

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

PROPOSED
LANDSCAPE ENHANCEMENT

FEDERAL AID PROJECT NH (F 2022(847)), ETC.
CCSJ: 0094-02-143.

SH 183
TARRANT COUNTY

FROM CRITES STREET TO N BOOTH CALLOWAY ROAD
TOTAL LENGTH OF PROJECT = 9,200 FT = 1.742 MI.

DESIGN AG	FED.RD. DIV.NO. 6	PROJECT NUMBER XXXX		HIGHWAY NO. SH 183
GRAPHICS CM	STATE	DISTRICT FTW	COUNTY TARRANT	SHEET NO. 001
CHECK LJO	CONTROL 0094	SECTION 02	JOB 143	

FUNCTIONAL CLASSIFICATION
URBAN PRINCIPAL ARTERIAL- OTHER, ETC
DESIGN SPEED: 55 MPH

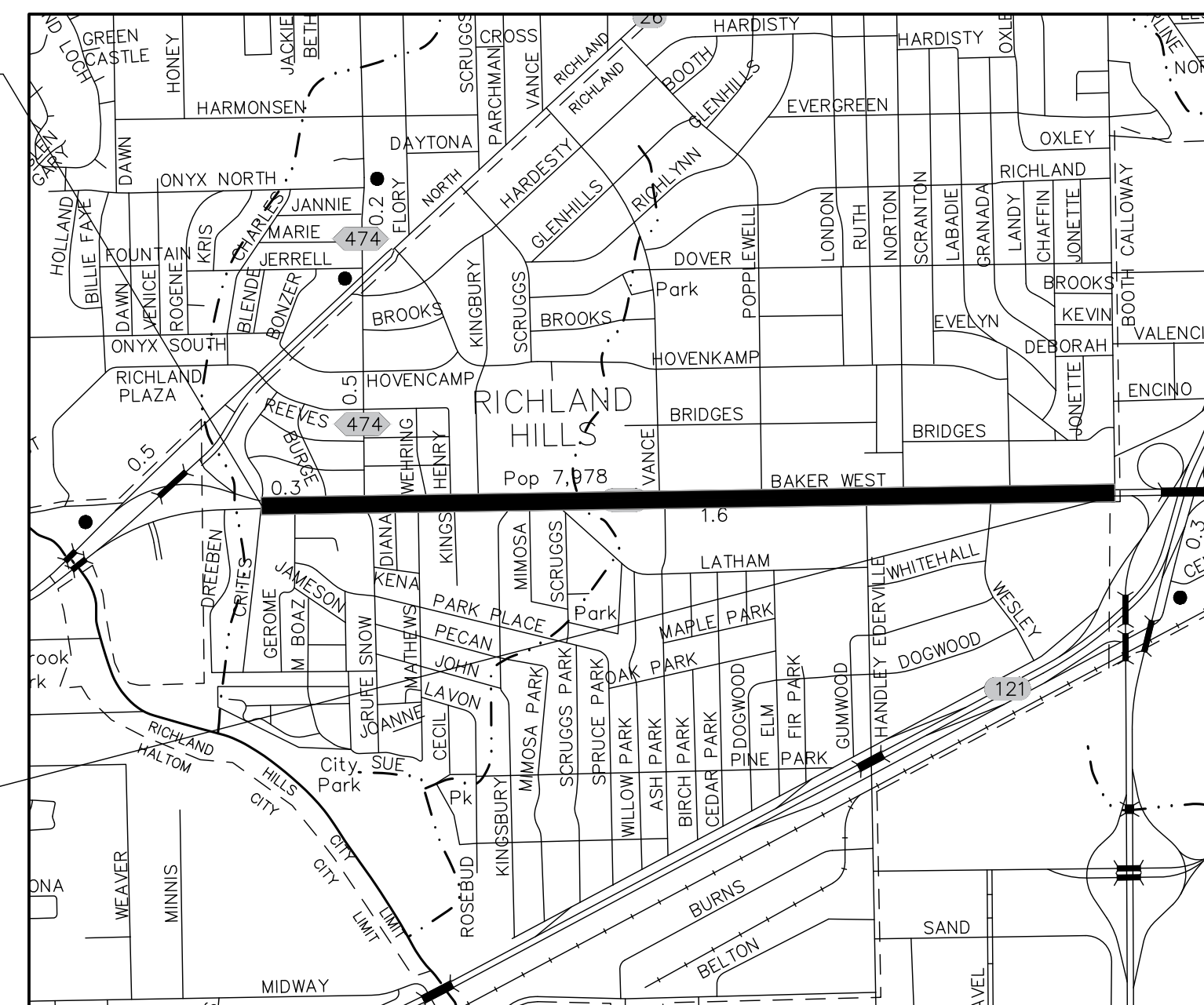
NOTE:

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)

TYPE OF WORK: FOR THE CONSTRUCTION OF LANDSCAPE AND SCENIC ENHANCEMENT WORK CONSISTING OF PLANTING AND IRRIGATION IMPROVEMENTS

SH 183 LANDSCAPE BEGIN PROJECT
CSJ: 0094-02-143
STA 350+00
STATE REFERENCE MARKER #572

SH 183 LANDSCAPE END PROJECT
CSJ: 0094-02-143
STA 442+00
STATE REFERENCE MARKER #572



TARRANT COUNTY
SCALE: NTS
FORT WORTH DISTRICT



4000 FOSSIL CREEK BLVD.
FORT WORTH, TEXAS 76137-2720
TEL (817) 764-7475
FAX (817) 232-9784

TBPE FIRM No. F-312

SUBMITTED FOR LETTING May 25 2022

Layne Olivo, P.L.A.
LAYNE OLIVO, RLA
LANDSCAPE ARCHITECT

SUBMITTED FOR LETTING May 25 2022

Connor R. Guerrero, P.E.
CONNOR R. GUERRERO, P.E.
PROFESSIONAL ENGINEER

SUBMITTED FOR LETTING May 25 2022

Jason Brown
JASON BROWN, CPRP
PARKS AND RECREATION DIRECTOR,
RICHLAND HILLS, TX

TEXAS DEPARTMENT OF TRANSPORTATION

WORK WAS COMPLETED ACCORDING TO THE PLANS AND CONTRACT.

_____, R.L.A.
Signature of Registrant & Date

EQUATIONS: NONE
EXCEPTIONS: NONE
RAILROAD CROSSINGS: NONE

FOR LETTING 6/7/2022 20
John, P.E.
AREA ENGINEER

RECOMMENDED FOR LETTING 6/21/2022 20

Carl H. Johnson, P.E.
DIRECTOR OF TRANSPORTATION
PLANNING & DEVELOPMENT

APPROVED FOR LETTING: 6/22/2022 20

Carl H. Johnson, PE, P.E.
DISTRICT ENGINEER

INDEX OF SHEETS

100% SHEET LIST - CSJ 0094-02-143 - SH 183 / BAKER BLVD FROM CRITES ST. TO CALLOWAY RD.

SHEET NO.	DESCRIPTION	Sheet Count	Firm
I. GENERAL			
1	TITLE SHEET	1	HALFF
2	INDEX OF SHEETS	1	HALFF
3 , 3A-3C	GENERAL NOTES	4	HALFF
4	ESTIMATE & QUANTITY SHEETS	1	HALFF
4A	QUANTITY SUMMARY	1	
II. TRAFFIC CONTROL PLAN			
5	TRAFFIC CONTROL PLAN SEQUENCE OF CONSTRUCTION	1	HALFF
TRAFFIC CONTROL PLAN STANDARDS			
6	TCP(1-5)-18	1	STD Detail
7	TCP(2-5)-18	1	STD Detail
8 - 19	BC(1)-21 THRU BC(12)-21	12	STD Detail
III. REMOVAL PLANS			
IV. ROADWAY PLANS			
ROADWAY STANDARDS			
V. RETAINING WALL PLANS			
RETAINING WALL STANDARDS			
VI. DRAINAGE PLANS			
DRAINAGE STANDARDS			
VII. UTILITIES			
VIII. BRIDGE PLANS			
BRIDGE STANDARDS			
IX. GEOTECH			
X. ILLUMINATION PLANS			
ILLUMINATION STANDARDS			
XI. ITS PLANS			
ITS STANDARDS			
XII. SIGNING PLANS			
SIGNING STANDARDS			
XIII. PAVEMENT MARKINGS AND DELINEATION PLANS			
PAVEMENT MARKINGS AND DELINEATION STANDARDS			
XIV. RAILROAD			
XV. ENVIRONMENTAL ISSUES			
20 - 21	STORM WATER POLLUTION PREVENTION PLAN (SW3P)	2	HALFF
22	ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPI/C)	1	HALFF
23 - 26	EROSION CONTROL PLAN	4	HALFF
ENVIRONMENTAL STANDARDS			
27 - 29	EC(9)-16	3	STD Detail

100% SHEET LIST - CSJ 0094-02-143 - SH 183 / BAKER BLVD FROM CRITES ST. TO CALLOWAY RD.

SHEET NO.	DESCRIPTION	Sheet Count	Firm
36	VEGETATION ESTABLISHMENT	1	HALFF
37	PLANTING AND ESTABLISHMENT	1	HALFF
38 - 43	PLANTING PLANS	6	HALFF
44	PLANTING DETAILS	1	HALFF
45 - 50	IRRIGATION PLANS	6	HALFF
51	IRRIGATION DETAILS	1	HALFF
		55	

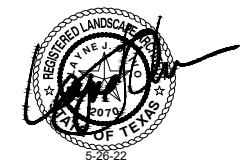


HALFF ASSOCIATES, INC. TBPELS FIRM #312

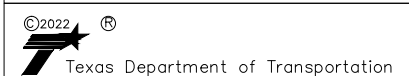
* THE STANDARD DETAIL SHEETS SPECIFICALLY IDENTIFIED ABOVE HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

140690
07/05/2022
 CONNOR GUERRERO PE DATE
 SIGNATURE

CALL TXDOT TRAFFIC MANAGEMENT CENTER (817-370-3661) FOR TXDOT LOCATES WHEN WORKING NEAR EXISTING TRAFFIC SIGNAL.



HALFF 4000 FOSSIL CREEK BLVD.
FORT WORTH, TEXAS
76137
TEL (817) 847-1422



SHEET INDEX

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.
6	SEE TITLE SHEET	02
STATE	DISTRICT	COUNTY
TEXAS	FTW	TARRANT
CONTROL	SECTION	JOB
0094	02	143
		HIGHWAY NO.
		FM 183

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Project Number: F 2022(847)

County: TARRANT

Highway: SH 183

Control: 0094-02-143

Specification Data

Basis of Estimate

Item	Description	Rate	Unit
100	PREPARING ROW		STA
170	IRRIGATION SYSTEM		LS
192	PLANT MATERIAL (4" CNTR)		EA
192	PLANT MATERIAL (1-GAL)		EA
161	COMPOST MANUFACTURED TOPSOIL		SY
192	PLANT BED PREPARATION		SY
192	PLANT MATERIAL (30 GAL) (TREE)		EA
192	CONC LNDSCP EDG (12 IN WIDTH)		LF
193	PLANT MAINTENANCE		MO
193	IRRIGATION SYSTEM OPER AND MAINT		MO
500	MOBILIZATION		LS
502	BARRICADES, SIGNS AND TRAFFIC HANDLING		MO
506	BIODEG EROSN CONT LOGS (INSTL) (8")		LF
506	BIODEG EROSN CONT LOGS (REMOVE)		LF
1005	LOOSE AGGR FOR GROUNDCOVER		CY
6185	TMA (STATIONARY)		DAY

Special Notes - For Contractor's Information

Electronic files containing answered pre-letting questions and other project related design information will be placed in the following FTP site periodically.

Check this site for new information. Notices of new postings will not be sent out by the Engineer.

The data located in these files is for non-construction purposes only and can be found at

TxDOT's public FTP site at <https://ftp.dot.state.tx.us/pub/txdot-info/Pre-Letting Responses/>.

Access is read-only.

All files in the FTP site are subject to the License Agreement shown on the FTP site.

To obtain a copy of the project plans free of charge, submit a request from the following site: <http://www.txdot.gov/business/letting-bids/plans-online.html>

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

Area Engineer's Email: minh.tran@txdot.gov

Assistant Area Engineer's Email: james.bell1@txdot.gov

Design Manager's Email: sam.yacoub@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 Responses/>

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.

Single lane closures, except as otherwise shown in the plans, will be restricted to off-peak hours as defined in the following table:

Peak Hours		Off-Peak Hours	
6 to 9 AM Monday through Friday	3 to 7 PM Monday through Friday	9 AM to 3 PM and 7 PM to 6 AM Monday through Friday	All day Saturday and Sunday

Work that requires closure of multiple travel lanes in the same direction, except as otherwise shown in the plans, are restricted to night hours between 9 PM and 6 AM.

Existing storm sewers and utilities are shown from the best available information. Verify the location of all underground facilities prior to starting work.

For dimensions of right-of-way not shown on the plans, see right-of-way map on file at the TxDOT District Office.

Modifications to Lane Closure / Work Restrictions:

Submit a request in writing for approval by the Engineer a minimum of 10 days in advance of implementing a change to lane closure restrictions.

When deemed necessary, the Engineer will lengthen, shorten, or otherwise modify lane closure restrictions as traffic conditions warrant.

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When deemed necessary, the Engineer will modify the list of major events when new events develop, existing events are rescheduled, or when warranted.

Special Events/ Special Situations will be handled on a case-by-case basis. No work restricting lane closures is allowed from 3 PM a day before to 9 AM the day after the Special Event or Special Situation.

Do not discolor or damage existing curb and curb and gutter during construction operations. In the event of discoloration or damage, clean or repair as directed.

Remove any obstructions to existing drainage due to the contractor's operations, as required, at the Contractor's expense.

Item 2. Instructions to Bidders

Proposals with a bid of more than 90 working days for the substantial completion of the project will be considered non-responsive.

Item 4 - Scope of Work

Reimbursement for project overhead will not be considered until project completion has extended beyond the original Contract Time.

Item 5. Control of the Work

When supplementary bridge plans, shop drawings, shop details, erection drawings, working drawings, forming plans, or other drawings are required, prepare and submit drawings on sheets 8-1/2 by 11 inches, 17 by 22 inches, or full size drawings reduced to half scale if completely legible. If, in the opinion of the Engineer, the drawings are not completely legible, prepare and submit on sheets 22 by 34 inches, with a 1-1/2 inch left margin, and 1/2 inch top, right, and bottom margins.

Submit all sheets with a title in the lower right hand corner. The title must include the sheet index data shown on the lower right corner of the project plans, name of the structure or element or stream, sheet numbering for the shop drawings, name of the fabricator and the name of the Contractor.

Standard Operating Procedure for Alternate Precast Proposal Submission" found online at <https://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/publications/bridge.html#design>. Acceptance or denial of an alternate is at the sole

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discretion of the Engineer. Impacts to the project schedule and any additional costs resulting from the use of alternates are the sole responsibility of the Contractor.

Item 7. Legal Relations and Responsibilities

The total area disturbed for this project is 0.52 acres. The disturbed area in this project, all project locations in the Contract, and the Contractor project specific locations (PSLs), within 1 mile of the project limits, for the Contract will further establish the authorization requirements for storm water discharges. The Department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction activities shown on the plans. The Contractor is to obtain required authorization from the TCEQ for Contractor PSLs for construction support activities on or off the right of way. When the total area disturbed in the Contract and PSLs within 1 mile of the project limits exceeds 5 acres, provide a copy of the Contractor NOI for PSLs on the right of way to the Engineer and to the local government that operates a separate storm sewer system.

Prevention of Migratory Bird Nesting

It is anticipated that migratory birds, a protected group of species, may try to nest on bridges, culverts, vegetation, or gravel substrate, at any time of the year. The preferred nesting season for migratory birds is from February 15 through October 1. When practicable, schedule construction operations outside of the preferred nesting season. Otherwise, avoid nests containing migratory birds and perform no work in the nesting areas until the young birds have fledged.

The following Holiday/Event lane closure restriction requirements apply to this project: No work that restricts or interferes with traffic shall be allowed between 3 PM on the day preceding a Holiday or Event and 9 AM on the day after the Holiday or Event.

Holiday Lane Closure Restrictions	
Labor Day Weekend (Friday through Monday)	3 PM Thursday through 9 AM Tuesday
Thanksgiving Holiday (Wednesday through Sunday)	3 PM Tuesday through 9 AM Monday

Plan work schedules around the appropriate dates above to ensure productive work is performed without lane closures.

Item 8. Prosecution and Progress

Working days will be computed and charged in accordance with Section 8.3.1.1, 'Five-Day Workweek.'

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Prepare the progress schedule as a bar chart, include all planned work activities and sequences and show Contract completion within the number of working days specified. Submit an updated hard copy when changes to the schedule occur or when requested.

Item 100. Preparing Right of Way

Measurement for this item will be along the centerline of the project with the limits of measurements as shown on the plans.

Work to be completed in accordance with this item includes:

- Removal of existing plants as shown
- Removal of existing irrigation as shown
- Removal of existing aggregate as shown
- Removal of existing mow strips as shown
- Cap existing irrigation lines to remain in preparation for reconnecting to new irrigation
- Disposal of all items above

Item 162. Sodding for Erosion Control

Furnish and place Bermudagrass sod.

Item 166. Fertilizer

Fertilize all areas of project to be seeded or sodded.

Item 170. Irrigation

Contact **Jason Brown** @ 817.616.3775 for installation of the water meter for the project. The Contractor is to pay for the installation & fees.

Electrical connection, to be made by a licensed electrician, to power source for the irrigation system and controllers is subsidiary to this item.

Irrigation system under this pay item is defined as the total system from the outlet of the water meters. Water meters and connection to water meters, as shown on construction plans and installation of water meters and associated fees is subsidiary to this item. It is understood that the irrigation maintenance will include and apply to all irrigation system locations.

Item 192. Planting

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

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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.

It is understood that the contractor will provide 3" of bark mulch for the 30-gallon plant material subsidiary to item 192 6024. All other bark mulch areas are paid for under pay item 192 6012.

Per special provision 192.001 plant material requiring replacement will be at the cost of the contractor.

Mow Curbs will be paid for by the foot at the unit price for the corresponding curb or curb and gutter section rebar and expansion joints and compacted subgrade are subsidiary to this pay item.

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.

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.

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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 US 380 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.

Storm water BMP's will be subsidiary to item 502-6001.

Item 506. Temporary Erosion, Sedimentation, and Environmental Controls

Remove accumulated sediment or replace SW3P controls when the capacity has been reduced by 50% or when the depth of sediment at the control structure exceeds one foot.

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

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In addition to the shadow vehicles with truck mounted attenuator (TMA) that are specified as being required on the traffic control plan for this project, provide 0 additional shadow vehicle(s) with TMA for TCP (1-5)-18 as detailed on General Note of this standard sheet.

Therefore, 2 total shadow vehicles with TMA will be required for this type of work. Determine if one or more of these operations will be ongoing at the same time to determine the total number of TMAs needed for the project.



Estimate & Quantity Sheet

CONTROLLING PROJECT ID 0094-02-143

DISTRICT Fort Worth
HIGHWAY SH 183

COUNTY Tarrant

CONTROL SECTION JOB				0094-02-143		TOTAL EST.	TOTAL FINAL
PROJECT ID				A00185503			
COUNTY				Tarrant			
HIGHWAY				SH 183			
ALT	BID CODE	DESCRIPTION	UNIT	EST.	FINAL		
	100-6002	PREPARING ROW	STA	82.000		82.000	
	161-6018	COMPOST MANUF TOPSOIL	CY	114.160		114.160	
	170-6001	IRRIGATION SYSTEM	LS	1.000		1.000	
	192-6001	PLANT MATERIAL (4" CNTR)	EA	11,873.000		11,873.000	
	192-6002	PLANT MATERIAL (1-GAL)	EA	2,781.000		2,781.000	
	192-6012	MULCH	CY	175.880		175.880	
	192-6016	PLANT BED PREPARATION	SY	703.520		703.520	
	192-6024	PLANT MATERIAL (30 GAL) (TREE)	EA	30.000		30.000	
	192-6097	CONC LNDSCP EDG (12 IN WIDTH)	LF	903.000		903.000	
	193-6001	PLANT MAINTENANCE	MO	12.000		12.000	
	193-6007	IRRIGATION SYSTEM OPER AND MAINT	MO	12.000		12.000	
	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	1,241.000		1,241.000	
	506-6043	BIODEG EROSN CONT LOGS (REMOVE)	LF	1,241.000		1,241.000	
	1005-6001	LOOSE AGGR FOR GROUND COVER (TYPE I)	CY	46.590		46.590	
	6185-6002	TMA (STATIONARY)	DAY	180.000		180.000	
	18	EROSION CONTROL MAINTENANCE: CONTRACTOR FORCE ACCOUNT WORK (PART)	LS	1.000		1.000	
		SAFETY CONTINGENCY: CONTRACTOR FORCE ACCOUNT WORK (PARTICIPATING)	LS	1.000		1.000	

SUMMARY OF WORKZONE TRAFFIC CONTROL ITEMS	
LOCATION	
	6185
	6002
	TMA (STATIONARY)
	DAY
PROJECT TOTALS	180

SUMMARY OF EROSION CONTROL ITEMS		
LOCATION	506 6040	506 6043
	BIODEG EROSN CONT LOGS <INSTITL> <6''>	BIODEG EROSN CONT LOGS <REMOVE>
	LF	LF
SHEET 1 <BEGIN PROJECT TO STA 367+00>	199	199
SHEET 2 <STA 367+00 TO STA 395+00>	267	267
SHEET 3 <STA 395+00 TO STA 420+00>	67	67
SHEET 4 <STA 420+00 TO END PROJECT>	708	708
PROJECT TOTALS	1241	1241

SUMMARY OF REMOVAL ITEMS	
LOCATION	100 6002
	PREPARING ROW
	STA
30	11.5
31	12.5
32	15.5
33	17
34	11.5
35	14
PROJECT TOTALS	82

SUMMARY OF LANDSCAPE ITEMS														
LOCATION	161 6018	170 6001	192 6001	192 6002	192 6002	192 6002	192 6012	192 6016	192 6024	192 6024	192 6097	193 6001	193 6007	1005 6001
	COMPOST MANUF TOPSOIL <2 IN. DEPTH>	IRRIGATION SYSTEM	PLANT MATERIAL <4" CNTR> PURPLE WINTERCREEP ER	PLANT MATERIAL <1 GAL> SNOW WHITE INDIAN HAUTHORN	PLANT MATERIAL <1 GAL> CATMINT	PLANT MATERIAL <1- GAL> CREEPING JUNIPER	MULCH <3 IN. DEPTH>	PLANT BED PREPARATION	PLANT MATERIAL <30 GAL> <TREE> DESER T WILLOW	PLANT MATERIAL <30 GAL> <TREE> GRAPE MYRTLE	CONC LNDSCLP EDG <12 IN WIDTH>	PLANT MAINTENANCE	IRRIGATION SYSTEM OPER AND MAINT	LOOSE AGGR FOR GROUNDCOVER <TYPE 1> 2 in to 3 in DECORATIVE ROCK
	CY	LS	EA	EA	EA	EA	CY	SY	EA	EA	LF	MO	MO	CY
SHEET 38	38.45		4552	48	572	257	57.68	230.72	8	7	375	X		14.52
SHEET 39	7.38					141	11.07	44.28				X		
SHEET 40	8.24					148	12.36	49.44				X		
SHEET 41	3.47					7	5.21	20.84				X		
SHEET 42	39.81		4789	50	1051	235	59.72	238.88	2	4	324	X		19.91
SHEET 43	16.81		2532	32	89	151	29.84	119.36	4	5	204	X		12.16
SHEET 44		X											X	
SHEET 45		X											X	
SHEET 46		X											X	
SHEET 47		X											X	
SHEET 48		X											X	
SHEET 49		X											X	
PROJECT TOTALS	114.16	1	11873	130	1712	939	175.88	703.52	14	16	903	12	12	46.59

CALL TXDOT TRAFFIC MANAGEMENT CENTER
(817-370-3661) FOR TXDOT LOCATES WHEN
WORKING NEAR EXISTING TRAFFIC SIGNAL.

HALFF 4000 FOSSIL CREEK BLVD.
FORT WORTH, TEXAS
76137
TEL (817) 847-1422

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QUANTITY SUMMARY

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	04	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183

DATE: 01/11/2023 10:53:53 AM

TRAFFIC CONTROL GENERAL NOTES

MAINTENANCE OF WORK ZONE TRAFFIC CONTROL DEVICES:

THOSE PORTIONS OF THE PROJECT WHICH REQUIRE CONSTRUCTION WHERE TRAFFIC PASSES NEARBY WILL BE MAINTAINED SUCH THAT THE TRAVEL LANES ARE FREE AND CLEAR OF ALL DEBRIS AT ALL TIME AND ALL TRAFFIC HANDLING DEVICES ARE IN GOOD CONDITION AND ACCEPTABLE TO THE ENGINEER. THIS WORK WILL BE SUBSIDIARY TO THE VARIOUS BID ITEMS.

THE CONTRACTOR SHALL MAINTAIN ALL TRAFFIC CONTROL DEVICES AND WORK ZONE PAVEMENT MARKINGS SUCH THAT THEY WILL BE KEPT IN A HIGHLY VISIBLE CONDITION (CLEAN, UPRIGHT, AND PROPER LOCATION). AT ALL TIMES THE CONTRACTOR SHALL REPLACE ANY DAMAGED TRAFFIC CONTROL DEVICES TO MEET THE REQUIREMENTS SHOWN IN THE TMUTCD, TCP, AND BC STANDARDS, AND TO THE SATISFACTION OF THE ENGINEER. PAYMENT FOR THIS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO BID ITEM 502 ;BARRICADES, SIGNS, AND TRAFFIC HANDLINGK.

SIGNING:

THE CONTRACTOR SHALL TEMPORARILY COVER EXISTING SIGNS THAT ARE IN CONFLICT WITH THE SUGGESTED TRAFFIC CONTROL PLAN OR THE INTENT THEREOF.

EXISTING SIGNS THAT DO NOT CONFLICT WITH THE SUGGESTED TRAFFIC CONTROL PLAN OR THE INTENT THEREOF, BUT REQUIRE RELOCATION DUE TO PHYSICAL CONFLICTS SHALL NOT BE RELOCATED UNTIL TEMPORARY SIGN SUPPORTS HAVE BEEN INSTALLED TO ALLOW FOR THE IMMEDIATE RELOCATION OF ANY SUCH SIGNS.

THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TWO TRAILER MOUNTED FLASHING ARROW PANELS (IN WORKING ORDER) AT ALL TIMES AT THE PROJECT SITE TO BE USED WHEN NEEDED AS DIRECTED BY THE ENGINEER. PAYEMNT FOR THIS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO BID ITEM 502 ;BARRICADES, SIGNS, AND TRAFFIC HANDLINGK.

GENERAL:

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE REQUIREMENTS OF ITEM 7 ;LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLICK OF THE GENERAL REQUIREMENTS AND COVENANTS OF THE STANDARD SPECIFICIATIONS.

INSTALLATION AND MAINTENANCE OF ALL WORK ZONE SIGNS, BARRICADES, AND PAVEMENT MARKINGS IS THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL CONFORM TO THE BARRICADE AND CONSTRUCTION (BC) STANDARDS AND/OR THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).

CONSTRUCTION IN ANY AREA THAT IS ADVERSELY AFFECTING TRAFFIC FLOW AND SAFETY MUST BE PURSUED DILIGENTLY BY THE CONTRACTOR. IN THE OPINION OF THE ENGINEER, IF THE CONTRACTOR IS NOT DILIGENTLY PURSUING THE CONSTRUCTION IN THOSE AREAS, THEN THE ENGINEER MAY REQUIRE THE CONTRACTOR TO CHANGE HIS WORK SCHEDULE TO EXPEDITE COMPLETION IN THOSE AREAS OF CONCERN.

TRAFFIC CONTROL PLAN NARRATIVE

1. CONTRACTOR SHALL UTILIZE ONLY SHORT TERM STATIONARY TRAFFIC CONTROL LANE CLOSURES IN ACCORDANCE WITH TCP(1-5)-18.
2. ONLY ONE AREA MAY BE WORKED ON AT A TIME, SUCH THAT A MAXIMUM OF ONE LANE MAY BE CLOSED IN EACH DIRECTION.
3. LANE CLOSURES MAY BE MAINTAINED FOR A MAXIMUM OF ONE DAY AT A TIME.
4. IF NEEDED, TCP(1-5)-18 DETAIL TCP(1-5b) MAY BE USED TO PROVIDE A LEFT TURN LANE AT INTERSECTIONS.

ADVANCED WARNING SIGNAGE:

1. IMPLEMENT TRAFFIC CONTROL FOR ADVANCE WARNING SIGNAGE IN ACCORDANCE WITH TCP(1-5)-18 FOR EACH SECTION OF WORK.

SEQUENCE OF CONSTRUCTION:

1. INSTALL CHANNELIZING DEVICES, BARRICADES, AND SIGNAGE IN ACCORDANCE WITH TCP(1.5)-18.
2. INSTALL/MAINTAIN DOWNSTREAM SW3P DEVICES IN ACCORDANCE WITH EROSION CONTROL PLANS.
3. COMPLETE WORK IN ACCORDANCE WITH DEMOLITION, PLANTING AND IRRIGATION PLANS.
4. CLEAN UP WORKZONE, REMOVE TRAFFIC CONTROL DEVICES AND ALLOW TRAFFIC.
5. REMOVE SW3P DEVICES AFTER FINAL VEGETATION HAS BEEN ACHIEVED.

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Connor R. Guerrero

DATE: 05/25/2022

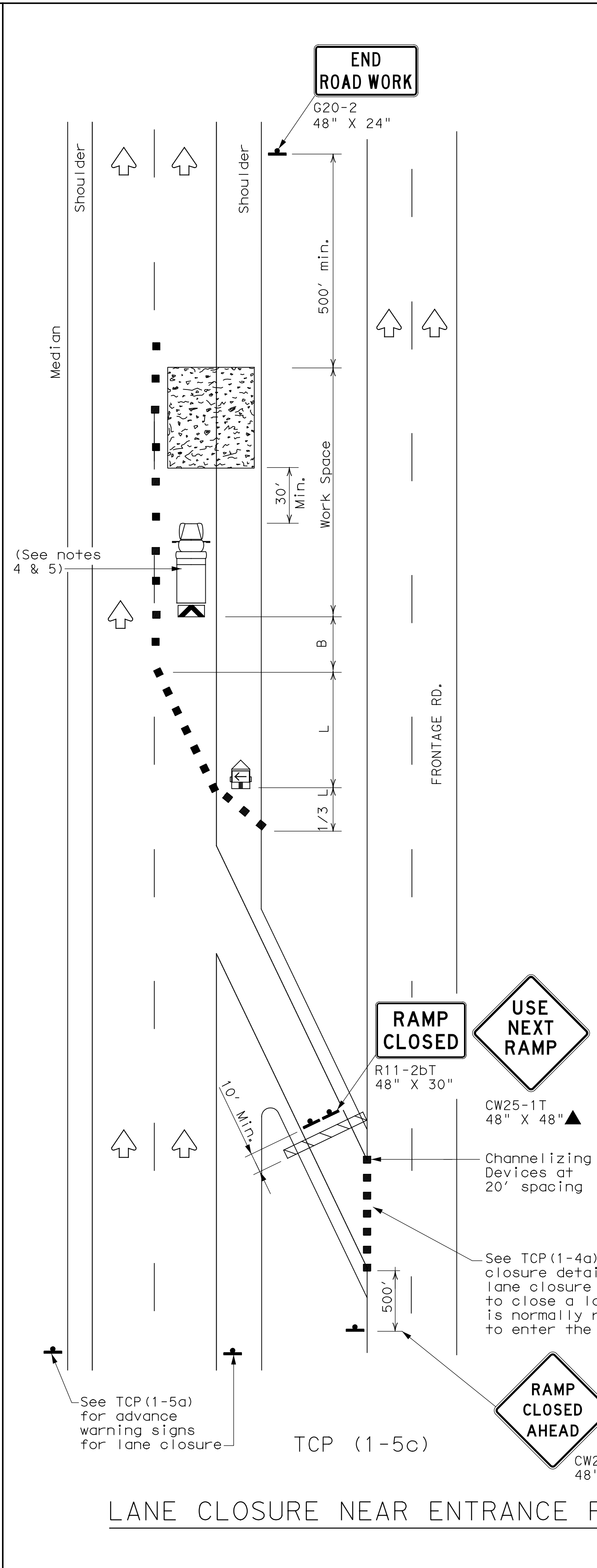
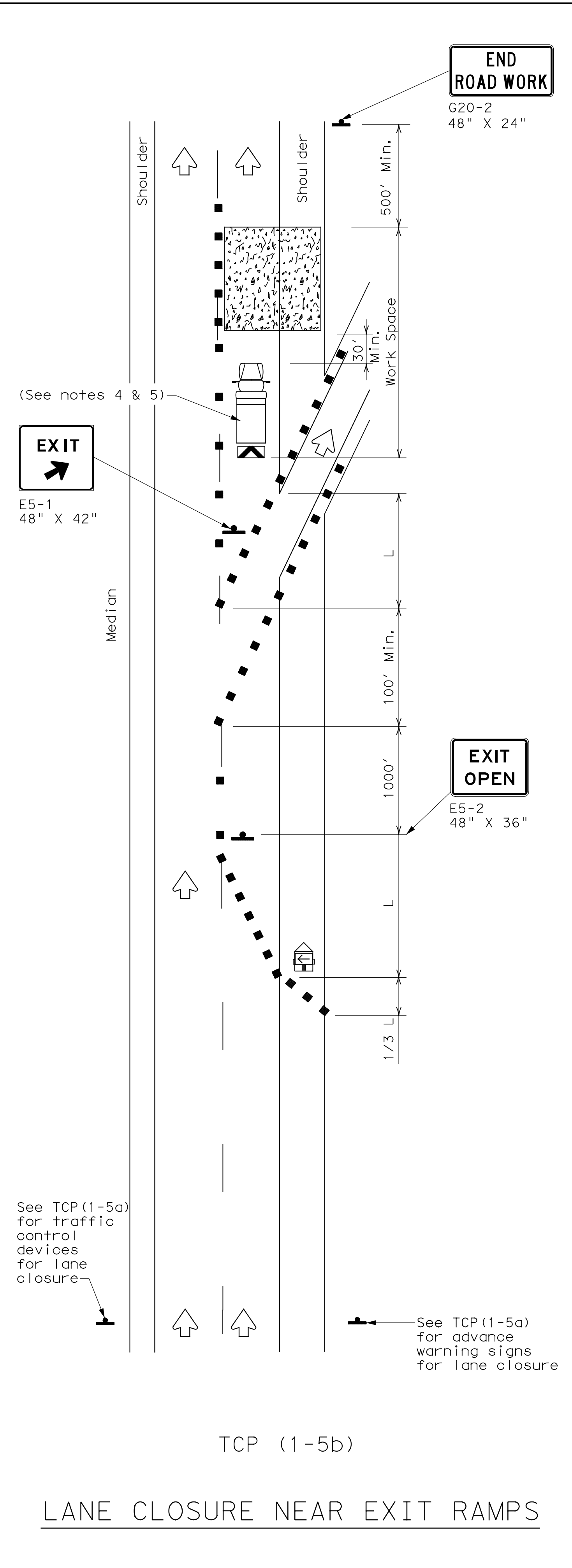
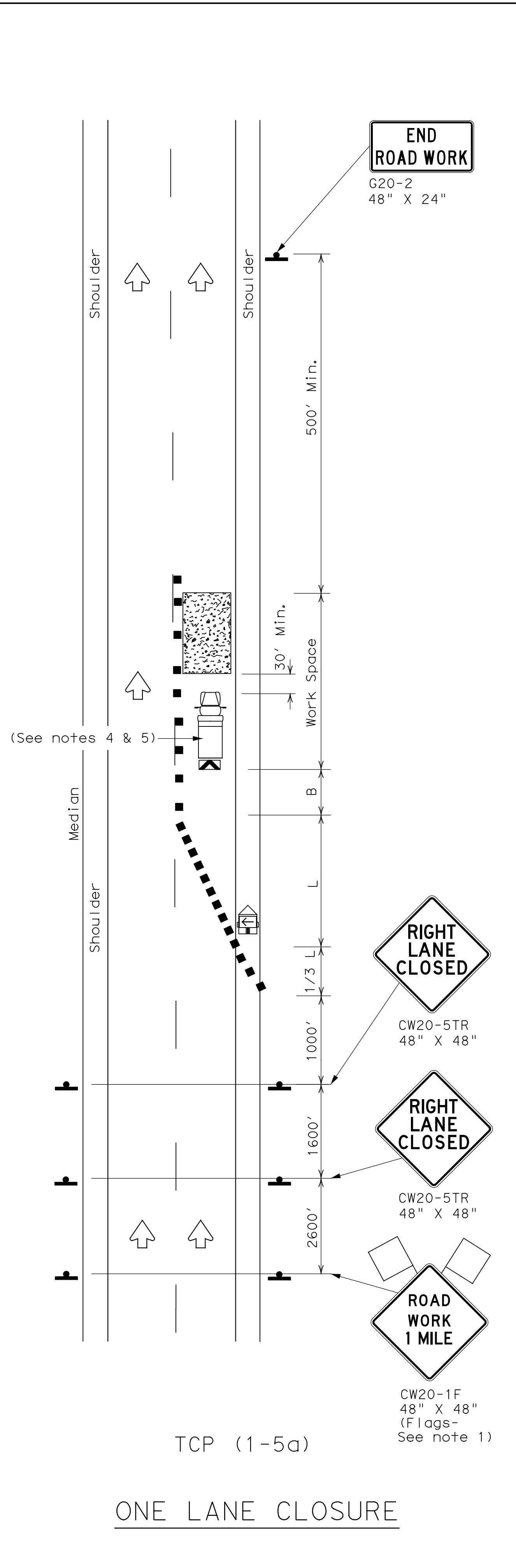


**TRAFFIC CONTROL PLAN
GENERAL NOTES & NARRATIVE**

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		SHEET NO.
6	SEE TITLE SHEET		5
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	SH 183

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

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

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

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

- GENERAL NOTES
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - Channelizing devices used to close lanes may be supplemented with the Chevron Alignment Sign placed on every other channelizing device. Chevrons may be attached to plastic drums as per BC Standards.
 - 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.
 - Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.



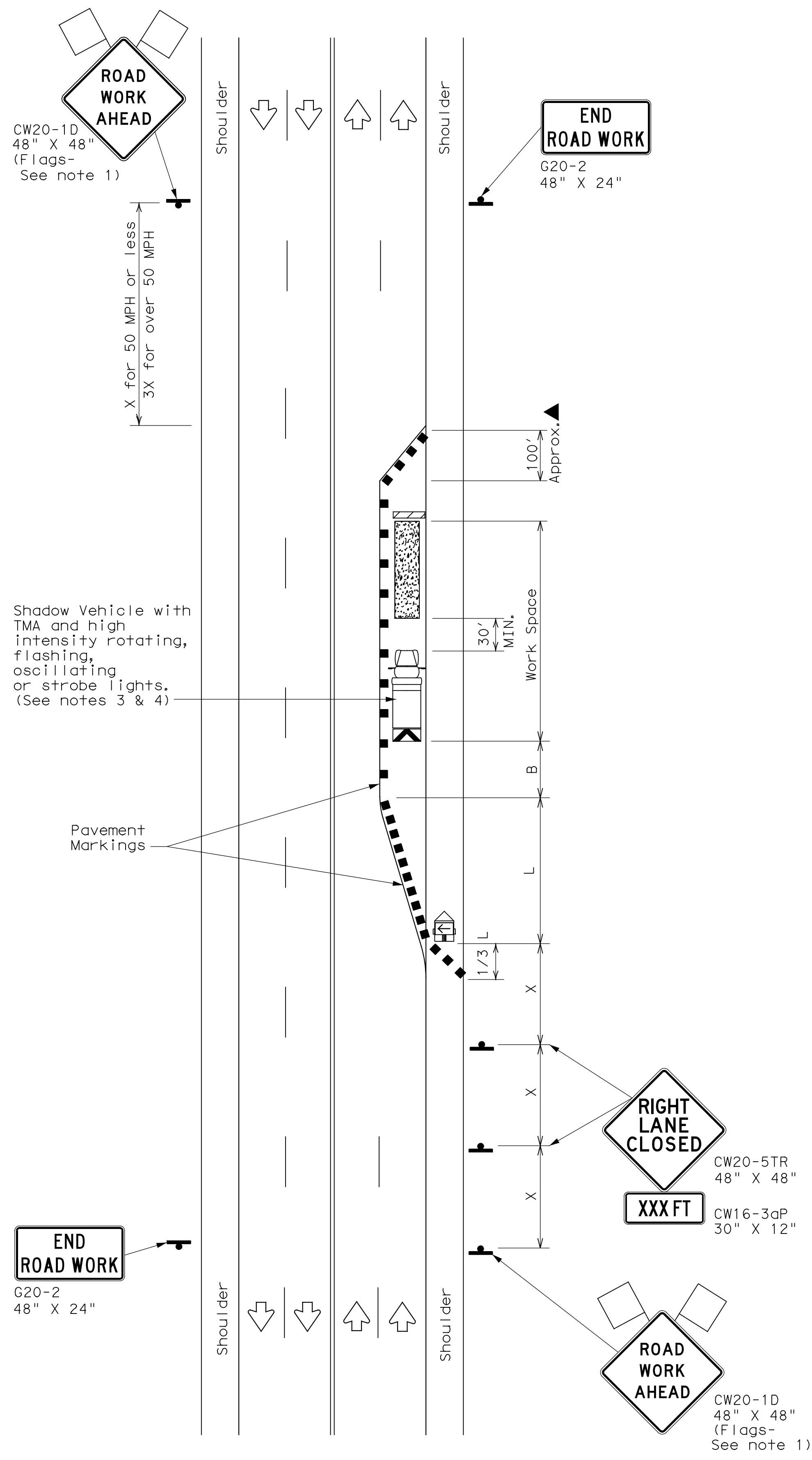
TRAFFIC CONTROL PLAN
 LANE CLOSURES FOR
 DIVIDED HIGHWAYS

TCP (1-5) - 18

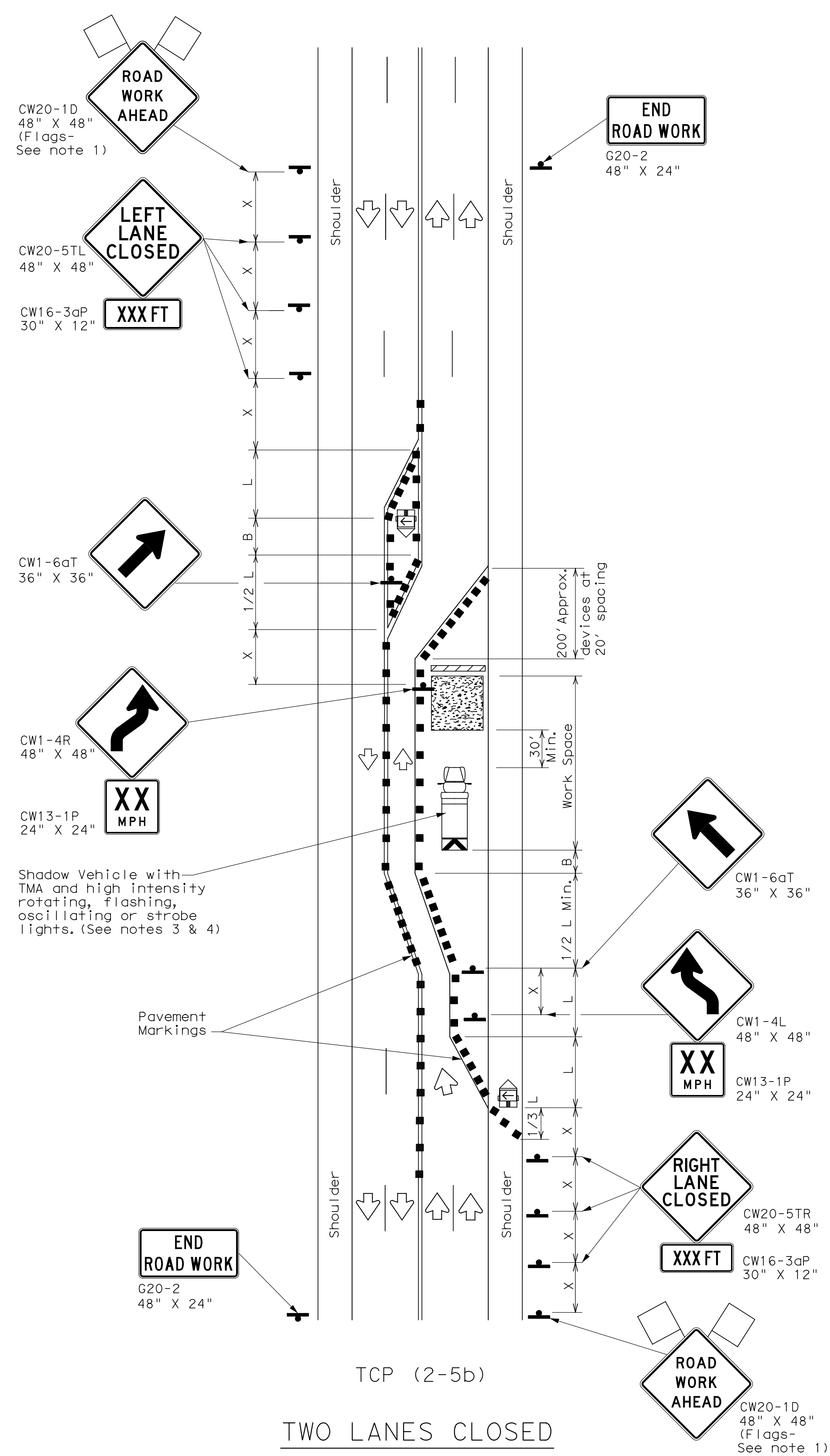
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2-18	0094	02	143	SH 183
	DIST	COUNTY	SHEET NO.	
	FTW	TARRANT	6	

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TCP (2-5a)
 ONE LANE CLOSED



TCP (2-5b)
 TWO LANES CLOSED

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

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

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

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

- GENERAL NOTES
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - 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.
 - Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.
 - The downstream taper is optional. When used, it should be 100 feet approximately per lane, with channelizing devices spaced at 20 feet.
- TCP (2-5a)
- If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic, with the arrow board placed in the closed lane near the end of the merging taper.
- TCP (2-5b)
- Conflicting pavement markings shall be removed for long-term projects.

		Traffic Operations Division Standard	
TRAFFIC CONTROL PLAN LONG TERM LANE CLOSURES MULTILANE CONVENTIONAL RDS.			
TCP (2-5) - 18			
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8-95 2-12	DIST:	COUNTY:	SHEET NO.
1-97 3-03	FTW	TARRANT	7
4-98 2-18			

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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

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

WORKER SAFETY NOTES:

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

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

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



**BARRICADE AND CONSTRUCTION
 GENERAL NOTES
 AND REQUIREMENTS**

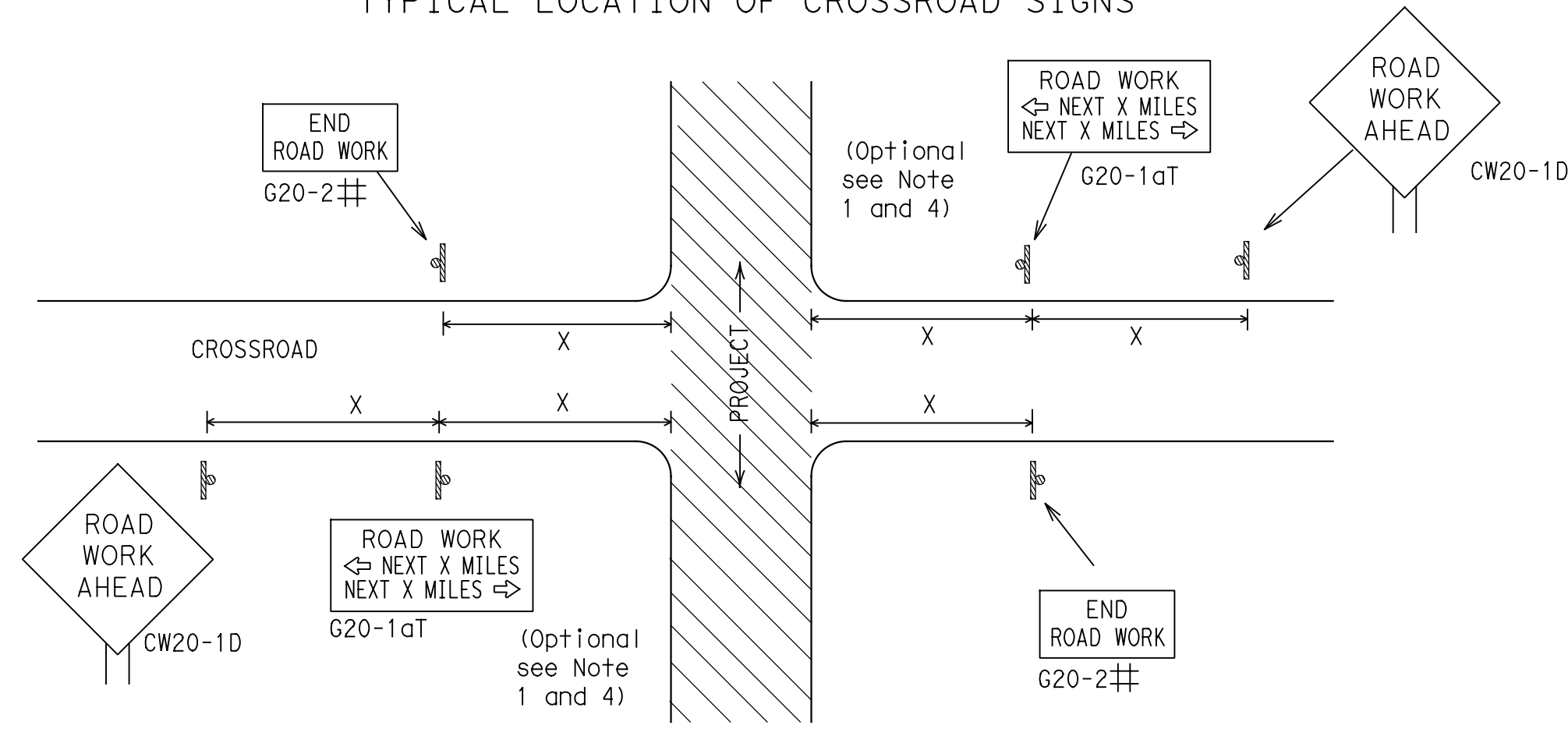
BC (1) - 21

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4-03	7-13	DIST	COUNTY		SHEET NO.				
9-07	8-14	FTW	TARRANT		8				
5-10	5-21								

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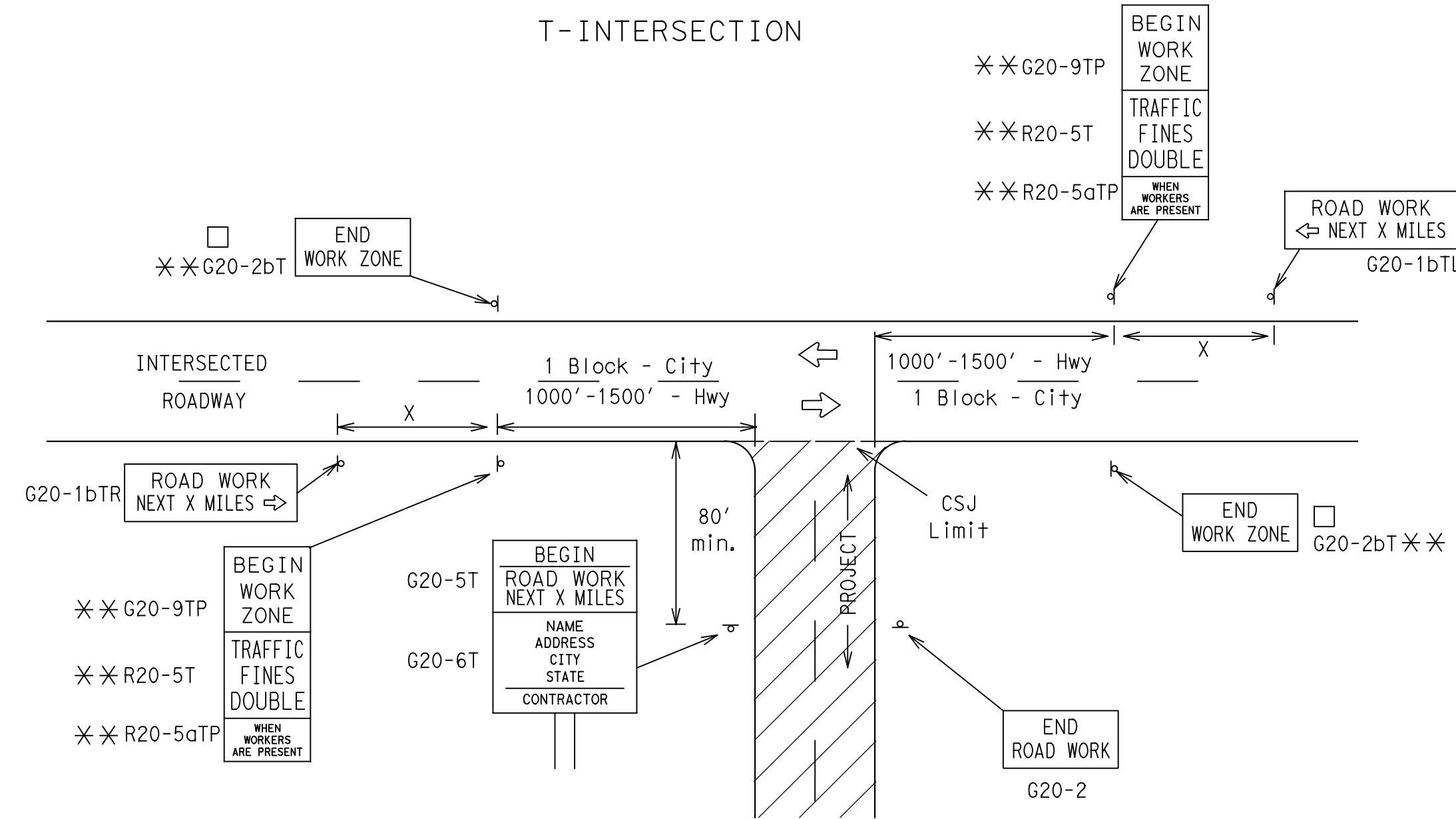
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TYPICAL LOCATION OF CROSSROAD SIGNS



- ## May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of Engineer. (See note 2 below)
- The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
 - The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume as per TMUTCD Part 5. This information shall be shown in the plans.
 - Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
 - The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
 - Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
 - When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

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

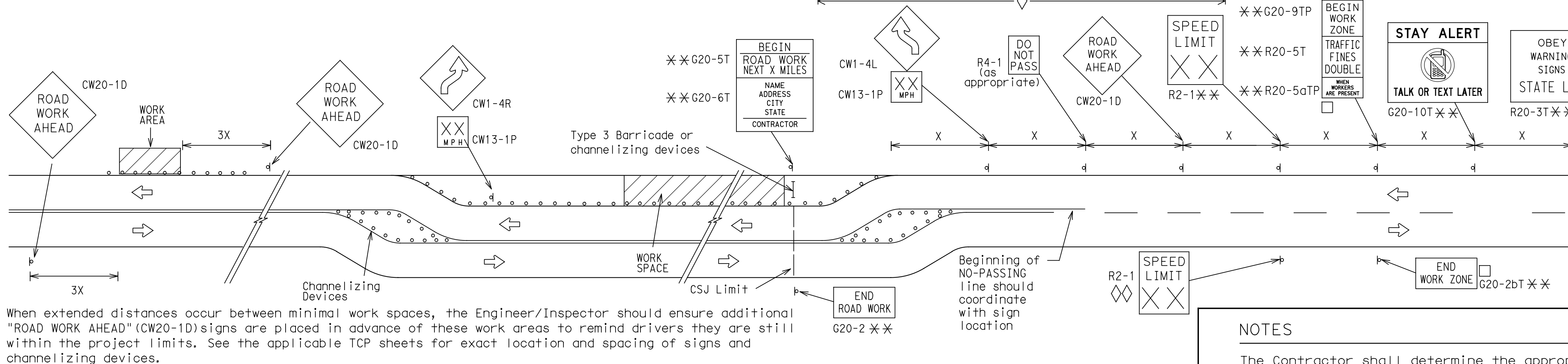
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

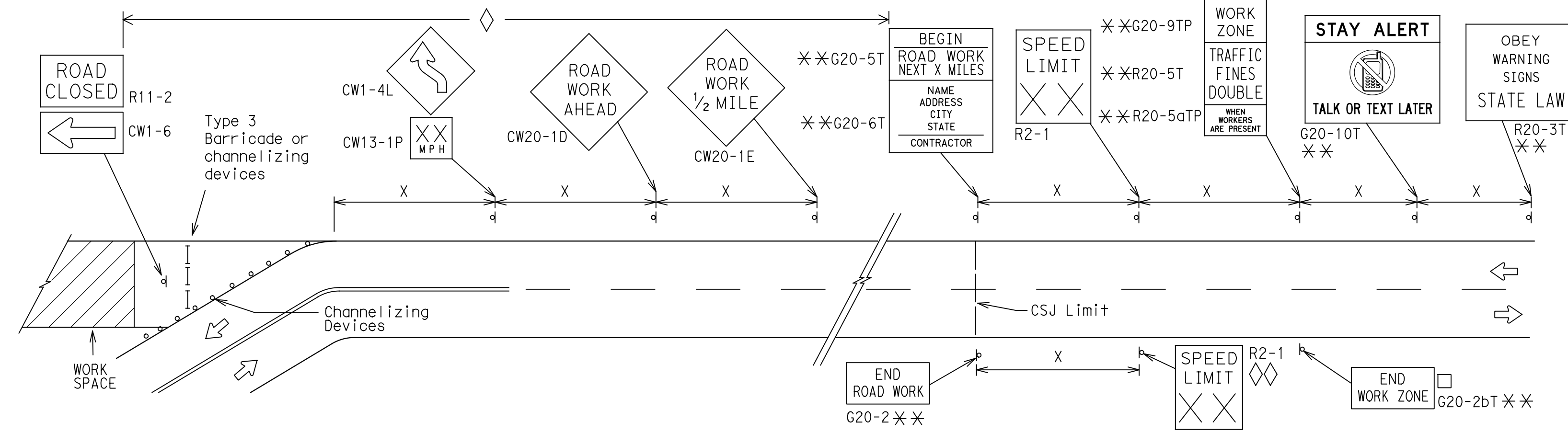
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
- Only diamond shaped warning sign sizes are indicated.
- See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

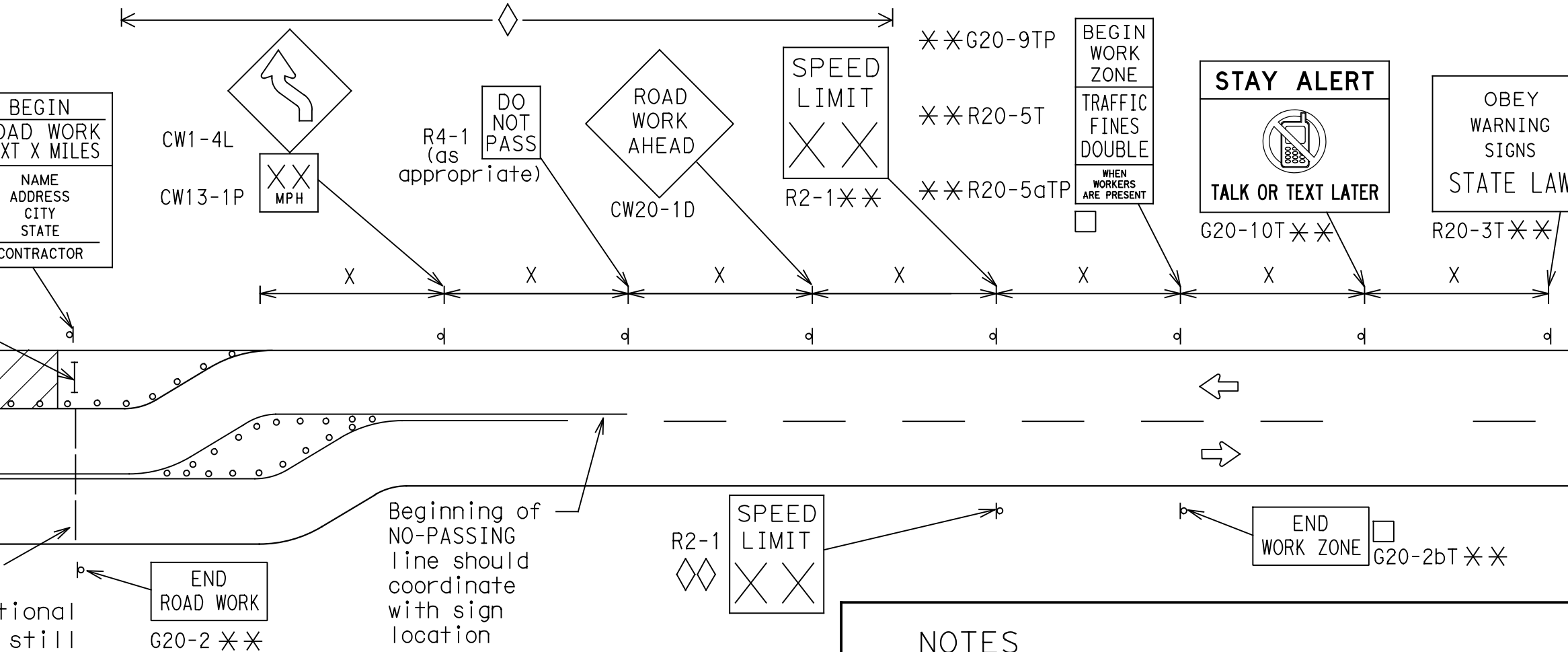


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

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



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



NOTES

- The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.
- The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.
 - ** CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.
 - ◇ Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.
 - ◇◇ Contractor will install a regulatory speed limit sign at the end of the work zone.

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

SHEET 2 OF 12



BARRICADE AND CONSTRUCTION PROJECT LIMIT

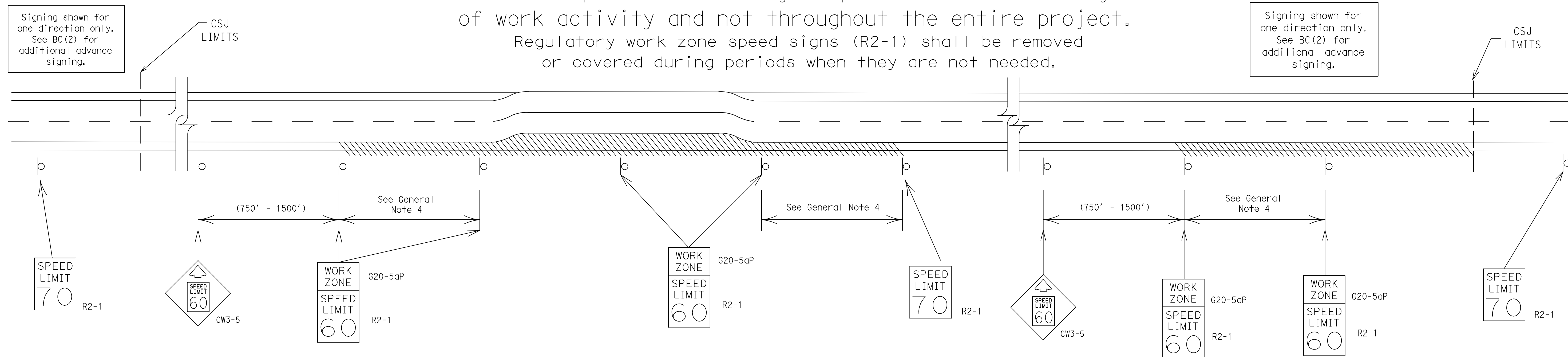
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© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0094	02	143	SH 183
9-07 8-14	DIST	COUNTY	SHEET NO.	
7-13 5-21	FTW	TARRANT	9	

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present.

Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

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

SHEET 3 OF 12



BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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REVISIONS		0094	02	143	SH 183				
9-07	8-14	DIST	COUNTY	SHEET NO.					
7-13	5-21	FTW	TARRANT	10					

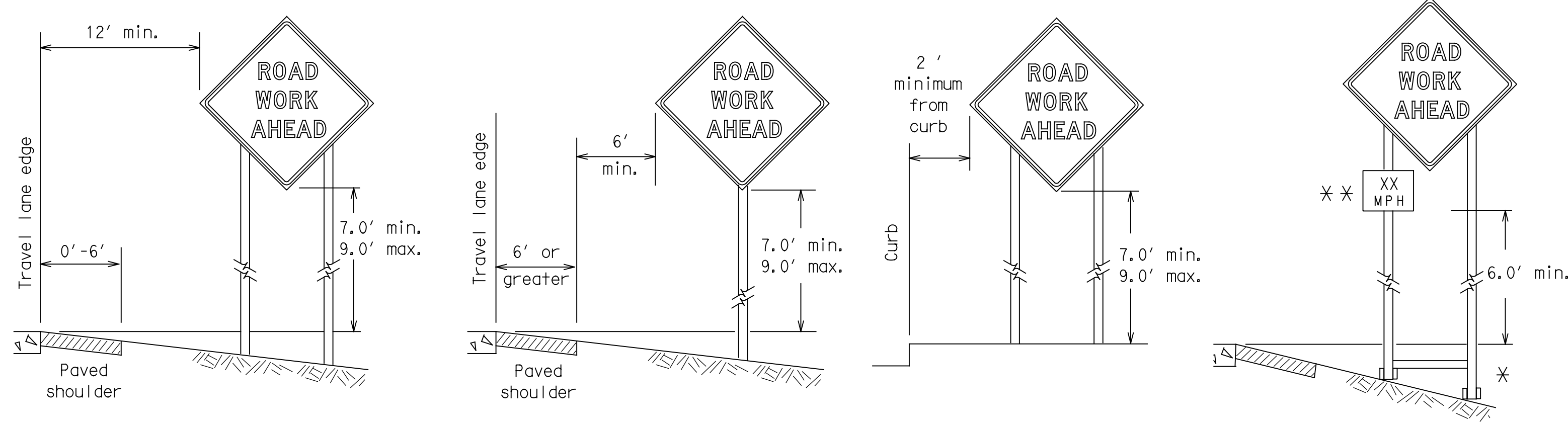
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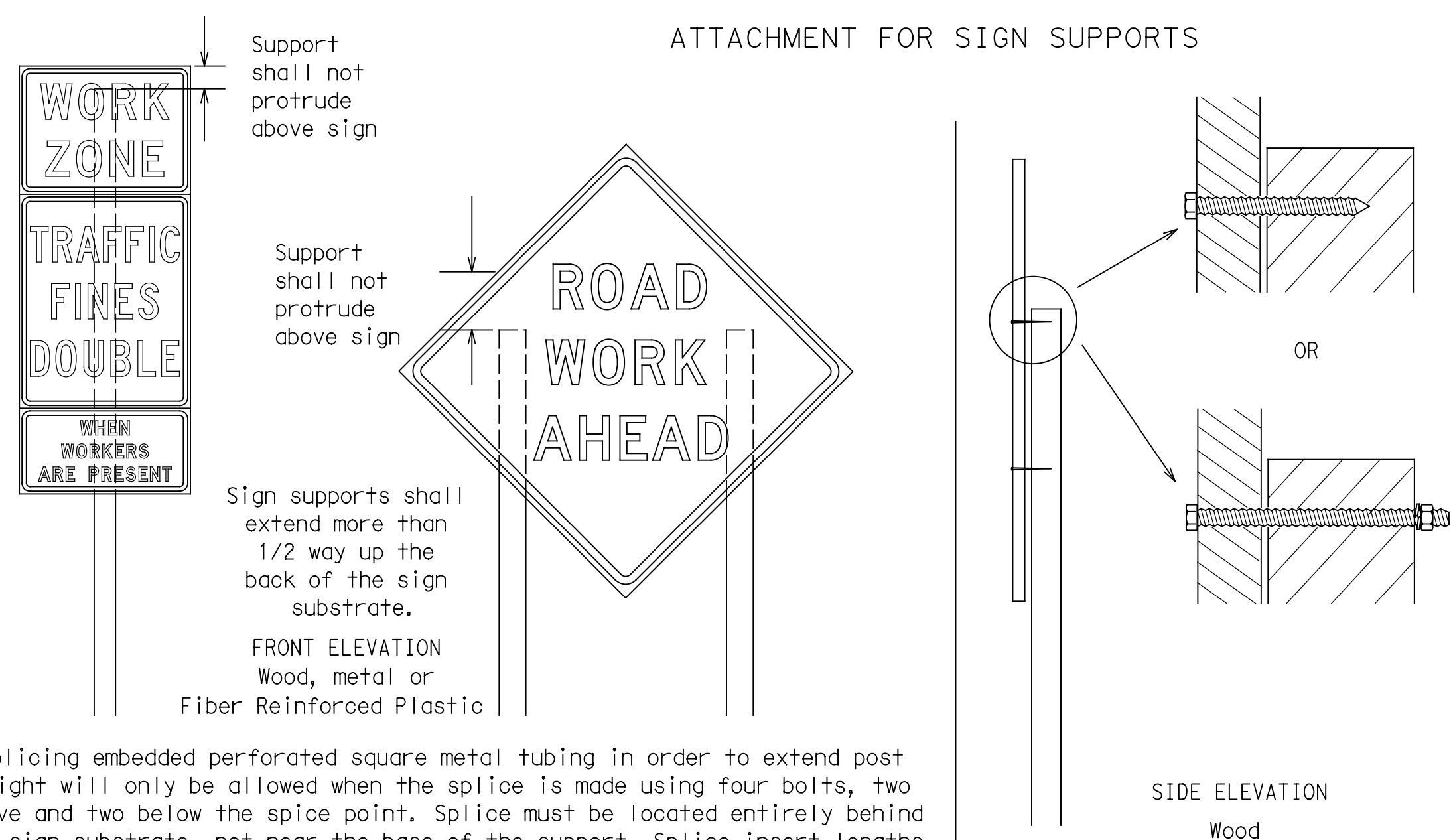
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



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

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

ATTACHMENT FOR SIGN SUPPORTS



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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

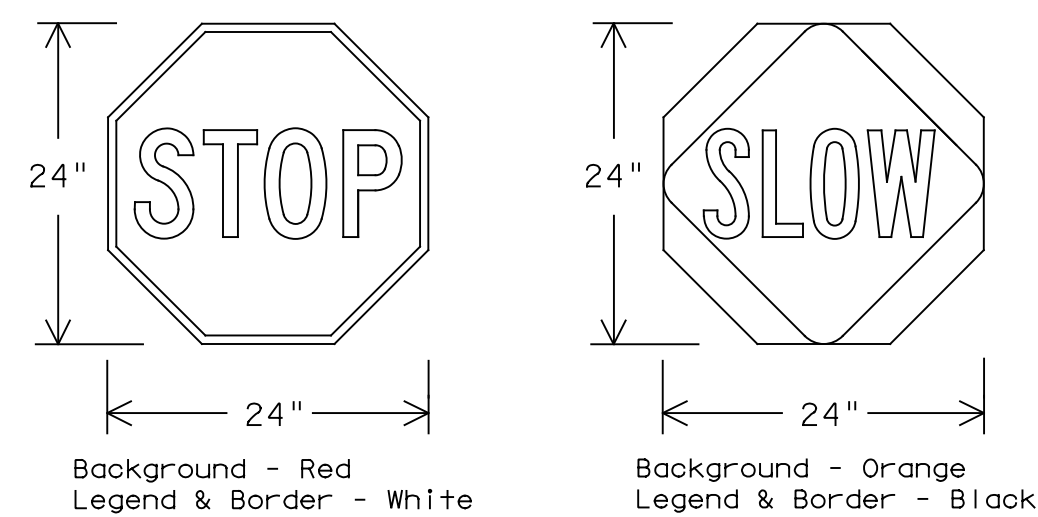
- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
- The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
- Rock, concrete, iron, steel or other solid objects shall not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

FLAGS ON SIGNS

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

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

SHEET 4 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION

TEMPORARY SIGN NOTES

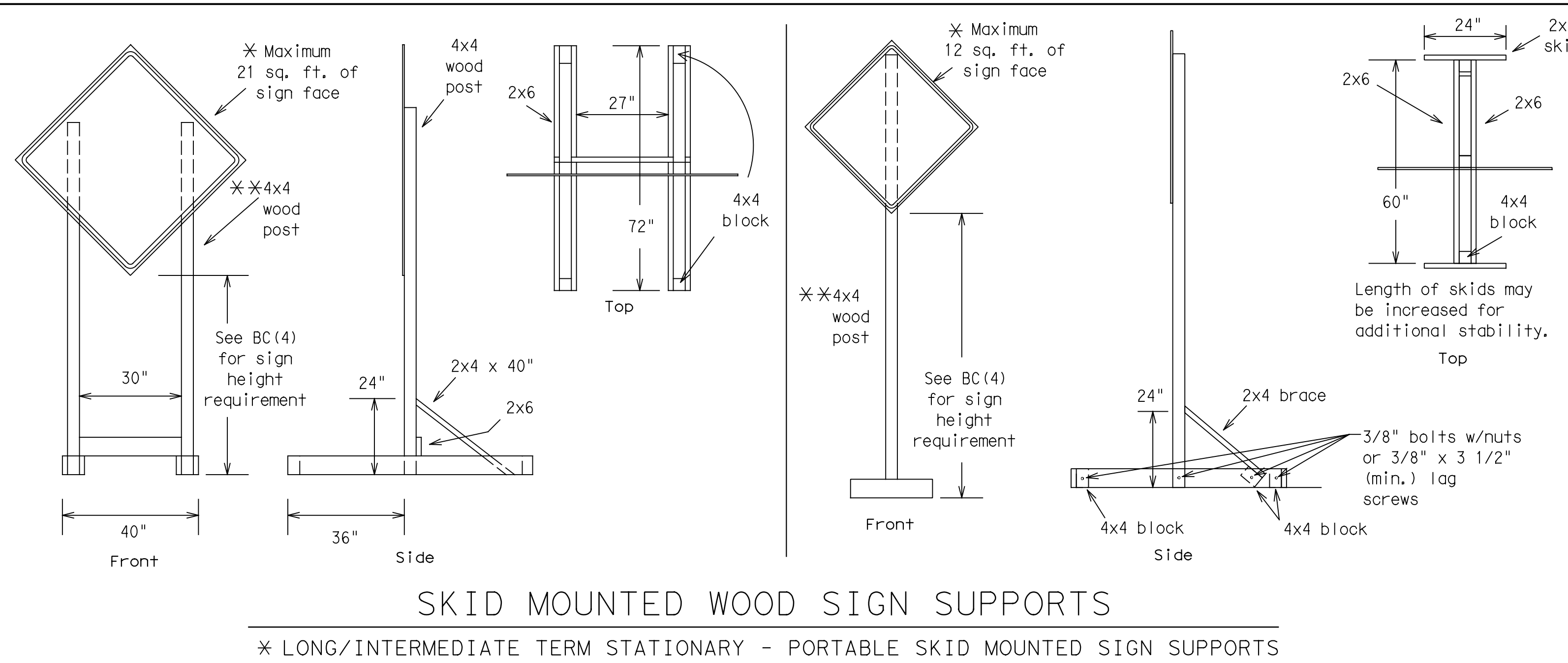
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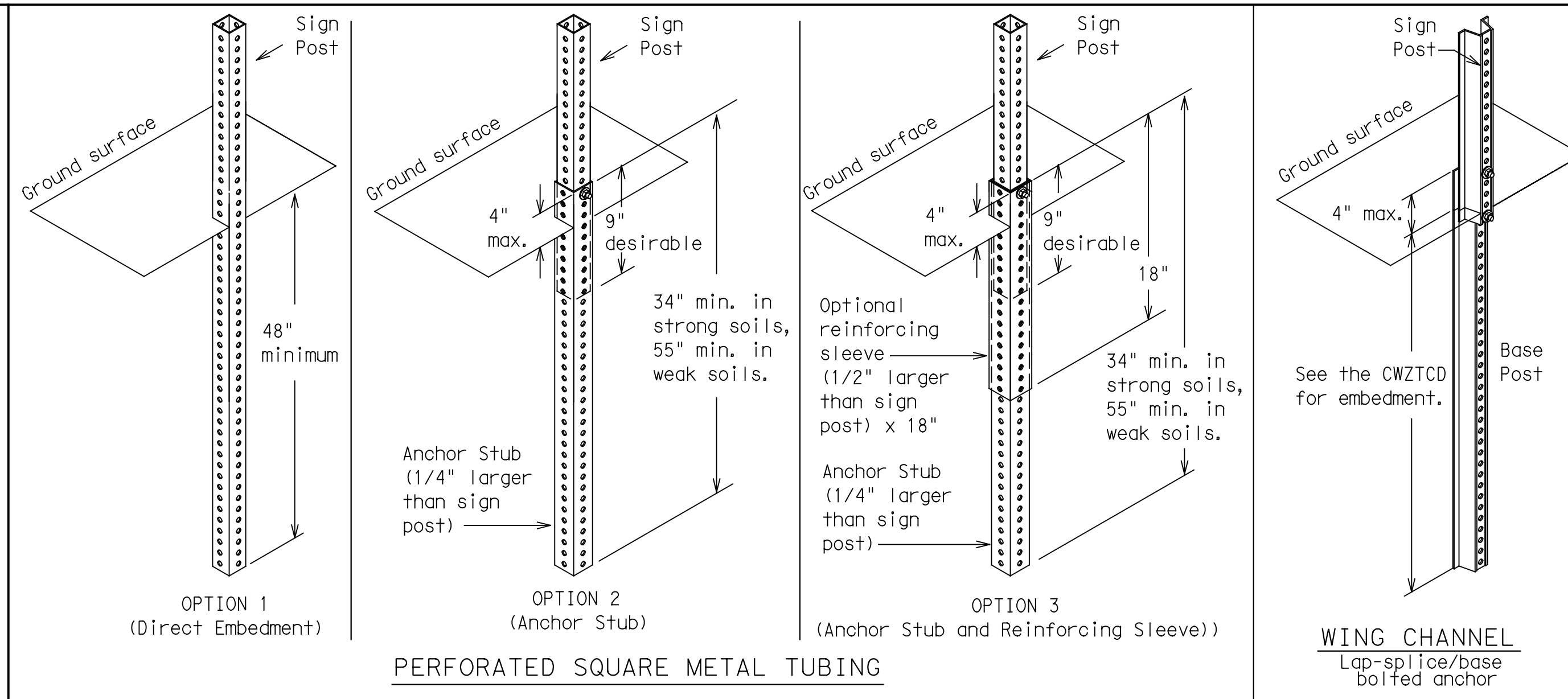
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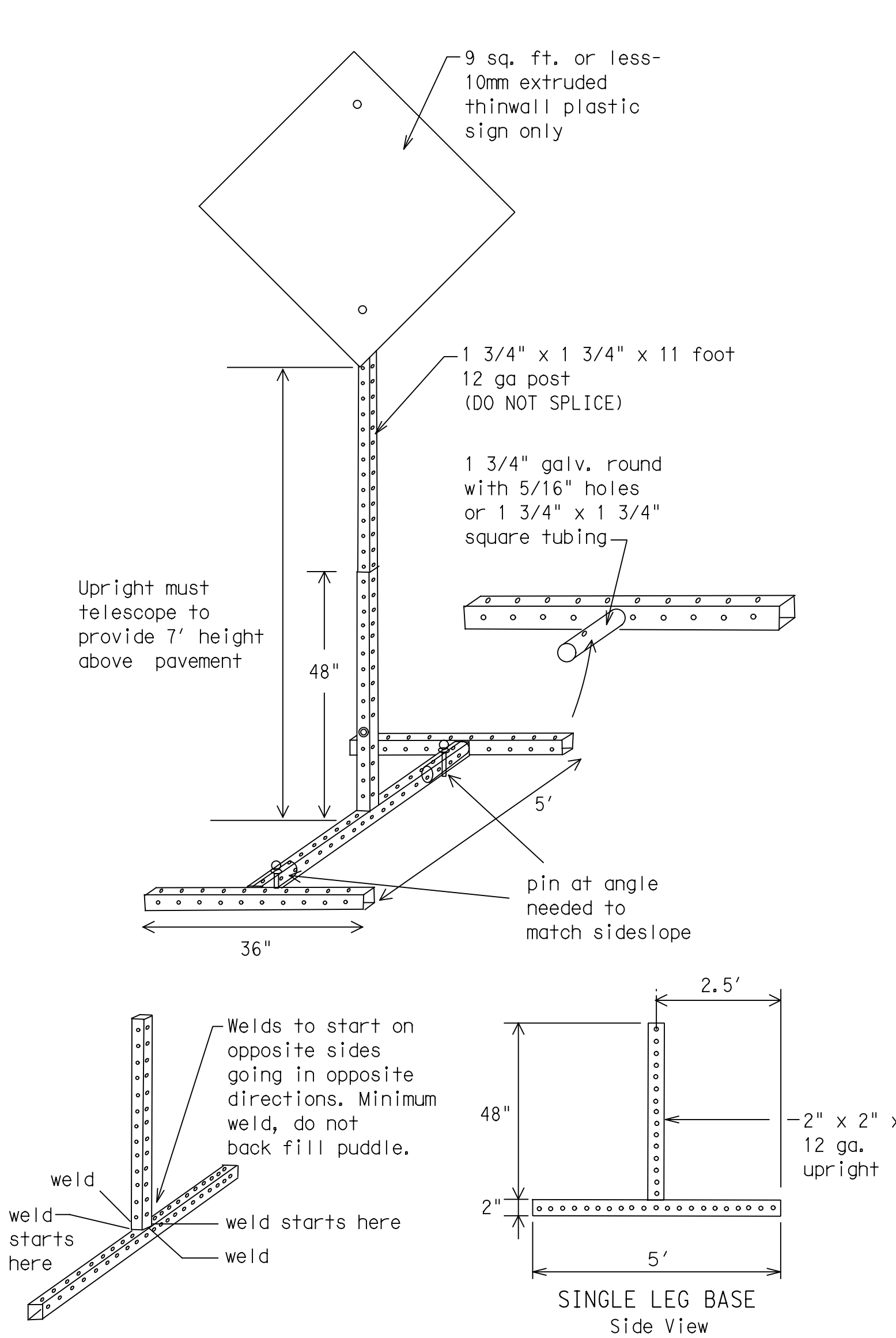
SKID MOUNTED WOOD SIGN SUPPORTS

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



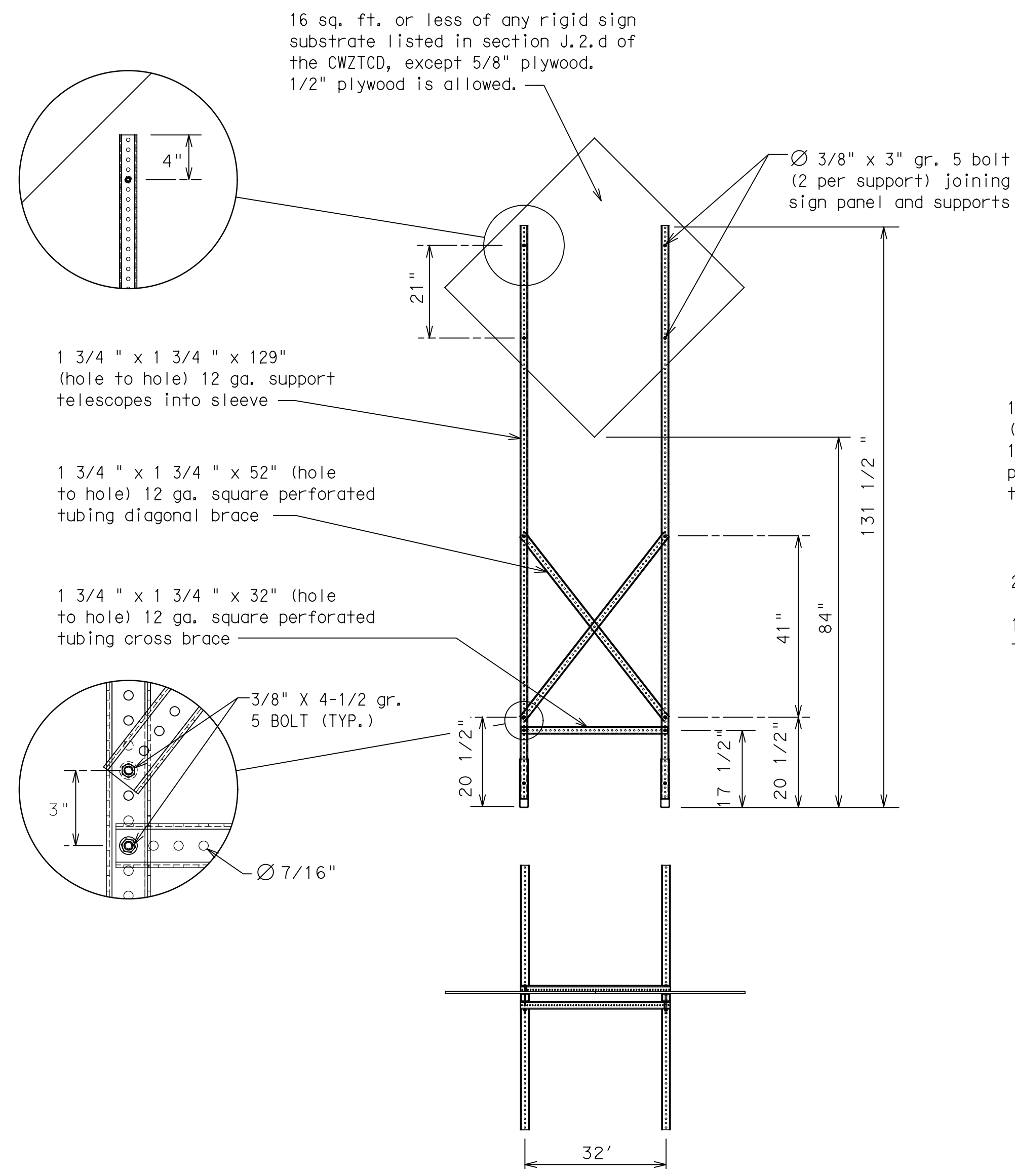
GROUND MOUNTED SIGN SUPPORTS

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



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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



WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

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

SHEET 5 OF 12



BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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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

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

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

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

ROADWORK XXX FT
FLAGGER XXXX FT
RIGHT LN NARROWS XXXX FT
MERGING TRAFFIC XXXX FT
LOOSE GRAVEL XXXX FT
DETOUR X MILE
ROADWORK PAST SH XXXX
BUMP XXXX FT
TRAFFIC SIGNAL XXXX FT

ROAD REPAIRS XXXX FT
LANE NARROWS XXXX FT
TWO-WAY TRAFFIC XX MILE
CONST TRAFFIC XXX FT
UNEVEN LANES XXXX FT
ROUGH ROAD XXXX FT
ROADWORK NEXT FRI-SUN
US XXX EXIT X MILES
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
DETOUR NEXT X EXITS
USE EXIT XXX
STAY ON US XXX SOUTH
TRUCKS USE US XXX N
WATCH FOR TRUCKS
EXPECT DELAYS
REDUCE SPEED XXX FT
USE OTHER ROUTES
STAY IN LANE *

Location List

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

Warning List

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

** Advance Notice List

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

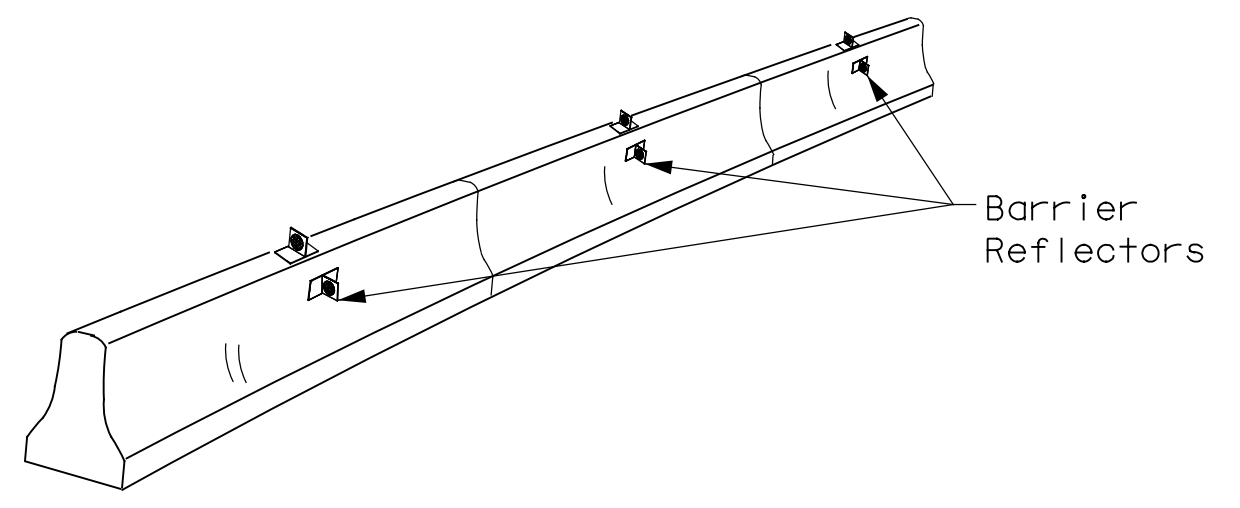
- When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
- When symbol signs, such as the "Flagger Symbol" (CW20-7) are represented graphically on the Full Matrix PCMS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

<h2>BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)</h2>			
<h3>BC (6) - 21</h3>			
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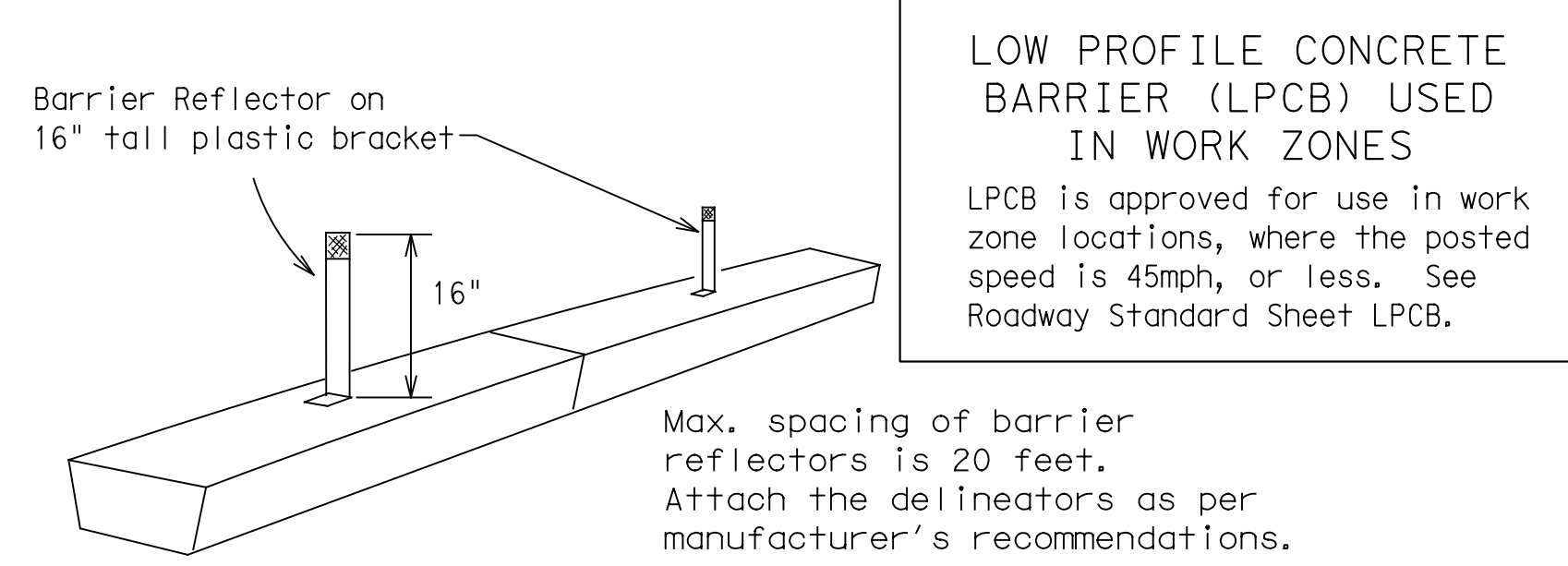
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



CONCRETE TRAFFIC BARRIER (CTB)

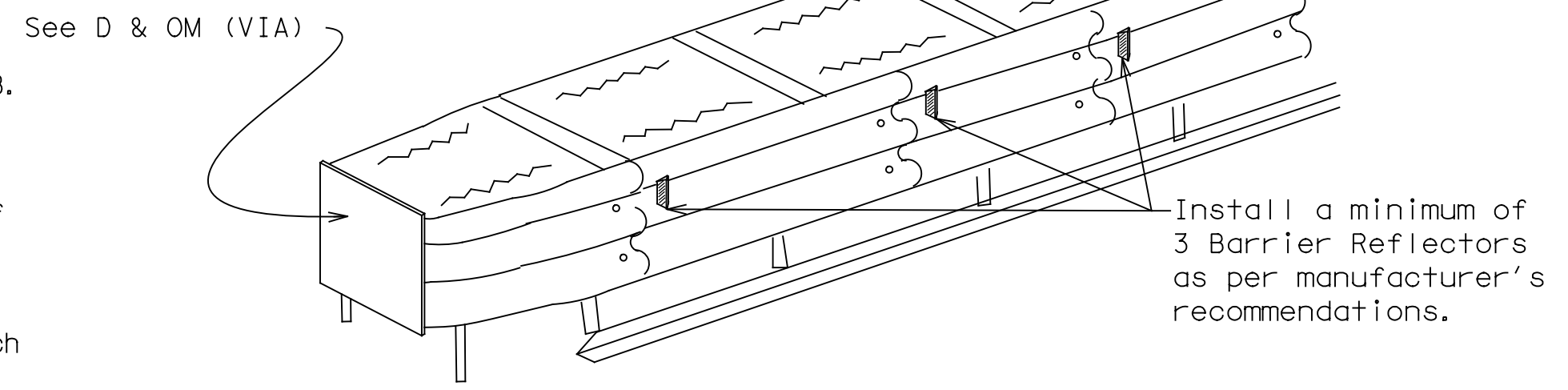


LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

LOW PROFILE CONCRETE BARRIER (LPCB)

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



DELINEATION OF END TREATMENTS

END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

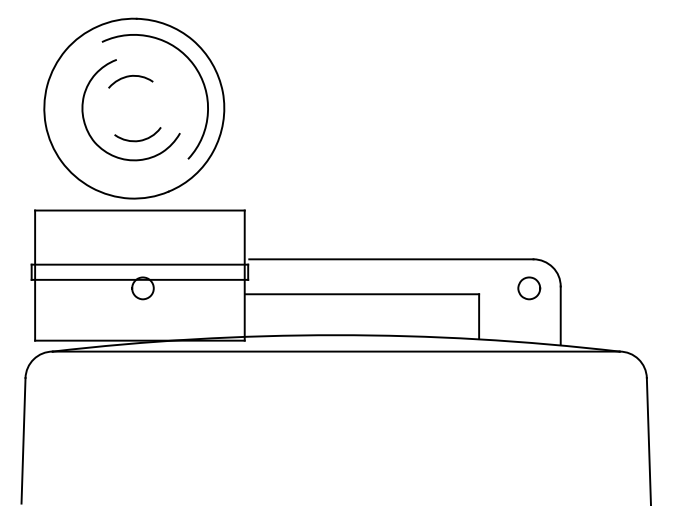
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

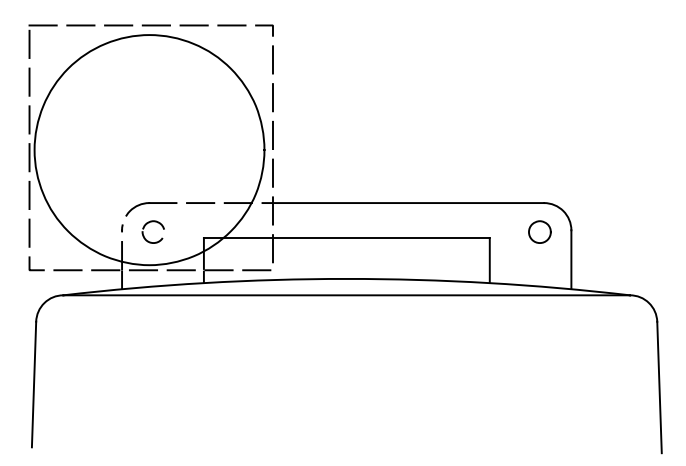
- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing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

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

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



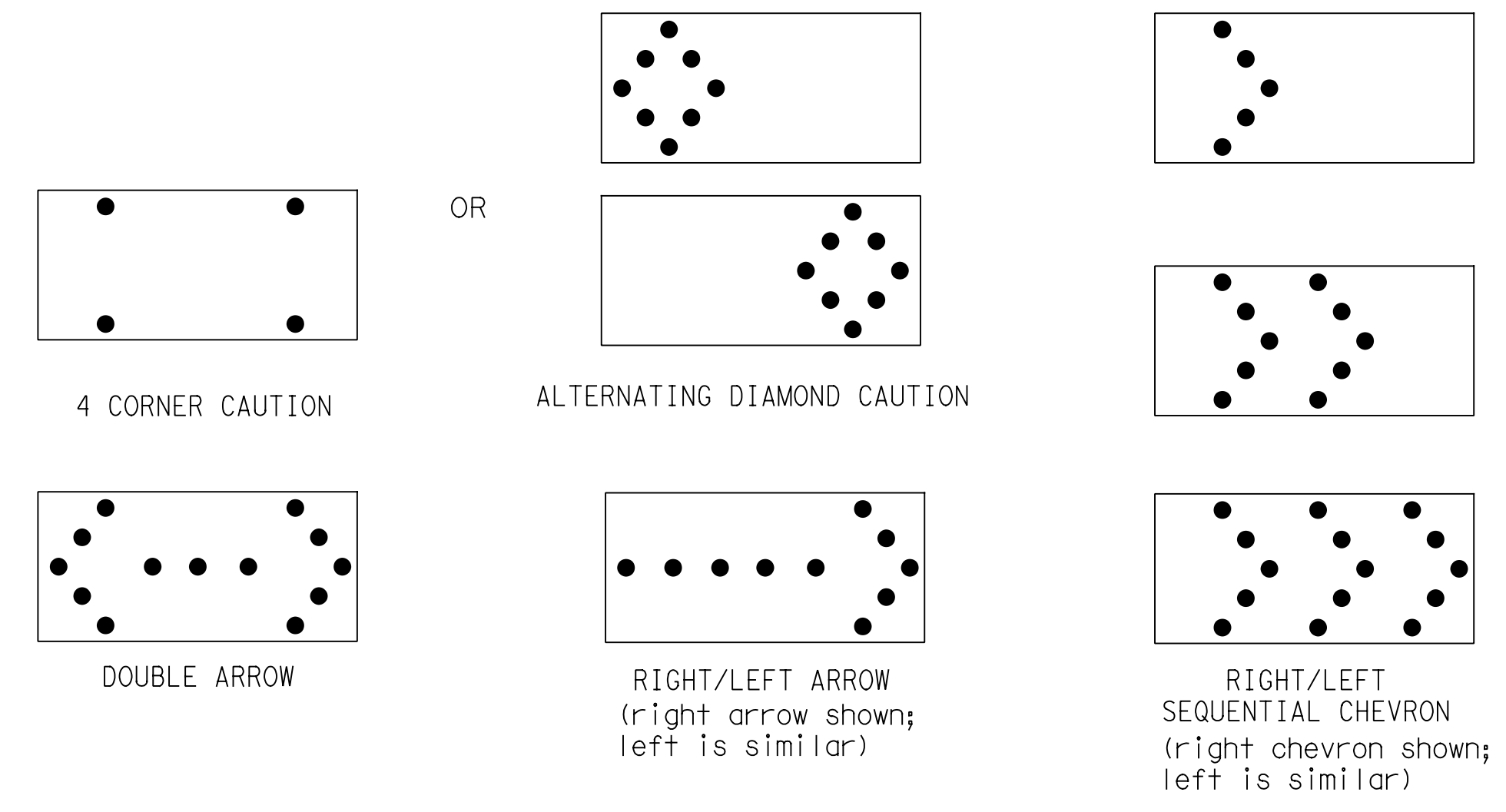
Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



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

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

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



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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

SHEET 7 OF 12

TRUCK-MOUNTED ATTENUATORS

- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CWZTCD for a list of approved TMAs.
- TMAs are required on freeways unless otherwise noted in the plans.
- A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
- The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.



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

BC (7) - 21

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© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
REVISIONS		0094	02	143	SH 183				
9-07	8-14	DIST	COUNTY		SHEET NO.				
7-13	5-21	FTW	TARRANT		14				

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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

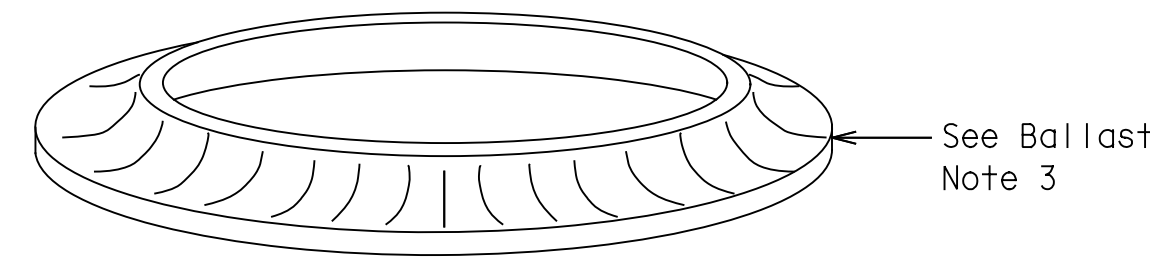
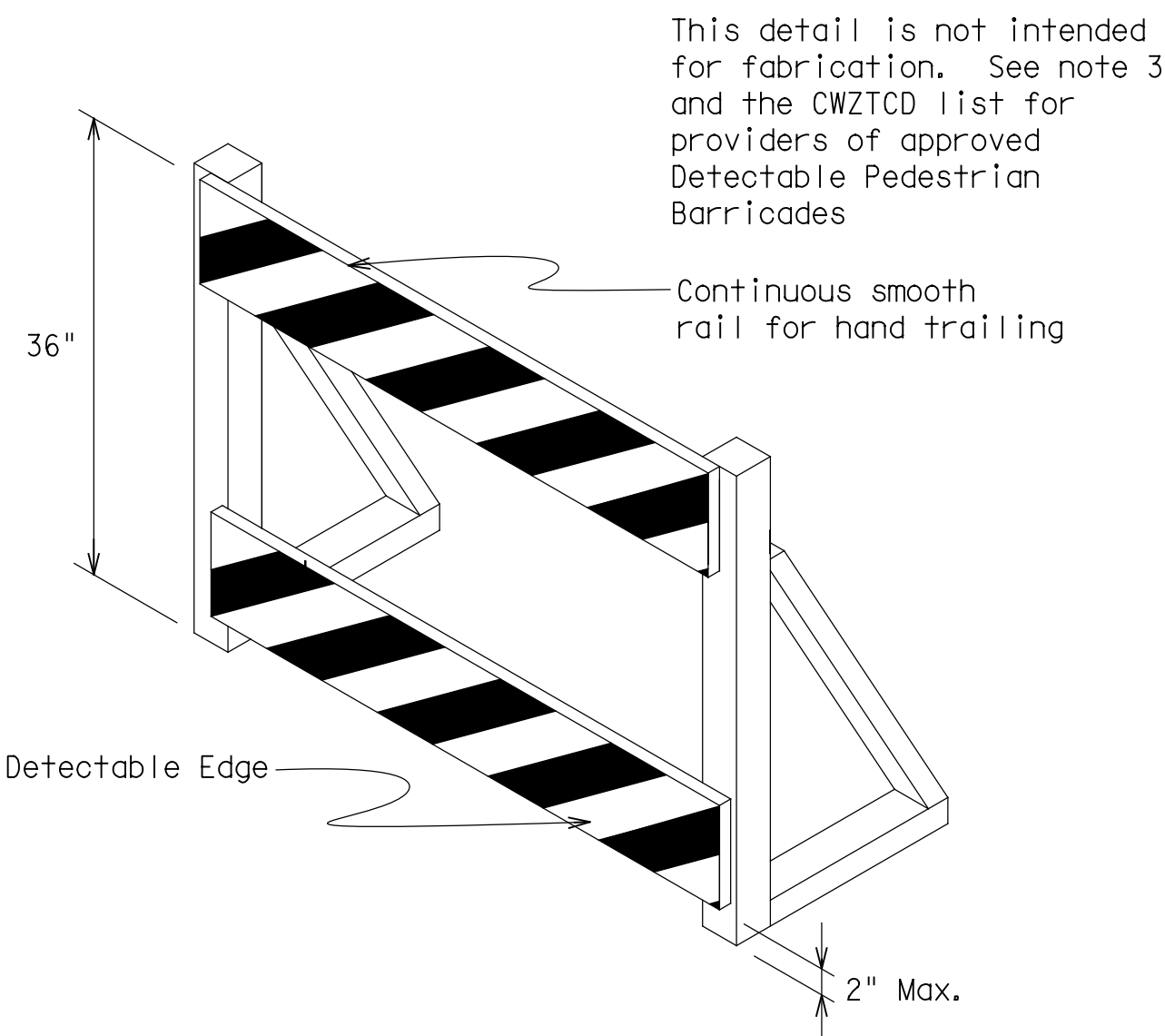
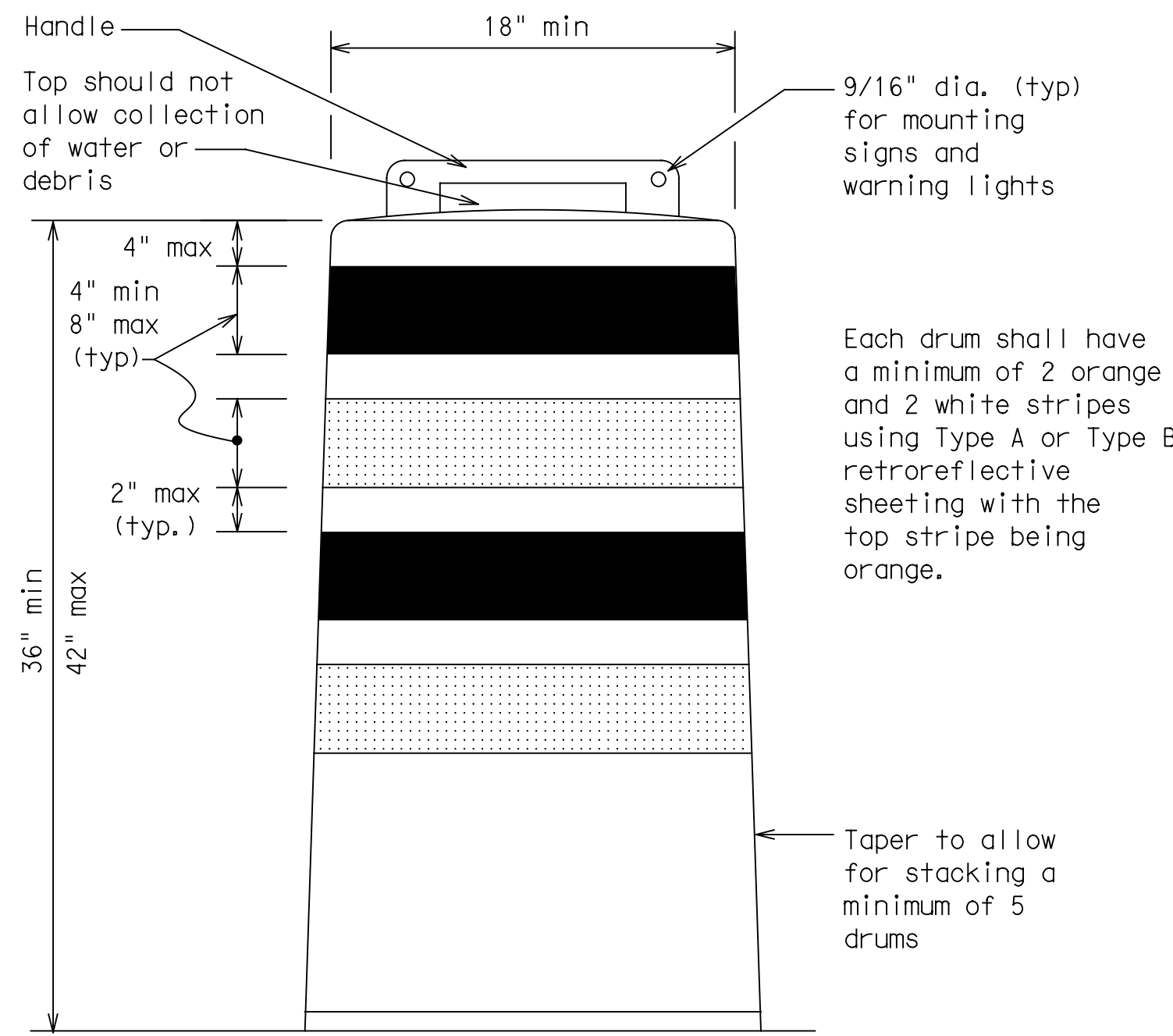
- Pre-qualified plastic drums shall meet the following requirements:
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
 - The body and base shall lock together in such a manner that the body separates from the base when impacted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

RETROREFLECTIVE SHEETING

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

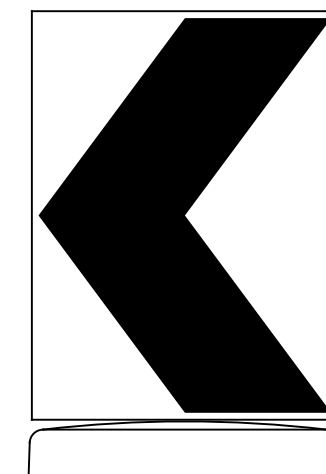
BALLAST

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

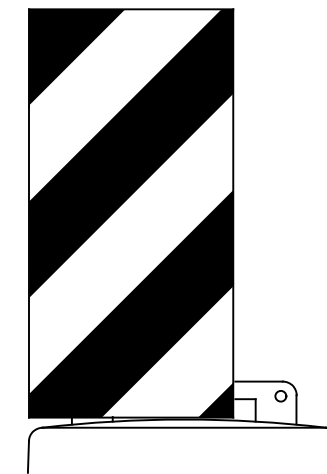


DETECTABLE PEDESTRIAN BARRICADES

- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
- Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
- Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
- Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.
- Warning lights shall not be attached to detectable pedestrian barricades.
- Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

SHEET 8 OF 12



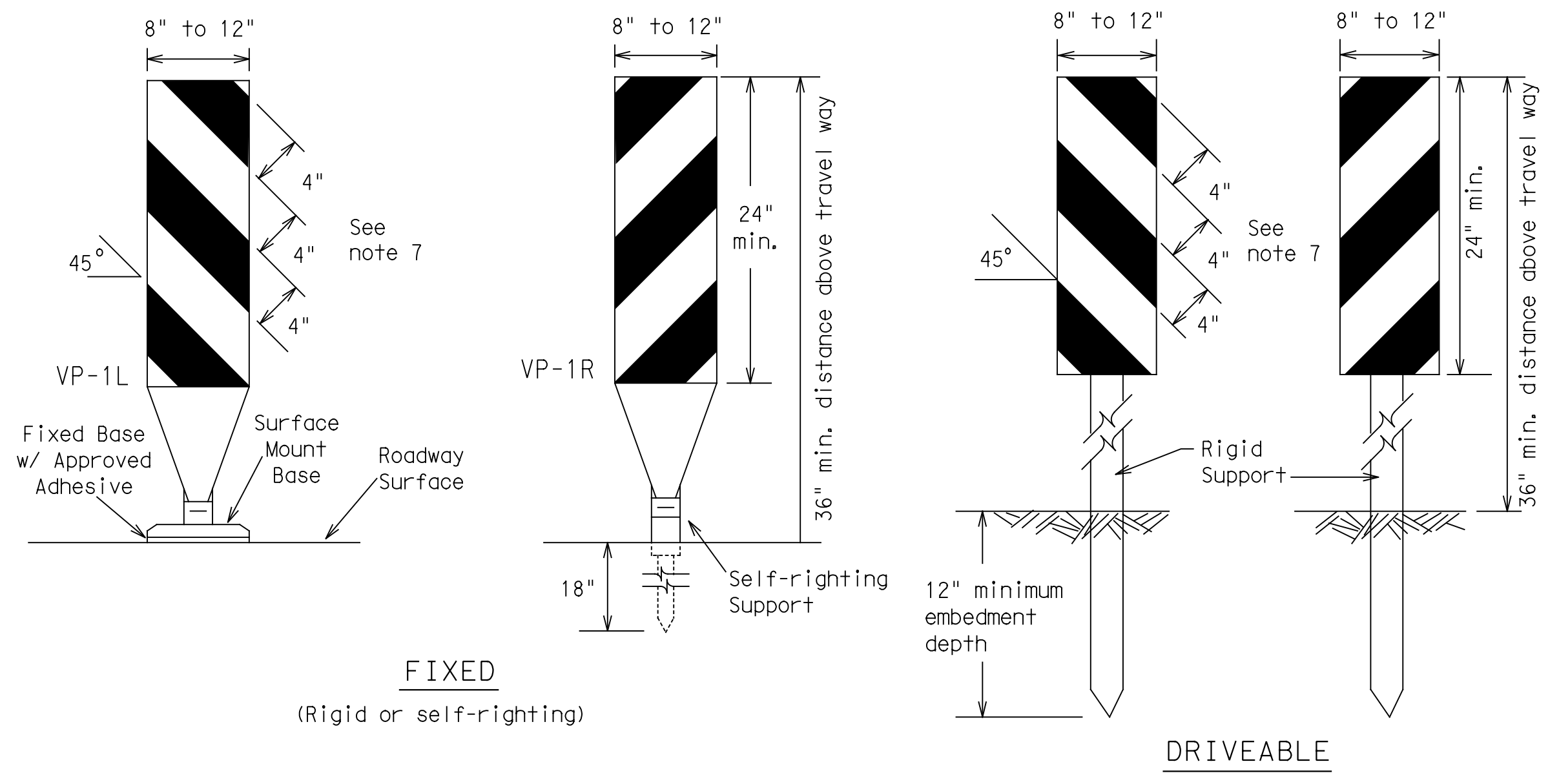
BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

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9-07	5-21	FTW	TARRANT		15				
7-13									

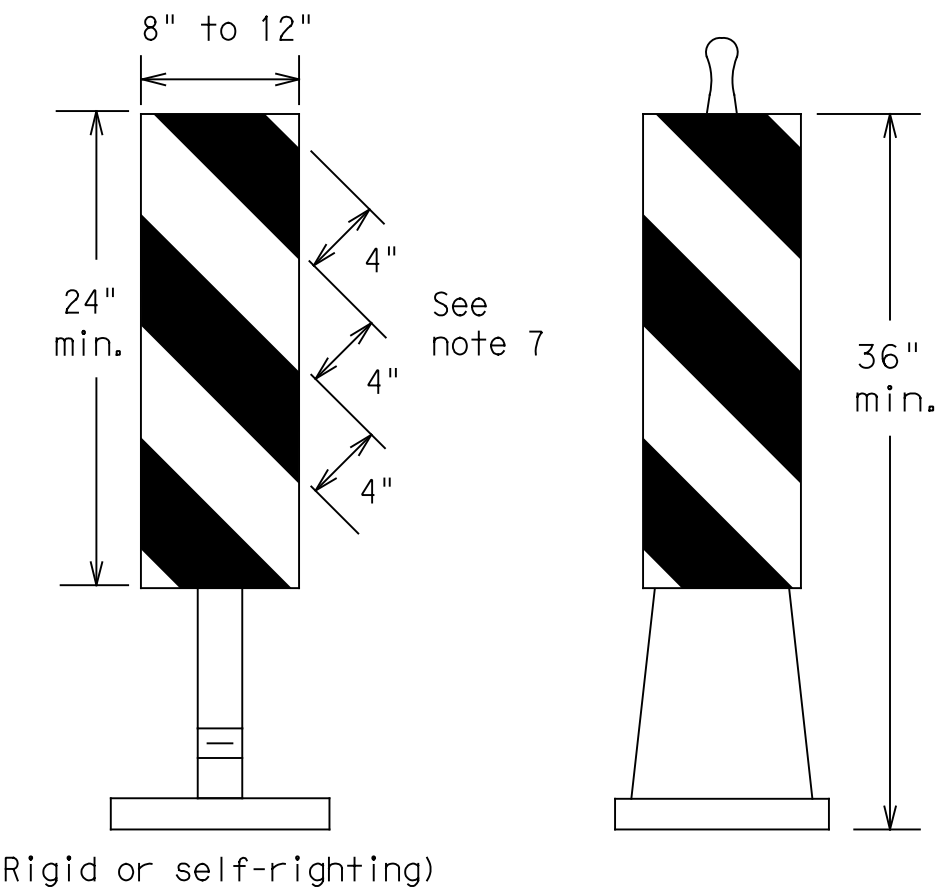
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FIXED
(Rigid or self-righting)

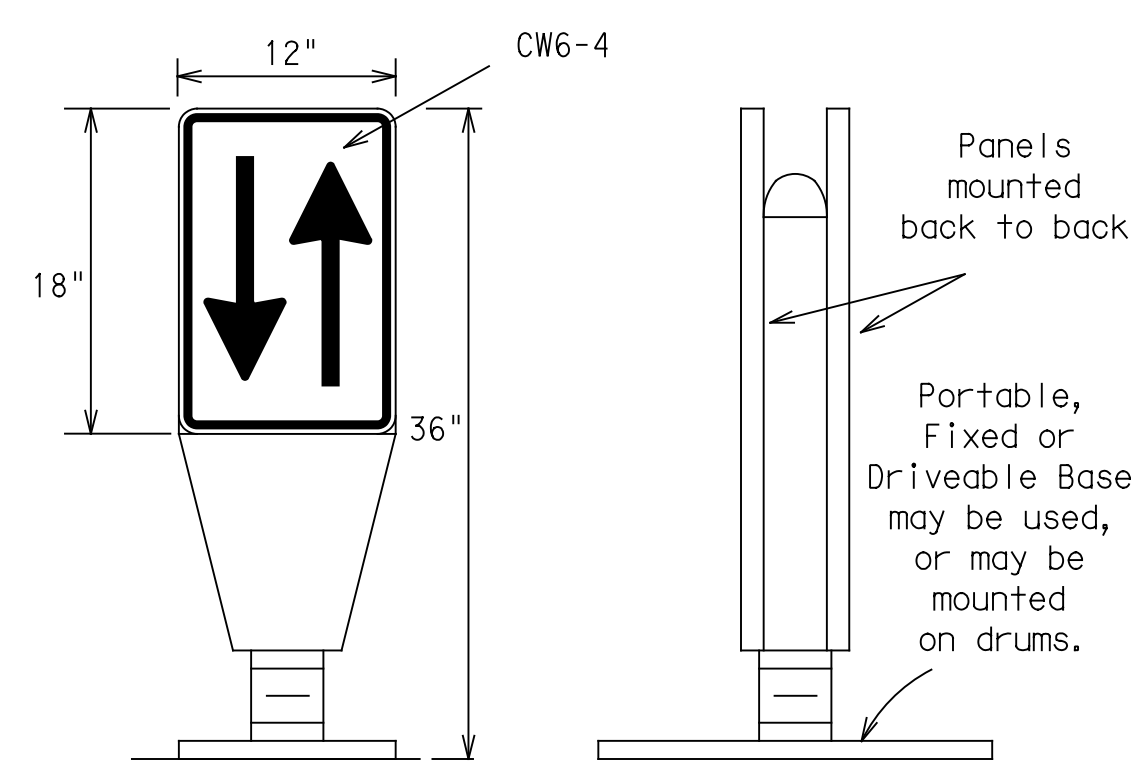
DRIVEABLE



PORTABLE

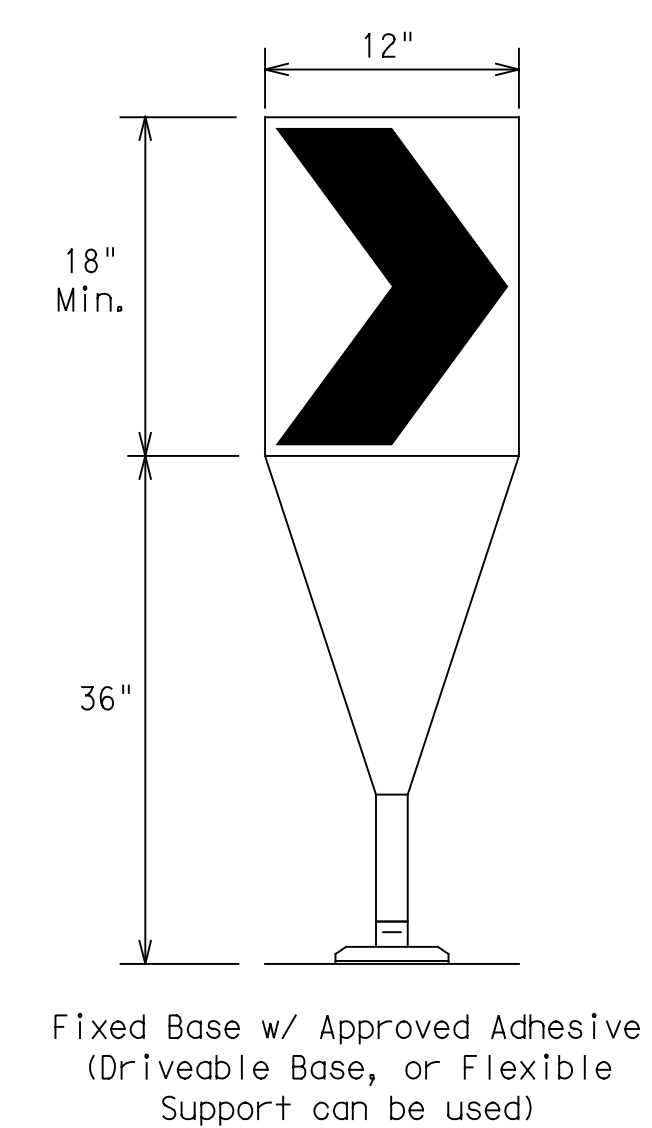
VERTICAL PANELS (VPs)

- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use VP's for drop-offs.
- 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.
- VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
- Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
- Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.



OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

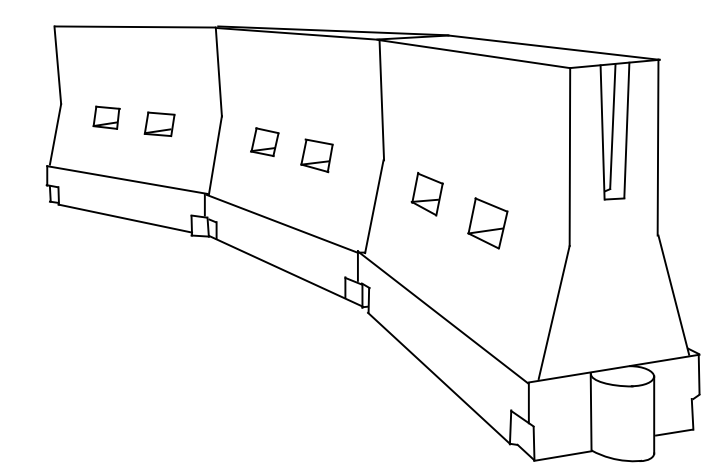
- Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
- The OTLD may be used in combination with 42" cones or VPs.
- Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
- 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.



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

- The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
- 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.
- 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.
- To be effective, the chevron should be visible for at least 500 feet.
- 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.
- For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS



LONGITUDINAL CHANNELIZING DEVICES (LCD)

- 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.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
- LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
- LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10). Place reflective sheeting near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

- Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
- 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.
- 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.
- 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.
- When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

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

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

GENERAL NOTES

- 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).
- 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.
- 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).
- 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.
- Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
- 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.
- The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.

Posted Speed	Formula	Minimum Desirable Taper Lengths X X			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	L = 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'	

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (9) - 21

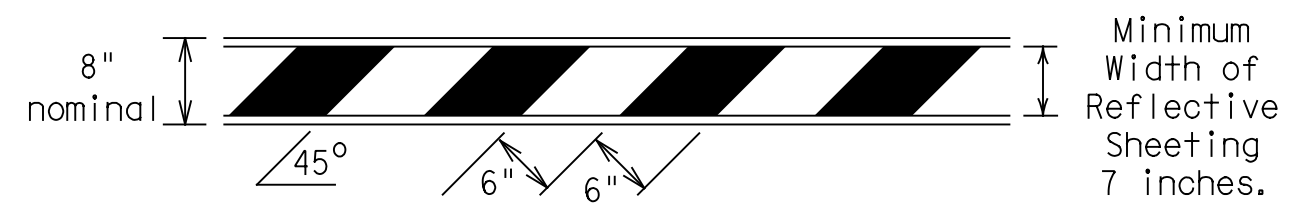
FILE:	bc-21.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
© TxDOT	November 2002	CONT	SECT	JOB	HIGHWAY				
REVISIONS		0094	02	143	SH 183				
9-07	8-14	DIST	COUNTY		SHEET NO.				
7-13	5-21	FTW	TARRANT		16				

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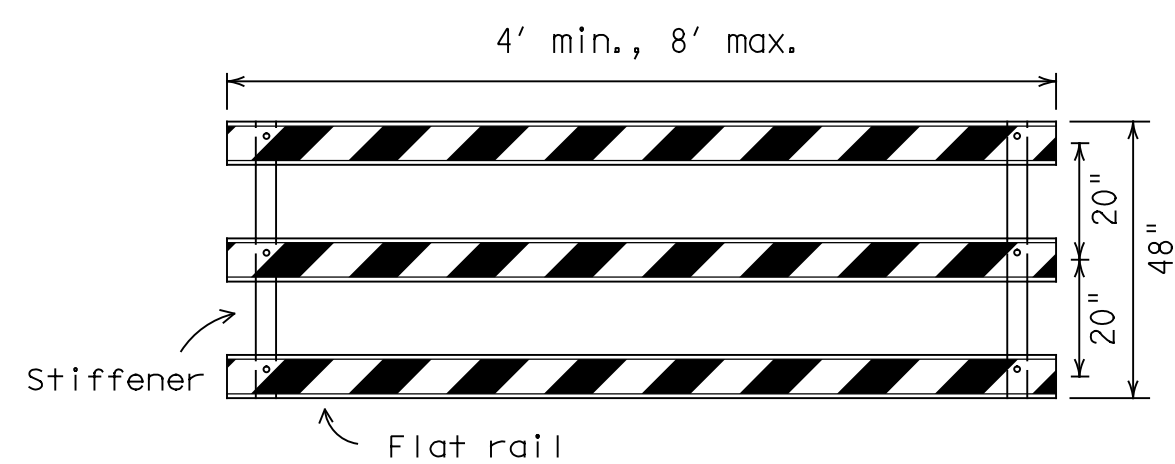
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



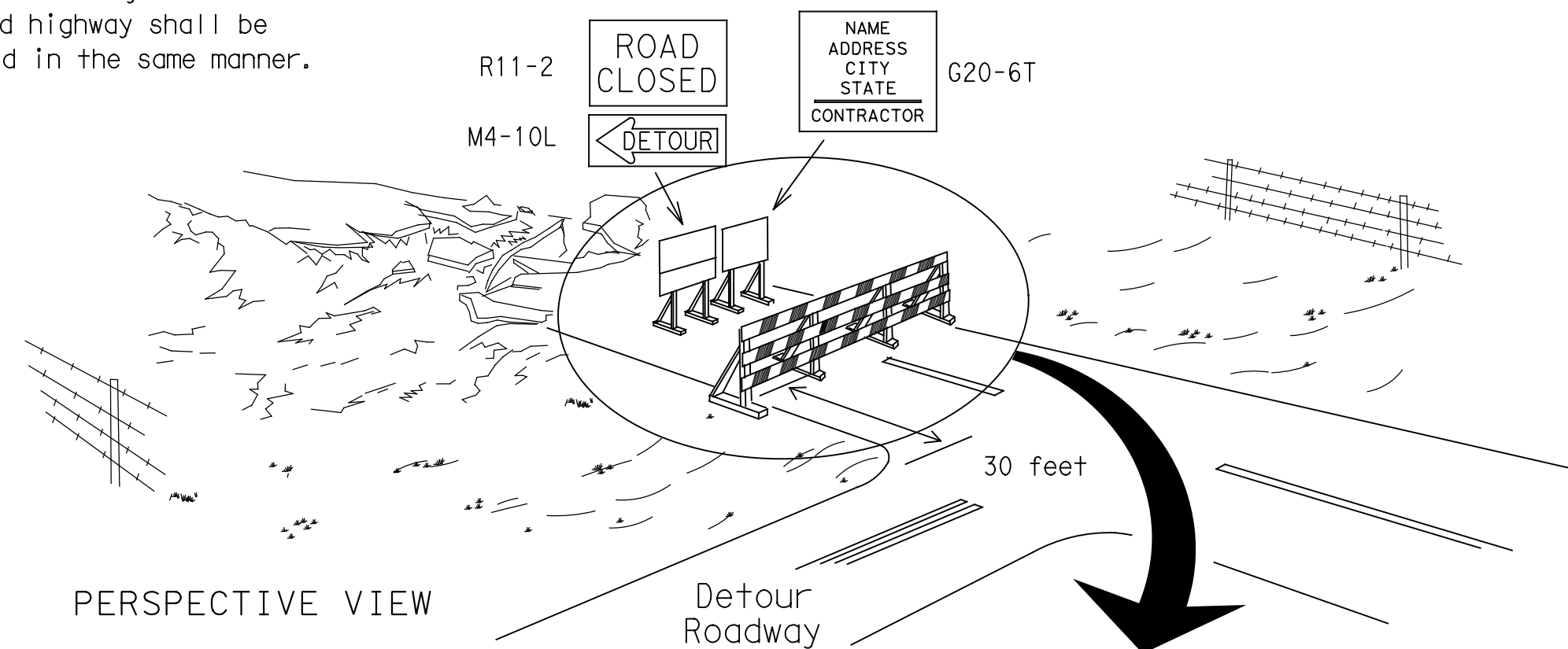
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

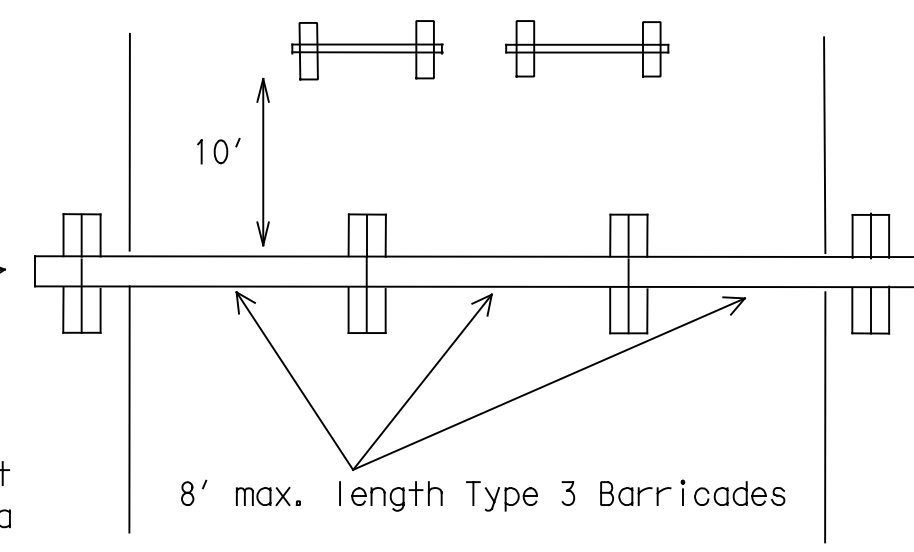
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

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



PERSPECTIVE VIEW

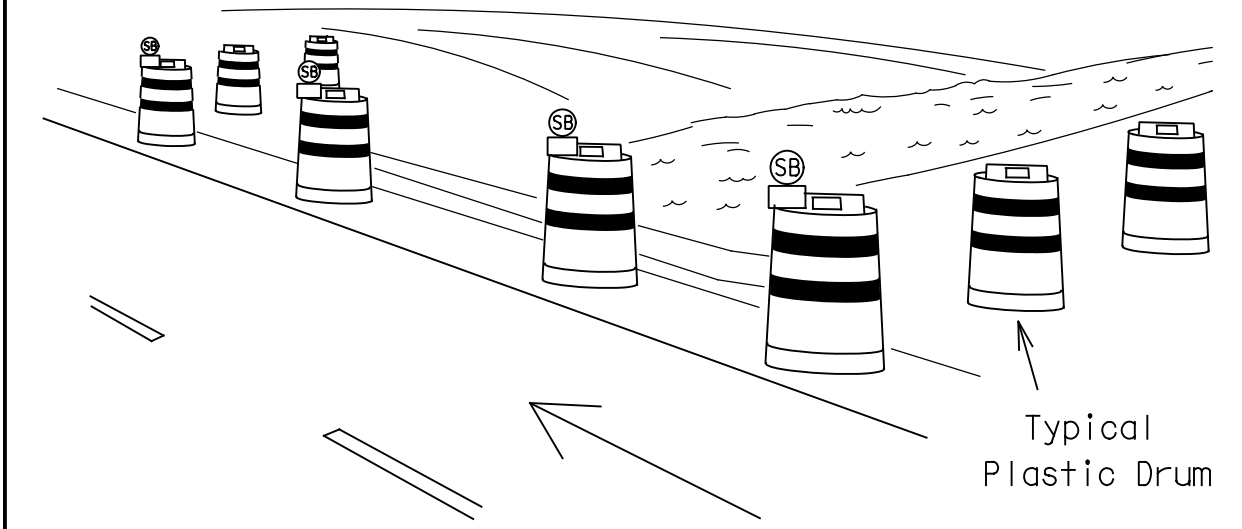
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



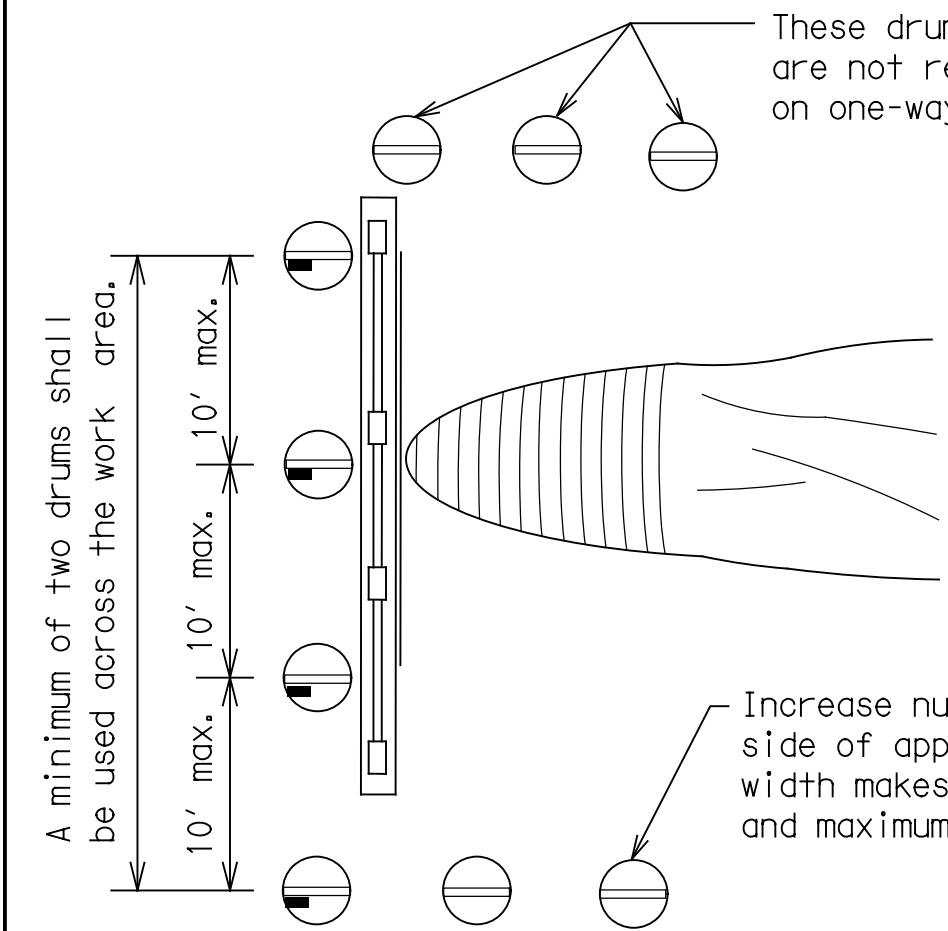
PLAN VIEW

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

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

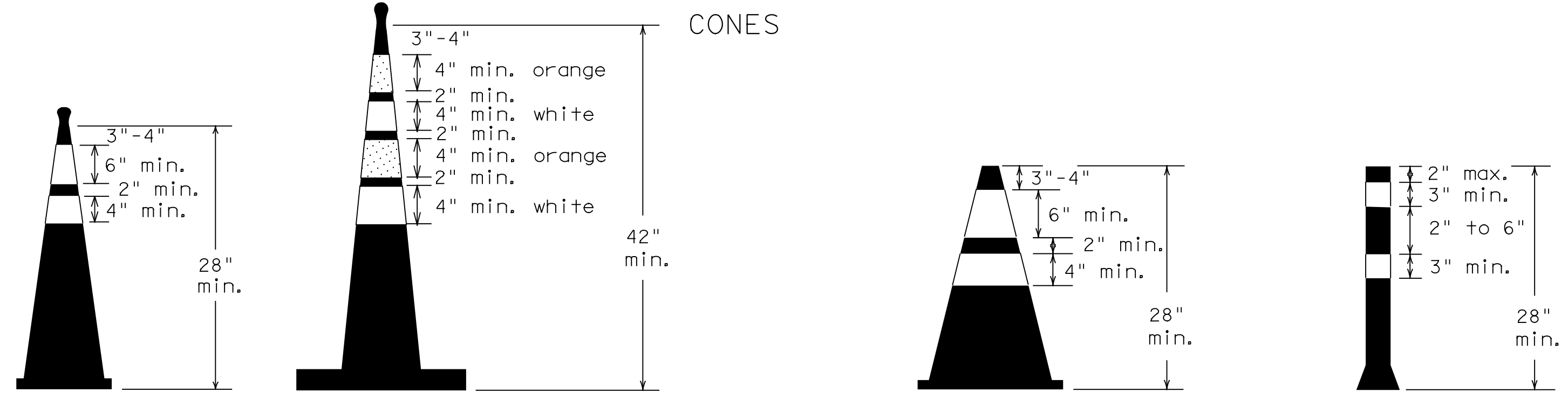


PLAN VIEW

1. Where positive redirection 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
	Steady burn warning light or yellow warning reflector

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



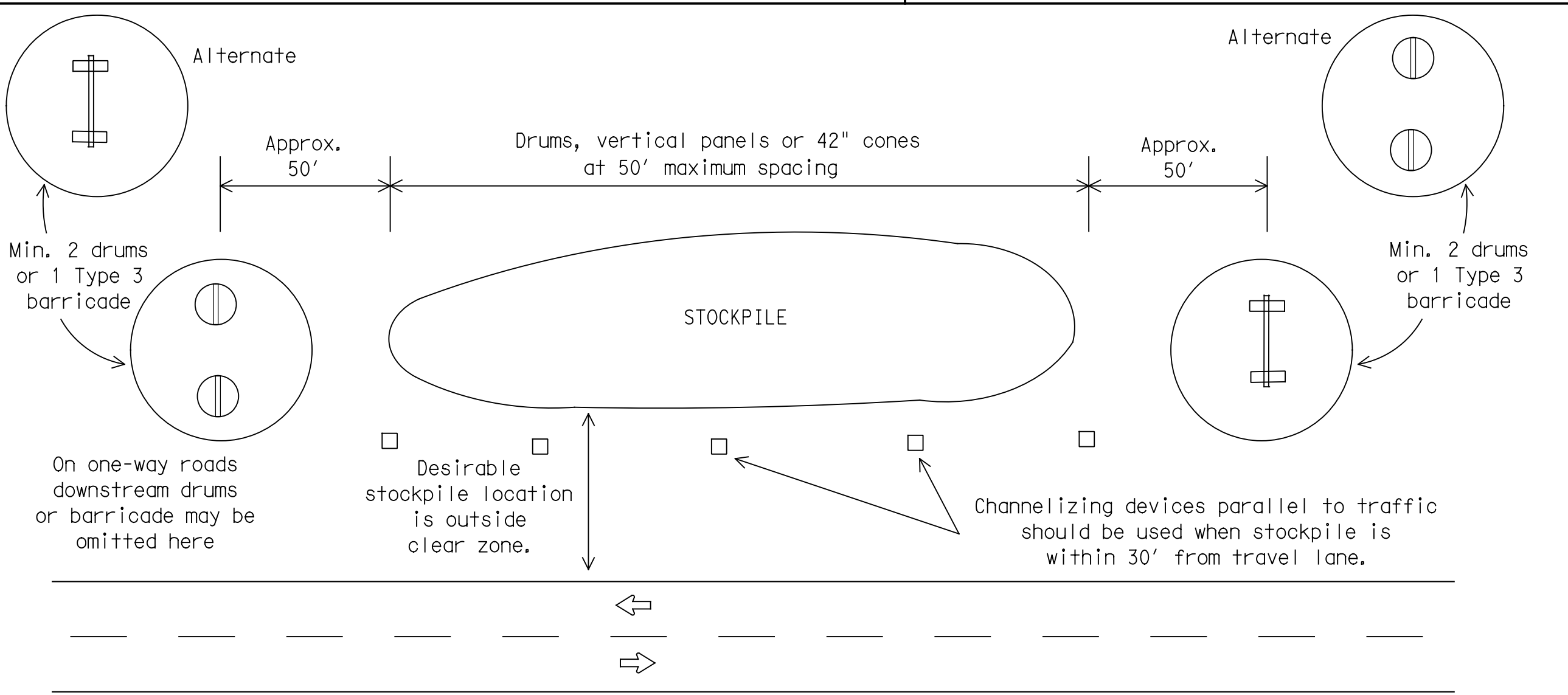
Two-Piece cones

One-Piece cones

Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.
 42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (10) - 21

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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

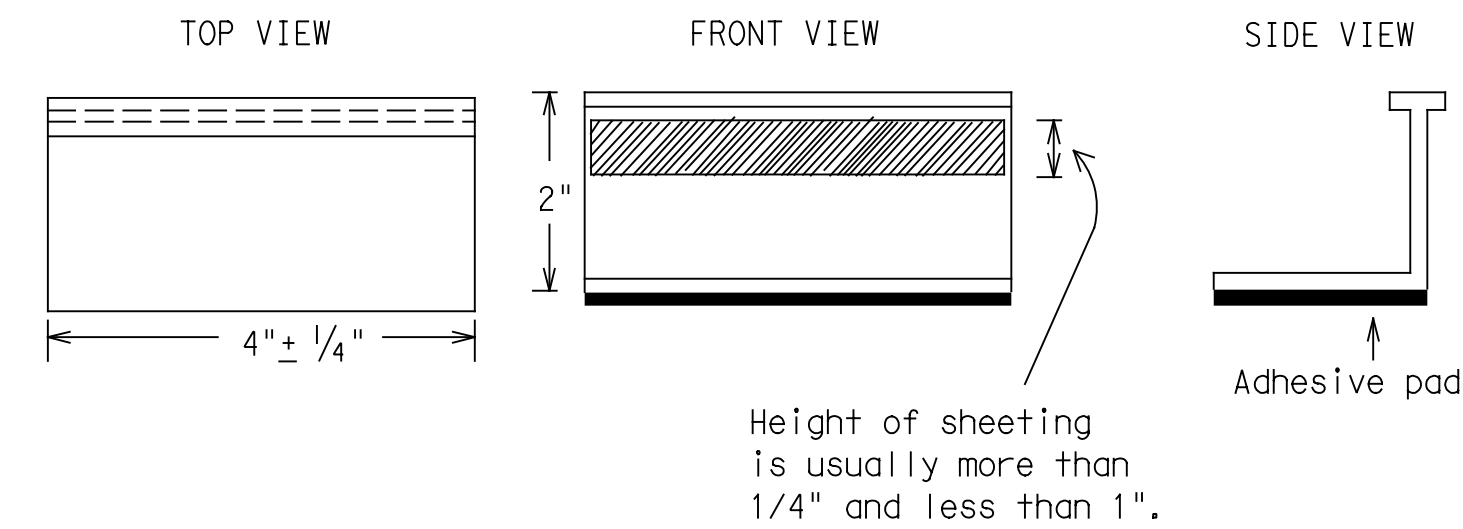
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

- Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
- Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
 - Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
 - Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
- Small design variances may be noted between tab manufacturers.
- See Standard Sheet WZ(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

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

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

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

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

SHEET 11 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

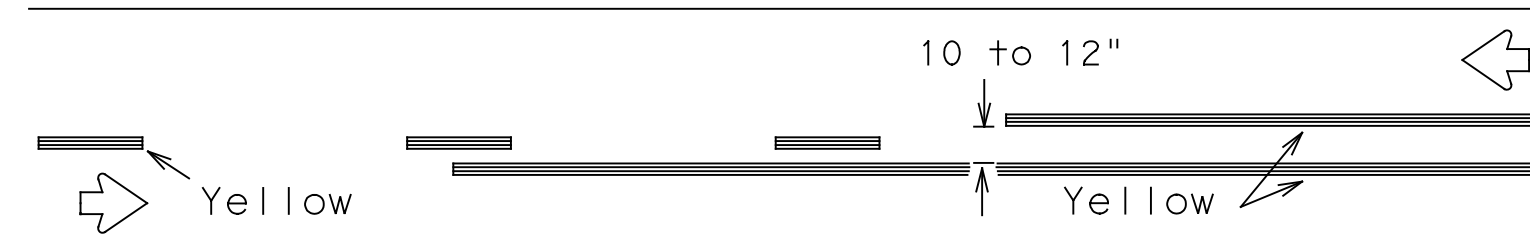
BC(11)-21

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2-98 9-07 5-21	DIST	COUNTY	SHEET NO.	
1-02 7-13	FTW	TARRANT	18	
11-02 8-14				

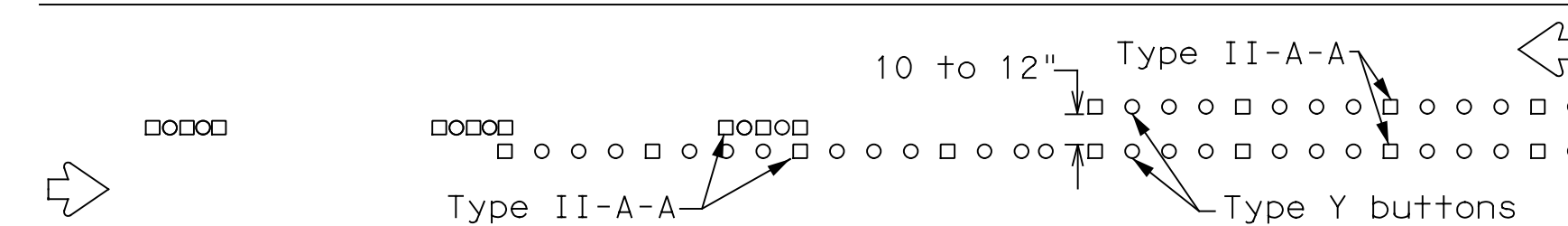
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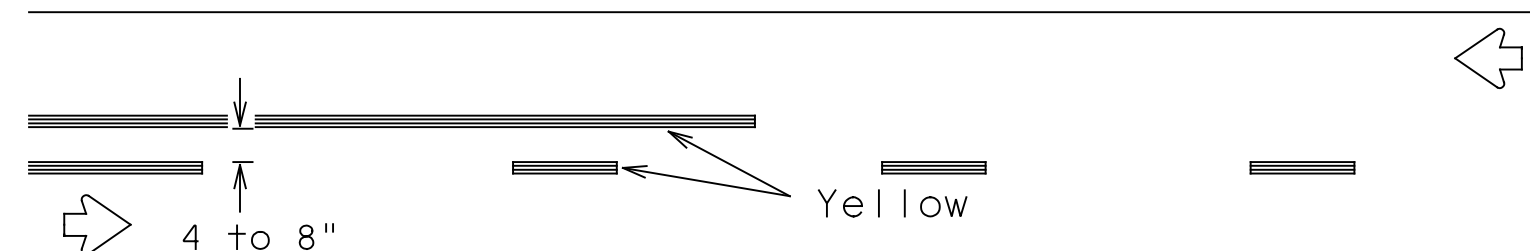
PAVEMENT MARKING PATTERNS



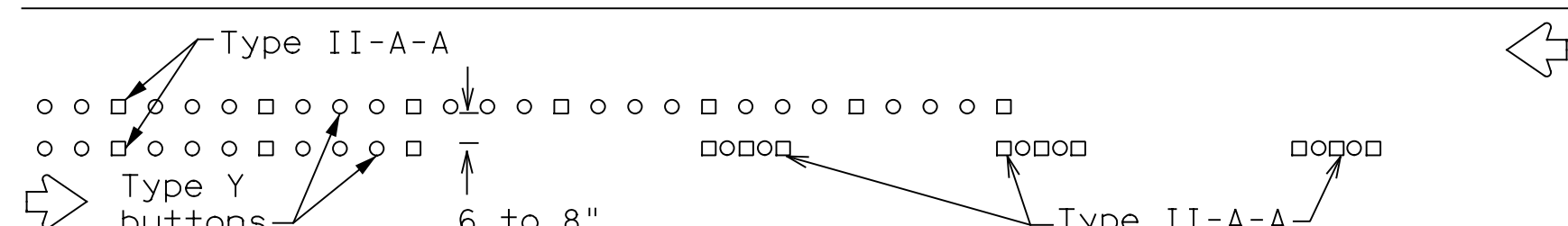
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



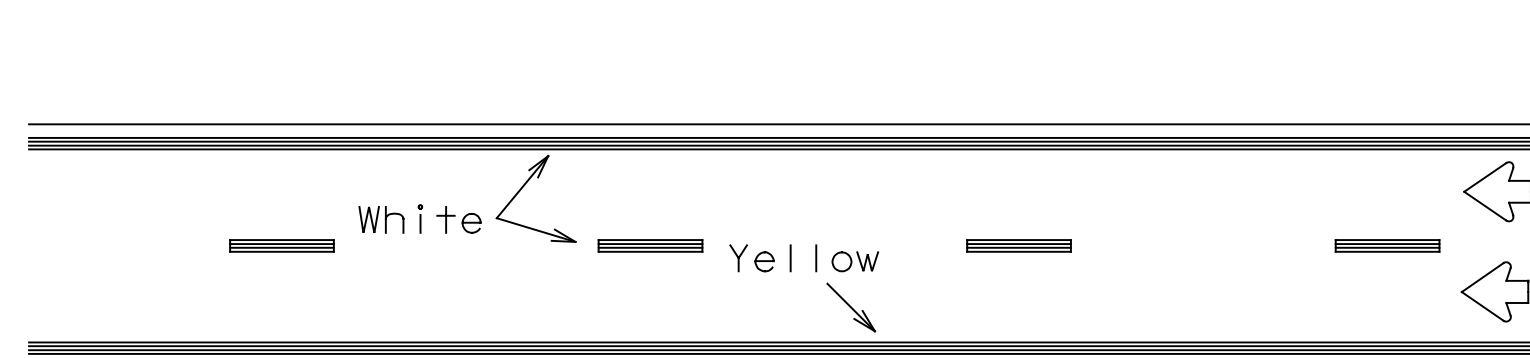
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



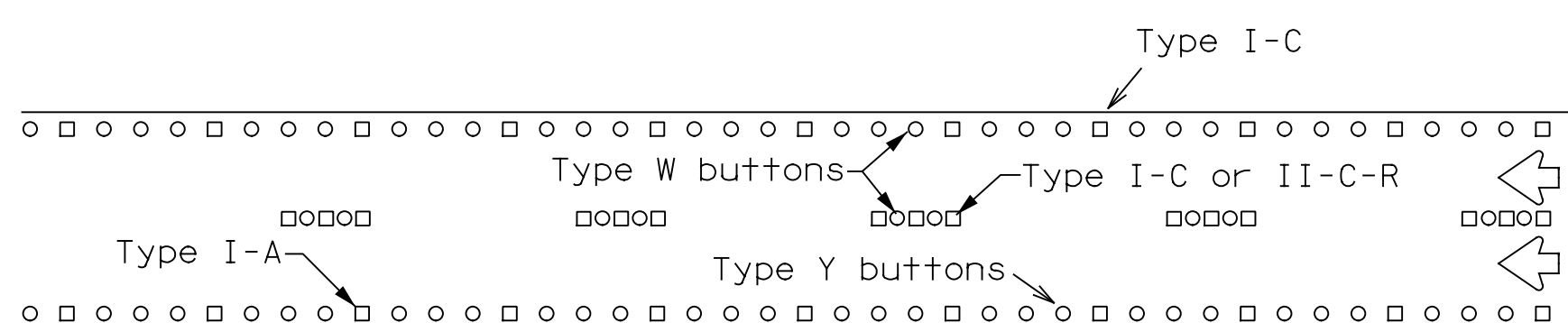
RAISED PAVEMENT MARKERS - PATTERN B

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.

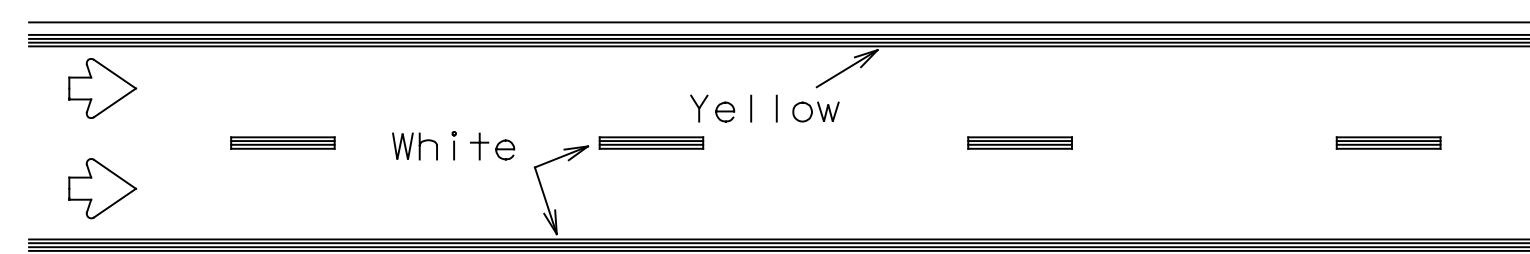
CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



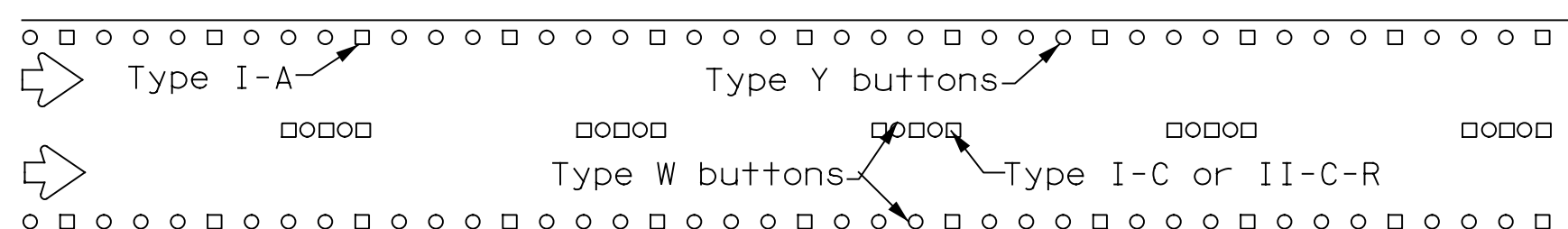
REFLECTORIZED PAVEMENT MARKINGS



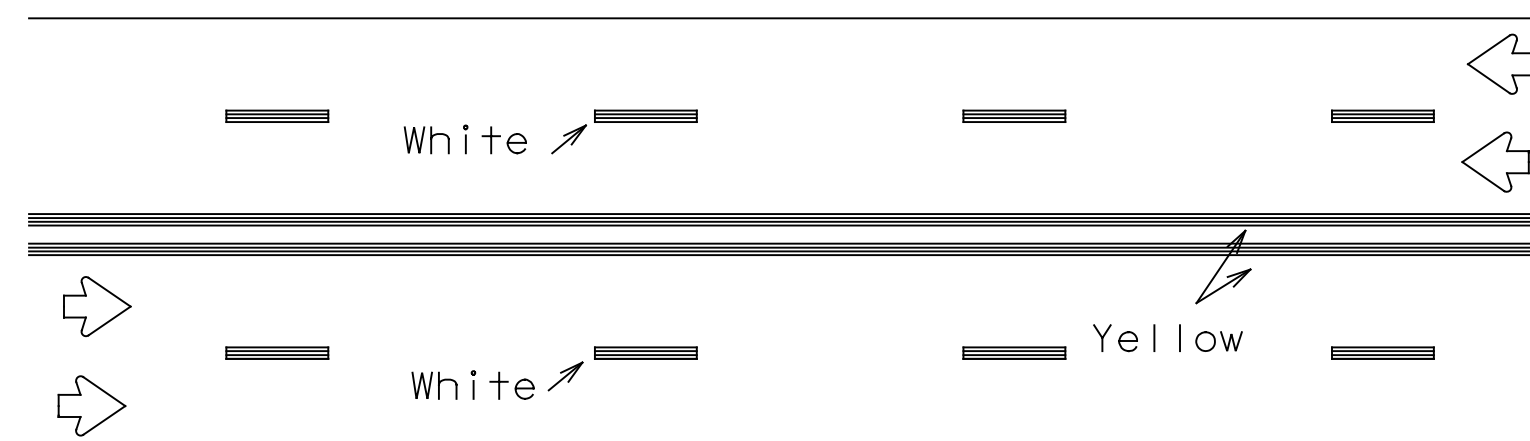
RAISED PAVEMENT MARKERS



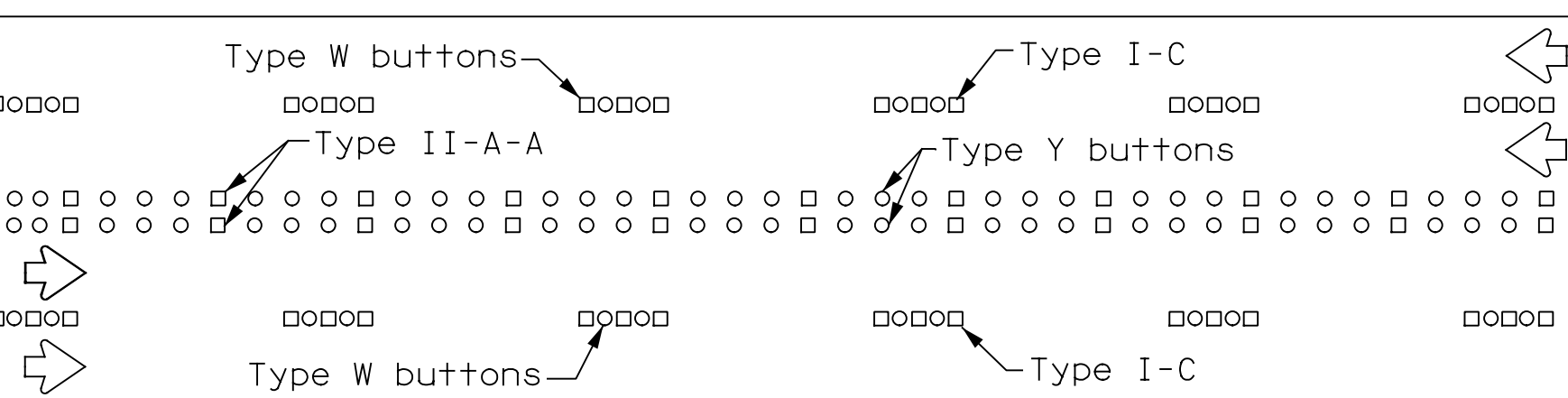
Prefabricated markings may be substituted for reflectORIZED pavement markings.



EDGE & LANE LINES FOR DIVIDED HIGHWAY



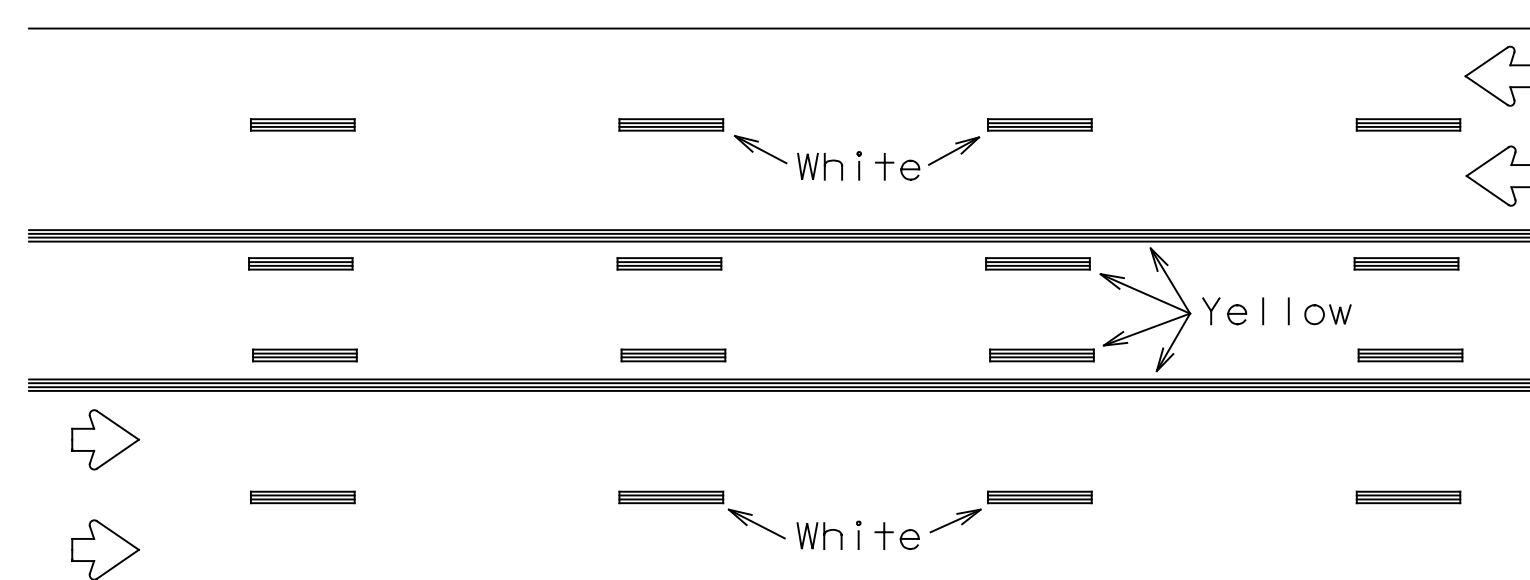
REFLECTORIZED PAVEMENT MARKINGS



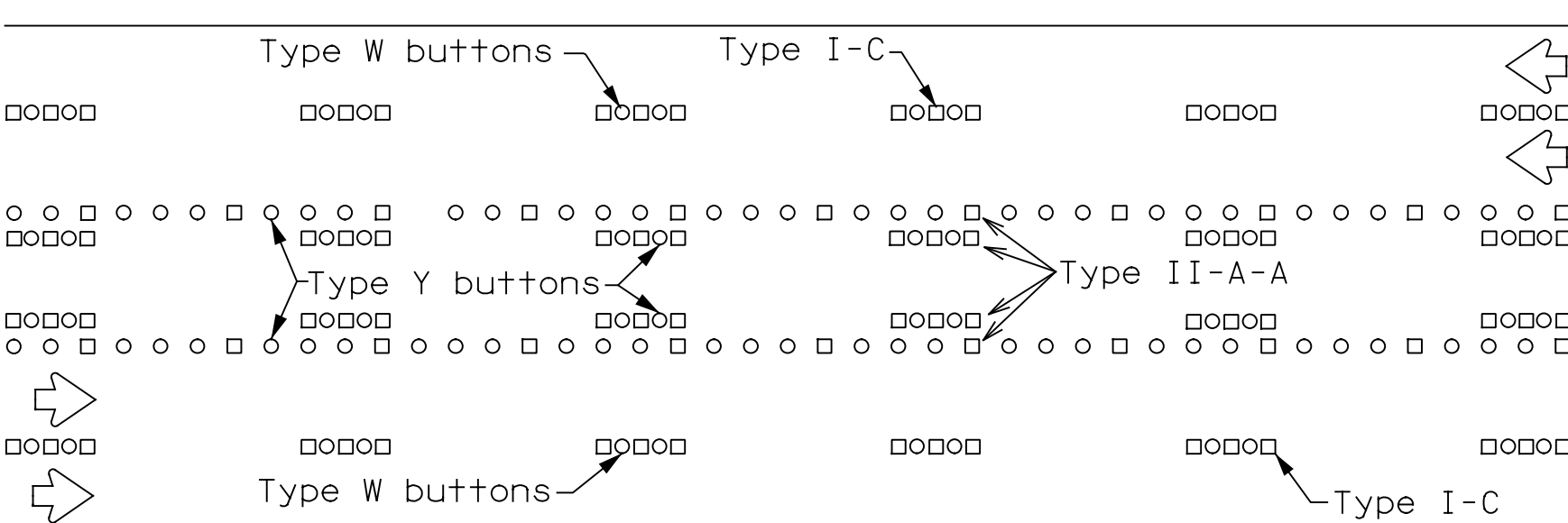
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectORIZED pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS

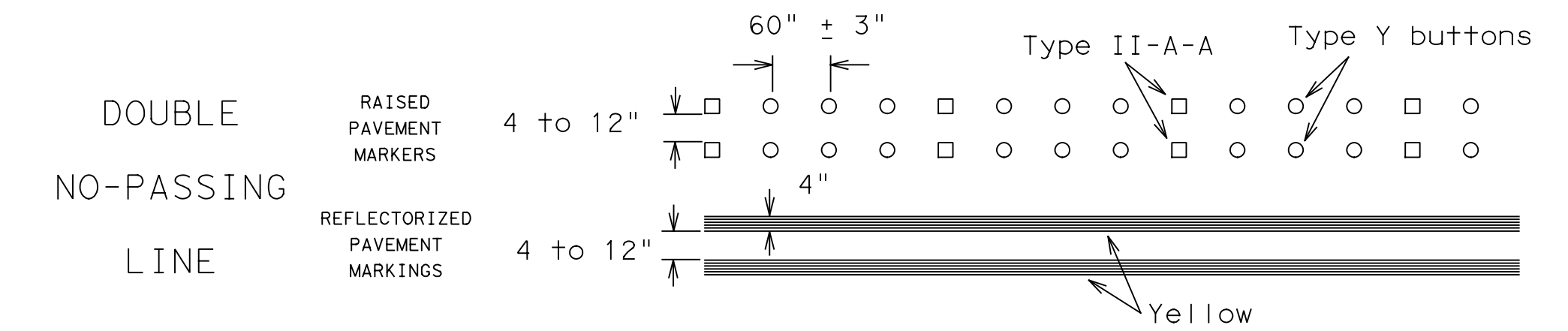


RAISED PAVEMENT MARKERS

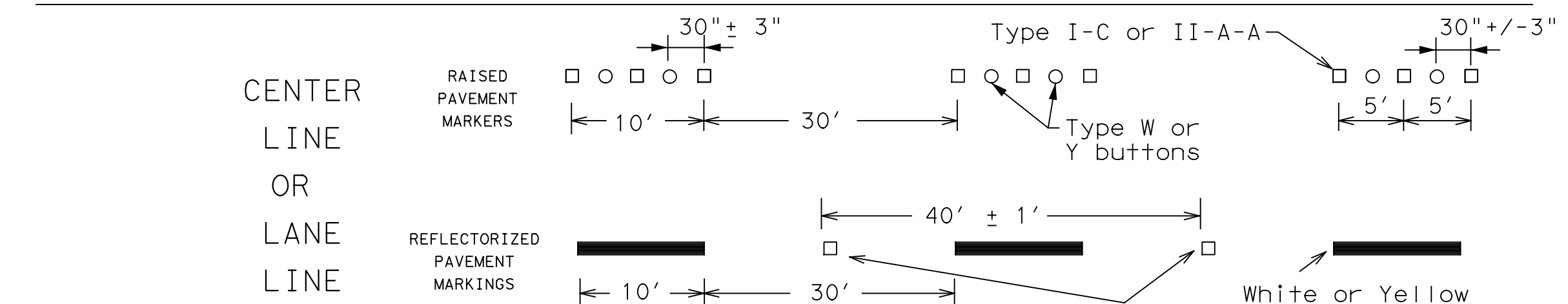
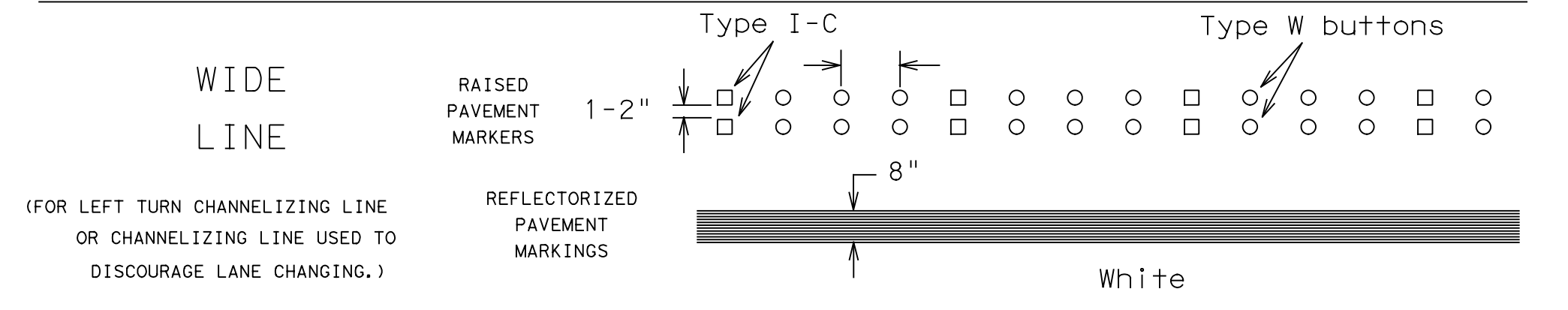
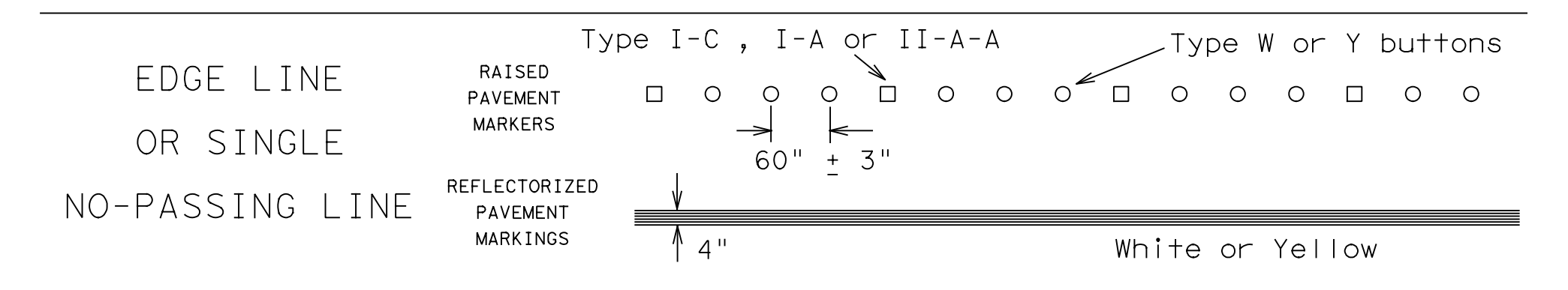
Prefabricated markings may be substituted for reflectORIZED pavement markings.

TWO-WAY LEFT TURN LANE

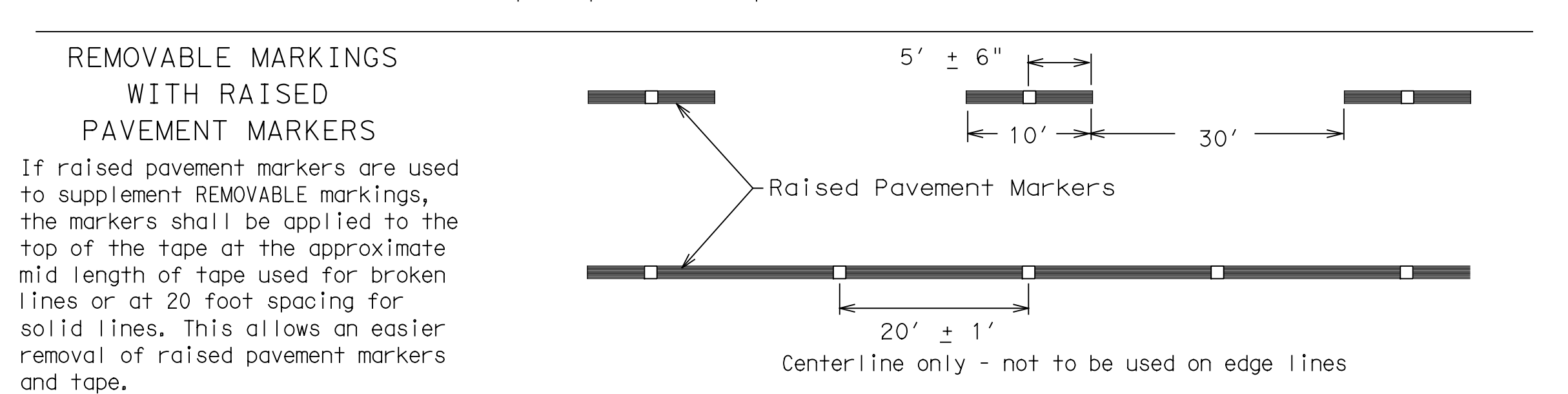
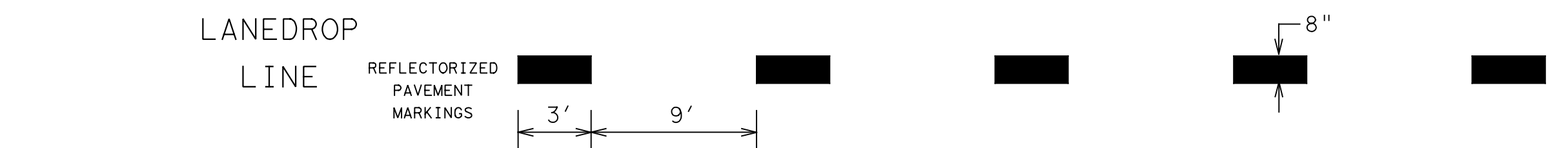
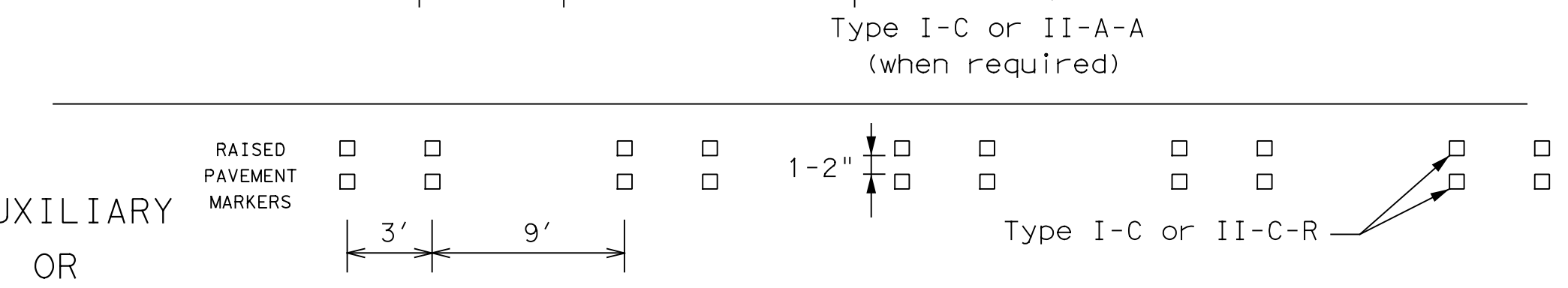
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



SOLID LINES



BROKEN LINES



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."



BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

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2-98 7-13				
11-02 8-14	DIST	COUNTY	SHEET NO.	
	FTW	TARRANT	19	

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A. GENERAL SITE DATA

1. **PROJECT LIMITS:** Highway: SH 183/Baker Boulevard
 From: Crites St.
 To: Booth Calloway Rd.

LATITUDE: 32.809283° LONGITUDE: (-97.242214°)

2. **PROJECT SITE MAPS:**

- * Project Location Map: Title Sheet (Sheet 1)
- * Drainage Patterns: Erosion Control Plan (Sheets 23-26)
- * Approx. Slopes Anticipated After Major Gradings and Areas of Soil Disturbance: Typical Sections N/A No grading being done with this project
- * Major Controls and Locations of Stabilization Practices: (Sheets 23-26) SW3P Site Map Sheets
- * Project Specific Locations: To be specified by Project Field Office and located in the Project SW3P File
- * Surface Waters and Discharge Locations: Drainage and Culvert Layout Sheets N/A No drainage or culvert work being done with this project

3. **PROJECT DESCRIPTION:**

Landscape enhancements for medians

4. **MAJOR SOIL DISTURBING ACTIVITIES:**

Demolition, planting and irrigation work within medians

5. **EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER:**

The existing SH 183 corridor is primarily a paved asphalt or concrete roadway with commercial zoned businesses bordering TxDOT ROW on both the north and south side. Approximately 20% of the site has vegetative cover. Underlying soils are Texas Blackland Prairie consisting of still to hard fat clay and stiff to hard sand fat clay.

6. **TOTAL PROJECT AREA:** 1.73 Acres

7. **TOTAL AREA TO BE DISTURBED:** 0.52 Acres (30 % OF TOTAL PROJECT AREA)

8. **WEIGHTED RUNOFF COEFFICIENT**

BEFORE CONSTRUCTION: 0.61
 AFTER CONSTRUCTION: 0.61

9. **NAME OF RECEIVING WATERS:**

Big Fossil Creek, BFC-5A, BFC5

10. **ENDANGERED SPECIES, DESIGNATED CRITICAL HABITAT AND HISTORIC PROPERTY:**

1. Whooping Crane - Contractor and/or TxDOT personnel would be advised of potential Whooping Cranes to occur within the project limits. Construction personnel will be advised to avoid adverse impacts to this species and to report any sightings to TxDOT District Environmental staff.
2. Between October 1 and February 15, the Contractor would remove all old migratory birds nests from any structure that would be affected by the proposed project, and complete any demolition and/or vegetation clearing. In addition, the Contractor would be prepared to prevent migratory birds from building nests by utilizing nest prevention methods, such as bird-deterrent netting and bird-repelling sprays and/or gels. In the event that migratory birds are encountered on-site during project construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided.
3. The Contractor shall not disturb, destroy, or remove active nests, including ground nesting birds, during the nesting season. Avoid the removal of unoccupied inactive nests as practical. Preventing the establishment of active nests during the nesting season on TxDOT owned and operated facilities. The Contractor shall not collect, capture, relocate or transport birds, eggs, young or active nests without a permit. The Eagle Protection Act prohibits the taking or possession of any commerce in Eagles, parts, feathers, nests or eggs with limited exceptions. The definition of take includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. Eagles may not be taken for any purpose unless a permit is issued prior to the taking.

The documentation satisfying TPDES Construction General Permit eligibility pertaining to the existence or of any protective action taken with regards to endangered species or designated critical habitat or historical property in this project area is contained in the project's Environmental document (EA or EIS) and can be viewed under the State Open Records Act at the address shown below:

TEXAS DEPARTMENT OF TRANSPORTATION
 FORT WORTH DISTRICT HEADQUARTERS
 DISTRICT DESIGN SECTION
 2501 SW LOOP
 FORT WORTH, TX 76133
 PHONE: 817-370-6500

B. EROSION AND SEDIMENT CONTROLS

1. **SOIL STABILIZATION PRACTICES:**

(Select T = Temporary or P = Permanent, as applicable)

- | | |
|---|--|
| <input type="checkbox"/> TEMPORARY SEEDING | <input type="checkbox"/> PRESERVATION OF NATURAL RESOURCES |
| <input checked="" type="checkbox"/> MULCHING (Hay or Straw) | <input type="checkbox"/> FLEXIBLE CHANNEL LINER |
| <input type="checkbox"/> BUFFER ZONES | <input type="checkbox"/> RIGID CHANNEL LINER |
| <input checked="" type="checkbox"/> PLANTING | <input type="checkbox"/> SOIL RETENTION BLANKET |
| <input type="checkbox"/> SEEDING | <input type="checkbox"/> COMPOST MANUFACTURED TOPSOIL |
| <input checked="" type="checkbox"/> SODDING | <input type="checkbox"/> OTHER: (Specify Practice) |

2. **STRUCTURAL PRACTICES:**

(Select T = Temporary or P = Permanent, as applicable)

- | | |
|---|--|
| <input type="checkbox"/> SILT FENCES | <input type="checkbox"/> DIVERSION, INTERCEPTOR, OR PERIMETER DIKES |
| <input type="checkbox"/> HAY BALES | <input type="checkbox"/> DIVERSION, INTERCEPTOR, OR PERIMETER SWALES |
| <input type="checkbox"/> ROCK FILTER DAMS | <input type="checkbox"/> DIVERSION DIKE AND SWALE COMBINATIONS |
| <input type="checkbox"/> PIPE SLOPE DRAINS | <input type="checkbox"/> ROCK BEDDING AT CONSTRUCTION EXIT |
| <input type="checkbox"/> PAVED FLUMES | <input type="checkbox"/> TIMBER MATTING AT CONSTRUCTION EXIT |
| <input type="checkbox"/> CHANNEL LINERS | <input type="checkbox"/> STONE OUTLET STRUCTURES |
| <input type="checkbox"/> SEDIMENT TRAPS | <input type="checkbox"/> VELOCITY CONTROL DEVICES |
| <input type="checkbox"/> SEDIMENT BASINS | <input type="checkbox"/> CURBS AND GUTTERS |
| <input type="checkbox"/> STORM SEWERS | <input type="checkbox"/> STORM INLET SEDIMENT TRAP |
| <input checked="" type="checkbox"/> OTHER: EROSION CONTROL LOGS | |

3. **STORM WATER MANAGEMENT:**

1. Storm water drainage will be provided by the ditches, inlets and storm water systems that will carry drainage within the R.O.W. to the low points within the roadway and project site which drain to natural facilities.
2. Permanent erosion control devices already in place should be sufficient for this project.

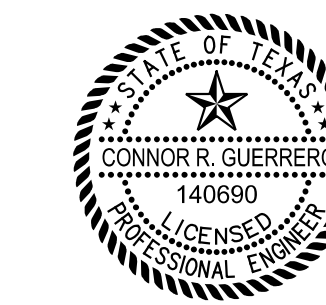
4. **STORM WATER MANAGEMENT ACTIVITIES: (Sequence of Construction)**

Earthwork activities and construction of site improvements will be conducted in accordance with the following general construction sequence:

1. Install SW3P BMPs as shown on Erosion Control Plan
2. Demolition of existing items
3. Construction/modification of Irrigation Items
4. Construction of Landscape Items
5. Once final stabilization has been achieved, SW3P BMPs may be removed

5. **NON-STORM WATER DISCHARGES:**

Non-storm water discharges should be filtered, or held in retention basins, before being allowed to mix with storm water. These discharges consist of non-polluted ground water, spring water, foundation and/or footing drain water, and water used for dust control, pavement washing and vehicle washwater containing no detergents.



Connor R. Guerrero

DATE: 05/25/2022



STORM WATER POLLUTION PREVENTION PLAN (SW3P)

SHEET 1 OF 2 SHEETS

ORIGINAL DRAWING: 09/2002	sw3p-ftw.dgn	FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
DATE	REVISIONS	6		20
09/2008	NPDES TO TPDES	STATE	COUNTY	
01/2012	CLARIFY NOTE C.2.	TEXAS	FTW	TARRANT
08/2013	ADDED SIGN	CONT.	SECT.	JOB
05/2019	2-SHEET FORMAT	0094	02	143
				SH 183

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.

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C. OTHER REQUIREMENTS & PRACTICES

1. MAINTENANCE:

All erosion and sediment controls shall be maintained in good working order. If a repair is necessary, it shall be performed at the earliest date possible but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. Disturbed areas on which construction activities have ceased, temporarily or permanently, shall be stabilized within 14 calendar days unless they are scheduled to and do resume within 21 calendar days. The areas adjacent to creeks and drainageways shall have priority followed by devices protecting storm sewer inlets.

2. INSPECTION:

An inspection shall be performed by a TxDOT Inspector every 14 calendar days as well as within 24 hours after any rainfall of one-half inch or more is recorded on a non-freezing rain gauge to be located at the project site, or every 7 calendar days. An Inspection and Maintenance Report shall be filed for each inspection. Based on the inspection results, the controls shall be revised in accordance with the inspection report.

3. WASTE MATERIALS:

Except as noted below, all waste materials shall be collected in a metal dumpster having a secure cover. The dumpster shall meet all state and local solid waste management regulations. All trash and debris from construction shall be deposited in the dumpster. The dumpster shall be emptied, as necessary or as required by local regulation, and hauled to a local approved land fill site. The burying of construction waste on the project site shall not be permitted.

Concrete washout areas shall be required and shall consist of a pit, lined with an impervious material, of sufficient size to contain, until evaporation, all water used and washout material produced during concrete washout operations. The concrete washout locations shall be as directed by the engineer.

Lime slaking tanks shall be surrounded by an earthen berm, capable of containing any overflow.

4. HAZARDOUS WASTE (INCLUDING SPILL REPORTING):

As a minimum, any products in the following categories are considered to be hazardous: paints, acids, solvents, asphalt products, chemical additives for soil stabilization, and concrete curing compounds or additives. In the event of a spill which may be hazardous, the spill coordinator shall be contacted immediately.

5. SANITARY WASTE:

All sanitary waste shall be collected from the portable units, as necessary or as required by local regulation, by a licensed sanitary waste management contractor.

6. OFFSITE VEHICLE TRACKING:

The Contractor shall be required, on a regular basis or as may be directed by the Engineer, to dampen haul roads for dust control, stabilize construction entrances and to remove excess dirt from the roadway.

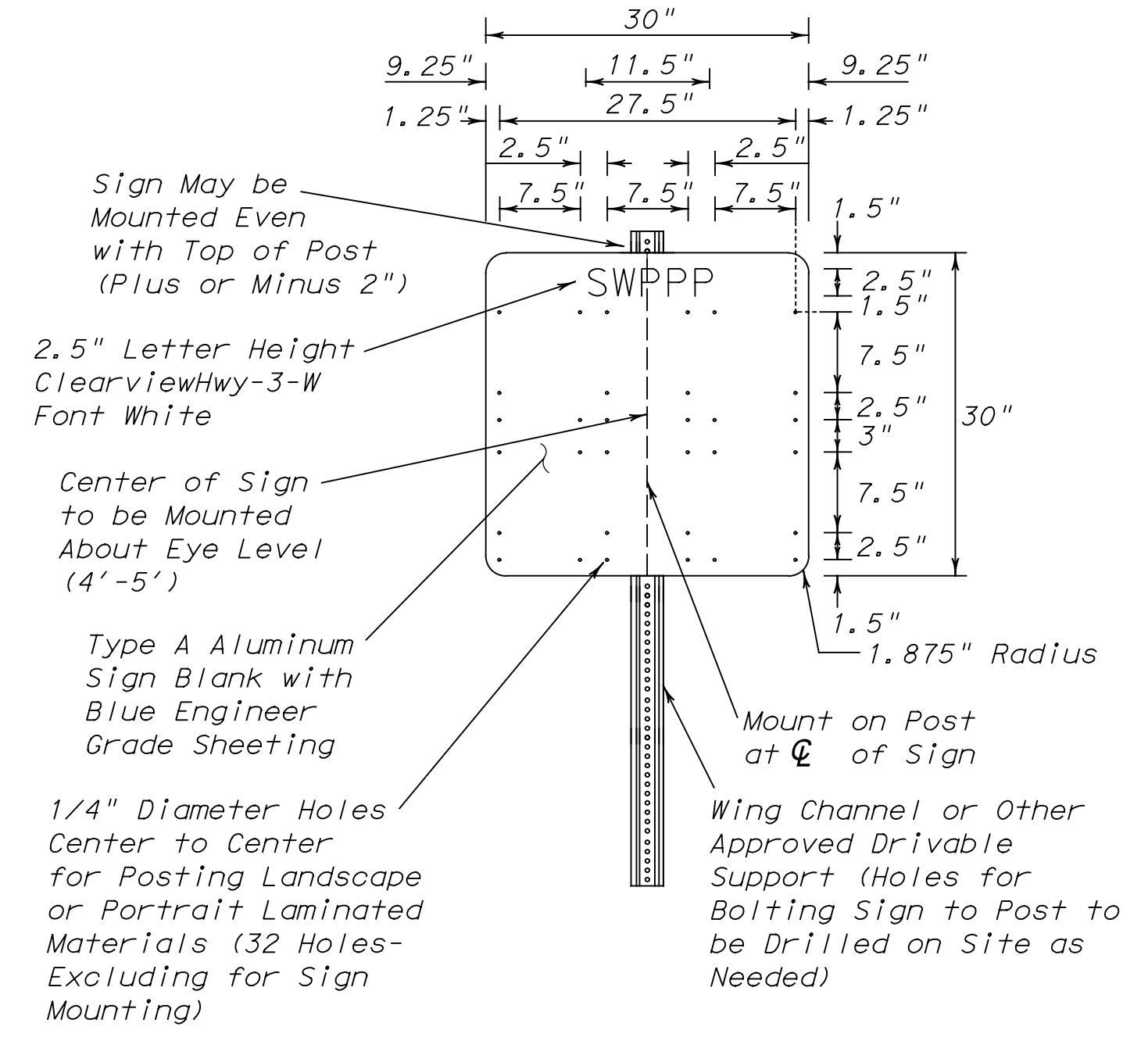
7. MANAGEMENT PRACTICES:

1. Runoff from disturbed into existing storm drain systems and/or offsite shall be limited to the greatest extent possible

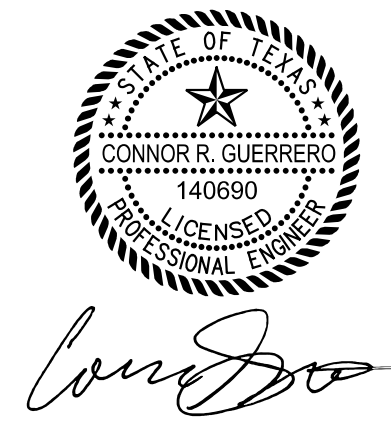
8. OTHER:

- 1. Listing of construction materials stored on site to be provided by Project Field Office.
- 2. The Project SW3P File located at the project field office shall contain the N.O.I., CGP Coverage Notice, TCEQ TPDES Form, Signature Authorization, Certification/Qualification Statements, Inspection Reports, Required Maps, and a copy of the TPDES General Permit No. TXRI50000.

STORM WATER POLLUTION PREVENTION PLAN PERMIT POSTING



No Permanent Installation Allowed.
 Sign to be Removed After Project Completion.



Connor R. Guerrero

DATE: 05/25/2022

		4000 FOSSIL CREEK BLVD FORT WORTH, TEXAS 76137 TEL (817) 847-1422	
		Fort Worth District Standard	
STORM WATER POLLUTION PREVENTION PLAN (SW3P)			
SHEET 2 OF 2 SHEETS			
ORIGINAL DRAWING: 09/2002	sw3p-ftw.dgn	FED. RD. DIV. NO. 6	PROJECT NO.
DATE	REVISIONS	STATE	COUNTY
09/2008	NPDES TO TPDES	TEXAS	FTW
01/2012	CLARIFY NOTE C.2.	CONT.	SECT.
08/2013	ADDED SIGN	JOB	HIGHWAY NO.
05/2019	2-SHEET FORMAT	0094	143 SH 183
		SHEET NO. 21	

DATE: 5/25/2022
 FILE: I:\310006\31515\W025 FY22 Baker Blvd Green Ribbon\CADD\Sheets\FTW\epic.dgn
 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.

I. STORMWATER POLLUTION PREVENTION-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 MS4 Operator(s) that may receive discharges from this project. They may need to be notified prior to construction activities.

1. CITY OF RICHLAND HILLS

2.

No Action Required Required Action

Action No.

1. The project disturbs less than one acre of surface area. The Contractor is responsible for the PSL as defined in the Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (2004 Edition, Section 7.19.F, Page 55). The total disturbed acreage is the combined acreage to be disturbed on the project and the Contractor's PSL. This EPIC must be updated if the disturbed area increases to one or more acres during the course of construction (refer to the following sections). It may become necessary to post a site notice and/or NOI for the project and/or PSL.

Commitment 1: Refer to the SW3P Plan Sheet, BMPs, and Detail. It will address sweeping, chemical storage, sanitary waste, and all other management practices.

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.

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# _____

No action required

Best Management Practices:

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

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

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

No Action Required Required Action

Action No.

1. Whooping Crane - Contractor and/or TxDOT personnel would be advised of potential Whooping Cranes to occur within the project limits. Construction personnel will be advised to avoid adverse impacts to this species and to report any sightings to TxDOT District Environmental staff.

2. Between October 1 and February 15, the Contractor would remove all old migratory birds nests from any structure that would be affected by the proposed project, and complete any demolition and/or vegetation clearing. In addition, the Contractor would be prepared to prevent migratory birds from building nests by utilizing nest prevention methods, such as bird-deterrent netting and bird-repelling sprays and/or gels. In the event that migratory birds are encountered on-site during project construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided.

3. The Contractor shall not disturb, destroy, or remove active nests, including ground nesting birds, during the nesting season. Avoid the removal of unoccupied inactive nests as practical. Preventing the establishment of active nests during the nesting season on TxDOT owned and operated facilities. The Contractor shall not collect, capture, relocate or transport birds, eggs, young or active nests without a permit. The Eagle Protection Act prohibits the taking or possession of any commerce in Eagles, parts, feathers, nests or eggs with limited exceptions. The definition of take includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. Eagles may not be taken for any purpose unless a permit is issued prior to the taking.

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 immediate area, and contact the Engineer immediately.

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 Corps 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 Material Safety Data Sheets (MSDS) 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 MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, 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, canister, barrels, etc.
- * Undesirable smells or odors
- * Evidence of leaching or seepage of substances

Does the project involve any bridge class structure rehabilitation or replacements (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 No.

1.

2.

3.

VII. OTHER ENVIRONMENTAL ISSUES

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

No Action Required Required Action

Action No.

1.

2.

3.

Design Division Standard				
ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS EPIC				
FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR
© TxDOT: February 2015	CONT	SECT	JOB	HIGHWAY
12-12-2011 (DS) REVISIONS	0094	02	143	SH 183
05-07-14 ADDED NOTE SECTION IV.	DIST	COUNTY		SHEET NO.
01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.)	FTW	TARRANT		22

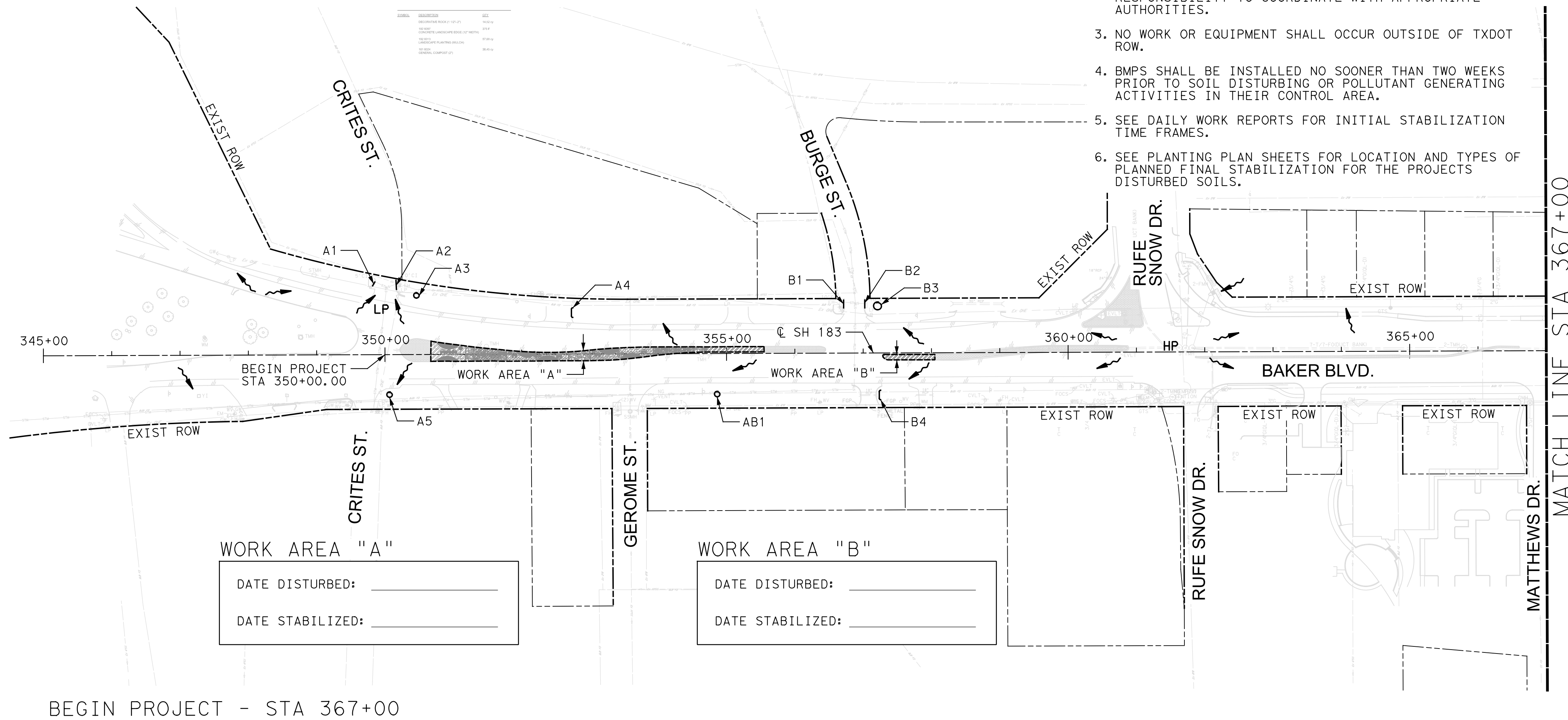
ESTIMATE OF EROSION CONTROL QUANTITIES - WORK AREAS A & B			
ITEM	DESCRIPTION	UNIT	QUANTITY
506-6040	BIODEG EROSN CONTROL LOGS (INSLT) (8")	LF	199
506-6043	BIODEG EROSN CONTROL LOGS (REMOVE)	LF	199

EROSION CONTROL GENERAL NOTES

- THE ENTIRE LIMITS OF IMPROVEMENT WERE NOT SURVEYED. ALL LINework IS APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
- ALL UTILITIES SHOWN ON PLANS ARE APPROXIMATE IN NATURE AND DO NOT RELIEVE THE CONTRACTOR FROM ANY RESPONSIBILITY TO COORDINATE WITH APPROPRIATE AUTHORITIES.
- NO WORK OR EQUIPMENT SHALL OCCUR OUTSIDE OF TXDOT ROW.
- BMPs SHALL BE INSTALLED NO SOONER THAN TWO WEEKS PRIOR TO SOIL DISTURBING OR POLLUTANT GENERATING ACTIVITIES IN THEIR CONTROL AREA.
- SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIME FRAMES.
- SEE PLANTING PLAN SHEETS FOR LOCATION AND TYPES OF PLANNED FINAL STABILIZATION FOR THE PROJECTS DISTURBED SOILS.

LEGEND

- LIMITS OF CONSTRUCTION
- EROSION CONTROL LOG
- FLOW DIRECTION



WORK AREA "A"

DATE DISTURBED: _____

DATE STABILIZED: _____

WORK AREA "B"

DATE DISTURBED: _____

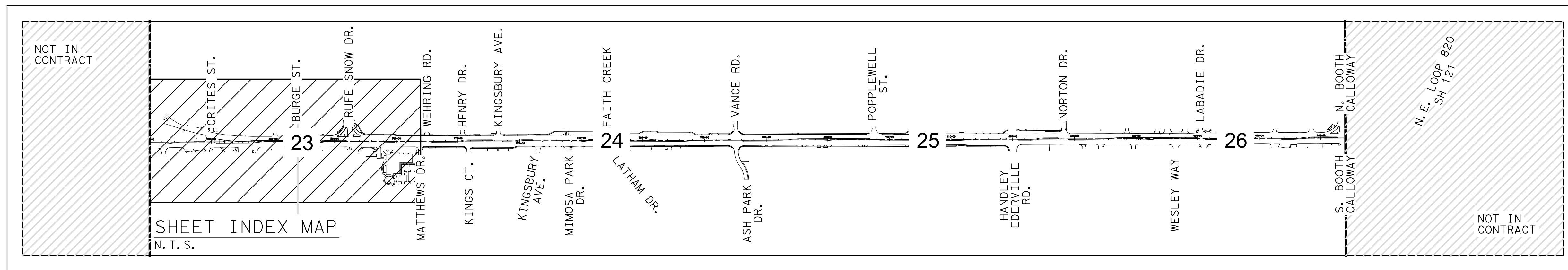
DATE STABILIZED: _____

BEGIN PROJECT - STA 367+00
1" = 100'-0"

WORK AREA "A"				
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A1	CI	7		
A2	CI	14		
A3	DI	27		
A4	D	17		
A5	DI	27		
AB1	DI	27		

WORK AREA "B"				
INLET ID	TYPE	LF	DATE INSTALLED	DATE REMOVED
AB1	DI	*		
B1	CI	12		
B2	CI	12		
B3	DI	39		
B4	D	17		

EROSION CONTROL LOG TYPE - SEE EC(9)-16
CI: CONTROL LOG AT CURB INLET
DI: CONTROL LOG AT DROP INLET
D: CONTROL LOG DAM
* SEE PREVIOUS WORK AREA



Connor R. Guerrero

DATE: 05/25/2022



EROSION CONTROL PLAN
BEGIN PROJECT TO STA 367+00

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	23	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	SH 183

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 PLOT BY: CONNOR R. GUERRERO

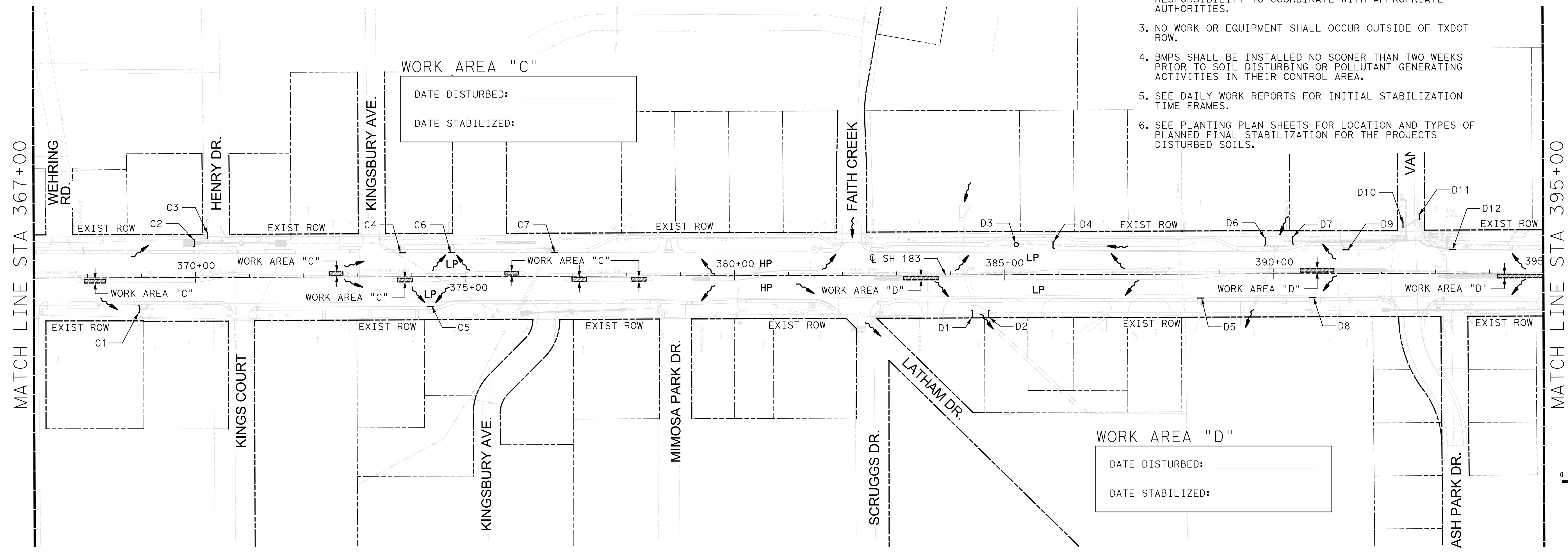
ESTIMATE OF EROSION CONTROL QUANTITIES - WORK AREAS C & D				
ITEM	DESCRIPTION	UNIT	QUANTITY	
506-6040	BIODEG EROSN CONTROL LOGS (INSL) (8")	LF	267	
506-6043	BIODEG EROSN CONTROL LOGS (REMOVE)	LF	267	

EROSION CONTROL GENERAL NOTES

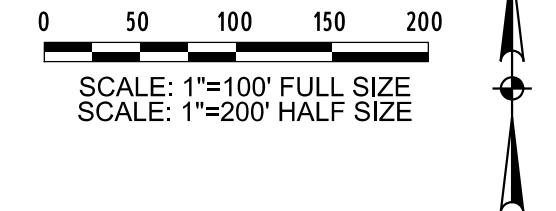
1. THE ENTIRE LIMITS OF IMPROVEMENT WERE NOT SURVEYED. ALL LINEWORK IS APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
2. ALL UTILITIES SHOWN ON PLANS ARE APPROXIMATE IN NATURE AND DO NOT RELIEVE THE CONTRACTOR FROM ANY RESPONSIBILITY TO COORDINATE WITH APPROPRIATE AUTHORITIES.
3. NO WORK OR EQUIPMENT SHALL OCCUR OUTSIDE OF TXDOT ROW.
4. BMPs SHALL BE INSTALLED NO SOONER THAN TWO WEEKS PRIOR TO SOIL DISTURBING OR POLLUTANT GENERATING ACTIVITIES IN THEIR CONTROL AREA.
5. SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIME FRAMES.
6. SEE PLANTING PLAN SHEETS FOR LOCATION AND TYPES OF PLANNED FINAL STABILIZATION FOR THE PROJECTS DISTURBED SOILS.

LEGEND

- LIMITS OF CONSTRUCTION
- o- EROSION CONTROL LOG
- > FLOW DIRECTION



STA 367+00 - STA 395+00
1" = 100'-0"



WORK AREA "C"				
INLET ID	TYPE	LF	DATE INSTALLED	DATE REMOVED
C1	D	17		
C2	D	17		
C3	CI	11		
C4	CI	11		
C5	CI	11		
C6	CI	11		
C7	CI	11		

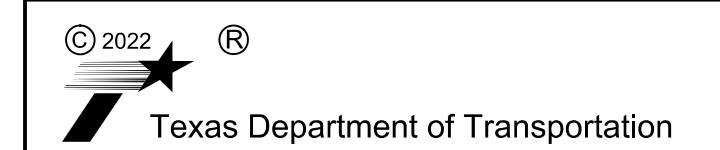
WORK AREA "D"				
INLET ID	TYPE	LF	DATE INSTALLED	DATE REMOVED
D1	D	17		
D2	D	17		
D3	DI	27		
D4	D	17		
D5	CI	11		
D6	D	17		
D7	D	17		
D8	CI	11		
D9	CI	11		
D10	CI	11		
D11	CI	11		
D12	CI	11		

EROSION CONTROL LOG TYPE - SEE EC(9)-16
 CI: CONTROL LOG AT CURB INLET
 DI: CONTROL LOG AT DROP INLET
 D: CONTROL LOG DAM



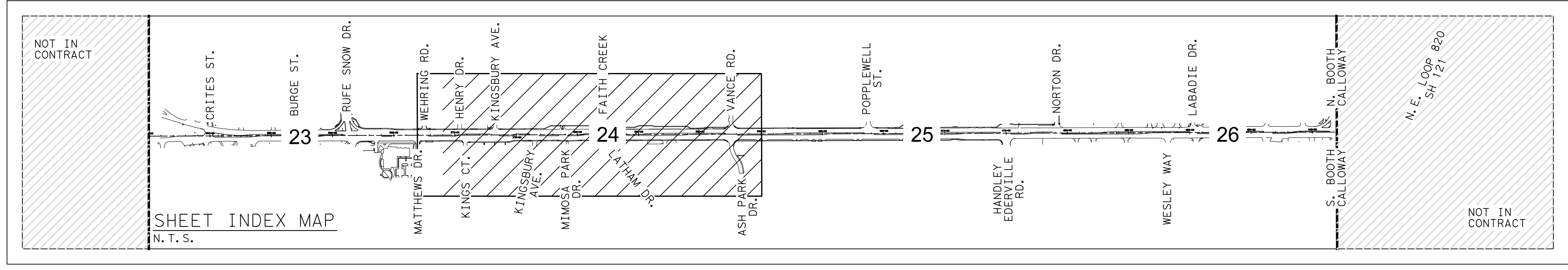
Connor R. Guerrero

DATE: 05/25/2022



EROSION CONTROL PLAN
STA 367+00 TO STA 395+00

FED.RD. DIV.NO. 6	FEDERAL AID PROJECT NO. SEE TITLE SHEET	SHEET NO. 24	
STATE TEXAS	DISTRICT FTW	COUNTY TARRANT	
CONTROL 0094	SECTION 02	JOB 143	HIGHWAY NO. SH 183



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 PLOT SHEET: 24
 PLOT TOTAL SHEETS: 24

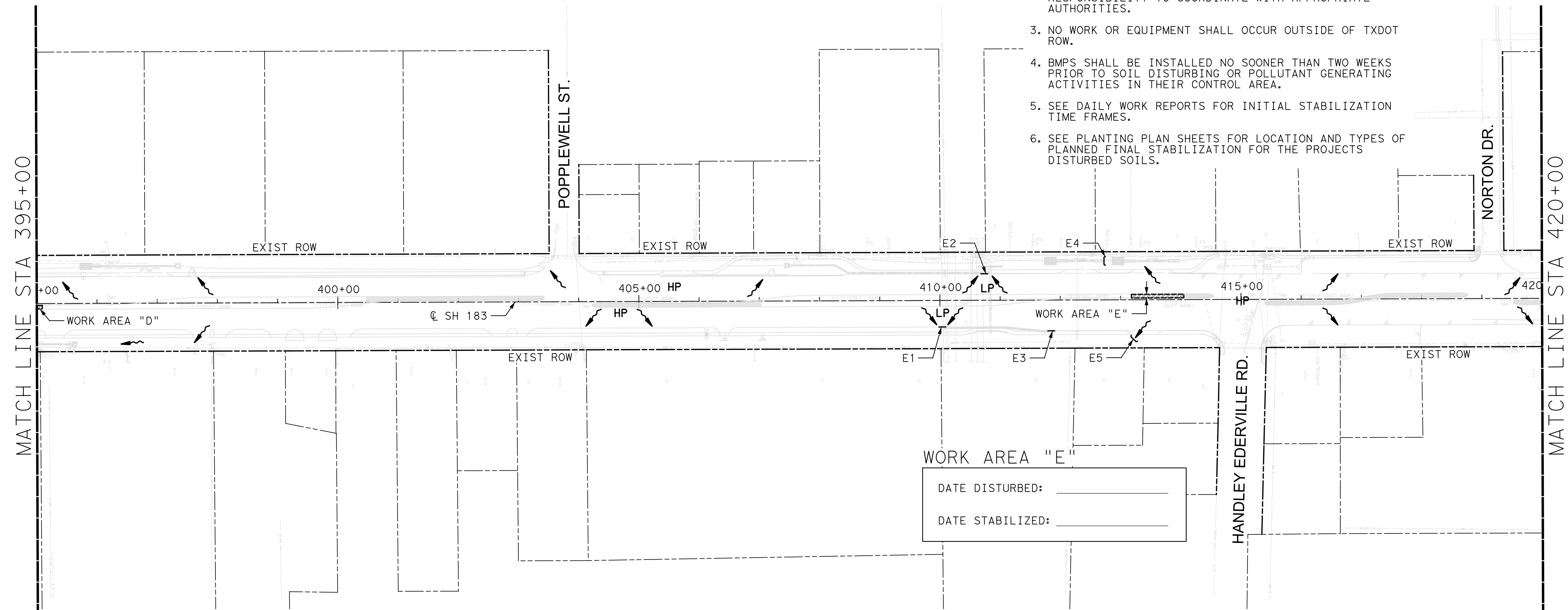
ESTIMATE OF EROSION CONTROL QUANTITIES - WORK AREA E			
ITEM	DESCRIPTION	UNIT	QUANTITY
506-6040	BIODEG EROSN CONTROL LOGS (INSL) (8")	LF	67
506-6043	BIODEG EROSN CONTROL LOGS (REMOVE)	LF	67

EROSION CONTROL GENERAL NOTES

1. THE ENTIRE LIMITS OF IMPROVEMENT WERE NOT SURVEYED. ALL LINWORK IS APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
2. ALL UTILITIES SHOWN ON PLANS ARE APPROXIMATE IN NATURE AND DO NOT RELIEVE THE CONTRACTOR FROM ANY RESPONSIBILITY TO COORDINATE WITH APPROPRIATE AUTHORITIES.
3. NO WORK OR EQUIPMENT SHALL OCCUR OUTSIDE OF TXDOT ROW.
4. BMPs SHALL BE INSTALLED NO SOONER THAN TWO WEEKS PRIOR TO SOIL DISTURBING OR POLLUTANT GENERATING ACTIVITIES IN THEIR CONTROL AREA.
5. SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIME FRAMES.
6. SEE PLANTING PLAN SHEETS FOR LOCATION AND TYPES OF PLANNED FINAL STABILIZATION FOR THE PROJECTS DISTURBED SOILS.

LEGEND

- LIMITS OF CONSTRUCTION
- ○ ○ ○ ○ EROSION CONTROL LOG
- FLOW DIRECTION



STA 395+00 - STA 420+00
1" = 100'-0"

WORK AREA "E"				
INLET ID	TYPE	LF	DATE INSTALLED	DATE REMOVED
E1	CI	11		
E2	CI	11		
E3	CI	11		
E4	D	17		
E5	D	17		

EROSION CONTROL LOG TYPE - SEE EC(9)-16
CI: CONTROL LOG AT CURB INLET
D: CONTROL LOG DAM



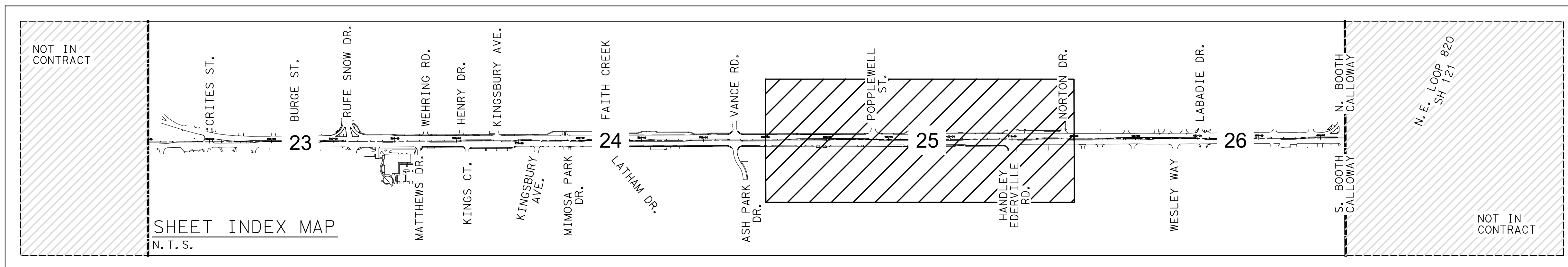
Connor R. Guerrero

DATE: 05/25/2022



EROSION CONTROL PLAN STA 395+00 TO STA 420+00

FED.RD. DIV.NO. 6	FEDERAL AID PROJECT NO. SEE TITLE SHEET	SHEET NO. 25
STATE TEXAS	DISTRICT FTW	COUNTY TARRANT
CONTROL 0094	SECTION 02	JOB 143
		HIGHWAY NO. SH 183



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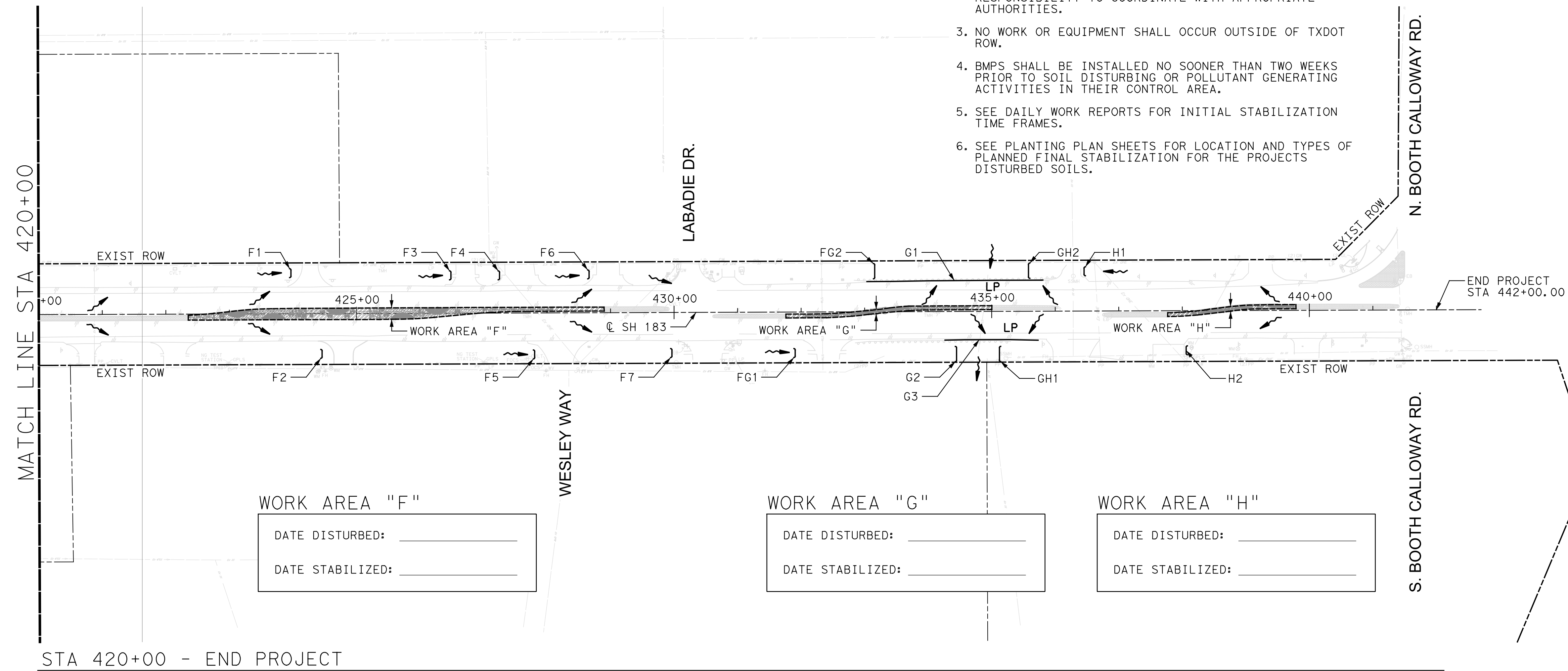
ESTIMATE OF EROSION CONTROL QUANTITIES - WORK AREAS F, G & H			
ITEM	DESCRIPTION	UNIT	QUANTITY
506-6040	BIODEG EROSN CONTROL LOGS (INSL) (8")	LF	708
506-6043	BIODEG EROSN CONTROL LOGS (REMOVE)	LF	708

EROSION CONTROL GENERAL NOTES

1. THE ENTIRE LIMITS OF IMPROVEMENT WERE NOT SURVEYED. ALL LINEWORK IS APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
2. ALL UTILITIES SHOWN ON PLANS ARE APPROXIMATE IN NATURE AND DO NOT RELIEVE THE CONTRACTOR FROM ANY RESPONSIBILITY TO COORDINATE WITH APPROPRIATE AUTHORITIES.
3. NO WORK OR EQUIPMENT SHALL OCCUR OUTSIDE OF TXDOT ROW.
4. BMPs SHALL BE INSTALLED NO SOONER THAN TWO WEEKS PRIOR TO SOIL DISTURBING OR POLLUTANT GENERATING ACTIVITIES IN THEIR CONTROL AREA.
5. SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIME FRAMES.
6. SEE PLANTING PLAN SHEETS FOR LOCATION AND TYPES OF PLANNED FINAL STABILIZATION FOR THE PROJECTS DISTURBED SOILS.

LEGEND

- LIMITS OF CONSTRUCTION
- ○ ○ EROSION CONTROL LOG
- FLOW DIRECTION



WORK AREA "F"

DATE DISTURBED: _____

DATE STABILIZED: _____

WORK AREA "G"

DATE DISTURBED: _____

DATE STABILIZED: _____

WORK AREA "H"

DATE DISTURBED: _____

DATE STABILIZED: _____

STA 420+00 - END PROJECT

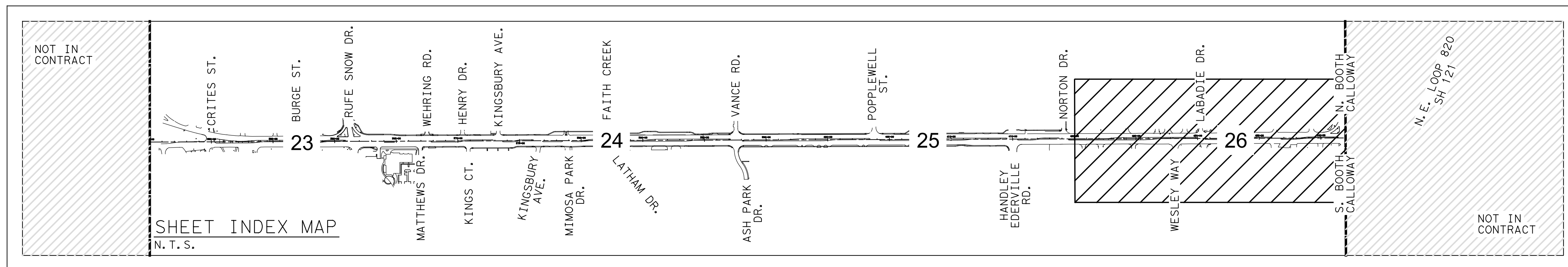
1" = 100'-0"

WORK AREA "F"				
INLET ID	TYPE	LF	DATE INSTALLED	DATE REMOVED
F1	D	17		
F2	D	17		
F3	D	17		
F4	D	17		
F5	D	17		
F6	D	17		
F7	D	17		
FG1	D	17		
FG2	D	27		

WORK AREA "G"				
INLET ID	TYPE	LF	DATE INSTALLED	DATE REMOVED
FG1	D	*		
FG2	D	*		
G1	D	280		
G2	D	27		
G3	D	150		
GH1	D	27		
GH2	D	27		

WORK AREA "H"				
INLET ID	TYPE	LF	DATE INSTALLED	DATE REMOVED
GH1	D	*		
GH2	D	*		
H1	D	17		
H2	D	17		

EROSION CONTROL LOG TYPE - SEE EC(9)-16
D: CONTROL LOG DAM
* SEE PREVIOUS WORK AREA



Connor R. Guerrero

DATE: 05/25/2022

HALFF 4000 FOSSIL CREEK BLVD
FORT WORTH, TEXAS
76137
TEL (817) 847-1422

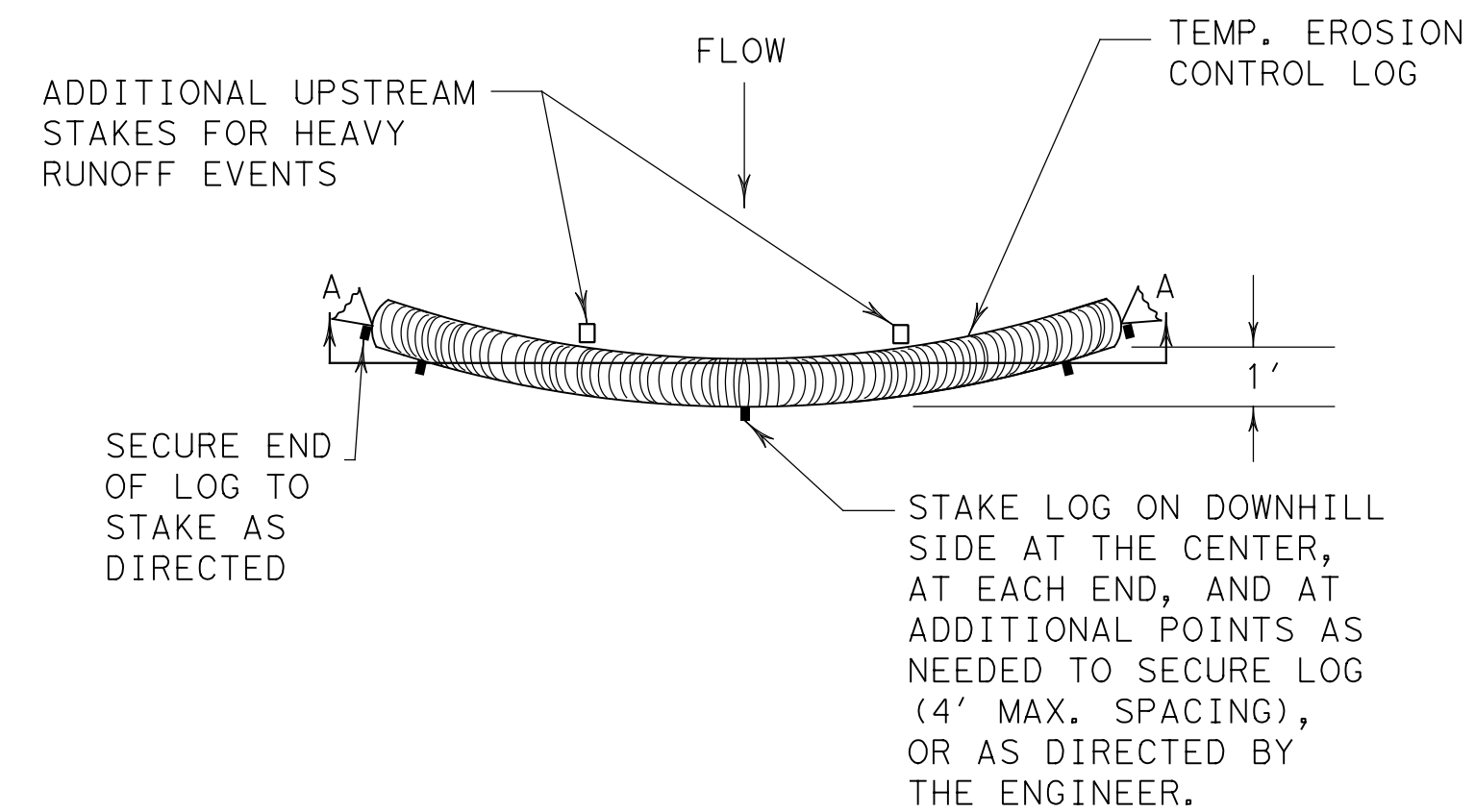
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EROSION CONTROL PLAN STA 420+00 TO END PROJECT

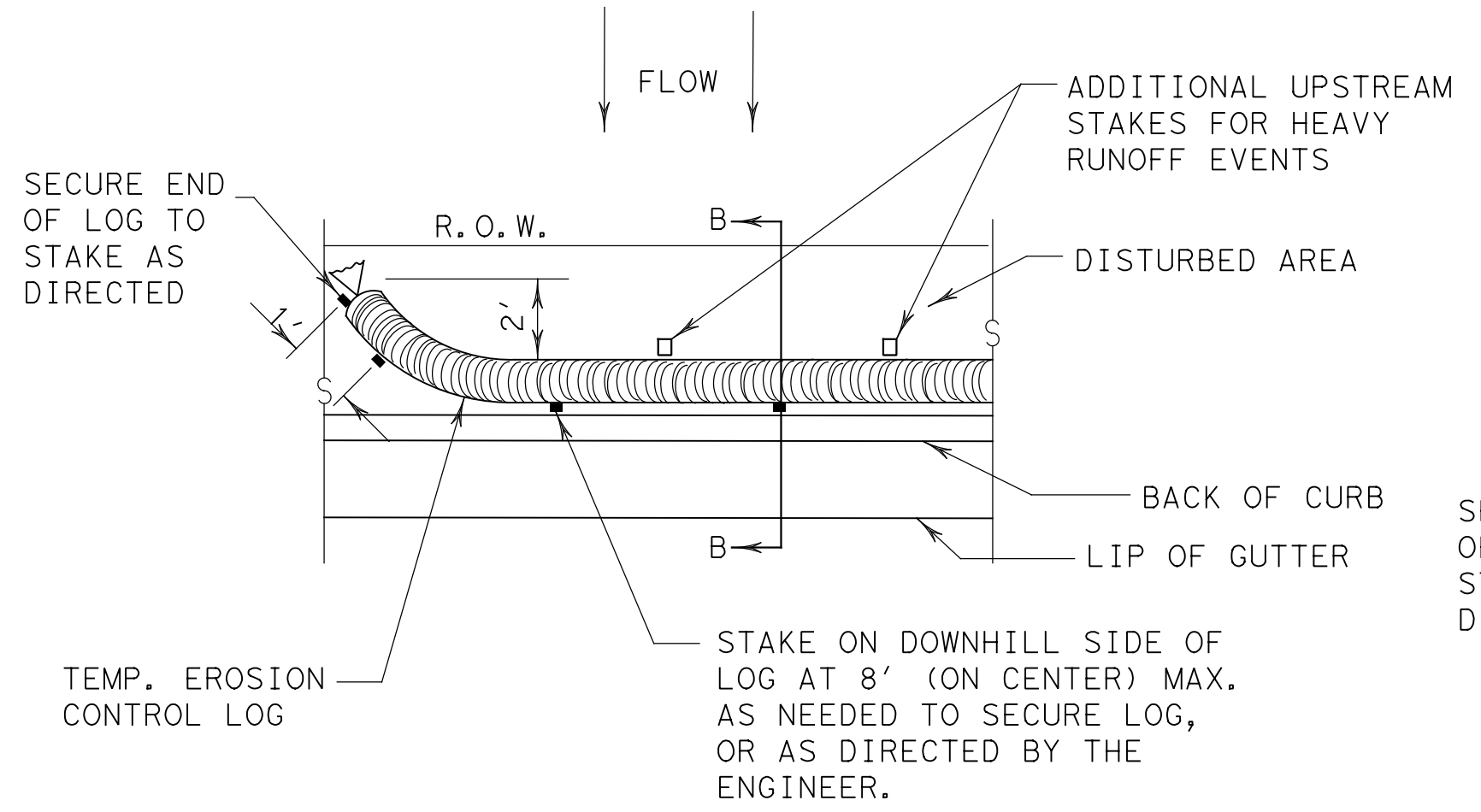
FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	26	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	SH 183

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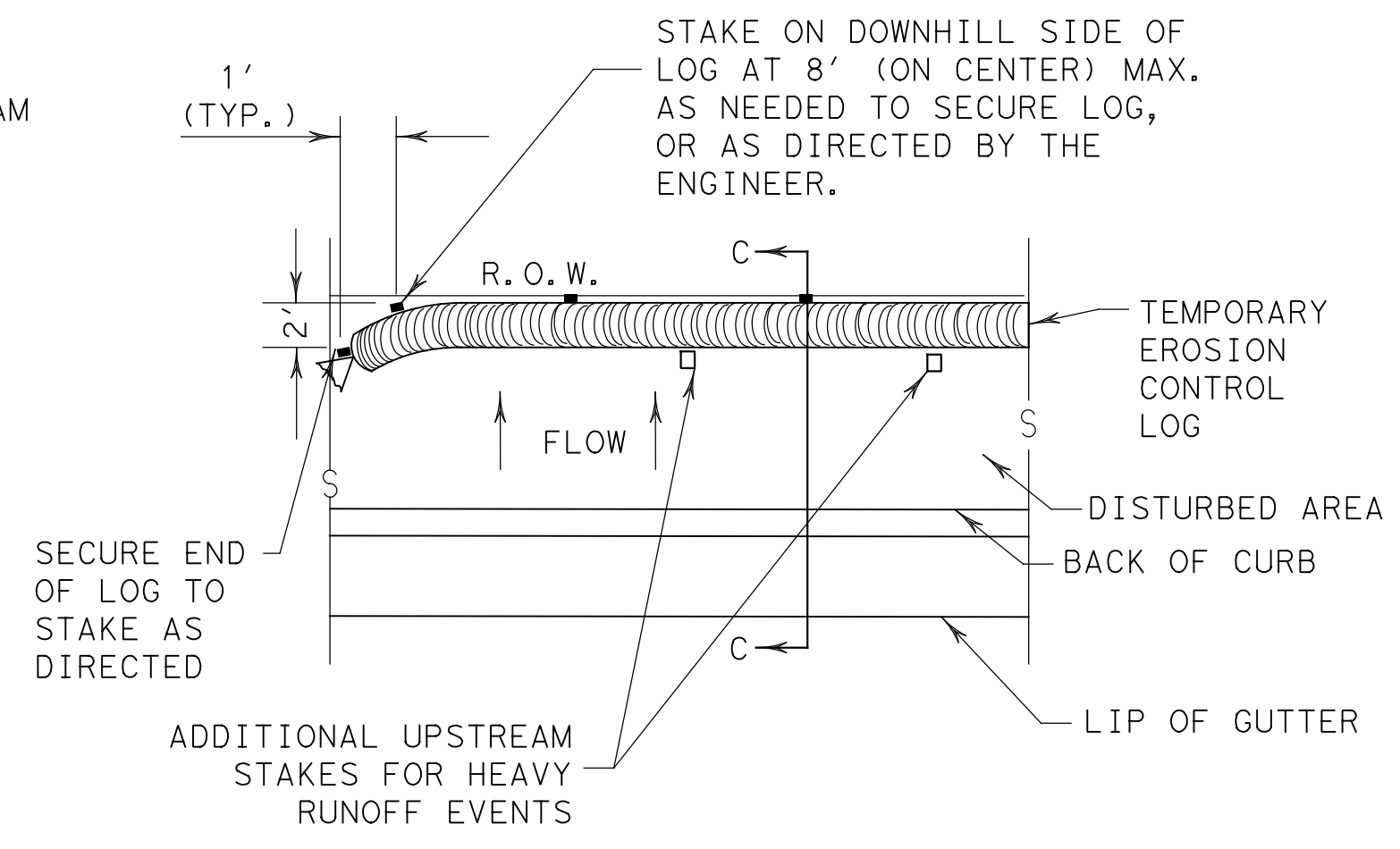
DATE: 5/25/2022
 FILE: I:\31000s\31515\W025 FY22 Baker Blvd Green Ribbon\CADD\Sheets\FTW\ec916.dgn



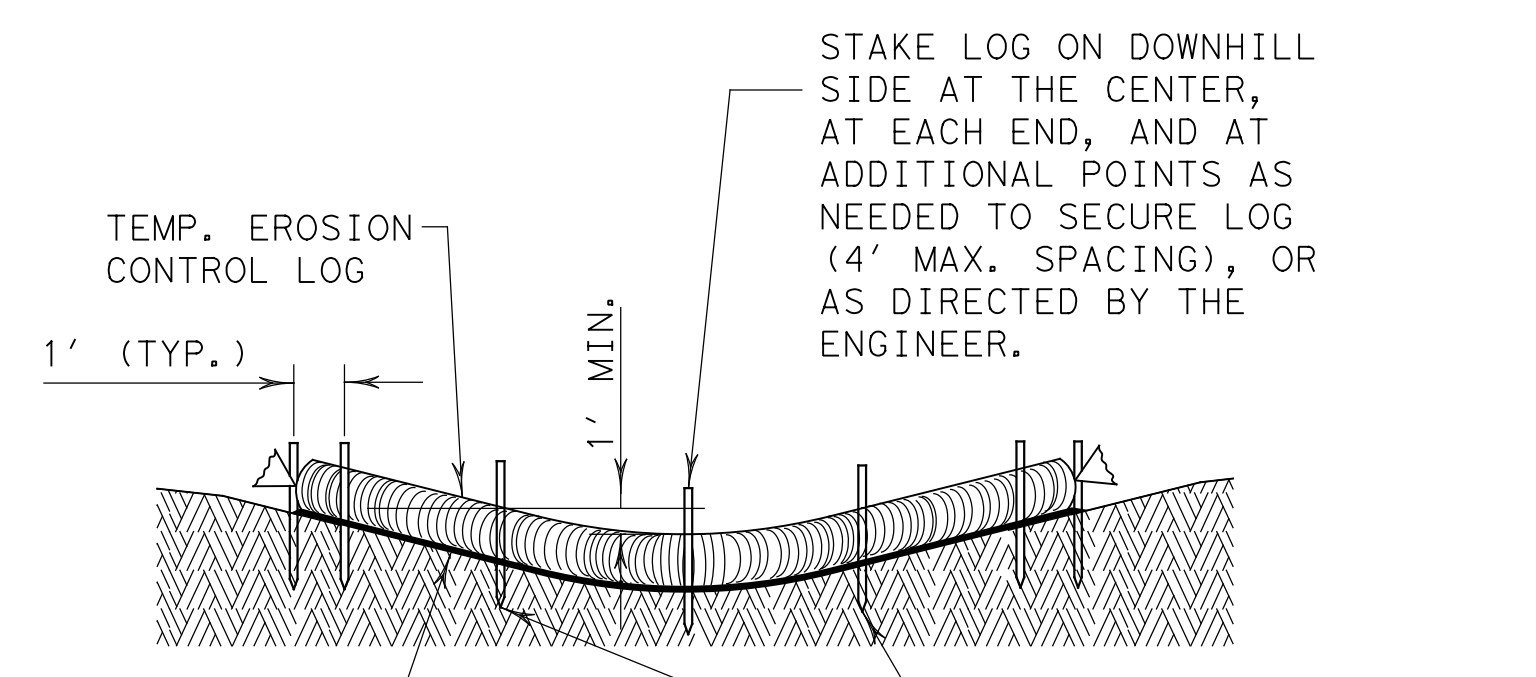
PLAN VIEW



PLAN VIEW



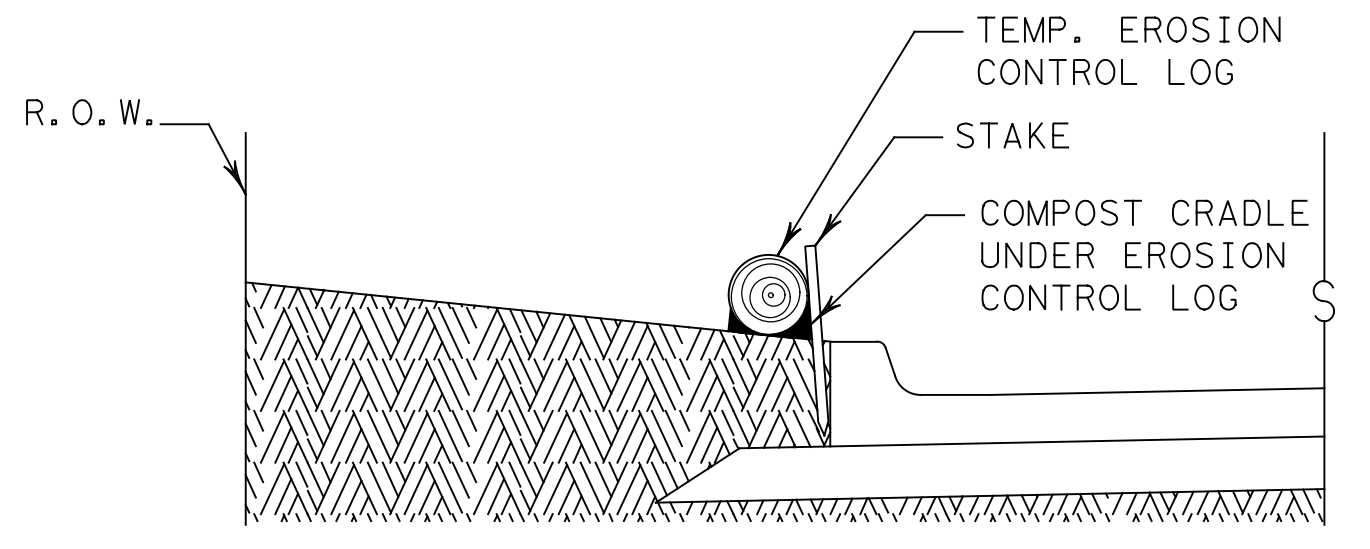
PLAN VIEW



SECTION A-A

EROSION CONTROL LOG DAM

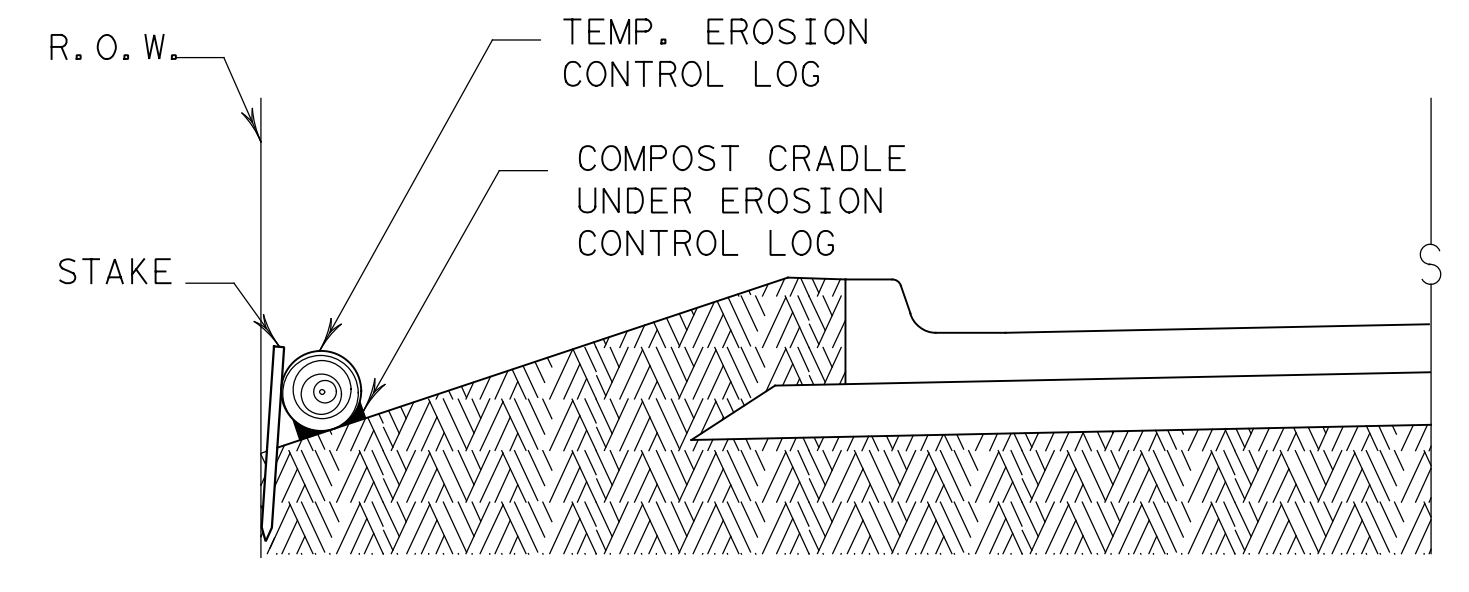
CL-D



SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

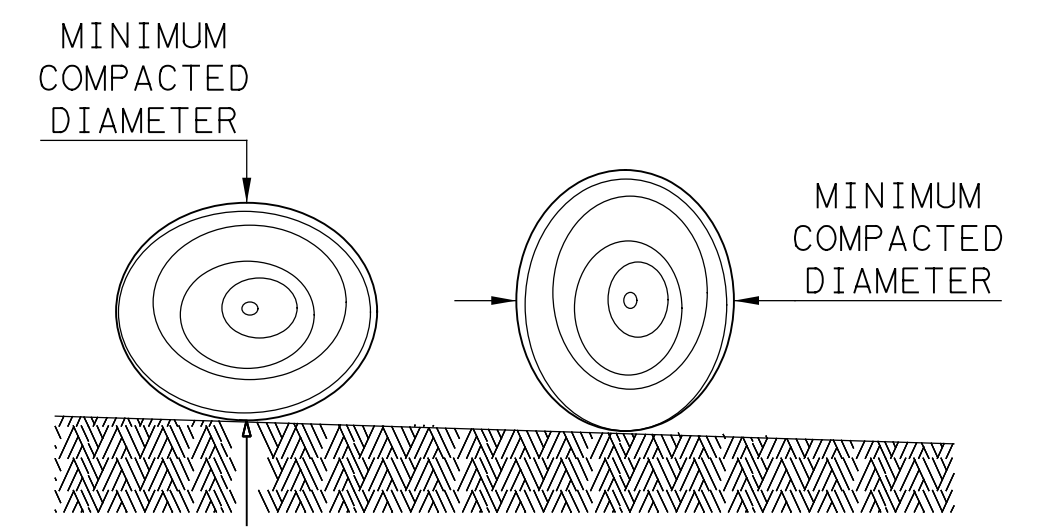
CL-BOC



SECTION C-C

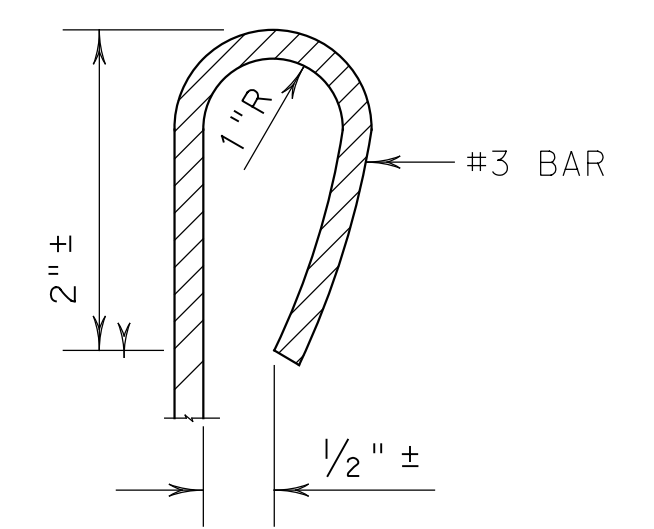
EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

- 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



REBAR STAKE DETAIL

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.

GENERAL NOTES:

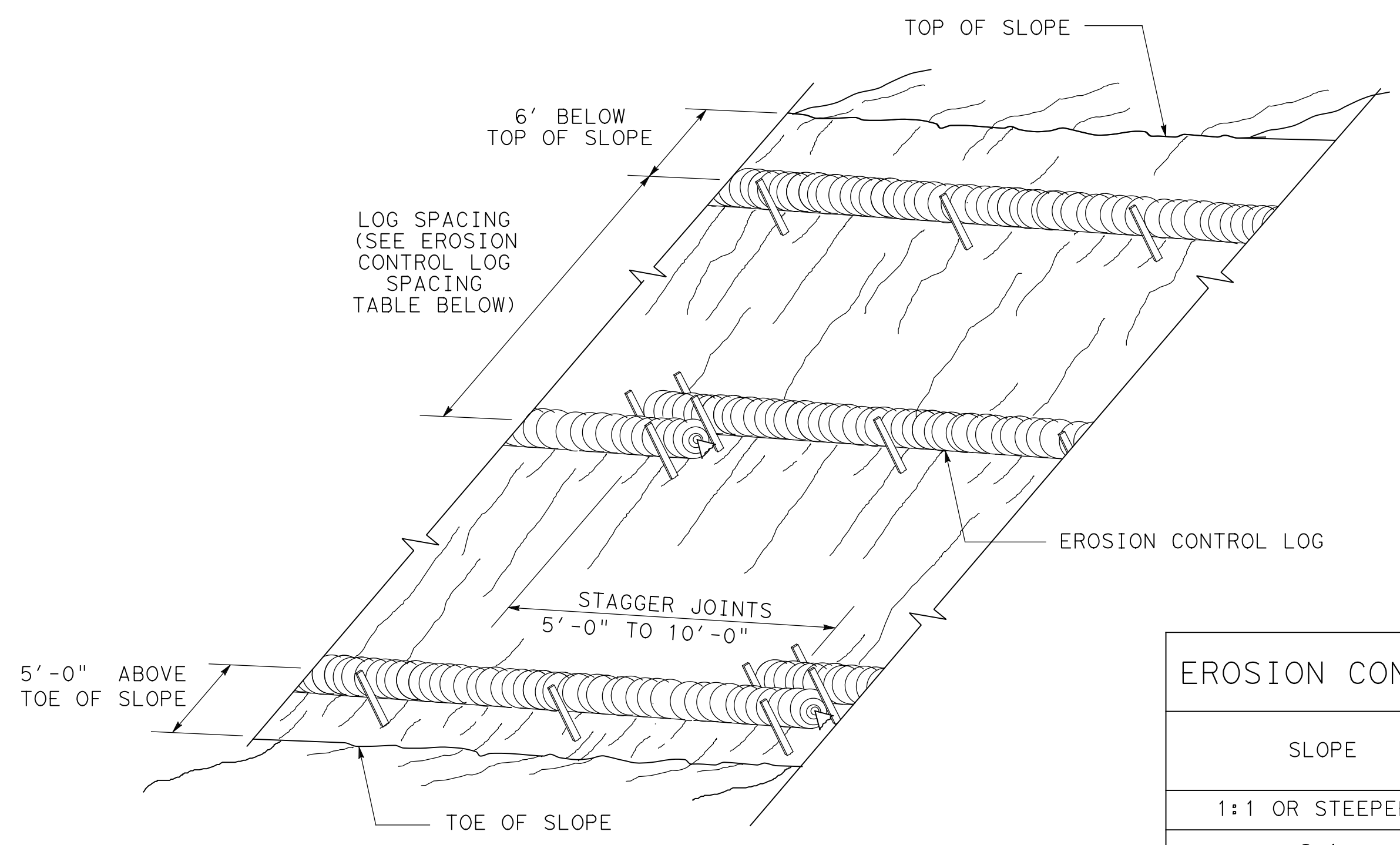
1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE 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.

SHEET 1 OF 3

Design Division Standard				
<p style="margin: 0;">TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES</p> <p style="margin: 0;">EROSION CONTROL LOG</p> <p style="margin: 0;">EC (9) - 16</p>				
FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	0094	02	143	SH 183
DIST	COUNTY	SHEET NO.		
FTW	TARRANT	27		

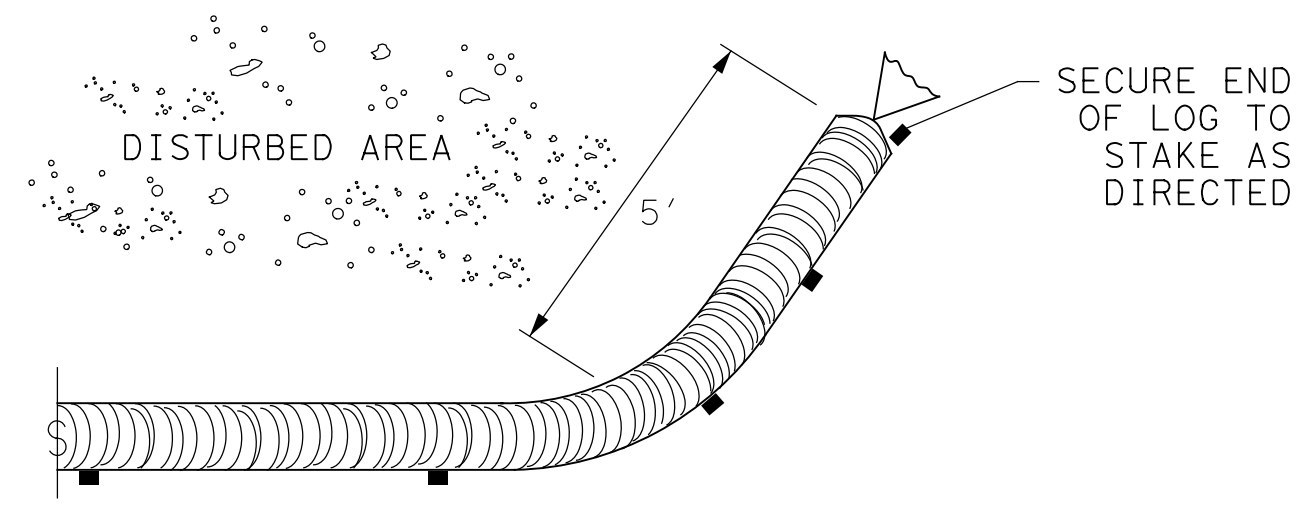
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DATE: 5/25/2022
 FILE: I:\31000\311515\W025 FY22 Baker Blvd Green Ribbon\CADD\Sheets\FTW\ec916.dgn



EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING

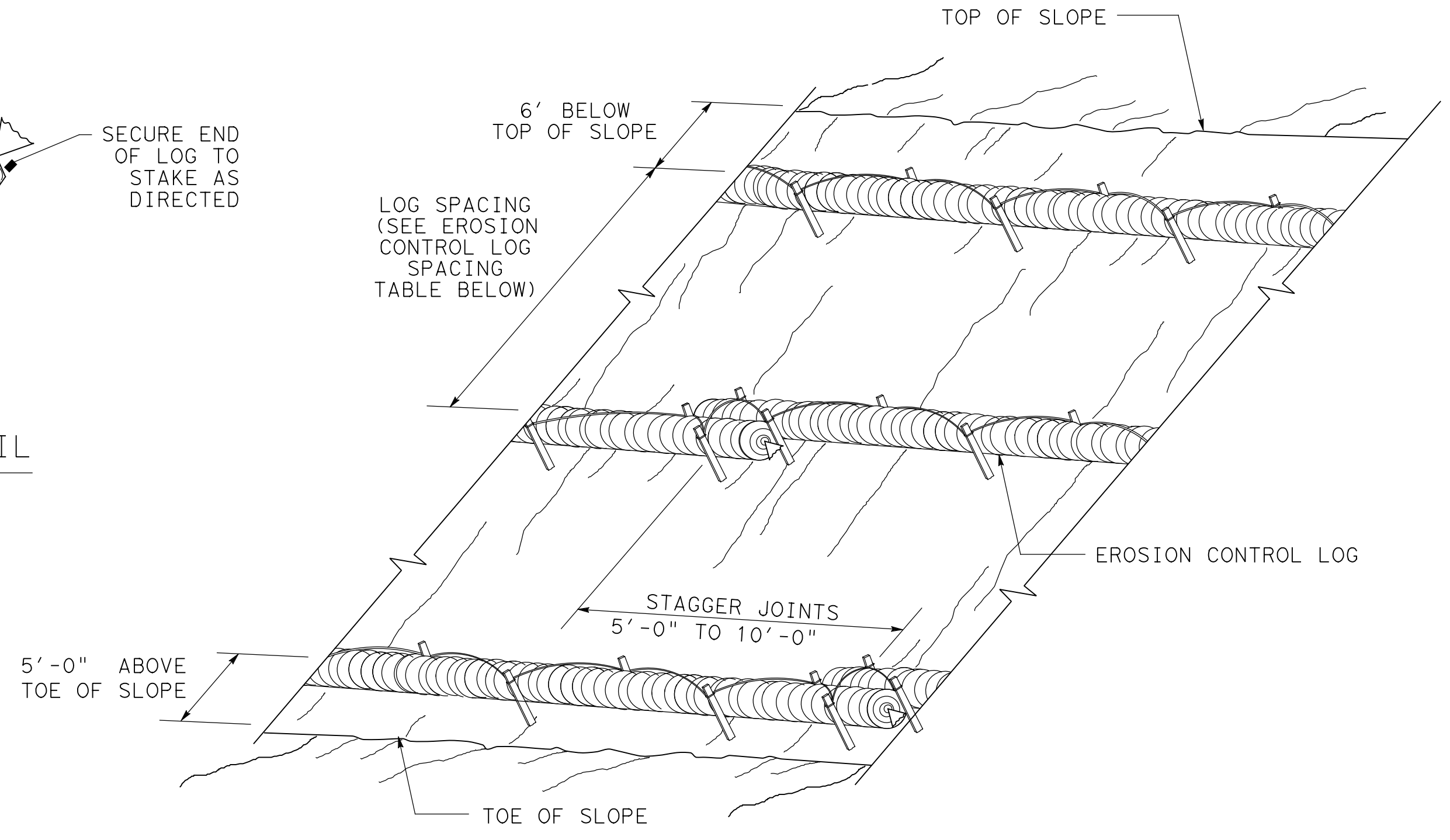
CL-SST



END SECTION RAP DETAIL

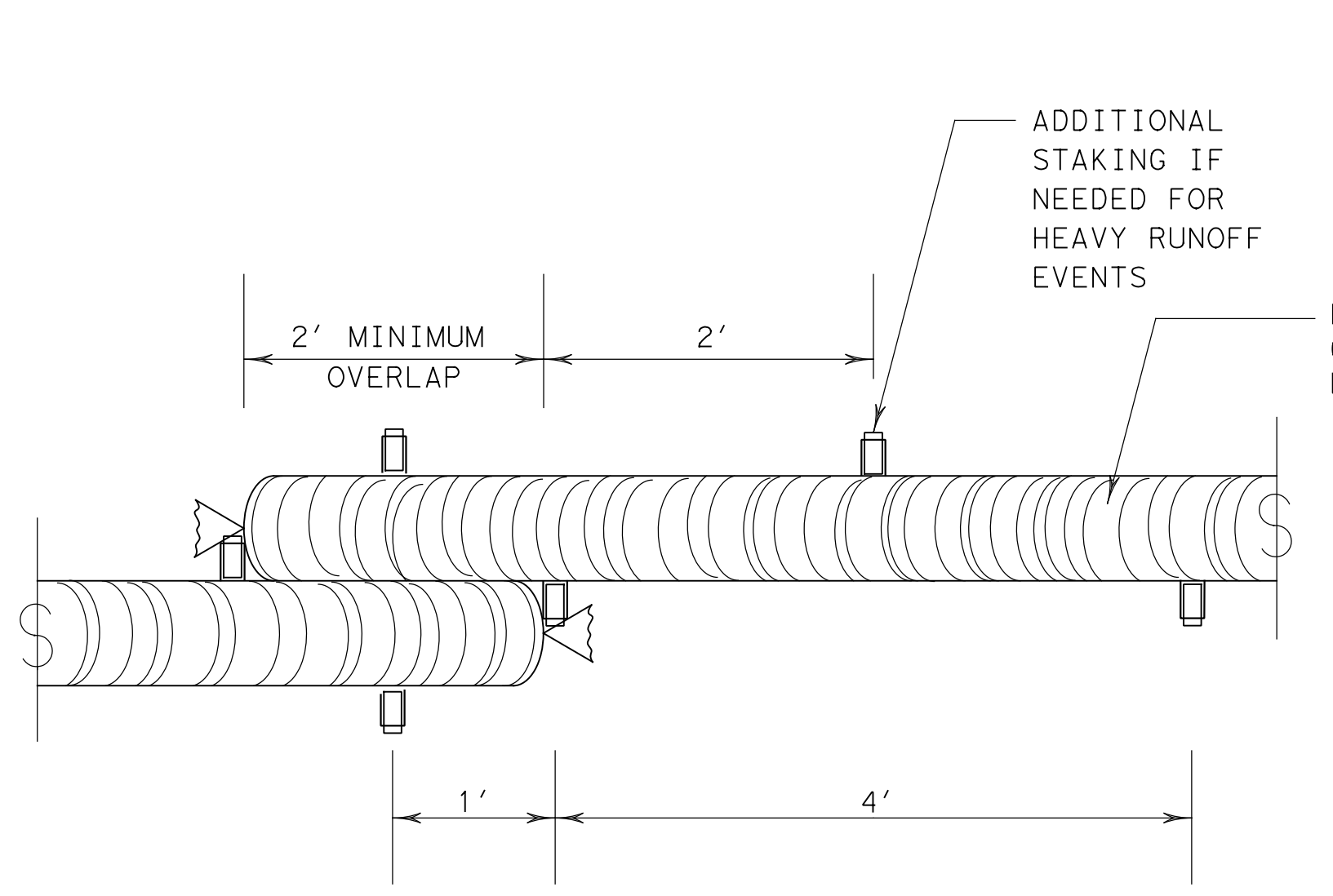
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

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



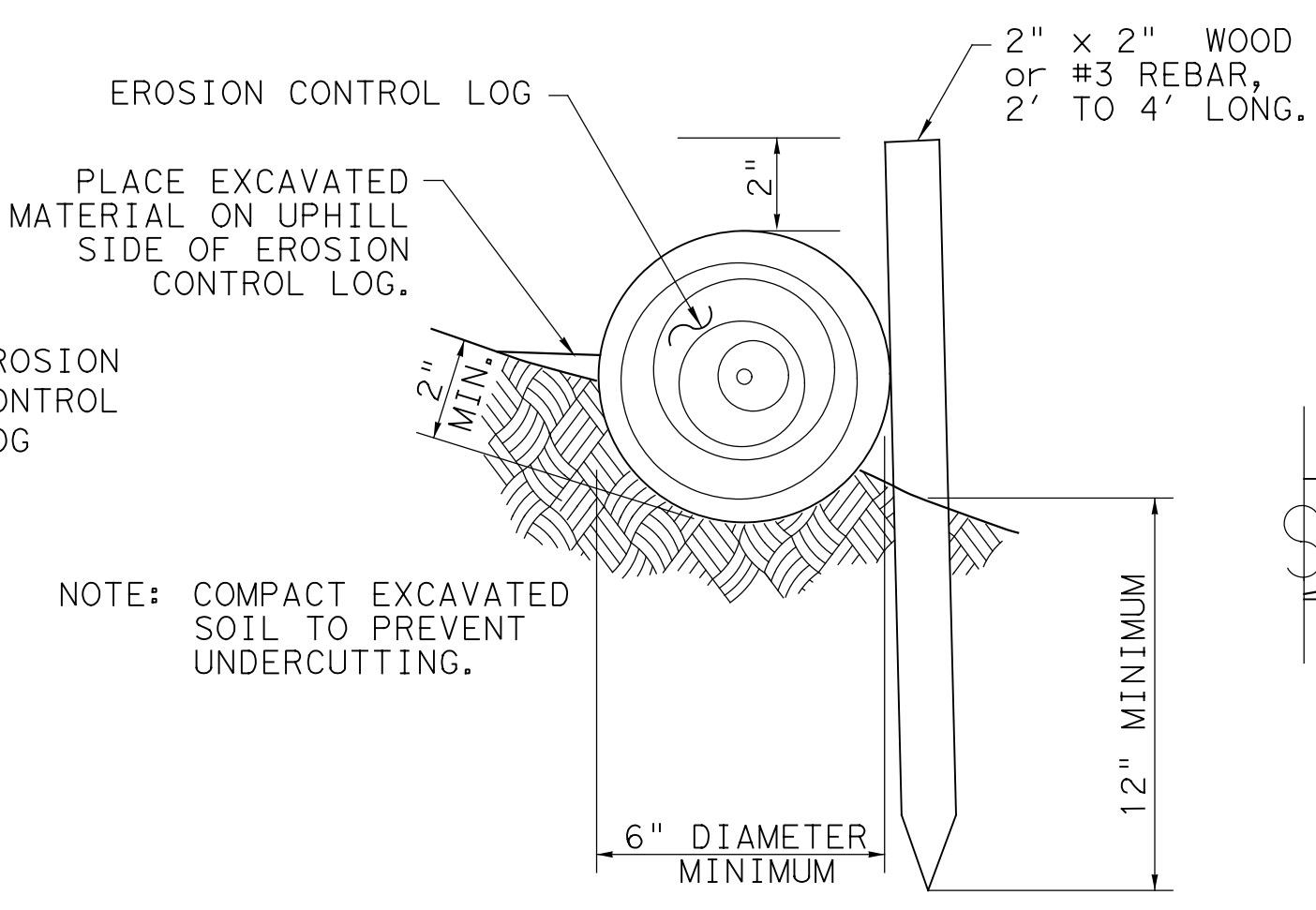
EROSION CONTROL LOGS ON SLOPES
STAKE AND LASHING ANCHORING

CL-SSL



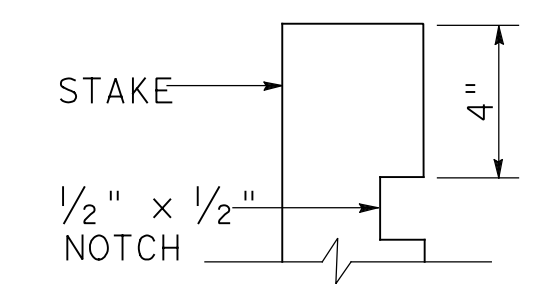
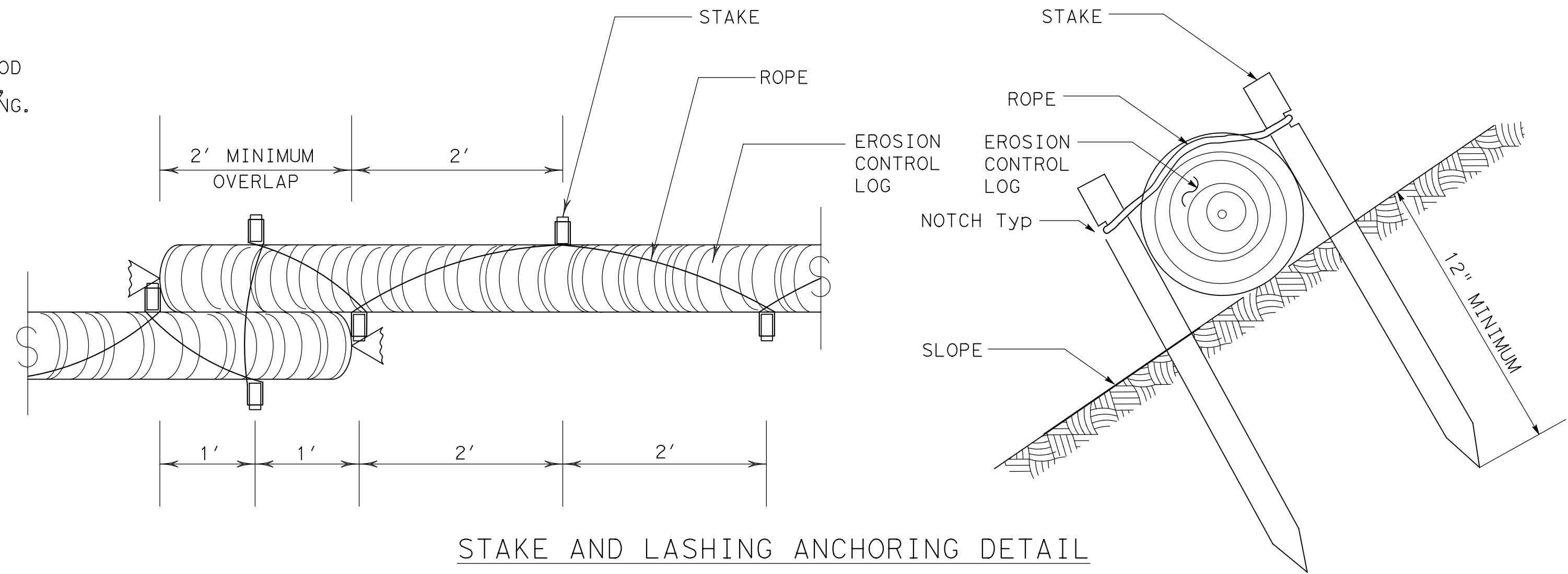
STAKE AND TRENCHING ANCHORING DETAIL

CL-SST



STAKE AND LASHING ANCHORING DETAIL

CL-SSL



STAKE NOTCH DETAIL

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

SHEET 2 OF 3

Texas Department of Transportation

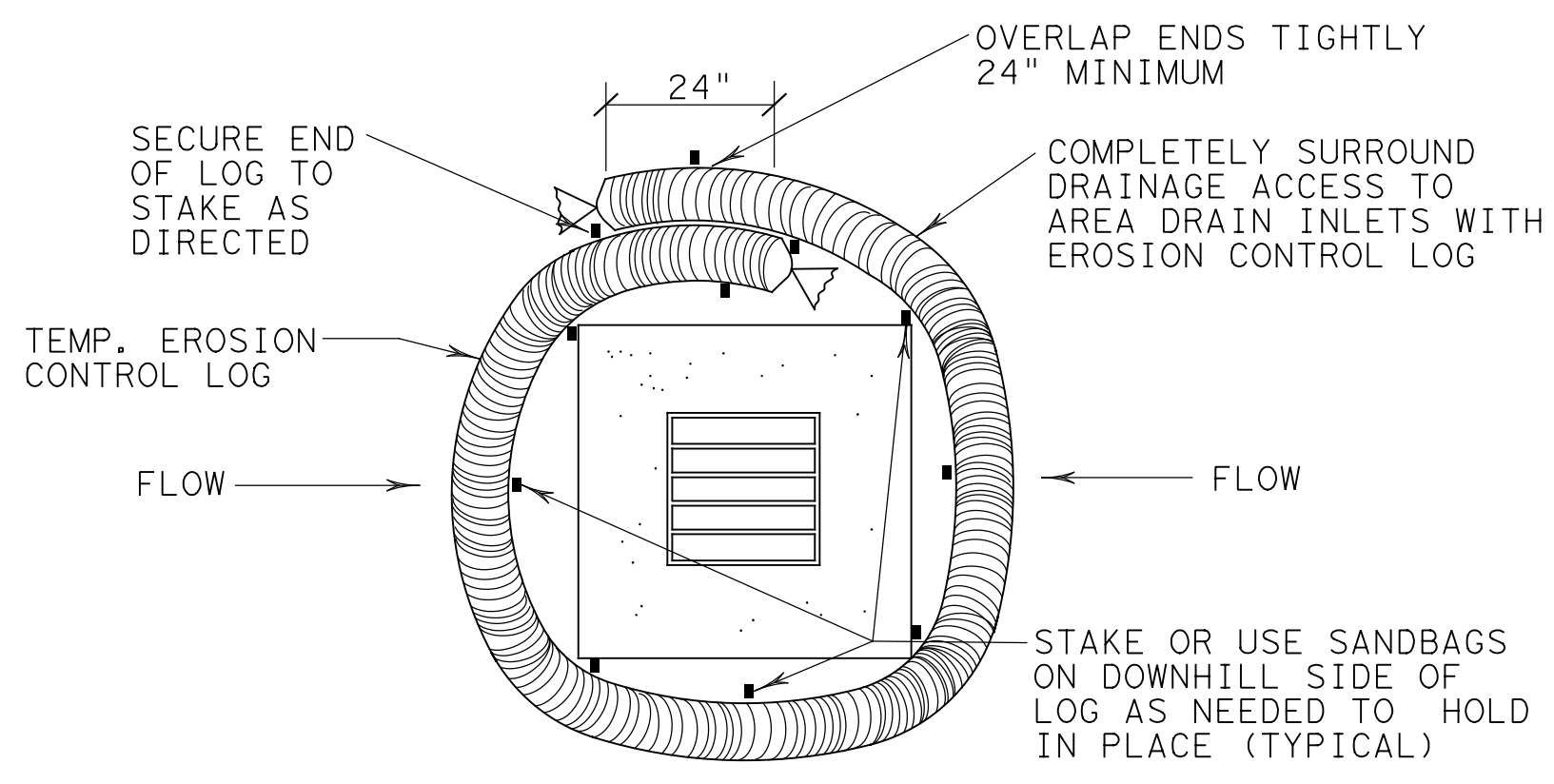
Design Division Standard

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	0094	02	143	SH 183
	DIST	COUNTY	SHEET NO.	
	FTW	TARRANT	28	

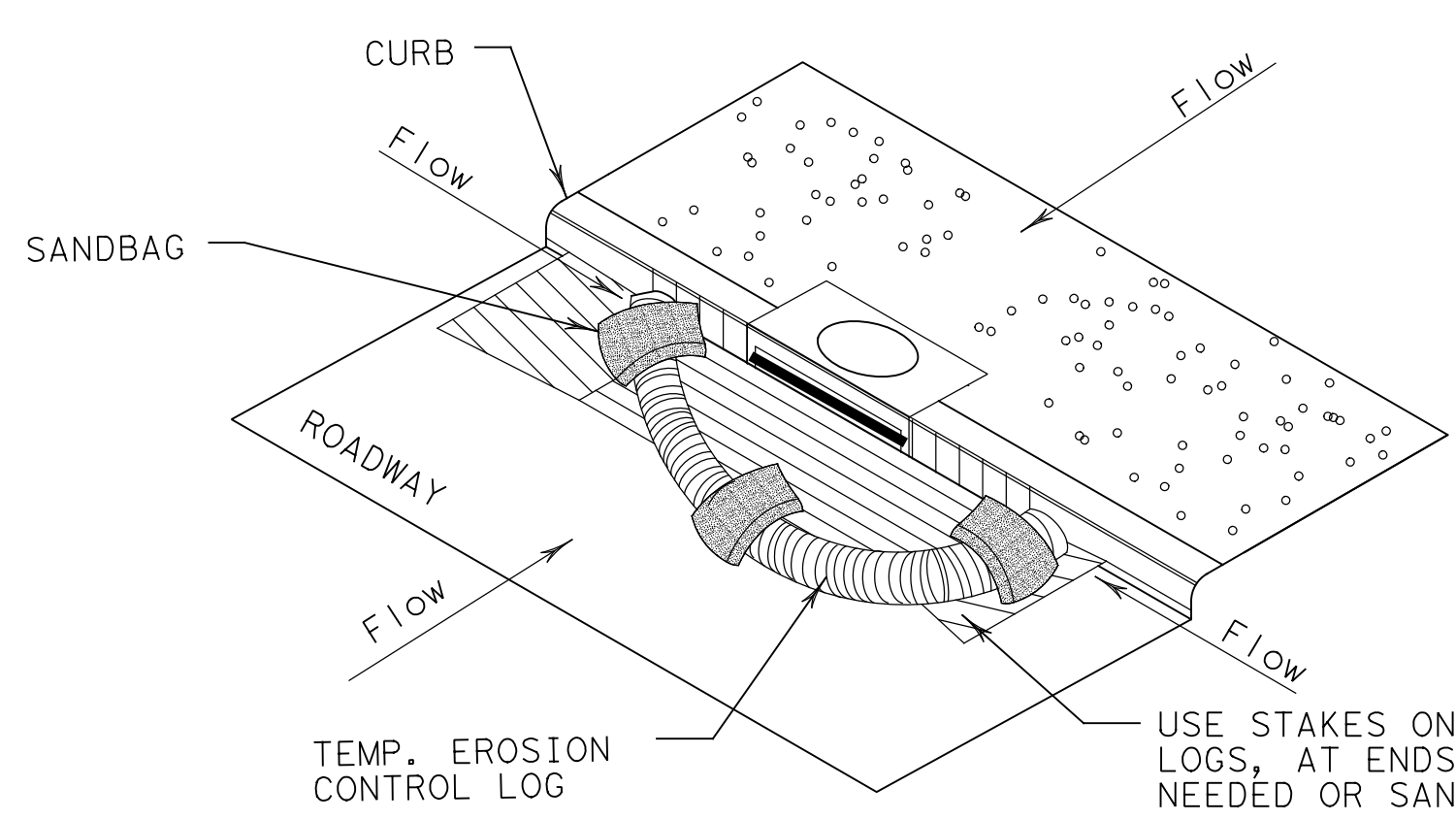
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DATE: 5/25/2022
 FILE: I:\31000\311515\W025 FY22 Baker Blvd Green Ribbon\CADD\Sheets\FTW\ec916.dgn



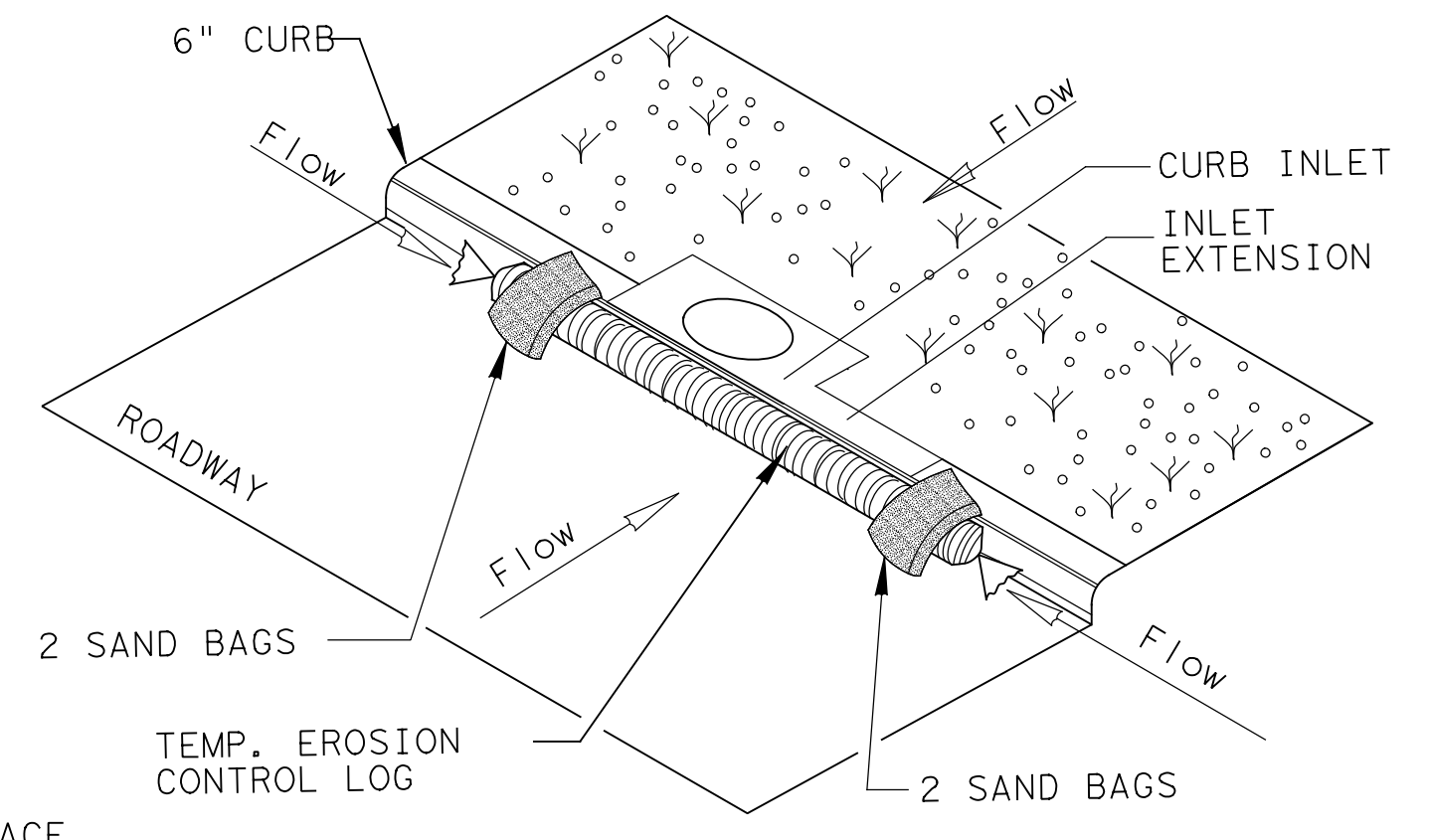
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

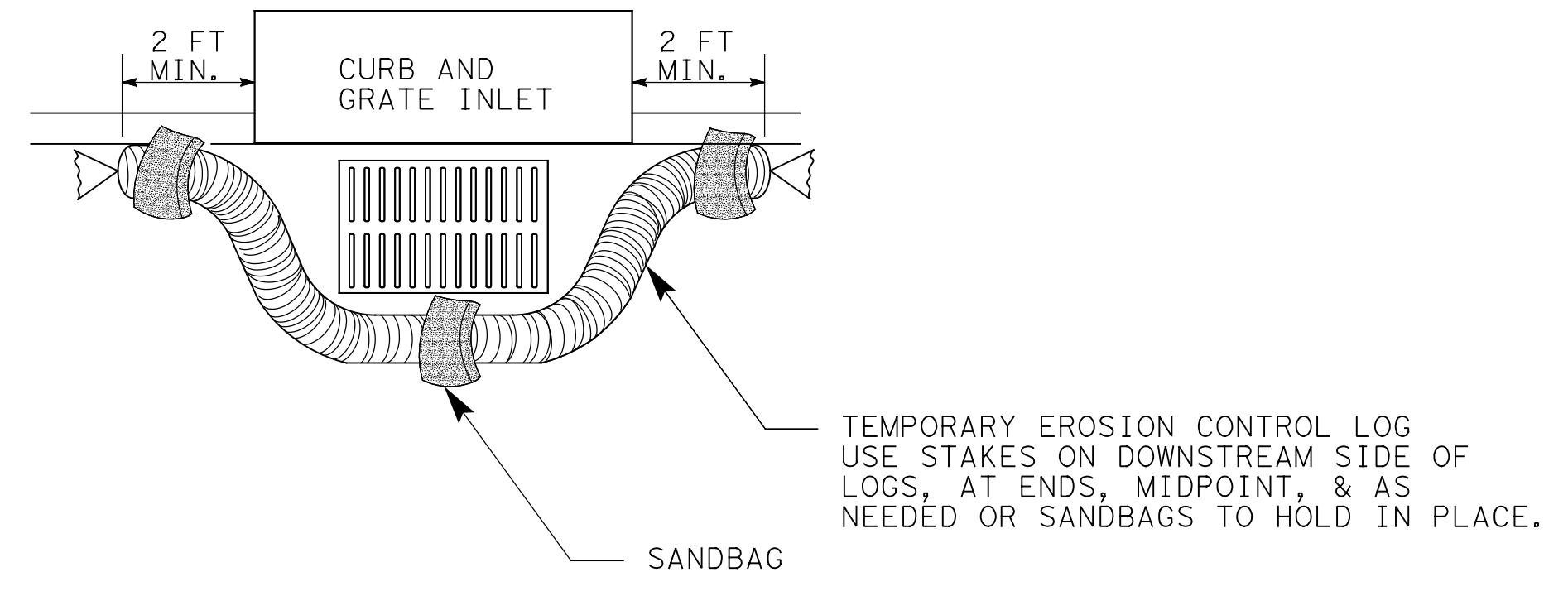
CL-CI



EROSION CONTROL LOG AT CURB INLET

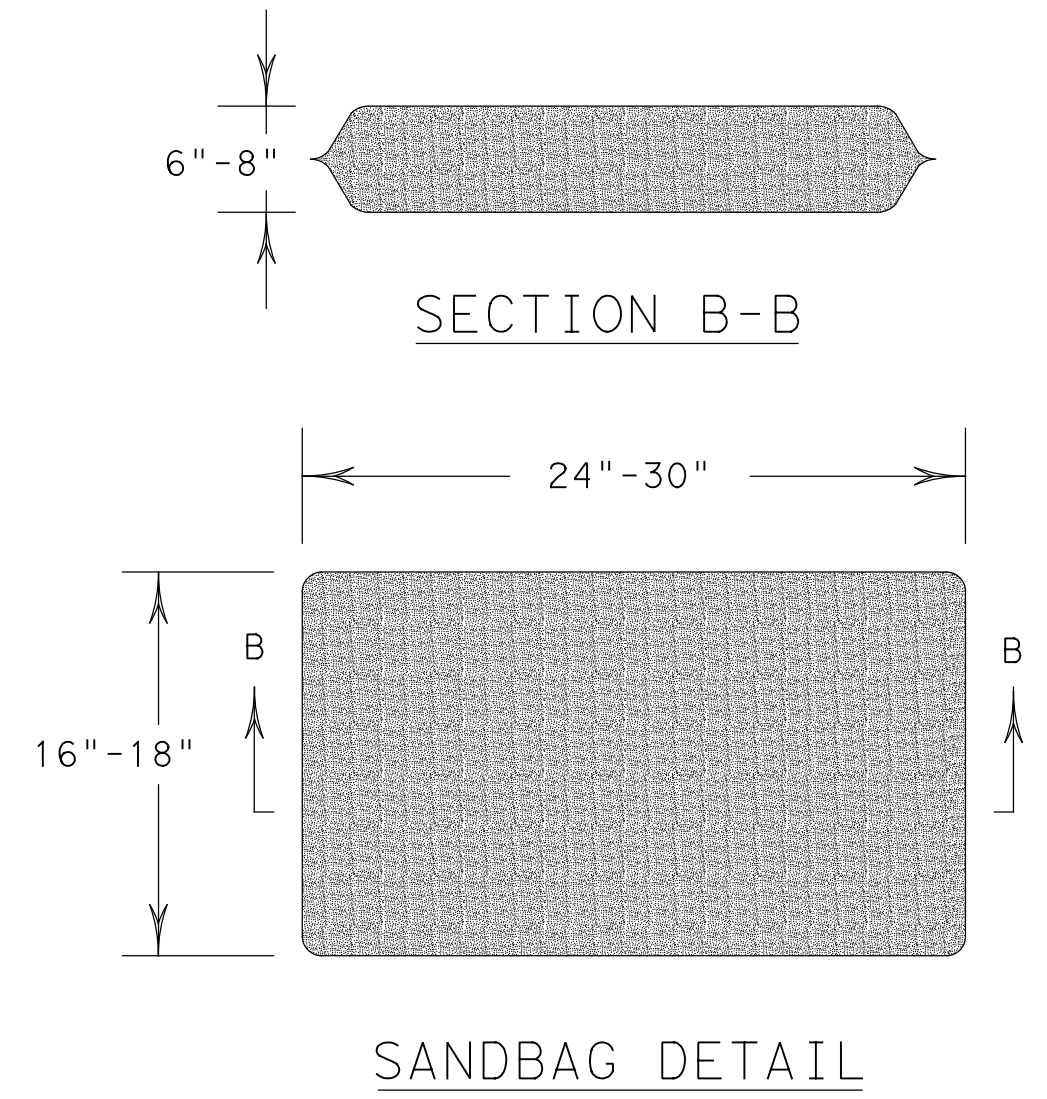
CL-CI

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

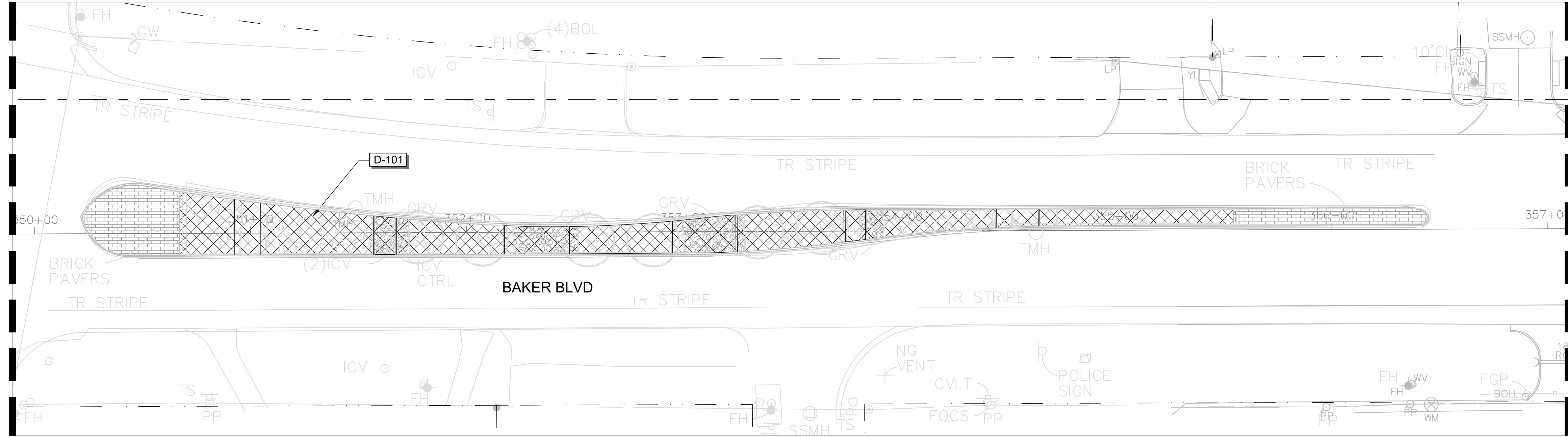


SHEET 3 OF 3

		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
© TxDOT: JULY 2016	CONT	SECT	JOB
REVISIONS	0094	02	143
	DIST	COUNTY	SHEET NO.
	FTW	TARRANT	29

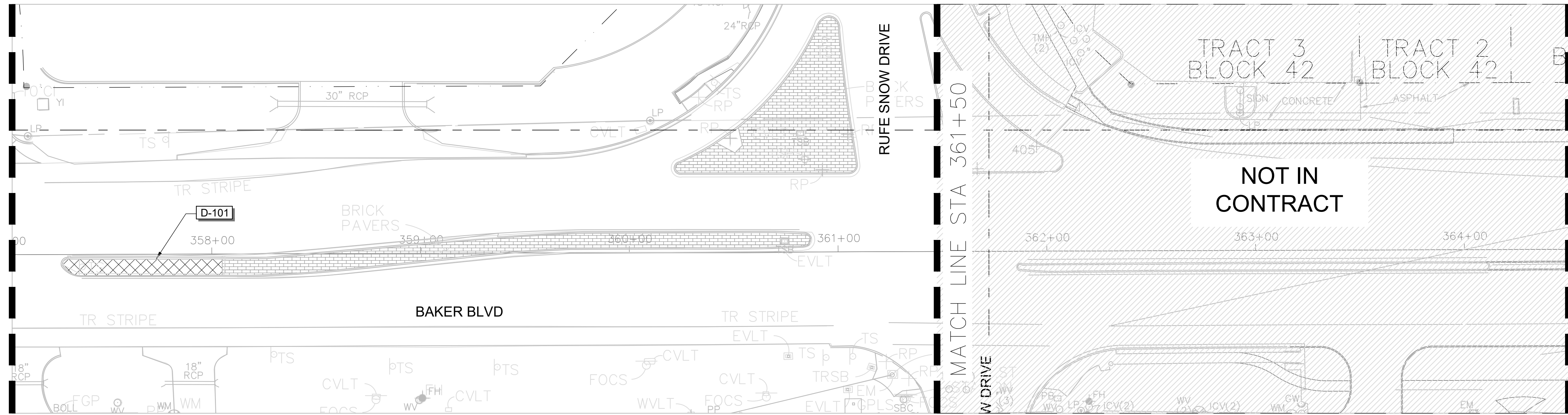
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BEGIN PROJECT STA 350+00



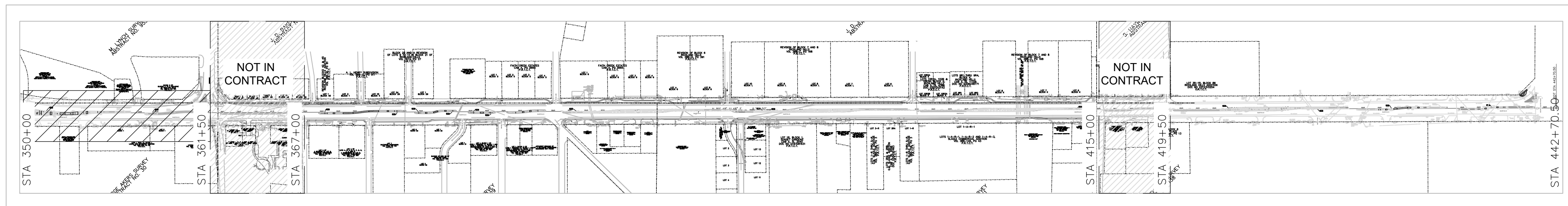
STA 350+00 - STA 357+00
Full Size: 1" = 30'
Half Size: 1" = 60'

MATCH LINE STA 357+00



STA 357+00 - STA 364+50
Full Size: 1" = 30'
Half Size: 1" = 60'

###



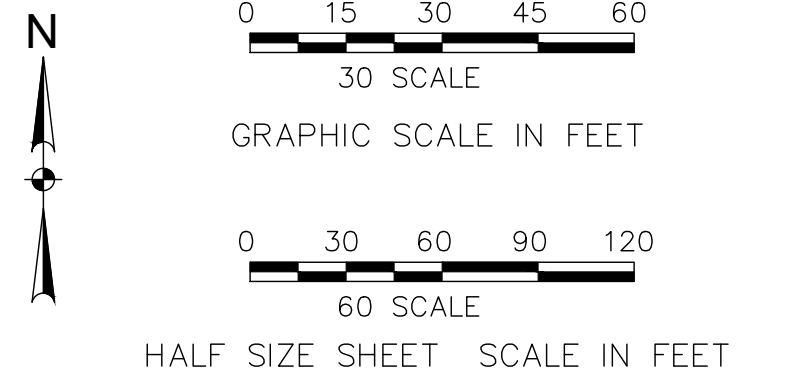
SHEET INDEX MAP
N.T.S.

NOTE:
1. ALL LANDSCAPE PLANTINGS AND MULCH SHOWN TO BE REMOVED SHALL BE DISPOSED OF OFF-SITE. EXISTING IRRIGATION SHALL BE CAREFULLY DISCONNECTED, TRACKED AND BE MADE READY FOR RE-USE. AFTER REQUIRED FILL IS ADDED TO MEDIANS AND GRADING IS ACCEPTED BY THE OWNER, IRRIGATION REMOVAL, DISCONNECTION AND TRACKING SHALL BE INCIDENTAL TO ITEM 100-6002 "PREPARING ROW". MAINLINE IRRIGATION LINE TO REMAIN IN PLACE.
2. PAYMENT FOR LANDSCAPE PLANTING REMOVAL SHALL BE PAID FOR UNDER ITEM 100-6002, PREPARING ROW.
3. CONTRACTOR TO REMOVE ALL WEEDS AND DEBRIS FROM EXISTING GRAVEL BEDS. WEED AND DEBRIS REMOVAL SHALL BE PAID FOR UNDER ITEM 100-6002, PREPARING ROW.

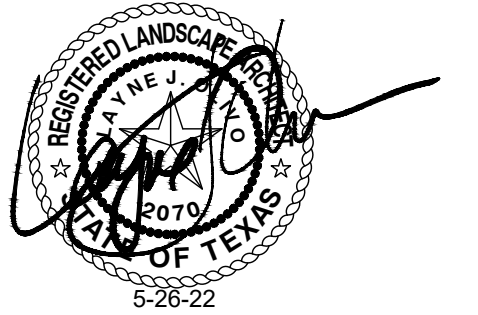
DEMOLITION SCHEDULE L100		
SYMBOL	DESCRIPTION	QTY
D-101	REMOVE ALL PLANTING, CONCRETE MOWSTRIPS, GRAVEL, AND IRRIGATION IN HATCHED AREA CAP OPEN IRRIGATION PIPES.	7,578 sf

GENERAL NOTES

1. THE ENTIRE LIMITS OF IMPROVEMENTS WERE SURVEYED. ALL LINWORK IS APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO CONTRACTORS SUBMITTING THEIR BID.
2. ALL UTILITIES SHOWN ON PLANS ARE APPROPRIATE AUTHORITIES.



CALL TXDOT TRAFFIC MANAGEMENT CENTER (817-370-3661) FOR TXDOT LOCATES WHEN WORKING NEAR EXISTING TRAFFIC SIGNAL.



HALFF 4000 FOSSIL CREEK BLVD.
FORT WORTH, TEXAS
76137
TEL (817) 847-1422

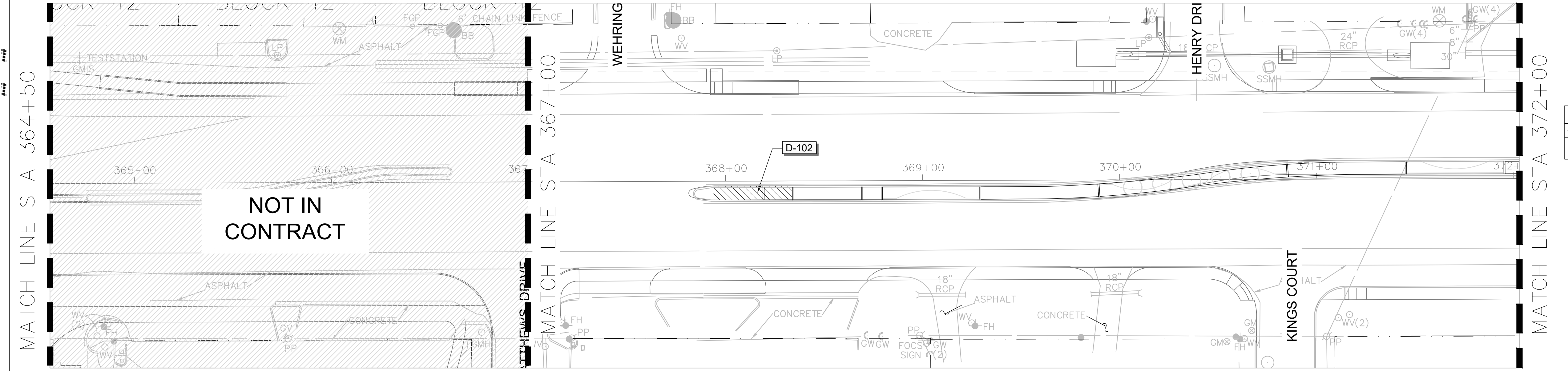
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DEMOLITION PLAN
STA 350+00 - STA 364+50

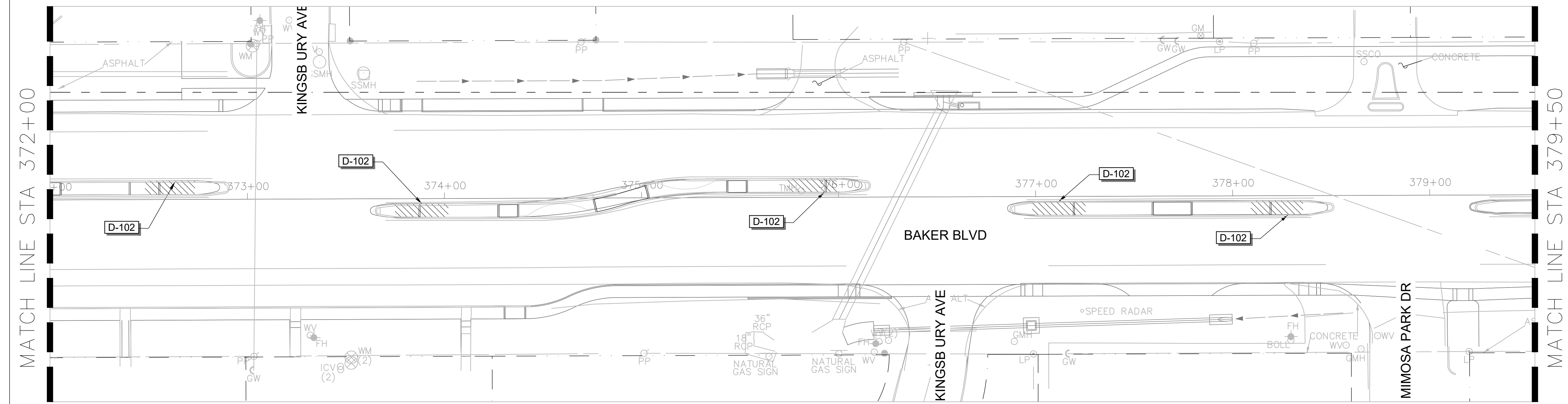
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	30	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183

NOTE:
 1. ALL LANDSCAPE PLANTINGS AND MULCH SHOWN TO BE REMOVED SHALL BE DISPOSED OF OFF-SITE. EXISTING IRRIGATION SHALL BE CAREFULLY DISCONNECTED, TRACKED AND BE MADE READY FOR RE-USE. AFTER REQUIRED FILL IS ADDED TO MEDIANS AND GRADING IS ACCEPTED BY THE OWNER, IRRIGATION REMOVAL, DISCONNECTION AND TRACKING SHALL BE INCIDENTAL TO ITEM 100-6002 "PREPARING ROW". MAINLINE IRRIGATION LINE TO REMAIN IN PLACE.
 2. PAYMENT FOR LANDSCAPE PLANTING REMOVAL SHALL BE PAID FOR UNDER ITEM 100-6002, PREPARING ROW.
 3. CONTRACTOR TO REMOVE ALL WEEDS AND DEBRIS FROM EXISTING GRAVEL BEDS. WEED AND DEBRIS REMOVAL SHALL BE PAID FOR UNDER ITEM 100-6002, PREPARING ROW.

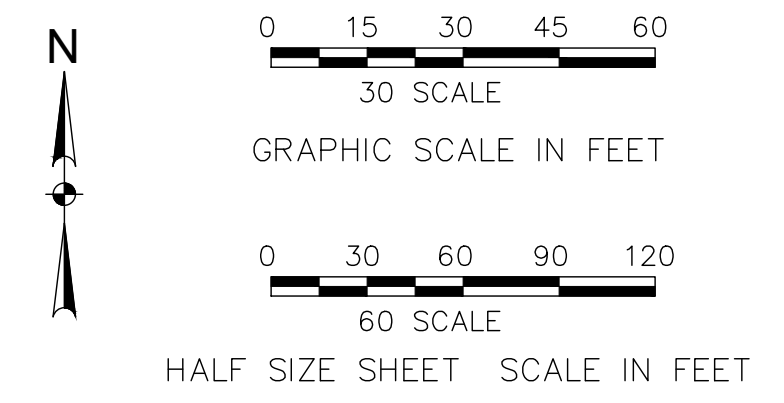
DEMOLITION SCHEDULE L101		
SYMBOL	DESCRIPTION	QTY
D-102	REMOVE SALVIA GREGGI AND IRRIGATION IN HATCHED AREA CAP OPEN IRRIGATION PIPES.	1,198 sf



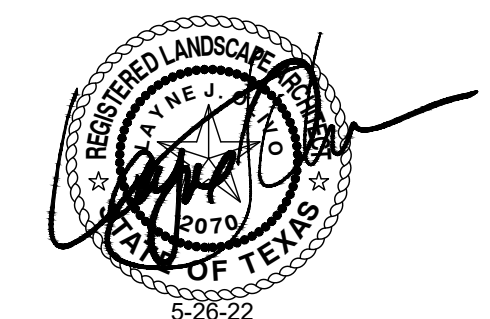
STA 364+50 - STA 372+00
 Full Size: 1" = 30'
 Half Size: 1" = 60'



STA 372+00 - STA 379+50
 Full Size: 1" = 30'
 Half Size: 1" = 60'



CALL TXDOT TRAFFIC MANAGEMENT CENTER (817-370-3661) FOR TXDOT LOCATES WHEN WORKING NEAR EXISTING TRAFFIC SIGNAL.

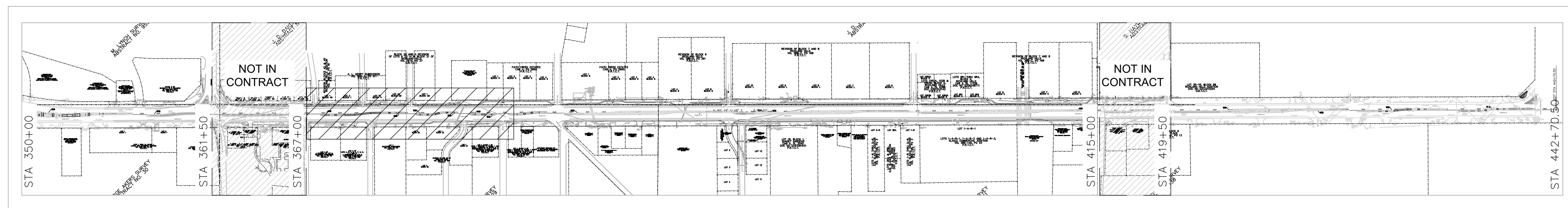


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DEMOLITION PLAN
 STA 364+50 - STA 379+50

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	31	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183



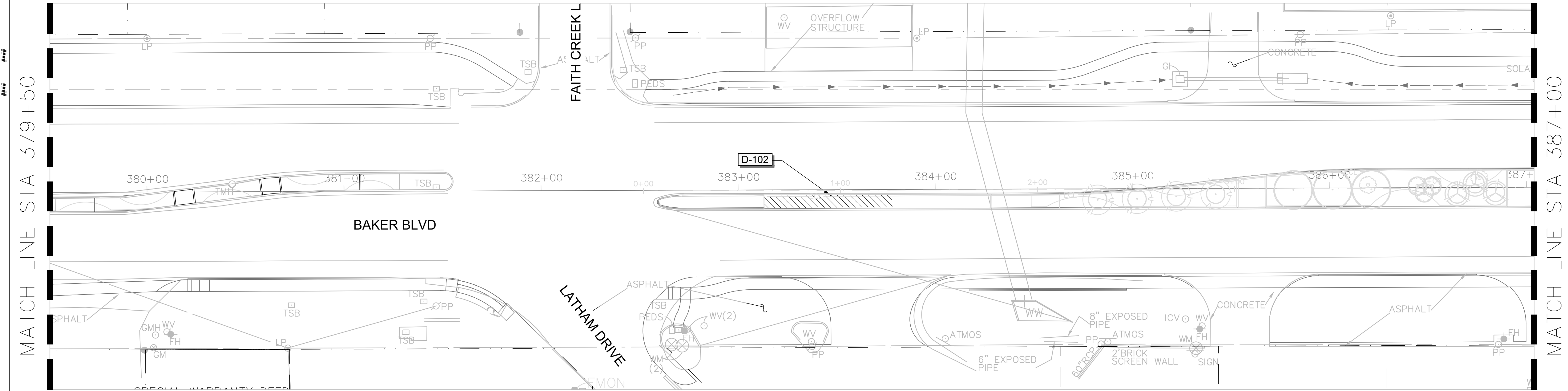
SHEET INDEX MAP
 N.T.S.

55335PL133333
 55335PL133333
 55335PL133333

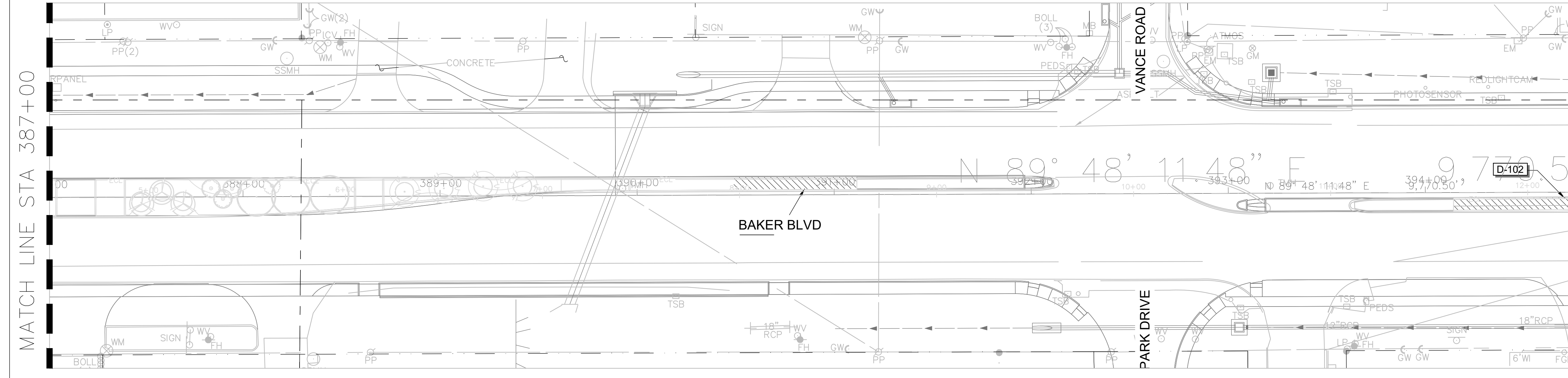
NOTE:
 1. ALL LANDSCAPE PLANTINGS AND MULCH SHOWN TO BE REMOVED SHALL BE DISPOSED OF OFF-SITE. EXISTING IRRIGATION SHALL BE CAREFULLY DISCONNECTED, TRACKED AND BE MADE READY FOR RE-USE AFTER REQUIRED FILL IS ADDED TO MEDIANS AND GRADING IS ACCEPTED BY THE OWNER. IRRIGATION REMOVAL, DISCONNECTION AND TRACKING SHALL BE INCIDENTAL TO ITEM 100-6002 "PREPARING ROW." MAINLINE IRRIGATION LINE TO REMAIN IN PLACE.
 2. PAYMENT FOR LANDSCAPE PLANTING REMOVAL SHALL BE PAID FOR UNDER ITEM 100-6002, PREPARING ROW.
 3. CONTRACTOR TO REMOVE ALL WEEDS AND DEBRIS FROM EXISTING GRAVEL BEDS. WEED AND DEBRIS REMOVAL SHALL BE PAID FOR UNDER ITEM 100-6002, PREPARING ROW.

DEMOLITION SCHEDULE L102

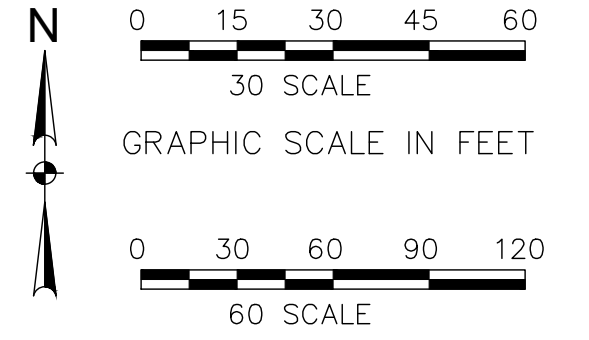
SYMBOL	DESCRIPTION	QTY
D-102	REMOVE SALVIA GREGGI AND IRRIGATION IN HATCHED AREA CAP OPEN IRRIGATION PIPES.	1,277 sf



STA 379+50 - STA 387+00
 Full Size: 1" = 30'
 Half Size: 1" = 60'



STA 387+00 - STA 395+00
 Full Size: 1" = 30'
 Half Size: 1" = 60'



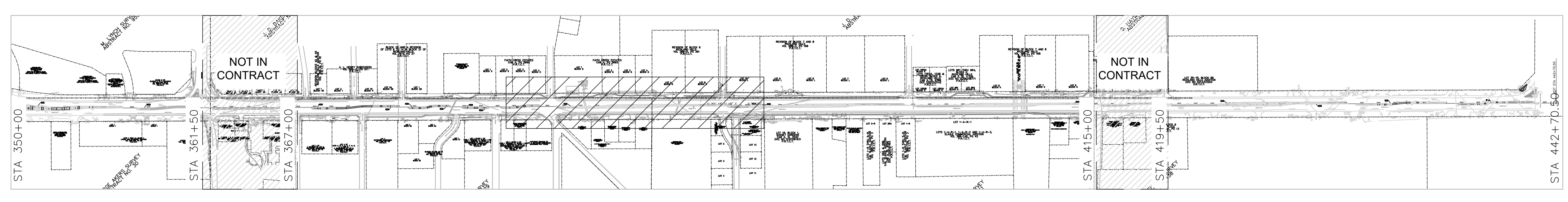
CALL TXDOT TRAFFIC MANAGEMENT CENTER (817-370-3661) FOR TXDOT LOCATES WHEN WORKING NEAR EXISTING TRAFFIC SIGNAL.

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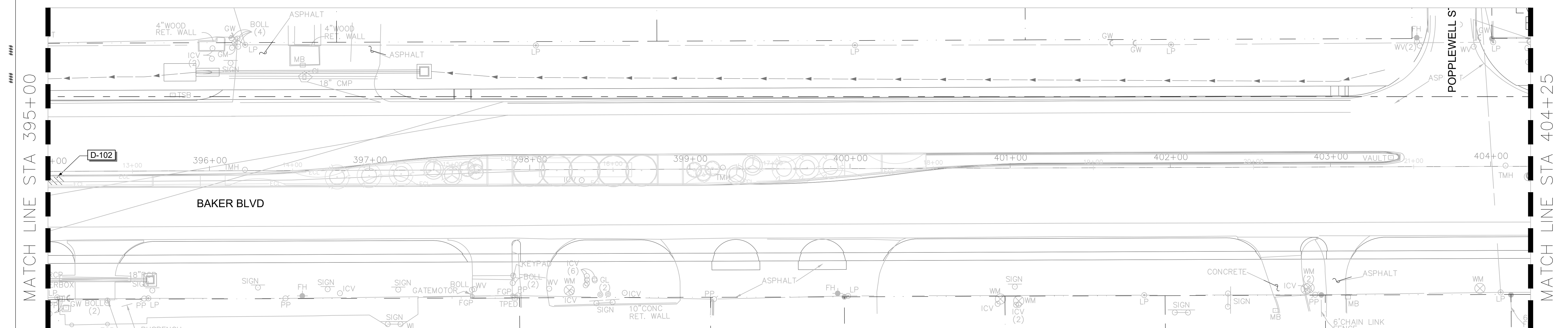
DEMOLITION PLAN
 STA 379+50 - STA 395+00

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	32	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183



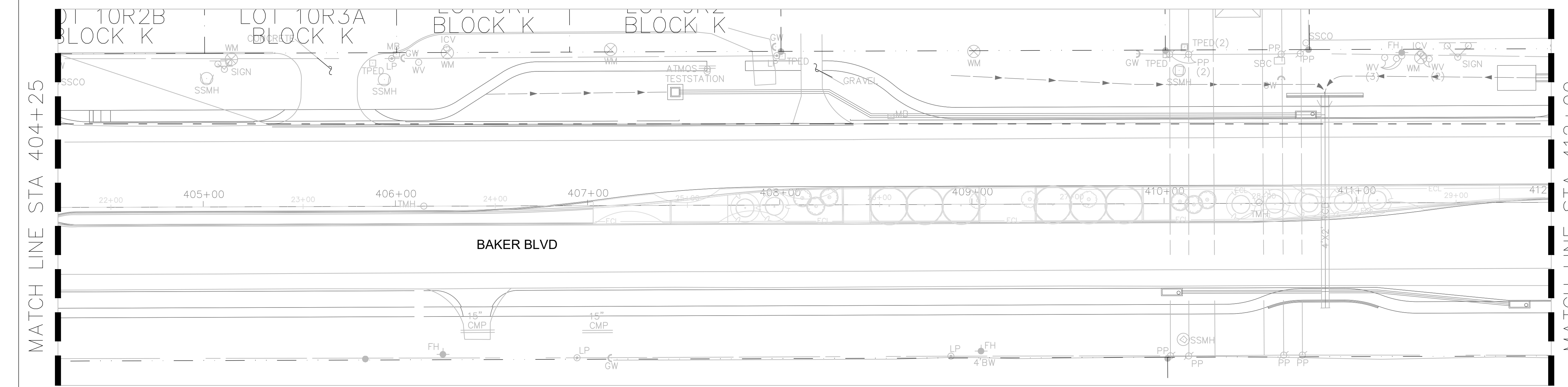
SHEET INDEX MAP
 N.T.S.

MATCH LINE STA 379+50
 MATCH LINE STA 387+00
 MATCH LINE STA 395+00
 STA 350+00
 STA 361+50
 STA 367+00
 STA 415+00
 STA 419+50
 STA 442+70.50



STA 395+00 - STA 404+00

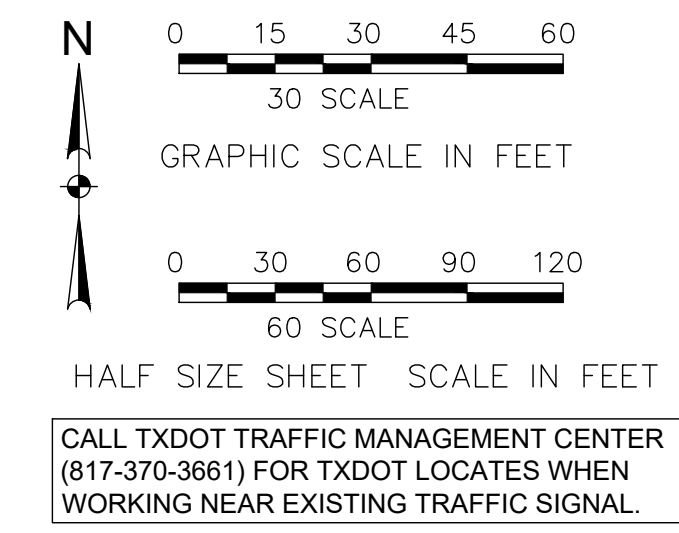
Full Size: 1" = 30'
Half Size: 1" = 60'



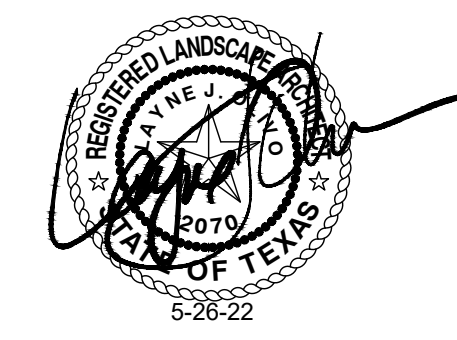
STA 404+00 - STA 412+00

Full Size: 1" = 30'
Half Size: 1" = 60'

NOTE:
1. ALL LANDSCAPE PLANTINGS AND MULCH SHOWN TO BE REMOVED SHALL BE CAREFULLY DISPOSED OF OFF-SITE. EXISTING IRRIGATION SHALL BE CAREFULLY DISCONNECTED, TRACED AND BE MADE READY FOR RE-USE AFTER REQUIRED FILL IS ADDED TO MEDIANS AND GRADING IS ACCEPTED BY THE OWNER. IRRIGATION REMOVAL, DISCONNECTION AND TRACKING SHALL BE INCIDENTAL TO ITEM 100-6002 "PREPARING ROW, MAINLINE IRRIGATION LINE TO REMAIN IN PLACE."
2. PAYMENT FOR LANDSCAPE PLANTING REMOVAL SHALL BE PAID FOR UNDER ITEM 100-6002, PREPARING ROW.
3. CONTRACTOR TO REMOVE ALL WEEDS AND DEBRIS FROM EXISTING GRAVEL BEDS. WEED AND DEBRIS REMOVAL SHALL BE PAID FOR UNDER ITEM 100-6002, PREPARING ROW.



CALL TXDOT TRAFFIC MANAGEMENT CENTER (817-370-3661) FOR TXDOT LOCATES WHEN WORKING NEAR EXISTING TRAFFIC SIGNAL.



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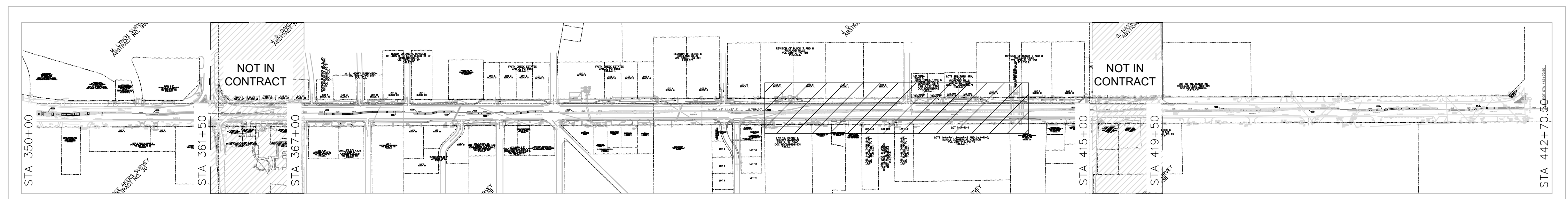
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DEMOLITION PLAN
STA 395+00 - STA 412+00

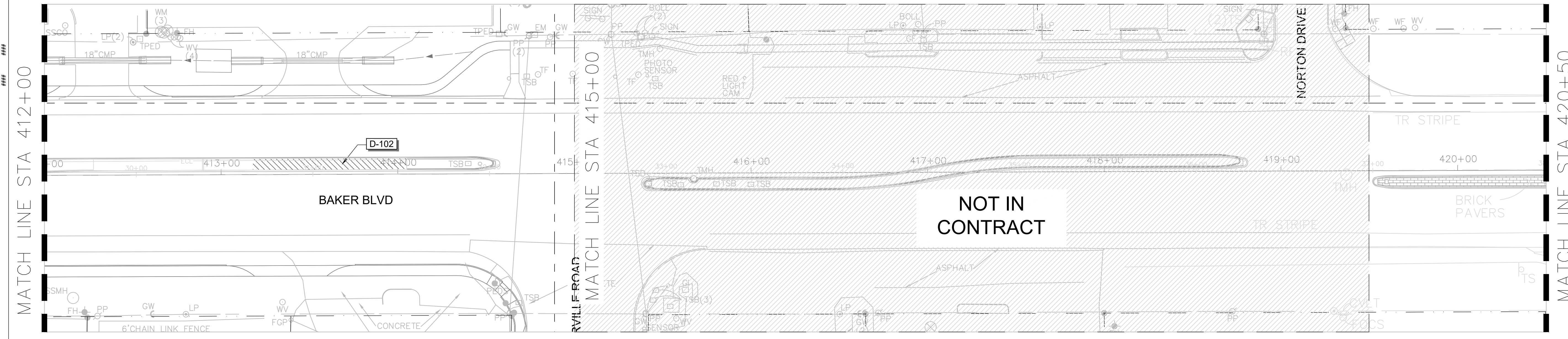
FED. RD. DIV. NO. 6	FEDERAL AID PROJECT NO. SEE TITLE SHEET	SHEET NO. 33
STATE TEXAS	DISTRICT FTW	COUNTY TARRANT
CONTROL 0094	SECTION 02	JOB 143
		HIGHWAY NO. FM 183

DEMOLITION SCHEDULE L103

SYMBOL	DESCRIPTION	QTY
D-102	REMOVE SALVIA GREGGI AND IRRIGATION IN HATCHED AREA CAP OPEN IRRIGATION PIPES.	54 sf

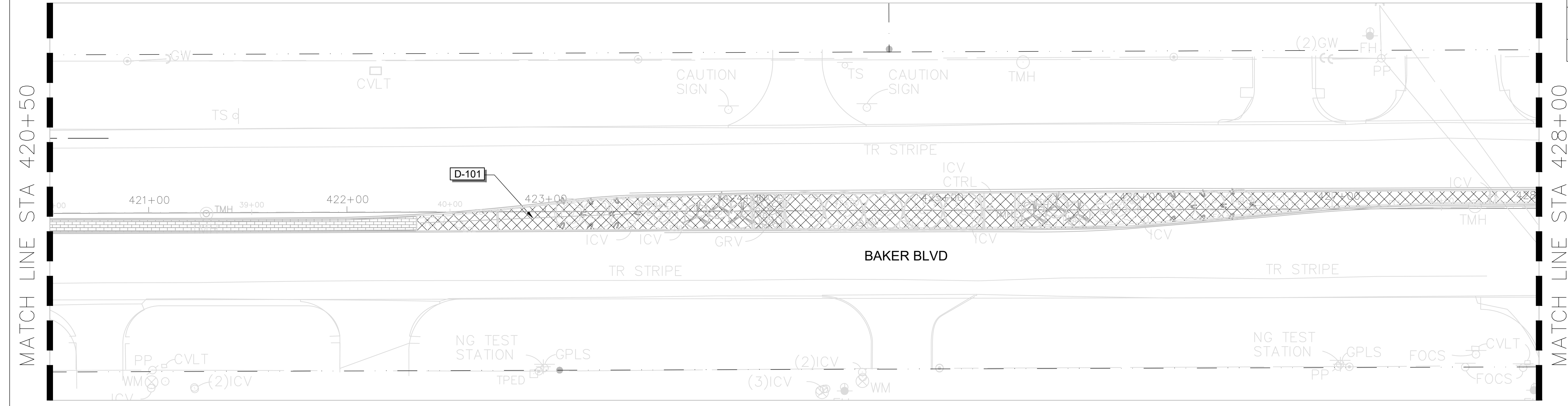


SHEET INDEX MAP
N.T.S.

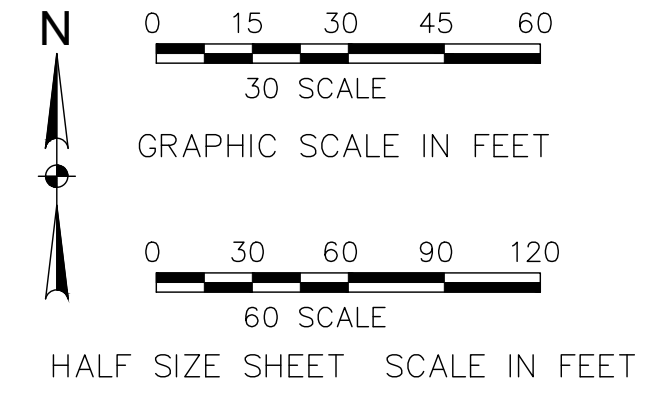


NOTE:
 1. ALL LANDSCAPE PLANTINGS AND MULCH SHOWN TO BE REMOVED SHALL BE DISPOSED OF OFF-SITE. EXISTING IRRIGATION SHALL BE CAREFULLY DISCONNECTED, TRACKED AND BE MADE READY FOR RE-USE AFTER REQUIRED FILL IS ADDED TO MEDIANS AND GRADING IS ACCEPTED BY THE OWNER. IRRIGATION REMOVAL, DISCONNECTION AND TRACKING SHALL BE INCIDENTAL TO ITEM 100-6002 "PREPARING ROW". MAINLINE IRRIGATION LINE TO REMAIN IN PLACE.
 2. PAYMENT FOR LANDSCAPE PLANTING REMOVAL SHALL BE PAID FOR UNDER ITEM 100-6002, PREPARING ROW.
 3. CONTRACTOR TO REMOVE ALL WEEDS AND DEBRIS FROM EXISTING GRAVEL BEDS. WEED AND DEBRIS REMOVAL SHALL BE PAID FOR UNDER ITEM 100-6002, PREPARING ROW.

STA 412+00 - STA 419+50
 Full Size: 1" = 30'
 Half Size: 1" = 60'

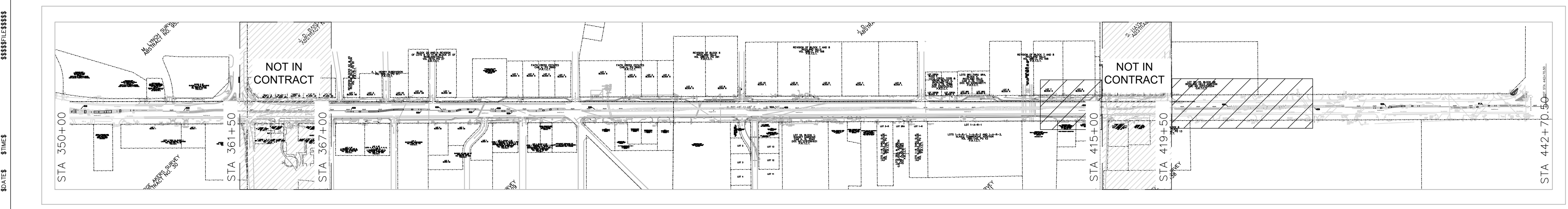


DEMOLITION SCHEDULE L104		
SYMBOL	DESCRIPTION	QTY
D-101	REMOVE ALL PLANTING, CONCRETE MOWSTRIPS, GRAVEL, AND IRRIGATION IN HATCHED AREA CAP OPEN IRRIGATION PIPES.	7,627 sf
D-102	REMOVE SALVIA GREGGI AND IRRIGATION IN HATCHED AREA CAP OPEN IRRIGATION PIPES.	538 sf

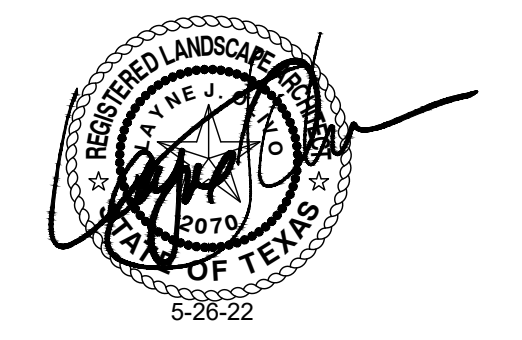


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STA 419+50 - STA 428+00
 Full Size: 1" = 30'
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DEMOLITION PLAN
 STA 412+00 - STA 428+00

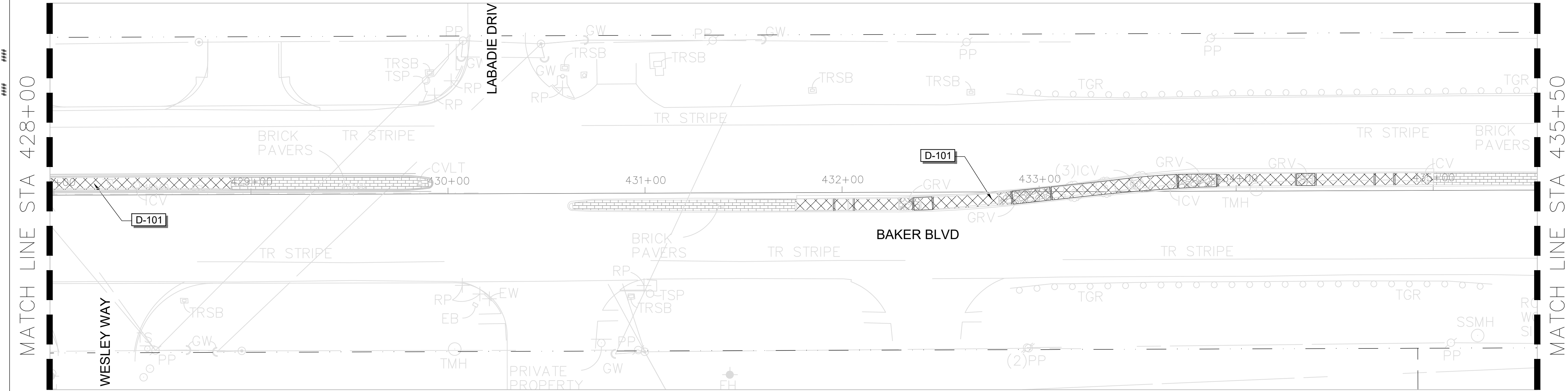
FED.RD. DIV.NO. 6	FEDERAL AID PROJECT NO. SEE TITLE SHEET	SHEET NO. 34
STATE TEXAS	DISTRICT FTW	COUNTY TARRANT
CONTROL 0094	SECTION 02	JOB 143
		HIGHWAY NO. FM 183

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 DATE: 2022/05/05 TIME: 10:27 AM
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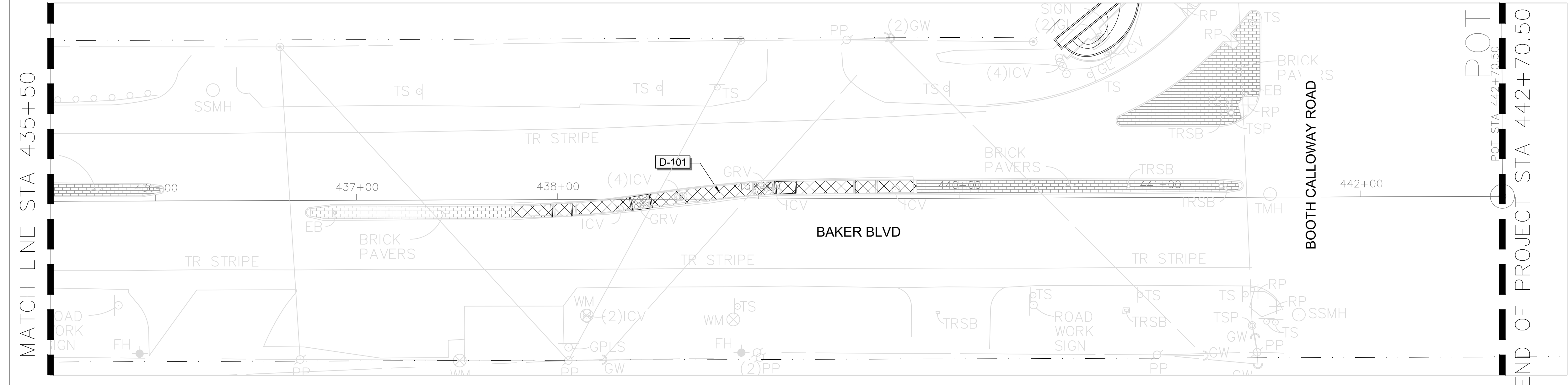
- NOTE:
1. ALL LANDSCAPE PLANTINGS AND MULCH SHOWN TO BE REMOVED SHALL BE DISPOSED OF OFF-SITE. EXISTING IRRIGATION SHALL BE CAREFULLY DISCONNECTED, TRACKED AND BE MADE READY FOR RE-USE. AFTER REQUIRED FILL IS ADDED TO MEDIANS AND GRADING IS ACCEPTED BY THE OWNER, IRRIGATION REMOVAL, DISCONNECTION AND TRACKING SHALL BE INCIDENTAL TO ITEM 100-6002 "PREPARING ROW". MAINLINE IRRIGATION LINE TO REMAIN IN PLACE.
 2. PAYMENT FOR LANDSCAPE PLANTING REMOVAL SHALL BE PAID FOR UNDER ITEM 100-6002, PREPARING ROW.
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DEMOLITION SCHEDULE L105

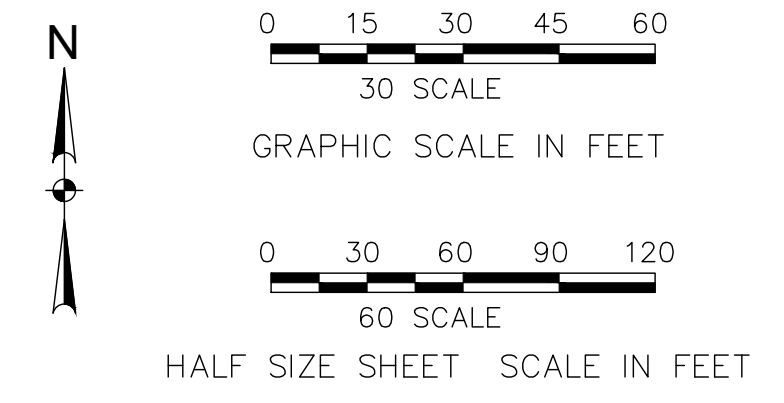
SYMBOL	DESCRIPTION	QTY
D-101	REMOVE ALL PLANTING, CONCRETE MOWSTRIPS, GRAVEL, AND IRRIGATION IN HATCHED AREA CAP OPEN IRRIGATION PIPES.	3,942 sf



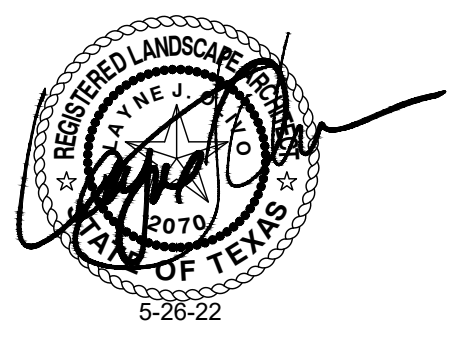
STA 428+00 - STA 435+50
 Full Size: 1" = 30'
 Half Size: 1" = 60'



STA 435+50 - STA 442+70.5
 Full Size: 1" = 30'
 Half Size: 1" = 60'



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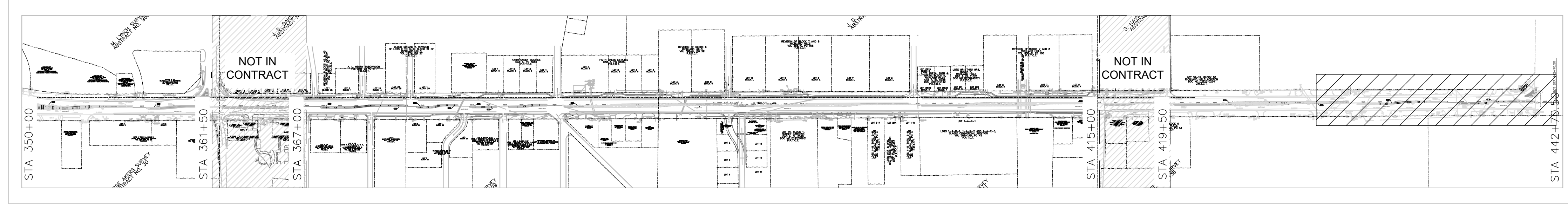


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DEMOLITION PLAN
 STA 428+00 - STA 442+70.50

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6	SEE TITLE SHEET	35	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183



SHEET INDEX MAP
 N.T.S.

USER ID

SURFACE PREPARATION ITEM 160* TOPSOIL SY / ITEM 161* COMPOST MANUF. TOPSOIL (BOS) (4") SY

SURFACE PREPARATION

Prepare planting area surface BEFORE placing Topsoil, Compost, Fertilizer, Seed and/or Sod. Once project area has been completed to final lines, grade and compaction, remove objectionable materials from planting area surface and cultivate existing surface to a depth of 4 inches, unless otherwise specified or directed.

Refer to Items 160 and 161 of TxDOT 2014 Standard Specifications* for specifications, dimensions, volumes, and measurements that have been modified or not shown in plans. Materials and construction shall meet all specifications.

TOPSOIL NOTES:

- When Topsoil is specified under Item 160, use suitable material salvaged from the project ROW in accordance with Item 160 specifications, and/or secure additional good material from approved sources.
- Topsoil shall include only the top 6 inches of its native surface, and be easily cultivated, fertile, erosion-resistant and free of objectionable materials.
- Topsoil obtained from sites outside of the ROW must come from approved sources and have a pH between 5.5 and 8.5 su.
- Place Topsoil on pre-cultivated surface, spread to a uniform loose cover at thickness specified, and shape per plans. Water and roll the finished surface with a light roller or other suitable equipment per Item 160.3; do not over-compact.

COMPOST NOTES:

- When Compost Manufactured Topsoil (4") is specified under Item 161, use compost meeting all requirements of Item 161.2 and Table 1. Provide quality control (QC) documentation and obtain Engineer approval prior to compost delivery.
- Contractor shall provide tickets/invoices that document material type, quantity and placement for all compost delivered.
- Additional topsoil may be required to be imported to achieve the compost/topsoil mix ratio. Topsoil must meet Item 160 specifications.

APPLICATION OF COMPOST MANUFACTURED TOPSOIL (4")

AFTER Surface Preparation, uniformly spread a 1-inch layer of compost on-grade with 3 inches topsoil over pre-cultivated planting area. (25% compost and 75% topsoil = 1" compost and 3" topsoil.) Then mix compost and topsoil together by cultivating the compost into the topsoil (by till or disk) to a 4-inch (4") depth. Roll the finished surface with a light corrugated drum; do not over-compact.

FERTILIZER ITEM 166* FERTILIZER AC

SOIL ANALYSIS FOR FERTILIZER APPLICATION RATE

Unless otherwise stated in the plans, Contractor shall perform at least one soil analysis on each project before fertilization, and submit results to Engineer with recommended fertilizer rates based on soil analysis. Engineer may direct sample location(s). Soil analysis may be waived if both compost and sod are used on entire project.

FERTILIZER NOTES:

- Refer to Item 166 of TxDOT 2014 Standard Specifications* for specifications, dimensions, volumes, and measurements that have been modified or not shown in plans. Materials and construction shall meet all specifications.
- Apply fertilizer BEFORE seeding, or AFTER placing sod.
- Use fertilizer containing nitrogen (N), phosphoric acid (P) and potash (K) nutrients, unless otherwise specified. At least 50% of the Nitrogen component shall be a slow-release sulfur-coated urea as described in Item 166.3. Do not apply more than 60 lbs Nitrogen per acre without Engineer concurrence.
- Deliver fertilizer in bags, clearly labeled to show contents, unless otherwise specified or approved prior to delivery. When non-bagged, loose fertilizer is approved, provide documentation for each load of material delivered, to validate authenticity of the material.
- Apply fertilizer uniformly, as a dry, granular material, essentially dust-free, and do not mix with water for application as a slurry.
- When both temporary and permanent seeding are specified for the same area, apply half of the required fertilizer before the temporary seeding operation and the other half before the permanent seeding operation.

SEEDING FOR EROSION CONTROL ITEM 164* DRILL SEEDING AC

RECOMMENDED PLANTING SEASON	PERMANENT RURAL SEED MIX ITEM 164 – DRILL SEEDING (PERM) (RURAL)(CLAY)	PERMANENT URBAN SEED MIX ITEM 164 – DRILL SEEDING (PERM) (URBAN)(CLAY)	TEMPORARY DRILL SEED MIX ITEM 164 – DRILL SEEDING (TEMP) (WARM OR COOL)
	Pure Live Seed Rate **	Pure Live Seed Rate **	Pure Live Seed Rate **
WARM SEASON Mar.15th, April, May, June, July, August, Sept. 15th	Green Sprangletop (Van Horn) – 1.0 lbs/AC Sideoats Grama (Haskell) – 1.0 lbs/AC Texas Grama (Atascosa) – 1.0 lbs/AC Hairy Grama (Chaparral) – 0.4 lbs/AC Shortspike Windmillgrass (Welder) – 0.2 lbs/AC Little Bluestem (OK Select) – 0.8 lbs/AC Purple Prairie Clover (Cuero) – 0.6 lbs/AC Engelmann Daisy (Eldorado) – 0.75lbs/AC Illinois Bundleflower – 1.3 lbs/AC Awnless Bushsunflower (Plateau) – 0.2 lbs/AC	Green Sprangletop (Leptochloa dubia) – 0.3 lbs/AC Sideoats Grama (El Reno)(Bouteloua curtipendula) – 3.6 lbs/AC Buffalograss (Texoka)(Buchloe dactyloides) – 1.6 lbs/AC Bermudagrass (Cynodon dactylon) – 2.4 lbs/AC	Foxtail Millet (Setaria italica) – 34 lbs/AC
COOL SEASON Sept 16th, Oct, Nov, Dec, Jan, Feb, Mar 14th			Pure Live Seed Rate **
			Tall Fescue (Festuca arundinaceae) – 4.5 lbs/AC Western Wheatgrass (Agropyron smithii) – 5.6 lbs/AC Red Winter Wheat (Triticum aestivum) – 34 lbs/AC Cereal Rye – 34 lbs/AC

SEEDING NOTES:

- When seeding is specified under Item 164, refer to TxDOT 2014 Standard Specifications* for specifications, dimensions, volumes, and measurements that have been modified or not shown. Materials and construction shall meet specifications.
- Conduct seeding upon completion of each applicable construction stage (dependent upon planting season requirements), without compensation for additional move-ins.
- Place seed AFTER preparing planting area surface. Refer to Surface Preparation detail this sheet, as well as Topsoil Item 160 and Compost Manufactured Topsoil Item 161 when specified. Apply fertilizer per Item 166 BEFORE seeding, per specifications and this sheet, to help drill the fertilizer into the soil.
- When temporary grasses are well-established and more than 2 inches tall, mow planting area before seeding permanent grasses; mowing for this purpose will be subsidiary. When vegetation is not already well-established, cultivate planting area to a depth as described in Item 164.3, before temporary seeding and before permanent seeding.
- Seed material must be appropriate to the location, soil type and season. Use the seed mix species and pure live seed rates designated in Tables 1-4 of the TxDOT 2014 Standard Specifications* for Item 164, unless otherwise specified.
- All seed shall meet labeling, delivery, analysis, and testing requirements described in Item 164.2.1. Deliver seed in labeled, unopened bags or containers to Engineer prior to planting.
- Uniformly plant seed over the designated planting area, along the contour of slopes, and drill seed to a depth as described in Item 164.3.4.
- Hydroseeding may be allowed, when specified or Engineer concurs.
- Implement and continue Vegetative Watering per the schedule, rate and volume specified under Item 168.

TxDOT REFERENCE MATERIALS:

- * "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES" 2014
- "A GUIDANCE TO ROADSIDE VEGETATION ESTABLISHMENT" 2004
- ONLINE TRAINING COURSE: MNT415 REVEGETATION DURING CONSTRUCTION
- DALLAS DISTRICT "VEGETATION ESTABLISHMENT GUIDELINES"

SODDING FOR EROSION CONTROL ITEM 162* BLOCK SOD (BERMUDA) SY

BLOCK OR ROLL SOD	COMMON NAME	BOTANICAL NAME
	Common Bermuda Grass	Cynodon dactylon

SODDING NOTES:

- Refer to Item 162 of TxDOT 2014 Standard Specifications* for specifications, dimensions, volumes, and measurements that have been modified or not shown in plans. Materials and construction shall meet all specifications.
- Place sod between the average date of the last freeze in the Spring and 6 weeks before the average date of the first freeze in the Fall, per the Texas Almanac for the project area.
- Place sod only AFTER soil surface preparation is complete as detailed in this sheet. Dry soil may require pre-watering.
- Place all sod (blocks or rolls) within 24 hours of delivery to the site, and keep moist from the time it is dug up until it is planted. Sod with dried roots will not be accepted.
- Place sod with joints alternating on each row to prevent all joints from lining up, and place blocks firmly against adjacent blocks. Roll, tamp and trim sod per Item 162.3.
- Place fertilizer promptly AFTER sodding operation is complete in each area.
- Water sod immediately following placement, and continue Vegetative Watering per Item 168.

VEGETATIVE WATERING FOR ESTABLISHING SEED AND SOD ITEM 168* VEGETATIVE WATERING MG

SEASON (Usual Months)	RATE	TIME SCHEDULE	TOTAL WATER ESTIMATE
SPRING & FALL (March, April, May, October)	7,000 gallons/acre per working day	Vegetative watering for seed shall begin on the day after rainfall described below and continue for 60 consecutive working days; vegetative watering for sod shall begin on the day the sod is placed and continue for a minimum of 15 consecutive working days.	420,000 gallons/acre (60 working days)
SUMMER (June, July, August, September)	12,000 gallons/acre per working day		720,000 gallons/acre (60 working days)
WINTER (November through February)	1,000 gallons/acre per working day	Vegetative watering for seed and/or sod shall begin on the day after placement for 15 consecutive working days	15,000 gallons/acre (15 working days)

Notes: Rate and frequency may be adjusted, with the approval of the Engineer, to meet site conditions (especially with sod). For informational purposes only: 1,000 gallons equals 1 MG

VEGETATIVE WATERING NOTES:

- Refer to Item 168 of TxDOT 2014 Standard Specifications* for specifications, dimensions, volumes, and measurements that have been modified or not shown in plans. Materials and construction shall meet all specifications.
- Use clean water free of industrial waste and other substances harmful to vegetation growth, per Item 168.2.
- Use Vegetative Watering to keep the seed bed moist during germination; not to provide initial watering. After drill seeding, postpone watering operations until site receives at least 1/2-inch of natural rainfall in a single day. Delay watering operations for warm season grasses until soil temperature exceeds 70 degrees F.
- For sod, water immediately.
- All water distribution equipment shall be furnished and operated to provide water at a uniform and controllable rate. Use a metering device on all watering equipment.
- Evenly distribute water over entire area designated for seeding and/or sodding, using even spray patterns that do not disturb seed bed and/or dislodge seed from seed bed.
- Do not water between the hours of 12:00 p.m. and 6:00 p.m. when daytime temperatures exceed 95 degrees F.
- After initial establishment period, continue intermittent watering of newly established seed or sod at a rate of approximately 1-inch water/week, during summer months until end of contract.
- If 1/4-inch or more of rainfall occurs on site on any given working day, no vegetative watering will be needed on that working day. (Note: 1/4-inch rain equals 7,000 gallons of water per acre.)
- Should the Contractor fail to apply the specified amount of water within the time allowed, any seed or sod in poor condition shall be replaced, fertilized, and watered at Contractor's expense.

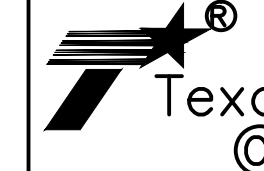
ROADSIDE MOWING ITEM 730* PROJECT MAINTENANCE AC

MOWING NOTES:

- During project construction, once seed is established, use mowing to promote permanent grasses by mowing any remaining temporary grasses.
- Also mow established turf and ROW grasses in designated areas of project limits as specified or directed by Engineer.
- Remove litter and debris prior to mowing.
- Do not mow on wet ground when soil rutting can occur.
- Hand-trim around obstructions and stormwater control devices as needed.
- Maintain paved surfaces free of tracked soils and clipped vegetation.

SEQUENCE OF WORK:

- CULTIVATE SURFACE SOIL.
- PREPARE / PLACE TOPSOIL, OR
- PREPARE / PLACE COMPOST MANUFACTURED TOPSOIL.
- APPLY FERTILIZER AND THEN PLACE SEEDING, OR
- PLACE SOD AND THEN APPLY FERTILIZER.
- CONDUCT VEGETATIVE WATERING.
- CONDUCT ROADSIDE MOWING, AS DIRECTED.

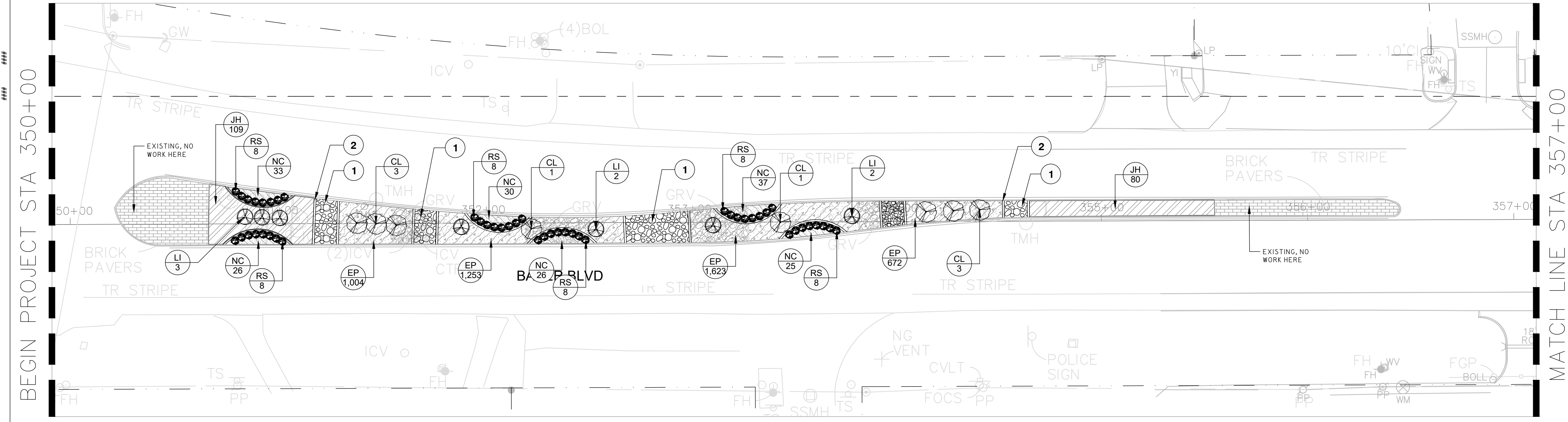


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VEGETATION ESTABLISHMENT SHEET
(FORT WORTH DISTRICT)
TEMPLATE REVISION DATE: 02/21/19

DESIGN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
GRAPHICS	6	(See Title Sheet)		SHEET NO.
CHECK	STATE	DISTRICT	COUNTY	36
CHECK	TEXAS	FTW	JOB	
	CONTROL	SECTION	JOB	

DATE



PLANT SCHEDULE STA 350+00 - 364+50

TREES	QTY	COMMON NAME	CONT
CL	8	Desert Willow	30 GAL
LI	7	Crape Myrtle	30G

SHRUBS	QTY	COMMON NAME	CONT
RS	48	Snow White Indian Hawthorn	1 GAL

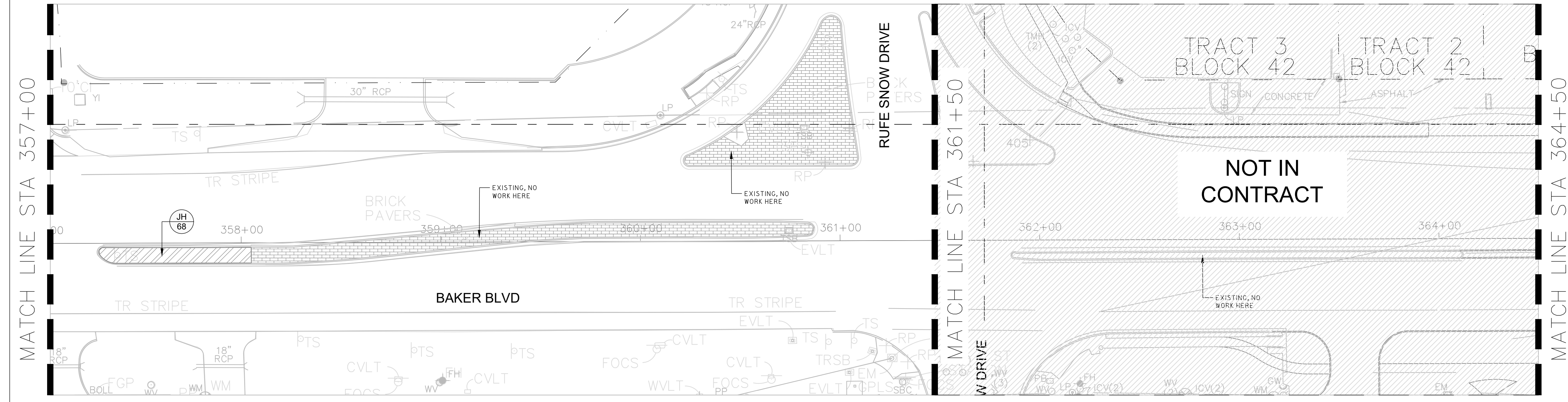
SHRUB AREAS	QTY	COMMON NAME	CONT
NC	177	Catmint	1 GAL

GROUND COVERS	QTY	COMMON NAME	CONT
EP	4,551	Purple Wintercreeper	4" pot
JH	257	Creeping Juniper	1 GAL

REFERENCE NOTES SCHEDULE STA 350+00 - 364+50

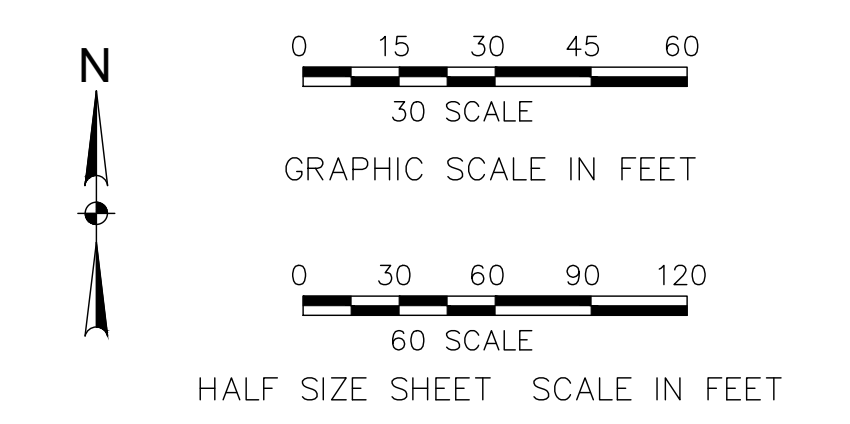
SYMBOL	DESCRIPTION	QTY
①	DECORATIVE ROCK (1 1/2" - 2")	14.52 cy
②	192 6097 CONCRETE LANDSCAPE EDGE (12" WIDTH)	375 lf
③	192 6013 LANDSCAPE PLANTING (MULCH)	57.68 cy
④	161 6024 GENERAL COMPOST (2")	38.45 cy

STA 350+00 - STA 357+00
 Full Size: 1" = 30'
 Half Size: 1" = 60'



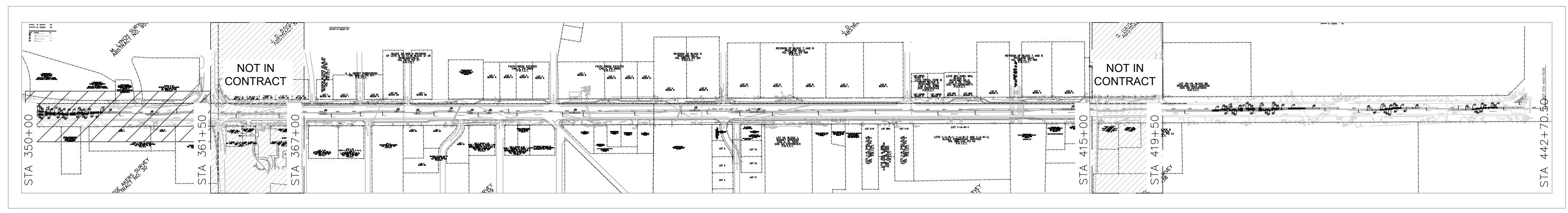
GENERAL NOTES

1. THE ENTIRE LIMITS OF IMPROVEMENTS WERE SURVEYED. ALL LINWORK IS APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO CONTRACTORS SUBMITTING THEIR BID.
2. ALL UTILITIES SHOWN ON PLANS ARE APPROPRIATE AUTHORITIES.
3. REFERENCE SHEET 44 - PLANTING DETAILS FOR ENTIRE PLANT SCHEDULE.

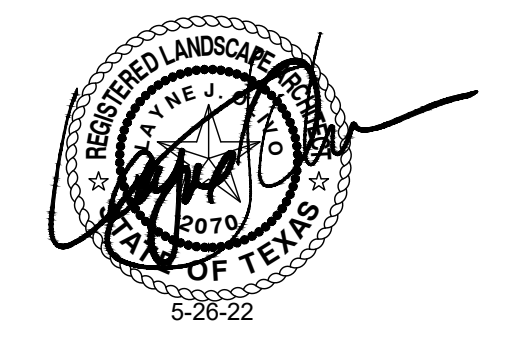


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STA 357+00 - STA 364+50
 Full Size: 1" = 30'
 Half Size: 1" = 60'



SHEET INDEX MAP
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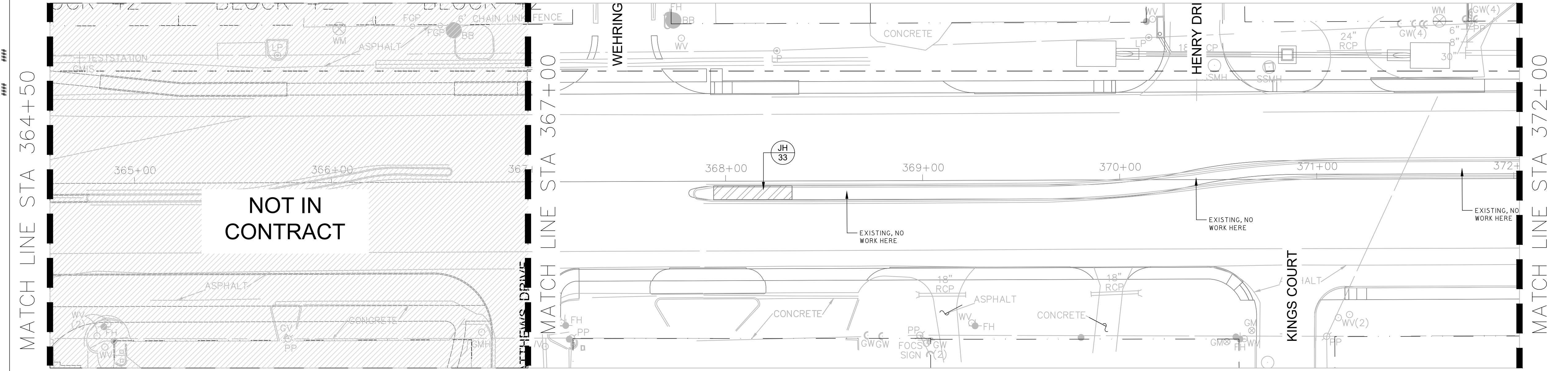
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PLANTING PLAN
 STA 350+00 - STA 364+50

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	38	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183

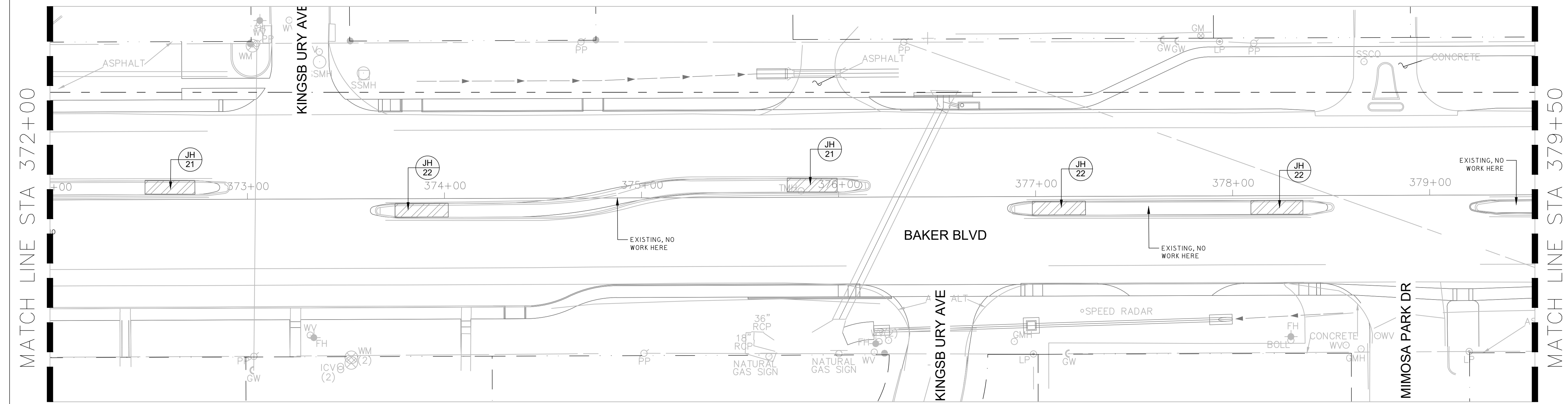
PLANT SCHEDULE STA 364+50 - 379+50

GROUND COVERS	QTY	COMMON NAME	CONT
JH	141	Creeping Juniper	1 GAL



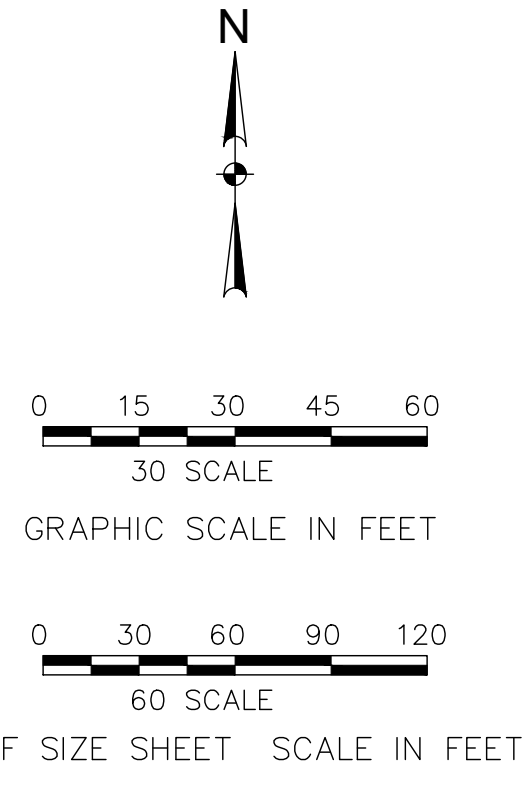
STA 364+50 - STA 372+00

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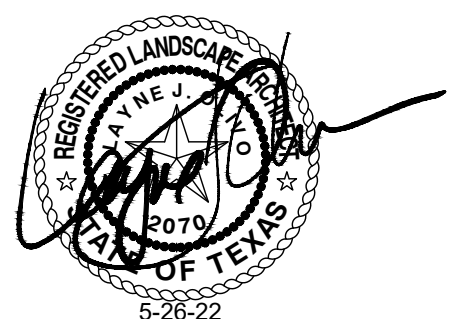


STA 372+00 - STA 379+50

Full Size: 1" = 30'
Half Size: 1" = 60'



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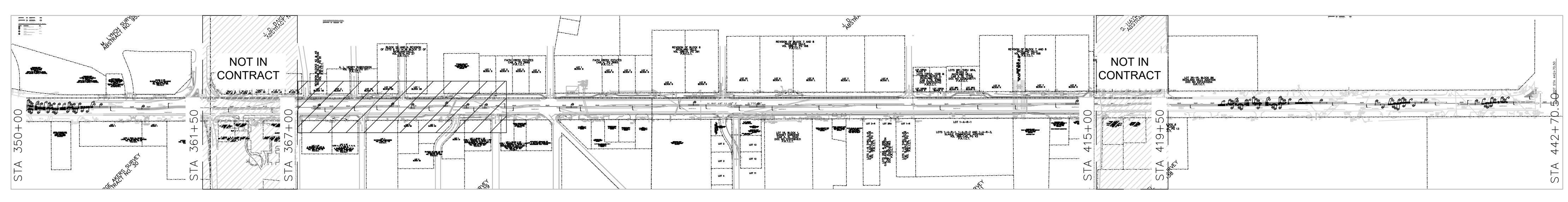


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PLANTING PLAN
STA 364+50 - STA 379+50

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	39	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183

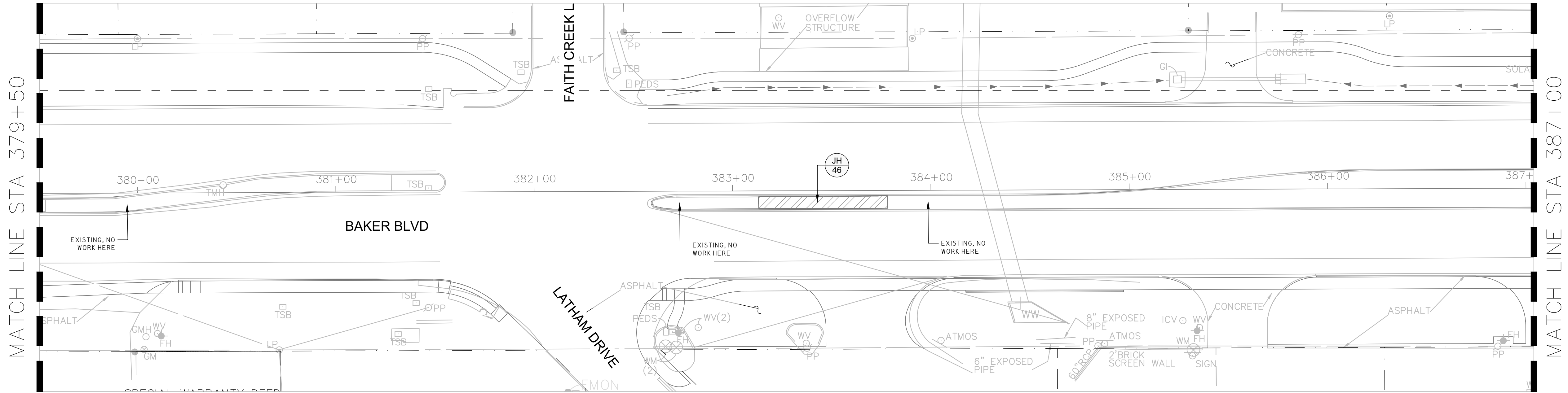


SHEET INDEX MAP
N.T.S.

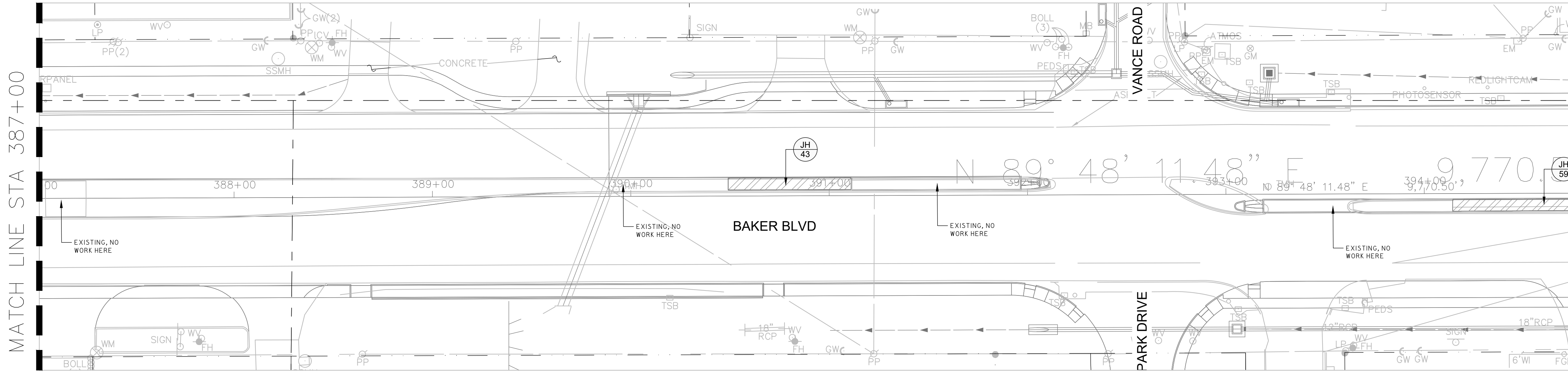
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PLANT SCHEDULE STA 379+50 - 395+00

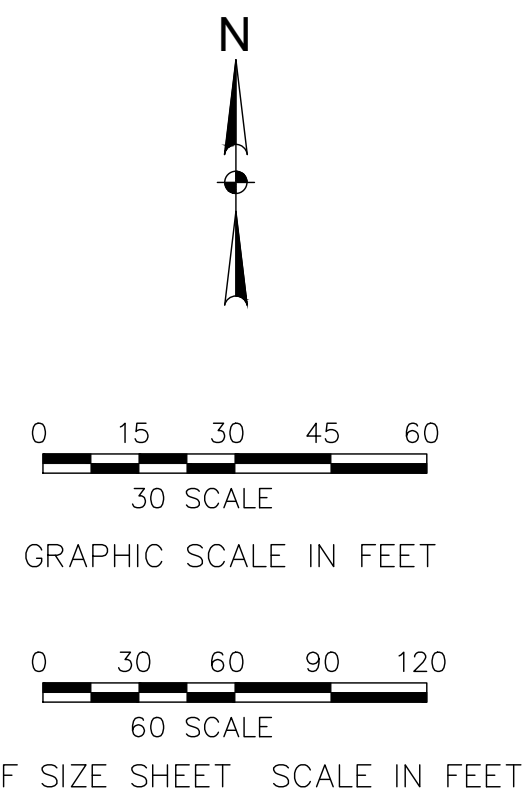
GROUND COVERS	QTY	COMMON NAME	CONT
JH	149	Creeping Juniper	1 GAL



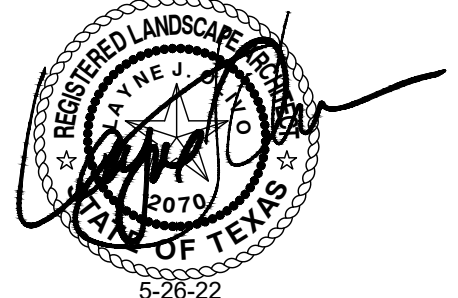
STA 379+50 - STA 387+00
Full Size: 1" = 30'
Half Size: 1" = 60'



STA 387+00 - STA 395+00
Full Size: 1" = 30'
Half Size: 1" = 60'



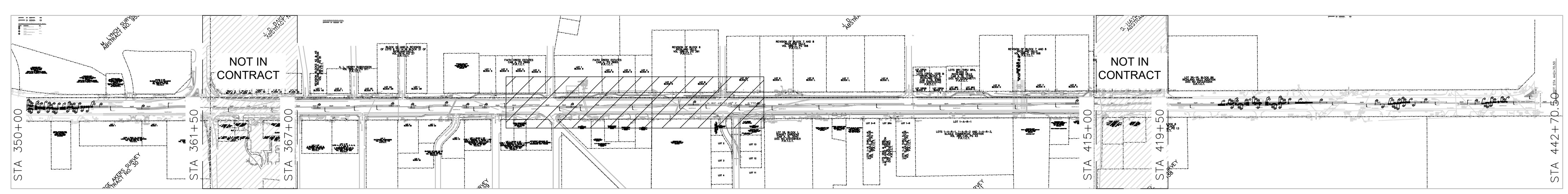
CALL TXDOT TRAFFIC MANAGEMENT CENTER (817-370-3661) FOR TXDOT LOCATES WHEN WORKING NEAR EXISTING TRAFFIC SIGNAL.



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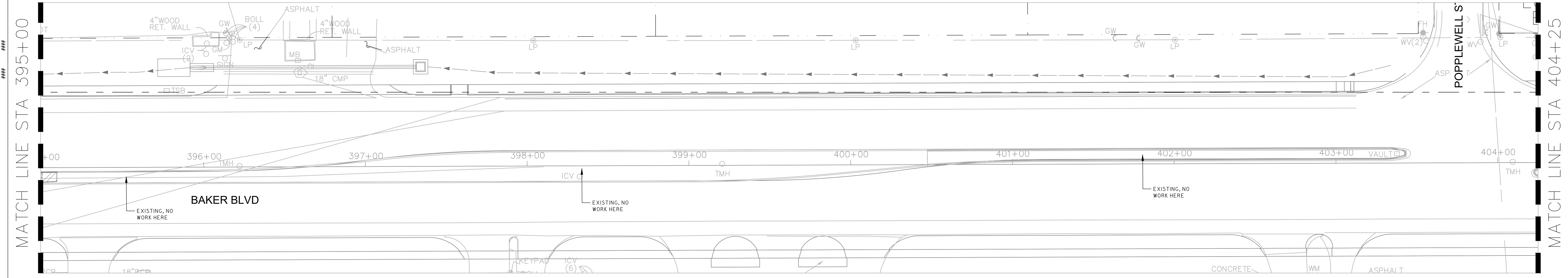
PLANTING PLAN
STA 379+50 - STA 395+00



SHEET INDEX MAP
N.T.S.

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	40	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183

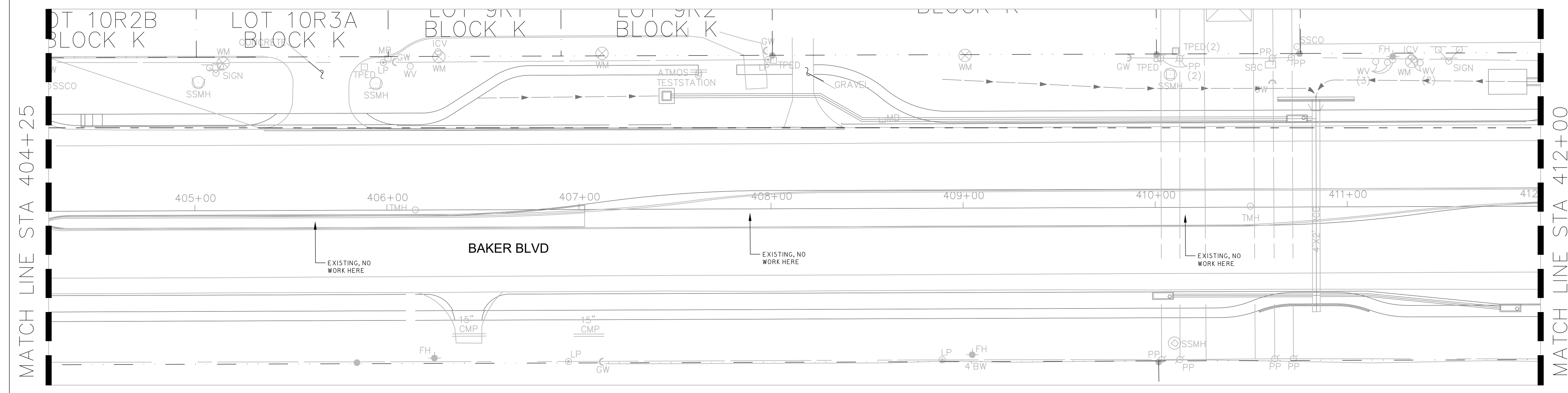
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DATE - 2022/05/10 TIME - 10:47 AM
USER - jhalff PLOT - 100% PLOT - 100%



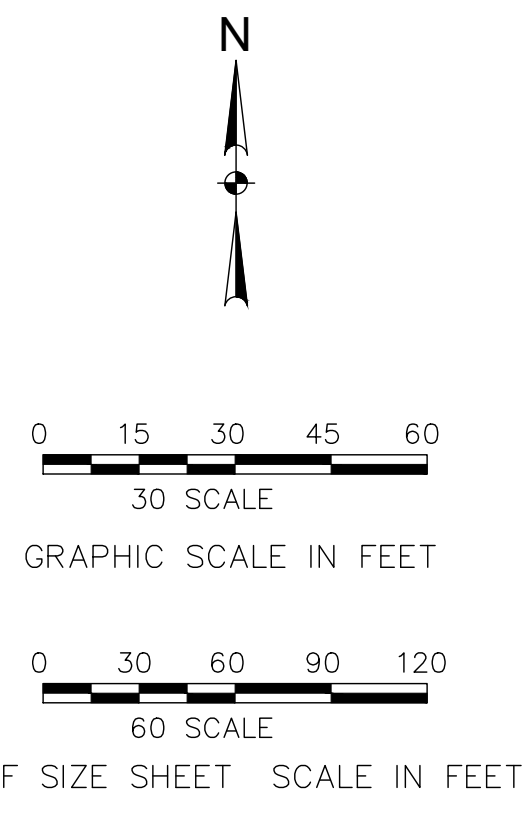
STA 395+00 - STA 404+00
 Full Size: 1" = 30'
 Half Size: 1" = 60'

PLANT SCHEDULE 395+00 - 412+00

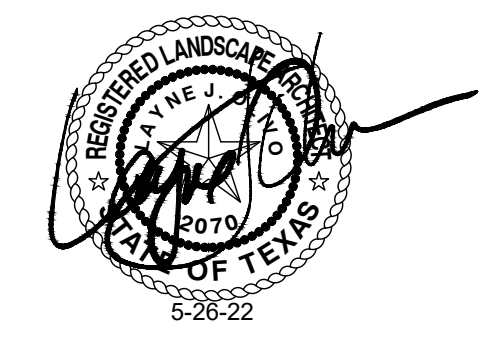
GROUND COVERS	QTY	COMMON NAME	CONT
JH	7	Creeping Juniper	1 GAL



STA 404+00 - STA 412+00
 Full Size: 1" = 30'
 Half Size: 1" = 60'



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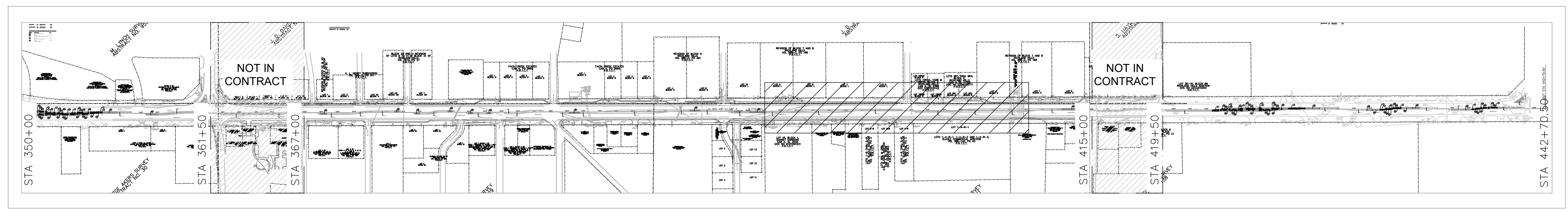


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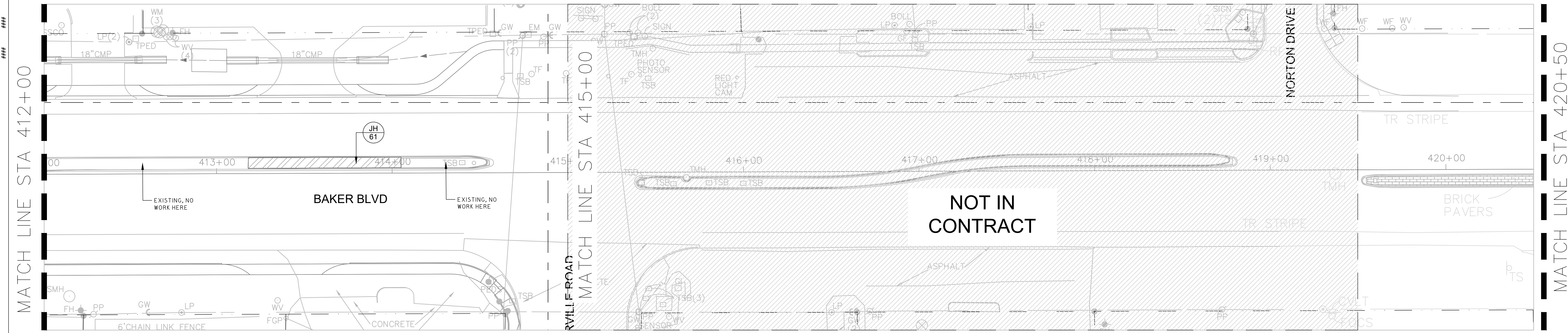
PLANTING PLAN
 STA 395+00 - STA 412+00

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	41	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183

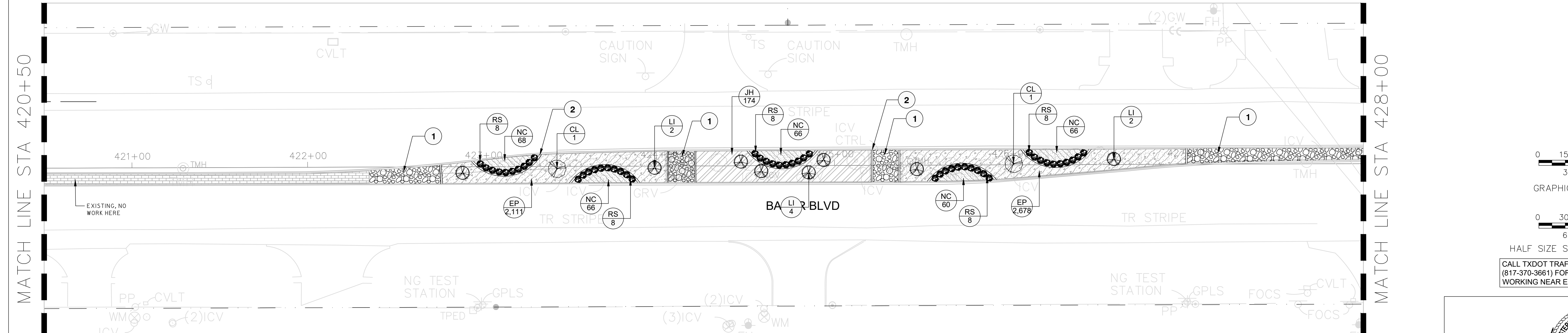


SHEET INDEX MAP
 N.T.S.

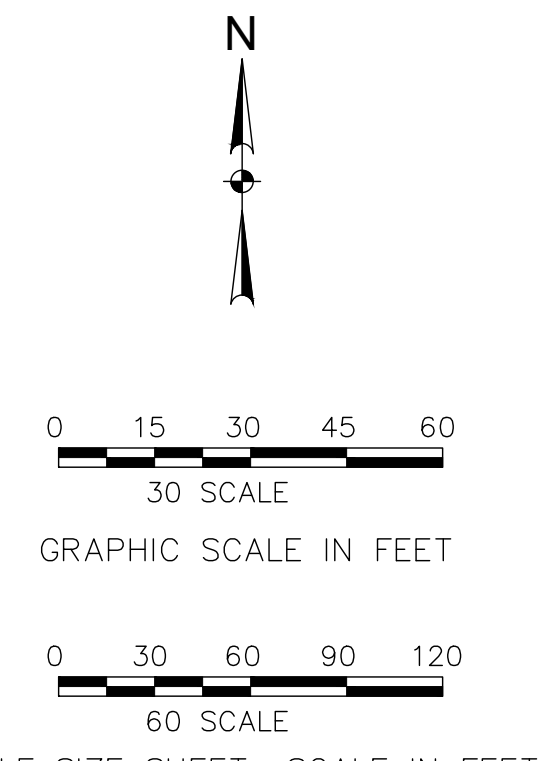
GROUND COVERS	QTY	COMMON NAME	CONT
JH	7	Creeping Juniper	1 GAL



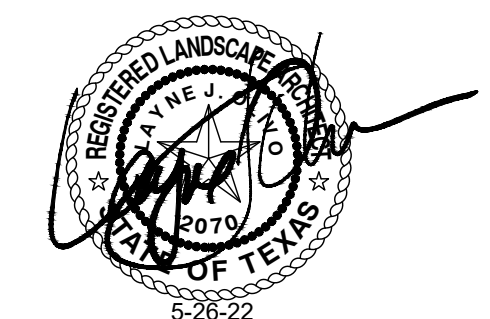
STA 412+00 - STA 419+50
 Full Size: 1" = 30'
 Half Size: 1" = 60'



STA 419+50 - STA 428+00
 Full Size: 1" = 30'
 Half Size: 1" = 60'



CALL TXDOT TRAFFIC MANAGEMENT CENTER (817-370-3661) FOR TXDOT LOCATES WHEN WORKING NEAR EXISTING TRAFFIC SIGNAL.

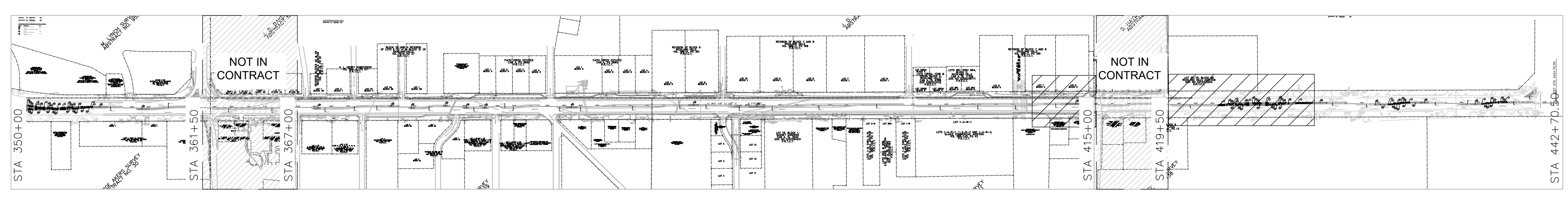


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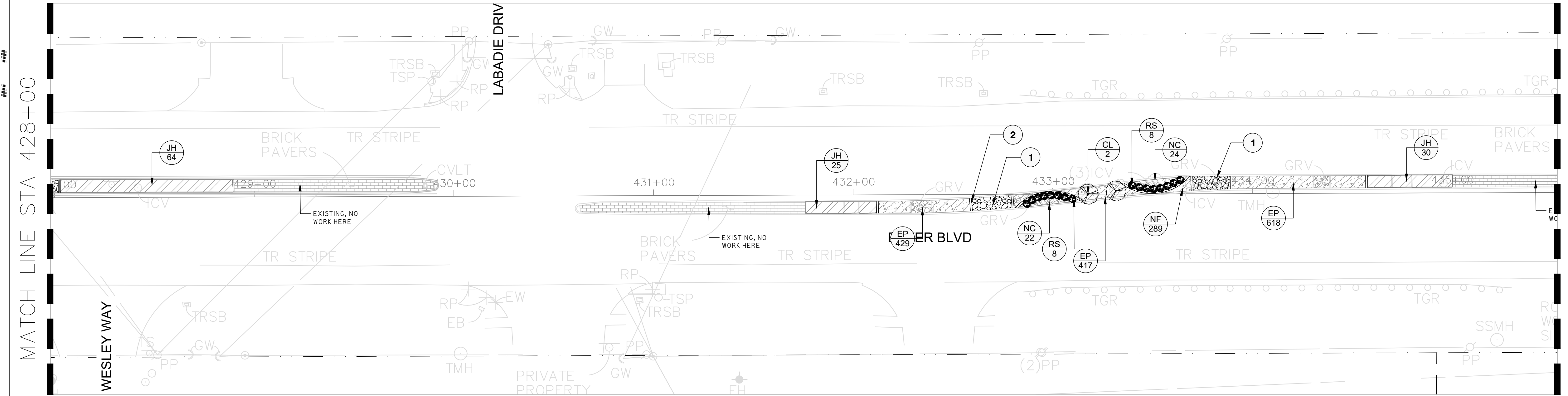
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PLANTING PLAN
 STA 412+00 - STA 428+00

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	42	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183



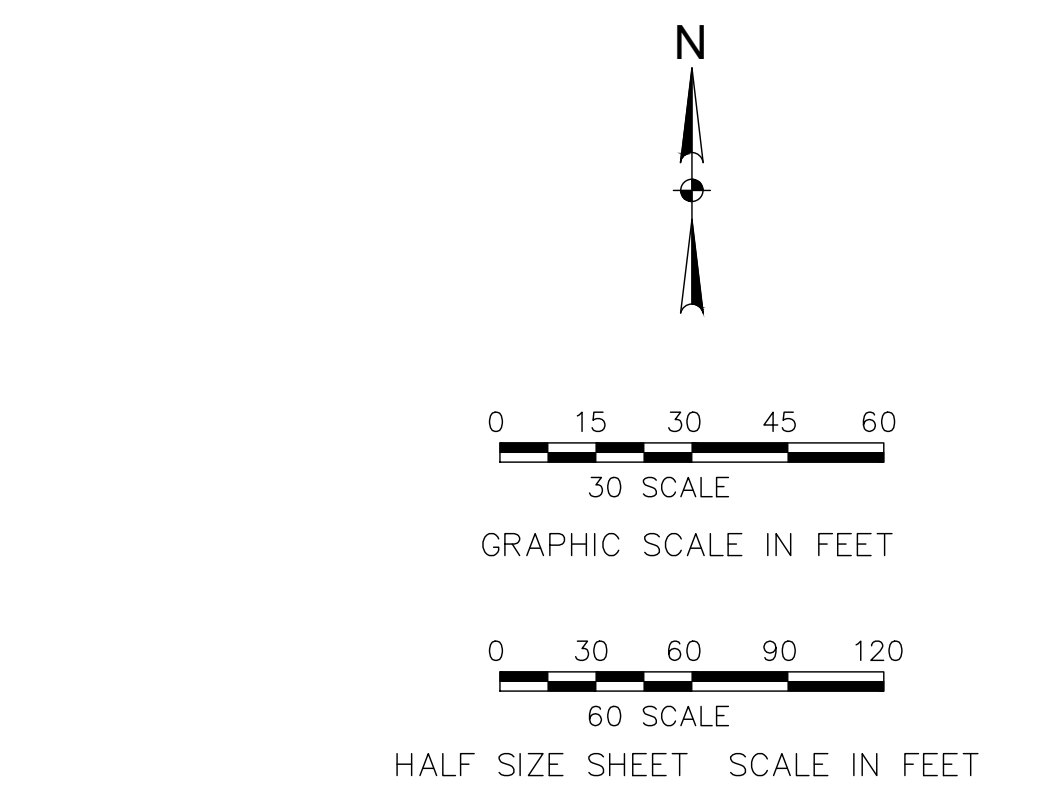
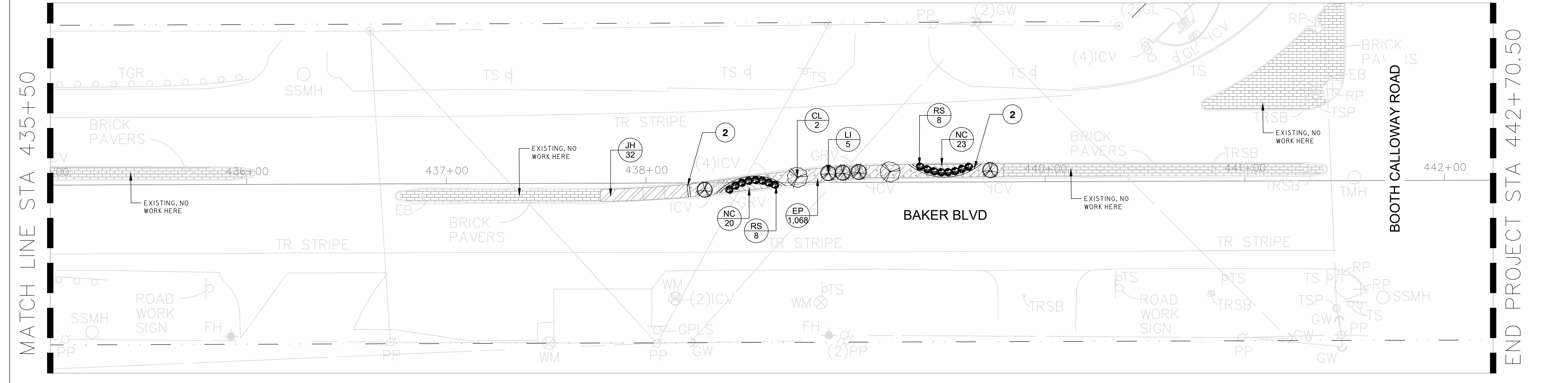
SHEET INDEX MAP



PLANT SCHEDULE STA 428+00 - 442+00

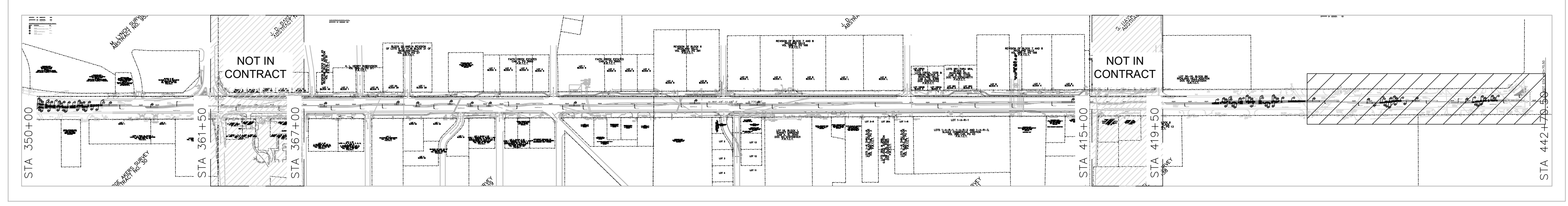
TREES	QTY	COMMON NAME	CONT
CL	4	Desert Willow	30 GAL
LI	5	Crape Myrtle	30G
SHRUBS	QTY	COMMON NAME	CONT
RS	32	Snow White Indian Hawthorn	1 GAL
SHRUB AREAS	QTY	COMMON NAME	CONT
NC	89	Catmint	1 GAL
GROUND COVERS	QTY	COMMON NAME	CONT
EP	2,532	Purple Wintercreeper	4" pot
JH	151	Creeping Juniper	1 GAL

STA 428+00 - STA 435+50
 Full Size: 1" = 30'
 Half Size: 1" = 60'

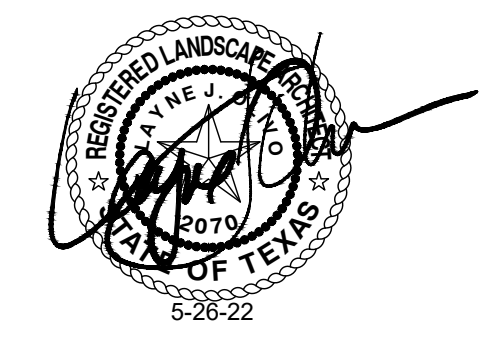


CALL TXDOT TRAFFIC MANAGEMENT CENTER (817-370-3661) FOR TXDOT LOCATES WHEN WORKING NEAR EXISTING TRAFFIC SIGNAL.

STA 435+50 - STA 442+70.5
 Full Size: 1" = 30'
 Half Size: 1" = 60'



SHEET INDEX MAP
 N.T.S.

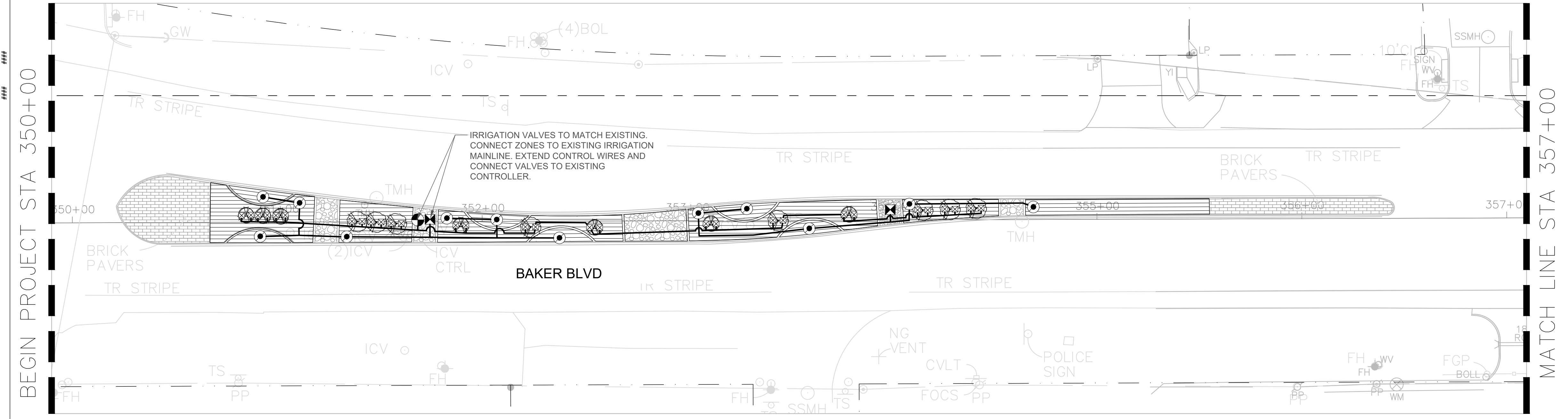


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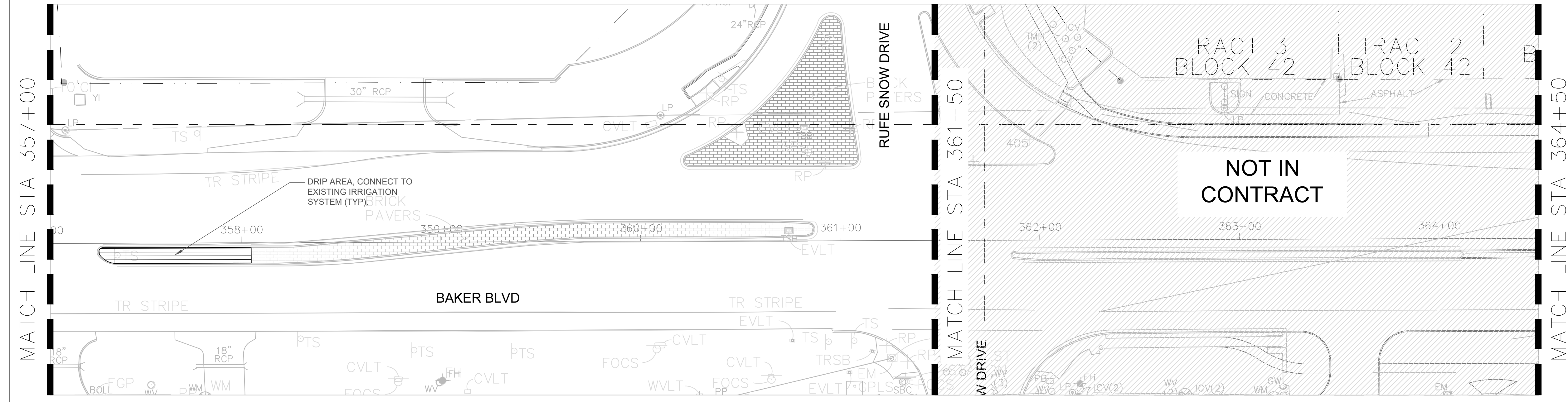
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PLANTING PLAN
 STA 428+00 - STA 442+70.50

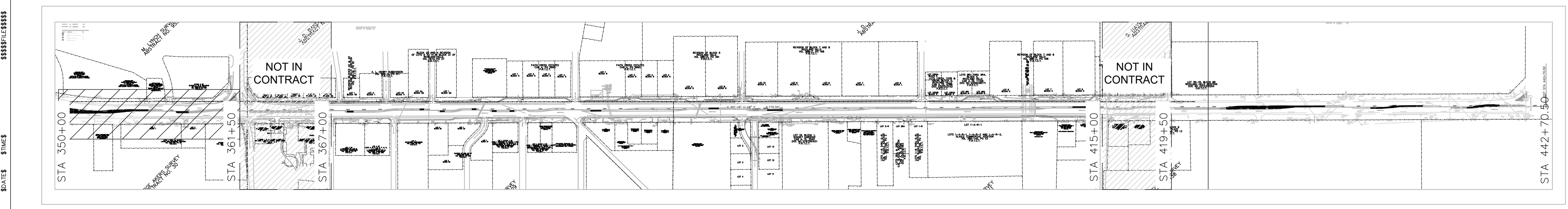
FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	43	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183



STA 350+00 - STA 357+00
 Full Size: 1" = 30'
 Half Size: 1" = 60'



STA 357+00 - STA 364+50
 Full Size: 1" = 30'
 Half Size: 1" = 60'

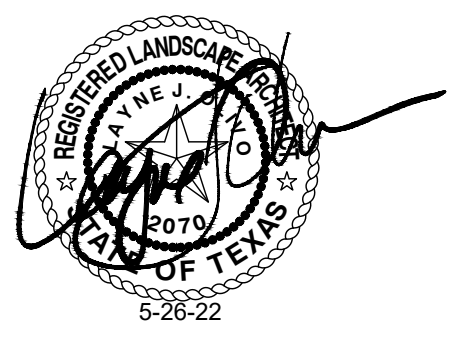
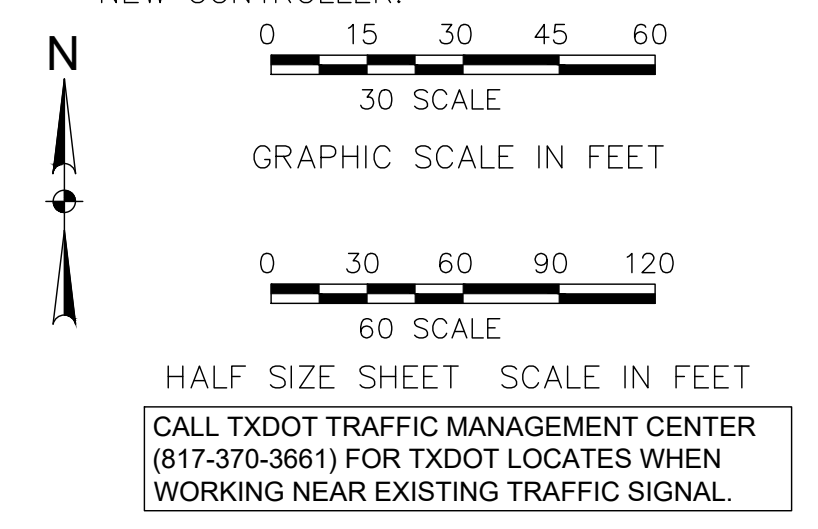


SHEET INDEX MAP
 N.T.S.

IRRIGATION SCHEDULE	
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Tree Bubblers To Match Existing. (2) per Tree.
	Drip Control Zone Kit To Match Existing
	Pipe Transition Point in Drip Box
	Area to Receive Dripline Dripline to Match Existing.
	Irrigation Control Valve Electric Remote Control Valves to Match Existing
	Irrigation Lateral Line: PVC Class 200 SDR 21

GENERAL NOTES

1. THE ENTIRE LIMITS OF IMPROVEMENTS WERE SURVEYED. ALL LINWORK IS APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO CONTRACTORS SUBMITTING THEIR BID.
2. ALL UTILITIES SHOWN ON PLANS ARE APPROPRIATE AUTHORITIES.
3. REFERENCE SHEET 51 - IRRIGATION DETAILS.
4. PROPOSED IRRIGATION TO CONNECT TO EXISTING IRRIGATION SYSTEM. CONTRACTOR TO VERIFY LOCATIONS OF EXISTING IRRIGATION, AVAILABLE PRESSURE, AND EXISTING CONTROLLER CAPACITY. IF CONTROLLER DOES NOT HAVE ADEQUATE CAPACITY, CONTRACTOR TO LOCATE AND INSTALL NEW CONTROLLER.

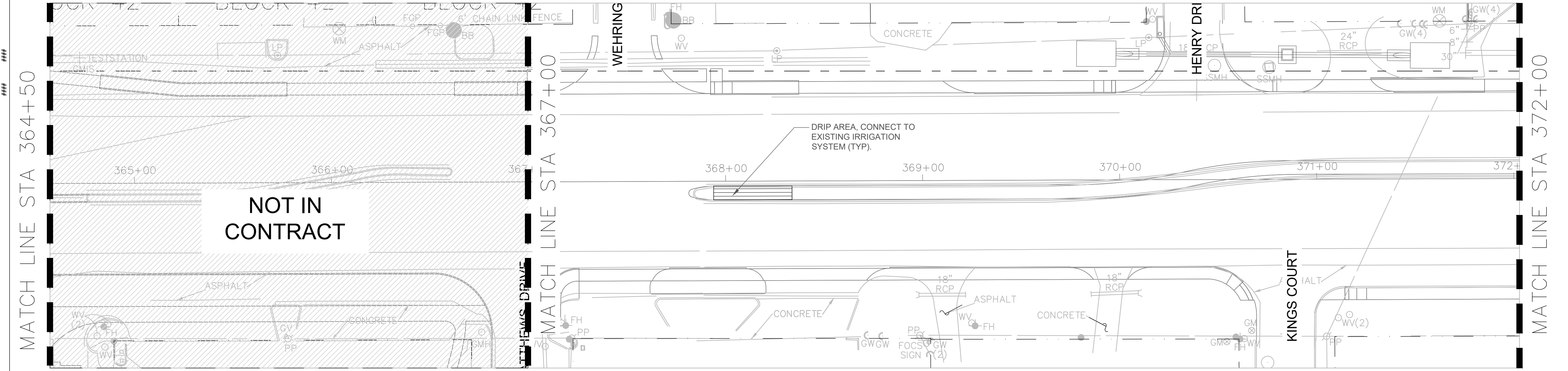


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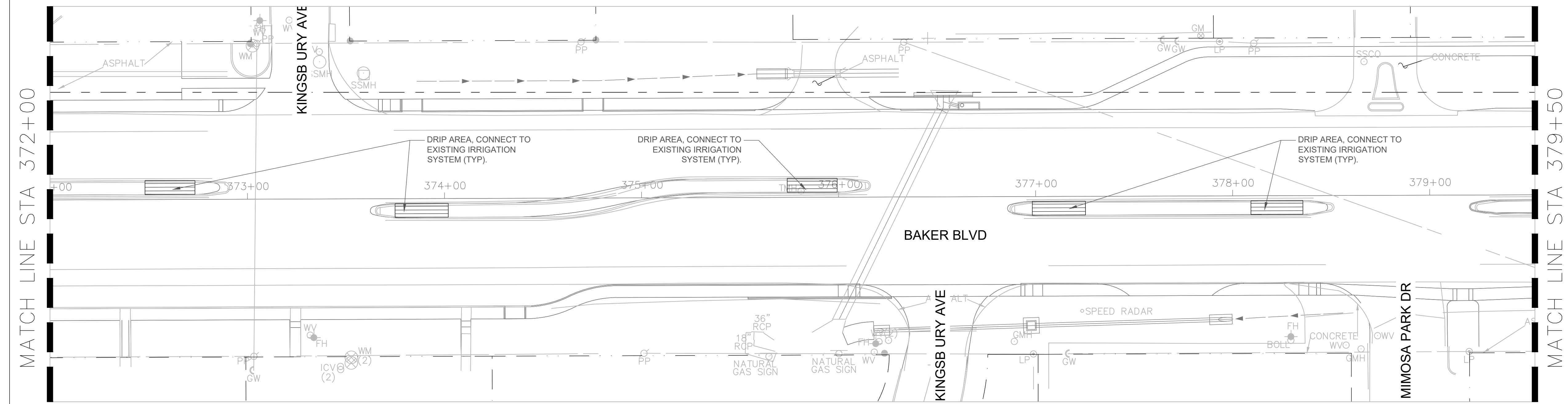
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IRRIGATION PLAN
 STA 350+00 - STA 364+50

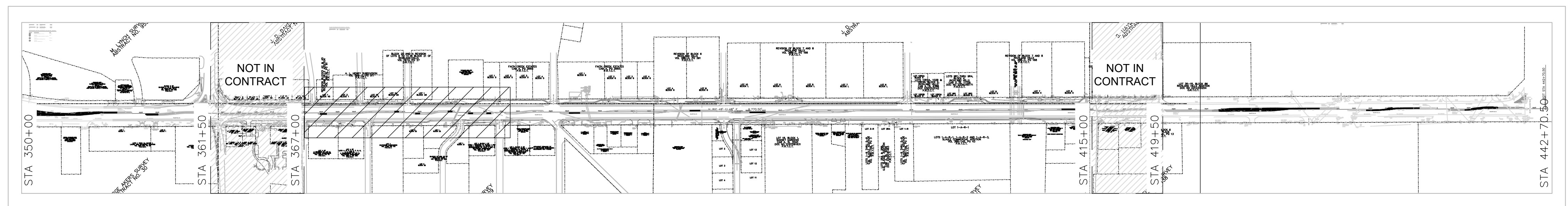
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	45	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183



STA 364+50 - STA 372+00
 Full Size: 1" = 30'
 Half Size: 1" = 60'



STA 372+00 - STA 379+50
 Full Size: 1" = 30'
 Half Size: 1" = 60'

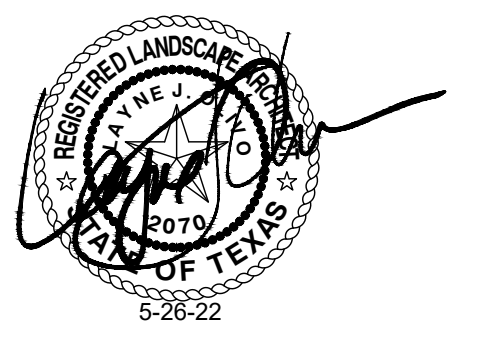
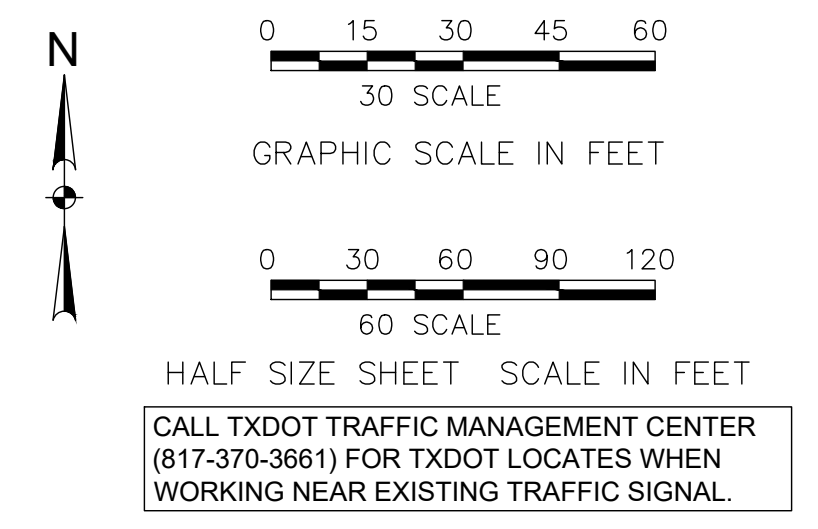


SHEET INDEX MAP
 N.T.S.

IRRIGATION SCHEDULE	
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Tree Bubblers To Match Existing. (2) per Tree.
	Drip Control Zone Kit To Match Existing
	Pipe Transition Point in Drip Box
	Area to Receive Dripline Dripline to Match Existing.
	Irrigation Control Valve Electric Remote Control Valves to Match Existing
	Irrigation Lateral Line: PVC Class 200 SDR 21

GENERAL NOTES

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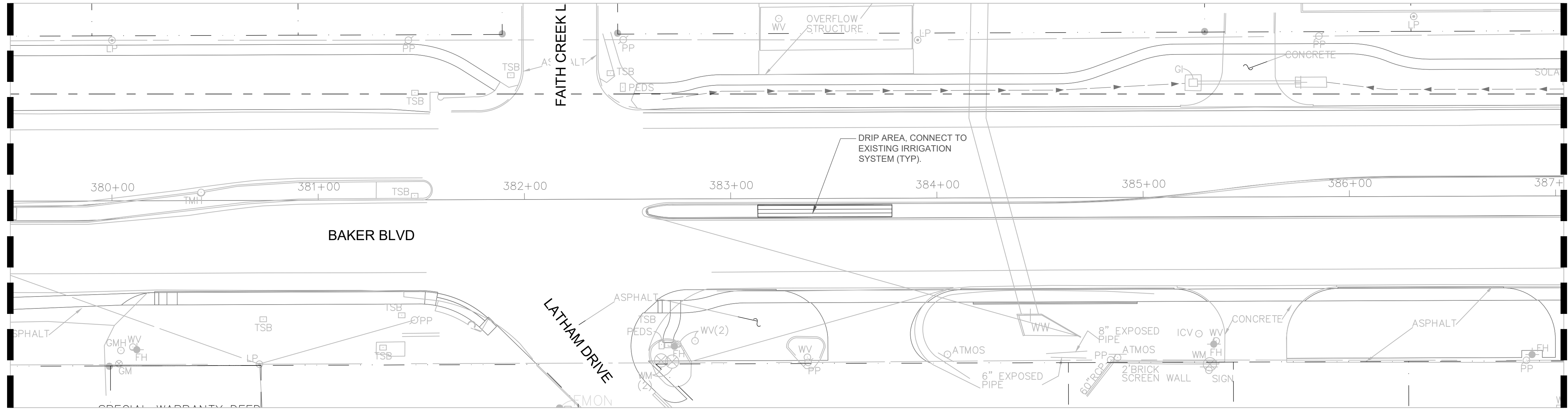
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IRRIGATION PLAN
 STA 364+50 - STA 379+50

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	46	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183

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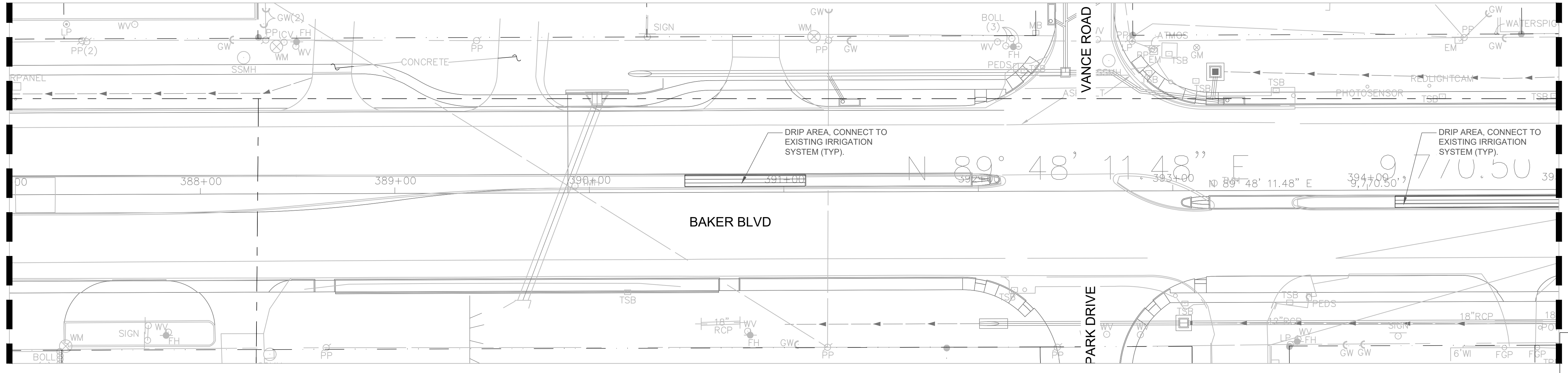
MATCH LINE STA 379+50



MATCH LINE STA 387+00

STA 379+50 - STA 387+00
 Full Size: 1" = 30'
 Half Size: 1" = 60'

MATCH LINE STA 387+00



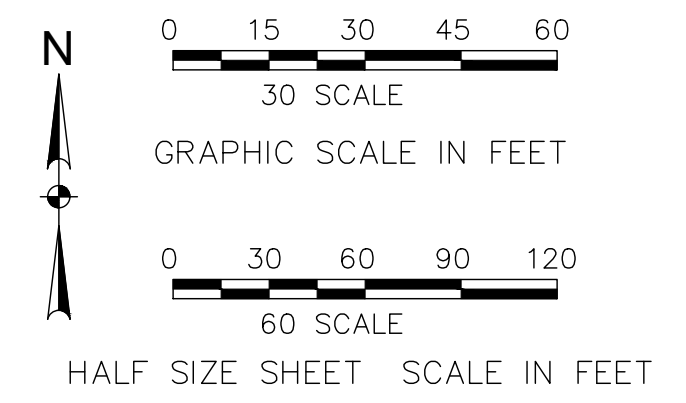
MATCH LINE STA 395+00

STA 387+00 - STA 395+00
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 Half Size: 1" = 60'

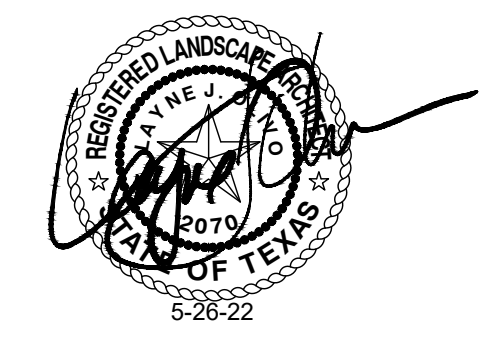
IRRIGATION SCHEDULE	
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Tree Bubbler To Match Existing. (2) per Tree.
	Drip Control Zone Kit To Match Existing
	Pipe Transition Point in Drip Box
	Area to Receive Dripline Dripline to Match Existing.
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Irrigation Control Valve Electric Remote Control Valves to Match Existing
	Irrigation Lateral Line: PVC Class 200 SDR 21

GENERAL NOTES

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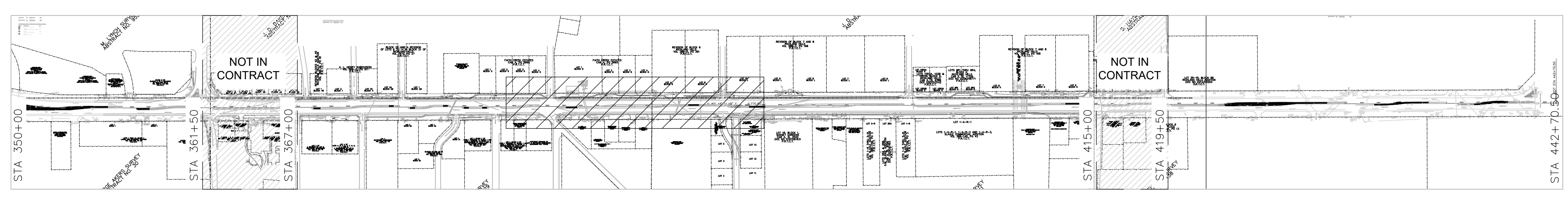
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IRRIGATION PLAN

STA 379+50 - STA 395+00

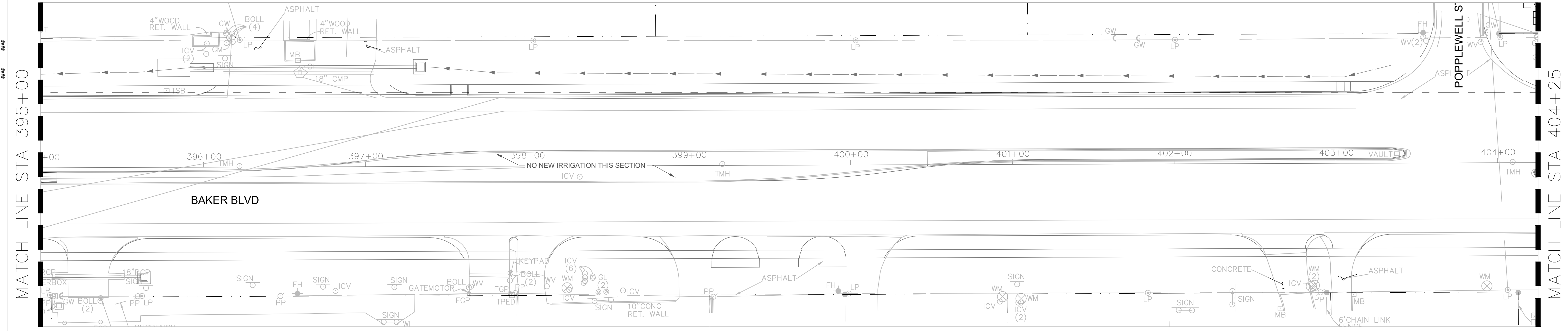
FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	SHEET NO.
6	SEE TITLE SHEET	47
STATE	DISTRICT	COUNTY
TEXAS	FTW	TARRANT
CONTROL	SECTION	JOB
0094	02	143
		HIGHWAY NO.
		FM 183



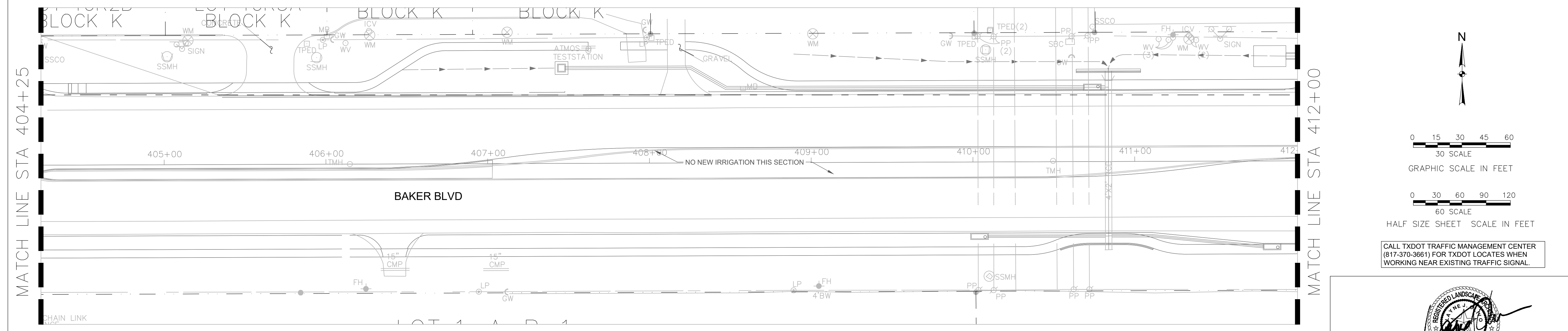
SHEET INDEX MAP
 N.T.S.

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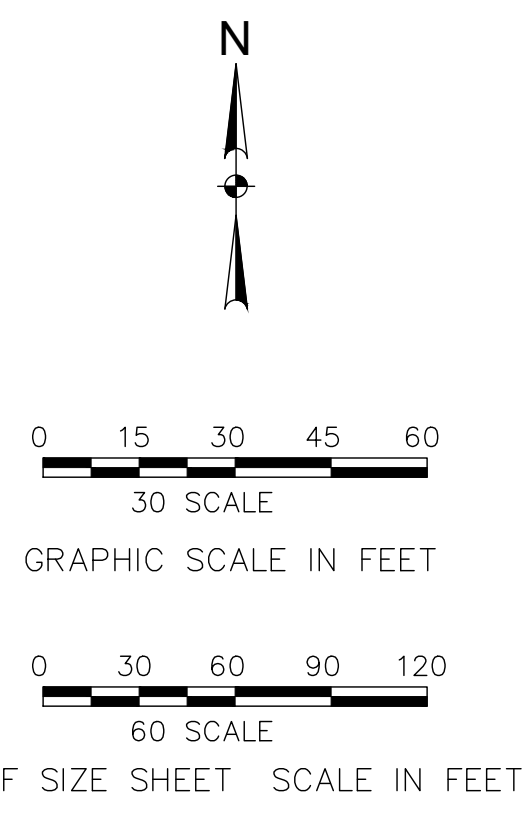
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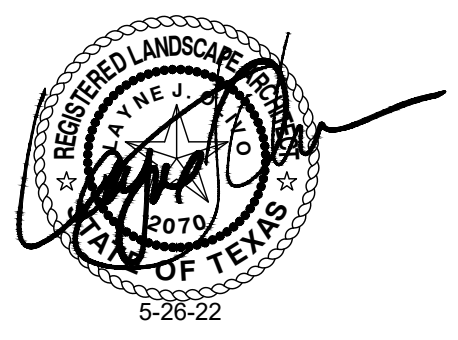
STA 395+00 - STA 404+00
 Full Size: 1" = 30'
 Half Size: 1" = 60'



STA 404+00 - STA 412+00
 Full Size: 1" = 30'
 Half Size: 1" = 60'



CALL TXDOT TRAFFIC MANAGEMENT CENTER
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 WORKING NEAR EXISTING TRAFFIC SIGNAL.

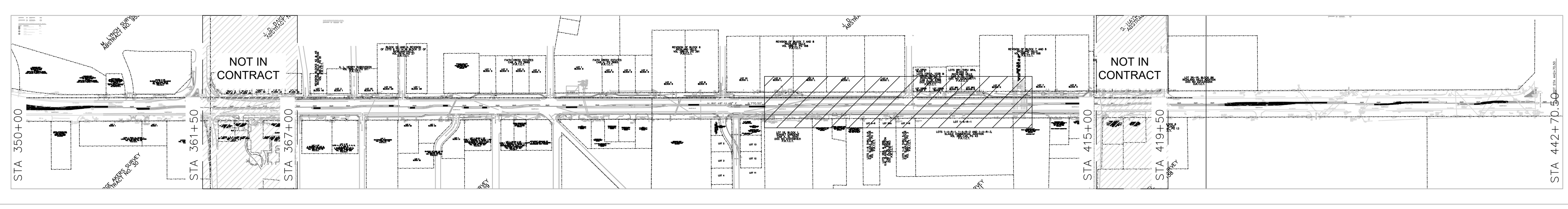


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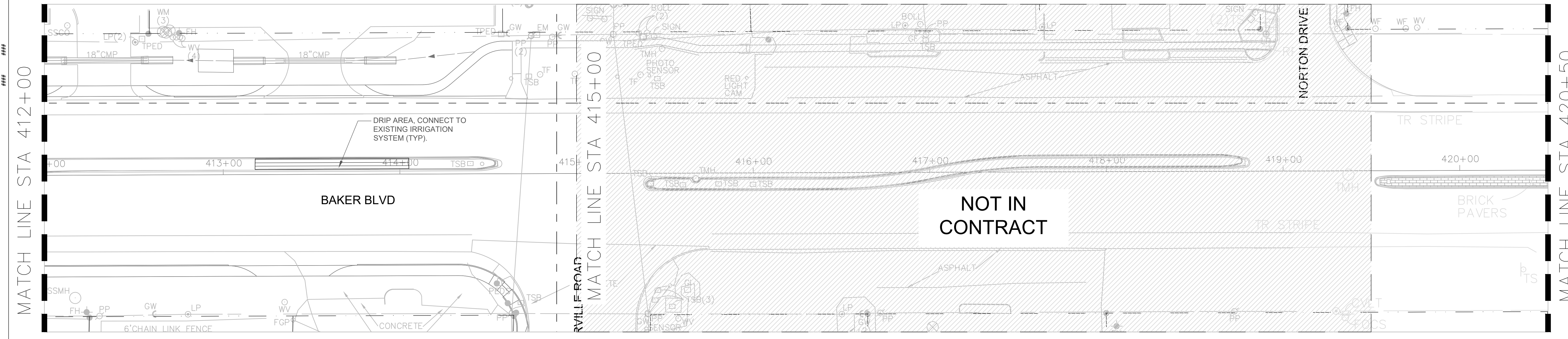
IRRIGATION PLAN
 STA 395+00 - STA 412+00

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	48	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183

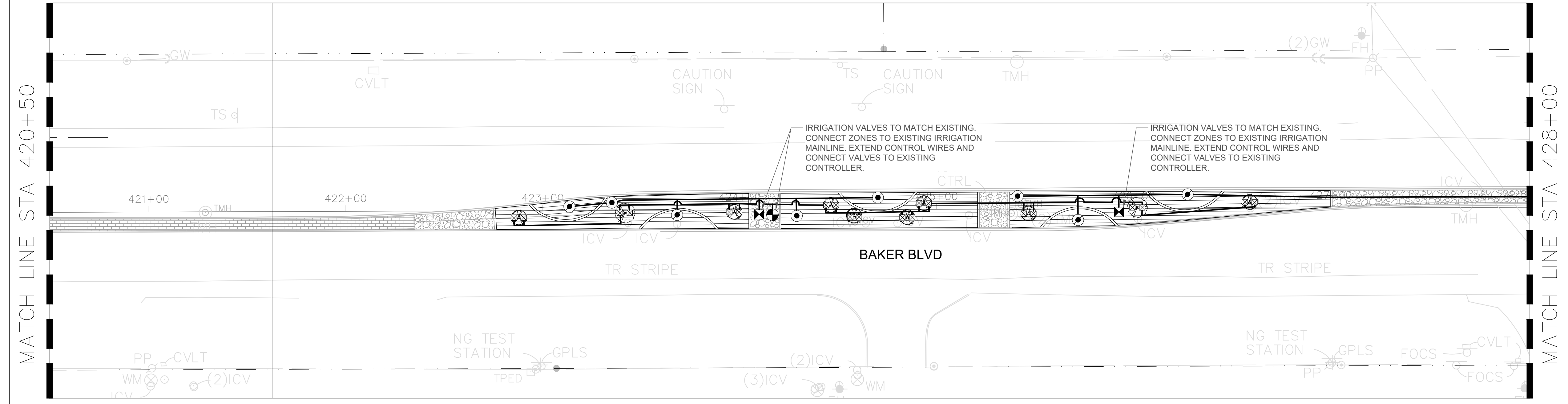


SHEET INDEX MAP
 N.T.S.

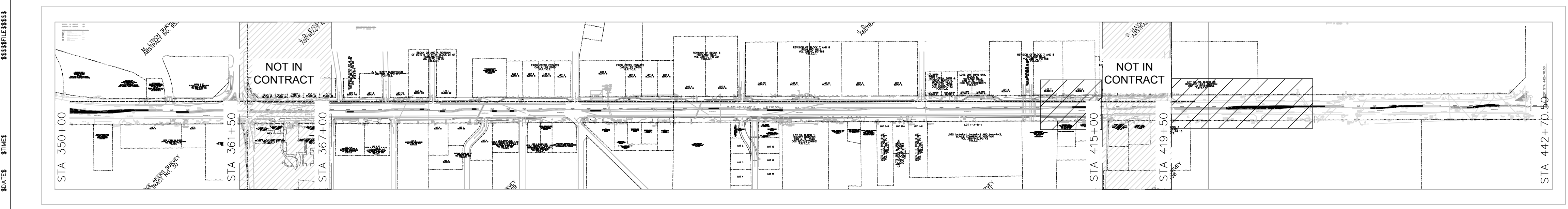
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STA 412+00 - STA 419+50
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 Half Size: 1" = 60'



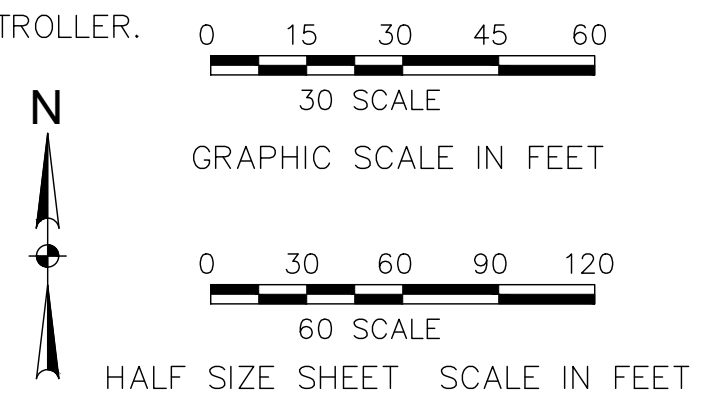
STA 419+50 - STA 428+00
 Full Size: 1" = 30'
 Half Size: 1" = 60'



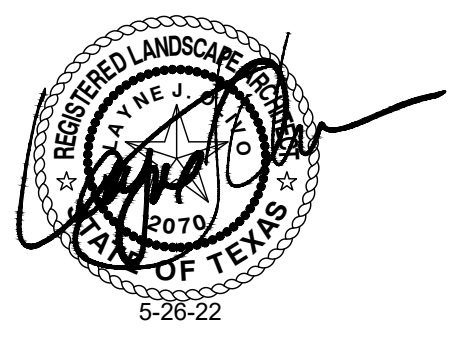
SHEET INDEX MAP
 N.T.S.

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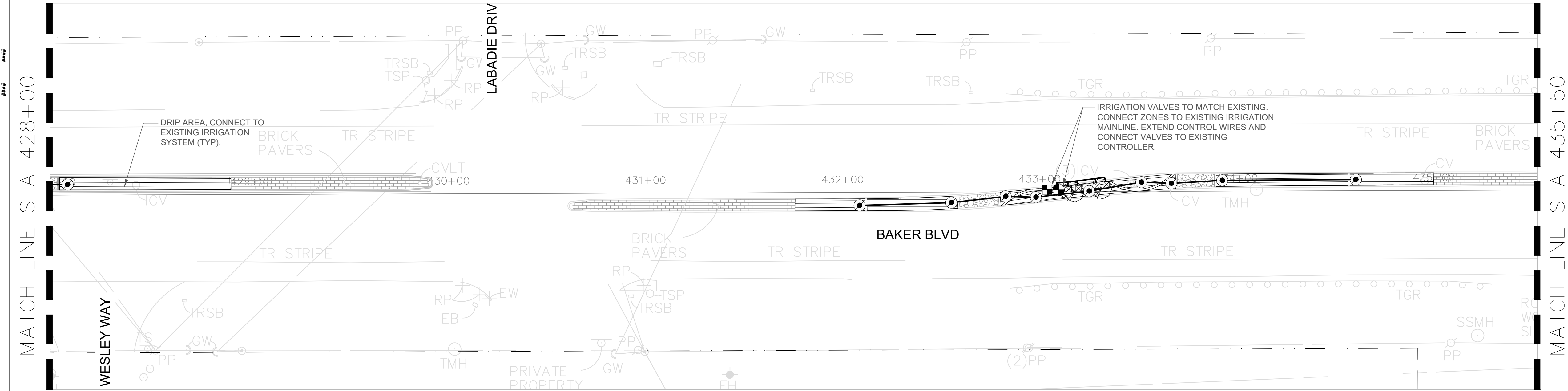


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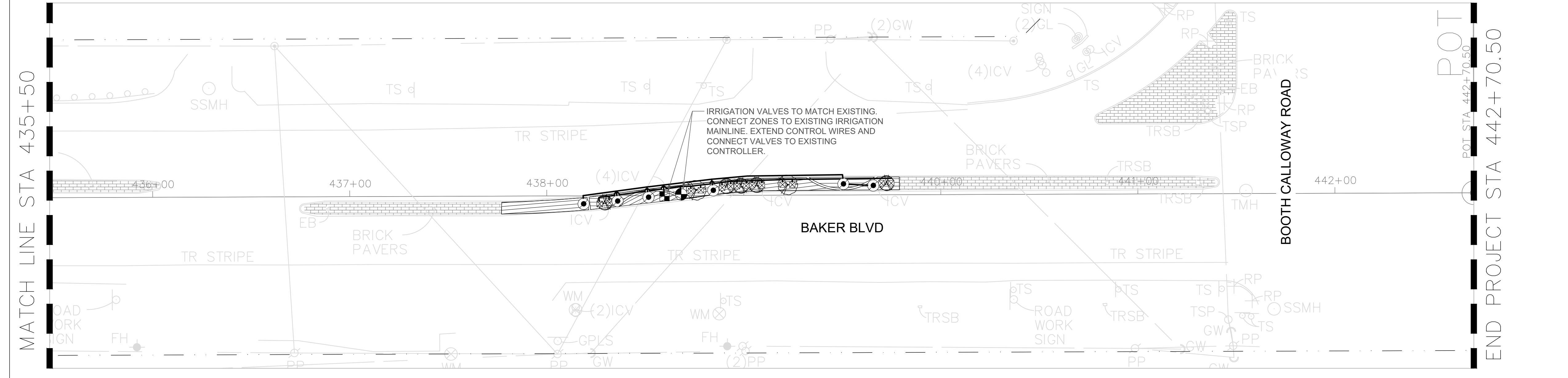
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IRRIGATION PLAN
 STA 412+00 - STA 428+00

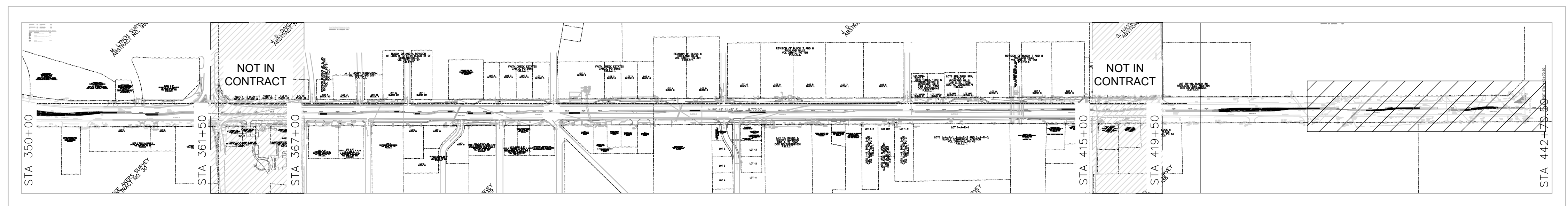
FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	49	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183



STA 428+00 - STA 435+50
 Full Size: 1" = 30'
 Half Size: 1" = 60'



STA 435+50 - STA 442+70.50
 Full Size: 1" = 30'
 Half Size: 1" = 60'

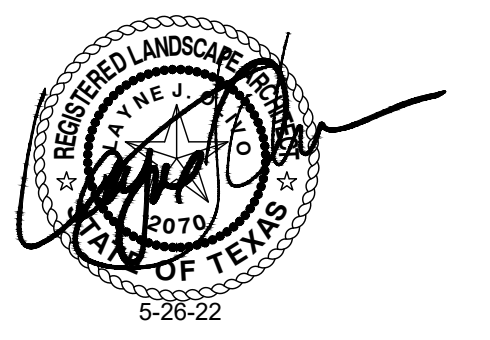
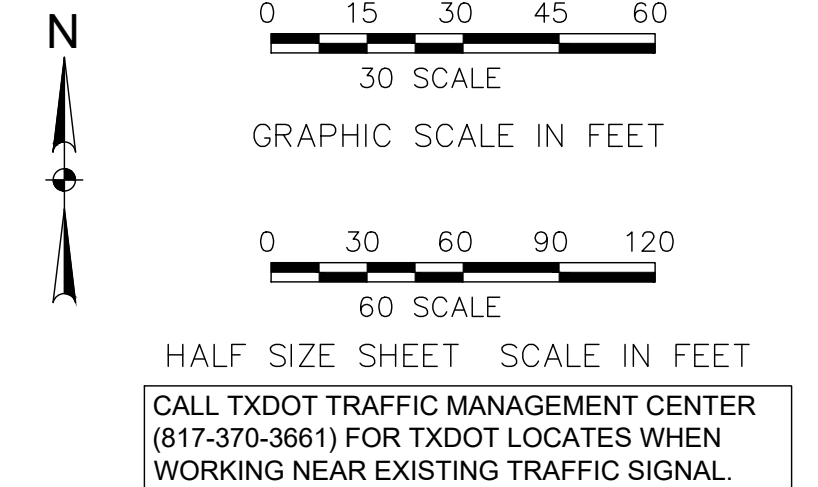


SHEET INDEX MAP
 N.T.S.

IRRIGATION SCHEDULE	
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Tree Bubbler To Match Existing. (2) per Tree.
	Drip Control Zone Kit To Match Existing
	Pipe Transition Point in Drip Box
	Area to Receive Dripline Dripline to Match Existing.
	Irrigation Control Valve Electric Remote Control Valves to Match Existing
	Irrigation Lateral Line: PVC Class 200 SDR 21

GENERAL NOTES

1. THE ENTIRE LIMITS OF IMPROVEMENTS WERE SURVEYED. ALL LINWORK IS APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO CONTRACTORS SUBMITTING THEIR BID.
2. ALL UTILITIES SHOWN ON PLANS ARE APPROPRIATE AUTHORITIES.
3. REFERENCE SHEET 51 - IRRIGATION DETAILS.
4. PROPOSED IRRIGATION TO CONNECT TO EXISTING IRRIGATION SYSTEM. CONTRACTOR TO VERIFY LOCATIONS OF EXISTING IRRIGATION, AVAILABLE PRESSURE, AND EXISTING CONTROLLER CAPACITY. IF CONTROLLER DOES NOT HAVE ADEQUATE CAPACITY, CONTRACTOR TO LOCATE AND INSTALL NEW CONTROLLER.



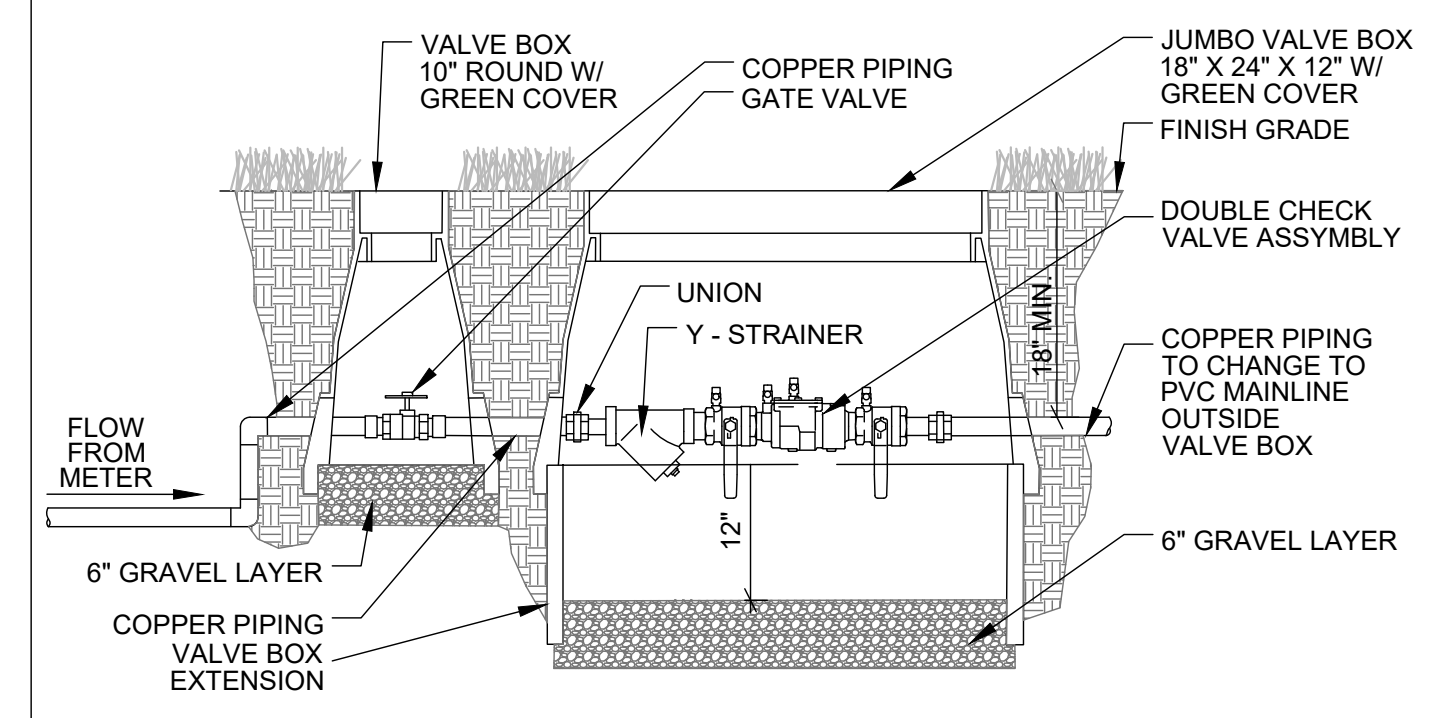
HALFF 4000 FOSSIL CREEK BLVD.
 FORT WORTH, TEXAS
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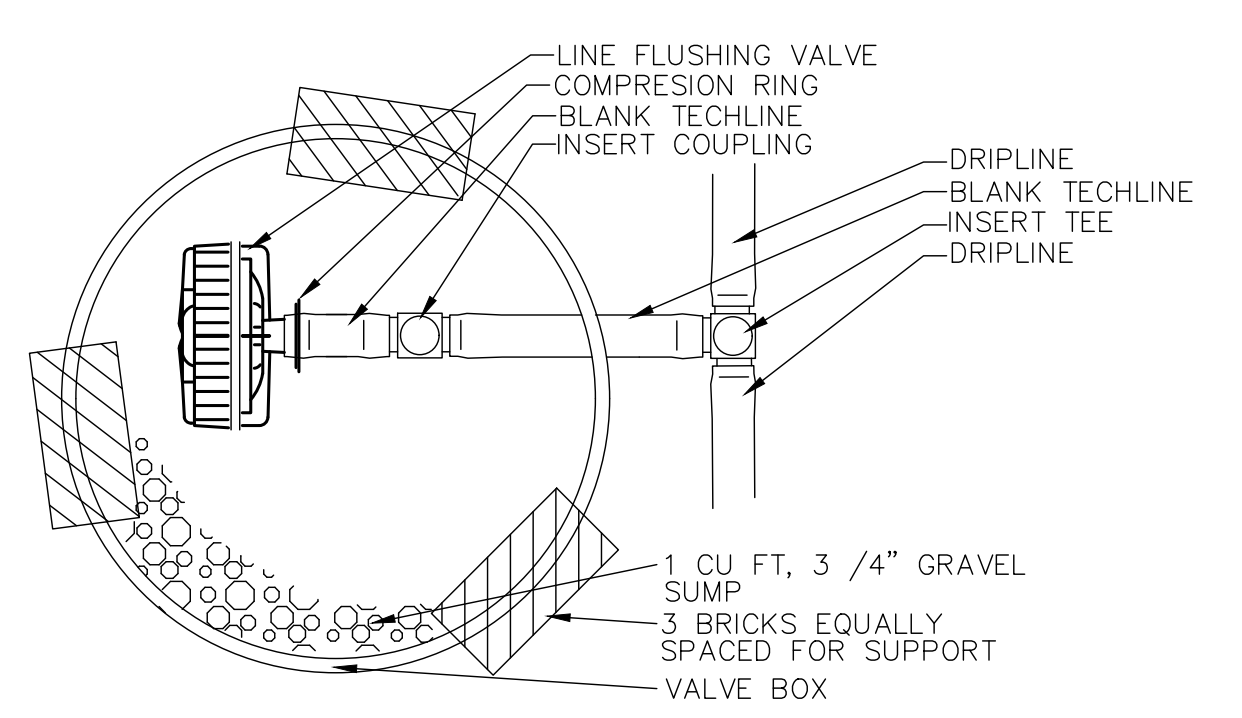
IRRIGATION PLAN
 STA 428+00 - STA 442+70.50

FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	SHEET NO.	
6	SEE TITLE SHEET	50	
STATE	DISTRICT	COUNTY	
TEXAS	FTW	TARRANT	
CONTROL	SECTION	JOB	HIGHWAY NO.
0094	02	143	FM 183

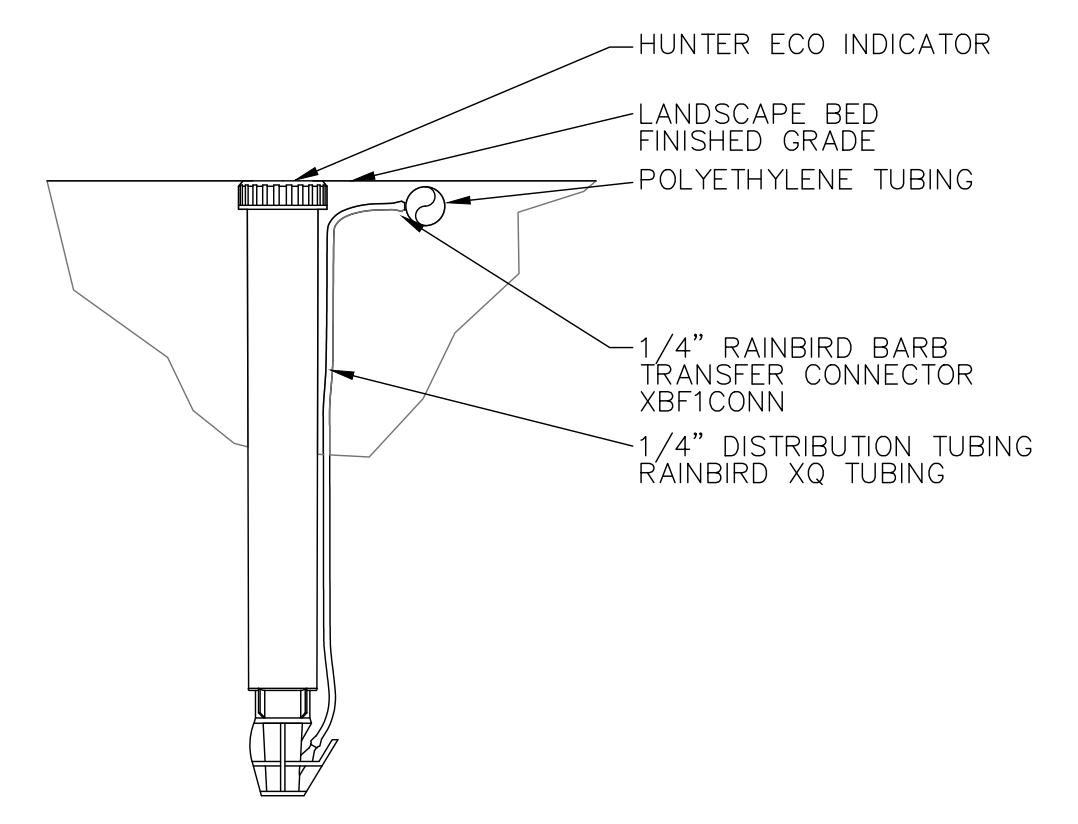
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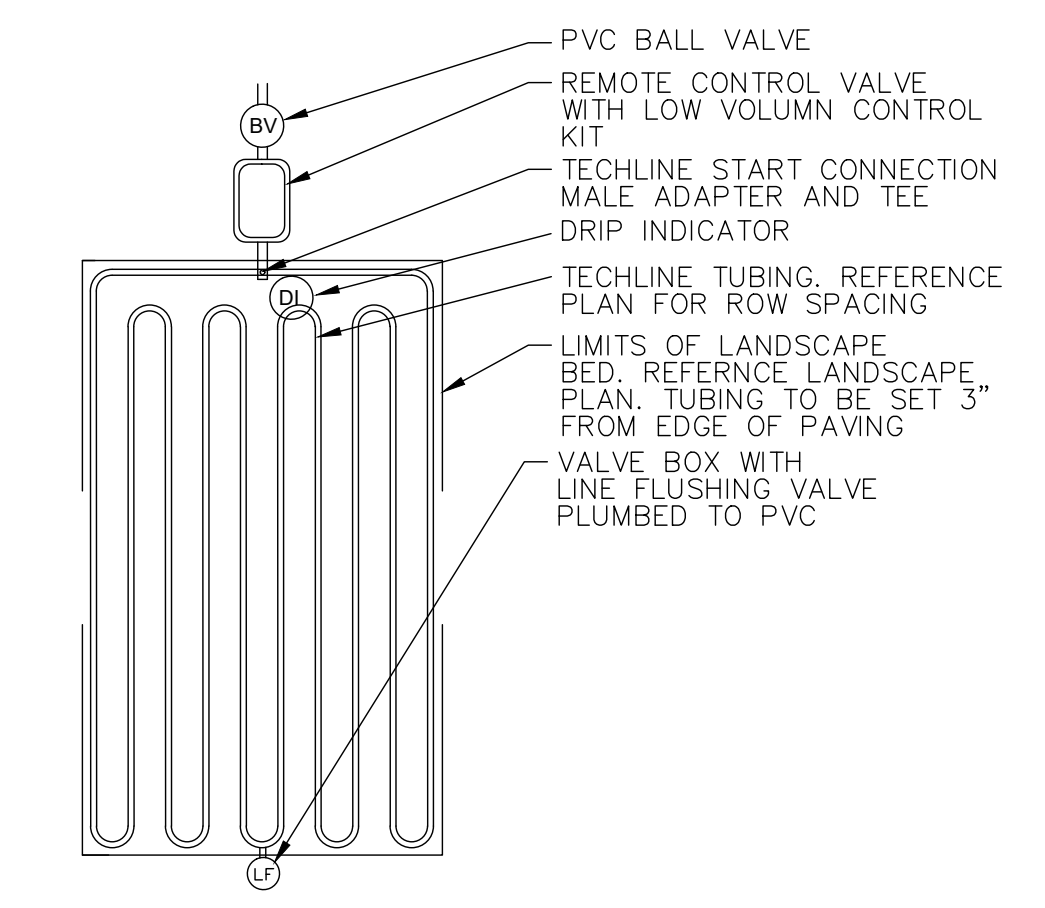
1 REDUCED PRESSURE ZONE ASSEMBLY
1" = 1'-0"



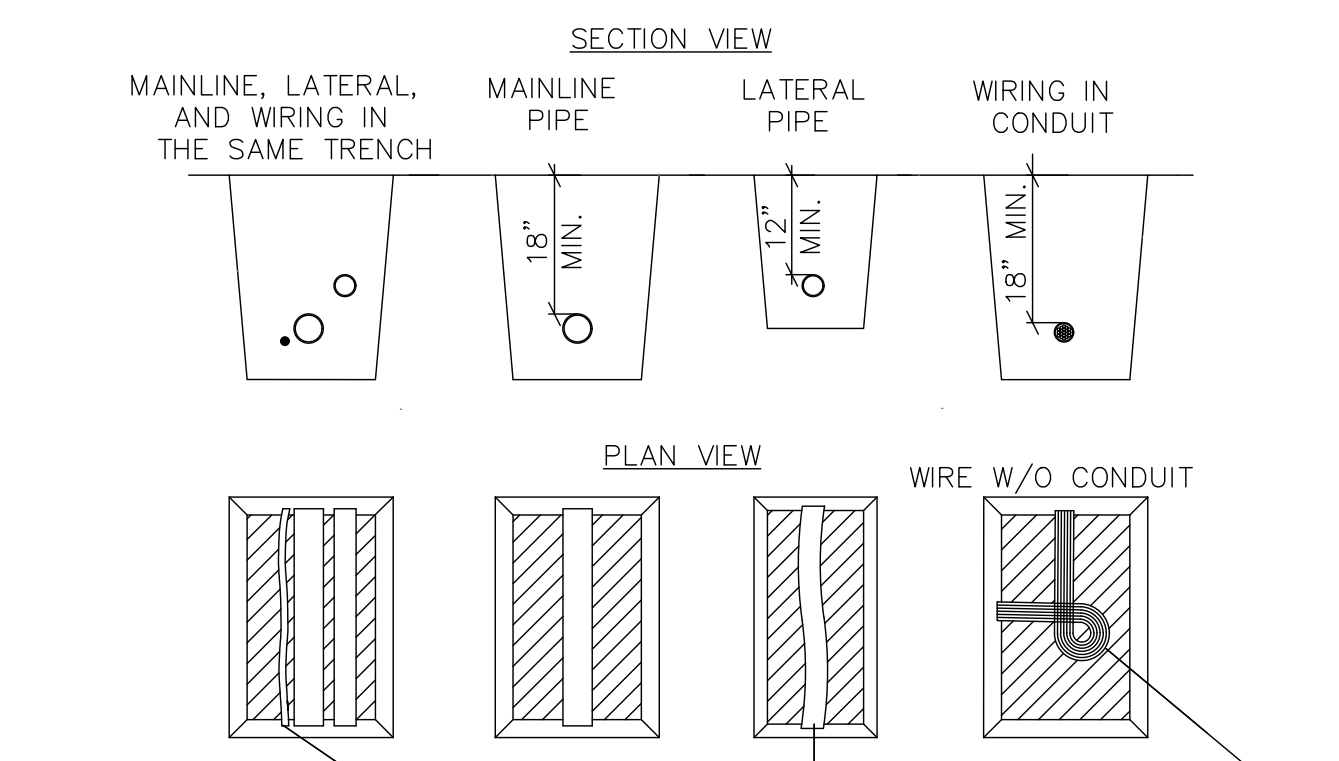
2 LINE FLUSHING VALVE
1" = 1'-0"



3 DRIP OPERATION INDICATOR
1" = 1'-0"

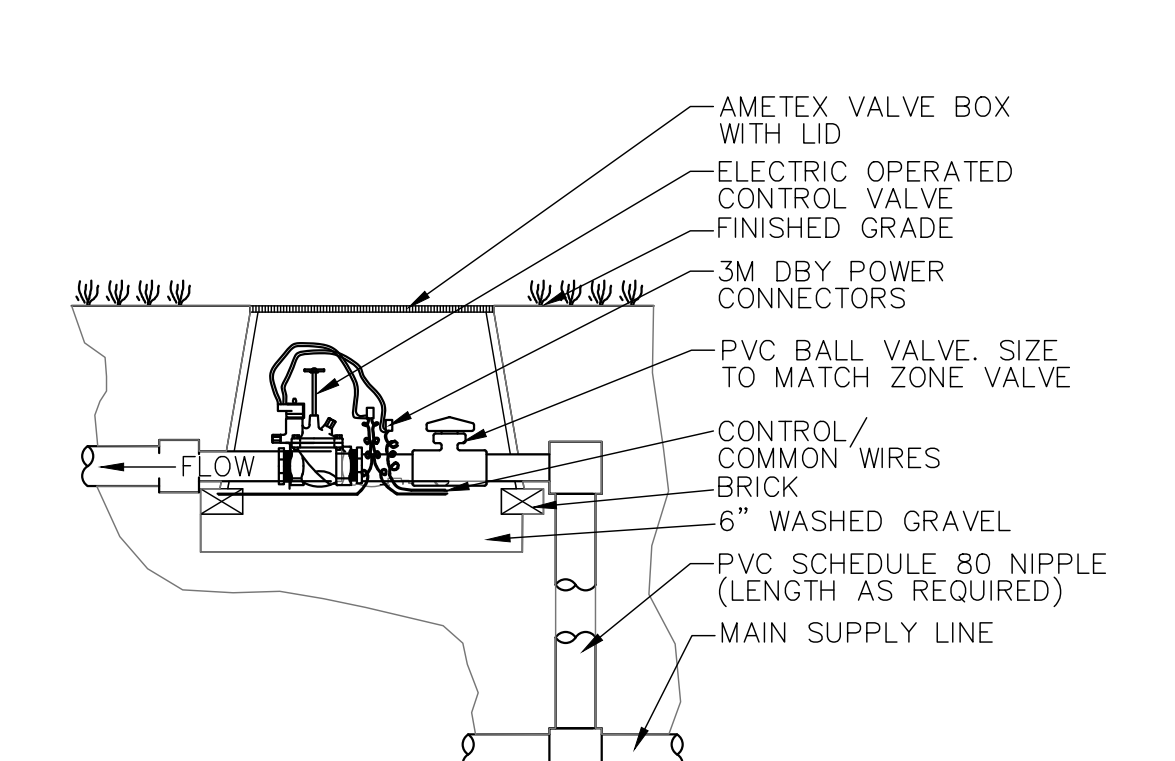


4 DRIP IRRIGATION - LANDSCAPE BEDS
1" = 1'-0"



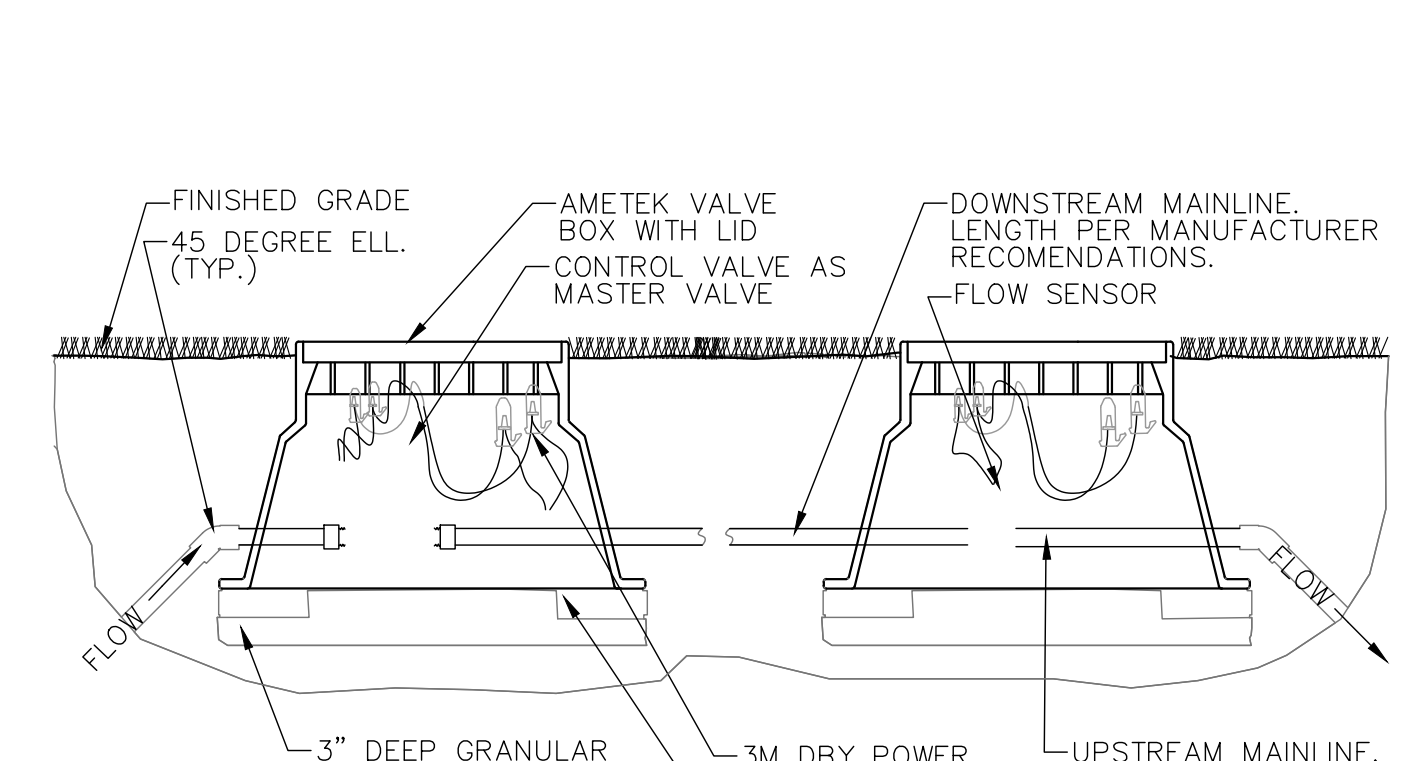
- SECTION VIEW
MAINLINE, LATERAL, AND WIRING IN THE SAME TRENCH
MAINLINE PIPE
LATERAL PIPE
WIRING IN CONDUIT
- PLAN VIEW
WIRE W/O CONDUIT
- RUN WIRING BENEATH AND BESIDE MAINLINE. TAPE AND BUNDLE AT 10-FOOT INTERVALS.
- ALL SOLVENT WELD PLASTIC PIPING TO BE SNAKED IN TRENCH AS SHOWN.
- TIE A 24-INCH LOOP IN ALL WIRING AT CHANGES OF DIRECTION OF 30° OR GREATER. UNTIE AFTER ALL CONNECTIONS HAVE BEEN MADE.
- NOTES:
1. SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH SCHD.40 PVC TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE WITHIN.
2. ALL PIPING UNDER PAVING SHALL HAVE A MINIMUM OF 18" COVER.

5 TRENCHING DETAIL
1" = 1'-0"



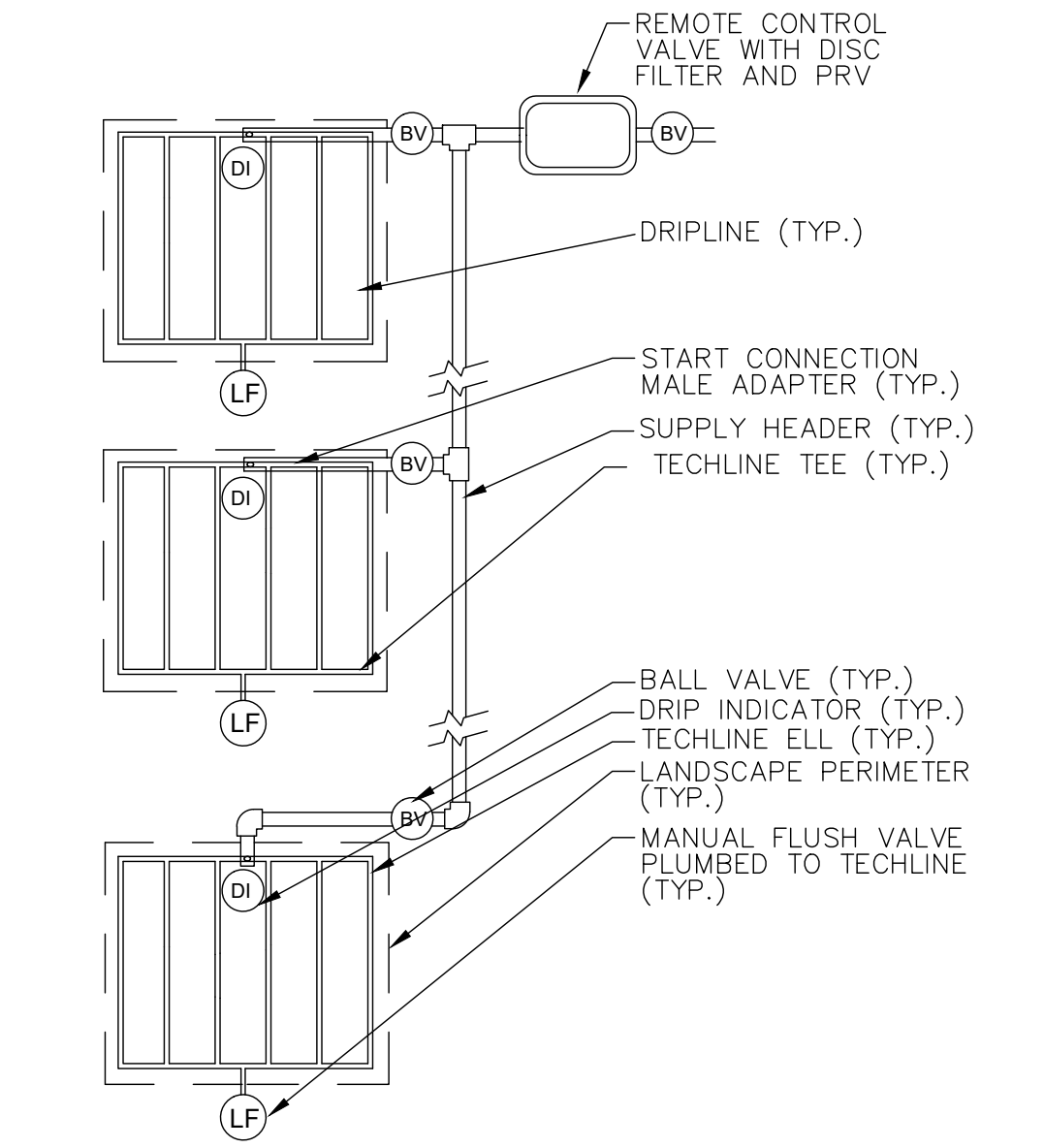
- NOTES:
1. ALL WIRE TO BE INSTALLED PER LOCAL CODE.
2. TAPE AND BUNDLE WIRE EVERY TEN FEET.
3. PROVIDE EXPANSION COILS AT EACH WIRE CONNECTION IN VALVE BOX. (WRAP AROUND 1/2" PIPE 15 TIMES.)
4. COMPACT SOIL AROUND VALVE BOX TO SAME DENSITY AS UNDISTURBED ADJ. SOIL.
5. INSTALL VALVES IN CLOSE PROXIMITY TO ADJACENT WALKS WHERE POSSIBLE.
6. ORIENT RECTANGULAR VALVE BOXES PARALLEL TO ADJACENT WALKS, CURBS, ETC.
7. INSTALLATION OF BALL VALVES WILL BE SIMILAR TO INSTALLATION FOR CONTROL VALVES.

6 CONTROL VALVE
1" = 1'-0"



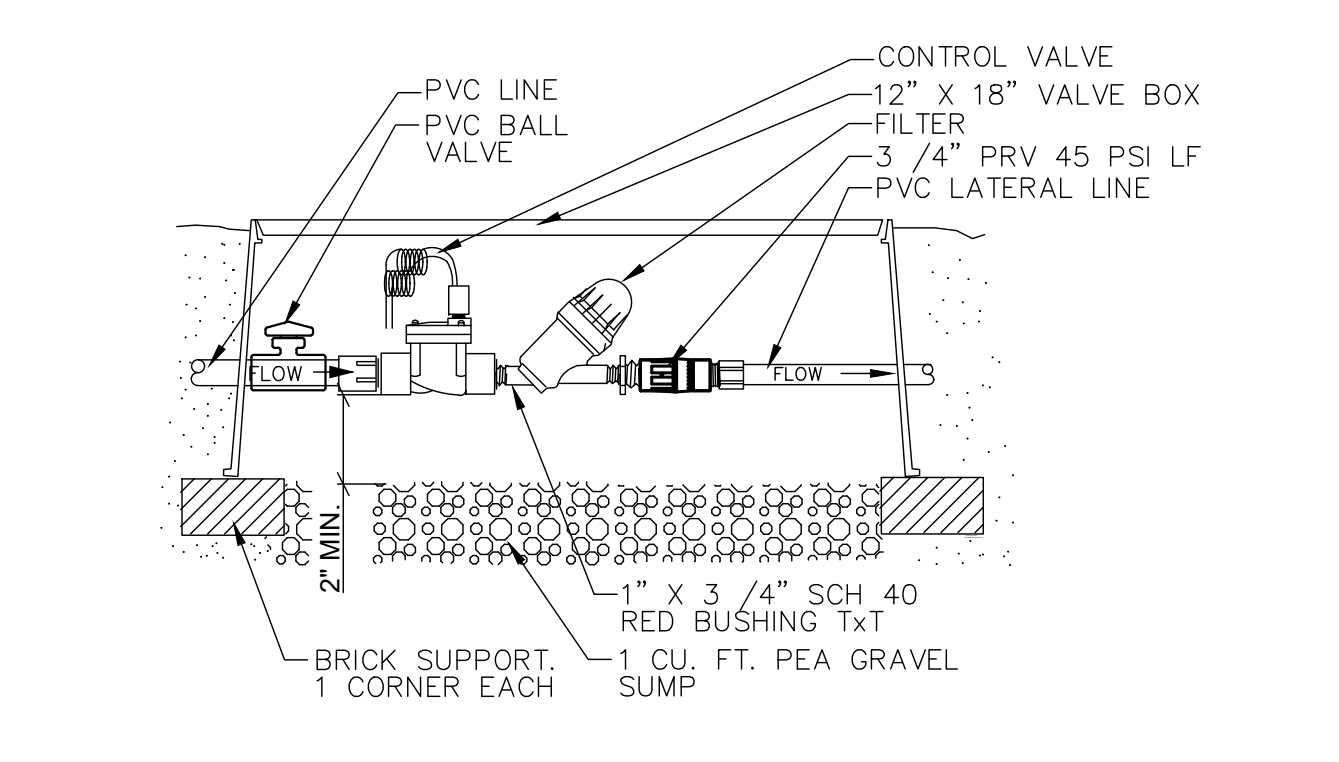
- NOTES:
1. ALL WIRE TO BE INSTALLED PER LOCAL CODE.
2. TAPE AND BUNDLE WIRE EVERY TEN FEET.
3. PROVIDE EXPANSION COILS AT EACH WIRE CONNECTION IN VALVE BOX. (WRAP AROUND 1/2" PIPE 15 TIMES.)
4. COMPACT SOIL AROUND VALVE BOX TO SAME DENSITY AS UNDISTURBED ADJ. SOIL.
5. INSTALL VALVES IN CLOSE PROXIMITY TO ADJACENT WALKS WHERE POSSIBLE.
6. ORIENT RECTANGULAR VALVE BOXES PARALLEL TO ADJACENT WALKS, CURBS, ETC.

7 MASTER VALVE & FLOW METER
1" = 1'-0"

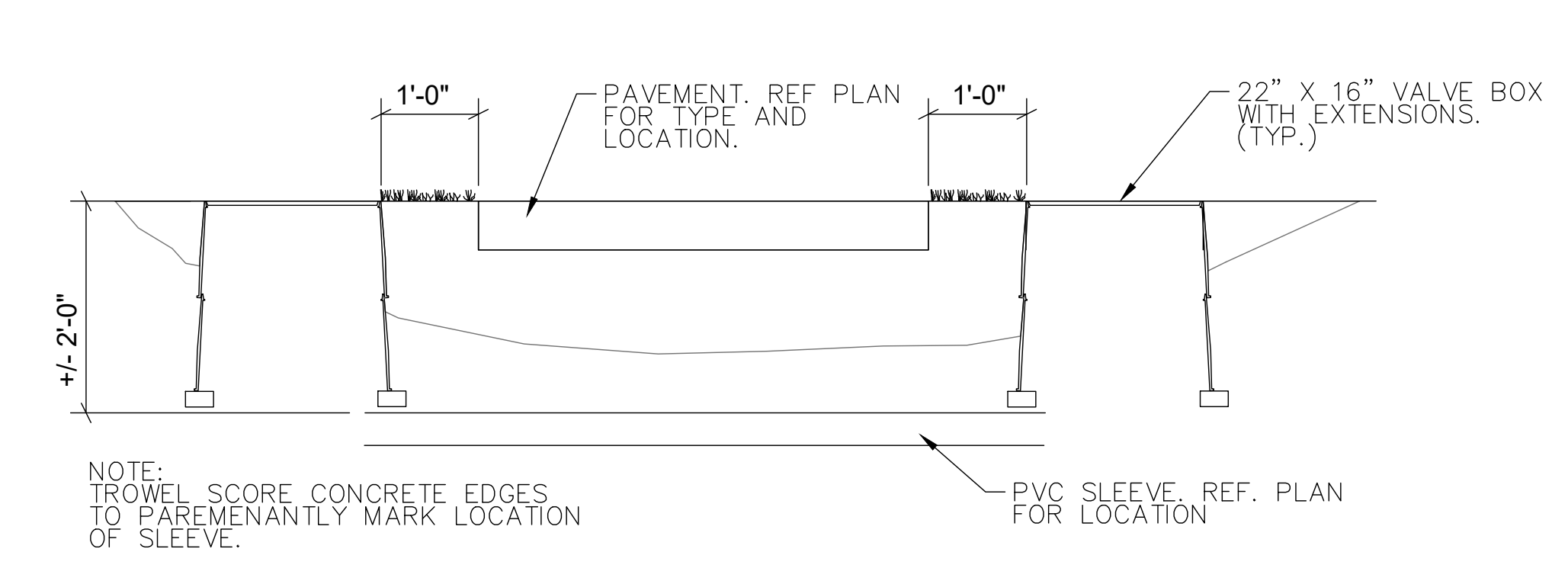


8 DRIP IRRIGATION - MULTIPLE BEDS
1" = 1'-0"

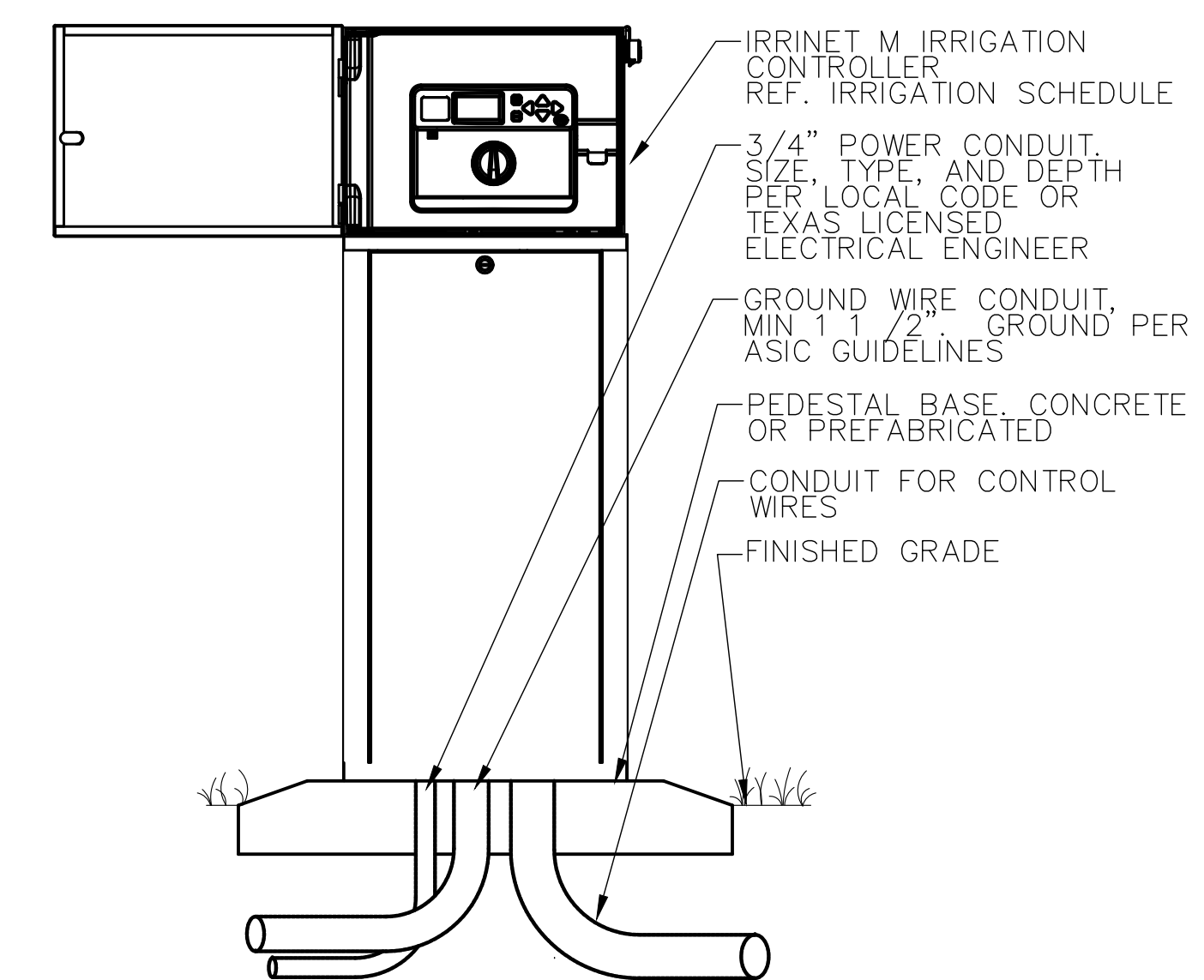
CALL TXDOT TRAFFIC MANAGEMENT CENTER (817-370-3661) FOR TXDOT LOCATES WHEN WORKING NEAR EXISTING TRAFFIC SIGNAL.



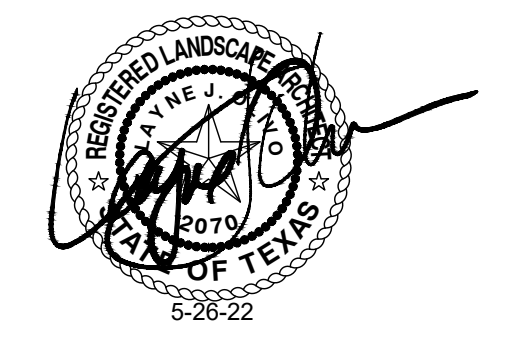
9 VOLUME CONTROL VALVE
1" = 1'-0"



10 IRRIGATION SLEEVE
1" = 1'-0"



11 IRRIGATION CONTROLLER
1" = 1'-0"



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IRRIGATION DETAILS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	SHEET NO.
6	SEE TITLE SHEET	51
STATE	DISTRICT	COUNTY
TEXAS	FTW	TARRANT
CONTROL	SECTION	JOB
0094	02	143
		HIGHWAY NO.
		FM 183

5/23/22 11:55 AM