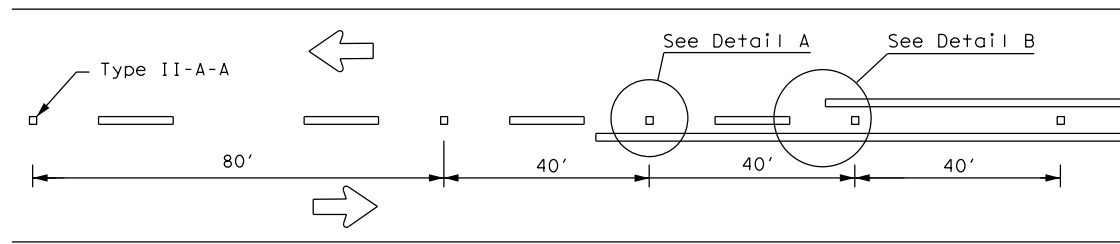


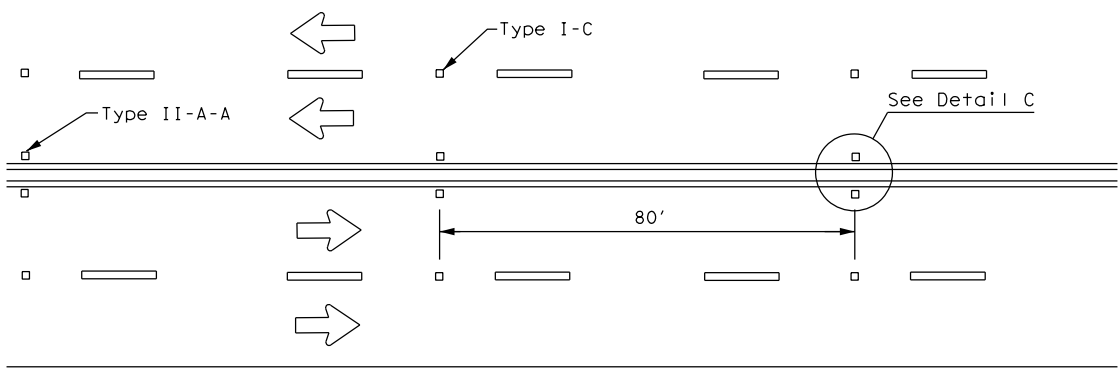
# REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

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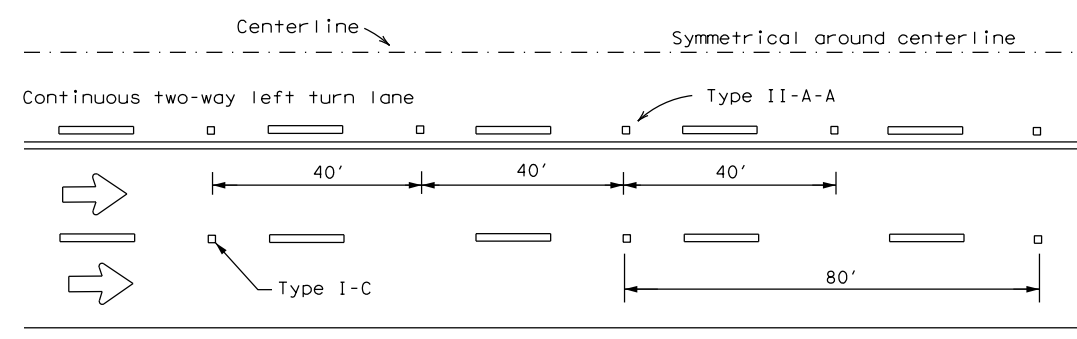
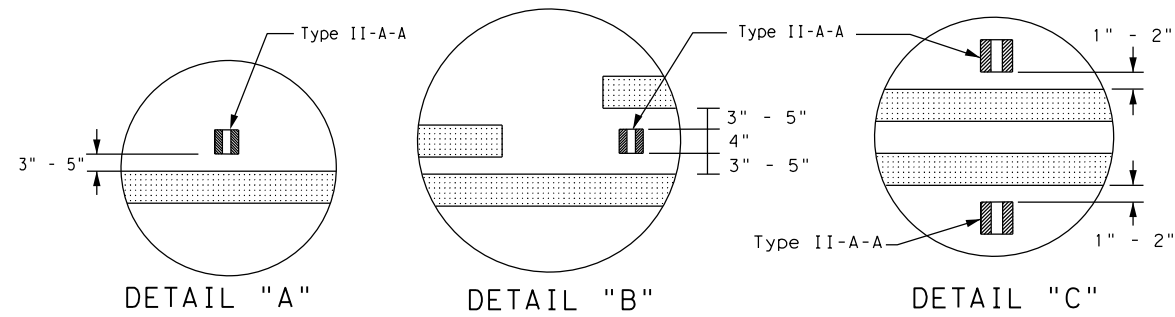
DATE: 2/28/2023 9:01:02 AM  
 FILE: c:\txdot\pw\_online\line\txdot5\ibrahim.eisaad\0483316\pm2-22.dgn



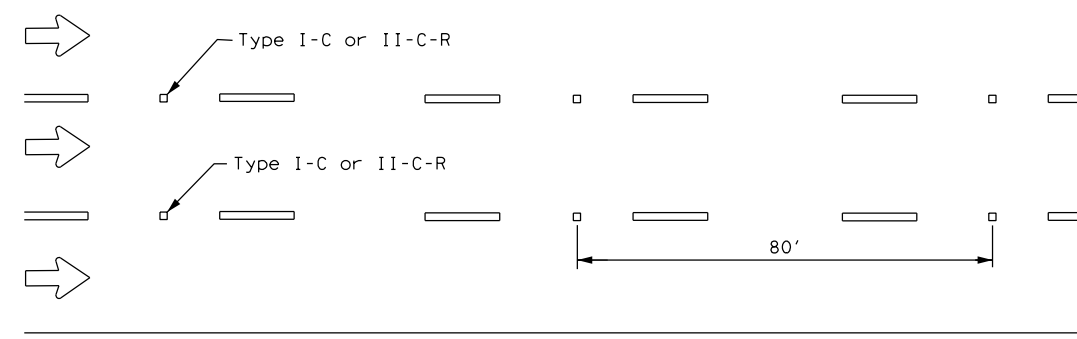
CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS



CENTERLINE & LANE LINES  
FOR FOUR LANE TWO-WAY ROADWAYS

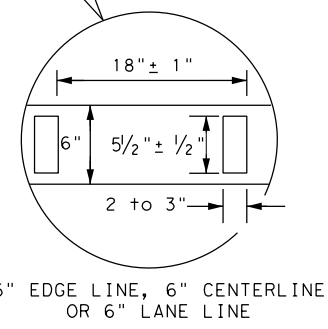
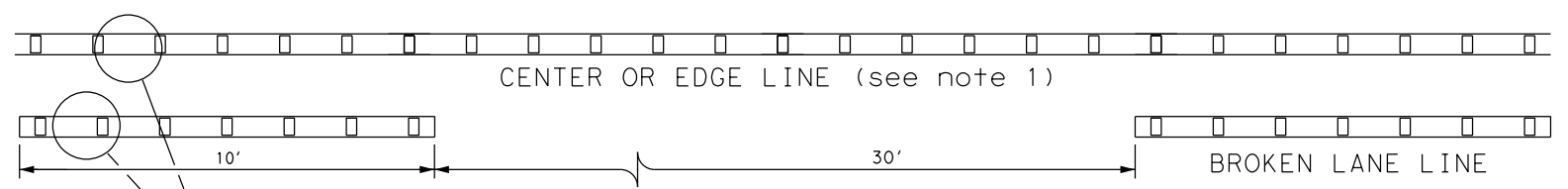


CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE

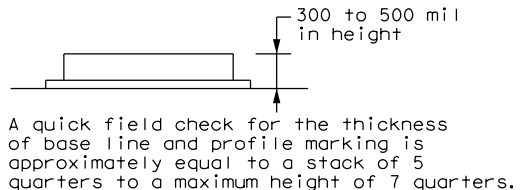


LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.  
 See Note 3.



REFLECTORIZED PROFILE  
PATTERN DETAIL  
USING REFLECTIVE PROFILE PAVEMENT MARKINGS



A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

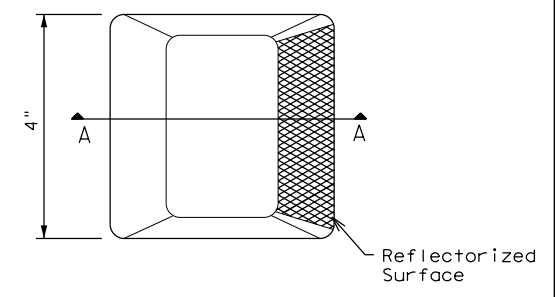
- NOTES**
- Edge lines should typically be 6" wide and the materials shall be specified in the plans.
  - Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

**GENERAL NOTES**

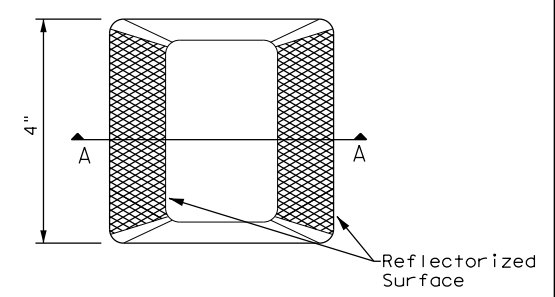
- All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
- On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.
- Use raised pavement marker Type I-C with undivided roadways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.

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

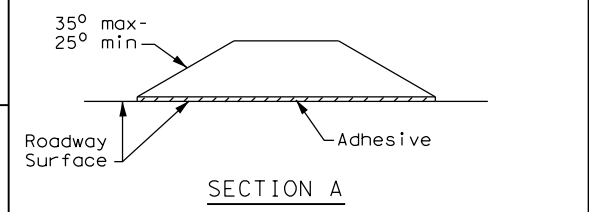
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



RAISED PAVEMENT MARKERS

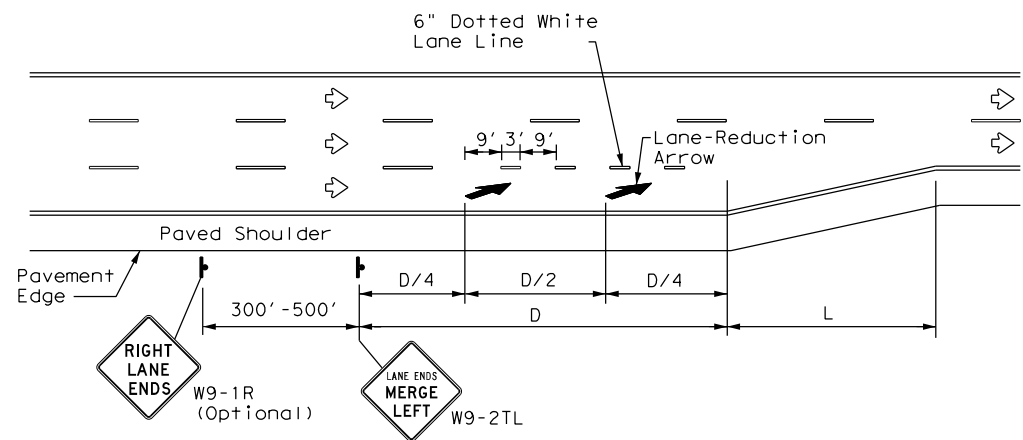


## POSITION GUIDANCE USING RAISED MARKERS REFLECTORIZED PROFILE MARKINGS PM(2) - 22

FILE: pm2-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	1392	01	044, ETC.FM 1378, ETC.	
4-77 8-00 6-20	DIST	COUNTY	SHEET NO.	
4-92 2-10 12-22	DAL	COLLIN	318	
5-00 2-12				

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DATE: 2/28/2023 9:02:32 AM  
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LANE REDUCTION

NOTES

- Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
- On divided highways, an additional RIGHT LANE ENDS (W9-1R) sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
- Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
- For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

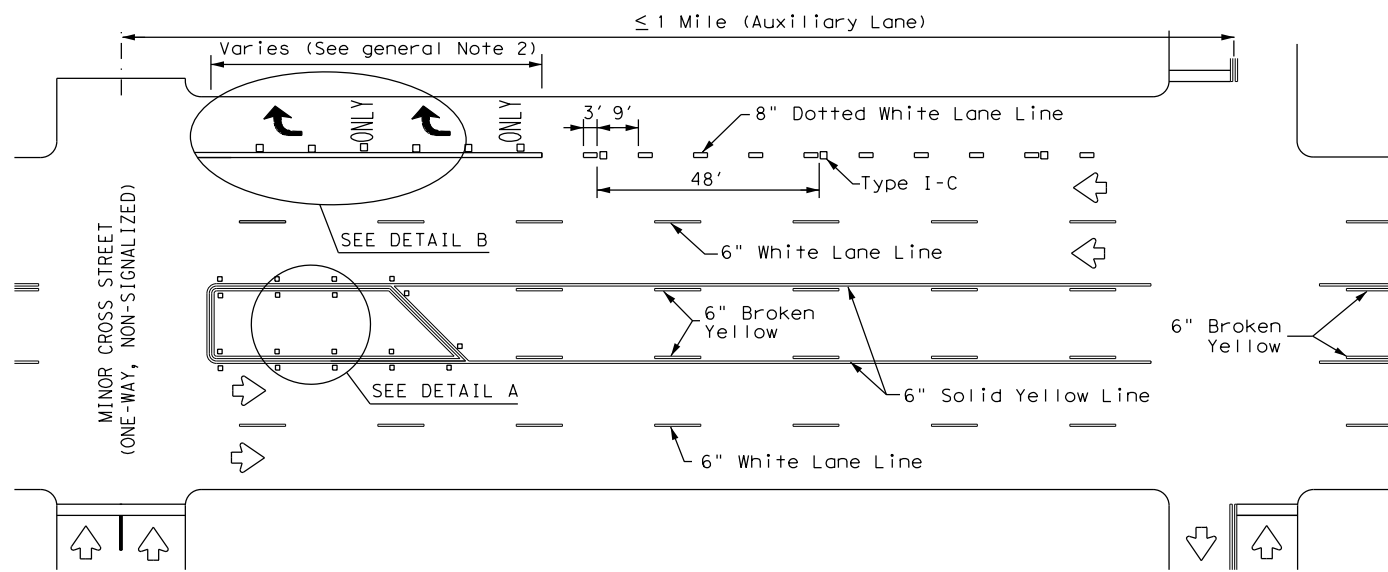
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L = \frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	L=WS
45 MPH	775	
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

GENERAL NOTES

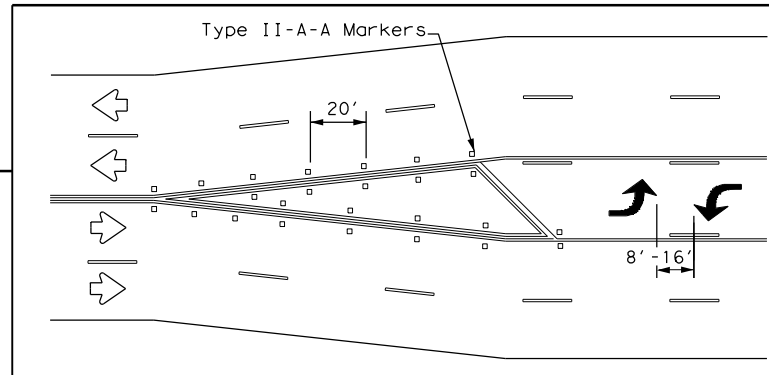
- Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
- When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
- Use raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.
- Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer. See Chapter 3 of the Roadway Design Manual for additional information on turning lanes or storage lengths.

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

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

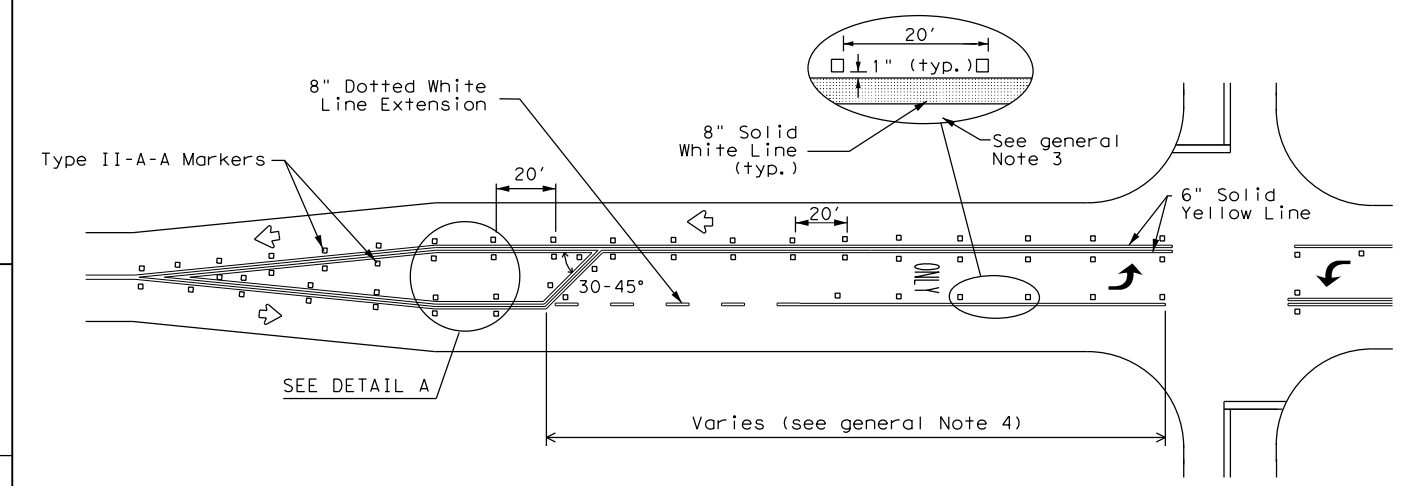


TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE

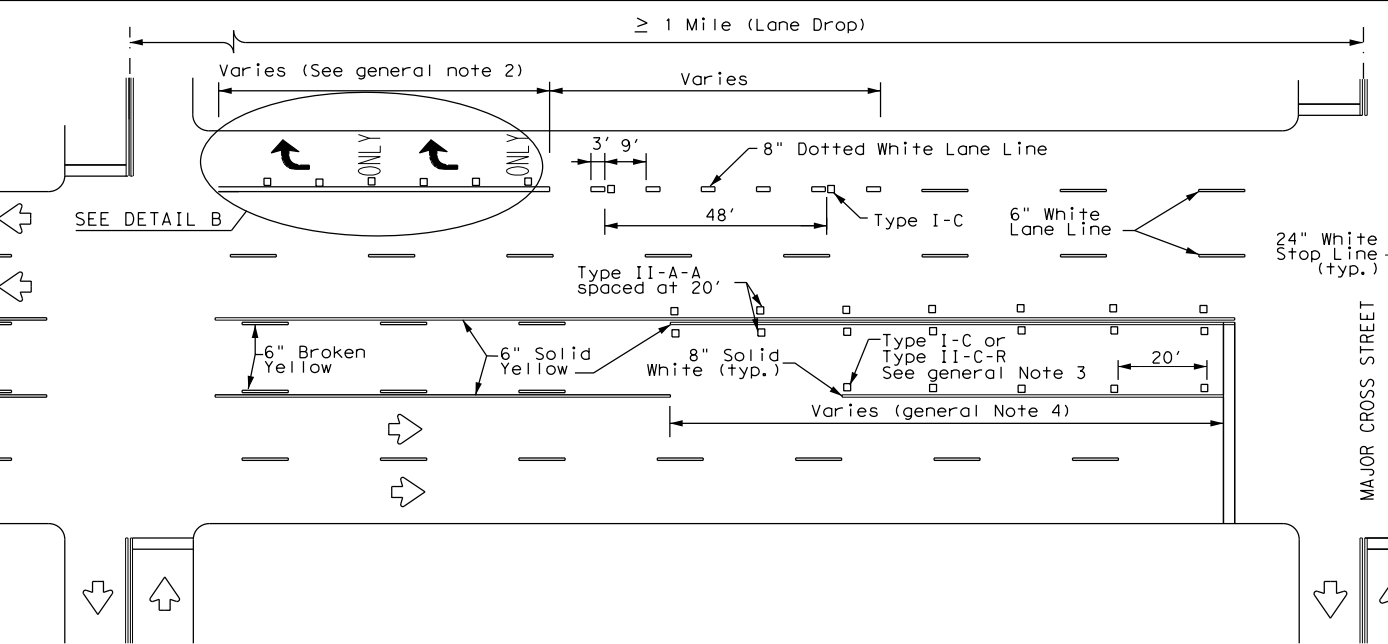


A two-way left-turn (TWLTL) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

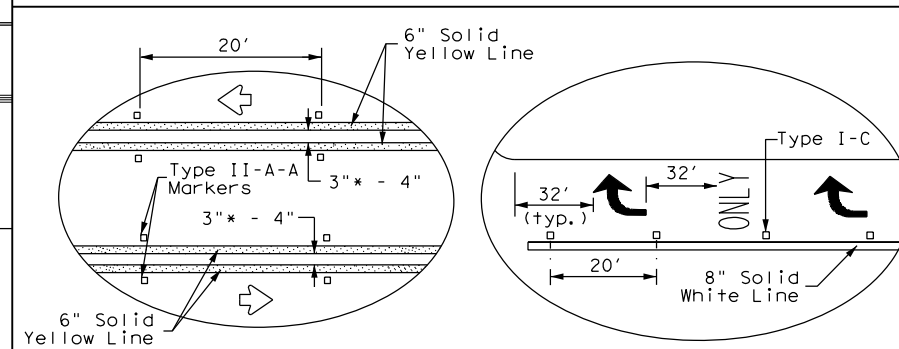
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY



TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS



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



DETAIL A

DETAIL B

\* 2" minimum allowed for restripe projects when approved by the Engineer.

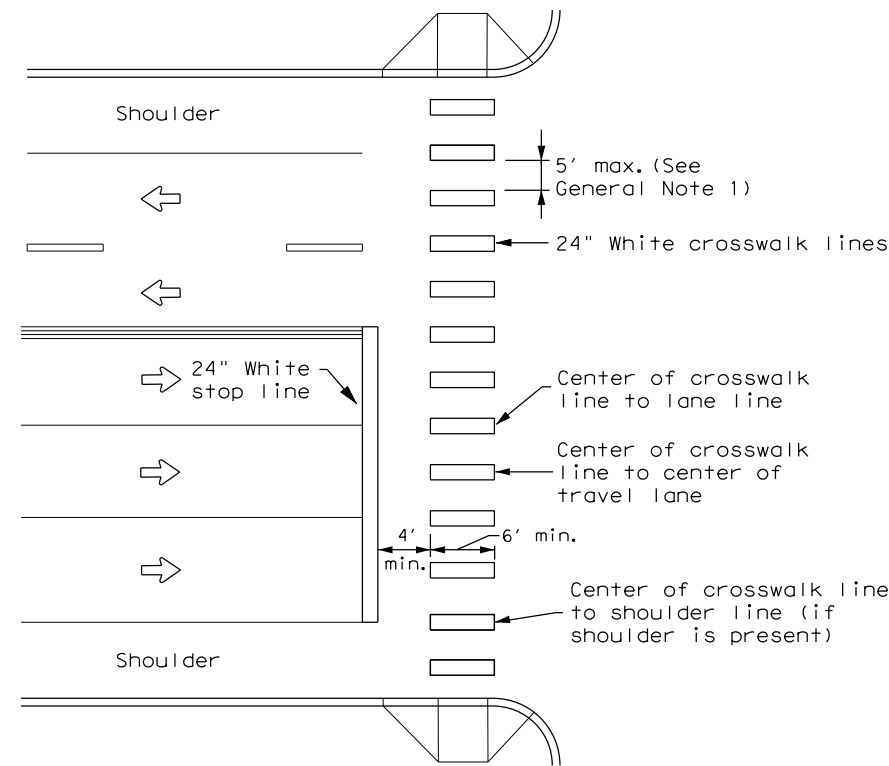
Texas Department of Transportation  
 Traffic Safety Division Standard

### TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS PM(3) - 22

FILE: pm3-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	1392	01	044, ETC.FM 1378, ETC.	
4-98 3-03 6-20	DIST	COUNTY	SHEET NO.	
5-00 2-10 12-22	DAL	COLLIN	319	
8-00 2-12				

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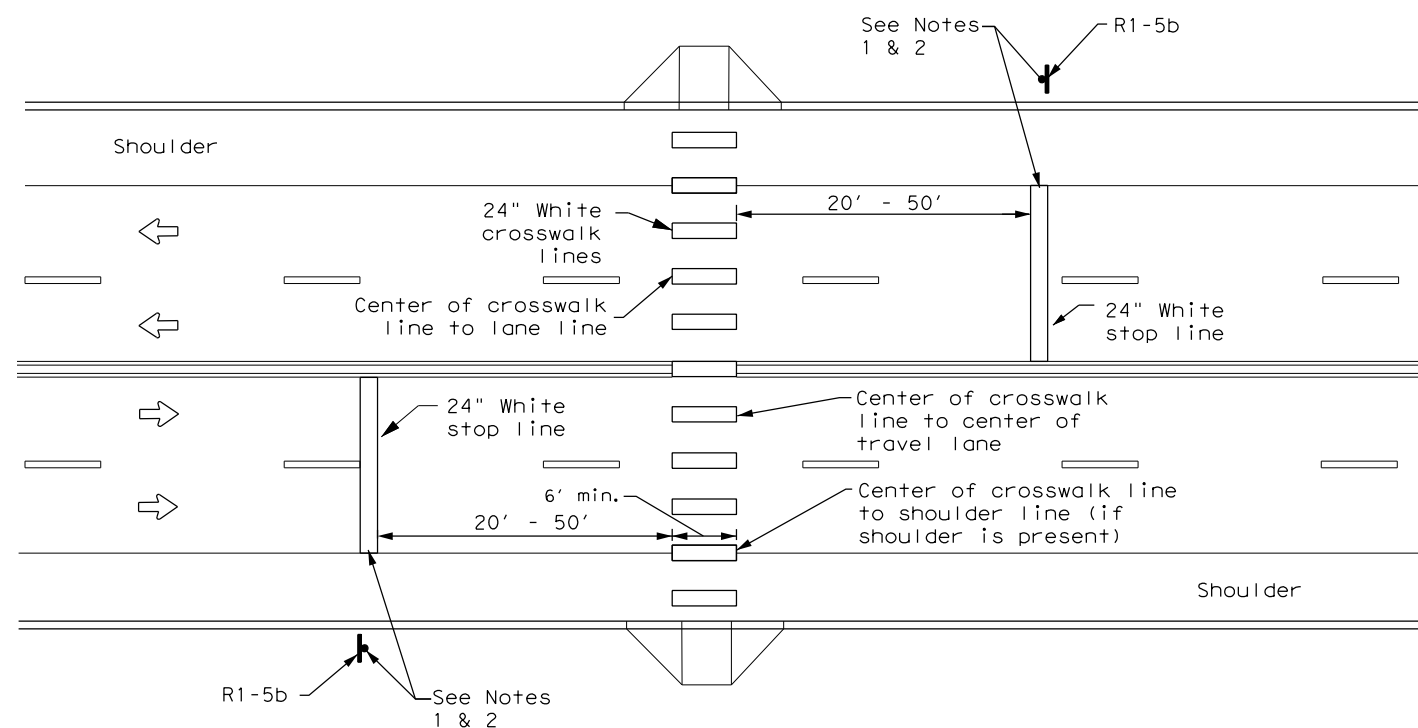
HIGH-VISIBILITY LONGITUDINAL CROSSWALK AT CONTROLLED APPROACH

GENERAL NOTES

1. Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center the crosswalk lines on travel lanes, lane lines, and shoulder lines (if present).
2. A minimum 6" clear distance shall be provided to the curb face. If the last crosswalk line falls into this distance it must be omitted.
3. For divided roadways, adjustments in spacing of the crosswalk lines should be made in the median so that the crosswalk lines are maintained in their proper location across the travel portion of the roadway.
4. At skewed crosswalks, the crosswalk lines are to remain parallel to the lane lines.
5. Each crosswalk shall be a minimum of 6' wide.
6. The High-Visibility Longitudinal Crosswalk is the preferred crosswalk pattern on State Highways. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used. All crosswalk designs and dimension shall comply with the "Texas Manual on Uniform Traffic Control Devices."
7. Final placement of Stop Bar and Crosswalk shall be approved by the Engineer in the field.

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

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



UNSIGNALIZED MIDBLOCK HIGH-VISIBILITY LONGITUDINAL CROSSWALK

NOTES:

1. Use stop bars with Stop Here For Pedestrians (R1-5b) signs at unsignalized midblock crosswalks.
2. Use stop bars with STOP HERE ON RED (R10-6 or R10-6a) signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.

				<b>Traffic Safety Division Standard</b>	
<h2>CROSSWALK PAVEMENT MARKINGS</h2> <h3>PM(4) - 22A</h3>					
FILE:	pm4-22a.dgn	DN:	CK:	DW:	CK:
© TxDOT	December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS		1392	01	044, ETC. FM 1378, ETC.	
6-20		DIST	COUNTY		SHEET NO.
6-22		DAL	COLLIN		320
12-22					
22D					

**STORMWATER POLLUTION PREVENTION PLAN (SWP3):**

This SWP3 has been developed in accordance with the TPDES Construction General Permit TXR150000 (CGP). The Texas Department of Transportation (TxDOT) ensures that project specifications include adequate best management practices (BMPs) for this project.

For all projects with any soil disturbing activities, TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office. If no field office is available, then this SWP3 shall be kept in the appropriate TxDOT Area Office.

This SWP3 is consistent with requirements specified in applicable stormwater plans and the projects environmental permits, issues, and commitments (EPICs). A copy of the CGP is included in Attachment 2.12 of the SWP3 binder.

**1.0 SITE/PROJECT DESCRIPTION**

**1.1 PROJECT CONTROL SECTION JOB (CSJ):**

1392-01-044, ETC

**1.2 PROJECT LIMITS:**

FM 1778 AT FM 3286:  
[FM 1378 FROM W OF EDGEFIELD LN TO S OF JORDAN CT;  
AND FM 3286 FROM FM 1378 TO E WINDING CREEK DR]

**1.3 PROJECT COORDINATES:**

BEGIN: (Lat) 33.0852306 , (Long) -96.5798901

END: (Lat) 33.0779800 , (Long) -96.5767750

**1.4 TOTAL PROJECT AREA (Acres): 17.80**

**1.5 TOTAL AREA TO BE DISTURBED (Acres): 16.90**

**1.6 NATURE OF CONSTRUCTION ACTIVITY:**

CONSTRUCT INTERSECTION IMPROVEMENTS (SIDEWALK & TURN LANES).

**1.7 MAJOR SOIL TYPES:**

Soil Type	Description
AUSTIN SILTY CLAY, 5 TO 8% SLOPES	CLAY, WELL DRAINED, HIGH RATE OF RUNOFF, AND MODERATELY ERODED.
BURLESON CLAY, 1% TO 3% SLOPES	CLAY, MODERATELY WELL DRAINED, HIGH RATE OF RUNOFF.
HEIDEN CLAY, 3 TO 5% SLOPES	CLAY, MODERATELY WELL DRAINED, VERY HIGH RATE OF RUNOFF AND MODERATELY ERODED.
HEIDEN CLAY, 5 TO 8% SLOPES	CLAY, MODERATELY WELL DRAINED, VERY HIGH RATE OF RUNOFF AND MODERATELY ERODED.
HOUSTON BLACK CLAY, 1 TO 3 % SLOPES	CLAY, MODERATELY WELL DRAINED, VERY HIGH RATE OF RUNOFF.

Gentle sloping to sloping, 100% materials were light to dark brown clay with aggregate fragments and fill sand at the top layers. The project area consists mostly of short grasses and shrubs, with a few small trees throughout. A portion of the site has been developed with streets and houses. The estimated existing vegetative density is 75%.

**1.8 PROJECT SPECIFIC LOCATIONS (PSLs):**

PSLs must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. PSLs may be identified during preconstruction meetings or during the construction process. Please choose from the options below:

- PSLs determined during preconstruction meeting
- PSLs determined during construction
- No PSLs planned for construction

Type	Sheet #s

All off-ROW PSLs required by the Contractor are the Contractor's responsibility. The Contractor shall secure all permits required by local, state, federal laws for off-ROW PSLs. The contractor shall provide diagrams, areas of disturbance, acreage, and BMPs for all off-ROW PSLs within one mile of the project.

**1.9 CONSTRUCTION ACTIVITIES:**

(Use the following list as a starting point when developing the Construction Activity Schedule and Ceasing Record in Attachment 2.5.)

- Mobilization
- Install sediment and erosion controls
- Blade existing topsoil into windrows, prep ROW, clear and grub
- Remove existing pavement
- Grading operations, excavation, and embankment
- Excavate and prepare subgrade for proposed pavement widening
- Remove existing culverts, safety end treatments (SETs)
- Remove existing metal beam guard fence (MBGF), bridge rail
- Install proposed pavement per plans
- Install culverts, culvert extensions, SETs
- Install mow strip, MBGF, bridge rail
- Place flex base
- Rework slopes, grade ditches
- Blade windrowed material back across slopes
- Revegetation of unpaved areas
- Achieve site stabilization and remove sediment and erosion control measures

- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

**1.10 POTENTIAL POLLUTANTS AND SOURCES:**

- Sediment laden stormwater from stormwater conveyance over disturbed area
- Fuels, oils, and lubricants from construction vehicles, equipment, and storage
- Solvents, paints, adhesives, etc. from various construction activities
- Transported soils from offsite vehicle tracking
- Construction debris and waste from various construction activities
- Contaminated water from excavation or dewatering pump-out water
- Sanitary waste from onsite restroom facilities
- Trash from various construction activities/receptacles
- Long-term stockpiles of material and waste
- Other: CONCRETE SLURRY / POURING, AND CONCRETE WASHOUT FROM EQUIPMENT CLEANING
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

**1.11 RECEIVING WATERS:**

Receiving waters must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. Include Segment # for receiving waters.

Tributaries	Classified Waterbody
WHITE ROCK CREEK EAST TRIBUTARY 1-1, AND UNAMED TRIBUTARY	FLOWS TO LAKE LAVON (0821) NO IMPAIRMENTS

\* Add (\*) for impaired waterbodies with pollutant in ( ).

**1.12 ROLES AND RESPONSIBILITIES: TxDOT**

- Development of plans and specifications
- Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
- Post Construction Site Notice
- Submit NOI/CSN to local MS4
- Perform SWP3 inspections
- Maintain SWP3 records and update to reflect daily operations
- Complete and submit Notice of Termination to TCEQ
- Maintain SWP3 records for 3 years
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

**1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR**

- Day To Day Operational Control
- Submit Notice of Intent (NOI) to TCEQ (≥5 acres)
- Post Construction Site Notice
- Submit NOI/CSN to local MS4
- Maintain schedule of major construction activities
- Install, maintain and modify BMPs
- Complete and submit Notice of Termination to TCEQ
- Maintain SWP3 records for 3 years
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

**1.14 LOCAL MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) OPERATOR COORDINATION:**

MS4 Entity
CITY OF LUCAS, PHASE II --CONTACT STANTON FOERSTER

**STORMWATER POLLUTION PREVENTION PLAN (SWP3)**



Sheet 1 of 2

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	SEE TITLE SHEET		321
STATE	STATE DIST.	COUNTY	
TEXAS	DALLAS	COLLIN	
CONT.	SECT.	JOB	HIGHWAY NO.
1392	01	044, ETC.	FM 1378, ETC.

**STORMWATER POLLUTION PREVENTION PLAN (SWP3):**

**2.0 BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS, INSPECTION, AND MAINTENANCE**

The Contractor shall be the responsible party for implementing the BMPs described herein and for complying with the SWP3 for control of erosion and sedimentation during day-to-day operations. The Contractor shall implement changes to this SWP3 approved by TxDOT within the times specified in this SWP3 or the CGP.

**2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:**

**T / P**

- Protection of Existing Vegetation
- Vegetated Buffer Zones
- Soil Retention Blankets
- Geotextiles
- Mulching/ Hydromulching
- Soil Surface Treatments
- Temporary Seeding
- Permanent Planting, Sodding or Seeding
- Biodegradable Erosion Control Logs
- Rock Filter Dams/ Rock Check Dams
- Vertical Tracking
- Interceptor Swale
- Riprap
- Diversion Dike
- Temporary Pipe Slope Drain
- Embankment for Erosion Control
- Paved Flumes
- Other: Compost Manufactured Topsoil
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

**2.2 SEDIMENT CONTROL BMPs:**

**T / P**

- Biodegradable Erosion Control Logs
- Dewatering Controls
- Inlet Protection
- Rock Filter Dams/ Rock Check Dams
- Sandbag Berms
- Sediment Control Fence
- Stabilized Construction Exit
- Floating Turbidity Barrier
- Vegetated Buffer Zones
- Vegetated Filter Strips
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

Sediment control BMPs requiring design capacity calculations (See SWP3 Attachment 1.3.):

**T / P**

- Sediment Trap
  - Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area
  - 3,600 cubic feet of storage per acre drained
- Sedimentation Basin
  - Not required (<10 acres disturbed)
  - Required (>10 acres) and implemented.
    - Calculated volume runoff from 2-year, 24-hour storm for each acre of disturbed area
    - 3,600 cubic feet of storage per acre drained
- Required (>10 acres), but not feasible due to:
  - Available area/Site geometry
  - Site slope/Drainage patterns
  - Site soils/Geotechnical factors
  - Public safety
  - Other: \_\_\_\_\_

**2.3 PERMANENT CONTROLS:**

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To
BLOCK SODDING	16+15.90	20+98.76
BLOCK SODDING	26+94.66	29+13.93

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

**2.4 OFFSITE VEHICLE TRACKING CONTROLS:**

- Excess dirt/mud on road removed daily
- Haul roads dampened for dust control
- Loaded haul trucks to be covered with tarpaulin
- Stabilized construction exit
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

**2.5 POLLUTION PREVENTION MEASURES:**

- Chemical Management
- Concrete and Materials Waste Management
- Debris and Trash Management
- Dust Control
- Sanitary Facilities
- Other: Avoid storing portable sanitary units, concrete washout of chemical within 50 feet upgradient of a receiving water or drainage conveyance without adequate pollution controls.
- Other: Capture saw-cutting debris and slurry for proper disposal.
- Other: Maintain roadways, active pedestrian facilities and adjacent properties free of project sedimentation and loose materials.
- Other: \_\_\_\_\_

**2.6 VEGETATED BUFFER ZONES:**

Natural vegetated buffers shall be maintained as feasible to protect adjacent surface waters. If vegetated natural buffer zones are not feasible due to site geometry, the appropriate additional sediment control measures have been incorporated into this SWP3.

Type	Stationing	
	From	To
Vegetative Buffer Next to White Rock Creek	18+00	36+00
Vegetative Buffer Next to Uname Tributary	101+75	102+00

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

**2.7 ALLOWABLE NON-STORMWATER DISCHARGES:**

- Fire hydrant flushings, but excluding discharges of hyperchlorinated
- Irrigation drainage
- Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- Potable water sources
- Springs
- Uncontaminated groundwater
- Water used to wash vehicles exterior only or control dust
- Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

**2.8 INSPECTIONS:**

All disturbed areas and erosion and sediment control devices shall be inspected at least once every seven (7) days. Inspections shall be performed by TxDOT as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3 .

**2.9 MAINTENANCE:**

Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being able to access the site. Maintenance shall be performed by the Contractor as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.5 of this SWP3.

**STORMWATER POLLUTION PREVENTION PLAN (SWP3)**



FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	SEE TITLE SHEET		322
STATE	STATE DIST.	COUNTY	
TEXAS	DALLAS	COLLIN	
CONT.	SECT.	JOB	HIGHWAY NO.
1392	01	044, ETC.	FM 1378, ETC.

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

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

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

1. City of Lucas Phase II MS 4- Contact Stanton Foerster.

No Action Required  Required Action

Action Number:

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

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

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

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

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

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

- Unnamed Tributary to Lake Lavon- Desc: Sta. 24+50
- Unnamed Tributary to Lake Lavon- Desc: Sta. 30+05
- Unnamed Tributary to Lake Lavon -Desc: Sta. 103+00

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

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

Erosion	Sedimentation	Post-Construction TSS
<input checked="" type="checkbox"/> Temporary Vegetation	<input checked="" 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 checked="" 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

Action Number:

**IV. VEGETATION RESOURCES**

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

No Action Required  Required Action

Action Number:

- 
- 
- 

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

No Action Required  Required Action

Action Number:

- The following species could occur in the project area: Monarch butterfly, Woodhouse's toad, Western Burrowing Owl, American bumblebee, eastern spotted skunk, eastern box turtle, slender glass lizard, and Texas garter snake. Follow the special note on the EPIC sheet and the BMPs listed below to protect these species.
- Contractor to implement the following BMPs from "Beneficial Management Practices: Avoiding, Minimizing, and Mitigating Impacts of Transportation Projects on State Natural Resources" available at <https://ftp.txdot.gov/pub/txdot-info/env/toolkit/300-01-bmp.pdf>.
  - Section 2.4.4 Insect Pollinator BMP
  - Section 2.6.1 Aquatic Amphibian and Reptile BMP (barrier fencing not required)
  - Section 2.6.2 Terrestrial Amphibian and Reptile BMP
  - Section 2.2.1 Bird BMP
  - Section 1.4 Water Quality BMP
  - Section 1.2 Vegetation BMP

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

**LIST OF ABBREVIATIONS**

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

**VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES**

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used. Obtain and keep on-site 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, canisters, barrels, etc.
- \* Undesirable smells or odors
- \* Evidence of leaching or seepage of substances

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

Yes  No

If "No", then no further action is required.

If "Yes", then TxDOT is responsible for completing asbestos assessment/inspection.

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

Yes  No

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

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

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

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

No Action Required  Required Action

Action Number:

- 

**VII. OTHER ENVIRONMENTAL ISSUES**


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

No Action Required  Required Action

Action Number:

**GENERAL NOTE:**

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

 <b>Texas Department of Transportation</b> Dallas District				
<b>ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPIC)</b>				
SHEET 1 OF 1				
FED. RD. DIV. NO. 6	FEDERAL AID PROJECT NO. SEE TITLE SHEET			HIGHWAY NO. FM 1378
STATE TEXAS	DISTRICT DALLAS	COUNTY Collin		SHEET NO.
CONTROL	SECTION	JOB		
1392	01	044, ETC.		323

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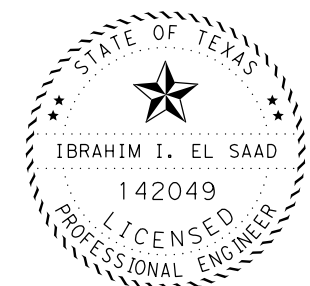
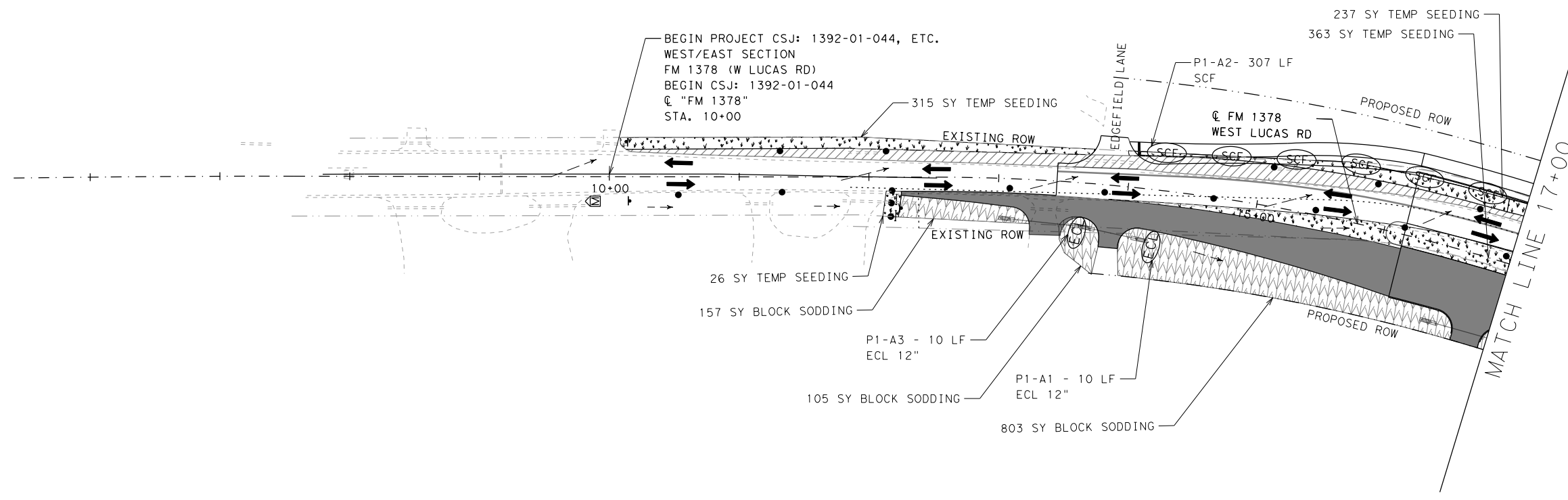
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LEGEND

- - -> DIRECTION OF FLOW
- (SCF) SEDIMENT CONTROL FENCE
- (ECL) EROSION CONTROL LOG
- (RFD2) ROCK FILTER DAM (TY II)
- (RFD3) ROCK FILTER DAM (TY III)
- [ ] CONSTRUCTION EXIT
- [ ] TEMPORARY SEEDING
- [ ] PERMANENT BLOCK SODDING
- [ ] PERMANENT CONSTRUCTION THIS PHASE
- [ ] TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE
- [ ] TEMPORARY PAVEMENT CONSTRUCTED PREVIOUS PHASE

NOTE:  
BMP'S SHALL BE INSTALLED NO SOONER THAN TWO WEEKS PRIOR TO SOIL DISTURBANCE IN THEIR CONTROL AREA.  
SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIMEFRAMES.



*Abraham El Saad, P.E.* 11-7-22  
Signature of Registrant & Date

PI-Ⓐ

DATE DISTURBED	DATE STABILIZED

BMP INSTALL/ REMOVE DATES

BMP #	INSTALL DATE	REMOVE DATE
P1-A1		
P1-A2		
P1-A3		



**FM 1378**  
**AT FM 3286**  
**SW3P SITE MAP**  
**PHASE I STAGE 1**

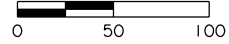
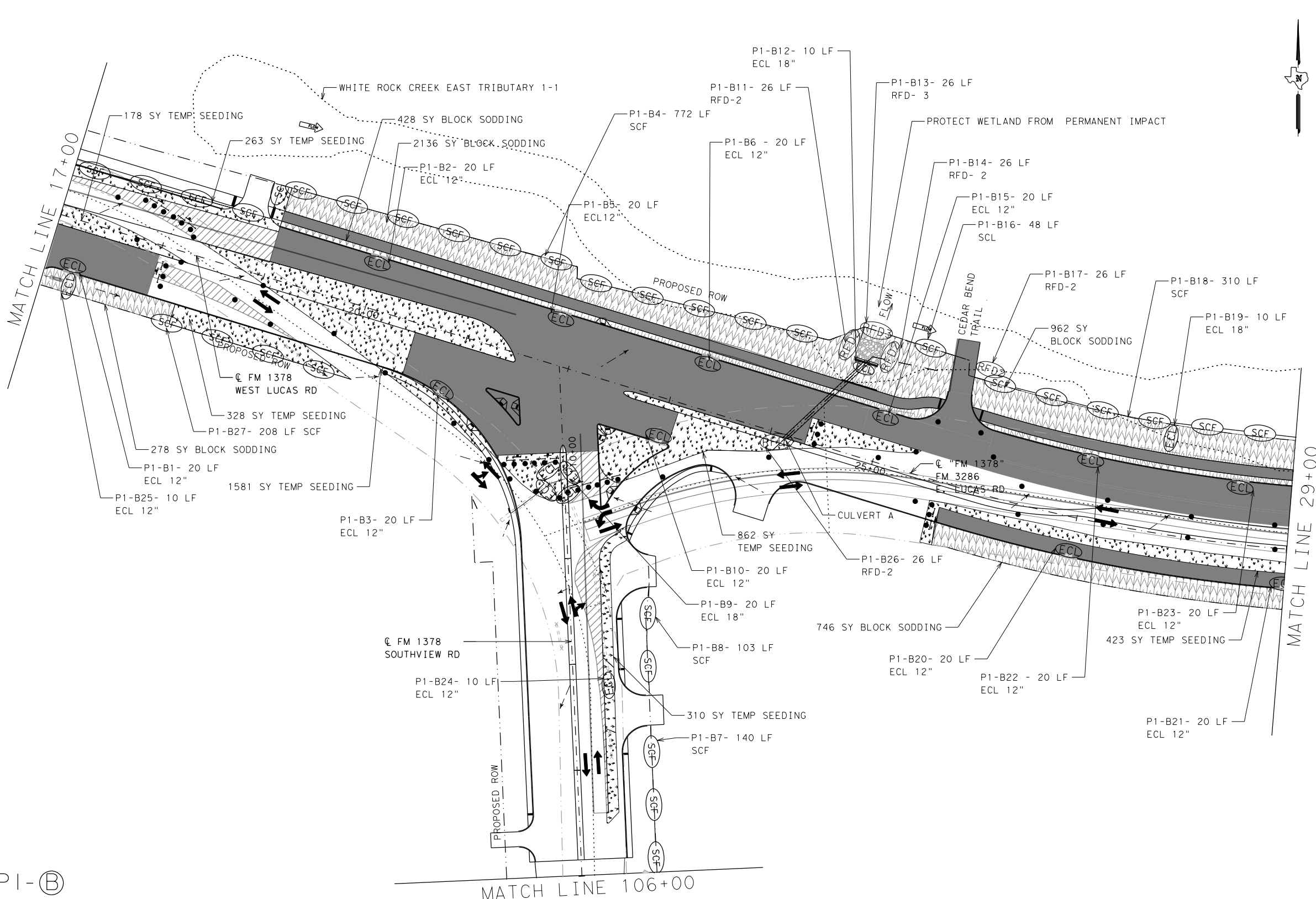
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CHECK	CONTROL 1392	SECTION 01	JOB 044, ETC.

SCALE: 1" = 100' SHEET 01 OF 04

325

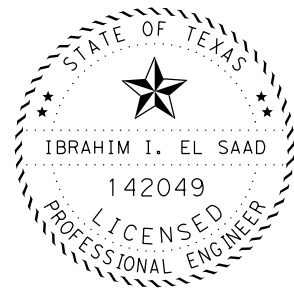
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- LEGEND**
- > DIRECTION OF FLOW
  - (SCF) SEDIMENT CONTROL FENCE
  - (ECL) EROSION CONTROL LOG
  - (RFD2) ROCK FILTER DAM (TY II)
  - (RFD3) ROCK FILTER DAM (TY III)
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*Abraham El Saad, P.E. 11-7-22*  
Signature of Registrant & Date



**FM 1378  
AT FM 3286  
SW3P SITE MAP  
PHASE I STAGE I**

PI-(B)

DATE DISTURBED	DATE STABILIZED

BMP INSTALL/ REMOVE DATES

BMP #	INSTALL DATE	REMOVE DATE	BMP #	INSTALL DATE	REMOVE DATE	BMP #	INSTALL DATE	REMOVE DATE	BMP #	INSTALL DATE	REMOVE DATE
P1-B1			P1-B8			P1-B15			P1-B22		
P1-B2			P1-B9			P1-B16			P1-B23		
P1-B3			P1-B10			P1-B17			P1-B24		
P1-B4			P1-B11			P1-B18			P1-B25		
P1-B5			P1-B12			P1-B19			P1-B26		
P1-B6			P1-B13			P1-B20			P1-B27		
P1-B7			P1-B14								

SCALE: 1"=100'

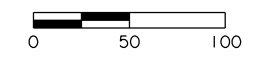
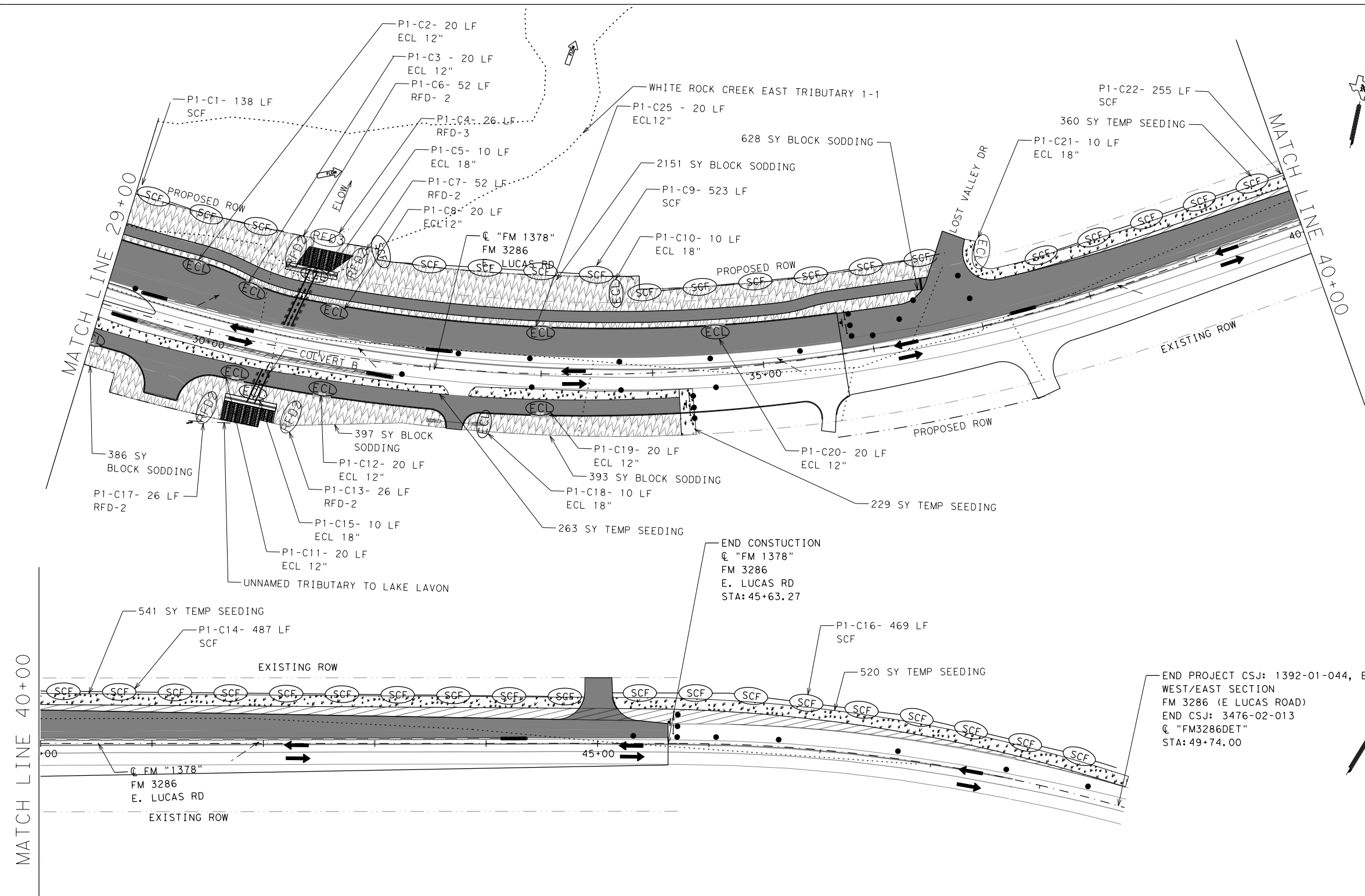
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CHECK	CONTROL 1392	SECTION 01	JOB 044, ETC.	

SHEET 02 OF 04



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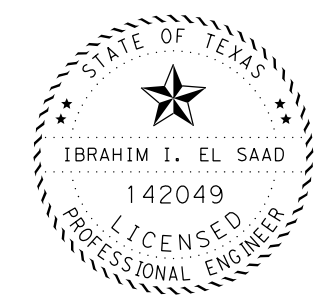
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- LEGEND**
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  - SCF SEDIMENT CONTROL FENCE
  - ECL EROSION CONTROL LOG
  - RFD2 ROCK FILTER DAM (TY II)
  - RFD3 ROCK FILTER DAM (TY III)
  - ▭ CONSTRUCTION EXIT
  - ▨ TEMPORARY SEEDING
  - ▩ PERMANENT BLOCK SODDING
  - PERMANENT CONSTRUCTION THIS PHASE
  - ▨ TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE
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SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIMEFRAMES.

END PROJECT CSJ: 1392-01-044, ETC  
WEST/EAST SECTION  
FM 3286 (E LUCAS ROAD)  
END CSJ: 3476-02-013  
@ "FM3286DET"  
STA: 49+74.00



*Abraham El Saad, P.E. 11-7-22*  
Signature of Registrant & Date

P1-©

DATE DISTURBED	DATE STABILIZED

**BMP INSTALL/ REMOVE DATES**

BMP #	INSTALL DATE	REMOVE DATE	BMP #	INSTALL DATE	REMOVE DATE	BMP #	INSTALL DATE	REMOVE DATE	BMP #	INSTALL DATE	REMOVE DATE
P1-C1			P1-C8			P1-C15			P1-C22		
P1-C2			P1-C9			P1-C16					
P1-C3			P1-C10			P1-C17					
P1-C4			P1-C11			P1-C18					
P1-C5			P1-C12			P1-C19					
P1-C6			P1-C13			P1-C20					
P1-C7			P1-C14			P1-C21					

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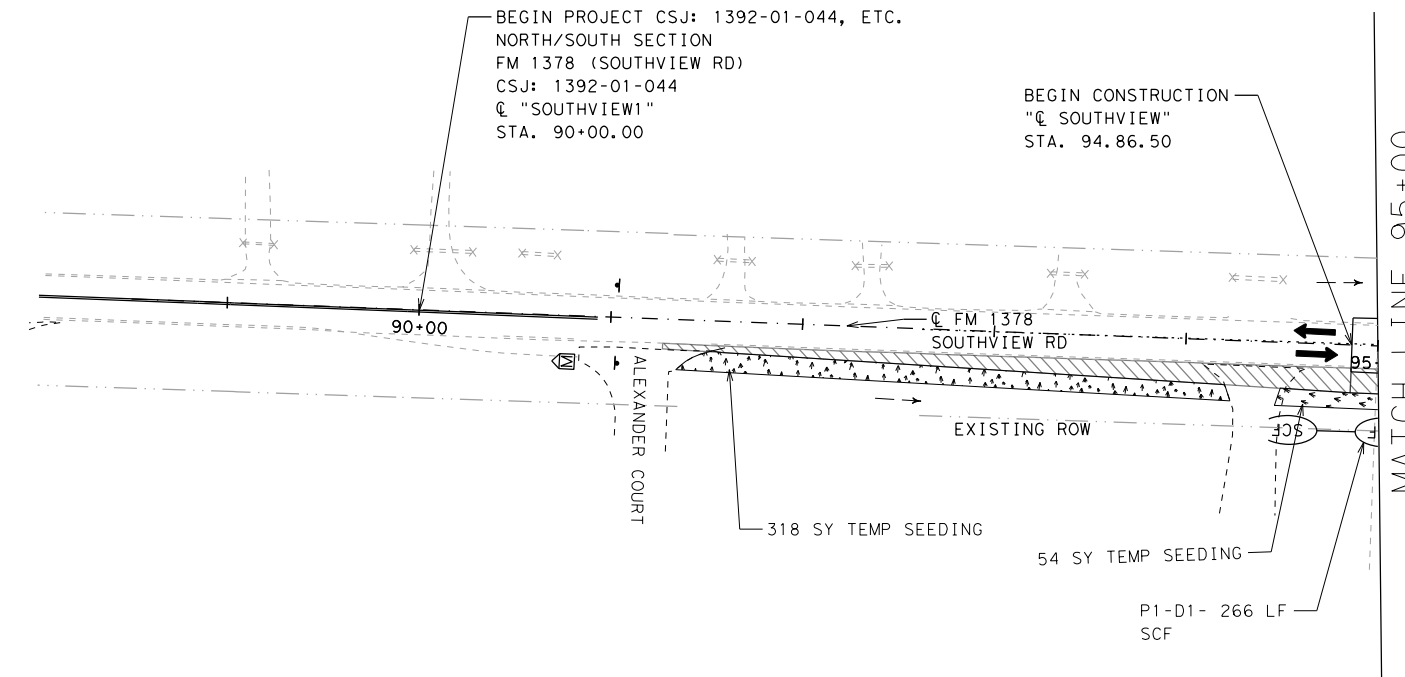
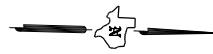
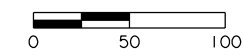
**Texas Department of Transportation**

**FM 1378**  
**AT FM 3286**

**SW3P SITE MAP**  
**PHASE 1 STAGE 1**

SCALE: 1"=100' SHEET 03 OF 04

DESIGN PR	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
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	1392	01	044, ETC.	



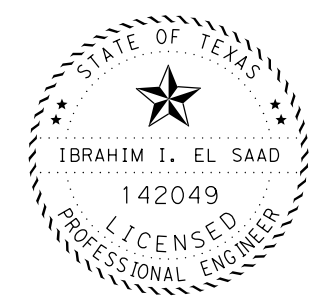
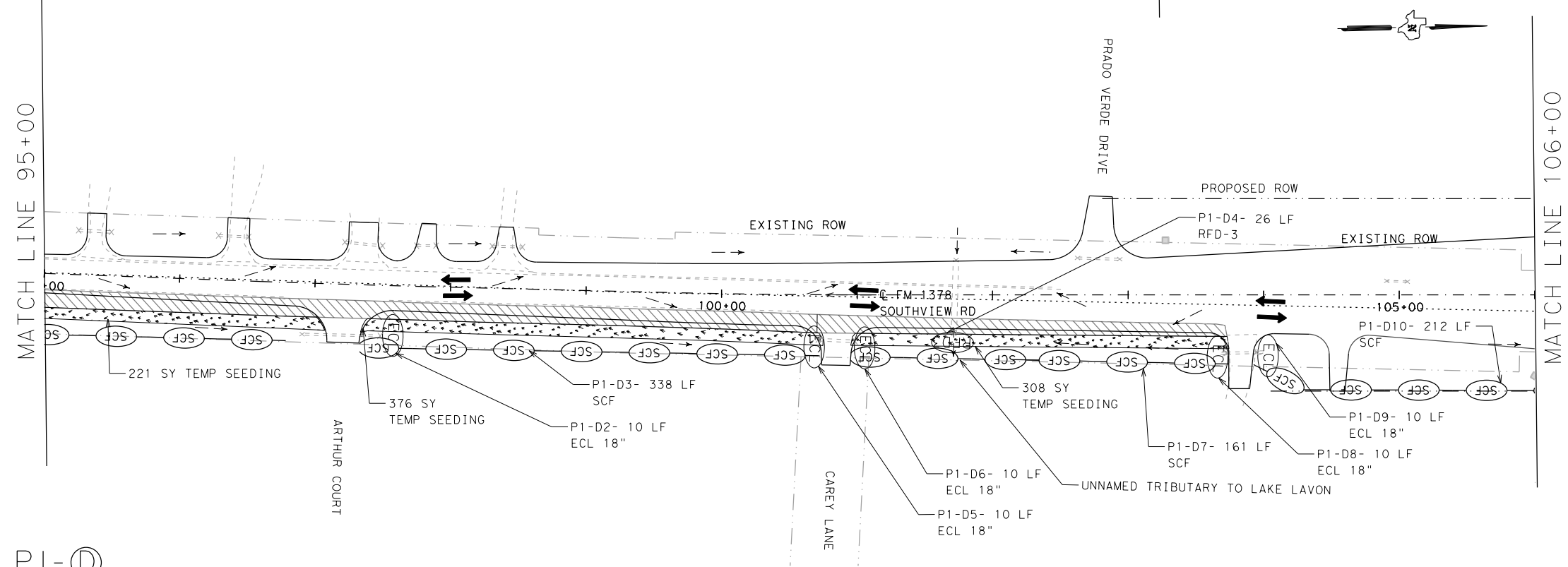
MATCH LINE 95+00

- LEGEND**
- DIRECTION OF FLOW
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  - ROCK FILTER DAM (TY II)
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SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIMEFRAMES.

MATCH LINE 95+00

MATCH LINE 106+00



*Abraham I. Saad, P.E. 11-7-22*  
Signature of Registrant & Date

P1-D

DATE DISTURBED	DATE STABILIZED

BMP INSTALL/ REMOVE DATES

BMP #	INSTALL DATE	REMOVE DATE	BMP #	INSTALL DATE	REMOVE DATE
P1-D1			P1-D8		
P1-D2			P1-D9		
P1-D3			P1-D10		
P1-D4					
P1-D5					
P1-D6					
P1-D7					



**FM 1378**  
**AT FM 3286**  
**SW3P SITE MAP**  
**PHASE I STAGE I**

SCALE: 1"=100' SHEET 04 OF 04

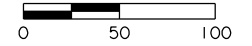
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GRAPHICS PR	STATE TEXAS	DISTRICT DAL	COUNTY COLLIN
CHECK	CONTROL 1392	SECTION 01	JOB 044, ETC.

**328**

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LEGEND

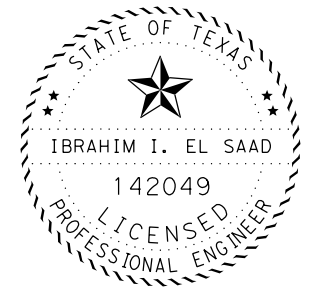
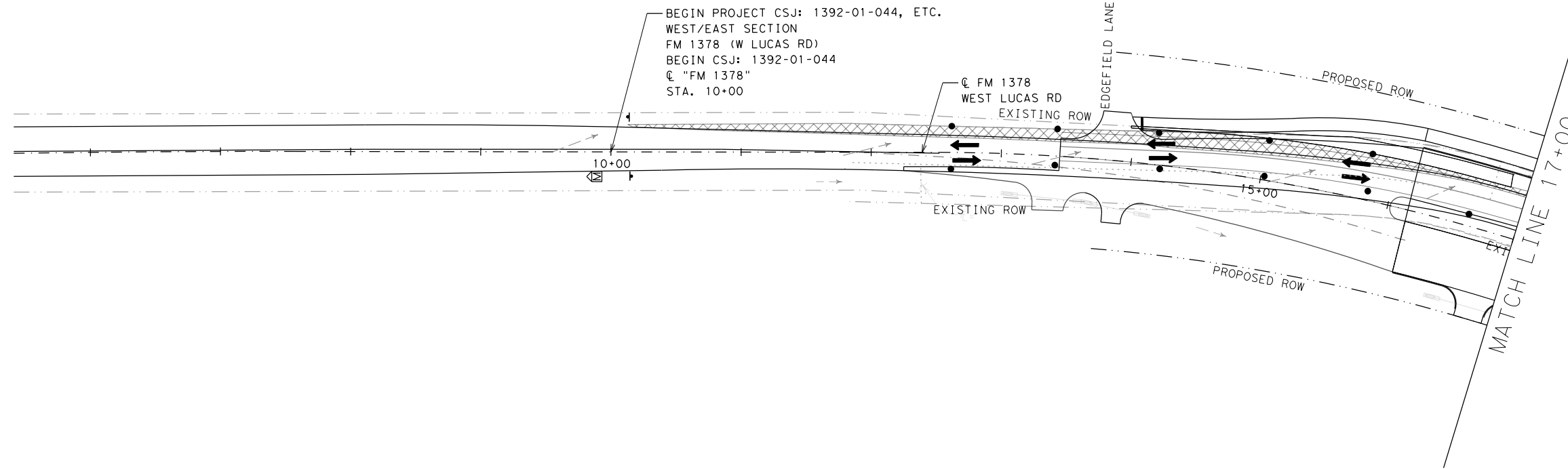
- DIRECTION OF FLOW
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NOTE:  
CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EROSION CONTROL DEVICES FROM PREVIOUS PHASE(S) THROUGHOUT DURATION OF PROJECT.

BMP'S SHALL BE INSTALLED NO SOONER THAN TWO WEEKS PRIOR TO SOIL DISTURBANCE IN THEIR CONTROL AREA.

SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIMEFRAMES.

BMP'S WITH \* INDICATE PREVIOUS INSTALLATION



*Ibrahim I. El Saad*, P.E. 11-7-22  
Signature of Registrant & Date

P1S2-(A)

DATE DISTURBED	DATE STABILIZED

BMP INSTALL/ REMOVE DATES		
BMP #	INSTALL DATE	REMOVE DATE



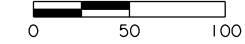
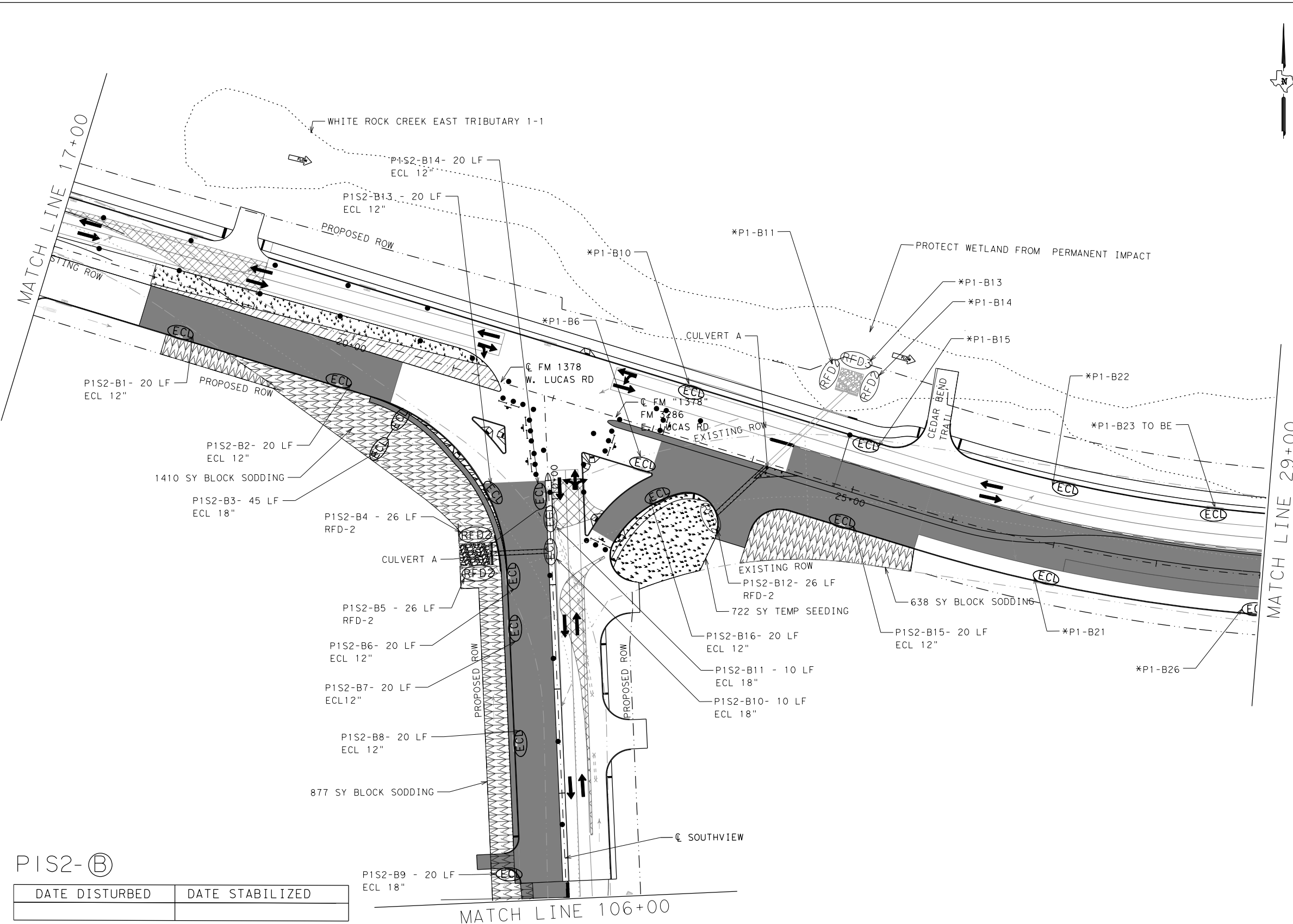
**FM 1378  
AT FM 3286  
SW3P SITE MAP  
PHASE 1 STAGE 2**

SCALE: 1" = 100'			SHEET 01 OF 04
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GRAPHICS PR	STATE TEXAS	DISTRICT DAL	COUNTY COLLIN
CHECK	CONTROL 1392	SECTION 01	JOB 044, ETC.
			<b>329</b>

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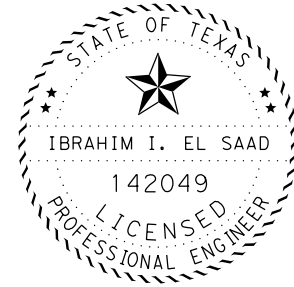
- DIRECTION OF FLOW
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SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIMEFRAMES.

BMP'S WITH \* INDICATE PREVIOUS INSTALLATION



*Ibrahim I. Saad, P.E. 11-7-22*  
Signature of Registrant & Date



FM 1378  
AT FM 3286

SW3P SITE MAP  
PHASE 1 STAGE 2

DESIGN PR	FED. RD. DIV. NO. 6	FEDERAL AID PROJECT NO. SEE TITLE SHEET	HIGHWAY NO. FM 1378, ETC.
GRAPHICS PR	STATE TEXAS	DISTRICT DAL	COUNTY COLLIN
CHECK	CONTROL 1392	SECTION 01	JOB 044, ETC.

330

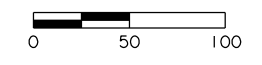
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DATE DISTURBED	DATE STABILIZED

BMP INSTALL/ REMOVE DATES

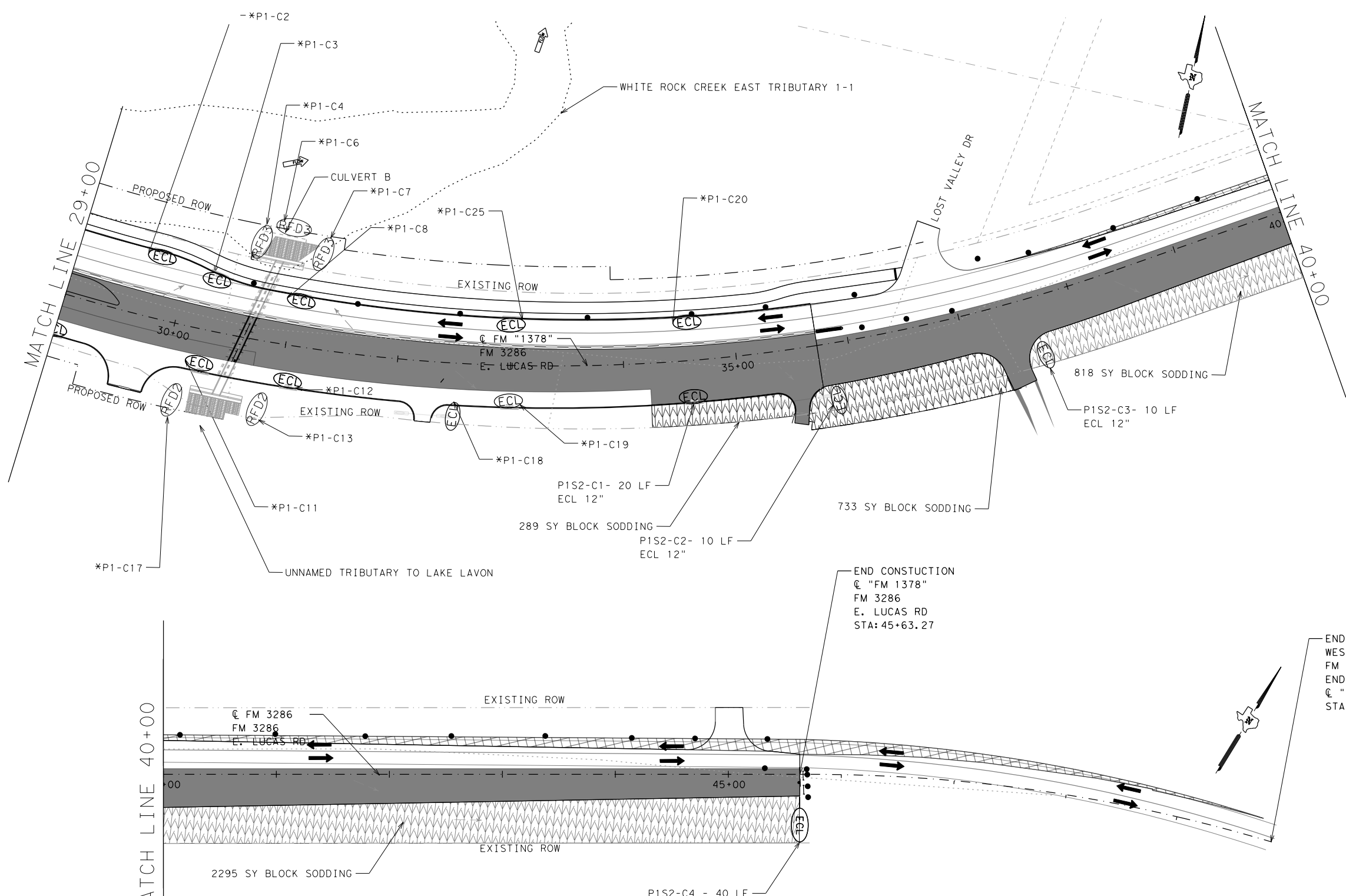
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P1S2-B2			P1S2-B9			P1S2-B16		
P1S2-B3			P1S2-B10					
P1S2-B4			P1S2-B11					
P1S2-B5			P1S2-B12					
P1S2-B6			P1S2-B13					
P1S2-B7			P1S2-B14					

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 DATE: 10/31/2022 TIME: 9:37:41 AM



**LEGEND**

- > DIRECTION OF FLOW
- SCF SEDIMENT CONTROL FENCE
- ECL EROSION CONTROL LOG
- RFD2 ROCK FILTER DAM (TY II)
- RFD3 ROCK FILTER DAM (TY III)
- ▭ CONSTRUCTION EXIT
- ▨ TEMPORARY SEEDING
- ▩ PERMANENT BLOCK SODDING
- PERMANENT CONSTRUCTION THIS PHASE
- ▨ TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE
- ▨ TEMPORARY PAVEMENT CONSTRUCTED PREVIOUS PHASE



NOTE:  
 CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EROSION CONTROL DEVICES FROM PREVIOUS PHASE(S) THROUGHOUT DURATION OF PROJECT.

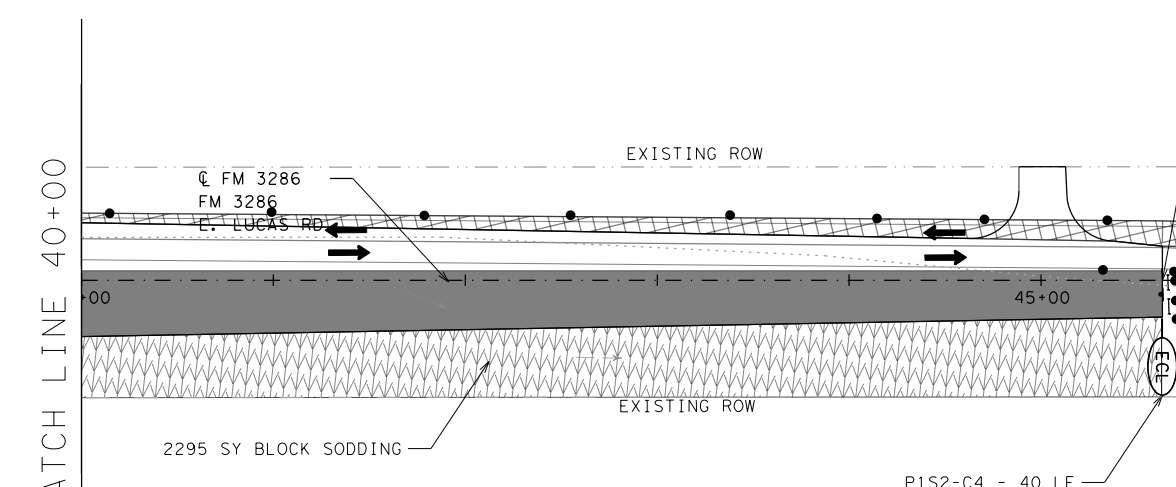
BMP'S SHALL BE INSTALLED NO SOONER THAN TWO WEEKS PRIOR TO SOIL DISTURBANCE IN THEIR CONTROL AREA.

SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIMEFRAMES.

BMP'S WITH \* INDICATE PREVIOUS INSTALLATION

END PROJECT CSJ: 1392-01-044,  
 WEST/EAST SECTION  
 FM 3286 (E LUCAS ROAD)  
 END CSJ: 3476-02-013  
 Q "FM3286DET"  
 STA: 45+63.27

END CONSTRUCTION  
 Q "FM 1378"  
 FM 3286  
 E. LUCAS RD  
 STA: 45+63.27

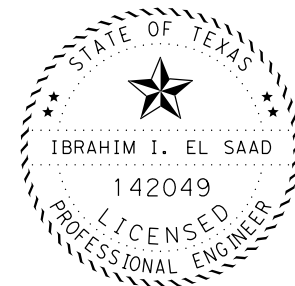


**P1S2-C**

DATE DISTURBED	DATE STABILIZED

BMP INSTALL/ REMOVE DATES

BMP #	INSTALL DATE	REMOVE DATE
P1S2-C1		
P1S2-C2		
P1S2-C3		
P1S2-C4		



*Abraham I. Saad*, P.E. 11-7-22  
 Signature of Registrant & Date

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**Texas Department of Transportation**

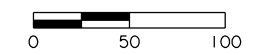
**FM 1378  
 AT FM 3286**

**SW3P SITE MAP  
 PHASE 1 STAGE 2**

SCALE: 1"=100' SHEET 03 OF 04

DESIGN PR	FED. RD. DIV. NO. 6	FEDERAL AID PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. FM 1378, ETC.
GRAPHICS PR	STATE TEXAS	DISTRICT DAL	COUNTY COLLIN	SHEET NO. 331
CHECK	CONTROL 1392	SECTION 01	JOB 044, ETC.	

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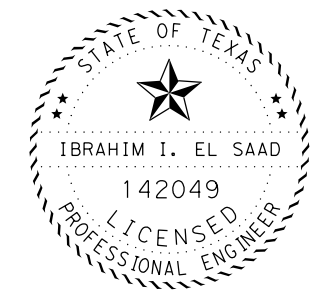
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- (SCF) SEDIMENT CONTROL FENCE
- (ECL) EROSION CONTROL LOG
- (RFD2) ROCK FILTER DAM (TY II)
- (RFD3) ROCK FILTER DAM (TY III)
- [ ] CONSTRUCTION EXIT
- [ ] TEMPORARY SEEDING
- [ ] PERMANENT BLOCK SODDING
- [ ] PERMANENT CONSTRUCTION THIS PHASE
- [ ] TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE
- [ ] TEMPORARY PAVEMENT CONSTRUCTED PREVIOUS PHASE

NOTE:  
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SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIMEFRAMES.

BMP'S WITH \* INDICATE PREVIOUS INSTALLATION



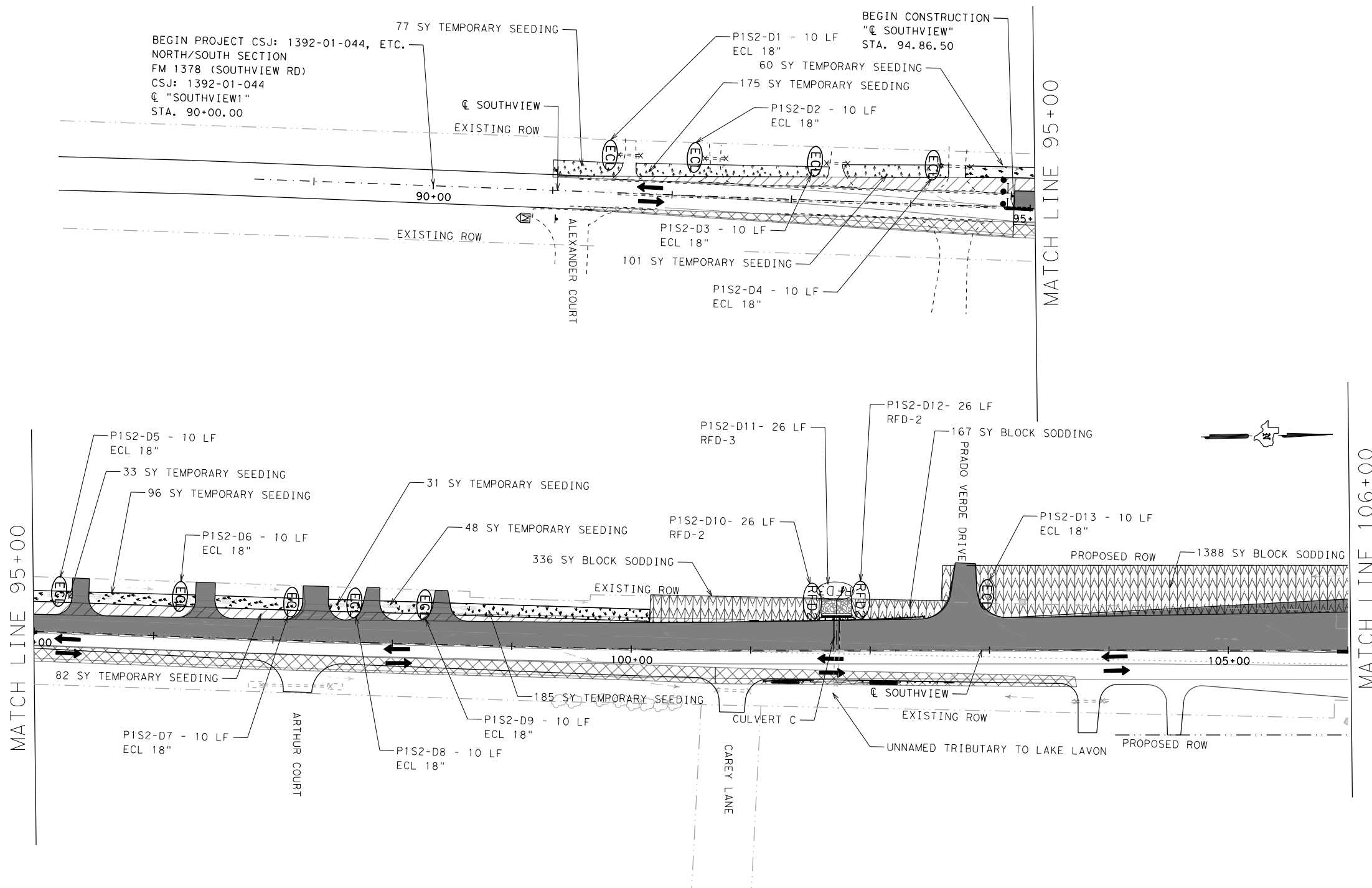
*Abraham El Saad, P.E. 11-7-22*  
 Signature of Registrant & Date



FM 1378  
 AT FM 3286  
**SW3P SITE MAP  
 PHASE 1 STAGE 2**

SCALE: 1" = 100' SHEET 04 OF 04

DESIGN PR	FED. RD. DIV. NO. 6	FEDERAL AID PROJECT NO. SEE TITLE SHEET		HIGHWAY NO. FM 1378, ETC.
GRAPHICS PR	STATE TEXAS	DISTRICT DAL	COUNTY COLLIN	SHEET NO. 332
CHECK	CONTROL 1392	SECTION 01	JOB 044, ETC.	



**P1S2-Ⓧ**

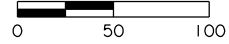
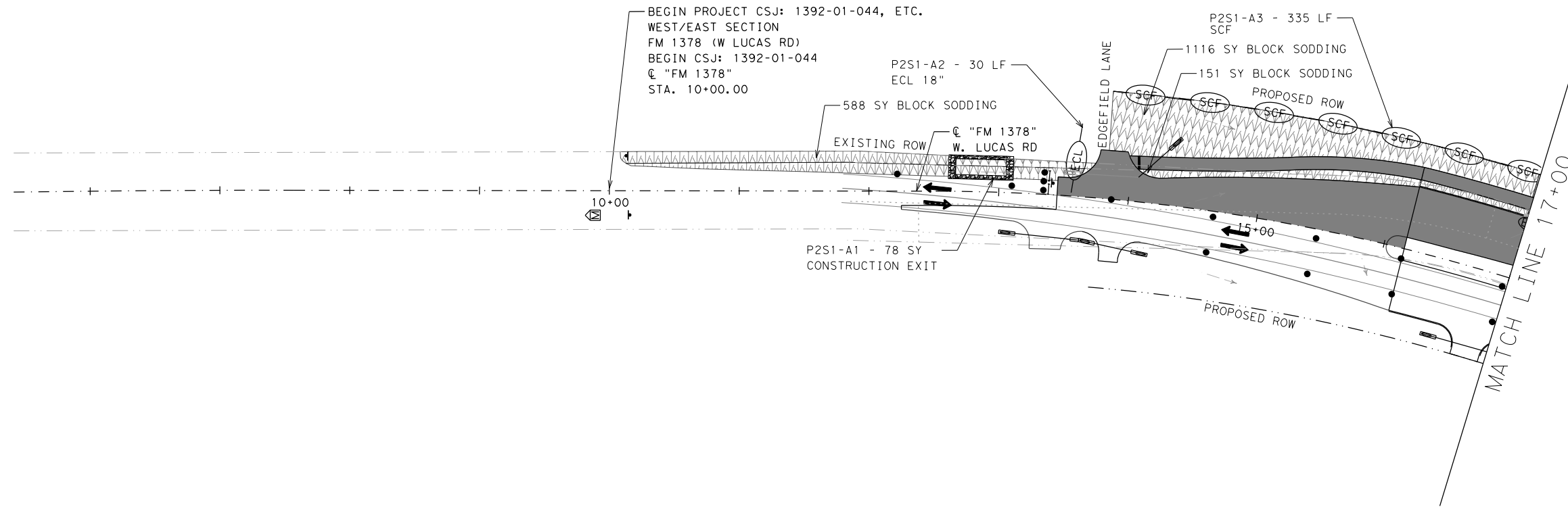
DATE DISTURBED	DATE STABILIZED

BMP INSTALL/ REMOVE DATES

BMP #	INSTALL DATE	REMOVE DATE	BMP #	INSTALL DATE	REMOVE DATE
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P1S2-D2			P1S2-D9		
P1S2-D3			P1S2-D10		
P1S2-D4			P1S2-D11		
P1S2-D5			P1S2-D12		
P1S2-D6			P1S2-D13		
P1S2-D7					

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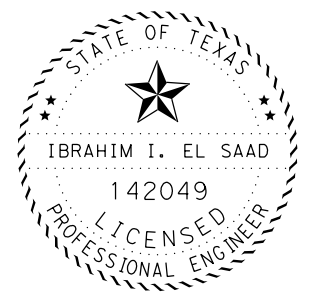
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LEGEND

- - -> DIRECTION OF FLOW
- (SCF) SEDIMENT CONTROL FENCE
- (ECL) EROSION CONTROL LOG
- (RFD2) ROCK FILTER DAM (TY II)
- (RFD3) ROCK FILTER DAM (TY III)
- [ ] CONSTRUCTION EXIT
- [ ] TEMPORARY SEEDING
- [ ] PERMANENT BLOCK SODDING
- [ ] PERMANENT CONSTRUCTION THIS PHASE
- [ ] TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE
- [ ] TEMPORARY PAVEMENT CONSTRUCTED PREVIOUS PHASE

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 BMP'S SHALL BE INSTALLED NO SOONER THAN TWO WEEKS PRIOR TO SOIL DISTURBANCE IN THEIR CONTROL AREA.  
 SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIMEFRAMES.  
 BMP'S WITH \* INDICATE PREVIOUS INSTALLATION



*Ibrahim I. El Saad*, P.E. 11-7-22  
 Signature of Registrant & Date

P2S1 - (A)

DATE DISTURBED	DATE STABILIZED

BMP INSTALL/ REMOVE DATES		
BMP #	INSTALL DATE	REMOVE DATE
P2S1-A1		
P2S1-A2		
P2S1-A3		



FM 1378  
 AT FM 3286  
**SW3P SITE MAP  
 PHASE 2 STAGE 1**

DESIGN R/MN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
	6	SEE TITLE SHEET	FM 1378, ETC.
GRAPHICS R/MN	STATE	DISTRICT	COUNTY
	TEXAS	DAL	COLLIN
CHECK SM/MN	CONTROL	SECTION	JOB
	1392	01	044, ETC.

333

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DATE: 1/3/2023

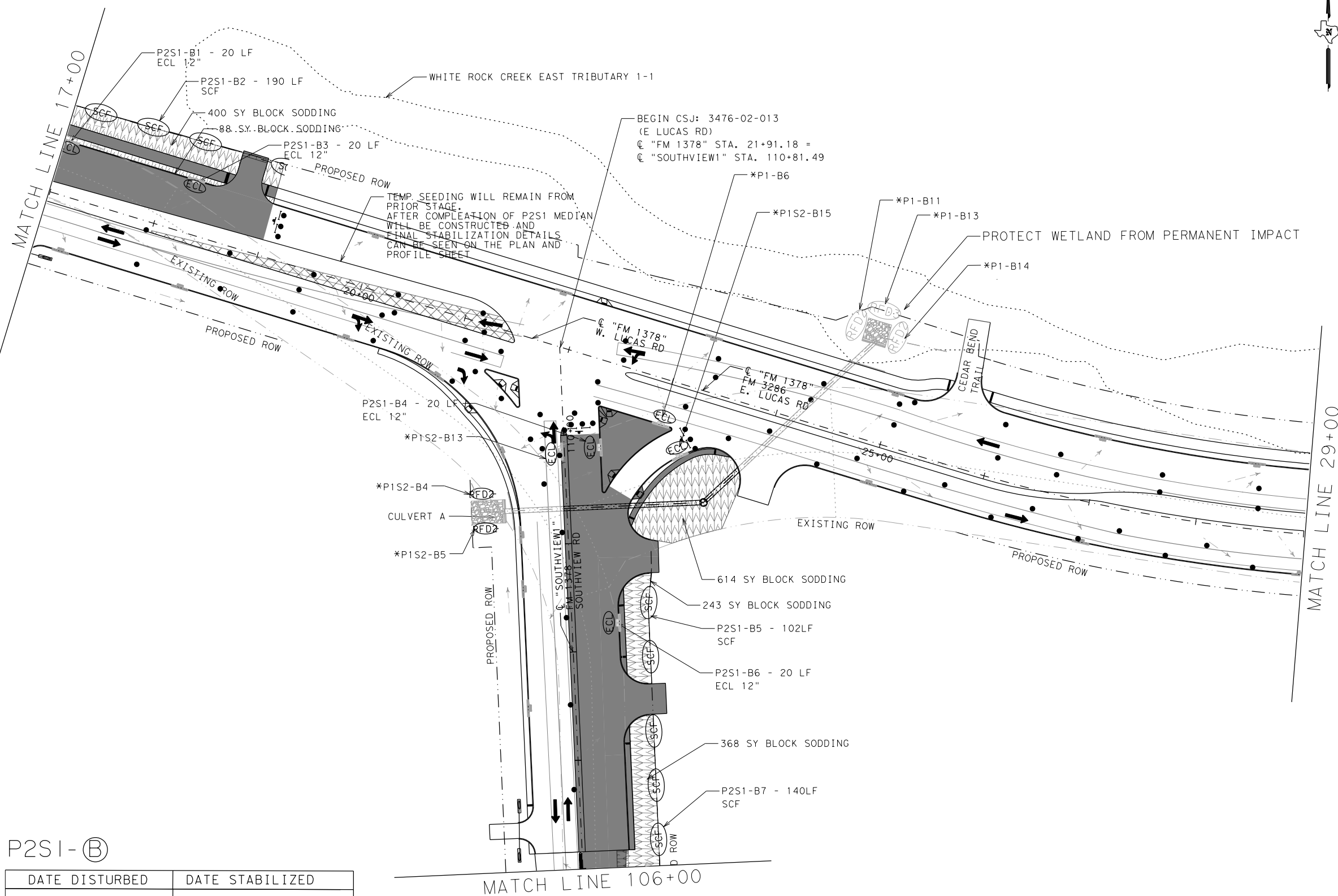
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P2S1- (B)

DATE DISTURBED	DATE STABILIZED

BMP INSTALL/ REMOVE DATES

BMP #	INSTALL DATE	REMOVE DATE
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P2S1-B2		
P2S1-B3		
P2S1-B4		
P2S1-B5		
P2S1-B6		
P2S1-B7		



LEGEND

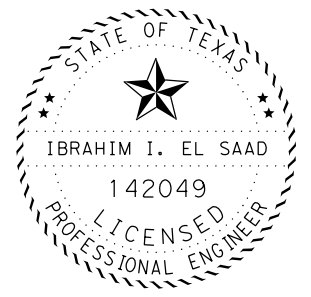
- > DIRECTION OF FLOW
- (SCF) SEDIMENT CONTROL FENCE
- (ECL) EROSION CONTROL LOG
- (RFD2) ROCK FILTER DAM (TY II)
- (RFD3) ROCK FILTER DAM (TY III)
- [ ] CONSTRUCTION EXIT
- [ ] TEMPORARY SEEDING
- [ ] PERMANENT BLOCK SODDING
- [ ] PERMANENT CONSTRUCTION THIS PHASE
- [ ] TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE
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BMP'S WITH \* INDICATE PREVIOUS INSTALLATION



Abraham I. El Saad, P.E. 01-04-2023  
Signature of Registrant & Date



FM 1378  
AT FM 3286  
**SW3P SITE MAP  
PHASE 2 STAGE 1**

DESIGN R/MN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
GRAPHICS R/MN	STATE	DISTRICT	COUNTY
CHECK SM/MN	TEXAS	DAL	COLLIN
CHECK	CONTROL	SECTION	JOB
	1392	01	044, ETC.

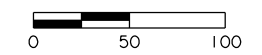
334

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SHEET 02 OF 04

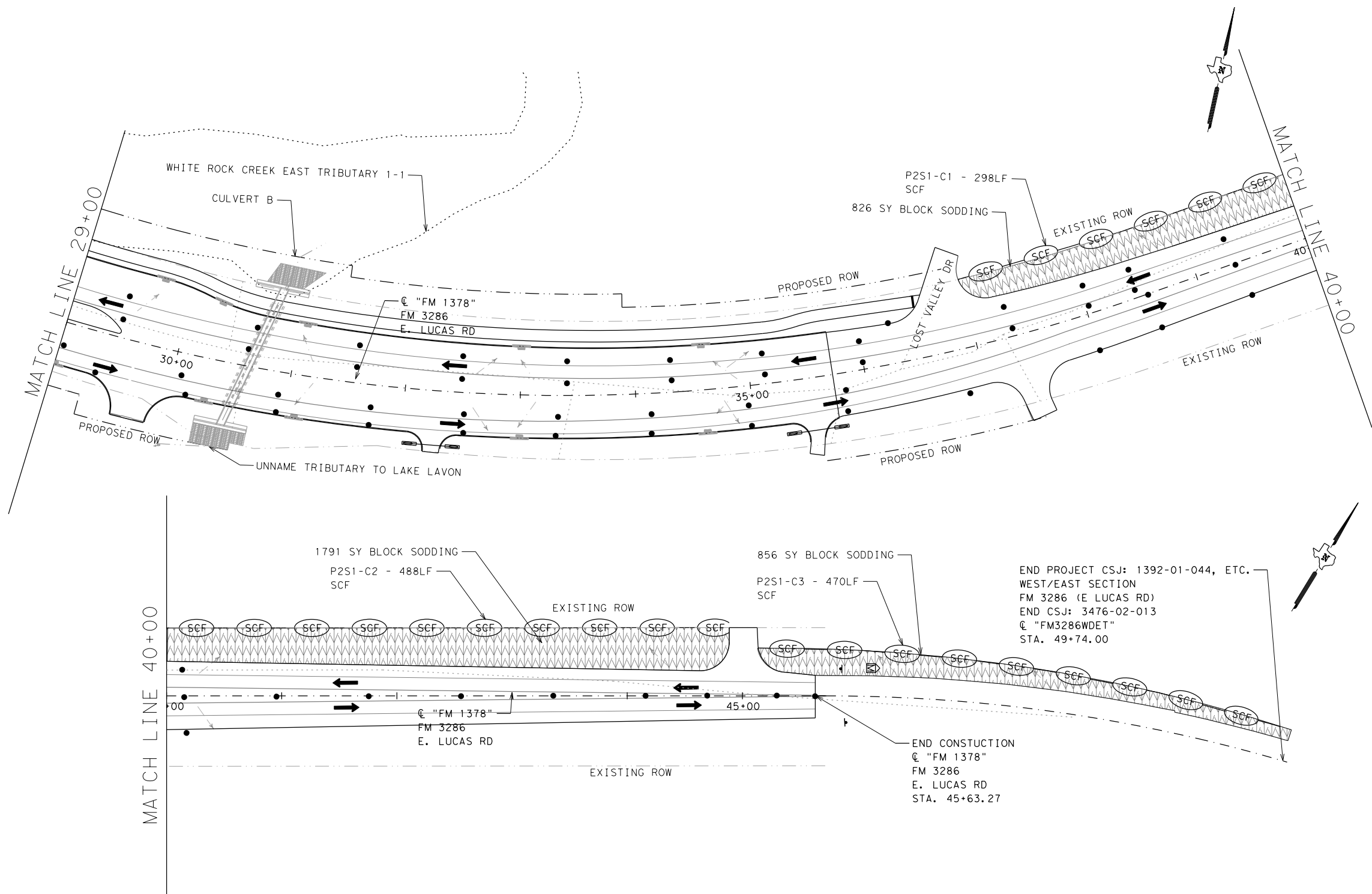


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LEGEND

- - -> DIRECTION OF FLOW
- (SCF)- SEDIMENT CONTROL FENCE
- (ECL)- EROSION CONTROL LOG
- (RFD2)- ROCK FILTER DAM (TY II)
- (RFD3)- ROCK FILTER DAM (TY III)
- [ ] CONSTRUCTION EXIT
- [ ] TEMPORARY SEEDING
- [ ] PERMANENT BLOCK SODDING
- [ ] PERMANENT CONSTRUCTION THIS PHASE
- [ ] TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE
- [ ] TEMPORARY PAVEMENT CONSTRUCTED PREVIOUS PHASE



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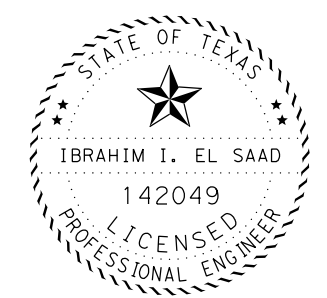
BMP'S SHALL BE INSTALLED NO SOONER THAN TWO WEEKS PRIOR TO SOIL DISTURBANCE IN THEIR CONTROL AREA.

SEE DAILY WORK REPORTS FOR INITIAL STABILIZATION TIMEFRAMES.

BMP'S WITH \* INDICATE PREVIOUS INSTALLATION

END PROJECT CSJ: 1392-01-044, ETC.  
 WEST/EAST SECTION  
 FM 3286 (E LUCAS RD)  
 END CSJ: 3476-02-013  
 "FM3286WDET"  
 STA. 49+74.00

END CONSTRUCTION  
 "FM 1378"  
 FM 3286  
 E. LUCAS RD  
 STA. 45+63.27



*Abraham El Saad, P.E. 11-7-22*  
 Signature of Registrant & Date

P2S1-C

DATE DISTURBED	DATE STABILIZED

BMP INSTALL/ REMOVE DATES

BMP #	INSTALL DATE	REMOVE DATE
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P2S1-C2		
P2S1-C3		

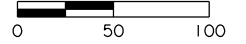


FM 1378  
 AT FM 3286  
**SW3P SITE MAP  
 PHASE 2 STAGE 1**

SCALE: 1"=100'	SHEET 03 OF 04		
DESIGN R/MN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
	6	SEE TITLE SHEET	FM 1378, ETC.
GRAPHICS R/MN	STATE	DISTRICT	COUNTY
	TEXAS	DAL	COLLIN
CHECK SM/MN	CONTROL	SECTION	JOB
	1392	01	044, ETC.
CHECK	<b>335</b>		

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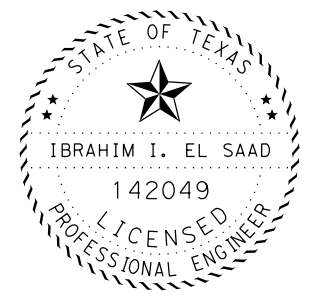
- DIRECTION OF FLOW
- SCF SEDIMENT CONTROL FENCE
- ECL EROSION CONTROL LOG
- RFD2 ROCK FILTER DAM (TY II)
- RFD3 ROCK FILTER DAM (TY III)
- ▭ CONSTRUCTION EXIT
- ▨ TEMPORARY SEEDING
- ▩ PERMANENT BLOCK SODDING
- PERMANENT CONSTRUCTION THIS PHASE
- ▨ TEMPORARY PAVEMENT CONSTRUCTED THIS PHASE
- ▨ TEMPORARY PAVEMENT CONSTRUCTED PREVIOUS PHASE

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BMP'S WITH \* INDICATE PREVIOUS INSTALLATION



*Abraham El Saad, P.E. 11-7-22*  
Signature of Registrant & Date

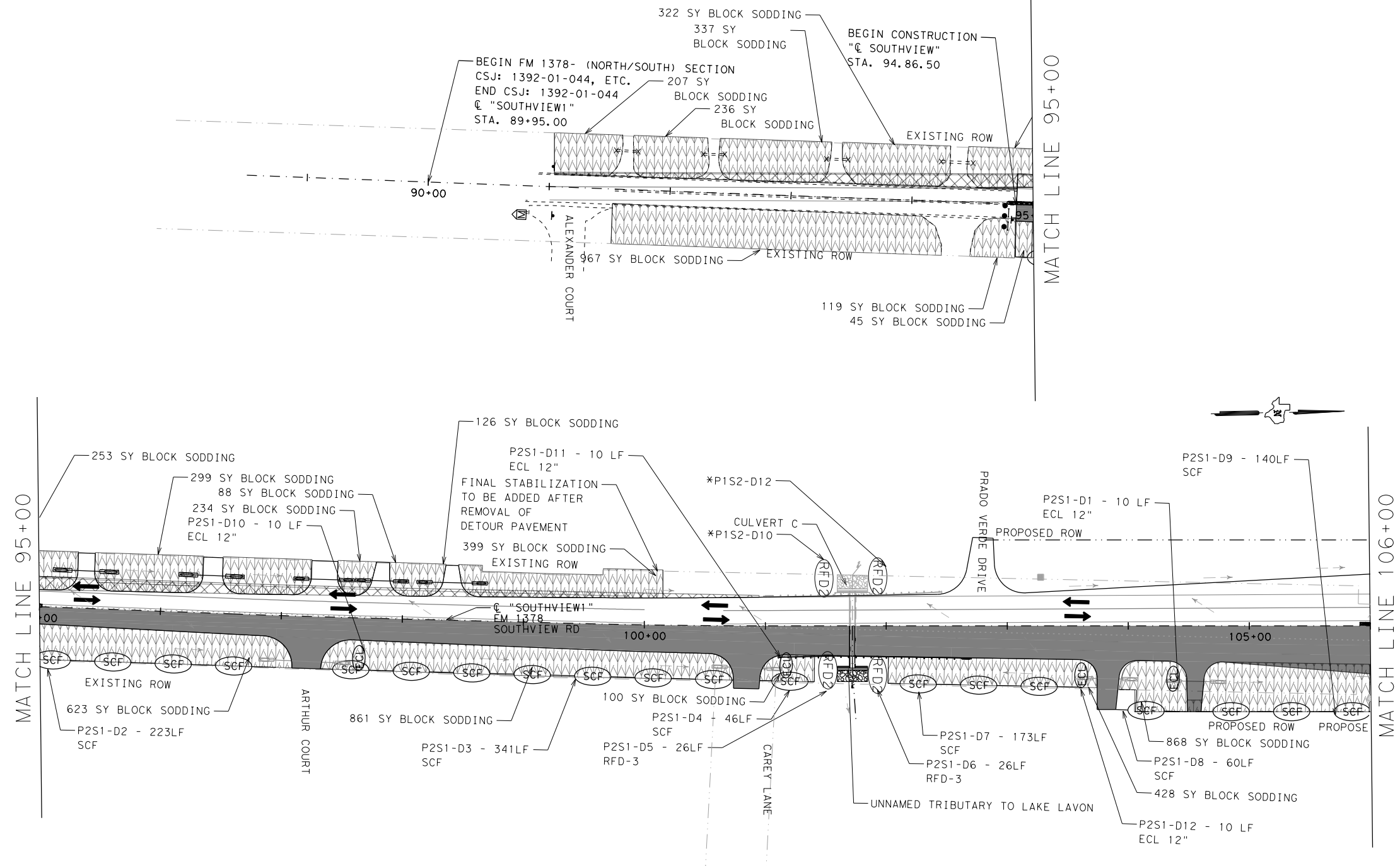


FM 1378  
AT FM 3286

SW3P SITE MAP  
PHASE 2 STAGE 1

DESIGN R/MN	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
GRAPHICS R/MN	STATE	DISTRICT	COUNTY
CHECK SM/MN	TEXAS	DAL	COLLIN
CHECK	CONTROL	SECTION	JOB
	1392	01	044, ETC.

336



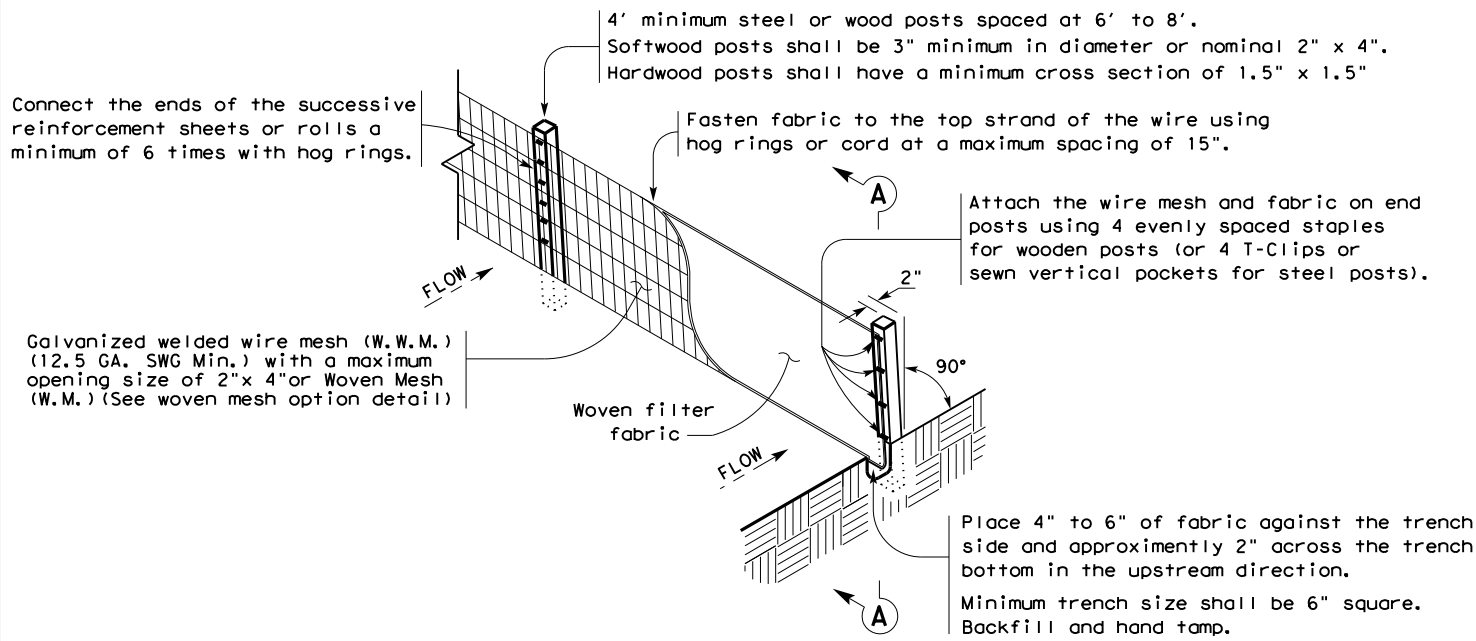
P2S1 - (D)

DATE DISTURBED	DATE STABILIZED

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P2S1-D2			P2S1-D9		
P2S1-D3			P2S1-D10		
P2S1-D4			P2S1-D11		
P2S1-D5			P2S1-D12		
P2S1-D6					
P2S1-D7					

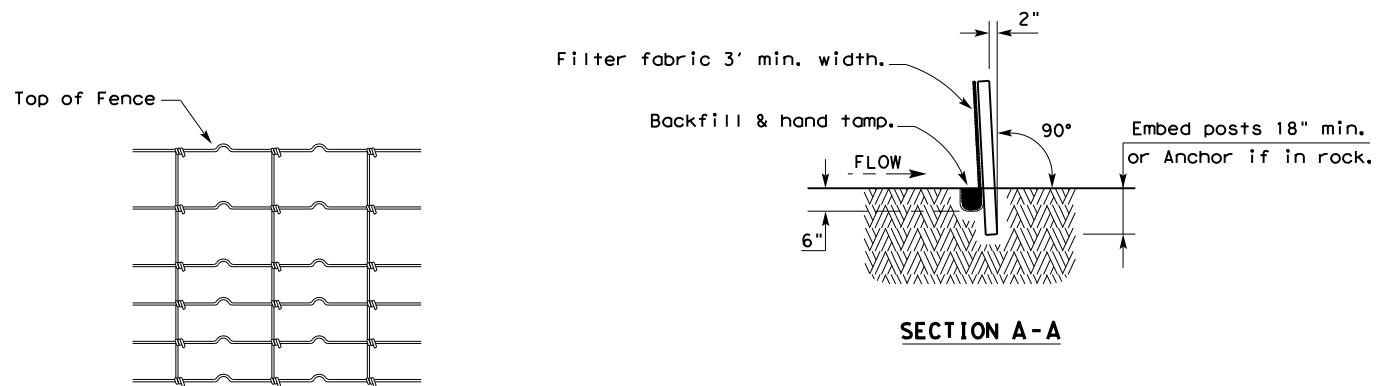
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8/22/2022  
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**TEMPORARY SEDIMENT CONTROL FENCE**

SCF



**HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL**

Galvanized hinge joint knot woven mesh (12.5 GA. SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

**SEDIMENT CONTROL FENCE USAGE GUIDELINES**

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT<sup>2</sup>. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

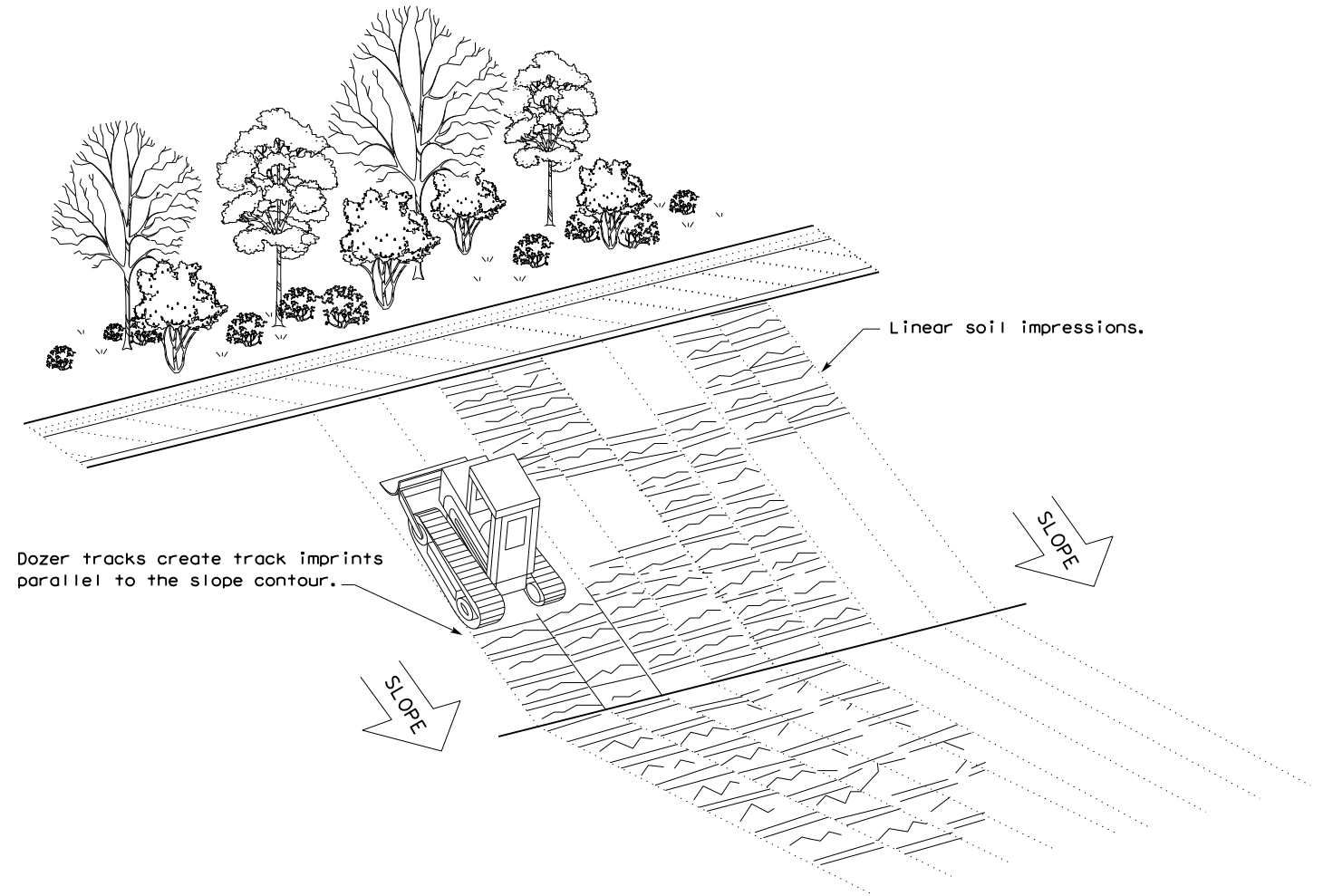
**LEGEND**

Sediment Control Fence

SCF

**GENERAL NOTES**

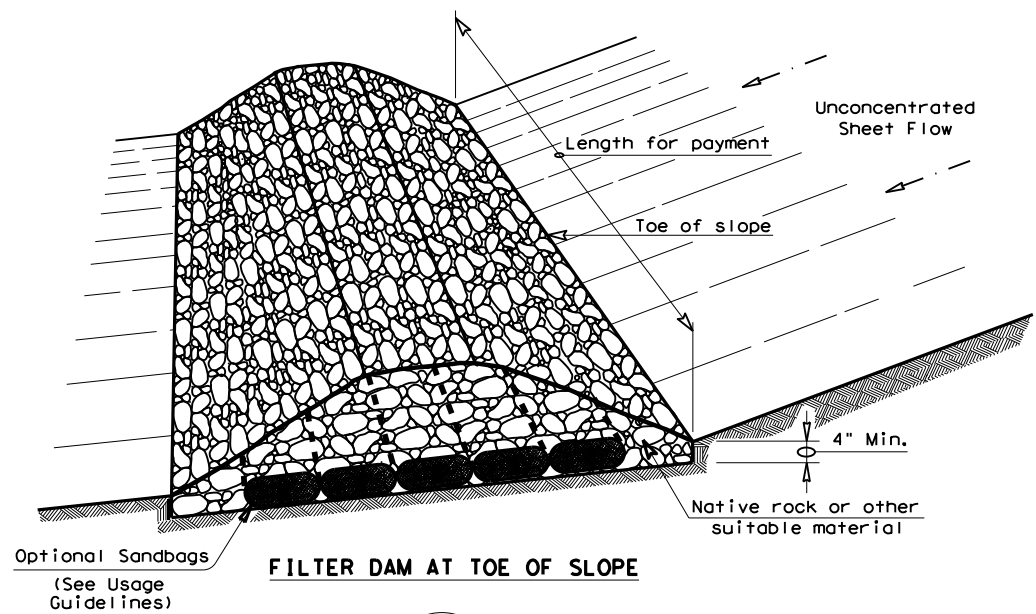
1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continuous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



**VERTICAL TRACKING**

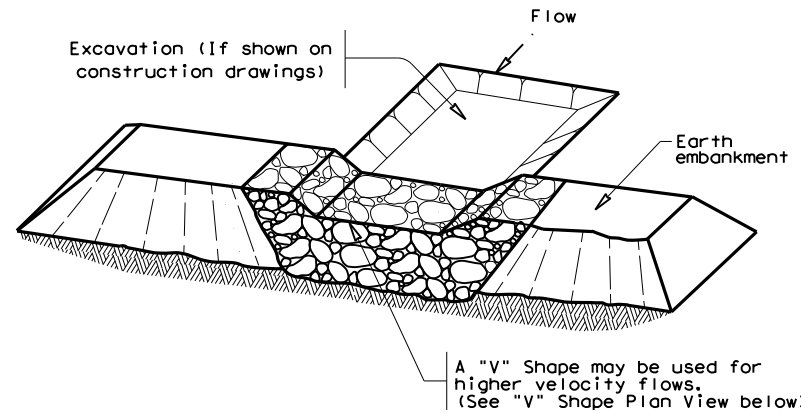
				Design Division Standard	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE &amp; VERTICAL TRACKING</b> <b>EC(1)-16</b>					
FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS	
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
REVISIONS		1392	01	044, ETC. FM 1378, ETC.	
DIST	COUNTY	SHEET NO.			
DAL	COLLIN	337			

DATE: 8/29/2022  
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 DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT 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.



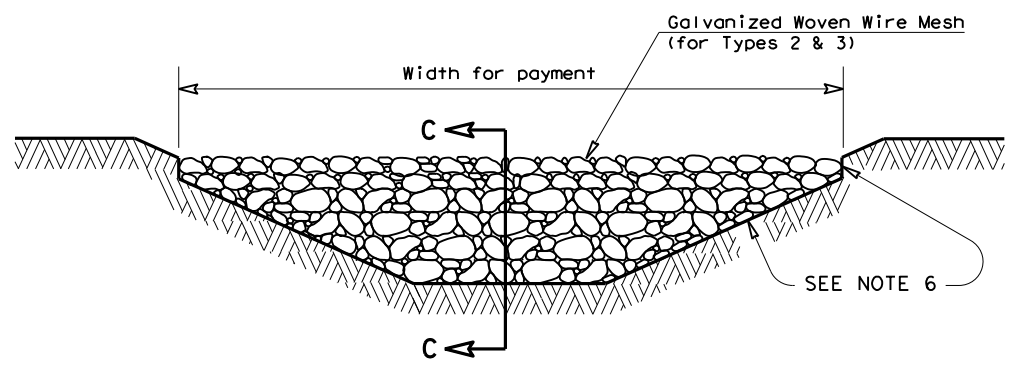
**FILTER DAM AT TOE OF SLOPE**

(RFD1)



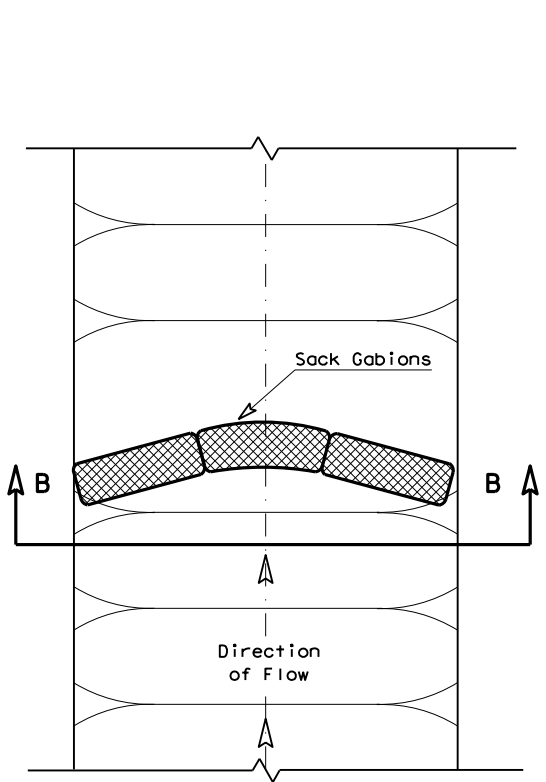
**FILTER DAM AT SEDIMENT TRAP**

(RFD1) OR (RFD2)

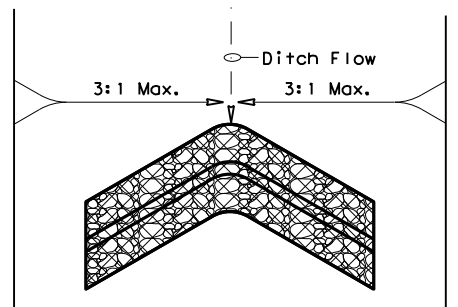


**FILTER DAM AT CHANNEL SECTIONS**

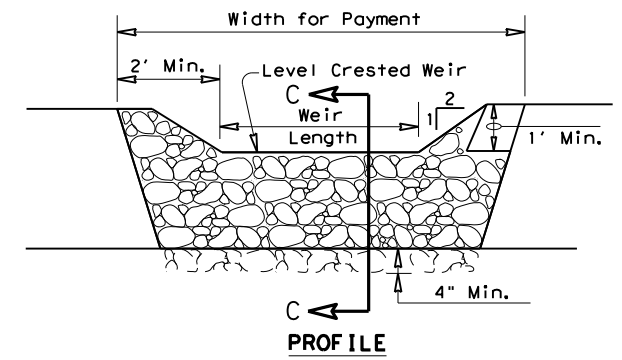
(RFD1) OR (RFD2) OR (RFD3)



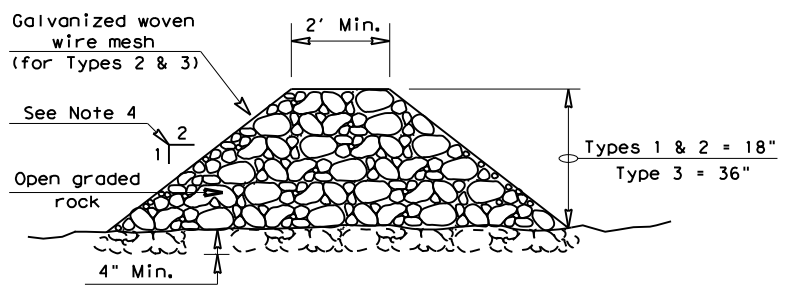
**PLAN VIEW**



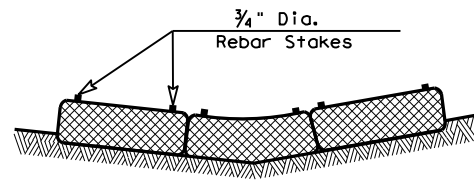
**"V" SHAPE PLAN VIEW**



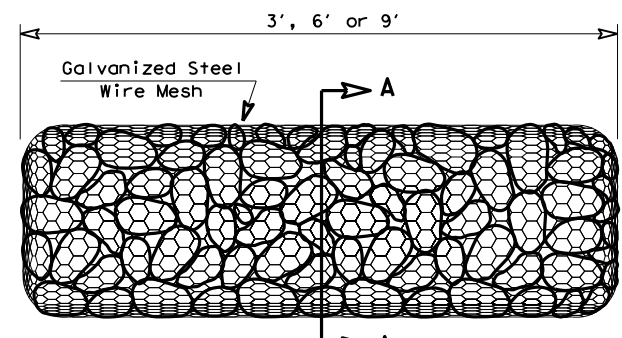
**PROFILE**



**SECTION C-C**

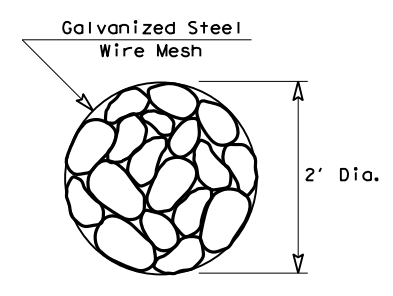


**SECTION B-B**



**TYPE 4 (SACK GABIONS)**

(RFD4)



**SECTION A-A**

**ROCK FILTER DAM USAGE GUIDELINES**

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT<sup>2</sup> of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

**Type 1 (18" high with no wire mesh) (3" to 6" aggregate):** Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximately 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

**Type 2 (18" high with wire mesh) (3" to 6" aggregate):** Type 2 may be used in ditches and at dike or swale outlets.

**Type 3 (36" high with wire mesh) (4" to 8" aggregate):** Type 3 may be used in stream flow and should be secured to the stream bed.

**Type 4 (Sack gabions) (3" to 6" aggregate):** Type 4 May be used in ditches and smaller channels to form an erosion control dam.

**Type 5:** Provide rock filter dams as shown on plans.

**GENERAL NOTES**

1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be staked down with 3/4" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 1/2" x 3 1/4".
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

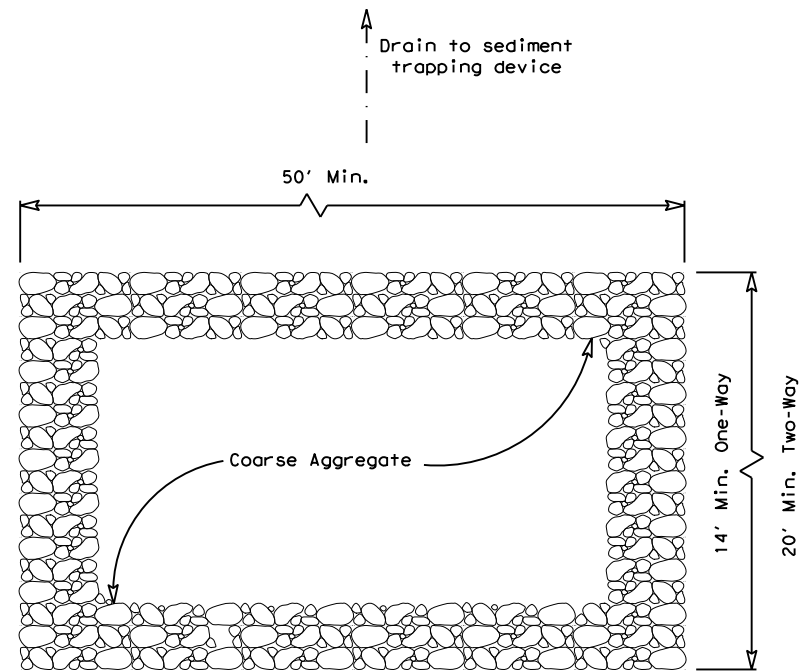
**PLAN SHEET LEGEND**

- Type 1 Rock Filter Dam (RFD1)
- Type 2 Rock Filter Dam (RFD2)
- Type 3 Rock Filter Dam (RFD3)
- Type 4 Rock Filter Dam (RFD4)

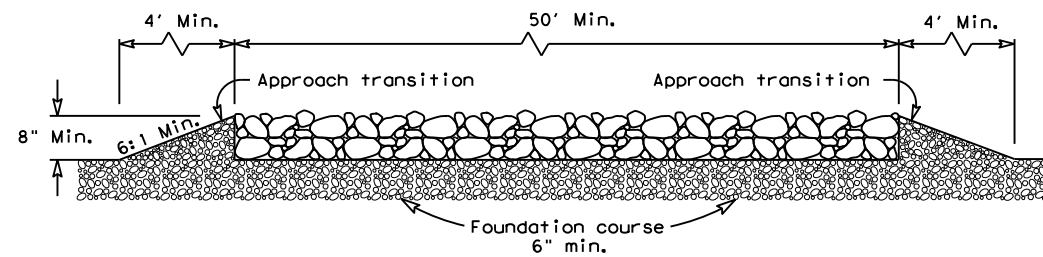
		<b>Design Division Standard</b>	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES</b> <b>ROCK FILTER DAMS</b> <b>EC(2) - 16</b>			
FILE: ec216	DN: TxDOT	CK: KM	DW: VP
© TxDOT: JULY 2016	CONT	SECT	JOB
REVISIONS	1392	01	044, ETC.FM 1378, ETC.
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PLAN VIEW

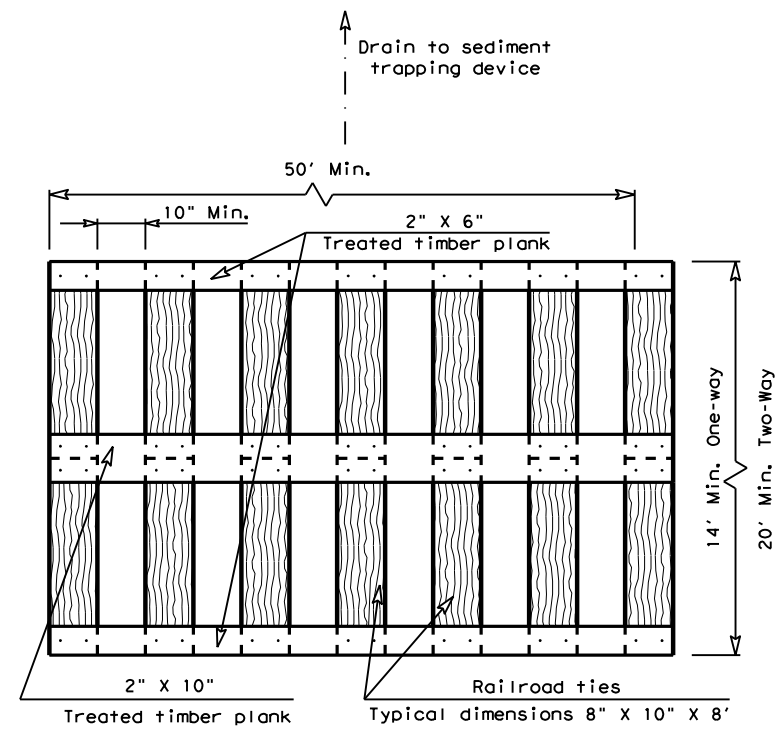


ELEVATION VIEW

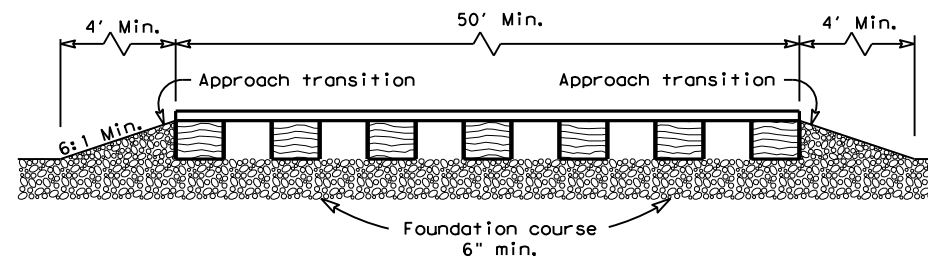
CONSTRUCTION EXIT (TYPE 1)  
ROCK CONSTRUCTION (LONG TERM)

**GENERAL NOTES (TYPE 1)**

1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materials approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW

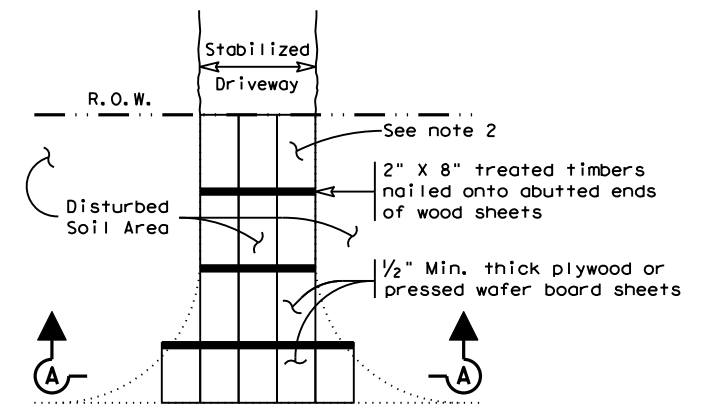


ELEVATION VIEW

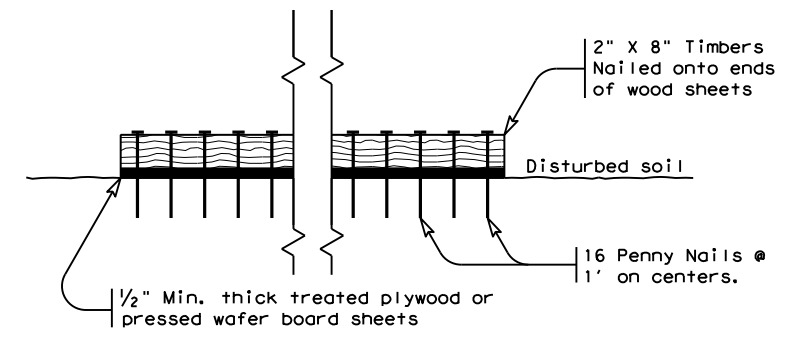
CONSTRUCTION EXIT (TYPE 2)  
TIMBER CONSTRUCTION (LONG TERM)

**GENERAL NOTES (TYPE 2)**

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
2. The treated timber planks shall be attached to the railroad ties with 1/2" x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW



SECTION A-A  
CONSTRUCTION EXIT (TYPE 3)  
SHORT TERM

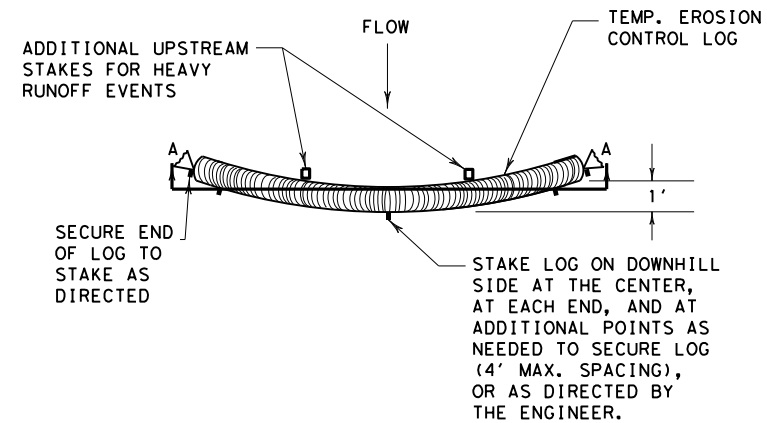
**GENERAL NOTES (TYPE 3)**

1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

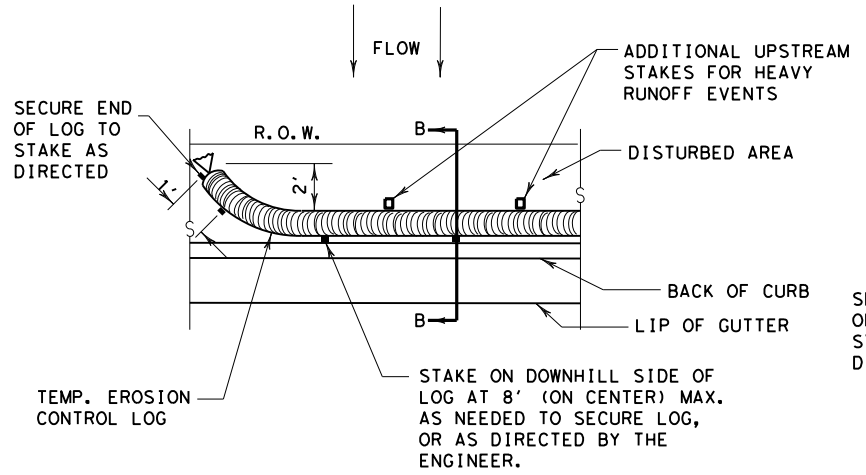
		Design Division Standard	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES</b> <b>CONSTRUCTION EXITS</b> <b>EC(3)-16</b>			
FILE: ec316	DN: TxDOT	CK: KM	DW: VP
© TxDOT: JULY 2016	CONT SECT	JOB	HIGHWAY
REVISIONS	1392 01	044, ETC. FM 1378, ETC.	
DIST	COUNTY	SHEET NO.	
DAL	COLLIN	339	

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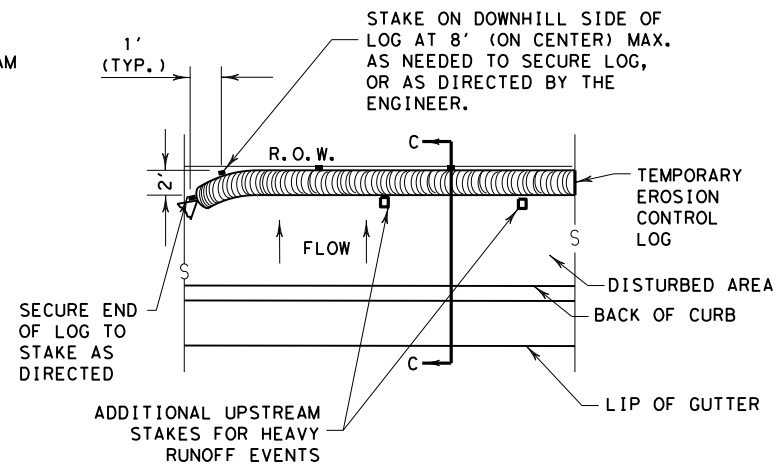
DATE: 8/29/2022  
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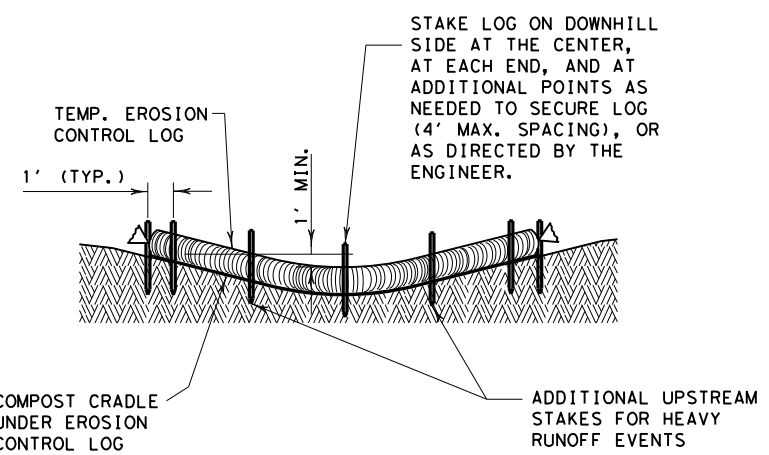
PLAN VIEW



PLAN VIEW



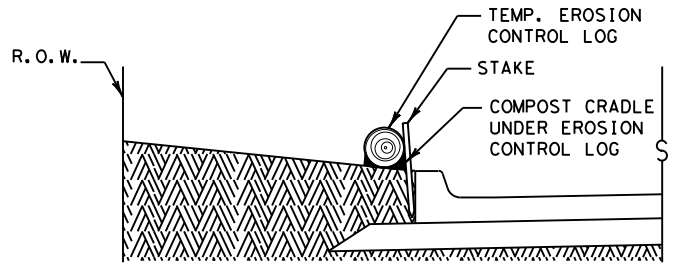
PLAN VIEW



SECTION A-A

EROSION CONTROL LOG DAM

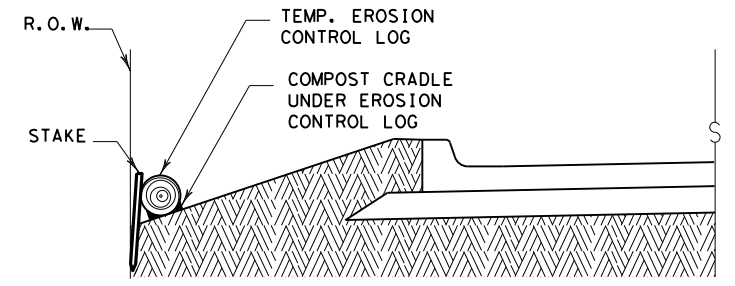
CL-D



SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

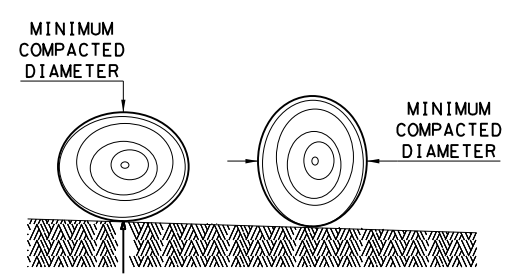
CL-BOC



SECTION C-C

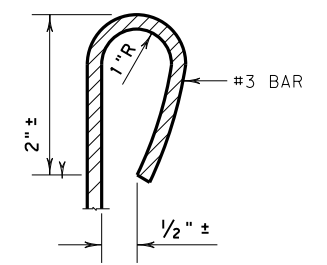
EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

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:**

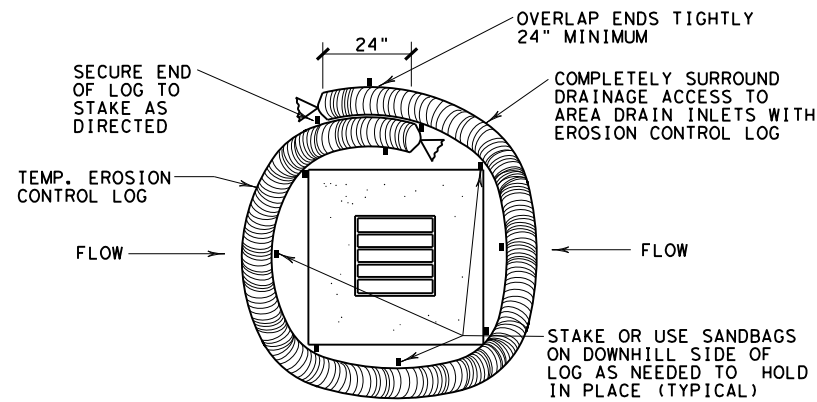
1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE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

		<i>Design Division Standard</i>	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES</b> <b>EROSION CONTROL LOG</b> <b>EC (9) - 16</b>			
FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT
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REVISIONS	1392	01	044, ETC.FM 1378, ETC.
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DAL	COLLIN		340

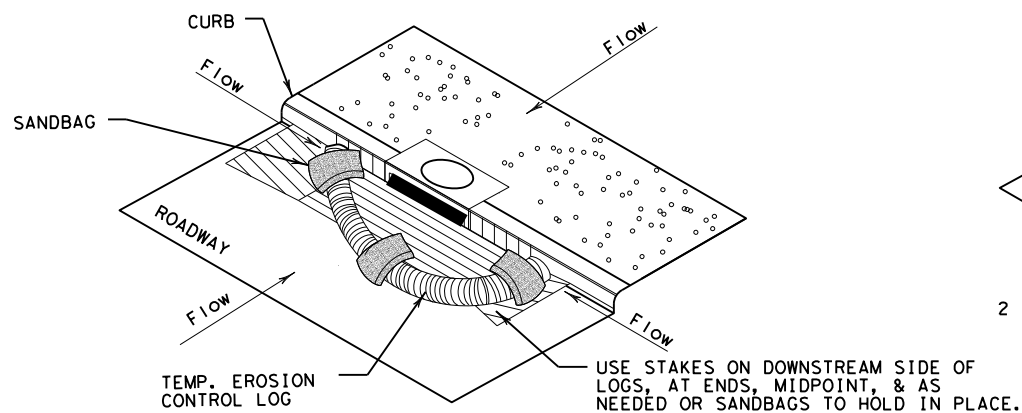
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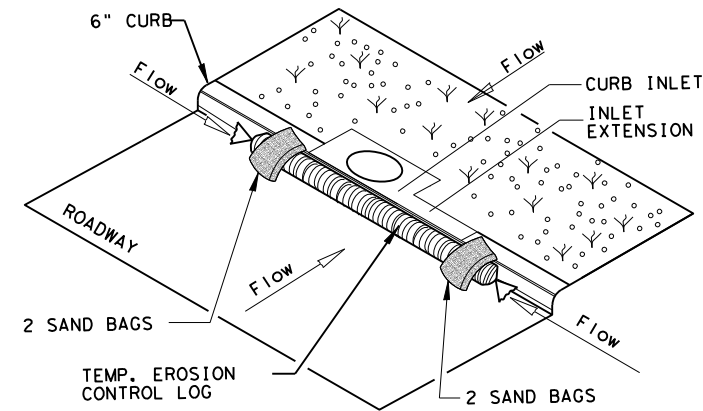
**EROSION CONTROL LOG AT DROP INLET**

CL-DI



**EROSION CONTROL LOG AT CURB INLET**

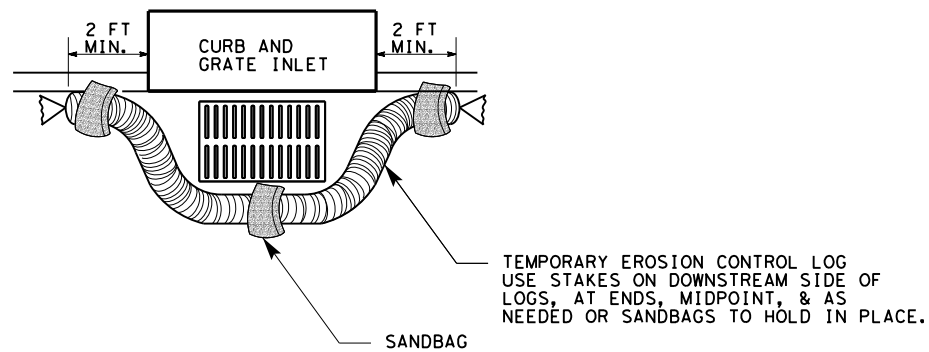
CL-CI



**EROSION CONTROL LOG AT CURB INLET**

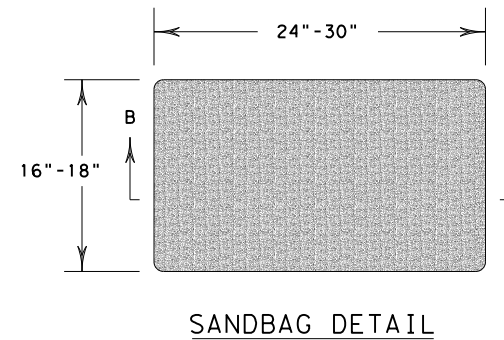
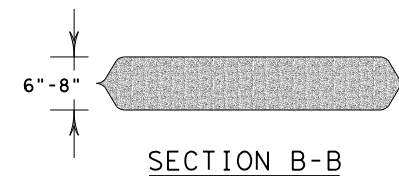
CL-CI

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

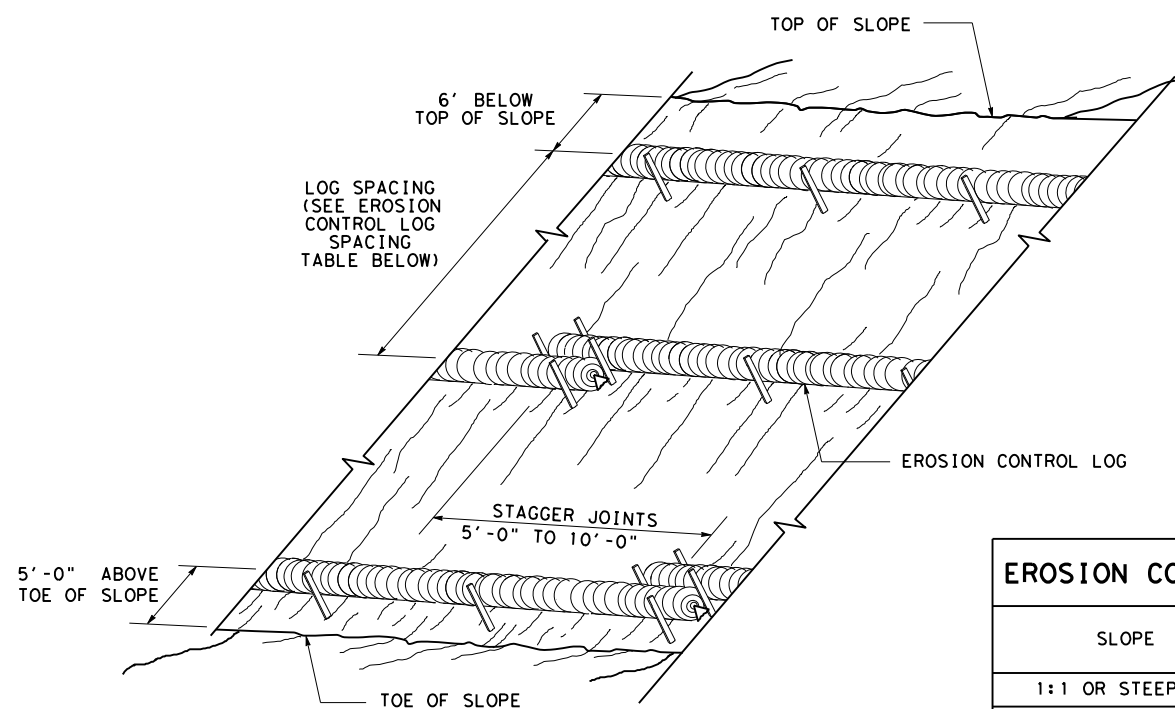


SHEET 3 OF 3

		<i>Design Division Standard</i>	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES</b> <b>EROSION CONTROL LOG</b> <b>EC (9) - 16</b>			
FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT
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DAL	COLLIN		341

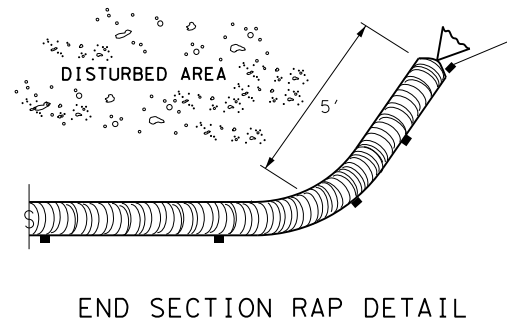
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**EROSION CONTROL LOGS ON SLOPES  
STAKE AND TRENCHING ANCHORING**

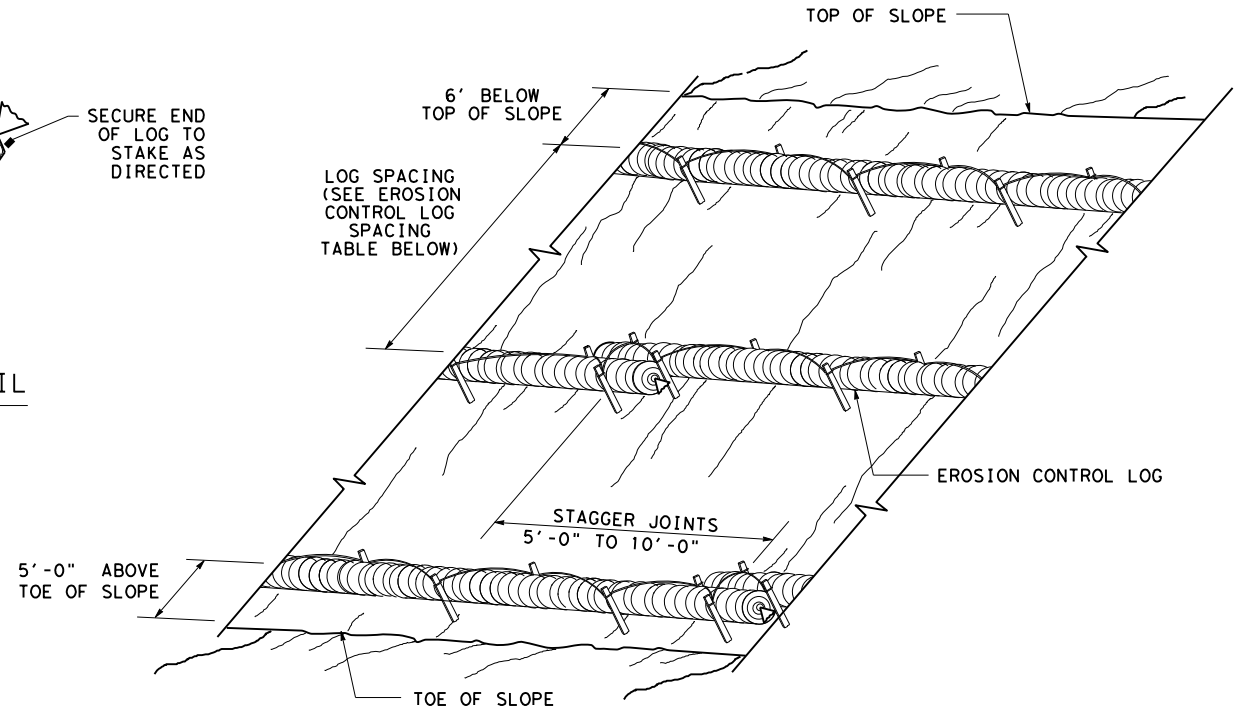
CL-SST



**END SECTION RAP DETAIL**

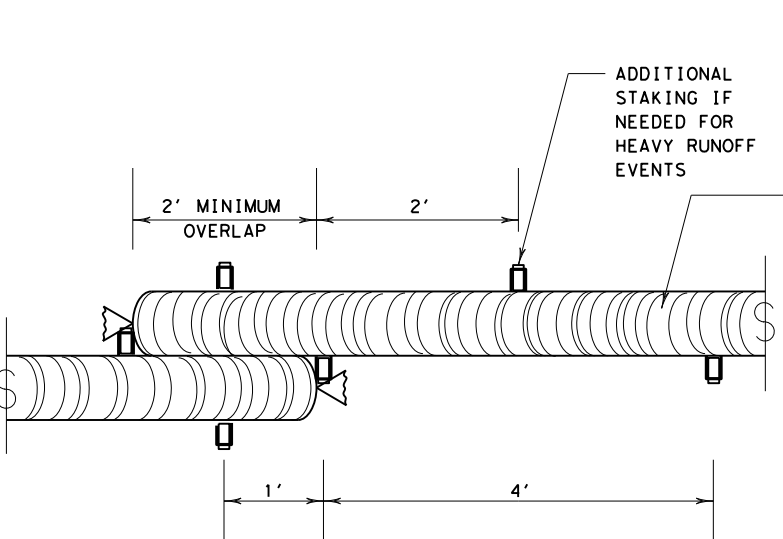
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

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



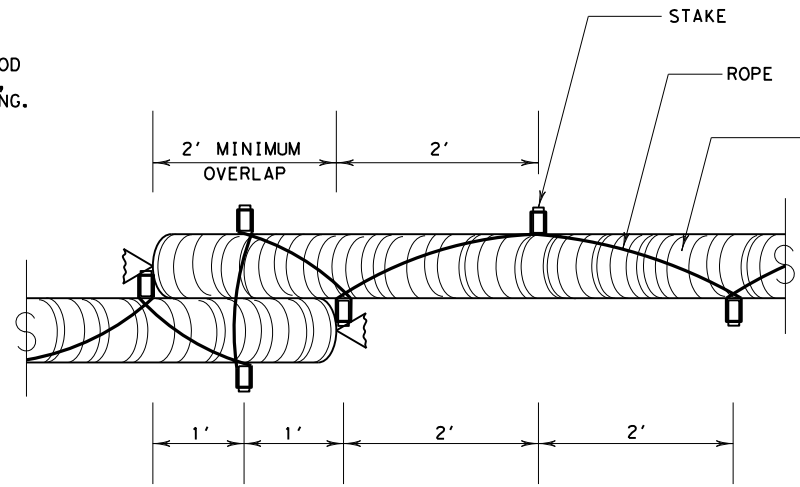
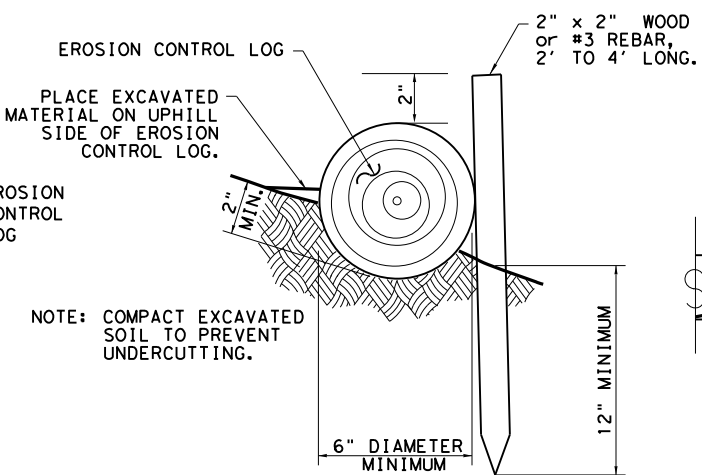
**EROSION CONTROL LOGS ON SLOPES  
STAKE AND LASHING ANCHORING**

CL-SSL



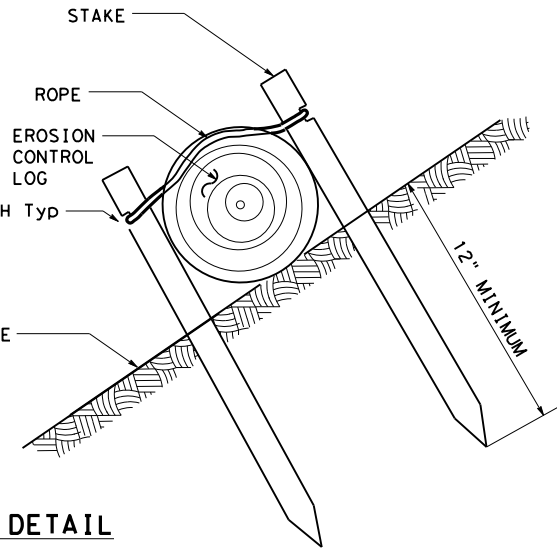
**STAKE AND TRENCHING ANCHORING DETAIL**

CL-SST

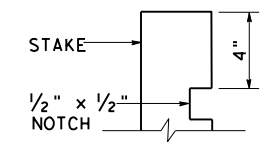


**STAKE AND LASHING ANCHORING DETAIL**

CL-SSL



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



**STAKE NOTCH DETAIL**

SHEET 2 OF 3

		Design Division Standard	
<b>TEMPORARY EROSION,          SEDIMENT AND WATER          POLLUTION CONTROL MEASURES          EROSION CONTROL LOG          EC(9) - 16</b>			
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DAL	COLLIN	342	



**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)																														
<b>WARM SEASON</b> Mar. 15th, April, May, June, July, August, Sept. 15th	<table border="0"> <tr><td>Green Sprangletop (Van Horn)</td><td>- 1.0 lbs/AC</td></tr> <tr><td>Sideoats Grama (Haskell)</td><td>- 1.0 lbs/AC</td></tr> <tr><td>Texas Grama (Atascosa)</td><td>- 1.0 lbs/AC</td></tr> <tr><td>Hairy Grama (Chaparral)</td><td>- 0.4 lbs/AC</td></tr> <tr><td>Shortspike Windmillgrass (Welder)</td><td>- 0.2 lbs/AC</td></tr> <tr><td>Little Bluestem (OK Select)</td><td>- 0.8 lbs/AC</td></tr> <tr><td>Purple Prairie Clover (Cuero)</td><td>- 0.6 lbs/AC</td></tr> <tr><td>Engelmann Daisy (Eldorado)</td><td>- 0.75 lbs/AC</td></tr> <tr><td>Illinois Bundlesflower</td><td>- 1.3 lbs/AC</td></tr> <tr><td>Awnless Bushsunflower (Plateau)</td><td>- 0.2 lbs/AC</td></tr> </table>	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)	- 0.75 lbs/AC	Illinois Bundlesflower	- 1.3 lbs/AC	Awnless Bushsunflower (Plateau)	- 0.2 lbs/AC	<table border="0"> <tr><td>Green Sprangletop (Leptochloa dubia)</td><td>- 0.3 lbs/AC</td></tr> <tr><td>Sideoats Grama (El Reno) (Bouteloua curtipendula)</td><td>- 3.6 lbs/AC</td></tr> <tr><td>Buffalograss (Texoka) (Buchloe dactyloides)</td><td>- 1.6 lbs/AC</td></tr> <tr><td>Bermudagrass (Cynodon dactylon)</td><td>- 2.4 lbs/AC</td></tr> </table>	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	<table border="0"> <tr><td>Foxtail Millet (Setaria italica)</td><td>- 34 lbs/AC</td></tr> </table>	Foxtail Millet (Setaria italica)	- 34 lbs/AC
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Foxtail Millet (Setaria italica)	- 34 lbs/AC																																
<b>COOL SEASON</b> Sept 16th, Oct, Nov, Dec, Jan, Feb, Mar 14th			<table border="0"> <tr><td>Tall Fescue (Festuca arundinaceae)</td><td>- 4.5 lbs/AC</td></tr> <tr><td>Western Wheatgrass (Agropyron smithii)</td><td>- 5.6 lbs/AC</td></tr> <tr><td>Red Winter Wheat (Triticum aestivum)</td><td>- 34 lbs/AC</td></tr> <tr><td>Cereal Rye</td><td>- 34 lbs/AC</td></tr> </table>	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																						
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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 in 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.



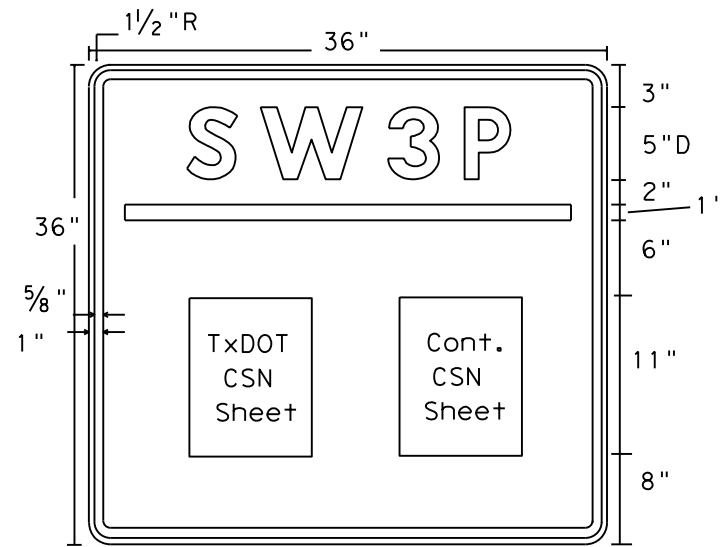
**VEGETATION ESTABLISHMENT SHEET**  
(DALLAS DISTRICT)

TEMPLATE REVISION DATE: 02/21/19

DESIGN CPB	FED. RD. DIV. NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
GRAPHICS XXX	6	(See Title Sheet)		FM 1378, ETC.
CHECK XXX	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK XXX	TEXAS	DALLAS	COLLIN	343
CHECK XXX	CONTROL	SECTION	JOB	
	1392	01	044, ETC.	

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.

LEVELS DISPLAYED	1
PATH:	



**SW3P SIGN**  
TxDOT & Contractor  
Construction Site Note  
(CSN)

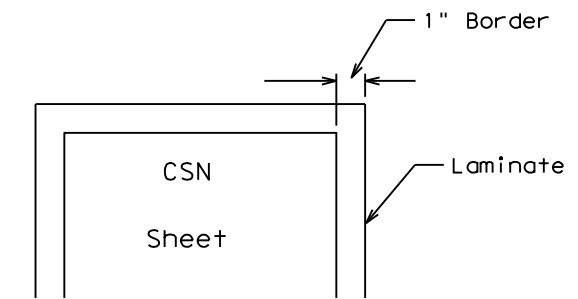
**Sign Dimensions**

36" X 36"

- Letters - White
- Numbers - White
- Border - White
- Background - Blue

**GENERAL NOTES:**

1. The alphabets and lateral spacing between letters and numerals shall conform with the "Texas Manual on Uniform Traffic Control Devices for Streets and Highways", (TMUTCD) latest edition, and the "Compliant Work Zone Traffic Control Devices List". Lateral spacing of text shall provide a balanced appearance. All materials shall conform to Department Specifications.
2. Legend and border may be applied by reverse screening process with transparent colored ink, cut-out white reflective sheeting applied to colored background or combination thereof. Background shall be reflective sheeting Type C.
3. CSN Sheets will be laminated and attached to the sign with an adhesive. Ensure sheets remain dry. (See Figure 1).
4. SW3P Signs should be placed just inside the ROW line at the project limits at a readable height. It may be placed perpendicular or parallel to ROW line. If the sign cannot be placed outside the clear zone, it will be mounted per TMUTCD requirements.
5. Final location of the signs will be as approved by the Engineer.



**Figure 1**

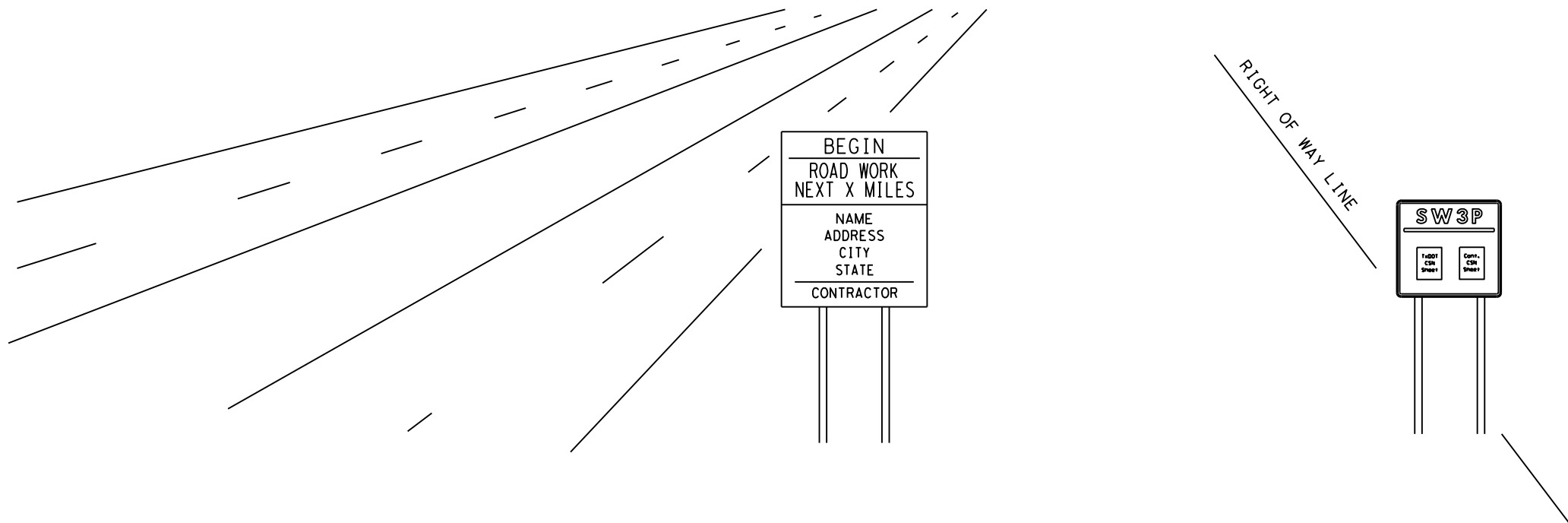
DEPARTMENT MATERIAL SPECIFICATIONS	
PLYWOOD SIGN BLANKS	DMS-7100
FLAT SURFACE REFLECTIVE SHEETING	DMS-8300
VINYL NON-REFLECTIVE DECAL SHEETING	DMS-8320

COLOR	USAGE	REFLECTIVE SHEETING OR OTHER MATERIAL
BLUE	BACKGROUND	TYPE C (FLUORESCENT PRISMATIC)
WHITE	LEGEND & BORDERS	VINYL NON-REFLECTIVE DECAL SHEETING

Texas Department of Transportation  
DALLAS DISTRICT STANDARD

**SW3P SIGN SHEET**

FILE#	DW: IxDOT	CK:	DW:	CK:
© TxDOT 2016	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISION DATE:	18	SEE TITLE SHEET		344
10-16-15	COUNTY	CONTROL SECT	JOB	HIGHWAY
	COLLIN	1392	01	044, ETC. FM 1378, ETC.



# NORTH TEXAS MUNICIPAL WATER DISTRICT



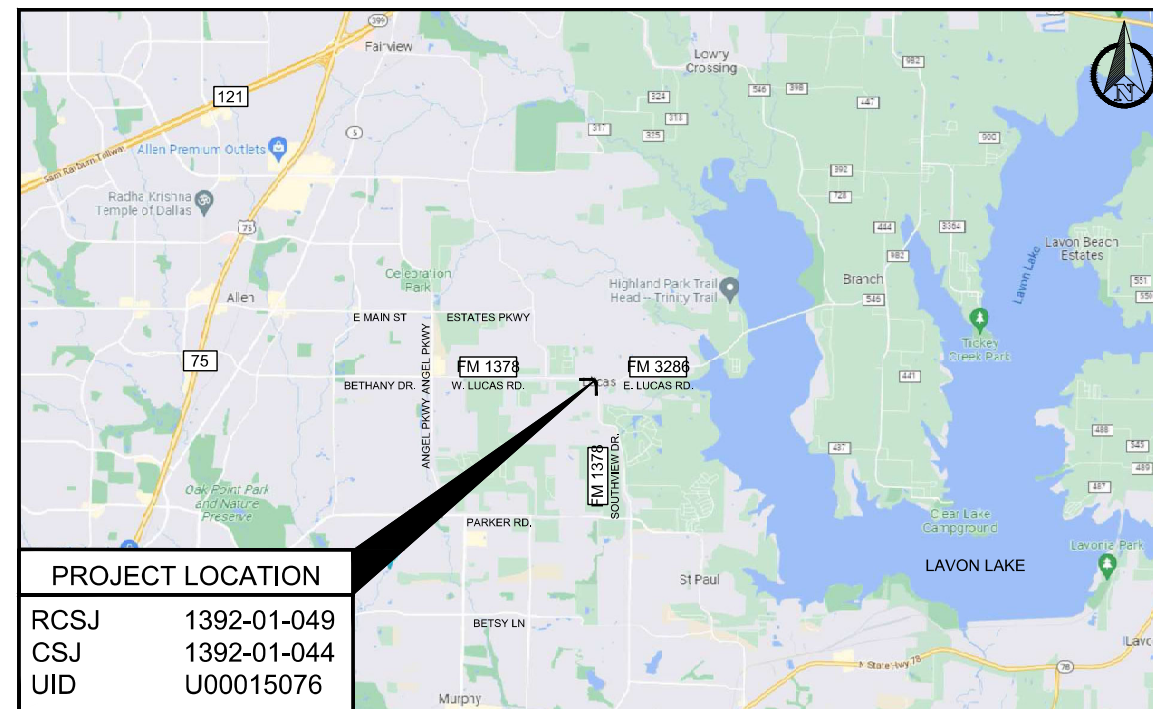
## REGIONAL WATER SYSTEMS

### F.M. 1378 PIPELINE RELOCATIONS

REPLACEMENT OF 20" WATERLINE WITH 20" WATERLINE AT  
F.M. 1378 SOUTHVIEW DR. & F.M. 1378 W. LUCAS DR.

NTMWD PROJECT No. **101-0585A-21**

MAXIMO No. TWPI00409, TWPI00413, TWPI00416



PROJECT LOCATION	
RCSJ	1392-01-049
CSJ	1392-01-044
UID	U00015076

VICINITY MAP  
(NOT TO SCALE)  
MARCH 2023

SHEET INDEX	
SHT.No.	SHEET TITLE
345	COVER SHEET
346	GENERAL NOTES 1-2
347	GENERAL NOTES 2-2
348	QUANTITY SHEET
349	PROPOSED 20" WATERLINE INDEX SHEET
350	PROPOSED 20" WATERLINE (1-4 SHEETS)
351	PROPOSED 20" WATERLINE (2-4 SHEETS)
352	PROPOSED 20" WATERLINE (3-4 SHEETS)
353	PROPOSED 20" WATERLINE (4-4 SHEETS)
354	TRENCH DETAILS 1-3
357	CONSTRUCTION DETAILS 1-3
358	CONSTRUCTION DETAILS 2-3
359	CONSTRUCTION DETAILS 3-3



**OWNER**  
501 E. BROWN STREET  
WYLIE, TX 75098  
(972) 442-5405

**CIVIL ENGINEER**  
**CRIADO**  
4100 SPRING VALLEY ROAD, SUITE 1001  
DALLAS, TX 75244  
O: 972-392-9092 F: 972-392-9192  
FIRM NO. F-4373

Project No. **R14465.04**

NO.	DATE	REVISION

THESE PLANS AND RELATED SPECIFICATIONS WERE PREPARED FOR CONSTRUCTION OF THE SPECIFIC PROJECT ONLY. REUSE OF THESE DOCUMENTS IS NOT PERMITTED WITHOUT WRITTEN AUTHORIZATION OF CRIADO, INC. IF THIS DRAWING IS CONVERTED TO AN ELECTRONIC FILE, IF ANY DISCREPANCY OCCURS BETWEEN THE ELECTRONIC FILE AND CRIADO ORIGINAL DOCUMENT, THE ORIGINAL DOCUMENT WILL GOVERN IN ALL CASES.



**CRIADO**  
4100 SPRING VALLEY RD., SUITE 1001  
DALLAS, TX 75244  
Tel 972.392.9092  
Firm No. F-4373








































DRAWN BY: AEP  
APPROVED BY: DBH  
DATE: MARCH 03, 2023

NORTH TEXAS MUNICIPAL WATER DISTRICT  
F.M. 1378 PIPELINE RELOCATIONS  
**COVER SHEET**

SHEET NUMBER  
**345**  
345 OF 13 SHEETS

FILE NAME: I:\PROJECTS\R14465.04\_NTMWD\_FN\_2514\_Pipeline Relocations\02\_DWG\02\_Sheets\FM 1378\_F14465.04 - SHEETS  
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 ISSUED FOR BID

# GENERAL LEGEND

-  BENCHMARK
-  CONTROL POINT
-  TREE
-  SHRUB
-  BRUSH/TREE LINE
-  WOOD FENCE
-  CHAIN LINK FENCE
-  WIRE FENCE (AS NOTED)
-  MAIL BOX
-  BOLLARDS
-  IRRIGATION CONTROL VALVE
-  PARKING METER
-  TRAFFIC SIGN OR AS NOTED
-  TRAFFIC SIGNAL POLE
-  LIGHT POLE
-  FIRE HYDRANT
-  WATER METER
-  WATER GATE VALVE
-  WATER LINE MARKER
-  WASTEWATER CLEANOUT
-  GAS MANHOLE
-  TRANSFORMER PAD
-  ELECTRIC POWER POLE
-  GUY WIRE/ANCHOR
-  ELECTRIC UTILITY MANHOLE
-  ELECTRIC VAULT
-  ELECTRIC METER
-  OVERHEAD ELECTRIC
-  UNDERGROUND CABLE TV
-  TELEPHONE UTILITY MANHOLE
-  CABLE PEDESTAL
-  CABLE VAULT
-  TELEPHONE PEDESTAL
-  TELEPHONE CABLE SIGN
-  FIBER OPTIC MANHOLE
-  CABLE TV MANHOLE
-  CABLE TV FLAG

# EXISTING UTILITY OWNERS

NORTH TEXAS MUNICIPAL WATER DISTRICT	
TRAVIS MARKHAM	
MATT ARMSTRONG	(972) 442-5405
ONCOR	
BRYAN WILLIAMS	(817) 215-6285
JILL ALVAREZ	(817) 215-6061
ANDREW COOK	(817) 215-6630
AT&T	
JAMES BLAZIER	(903)-457-2301
COSERVE GAS	
PAUL KENNEDY	(940) 321-7800
COSERVE ELECTRIC	
BILLY RYAN	(940) 321-7800
VERIZON	
DAN DANCER	(972) 841-4651
TXDOT	
	(214) 320-6648
WALTER CRAIG	
	(972) 962-7206
TEXAS ONE CALL SYSTEM	
	(800) 245-4545
TEXAS EXCAVATION SAFETY SYSTEM	
	(800) 344-8377
ATMOS ENERGY	
LONDON BROWN	(214) 206-2735
FRONTIER COMMUNICATIONS	
ANDY KING	andy.a.king@ftr.com
KEITH DANCER	keith.dancer@cyient.com

## GENERAL PROJECT NOTES (NO SEPARATE PAY ITEMS)

### A. REGULATORY, PERMITTING AND SAFETY

- A1 CONTRACTOR SHALL ABIDE BY ALL APPLICABLE GOVERNMENTAL AND REGULATORY STANDARDS AND REQUIREMENTS AND OBTAIN ALL NECESSARY PERMITS AND APPROVALS FOR CONSTRUCTION OF THE PIPELINE FACILITIES SHOWN IN THE PLANS.
- A2 CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING GENERAL SAFETY AT AND ADJACENT TO THE PROJECT AREA, INCLUDING THE PERSONAL SAFETY OF THE CONSTRUCTION STAFF AND THE GENERAL PUBLIC, AND FOR THE SAFETY OF PUBLIC AND PRIVATE PROPERTY.
- A3 CONTRACTOR IS RESPONSIBLE FOR ALL TRENCH SAFETY. THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED WORK UTILIZING A TRENCH SAFETY PLAN PREPARED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS, FOR THIS PROJECT. THIS TRENCH SAFETY PLAN SHALL BE SUBMITTED PRIOR TO ANY WORK ACTIVITIES. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING AN OVERALL SAFETY PLAN INCLUDING BUT NOT LIMITED TO ITEMS LISTED ABOVE.
- A4 CONTRACTOR SHALL PROVIDE A STORM WATER POLLUTION PREVENTION PLAN AND PROVIDE ALL APPURTENANCES TO COMPLY WITH THE LATEST TCEQ STORM WATER POLLUTION PREVENTION REGULATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR FILING A NOTICE OF INTENT (NOI) AT THE START OF CONSTRUCTION WITH THE TCEQ AND A NOTICE OF TERMINATION (NOT) AT THE END, ALSO WITH THE TCEQ.
- A5 THE CONTRACTOR SHALL EMPLOY ADEQUATE METHODS TO MINIMIZE TURBIDITY IN WATERWAYS DURING ALL PHASES OF THE PROJECT. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS CONCERNING WATER POLLUTION PREVENTION.
- A6 CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE MEASURES FOR PREVENTING STORM WATER RUNOFF FROM ENTERING THE TRENCH DURING CONSTRUCTION.
- A7 CONTRACTOR IS RESPONSIBLE FOR KEEPING ROADWAYS AND SIDEWALKS ADJACENT TO THE PROJECT FREE OF MUD, TRASH, AND CONSTRUCTION DEBRIS.
- A8 CONTRACTOR SHALL NOTIFY TXDOT OF THE CONSTRUCTION SCHEDULE OF ALL TUNNELS TO BE INSTALLED WITHIN STATE HIGHWAYS AND ROADWAYS. NOTIFY TXDOT AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION SO THAT TXDOT CAN HAVE A REPRESENTATIVE PRESENT. CONTRACTOR SHALL COMPLY WITH ALL OF THE REQUIREMENTS OF THE CROSSING PERMITS ATTACHED TO THE PROJECT SPECIFICATIONS.
- A9 CONTRACTOR SHALL LEAVE AT LEAST ONE LANE OF TRAFFIC OPEN WHEN CROSSING OPEN CUT ROADWAYS.

### B. GENERAL AND CONSTRUCTION

- B1 CONSTRUCTION SURVEYING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR INCLUDING BUT NOT LIMITED TO LIMITS OF PERMANENT EASEMENT, TEMPORARY EASEMENT, CENTERLINE, ETC. THE CONTRACTOR SHALL VERIFY ALL CONTROL MONUMENTATION PRIOR TO BEGINNING CONSTRUCTION.
- B2 CONTRACTOR SHALL PROVIDE THE OWNER AS-BUILT LOCATIONS AND ELEVATIONS OF APPURTENANCES, INCLUDING BUT NOT LIMITED TO AIR RELEASE, AIR/VACUUM, AND BLOW OFF VALVES, MANHOLE COVERS, IN-LINE VALVES, CORROSION TEST STATIONS, CONNECTIONS AND OUTLETS. CONTRACTOR SHALL ALSO PROVIDE AS-BUILT TOP-OF-PIPE SURVEY AS SPECIFIED IN THE CONTRACT DOCUMENTS AS IT IS BEING LAID, INCLUDING STATION AND ELEVATION INFORMATION. AS-BUILT DATA SHALL BE SUBMITTED WITH THE REQUEST FOR PAYMENT FOR THESE ITEMS. INFORMATION SUBMITTED TO THE OWNER SHOULD BE FOLLOWING THE NTMWD GIS STANDARDS.
- B3 CONTRACTOR SHALL INSTALL ALL PIPE ON GRADUAL VERTICAL CURVATURES, EXCEPT AS SHOWN ON PLANS TO PRECLUDE THE NECESSITY OF USING FITTINGS FOR VERTICAL BENDS. HOWEVER, PIPE JOINTS AND FITTINGS SHALL NOT BE DEFLECTED MORE THAN 75% OF THE MANUFACTURER'S ALLOWABLE DEFLECTION PER JOINT.
- B4 VALVE AND MANHOLE RIMS & LIDS SHALL BE INSTALLED 12 TO 24 INCHES ABOVE FINAL GRADE OF TRENCH OR STRUCTURAL BACKFILL, AND BE OF SUFFICIENT DEPTH TO ACCOMMODATE VALVE ASSEMBLY WITH HEADROOM UNLESS OTHERWISE NOTED IN PLANS. REFER TO PIPELINE DETAILS FOR ADDITIONAL INFORMATION.
- B5 AIR-RELEASE VALVES SHALL BE INSTALLED AT HIGH POINTS AND OTHER VARIOUS LOCATIONS ALONG THE PIPELINE AS SHOWN IN THE PLANS. STATION LOCATION ADJUSTMENTS MAY BE MADE WITH PRIOR APPROVAL OF THE ENGINEER.
- B6 BLOW-OFF VALVE DISCHARGE PIPING IS SHOWN IN THE PLANS AS A GENERAL LOCATION AND ORIENTATION OF THE DISCHARGE PIPING AND VALVE. FINAL LOCATION AND DIRECTION OF BLOW-OFF VALVE DISCHARGE SHALL BE DETERMINED PRIOR TO INSTALLATION BY THE OWNER'S ON-SITE INSPECTOR WITH PRIOR APPROVAL OF THE ENGINEER. CONTRACTOR SHALL COORDINATE WITH THE OWNER'S INSPECTOR PRIOR TO INSTALLATION OF THE DISCHARGE PIPING.
- B7 NO BLASTING WILL BE ALLOWED.
- B8 NO BURNING WILL BE ALLOWED. ALL BRUSH AND CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SITE.
- B9 NEW PIPE SHALL BE DESIGNED FOR THE OPERATING PRESSURES INDICATED ON THE HYDRAULIC GRADE LINE SHEET AND AS INDICATED ON THE PLANS. IN NO CASE SHALL PIPE BE DESIGNED FOR LESS THAN 150 PSI.
- B10 ALL OUTLETS ON THE WATERLINE SHALL BE FLANGED OUTLETS. ALL VALVES CONNECTED TO THE OUTLETS SHALL BE FLANGED. ALL FLANGE BOLTS SHALL BE CARBON STEEL WHEN INSTALLED WITHIN A MANHOLE. ANY FLANGE BOLTS DIRECT BURIED SHALL BE STAINLESS STEEL.
- B11 CONTRACTOR WILL BE REQUIRED TO PROTECT STORED PIPING BY CAPPING OR SECURING PIPE ENDS.
- B12 CONTRACTOR SHALL BE REQUIRED TO INSTALL TEMPORARY TEST PLUGS FOR HYDROSTATIC TESTING AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
- B13 ALL ABOVE GROUND METAL SHALL BE PAINTED OR COATED ACCORDING TO THE SPECIFICATIONS. CONTRACTOR SHALL COORDINATE THE COLORS WITH THE OWNER.
- B14 VARIOUS LOCATIONS OF THE WORK ARE SUBJECT TO FLOODING OR STANDING WATER DURING WET WEATHER PERIODS. CONTRACTOR SHALL PLAN THIS WORK FOR DRY WEATHER PERIODS OR PROVIDE DEWATERING AND OTHER WET WEATHER PROVISIONS AS INCIDENTAL WORK.
- B15 CONTRACTOR SHALL COORDINATE HIS PROPOSED CONSTRUCTION WITH OTHER CONTRACTORS IN THE EVENT THE OTHER CONTRACTORS ARE DOING WORK IN THE SAME AREA SIMULTANEOUSLY WITH HIS PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO, ALL CONNECTION POINTS OR OTHER SPECIAL ITEMS AS REQUIRED FOR TESTING.
- B16 THIS PROJECT IMPACTS ENTITIES WHO MAY HAVE FACILITIES LOCATED IN THE PROJECT TEMPORARY AND PERMANENT EASEMENTS. PRIOR TO RECEIVING FINAL PAYMENT FROM NTMWD, THE CONTRACTOR SHALL PROVIDE A RELEASE TO NTMWD ON BEHALF OF EACH ENTITY. THE LIST OF SUPPLIERS INCLUDES BUT IS NOT LIMITED TO NTMWD, ONCOR DELIVERY COMPANY, ENERGY TRANSFER, AND TRINITY VALLEY ELECTRIC COOPERATIVE.
- B17 ALL STEEL PIPE JOINTS MUST BE WELDED UNLESS INDICATED OTHERWISE IN THE PLANS.
- B18 CONTRACTOR SHALL RESTORE EXISTING DIRT TRAILS ALONG ALIGNMENT TO EXISTING CONDITIONS OR BETTER AT NO ADDITIONAL COST TO OWNER.
- B19 CONTRACTOR SHALL PROVIDE EQUIPMENT FOR HOLIDAY TESTING PER SPECIFICATION SECTION 09 97 16 "PIPELINE COATINGS AND LININGS."

FILE PATH: P:\PROJECTS\1446303\_NTMWD\_LN\_2514\_Pipeline Relocations\07\_DONOTDELETE\Sheet\PM 1378\_P1446303\_1SHEETS  
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NORTH TEXAS MUNICIPAL WATER DISTRICT  
 F.M. 1378 PIPELINE RELOCATIONS

**GENERAL NOTES 1-2**

SHEET NUMBER

**346**

346 OF 13 SHEETS

C. ACCESS AND EASEMENT REQUIREMENTS

- C1 CONTRACTOR'S OPERATIONS MUST STAY WITHIN THE ACCESS ROADS, AND PERMANENT AND TEMPORARY EASEMENTS DESIGNATED ON THE PLAN SHEETS. CONTRACTOR SHALL STAKE THE LIMITS OF THE PERMANENT AND TEMPORARY EASEMENT PRIOR TO BEGINNING WORK. CONTRACTOR SHALL MAINTAIN STAKES UNTIL WORK IS COMPLETE, INCLUDING PROPERTY RESTORATION. ACCESS ROUTES OR OPERATIONS WHICH FALL OUTSIDE THE DESIGNATED AREAS WILL ONLY BE ALLOWED WITH PRIOR LANDOWNER CONSENT. CONTRACTOR SHALL PROVIDE THE OWNER WITH A COPY OF AGREEMENTS MADE BETWEEN THE LANDOWNER AND THE CONTRACTOR BEFORE DEVIATING FROM EASEMENTS.
- C2 ALL GATES SHALL BE KEPT CLOSED TO CONTROL ACCESS TO THE PROJECT SITE. CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE SECURITY AND ACCESS CONTROL AND SHALL PROVIDE APPROPRIATE STAFFING AND ACCESS CONTROLS INCLUDING GATES AND LOCKS AS REQUIRED.
- C3 CONTRACTOR SHALL MAINTAIN AT LEAST ONE LANE OF TRAFFIC ON ALL ROADS AT ALL TIMES, AND CONSTRUCT TEMPORARY BYPASS, IF NECESSARY, IF THE ROADWAY MUST BE CLOSED TO FACILITATE CONSTRUCTION ACTIVITIES. ACCESS MUST BE MAINTAINED TO PRIVATE DRIVES AT ALL TIMES. CONTRACTOR SHALL NOTIFY PRIVATE DRIVE OWNERS A MINIMUM OF 7 DAYS PRIOR TO AFFECTING ACCESS TO DRIVES.
- C4 CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE OWNER AND THE RIGHT-OF-WAY OWNER OF THE ROADWAY FOR APPROVAL NO LESS THAN 14 DAYS IN ADVANCE OF THE PROPOSED ROADWAY CLOSURE. ANY COMMENTS RECEIVED ON THE PLAN BY THE OWNER OR RIGHT-OF-WAY OWNER SHALL BE INCORPORATED INTO THE PLAN. THE PLAN SHALL BE PREPARED SPECIFICALLY FOR THIS PROJECT AND SHALL BE SEALED AND SIGNED BY AN ENGINEER LICENSED IN THE STATE OF TEXAS. THE COST TO PREPARE THE TRAFFIC CONTROL PLAN, WHEN REQUIRED, SHALL BE MADE INCIDENTAL TO THE PROJECT.
- C5 CONTRACTOR SHALL PROVIDE APPROPRIATE SIGNAGE, BARRICADES, FLAG MEN, ETC. REQUIRED TO MAINTAIN SAFE TRAFFIC FLOW AT ALL TIMES FOR ANY WORK ACTIVITY ON OR ADJACENT TO ANY TOWN, CITY, COUNTY OR TXDOT ROADWAY. ALL TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH TXDOT'S MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- C6 CONTRACTOR SHALL NOTIFY ALL CIVIC AUTHORITIES, COUNTIES, CITY COMMISSIONERS, EMERGENCY UNITS AND SCHOOL DISTRICTS OPERATING WITHIN THE AREA OF THE PROPOSED WORK OF LANE CLOSURES AND CONSTRUCTION SCHEDULES.
- C7 CONTRACTOR SHALL NOTIFY ALL PROPERTY OWNERS AT LEAST 48 HOURS PRIOR TO PERFORMING ANY WORK ON THEIR PROPERTY. CONTRACTOR SHALL ALSO DISTRIBUTE A LETTER TO ALL AFFECTED PROPERTY OWNERS THAT INCLUDES NAMES AND TELEPHONE NUMBERS OF CONTRACTOR'S CONTACTS, A DESCRIPTION OF WORK TO BE DONE, AND THE TIME FRAME FOR DOING THE WORK. A COPY OF THE NOTICE LETTERS SHALL BE FORWARDED TO THE OWNER'S REPRESENTATIVE.
- C8 CONTRACTOR SHALL NOT DISTURB PONDS, CREEKS OR OTHER WATERWAYS OUTSIDE OF THE PERMANENT EASEMENT.
- C9 ALL FISHING OR HUNTING ON THE EASEMENT OR ANY OF THE LANDOWNER'S PROPERTY BY THE COMPANY OR ANY OF ITS EMPLOYEES, AGENTS, OR CONTRACTORS WITHOUT THE LANDOWNER'S PERMISSION IS STRICTLY PROHIBITED.
- C10 CONTRACTOR SHALL BE RESPONSIBLE FOR CATTLE, HORSES, OR OTHER LIVESTOCK INJURED OR KILLED AS A RESULT OF CONSTRUCTION ACTIVITY AT NO ADDITIONAL COST TO THE OWNER.

D. EXCAVATION AND BACKFILL

- D1 IN ACCORDANCE WITH TEXAS STATE LAW, AT LEAST 2 DAYS PRIOR TO BEGINNING EXCAVATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING A TEXAS REGISTERED NOTIFICATION CENTER (I.E. TEXAS ONE CALL, DIG TESS, ETC.), IN ORDER TO HAVE EXISTING UTILITIES LOCATED.
- D2 CONTRACTOR SHALL SECURE EXCAVATION AT THE END OF EACH DAY. THE OWNER MAY REQUIRE THAT NO TRENCHES BE LEFT OPEN OVERNIGHT IN STREETS OR POPULATED AREAS.
- D3 THE TOP 12 INCHES OF TRENCH BACKFILL MATERIAL SHALL HAVE A GRADATION SIMILAR TO EXISTING GROUND ADJACENT TO THE TRENCH. MAXIMUM ROCK SIZE WITHIN THE 12 INCH TOP LAYER SHALL NOT EXCEED 1 INCH.
- D4 CLSM REQUIRED FOR CROSSING FLEXIBLE BASE ROADS, DRIVES, AND ASPHALT PAVEMENT, IS SHOWN ON THE PLAN AND PROFILE SHEETS FOR REFERENCE. PAYMENT FOR THIS CLSM SHALL BE MADE INCIDENTAL TO THE UNIT PRICE AND BID FOR "FLEXIBLE BASE ROAD OR DRIVE CROSSING", AND "ASPHALT ROAD CROSSING", IN THE PROPOSAL. CLSM FOR STEEL PIPE WITH DEEP TRENCH SECTION IS ALSO SHOWN. PAYMENT FOR THE CLSM SHALL BE MADE INCIDENTAL TO THE UNIT PRICE BID FOR MAINLINE PIPE.
- D5 CONTRACTOR SHALL REMOVE ALL SURPLUS MATERIAL FROM THE PROJECT AREA INCLUDING EXCAVATED MATERIAL, SOIL, RUBBLE, TRASH, ETC. TO AN APPROPRIATE OFF-SITE LOCATION ACCEPTABLE TO THE OWNER. NO EXCAVATED MATERIAL SHALL BE DEPOSITED IN LOW AREAS OR ALONG NATURAL DRAINAGE WAYS. IF THE CONTRACTOR PLACES EXCESS MATERIAL IN AREAS WITHOUT WRITTEN PERMISSION, HE WILL BE RESPONSIBLE FOR ALL DAMAGES RESULTING FROM SUCH FILL AND HE SHALL REMOVE THE MATERIAL AT HIS OWN COST.

E. EASEMENT RESTORATION

- E1 CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITHIN THE CONSTRUCTION SITE AS PER THE EASEMENT REQUIREMENTS ASSOCIATED WITH THE PROJECT AND ANY OTHER REQUIREMENTS SHOWN ON THE PLANS. IF NOT OTHERWISE SPECIFIED, ALL STREETS, DRIVEWAYS, FENCING, LANDSCAPING, SIDEWALKS ETC. SHALL BE RETURNED TO A CONDITION EQUAL TO OR BETTER THAN EXISTED PRIOR TO CONSTRUCTION.
- E2 THE CONTRACTOR SHALL PROVIDE A VIDEO (AS SPECIFIED) TO THE OWNER DOCUMENTING THE CONDITION OF THE PIPELINE ROUTE, INCLUDING THE PERMANENT EASEMENT, TEMPORARY EASEMENT AND SURROUNDING AREA. CONTRACTOR SHALL REVIEW THE TAPE OR DVD WITH THE OWNER PRIOR TO THE START OF ANY CONSTRUCTION.
- E3 EXISTING TOPSOIL (NATIVE MATERIAL) SHALL BE STOCKPILED AND REPLACED TO A MINIMUM DEPTH OF 12 INCHES AND DISC HARROWED TO A MINIMUM DEPTH OF 4 INCHES.
- E4 RESTORE GROUND TO ORIGINAL GRADE AND PREVENT PONDING OF STORM WATER RUNOFF ON ALL GROUND DISTURBED BY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL RESTORE GROUND THROUGHOUT THE WARRANTY PERIOD WHERE SETTLEMENT HAS CREATED STORM WATER PONDING.
- E5 FOLLOWING INSTALLATION OF PIPELINE ACROSS WATERWAYS, THE WATERWAY BANK SLOPE SHALL BE RESTORED IN ACCORDANCE WITH PROJECT DETAILS.
- E6 CONTRACTOR SHALL CLEAN THE RIGHT-OF-WAY OF ANY AND ALL TRASH AND OTHER CONSTRUCTION DEBRIS DAILY.
- E7 IT SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR TO REBUILD THE CONCRETE OR ASPHALT PAVEMENT REPLACEMENT SECTIONS TO THE SAME LINE AND GRADE THAT EXISTED PRIOR TO PIPELINE CONSTRUCTION.
- E8 THE CONTRACTOR SHALL RESTORE, AT HIS OWN EXPENSE, TEMPORARY ROADS AND CONSTRUCTION WORK AREAS TO PRE-CONSTRUCTION CONDITIONS.
- E9 CONTRACTOR SHALL RESEED, AS SPECIFIED, ALL DISTURBED AREAS WITHIN TXDOT RIGHT-OF-WAY AND EASEMENTS OR AS MAY BE DIRECTED IN WRITING BY THE OWNER.

F. TREES

- F1 CONTRACTOR SHALL OBTAIN A TREE REMOVAL PERMIT AS MAY BE REQUIRED BY CITY ORDINANCE OR OTHER AUTHORITY.
- F2 CONTRACTOR SHALL CLEAR ALL TREES WITHIN THE PERMANENT EASEMENT UNLESS OTHERWISE SPECIFICALLY NOTED ON THE PLANS OR IN THE EASEMENTS.
- F3 CONTRACTOR SHALL NOT DAMAGE EXISTING TREES LARGER THAN 8-INCHES IN DIAMETER (MEASURED 4 FT. ABOVE THE GROUND) THAT ARE OUTSIDE OF THE PERMANENT EASEMENT. THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE OWNER'S REPRESENTATIVE BEFORE ANY TREES OUTSIDE OF THE PERMANENT EASEMENT CAN BE REMOVED OR TRIMMED.
- F4 CONTRACTOR SHALL REPLACE ANY TREES REMOVED OR DESTROYED WITHOUT THE OWNER'S PERMISSION OR SHALL PAY THE FAIR MARKET VALUE (AS DETERMINED BY THE OWNER) TO THE OWNER.
- F5 TRIMMING OF TREES SHALL BE ACCOMPLISHED USING A SAW OR PRUNING SHEARS. ALL CUT LIMBS OVER 1 INCH IN DIAMETER SHALL BE PAINTED WITH TREE WOUND PAINT IMMEDIATELY AFTER TREE TRIMMING.
- F6 ALL NEW TREES REQUESTED BY THE OWNER, SHOWN ON THE PLANS, OR REQUIRED BY THE EASEMENTS, SHALL BE PLANTED BY A NURSERYMAN LICENSED IN THE STATE OF TEXAS.
- F7 ALL EXISTING TREES SHOWN TO BE REMOVED SHALL BE REPLACED WITH "45 GALLON CONTAINER GROWN CREPE MYRTLES"

G. FENCES AND GATES

- G1 EXISTING FENCES, GATES, CATTLE GUARDS, ETC. USED FOR ACCESS SHALL BE LEFT IN CONDITION EQUAL TO OR BETTER THAN EXISTED PRIOR TO CONSTRUCTION. CONTRACTOR SHALL REPAIR OR REPLACE ALL DAMAGED FENCING ITEMS IN KIND WITH LIKE OR BETTER MATERIALS, AND PAINTED, STAINED OR TREATED TO MATCH EXISTING FENCING.
- G2 CONTRACTOR SHALL REMOVE FENCES AND GATES AS REQUIRED FOR CONSTRUCTION AND REPLACE AFTER THE PIPELINE HAS BEEN INSTALLED AND TESTED. ALL FENCING INCLUDING BARBED WIRE, WROUGHT IRON, ORNAMENTAL, CHAIN AND LINK FENCES SHALL BE REPLACED OR RECONSTRUCTED WITH NEW MATERIALS AND SHALL MATCH EXISTING FENCING UNLESS OTHERWISE NOTED IN THE PLANS OR EASEMENTS.
- G3 INSTALL PERMANENT STEEL GATES PER PROJECT DETAILS AT ALL EXISTING FENCE CROSSINGS EXCEPT WHERE DESIGNATED OTHERWISE.
- G4 TEMPORARY FENCING SHALL BE REQUIRED WHERE THERE IS LIVESTOCK OR IN PUBLIC AREAS. TEMPORARY FENCING SHALL BE INSTALLED WHERE PERMANENT FENCING IS NOT TO BE REPLACED BY END OF SAME WORK DAY. CONTRACTOR SHALL VERIFY PRESENCE OF LIVESTOCK WITH LANDOWNER PRIOR TO ENTERING PROPERTY.
- G5 ANY DAMAGES RESULTING FROM GATES OR FENCING LEFT OPEN SHALL BE AT THE CONTRACTOR'S EXPENSE.

H. UTILITIES

- H1 THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE COMMENCING WORK. CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES RESULTING FROM FAILURE TO EXACTLY LOCATE AND PRESERVE THE UNDERGROUND UTILITIES.
- H2 CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO MANUFACTURING OF PIPE AND SUFFICIENTLY IN ADVANCE OF THE CONSTRUCTION SO THAT IF IT IS NECESSARY TO CHANGE OR MOVE THE UTILITY, THE PROGRESS OF THE WORK WILL NOT BE DELAYED. ANY EXISTING UTILITY DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED IMMEDIATELY WITH LIKE OR BETTER MATERIALS.
- H3 CONTRACTOR SHALL SUBMIT A WRITTEN LAYING PLAN AND SCHEDULE 14 DAYS IN ADVANCE OF CONSTRUCTION ACTIVITIES REQUIRING REPLACEMENT OR SUPPORT OF EXISTING SANITARY SEWER PIPE, WATER PIPE OR STORM DRAIN PIPE. THE PLAN SHALL DESCRIBE IN DETAIL THE METHOD FOR REPLACING OR SUPPORTING EXISTING PIPE AND ASSOCIATED SCHEDULE. PLANS SHALL BE REVIEWED AND ACCEPTED BY OWNER.
- H4 CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SERVICE LINES CROSSED OR EXPOSED BY HIS CONSTRUCTION OPERATIONS. WHERE EXISTING SERVICE LINES ARE CUT, BROKEN OR DAMAGED THE CONTRACTOR SHALL IMMEDIATELY REPLACE THE SERVICE LINES IN KIND WITH LIKE OR BETTER MATERIALS. CONTRACTOR SHALL ENSURE PROPER COMPACTION TO MINIMIZE ANY FUTURE DEFLECTION OF THE SERVICE LINE.
- H5 CONTRACTOR SHALL PROTECT ALL UNDERGROUND IRRIGATION SYSTEMS ENCOUNTERED WITHIN THE CONSTRUCTION AREA. ALL DAMAGE SHALL BE REPAIRED BY IRRIGATOR LICENSED IN THE STATE OF TEXAS AND IN COORDINATION WITH THE OWNER OF THE SYSTEMS.
- H6 CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT OF ALL POWER AND TELEPHONE POLES AND GUY WIRES WITHIN 15 FEET OF PROPOSED WATER LINE OR AS WORK EXCAVATION DEMANDS AND SHALL REPAIR DAMAGED POLES AND GUY WIRES OR RELOCATE POLES AND GUY WIRES AS REQUIRED BY THE UTILITY OWNER AT NO ADDITIONAL COST TO THE OWNER.
- H7 CONTRACTOR, AT HIS DISCRETION, MAY TUNNEL UNDER EXISTING UTILITIES OR ROADWAYS OTHER THAN THOSE CROSSINGS SPECIFICALLY SHOWN ON THE DRAWINGS, AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL SUBMIT PLAN TO OWNER BEFORE COMMENCING IN ALL TUNNELING ACTIVITIES.
- H8 WHEN NEW WATERLINE CONSTRUCTION CROSSES UNDER EXISTING PIPELINES 12" DIAMETER OR GREATER, CONTRACTOR SHALL BACKFILL EXISTING PIPELINE WITH CLSM EMBEDMENT FROM TOP OF PIPE ZONE OF NEW WATERLINE TO 6-INCHES ABOVE EXISTING PIPELINE.
- H9 WHERE OVERHEAD ELECTRICAL POWER POLES AND GUY WIRES ARE CALLED OUT TO BE RELOCATED, CONTRACTOR SHALL COORDINATE THE RELOCATION WITH THE ELECTRICAL DISTRIBUTION COMPANY AND PAY FOR ALL COSTS ASSOCIATED WITH THE ACTIVITIES. OVERHEAD ELECTRICAL POLES AND GUY WIRES SHALL BE RELOCATED TO OUTSIDE OF THE PERMANENT EASEMENT. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT OF ALL POWER POLES WITHIN 15 FEET OF CONSTRUCTION OR WHERE TEMPORARY REMOVAL OF GUY WIRES IS NECESSARY FOR CONSTRUCTION.
- H10 REFER TO THE SPECIFICATION APPENDICES FOR ADDITIONAL INFORMATION REGARDING CROSSING OF EXISTING UTILITIES.
- H11 ALL WATER USED FOR TESTING AND FLUSHING SHALL BE PROVIDED BY NTMWD TO THE CONTRACTOR AT NO CHARGE TO THE CONTRACTOR. ALL OTHER WATER NEEDED FOR THE PROJECT BY THE CONTRACTOR WILL BE PAID FOR BY THE CONTRACTOR.

I. EXISTING STRUCTURES AND FACILITIES

- I1 WHEN THE PLANS OR EASEMENTS INDICATE THE DEMOLITION OR REMOVAL OF AN EXISTING STRUCTURE OR FACILITY BY THE CONTRACTOR, THE CONTRACTOR SHALL PROVIDE AT LEAST 30 DAYS NOTICE TO THE PROPERTY OWNER AND THE PROJECT OWNER OF THE PENDING REMOVAL.
- I2 WHERE IT IS NECESSARY FOR LANDOWNERS TO MOVE TRAILERS, SHEDS, OR OTHER FACILITIES OR IMPROVEMENTS, THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNER AND THE PROJECT OWNER NO LESS THAN 30 DAYS PRIOR TO THE NEED FOR MOVING THE FACILITIES OR IMPROVEMENTS.

FILE NAME: SUBMITTAL NOTES\_2-2.dwg  
 PROJECT: R1446303\_NTWDVW\_EM\_2514 Pipeline Relocations\_02.DWG  
 SHEET: 1378.F1.446304 - SHEETS  
 DATE: 03/03/2023 10:18:30 AM  
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NORTH TEXAS MUNICIPAL WATER DISTRICT  
 F.M. 1378 PIPELINE RELOCATIONS  
**GENERAL NOTES 2-2**

SHEET NUMBER  
**347**  
 347 OF 13 SHEETS

## QUANTITY SHEET

ITEM NO	TXDOT BID ITEM	TXDOT DESCRIPTION	UNIT	SHEET 1	SHEET 2	SHEET 3	SHEET 4	TOTAL QUANTITY
7316	6001	20" AWWA C303 RCCP*	LF	300	400	400	353	1453
7316	6002	20"X20" 90 degree RCCP Bend* (20"X20" 81 degree RCCP Bend*) **	EA	1			1	2
7316	6003	20"X20" 73 degree RCCP Bend*	EA	1				1
7316	6004	20" x 20" 45 degree RCCP Bend *	EA		1	3	3	7
7316	6005	Remove Existing Water Main	LS					1
7316	6006	Thrust Restraint *	LF	172	154	136	85	547
7316	6007	Existing Pipe Joint Restraints *	LF	55			55	110
7316	6008	Connect to Existing Waterline	EA	1			1	2
7316	6009	Testing and Disinfection	LS					1
7316	6010	6" Combination Air Release Assembly*	EA		1			1
7316	6011	8" Blowoff Valve Assembly*	EA	1		1		2
7316	6013	Trench Excavation Safety & Support	LF	300	400	400	353	1453
7316	6014	Salvage existing blow-off valve and piping	EA		1	1		2
7316	6015	Silt Fence	LF	300	400	400	353	1453
7316	6016	Sand Backfill	CY	9	12	12	11	45
7316	6017	Flowable Fill	CY	5	6	6	5	22
7316	6018	Remove Derelict Wooden Shed	LS		1			1
7316	6019	Remove & Replace Wooden Fence	LF	0	85	395	188	668
7316	6020	Remove & Replace Chain Link Fence	LF		92			92
7316	6021	Remove & Replace Barbed Wire Fence	LF				30	30
7316	6022	Remove & Replace Box Wire Fence	LF	200				200
7316	6023	Remove & Replace 12in CMP	LF				20	20
7316	6024	Install Access Gate	EA	2	1		2	5
7316	6025	Remove & Replace Tree	EA				2	2
7316	6026	Remove Tree	EA		2	6		8
7316	6027	Remove and Replace Asphalt Driveway	SY				406	406
7316	6028	Restoration & Seeding	AC	0.4	0.5	0.5	0.5	2
7316	6029	SWPPP	EA					1
7316	6030	Disposal of Heavy Chlorinated Water Main Flushing Water	LF	300	400	400	353	1453
7316	6031	Construction Surveying & Staking (Water & WW Mains)	LF	300	400	400	353	1453

\*Line Item Must be Buy America compliant in accordance with TxDOT/FHWA guidance letter dated October 3, 2019

\*\* The 20"X20" 81 degree RCCP Bend\* on Plan Sheet 353 has been added to TxDOT Bid Item 6002 - 20"X20" 90 degree RCCP Bend\*

FILE NAME: I:\PROJECTS\1446\03\_NTW\DWG\_EN\_2514\_Pipeline Relocations\02\_DON076\_Sheets\FM\_1378\_F14466.04 - SHEETS

FILE NAME: SUBQUANTITY SHEET.dwg  
DATE: 03/03/2023 11:37:07 AM  
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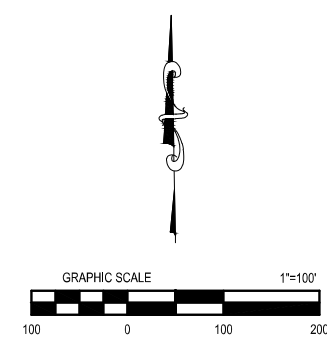
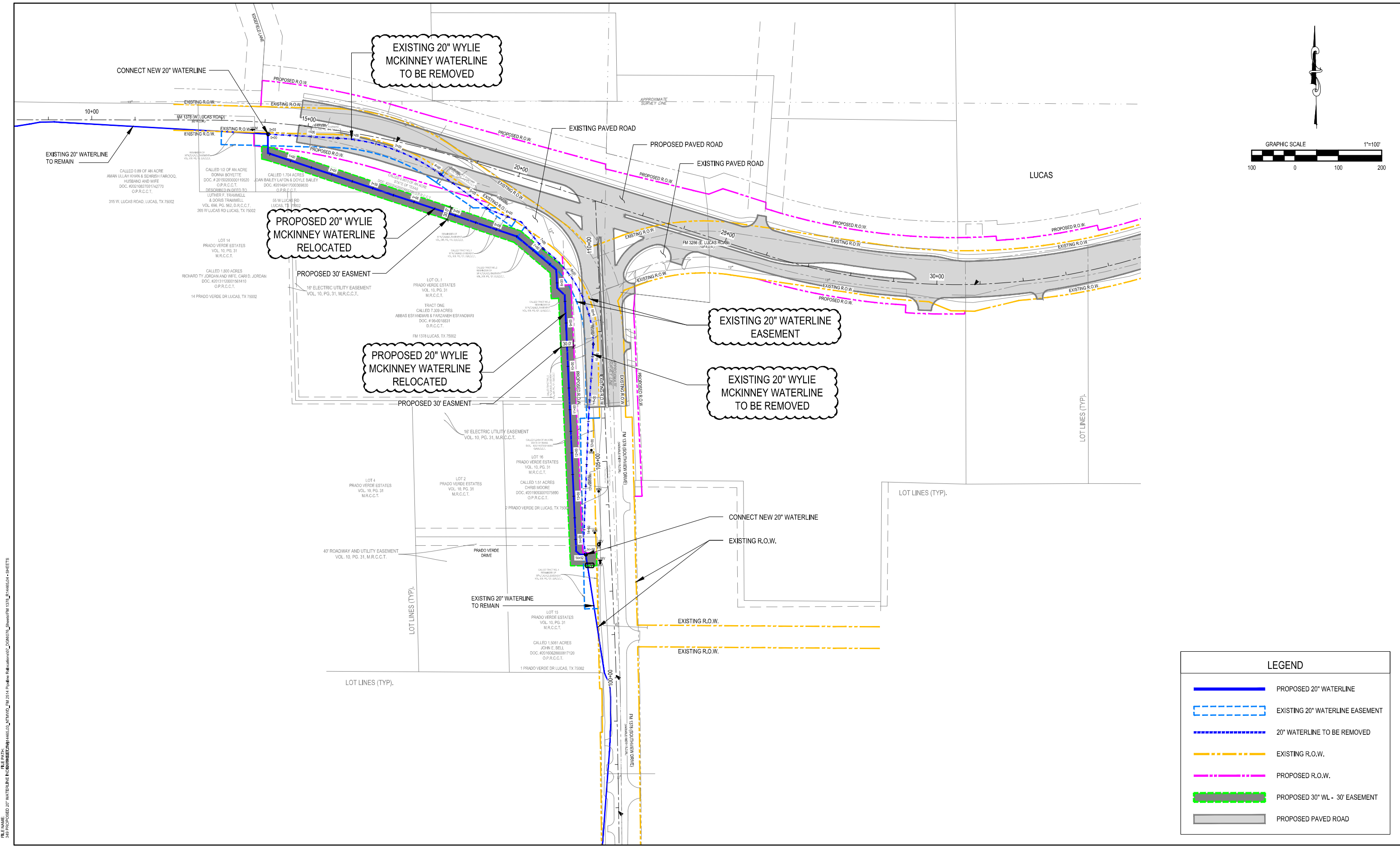
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NORTH TEXAS MUNICIPAL WATER DISTRICT  
F.M. 1378 PIPELINE RELOCATIONS  
**QUANTITY SHEET**

SHEET NUMBER  
**348**  
348 OF 13 SHEETS



LEGEND	
	PROPOSED 20" WATERLINE
	EXISTING 20" WATERLINE EASEMENT
	20" WATERLINE TO BE REMOVED
	EXISTING R.O.W.
	PROPOSED R.O.W.
	PROPOSED 30" WL - 30' EASEMENT
	PROPOSED PAVED ROAD

FILE NAME: SUBMITTED 20" WATERLINE INDEX SHEET.dwg, DATE: 03/03/2023 10:18:14 AM  
 SHEET NO. 349 OF 13 SHEETS

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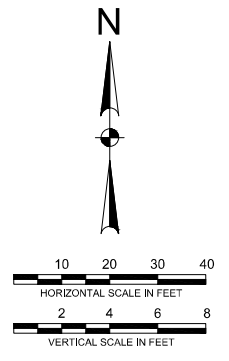
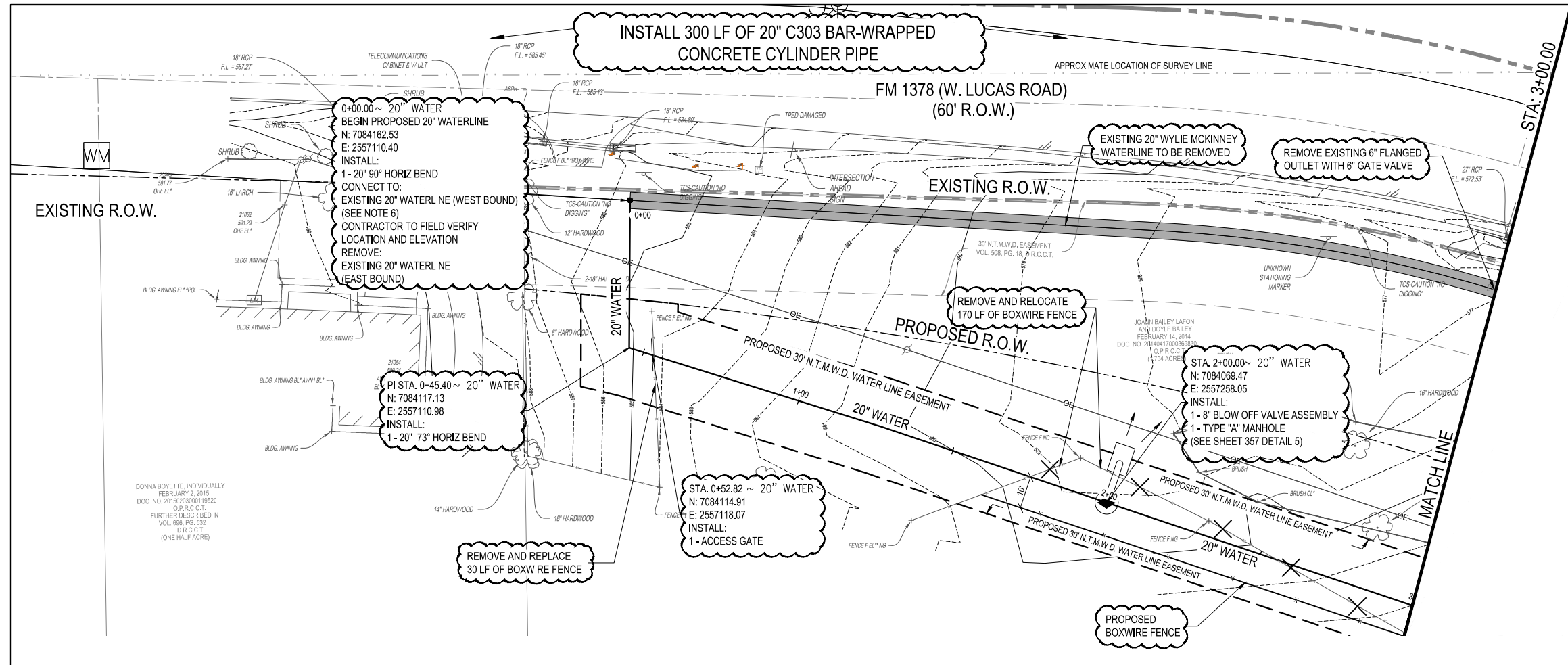
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NORTH TEXAS MUNICIPAL WATER DISTRICT  
 F.M. 1378 PIPELINE RELOCATIONS  
**PROPOSED 20" WATERLINE INDEX SHEET**

SHEET NUMBER  
**349**  
 349 OF 13 SHEETS



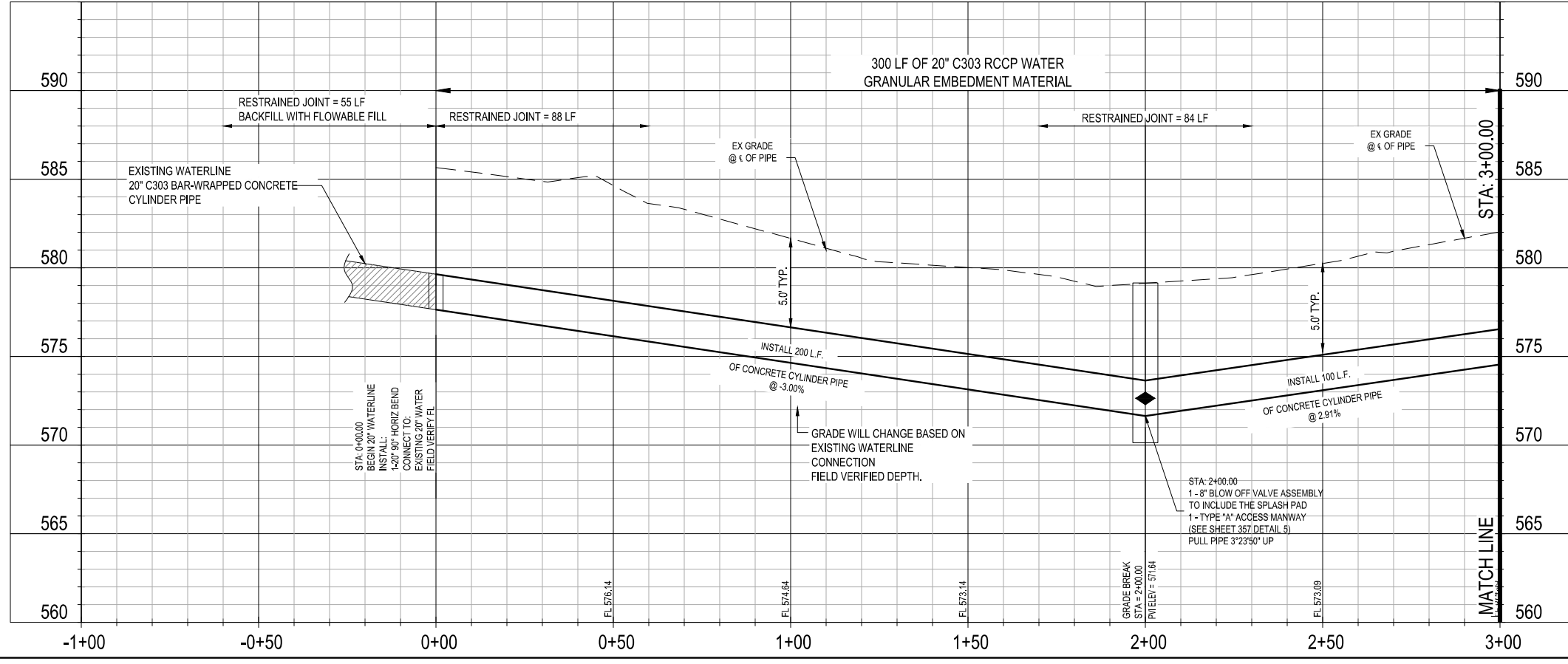
LEGEND	
	TREE REMOVAL
	EXISTING FENCE REMOVAL
	PROPOSED BOXWIRE FENCE
	PROPOSED WOOD FENCE
	PROPOSED 20" WATERLINE
	20" WATERLINE TO BE REMOVED
	EXISTING R.O.W.
	PROPOSED R.O.W.
	PROPOSED 30" WL - 30' EASEMENT

CALL BEFORE YOU DIG  
TEXAS ONE CALL PARTICIPANTS  
REQUEST 48 HOURS NOTICE BEFORE  
YOU DIG, DRILL OR BLAST  
STOP CALL

Texas One Call System  
1-800-DIG-TESS

**CAUTION!!!**  
UNDERGROUND AND OVERHEAD UTILITIES  
IN VICINITY. CONTRACTOR SHALL LOCATE  
HORIZONTAL AND VERTICAL LOCATIONS OF  
ALL UNDERGROUND UTILITIES IN THE  
VICINITY OF CONSTRUCTION PRIOR TO  
COMMENCING WORK.

- NOTES:
1. MARKER SHALL BE LOCATED AT ALL MAINLINE VALVES, AIR VALVES, AND BLOWOFF VALVES. AT HORIZONTAL BENDS, AND MAX SPACING OF 2000' ALONG PIPELINE ALIGNMENT.
  2. ALL EXISTING TREES SHOWN TO BE REMOVED SHALL BE REPLACED WITH 45 GALLON CONTAINER GROWN CREPE MYRTLES
  3. IN ADDITION TO THE SIDEWALK/TRAIL, ALL IRRIGATION AND LANDSCAPING/SODDING SHALL BE RETURNED TO EQUAL OR BETTER CONDITION.
  4. JOINTS AT CONNECTIONS AND BENDS ARE TO BE RESTRAINT BY FULL WELD. (SEE DETAIL ON SHEET 15).
  5. THE CONTRACTOR MUST SUBMIT A PLAN FOR FILLING, FLUSHING AND TESTING THE PROPOSED 20" WATERLINE FOR APPROVAL BY THE ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
  6. BOTH CONNECTIONS TO THE EXISTING 20" WATERLINE TO BE MADE CONCURRENTLY. SHUTDOWN IS REQUIRED. REFER TO NTMWD SPEC 01 35.00.



18" RCP F.L. = 587.27  
 TELECOMMUNICATIONS CABINET & VAULT  
 18" RCP F.L. = 585.45  
 APPROXIMATE LOCATION OF SURVEY LINE  
 FM 1378 (W. LUCAS ROAD) (60' R.O.W.)  
 EXISTING R.O.W.  
 EXISTING 20" WYLIE MCKINNEY WATERLINE TO BE REMOVED  
 REMOVE EXISTING 6" FLANGED OUTLET WITH 6" GATE VALVE  
 REMOVE AND RELOCATE 170 LF OF BOXWIRE FENCE  
 PROPOSED R.O.W.  
 REMOVE AND REPLACE 30 LF OF BOXWIRE FENCE  
 300 LF OF 20" C303 RCCP WATER GRANULAR EMBEDMENT MATERIAL  
 RESTRAINED JOINT = 55 LF BACKFILL WITH FLOWABLE FILL  
 RESTRAINED JOINT = 88 LF  
 RESTRAINED JOINT = 84 LF  
 EX GRADE @ 4' OF PIPE  
 EX GRADE @ 4' OF PIPE  
 STA: 0+00.00  
 BEGIN 20" WATERLINE  
 INSTALL:  
 1-20" 90° HORIZ BEND  
 CONNECT TO:  
 EXISTING 20" WATER  
 FIELD VERIFY FL  
 20" WATER  
 PI STA: 0+45.40 ~ 20" WATER  
 N: 7084117.13  
 E: 2557110.98  
 INSTALL:  
 1-20" 73° HORIZ BEND  
 20" WATER  
 STA: 0+52.82 ~ 20" WATER  
 N: 7084114.91  
 E: 2557118.07  
 INSTALL:  
 1- ACCESS GATE  
 20" WATER  
 STA: 2+00.00 ~ 20" WATER  
 N: 7084069.47  
 E: 2557258.05  
 INSTALL:  
 1- 8" BLOW OFF VALVE ASSEMBLY  
 1- TYPE "A" MANHOLE  
 (SEE SHEET 357 DETAIL 5)  
 MATCH LINE  
 DONNA BOYETTE, INDIVIDUALLY  
 FEBRUARY 2, 2015  
 DOC. NO. 20150203006119520  
 O.P.R.C.C.T.  
 FURTHER DESCRIBED IN  
 VOL. 696, PG. 532  
 D.R.C.C.T.  
 (ONE HALF ACRE)

NO.	DATE	REVISION

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DALLAS, TX 75244  
Tel 972.392.9092  
Firm No. F-4373

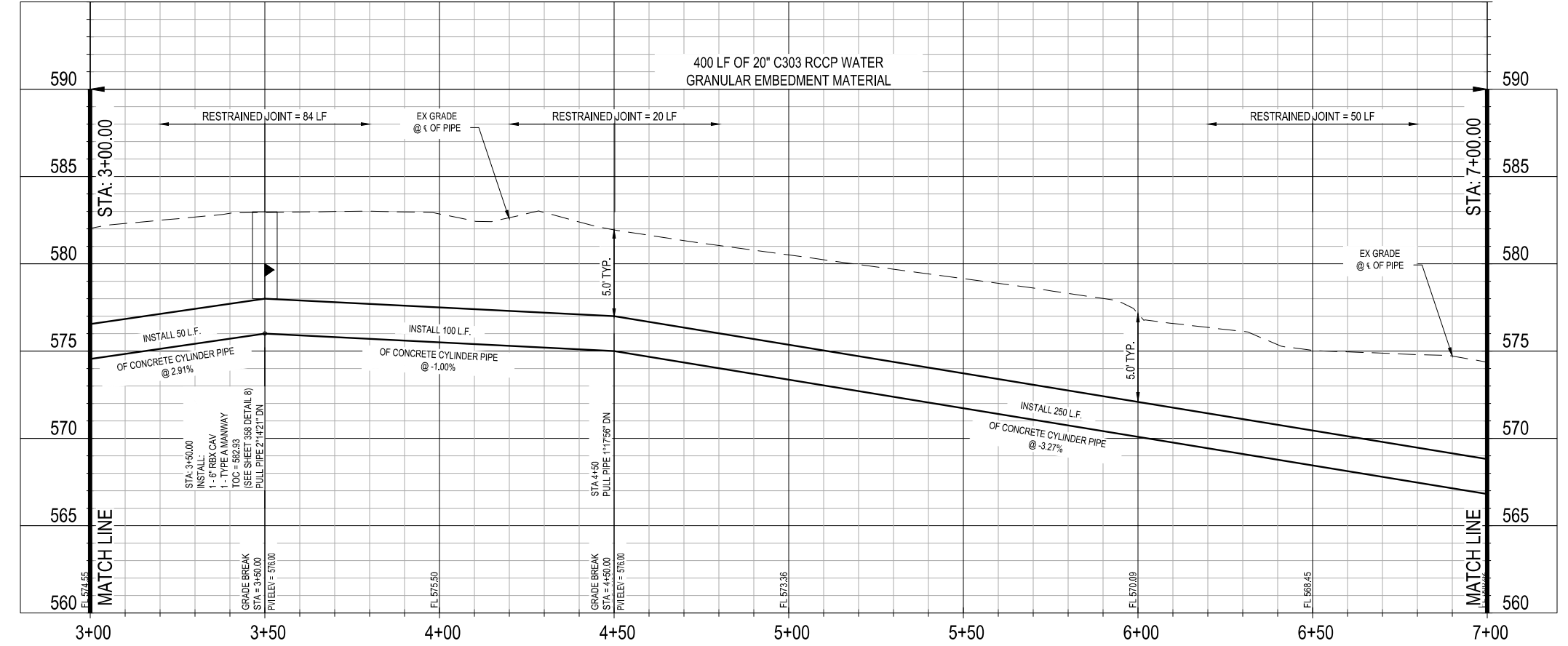
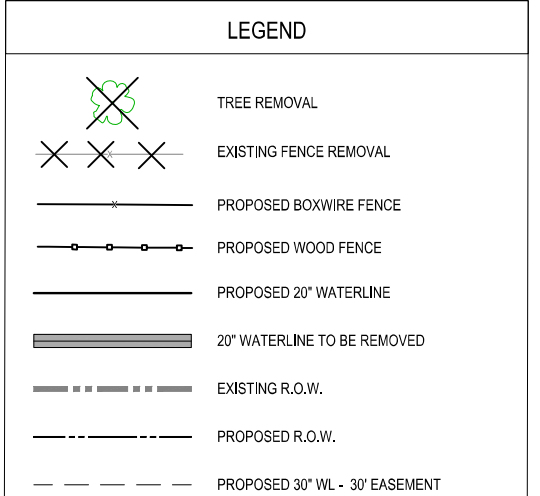
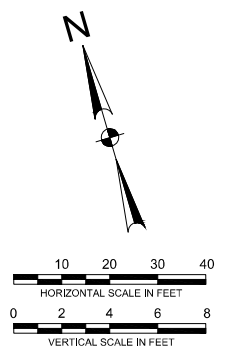
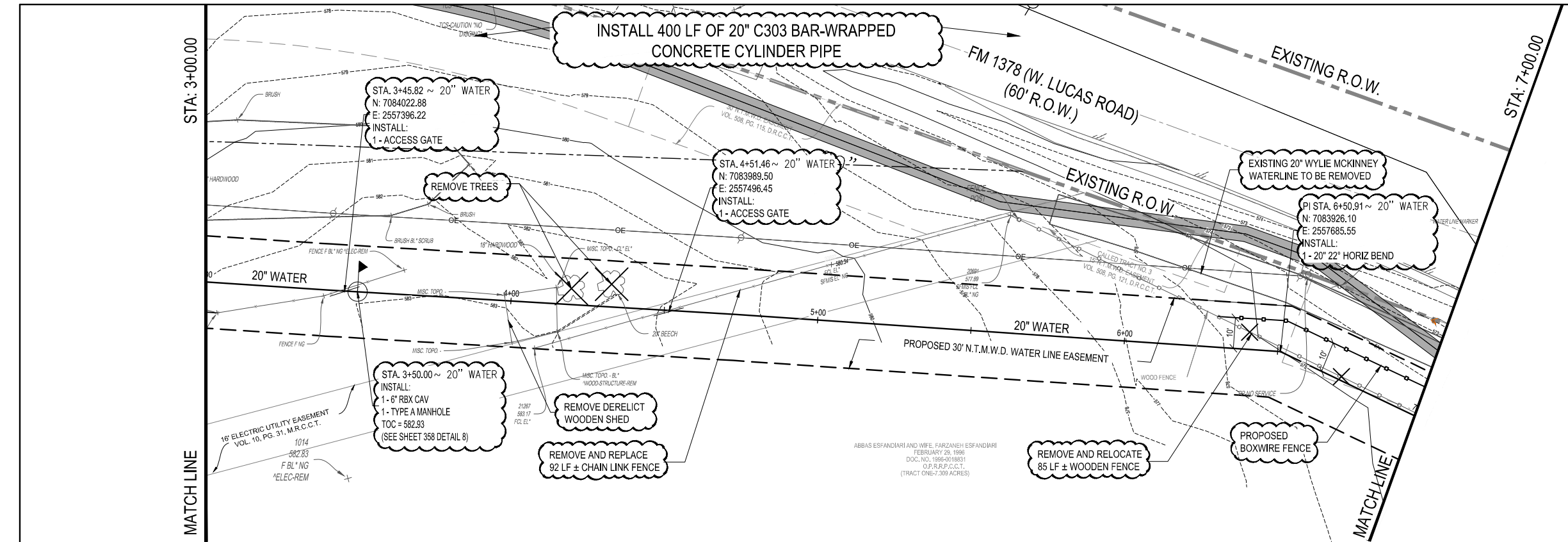


DRAWN BY: AEP  
APPROVED BY: DBH  
DATE: MARCH 03, 2023

NORTH TEXAS MUNICIPAL WATER DISTRICT  
F.M. 1378 PIPELINE RELOCATIONS  
**PROPOSED 20" WATERLINE (1-4 SHEETS)**

SHEET NUMBER  
**350**  
350 OF 13 SHEETS





**CALL BEFORE YOU DIG**  
 TEXAS ONE CALL PARTICIPANTS  
 REQUEST 48 HOURS NOTICE BEFORE  
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 STOP CALL

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- NOTES:
1. MARKER SHALL BE LOCATED AT ALL MAINLINE VALVES, AIR VALVES, AND BLOWOFF VALVES. AT HORIZONTAL BENDS, AND MAX SPACING OF 2000' ALONG PIPELINE ALIGNMENT.
  2. ALL EXISTING TREES SHOWN TO BE REMOVED SHALL BE REPLACED WITH \*45 GALLON CONTAINER GROWN CREPE MYRTLES\*
  3. IN ADDITION TO THE SIDEWALK/TRAIL, ALL IRRIGATION AND LANDSCAPING/SODDING SHALL BE RETURNED TO EQUAL OR BETTER CONDITION.
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P. 20/25 - DATE: 2/13/2023 - TIME: 2:30:00 PM  
 P. 20/25 - NAME: 500 UNIMPROVED 20" WATERLINE (1468) 03 NTMWD - EN 2514 Pipeline Relocations07\_DON076\_Sheet04 FM 1378\_E14456.04 - SHEETS

NO.	DATE	REVISION

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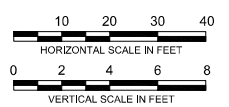
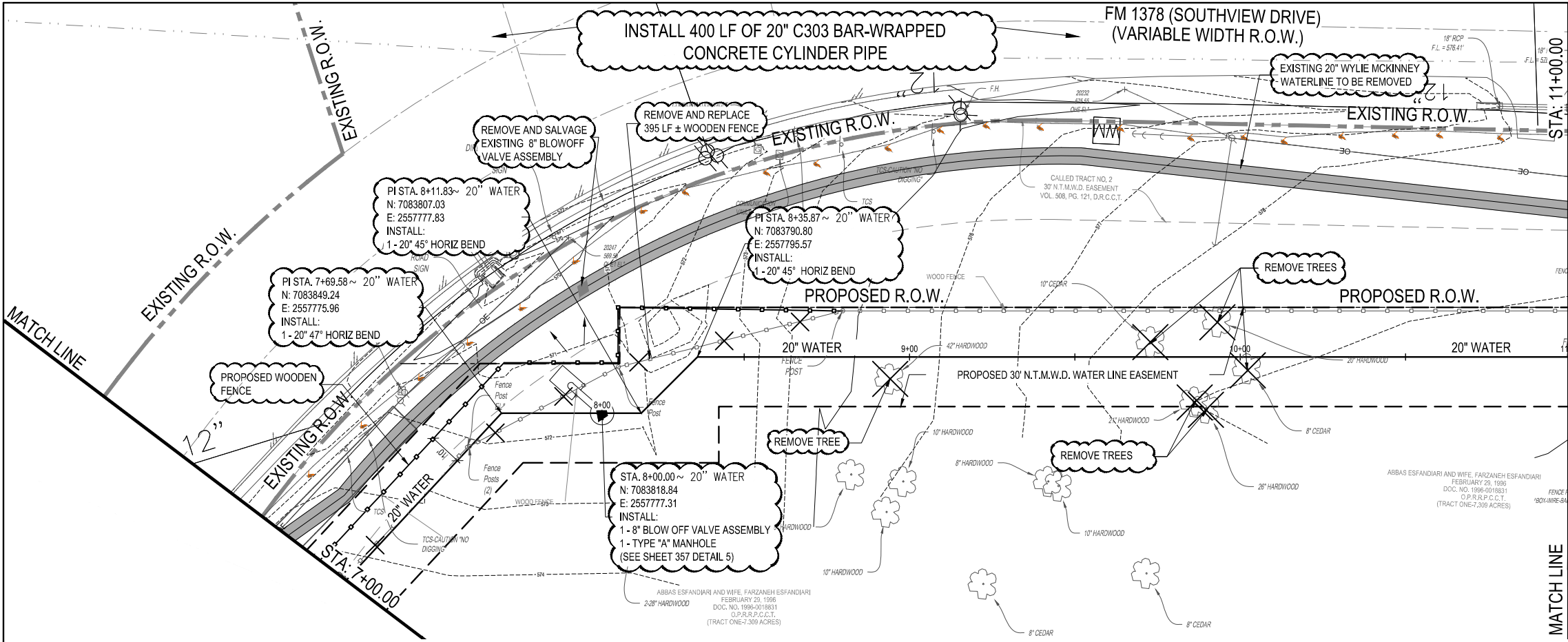
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 DALLAS, TX 75244  
 Tel 972.392.9092  
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DRAWN BY: AEP  
 APPROVED BY: DBH  
 DATE: MARCH 03, 2023

**NORTH TEXAS MUNICIPAL WATER DISTRICT  
 F.M. 1378 PIPELINE RELOCATIONS  
 PROPOSED 20" WATERLINE (2-4 SHEETS)**

SHEET NUMBER  
**351**  
 351 OF 13 SHEETS



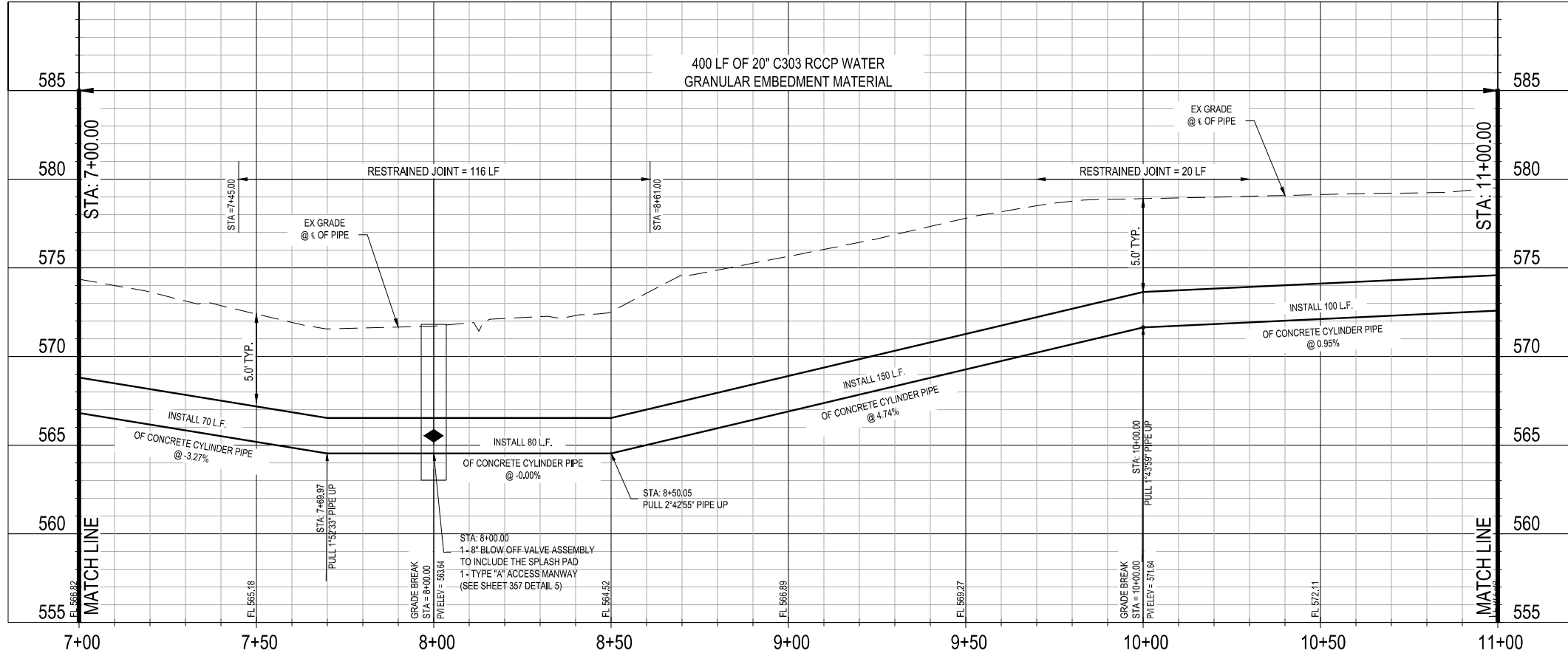
LEGEND	
	TREE REMOVAL
	EXISTING FENCE REMOVAL
	PROPOSED BOXWIRE FENCE
	PROPOSED WOOD FENCE
	PROPOSED 20" WATERLINE
	20" WATERLINE TO BE REMOVED
	EXISTING R.O.W.
	PROPOSED R.O.W.
	PROPOSED 30' WL - 30' EASEMENT

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- NOTES:**
- MARKER SHALL BE LOCATED AT ALL MAINLINE VALVES, AIR VALVES, AND BLOWOFF VALVES, AT HORIZONTAL BENDS, AND MAX SPACING OF 200' ALONG PIPELINE ALIGNMENT.
  - ALL EXISTING TREES SHOWN TO BE REMOVED SHALL BE REPLACED WITH \*45 GALLON CONTAINER GROWN CREPE MYRTLES\*
  - IN ADDITION TO THE SIDEWALK/TRAIL, ALL IRRIGATION AND LANDSCAPING/SODDING SHALL BE RETURNED TO EQUAL OR BETTER CONDITION.
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NO. DATE REVISION  
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APPROVED BY: DBH  
DATE: MARCH 03, 2023

NORTH TEXAS MUNICIPAL WATER DISTRICT  
F.M. 1378 PIPELINE RELOCATIONS  
**PROPOSED 20" WATERLINE (3-4 SHEETS)**

SHEET NUMBER  
**352**  
352 OF 13 SHEETS

STA: 11+00.00

MATCH LINE

INSTALL 353 LF OF 20" C303 BAR-WRAPPED CONCRETE CYLINDER PIPE

FM 1378 (SOUTHVIEW DRIVE) (VARIABLE WIDTH R.O.W.)

14+52.37 ~ 20" WATER END PROPOSED 20" WATERLINE SEE NOTE 6 N: 7083192.48 E: 2557844.24 INSTALL: 1- 20' 81" HORIZ BEND CONNECT TO: EXISTING 20" WATERLINE (SOUTH BOUND) (SEE NOTE 6) CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION REMOVE: EXISTING 20" WATERLINE (NORTH BOUND)

REMOVE EXISTING 8" COMBINATION AIR RELEASE ASSEMBLY

EXISTING 20" WYLIE MCKINNEY WATERLINE TO BE REMOVED

REMOVE AND REPLACE TREES

REMOVE AND RELOCATE 188 LF ± WOODEN FENCE

STA. 12+00.00 ~ 20" WATER N: 7083427.02 E: 2557811.68 INSTALL: 1- ACCESS GATE

PROPOSED R.O.W.

PROPOSED 4" WATER (BY OTHERS)

PROPOSED 12" PVC WATER (BY OTHERS)

PROPOSED 30' N.T.M.W.D. WATER LINE EASEMENT

STA. 11+17.87 ~ 20" WATER N: 7083509.06 E: 2557807.81 INSTALL: 1- ACCESS GATE

PROPOSED WOODEN FENCE

REMOVE AND REPLACE 20 L.F. OF 12" CMP

P I STA. 14+39.03 ~ 20" WATER N: 7083192.48 E: 2557830.90 INSTALL: 1- 20' 40" HORIZ BEND

P I STA. 14+27.00 ~ 20" WATER N: 7083200.24 E: 2557821.72 INSTALL: 1- 20' 47" HORIZ BEND

REMOVE AND REPLACE 30 LF ± BARB WIRE FENCE

**LEGEND**

- Tree symbol: TREE REMOVAL
- Symbol with X: EXISTING FENCE REMOVAL
- Dashed line with X: PROPOSED BOXWIRE FENCE
- Dashed line with dots: PROPOSED WOOD FENCE
- Solid line with dots: PROPOSED 20" WATERLINE
- Thick solid line: 20" WATERLINE TO BE REMOVED
- Dashed line: EXISTING R.O.W.
- Dotted line: PROPOSED R.O.W.
- Thin dashed line: PROPOSED 30' WL - 30' EASEMENT

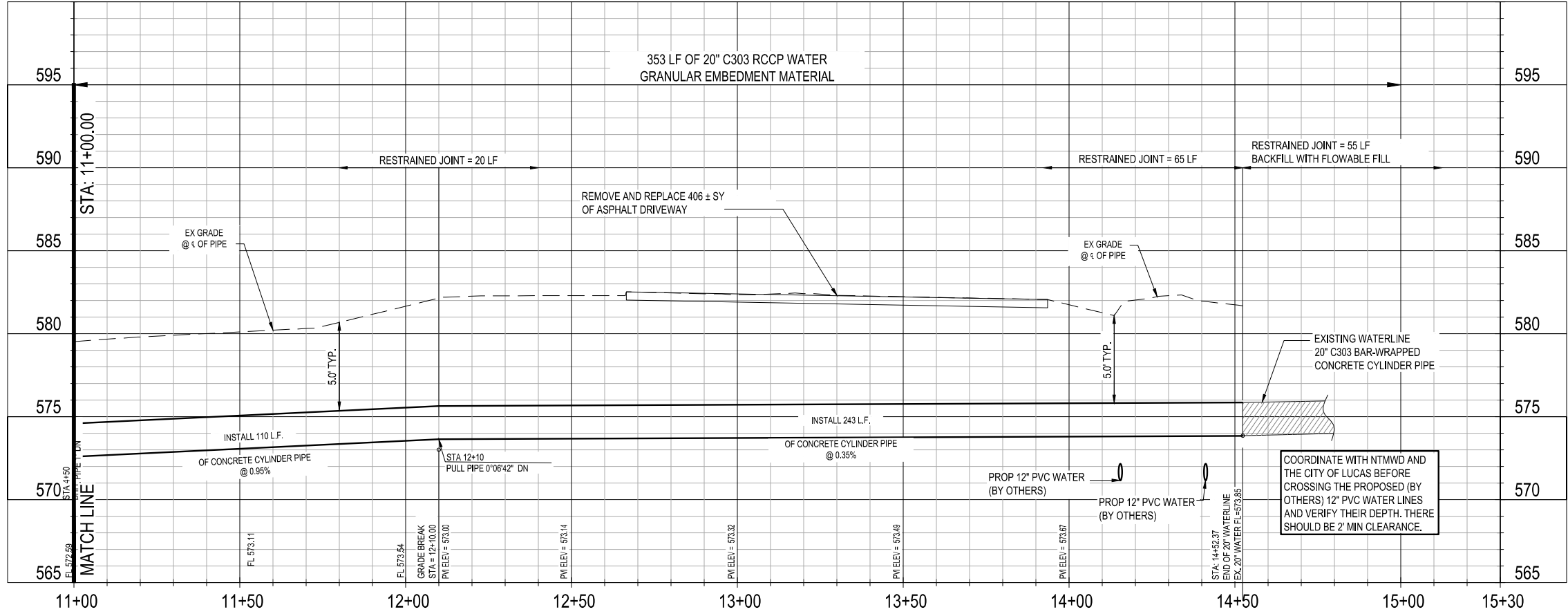
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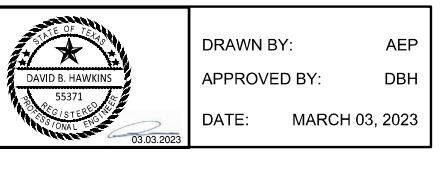
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NO.	DATE	REVISION

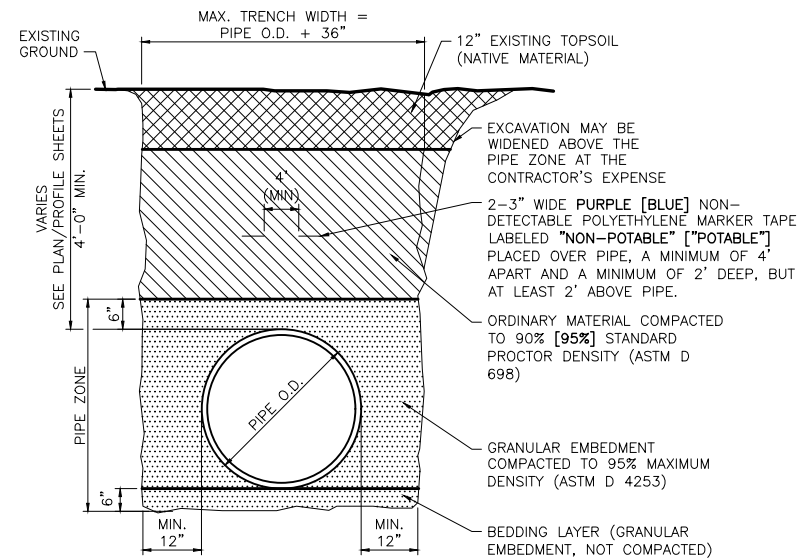
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NORTH TEXAS MUNICIPAL WATER DISTRICT  
F.M. 1378 PIPELINE RELOCATIONS

**PROPOSED 20" WATERLINE (4-4 SHEETS)**

SHEET NUMBER  
**353**  
353 OF 13 SHEETS

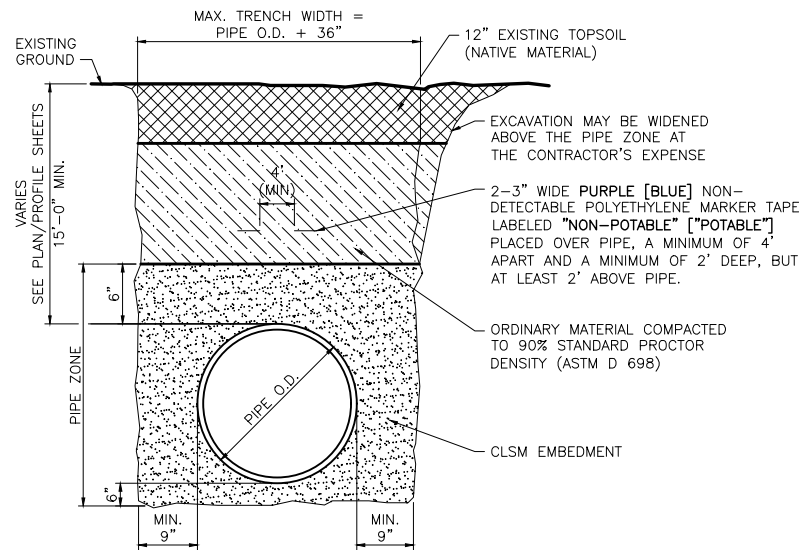


**NOTE:**

MATERIAL PLACED WITHIN 12" ABOVE TOP OF PIPE SHALL BE SCREENED TO ROCK LESS THAN 2" IN SIZE WHEN BACKFILLING WITH ROCK FROM EXCAVATED MATERIAL. AT NO TIME WILL ROCK GREATER THAN 2" BE ALLOWED WITHIN 12" FROM TOP OF PIPE.

**1 STEEL PIPE TYPICAL TRENCH SECTION FOR DEPTH OF COVER 4 TO 15 FEET**

NOT TO SCALE

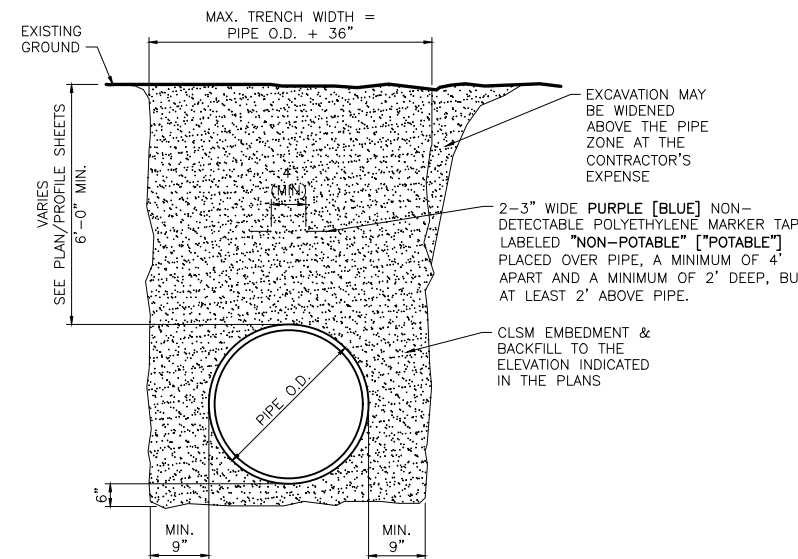


**NOTES TO DESIGNER (DELETE FROM FINAL DRAWINGS):**

1. CHOOSE THE CORRECT BOLDED TEXT (I.E. BRACKETED FOR TREATED WATER LINES).
2. REFER TO BACKFILL ABOVE THE PIPE ZONE (ALL TRENCH DETAILS NOT UNDER ROADWAYS, DRIVES).
  - A. SELECT 90% COMPACTION FOR ALL PIPELINES IN UNDERDEVELOPED AREAS OR AS SHOWN ON DRAWINGS.
  - B. SELECT 95% COMPACTION FOR ALL PIPELINES IN DEVELOPED AREAS OR AS SHOWN ON DRAWINGS.
3. SELECT 95% COMPACTION FOR ALL TRENCH DETAILS UNDER ROADWAYS, DRIVES.
4. REFER TO MARKER TAPE (ALL TRENCH DETAILS).
  - A. SELECT "PURPLE" AND "NON-POTABLE" FOR RAW WATER LINES.
  - B. SELECT "BLUE" AND "POTABLE" FOR TREATED WATER LINES.

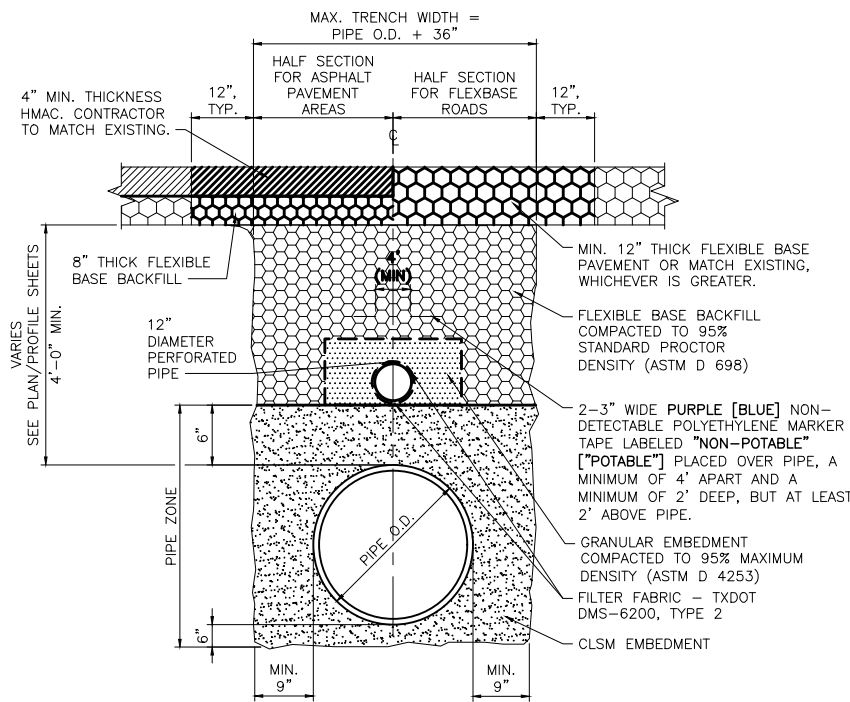
**2 STEEL PIPE TYPICAL TRENCH SECTION FOR DEPTH OF COVER OVER 15 FEET**

NOT TO SCALE



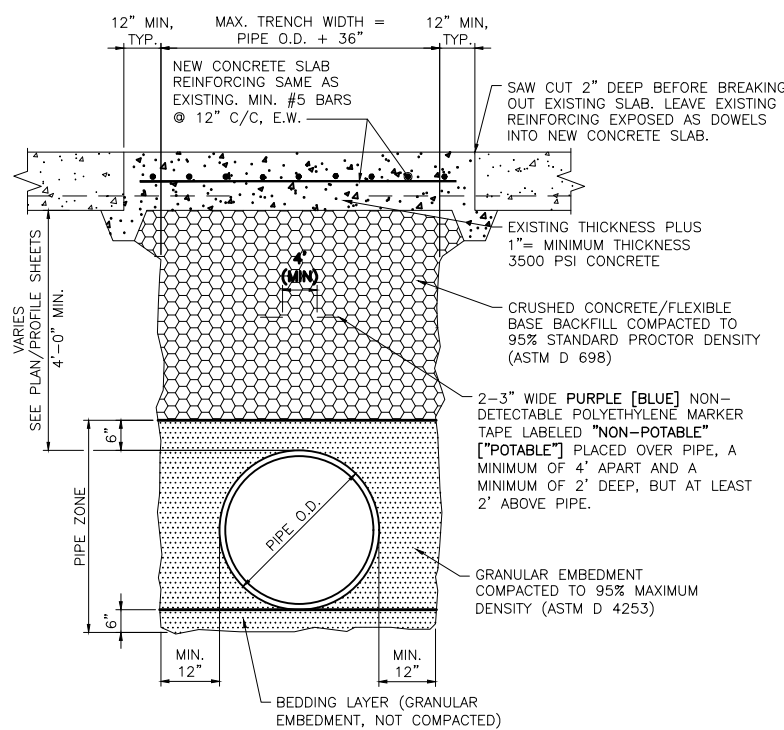
**3 TYPICAL TRENCH SECTION FOR CLSM ENCASEMENT**

NOT TO SCALE



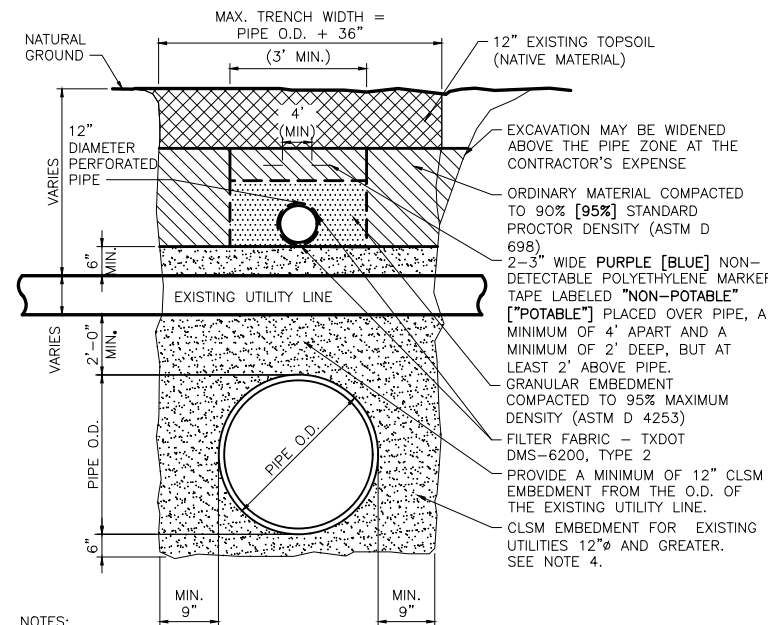
**4 TYPICAL TRENCH SECTION FOR OPEN CUT FLEX BASE OR DIRT PRIVATE ROADS, CHIP-SEAL ROADS, AND ASPHALT PAVEMENT AREAS**

NOT TO SCALE



**5 TYPICAL TRENCH SECTION FOR OPEN CUT CONCRETE ROADS**

NOT TO SCALE



**NOTES:**

1. MINIMUM 2' SPACING BETWEEN UTILITY LINES AND PROPOSED PIPELINE.
2. THE CONTRACTOR SHALL BE REQUIRED TO USE WOOD MATS FOR CONSTRUCTION TRAFFIC OVER EXISTING GAS PIPELINES AND 12" AND LARGER UTILITY LINES.
3. THE CONTRACTOR SHALL CONTACT UTILITY OWNER AT LEAST (3) DAYS PRIOR TO CROSSING THE UTILITY.
4. FOR UTILITIES LESS THAN 12", USE GRANULAR EMBEDMENT COMPACTED TO 95% MAXIMUM INDEX DENSITY AS MEASURED BY ASTM D4253 WHEN TESTED IN ACCORDANCE WITH ASTM D1556 AND ASTM D6938.

**6 TYPICAL TRENCH SECTION FOR UTILITY LINE CROSSING BY OPEN CUT FOR UTILITIES 12" OR LARGER**

NOT TO SCALE

FILE NAME: I:\PROJECTS\1446303\_NTW\DWG\_EN\_2514\_Pipeline Relocations\02\_D06070\_Sheet\FM 1378\_B1446304-SHEETS  
 PROJECT: 1446303\_NTW\DWG\_EN\_2514\_Pipeline Relocations\02\_D06070\_Sheet\FM 1378\_B1446304-SHEETS  
 DATE: 03/03/2023 10:18:50 AM  
 ISSUED FOR BIDDING

NO.	DATE	REVISION



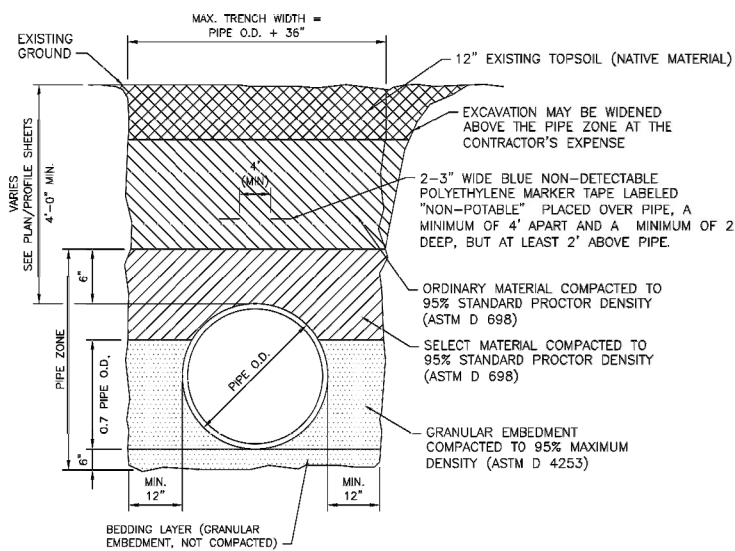
4100 SPRING VALLEY RD., SUITE 1001  
 DALLAS, TX 75244  
 Tel 972.392.9092  
 Firm No. F-4373



DRAWN BY: AEP  
 APPROVED BY: DBH  
 DATE: MARCH 03, 2023

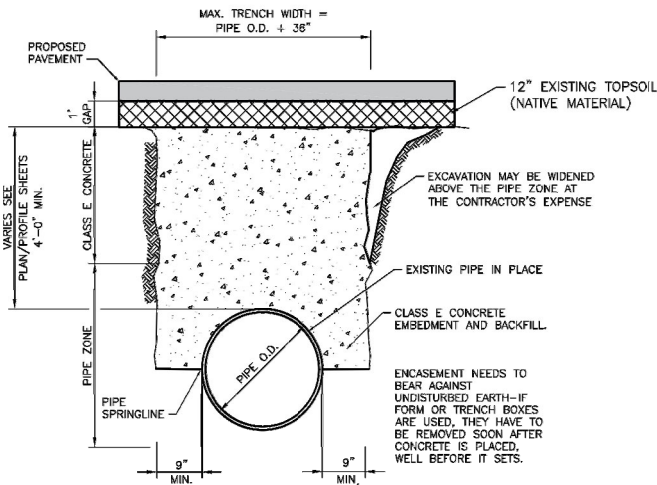
NORTH TEXAS MUNICIPAL WATER DISTRICT  
 F.M. 1378 PIPELINE RELOCATIONS  
**TRENCH DETAILS**

SHEET NUMBER  
**354**  
 354 OF 13 SHEETS

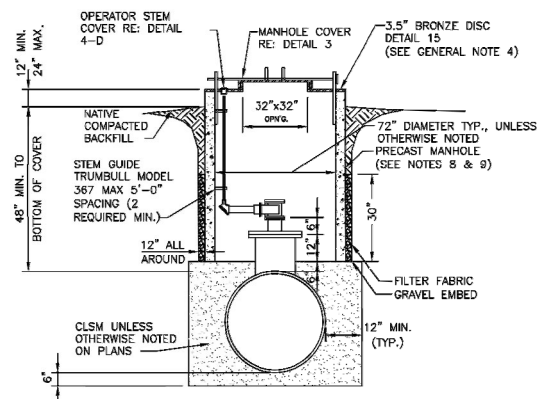


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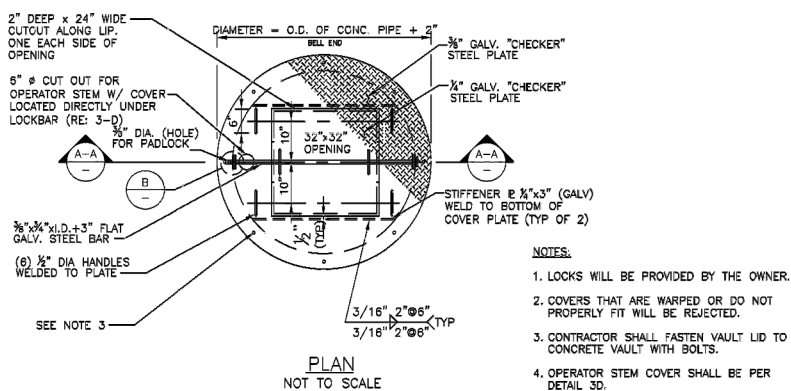
1  
TYPICAL TRENCH SECTION FOR BAR-WRAPPED CONCRETE PIPE  
DEPTH OF COVER 4 TO 10 FEET  
NOT TO SCALE



2  
TYPICAL TRENCH SECTION  
CONCRETE ENCASEMENT TYPE 2  
NOT TO SCALE

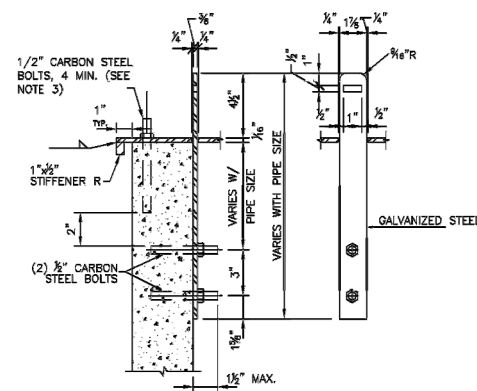


3  
TYPE "A" MANHOLE  
NON-TRAFFIC RATED  
NOT TO SCALE

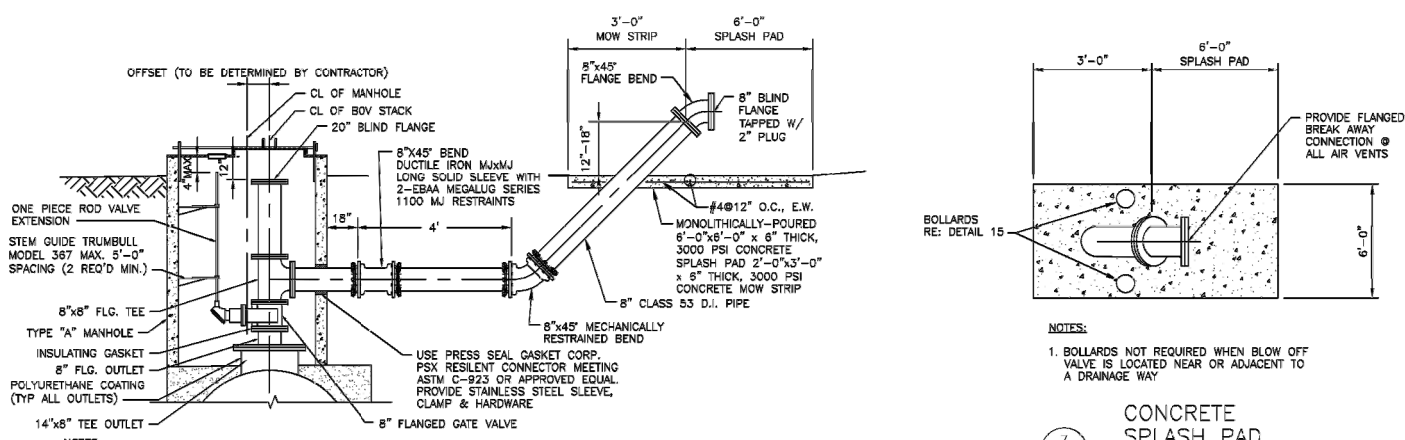


NOTES:  
1. LOCKS WILL BE PROVIDED BY THE OWNER.  
2. COVERS THAT ARE WARPED OR DO NOT PROPERLY FIT WILL BE REJECTED.  
3. CONTRACTOR SHALL FASTEN VAULT LID TO CONCRETE VAULT WITH BOLTS.  
4. OPERATOR STEM COVER SHALL BE PER DETAIL 3D.

PLAN  
NOT TO SCALE

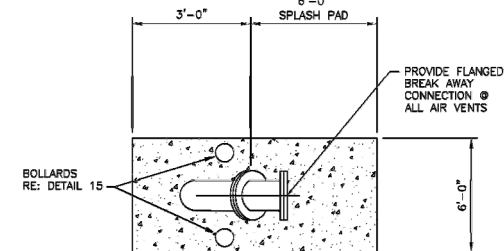


B  
DETAIL  
NOT TO SCALE



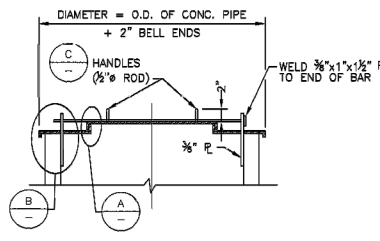
NOTES:  
1. DISCHARGE PIPING DIRECTION SHALL BE ROUTED AWAY FROM FIBER OPTIC LINE.  
2. INSPECTOR SHALL COORDINATE DISCHARGE PIPING DIRECTION AWAY FROM PIPELINE.  
3. A PERMANENTLY ATTACHED VALVE STEM EXTENSION SHALL BE REQUIRED FOR ANY VALVE WHOSE OPERATING NUT IS LOCATED IN EXCESS OF 4 FEET BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO ENSURE THAT ITS TOP IS WITHIN 4" OF THE VALVE BOX COVER. VALVE STEM EXTENSIONS SHALL BE 1" DIA. SOLID STEEL ROD.  
4. CENTER MANHOLE OPENING OVER B.O.V. RISER PIPE.  
5. REFERENCE TYPE A MANHOLE DETAIL FOR MANHOLE RING AND BACKFILL REQUIREMENTS.

5  
BLOW OFF VALVE ASSEMBLY  
NOT TO SCALE

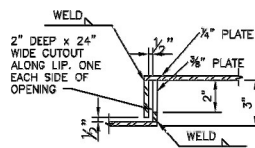


NOTES:  
1. BOLLARDS NOT REQUIRED WHEN BLOW OFF VALVE IS LOCATED NEAR OR ADJACENT TO A DRAINAGE WAY.

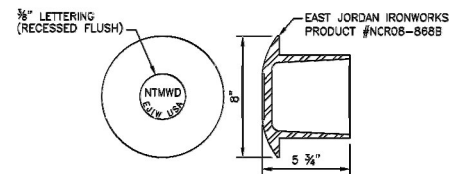
7  
CONCRETE SPLASH PAD  
NOT TO SCALE



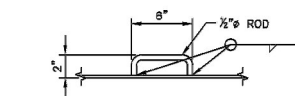
SECTION A-A  
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A  
DETAIL  
NOT TO SCALE



D  
OPERATOR STEM COVER  
NOT TO SCALE



C  
TYPICAL HANDLE DETAIL  
NOT TO SCALE

FILE NAME: S:\CONSTRUCTION DETAILS\2014\PROJECT\1446303\_NT\WVD\_LN\_2514\_Pipeline Relocation\07\_2014\DWG\1378\_F1446303-13SHEETS  
DATE: 2/20/2014 10:00:00 AM  
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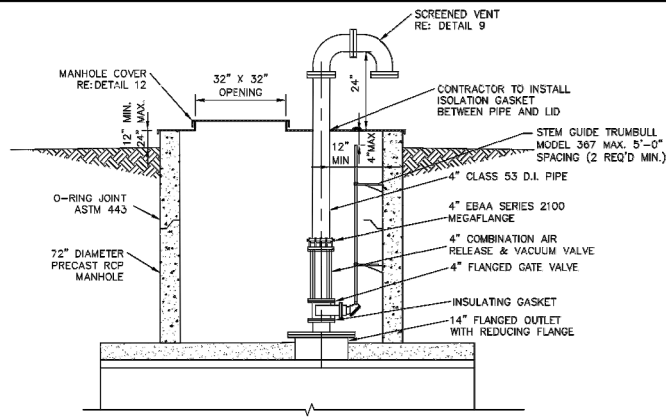
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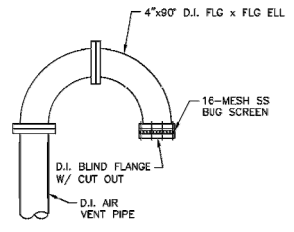
DRAWN BY: AEP  
APPROVED BY: DBH  
DATE: MARCH 03, 2023

NORTH TEXAS MUNICIPAL WATER DISTRICT  
F.M. 1378 PIPELINE RELOCATIONS  
**CONSTRUCTION DETAILS 1-3**

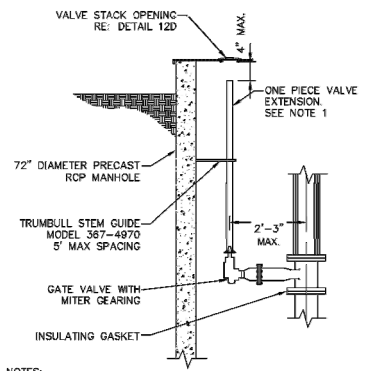
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**355**  
355 OF 13 SHEETS



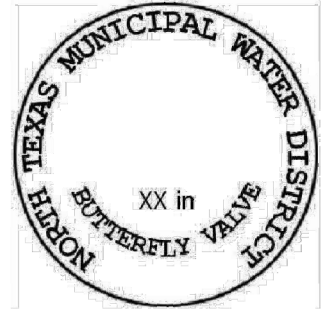
8 CAV FOR TREATED WATER PIPELINE - SECTION VIEW  
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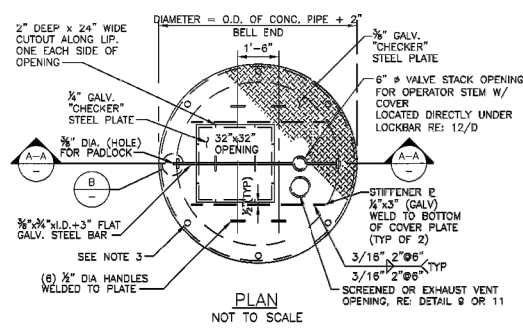
9 SCREENED VENT  
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10 STEM GUIDE DETAIL  
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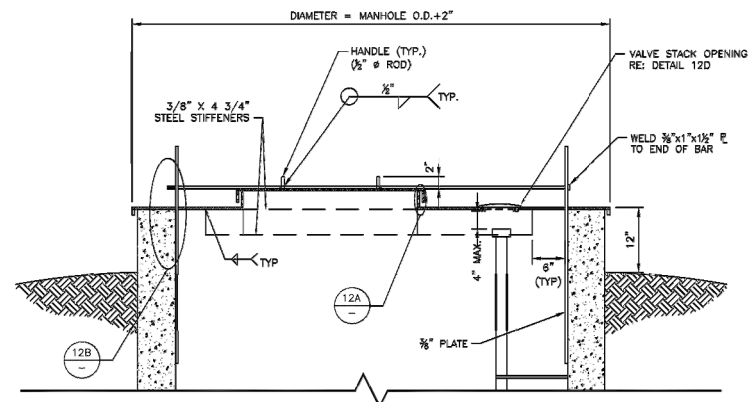


11 BRONZE MARKER DETAIL  
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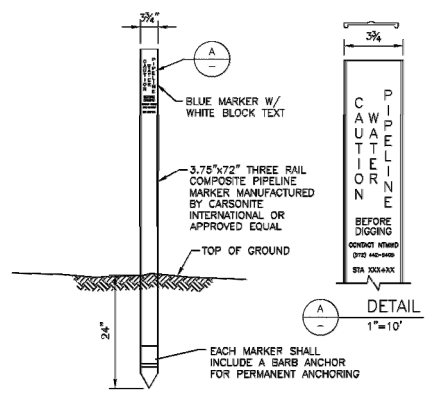


- NOTES:
- LOCKS WILL BE PROVIDED BY THE OWNER.
  - COVERS THAT ARE WARPED OR DO NOT PROPERLY FIT WILL BE REJECTED.
  - CONTRACTOR SHALL FASTEN VAULT LID TO CONCRETE VAULT WITH BOLTS.
  - OPERATOR STEM COVER SHALL BE PER DETAIL 12D.
  - THE VALVE STACK OPENING SHOWN ABOVE IS SCHEMATIC. CONTRACTOR SHALL COORDINATE VALVE STACK OPENING LOCATION WITH VALVE MANUFACTURER AND MANHOLE COVER MANUFACTURER PRIOR TO MANHOLE COVER FABRICATION. CONTRACTOR SHALL SUBMIT SHOP DRAWING OF MANHOLE AND MANHOLE COVER TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
  - CONTRACTOR SHALL INSTALL BLANK 3.5" (BERNTSEN C3509 OR APPROVED EQUAL) BRASS DISC ON TOP OF MANHOLE COVER. CONTRACTOR WILL BE RESPONSIBLE FOR STAMPING DISC AT END OF PROJECT WITH IDENTIFICATION PROVIDED BY NTHWD. SEE DETAIL 15.

PLAN  
NOT TO SCALE

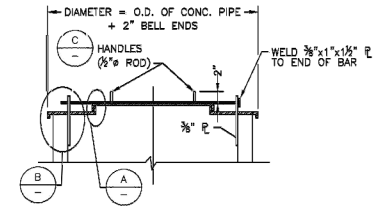


13 TYPE A MANHOLE COVER FOR WATER TREATED PIPELINE CAV - SECTION VIEW  
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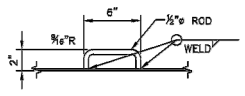


- NOTES:
- MARKER SHALL BE LOCATED ON BOTH SIDES OF ALL ROADS AND RAILROADS, AT ALL MAINLINE VALVES, AIR VALVES, AND BLOWOFF VALVES, AT ALL HORIZONTAL BENDS, AND MAX SPACING OF 2000' ALONG PIPELINE ALIGNMENT.
  - EACH MARKER SHALL HAVE A STICKER WITH THE FOLLOWING INFORMATION "CAUTION WATER PIPELINE BEFORE DIGGING CONTACT NTHWD (972) 442-5405, STA. XX+XX" ALL INFORMATION MUST BE TYPED OR STAMPED WITH NON-FADING INK, NOT HAND WRITTEN.

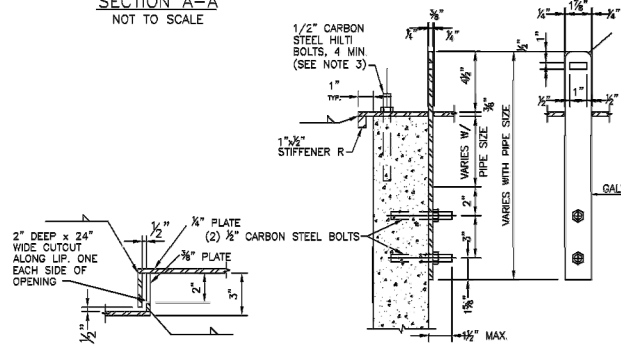
14 PIPELINE MARKER  
NOT TO SCALE



SECTION A-A  
NOT TO SCALE



15 TYPICAL HANDLE DETAIL  
NOT TO SCALE

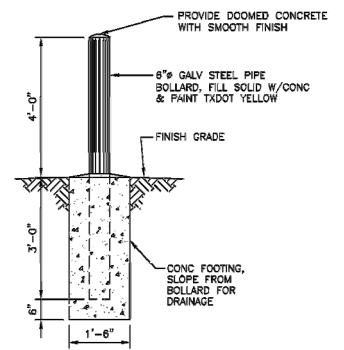


DETAIL A  
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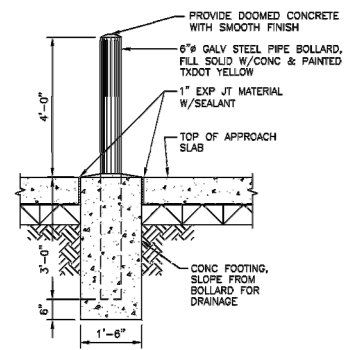
DETAIL B  
NOT TO SCALE

DETAIL D OPERATOR STEM COVER  
NOT TO SCALE

12 TYPE A MANHOLE COVER FOR TREATED WATER PIPELINE CAV  
NOT TO SCALE



15 TYPICAL BOLLARD DETAIL  
NOT TO SCALE



16 TYPICAL BOLLARD IN PAVEMENT DETAIL  
NOT TO SCALE

FILE PATH: S:\CONSTRUCTION DETAILS\2014\PIPELINE RELOCATIONS\07\_2014\NTHWD\_EIN\_2514 Pipeline Relocations\07\_2014\Sheet\FM 1378\_P1446504 - SHEETS  
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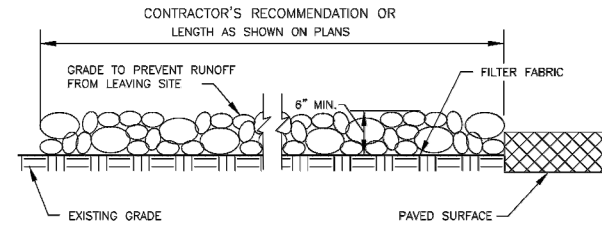
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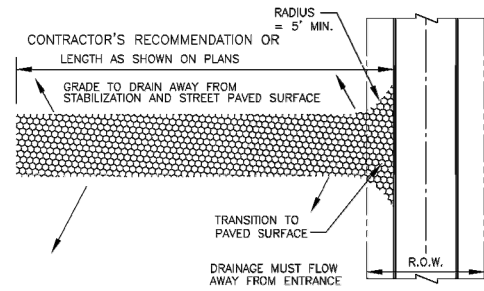
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APPROVED BY: DBH  
DATE: MARCH 03, 2023

NORTH TEXAS MUNICIPAL WATER DISTRICT  
F.M. 1378 PIPELINE RELOCATIONS  
**CONSTRUCTION DETAILS 2-3**

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PROFILE VIEW  
N.T.S.

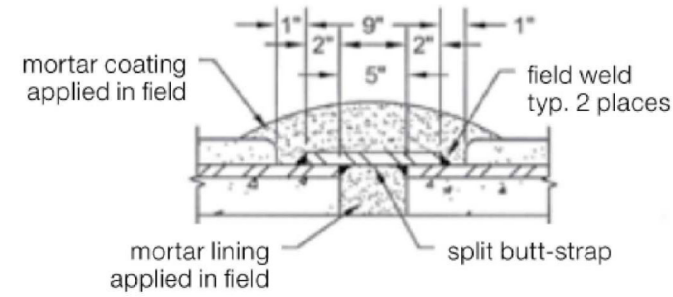


PLAN VIEW  
N.T.S.

1 STABILIZED CONSTRUCTION EXIT  
N.T.S.

**NOTES:**

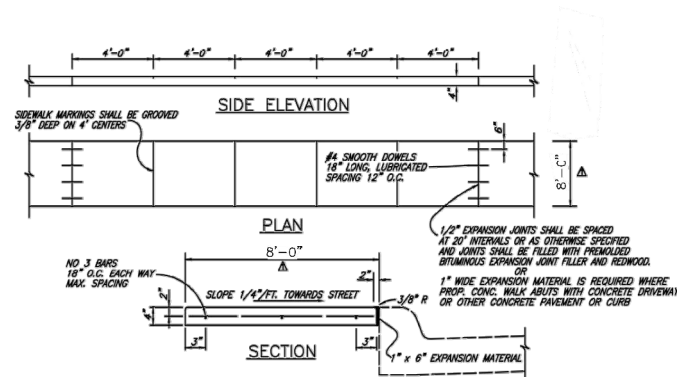
1. STONE SHALL BE 3 TO 5 INCH DIAMETER COARSE AGGREGATE.
2. LENGTH SHALL BE SPECIFIED ON PLANS OR PER CONTRACTOR'S RECOMMENDATION.
3. THE THICKNESS SHALL NOT BE LESS THAN 12 INCHES.
4. WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
5. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.
6. PREVENT SHORTCUTTING OF THE FULL LENGTH OF THE CONSTRUCTION ENTRANCE BY INSTALLING BARRIERS AS NECESSARY.
7. INSPECTION SHALL BE MANDATORY.



**NOTES:**

1. 12" MAXIMUM LENGTH OF TYPICAL BUTT STRAP FOR FIELD CLOSING SECTION.
2. INTERNAL DIAMETER TO BE COATED VIA AEGION ROBOTIC FIELD JOINT COATING OR EQUAL

2 WELDED BUTT-STRAP DIA ≥ 20"  
NOT TO SCALE



3 CONCRETE SIDEWALK  
N.T.S.

FILE NAME: S:\CONSTRUCTION DETAILS\2014\14465.03\_NTMWD\_FM 2514 Pipeline Relocations\07\_DGN\076\_Sheets\FM 1378\_F14465.04 - SHEETS  
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OBJECT 14465.03\_NTMWD\_FM 2514 Pipeline Relocations\07\_DGN\076\_Sheets\14465.03\_DETAILS.dwg ohallingsworth

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 APPROVED BY: DBH  
 DATE: MARCH 03, 2023

NORTH TEXAS MUNICIPAL WATER DISTRICT  
 F.M. 1378 PIPELINE RELOCATIONS  
**CONSTRUCTION DETAILS 3-3**

SHEET NUMBER  
**357**  
 357 OF 13 SHEETS