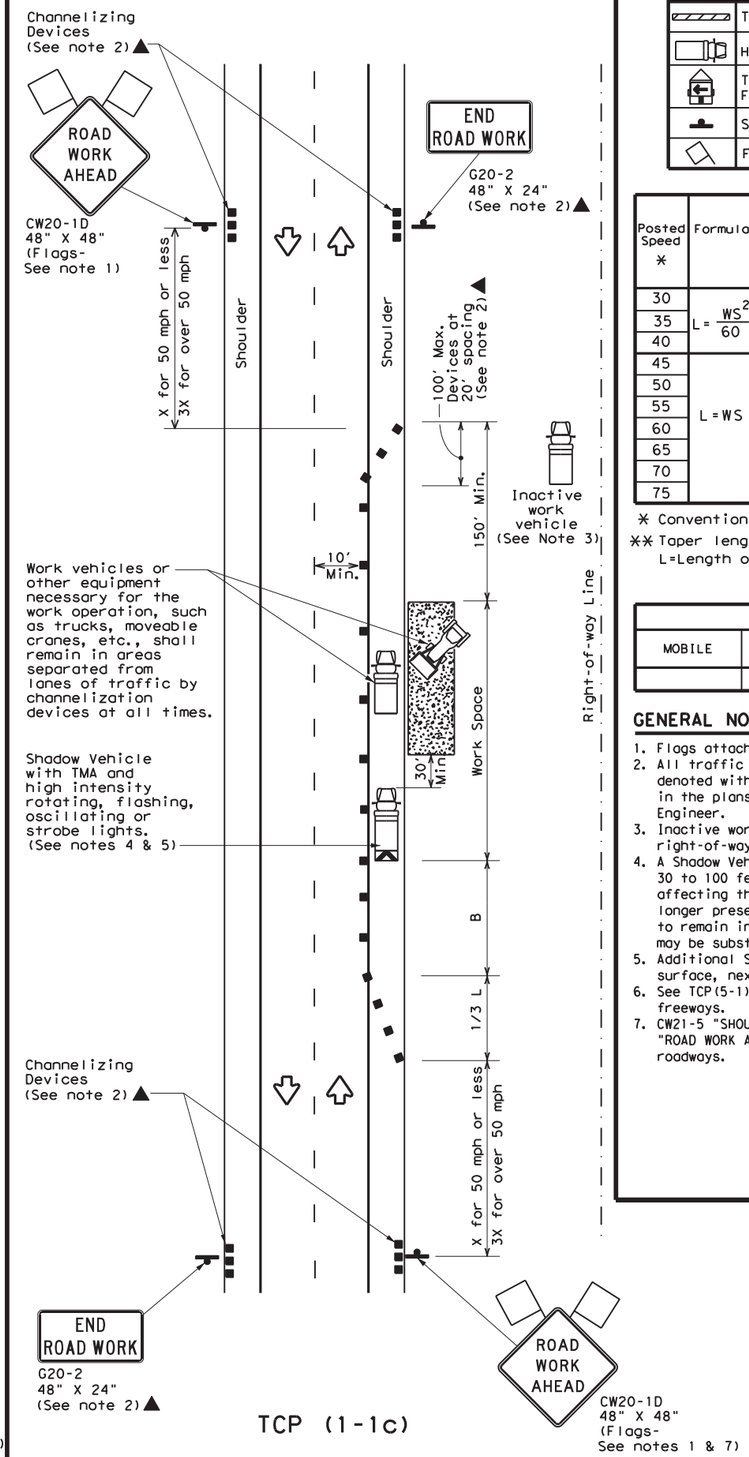
TCP (1-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (1-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (1-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
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. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
6. See TCP(5-1)for shoulder work on divided highways, expressways and freeways.
7. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation

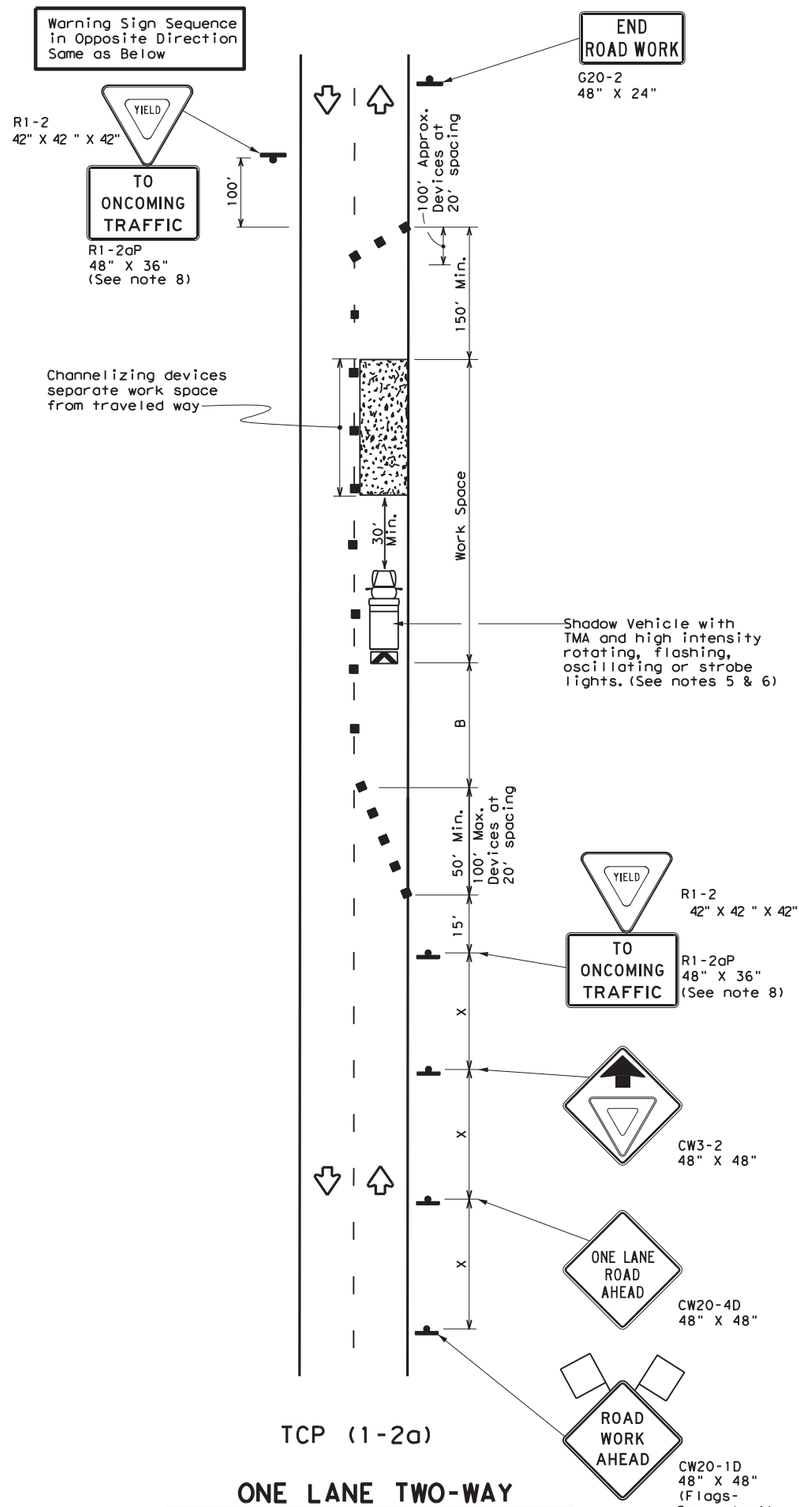
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(1-1)-18

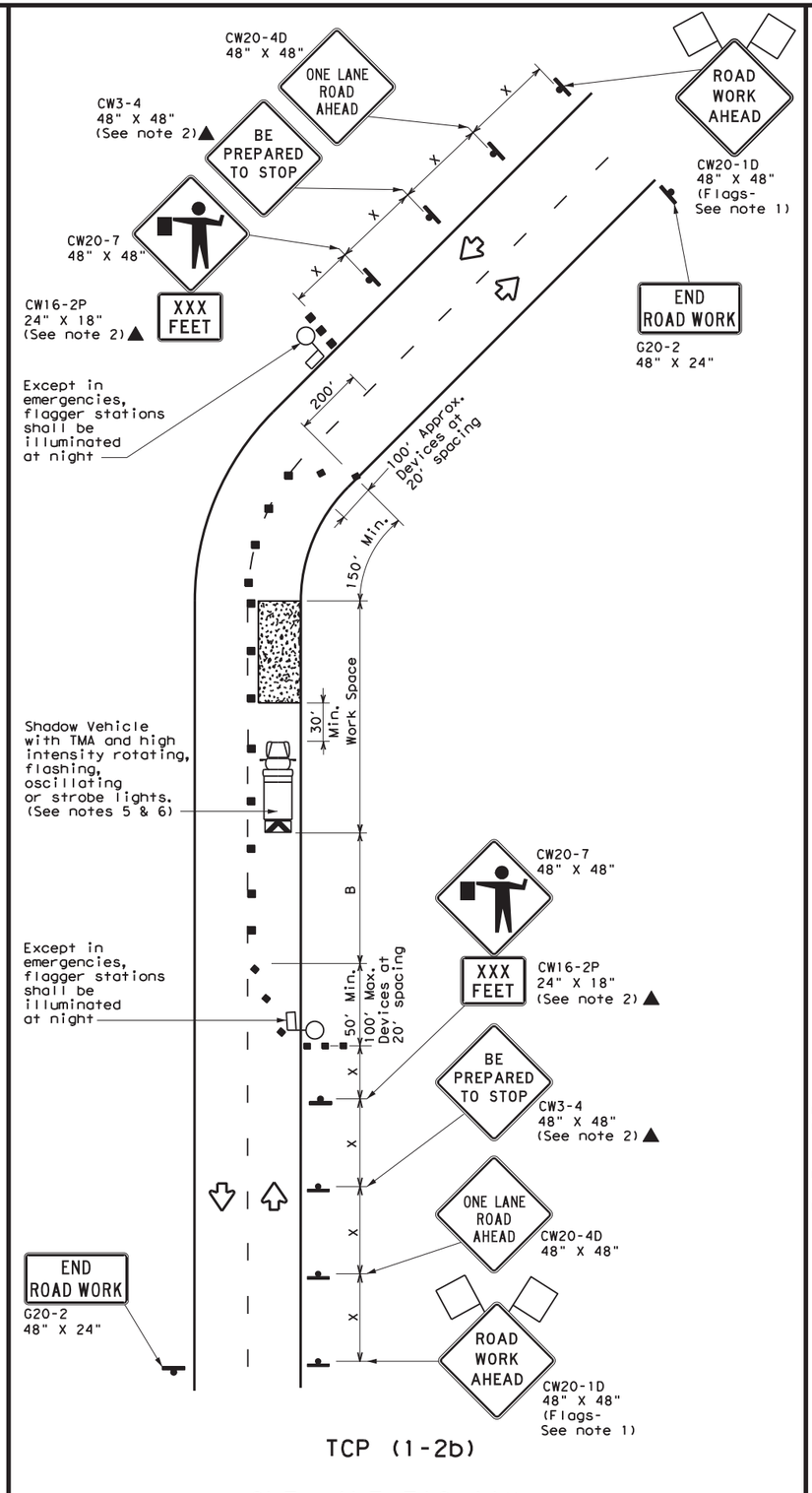
FILE: tcp1-1-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18	6464	33	001	US 60
	DIST	COUNTY		SHEET NO.
	AMA	RANDALL		19

DATE:
FILE:



TCP (1-2a)

ONE LANE TWO-WAY
CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See note 7)



TCP (1-2b)

ONE LANE TWO-WAY
CONTROL WITH FLAGGERS

LEGEND

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L = WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* 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. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
5. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
6. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-2a)

7. R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
8. R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.

TCP (1-2b)

9. Flaggers should use two-way radios or other methods of communication to control traffic.
10. Length of work space should be based on the ability of flaggers to communicate.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
12. Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
13. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

Texas Department of Transportation

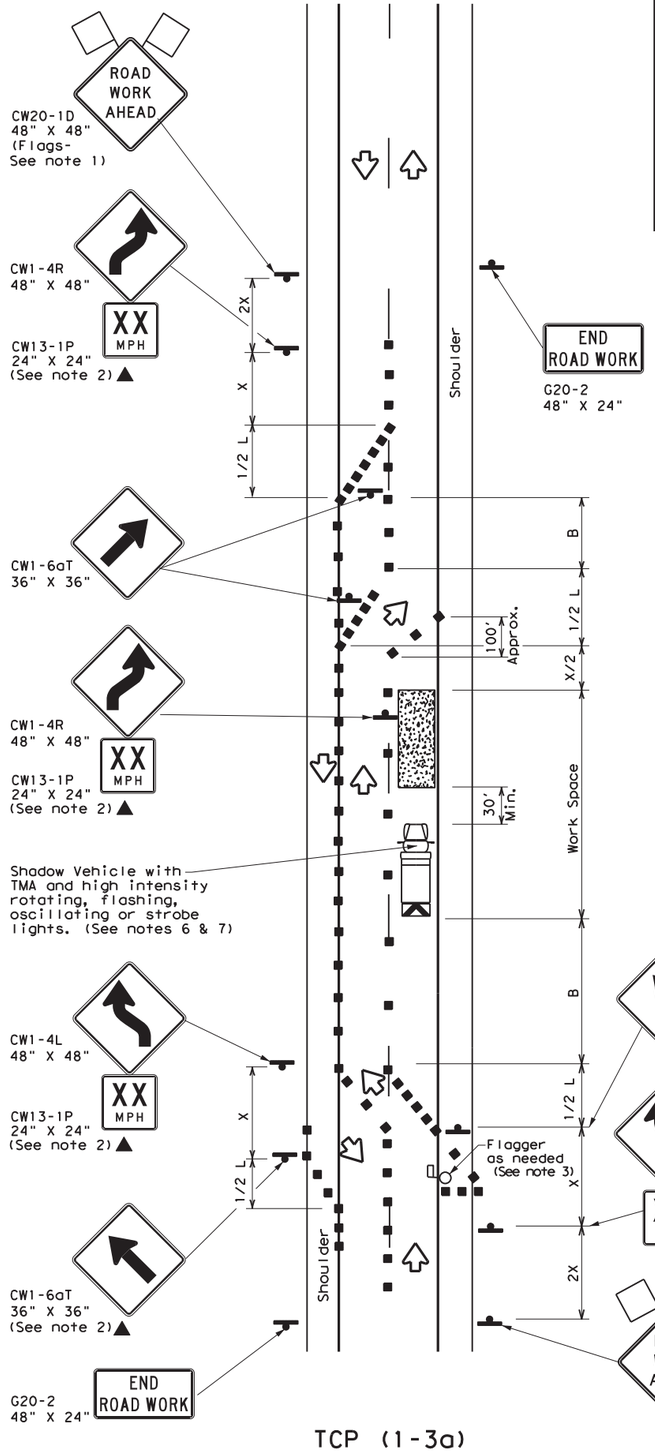
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY
TRAFFIC CONTROL

TCP(1-2)-18

FILE: tcp1-2-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-90 4-98	6464	33	001	US 60
2-94 2-12	DIST	COUNTY		SHEET NO.
1-97 2-18	AMA	RANDALL		20

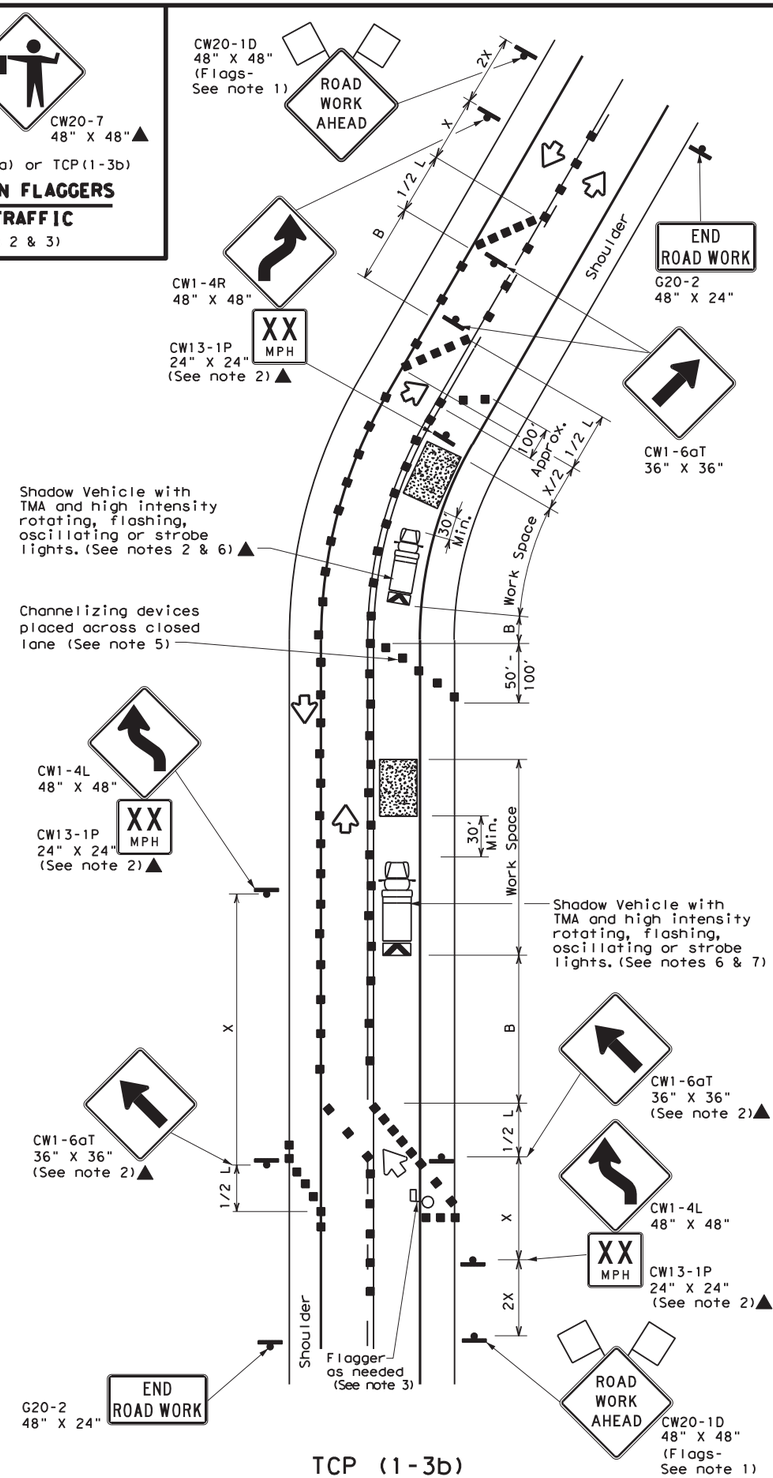
DATE:
FILE:



TCP (1-3a)
2-LANE ROADWAY WITH PAVED SHOULDERS

ONE LANE CLOSED
ADEQUATE FIELD OF VIEW

BE PREPARED TO STOP
CW3-4 48" X 48"
CW20-7 48" X 48"
For either TCP(1-3a) or TCP(1-3b)
USE ONLY WHEN FLAGGERS CONTROL TRAFFIC
(See Notes 2 & 3)



TCP (1-3b)
2-LANE ROADWAY WITH PAVED SHOULDERS

ONE LANE CLOSED
INADEQUATE FIELD OF VIEW

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
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. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safely control traffic. Additional flaggers may be positioned in advance of traffic queues to alert traffic to reduce speed.
4. DO NOT PASS, PASS WITH CARE and construction regulatory speed zone signs may be installed downstream of the ROAD WORK AHEAD signs.
5. When the work zone is made up of several work spaces, channelizing devices should be placed laterally across the closed lane to re-emphasize closure. Laterally placed channelizing devices should be repeated every 500 to 1000 feet in urban areas and every 1/4 to 1/2 mile in rural areas.
6. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
7. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
8. Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20', or 15' if posted speed are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the area of conflicting markings not the entire work zone.

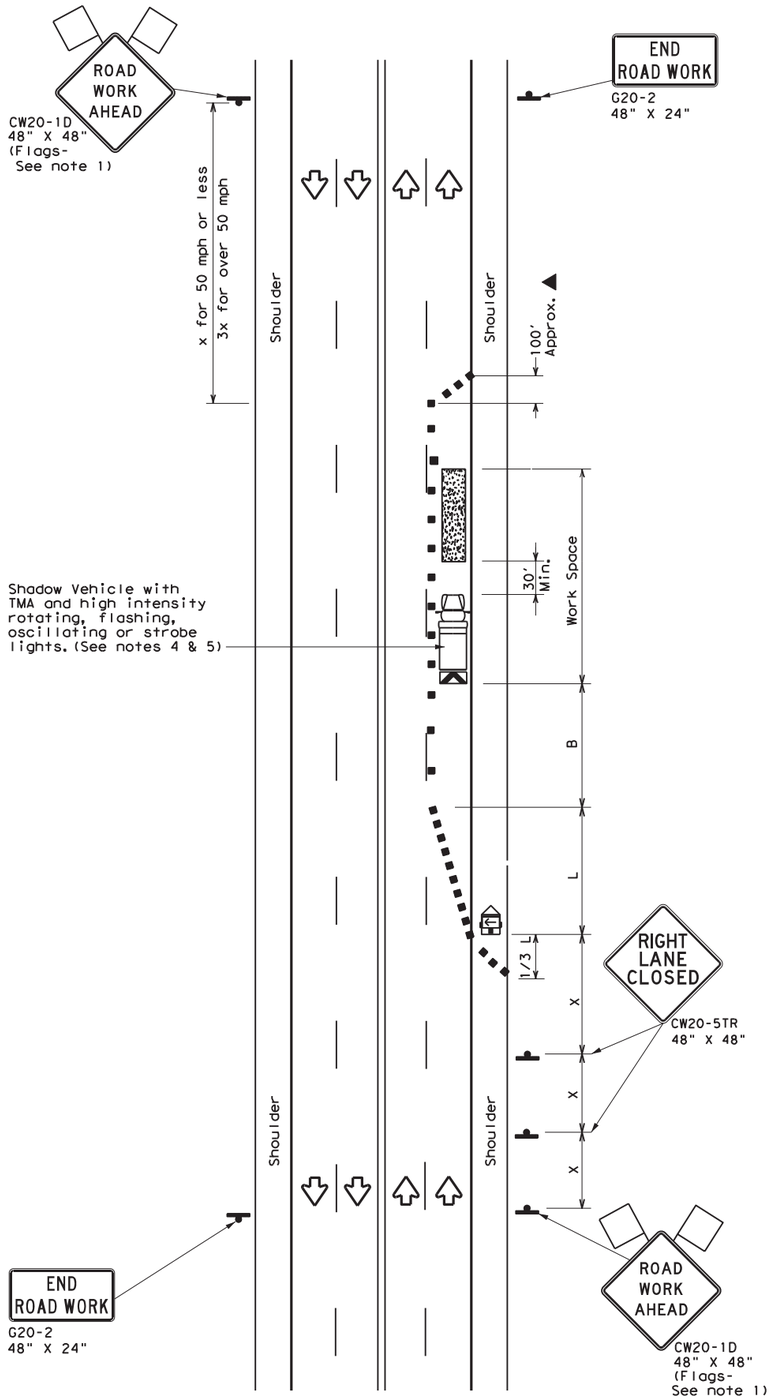
Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
TRAFFIC SHIFTS ON TWO LANE ROADS
TCP(1-3)-18

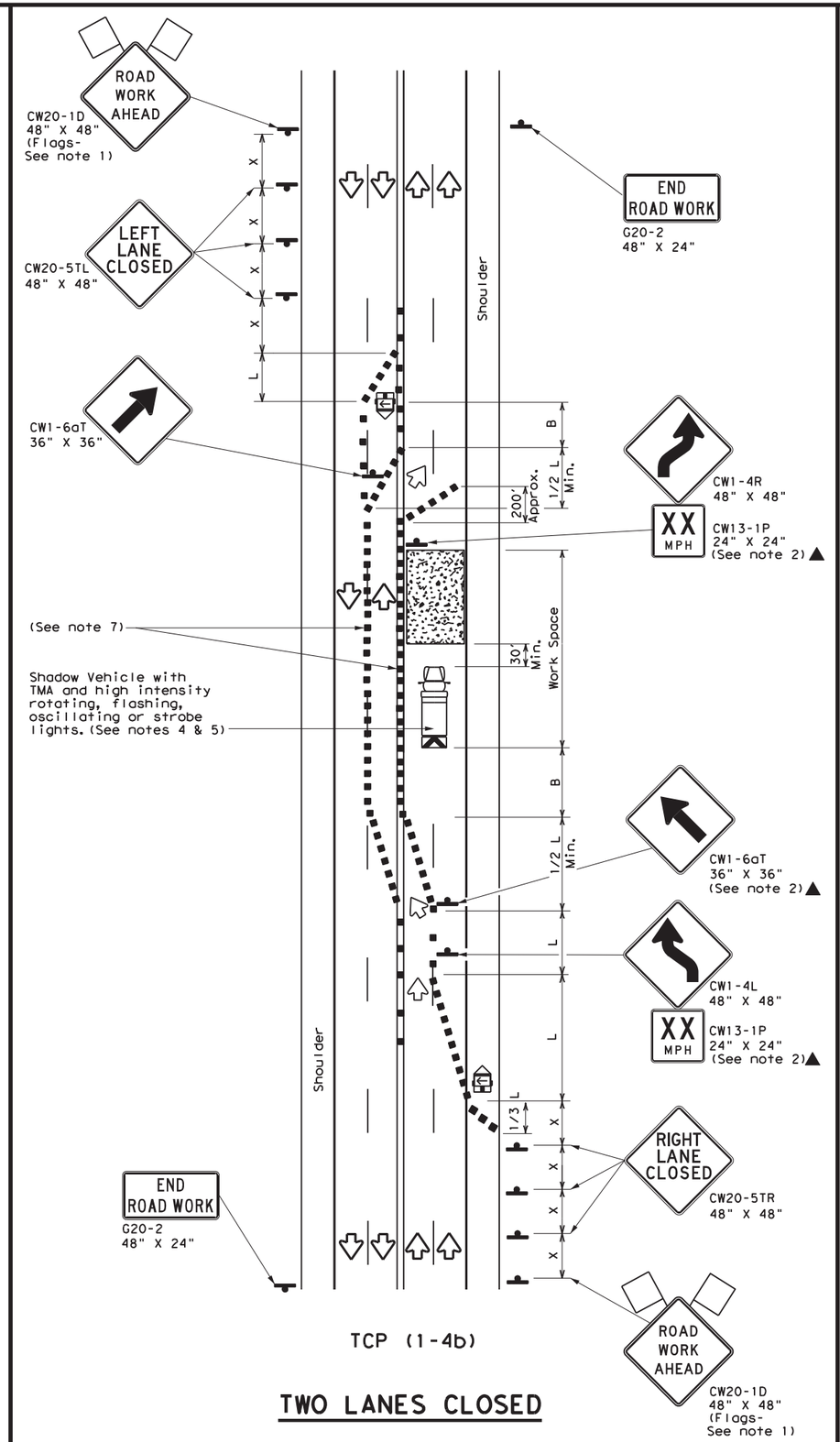
FILE: tcp1-3-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	6464	33	001	US 60
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12	AMA	RANDALL		21
1-97 2-18				

DATE:
FILE:



TCP (1-4a)

ONE LANE CLOSED



TCP (1-4b)

TWO LANES CLOSED

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
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. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the visibility of the work zone is less than 1500 feet.
4. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-4a)

6. If this TCP is used for a left lane closure , CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline where needed to protect the work space from opposing traffic with the arrow panel placed in the closed lane near the end of the merging taper.

TCP (1-4b)

7. Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20′ or 15′ if posted speeds are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

Texas Department of Transportation

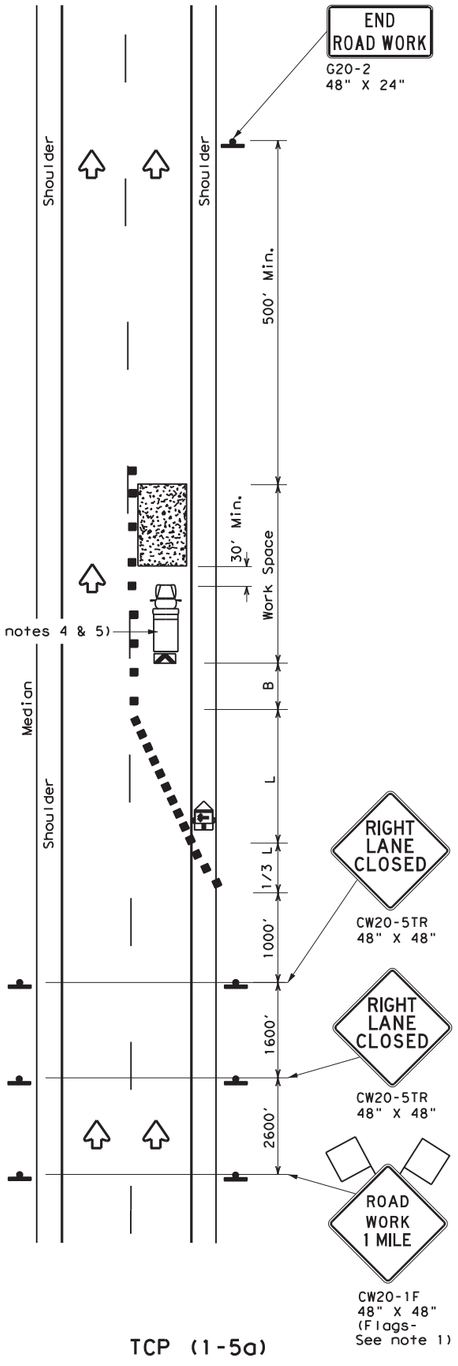
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

TCP(1-4)-18

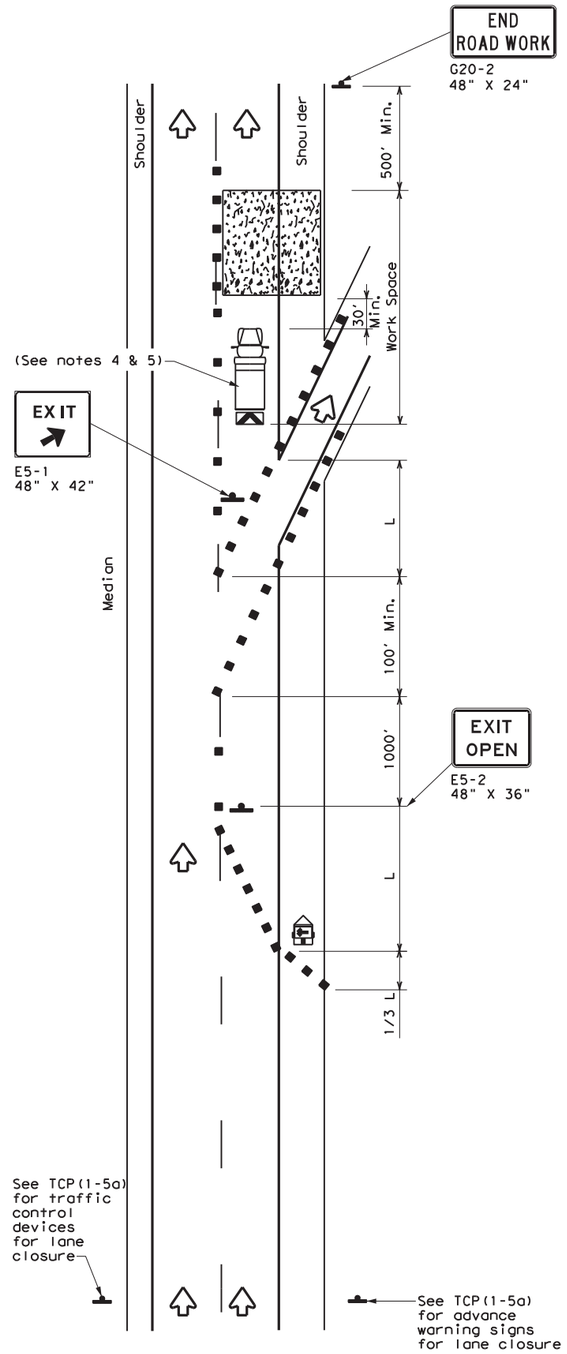
FILE: tcp1-4-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	6464	33	001	US 60
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12	AMA	RANDALL		22
1-97 2-18				

DATE:
FILE:



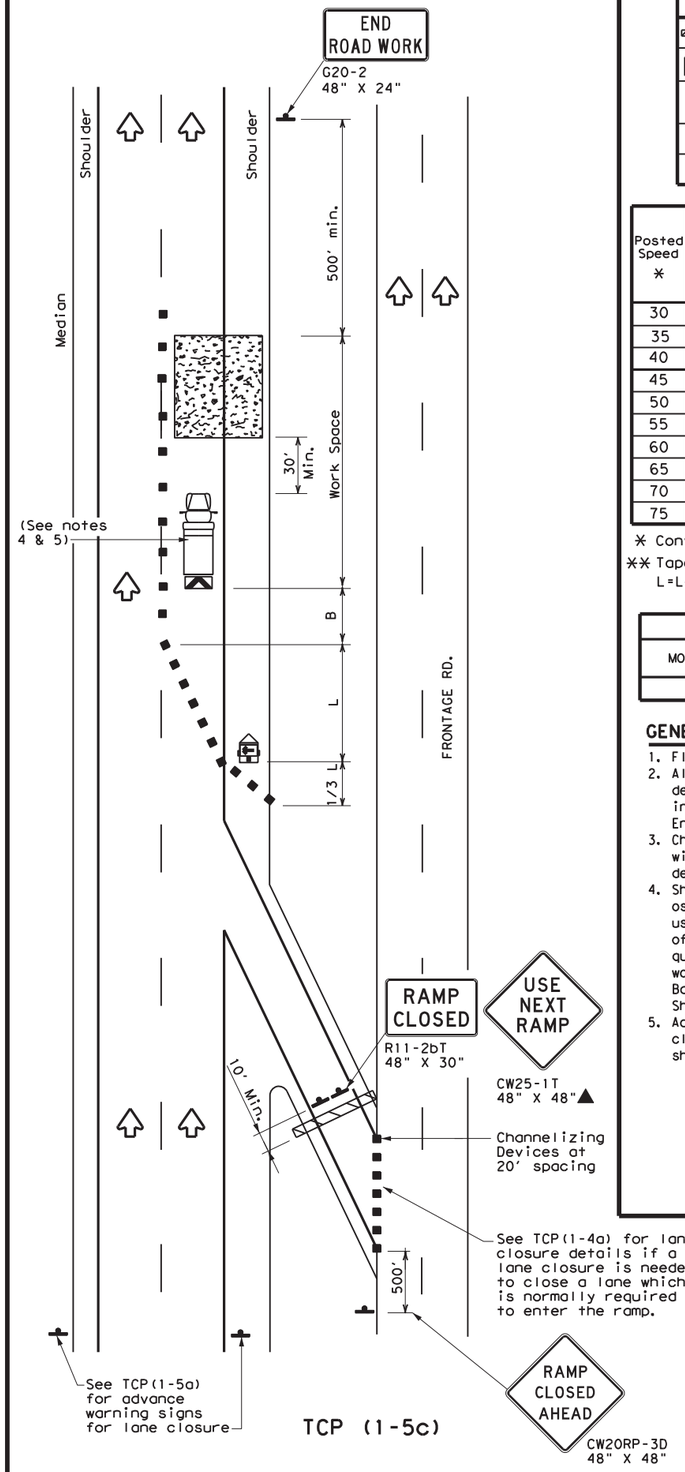
TCP (1-5a)

ONE LANE CLOSURE



TCP (1-5b)

LANE CLOSURE NEAR EXIT RAMPS



TCP (1-5c)

LANE CLOSURE NEAR ENTRANCE RAMPS

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
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. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. Channelizing devices used to close lanes may be supplemented with the Chevron Alignment Sign placed on every other channelizing device. Chevrons may be attached to plastic drums as per BC Standards.
4. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

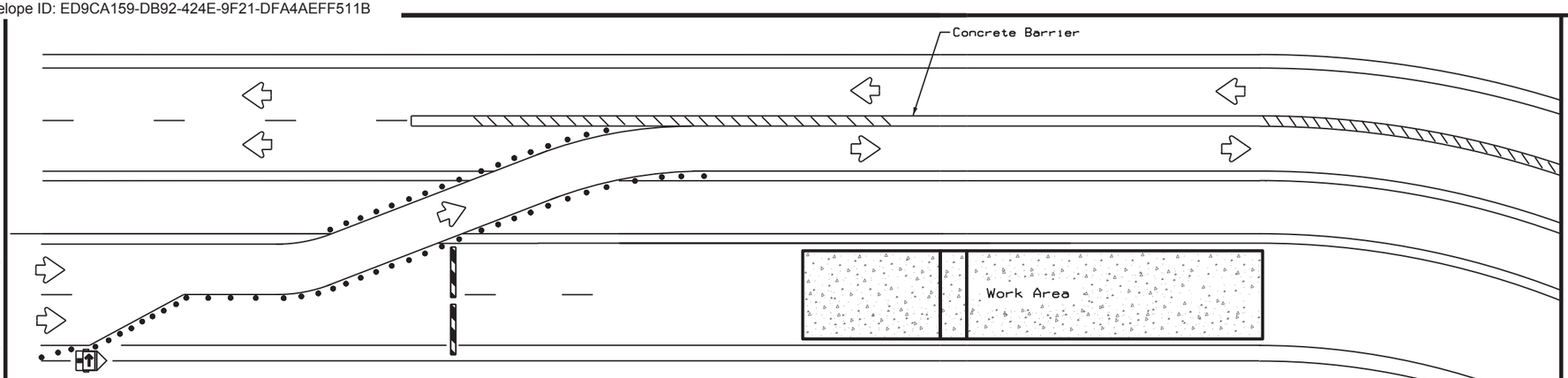
Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN LANE CLOSURES FOR DIVIDED HIGHWAYS

TCP(1-5)-18

FILE: tcp1-5-18.dgn	DN:	CK:	DW:	CK:
©TxDOT February 2012	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-18	6464	33	001	US 60
	DIST	COUNTY		SHEET NO.
	AMA	RANDALL		23



NOTES:

1. Length of Safety Glare screen will be specified elsewhere in the plans.
2. The cumulative nominal length of the modular safety glare screen units shall equal the length of the individual sections of temporary concrete traffic barrier on which they are installed so the joint between barrier sections will not be spanned by any one safety glare screen unit.
3. Screen Panel/blades will be designed such that reflective sheeting conforming with Departmental Material Specification DMS-8300, Sign Face Materials, Type B or C Yellow, minimum size of 2 inches by 12 inches can be attached to the edge of the panel/blade. The sheeting shall be attached to one glare screen panel/blade per section of concrete barrier not to exceed a spacing of 30 feet. Barrier reflectors are not necessary when panel/blades are installed with reflective sheeting as described.
4. Payment for these devices will be under statewide Special Specification "Modular Glare Screens for Headlight Barrier."
5. This detail is only intended to show types of locations where Glare Screens would be appropriate. Required signing and other devices shall be as shown elsewhere in the plans.

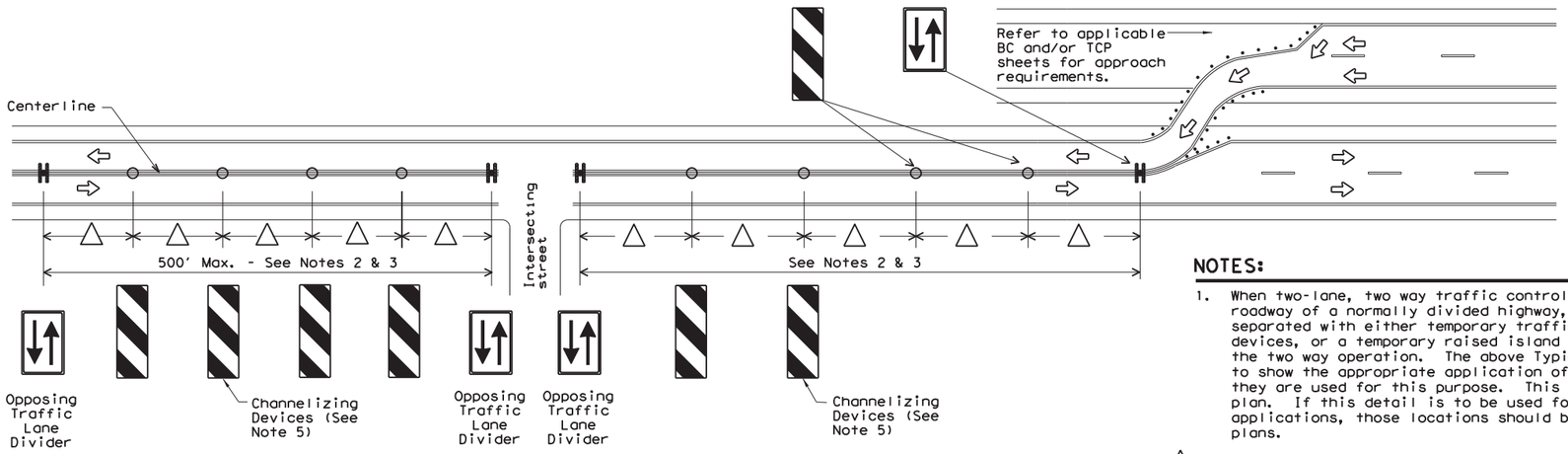
BARRIER DELINEATION WITH MODULAR GLARE SCREENS

LEGEND	
	Type 3 Barricade
• • •	Channelizing Devices
	Trailer Mounted Flashing Arrow Board
	Sign
\\\\	Safety glare screen

DEPARTMENTAL MATERIAL SPECIFICATIONS	
SIGN FACE MATERIALS	DMS-8300
DELINEATORS AND OBJECT MARKERS	DMS-8600
MODULAR GLARE SCREENS FOR HEADLIGHT BARRIER	DMS-8610

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 found at the following web address:

http://www.txdot.gov/business/resources/producer-list.html



VERTICAL PANELS & OPPOSING TRAFFIC LANE DIVIDERS (OTLD) SEPARATING TWO-WAY TRAFFIC ON NORMALLY DIVIDED HIGHWAYS

NOTES:

1. When two-lane, two way traffic control must be maintained on one roadway of a normally divided highway, opposing traffic shall be separated with either temporary traffic barriers, channelizing devices, or a temporary raised island throughout the length of the two way operation. The above Typical Application is intended to show the appropriate application of channelizing devices when they are used for this purpose. This is not a traffic control plan. If this detail is to be used for other types of roads or applications, those locations should be stated elsewhere in the plans.

△2. Space devices according to the Tangent Spacing shown on the Device Spacing table on BC(9) but not exceeding 100'.

3. Every fifth device should be an OTLD except when spaced closer to accommodate an intersection. An OTLD should be the first device on each side of intersecting streets or roads.
4. Locations where surface mount bases with adhesives or self-righting devices will be required in order to maintain them in their proper position should be noted elsewhere in the plans.
5. Channelizing devices are to be vertical panels, 42" cones or tubular markers that are at least 36" tall. Tubular markers used to separate traffic should have a rubber base weighing at least 30 pounds. Tubular markers that are 42" tall or more shall have four bands of reflective material as detailed for 42" cones on BC(10). Tubular markers less than 42" but at least 36" tall shall have three bands of 3" wide white reflective material spaced 2" apart. Reflective material shall meet DMS-8300, Type A.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN TYPICAL DETAILS

WZ(TD)-17

FILE: wztd-17.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-98 2-17 3-03 7-13	6464	33	001	US 60
	DIST	COUNTY		SHEET NO.
	AMA	RANDALL		24

DATE:
FILE:

PLANT SPECIFICATIONS

Botanical Name	Common Name	ANZI Z60.1 Classification	Quantity	Root Condition	Caliper	Height	Spread	Remarks
TREES	AUSTRIAN BLACK PINE							
CIRCIS CANIDENSIS "texensis"	RED BUD	SINGLE TRUNK. (UPRIGHT)	6	# 30 CONTAINER	1.75"-2.0"	6'- 7'	CLEAN, WELL SHAPED	SINGLE TRUNK (SPECIES ONLY)
JUNIPERUS SCOPULORUM	ROCKY MOUNTAIN JUNIPER	TYPE 5 CONIFER	17	#45 CONTAINER		10'	CLEAN, WELL SHAPED	NO CULTIVARS (SPECIES ONLY)
GLEDITSIA TRIACANTHOS	SHADE MASTER LOCUST	TYPE 5 SHADE TREE	56	#45 CONTAINER	2.75" - 3."	9'-10'	CLEAN, WELL SHAPED	NO CULTIVARS (SPECIES ONLY)
QUERCUS MACROCARPA	BUR OAK	JYPE 5 SHADE TREE	43	#45 CONTAINER	2.75" - 3."	9'-10'	CLEAN, WELL SHAPED	NO CULTIVARS (SPECIES ONLY)
SHRUBS								
VINE/GROUND COVER								

PLANT SPECIFICATIONS:

1. Contractor shall be responsible for referencing Item 192 of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges 2014 for specifications, dimensions, volumes and measurements that have been modified or not shown.
2. Rejection of plants shall be in accordance with Item 192.2.
3. The Contractor shall be responsible for the safe transportation of plants to the project site and their condition upon arrival.
4. Plant materials shall not be stored on hard surface or left exposed to the sun. Protect the root balls and water thoroughly and kept moist until planting. If plants are left in storage over the weekend or holiday, a means of periodically watering and inspecting container moisture shall be provided.
5. All plants shall be hardy, symmetrical, tight knit, and so trained or favored in development and appearance as to be superior in form, number of branches, and compactness. Plants shall be sound, healthy and vigorous, well branched, and densely foliated when in leaf, and shall have healthy, well developed root systems.
6. All plants shall be nursery grown unless otherwise shown on plans.
7. Container sizes and plant measurements shall be as shown in ANSI Z60.1 "American Standard for Nursery Stock".
8. If tree crown is wraped for shippment, heat damage is a consideration. Desiccation within the crown and branches will not be allowed. Trees shall be inspected at delivery.
9. All plants shall be inspected and signed off by TxDOT Plant Specialist at acceptance.

STATE OF TEXAS
PAT BRINKMAN
1372
REGISTERED
LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by PAT BRINKMAN R.L.A. 1372, ON FEB 2, 2024 20__

Texas Department of Transportation

AMARILLO DISTRICT

PLANT SPECIFICATION DETAILS.

SHEET 1 of 1

FILE:	FED DIV	STATE	PROJECT NUMBER			SHEET
	xx	TEXAS	RMC 646433001			25
ORIGINAL:	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	AMA	RANDALL	6464	33	001	US 60

INITIAL WATERING AND ROOT STIMULATOR REQUIREMENTS

PHASE	Item 192.3.7 Construction. Initial watering.
ITEM DESCRIPTION	Item 192.3.10. Plant Installation. Root stimulator material is incidental to Item 192 and is not paid for separately.
MATERIALS and SOLUTION	Two (2) ounces of root stimulator concentrate per one (1) gallon water. Root stimulator must be commercially available and labeled as an all organic/non-chemical liquid concentrate Bio-Stimulant and Root Stimulator. Use the following product or an approved equal: Super Seaweed, San Jacinto Environmental Supplies, 713-957-0909.
FREQUENCY and RATE	At the time of planting, provide initial watering at rate shown in Vegetative Watering Schedule this sheet. Use root stimulator solution for initial watering. Shall always use a WATERING BUBBLER attached to the end of 5/8" hose.

VEGETATIVE WATERING SCHEDULE FOR TREES, SHRUBS, VINES

FOR VEGETATIVE WATERING FOR PALMS ONLY SEE PLANTING AND ESTABLISHMENT SHEET 2 of 8

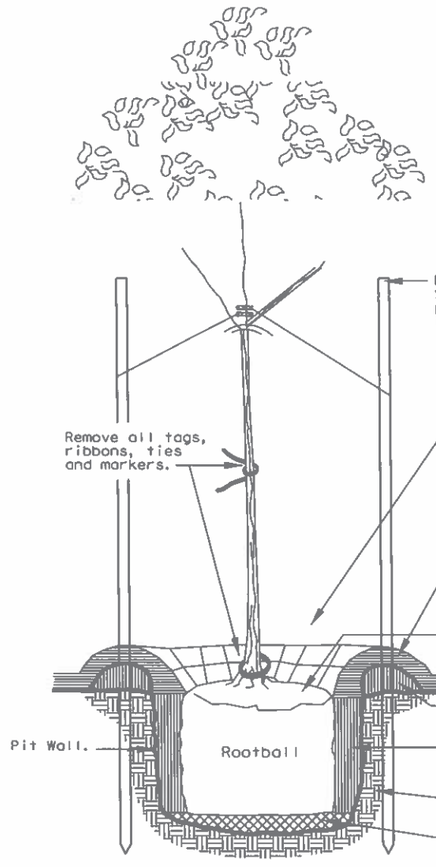
PHASE	ITEM DESCRIPTION	FREQUENCY	RATE / PLANT
Item 192.3 Construction	Item 192.3.7. Watering is incidental to Item 192 and is not paid for separately **See Initial Watering note**	Begin same day as planting then: 3 times per week with 1 day minimum between waterings	CNTR SIZE / WATER QTY 45 Gal = 25 gallons. 30 GAL = 16 gallons 15 GAL = 10 gallons 5 GAL = 4 gallons 3 GAL = 2 gallons 1 GAL = 2 gallons (1/2 X plant CNTR gallon size per plant for sizes not shown, one (1) gallon minimum)
Item 192.3.15 Maintenance	Item 192.3.15.1. Watering is incidental to Item 192 and is not paid for separately		
Item 193 Landscape Establishment (When Shown In Plans)	Item 193.3.3. Watering is incidental to Item 193 and is not paid for separately	Water root balls 2 times per week with 2 days minimum between waterings. Once a month, water 100% of mulch ring with 125 gallons of water.	

NOTES:
Using a 5/8" hose and a watering bubbler, apply water over the rootball within the tree well only, unless otherwise shown on plans. Adjust rate and frequency to meet site conditions and weather as approved or directed by engineer.

Plant material in poor condition due to the failure to apply the specified amount of water within the time allowed or overwatering will be replaced at contractor's expense. Maint. Time begins again for all new replacement installations.

PROVIDE MONTHLY METER READINGS OF WATER APPLIED.

Prior to arrival at project or storage area, provide watering plan(s) of plants to be installed or stored. Watering plan(s) must be approved by engineer prior to delivery to project or storage area.



TREE PLANTING DETAIL

PIT BACKFILLS TYPES:

BACKFILL A: 75% existing soil from pit and 25% General Use Compost. (GUC).

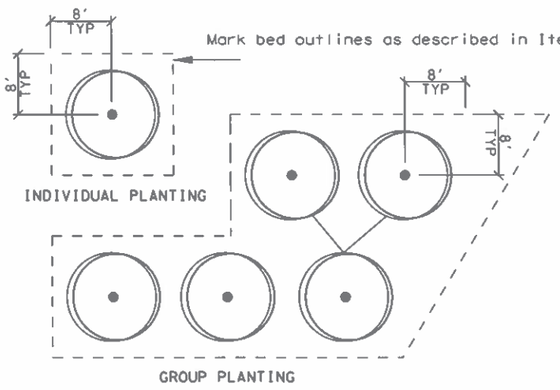
BACKFILL B: 100% existing soil from the pit.

GENERAL NOTE:
There shall be no bed preparations for this plant installation.

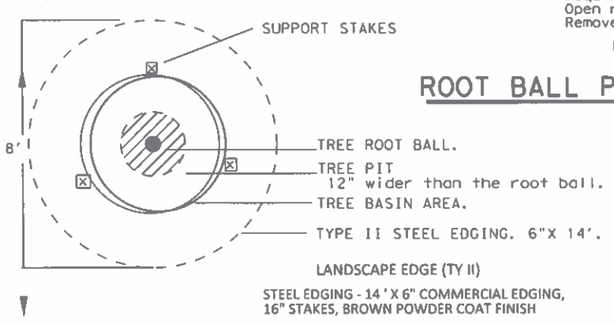
All plants shall be planted in single dug out pits.

Read and understand completely the shown and written information.

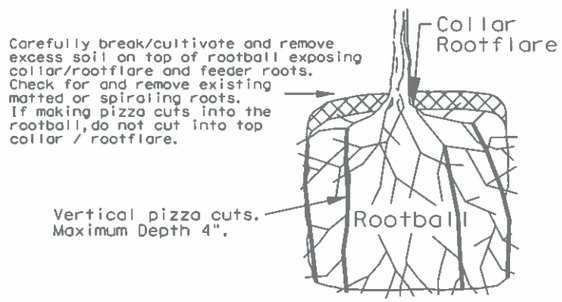
GENERAL NOTES:
1. Reference Item 192 of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014 for specifications, dimensions, volumes, and measurements not shown.
2. Reference Item 192.3, mark plant locations and bed outlines.
3. Verify that all planting meets the following clear zone minimum distance requirements from the edge of the travel lane:
   Trees: 32' unless protected by a barrier,
   Shrubs: 16' unless protected by a barrier,
   Groundcovers and vines: no minimum distance.
   Engineer has final authority over all clear zone related issues.
4. Locate and stake all underground conduits and utilities associated with but not limited to: CTMS, CTMS power supply, lighting, signal wires and detectors, gas, electric, telephone, fiber optics, etc.
5. Locate and stake existing ground boxes, inlets, culverts, manholes, etc. within the project area with a 4' wooden stake painted orange. Maintain the stakes in place for duration of the contract. Remove stakes when directed by engineer.
6. Reference Item 5.10 Inspection of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014. At any time during all phases of the contract, any materials or work performed not in accordance with the plans and specifications will be replaced and/or reworked until in compliance.
7. Any adjustments due to the failure to comply with plans and specifications shown will be at contractors expense.
8. The selection, purchase and rejection of plants shall be in accordance of Item 192.2 and as specified and directed by the standards of the ANSI, Z60.1 of the American Standard For Nursery Stock. Standards shall be strictly enforced.
9. Plants not located in beds shall require the construction of a plant basin. Item 192.3.6
10. Plants not planted in constructed beds, reference this sheet for plant pit excavations, installations and mulching. Planting pit backfill soil shall be mixed with the following: 75% of existing pit soil, 25% general use compost.
11. As directed by the Engineer, All pit soils shall be thoroughly blended at each pit location. All soil amendments shall be incidental to plant items.
12. Perform the maintenance schedule stated in Reference Item 192.3.15. for plant maintenance. At the end of Landscape Maintenance initiate Landscape Establishment Item. 193. for 12 months.



TREE PLACEMENT



TREE PIT AND MULCH EDGING.



ROOT BALL PREPARATION AND MAINTENANCE.

The seal appearing on this document was authorized by PAT BRINKMAN R.L.A. 1372, ON FEB-2 2024

Texas Department of Transportation

AMARILLO DISTRICT

PLANTING AND ESTABLISHMENT DETAILS.

SHEET 1 of 3

Details not to scale — TREE & SHRUB

FILE:	FED DIV	STATE	PROJECT NUMBER			SHEET
	6	TEXAS				Z6
REVISIONS: FEB 2023 for 2014 specs	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	04	RANDALL	6464	33	001	60

STD K-4

ITEM 192 LANDSCAPE PLANTING MAINTENANCE REQUIREMENTS

After completion of the project installation, as shown in the plans and approved by the engineer, begin maintenance activities for a period of 90 calendar days as described in ITEM 192.3.15.
Payment in accordance with ITEM 192.5. is subject to completion of all scheduled maintenance activities, timeline may also be suspended for failure to complete scheduled maintenance activities.
All maintenance work is incidental and is not paid for separately unless otherwise shown on plans.
Reference Item 170 and 192 of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges 2014 for specifications, dimensions, volumes and measurements that are not shown.
Notify engineer prior to each site visit, determination of the completeness of work will be done in the presence of the engineer same day as work activity.

DESCRIPTION OF WORK	TIMELINE (Days) 0 30 60 90										
	1 Thru 7	8 Thru 15	16 Thru 22	23 Thru 30	31 Thru 37	38 Thru 45	46 Thru 52	53 Thru 60	61 Thru 67	68 Thru 75	76 Thru 82	83 Thru 90
192.3.15.1. **WATERING** (See PLANTING AND ESTABLISHMENT SHEET 1 of 8, VEGETATIVE WATERING SCHEDULE FOR TREES, SHRUBS, VINES). Watering of tree rootball area. THERE ARE ZERO WATER SOURCES AT THIS SITE. Must purchase metered water.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
192.3.15.1. **WATERING** (See PLANTING AND ESTABLISHMENT SHEET 1 of 8, VEGETATIVE WATERING SCHEDULE FOR TREES, SHRUBS, VINES). Watering of tree ring area. THERE ARE ZERO WATER SOURCES AT THIS SITE. Must purchase metered water.				✓				✓				✓
192.3.15.2. **MOWING, TRIMMING, AND EDGING** DESIGNATED AREA: Schedule the mow cycle only, when the site is dry and firm. Total area to be mowed is 20 feet out and away from all tree metal edging. EQUIPMENT: Use Zero Turn landscape riding mower or small tractor equipment. Height of cut is 6" for each mowing cycle. Produce a clean quality cut. DO NOT MOW INTO, OVER OR DAMAGE THE METAL EDGING. TRIM OR WEED EAT EDGING. DO NOT MOW, (Weed Eat" TRIM) OR EDGE WITHIN 8' OF ANY TREE.				✓				✓				✓
192.3.15.3. **PLANT BASIN, BED, AND WORKSITE MAINTENANCE** (Includes keeping all inlets within or near the bed preparation areas free of compost. Maintain plant basin areas as shown below and reshape basins walls every 30 days or as site conditions and weather conditions require. If no requirement is selected, maintain per (Item 192.3.15.3)		✓		✓		✓		✓		✓		✓
WEED CONTROL REQUIREMENT												
☑ Maintain weed-free per Item 192.3.15.3. Cord trimmers are not allowed. Replace damaged plants per Item 192.15.9. WEEDS AND VINES MUST BE CONTROLED WITH A WICK APPLICATION. NO SPRAY APPLICATIONS, NOT MANUALLY REMOVED.		✓		✓		✓		✓		✓		✓
☐ Maintain grasses and weeds at 24" maximum height. Eradicate all vines regardless of height, VINES MUST BE CHEMICALLY TREATED, NOT MANUALLY REMOVED. Eradicate invasive shrubs and trees as directed. Method must be either a spot-treatment chemical application such as a wick applicator or manual hand pulling of weeds. Hand-pull previously treated dead plants over 24" tall.												
192.3.15.4. **PLANT SUPPORTS** (Remove plant stakes and all appurtenances within last 10 days of this schedule unless this Item 192 maintenance period is followed by Item 193 establishment period, unless otherwise directed by engineer)		✓		✓		✓		✓		✓		✓
192.3.15.5. **PRUNING** (Includes palm plant material and dead, diseased, or damaged palm fronds.)												
192.3.15.6. **INSECT, DISEASE, AND ANIMAL INSPECTION AND TREATMENT** (Exterminate all active ant colonies in bed preparation areas)												
192.3.15.7. **LITTER AND DEBRIS COLLECTION AND DISPOSAL** (Includes planting bed preparation areas and designated mowing limits. In addition, keep all inlets within or near planting bed preparation areas free of debris and litter)												
192.3.15.8. **TREE TRUNK WRAP AND PROTECTION GUARD REMOVAL AND DISPOSAL** (Not applicable)												
192.3.15.9. **PLANT REPLACEMENT***				✓				✓				✓
IRRIGATION SYSTEM (Only when Item 170 Irrigation System or a temporary irrigation system is part of the contract, see IRRIGATION DETAILS AND MATERIALS SHEET 1 OF 3, GUARANTEE AND ACCEPTANCE)												

* Remove any materials damaged by actions described in Item 7.18.1. Removal and disposal of damaged materials is incidental to Item 192. Contractor may be reimbursed for plant replacement in accordance with Item 7.18.1. Theft is not a reimbursable repair.

✓ = Work required during defined period of timeline. All work must be completed for entire project.

NOTES:
1. Reference Item 5.10 Inspection of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014. At any time during all phases of the contract, any materials or work performed not in accordance with the plans and specifications will be replaced and/or reworked until in compliance.
2. Any adjustments due to the failure to comply with plans and specifications shown will be at contractors expense.

STATE OF TEXAS
PAT BRINKMAN
1372
REGISTERED
LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by PAT BRINKMAN R.L.A. 1372, ON 2024

Texas Department of Transportation
AMARILLO DISTRICT

PLANTING AND ESTABLISHMENT DETAILS.

SHEET 2 OF 3

MAINTENANCE

FILE:	FED DIV	STATE	PROJECT NUMBER				SHEET
	6	TEXAS	RMC 646433001				27
REVISIONS: FEB 2023 for 2014 specs	DIST	COUNTY	CONTROL	SECT	JOB		HIGHWAY
	04	RANDALL	6464	33	001		US 60

STD K-4

ITEM 193 LANDSCAPE ESTABLISHMENT REQUIREMENTS

After completion of the Item 192 maintenance period, as shown in the plans and approved by the engineer, begin Item 193 establishment activities and continue for the duration of time shown in the plans.
Reference Item 193 of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges 2014 for specifications, dimensions, volumes and measurements that are not shown.
All establishment work is paid for separately in accordance with Item 193 unless otherwise shown on plans.
Notify engineer prior to each site visit, determination of the completeness of work will be done in the presence of the engineer same day as work activity.

TIMELINE (Days) - (1 - 365 = Month 1 thru 12; 366 - 726 = Month 13 thru 24)

Timeline markers: 0 (366), 30 (396), 60 (426), 90 (456), 120 (486), 150 (516), 180 (546), 210 (576), 240 (606), 270 (636), 300 (666), 330 (696), 365

DESCRIPTION OF WORK	1 Thru 7	8 Thru 15	16 Thru 22	23 Thru 30	31 Thru 37	38 Thru 45	46 Thru 52	53 Thru 60	61 Thru 67	68 Thru 75	76 Thru 82	83 Thru 90	91 Thru 97	98 Thru 105	106 Thru 112	113 Thru 120	121 Thru 127	128 Thru 135	136 Thru 142	143 Thru 150	151 Thru 157	158 Thru 165	166 Thru 172	173 Thru 180	181 Thru 187	188 Thru 195	196 Thru 202	203 Thru 210	211 Thru 217	218 Thru 225	226 Thru 232	233 Thru 240	241 Thru 247	248 Thru 255	256 Thru 262	263 Thru 270	271 Thru 277	278 Thru 285	286 Thru 292	293 Thru 300	301 Thru 307	308 Thru 315	316 Thru 322	323 Thru 330	331 Thru 338	339 Thru 346	347 Thru 354	355 Thru 365
193.3.1.1. PRUNING (Includes palm plant material and dead, diseased, or damaged palm fronds.)																																																
193.3.1.2. INSECT, DISEASE, AND ANIMAL CONTROL (Exterminate all active ant colonies in bed preparation areas)																																																
193.3.1.3. FERTILIZATION (Only when Item 192 Palm Material is part of the contract, see PLANTING AND ESTABLISHMENT SHEET 2 of 8, REQUIREMENTS AFTER PLANTING)																																																
193.3.1.4. MULCHING, PLANT BASIN, AND PLANT BED MAINTENANCE (Includes keeping all inlets within or near the bed preparation areas free of compost. Maintain bed preparation areas as shown below and reshape beds every 30 days or as site conditions and weather require. If no requirement is selected below, maintain per Item 193.3.1.4)		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓
WEED CONTROL REQUIREMENT ☐ Maintain weed-free per Item 193.3.1.4. Cord trimmers are not allowed. Replace damaged plants per Item 193.3.2. INVASIVE VINES MUST BE CHEMICALLY TREATED, NOT MANUALLY REMOVED.																																																
☑ Maintain grasses and weeds before reaching 24" in height. Eradicate all vines regardless of height, VINES MUST BE CHEMICALLY TREATED, NOT MANUALLY REMOVED. Eradicate invasive shrubs and trees as directed. Method must be either a spot-treatment chemical application such as a wick applicator or manual hand pulling of weeds. Hand-pull previously treated dead plants over 24" tall.		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓
193.3.1.5. MOWING, TRIMMING, AND EDGING: Schedule the mow cycle when weeds are developing. The bed must be dry and firm. Begin 10' outside of the perimiter of the 30' by 70' landscape bed. EQUIPMENT: Use Zero Turn landscape riding mower. Height of cut is 6" for each mowing cycle. Produce a clean quality cut. DO NOT MOW, TRIM OR EDGE WITHIN 3' radius OF ANY TREE.	✓ MOW EIGHT TIMES PER 365 DAY PERIOD, ONCE PER MONTH, DURING THE LAST WEEK OF: APRIL, MAY, JUNE, JULY, AUGUST, SEPTEMBER, OCTOBER, NOVEMBER ✓																																															
193.3.1.6. STAKING, GUYING, AND BRACING OF PLANTS Maintain all tree bracing equipment as scheduled. (Remove plant stakes and all appurtenances within last 30 days of this schedule, unless otherwise directed by engineer)		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓		✓
193.3.2. PLANT REPLACEMENT* Reference Item 193.3.2				✓				✓				✓				✓				✓				✓				✓				✓				✓				✓				✓				✓
193.3.3. VEGETATIVE WATERING (See PLANTING AND ESTABLISHMENT SHEET 1 of 3, VEGETATIVE WATERING SCHEDULE FOR TREES, SHRUBS, VINES). THERE ARE ZERO WATER SOURCES AT THIS SITE. Must purchase metered water.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
193.3.3. VEGETATIVE WATERING (Each tree, shall water 100 % of the mulch area, inside of steel edging ring, with 125 gallons of water. THERE ARE ZERO WATER SOURCES AT THIS SITE. Must purchase metered water.				✓				✓				✓				✓				✓				✓				✓				✓				✓				✓				✓				✓
193.3.4. IRRIGATION SYSTEM OPERATION AND MAINTENANCE	SEE PREVIOUS SHEET FOR FOLIAR APPLICATION SCHEDULE.																																															
LITTER AND DEBRIS COLLECTION AND DISPOSAL (Includes planting bed preparation areas and designated mowing limits. In addition, keep all inlets within or near planting bed preparation areas free of debris and litter)																																																

* Remove any materials damaged by actions described in Item 7.18.1. Removal and disposal of damaged materials is incidental to Item 193.

✓ = Work required during defined period of timeline. All work must be completed for entire project.

NOTES:
1. Reference Item 5.10 Inspection of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014. At any time during all phases of the contract, any materials or work performed not in accordance with the plans and specifications will be replaced and/or reworked until in compliance.
2. Any adjustments due to the failure to comply with plans and specifications shown will be at contractors expense.

STATE OF TEXAS — PAT BRINKMAN — 1372 — REGISTERED LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by PAT BRINKMAN R.L.A. 1372, ON FEB-8 2024

Texas Department of Transportation

AMARILLO DISTRICT

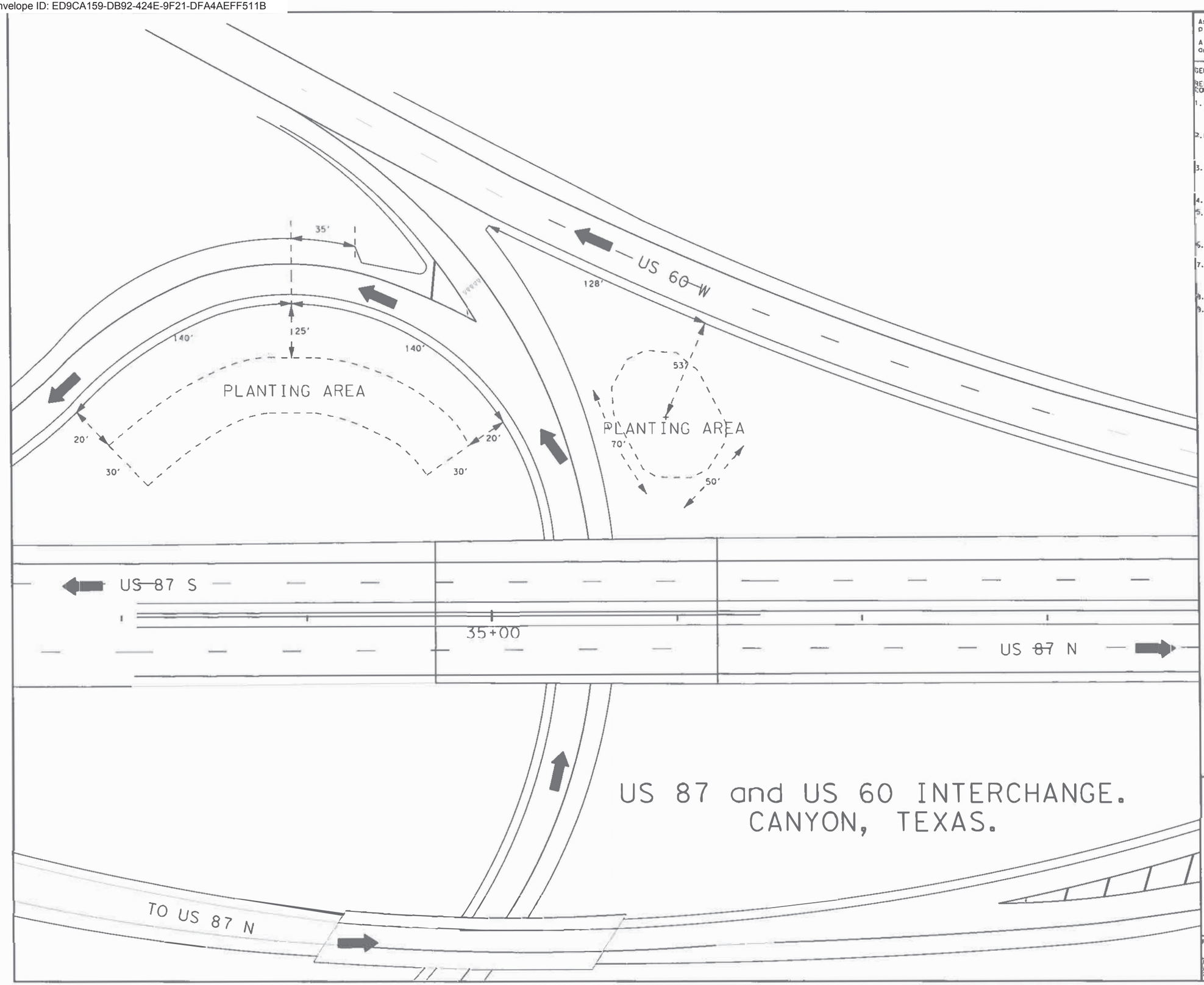
PLANTING AND ESTABLISHMENT DETAILS

SHEET 3 of 3

ESTABLISHMENT

FILE:	FED DIV	STATE	PROJECT NUMBER			SHEET
	6	TEXAS				28
REVISIONS: AUG 2023 for 2014 specs	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	04	RANDALL	6464	33	001	60

STD K-4



As shown on the plan, layout the designated site and planting areas.

All sustainable runoff shall flow naturally toward and into the tree planting pits.

GENERAL NOTES: SITE AND BED LAYOUT PLAN FOR CONSTRUCTION:

REFERENCE THE WRITTEN GENERAL NOTES IN THIS PLAN SET FOR COMPLETE INSTRUCTIONAL AND SPECIFICATION INFORMATION.

1. Reference Item 100 Preparation of the Right of Way, of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges 2014for specifications, dimensions, volumes and measurements not shown.
2. Reference the Contour Plan in plans for more details. Locate and stake all underground conduits and utilities associated with but not limited to: CTMS, CTMS power supply, lighting, signal wires and detectors, gas, electric, telephone, fiber optics, etc.
3. Locate and stake existing ground boxes, inlets, culverts, manholes, etc. within the project area with a 4' wooden stake painted orange. Maintain the stakes in place for duration of the project. Remove stakes when directed by engineer.
4. Repair any damage within right of way caused by contractor at no additional expense to the Department.
5. All concrete, steel, trash, and other debris uncovered during bed preparation work which the engineer determines as detrimental to the project will become the responsibility of the contractor and disposed of in an approved manner.
6. Debris removal will occur daily and will be incidental to Preparation of the Right of Way and will not be paid for separately.
7. At any time during all phases of the contract, any materials or work performed not in accordance with the plans and specifications will be replaced and/or reworked until in compliance.
8. Any adjustments due to the failure to comply with plans and specifications shown will be at contractors expense.
9. Clean and clear bed prep areas and nearby inlets of existing tall vegetation and any piles or layers of dead grass and weeds caused by drought or mowing operations by others.

STATE OF TEXAS
PAT BRINKMAN
1372
REGISTERED
LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by PAT BRINKMAN R.L.A. 1372, ON FEB-2 2024

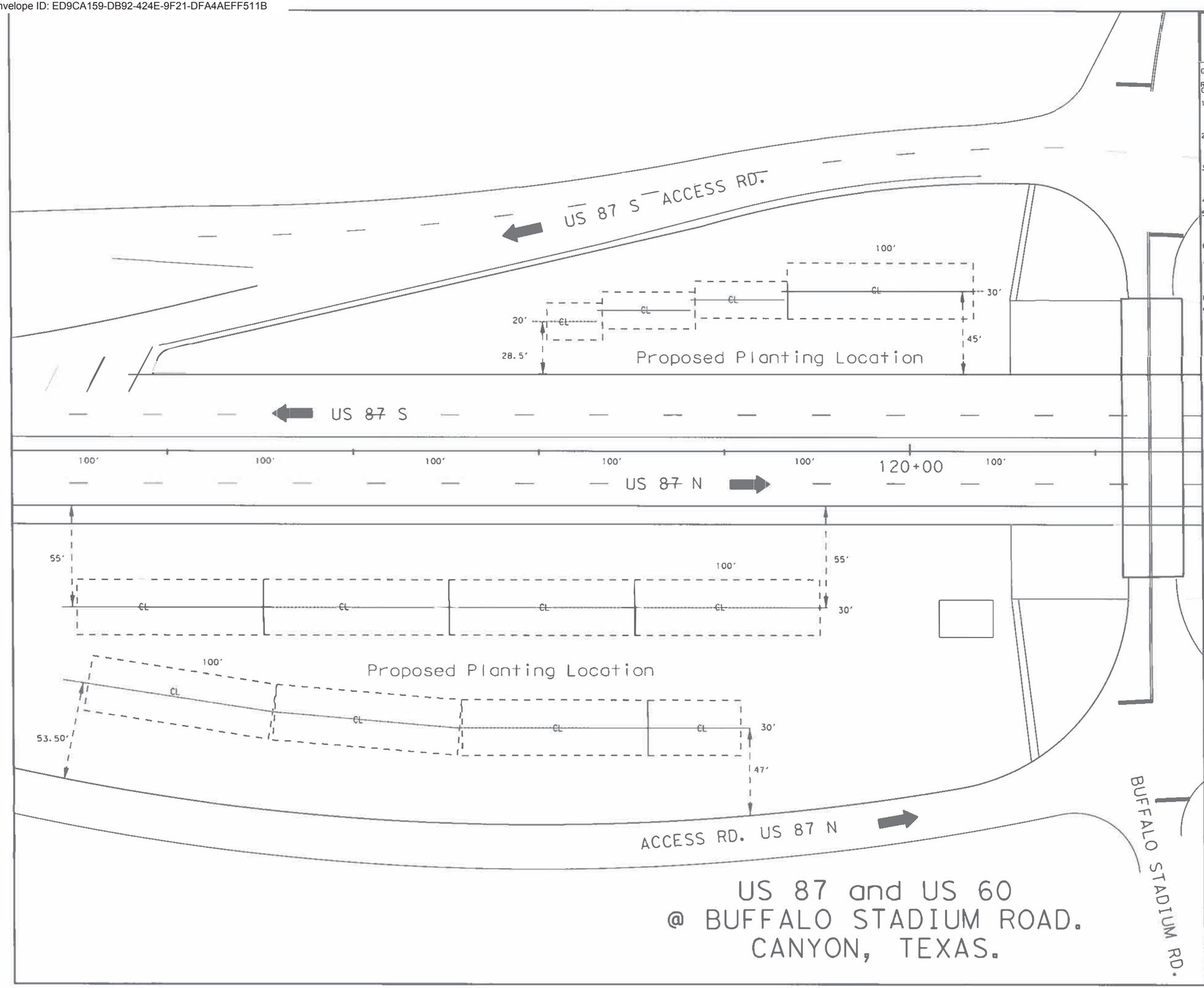
0 25 50
SCALE IN FEET

Texas Department of Transportation
AMARILLO DISTRICT

SITE LAYOUT PLAN

SHEET 1 OF 1

FILE:	FED DIV	STATE	PROJECT NUMBER			SHEET
	6	TEXAS	RMC 646433001			29
REVISIONS: AUG 2023 for 2014 specs	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	04	RANDALL	6464	33	001	US 60



As shown on the plan, layout the designated site and planting areas.

All sustainable runoff shall flow naturally toward and into the tree planting pits.

GENERAL NOTES: SITE AND BED LAYOUT PLAN FOR CONSTRUCTION:

REFERENCE THE WRITTEN GENERAL NOTES IN THIS PLAN SET FOR COMPLETE INSTRUCTIONAL AND SPECIFICATION INFORMATION.

1. Reference Item 100 Preparation of the Right of Way, of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges 2014for specifications, dimensions, volumes and measurements not shown.
2. Reference the Contour Plan in plans for more details. Locate and stake all underground conduits and utilities associated with but not limited to: CTNS, CTNS power supply, lighting, signal wires and detectors, gas, electric, telephone, fiber optics, etc.
3. Locate and stake existing ground boxes, inlets, culverts, manholes, etc. within the project area with a 4' wooden stake painted orange. Maintain the stakes in place for duration of the project. Remove stakes when directed by engineer.
4. Repair any damage within right of way caused by contractor at no additional expense to the Department.
5. All concrete, steel, trash, and other debris uncovered during bed preparation work which the engineer determines as detrimental to the project will become the responsibility of the contractor and disposed of in an approved manner.
6. Debris removal will occur daily and will be incidental to Preparation of the Right of Way and will not be paid for separately.
7. At any time during all phases of the contract, any materials or work performed not in accordance with the plans and specifications will be replaced and/or reworked until in compliance.
8. Any adjustments due to the failure to comply with plans and specifications shown will be at contractors expense.
9. Clean and clear bed prep areas and nearby inlets of existing tall vegetation and any piles or layers of dead grass and weeds caused by drought or mowing operations by others.

STATE OF TEXAS
PAT BRINKMAN
1372
REGISTERED LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by PAT BRINKMAN R.L.A. 1372, ON 2024

0 25 50
SCALE IN FEET

Texas Department of Transportation
AMARILLO DISTRICT

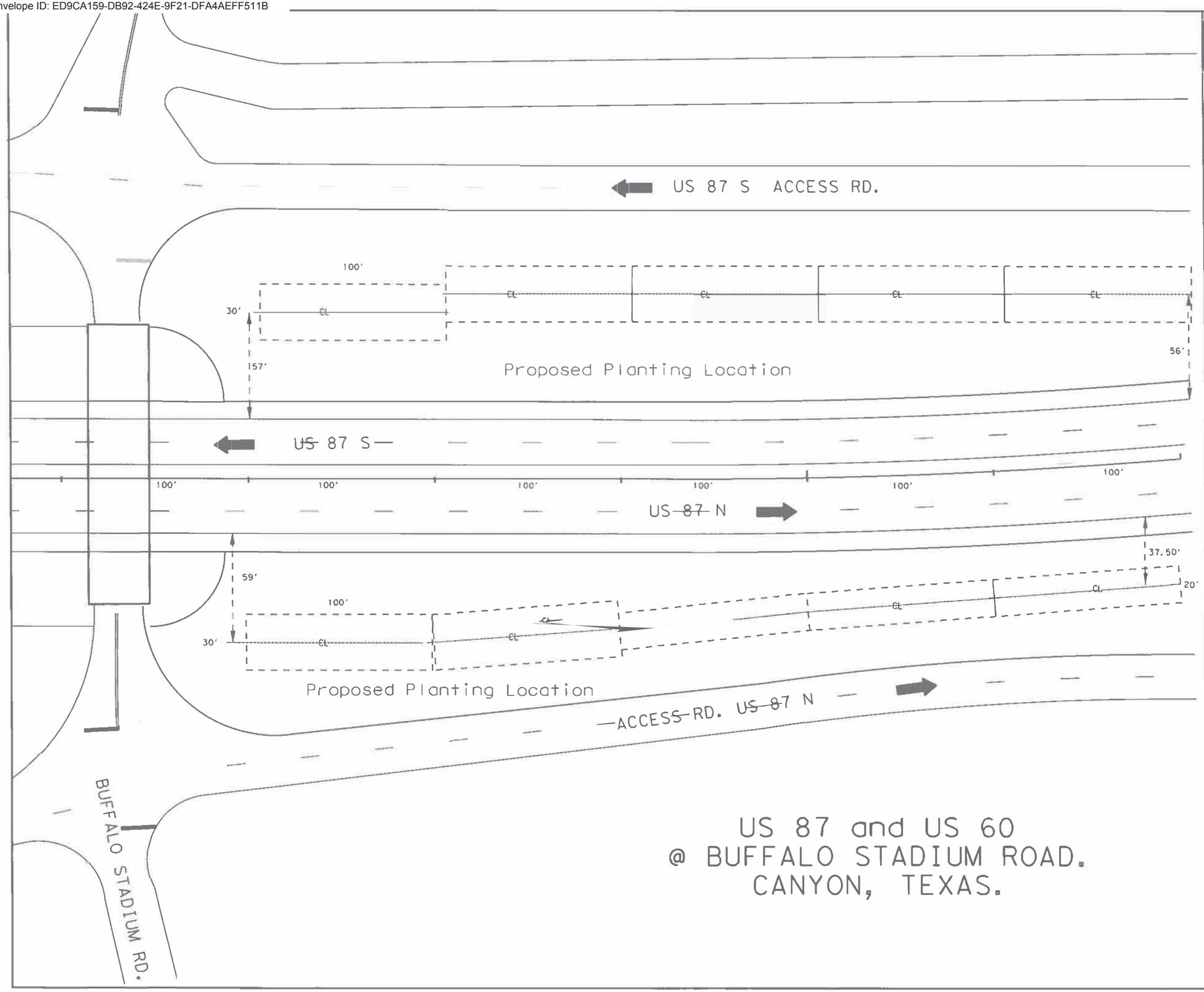
SITE LAYOUT PLAN

SHEET 1 OF 2

US 87 and US 60 @ BUFFALO STADIUM ROAD. CANYON, TEXAS.

FILE:	FED DIV	STATE	PROJECT NUMBER			SHEET
	6	TEXAS	RMC 646433001			30
REVISIONS: AUG 2023 for 2014 SDHCB	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	04	RANDALL	6464	33	001	US 60

STD. K-4



US 87 and US 60
@ BUFFALO STADIUM ROAD.
CANYON, TEXAS.

As shown on the plan, layout the designated site and planting areas.

All sustainable runoff shall flow naturally toward and into the tree planting pits.

GENERAL NOTES: SITE AND BED LAYOUT PLAN FOR CONSTRUCTION:

REFERENCE THE WRITTEN GENERAL NOTES IN THIS PLAN SET FOR COMPLETE INSTRUCTIONAL AND SPECIFICATION INFORMATION.

1. Reference Item 100 Preparation of the Right of Way, of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges 2014for specifications, dimensions, volumes and measurements not shown.
2. Reference the Contour Plan in plans for more details. Locate and stake all underground conduits and utilities associated with but not limited to: CTMS, CTMS power supply, lighting, signal wires and detectors, gas, electric, telephone, fiber optics, etc.
3. Locate and stake existing ground boxes, inlets, culverts, manholes, etc. within the project area with a 4' wooden stake painted orange. Maintain the stakes in place for duration of the project. Remove stakes when directed by engineer.
4. Repair any damage within right of way caused by contractor at no additional expense to the Department.
5. All concrete, steel, trash, and other debris uncovered during bed preparation work which the engineer determines as detrimental to the project will become the responsibility of the contractor and disposed of in an approved manner.
6. Debris removal will occur daily and will be incidental to Preparation of the Right of Way and will not be paid for separately.
7. At any time during all phases of the contract, any materials or work performed not in accordance with the plans and specifications will be replaced and/or reworked until in compliance.
8. Any adjustments due to the failure to comply with plans and specifications shown will be at contractors expense.
9. Clean and clear bed prep areas and nearby inlets of existing tall vegetation and any piles or layers of dead grass and weeds caused by drought or mowing operations by others.

STATE OF TEXAS
PAT BRINKMAN
1372
REGISTERED LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by PAT BRINKMAN R.L.A. 1372, ON 20 24

0 25 50
SCALE IN FEET

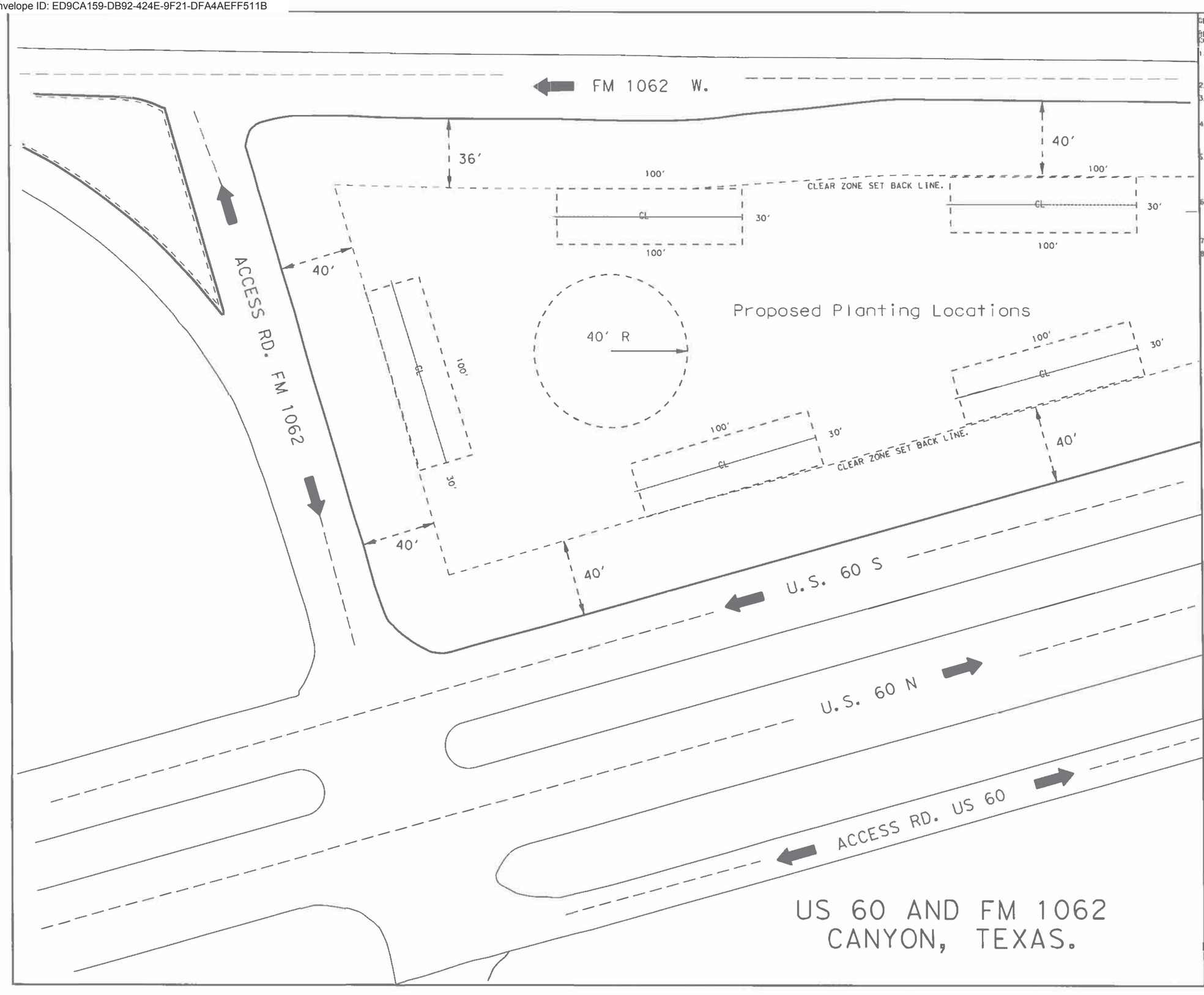
Texas Department of Transportation
AMARILLO DISTRICT

SITE LAYOUT PLAN

SHEET 2 OF 2

FILE:	FED DIV	STATE	PROJECT NUMBER			SHEET
	6	TEXAS	RMC 646433001			31
REVISIONS: AUG 2023 for 2014 specs	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	04	RANDALL	6464	33	001	US 60

STD K-4



US 60 AND FM 1062
CANYON, TEXAS.

GENERAL NOTES: SITE PREPARATIONS.

REFERENCE THE WRITTEN GENERAL NOTES IN THIS PLAN SET FOR COMPLETE INSTRUCTIONAL AND SPECIFICATION INFORMATION.

1. Reference Item 100, Preparing the Right of Way, of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges 2014 for specifications, dimensions, volumes and measurements not shown.
2. When directed by engineer, shall 4" mow the designated land areas of the site before beginning any work.
3. Locate and stake all underground conduits and utilities associated with but not limited to: CTMS, CTMS power supply, lighting, Signal wires and detectors, gas, electric, telephone, fiber optics, etc.
4. Locate and stake existing ground boxes, inlets, culverts, manholes, etc. within the project area with a 4' wooden stake painted orange. Maintain the stakes in place for duration of the project. Remove stakes when directed by engineer.
5. Repair any damage within right of way caused by contractor at no additional expense to the Department. All concrete, steel, trash, and other debris uncovered during bed preparation work which the engineer determines as detrimental to the project will become the responsibility of the contractor and disposed of in an approved manner.
6. Debris removal will occur daily and will be incidental to site preparation and will not be paid for separately. At any time during all phases of the contract, any materials or work performed not in accordance with the plans and specifications will be replaced and/or reworked until in compliance.
7. Any adjustments due to the failure to comply with plans and specifications shown will be at contractors expense.
8. Clean and clear bed prep areas and nearby inlets of existing tall vegetation and any piles or layers of dead grass and weeds caused by drought or mowing operations by others.

STATE OF TEXAS
PAT BRINKMAN
1372
REGISTERED LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by PAT BRINKMAN R.L.A. 1372, ON FEB 21 2024

N

0 25 50
SCALE IN FEET

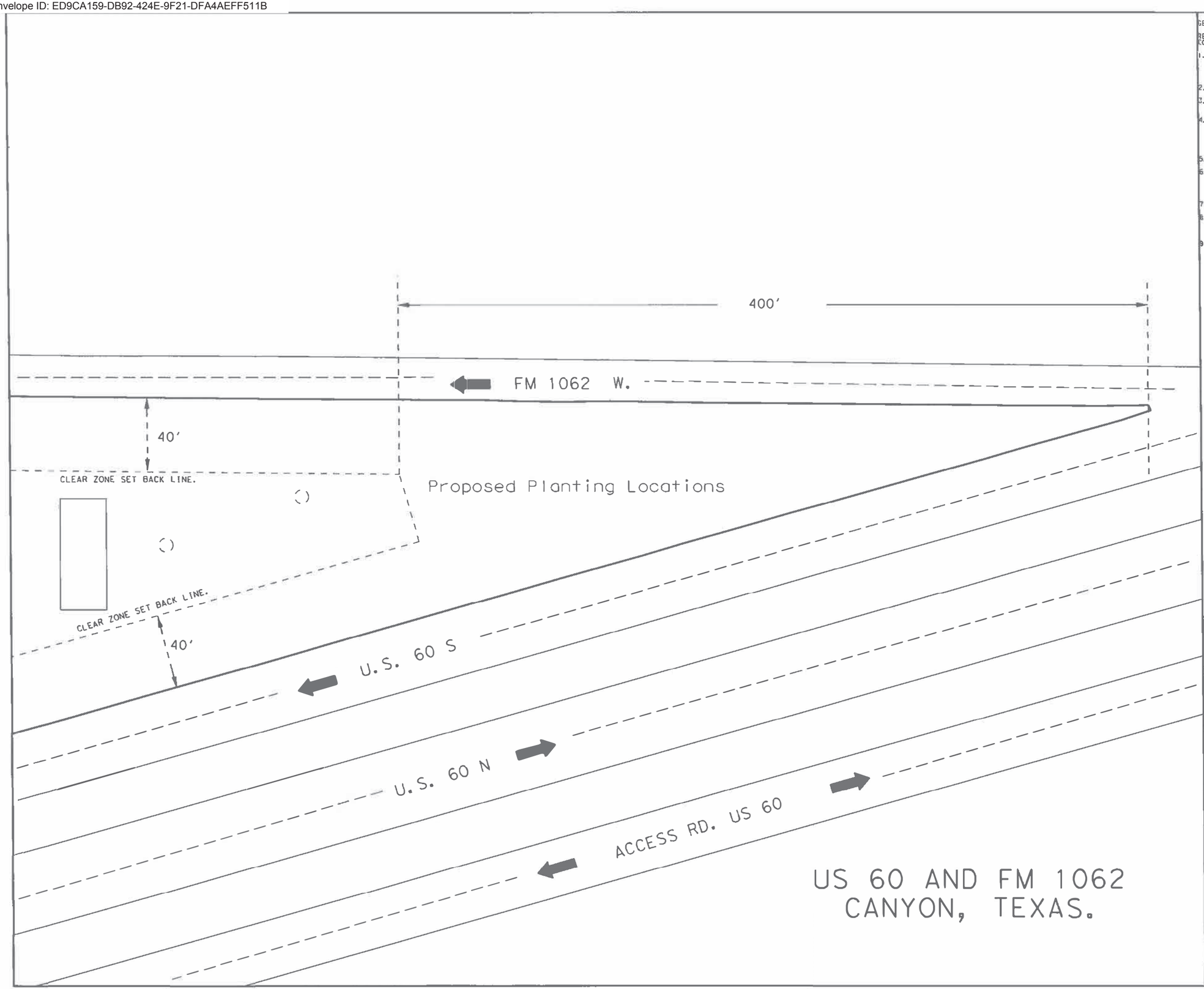
Texas Department of Transportation

AMARILLO DISTRICT

SITE LAYOUT PLAN.

SHEET 1 OF 2

FILE:	FED DIV	STATE	PROJECT NUMBER			SHEET
	6	TEXAS	RMC 646433001			32
REVISIONS: AUG 2023 for 2014 specs	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	04	RANDALL	6464	33	001	US 60



US 60 AND FM 1062
CANYON, TEXAS.

GENERAL NOTES: SITE PREPARATIONS.

REFERENCE THE WRITTEN GENERAL NOTES IN THIS PLAN SET FOR COMPLETE INSTRUCTIONAL AND SPECIFICATION INFORMATION.

1. Reference Item 100, Preparing the Right of Way, of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges 2014 for specifications, dimensions, volumes and measurements not shown.
2. When directed by engineer, shall 4" mow the designated land areas of the site before beginning any work.
3. Locate and stake all underground conduits and utilities associated with but not limited to: CTMS, CTMS power supply, lighting, signal wires and detectors, gas,
4. electric, telephone, fiber optics, etc. Locate and stake existing ground boxes, inlets, culverts, manholes, etc. within the project area with a 4' wooden stake painted orange. Maintain the stakes in place for duration of the project. Remove stakes when directed by engineer.
5. Repair any damage within right of way caused by contractor at no additional expense to the Department.
6. All concrete, steel, trash, and other debris uncovered during bed preparation work which the engineer determines as detrimental to the project will became the responsibility of the contractor and disposed of in an approved manner.
7. Debris removal will occur daily and will be incidental to site preparation and will not be paid for separately.
8. At any time during all phases of the contract, any materials or work performed not in accordance with the plans and specifications will be replaced and/or reworked until in compliance.
9. Any adjustments due to the failure to comply with plans and specifications shown will be at contractors expense. Clean and clear bed prep areas and nearby inlets of existing tall vegetation and any piles or layers of dead grass and weeds caused by drought or mowing operations by others.

STATE OF TEXAS
PAT BRINKMAN
1372
REGISTERED
LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by PAT BRINKMAN R.L.A. 1372, ON 20 24

N

0 25 50
SCALE IN FEET

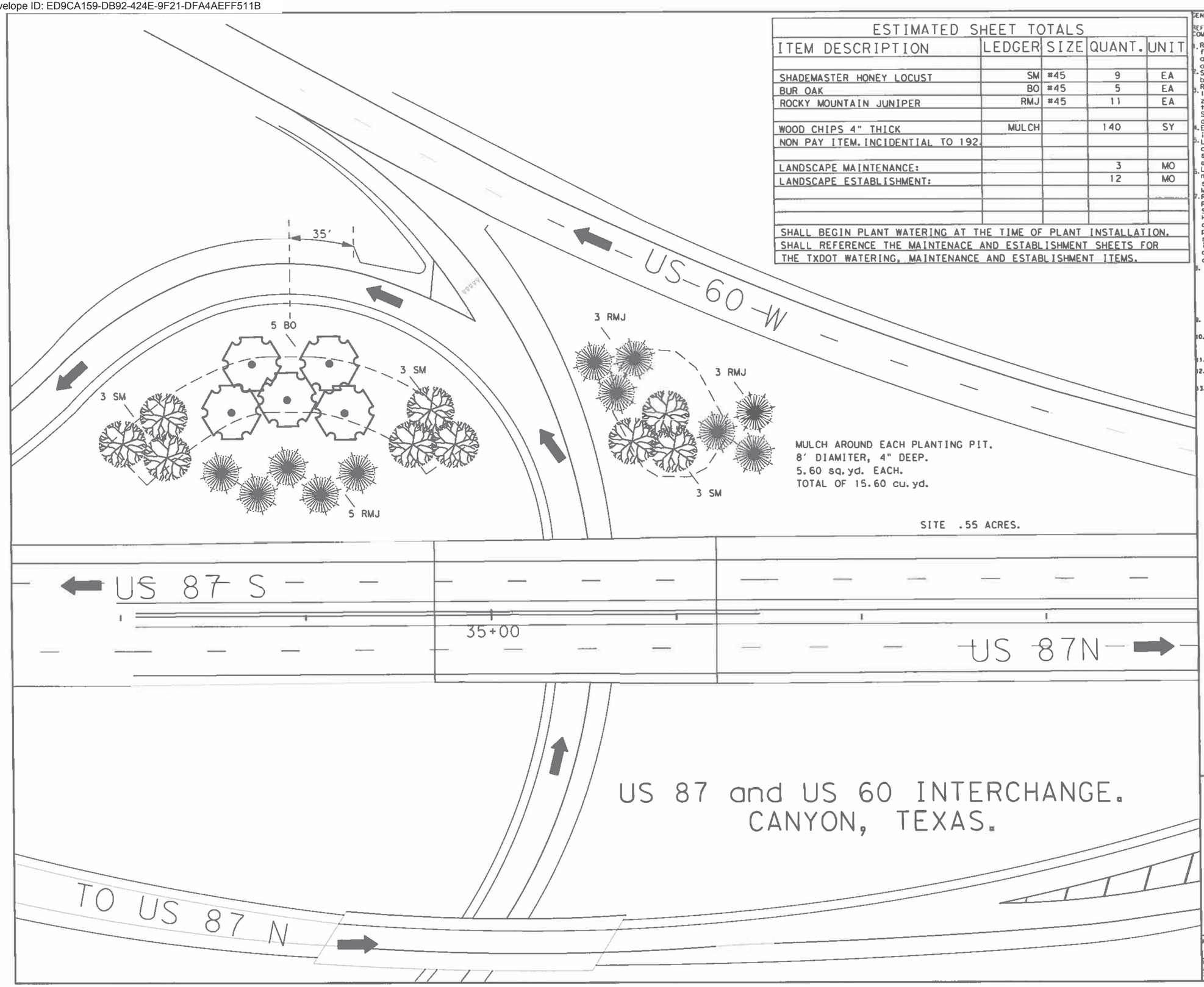
Texas Department of Transportation

AMARILLO DISTRICT

SITE LAYOUT PLAN.

SHEET 2 OF 2

FILE:	FED DIV	STATE	PROJECT NUMBER			SHEET
	6	TEXAS	RMC 646433001			33
REVISIONS: AUG 2023 for 2014 specs	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	04	RANDALL	6464	33	001	US 60



MULCH AROUND EACH PLANTING PIT.
8' DIAMITER, 4" DEEP.
5.60 sq.yd. EACH.
TOTAL OF 15.60 cu.yd.

SITE .55 ACRES.

US 87 and US 60 INTERCHANGE.
CANYON, TEXAS.

ESTIMATED SHEET TOTALS

ITEM DESCRIPTION	LEDGER	SIZE	QUANT.	UNIT
SHADEMASTER HONEY LOCUST	SM	#45	9	EA
BUR OAK	BO	#45	5	EA
ROCKY MOUNTAIN JUNIPER	RMJ	#45	11	EA
WOOD CHIPS 4" THICK	MULCH		140	SY
NON PAY ITEM. INCIDENTIAL TO 192.				
LANDSCAPE MAINTENANCE:			3	MO
LANDSCAPE ESTABLISHMENT:			12	MO

SHALL BEGIN PLANT WATERING AT THE TIME OF PLANT INSTALLATION.
SHALL REFERENCE THE MAINTENACE AND ESTABLISHMENT SHEETS FOR THE TXDOT WATERING, MAINTENANCE AND ESTABLISHMENT ITEMS.

GENERAL NOTES:

REFERENCE THE WRITTEN GENERAL NOTES IN THIS DESIGN SET FOR COMPLETE INSTRUCTIONAL AND SPECIFICATION INFORMATION.

1. Reference Item 192 of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014 for specifications, dimensions, volumes, and measurements not shown.
2. Shall mow vegetation in planting pit areas to 4" before beginning any work. Mowing is incidential to Item 192.
3. Reference Item 192.3, Work plant locations and bed out lines. Verify that all planting meets the following clear zone minimum distance requirements from the edge of the travel lane: Trees: 32' unless protected by a barrier, Shrubs: 16' unless protected by a barrier, Groundcovers and vines: no minimum distance.
4. Engineer has final authority over all clear zone related issues.
5. Locate and stake all underground conduits and utilities associated with but not limited to: CTMS, CTMS power supply, lighting, signal wires and detectors, gas, electric, telephone, fiber optics, etc.
6. Locate and stake existing ground boxes, inlets, culverts, manholes, etc. within the project area with a 4' wooden stake painted orange.
7. Maintain the stakes in place for duration of the contract. Remove stakes when directed by engineer.
8. Reference Item 5.10 Inspection of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014. At any time during all phases of the contract, any materials or work performed not in accordance with the plans and specifications will be replaced and/or reworked until in compliance. Any adjustments due to the failure to comply with plans and specifications shown will be at contractors expense.
9. Rejection of plants shall be in accordance with Item 192.2. Plants not located in beds shall require the construction of a plant basin. Item 192.3.6 Item 192.3.13. Planting bed preparation shall consist of the following: As directed by the engineer, mulch shall be placed as specified in Planting Detail Sheet of plans. Shall probe the planting pits around each tree for mulch thickness and accuracy.
10. Reference the Planting and Establishment Details sheets for important information and specific plant installation details.
11. Planting pit, backfill soil, shall be mixed with the following: 75% of existing pit soil, 25% general use compost.
12. All pit soils shall be thoroughly blended at each pit location.
13. All soil amendments shall be incidental to plant items.
14. Perform the maintenance schedule as directed by engineer.

STATE OF TEXAS
PAT BRINKMAN
1372
REGISTERED LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by PAT BRINKMAN
R. L. A. 1372, ON FEB-2 20 24

0 25 50
SCALE IN FEET

Texas Department of Transportation
AMARILLO DISTRICT

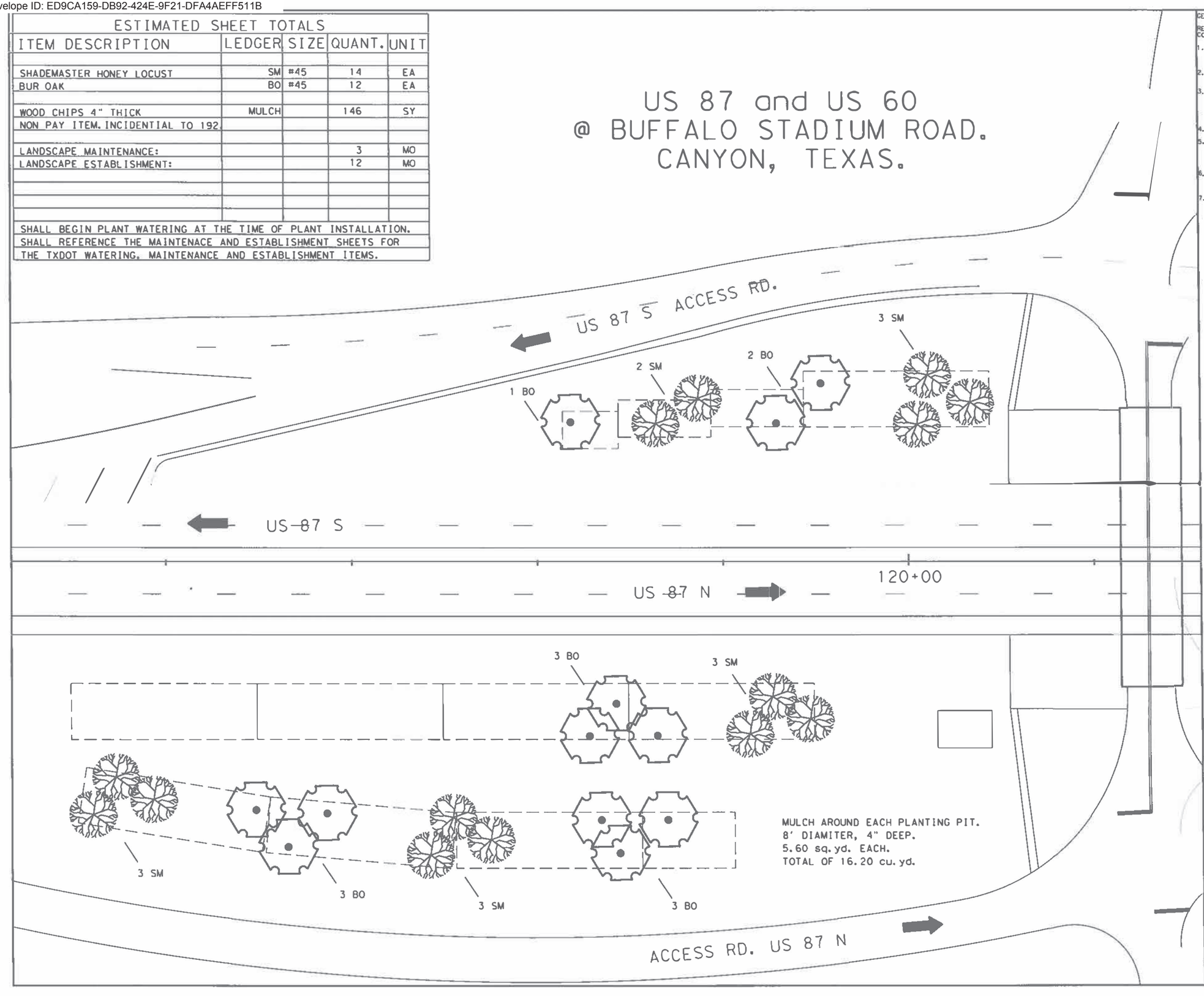
PLANTING DESIGN

SHEET 1 OF 1

FILE:	FED DIV	STATE	PROJECT NUMBER			SHEET
	6	TEXAS	RMC 646433001			34
REVISIONS: AUG 2023 for 2014 specs	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	04	RANDALL	6464	33	001	US 60

ESTIMATED SHEET TOTALS				
ITEM DESCRIPTION	LEDGER	SIZE	QUANT.	UNIT
SHADEMASTER HONEY LOCUST	SM	#45	14	EA
BUR OAK	BO	#45	12	EA
WOOD CHIPS 4" THICK	MULCH		146	SY
NON PAY ITEM. INCIDENTIAL TO 192				
LANDSCAPE MAINTENANCE:			3	MO
LANDSCAPE ESTABLISHMENT:			12	MO
SHALL BEGIN PLANT WATERING AT THE TIME OF PLANT INSTALLATION.				
SHALL REFERENCE THE MAINTENACE AND ESTABLISHMENT SHEETS FOR THE TXDOT WATERING, MAINTENANCE AND ESTABLISHMENT ITEMS.				

US 87 and US 60 @ BUFFALO STADIUM ROAD. CANYON, TEXAS.



MULCH AROUND EACH PLANTING PIT.
8' DIAMITER, 4" DEEP.
5.60 sq. yd. EACH.
TOTAL OF 16.20 cu. yd.

GENERAL NOTES:

REFERENCE THE WRITTEN GENERAL NOTES IN THIS DESIGN SET FOR COMPLETE INSTRUCTIONAL AND SPECIFICATION INFORMATION.

1. Reference Item 192 of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014 for specifications, dimensions, volumes, and measurements not shown.
2. Shall mow vegetation in planting pit areas to 4" before beginning any work. Mowing is incidential to Item 192.
3. Reference Item 192.3, Mark plant locations and bed out lines. Verify that all planting meets the following clear zone minimum distance requirements from the edge of the travel lane: Trees: 32' unless protected by a barrier, Shrubs: 16' unless protected by a barrier, Groundcovers and vines: no minimum distance.
4. Engineer has final authority over all clear zone related issues.
5. Locate and stake all underground conduits and utilities associated with but not limited to: CTWS, CTMS power supply, lighting, signal wires and detectors, gas, electric, telephone, fiber optics, etc.
6. Locate and stake existing ground boxes, inlets, culverts manholes, etc. within the project area with a 4' wooden stake painted orange. Maintain the stakes in place for duration of the contract
7. Remove stakes when directed by engineer.

Reference Item 5.10 Inspection of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014. At any time during all phases of the contract, any materials or work performed not in accordance with the plans and specifications will be replaced and/or reworked until in compliance. Any adjustments due to the failure to comply with plans and specifications shown will be at contractors expense.

Rejection of plants shall be in accordance with Item 192.2. Plants not located in beds shall require the construction of a plant basin. Item 192.3.6

Item 192.3.13. Planting bed preparation shall consist of the following: As directed by the engineer, mulch shall be placed as specified in Planting Detail Sheet of plans. Shall probe the planting pits around each tree for mulch thickness and accuracy.

Reference the Planting and Establishment Details sheets for important information and specific plant installation details.

Planting pit, backfill soil, shall be mixed with the following: 75% of existing pit soil, 25% general use compost.

All pit soils shall be thoroughly blended at each pit location.

All soil amendments shall be incidental to plant items.

Perform the maintenance schedule as directed by engineer.

STATE OF TEXAS
PAT BRINKMAN
1372
REGISTERED
LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by PAT BRINKMAN R.L.A. 1372, ON 2024

FEB 2,

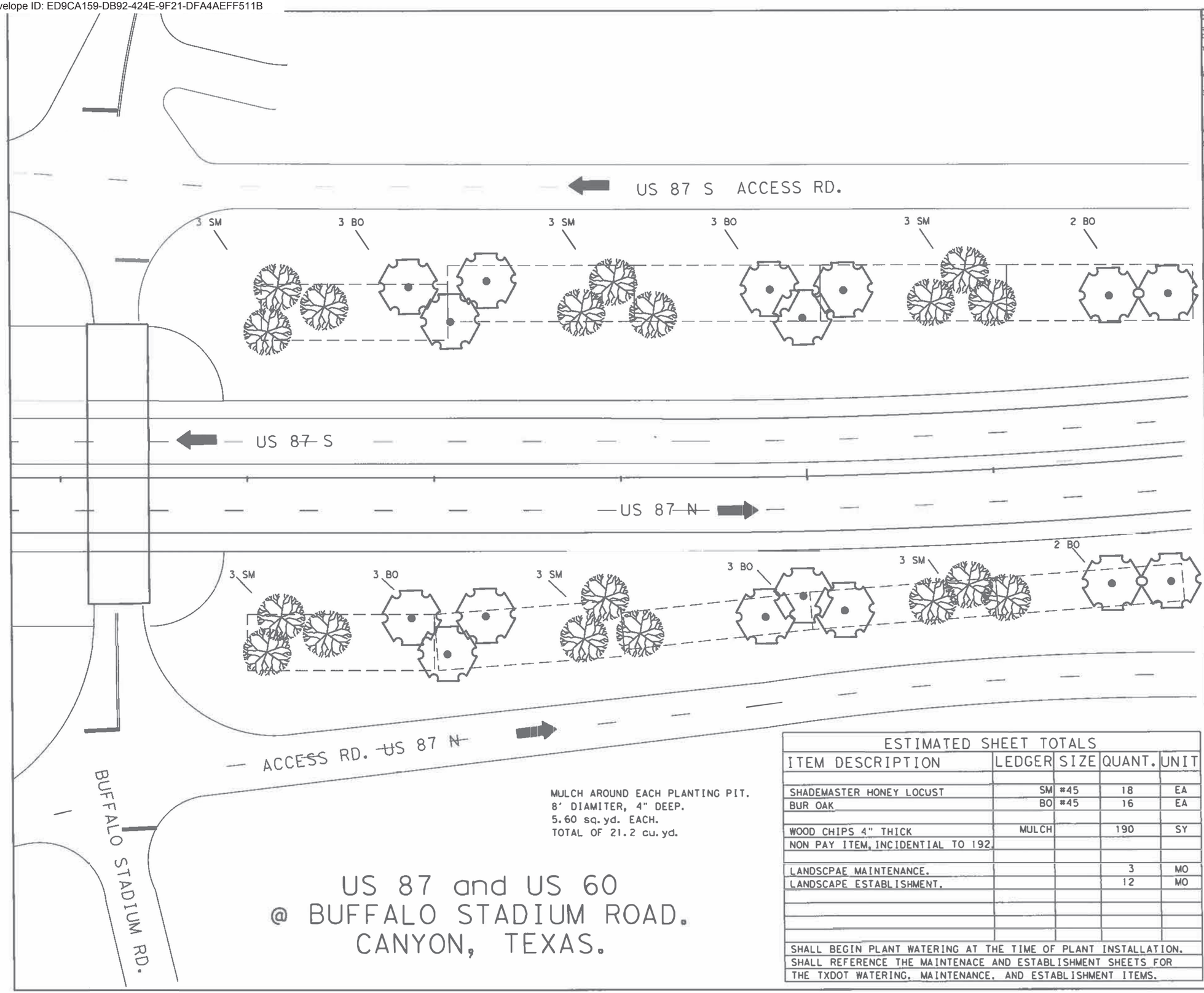
0 25 50
SCALE IN FEET

Texas Department of Transportation
AMARILLO DISTRICT

PLANTING PLAN

SHEET 1 OF 2

FILE:	FED DIV	STATE	PROJECT NUMBER			SHEET
	6	TEXAS	RMC 646433001			35
REVISIONS: AUG 2023 for 2014 specs	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	04	RANDALL	6464	33	001	US 60



MULCH AROUND EACH PLANTING PIT.
8' DIAMITER, 4" DEEP.
5.60 sq.yd. EACH.
TOTAL OF 21.2 cu.yd.

US 87 and US 60
@ BUFFALO STADIUM ROAD.
CANYON, TEXAS.

GENERAL NOTES:

REFERENCE THE WRITTEN GENERAL NOTES IN THIS DESIGN SET FOR COMPLETE INSTRUCTIONAL AND SPECIFICATION INFORMATION.

1. Reference Item 192 of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014 for specifications, dimensions, volumes, and measurements not shown.
2. Shall mow vegetation in planting pit areas to 4" before beginning any work. Mowing is incidential to Item 192.
3. Reference Item 192.3. Mark plant locations and bed out lines. Verify that all planting meets the following clear zone minimum distance requirements from the edge of the travel lane: Trees: 32' unless protected by a barrier, Shrubs: 16' unless protected by a barrier, Groundcovers and vines: no minimum distance.
4. Engineer has final authority over all clear zone related issues.
5. Locate and stake all underground conduits and utilities associated with but not limited to: CTMS, CTMS power supply, lighting, signal wires and detectors, gas, electric, telephone, fiber optics, etc.
6. Locate and stake existing ground boxes, inlets, culverts, manholes, etc. within the project area with a 4' wooden stake painted orange.
   Maintain the stakes in place for duration of the contract.
7. Remove stakes when directed by engineer.
   Reference Item 5.10 Inspection of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014. At any time during all phases of the contract, any materials or work performed not in accordance with the plans and specifications will be replaced and/or reworked until in compliance. Any adjustments due to the failure to comply with plans and specifications shown will be at contractors expense.
8. Rejection of plants shall be in accordance with Item 192.2. Plants not located in beds shall require the construction of a plant basin. Item 192.3.6
   Item 192.3.13. Planting bed preparation shall consist of the following: As directed by the engineer, mulch shall be placed as specified in Planting Detail Sheet of plans. Shall probe the planting pits around each tree for mulch thickness and accuracy.
9. Reference the Planting and Establishment Details sheets for important information and specific plant installation details.
10. Planting pit backfill soil, shall be mixed with the following: 75% of existing pit soil, 25% general use compost.
    All pit soils shall be thoroughly blended at each pit location.
11. All soil amendments shall be incidental to plant items.
12. Perform the maintenance schedule as directed by engineer.

ESTIMATED SHEET TOTALS

ITEM DESCRIPTION	LEDGER	SIZE	QUANT.	UNIT
SHADEMASTER HONEY LOCUST	SM	#45	18	EA
BUR OAK	BO	#45	16	EA
WOOD CHIPS 4" THICK	MULCH		190	SY
NON PAY ITEM, INCIDENTIAL TO 192.				
LANDSCPAE MAINTENANCE.			3	MO
LANDSCAPE ESTABLISHMENT.			12	MO

SHALL BEGIN PLANT WATERING AT THE TIME OF PLANT INSTALLATION.
SHALL REFERENCE THE MAINTENACE AND ESTABLISHMENT SHEETS FOR THE TXDOT WATERING. MAINTENANCE. AND ESTABLISHMENT ITEMS.

STATE OF TEXAS
PAT BRINKMAN
1372
REGISTERED LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by PAT BRINKMAN R.L.A. 1372, ON FEB 2024

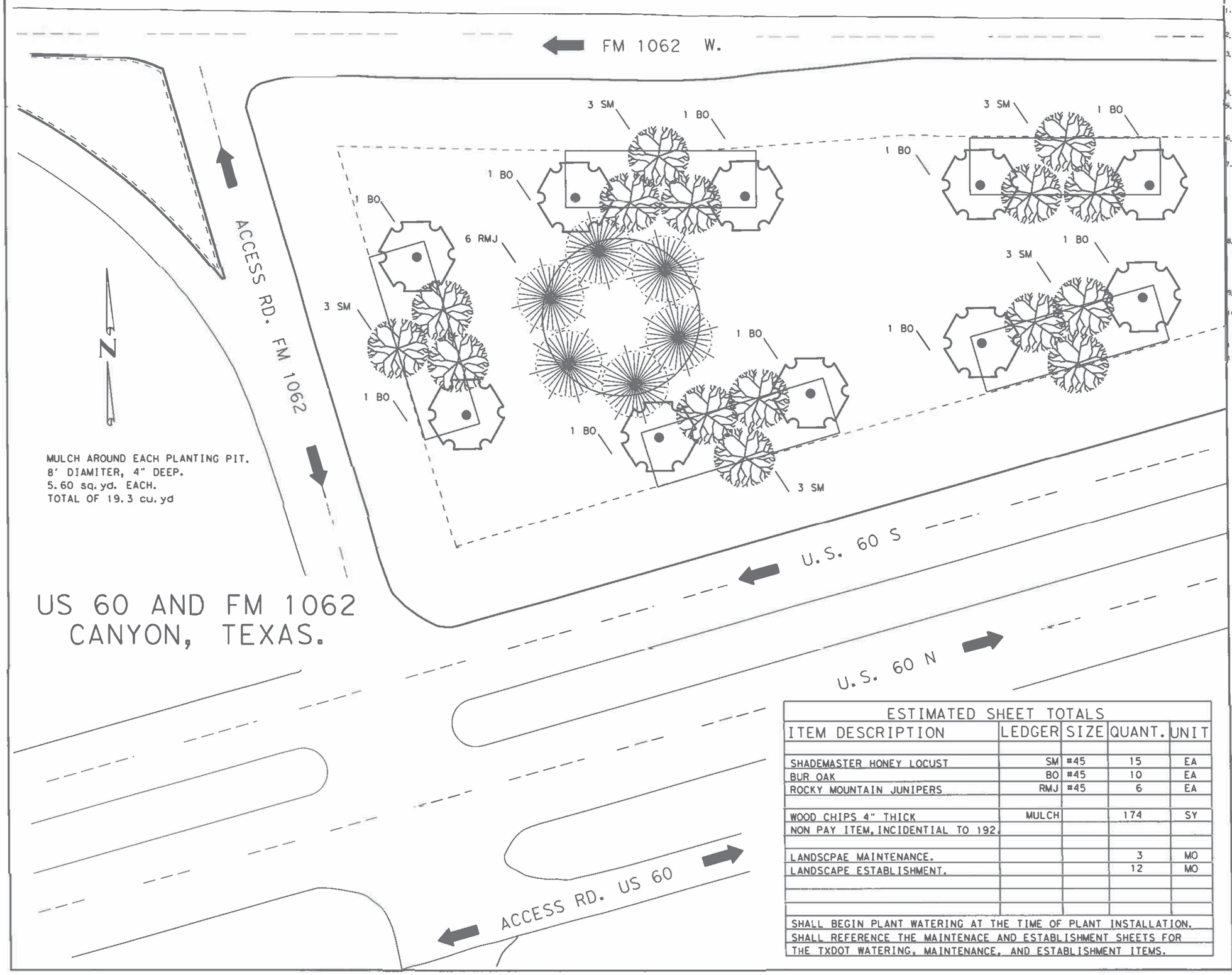
0 25 50
SCALE IN FEET

Texas Department of Transportation
AMARILLO DISTRICT

PLANTING PLAN

SHEET 2 OF 2

FILE:	DIST	STATE	PROJECT NUMBER			SHEET
	6	TEXAS	RMC 6464	33001		36
REVISIONS: AUG 2023 for 2014 specs	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	04	RANDALL	6464	33	001	US 60



US 60 AND FM 1062
CANYON, TEXAS.

ESTIMATED SHEET TOTALS				
ITEM DESCRIPTION	LEDGER	SIZE	QUANT.	UNIT
SHADEMASTER HONEY LOCUST	SM	#45	15	EA
BUR OAK	BO	#45	10	EA
ROCKY MOUNTAIN JUNIPERS	RMJ	#45	6	EA
WOOD CHIPS 4" THICK	MULCH		174	SY
NON PAY ITEM, INCIDENTIAL TO 192.				
LANDSCPAE MAINTENANCE.			3	MO
LANDSCAPE ESTABLISHMENT.			12	MO
SHALL BEGIN PLANT WATERING AT THE TIME OF PLANT INSTALLATION.				
SHALL REFERENCE THE MAINTENACE AND ESTABLISHMENT SHEETS FOR THE TXDOT WATERING, MAINTENANCE, AND ESTABLISHMENT ITEMS.				

GENERAL NOTES:

REFERENCE THE WRITTEN GENERAL NOTES IN THIS DESIGN SET FOR COMPLETE INSTRUCTIONAL AND SPECIFICATION INFORMATION.

1. Reference Item 192 of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014 for specifications, dimensions, volumes, and measurements not shown.
2. Shall mow vegetation in planting pit areas to 4" before beginning any work. Mowing is incidential to Item 192.
3. Reference Item 192.3, Work plant locations and bed out lines. Verify that all planting meets the following clear zone minimum distance requirements from the edge of the travel lane: Trees: 32' unless protected by a barrier, Shrubs: 16' unless protected by a barrier, Groundcovers and vines: NO minimum distance.
4. Engineer has final authority over all clear zone related issues.
5. Locate and stake all underground conduits and utilities associated with but not limited to: CTMS, CTMS power supply, lighting, signal wires and detectors, gas, electric, telephone, fiber optics, etc.
6. Locate and stake existing ground boxes, inlets, culverts manholes, etc. within the project area with a 4' wooden stake painted orange.
   Maintain the stakes in place for duration of the contract.
7. Remove stakes when directed by engineer.
   Reference Item 5.10 Inspection of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014. At any time during all phases of the contract, any materials or work performed not in accordance with the plans and specifications will be replaced and/or reworked until in compliance. Any adjustments due to the failure to comply with plans and specifications shown will be at contractors expense.
8. Rejection of plants shall be in accordance with Item 192.2. Plants not located in beds shall require the construction of a plant basin. Item 192.3.6
   Item 192.3.13, Planting bed preparation shall consist of the following: As directed by the engineer, mulch shall be placed as specified in Planting Detail Sheet of plans. Shall probe the planting pits around each tree for mulch thickness and accuracy.
9. Reference the Planting and Establishment Details sheets for important information and specific plant installation details.
10. Planting pit, backfill soil, shall be mixed with the following: 75% of existing pit soil, 25% general use compost.
    All pit soils shall be thoroughly blended at each pit location.
11. All soil amendments shall be incidental to plant items.
12. Perform the maintenance schedule as directed by engineer.

STATE OF TEXAS
PAT BRINKMAN
1372
REGISTERED
LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by PAT BRINKMAN R.L.A. 1372, ON FEB 2024

0 25 50
SCALE IN FEET

Texas Department of Transportation
AMARILLO DISTRICT

PLANTING PLAN.

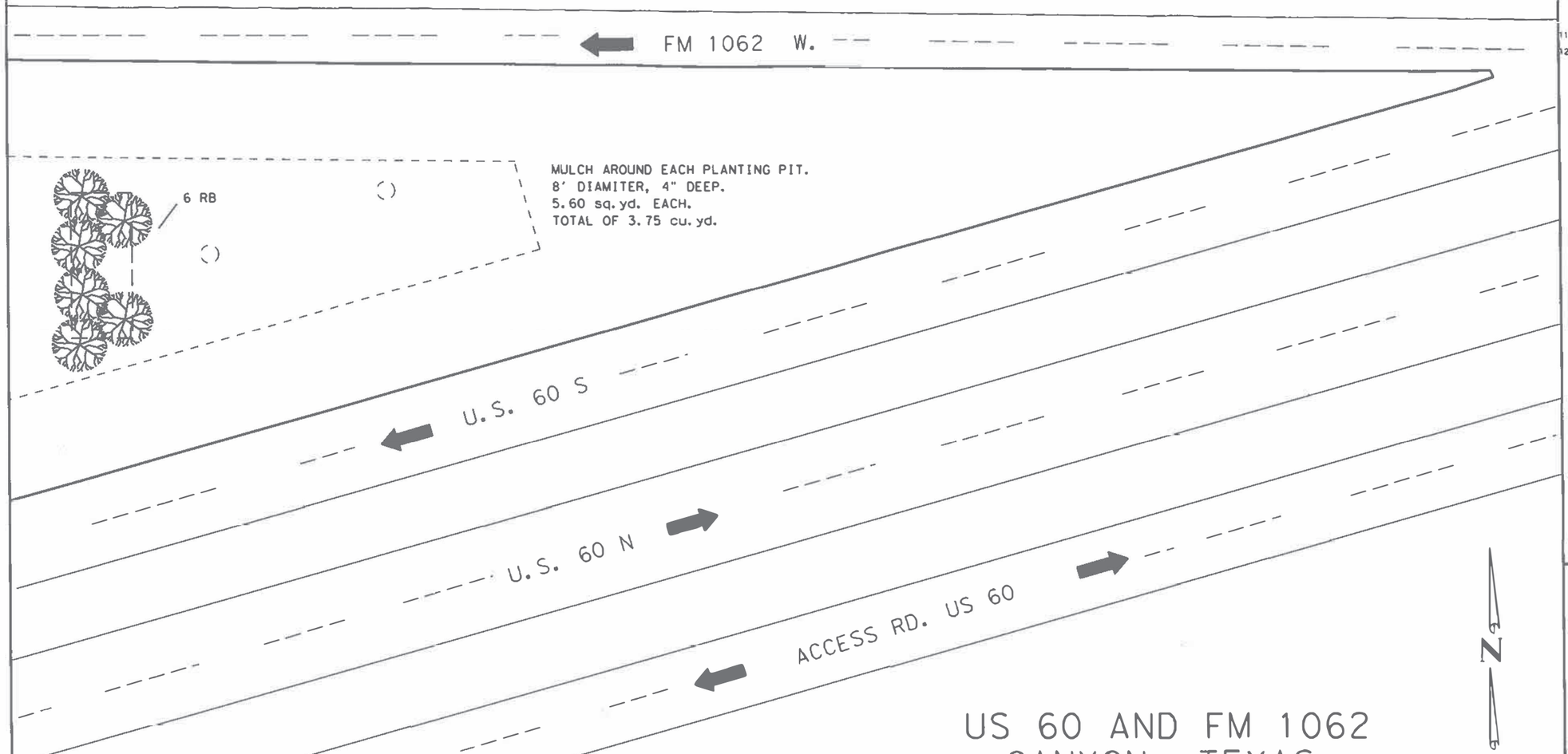
SHEET 1 OF 2

FILE:	FED DIV	STATE	PROJECT NUMBER			SHEET
	6	TEXAS	RMC 646433001			337
REVISIONS: AUG 2023 for 2014 specs	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	04	RANDALL	6464	33	001	60

ESTIMATED SHEET TOTALS

ITEM DESCRIPTION	LEDGER	SIZE	QUANT.	UNIT
RED BUD	RB	#30	6	EA
				EA
WOOD CHIPS 4" THICK	MULCH		34	SY
NON PAY ITEM, INCIDENTIAL TO 192.				
LANDSCPAE MAINTENANCE.			3	MO
LANDSCAPE ESTABLISHMENT.			12	MO
SHALL BEGIN PLANT WATERING AT THE TIME OF PLANT INSTALLATION.				
SHALL REFERENCE THE MAINTENACE AND ESTABLISHMENT SHEETS FOR THE TXDOT WATERING, MAINTENANCE, AND ESTABLISHMENT ITEMS.				

MULCH AROUND EACH PLANTING PIT.
8' DIAMITER, 4" DEEP.
5.60 sq.yd. EACH.
TOTAL OF 3.75 cu.yd.



US 60 AND FM 1062
CANYON, TEXAS.

GENERAL NOTES:

REFERENCE THE WRITTEN GENERAL NOTES IN THIS DESIGN SET FOR COMPLETE INSTRUCTIONAL AND SPECIFICATION INFORMATION.

1. Reference Item 192 of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014 for specifications, dimensions, volumes, and measurements not shown.
2. Shall mow vegetation in planting pit area to 4" before beginning any work. Mowing is incidential to Item 192.
3. Reference Item 192.3, Mark plant locations and bed out lines. Verify that all planting meets the following clear zone minimum distance requirements from the edge of the travel lane: Trees: 32' unless protected by a barrier, Shrubs: 16' unless protected by a barrier, Groundcovers and vines: no minimum distance.
4. Engineer has final authority over all clear zone related issues.
5. Locate and stake all underground conduits and utilities associated with but not limited to: CIMS, CTMS power supply, lighting, signal wires and detectors, gas, electric, telephone, fiber optics, etc.
6. Locate and stake existing ground boxes, inlets, culverts, manholes, etc. within the project area with a 4' wooden stake painted orange.
   Maintain the stakes in place for duration of the contract.
7. Remove stakes when directed by engineer.
   Reference Item 5.10 Inspection of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges 2014. At any time during all phases of the contract, any materials or work performed not in accordance with the plans and specifications will be replaced and/or reworked until in compliance. Any adjustments due to the failure to comply with plans and specifications shown will be at contractors expense.
8. Rejection of plants shall be in accordance with Item 192.2. Plants not located in beds shall require the construction of a plant basin. Item 192.3.6
   Item 192.3.13. Planting bed preparation shall consist of the following: As directed by the engineer, mulch shall be placed as specified in Planting Detail Sheet of plans. Shall probe the planting pits around each tree for mulch thickness and accuracy.
9. Reference the Planting and Establishment Details sheets for important information and specific plant installation details.
10. Planting pit, backfill soil, shall be mixed with the following: 75% of existing pit soil, 25% general use compost.
    All pit soils shall be thoroughly blended at each pit location.
11. All soil amendments shall be incidental to plant items, Item 192.
12. Perform the maintenance schedule as directed by engineer.

STATE OF TEXAS
PAT BRINKMAN
1372
REGISTERED
LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by PAT BRINKMAN R.L.A. 1372, ON 2024

0 25 50
SCALE IN FEET

Texas Department of Transportation

AMARILLO DISTRICT

PLANTING PLAN.

SHEET 2 OF 2

FILE:	FED DIV	STATE	PROJECT NUMBER			SHEET
	6	TEXAS	XX			XX
REVISIONS: AUG 2023 for 2014 specs	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
	04	RANDALL	6464	33	001	60

STD. K-4