DESIGN	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
HG	6	F 2022(063)		FM 1171
GRAPHICS HG	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	1
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

FINAL PLANS

NAME OF CONTRACTOR: _____

DATE OF LETTING: _____

DATE WORK BEGAN: _____

DATE WORK COMPLETED: _____

DATE WORK ACCEPTED: _____

SUMMARY OF CHANGE ORDERS:

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT

FEDERAL AID PROJECT
F 2022(063)
CSJ: 1311-01-058

FM 1171

DENTON COUNTY

LIMITS: FROM LONG PRAIRIE RD
TO NORTH GARDEN RIDGE BLVD

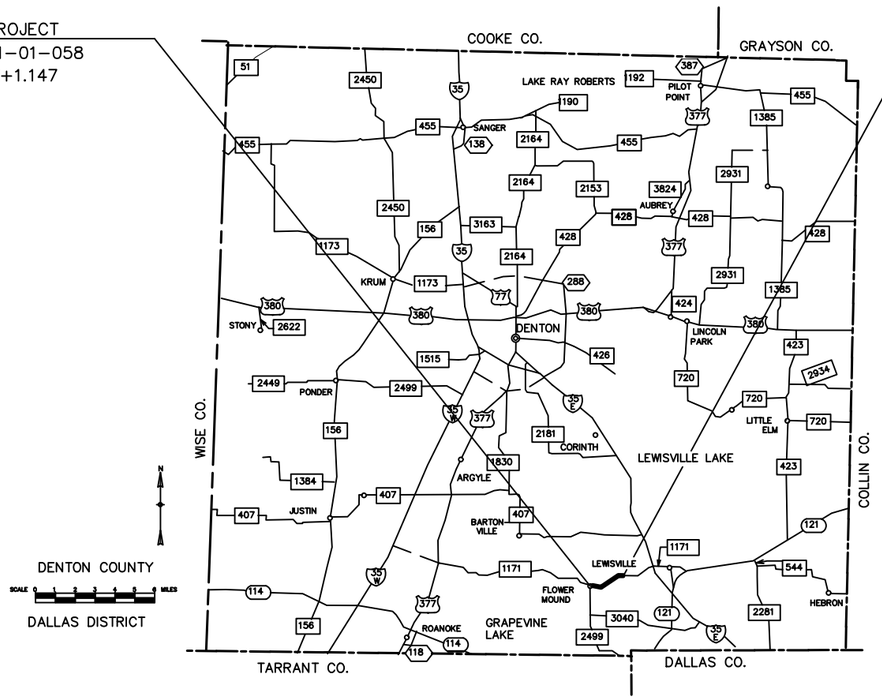
TOTAL LENGTH OF PROJECT =

ROADWAY = 11515	FT. =	2.17 MI.
BRIDGE = 000.00	FT. =	0.00MI.
TOTAL = 11515	FT. =	2.17 MI.

FOR THE CONSTRUCTION OF LANDSCAPE & SCENIC ENHANCEMENT
CONSISTING OF: Construction of Landscape work consisting of planting and irrigation

BEGIN PROJECT
CSJ 1311-01-058
TRM 568+1.147

END PROJECT
CSJ 1311-01-058
TRM 572+0



DENTON COUNTY
SCALE 0 1 2 3 4 5 MILES
DALLAS DISTRICT

EQUATIONS: N/A
EXCEPTIONS: N/A
RAILROAD CROSSINGS: N/A

DESIGN SPEEDS = N/A
ADT = N/A
HIGHWAY FUNCTIONAL CLASSIFICATION: PRINCIPLE ARTERIAL (URBAN)

NOTE:
SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014, AND THE CONTRACT PROVISIONS LISTED AND DATED AS FOLLOWS SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, MAY 1, 2012)

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

SUBMITTED FOR LETTING
Docusigned by: 6/25/2021
Hilary Garnish , R.L.A.
LANDSCAPE ARCHITECT

CONCURRENCE:
Docusigned by: 6/25/2021
Kari Biddix
PARKS DEVELOPMENT MANAGER,
TOWN OF FLOWERMOUND

TEXAS DEPARTMENT OF TRANSPORTATION

SUBMITTED FOR LETTING
Docusigned by: 6/29/2021
JEFFREY BUSH , P.E.
DIRECTOR OF OPERATIONS

RECOMMENDED FOR LETTING
Docusigned by: 6/30/2021
, P.E.
DIRECTOR OF TRANSPORTATION PLANNING & DEVELOPMENT

RECOMMENDED FOR LETTING
Docusigned by: 6/28/2021
, P.E.
AREA ENGINEER

APPROVED FOR LETTING
Docusigned by: 6/30/2021
, P.E.
DISTRICT ENGINEER

WORK WAS COMPLETED ACCORDING TO THE PLANS AND CONTRACT.

_____, P.E.
Signature of Registrant & Date

DATE: _____

		GENERAL
	1	TITLE SHEET
	2	INDEX OF SHEETS
	3	PROJECT LAYOUT
	4, 4A-4B	GENERAL NOTES
	5	ESTIMATE & QUANTITY
	6	QUANTITY SUMMARY
		TRAFFIC CONTROL PLAN STANDARDS
**	7-18	BC (1)-14 THRU BC (12)-14
**	19	TCP (2-1)-18
		ENVIRONMENTAL ISSUES
	20	STORMWATER POLLUTION PREVENTION PLAN (SW3P)
	20A-20D	SW3P LAYOUT
	21	ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPIC)
**	22-24	EC (9)-16
		MISCELLANEOUS ITEMS
	25-38	DEMOLITION PLAN
	39-52	LAYOUT & MATERIALS PLAN
	53-65	PLANTING PLAN
	66-78	IRRIGATION PLAN
	79-81	MISC DETAILS
	82-83	PLANTING DETAILS
	84-85	IRRIGATION DETAILS
	86	IRRIGATION SPECIFICATIONS

STATE OF TEXAS
JAMES DAVID MORREN
93734
LICENSED
PROFESSIONAL ENGINEER

** THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ABOVE HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

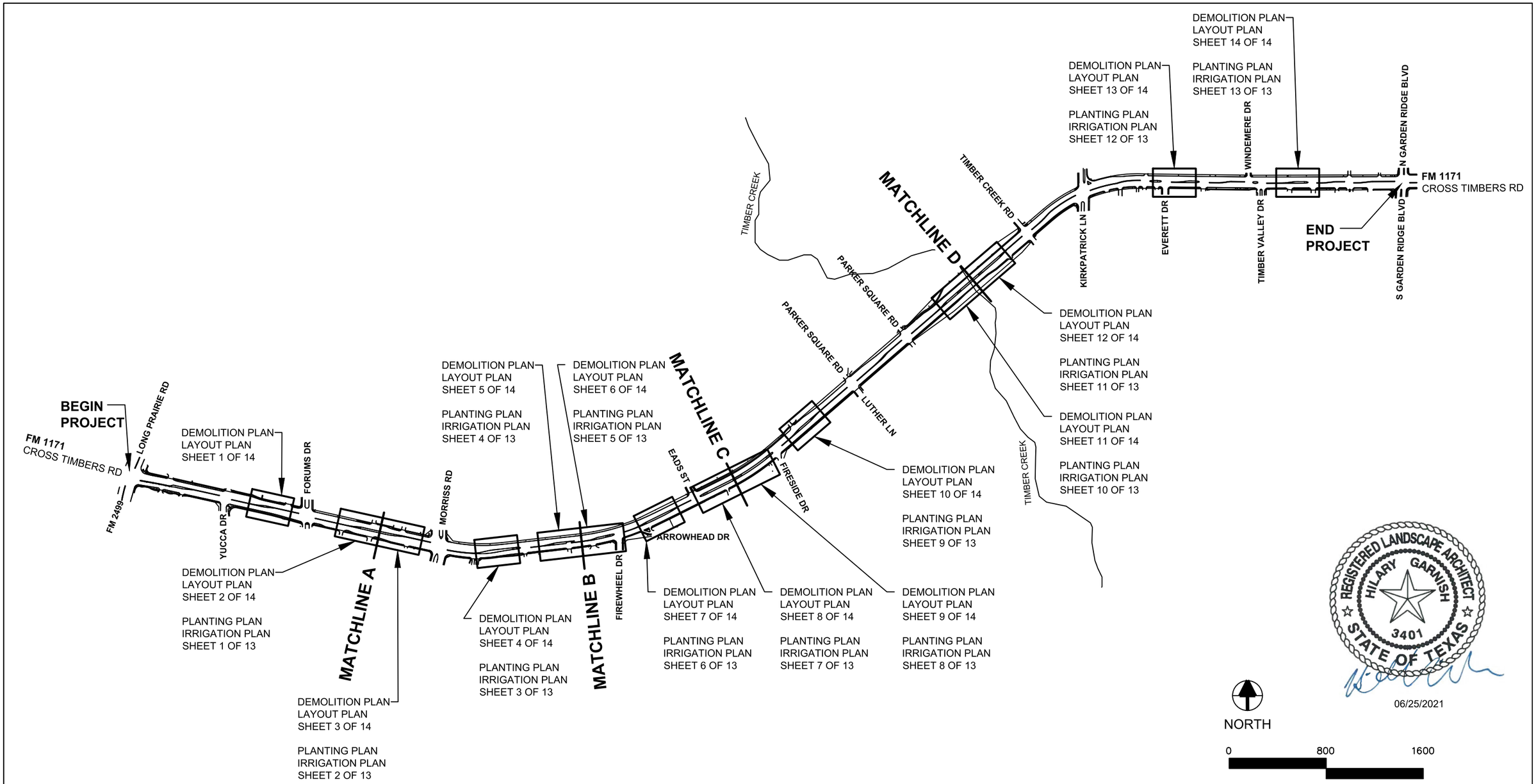
James D Morren, P.E. — 06/28/2021

SIGNATURE — DATE

INDEX OF SHEETS

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
1311	01	058	FM 1171
DIST	COUNTY		SHEET NO.
DAL	DENTON		2



06/25/2021

NORTH

0 800 1600

Texas Department of Transportation
© 2021

FLOWER MOUND
PROJECT LAYOUT

SCALE: 1" = 800'

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	3
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02

DATE

GENERAL

The construction, operation and maintenance of the proposed project will be consistent with the state implementation plan as prepared by the Texas Commission on Environmental Quality.

The disturbed area for this project, as shown on the plans is _0.93_ acres. However, the Total Disturbed Area (TDA) will establish the required authorization for storm water discharges. The TDA of this project will be determined by the sum of the disturbed area in all project locations in the contract, and all disturbed area on all Project-Specific Locations (PSL) located in the project limits and/or within 1 mile of the project limits. The department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction site as shown on the plans, according to the TDA of the project. The contractor will obtain any required authorization from the TCEQ for the discharge of storm water from any PSL for construction support activities on or off of the project row according to the TDA of the project. When the TDA for the project exceeds 1 acre, provide a copy of the appropriate application of permit (NOI, or Construction Site Notice) to the engineer, for any PSL located in the project limits or within 1 mile of the project limits. Follow the directives and adhere to all requirements set forth in the TCEQ, Texas Pollution Discharge Elimination System, Construction General Permit (TPDES, CGP).

This project required no formal consultation or permitting with environmental resources agencies. There is a high probability that an environmentally sensitive area could be encountered on the contractor designated Project-Specific Locations (PSL) for this project (haul roads, equipment staging areas, borrow pits, disposal sites, field offices, storage areas, parking areas, etc.). Item 7.6 “Project-Specific Locations”, provides a listing of regulatory agencies that may need to be contacted regarding this project.

Leave all right of way areas undisturbed until actual construction is to be performed in said areas.

Contractor questions on this project are to be addressed to the following individual(s):

James T Campbell, Travis.Campbell@txdot.gov
Christopher P Rocha, Christopher.Rocha@txdot.gov

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

All contractor questions will be reviewed by the Engineer. Once a response is developed, it will be posted to TxDOT’s Public FTP at the following Address:
https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting%20Responses/

All questions submitted that generate a response will be posted through this site. The site is organized by District, Project Type (Construction or Maintenance), Letting Date, CCSJ/Project Name.

CSJ: 1311-01-058 **Sheet 4**

County: Denton

Highway: FM 1171

Paper copies of cross-sections may be produced by using the provided .pdf file located on the above FTP Website at the bidders’ expense and at copying companies. This data is for non-construction purposes only and it is the responsibility of the prospective bidder to validate the enclosed data with appropriate plans, specifications and estimate for the project(s).

Item 5:
Underground utilities owned by the Texas Department of Transportation may be present within the Right-Of-Way on this project. For signal, illumination, surveillance, and communications & control maintained by TxDOT, call the TxDOT Traffic Signal Office (214-320-6682) for locates a minimum of 48 hours in advance of excavation. For irrigation systems, call TxDOT Landscape Office (214-320-6205) for locates a minimum of 48 hours in advance of excavation. If city or town owned irrigation facilities are present, call the appropriate department of the local city or town a minimum of 48 hours in advance of excavation. The Contractor is liable for all damages when utilities are damaged due to Contractor’s negligence including, but not limited to, repair or replacement at the Contractor’s expense.

Item 7:
Repair or replace any structures and utilities that might have been damaged by negligence or a failure to have utility locates performed.

Holiday restrictions – the engineer may decide that no lane closures or construction operations shall be allowed during the restricted periods listed in the following holiday schedule. TxDOT has the right to lengthen, shorten, or otherwise modify these restricted periods as actual, or expected, traffic conditions may warrant. Working days will not be charged for these restricted periods. No additional compensation will be allowed for these closures (i.e., overhead, delays, stand-by, barricades or any other associated cost impacts).

- New Year’s Eve and Day (noon on December 31 thru 10:00 pm January 1)
- Easter Holiday weekend (noon on Friday thru 10:00 pm Sunday)
- Memorial Day weekend (noon on Friday thru 10:00pm Monday)
- Independence Day (noon on July 3 thru 10:00 pm on July 5)
- Labor Day weekend (noon on Friday thru 10:00 pm Monday)
- Thanksgiving Holiday (noon on Wednesday thru 10:00 pm Sunday)
- Christmas Holiday (noon on December 23 thru 10:00 pm December 26)

No significant traffic generator events identified.

Item 8:
This Project will be a Standard Workweek.

Meet weekly with the engineer to notify him or her of planned work for the upcoming week.

Provide the engineer with a daily work schedule of planned work.

Item 100:
Remove the existing roadway small signs, delineators and object markers as shown on the plans, or as directed, during construction within the right of way. Small sign, delineator and object marker removals are subsidiary to this Item.

Item 104:
In those areas where the pavement is not to be overlaid, provide a smooth surface after the curb removal. Planing or grinding is considered an acceptable method at these locations. Measurement and payment is in accordance with this item.

Sawing of concrete is not paid for directly, but is considered subsidiary to this item.

Item 110:
Excavated shale is not an acceptable material for embankment.

Item 161:
Provide tickets representing quantity of compost delivered to site.

Item 192:
No planting shall occur between June 1st and September 15th without written approval from the Engineer.

Perform soil percolation test at least 24 hours prior to planting trees in plant pits. Excavate plant pit and fill entirely with water. Inspect planting pit within 24 hours to verify water has percolated into surrounding soil. In the event the water is present after 24 hours, contact Engineer before continuing tree planting in pits.

Prior to installing any plant material, ensure the irrigation system (if included in project) is pressurized up to the valves.

Begin the 90-day maintenance period only after all live plant material and functional irrigation systems have been installed as shown on plans.

Item 500:
Material On Hand (MOH) will not be used in calculating partial payments for Mobilization.

Item 502:
The Contractor Force Account “Safety Contingency” that has been established for this project is intended to be utilized for work zone enhancements, to improve the effectiveness of the Traffic Control Plan, that could not be foreseen in the project planning and design stage. These enhancements will be mutually agreed upon by the Engineer and the Contractor’s Responsible Person based on weekly or more frequent traffic management reviews on the project. The Engineer may choose to use existing bid items if it does not slow the implementation of enhancement.

Access will be provided to all business and residences at all times. Where turning radii are limited during phased construction at intersections, provide all weather surfaces such as RAP or base in turning movements to accommodate and to protect the traffic from edge drop-offs. Materials, labor, maintenance and removal for these temporary accesses and radii will not be paid for directly but will be considered subsidiary to the various bid items.

CSJ: 1311-01-058 **Sheet 4 A**

County: Denton

Highway: FM 1171

Provide a person on the project at all times (24 hours/day, 7 days/week) to patrol, monitor, and maintain the traffic control devices and signs. The person must be knowledgeable of TxDOT Guidelines for traffic control devices and signs.

Provide written proposed lane closure information by 1:00 pm on the business day prior to the proposed closures. Do not close lanes when this requirement is not met.

When excavation is required next to a pavement lane carrying traffic and the widening is not completed by the end of the work day, backfill against the edge of the pavement with at least a 3:1 slope using an acceptable material to support vehicular traffic. Carefully remove and dispose of this material when work resumes. Backfilling pavement edges, and the materials required for the work will be subsidiary to this item.

Place barricades and signs in locations that do not obstruct the sight distance of drivers entering the highway from driveways or side streets.

Provide rectangular shape (CW12-2P) Temporary Clearance Signs on all bridges where the existing vertical clearance has changed. Install Signs to the satisfaction of the Engineer prior to opening to traffic. Plywood sign blanks will have minimum dimensions of 84" X 12". Work performed and materials are subsidiary to this item.

Do not commence work on the road before sunrise. Do not operate or park any equipment/machinery closer than 30 feet from the traveled roadway after sunset unless authorized by the engineer.

When moving unlicensed equipment on or across any pavement or public highways, protect the pavement from all damage using an acceptable method.

As approved by the Engineer, provide uniformed off duty police officers and squad cars during lane or ramp closures, night time work or other situations that indicate a need for additional traffic control to protect the traveling public or the construction workforce. Provide documentation such as payroll, log sheets with signatures and badge number, or invoices from the government entity providing the officers for reimbursement. Complete the weekly tracking form provided by the department and submit invoices that agree with the tracking form for payment at the end of each month approved services were provided. Reimbursement will not be made for coordination fees charged by any party.

Limit lane closures along __FM 1171__ to the hours between 9:00 am and 3:30 pm. Work in other areas of the project is not restricted to this time frame.

Item 506:
Take all practicable precautions to prevent debris from being discharged into the Waters of Texas or a designated wetland. Install Best Management Practices before demolition begins and maintain them during the demolition. Remove any debris or construction material that escapes containment devices and are discharged into the restricted areas, before the next rain event or within 24 hours of the discharge.

If temporary construction stream crossings are allowed under a Nationwide Permit, submit in writing for approval the type and location of each temporary stream crossing. Use temporary bridges, timber mats, or other structurally sound and non-eroding material for temporary stream crossings. A temporary culvert crossing will consist of storm sewer pipes and 4- to 8-inch nominal size rock. Temporary stream crossings must not cause more than minimal changes to the hydraulic flow characteristics of the stream, increase flooding, or cause more than minimal degradation of water quality. Remove the temporary stream crossings in their entirety and return the affected areas to their pre-existing elevation. All work and materials use for temporary construction stream crossings will not be paid for directly but are subsidiary to pertinent Items.

Concrete Washouts are required per the CGP. The Concrete Washout Area(s) structural controls must consist of temporary berms, temporary shallow pits, and/or temporary storage tanks to prevent contaminated runoff and must be lined as to prevent contamination of underlying soil. Ensure pits properly maintained including removal of concrete as not to allow over flow. The location(s) of washout area will be approved by the Engineer. When washout pits are no longer needed, they will be removed and area will be restored to original condition. This work, materials and labor will not be measured or paid for directly but will be subsidiary to Item 506, “Temporary Erosion, Sedimentation, and Environmental Controls.”

Item 6185:

The total number of truck mounted attenuators (TMAs) or trailer attenuators (TAs) required when utilizing the traffic control standards are shown in the tables below.

TCP 2 Series	Scenario	Required TMA/TA
(2-1)-18	All	1

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/TAs needed for the project. Additional TMAs/TAs used that are not specified in the plans in which the contractor expects compensation will require prior approval from the Engineer.

Estimate & Quantity Sheet

CONTROLLING PROJECT ID 1311-01-058 **DISTRICT** Dallas **COUNTY** Denton
HIGHWAY FM 1171

			CONTROL SECTION JOB		**1311-01-058**	TOTAL EST.	TOTAL FINAL
			PROJECT ID		**A00131986**		
			COUNTY		**Denton**		
			HIGHWAY		**FM 1171**		
ALT	**BID CODE**	**DESCRIPTION**	**UNIT**	EST.	FINAL		
	100-6001	PREPARING ROW	AC	1.000		1.000	
	100-6008	PREPARING ROW (TREE) (0" TO 6" DIA)	EA	55.000		55.000	
	104-6011	REMOVING CONC (MEDIANS)	SY	47.000		47.000	
	110-6003	EXCAVATION (SPECIAL)	CY	784.000		784.000	
	161-6012	GENERAL USE COMPOST	CY	260.000		260.000	
	170-6001	IRRIGATION SYSTEM	LS	1.000		1.000	
	192-6002	PLANT MATERIAL (1-GAL)	EA	2,505.000		2,505.000	
	192-6003	PLANT MATERIAL (3-GAL)	EA	1,353.000		1,353.000	
	192-6004	PLANT MATERIAL (5-GAL)	EA	75.000		75.000	
	192-6012	MULCH	CY	123.000		123.000	
	192-6015	LANDSCAPE EDGE	LF	1,753.000		1,753.000	
	192-6016	PLANT BED PREPARATION	SY	2,308.000		2,308.000	
	192-6024	PLANT MATERIAL (30 GAL) (TREE)	EA	24.000		24.000	
	192-6025	PLANT MATERIAL (45 GAL) (TREE)	EA	6.000		6.000	
	500-6001	MOBILIZATION	LS	1.000		1.000	
	502-6001	BARRICADES, SIGNS AND TRAFFIC HANDLING	MO	5.000		5.000	
	506-6040	BIODEG EROSN CONT LOGS (INSTL) (8")	LF	1,200.000		1,200.000	
	506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	1,200.000		1,200.000	
	528-6001	COLORED TEXTURED CONC (4")	SY	88.000		88.000	
	1005-6001	LOOSE AGGR FOR GROUNDCOVER (TYPE I)	CY	205.000		205.000	
	6001-6002	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2.000		2.000	
	6185-6002	TMA (STATIONARY)	DAY	2.000		2.000	
	18	SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000		1.000	
		EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS	1.000		1.000	

SUMMARY OF QUANTITIES

	100 6001	100 6008	104 6011	110 6003	161 6012	170 6001	192 6002	192 6003	192 6004	192 6012	192 6015	192 6016	192 6024	192 6025	193 6001	193 6007
	PREPARING ROW	PREPARING ROW (TREE) (0" TO 6" DIA)	REMOVING CONC (MEDIANS)	EXCAVATION (SPECIAL)	GENERAL USE COMPOST	IRRIGATION SYSTEM	PLANT MATERIAL (1-GAL)	PLANT MATERIAL (3-GAL)	PLANT MATERIAL (5-GAL)	MULCH	LANDSCAPE EDGE	PLANT BED PREPARATION	PLANT MATERIAL (30 GAL) (TREE)	PLANT MATERIAL (45 GAL) (TREE)	PLANT MAINTENANCE	IRRIGATION SYSTEM OPER AND MAINT
LOCATION	AC	EA	SY	CY	CY	LS	EA	EA	EA	CY	LF	SY	EA	EA	MO	MO
median 1		1	19	13												
median 2a		9	2	54	23		106	140	6	11	150	206	3			
median 2b				41	18		227	78	4	8	155	155	3			
median 3		5	3	107	28		188	153	10	13	180	250		3		
median 4		5	2	40	14		52	115	6	6	128	125	3			
median 5			2	34	6			70	3	3	83	54				
median 6			2	67	15		181			6	106	126	3			
median 7a		4	3	75	25		260	146	10	13	156	227				
median 7b		9	3	115	41		804	117	7	21	158	371		3		
median 8		5	3	53	21		182	127	4	9	137	180	3			
median 9a		7	4	57	21		183	130	6	10	136	185	3			
median 9b		7	4	76	26		237	131	7	12	181	233	3			
median 10				7												
median 11				18	9		53	56	7	5	79	82				
median 12		3		27	13		32	90	5	6	104	114	3			
	1					1									9	9
PROJECT TOTALS	1	55	47	784	260	1	2505	1353	75	123	1753	2308	24	6	9	9

N.I.C

	500 6001	502 6001	506 6040	506 6043	528 6008	1005 6001	6001 6002	6185 6001
	MOBILIZATION	BARRICADES, SIGNS AND TRAFFIC HANDLING	BIODEG EROSN CONT LOGS (INSTL) (8")	BIODEG EROSN CONT LOGS (REMOVE)	COLORED TEXTURED CONC (5")	LOOSE AGGR FOR GROUNDCOVER (TYPEI)	PORTABLE CHANGEABLE MESSAGE SIGN	TMA (STATIONARY)
LOCATION	LS	MO	LF	LF	SY	CY	EA	EA
median 1					88			
median 2a						9		
median 2b						10		
median 3						43		
median 4						10		
median 5						14		
median 6						30		
median 7a						20		
median 7b						18		
median 8						9		
median 9a						8		
median 9b						16		
median 10						6		
median 11						4		
median 12						8		
	1	5	1200	1200			2	2
PROJECT TOTALS	1	5	1200	1200	88	205	2	2

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

QUANTITY SUMMARY

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
1311	01	058	FM 1171
DIST	COUNTY		SHEET NO.
DAL	DENTON		6

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

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. As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER (see Sign Detail G20-10T) and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. However, the TRAFFIC FINES DOUBLE sign will not be required on projects consisting solely of mobile operation work, such as striping or milling edgeline rumble strips. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.

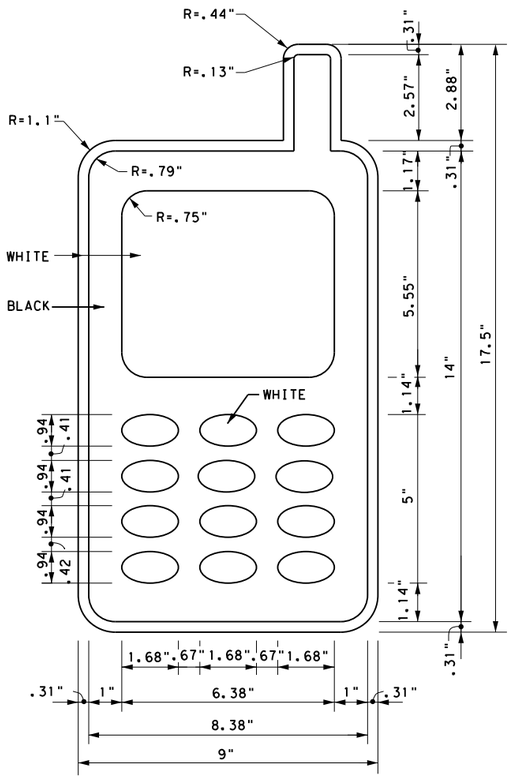
11. Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.

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 APPAREL 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.



SIGN DETAIL (G20-10T)

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

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

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

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

Texas Department of Transportation | Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	1311	01	058	FM 1171
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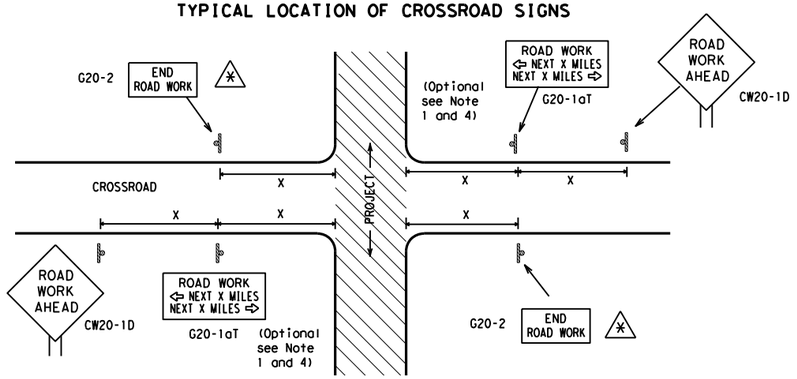
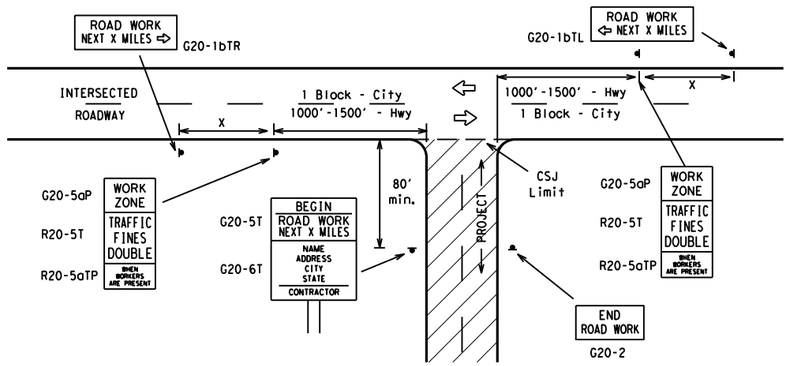
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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. 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]

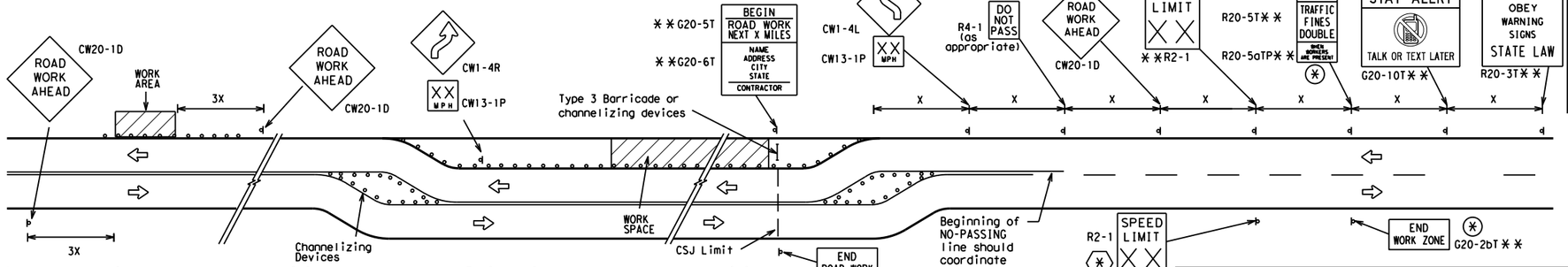
✱ For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

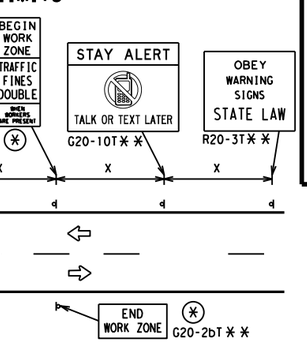
1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may be used on low volume crossroads at the discretion of the Engineer. 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

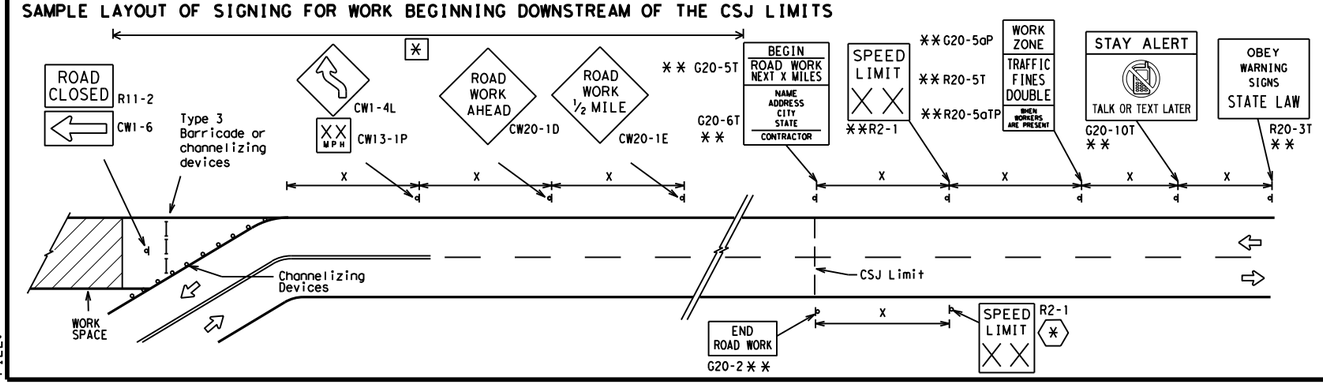


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

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

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

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

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

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-14

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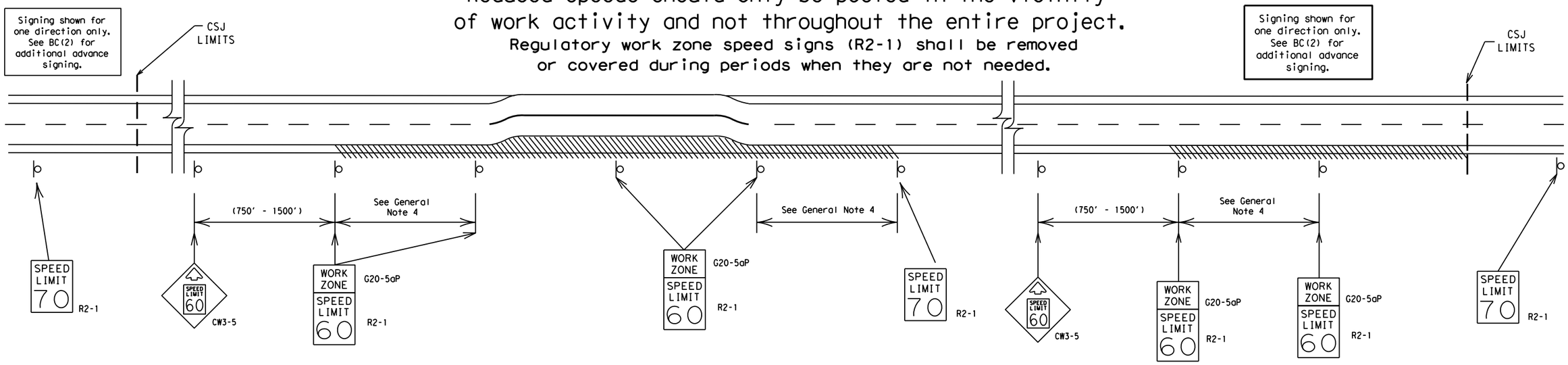
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.

Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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 travelled way.

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

GENERAL NOTES

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 Operations Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-14

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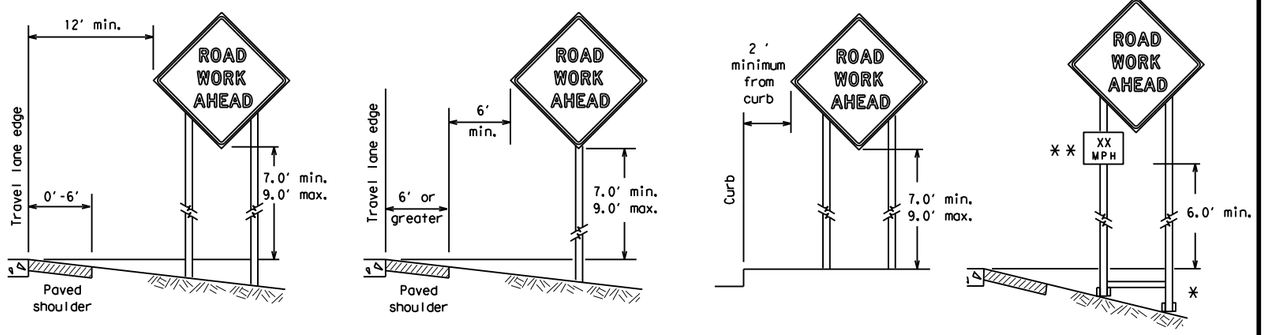
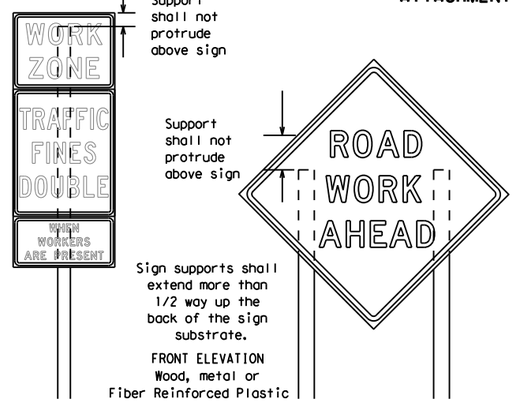
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



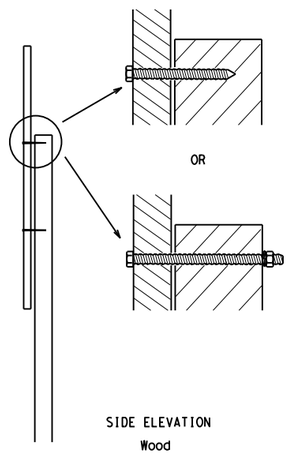
* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS



Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the 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.

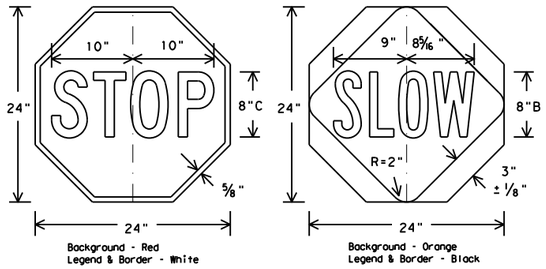


Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24" as detailed below.
2. When used at night, the STOP/SLOW paddle shall be retroreflectorized.
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.



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, 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.
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 sheets or the CWZTCD. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
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). 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 Operations Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-14

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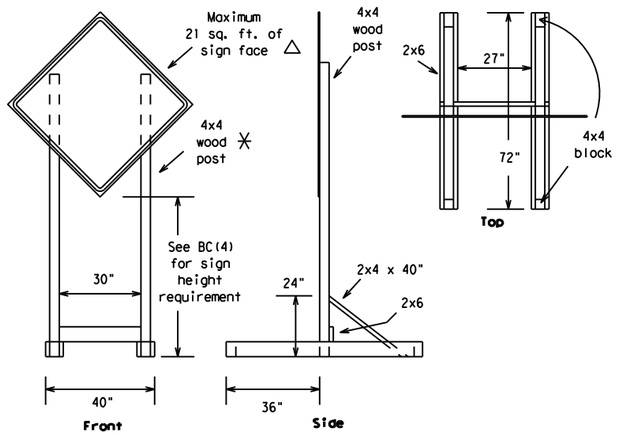
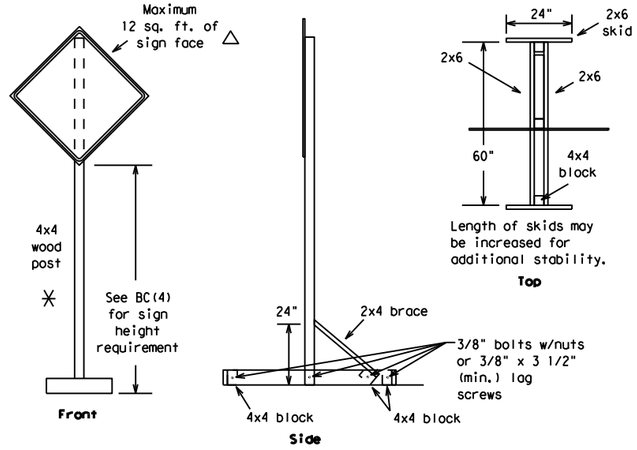
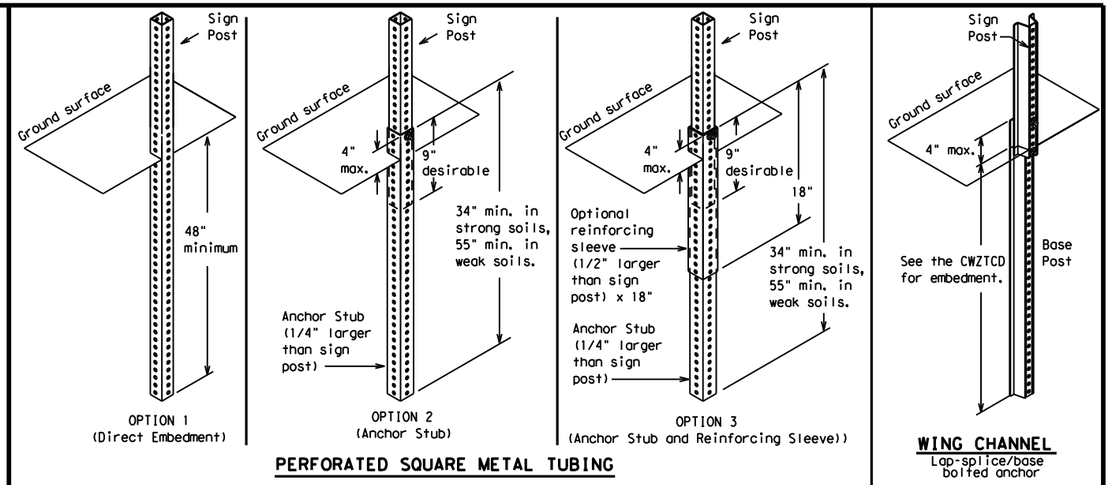




SKID MOUNTED WOOD SIGN SUPPORTS

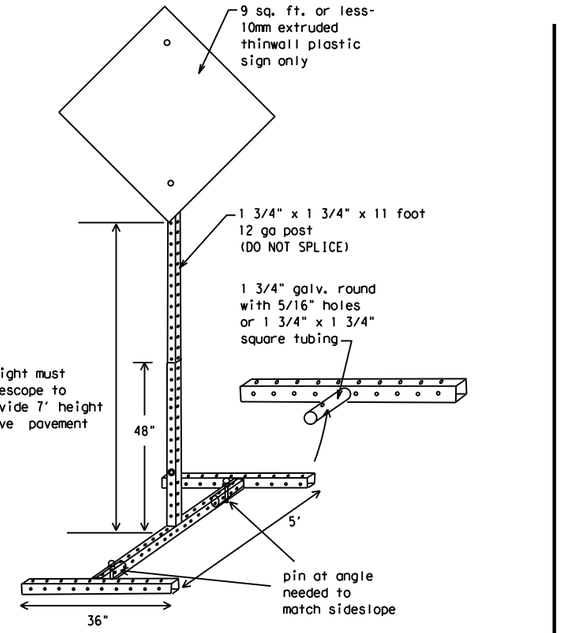
LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS □

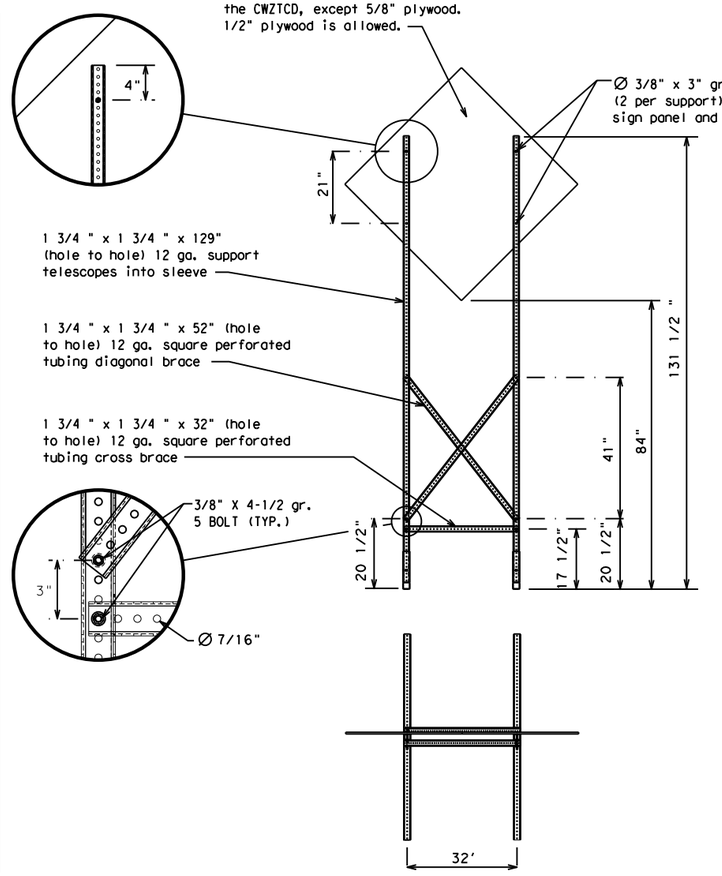


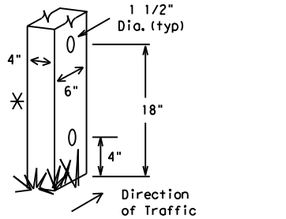
PERFORATED SQUARE METAL TUBING

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.

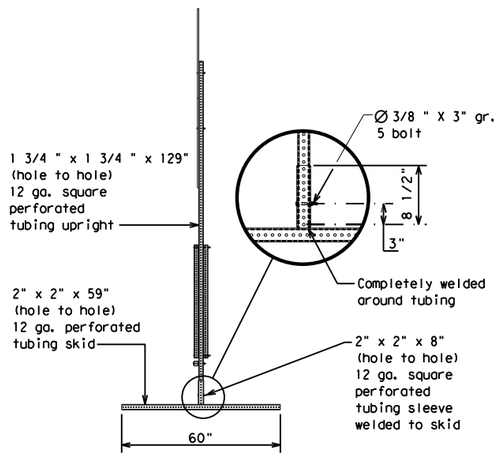






Nominal Post Size	Number of Posts	Maximum Sq. feet of Sign Face	Minimum Soil Embedment	Drilled Hole(s) Required
4 x 4	1	12	36"	NO
4 x 4	2	21	36"	NO
4 x 6	1	21	36"	YES
4 x 6	2	36	36"	YES

WOOD POST SYSTEM FOR GROUND 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.

Texas Department of Transportation | Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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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

WORD OR PHRASE	ABBREVIATION
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

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

** 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 Operations Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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DATE:
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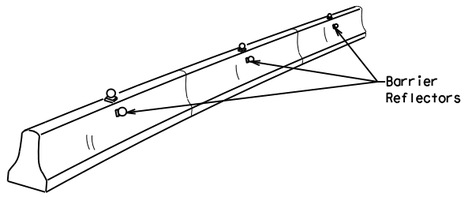
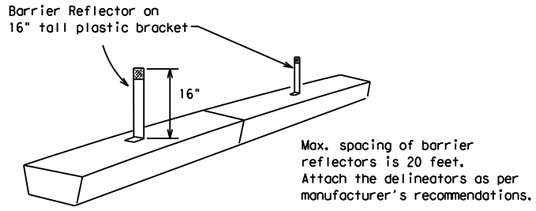
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.

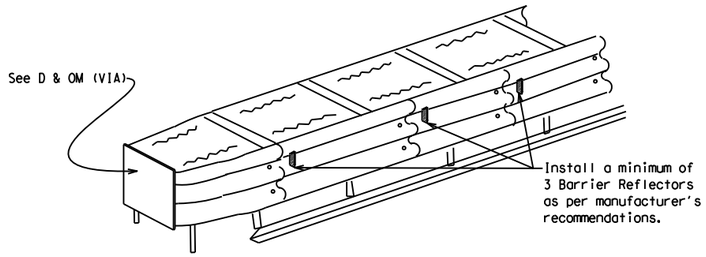


CONCRETE TRAFFIC BARRIER (CTB)

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.



LOW PROFILE CONCRETE BARRIER (LPCB)

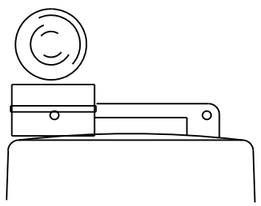


DELINEATION OF END TREATMENTS

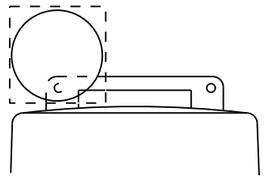
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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

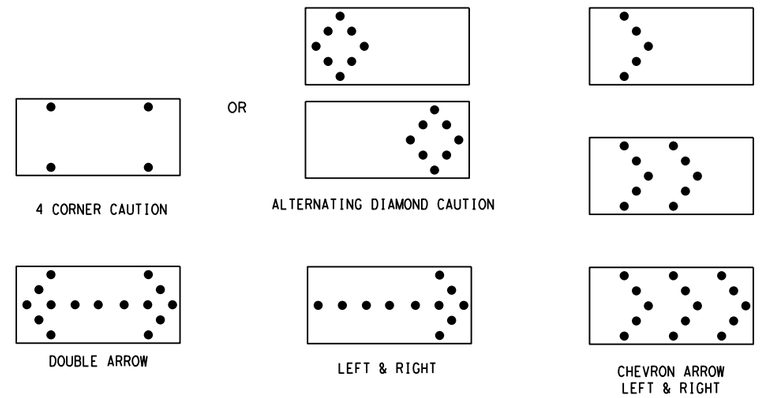
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing 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 National Cooperative Highway Research Report No. 350 (NCHRP 350) or 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 Operations Division Standard

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

BC(7)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	1311	01	058	FM 1171
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13	DAL	DENTON		13

DATE:
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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:

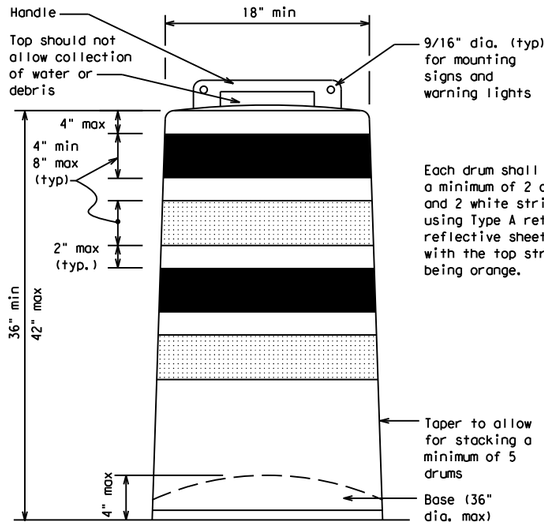
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents 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.

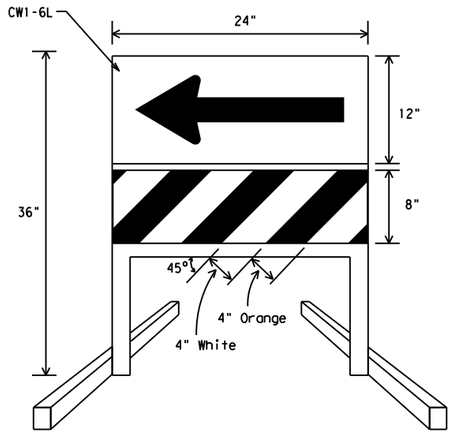
RETROREFLECTIVE SHEETING

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 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

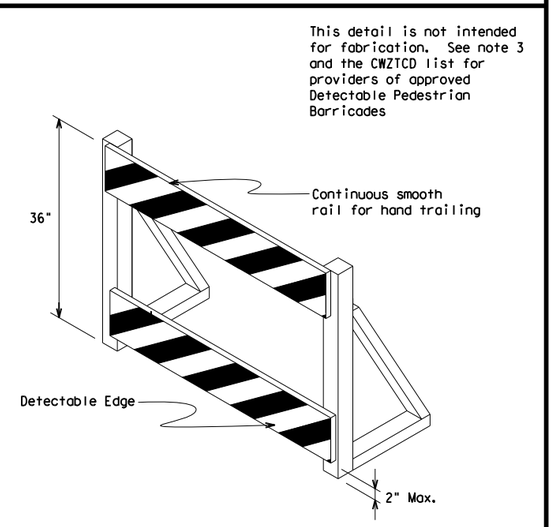
1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other 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.





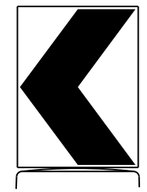
DIRECTION INDICATOR BARRICADE

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

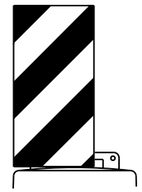


DETECTABLE PEDESTRIAN BARRICADES

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.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a device that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
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 for Buildings and Facilities (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 may use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



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 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.

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Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-14

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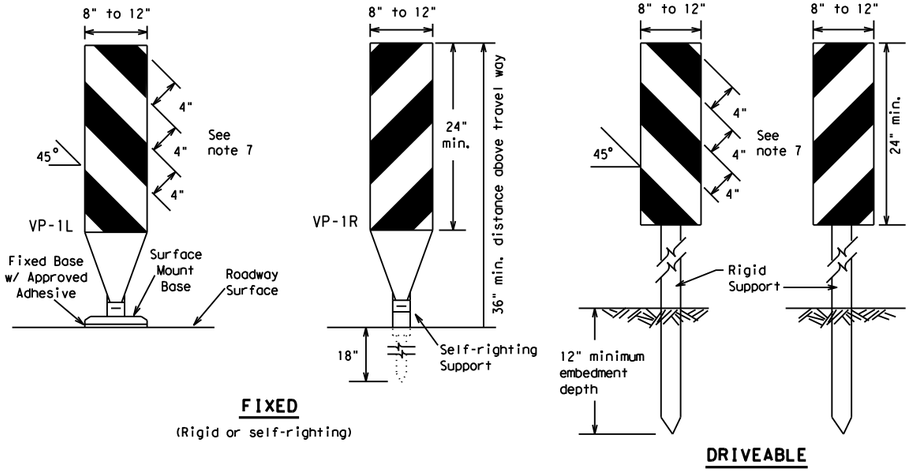
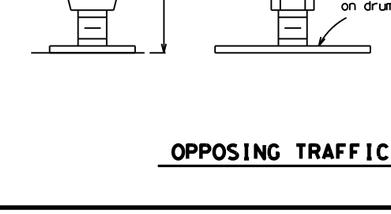


FIXED
(Rigid or self-righting)

DRIVEABLE

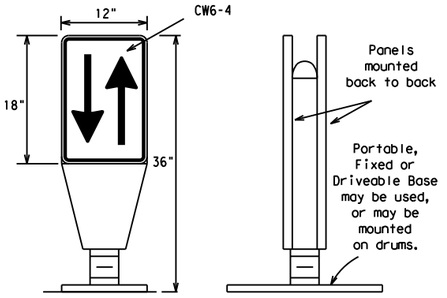


(Rigid or self-righting)

PORTABLE

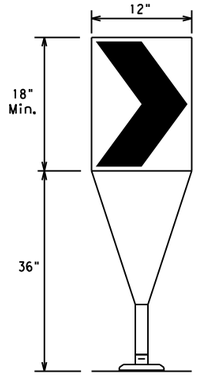
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is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

VERTICAL PANELS (VPs)



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



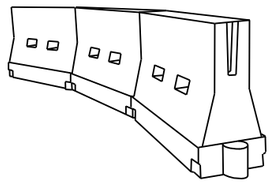
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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) placed near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

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 Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

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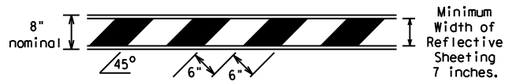
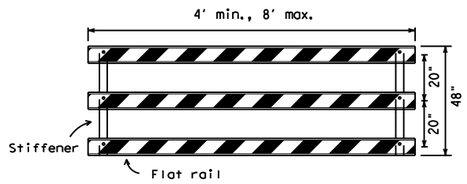
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



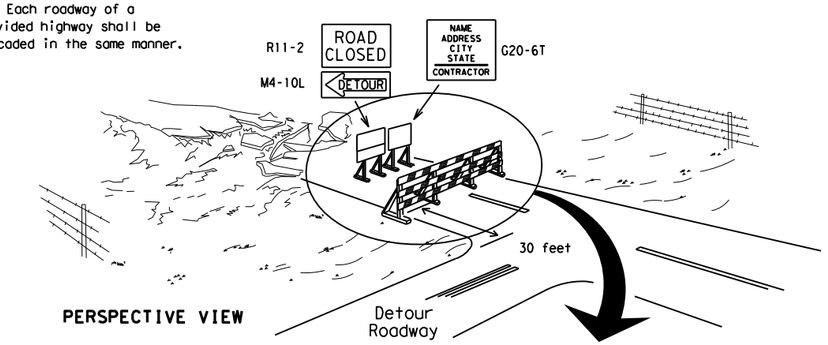
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

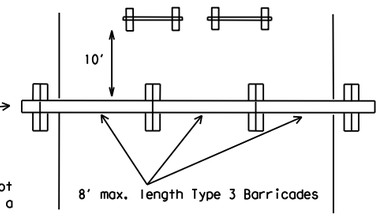
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

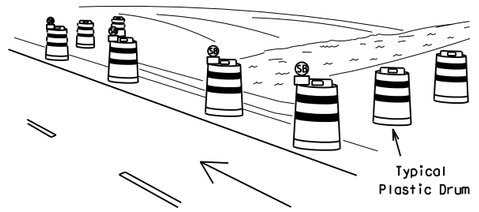
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

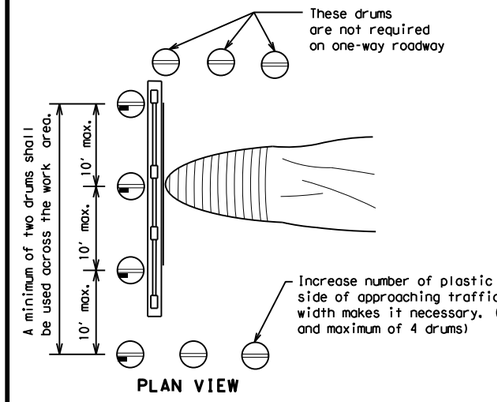
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

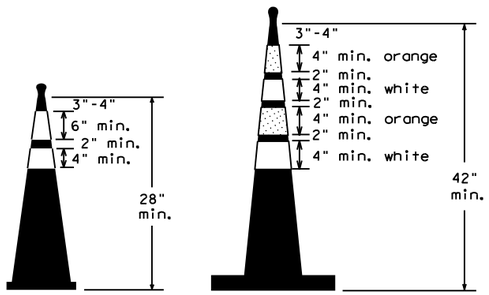
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder 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.



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

PLAN VIEW

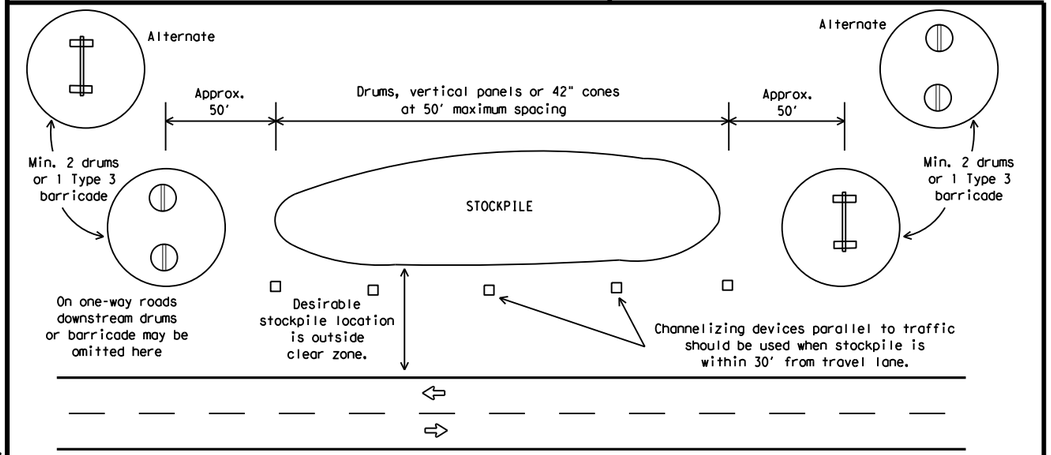
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



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

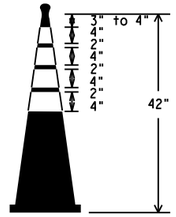
42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

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



EDGELINE CHANNELIZER

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

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BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-14

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DATE:
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DATE:
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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.

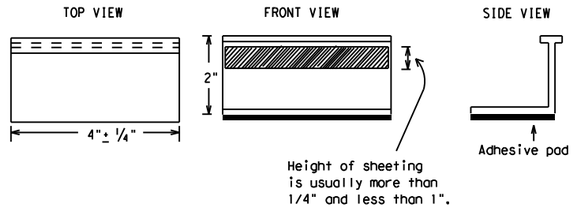
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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 Operations Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

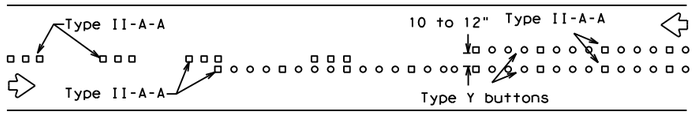
BC(11)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	1311	01	058	FM 1171
2-98 9-07	DIST	COUNTY		SHEET NO.
1-02 7-13	DAL	DENTON		17
11-02 8-14				

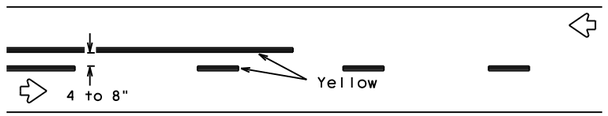
DATE:
FILE:

PAVEMENT MARKING PATTERNS

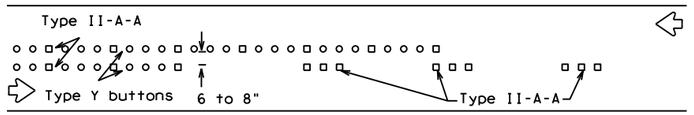
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



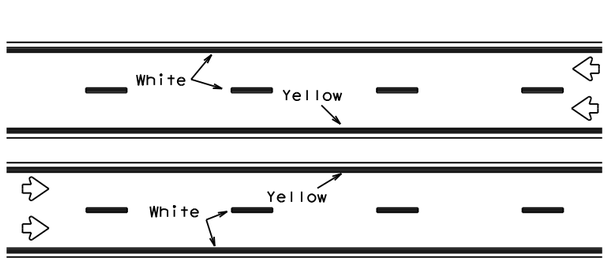
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



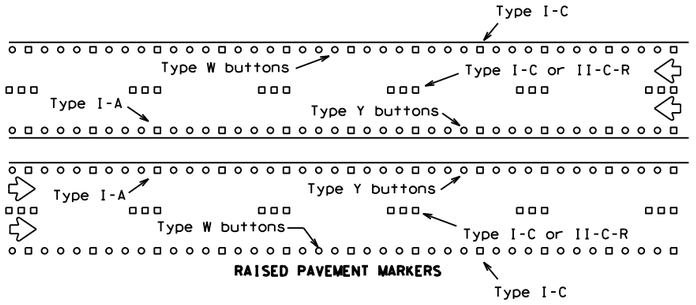
RAISED PAVEMENT MARKERS - PATTERN B

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



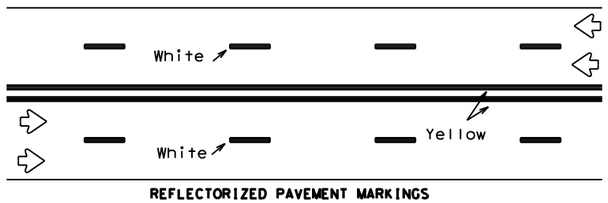
REFLECTORIZED PAVEMENT MARKINGS



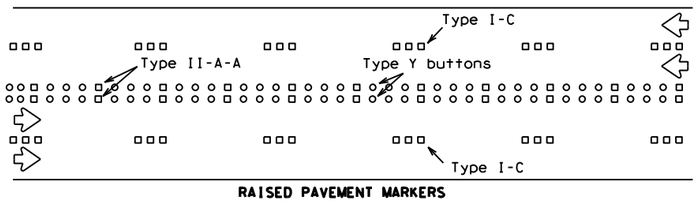
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



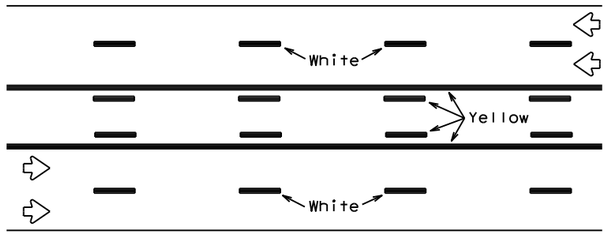
REFLECTORIZED PAVEMENT MARKINGS



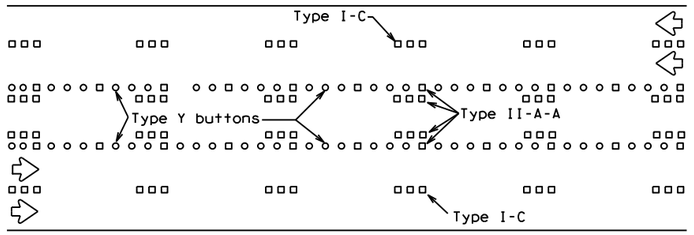
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

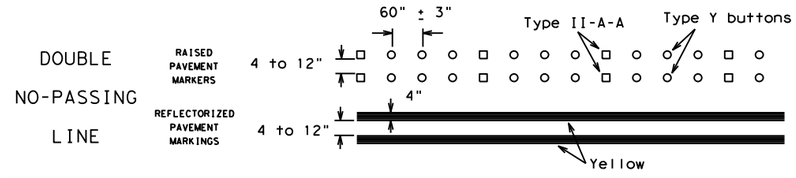
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

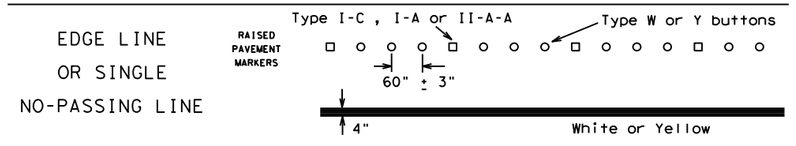
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

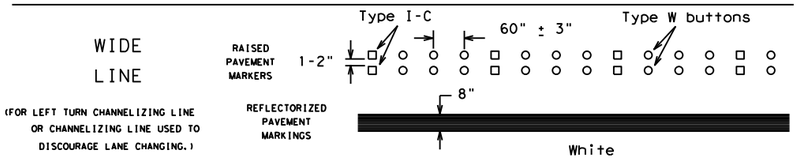


EDGE LINE OR SINGLE NO-PASSING LINE



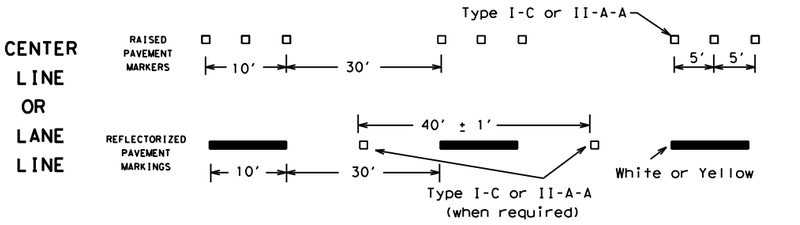
WIDE LINE

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

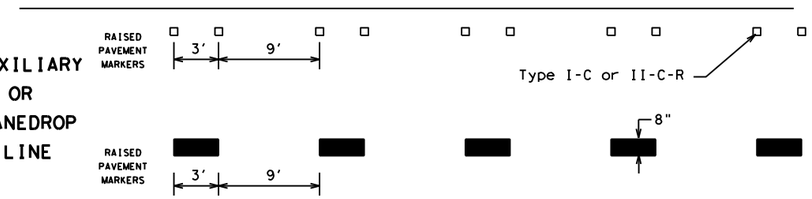


BROKEN LINES

CENTER LINE OR LANE LINE

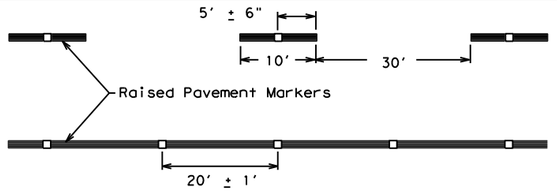


AUXILIARY OR LANEDROP LINE



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."

Texas Department of Transportation

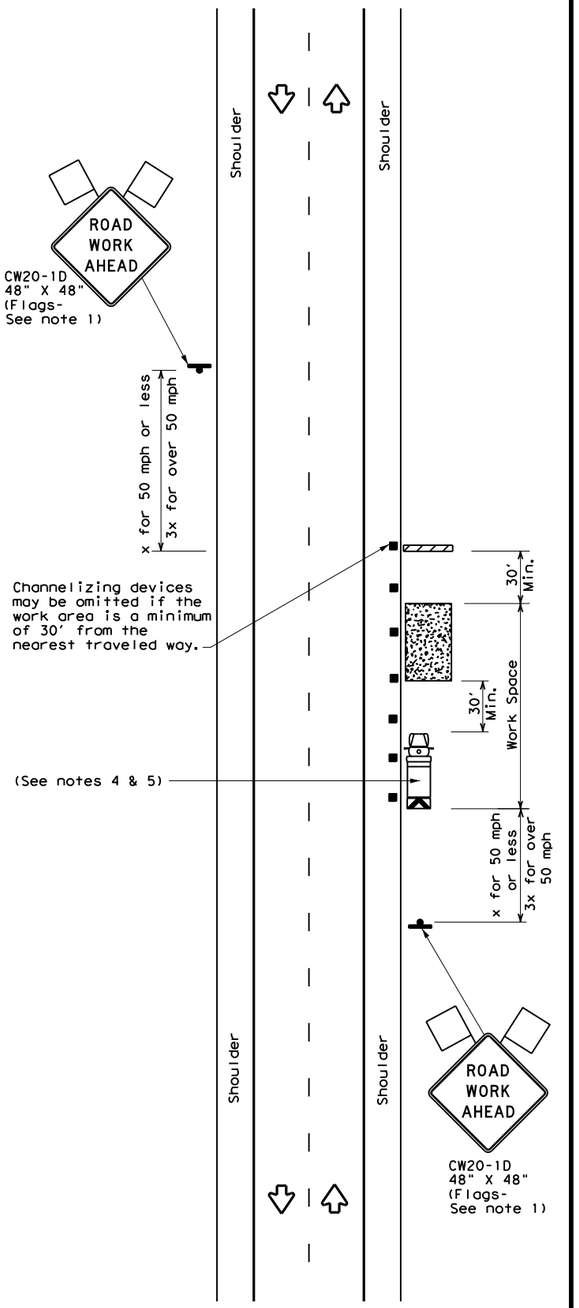
Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-14

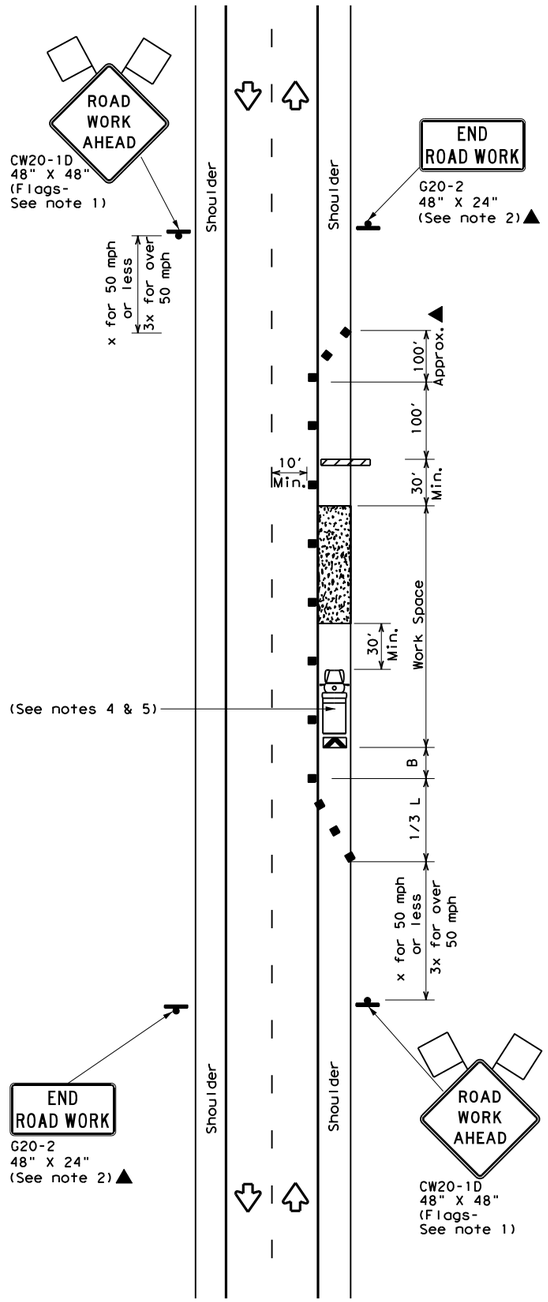
FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	1311	01	058	FM 1171
1-97 9-07	DIST	COUNTY		SHEET NO.
2-98 7-13	DAL	DENTON		18
11-02 8-14				

DATE:
FILE:



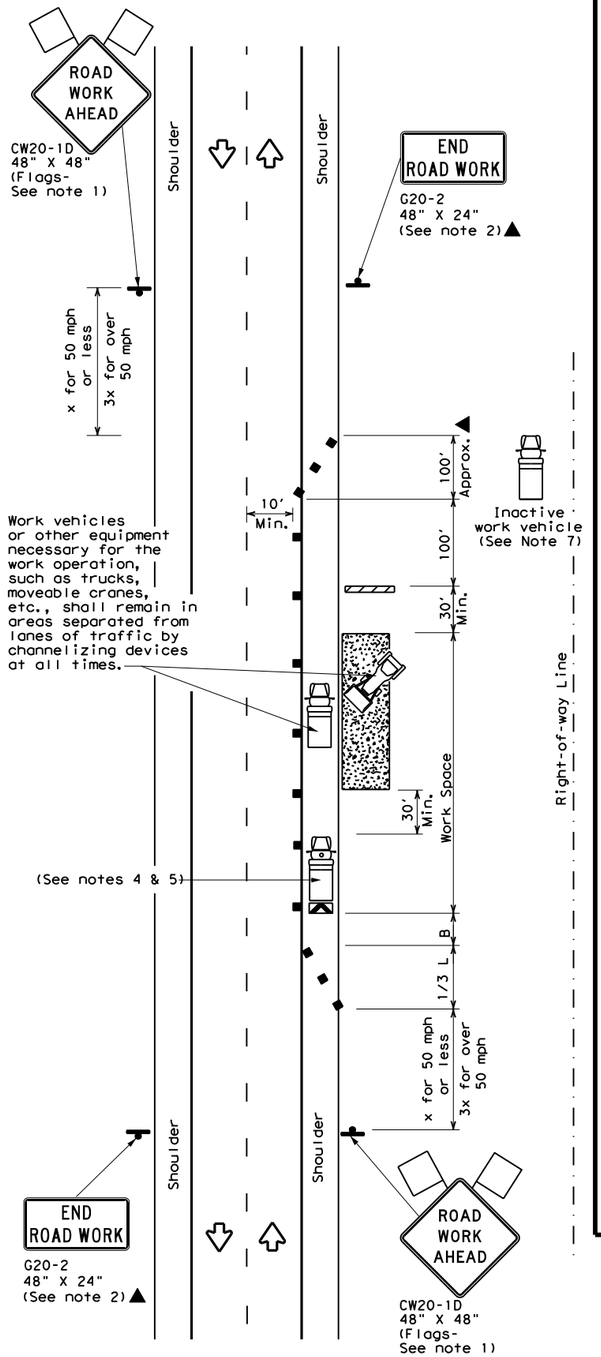
TCP (2-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (2-1c)

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 in the plans, or for routine maintenance work, when approved by the Engineer.
3. Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
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 off the paved surface, next to those shown in order to protect a wider work space.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
8. 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(2-1)-18

FILE: tcp2-1-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	1311	01	058	FM 1171
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12	DAL	DENTON		19
1-97 2-18				

A. GENERAL SITE DATA

1. PROJECT LIMITS: FM 1171 FROM LONG PRAIRIE ROAD TO NORTH GARDEN RIDGE BLVD

Begin Project Coordinates : Latitude (N): 33.0415583 Longitude (W): -97.0959445
End Project Coordinates : Latitude (N): 33.0382086 Longitude (W): -97.0505171

2. PROJECT SITE MAPS:

- *Project Location Map: The Title Sheet*
- *Drainage Patterns: Drainage Area Maps N/A*
- *Slopes Anticipated After Major Gradings or Areas of Soil Disturbance: Typical Sections N/A*
- *Location of Erosion and Sediment Controls: SW3P Site Maps SHEETS 20A-20D*
- *Surface Waters and Discharge Locations: Drainage and Culvert Layouts N/A*
- *Project Specific Location(s) (PSL): To be determined by the project Construction Personnel. Location(s) shown on SW3P Site Map (if PSL location(s) is within one mile of project) and information located in project SW3P Binder (Reference Item #10 below).*

3. PROJECT DESCRIPTION:
Construction of Landscape work consisting of planting and irrigation

4. MAJOR SOIL DISTURBING ACTIVITIES:
Demolition, plant bed preparation, planting, & trenching for irrigation system.

5. EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER:
Wilson clay loam, Burleson clay, Birome fine sandy loam, Navo clay loam, Konsil fine sandy loam, Justin fine sandy loam, and Crockett fine sandy loam.

95% Vegetative cover in median planting areas, mainly turf with some mass shrub plantings.

6. TOTAL PROJECT AREA: *1.73* Acres

7. TOTAL AREA TO BE DISTURBED: *0.93* Acres (*54 %*)

8. WEIGHTED RUNOFF COEFFICIENT

BEFORE CONSTRUCTION: *0.15*
AFTER CONSTRUCTION: *0.15*

9. NAME OF RECEIVING WATERS:

Timber Creek, Prairie Creek, Elm Fork Trinity River Below Lewisville Lake Segment number 0822 (No water quality impairments.)

10. PROJECT SW3P Binder:

A. For projects disturbing one to five acres, TxDOT will maintain a SW3P Binder at the project field office (if there is not a project field office, should be kept at the Area Office) which contains the following: Index Sheet, TCEQ Signature Authority, TxDOT's and Contractor's Small Construction Site Notice, SW3P Inspector Qualification Statements, EPIC Sheet, SW3P Sheet, Site Location Maps, Inspection and Maintenance Reports (Form 2118), Construction Stage Gate Checklists(s) (CSGC), Stored Material Lists specifying associated control measures and the Appendix which contains the TPDES Construction General Permit, TxDOT and Contractor MS4 Operator Notification(s) and the Construction PSL Permits per all applicable requirements.

B. For projects disturbing 5 acres or more, TxDOT will follow the actions listed in (10.A.) above with the addition of the following: TxDOT and Contractor Notice Of Intent (N.O.I.) and Fee Payment Form, TxDOT and Contractor Large Construction Site Notice (to be used instead of Small Site Notice), and TPDES Permit Coverage Notice.

C. For projects disturbing less than one acre, actions described in (10.A.) and (10.B.) above are not required. Acreage is calculated by adding Total Area To Be Disturbed Acres on project (See #7 above) and the PSL(s) acreage located within one mile of project.

FILE NAME
DATE
DESIGNER

B. EROSION AND SEDIMENT CONTROLS

1. SOIL STABILIZATION PRACTICES: (Select T = Temporary or P = Permanent, as applicable)

- ___ TEMPORARY SEEDING
- ___ MULCHING (Hay or Straw)
- ___ BUFFER ZONES
- P PLANTING
- ___ SEEDING
- ___ SODDING
- P PRESERVATION OF NATURAL RESOURCES
- ___ FLEXIBLE CHANNEL LINER
- ___ RIGID CHANNEL LINER
- ___ SOIL RETENTION BLANKET
- ___ COMPOST MANUFACTURED TOPSOIL
- ___ VERTICAL TRACKING
- ___ OTHER:

2. STRUCTURAL PRACTICES: (Select T = Temporary or P = Permanent, as applicable)

- ___ SILT FENCES
- T EROSION CONTROL LOGS
- ___ EROSION CONTROL COMPOST BERMS (Low Velocity)
- ___ ROCK FILTER DAMS
- ___ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- ___ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- ___ DIVERSION DIKE AND SWALE COMBINATIONS
- ___ PIPE SLOPE DRAINS
- ___ PAVED FLUMES
- ___ ROCK BEDDING AT CONSTRUCTION EXIT
- ___ TIMBER MATTING AT CONSTRUCTION EXIT
- ___ CHANNEL LINERS
- ___ SEDIMENT TRAPS
- ___ SEDIMENT BASINS
- ___ STORM INLET SEDIMENT TRAP
- ___ STONE OUTLET STRUCTURES
- ___ CURBS AND GUTTERS
- ___ STORM SEWERS
- ___ VELOCITY CONTROL DEVICES
- ___ OTHER:

NOTE: TOP OF BMP'S SHOULD NOT BE HIGHER THAN ROADWAY ELEVATION AS NOT TO FLOOD ROADWAY UNLESS PRIOR APPROVAL FROM ENGINEER IS OBTAINED.

3. STORM WATER MANAGEMENT:

A. Storm water drainage will be provided by ditches, inlets, and storm water systems which carry drainage within the R.O.W. to the lows within the roadway and project site which drains to natural facilities.

B. Other permanent erosion controls include hydraulic design to limit structure outlet velocities and grading design generally consisting of 4 :1 or flatter slopes with permanent vegetative cover.

4. STORM WATER MANAGEMENT ACTIVITIES: (Sequence of Construction)

1. *INSTALL TEMPORARY EROSION CONTROL LOGS BEFORE (BUT NO SOONER THAN TWO WEEKS PRIOR TO) CONSTRUCTION ACTIVITIES IN THEIR CONTROL AREA*
2. *DEMOLITION - PHASE PROJECT AS NEEDED TO MINIMIZE SOIL DISTURBANCE TO THE EXTENT PRACTICABLE. DO NOT DISTURB A LARGER AREA OF SOIL THAN THAT FOR WHICH LOOSE SEDIMENTS CAN BE CONTROLLED AND ACTIVE ROADWAYS AND STORMWATER DRAINAGE FEATURES CAN BE PROTECTED. MAINTAIN ACTIVE ROADWAYS FREE OF PROJECT SEDIMENTATION.*
3. *PLANT BED PREPARATION*
4. *PLANTING*
5. *IRRIGATION TRENCHING*
6. *ONCE DISTURBED SOILS IN COMPLETED PROJECT AREAS HAVE BEEN STABILIZED, AND AS AUTHORIZED OR DIRECTED BY ENGINEER, REMOVE TEMPORARY EROSION CONTROL LOGS*

5. NON-STORM WATER DISCHARGES:
Filter non-storm water discharges, or hold in retention basins, before being allowed to mix with storm water. These discharges consist of, but not limited to, non-polluted ground water, spring water, foundation or footing drain water, water used for dust control or pavement washing and vehicle washwater containing no detergents.

C. OTHER REQUIREMENTS & PRACTICES

1. MAINTENANCE:
Maintain all erosion and sediment controls in good working order. Perform any necessary cleaning/repairs/replacements at the earliest possible date prior to next rain event, but no later than 7 calendar days. Ensure the surrounding ground has dried sufficiently to prevent damage from equipment. "Too Wet" is the only reason for not adhering to timeframes described. When construction activities permanently or temporarily cease and are not expected to resume for 14 or more days on a disturbed portion of the site, stabilization measures must be initiated immediately.

2. INSPECTION:
A TxDOT Inspector will perform a regularly scheduled SW3P inspection every 7 calendar days. An Inspection and Maintenance Report, signed by the TxDOT Inspector and the Contractor, will be filed for each Inspection. Revise/clean/repair/replace each BMP control device in accordance with the current Field Inspection and Maintenance Report (Form 2118) and Item 1 (Maintenance) above.

3. WASTE MATERIALS:
On a daily basis, or as may be directed, collect all waste materials, trash and debris from the construction site and deposit into a metal dumpster having a secure cover and which meets all state and local city solid waste management requirements. Empty the dumpster as required by regulation, or as may be directed, at a local approved landfill site. Do not bury construction waste on the construction project site.

4. HAZARDOUS WASTE & SPILL REPORTING:
As a minimum, any products in the following categories are considered to be hazardous: Paints, Acids, Solvents, Fuels, Asphalt Products, Chemical Additives for Soil Stabilization, and Concrete Curing Compounds or Additives. When storing hazardous material on the project site, or at a Project Specific Location, take all practicable precaution to prevent and/or contain any spillage of these materials. In the event of a spill, contact the spill coordinator immediately.

5. SANITARY WASTE:
Use a licensed sanitary waste management contractor to collect all sanitary waste from portable units as may be required by local regulation, or as directed.

6. CONSTRUCTION VEHICLE TRACKING:
On a regular basis, or as may be directed, dampen haul roads for dust control and construct construction entrances/exits. Provide for a motorized broom or vacuum type sweeper to be available on a daily basis, or as may be directed, to remove sediment from paved roadways on project, abutting and traversing the project site.

7. MANAGEMENT PRACTICES:
A. Construct disposal areas, stockpiles, haul roads and PSL's in a manner that will minimize and control the amount of sediment that may enter receiving waters. Do not locate disposal areas in any wetland, waterbody or streambed.
B. Locate construction staging areas, vehicle maintenance and PSL's areas in a manner to minimize the runoff of pollutants.
C. When working in or near a wetland, install and maintain operating soil erosion and sediment controls at all times during construction and isolate the work from the wetland.
D. Clear all waterways as soon as practicable of temporary embankment, temporary bridges, matting, falsework, piling, debris or other obstructions placed during construction operations that are not a part of the finished work.
E. Procedures and/or practices should be taken to control dust.
F. Sediment to be removed from roadways daily or when work begins after weather events if construction activities have ceased due to weather event.

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

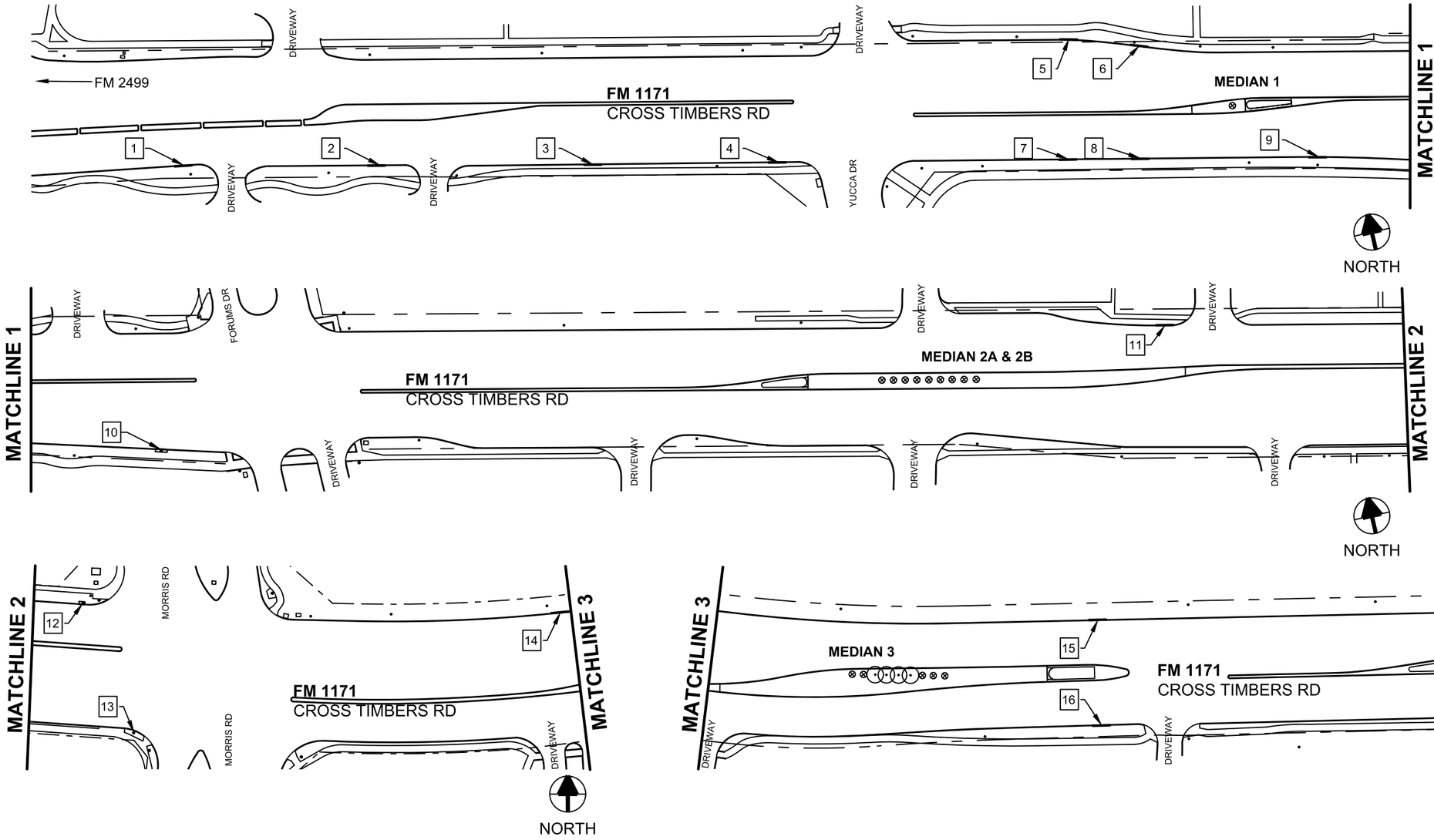
06/25/2021
, P.E.
Signature of Registrant & Date

DALLAS DISTRICT ENVIRONMENTAL

STORM WATER POLLUTION PREVENTION PLAN (SW3P)

TEMPLATE REVISION DATE: 02/07/18

DESIGN	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
XXX	6	SEE TITLE SHEET		FM 1171
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
XXX	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	20
XXX	1311	01	058	
CHECK				
XXX				



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVE EXISTING TREE (SEE DEMOLITION PLANS)
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR PRE INSPECTION AND FOR ANY REPAIRS FROM DAMAGES.
3. BMP'S SHALL NOT BE INSTALLED IN THEIR CONTROL AREA ANY SOONER THAN TWO WEEKS PRIOR TO SOIL DISTURBING ACTIVITIES. BMP LOCATIONS ARE APPROXIMATE - CONTRACTOR TO CONFIRM IN FIELD.
4. SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIME FRAMES.
5. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION. (SUBSIDIARY TO ITEM 110)

BMP	BMP TYPE	DATE INSTALLED	INIT.	DATE REMOVED	INIT.
1	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
2	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
3	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
4	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
5	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
6	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
7	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
8	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				

BMP	BMP TYPE	DATE INSTALLED	INIT.	DATE REMOVED	INIT.
9	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
10	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
11	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
12	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
13	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
14	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
15	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
16	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				

0 100 200 300

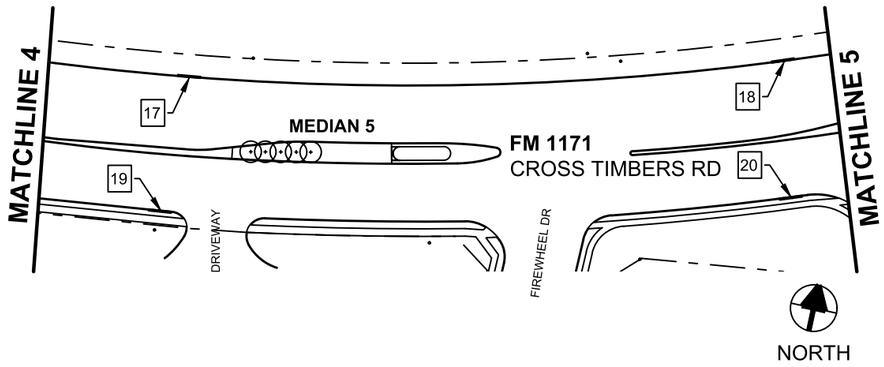
FLOWER MOUND
SW3P LAYOUT
MEDIAN 1-4

SCALE:1" = 100'

Sheet 1 of 4

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	20A
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



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18	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
19	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
20	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
21	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
22	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
23	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
24	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				

LEGEND

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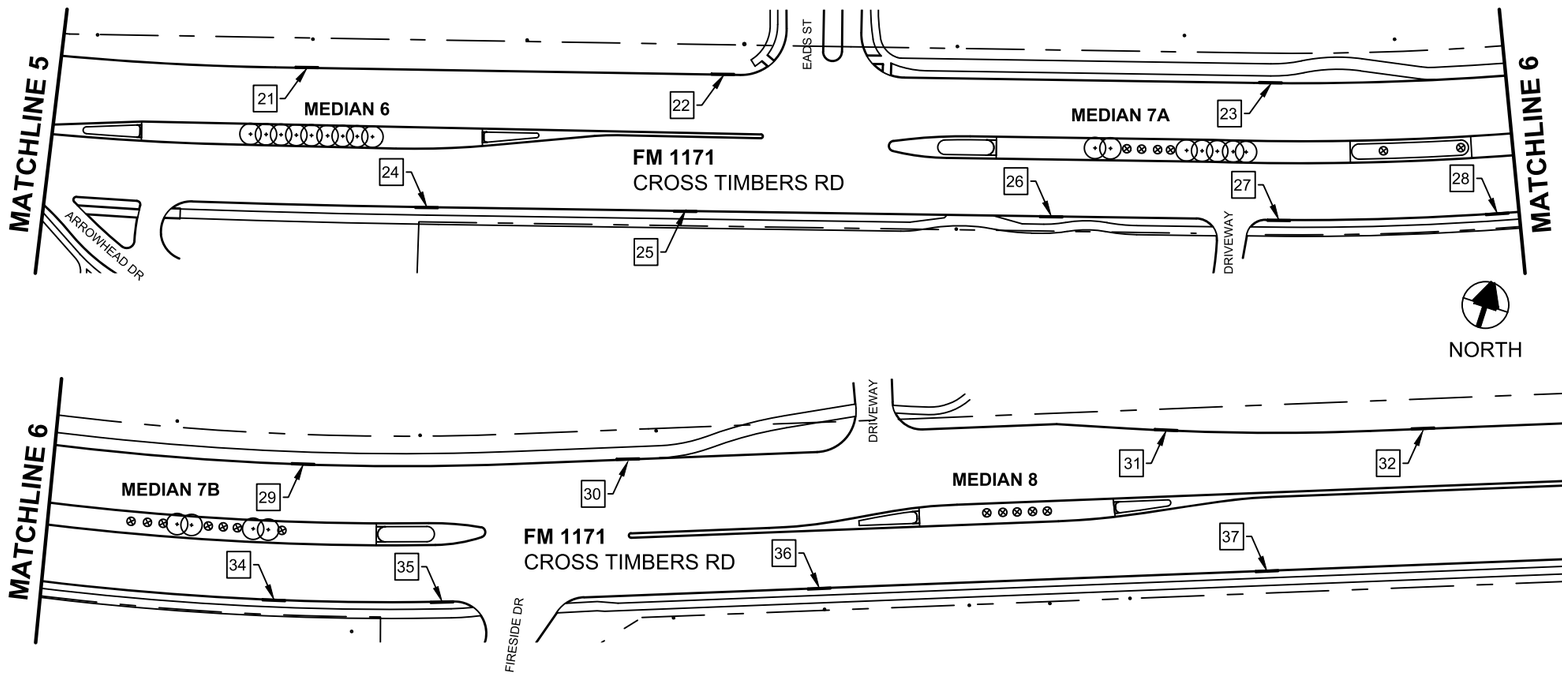

BMP	BMP TYPE	DATE INSTALLED	INIT.	DATE REMOVED	INIT.
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26	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
27	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
28	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
29	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
30	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
31	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
32	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				

BMP	BMP TYPE	DATE INSTALLED	INIT.	DATE REMOVED	INIT.
33	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
34	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
35	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
36	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
37	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				

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REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

0 100 200 300

TEMPLATED REVISED: 10-23-02

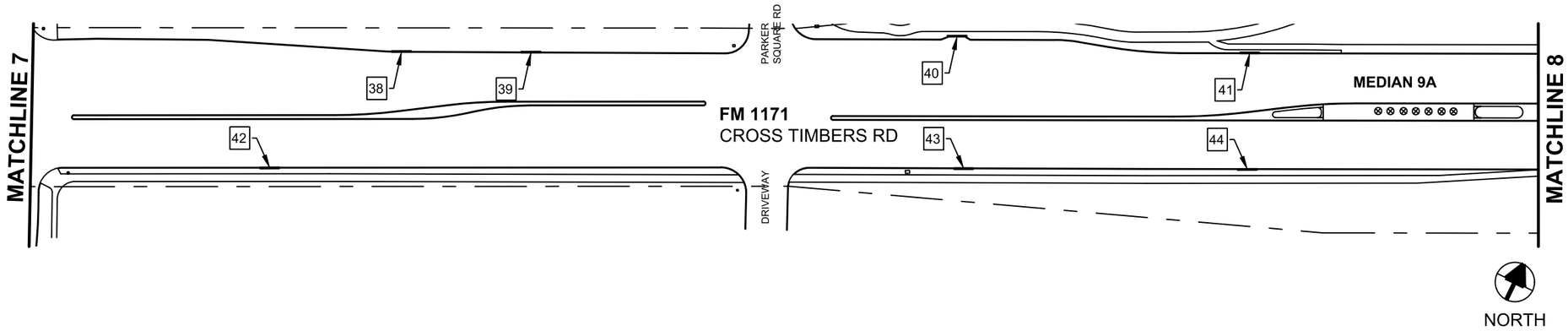
Texas Department of Transportation

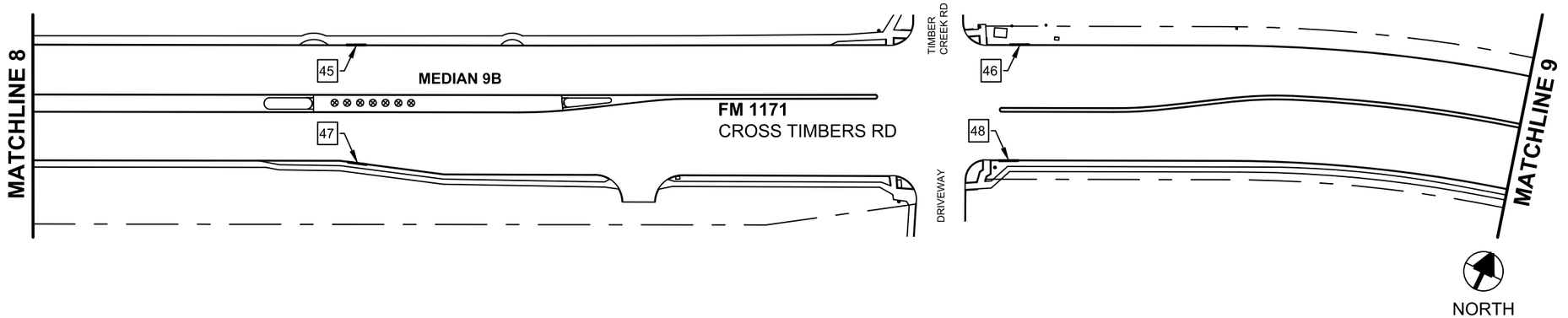
FLOWER MOUND
SW3P LAYOUT
MEDIAN 5-8

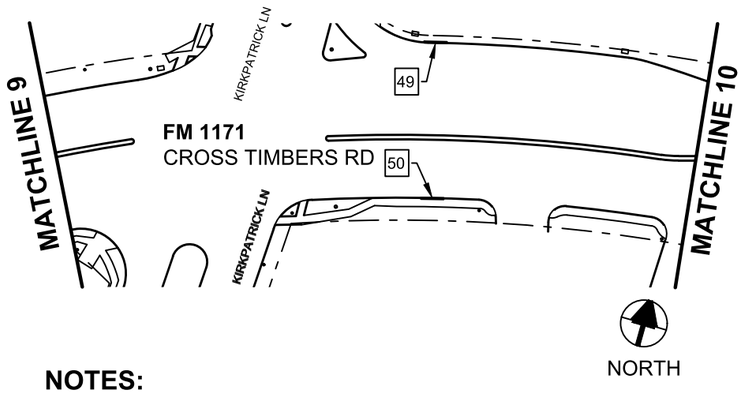
SCALE:1" = 100'

Sheet 2 of 4

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	20B
	1311	01	058	







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BMP	BMP TYPE	DATE INSTALLED	INIT.	DATE REMOVED	INIT.
38	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
39	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
40	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
41	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
42	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
43	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
44	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
45	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
46	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
47	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
48	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
49	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
50	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				

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REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

0 100 200 300

Texas Department of Transportation

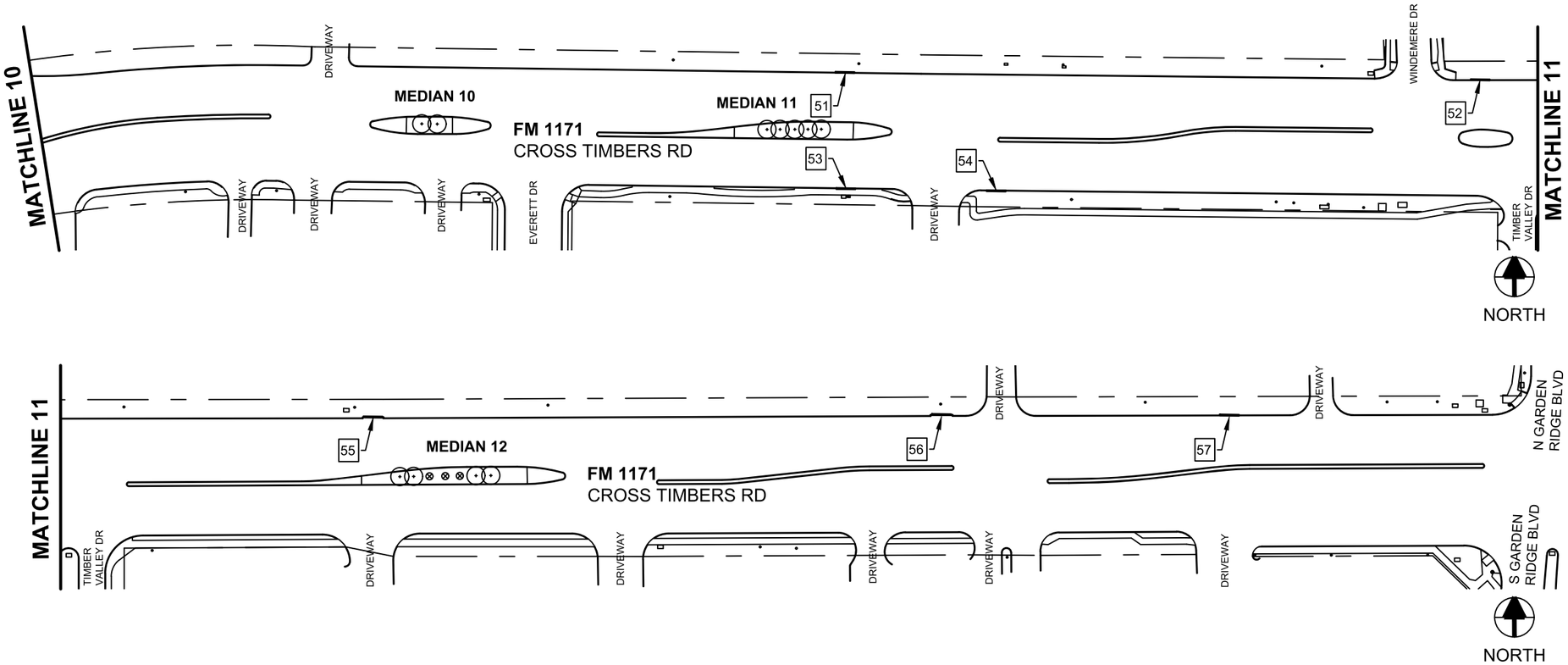
FLOWER MOUND
SW3P LAYOUT
MEDIAN 9A-9B

SCALE:1" = 100'

Sheet 3 of 4

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	20C
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



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BMP	BMP TYPE	DATE INSTALLED	INIT.	DATE REMOVED	INIT.
51	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
52	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
53	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
54	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
55	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
56	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				
57	(20 LF) EROSION CONTROL LOG - REFERENCE TXDOT DETAIL EC(9)-16				

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

0 100 200 300

Texas Department of Transportation
© 2021

FLOWER MOUND
SW3P LAYOUT
MEDIAN 10-12

SCALE:1" = 100'

Sheet 4 of 4

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	20D
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damage resulting from its use.

I. STORMWATER POLLUTION PREVENTION PLAN-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.
List adjacent MS 4 Operator(s) that receive discharges from this project. They need to be notified prior to construction activities.
(Note: Leave blank only if no adjacent MS 4 Operator(s) are affected.)

1. City of Flower Mound Phase II MS4 contact Matthew Green, Environmental Review Analyst
2.

☐ No Action Required ☒ Required Action

Action Number:

1. Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000.
2. Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.
3. Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.
4. When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, submit NOI to TCEQ and the Engineer.

II. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS CLEAN WATER ACT SECTIONS 401 AND 404

USACE Permit required for filling, dredging, excavating or other work in any water bodies, rivers, creeks, streams, wetlands or wet areas. No equipment is allowed in any sream channel below the ordinary High Water Mark except on approved temporary stream crossings or drill pads.

The Contractor must adhere to all of the terms and conditions associated with the following permit(s):

☒ No Permit Required
☐ Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)
☐ Nationwide Permit 14 - PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)
☐ Individual 404 Permit Required
☐ Other Nationwide Permit Required: NWP# 3(a)

Required Actions: List Waters of the US Permit applies to, location in project and check Best Management Practices planned to control erosion, sedimentation and post-project TSS.
1.
2.
3.

The elevation of the ordinary high water marks of any areas requiring work to be performed in the waters of the US requiring the use of a nationwide permit can be found on the Bridge Layouts.

Best Management Practices for applicable 401 General Conditions:
(Note: If CORP Permit not required, do not check boxes.)

Erosion	Sedimentation	Post-Construction TSS
☐ Temporary Vegetation	☐ Silt Fence	☐ Vegetative Filter Strips
☐ Blankets/Matting	☐ Rock Berm	☐ Retention/Irrigation Systems
☐ Mulch	☐ Triangular Filter Dike	☐ Extended Detention Basin
☐ Sodding	☐ Sand Bag Berm	☐ Constructed Wetlands
☐ Interceptor Swale	☐ Straw Bale Dike	☐ Wet Basin
☐ Diversion Dike	☐ Brush Berms	☐ Erosion Control Compost
☐ Erosion Control Compost	☐ Erosion Control Compost	☐ Mulch Filter Berm and Socks
☐ Mulch Filter Berm and Socks	☐ Mulch Filter Berm and Socks	☐ Compost Filter Berm and Socks
☒ Compost Filter Berm and Socks	☒ Compost Filter Berm and Socks	☐ Vegetation Lined Ditches
	☐ Stone Outlet Sediment Traps	☐ Sand Filter Systems
	☐ Sediment Basins	☐ Grassy Swales

III. CULTURAL RESOURCES

Refer to TxDOT Standard Specifications in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.

☒ No Action Required ☐ Required Action

Action Number:

1.
2.
3.

IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practical.
Contractor must adhere to Construction Specification Requirements Specs 162, 164, 192, 193, 506, 730, 751 & 752 in order to comply with requirements for invasive species, beneficial landscaping and tree/brush removal commitments.

☒ No Action Required ☐ Required Action

Action Number:

1.
2.
3.
4.

V. FEDERAL LISTED, PROPOSED THREATENED, ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES, CANDIDATE SPECIES AND MIGRATORY BIRDS TREATY ACT.

☒ No Action Required ☐ Required Action

Action Number:
1.
2.
3.
4.

If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediated area, and contact the Engineer immediately.

Special Note: The Migratory Bird Act of 1918 states that it is unlawful to kill, capture, collect, possess, buy, sell, trade or transport any migratory bird, nest, young, feather or egg in part or in whole, without a federal permit issued in accordance within the Act's policies and regulations. The contractor would remove all old migratory bird nests from any structure or trees where work would be done from October 1 to February 15. In addition, the contractor would be prepared to prevent migratory birds from building nest(s) between February 15 to October 1. In the event that migratory birds are encountered on-site during project construction, efforts to avoid adverse impacts on protected birds, active nests, eggs and/or young would be observed.

LIST OF ABBREVIATIONS

BMP:	Best Management Practice	SPCC:	Spill Prevention Control and Countermeasure
CGP:	Construction General Permit	SW3P:	Storm Water Pollution Prevention Plan
DSHS:	Texas Department of State Health Services	PCN:	Pre-Construction Notification
FHWA:	Federal Highway Administration	PSL:	Project Specific Location
MOA:	Memorandum of Agreement	TCEQ:	Texas Commission on Environmental Quality
MOU:	Memorandum of Understanding	TPDES:	Texas Pollutant Discharge Elimination System
MS4:	Municipal Separate Stormwater Sewer System	TPWD:	Texas Parks and Wildlife Department
MBTA:	Migratory Bird Treaty Act	TxDOT:	Texas Department of Transportation
NOT:	Notice of Termination	T&E:	Threatened and Endangered Species
NWP:	Nationwide Permit	USACE:	U.S. Army Corp of Engineers
NOI:	Notice of Intent	USFWS:	U.S. Fish and Wildlife Service

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):
Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

Obtain and keep on-site Safety Data Sheets (SDS) for all hazardous products used on the project, which may include, but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the Act. Maintain an adequate supply of on-site spill response materials, as indicated in the SDS. In the event of a spill, take actions to mitigate the spill as indicated in the SDS, in accordance with safe work practices, and contact the District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:
* Dead or distressed vegetation (not identified as normal)
* Trash piles, drums, canisters, barrels, etc.
* Undesirable smells or odors
* Evidence of leaching or seepage of substances

Does the project involve any bridge class structure rehabilitation(s) or replacement(s) (bridge class structures not including box culverts)?

☐ Yes ☒ No

If "No", then no further action is required.
If "Yes", then TxDOT is responsible for completing asbestos assessment/inspection.

Are the results of the asbestos inspection positive (is asbestos present)?

☐ Yes ☐ No

If "Yes", then TxDOT must retain a DSHS licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

In either case, the Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and asbestos consultant in order to minimize construction delays and subsequent claims.

Any other evidence indicating possible hazardous materials or contamination discovered on site. Hazardous Materials or Contamination Issues Specific to this Project:

☒ No Action Required ☐ Required Action

Action Number:

1.
2.
3.

VII. OTHER ENVIRONMENTAL ISSUES

(includes regional issues such as Edwards Aquifer District, etc.)

☒ No Action Required ☐ Required Action

Action Number:

1.

GENERAL NOTE:

Any change orders and/or deviations from the final design must be reported to the Engineer prior to commencement of construction activities, as additional environmental clearance may be required.

LAST REVISION: 1/15/15

Dallas District

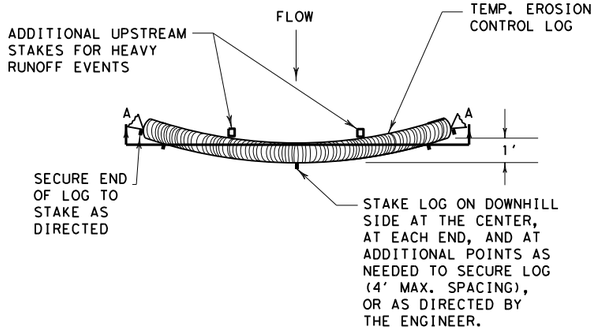
ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPIC)

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		FM 1171
STATE	DISTRICT	COUNTY	
TEXAS	DALLAS	Denton	
CONTROL	SECTION	JOB	SHEET NO.
1311	01	058	21

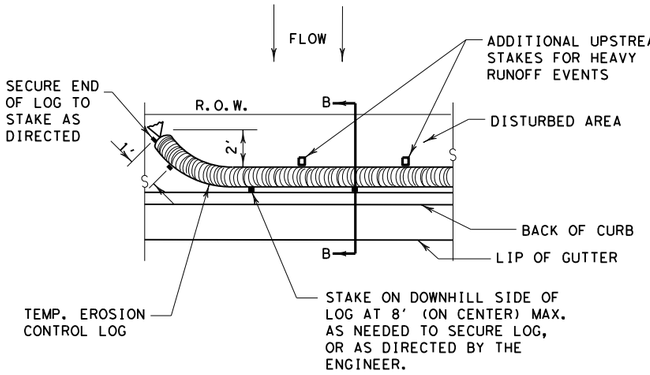
Notes To Designer:
1. *Do not alter Sheet Design or Font style, size or weight - match text attributes.*
2. *If additional space is needed for a numbered section, fence and adjust sections up or down as needed for proportioning and readability but do not relocate from its relative position.*
3. *All areas should be addressed thoroughly and verify the necessary pay items are set up to support actions needed.*

Filled Out: XX/XX/XXXX
Prepared by: Name/Section

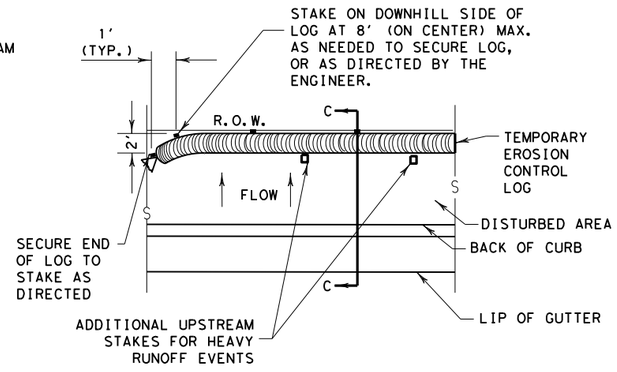
DATE:
FILE:



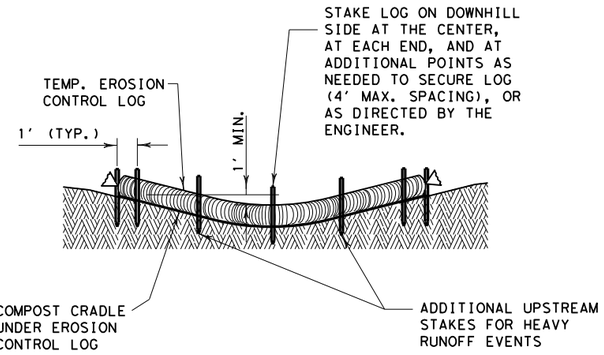
PLAN VIEW



PLAN VIEW



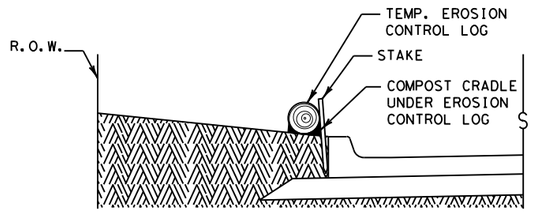
PLAN VIEW



SECTION A-A

EROSION CONTROL LOG DAM

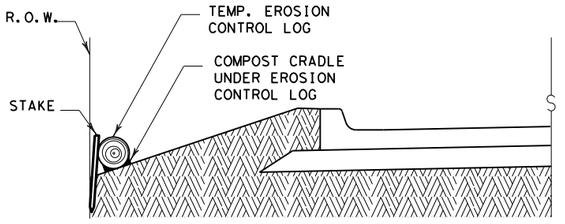
CL-D



SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

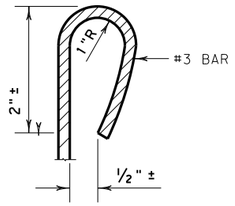
CL-BOC



SECTION C-C

EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



REBAR STAKE DETAIL

GENERAL NOTES:

1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
4. FILL LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE THE MINIMUM COMPACTED DIAMETER SPECIFIED IN THE PLANS WITHOUT EXCESSIVE DEFORMATION.
5. STAKES SHALL BE 2" X 2" WOOD OR #3 REBAR, 2'-4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED BY THE ENGINEER.
6. DO NOT PLACE STAKES THROUGH CONTAINMENT MESH.
7. COMPOST CRADLE MATERIAL IS INCIDENTAL & WILL NOT BE PAID FOR SEPARATELY.
8. SANDBAGS USED AS ANCHORS SHALL BE PLACED ON TOP OF LOGS & SHALL BE OF SUFFICIENT SIZE TO HOLD LOGS IN PLACE.
9. TURN THE ENDS OF EACH ROW OF LOGS UPSLOPE TO PREVENT RUNOFF FROM FLOWING AROUND THE LOG.
10. FOR HEAVY RUNOFF EVENTS, ADDITIONAL UPSTREAM STAKES MAY BE NECESSARY TO KEEP LOG FROM FOLDING IN ON ITSELF.

LEGEND

CL-D	EROSION CONTROL LOG DAM
CL-BOC	EROSION CONTROL LOG AT BACK OF CURB
CL-ROW	EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY
CL-SST	EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING
CL-SSL	EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING
CL-DI	EROSION CONTROL LOG AT DROP INLET
CL-CI	EROSION CONTROL LOG AT CURB INLET
CL-GI	EROSION CONTROL LOG AT CURB & GRATE INLET

SEDIMENT BASIN & TRAP USAGE GUIDELINES

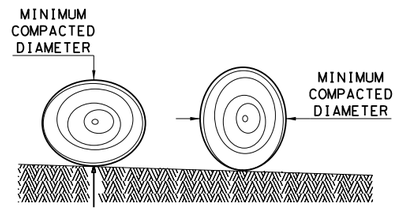
An erosion control log sediment trap may be used to filter sediment out of runoff draining from an unstabilized area.

Log Traps: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Control logs should be placed in the following locations:
1. Within drainage ditches spaced as needed or min. 500' on center
2. Immediately preceding ditch inlets or drain inlets
3. Just before the drainage enters a water course
4. Just before the drainage leaves the right of way
5. Just before the drainage leaves the construction limits where drainage flows away from the project.

The logs should be cleaned when the sediment has accumulated to a depth of 1/2 the log diameter.

Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

SHEET 1 OF 3

Texas Department of Transportation

Design Division Standard

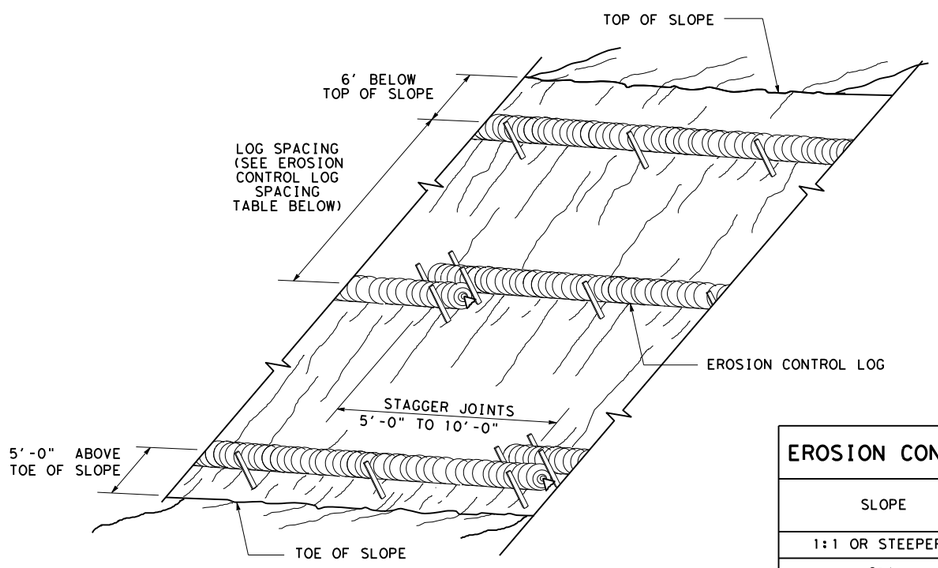
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

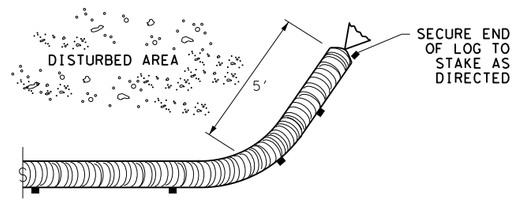
FILE: ec916	DN: TxDOT		CK: KM		DW: LS/PT	CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB		HIGHWAY	
REVISIONS	1311	01	058		FM 1171	
	DIST		COUNTY			SHEET NO.
	DAL		DENTON			22

DATE:
FILE:



EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING

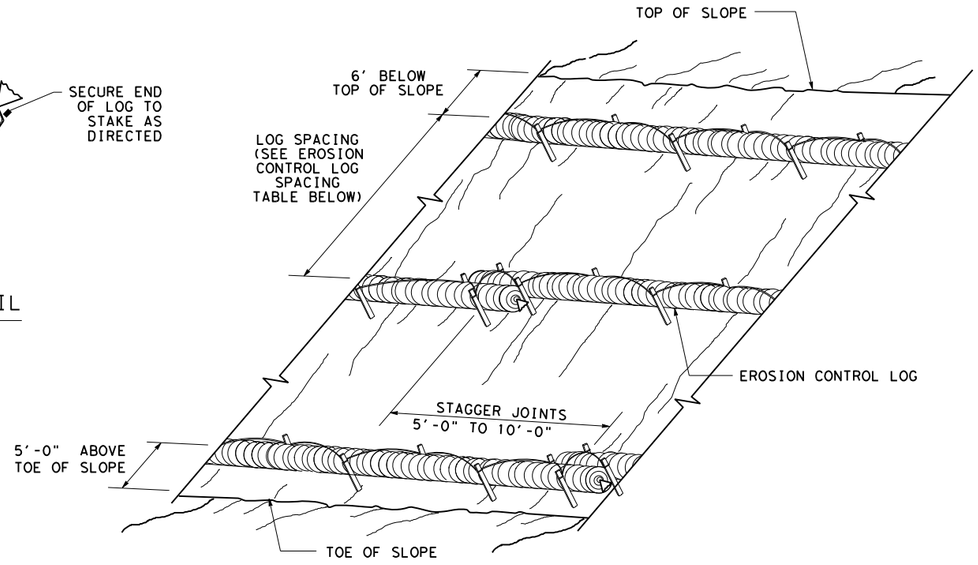
CL-SST



END SECTION RAP DETAIL

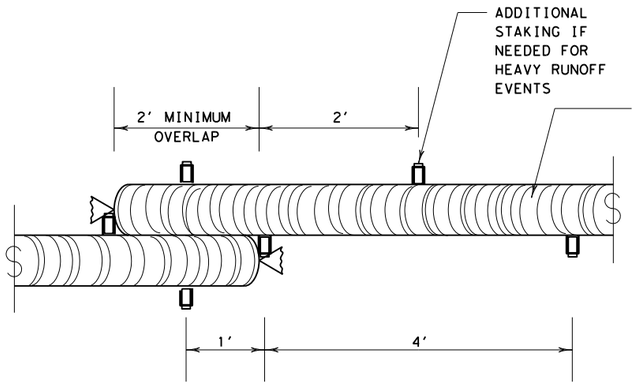
EROSION CONTROL LOG SPACING TABLE				
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

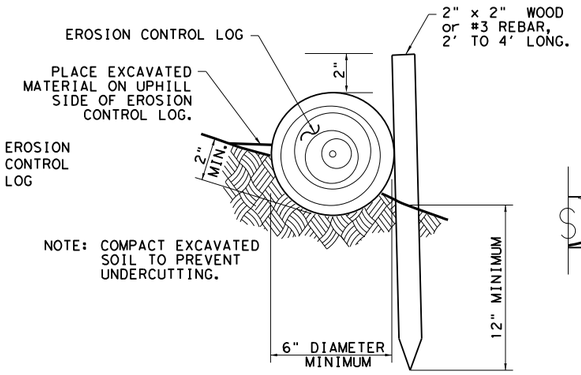
* ADJUSTMENTS CAN BE MADE FOR SOIL TYPE:
SOFT, LOAMY SOILS-ADJUST ROWS CLOSER TOGETHER;
HARD, ROCKY SOILS- ADJUST ROWS FARTHER APART



EROSION CONTROL LOGS ON SLOPES
STAKE AND LASHING ANCHORING

CL-SSL

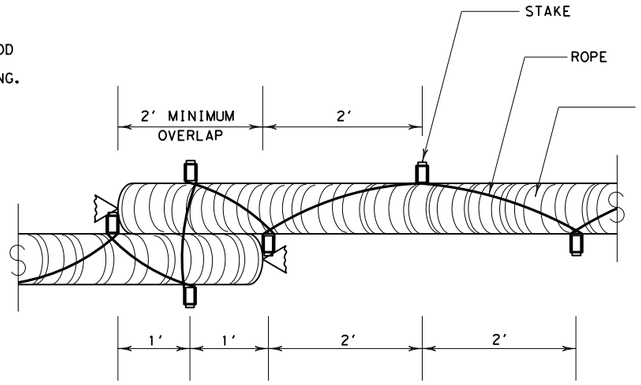


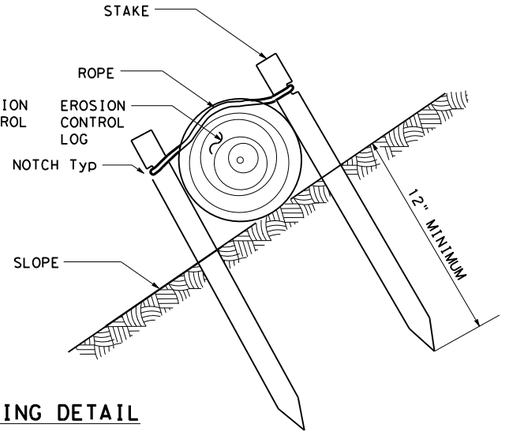


STAKE AND TRENCHING ANCHORING DETAIL

CL-SST

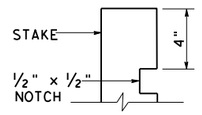
TRENCH DEPTH TABLE	
LOG DIAMETER	DEPTH
6"	2"
8"	3"
12"	4"
18"	5"





STAKE AND LASHING ANCHORING DETAIL

CL-SSL



STAKE NOTCH DETAIL

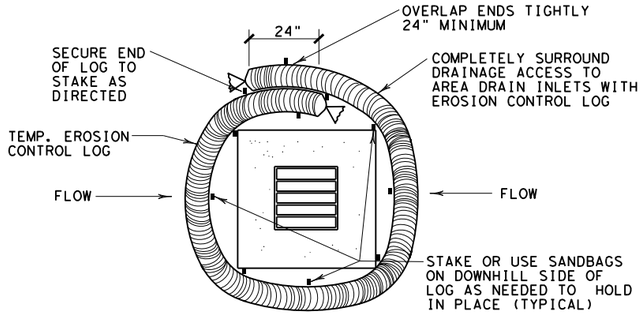
Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES
EROSION CONTROL LOG
EC(9)-16

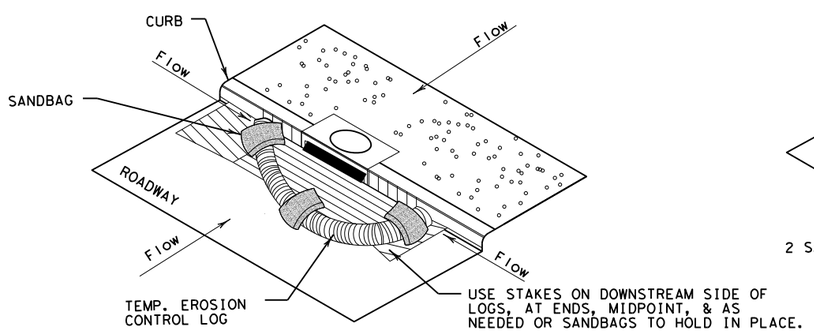
FILE: ec116	DN: TxDOT		CK: KM	DW: LS/PT		CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB		HIGHWAY	
REVISIONS	1311	01	058		FM 1171	
	DIST	COUNTY				SHEET NO.
	DAL	DENTON				23

DATE:
FILE:



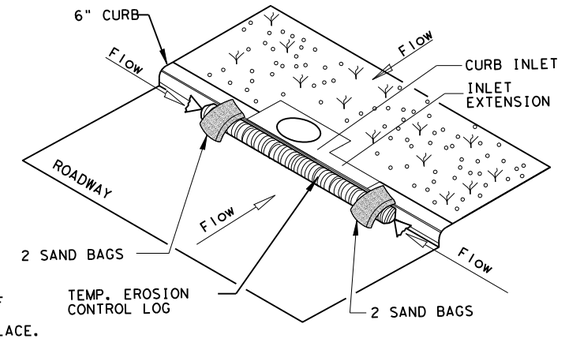
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

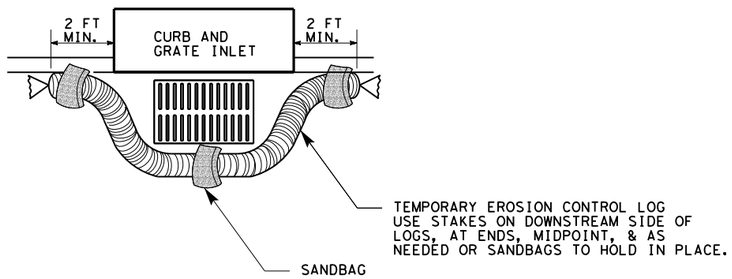
CL-CI



EROSION CONTROL LOG AT CURB INLET

CL-CI

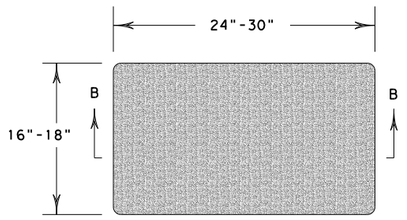
NOTE:
EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI

SECTION B-B



SANDBAG DETAIL

SHEET 3 OF 3

Texas Department of Transportation

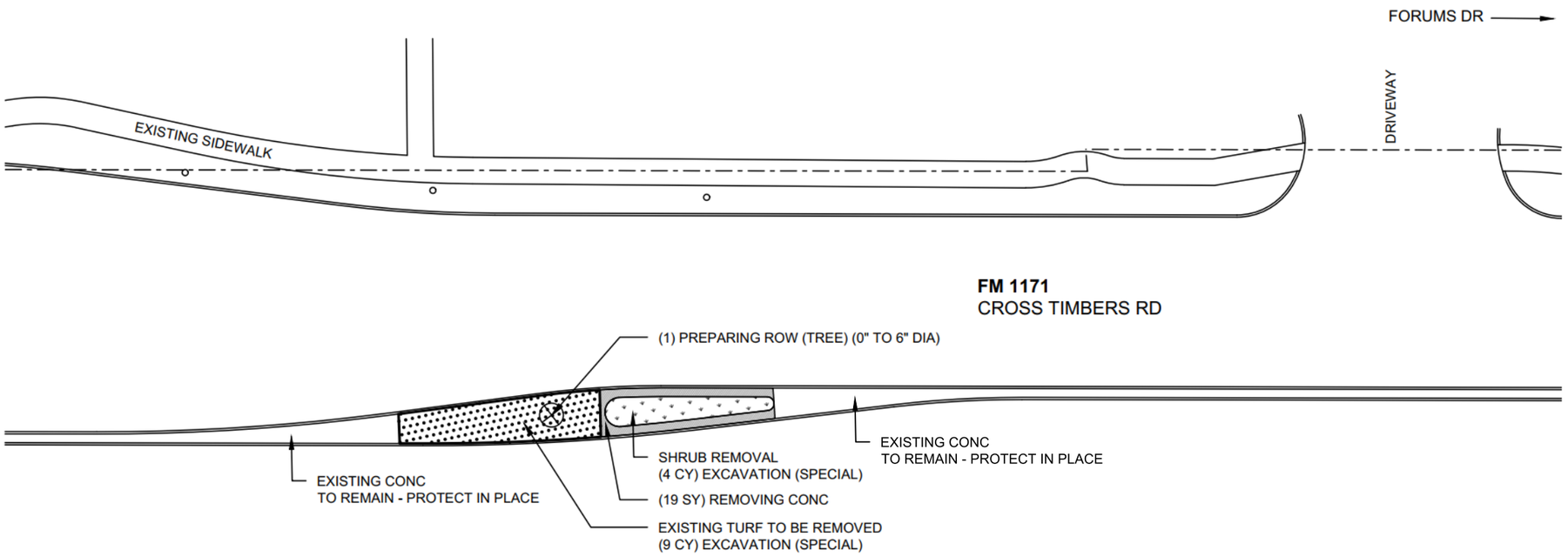
Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT		CK: KM	DW: LS/PT		CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB		HIGHWAY	
REVISIONS	1311	01	058		FM 1171	
	DIST	COUNTY				SHEET NO.
	DAL	DENTON				24



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVING CONC
- SHRUB REMOVAL EXCAVATION (SPECIAL)
- REMOVE EXISTING TREE

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR PRE INSPECTION AND FOR ANY REPAIRS FROM DAMAGES.
3. SAWCUT AND REMOVE CONCRETE AS SHOWN ON PLANS. LEAVE EXPOSED EDGE OF CONCRETE TO REMAIN SMOOTH.
4. FOR ITEM 110-6003, EXCAVATION (SPECIAL): REMOVE EXISTING TURF, SOIL, SHRUBS, AND EXISTING IRRIGATION COMPONENTS (WITH EXCEPTION OF IRRIGATION MAINLINE) AS SHOWN ON PLANS. HAND TOOLS ONLY WITHIN 10' RADIUS FROM CENTER OF EXISTING TREES TO REMAIN. SEE SHEETS 79-80 FOR EXCAVATION DEPTHS.
5. FOR PREPARING ROW (TREE) (0" TO 6" DIA), GRIND STUMPS MIN. 6" BELOW GRADE.
6. PROTECT EXISTING SIGNS IN PLACE (SUBSIDIARY TO ITEM 110).

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

Texas Department of Transportation

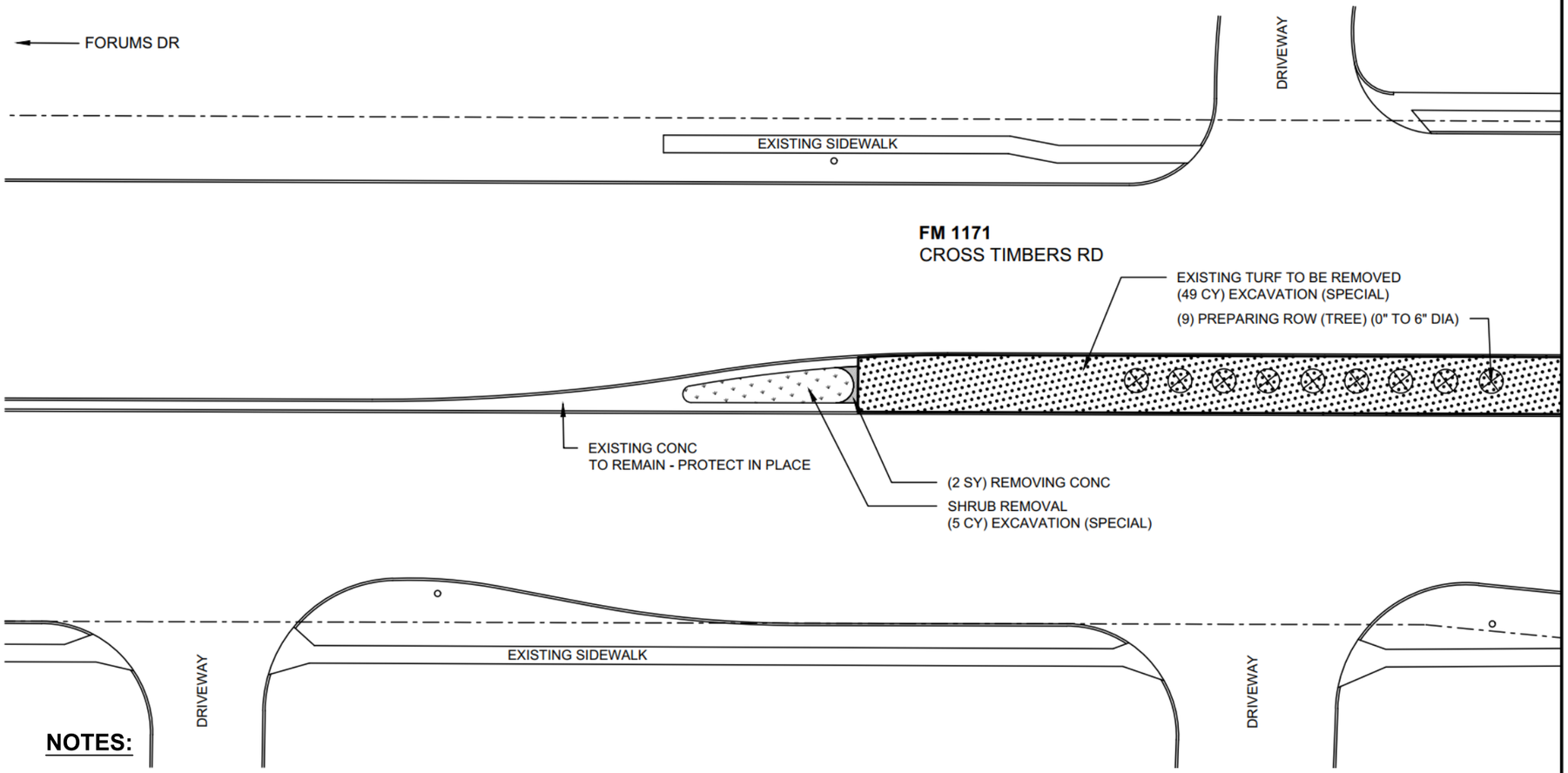
FLOWER MOUND
DEMOLITION PLAN
MEDIAN 1

SCALE: 1" = 30'

Sheet 1 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	25
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



MATCHLINE A

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVING CONC
- SHRUB REMOVAL EXCAVATION (SPECIAL)
- REMOVE EXISTING TREE

NOTES:

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5. FOR PREPARING ROW (TREE) (0" TO 6" DIA), GRIND STUMPS MIN. 6" BELOW GRADE.
6. PROTECT EXISTING SIGNS IN PLACE (SUBSIDIARY TO ITEM 110).

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

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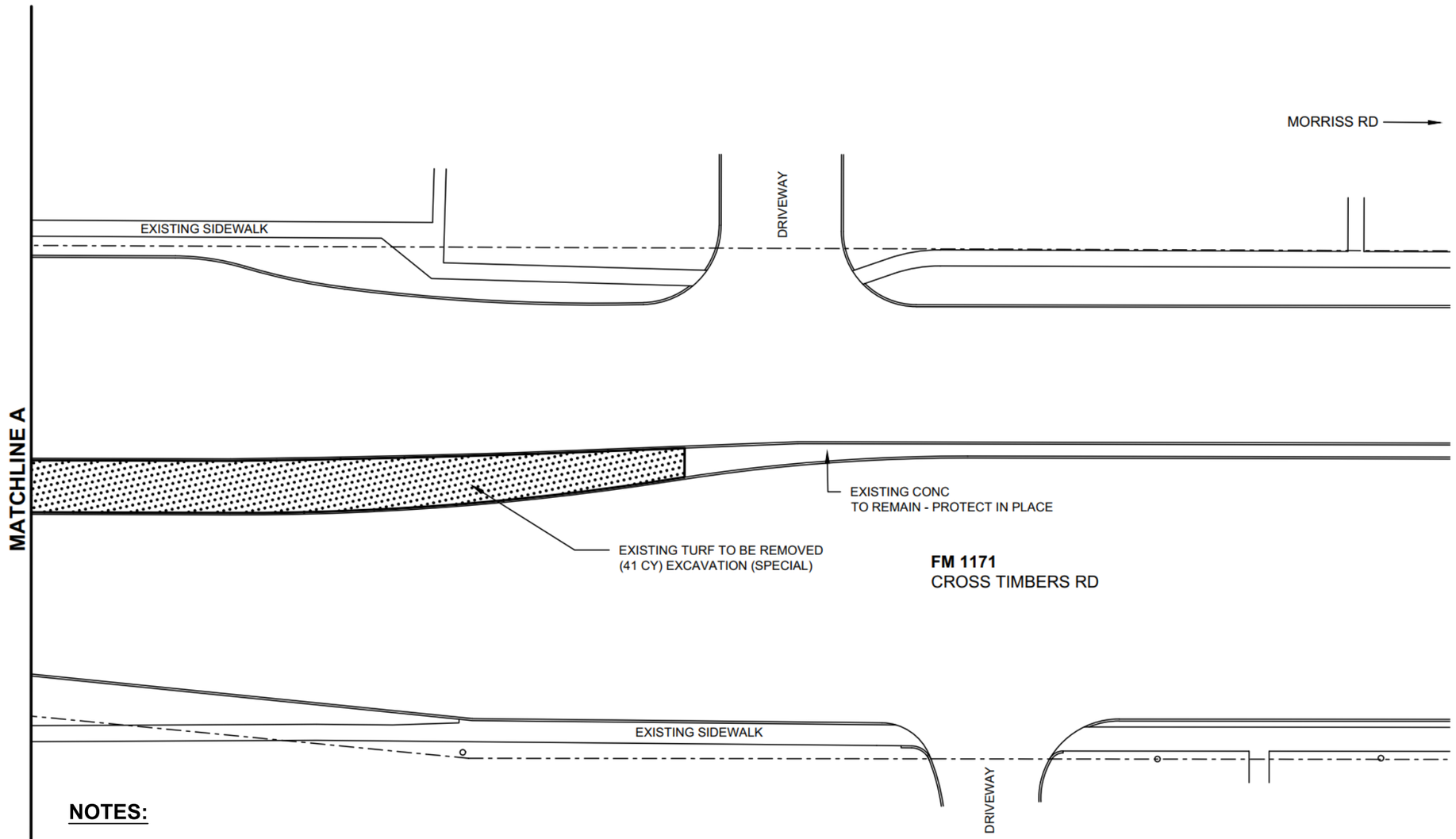
Texas Department of Transportation

FLOWER MOUND
DEMOLITION PLAN
MEDIAN 2A

SCALE: 1" = 30'

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	26
	1311	01	058	

TEMPLATED REVISED: 10-23-02



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
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REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

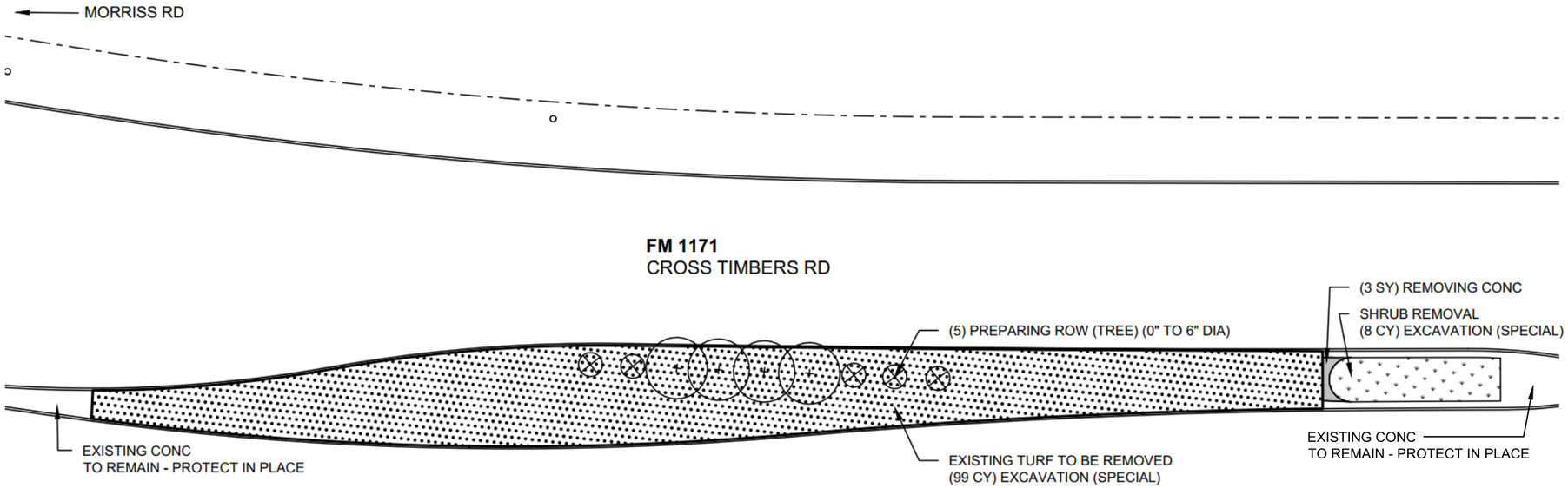
0 30 60 90

FLOWER MOUND
DEMOLITION PLAN
MEDIAN 2B

SCALE: 1" = 30'

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	27
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVING CONC
- SHRUB REMOVAL EXCAVATION (SPECIAL)
- REMOVE EXISTING TREE
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR PRE INSPECTION AND FOR ANY REPAIRS FROM DAMAGES.
3. SAWCUT AND REMOVE CONCRETE AS SHOWN ON PLANS. LEAVE EXPOSED EDGE OF CONCRETE TO REMAIN SMOOTH.
4. FOR ITEM 110-6003, EXCAVATION (SPECIAL): REMOVE EXISTING TURF, SOIL, SHRUBS, AND EXISTING IRRIGATION COMPONENTS (WITH EXCEPTION OF IRRIGATION MAINLINE) AS SHOWN ON PLANS. HAND TOOLS ONLY WITHIN 10' RADIUS FROM CENTER OF EXISTING TREES TO REMAIN. SEE SHEETS 79-80 FOR EXCAVATION DEPTHS.
5. FOR PREPARING ROW (TREE) (0" TO 6" DIA), GRIND STUMPS MIN. 6" BELOW GRADE.
6. PROTECT EXISTING SIGNS IN PLACE (SUBSIDIARY TO ITEM 110).
7. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION. (SUBSIDIARY TO ITEM 110)

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

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0 30 60 90

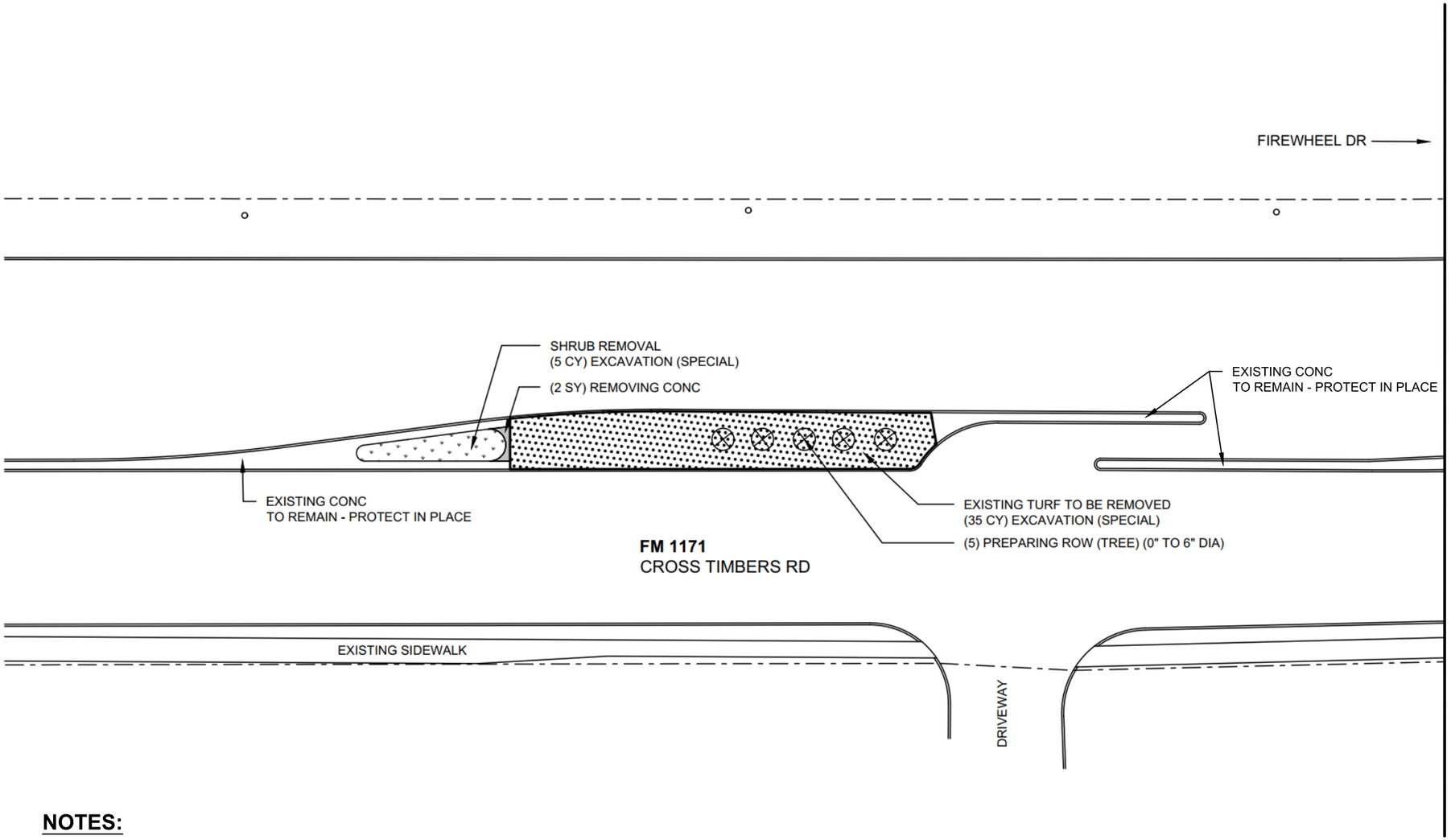
FLOWER MOUND
DEMOLITION PLAN
MEDIAN 3

SCALE: 1" = 30'

Sheet 4 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	28
	CONTROL	SECTION	JOB	
CHECK	1311	01	058	

TEMPLATED REVISED: 10-23-02



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVING CONC
- SHRUB REMOVAL EXCAVATION (SPECIAL)
- REMOVE EXISTING TREE

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

NOTES:

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3. SAWCUT AND REMOVE CONCRETE AS SHOWN ON PLANS. LEAVE EXPOSED EDGE OF CONCRETE TO REMAIN SMOOTH.
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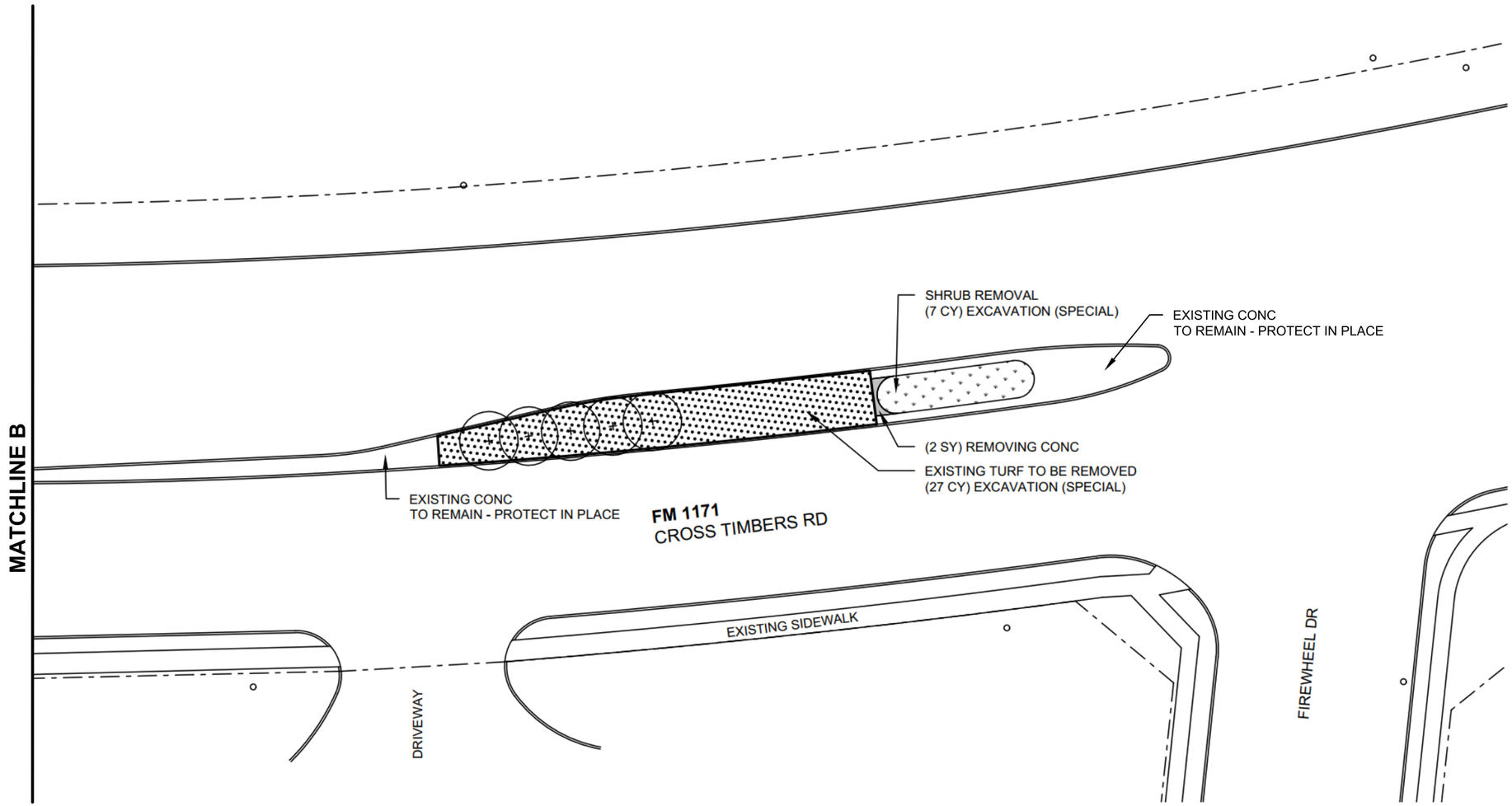
5. FOR PREPARING ROW (TREE) (0" TO 6" DIA), GRIND STUMPS MIN. 6" BELOW GRADE.
6. PROTECT EXISTING SIGNS IN PLACE (SUBSIDIARY TO ITEM 110).

TEMPLATED REVISED: 10-23-02

FLOWER MOUND
DEMOLITION PLAN
MEDIAN 4

SCALE: 1" = 30'

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	29
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVING CONC
- SHRUB REMOVAL EXCAVATION (SPECIAL)
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR PRE INSPECTION AND FOR ANY REPAIRS FROM DAMAGES.
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5. FOR PREPARING ROW (TREE) (0" TO 6" DIA), GRIND STUMPS MIN. 6" BELOW GRADE.
6. PROTECT EXISTING SIGNS IN PLACE (SUBSIDIARY TO ITEM 110).
7. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION. (SUBSIDIARY TO ITEM 110)

TEMPLATED REVISED: 10-23-02

FLOWER MOUND
DEMOLITION PLAN
MEDIAN 5

SCALE: 1" = 30'

Sheet 6 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	30
CHECK	CONTROL	SECTION	JOB	
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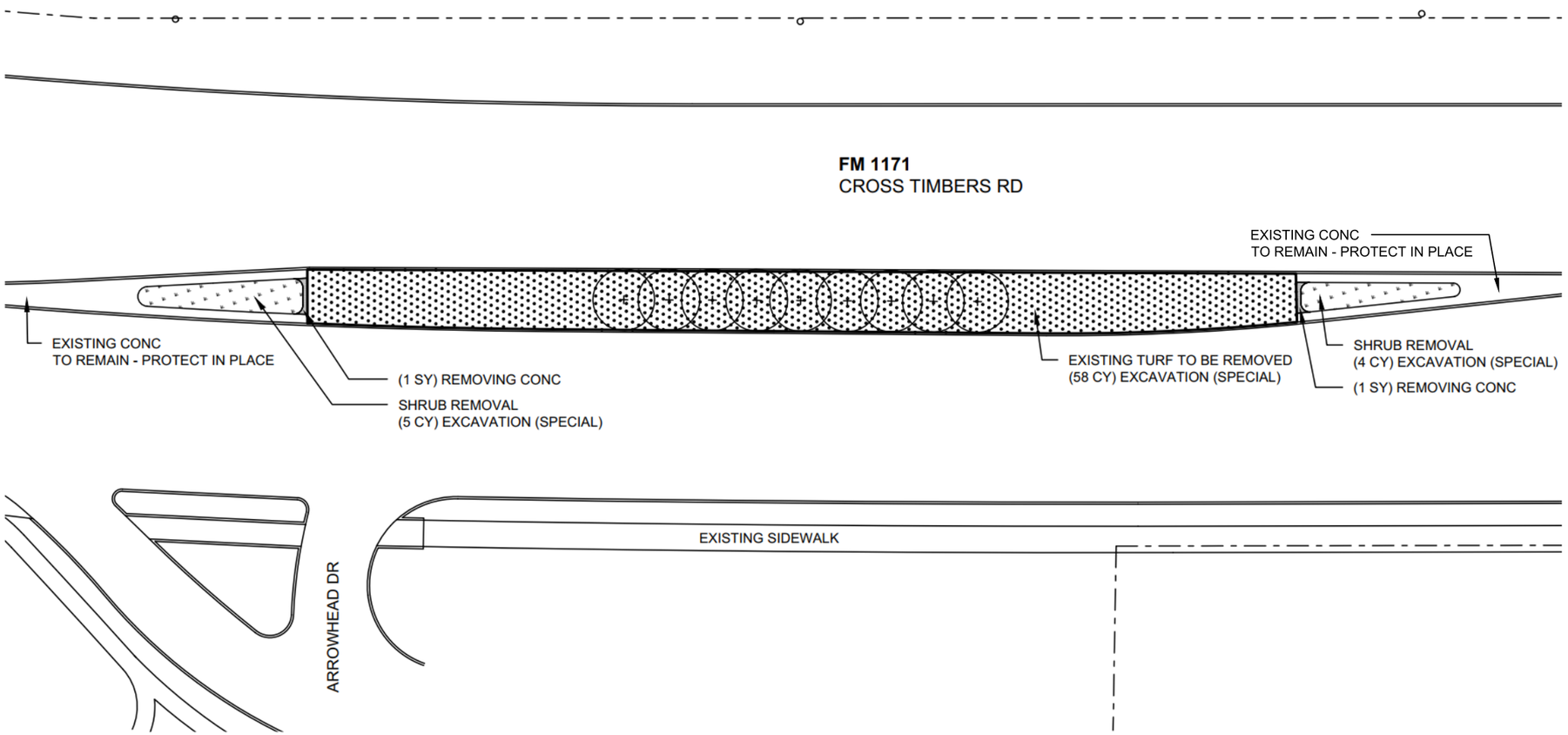


LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVING CONC
- SHRUB REMOVAL EXCAVATION (SPECIAL)
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

NOTES:

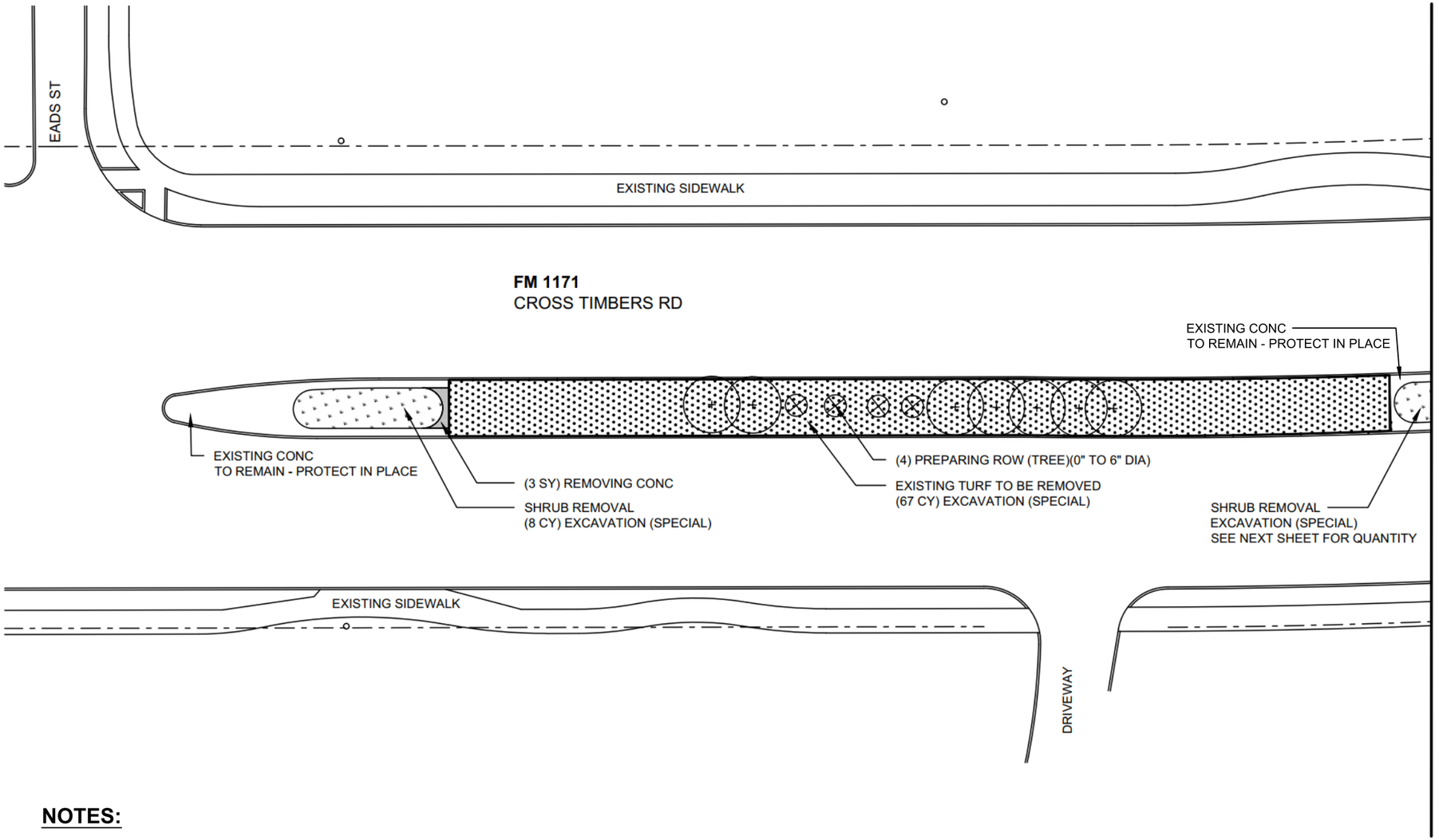
1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR PRE INSPECTION AND FOR ANY REPAIRS FROM DAMAGES.
3. SAWCUT AND REMOVE CONCRETE AS SHOWN ON PLANS. LEAVE EXPOSED EDGE OF CONCRETE TO REMAIN SMOOTH.
4. FOR ITEM 110-6003, EXCAVATION (SPECIAL): REMOVE EXISTING TURF, SOIL, SHRUBS, AND EXISTING IRRIGATION COMPONENTS (WITH EXCEPTION OF IRRIGATION MAINLINE) AS SHOWN ON PLANS. HAND TOOLS ONLY WITHIN 10' RADIUS FROM CENTER OF EXISTING TREES TO REMAIN. SEE SHEETS 79-80 FOR EXCAVATION DEPTHS.
5. FOR PREPARING ROW (TREE) (0" TO 6" DIA), GRIND STUMPS MIN. 6" BELOW GRADE.
6. PROTECT EXISTING SIGNS IN PLACE (SUBSIDIARY TO ITEM 110).
7. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION. (SUBSIDIARY TO ITEM 110)

TEMPLATED REVISED: 10-23-02

FLOWER MOUND
DEMOLITION PLAN
MEDIAN 6

SCALE: 1" = 30'

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	31
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR PRE INSPECTION AND FOR ANY REPAIRS FROM DAMAGES.
3. SAWCUT AND REMOVE CONCRETE AS SHOWN ON PLANS. LEAVE EXPOSED EDGE OF CONCRETE TO REMAIN SMOOTH.
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6. PROTECT EXISTING SIGNS IN PLACE (SUBSIDIARY TO ITEM 110).
7. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION. (SUBSIDIARY TO ITEM 110)

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVING CONC
- SHRUB REMOVAL EXCAVATION (SPECIAL)
- REMOVE EXISTING TREE
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

Texas Department of Transportation

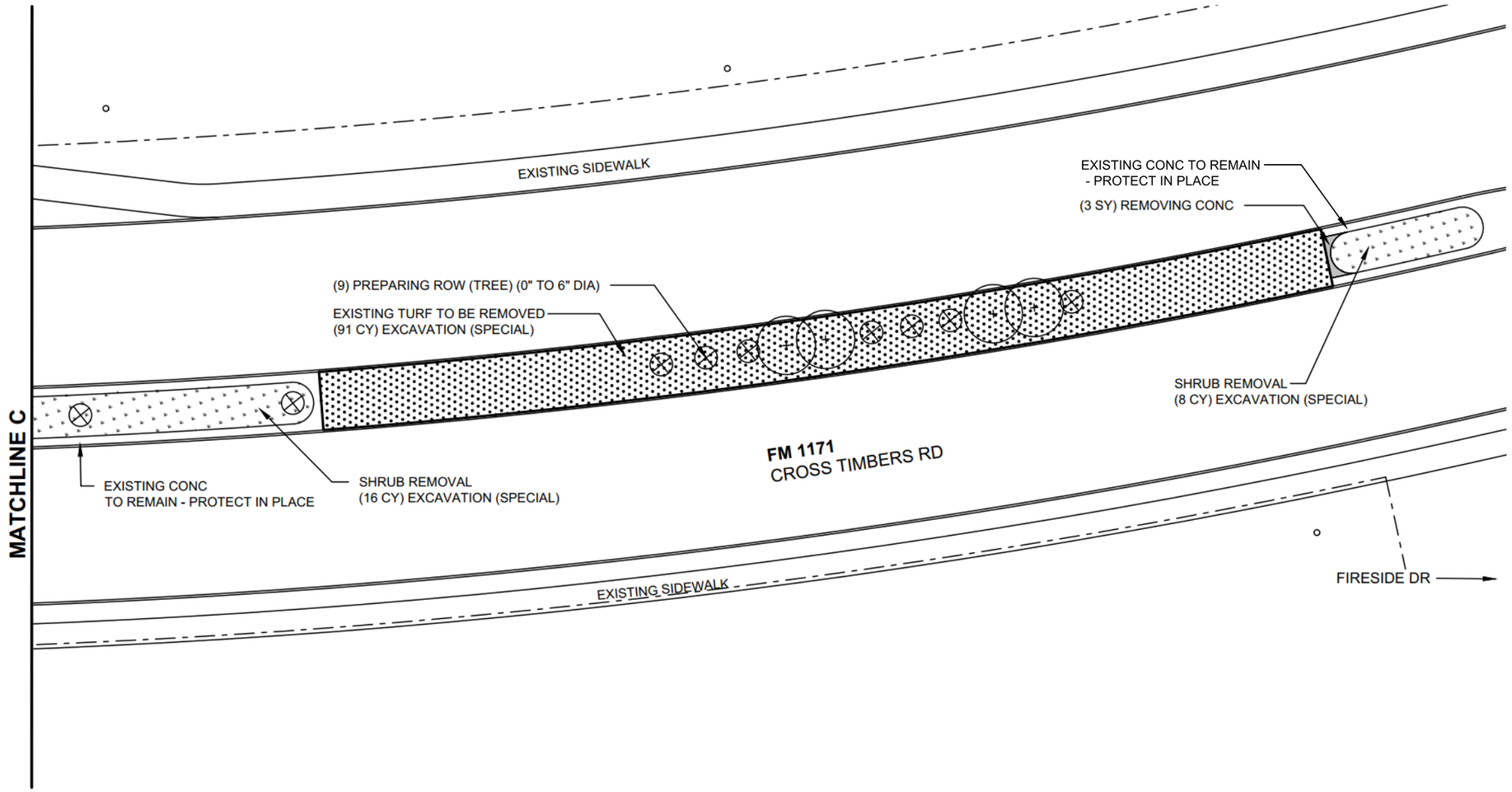
FLOWER MOUND
DEMOLITION PLAN
MEDIAN 7A

SCALE: 1" = 30'

Sheet 8 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	32
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVING CONC
- SHRUB REMOVAL EXCAVATION (SPECIAL)
- REMOVE EXISTING TREE
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR PRE INSPECTION AND FOR ANY REPAIRS FROM DAMAGES.
3. SAWCUT AND REMOVE CONCRETE AS SHOWN ON PLANS. LEAVE EXPOSED EDGE OF CONCRETE TO REMAIN SMOOTH.
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7. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION. (SUBSIDIARY TO ITEM 110)

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

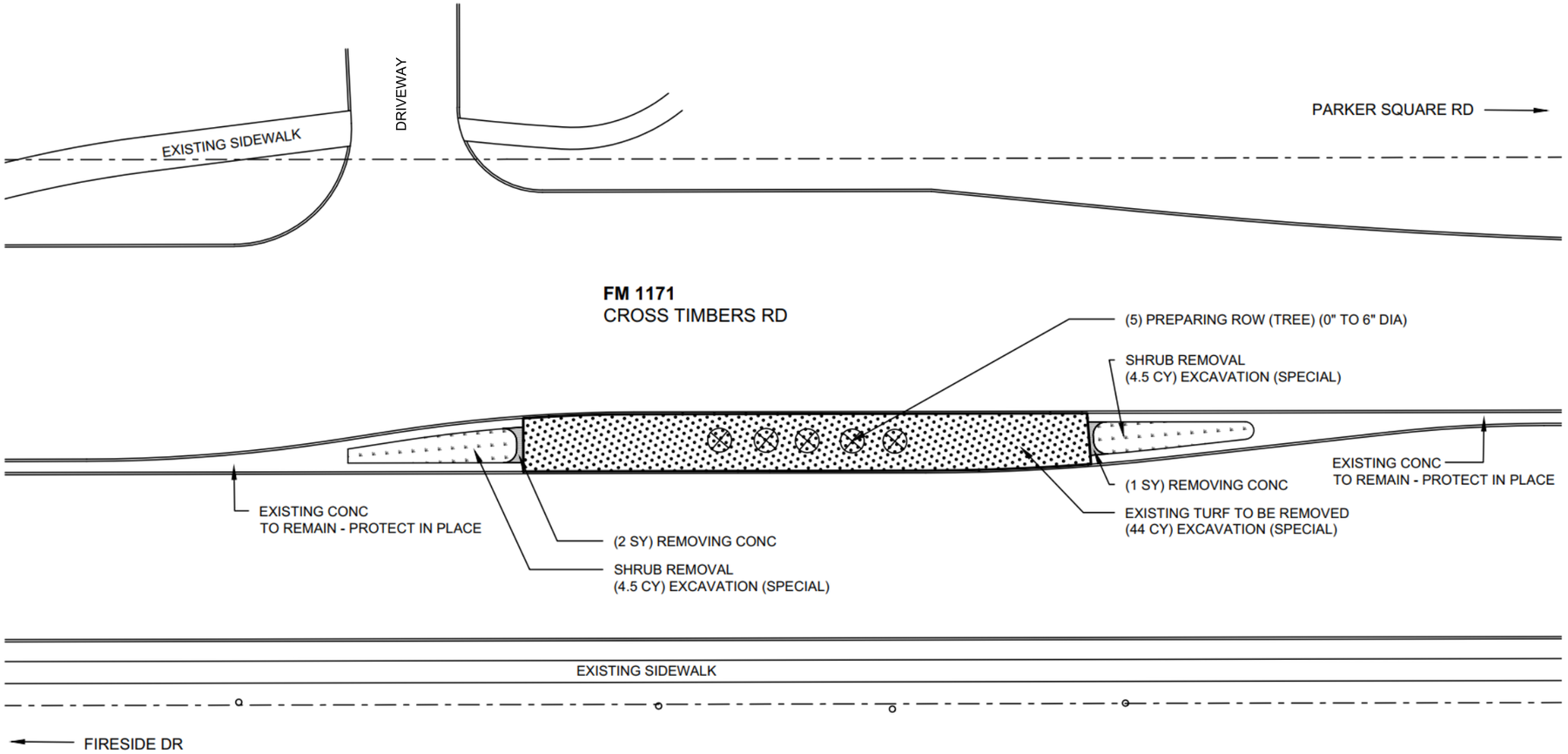
0 30 60 90

FLOWER MOUND
DEMOLITION PLAN
MEDIAN 7B

SCALE: 1" = 30'

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	33
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVING CONC
- SHRUB REMOVAL EXCAVATION (SPECIAL)
- REMOVE EXISTING TREE

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR PRE INSPECTION AND FOR ANY REPAIRS FROM DAMAGES.
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6. PROTECT EXISTING SIGNS IN PLACE (SUBSIDIARY TO ITEM 110).

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

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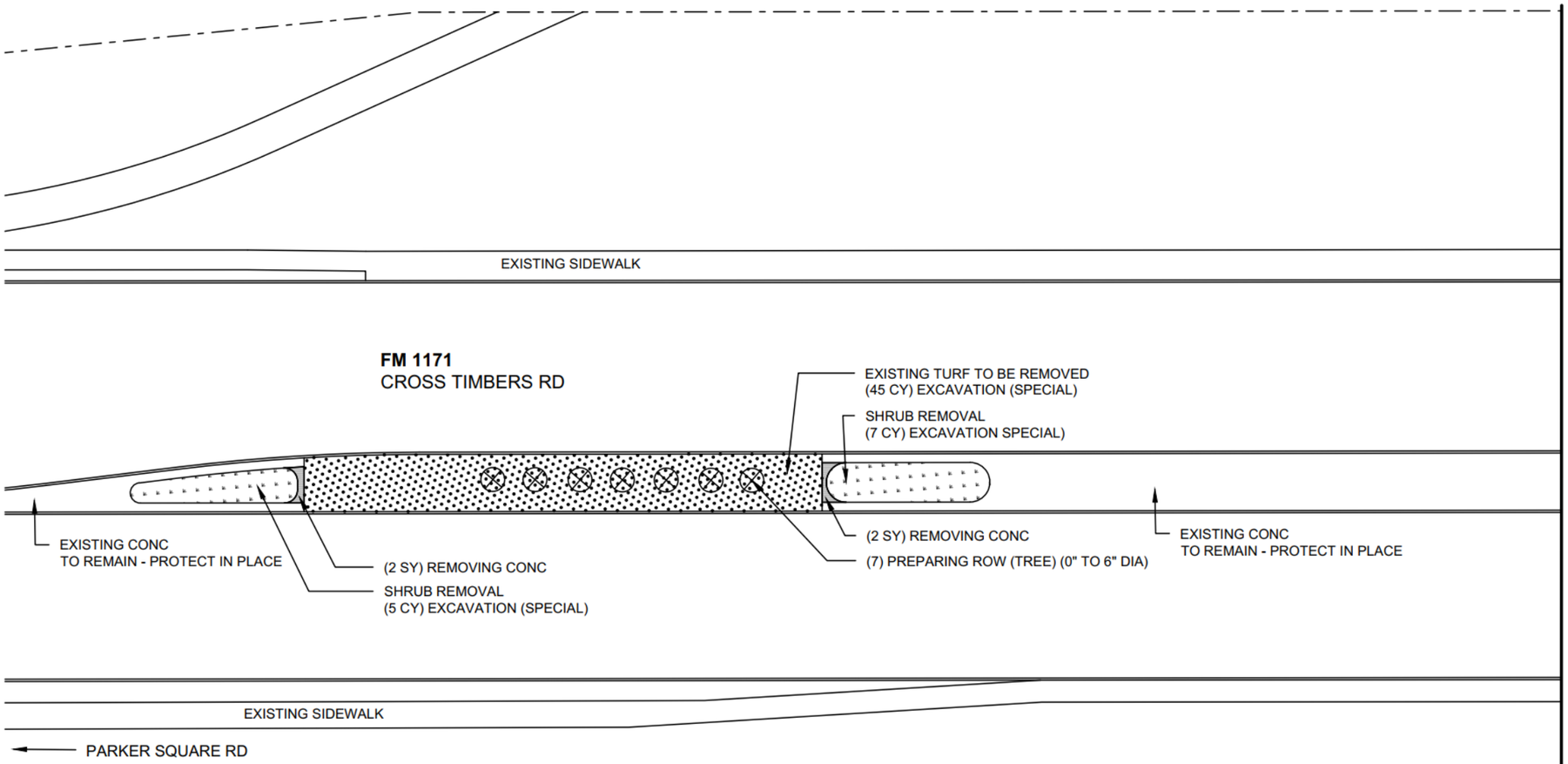
Texas Department of Transportation

FLOWER MOUND
DEMOLITION PLAN
MEDIAN 8

SCALE: 1" = 30'

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	34
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVING CONC
- SHRUB REMOVAL EXCAVATION (SPECIAL)
- REMOVE EXISTING TREE

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
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6. PROTECT EXISTING SIGNS IN PLACE (SUBSIDIARY TO ITEM 110).

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

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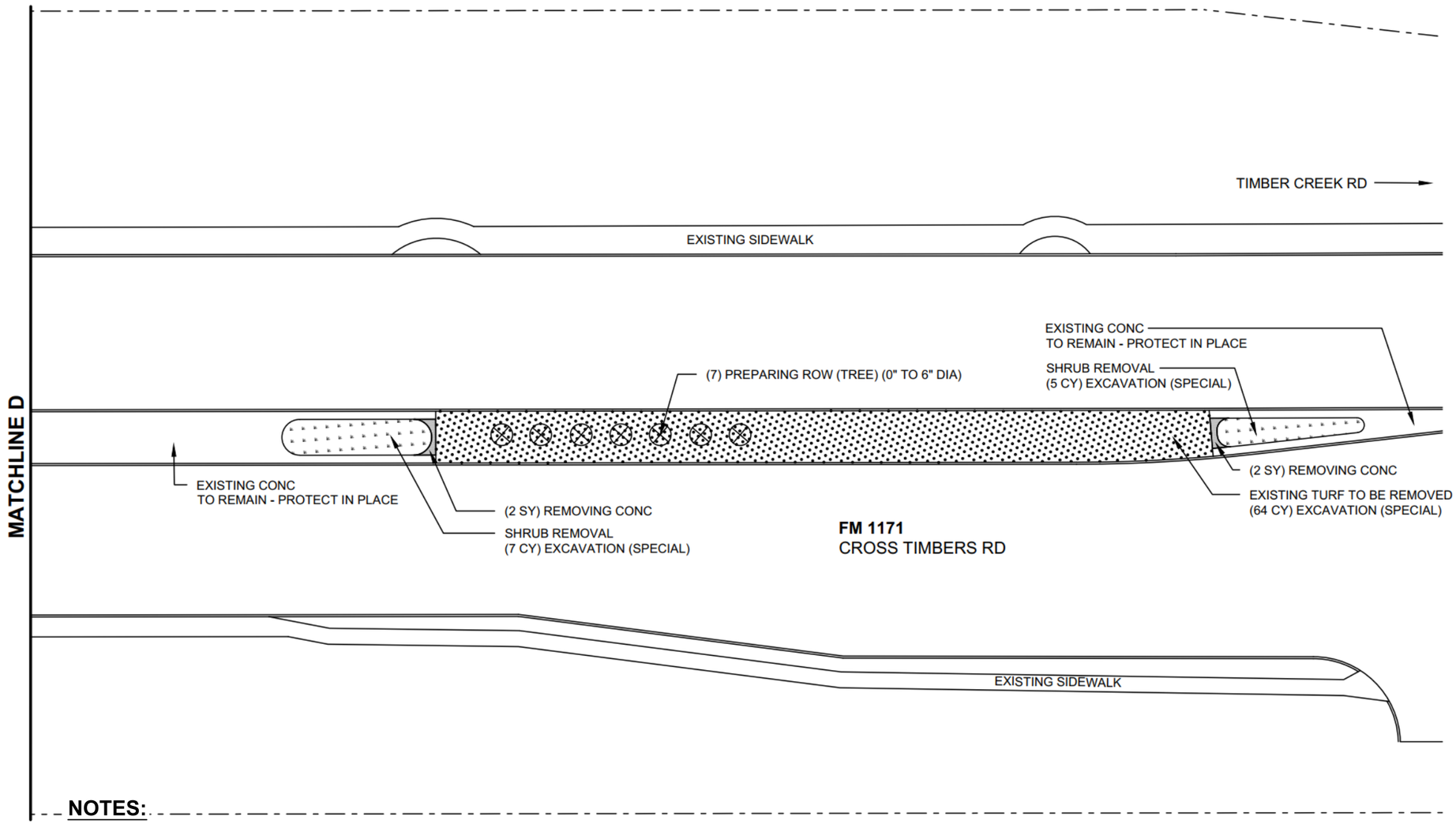
FLOWER MOUND
DEMOLITION PLAN
MEDIAN 9A

SCALE: 1" = 30'

Sheet 11 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	35
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVING CONC
- SHRUB REMOVAL EXCAVATION (SPECIAL)
- REMOVE EXISTING TREE

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
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REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

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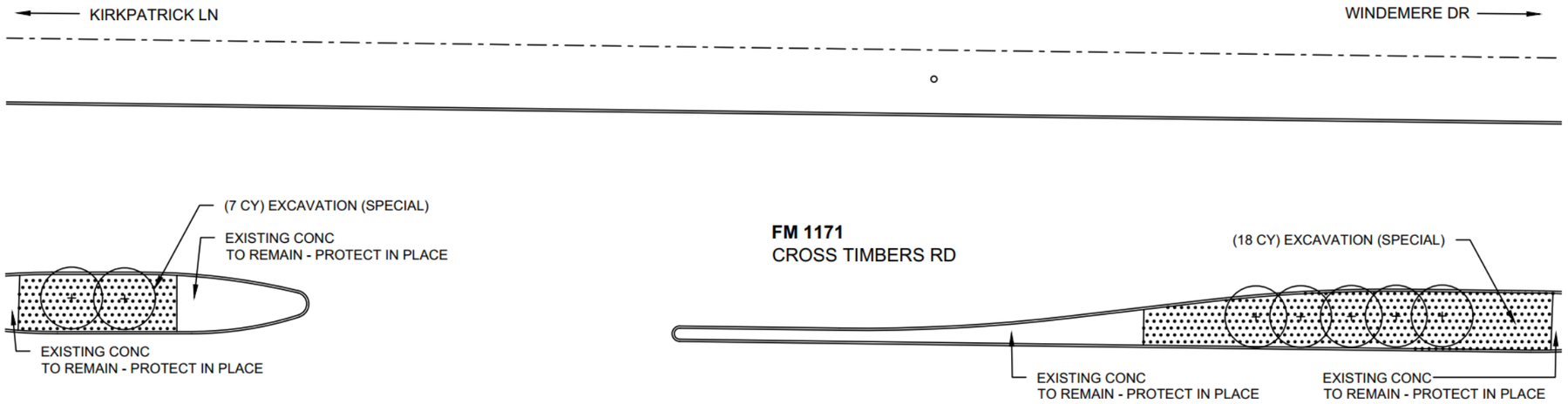
FLOWER MOUND
DEMOLITION PLAN
MEDIAN 9B

SCALE: 1" = 30'

Sheet 12 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	36
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVING CONC
- SHRUB REMOVAL EXCAVATION (SPECIAL)
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
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NORTH

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

0 30 60 90

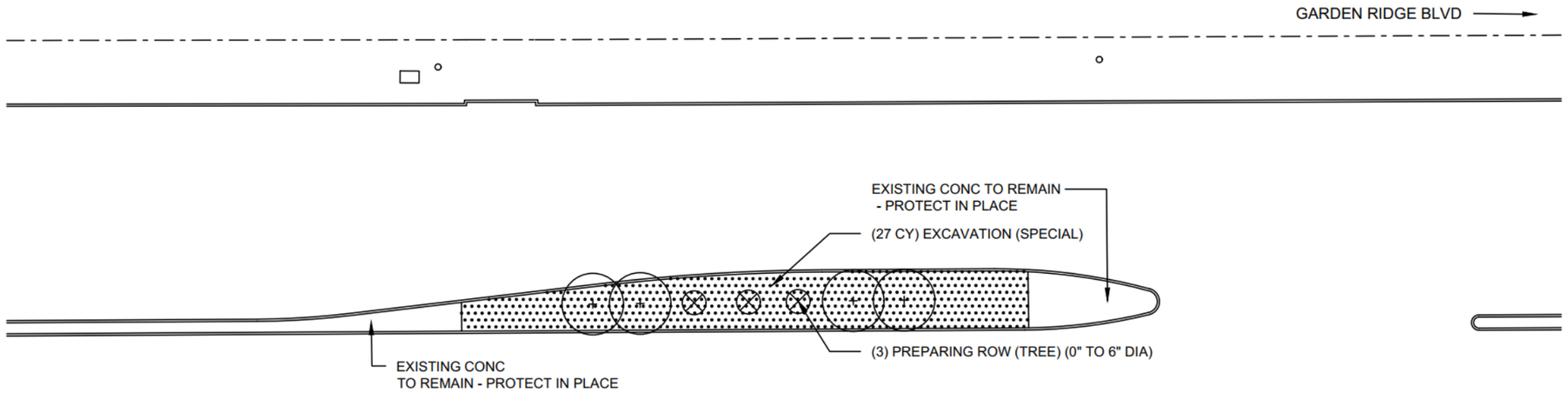
FLOWER MOUND
DEMOLITION PLAN
MEDIAN 10 & 11

SCALE: 1" = 30'

Sheet 13 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	37
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- REMOVING CONC
- SHRUB REMOVAL EXCAVATION (SPECIAL)
- REMOVE EXISTING TREE
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

NOTES:

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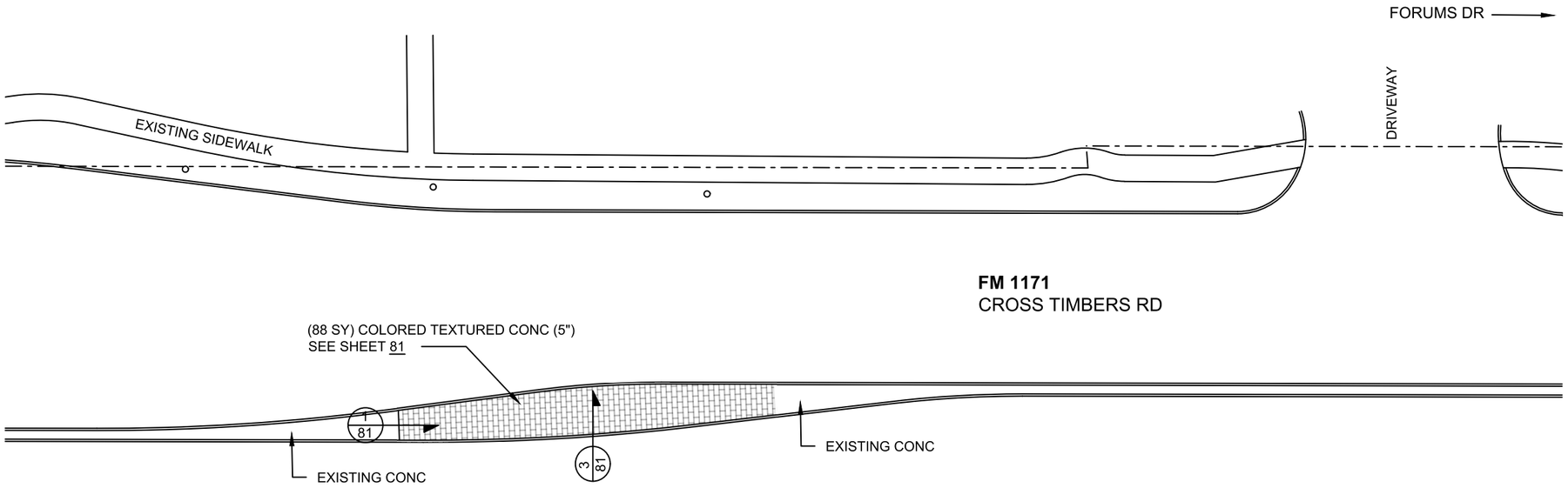
FLOWER MOUND
DEMOLITION PLAN
MEDIAN 12

SCALE: 1" = 30'

Sheet 14 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	38
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- COLORED TEXTURED CONC (5")

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
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STATE OF TEXAS

06/25/2021

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FLOWER MOUND
LAYOUT & MATERIALS PLAN
MEDIAN 1

SCALE: 1" = 30'

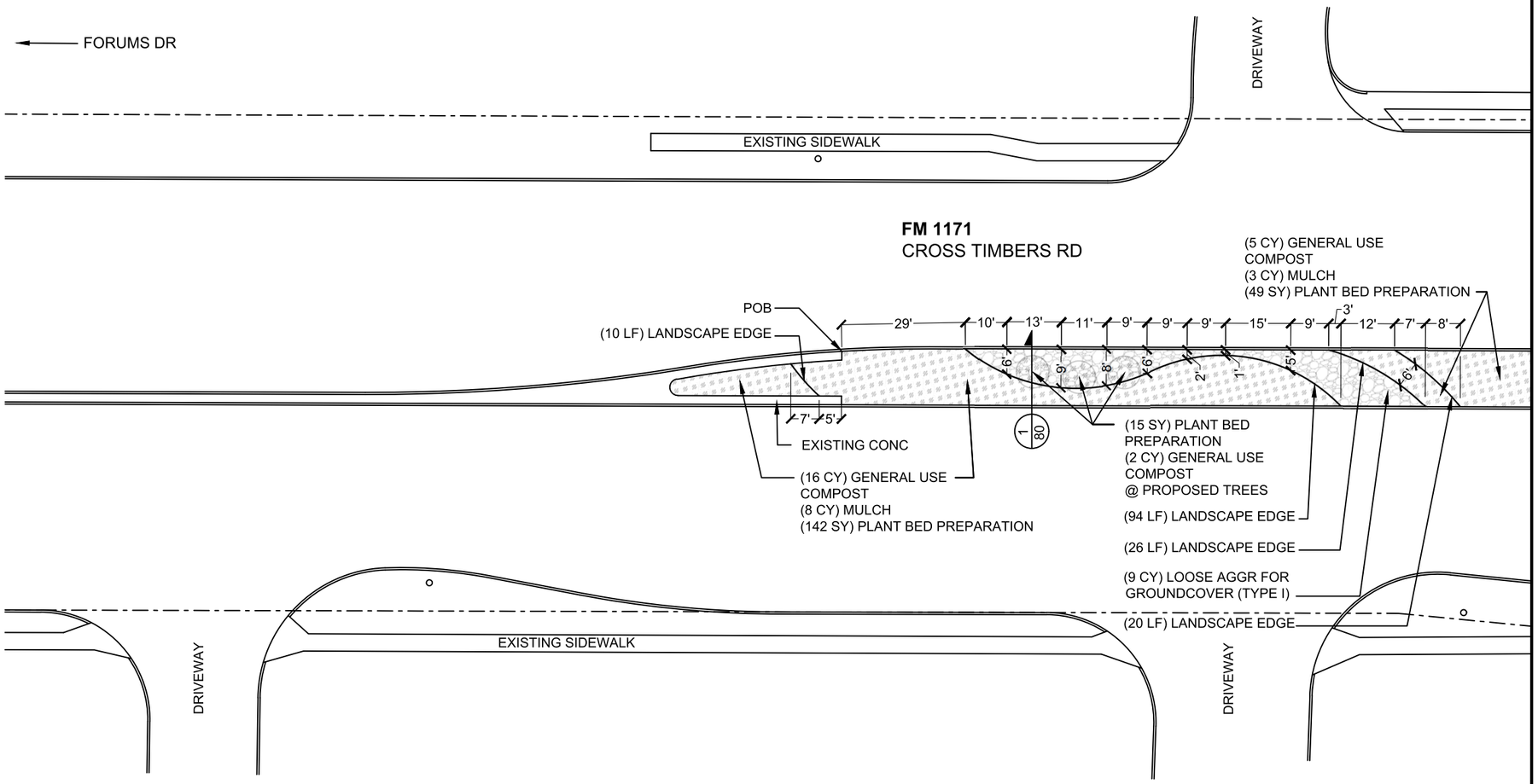
Sheet 1 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
	6	(SEE TITLE SHEET)		FM 1171
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	39
	1311	01	058	

TEMPLATED REVISED: 10-23-02

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- LOOSE AGGR FOR GROUNDCOVER (TYPE I)
- PLANT BED PREPARATION

NORTH

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
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STATE OF TEXAS

06/25/2021

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FLOWER MOUND

LAYOUT & MATERIALS PLAN

MEDIAN 2A

SCALE: 1" = 30'

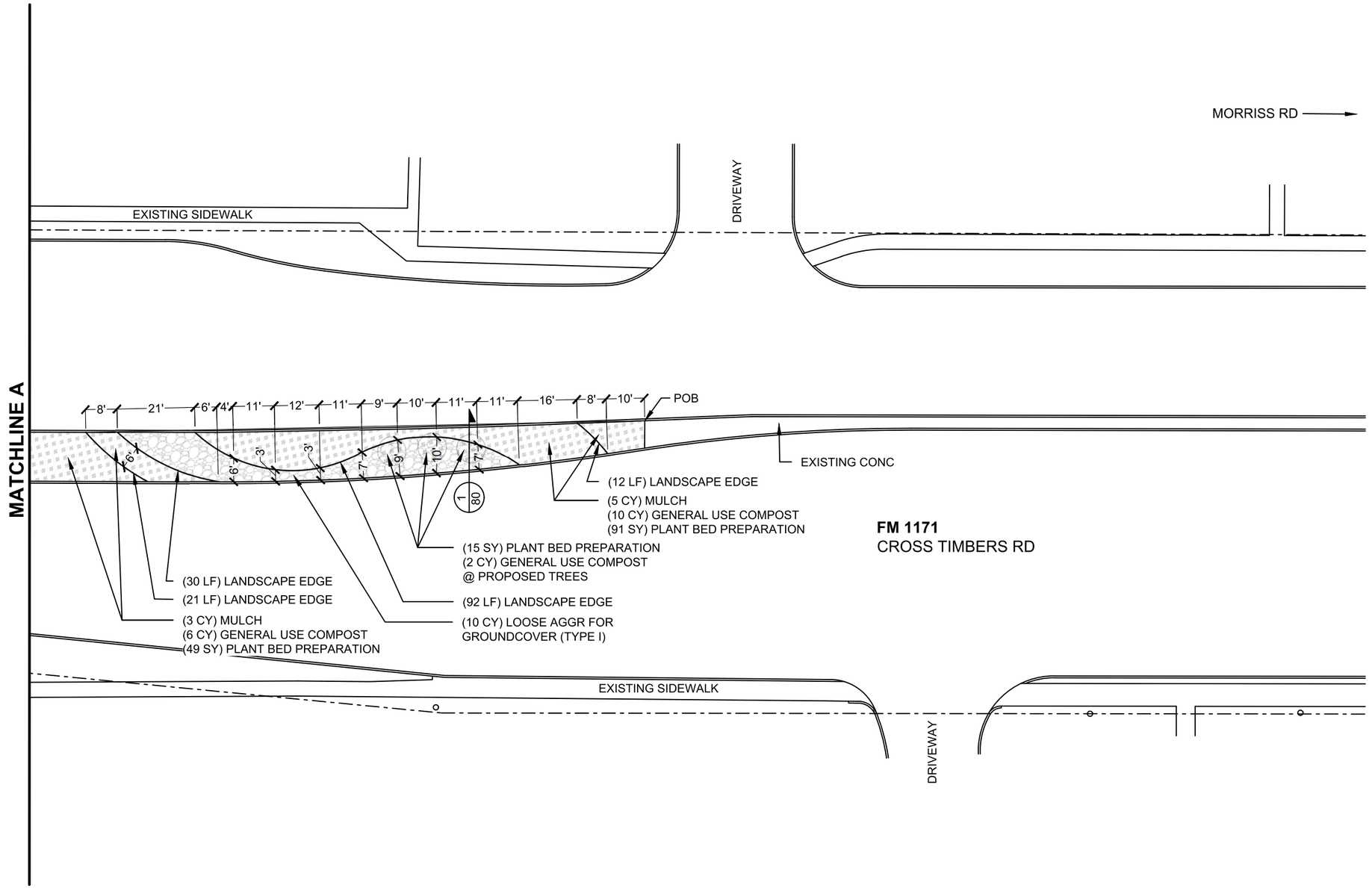
Sheet 2 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	40
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.



FM 1171
CROSS TIMBERS RD

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- LOOSE AGGR FOR GROUNDCOVER (TYPE I)
- PLANT BED PREPARATION

NORTH

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

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Texas Department of Transportation

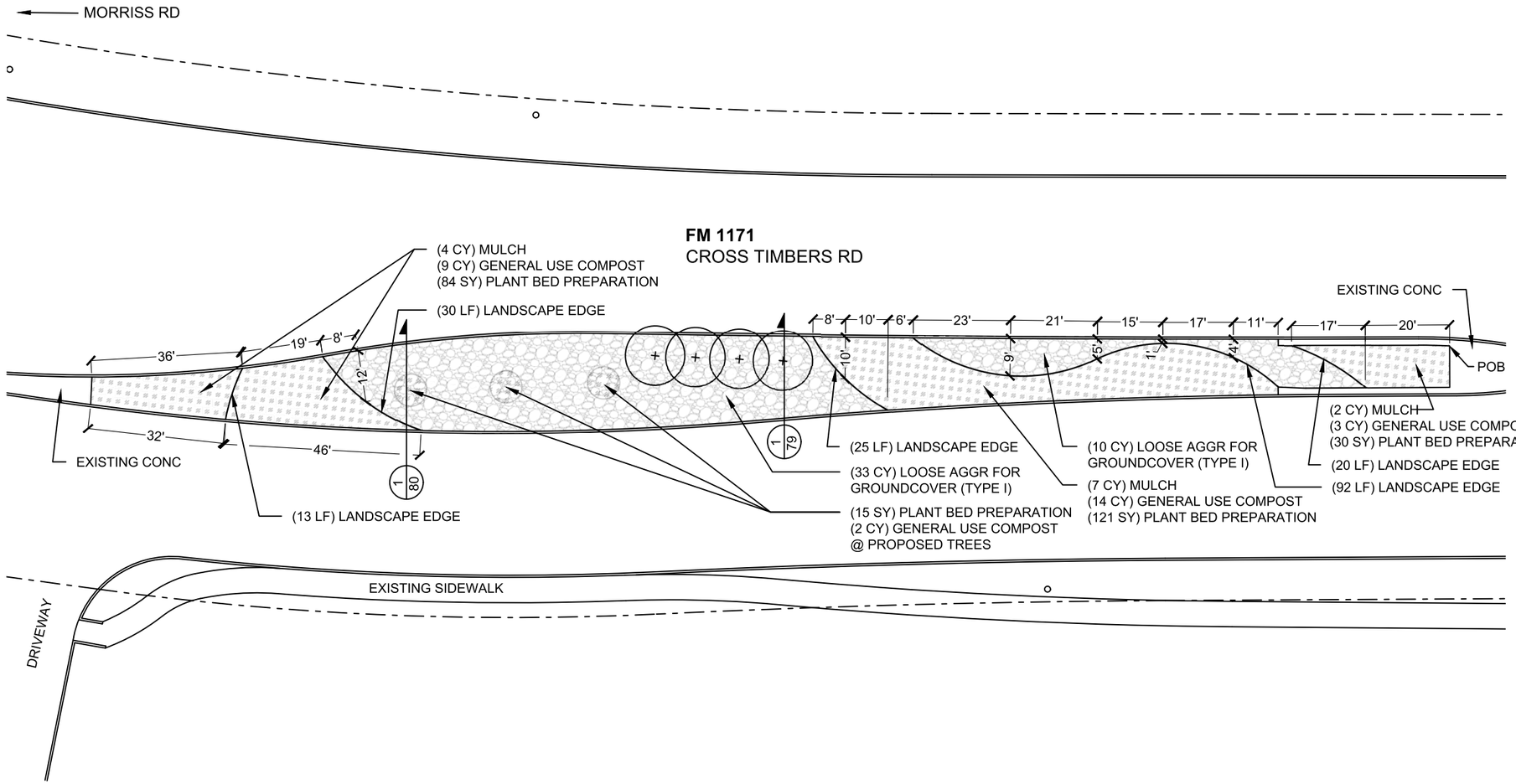
FLOWER MOUND
LAYOUT & MATERIALS PLAN
MEDIAN 2B

SCALE: 1" = 30'

Sheet 3 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	41
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.
3. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- LOOSE AGGR FOR GROUNDCOVER (TYPE I)
- PLANT BED PREPARATION
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

FLOWER MOUND

LAYOUT & MATERIALS PLAN

MEDIAN 3

SCALE: 1" = 30'

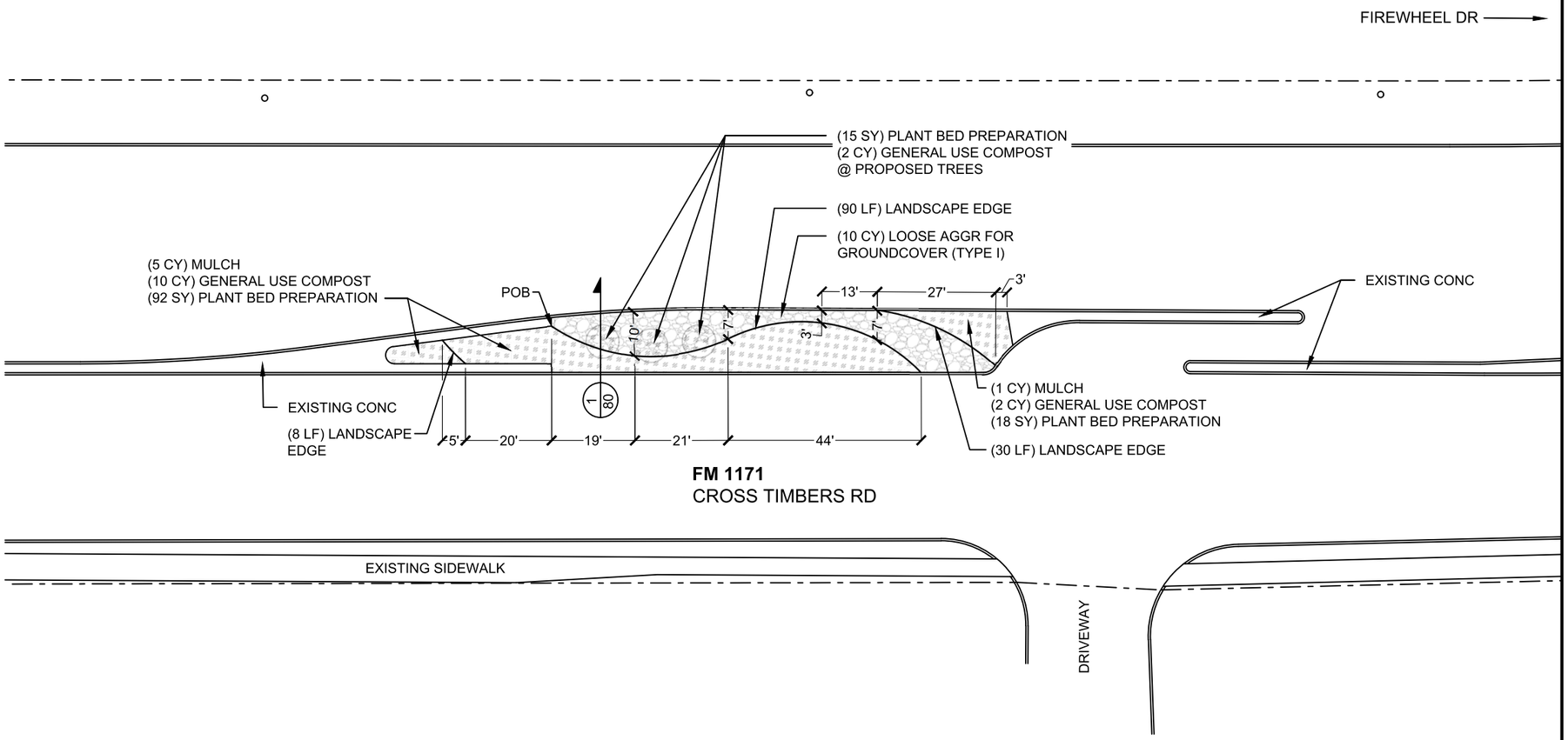
Sheet 4 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	42
	1311	01	058	

TEMPLATED REVISED: 10-23-02

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.



MATCHLINE B

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- LOOSE AGGR FOR GROUNDCOVER (TYPE I)
- PLANT BED PREPARATION

06/25/2021

NORTH

0 30 60 90

FLOWER MOUND

LAYOUT & MATERIALS PLAN

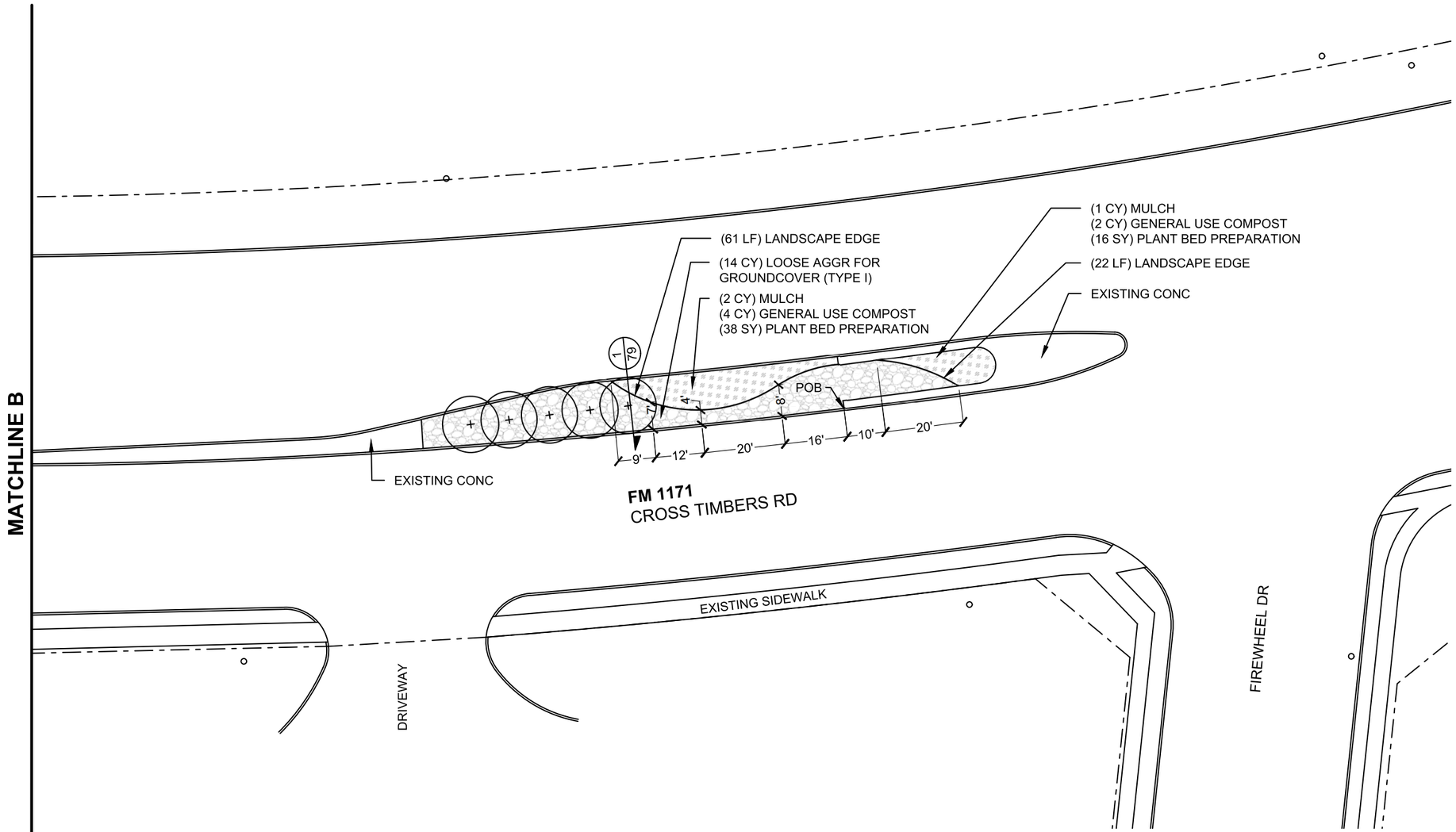
MEDIAN 4

SCALE: 1" = 30'

Sheet 5 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	43
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.
3. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- LOOSE AGGR FOR GROUNDCOVER (TYPE I)
- PLANT BED PREPARATION
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

FLOWER MOUND

LAYOUT & MATERIALS PLAN

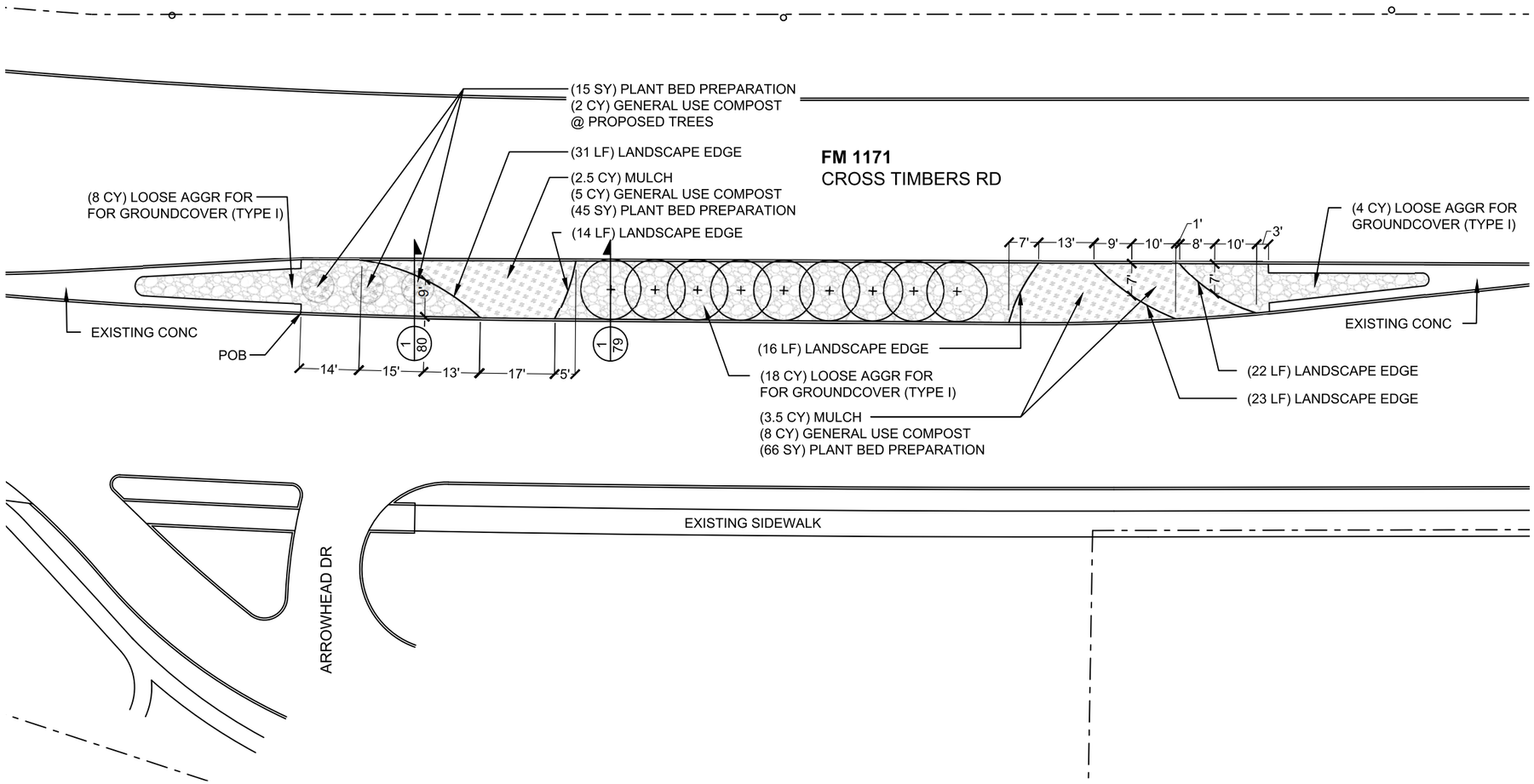
MEDIAN 5

SCALE: 1" = 30'

Sheet 6 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	44
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.
3. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- LOOSE AGGR FOR GROUNDCOVER (TYPE I)
- PLANT BED PREPARATION
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

NORTH

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

0 30 60 90

FLOWER MOUND

LAYOUT & MATERIALS PLAN

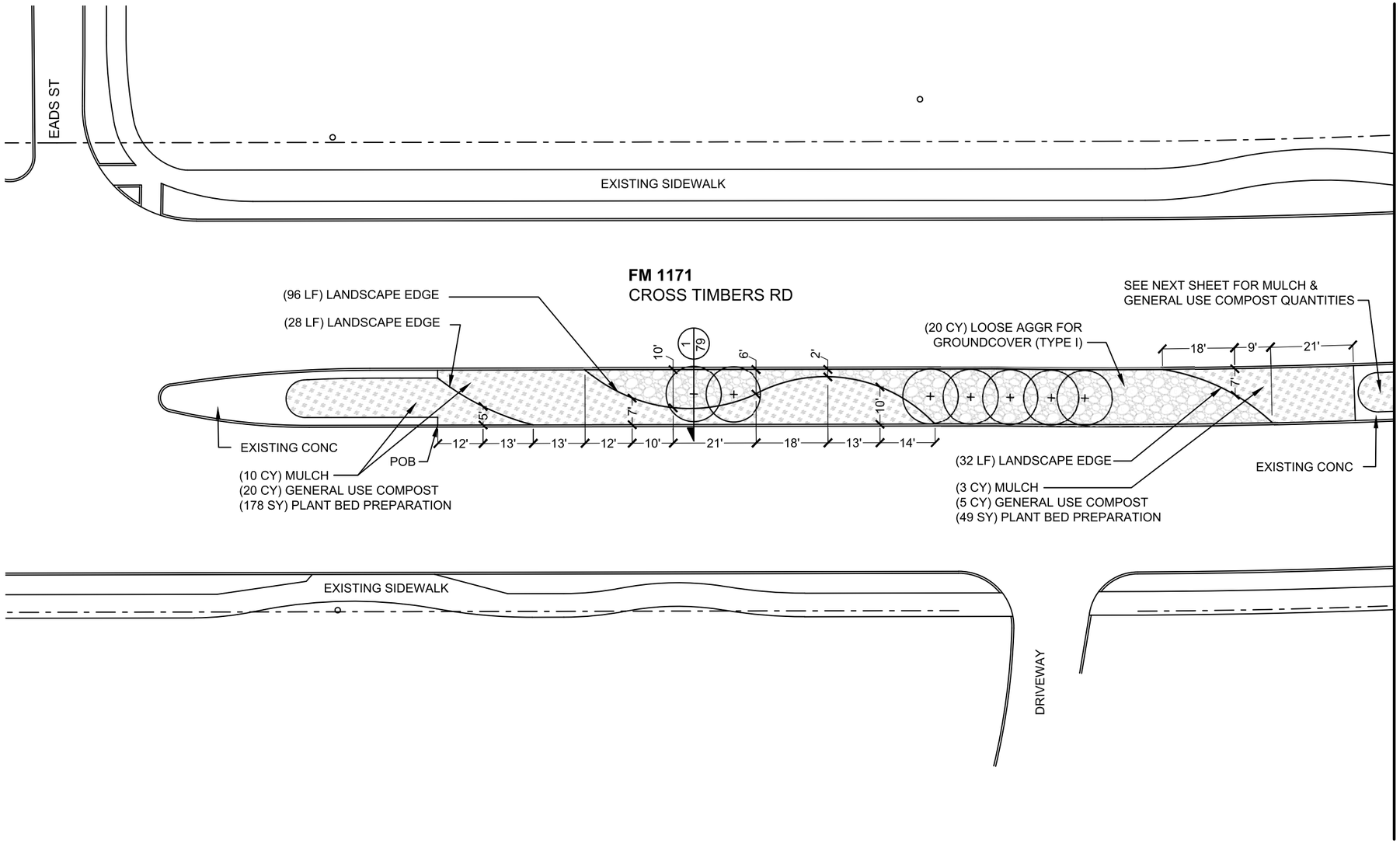
MEDIAN 6

SCALE: 1" = 30'

Sheet 7 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	45
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.
3. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- LOOSE AGGR FOR GROUNDCOVER (TYPE I)
- PLANT BED PREPARATION
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

REGISTERED LANDSCAPE ARCHITECT
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FLOWER MOUND

LAYOUT & MATERIALS PLAN

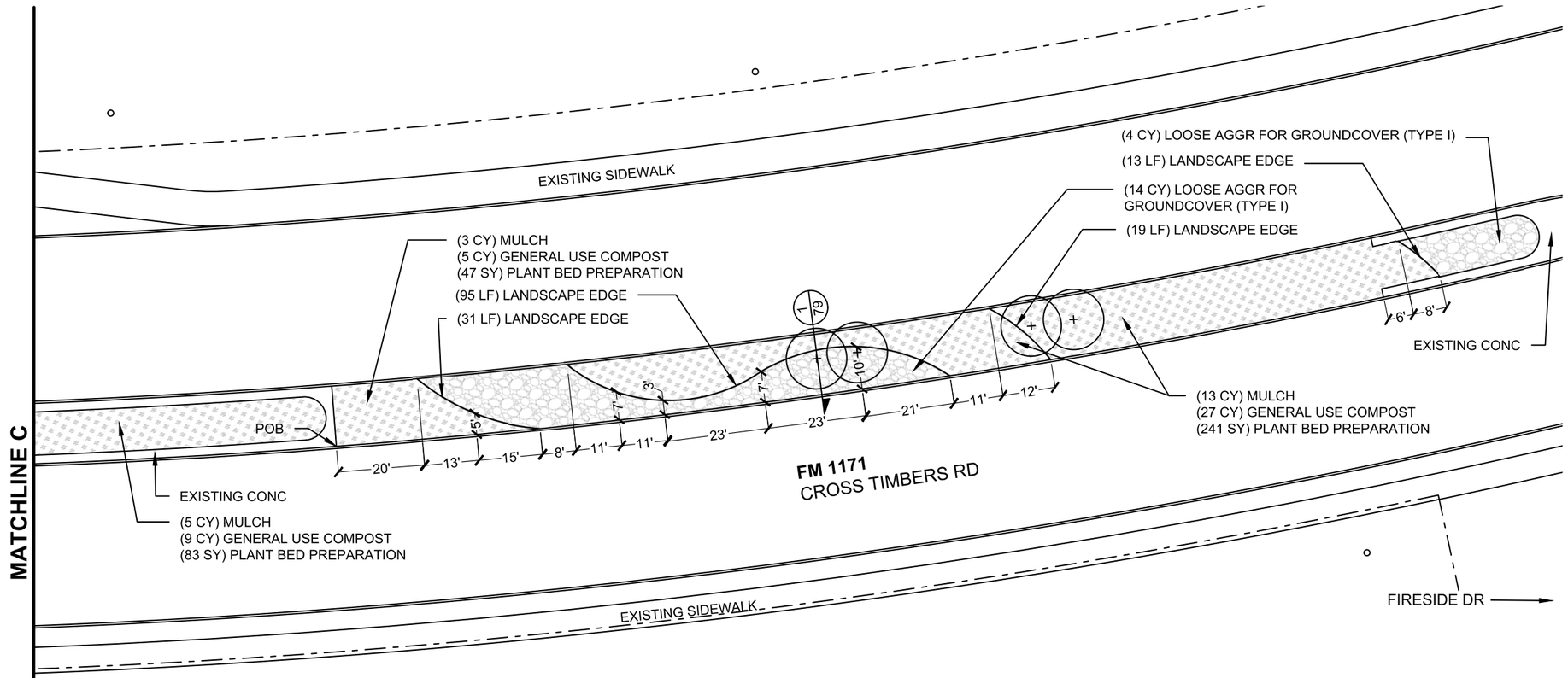
MEDIAN 7A

SCALE: 1" = 30'

Sheet 8 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	46
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.
3. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- LOOSE AGGR FOR GROUNDCOVER (TYPE I)
- PLANT BED PREPARATION
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

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FLOWER MOUND

LAYOUT & MATERIALS PLAN

MEDIAN 7B

SCALE: 1" = 30'

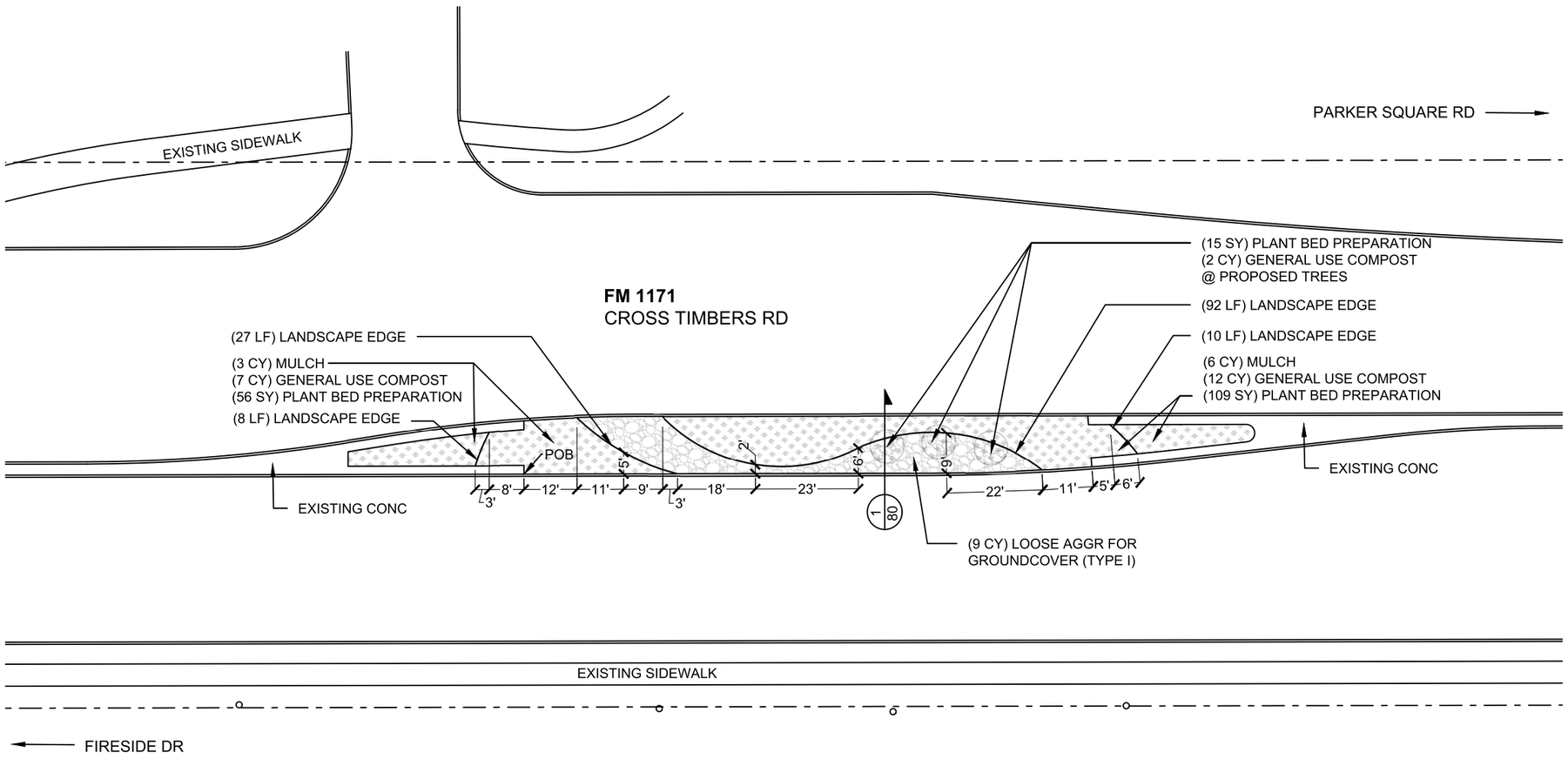
Sheet 9 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	47
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- LOOSE AGGR FOR GROUNDCOVER (TYPE I)
- PLANT BED PREPARATION

REGISTERED LANDSCAPE ARCHITECT
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FLOWER MOUND

LAYOUT & MATERIALS PLAN

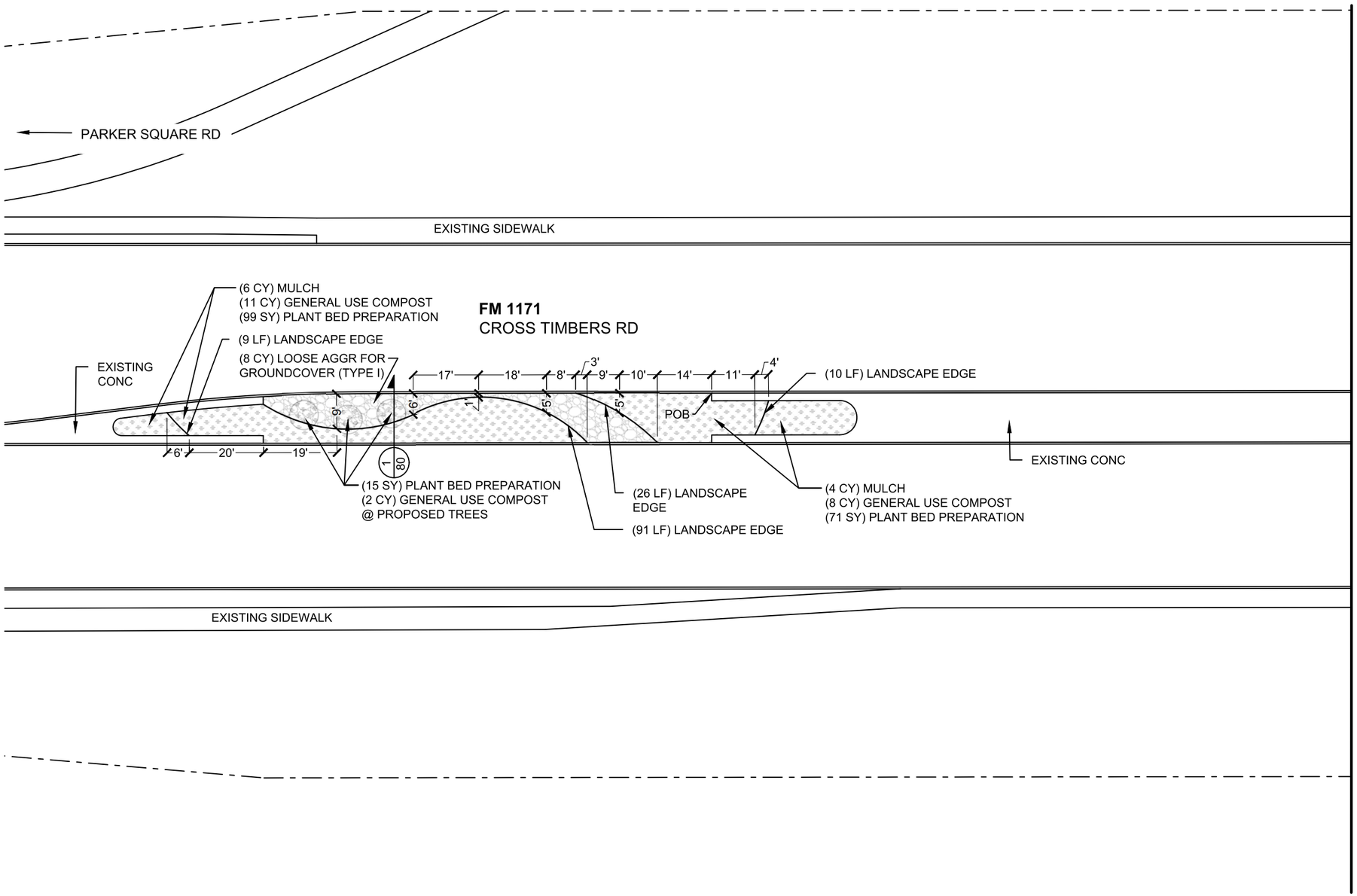
MEDIAN 8

SCALE: 1" = 30'

Sheet 10 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	48
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- LOOSE AGGR FOR GROUNDCOVER (TYPE I)
- PLANT BED PREPARATION

REGISTERED LANDSCAPE ARCHITECT
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06/25/2021

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FLOWER MOUND

LAYOUT & MATERIALS PLAN

MEDIAN 9A

SCALE: 1" = 30'

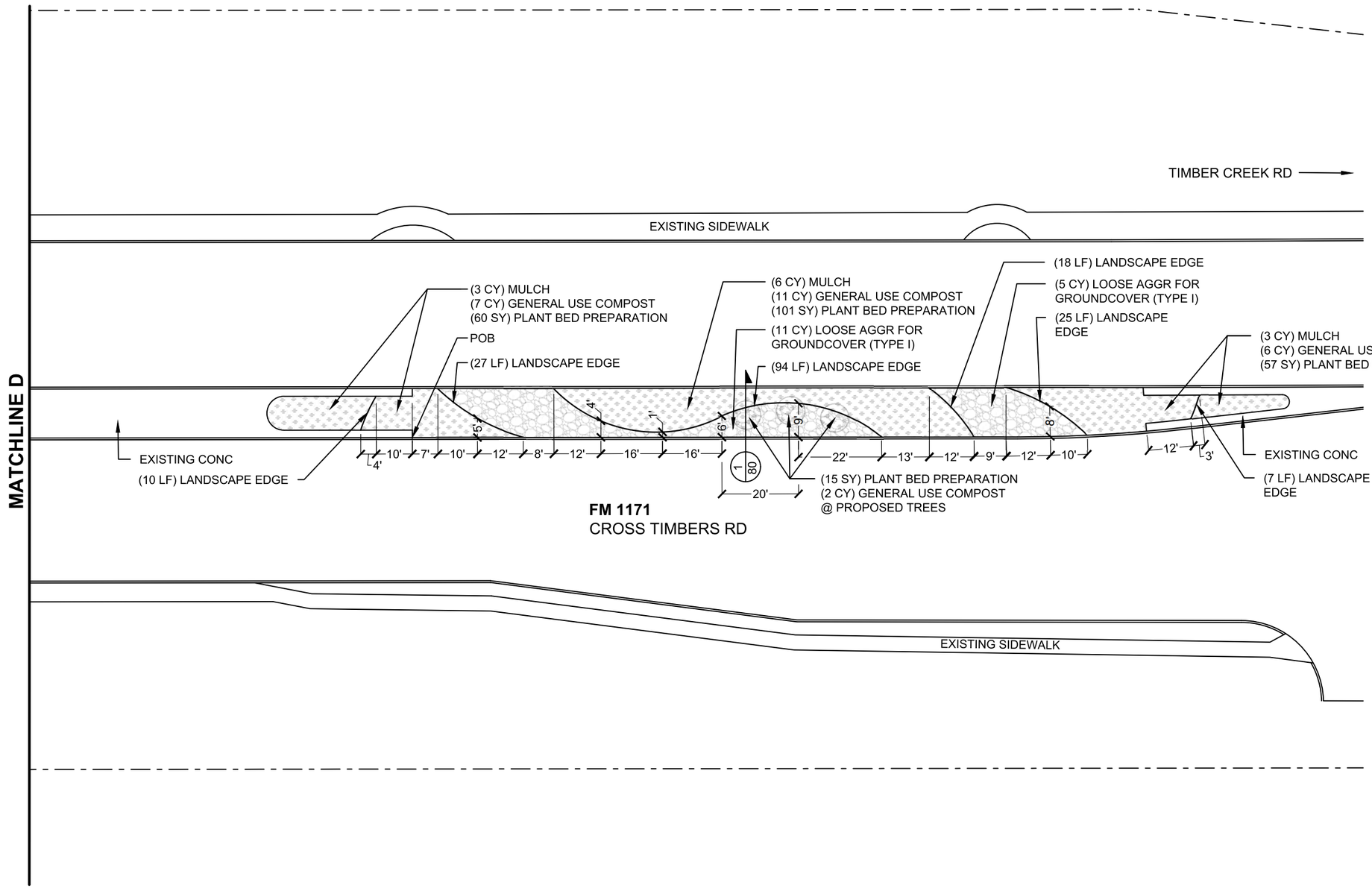
Sheet 11 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	49
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- LOOSE AGGR FOR GROUNDCOVER (TYPE I)
- PLANT BED PREPARATION

REGISTERED LANDSCAPE ARCHITECT
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FLOWER MOUND

LAYOUT & MATERIALS PLAN

MEDIAN 9B

SCALE: 1" = 30'

Sheet 12 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	50
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

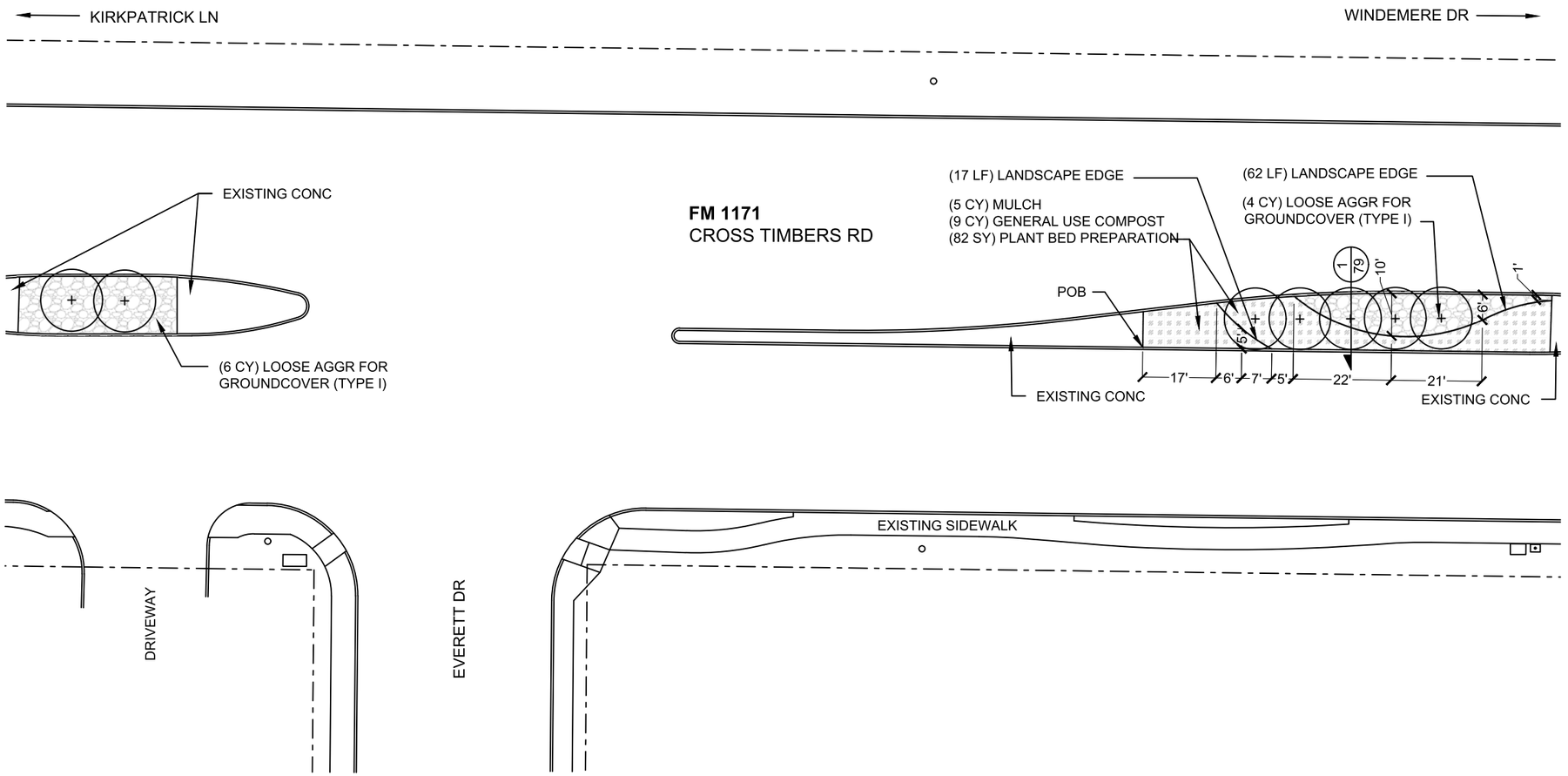
TEMPLATED REVISED: 10-23-02

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.
3. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- LOOSE AGGR FOR GROUNDCOVER (TYPE I)
- PLANT BED PREPARATION
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE



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REGISTERED LANDSCAPE ARCHITECT
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STATE OF TEXAS

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FLOWER MOUND

LAYOUT & MATERIALS PLAN

MEDIAN 10 & 11

SCALE: 1" = 30'

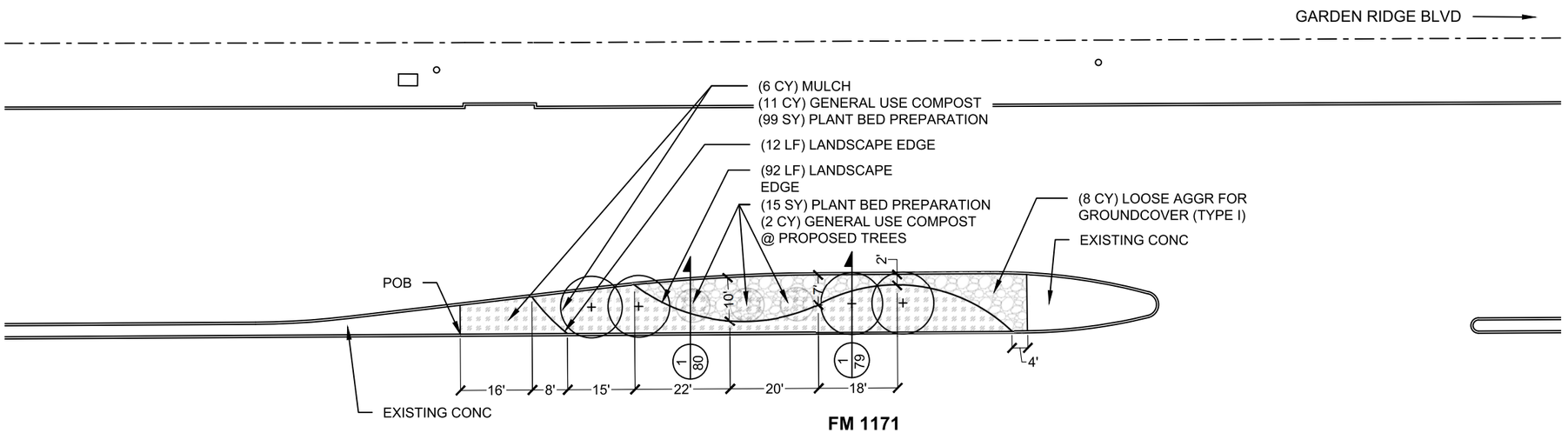
Sheet 13 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	51
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

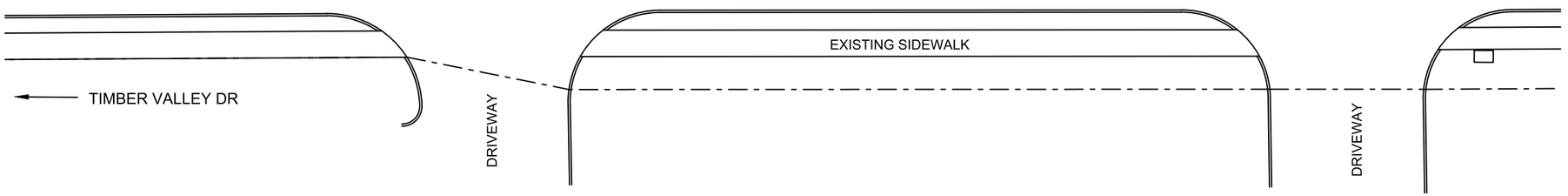
TEMPLATED REVISED: 10-23-02

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. SEE MISC DETAILS SHEETS FOR MATERIAL SPECIFICATIONS.
3. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.



FM 1171
CROSS TIMBERS RD



LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- LOOSE AGGR FOR GROUNDCOVER (TYPE I)
- PLANT BED PREPARATION
- EXISTING TREE (TO REMAIN) - PROTECT IN PLACE

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
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STATE OF TEXAS

06/25/2021

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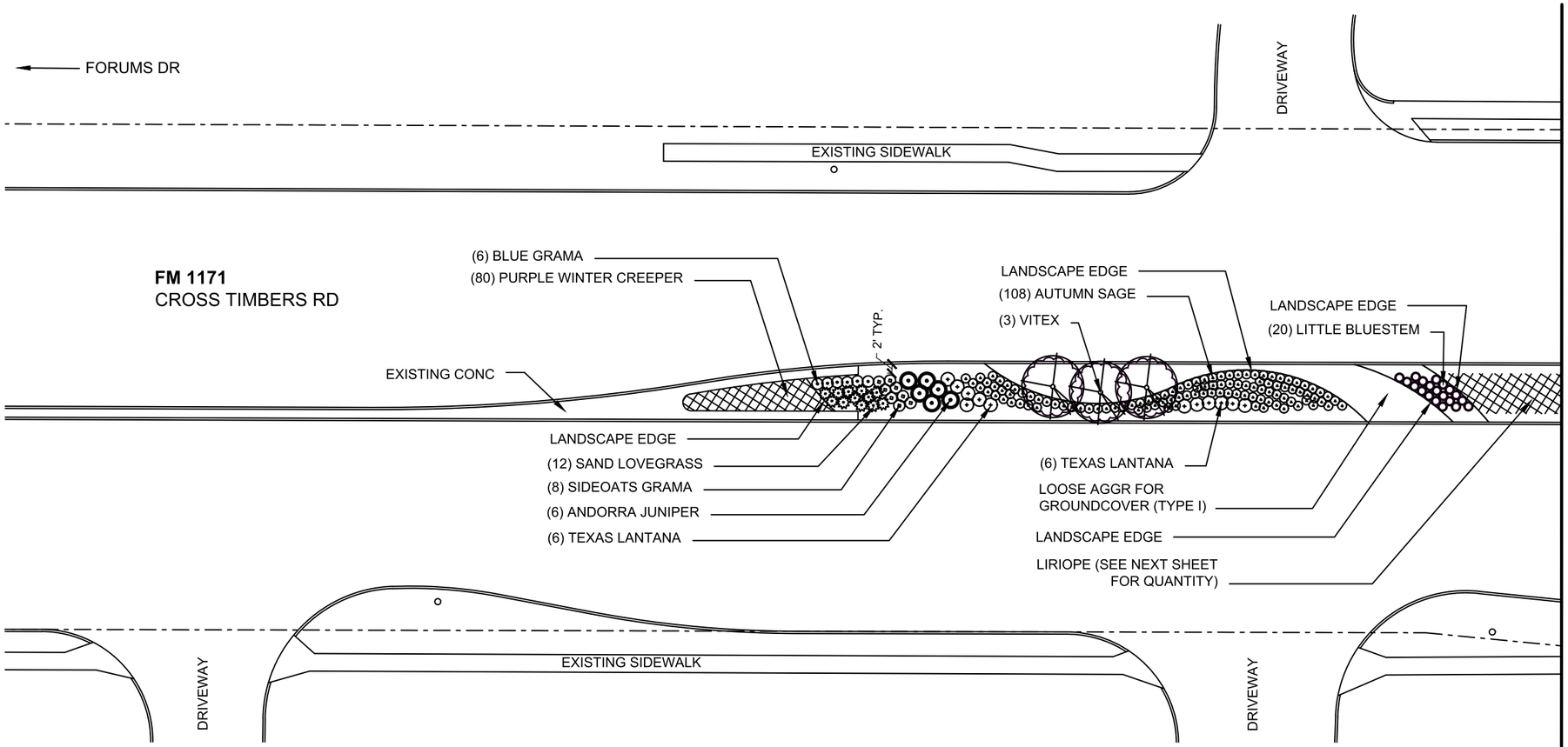
FLOWER MOUND
LAYOUT & MATERIALS PLAN
MEDIAN 12

SCALE: 1" = 30'

Sheet 14 of 14

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	52
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02



MEDIAN 2A PLANTING SUMMARY

	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6002	Purple Winter Creeper	Euonymus fortunei	80	1 GAL.		6"	6"	18" O.C.	'Coloratus'
	Little Bluestem	Schizachyrium scoparium	20	1 GAL.		8"	6"	24" O.C.	
	Blue Grama	Bouteloua gracilis	6	1 GAL.		18"	18"	30" O.C.	
		TOTAL:	**106**						
0192-6003	Autumn Sage	Salvia greggii	108	3 GAL.		12"	12"	24" O.C.	
	Sand Lovegrass	Eragrostis trichodes	12	3 GAL.		12"	12"	30" O.C.	
	Sideoats Grama	Bouteloua curtipendula	8	3 GAL.		12"	18"	30" O.C.	
	Texas Lantana	Lantana urticoides	12	3 GAL.		12"	12"	48" O.C.	
		TOTAL:	**140**						
0192-6004	Andorra Juniper	Juniperus horizontalis	6	5 GAL.		6"	12"	48" O.C.	'Plumosa Compacta'
		TOTAL:	**6**						
0192-6024	Vitex	Vitex agnus-castus	3	30 GAL.	2"	7'	4'	as shown	3 trunk minimum & matching
		TOTAL:	**3**						

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

REGISTERED LANDSCAPE ARCHITECT
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3401
STATE OF TEXAS

06/25/2021

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FLOWER MOUND
PLANTING PLAN
MEDIAN 2A

SCALE: 1" = 30'

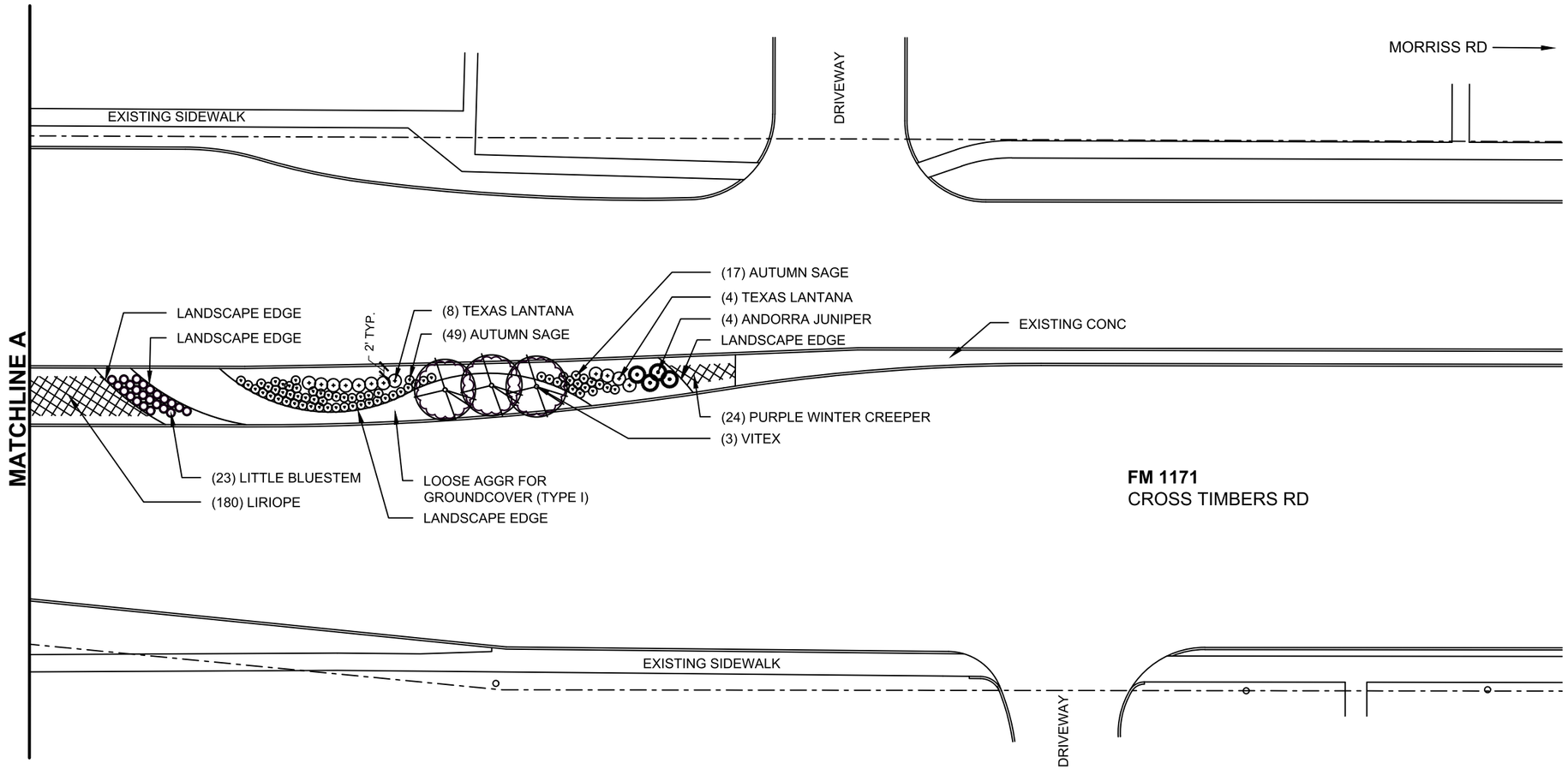
Sheet 1 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	53
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

USER ID

TEMPLATED REVISED: 10-23-02

DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

MEDIAN 2B PLANTING SUMMARY

	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6002	Liriope	Liriope muscari	180	1 GAL.		12"	10"	18" O.C.	
	Purple Winter Creeper	Euonymus fortunei	24	1 GAL.		6"	6"	18" O.C.	'Coloratus'
	Little Bluestem	Schizachyrium scoparium	23	1 GAL.		8"	6"	24" O.C.	
		TOTAL:	**227**						
0192-6003	Autumn Sage	Salvia greggii	66	3 GAL.		12"	12"	24" O.C.	
	Texas Lantana	Lantana urticoides	12	3 GAL.		12"	12"	48" O.C.	
		TOTAL:	**78**						
0192-6004	Andorra Juniper	Juniperus horizontalis	4	5 GAL.		6"	12"	48" O.C.	'Plumosa Compacta'
		TOTAL:	**4**						
0192-6024	Vitex	Vitex agnus-castus	3	30 GAL.	2"	7'	4'	as shown	3 trunk minimum & matching
		TOTAL:	**3**						

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

FLOWER MOUND
PLANTING PLAN
MEDIAN 2B

SCALE: 1" = 30'

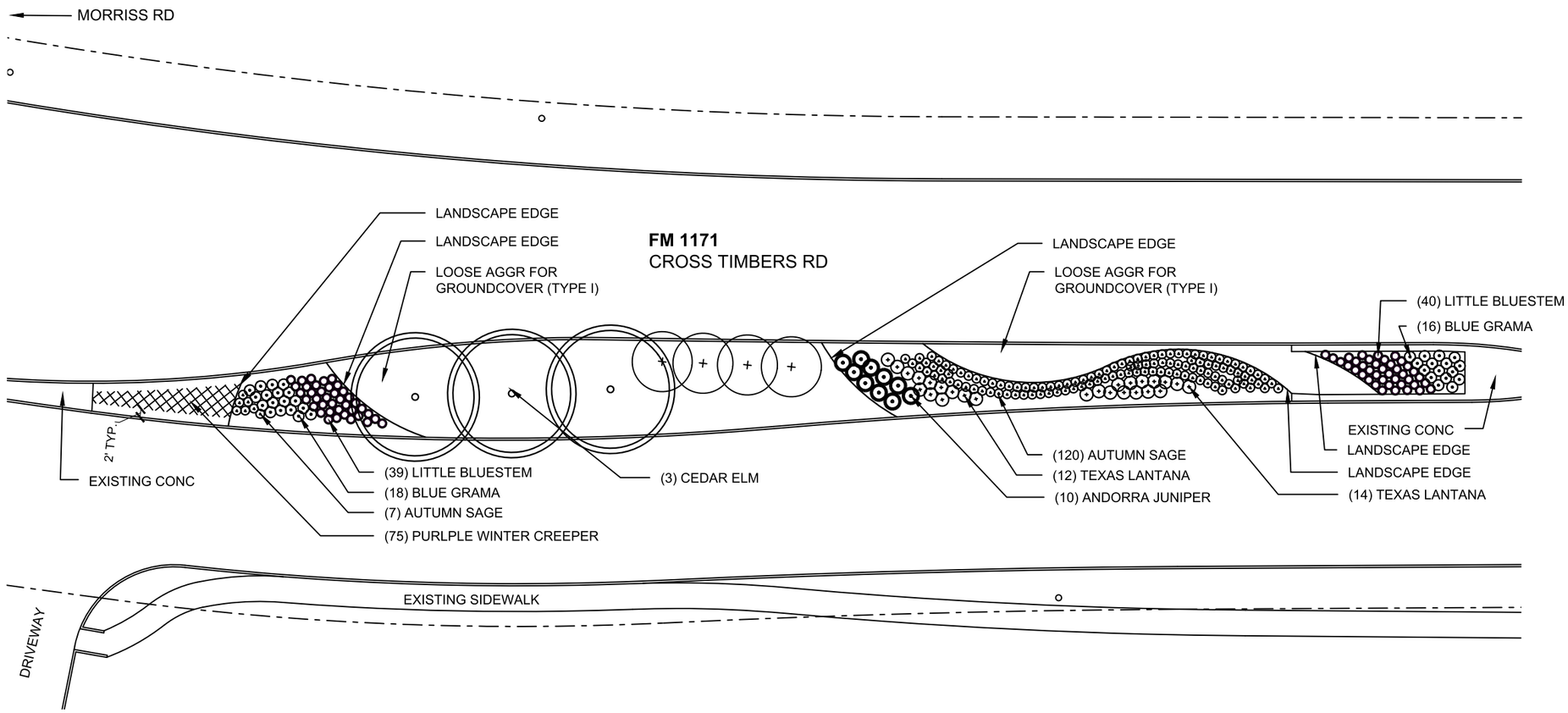
Sheet 2 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	54
	1311	01	058	

TEMPLATED REVISED: 10-23-02

USER ID

DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- EXISTING TREE (TO REMAIN)

MEDIAN 3 PLANTING SUMMARY

	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6002	Purple Winter Creeper	Euonymus fortunei	75	1 GAL.		6"	6"	18" O.C.	'Coloratus'
	Little Bluestem	Schizachyrium scoparium	79	1 GAL.		8"	6"	24" O.C.	
	Blue Grama	Bouteloua gracilis	34	1 GAL.		18"	18"	30" O.C.	
		TOTAL:	**188**						
0192-6003	Autumn Sage	Salvia greggii	127	3 GAL.		12"	12"	24" O.C.	
	Texas Lantana	Lantana urticoides	26	3 GAL.		12"	12"	48" O.C.	
		TOTAL:	**153**						
0192-6004	Andorra Juniper	Juniperus horizontalis	10	5 GAL.		6"	12"	48" O.C.	'Plumosa Compacta'
		TOTAL:	**10**						
0192-6025	Cedar Elm	Ulmus crassifolia	3	45 GAL.	2.5"	10'	6'	as shown	Straight central leader, matching; container grown
		TOTAL:	**3**						

REGISTERED LANDSCAPE ARCHITECT
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FLOWER MOUND
PLANTING PLAN
MEDIAN 3

SCALE: 1" = 30'

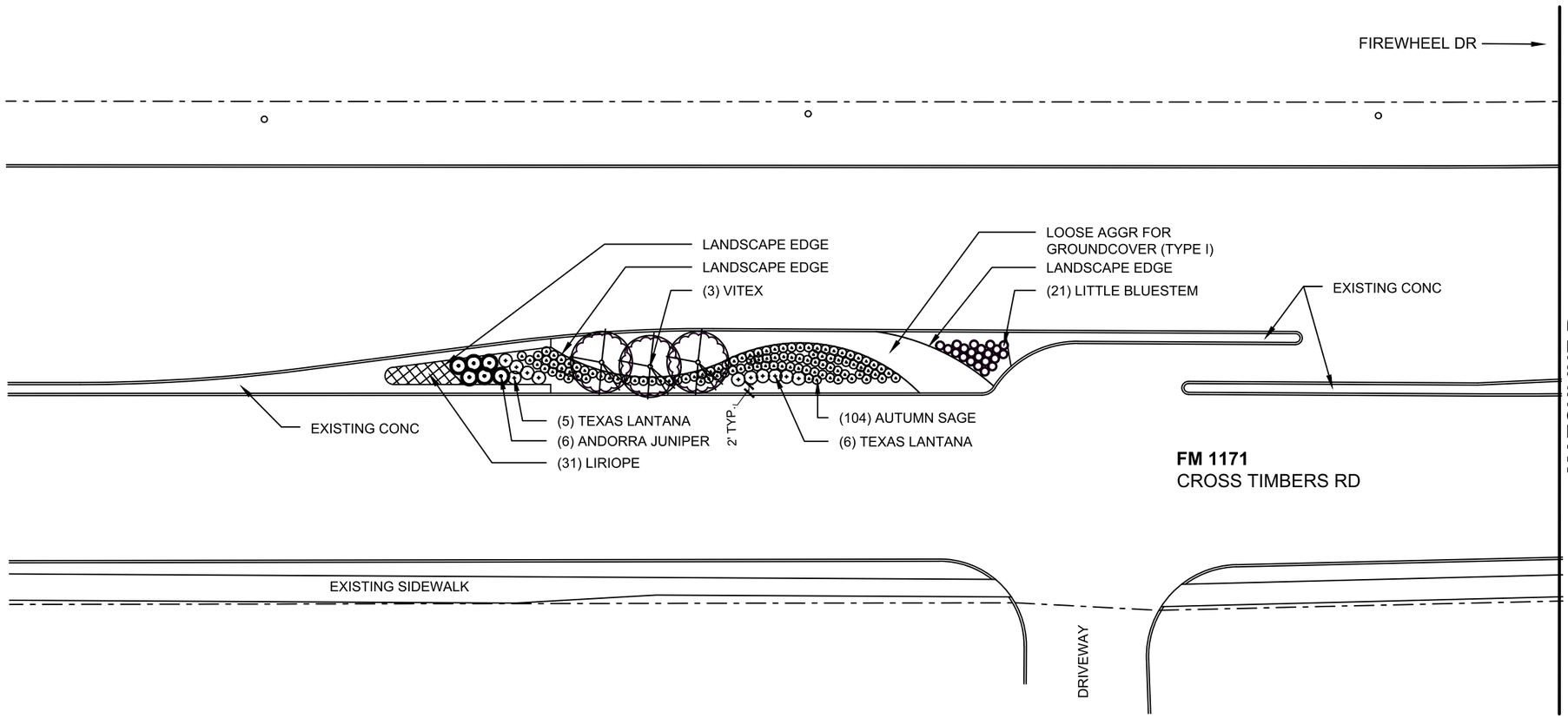
Sheet 3 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	55
	1311	01	058	

USER ID

TEMPLATED REVISED: 10-23-02

DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

MEDIAN 4 PLANTING SUMMARY

	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6002	Liriope	Liriope muscari	31	1 GAL.		12"	10"	18" O.C.	
	Little Bluestem	Schizachyrium scoparium	21	1 GAL.		8"	6"	24" O.C.	
		TOTAL:	**52**						
0192-6003	Autumn Sage	Salvia greggii	104	3 GAL.		12"	12"	24" O.C.	
	Texas Lantana	Lantana urticoides	11	3 GAL.		12"	12"	48" O.C.	
		TOTAL:	**115**						
0192-6004	Andorra Juniper	Juniperus horizontalis	6	5 GAL.		6"	12"	48" O.C.	'Plumosa Compacta'
		TOTAL:	**6**						
0192-6024	Vitex	Vitex agnus-castus	3	30 GAL.	2"	7'	4'	as shown	3 trunk minimum & matching
		TOTAL:	**3**						

REGISTERED LANDSCAPE ARCHITECT
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3401
STATE OF TEXAS

06/25/2021

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FLOWER MOUND
PLANTING PLAN
MEDIAN 4

SCALE: 1" = 30'

Sheet 4 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	56
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02

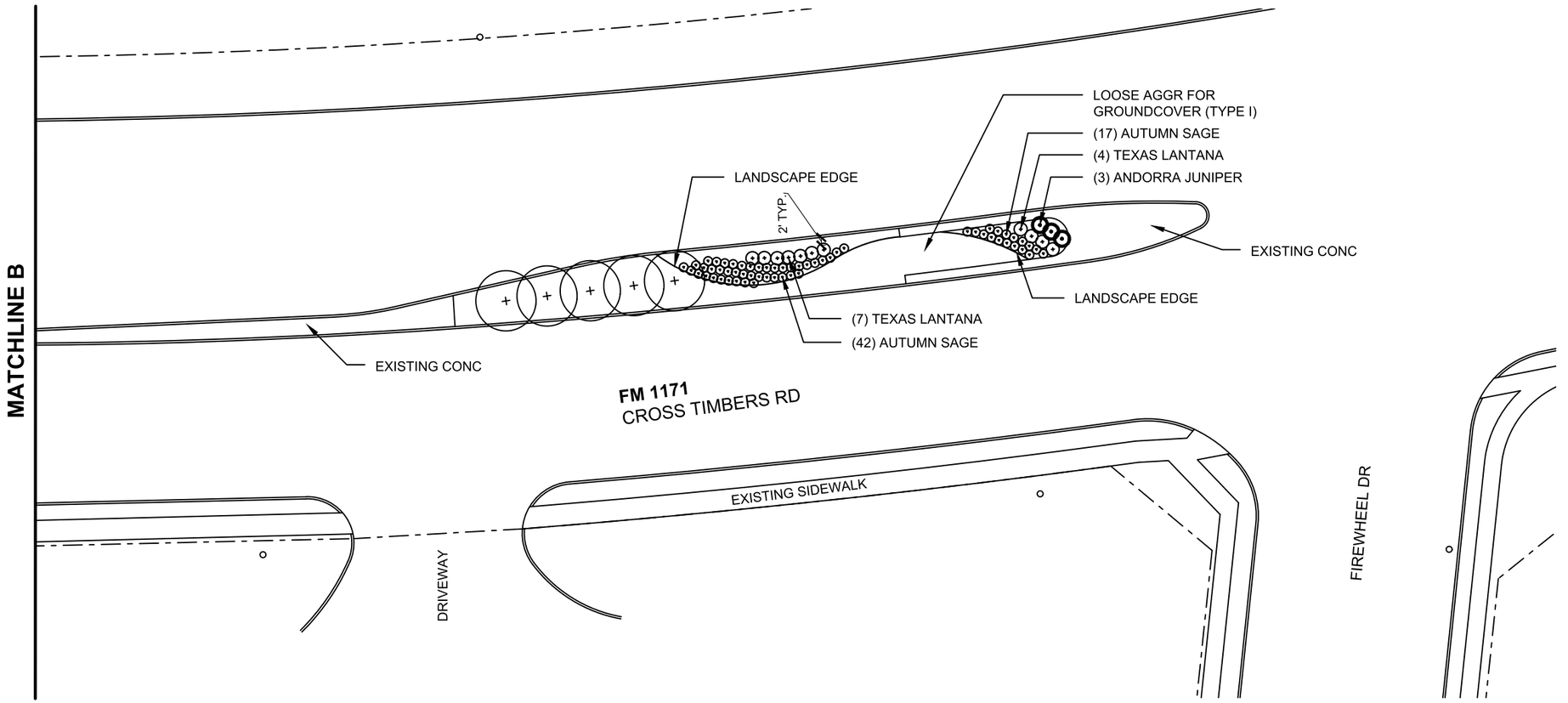
DATE

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- EXISTING TREE (TO REMAIN)



REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
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STATE OF TEXAS

06/25/2021

NORTH

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MEDIAN 5 PLANTING SUMMARY

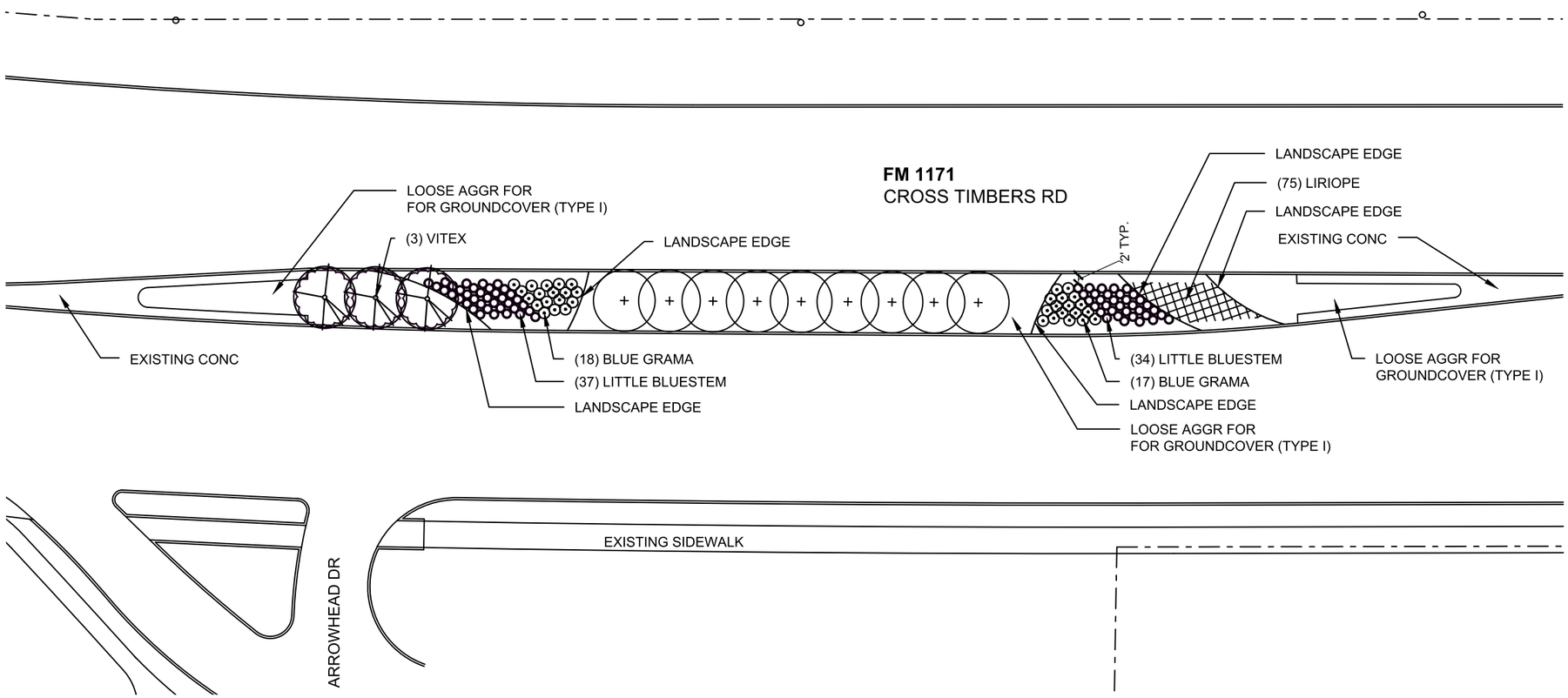
	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6003	Autumn Sage	Salvia greggii	59	3 GAL.		12"	12"	24" O.C.	
	Texas Lantana	Lantana urticoides	11	3 GAL.		12"	12"	48" O.C.	
		TOTAL:	**70**						
0192-6004	Andorra Juniper	Juniperus horizontalis	3	5 GAL.		6"	12"	48" O.C.	'Plumosa Compacta'
		TOTAL:	**3**						

FLOWER MOUND
PLANTING PLAN
MEDIAN 5

SCALE: 1" = 30'

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	57
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- EXISTING TREE (TO REMAIN)

MEDIAN 6 PLANTING SUMMARY

	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6002	Liriope	Liriope muscari	75	1 GAL.		12"	10"	18" O.C.	
	Little Bluestem	Schizachyrium scoparium	71	1 GAL.		8"	6"	24" O.C.	
	Blue Grama	Bouteloua gracilis	35	1 GAL.		18"	18"	36" O.C.	
		TOTAL:	**181**						
0192-6024	Vitex	Vitex agnus-castus	3	30 GAL.	2"	7'	4'	as shown	3 trunk minimum & matching
		TOTAL:	**3**						

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

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FLOWER MOUND
PLANTING PLAN
MEDIAN 6

SCALE: 1" = 30'

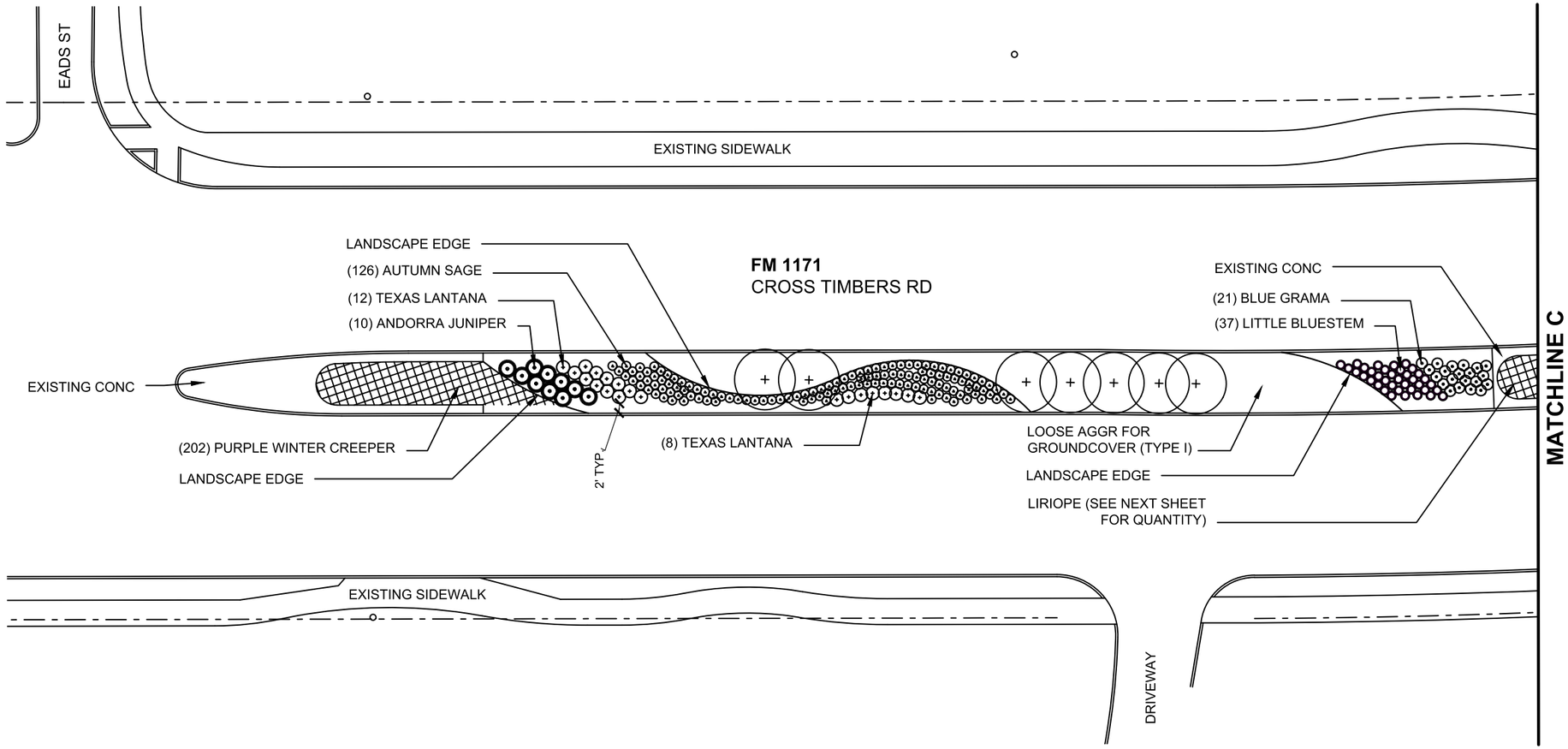
Sheet 6 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	58
	1311	01	058	

USER ID

TEMPLATED REVISED: 10-23-02

DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- EXISTING TREE (TO REMAIN)

MEDIAN 7A PLANTING SUMMARY

	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6002	Purple Winter Creeper	Euonymus fortunei	202	1 GAL.		6"	6"	18" O.C.	'Coloratus'
	Little Bluestem	Schizachyrium scoparium	37	1 GAL.		8"	6"	24" O.C.	
	Blue Grama	Bouteloua gracilis	21	1 GAL.		18"	18"	30" O.C.	
		TOTAL:	**260**						
0192-6003	Autumn Sage	Salvia greggii	126	3 GAL.		12"	12"	24" O.C.	
	Texas Lantana	Lantana urticoides	20	3 GAL.		12"	12"	48" O.C.	
		TOTAL:	**146**						
0192-6004	Andorra Juniper	Juniperus horizontalis	10	5 GAL.		6"	12"	48" O.C.	'Plumosa Compacta'
		TOTAL:	**10**						

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

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FLOWER MOUND
PLANTING PLAN
MEDIAN 7A

SCALE: 1" = 30'

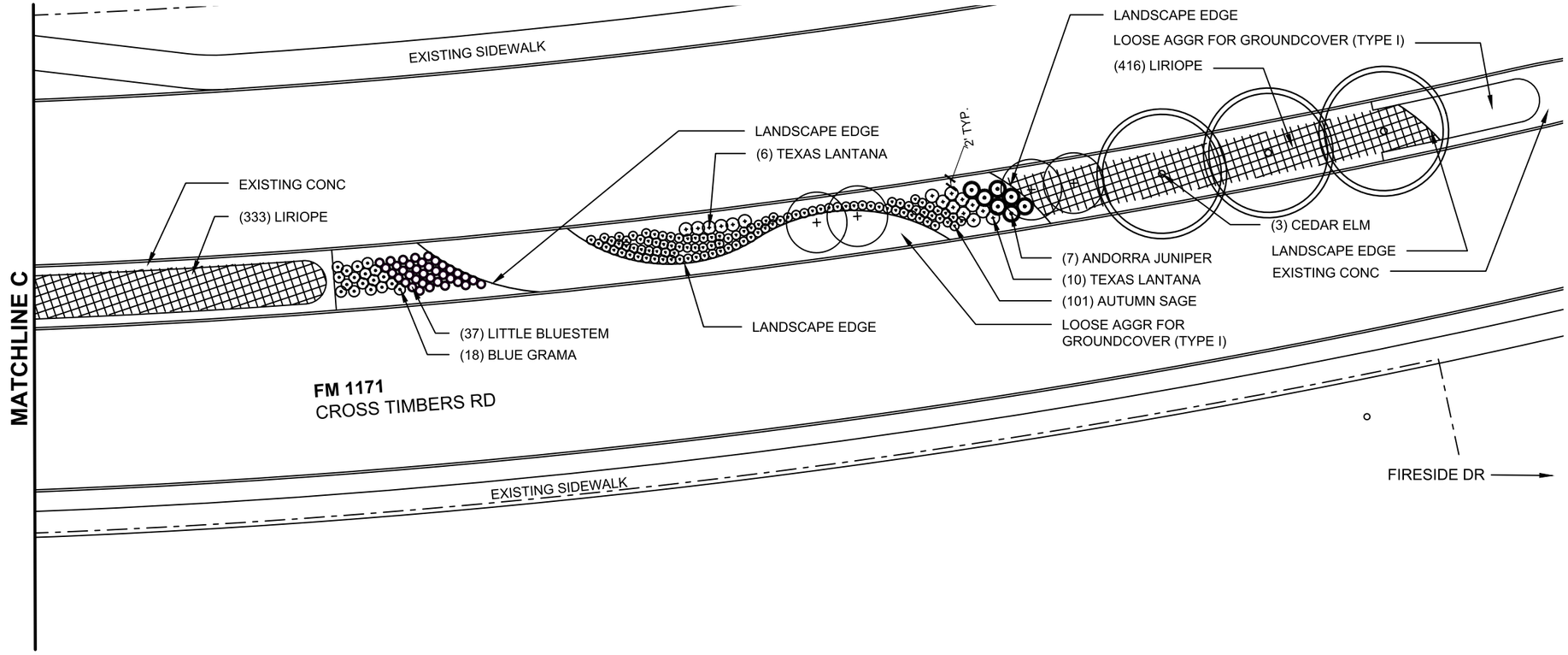
Sheet 7 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	59
	1311	01	058	

TEMPLATED REVISED: 10-23-02

USER ID

DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- EXISTING TREE (TO REMAIN)

MEDIAN 7B PLANTING SUMMARY

	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6002	Liriope	Liriope muscari	749	1 GAL.		12"	10"	18" O.C.	
	Little Bluestem	Schizachyrium scoparium	37	1 GAL.		8"	6"	24" O.C.	
	Blue Grama	Bouteloua gracilis	18	1 GAL.		18"	18"	30" O.C.	
		TOTAL:	**804**						
0192-6003	Autumn Sage	Salvia greggii	101	3 GAL.		12"	12"	24" O.C.	
	Texas Lantana	Lantana urticoides	16	3 GAL.		12"	12"	48" O.C.	
		TOTAL:	**117**						
0192-6004	Andorra Juniper	Juniperus horizontalis	7	5 GAL.		6"	12"	48" O.C.	'Plumosa Compacta'
		TOTAL:	**7**						
0192-6025	Cedar Elm	Ulmus crassifolia	3	45 GAL.	2.5"	10'	6'	as shown	Straight central leader, matching; container grown
		TOTAL:	**3**						

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

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FLOWER MOUND
PLANTING PLAN
MEDIAN 7B

SCALE: 1" = 30'

Sheet 8 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	60
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

USER ID

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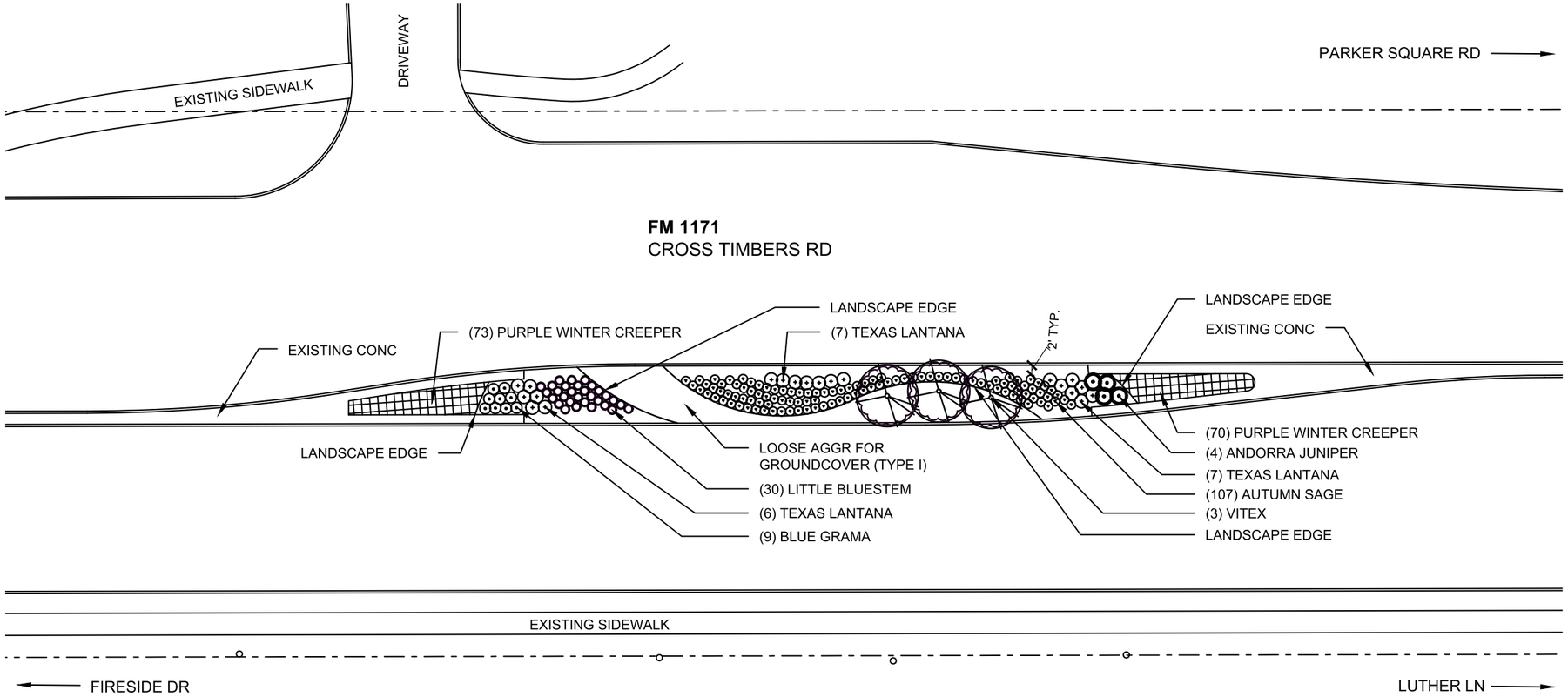

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

MEDIAN 8 PLANTING SUMMARY

	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6002	Purple Winter Creeper	Euonymus fortunei	143	1 GAL.		6"	6"	18" O.C.	'Coloratus'
	Little Bluestem	Schizachyrium scoparium	30	1 GAL.		8"	6"	24" O.C.	
	Blue Grama	Bouteloua gracilis	9	1 GAL.		18"	18"	30" O.C.	
		TOTAL:	**182**						
0192-6003	Autumn Sage	Salvia greggii	107	3 GAL.		12"	12"	24" O.C.	
	Texas Lantana	Lantana urticoides	20	3 GAL.		12"	12"	48" O.C.	
		TOTAL:	**127**						
0192-6004	Andorra Juniper	Juniperus horizontalis	4	5 GAL.		6"	12"	48" O.C.	'Plumosa Compacta'
		TOTAL:	**4**						
0192-6024	Vitex	Vitex agnus-castus	3	30 GAL.	2"	7'	4'	as shown	3 trunk minimum & matching
		TOTAL:	**3**						

REGISTERED LANDSCAPE ARCHITECT
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FLOWER MOUND
PLANTING PLAN
MEDIAN 8

SCALE: 1" = 30'

Sheet 9 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	61
	1311	01	058	

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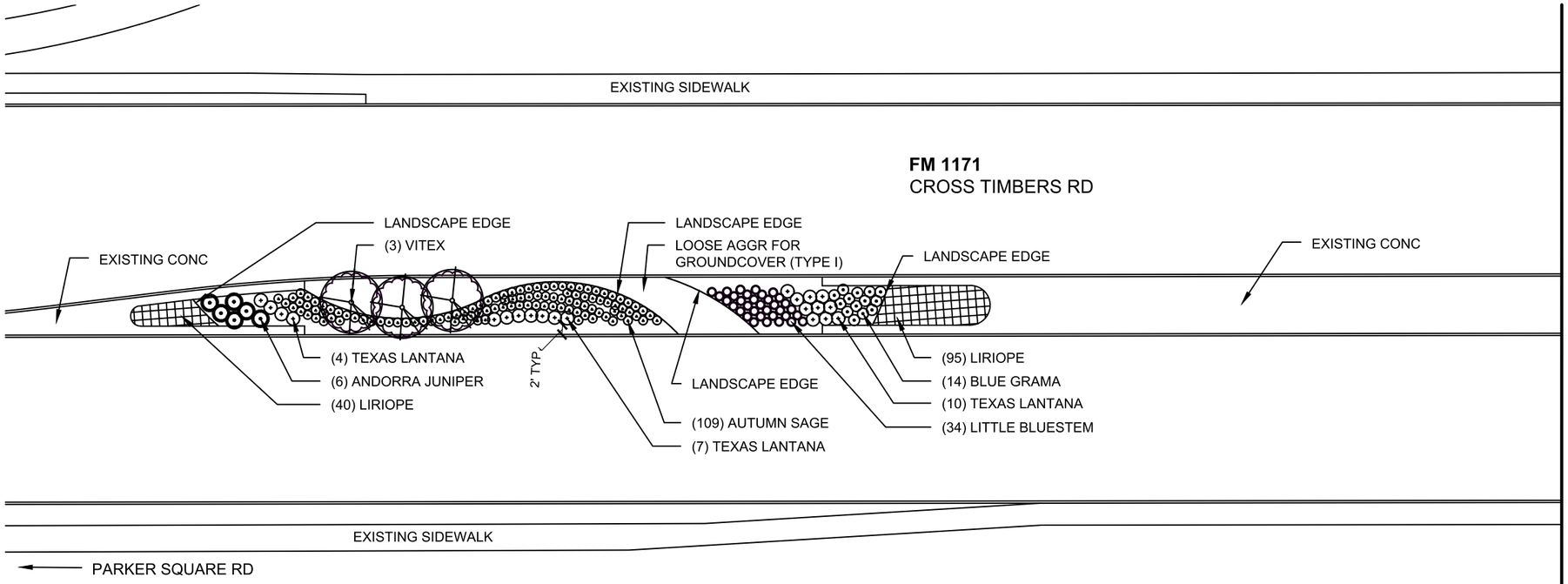

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

MEDIAN 9A PLANTING SUMMARY

	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6002	Liriope	Liriope muscari	135	1 GAL.		12"	10"	18" O.C.	
	Little Bluestem	Schizachyrium scoparium	34	1 GAL.		8"	6"	24" O.C.	
	Blue Grama	Bouteloua gracilis	14	1 GAL.		18"	18"	30" O.C.	
		TOTAL:	**183**						
0192-6003	Autumn Sage	Salvia greggii	109	3 GAL.		12"	12"	24" O.C.	
	Texas lantana	Lantana urticoides	21	3 GAL.		12"	12"	48" O.C.	
		TOTAL:	**130**						
0192-6004	Andorra Juniper	Juniperus horizontalis	6	5 GAL.		6"	12"	48" O.C.	'Plumosa Compacta'
		TOTAL:	**6**						
0192-6024	Vitex	Vitex agnus-castus	3	30 GAL.		7'	4'	as shown	3 trunk minimum & matching
		TOTAL:	**3**						

REGISTERED LANDSCAPE ARCHITECT
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FLOWER MOUND
PLANTING PLAN
MEDIAN 9A

SCALE: 1" = 30'

Sheet 10 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
	6	(SEE TITLE SHEET)		FM 1171
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	62
	1311	01	058	

USER ID

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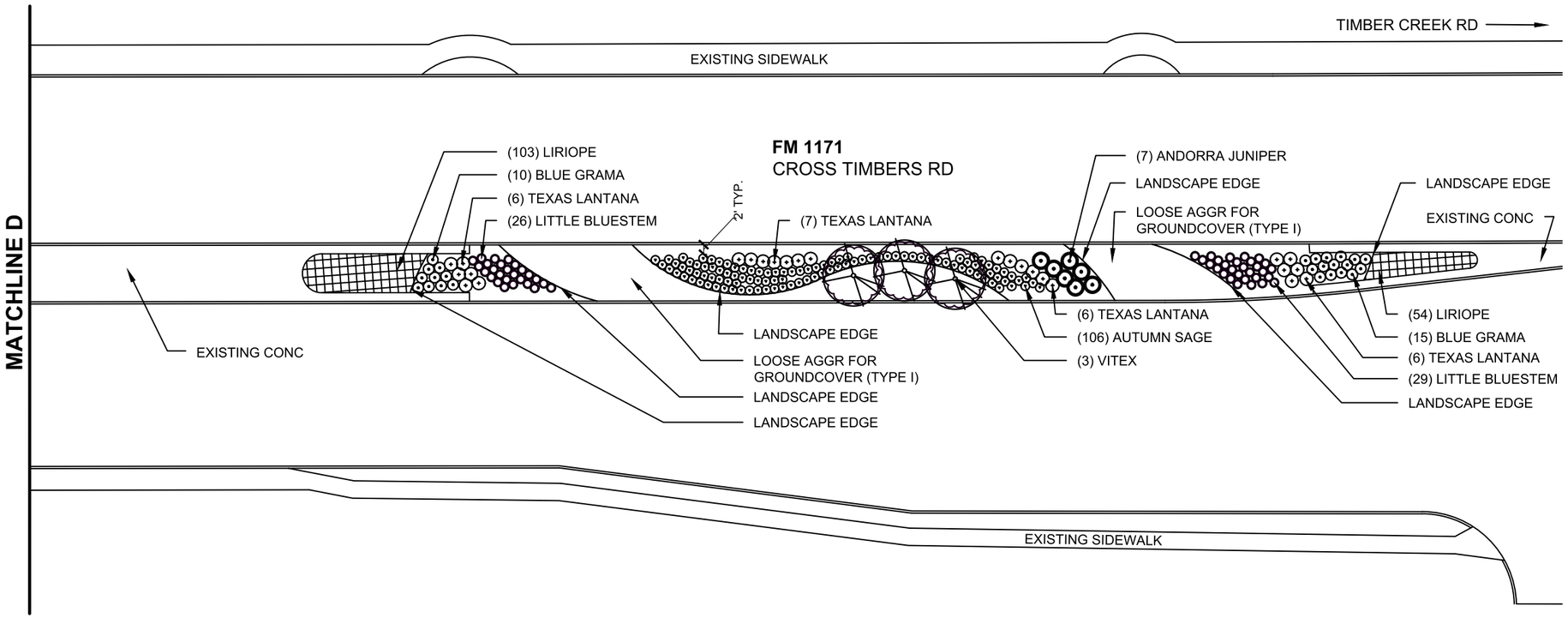
DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- EXISTING TREE (TO REMAIN)

MEDIAN 9B PLANTING SUMMARY

	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6002	Liriope	Liriope muscari	157	1 GAL.		12"	10"	18" O.C.	
	Little Bluestem	Schizachyrium scoparium	55	1 GAL.		8"	6"	24" O.C.	
	Blue Grama	Bouteloua gracilis	25	1 GAL.		18"	18"	30" O.C.	
		TOTAL:	**237**						
0192-6003	Autumn Sage	Salvia greggii	106	3 GAL.		12"	12"	24" O.C.	
	Texas Lantana	Lantana urticoides	25	3 GAL.		12"	12"	48" O.C.	
		TOTAL:	**131**						
0192-6004	Andorra Juniper	Juniperus horizontalis	7	5 GAL.		6"	12"	48" O.C.	'Plumosa Compacta'
		TOTAL:	**7**						
0192-6024	Vitex	Vitex agnus-castus	3	30 GAL.	2"	7'	4'	as shown	3 trunk minimum & matching
		TOTAL:	**3**						

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
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06/25/2021

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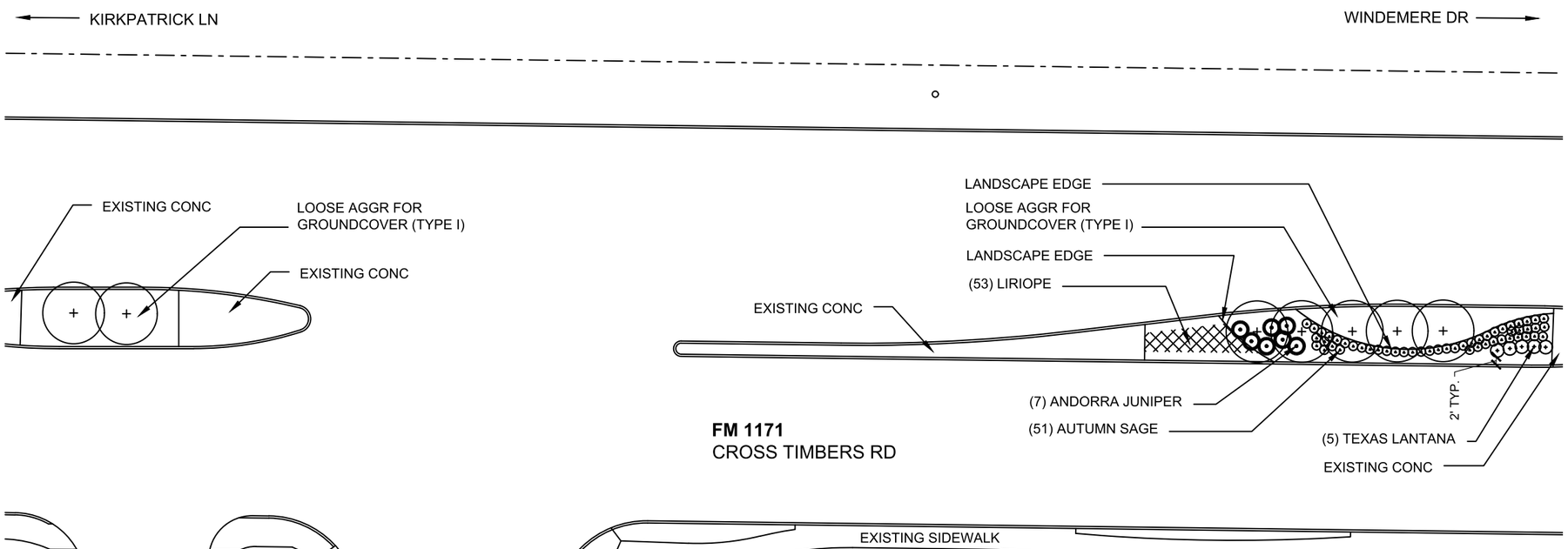
FLOWER MOUND
PLANTING PLAN
MEDIAN 9B

SCALE: 1" = 30'

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	63
	1311	01	058	



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- EXISTING TREE (TO REMAIN)

MEDIAN 11 PLANTING SUMMARY

	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6002	Liriope	Liriope muscari	53	1 GAL.		12"	10"	18" O.C.	
		TOTAL:	**53**						
0192-6003	Autumn Sage	Salvia greggii	51	3 GAL.		12"	12"	24" O.C.	
	Texas Lantana	Lantana urticoides	5	3 GAL.		12"	12"	48" O.C.	
		TOTAL:	**56**						
0192-6004	Andorra Juniper	Juniperus horizontalis	7	5 GAL.		6"	12"	48" O.C.	'Plumosa Compacta'
		TOTAL:	**7**						

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
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STATE OF TEXAS

06/25/2021

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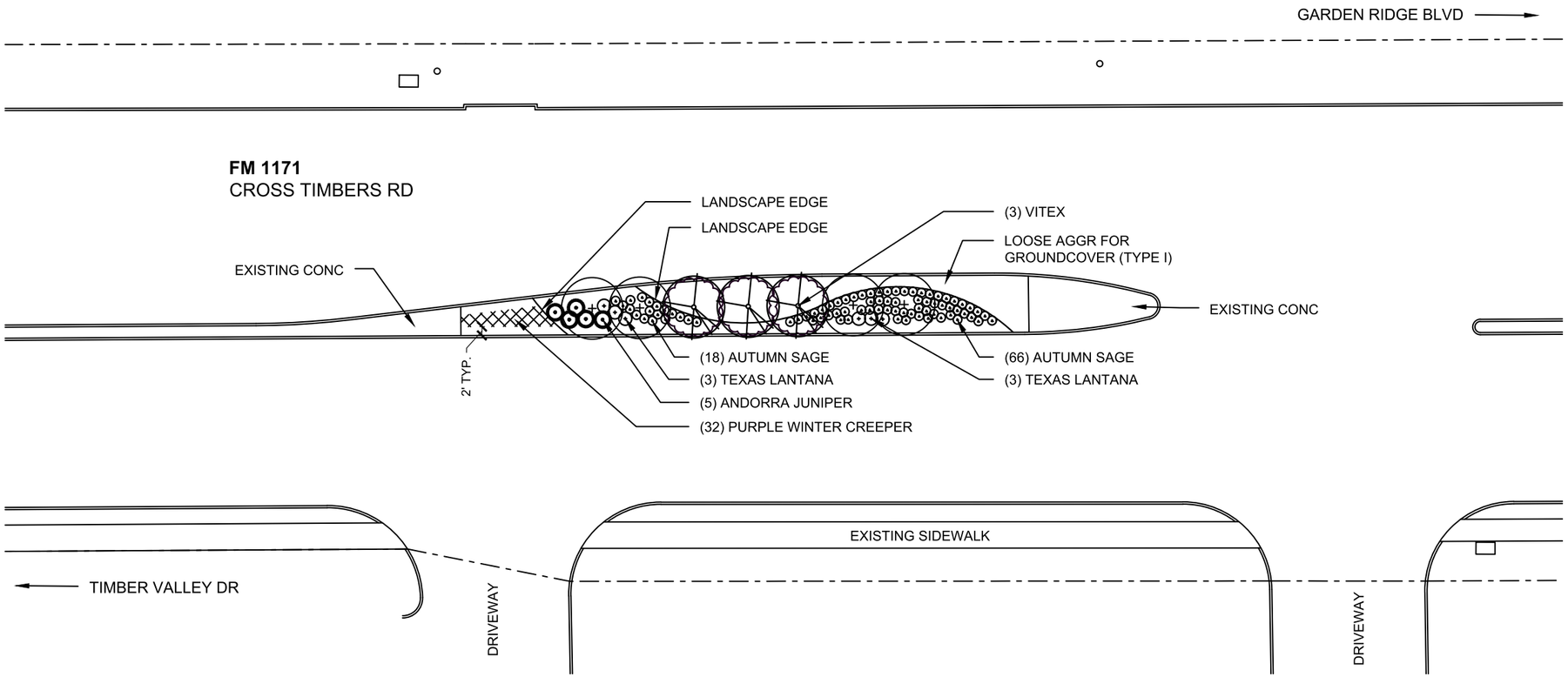
FLOWER MOUND
PLANTING PLAN
MEDIAN 10 & 11

SCALE: 1" = 30'

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	64
	1311	01	058	



MEDIAN 12 PLANTING SUMMARY

	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6002	Purple Winter Creeper	Euonymus fortunei	32	1 GAL.		6"	6"	18" O.C.	'Coloratus'
		TOTAL:	**32**						
0192-6003	Autumn Sage	Salvia greggii	84	3 GAL.		12"	12"	24" O.C.	
	Texas Lantana	Lantana urticoides	6	3 GAL.		12"	12"	48" O.C.	
		TOTAL:	**90**						
0192-6004	Andorra Juniper	Juniperus horizontalis	5	5 GAL.		6"	12"	48" O.C.	'Plumosa Compacta'
		TOTAL:	**5**						
0192-6024	Vitex	Vitex agnus-castus	3	30 GAL.	2"	7'	4'	as shown	3 trunk minimum & matching
		TOTAL:	**3**						

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.
2. PROTECT EXISTING TREES (TO REMAIN) FROM DAMAGE DURING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW
- EXISTING TREE (TO REMAIN)

REGISTERED LANDSCAPE ARCHITECT
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06/25/2021

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FLOWER MOUND
PLANTING PLAN
MEDIAN 12

SCALE: 1" = 30'

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DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	65
	1311	01	058	

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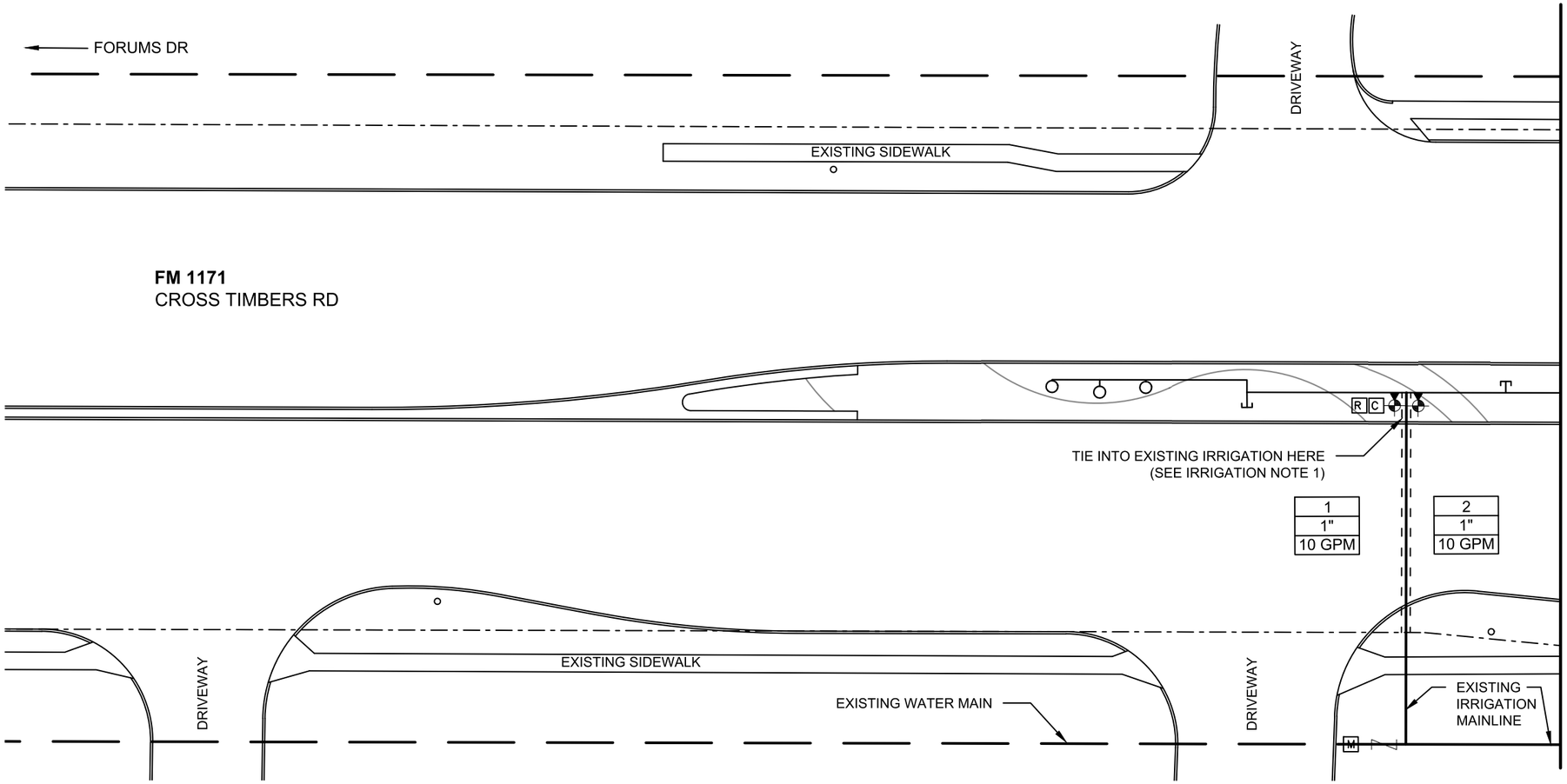

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

IRRIGATION LEGEND

- 3 / 1.5" / 18 GPM = ZONE NUMBER / VALVE SIZE / GALLONS PER MINUTE
- PROPOSED $\frac{3}{4}$" IRRIGATION LATERAL
- EXISTING IRRIGATION MAIN LINE
- EXISTING BORE / EXISTING IRRIGATION MAIN LINE
- BEGIN PROPOSED DRIP TUBING
- PROPOSED LATERAL TO TREE DRIP CIRCLE
- PROPOSED REMOTE CONTROL VALVE WITH PRESSURE REDUCER & FILTER
- C — PROPOSED CONTROLLER
- R — PROPOSED RAIN / FREEZE SENSOR
- M — EXISTING METER
- EXISTING BACKFLOW PREVENTOR

IRRIGATION NOTES:

1. TIE PROPOSED IRRIGATION LINE(S) INTO EXISTING IRRIGATION MAIN LINE AT EACH MEDIAN, AS SHOWN ON PLANS. INSTALL CONTROLLERS AT EACH VALVE MANIFOLD LOCATION. SOLENOIDS TO BE COMPATIBLE WITH PROPOSED LEIT IRRIGATION CONTROLLERS (SEE IRRIGATION SPECIFICATIONS, SHEET 86).
2. EXISTING CONTROLLER AT EXISTING MASTER VALVE MUST BE SYNCED TO OPERATE CONCURRENTLY WITH PROPOSED CONTROLLER(S) AT PROPOSED SECTION VALVE(S).
3. SEE IRRIGATION DETAILS FOR DRIP TUBING PLACEMENT.

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

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FLOWER MOUND
IRRIGATION PLAN
MEDIAN 2A

SCALE: 1" = 30'

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	66
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02

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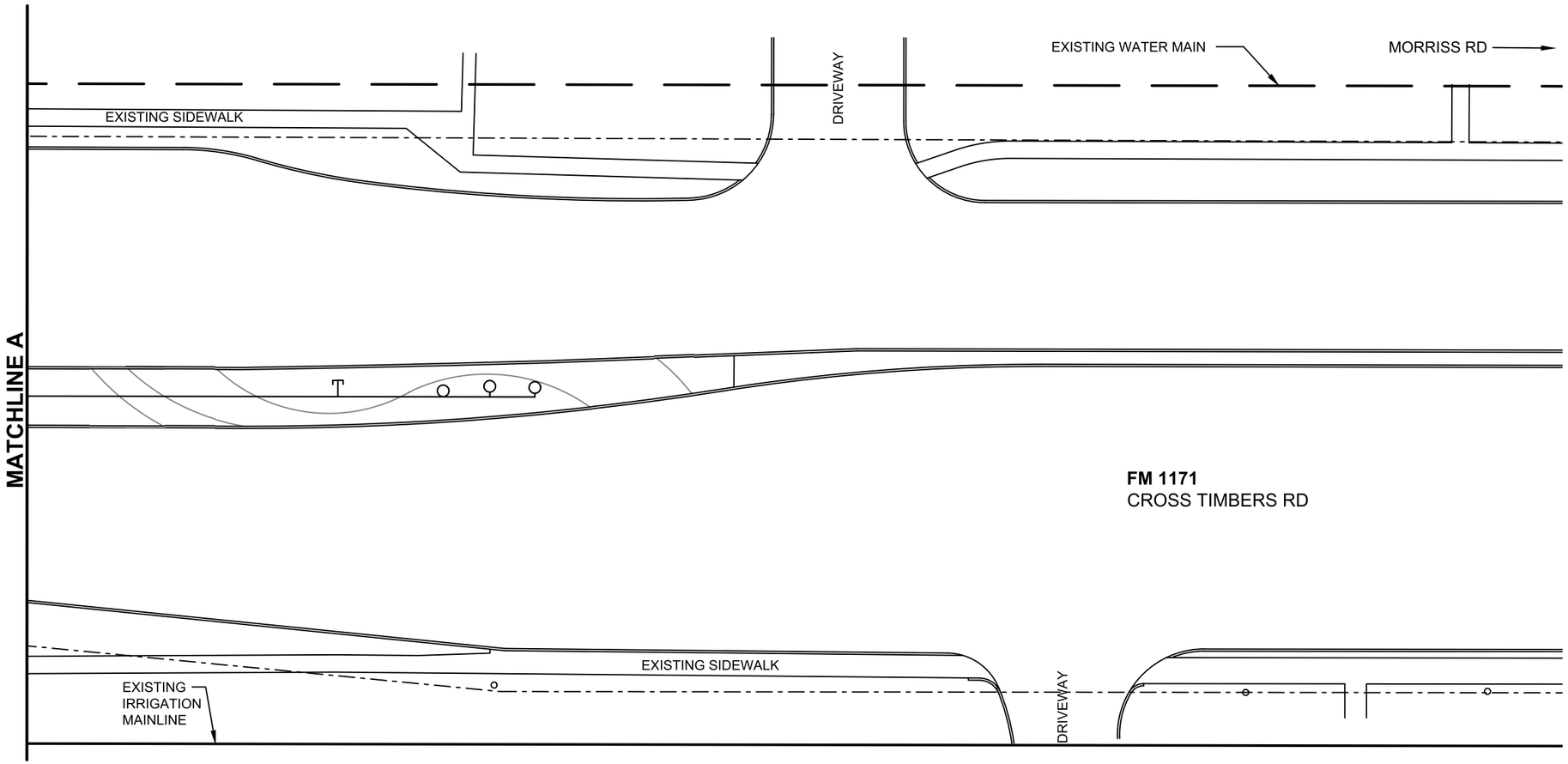

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

IRRIGATION LEGEND

3	= ZONE NUMBER
1.5"	= VALVE SIZE
18 GPM	= GALLONS PER MINUTE

- PROPOSED $\frac{3}{4}$" IRRIGATION LATERAL
- EXISTING IRRIGATION MAIN LINE
- EXISTING BORE / EXISTING IRRIGATION MAIN LINE
- T — BEGIN PROPOSED DRIP TUBING
- PROPOSED LATERAL TO TREE DRIP CIRCLE
- PROPOSED REMOTE CONTROL VALVE WITH PRESSURE REDUCER & FILTER
- C — PROPOSED CONTROLLER
- R — PROPOSED RAIN / FREEZE SENSOR
- M — EXISTING METER
- EXISTING BACKFLOW PREVENTOR

IRRIGATION NOTES:

1. TIE PROPOSED IRRIGATION LINE(S) INTO EXISTING IRRIGATION MAIN LINE AT EACH MEDIAN, AS SHOWN ON PLANS. INSTALL CONTROLLERS AT EACH VALVE MANIFOLD LOCATION. SOLENOIDS TO BE COMPATIBLE WITH PROPOSED LEIT IRRIGATION CONTROLLERS (SEE IRRIGATION SPECIFICATIONS, SHEET 86).
2. EXISTING CONTROLLER AT EXISTING MASTER VALVE MUST BE SYNCED TO OPERATE CONCURRENTLY WITH PROPOSED CONTROLLER(S) AT PROPOSED SECTION VALVE(S).
3. SEE IRRIGATION DETAILS FOR DRIP TUBING PLACEMENT.

REGISTERED LANDSCAPE ARCHITECT
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3401
STATE OF TEXAS

06/25/2021

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0 30 60 90

FLOWER MOUND
IRRIGATION PLAN
MEDIAN 2B

SCALE: 1" = 30'

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	67
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

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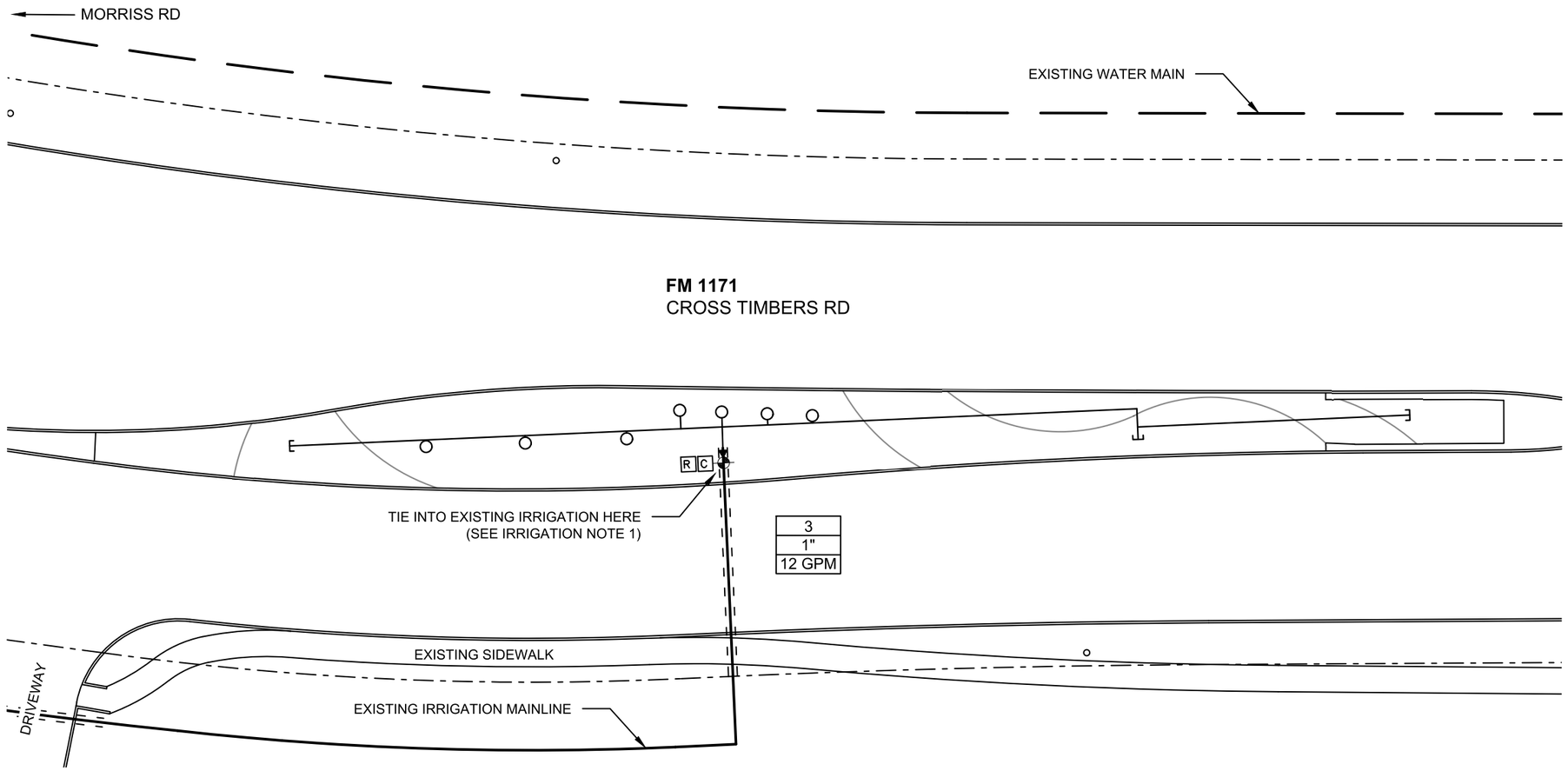

NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

IRRIGATION LEGEND

3	= ZONE NUMBER
1.5"	= VALVE SIZE
18 GPM	= GALLONS PER MINUTE

- PROPOSED $\frac{3}{4}$" IRRIGATION LATERAL
- EXISTING IRRIGATION MAIN LINE
- EXISTING BORE / EXISTING IRRIGATION MAIN LINE
- BEGIN PROPOSED DRIP TUBING
- PROPOSED LATERAL TO TREE DRIP CIRCLE
- PROPOSED REMOTE CONTROL VALVE WITH PRESSURE REDUCER & FILTER
- [C] PROPOSED CONTROLLER
- [R] PROPOSED RAIN / FREEZE SENSOR
- [M] EXISTING METER
- EXISTING BACKFLOW PREVENTOR

IRRIGATION NOTES:

1. TIE PROPOSED IRRIGATION LINE(S) INTO EXISTING IRRIGATION MAIN LINE AT EACH MEDIAN, AS SHOWN ON PLANS. INSTALL CONTROLLERS AT EACH VALVE MANIFOLD LOCATION. SOLENOIDS TO BE COMPATIBLE WITH PROPOSED LEIT IRRIGATION CONTROLLERS (SEE IRRIGATION SPECIFICATIONS, SHEET 86).
2. EXISTING CONTROLLER AT EXISTING MASTER VALVE MUST BE SYNCED TO OPERATE CONCURRENTLY WITH PROPOSED CONTROLLER(S) AT PROPOSED SECTION VALVE(S).
3. SEE IRRIGATION DETAILS FOR DRIP TUBING PLACEMENT.

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FLOWER MOUND
IRRIGATION PLAN
MEDIAN 3

SCALE: 1" = 30'

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DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	68
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

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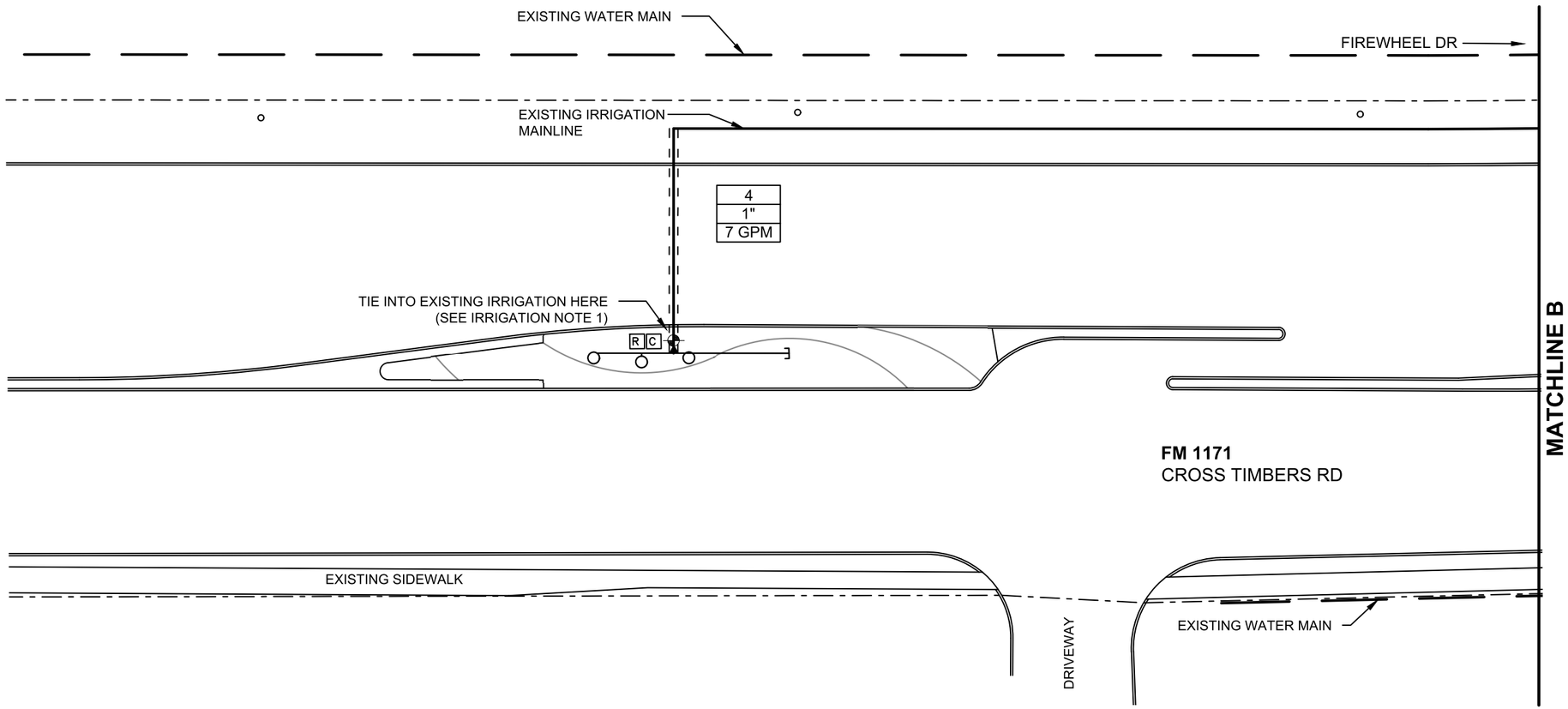
DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

IRRIGATION LEGEND

3	= ZONE NUMBER
1.5"	= VALVE SIZE
18 GPM	= GALLONS PER MINUTE

- PROPOSED $\frac{3}{4}$" IRRIGATION LATERAL
- EXISTING IRRIGATION MAIN LINE
- EXISTING BORE / EXISTING IRRIGATION MAIN LINE
- BEGIN PROPOSED DRIP TUBING
- PROPOSED LATERAL TO TREE DRIP CIRCLE
- PROPOSED REMOTE CONTROL VALVE WITH PRESSURE REDUCER & FILTER
- [C] PROPOSED CONTROLLER
- [R] PROPOSED RAIN / FREEZE SENSOR
- [M] EXISTING METER
- EXISTING BACKFLOW PREVENTOR

IRRIGATION NOTES:

1. TIE PROPOSED IRRIGATION LINE(S) INTO EXISTING IRRIGATION MAIN LINE AT EACH MEDIAN, AS SHOWN ON PLANS. INSTALL CONTROLLERS AT EACH VALVE MANIFOLD LOCATION. SOLENOIDS TO BE COMPATIBLE WITH PROPOSED LEIT IRRIGATION CONTROLLERS (SEE IRRIGATION SPECIFICATIONS, SHEET 86).
2. EXISTING CONTROLLER AT EXISTING MASTER VALVE MUST BE SYNCED TO OPERATE CONCURRENTLY WITH PROPOSED CONTROLLER(S) AT PROPOSED SECTION VALVE(S).
3. SEE IRRIGATION DETAILS FOR DRIP TUBING PLACEMENT.

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

FLOWER MOUND
IRRIGATION PLAN
MEDIAN 4

SCALE: 1" = 30'

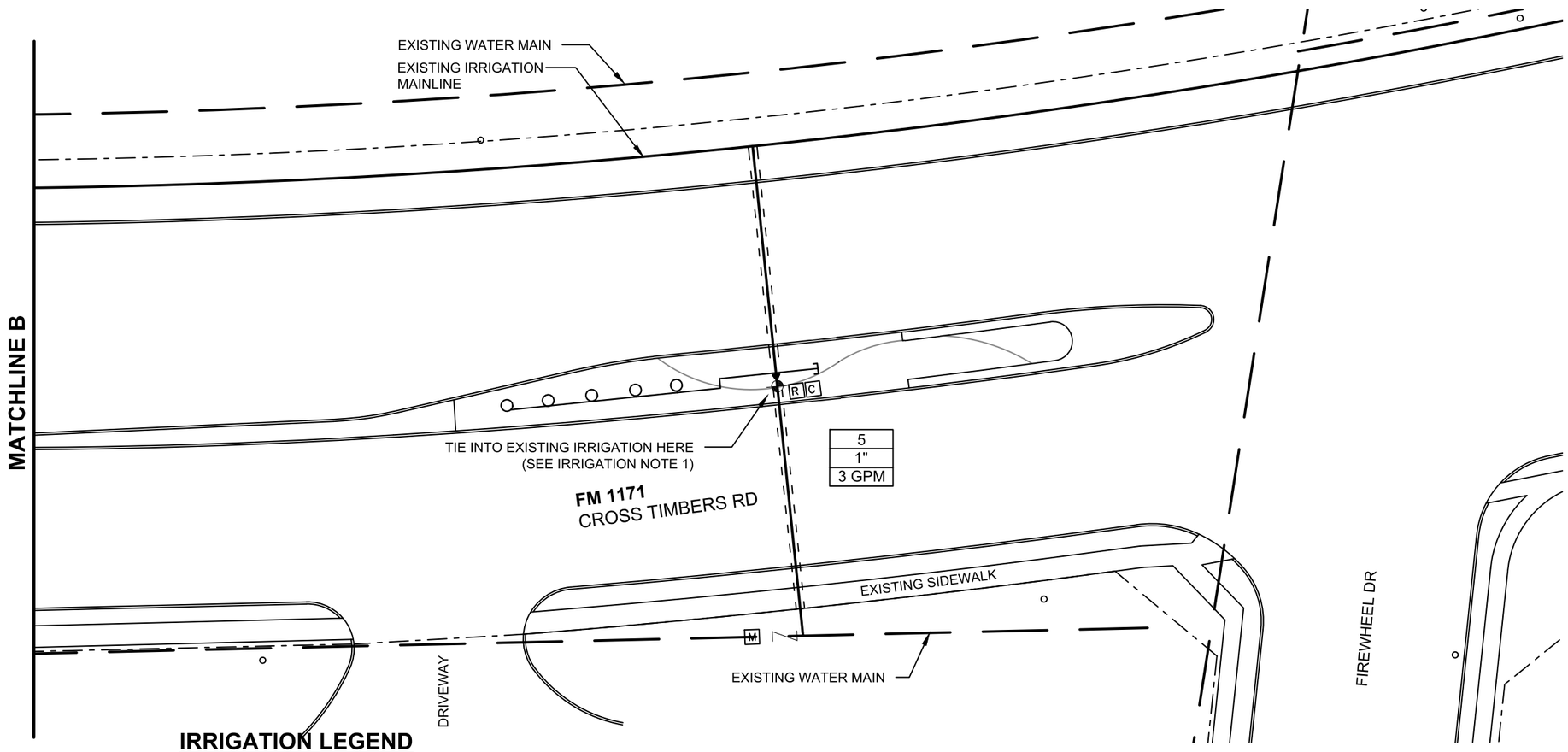
Sheet 4 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	69
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

USER ID

TEMPLATED REVISED: 10-23-02

DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

IRRIGATION LEGEND

3	= ZONE NUMBER
1.5"	= VALVE SIZE
18 GPM	= GALLONS PER MINUTE

- PROPOSED $\frac{3}{4}$" IRRIGATION LATERAL
- EXISTING IRRIGATION MAIN LINE
- EXISTING BORE / EXISTING IRRIGATION MAIN LINE
- BEGIN PROPOSED DRIP TUBING
- PROPOSED LATERAL TO TREE DRIP CIRCLE
- PROPOSED REMOTE CONTROL VALVE WITH PRESSURE REDUCER & FILTER
- C — PROPOSED CONTROLLER
- R — PROPOSED RAIN / FREEZE SENSOR
- M — EXISTING METER
- EXISTING BACKFLOW PREVENTOR

IRRIGATION NOTES:

1. TIE PROPOSED IRRIGATION LINE(S) INTO EXISTING IRRIGATION MAIN LINE AT EACH MEDIAN, AS SHOWN ON PLANS. INSTALL CONTROLLERS AT EACH VALVE MANIFOLD LOCATION. SOLENOIDS TO BE COMPATIBLE WITH PROPOSED LEIT IRRIGATION CONTROLLERS (SEE IRRIGATION SPECIFICATIONS, SHEET 86).
2. EXISTING CONTROLLER AT EXISTING MASTER VALVE MUST BE SYNCED TO OPERATE CONCURRENTLY WITH PROPOSED CONTROLLER(S) AT PROPOSED SECTION VALVE(S).
3. SEE IRRIGATION DETAILS FOR DRIP TUBING PLACEMENT.

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

FLOWER MOUND
IRRIGATION PLAN
MEDIAN 5

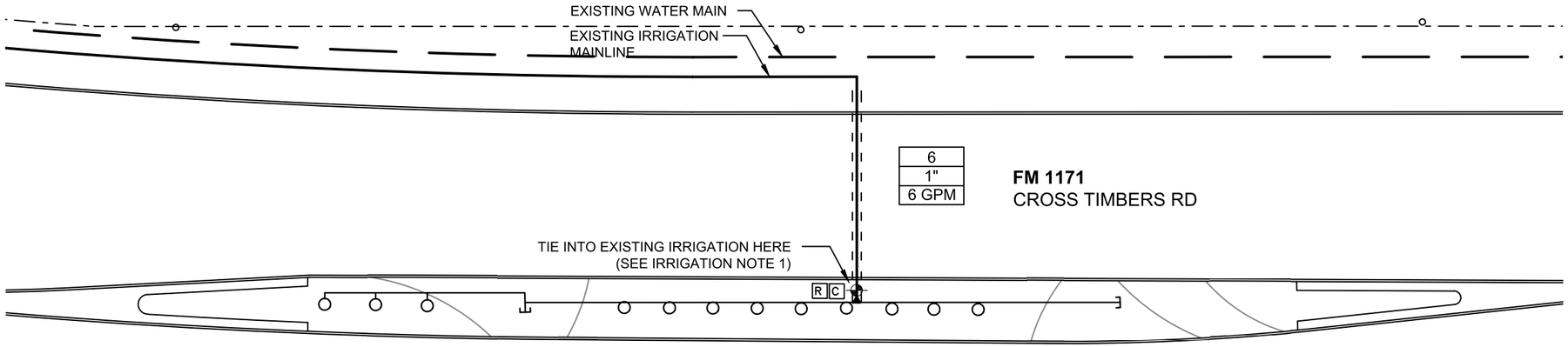
SCALE: 1" = 30'

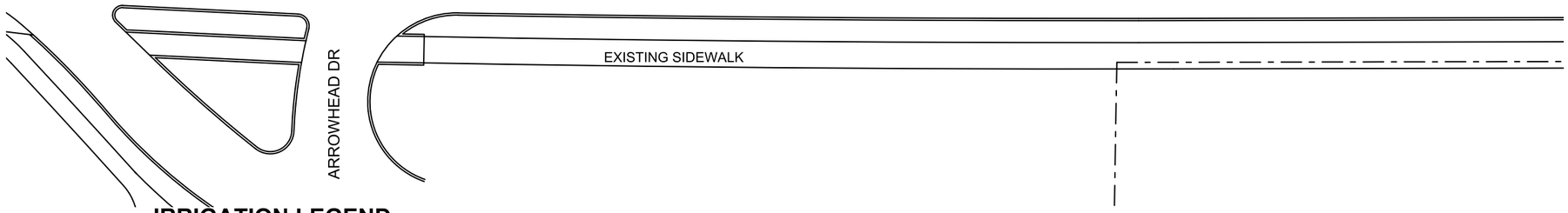
Sheet 5 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	70
	1311	01	058	

TEMPLATED REVISED: 10-23-02

DATE





NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

IRRIGATION LEGEND

3	= ZONE NUMBER
1.5"	= VALVE SIZE
18 GPM	= GALLONS PER MINUTE

- PROPOSED $\frac{3}{4}$" IRRIGATION LATERAL
- EXISTING IRRIGATION MAIN LINE
- EXISTING BORE / EXISTING IRRIGATION MAIN LINE
- BEGIN PROPOSED DRIP TUBING
- PROPOSED LATERAL TO TREE DRIP CIRCLE
- PROPOSED REMOTE CONTROL VALVE WITH PRESSURE REDUCER & FILTER
- C — PROPOSED CONTROLLER
- R — PROPOSED RAIN / FREEZE SENSOR
- M — EXISTING METER
- EXISTING BACKFLOW PREVENTOR

IRRIGATION NOTES:

1. TIE PROPOSED IRRIGATION LINE(S) INTO EXISTING IRRIGATION MAIN LINE AT EACH MEDIAN, AS SHOWN ON PLANS. INSTALL CONTROLLERS AT EACH VALVE MANIFOLD LOCATION. SOLENOIDS TO BE COMPATIBLE WITH PROPOSED LEIT IRRIGATION CONTROLLERS (SEE IRRIGATION SPECIFICATIONS, SHEET 86).
2. EXISTING CONTROLLER AT EXISTING MASTER VALVE MUST BE SYNCED TO OPERATE CONCURRENTLY WITH PROPOSED CONTROLLER(S) AT PROPOSED SECTION VALVE(S).
3. SEE IRRIGATION DETAILS FOR DRIP TUBING PLACEMENT.

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

FLOWER MOUND
IRRIGATION PLAN
MEDIAN 6

SCALE: 1" = 30'

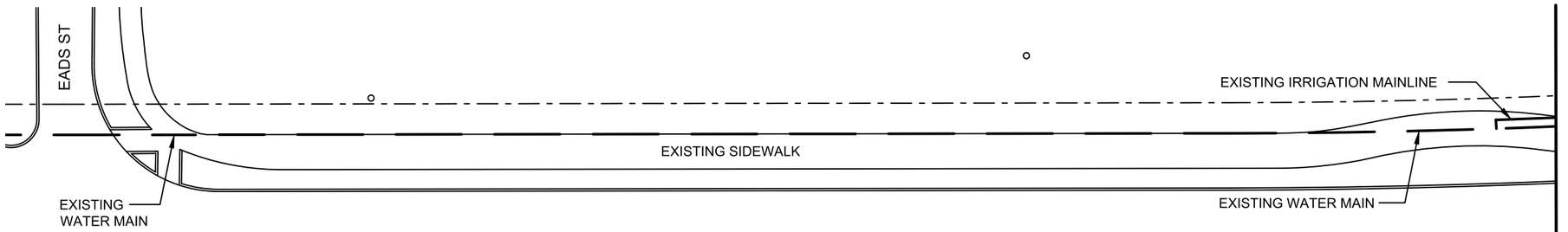
Sheet 6 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	71
	1311	01	058	

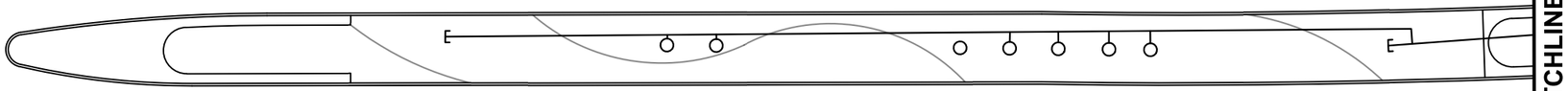
TEMPLATED REVISED: 10-23-02

DATE

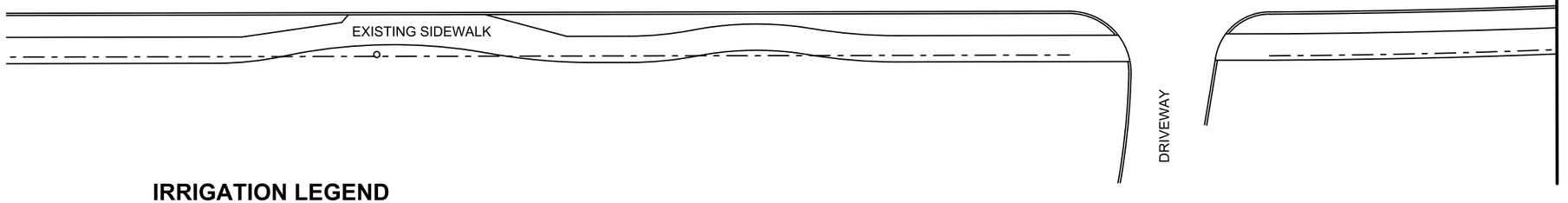
USER ID



FM 1171
CROSS TIMBERS RD



MATCHLINE C



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

IRRIGATION LEGEND

3	= ZONE NUMBER
1.5"	= VALVE SIZE
18 GPM	= GALLONS PER MINUTE

- PROPOSED $\frac{3}{4}$" IRRIGATION LATERAL
- EXISTING IRRIGATION MAIN LINE
- EXISTING BORE / EXISTING IRRIGATION MAIN LINE
- BEGIN PROPOSED DRIP TUBING
- PROPOSED LATERAL TO TREE DRIP CIRCLE
- PROPOSED REMOTE CONTROL VALVE WITH PRESSURE REDUCER & FILTER
- C PROPOSED CONTROLLER
- R PROPOSED RAIN / FREEZE SENSOR
- M EXISTING METER
- EXISTING BACKFLOW PREVENTOR

IRRIGATION NOTES:

1. TIE PROPOSED IRRIGATION LINE(S) INTO EXISTING IRRIGATION MAIN LINE AT EACH MEDIAN, AS SHOWN ON PLANS. INSTALL CONTROLLERS AT EACH VALVE MANIFOLD LOCATION. SOLENOIDS TO BE COMPATIBLE WITH PROPOSED LEIT IRRIGATION CONTROLLERS (SEE IRRIGATION SPECIFICATIONS, SHEET 86).
2. EXISTING CONTROLLER AT EXISTING MASTER VALVE MUST BE SYNCED TO OPERATE CONCURRENTLY WITH PROPOSED CONTROLLER(S) AT PROPOSED SECTION VALVE(S).
3. SEE IRRIGATION DETAILS FOR DRIP TUBING PLACEMENT.

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

FLOWER MOUND
IRRIGATION PLAN
MEDIAN 7A

SCALE: 1" = 30'

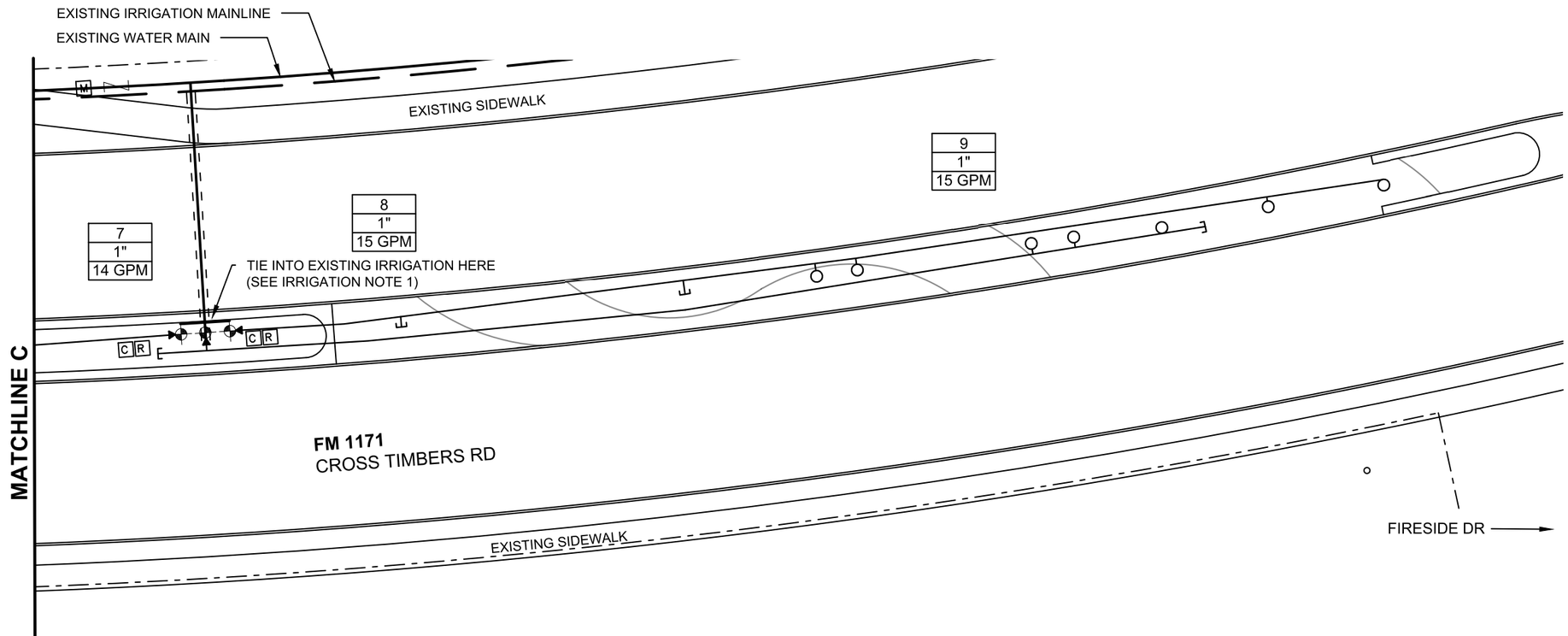
Sheet 7 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	72
	1311	01	058	

TEMPLATED REVISED: 10-23-02

USER ID

DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

IRRIGATION LEGEND

3	= ZONE NUMBER
1.5"	= VALVE SIZE
18 GPM	= GALLONS PER MINUTE

- PROPOSED ¾" IRRIGATION LATERAL
- EXISTING IRRIGATION MAIN LINE
- EXISTING BORE / EXISTING IRRIGATION MAIN LINE
- BEGIN PROPOSED DRIP TUBING
- PROPOSED LATERAL TO TREE DRIP CIRCLE
- PROPOSED REMOTE CONTROL VALVE WITH PRESSURE REDUCER & FILTER
- [C] PROPOSED CONTROLLER
- [R] PROPOSED RAIN / FREEZE SENSOR
- [M] EXISTING METER
- EXISTING BACKFLOW PREVENTOR

IRRIGATION NOTES:

1. TIE PROPOSED IRRIGATION LINE(S) INTO EXISTING IRRIGATION MAIN LINE AT EACH MEDIAN, AS SHOWN ON PLANS. INSTALL CONTROLLERS AT EACH VALVE MANIFOLD LOCATION. SOLENOIDS TO BE COMPATIBLE WITH PROPOSED LEIT IRRIGATION CONTROLLERS (SEE IRRIGATION SPECIFICATIONS, SHEET 86).
2. EXISTING CONTROLLER AT EXISTING MASTER VALVE MUST BE SYNCED TO OPERATE CONCURRENTLY WITH PROPOSED CONTROLLER(S) AT PROPOSED SECTION VALVE(S).
3. SEE IRRIGATION DETAILS FOR DRIP TUBING PLACEMENT.

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

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FLOWER MOUND
IRRIGATION PLAN
MEDIAN 7B

SCALE: 1" = 30'

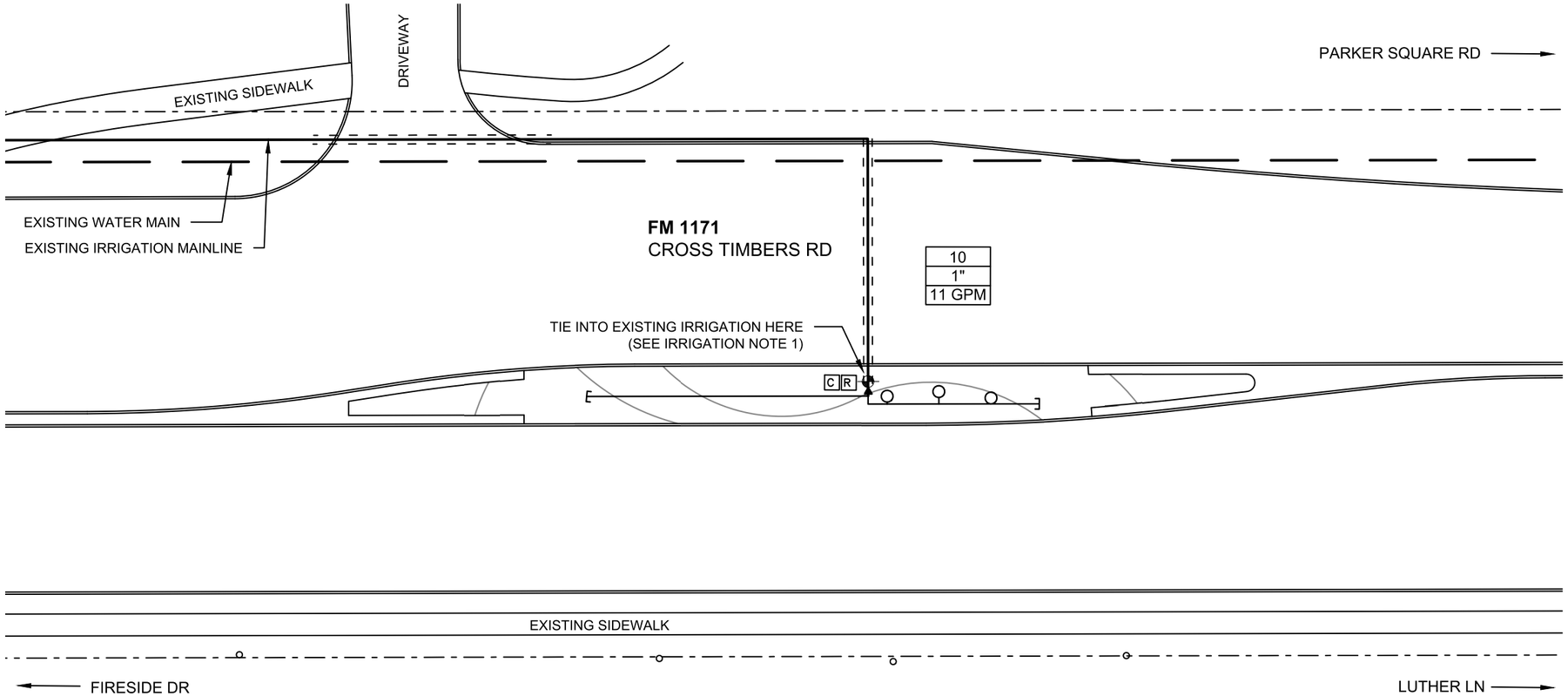
Sheet 8 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	73
	1311	01	058	

TEMPLATED REVISED: 10-23-02

USER ID

DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

IRRIGATION LEGEND

3	= ZONE NUMBER
1.5"	= VALVE SIZE
18 GPM	= GALLONS PER MINUTE

- PROPOSED $\frac{3}{4}$" IRRIGATION LATERAL
- EXISTING IRRIGATION MAIN LINE
- EXISTING BORE / EXISTING IRRIGATION MAIN LINE
- BEGIN PROPOSED DRIP TUBING
- PROPOSED LATERAL TO TREE DRIP CIRCLE
- PROPOSED REMOTE CONTROL VALVE WITH PRESSURE REDUCER & FILTER
- C — PROPOSED CONTROLLER
- R — PROPOSED RAIN / FREEZE SENSOR
- M — EXISTING METER
- EXISTING BACKFLOW PREVENTOR

IRRIGATION NOTES:

1. TIE PROPOSED IRRIGATION LINE(S) INTO EXISTING IRRIGATION MAIN LINE AT EACH MEDIAN, AS SHOWN ON PLANS. INSTALL CONTROLLERS AT EACH VALVE MANIFOLD LOCATION. SOLENOIDS TO BE COMPATIBLE WITH PROPOSED LEIT IRRIGATION CONTROLLERS (SEE IRRIGATION SPECIFICATIONS, SHEET 86).
2. EXISTING CONTROLLER AT EXISTING MASTER VALVE MUST BE SYNCED TO OPERATE CONCURRENTLY WITH PROPOSED CONTROLLER(S) AT PROPOSED SECTION VALVE(S).
3. SEE IRRIGATION DETAILS FOR DRIP TUBING PLACEMENT.

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

FLOWER MOUND
IRRIGATION PLAN
MEDIAN 8

SCALE: 1" = 30'

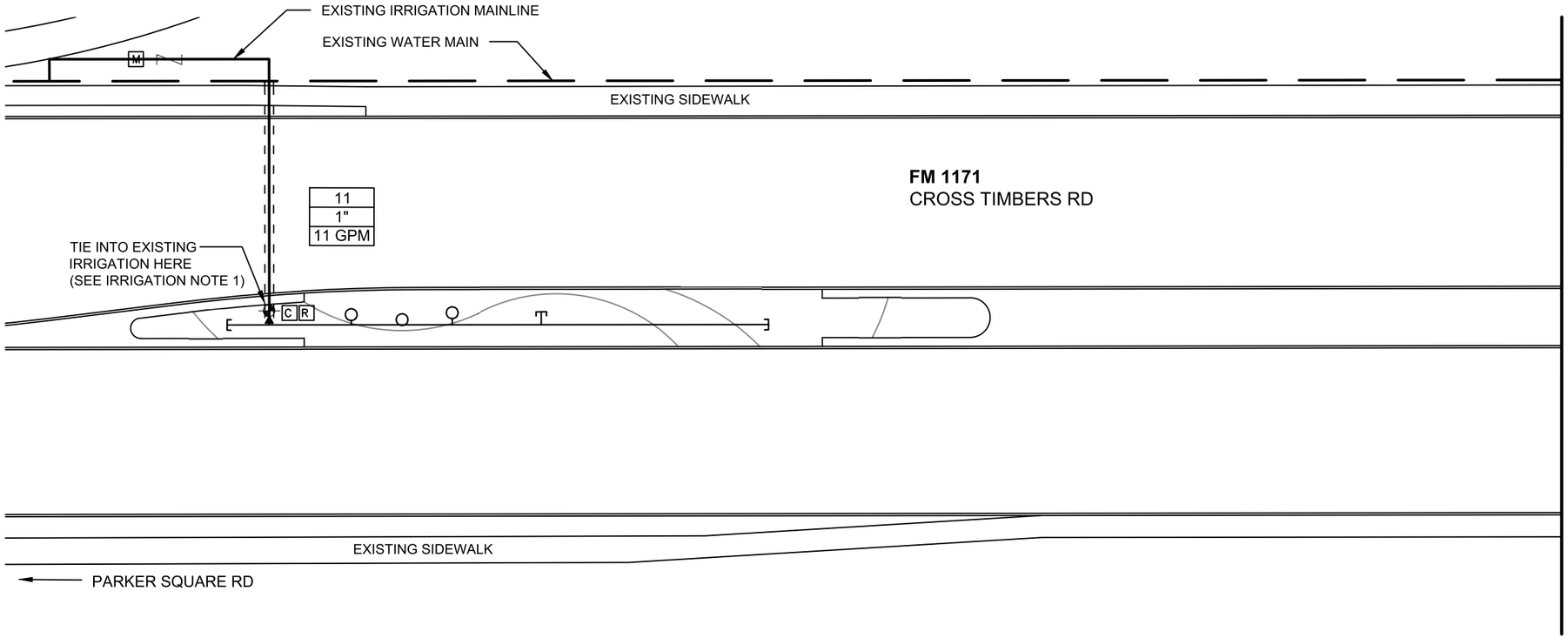
Sheet 9 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	74
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02

USER ID

DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

IRRIGATION LEGEND

3	= ZONE NUMBER
1.5"	= VALVE SIZE
18 GPM	= GALLONS PER MINUTE

- PROPOSED $\frac{3}{4}$" IRRIGATION LATERAL
- EXISTING IRRIGATION MAIN LINE
- EXISTING BORE / EXISTING IRRIGATION MAIN LINE
- BEGIN PROPOSED DRIP TUBING
- PROPOSED LATERAL TO TREE DRIP CIRCLE
- PROPOSED REMOTE CONTROL VALVE WITH PRESSURE REDUCER & FILTER
- C — PROPOSED CONTROLLER
- R — PROPOSED RAIN / FREEZE SENSOR
- M — EXISTING METER
- EXISTING BACKFLOW PREVENTOR

IRRIGATION NOTES:

1. TIE PROPOSED IRRIGATION LINE(S) INTO EXISTING IRRIGATION MAIN LINE AT EACH MEDIAN, AS SHOWN ON PLANS. INSTALL CONTROLLERS AT EACH VALVE MANIFOLD LOCATION. SOLENOIDS TO BE COMPATIBLE WITH PROPOSED LEIT IRRIGATION CONTROLLERS (SEE IRRIGATION SPECIFICATIONS, SHEET 86).
2. EXISTING CONTROLLER AT EXISTING MASTER VALVE MUST BE SYNCED TO OPERATE CONCURRENTLY WITH PROPOSED CONTROLLER(S) AT PROPOSED SECTION VALVE(S).
3. SEE IRRIGATION DETAILS FOR DRIP TUBING PLACEMENT.

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

FLOWER MOUND
IRRIGATION PLAN
MEDIAN 9A

SCALE: 1" = 30'

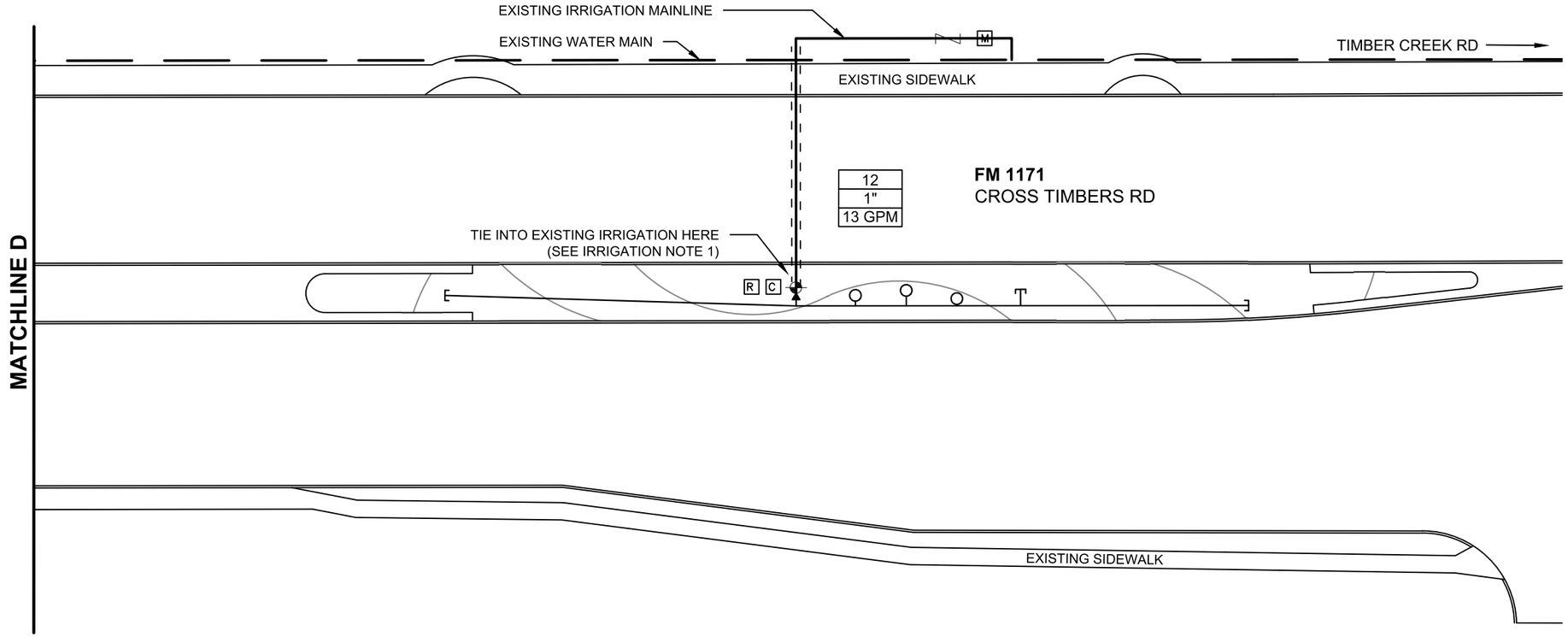
Sheet 10 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	75
	1311	01	058	

TEMPLATED REVISED: 10-23-02

USER ID

DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

IRRIGATION LEGEND

3	= ZONE NUMBER
1.5"	= VALVE SIZE
18 GPM	= GALLONS PER MINUTE

- PROPOSED $\frac{3}{4}$" IRRIGATION LATERAL
- EXISTING IRRIGATION MAIN LINE
- EXISTING BORE / EXISTING IRRIGATION MAIN LINE
- BEGIN PROPOSED DRIP TUBING
- PROPOSED LATERAL TO TREE DRIP CIRCLE
- PROPOSED REMOTE CONTROL VALVE WITH PRESSURE REDUCER & FILTER
- C — PROPOSED CONTROLLER
- R — PROPOSED RAIN / FREEZE SENSOR
- M — EXISTING METER
- EXISTING BACKFLOW PREVENTOR

IRRIGATION NOTES:

1. TIE PROPOSED IRRIGATION LINE(S) INTO EXISTING IRRIGATION MAIN LINE AT EACH MEDIAN, AS SHOWN ON PLANS. INSTALL CONTROLLERS AT EACH VALVE MANIFOLD LOCATION. SOLENOIDS TO BE COMPATIBLE WITH PROPOSED LEIT IRRIGATION CONTROLLERS (SEE IRRIGATION SPECIFICATIONS, SHEET 86).
2. EXISTING CONTROLLER AT EXISTING MASTER VALVE MUST BE SYNCED TO OPERATE CONCURRENTLY WITH PROPOSED CONTROLLER(S) AT PROPOSED SECTION VALVE(S).
3. SEE IRRIGATION DETAILS FOR DRIP TUBING PLACEMENT.

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

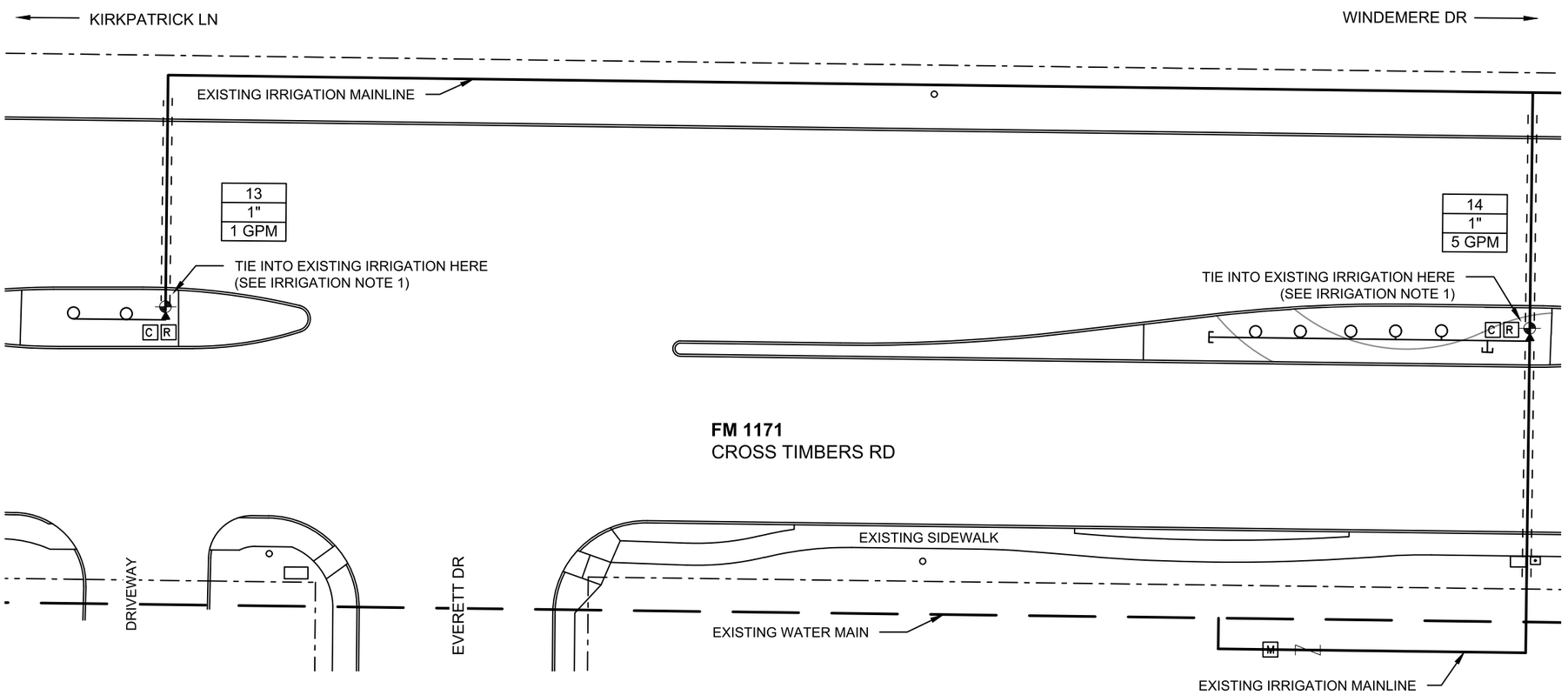
FLOWER MOUND
IRRIGATION PLAN
MEDIAN 9B

SCALE: 1" = 30'

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	76
	1311	01	058	

TEMPLATED REVISED: 10-23-02

DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

IRRIGATION LEGEND

3	= ZONE NUMBER
1.5"	= VALVE SIZE
18 GPM	= GALLONS PER MINUTE

- PROPOSED $\frac{3}{4}$" IRRIGATION LATERAL
- EXISTING IRRIGATION MAIN LINE
- EXISTING BORE / EXISTING IRRIGATION MAIN LINE
- BEGIN PROPOSED DRIP TUBING
- PROPOSED LATERAL TO TREE DRIP CIRCLE
- PROPOSED REMOTE CONTROL VALVE WITH PRESSURE REDUCER & FILTER
- C — PROPOSED CONTROLLER
- R — PROPOSED RAIN / FREEZE SENSOR
- M — EXISTING METER
- EXISTING BACKFLOW PREVENTOR

IRRIGATION NOTES:

1. TIE PROPOSED IRRIGATION LINE(S) INTO EXISTING IRRIGATION MAIN LINE AT EACH MEDIAN, AS SHOWN ON PLANS. INSTALL CONTROLLERS AT EACH VALVE MANIFOLD LOCATION. SOLENOIDS TO BE COMPATIBLE WITH PROPOSED LEIT IRRIGATION CONTROLLERS (SEE IRRIGATION SPECIFICATIONS, SHEET 86).
2. EXISTING CONTROLLER AT EXISTING MASTER VALVE MUST BE SYNCED TO OPERATE CONCURRENTLY WITH PROPOSED CONTROLLER(S) AT PROPOSED SECTION VALVE(S).
3. SEE IRRIGATION DETAILS FOR DRIP TUBING PLACEMENT.

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

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FLOWER MOUND
IRRIGATION PLAN
MEDIAN 10 & 11

SCALE: 1" = 30'

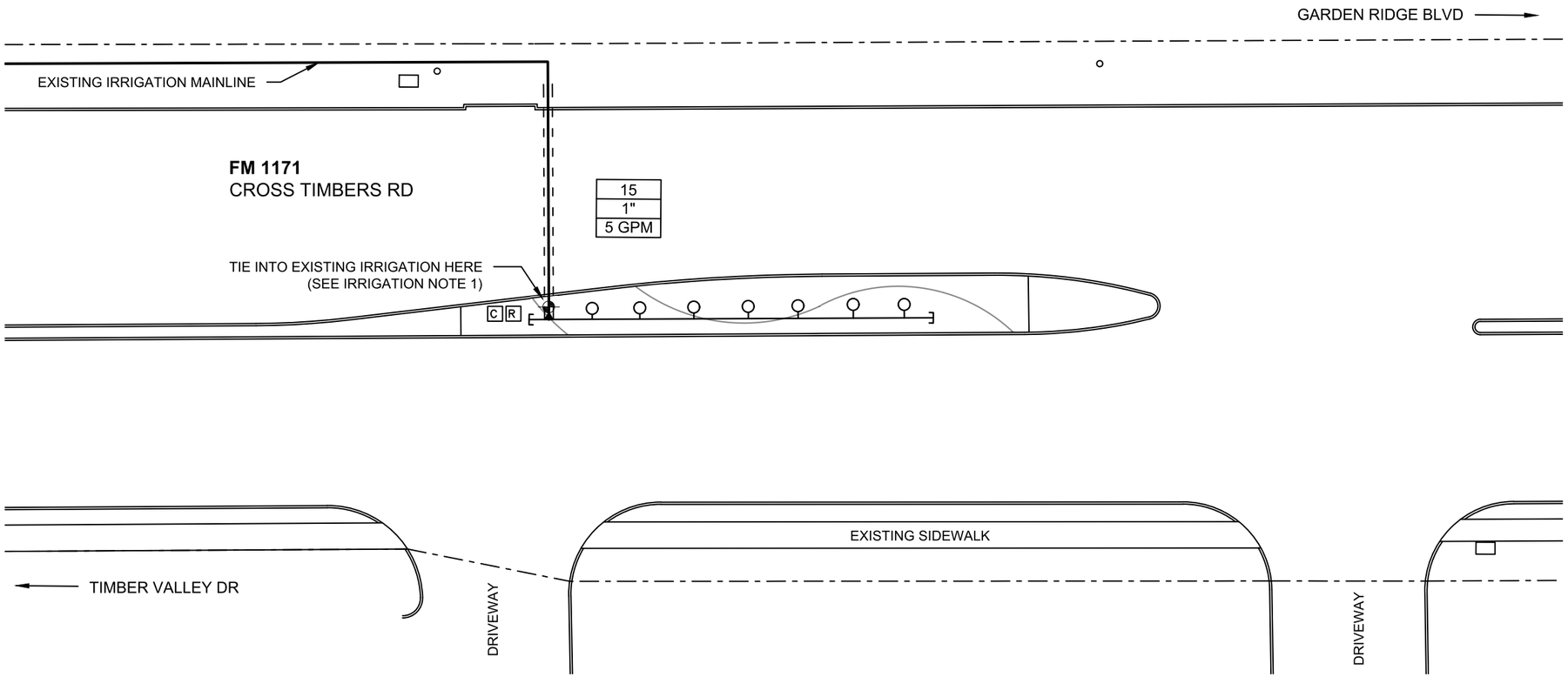
Sheet 12 of 13

DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	
CHECK	CONTROL	SECTION	JOB	77
	1311	01	058	

USER ID

TEMPLATED REVISED: 10-23-02

DATE



NOTES:

1. LOCATE ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION.

LEGEND

- POWER POLE
- TRAFFIC SIGNAL POLE
- UTILITY BOX
- ROW

IRRIGATION LEGEND

3	= ZONE NUMBER
1.5"	= VALVE SIZE
18 GPM	= GALLONS PER MINUTE

- PROPOSED ¾" IRRIGATION LATERAL
- EXISTING IRRIGATION MAIN LINE
- EXISTING BORE / EXISTING IRRIGATION MAIN LINE
- BEGIN PROPOSED DRIP TUBING
- PROPOSED LATERAL TO TREE DRIP CIRCLE
- PROPOSED REMOTE CONTROL VALVE WITH PRESSURE REDUCER & FILTER
- [C] PROPOSED CONTROLLER
- [R] PROPOSED RAIN / FREEZE SENSOR
- [M] EXISTING METER
- EXISTING BACKFLOW PREVENTOR

IRRIGATION NOTES:

1. TIE PROPOSED IRRIGATION LINE(S) INTO EXISTING IRRIGATION MAIN LINE AT EACH MEDIAN, AS SHOWN ON PLANS. INSTALL CONTROLLERS AT EACH VALVE MANIFOLD LOCATION. SOLENOIDS TO BE COMPATIBLE WITH PROPOSED LEIT IRRIGATION CONTROLLERS (SEE IRRIGATION SPECIFICATIONS, SHEET 86).
2. EXISTING CONTROLLER AT EXISTING MASTER VALVE MUST BE SYNCED TO OPERATE CONCURRENTLY WITH PROPOSED CONTROLLER(S) AT PROPOSED SECTION VALVE(S).
3. SEE IRRIGATION DETAILS FOR DRIP TUBING PLACEMENT.

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

NORTH

0 30 60 90

Texas Department of Transportation

FLOWER MOUND
IRRIGATION PLAN
MEDIAN 12

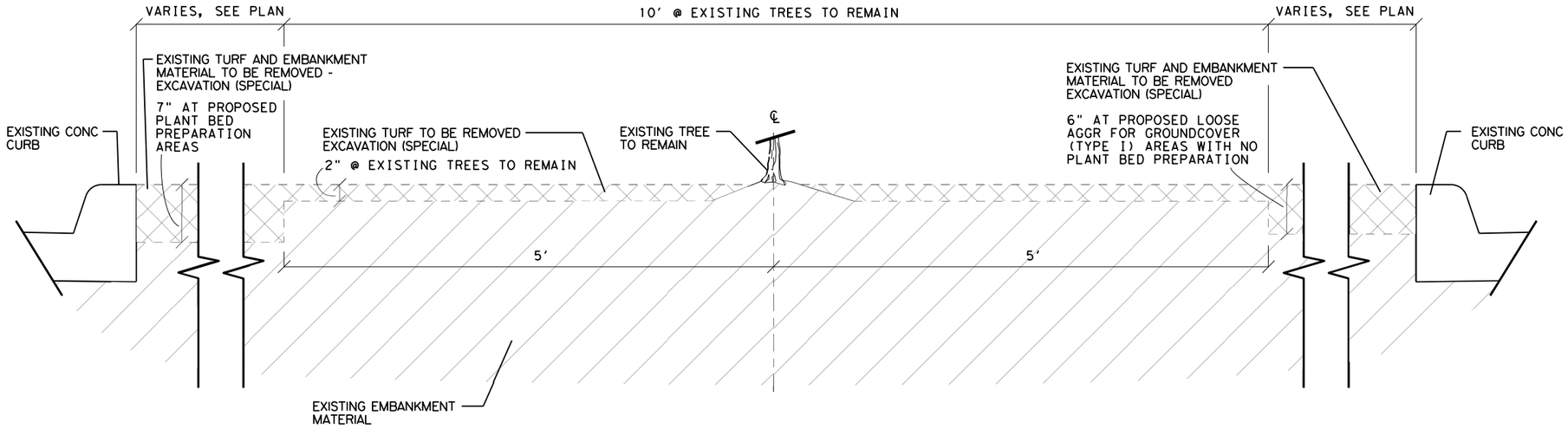
SCALE: 1" = 30'

Sheet 13 of 13

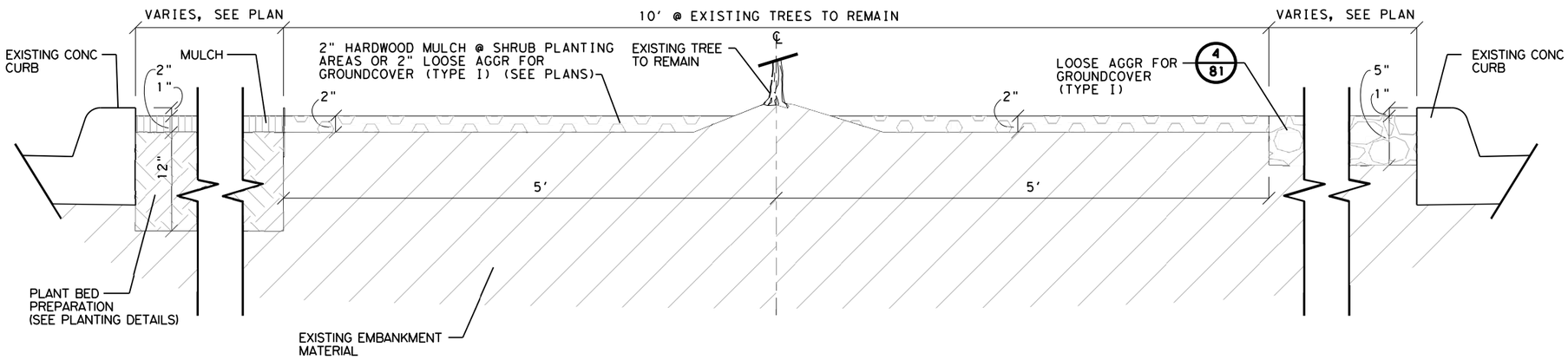
DESIGN	FED.RD. DIV.NO.	PROJECT NUMBER		HIGHWAY NO.
GRAPHICS	6	(SEE TITLE SHEET)		FM 1171
	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK	TEXAS	DALLAS	DENTON	78
CHECK	CONTROL	SECTION	JOB	
	1311	01	058	

TEMPLATED REVISED: 10-23-02

DATE



DEMOLITION



PROPOSED

1/79 DEMOLITION AND PROPOSED @ EXISTING TREE SECTION

SCALE: 3/4"=1'

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

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FLOWER MOUND MISC DETAILS

SHEET 1 OF 3

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
1311	01	058	FM 1171
DIST	COUNTY		SHEET NO.
DAL	DENTON		79

DATE:
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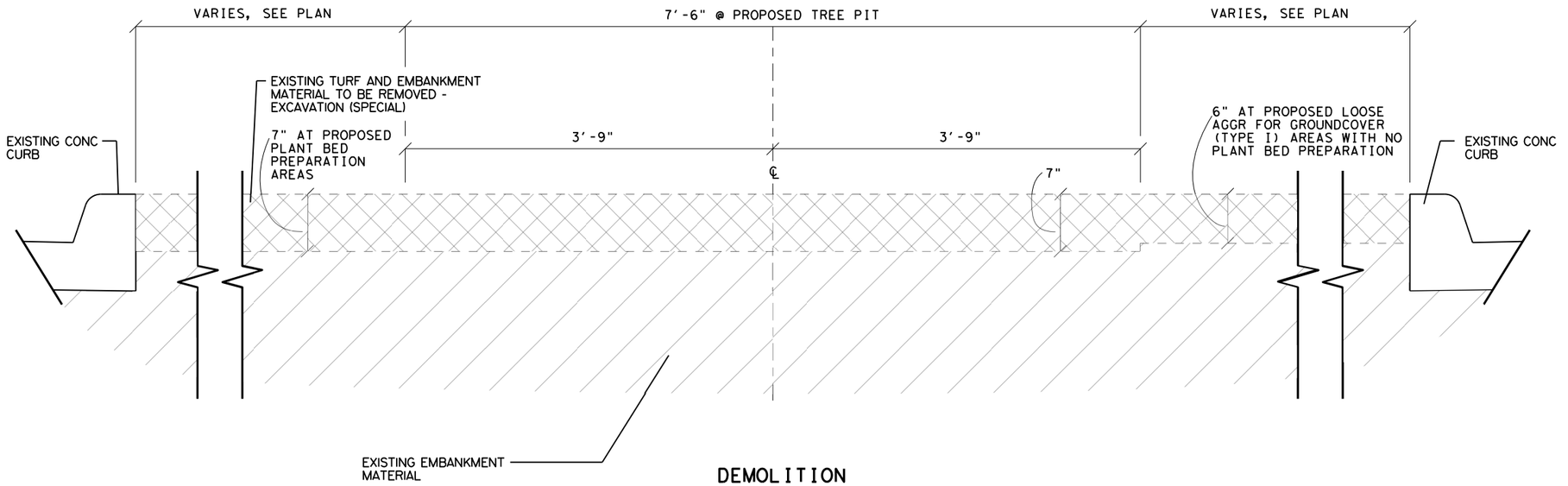

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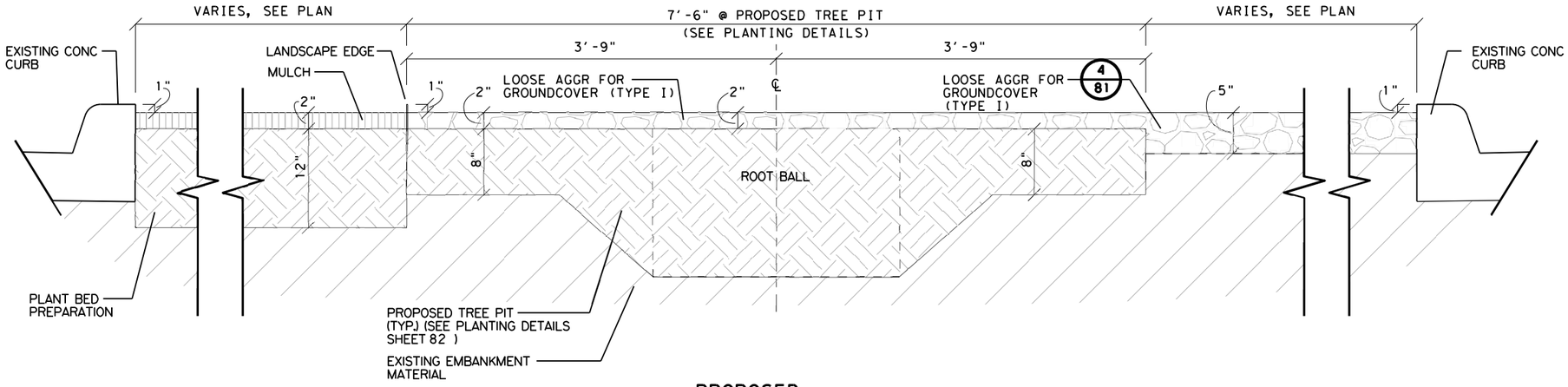

PROPOSED

1/80 DEMOLITION AND PROPOSED @ PROPOSED TREE SECTION

SCALE: 3/4"=1'

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

FLOWER MOUND MISC DETAILS

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
1311	01	058	FM 1171
DIST	COUNTY		SHEET NO.
DAL	DENTON		80

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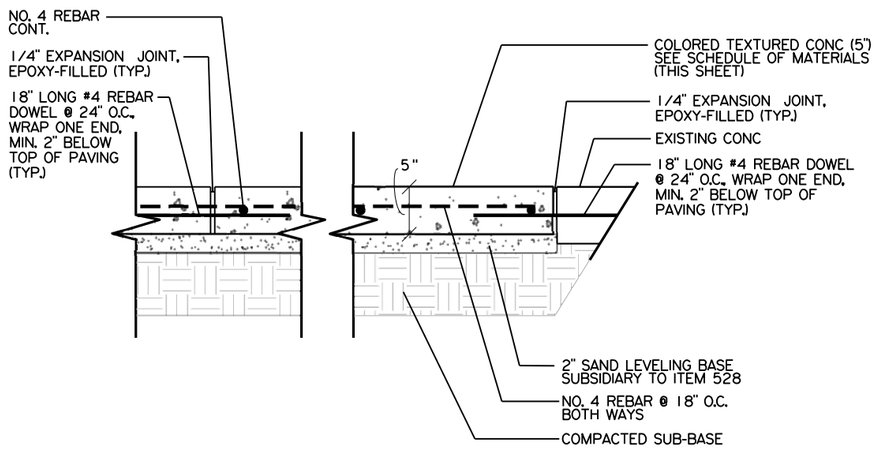
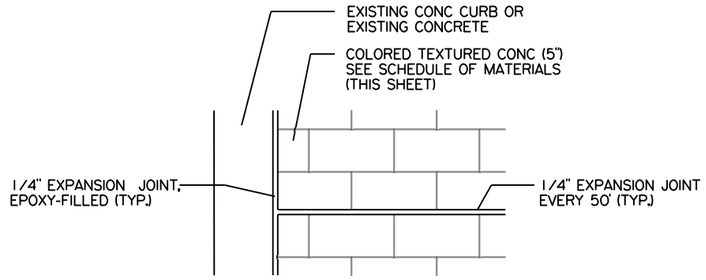
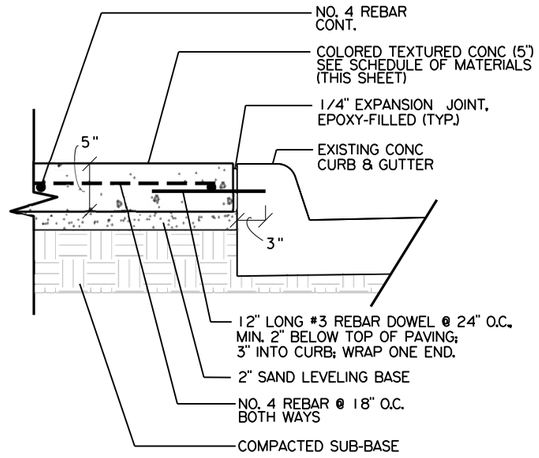


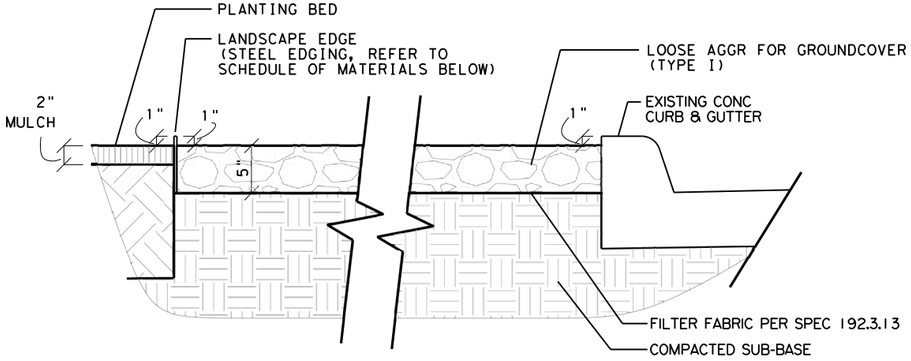
1/81 COLORED TEXTURED CONC (5") @ EXISTING CONC CURB
SECTION
SCALE: 3/4"=1'



2/81 COLORED TEXTURED CONC (5") @ EXISTING CONC CURB
PLAN
NTS



3/81 COLORED TEXTURED CONC (5") @ EXISTING CONC CURB
SECTION
SCALE: 3/4"=1'



4/81 LOOSE AGGR FOR GROUNDCOVER (TYPE I)
SCALE: 3/4"=1'

SCHEDULE OF MATERIALS

ITEM	DESCRIPTION	SPEC OR FINISH	EXAMPLE OR EQUAL
0192-6015	LANDSCAPE EDGE	Commercial Grade Steel Landscape Edging, 1/8", Brown powder coat finish	COL-MET or approved equal. Provide samples to be approved by the District Landscape Architect before installation.
0528-6001	COLORED TEXTURED CONC (5")	Running bond brick pattern, Brick Red color	Match existing medians between FM 2499 and Yucca Dr. Provide 3' x 3' mock-up to be approved by the District Landscape Architect before beginning construction.
1005-6001	LOOSE AGGR FOR GROUNDCOVER (TYPE I)	2"-4" Texas River Rock, 2" or 5" depth (see plans & details)	Match existing medians between Canyon Falls Dr and Old Cross Timbers Rd. Provide samples to be approved by the District Landscape Architect.

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MISC DETAILS

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Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
1311	01	058	FM 1171
DIST	COUNTY		SHEET NO.
DAL	DENTON		81

DATE:
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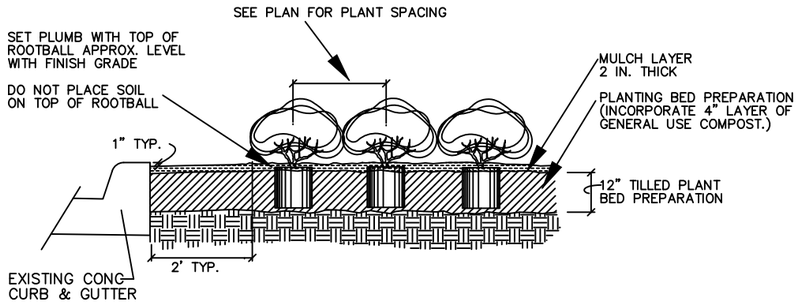
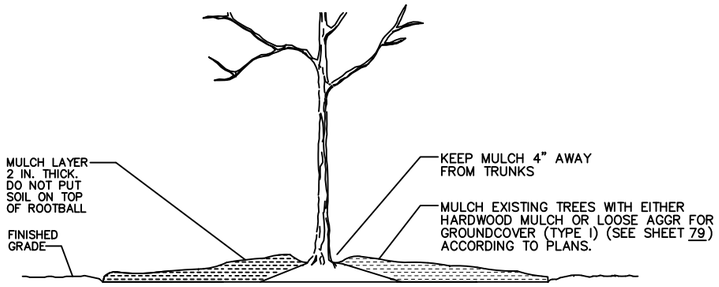


SHRUB PLANTING IN MASS BEDS

NTS



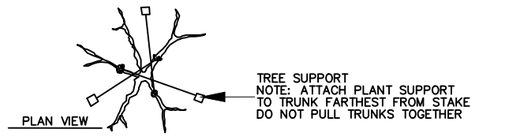
MULCH @ EXISTING TREE TO REMAIN

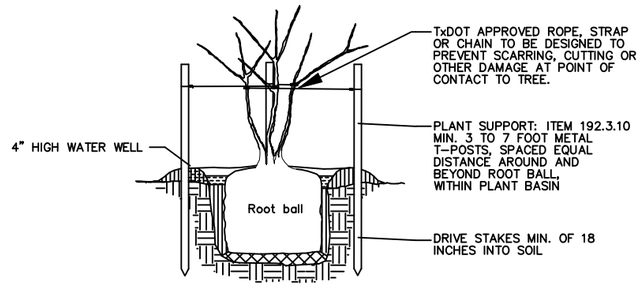
NTS

PLANTING BED PREPARATION

PERFORM PLANTING BED OPERATIONS IN THE FOLLOWING ORDER:

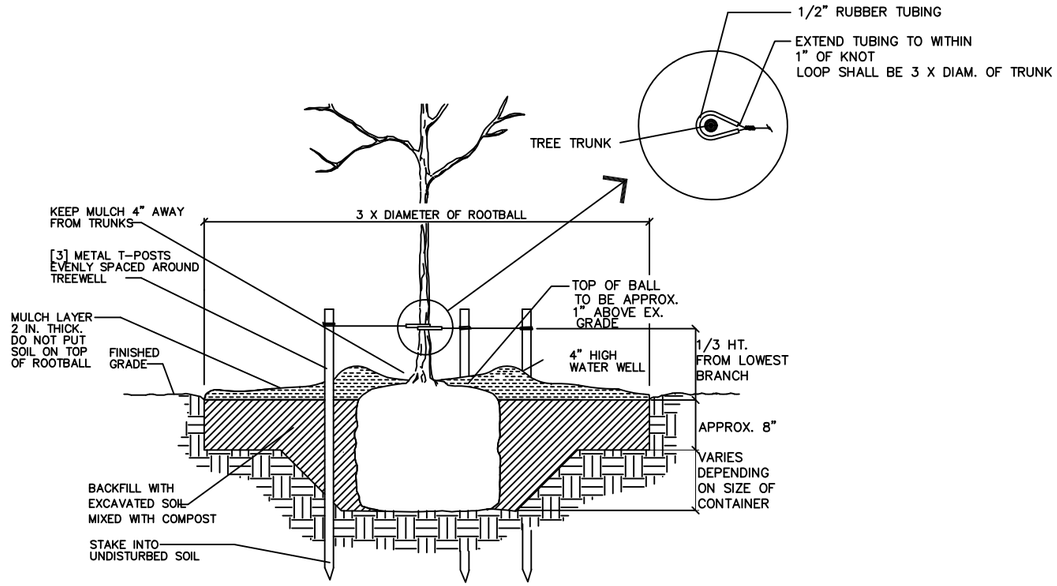
1. STAKE BED PREPARATION AREAS OR OTHERWISE DESIGNATE THE PROPER LOCATIONS ACCORDING TO THE PLANS. OBTAIN APPROVAL OF FINAL LOCATIONS BEFORE CONTINUING WORK UNDER THIS ITEM.
2. AFTER UNDERGROUND UTILITIES ARE LOCATED AND MARKED, TILL THE BED PREPARATION AREAS TO A DEPTH OF TWELVE (12) INCHES. TAKE SPECIAL PRECAUTION TO AVOID ANY UNDERGROUND UTILITIES AND ROOT ZONES OF EXISTING TREES (TO REMAIN) WITHIN THE PROJECT AREAS, AND DO NOT ALTER EXISTING DRAINAGE PATTERNS.
3. ADD 4" GENERAL USE COMPOST.
4. TILL/DISC SOIL TO A SMOOTH CONSISTENCY TO A DEPTH OF TWELVE (12) INCHES.
5. AFTER PLANTING MULCH BEDS WITH SHREDDED HARDWOOD MULCH OR LOOSE AGGR FOR GROUNDCOVER (TYPE I) TO A DEPTH OF 2" ACCORDING TO PLANS.





TREE SUPPORT – MULTI-TRUNK DETAIL

NTS

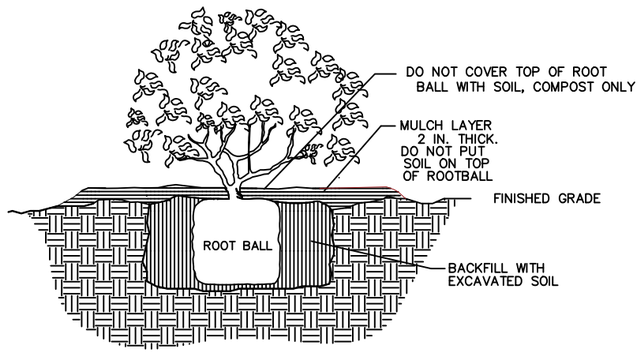


TREE PLANTING AND STAKING

NTS

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 THAT HAVE BEEN MODIFIED OR NOT SHOWN.
2. PROVIDE PLANTS NURSERY-GROWN IN CONTAINERS IN ACCORDANCE WITH ITEM 192.2.1.
3. REJECTION OF PLANTS IN ACCORDANCE WITH ITEM 192.2.2.
4. STAKE LOCATION OF TREES IN THE FIELD IN ACCORDANCE WITH ITEM 192.3.3.
5. PROVIDE FOR THE SAFE TRANSPORTATION OF PLANTS TO THE PROJECT SITE AND THE CONDITION OF PLANTS UPON ARRIVAL.
6. DO NOT STORE PLANT MATERIAL ON HARD SURFACES OR LEAVE EXPOSED TO THE SUN.
7. PROTECT THE PLANT ROOT BALLS AND WATER REGULARLY UNTIL PLANTING.
8. IF PLANTS ARE LEFT IN STORAGE OVER THE WEEKEND OR HOLIDAY, PROVIDE A MEANS OF PERIODICALLY WATERING AND INSPECTION OF CONTAINER MOISTURE.
9. PROVIDE PLANTS THAT ARE 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, DENSELY FOLIATED WHEN IN LEAF, AND SHALL HAVE HEALTHY, WELL DEVELOPED ROOT SYSTEMS.
10. ALL PLANTING AREAS TO BE MULCHED AFTER PLANTING TO THE DEPTH INDICATED IN THE DETAILS. PROVIDE SHREDDED HARDWOOD MULCH WITH A MINIMUM 3/8 " (NOT OVER 25% BY VOLUME) OF FINE PARTICLES AND DUST. PROVIDE MULCH FREE OF ANY PLASTIC, GLASS, METALS AND OTHER CONTAMINANTS (STICKS, STONES, CLAY, OR OTHER FOREIGN MATTER).



SHRUB AND GROUNDCOVER PLANTING

NTS

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

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FLOWER MOUND PLANTING DETAILS

SHEET 1 OF 2

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
1311	01	058	FM 1171
DIST	COUNTY		SHEET NO.
DAL	DENTON		82

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WATERING SCHEDULE FOR AREAS WITH IRRIGATION SYSTEM:			
ITEM DESCRIPTION	PHASE	FREQUENCY	RATE
GROUNDCOVER PERENNIALS, & SHRUBS N.I.C	Construction/installation operations, Item 192.3	Same day as planting and 2 times per week with 2 days minimum between waterings	2 times plant container gallon size per plant
	90–day Maintenance period, Item 192.3		
	~~9 month Establishment period, Item 193~~	~~APR through OCT – 2 times per week with 2 day min. between waterings~~	
		~~NOV through MAR – 1 time per week~~	
TREES N.I.C	Construction/installation operations, Item 192.3	Same day as planting and 2 times per week with 2 days minimum between waterings	1 times plant container gallon size per plant
	90–day Maintenance period, Item 192.3		
	~~9 month Establishment period, Item 193~~	~~APR through OCT – 2 times per week with 2 day min. between waterings~~	
		~~NOV through MAR – 1 time per week~~	

NOTES:

Provide water necessary to meet the quality and schedule shown above.Water required for construction/installation operations & 90–day Maintenance period is subsidiary to Item 192 and will not be paid for separately.

~~Water required for 270 day (9 month) Establishment period is subsidiary to Item 193.~~ N.I.C

Rate and frequency may be adjusted to meet site conditions and weather as approved or directed by engineer.

Refer to Item 168.2 for water quality information.

At the time of installation all plants are to be watered manually the same day as planting at a rate and frequency shown above.

Stressed plant material will be rejected according to Item 192.2.2 and replaced.

PLANT SPECIFICATIONS

Item	Common Name	Botanical Name	Quantity	Size	Min. Caliper	Min. Height	Min. Spread	Spacing	Notes
0192-6002	Liriope	Liriope muscari	1380	1 GAL.		12"	10"	18" O.C.	
	Purple Winter Creeper	Euonymus fortunei	556	1 GAL.		6"	6"	18" O.C.	'Coloratus'
	Little Bluestem	Schizachyrium scoparium	407	1 GAL.		8"	6"	24" O.C.	
	Blue Grama	Bouteloua gracilis	162	1 GAL.		18"	18"	30" O.C.	
		TOTAL:	**2505**						
0192-6003	Autumn Sage	Salvia greggii	1148	3 GAL.		12"	12"	24" O.C.	
	Sand Lovegrass	Eragrostis trichodes	12	3 GAL.		12"	12"	30" O.C.	
	Sideoats Grama	Bouteloua curtipendula	8	3 GAL.		12"	18"	30" O.C.	
	Texas Lantana	Lantana urticoides	185	3 GAL.		12"	12"	48" O.C.	
		TOTAL:	**1353**						
0192-6004	Andorra Juniper	Juniperus horizontalis	75	5 GAL.		6"	12"	48" O.C.	'Plumosa Compacta'
		TOTAL:	**75**						
0192-6024	Vitex	Vitex agnus-castus	24	30 GAL	2"	7'	4'	as shown	3 trunk minimum & matching
		TOTAL:	**24**						
0192-6025	Cedar Elm	Ulmus crassifolia	6	45 GAL.	2.5"	10'	6'	as shown	Straight central leader, matching; container grown
		TOTAL:	**6**						

REGISTERED LANDSCAPE ARCHITECT
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FLOWER MOUND
PLANTING DETAILS

SHEET 2 OF 2

Texas Department of Transportation

CONT	SECT	JOB	HIGHWAY
1311	01	058	FM 1171
DIST	COUNTY		SHEET NO.
DAL	DENTON		83

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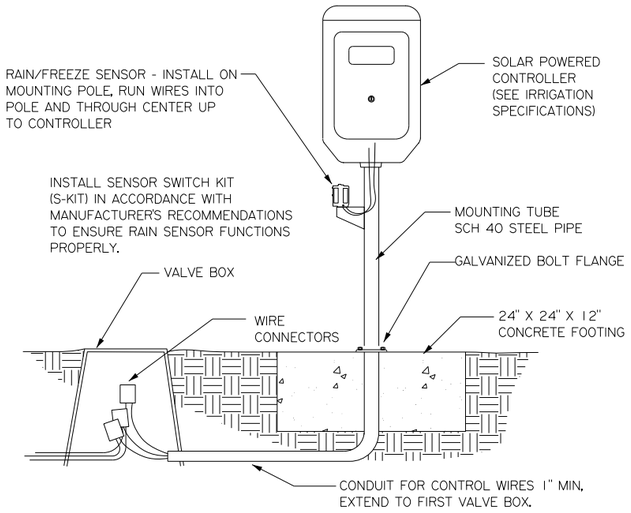
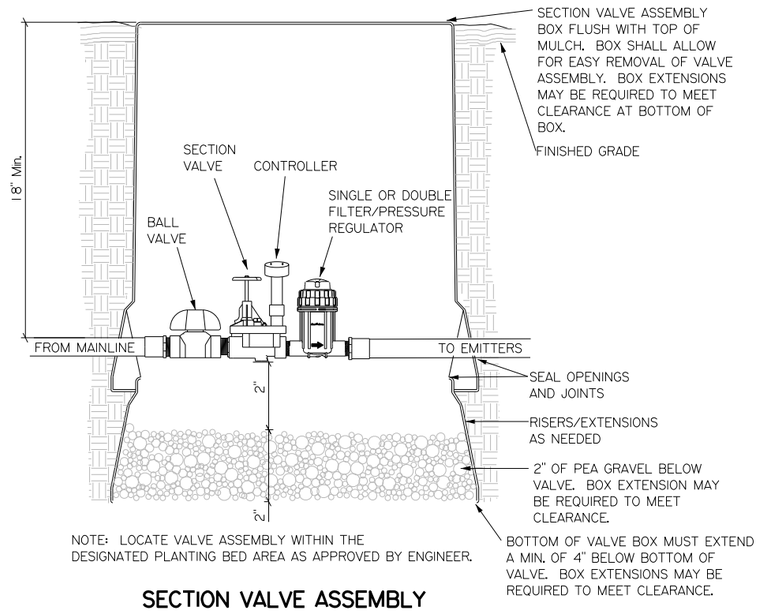


SOLAR POWERED CONTROLLER & RAIN/FREEZE SENSOR

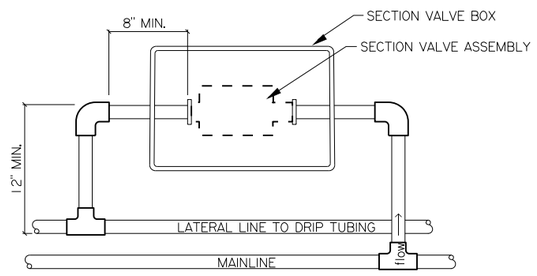
(NTS)



NOTE: LOCATE VALVE ASSEMBLY WITHIN THE DESIGNATED PLANTING BED AREA AS APPROVED BY ENGINEER.

SECTION VALVE ASSEMBLY

Drip Zones (NTS)



PLAN OF PIPING TO SECTION VALVE ASSEMBLY

(NTS)

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
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Not to Scale

Texas Department of Transportation

FM 1171
FLOWER MOUND
IRRIGATION DETAILS

SHEET 1 OF 2

FEDRD. DIV.NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		84
STATE	DIST.	COUNTY	
TEXAS	DAL	DENTON	
CONT.	SECT.	JOB	HIGHWAY NO.
1311	01	058	FM 1171

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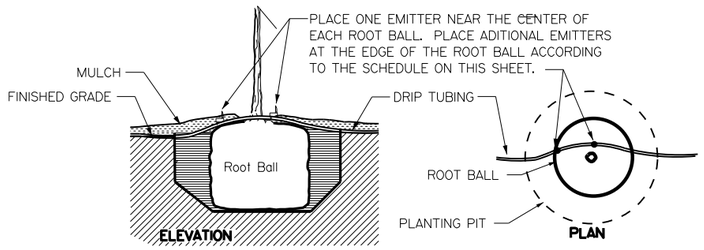
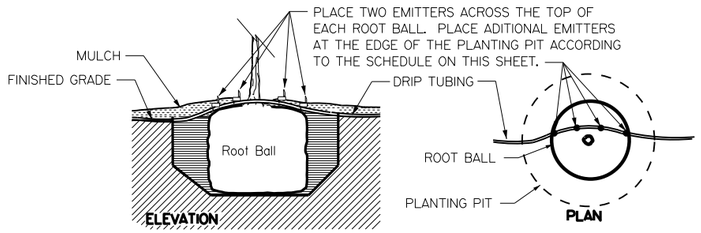
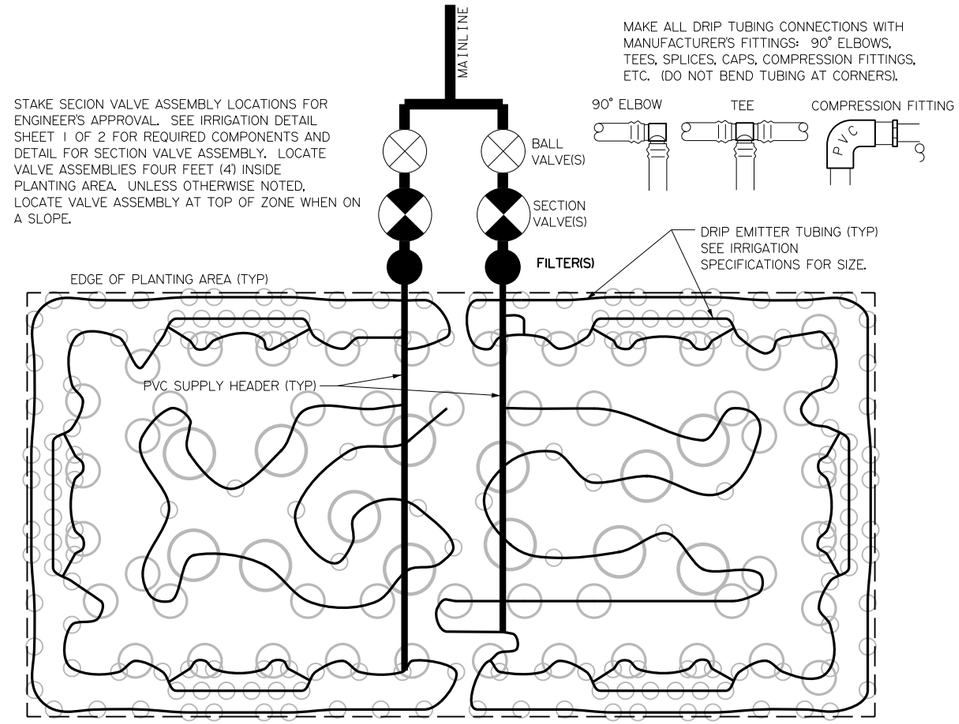


INDIVIDUAL EMITTER PLACEMENT - 1 GAL, 3 GAL, AND 5 GAL. CONTAINER



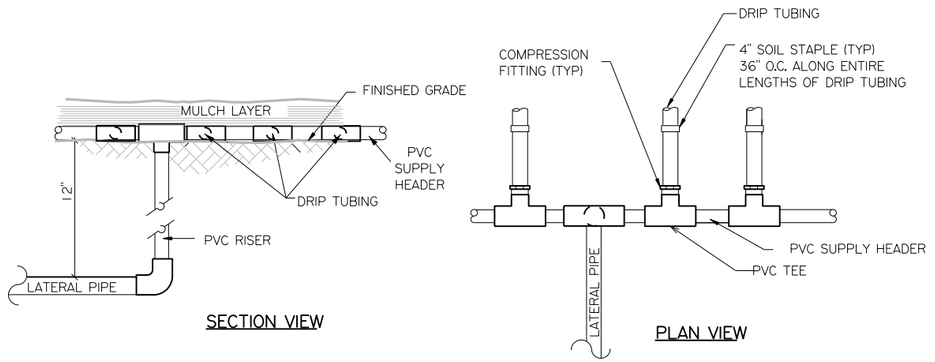
INDIVIDUAL EMITTER PLACEMENT - 30 GAL. AND 45 GAL. CONTAINER



DRIP TUBING LAYOUT WITH SECTION VALVE ASSEMBLY

NOTE: TOTAL NUMBER OF EMITTERS AND LATERALS SHALL NOT ALLOW FOR GPM (GALLONS PER MINUTE) FLOWING THROUGH ONE FILTER TO EXCEED 20 GPM. TOTAL SECTION GPM SHALL NOT EXCEED 40 GPM.

EMITTER PLACEMENT SCHEDULE		
PLANT CONTAINER SIZE	EMITTER	
	QTY	NOMINAL FLOW
1, 3, AND 5 GAL.	2	2 GPH
30 AND 45 GAL.	4	2 GPH



RISER DETAIL FOR SUPPLY HEADER TO DRIP TUBING

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

Not to Scale

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FM 1171
FLOWER MOUND
IRRIGATION DETAILS

SHEET 2 OF 2

FEDRD. DIV.NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		85
STATE	DIST.	COUNTY	
TEXAS	DAL	DENTON	
CONT.	SECT.	JOB	HIGHWAY NO.
1311	01	058	FM 1171

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IRRIGATION MATERIALS SPECIFICATIONS

DESCRIPTION	* EXAMPLE OR EQUAL	SIZE	REMARKS
Tap/Meter	Water Meter		Existing
Drip Tubing	Rainbird Blackstripe Tubing XBS	1/2"	See Rainbird Design Guide for appropriate fittings
Drip Emitter	Rainbird XB-20PC (Red) Barb inlet	2 GPH	
Tie-Down Stake	Rainbird TDS-050 (With bend)		Spaced 36" OC, and before and after every turn
Gate Valve	Nibco T113 threaded gate valve	1"	
Controller	DIG LEIT-2ET Two Station ambient light solar powered wireless controller with green dome model #30-830 DIG LEIT-4004 Four Station ambient light solar powered wireless controller Four station plus MV/P	2 Station 4 Station	With dome mount, LEIT-RC2ET remote control handset, 30-850 power supply, 30-851 car charger, and 30-852 handset holder.
Master Valve			Existing
Drip Section Valve	DIG P55-100 with 24 VAC and 30 PSI preset pressure regulator with DC latching solenoids	1"	Includes 1 ball valve.
Backflow Preventor			Existing
Mainline	PVC SCH40	as shown on the plans	Pressure rated with twin gasket couplings and fittings or slip type solvent welded joints
Laterals and Headers	PVC CLASS 200	3/4"	
Casing Pipe (Bores)	PVC SCH80 OR HDPE SDR11	Minimum 4" Unless otherwise noted on plans	
Above ground pipe including buried risers and swing-joint components	PVC SCH80 pipe rated for direct sunlight exposure		
Fittings	All fittings incorporated into system shall be of the same type, size and class material as the pipe	Same as pipe.	
Solvent Cement	Solvent cement shall be the type recommended by the the pipe manufacturer		
Valve Boxes Boxes for section valves, below-ground backflow preventors, and quick coupling valves shall be as shown on detail sheet	MacLean Highline Access Box	Box size shall allow for easy removal of valve, etc.	Quantity as required for section valves, below ground backflow preventors, quick coupling valves and any accessories. Seal valve boxes to prevent soil migration into box.
Valve Box Risers	MacLean Highline Access Box	Box and risers shall extend below valves as shown on detail sheet	Seal joints between valve box & risers, or between risers, to prevent soil migration into box
Rain/Freeze Sensor	LEIT WWS ambient light solar powered wireless weather station mounted on a 1 1/2" mounting column with a recommended height of 8 feet or more above finished grade.		Mount to a column with a 1 1/2", 1" x 12" mounting bracket with two clamps. Mounting column shall be installed two feet in the ground and concreted in place.

* Reference to Manufacturer's trade name or catalog number is for the purpose of identification only, contractor shall be permitted to furnish like materials of other manufacturers provided they are of equal quality and comply with specifications for this project and are approved by the Engineer.

GENERAL IRRIGATION NOTES:

1. Reference Item 170 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. Place the water meters in the name of the contractor. Obtain all permits, licenses, tests, and/or approvals, pay any fees and deposits for installation and operation as applicable. Provide any and all drawings, plans, and paperwork necessary to obtain permits and approvals. Deposits will not be refunded. Water meters shall remain operational and turned on through all phases of the contract to ensure plants receive required watering. Costs for water applied through the irrigation system will be paid for by the contractor.

3. Place backflow preventers in the name of the contractor. Be responsible for all charges, fees, tests, and coordination for any backflow preventor testing, at installation or annual inspection, required by local entity through all phases of the contract.

4. At the end of the project, disconnect water meter and remove backflow preventor and associated above-ground piping.

5. The drawings are diagrammatic of the work to be performed. Changes may be required due to varying conditions or as directed by the Engineer.

6. Verify location of any underground utilities with appropriate agencies. Underground utilities (if shown) on the plans are approximate.

7. See IRRIGATION MATERIALS SPECIFICATIONS chart for materials specifications, sizes, and requirements.

8. Ensure that the controller on the Master Valve is set to open when the section valve controllers are set to open.

CONSTRUCTION METHODS:

1. Investigate the site conditions affecting the work and furnish offsets, fittings, sleeves, and cased bores as may be required to meet site conditions.

2. All work to provide a complete and operational irrigation system is included in the Lump Sum bid price for Item 170. Items required but not included in the plans are considered incidental.

3. Locate all irrigation valves, mainlines, quick coupler valves, dripline, etc., for approval by the Engineer prior to installation.

4. Deviations in the piping as shown on the plans may be permitted with approval from the Engineer.

5. Exercise care when excavating near trees. No mechanical trenching shall be permitted below the canopy of existing trees. Adjust trench path and/or excavate by hand to avoid damage to existing tree root system.

6. Coordinate and verify location of signal wiring, traffic loop detector wiring, and TMS (Traffic Management) wiring prior to beginning any work. Damage to signal wiring, loop detector wiring, TMS System wiring, any utilities not listed, and structures shall be repaired at contractor's expense. Contact TxDOT signal shop, electrical shop, and transguide office for "TxDOT Locates".

7. Any underground utilities, high mast wiring, and TMS wiring shown on plans are approximate locations only and shall not relieve contractor's responsibility of coordinating with appropriate authorities to locate underground utilities, wiring and any structure.

8. Dig trenches straight and support pipe continuously on bottom of trench. Install pipe to an even grade. Trench bottom shall be clean and smooth with all organic debris and sharp objects removed. Snake pipe in trench, to allow for expansion and contraction. Protect open excavations for public safety.

9. Boring and sleeve requirements. Stake boring and sleeve locations for Engineer's approval. Boring depth shall be as described in Item 170.3.5. All borings and sleeves shall be continuous and shall extend the full width of the pavement and 3 feet minimum on each side thereof. Boring and sleeves shall be incidental to irrigation system. Bore encasement pipe must be installed same day as boring.

10. PVC casing(s) for bores and sleeves shall consist of SCH 80 smooth wall pipe with solvent welded joints and seams, and shall be continuous. The size of bore shall not exceed the diameter of casing(s) required by Item 170 by more than 1 inch.

11. Do not install pipe when air temperature is below 40 degrees fahrenheit. Cut plastic pipe in a manner that will insure a square cut. Remove burrs and cuts at ends prior to installation so that a smooth unobstructed flow will be obtained.

12. Thoroughly flush all water lines, valves, and sprinkler bodies before installing dripline or sprinkler nozzles.

13. Control wire and wire connections shall be as described on IRRIGATION MATERIALS SPECIFICATIONS chart. Connect and splice all wire in ground boxes using water-proof connectors.

14. Compaction of the pipe trenches must be sufficient to limit short term settling of the backfill to no more than 1 inch. Correct settling greater than this without additional compensation.

GUARANTEE AND ACCEPTANCE:

1. Maintenance period. Inspect the irrigation system concurrently with, and subject to the same establishment/maintenance requirement periods under Items 192 and 193. During the installation, establishment, and maintenance, perform the following activities as a minimum and to the satisfaction of the engineer:

   A) Install and maintain the controller program to insure the proper distribution of water (includes replacement of any batteries).

   B) Inspect, repair, and/or replace any equipment that is found defective or may have become damaged by any means.

   C) Make any adjustments or repairs that may become necessary to ensure the proper delivery of water to the plant material.

   D) Winterize the system as necessary to prevent damage to the system or utility provider infrastructure.

2. As-built drawings. Upon completion of the required maintenance period under Item 192, the Engineer will make an inspection of the irrigation system.

   For this inspection, furnish the Engineer a set of as-built drawings on reproducible 11x17 film base sheets. The Engineer will check to be sure they are a true record of the project conditions and will direct the contractor to correct any errors that are found.

   On the drawings, show all valve locations, meter numbers and addresses, any change to sprinkler head location, and re-routing of main and lateral lines. (Obtain approval of the Engineer for changes of this nature prior to installation).

REGISTERED LANDSCAPE ARCHITECT
HILARY GARNISH
3401
STATE OF TEXAS

06/25/2021

Texas Department of Transportation

FM 1171
FLOWER MOUND
IRRIGATION SPECIFICATIONS
SHEET 1 OF 1

FEDRD. DIV.NO.	FEDERAL AID PROJECT		SHEET NO.
6	SEE TITLE SHEET		86
STATE	DIST.	COUNTY	
TEXAS	DAL	DENTON	
CONT.	SECT.	JOB	HIGHWAY NO.
1311	01	058	FM 1171

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