

PLANS FOR THE CONSTRUCTION OF BELT LINE ROAD OVERLAY PROJECT MARSH LANE TO DALLAS NORTH TOLLWAY



JOE CHOW
MAYOR

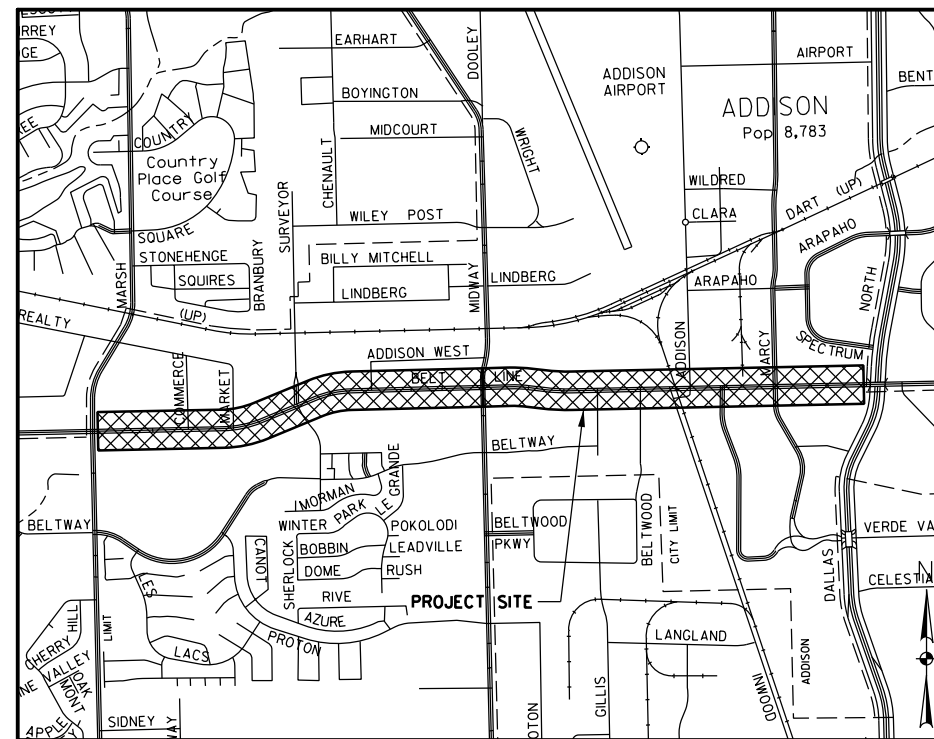
IVAN HUGHES
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AL ANGELL
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COUNCIL MEMBERS

WESLEY S. PIERSON
CITY MANAGER

LISA A. PYLES
DIRECTOR OF INFRASTRUCTURE
& DEVELOPMENT SERVICES

INFRASTRUCTURE OPERATIONS & SERVICES #18-38 FEBRUARY 2018



VICINITY MAP

NOT TO SCALE



Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date



1201 NORTH BOWSER ROAD
RICHARDSON, TEXAS 75081-2275
TEL (214) 346-6200
FAX (214) 739-0095

TBPE FIRM REGISTRATION NUMBER: 312

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NO.	REVISION	BY	DATE

ADDISON TOWN OF ADDISON
 DALLAS COUNTY, TEXAS

BELT LINE ROAD
 OVERLAY PROJECT

INDEX OF SHEETS

HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275
 TEL (214) 346-6200 FAX (214) 739-0095

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A INDX 01	INDEX

GENERAL NOTES

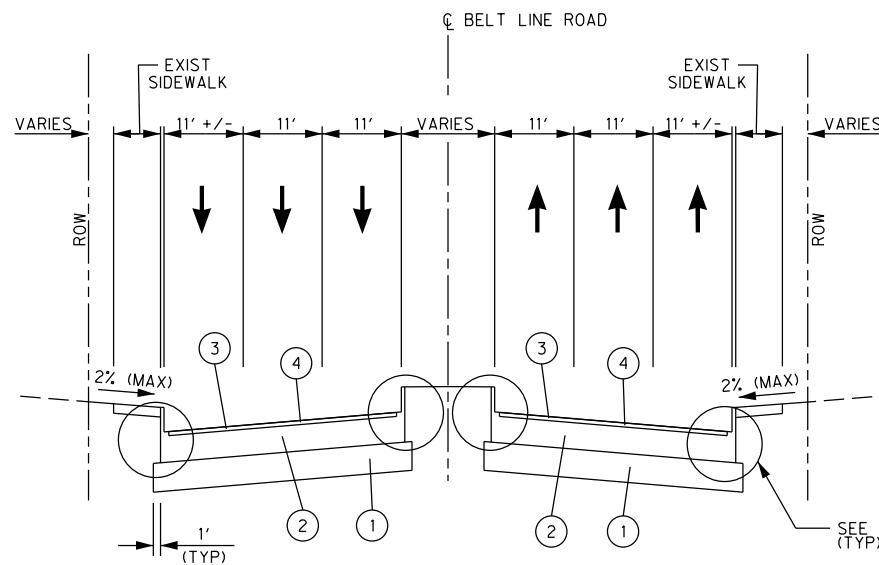
1. All work shall conform to the requirements of the Town of Addison and shall be in accordance with the Town of Addison standard details and specifications for construction. All work not covered in the contract documents and the Town of Addison standard details and specifications for construction shall be governed by the North Central Texas Council of Governments Standard Specifications for Public Works Construction, Fourth Edition, dated 2004, including all amendments.
2. Existing utility locations shown are generally schematic in nature and may not accurately reflect the size and location of each particular utility. Existing utilities shown are based on available record drawings and surface appurtenance field ties only. Some utility lines and surface locations may not be shown. The contractor shall assume responsibility for actual field location and protection of existing utilities whether shown or not. The Contractor shall also assume responsibility for repairs to existing utilities, whether shown or not, damaged by the Contractor's activities. Differences in horizontal or vertical location of existing utilities shall not be basis for additional compensation to the Contractor. All valves & manholes shall be adjusted to new finished grade. Covers and Rings will be evaluated by the Town and shall be replaced by the Contractor if needed. Cover and Ring replacement shall be subsidiary to item 1.07, Roadway Utility Adjustments.
3. The Contractor shall protect existing property monumentation and primary control. Any such points which the Contractor believes will be destroyed shall have offset points established by the Contractor prior to construction. Any monumentation destroyed by the Contractor shall be reestablished at Contractor's expense by a registered professional land surveyor.
4. Topographic survey information shown on the plans is provided for informational purposes. The Contractor shall be responsible for verifying that the information shown is correct, and shall notify the engineer immediately of any errors, discrepancies or omissions to the survey information provided. Any costs incurred as a result of not confirming the actual topographies and facilities shall be borne by the Contractor. Topographic survey provided does not include existing trees. (See note 17 with regard to protection of these trees.)
5. It shall be the responsibility of the Contractor to: A.) Prevent any damage to private property and property owner's poles, fences, shrubs, etc. B.) Protect all underground utilities. C.) Notify all utility companies at least 48 hours prior to excavation in accordance with Texas Law D.) Field verify horizontal and vertical location of all utilities in the vicinity of construction activities prior to start of construction. The Contractor shall notify Engineer of any previously unidentified potential conflicts that may exist between the existing utilities and construction plans.
6. Any damage that may occur to real property or existing improvements, including existing private and public landscape irrigation systems, shall be restored by the Contractor to at least the same condition that the real property or existing improvements were in prior to the damages. This restoration shall be completed by a licensed irrigator and subject to the property owner's approval; moreover, this restoration shall not be a basis for additional compensation to the Contractor or a time extension. The Contractor must furnish a letter to the Town, signed by the property owner that states repairs are satisfactory.
7. The Contractor shall maintain drainage at all times during construction. Ponding of water in streets, drives, trenches, etc. will not be allowed.
8. The Contractor shall maintain existing sanitary sewer and water service at all times during construction unless approved by Town of Addison in advance.
9. The Contractor is responsible for coordination with utility companies and adjustment of existing wastewater manholes, cleanouts, water meters, water valves, fire hydrants and other utility appurtenances to finished grade as shown in plans. Utility adjustments not shown in plans shall be approved by the Town of Addison. All utility adjustments shall be paid for as item 1.07, Roadway Utility Adjustments or item 1.08 Ground Box Adjustments.
10. The Contractor shall give all franchise utilities 48 hours advance notice before construction in areas where utilities are present. Utility contacts include but are not limited to:
 ATMOS - BRANDON BALL - brandon.ball@atmosenergy.com
 AT&T - DEBORAH HICKMAN - dh5246@att.com
 ONCOR - CHRIS HARRELSON - christopherblake.harrelson@oncor.com
 TIME WARNER - PHILLIP GWIN - phillip.gwin@twcable.com
 FIBERLIGHT - MIKE BITSCHKE - mike.bitschke@fiberlight.com
 DIGTESS - CONTRACTOR - fax@digtess.org
11. Pedestrian and vehicular traffic flow, safety and access shall be maintained during all phases of construction. Barricading and traffic control during construction shall be the responsibility of the contractor and shall conform to the Texas Manual on Uniform Traffic Control Devices, Part 6 in particular. Traffic flow and access shall be maintained during all phases of construction unless otherwise noted on the traffic control plan. The Contractor is responsible for providing traffic safety measures for work on the project. The Contractor shall assume full responsibility for public safety in the construction area for the duration of construction activities.
12. The Contractor shall remove from the project area all surplus material. This work shall be incidental and not a separate pay item. Surplus materials from excavation including dirt, trash, rock measuring greater than 9" in the largest dimension, etc. shall be properly disposed of at a site acceptable to the Town of Addison if within the Town limits. If the location is not within the Town limits, the Contractor shall provide a letter stating so. No excess excavated material shall be deposited in low areas or along natural drainage ways without written permission from the affected property owner and the Town of Addison. If the Contractor places excess material in these 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.
13. The Contractor shall sweep streets once a week and prior to known pending major rain events or as needed determined by the Town.
14. Bidders shall make any investigation of existing subsurface conditions as deemed necessary at no expense to the Town of Addison. Neither the Town of Addison nor the Engineer will be responsible in any way for additional compensation for excavation work performed under this contract due to the Contractor's assumptions pertaining to subsurface conditions.
15. All survey work shall be performed by a competent surveyor employed by the contractor.
16. The Contractor will furnish to the Town of Addison the name of an OSHA-certified competent person to be on the project at all times during ongoing construction activities.
17. Where trees, plants, shrubbery, etc. are adjacent to the line of work and are not to be removed or removed and replaced, the Contractor shall protect such trees, plants, shrubbery, etc. If such trees, plants, shrubbery, etc. could be damaged by machinery, etc., orange safety fencing with steel T-posts having a minimum height of 3' and as approved by the Town shall be utilized for protection as long as they do not block drivers' sight lines. Hand excavation may also be required in vicinity of trees, plants, shrubbery, etc. that are to remain. The Contractor shall not permit machinery or employees to scrape, tear the limbs from, damage or attach guy cables to existing trees that are to remain in place. The Contractor shall be responsible for all damages to adjacent trees, plants, shrubbery, etc. that are to remain and any such damage shall be remedied to the satisfaction of the Town.
18. The Contractor shall coordinate the protection of existing franchise utilities and appurtenances including existing utility poles in the vicinity of construction operations whether utilities are shown in the Contract Documents or not. Any damage incurred to existing franchise utilities, appurtenances, power poles, etc. by construction related activities shall be the sole responsibility of the Contractor.
19. Only Town staff will be allowed to operate existing water line valves. Contractor shall coordinate with Dave Wilde or Jose Flores at 972-450-2847 for water valve closures and openings.
20. Contractor is responsible for condition of removed signs. Removed signs to be reinstated must be in same or better condition when reinstated.
21. The Contractor shall cease all construction operations immediately if a suspected archeological object/artifact is uncovered during construction. The Contractor shall immediately contact Texas Historical Commission and the Town. Project work shall not recommence until proper permits are in place and provided to the Town. No additional contract days or additional remobilization expenses will be provided or paid for by the Town to the Contractor for time incurred.
22. The Contractor shall comply with the Migratory Bird Treaty Act.
24. Inspection of the proposed construction will be provided and paid for by the Town of Addison. The Contractor shall provide assistance necessary to facilitate inspection activities, and shall give sufficient notice well in advance of pending construction activities to the Town of Addison for scheduling of inspection services.
25. All dimensions are to the face of curb unless otherwise noted.
29. Contractor shall provide a pre-construction video of entire project area to document current condition of Belt Line Road and business frontage.
30. Contractor shall be responsible for maintaining pedestrian access on at least one side of Belt Line Road at all times.
31. Any existing bore holes encountered along the roadway shall be backfilled to milled elevation with asphalt at no additional cost to the Town.



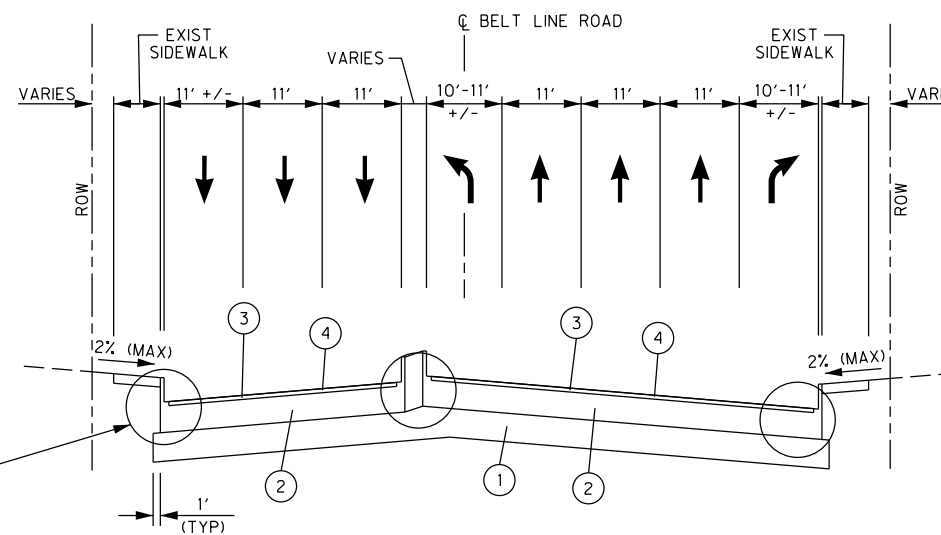
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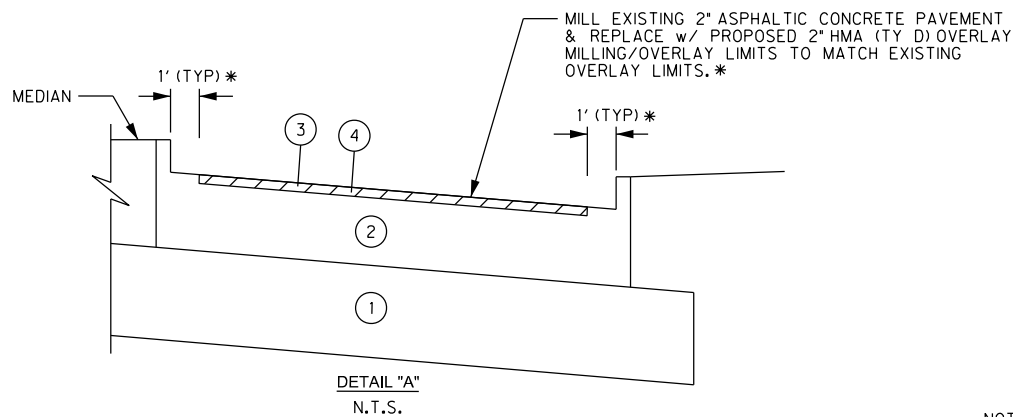
NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT GENERAL NOTES			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
FILE	SHEET		
33426	HALFF	HALFF	OCT. 2017
29350A GNTS 01	GN-1		



TYPICAL SECTION AT MIDBLOCK N.T.S.



TYPICAL SECTION AT INTERSECTION N.T.S.



DETAIL "A" N.T.S.

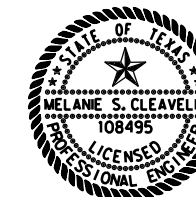
LEGEND

- ① EXISTING 6" SOIL-LIME BASE TREATMENT
- ② EXISTING 8" JOINTED REINFORCED CONCRETE PAVEMENT
- ③ EXISTING 2" ASPHALTIC CONCRETE PAVEMENT
- ④ PROPOSED 2" HMA (TY D)(PG 76-22) OVERLAY (SEE DETAIL 'A' FOR MILLING INFORMATION)

NOTES:

- DIMENSIONS ARE TO FACE OF CURB.
- SOME AREAS HAVE CONCRETE PAVEMENT FLUSH WITH ASPHALT SURFACE DUE TO TRENCHING OR REPAIRS. 2" MILLING IS REQUIRED IN THESE AREAS, NO SEPARATE PAY ITEM.

* MATCH EXISTING MILL/OVERLAY LIMITS IF WITHIN 2' OF FACE OF CURB, IF GREATER THAN 2', PROPOSED MILLING/OVERLAY LIMITS SHALL BE 1' FROM FACE OF CURB.



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BELT LINE ROAD OVERLAY PROJECT					
TYPICAL SECTIONS					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426		HALFF	OCT. 2017	29350A TYPP 01	TS-1

1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275
TEL (214) 346-6200 FAX (214) 739-0095

USER: oh1299

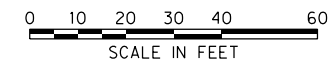
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PROJECT # 29350



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DATE: 12/18/2017



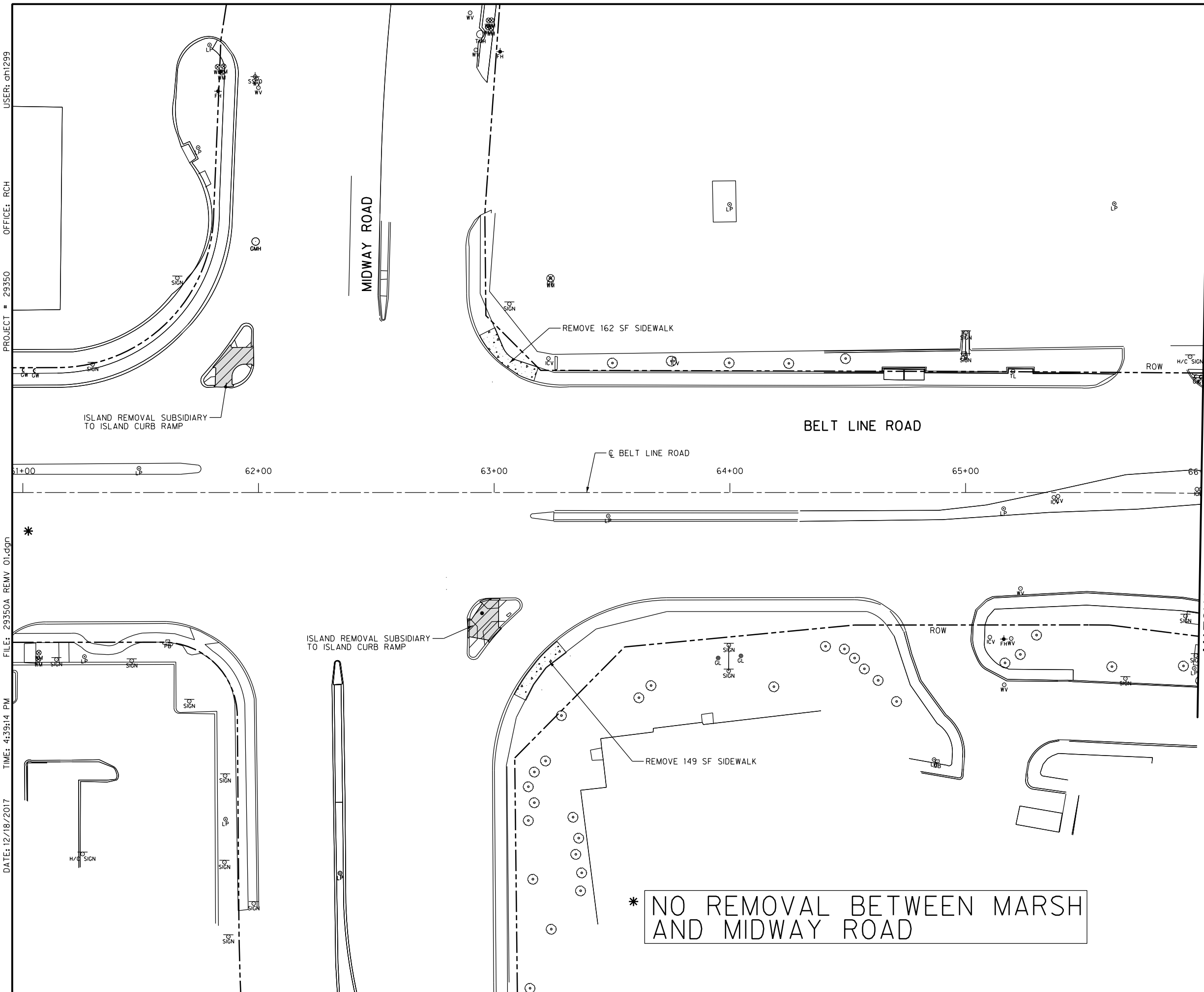
LEGEND

-  CONCRETE SIDEWALK TO BE REMOVED
-  CONCRETE MEDIAN / ISLAND TO BE REMOVED FOR MEDIAN / ISLAND ADJUSTMENT (SEE PAVING PLANS - SHEETS P-1 TO P-26)

NOTES:

1. SEE PAVING PLAN SHEETS FOR LOCATIONS OF KNOWN UTILITY APPURTENANCES WITHIN ROADWAY LIMITS & NOTES REGARDING UTILITY ADJUSTMENTS.
2. SIDEWALK REMOVAL TO INCLUDE RAMP REMOVAL AND CURB & GUTTER REPLACEMENT. SIDEWALK REMOVAL SHALL BE TO NEAREST JOINT.
3. CURB REMOVAL AT PROPOSED RAMPS IS SUBSIDIARY AND NOT AN ADDITIONAL PAY ITEM.
4. CONTRACTOR SHALL MAINTAIN EXISTING IRRIGATION IN WORKING ORDER.
5. MEDIAN NOSE ADJUSTMENT TO INCLUDE REMOVAL OF CURB, PAVEMENT, MEDIAN & ANY OTHER MISCELLANEOUS REMOVALS.



SHEET 5 OF 97

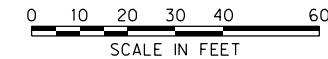


MATCH LINE BELT LINE ROAD STA 66+00





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NO.	REVISION	BY	DATE		
 TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
REMOVAL PLAN BELT LINE RD STA 61+00 TO STA 66+00					
 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A REMV 01	RM-1

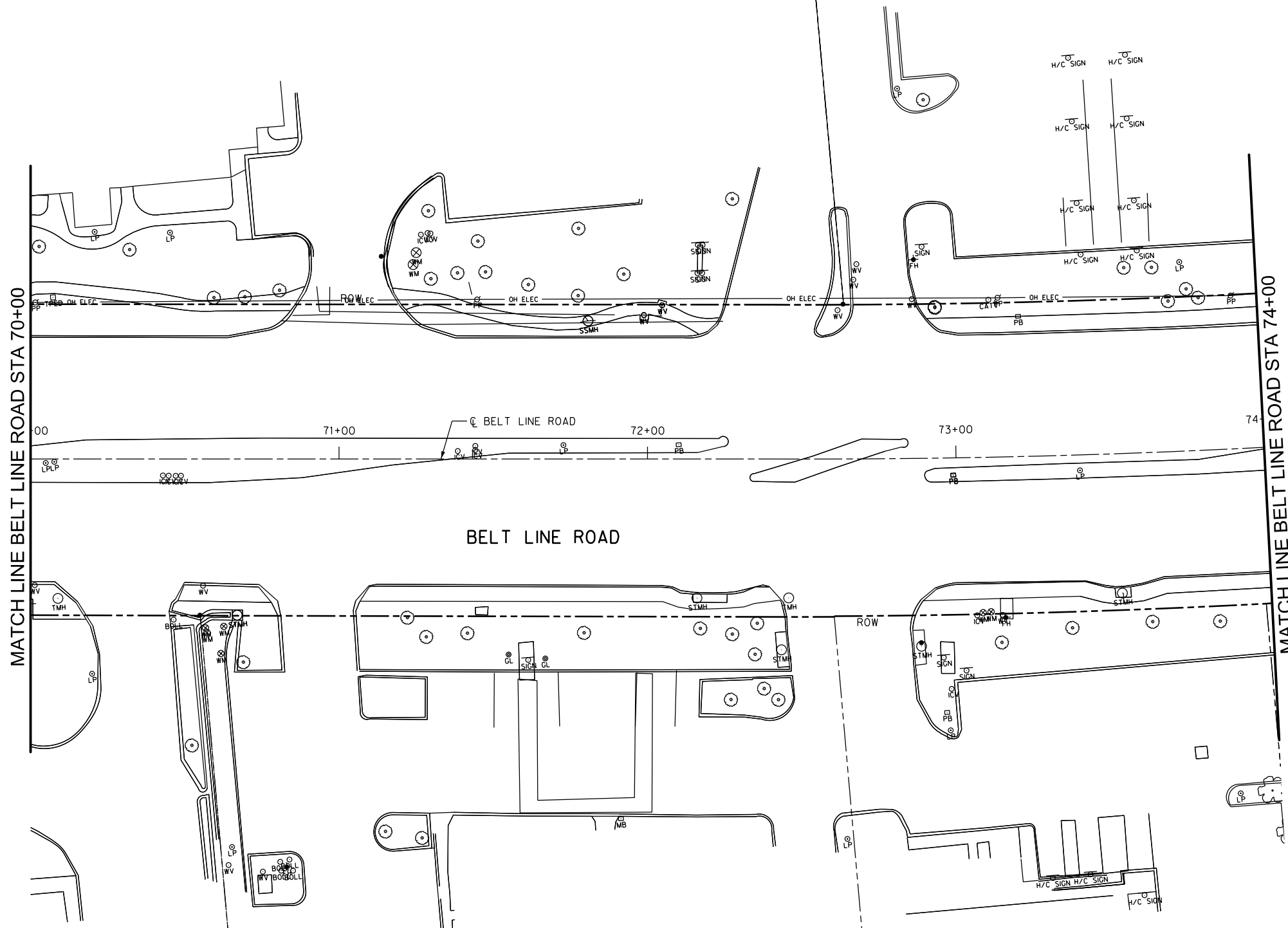


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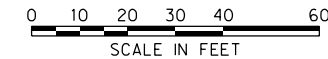
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

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NO.	REVISION	BY	DATE		
 TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
REMOVAL PLAN BELT LINE RD STA 70+00 TO STA 74+00					
 HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A REMV 03	RM-3

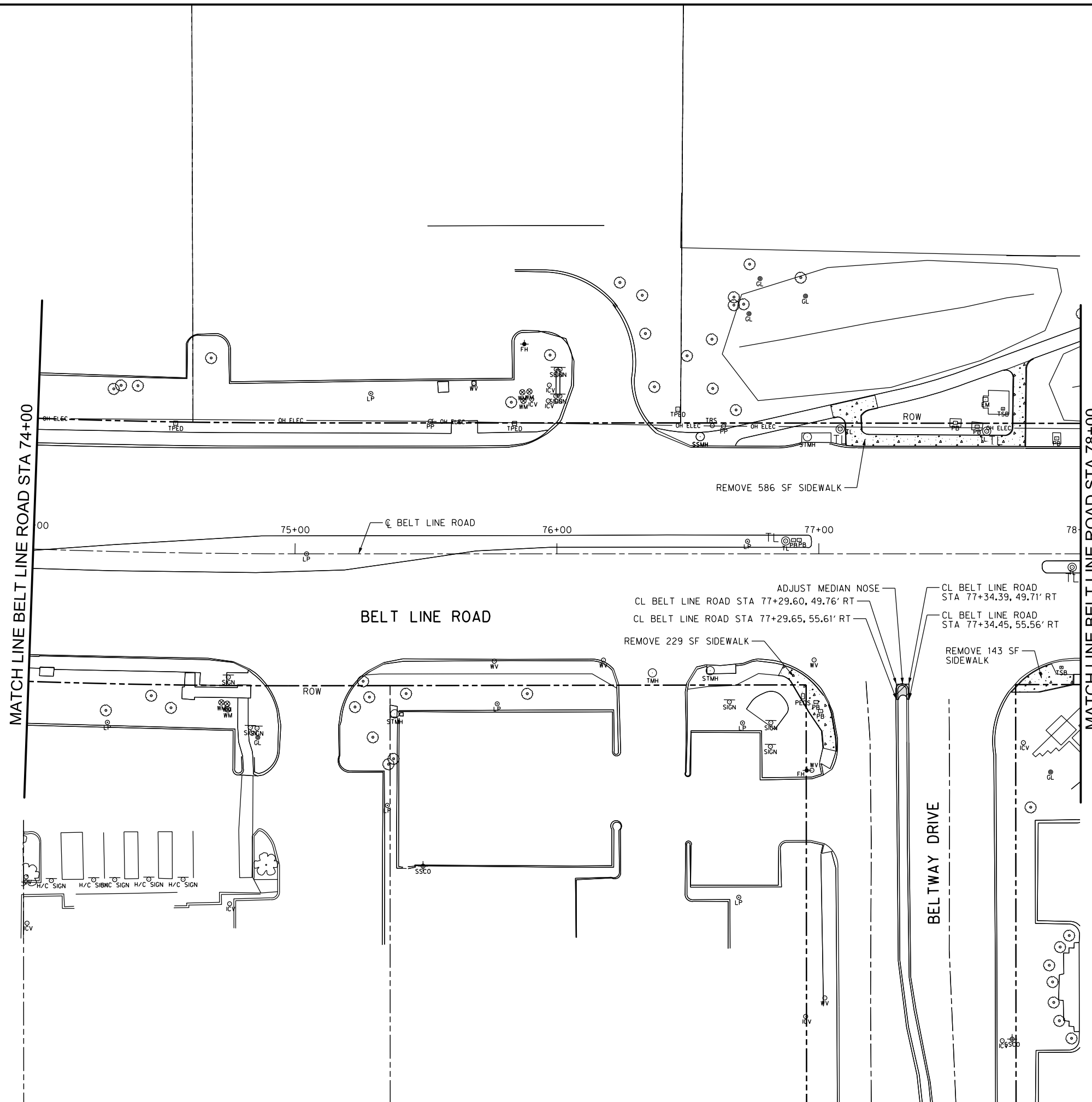


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ADDISON TOWN OF ADDISON
DALLAS COUNTY, TEXAS

BELT LINE ROAD
OVERLAY PROJECT



REMOVAL PLAN
BELT LINE RD STA 74+00 TO STA 78+00

HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275
TEL (214) 346-6200 FAX (214) 739-0095

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A REMV 04	RM-4

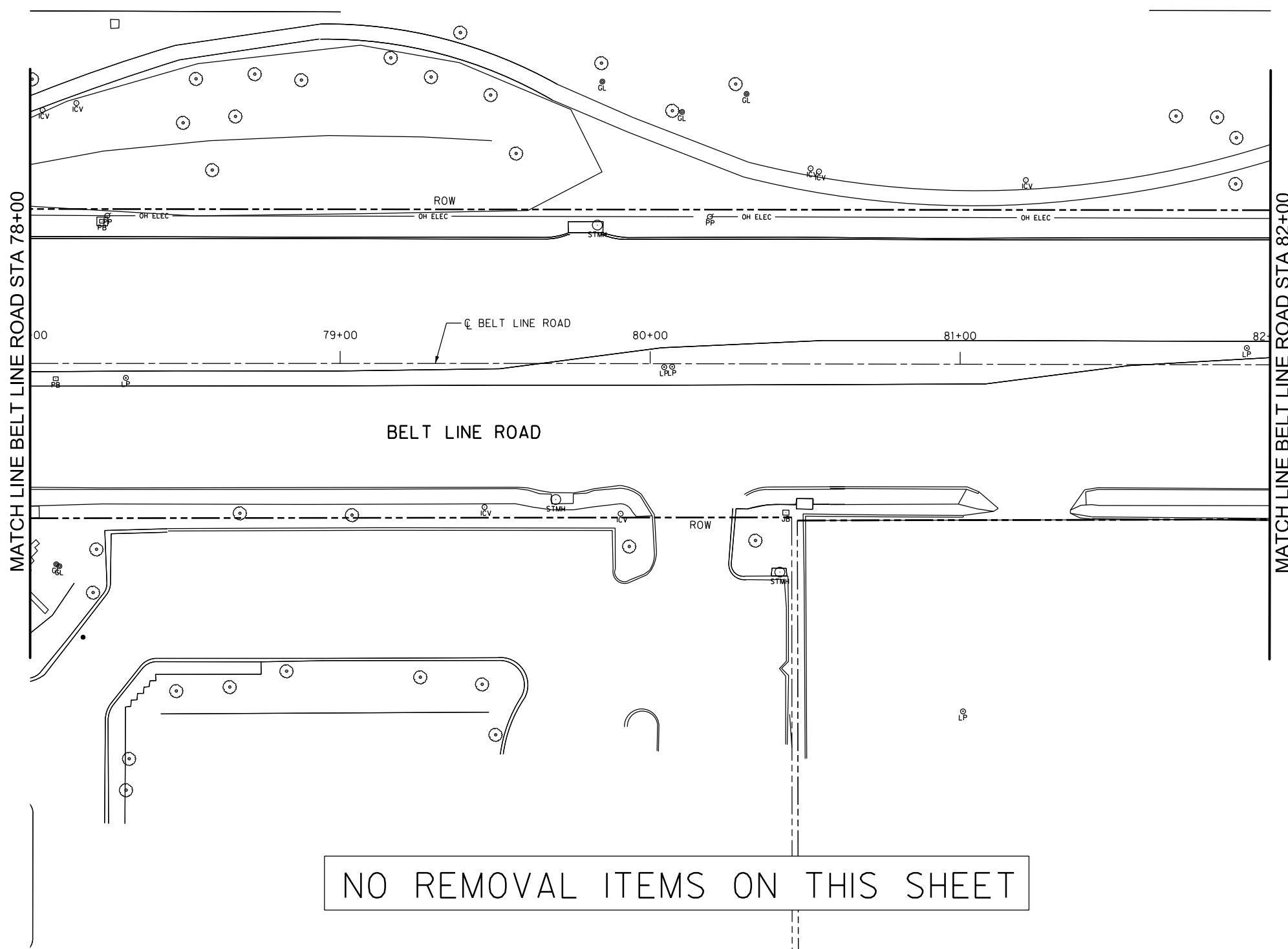


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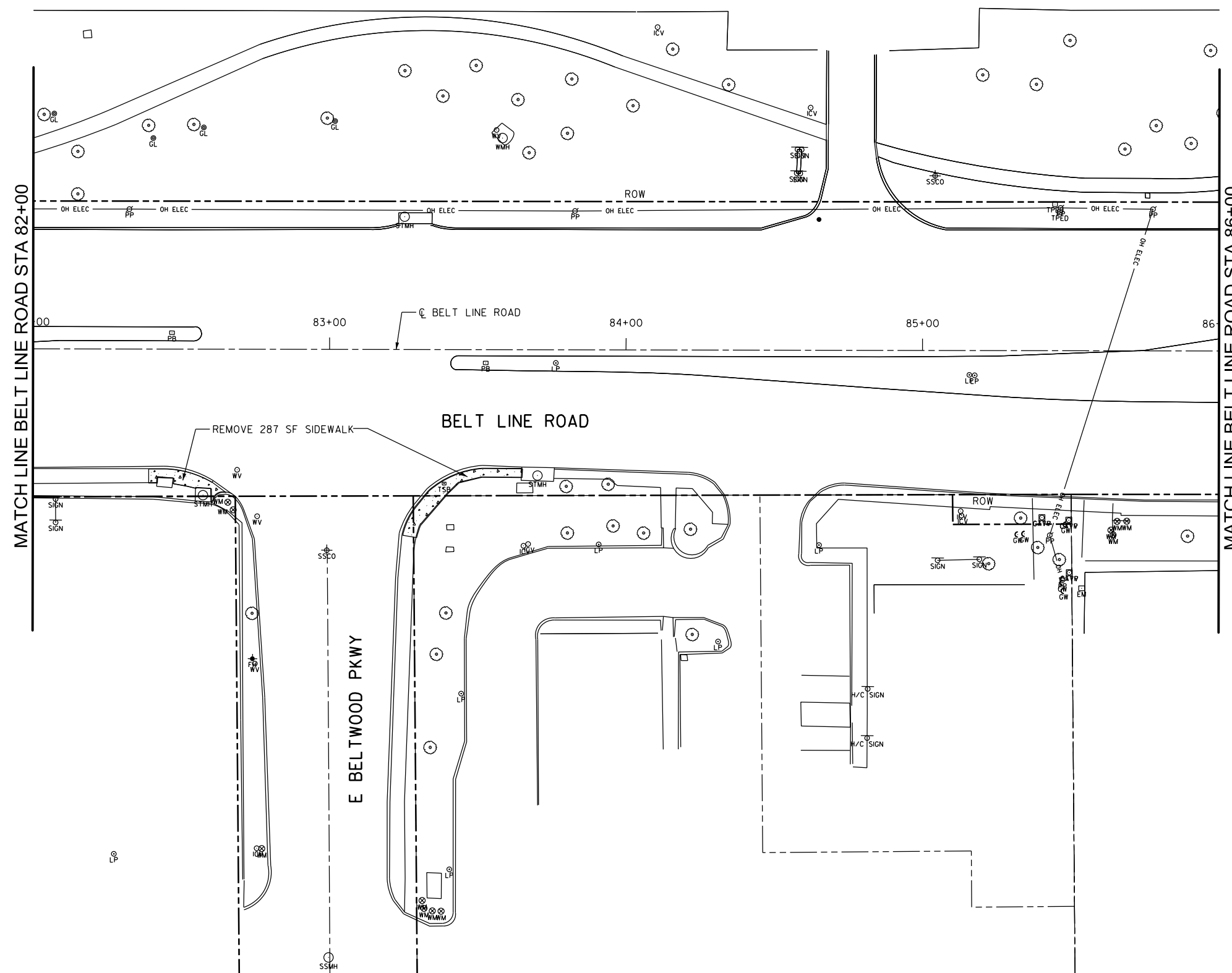
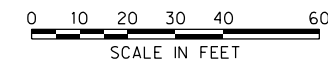
NO REMOVAL ITEMS ON THIS SHEET



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BELT LINE ROAD OVERLAY PROJECT					
REMOVAL PLAN BELT LINE RD STA 78+00 TO STA 82+00					
 HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A REMV 05	RM-5



LEGEND

- CONCRETE SIDEWALK TO BE REMOVED
- CONCRETE MEDIAN / ISLAND TO BE REMOVED FOR MEDIAN / ISLAND ADJUSTMENT (SEE PAVING PLANS - SHEETS P-1 TO P-26)

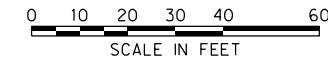
NOTES:

1. SEE PAVING PLAN SHEETS FOR LOCATIONS OF KNOWN UTILITY APPURTENANCES WITHIN ROADWAY LIMITS & NOTES REGARDING UTILITY ADJUSTMENTS.
2. SIDEWALK REMOVAL TO INCLUDE RAMP REMOVAL AND CURB & GUTTER REPLACEMENT. SIDEWALK REMOVAL SHALL BE TO NEAREST JOINT.
3. CURB REMOVAL AT PROPOSED RAMPS IS SUBSIDIARY AND NOT AN ADDITIONAL PAY ITEM.
4. CONTRACTOR SHALL MAINTAIN EXISTING IRRIGATION IN WORKING ORDER.
5. MEDIAN NOSE ADJUSTMENT TO INCLUDE REMOVAL OF CURB, PAVEMENT, MEDIAN & ANY OTHER MISCELLANEOUS REMOVALS.





Melane S. Cleavelin 12/19/17
Signature of Registrant Date
TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT REMOVAL PLAN BELT LINE RD STA 82+00 TO STA 86+00			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A REMV 06	RM-6		

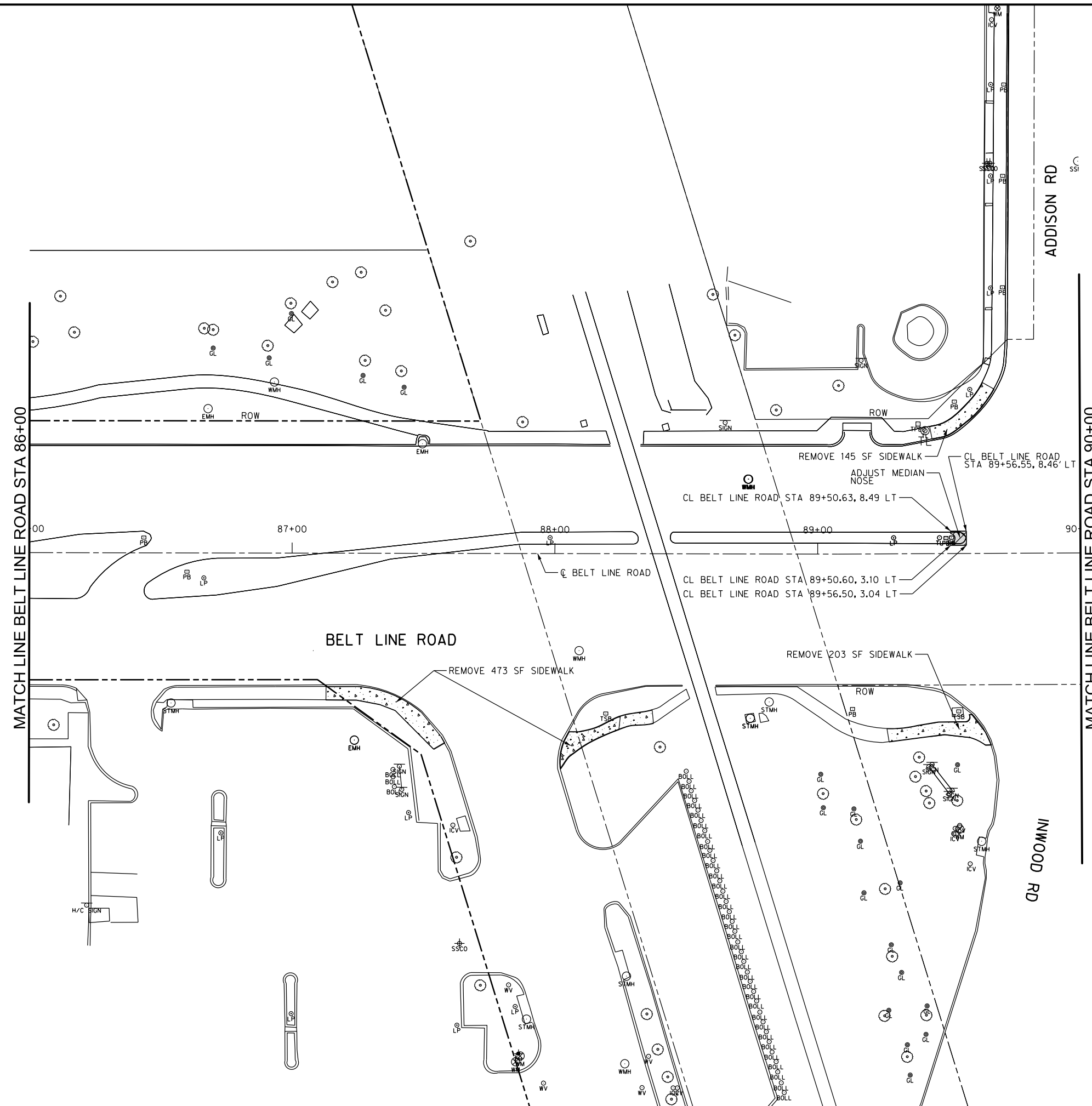


LEGEND

-  CONCRETE SIDEWALK TO BE REMOVED
-  CONCRETE MEDIAN / ISLAND TO BE REMOVED FOR MEDIAN / ISLAND ADJUSTMENT (SEE PAVING PLANS - SHEETS P-1 TO P-26)



NOTES:

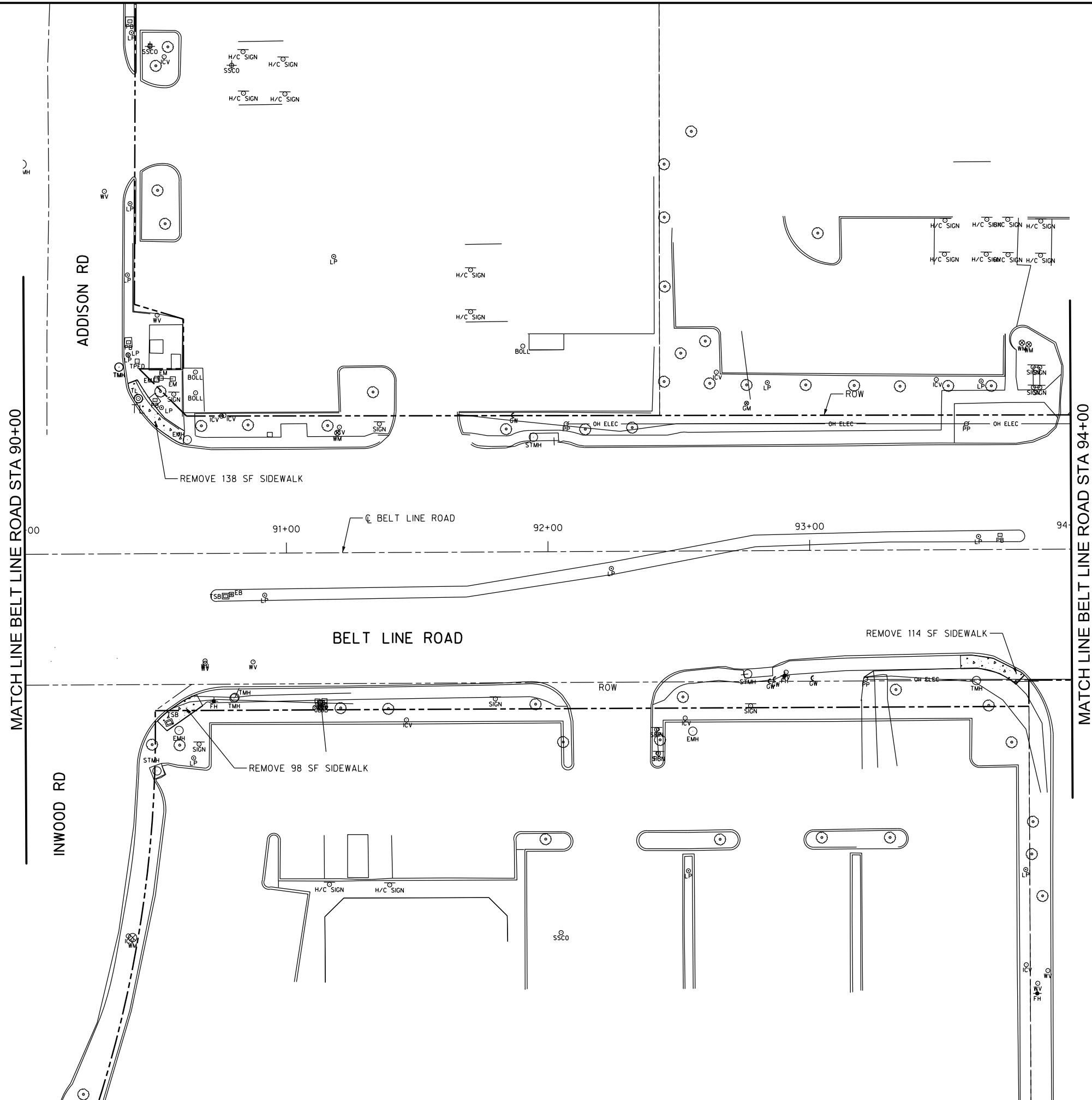
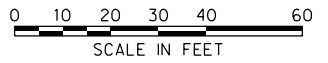
1. SEE PAVING PLAN SHEETS FOR LOCATIONS OF KNOWN UTILITY APPURTENANCES WITHIN ROADWAY LIMITS & NOTES REGARDING UTILITY ADJUSTMENTS.
2. SIDEWALK REMOVAL TO INCLUDE RAMP REMOVAL AND CURB & GUTTER REPLACEMENT. SIDEWALK REMOVAL SHALL BE TO NEAREST JOINT.
3. CURB REMOVAL AT PROPOSED RAMPS IS SUBSIDIARY AND NOT AN ADDITIONAL PAY ITEM.
4. CONTRACTOR SHALL MAINTAIN EXISTING IRRIGATION IN WORKING ORDER.
5. MEDIAN NOSE ADJUSTMENT TO INCLUDE REMOVAL OF CURB, PAVEMENT, MEDIAN & ANY OTHER MISCELLANEOUS REMOVALS.



Melane S. Cleavelin 12/19/17
 Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
 TOWN OF ADDISON DALLAS COUNTY, TEXAS			
BELT LINE ROAD OVERLAY PROJECT			
REMOVAL PLAN BELT LINE RD STA 86+00 TO STA 90+00			
 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A REMV 07	RM-7		



LEGEND

- CONCRETE SIDEWALK TO BE REMOVED
- CONCRETE MEDIAN / ISLAND TO BE REMOVED FOR MEDIAN / ISLAND ADJUSTMENT (SEE PAVING PLANS - SHEETS P-1 TO P-26)

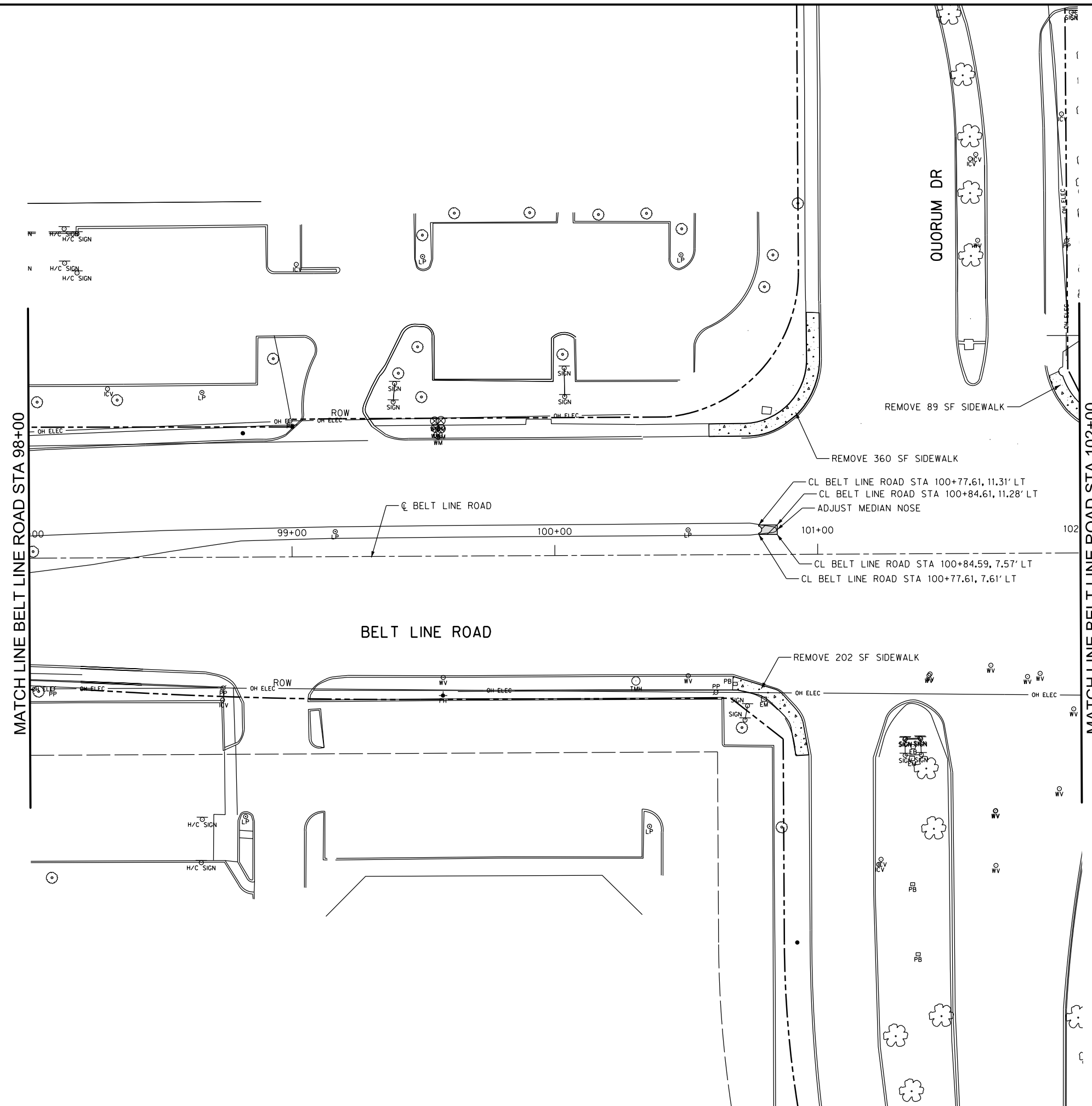
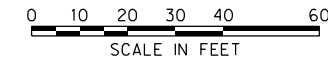
NOTES:

1. SEE PAVING PLAN SHEETS FOR LOCATIONS OF KNOWN UTILITY APPURTENANCES WITHIN ROADWAY LIMITS & NOTES REGARDING UTILITY ADJUSTMENTS.
2. SIDEWALK REMOVAL TO INCLUDE RAMP REMOVAL AND CURB & GUTTER REPLACEMENT. SIDEWALK REMOVAL SHALL BE TO NEAREST JOINT.
3. CURB REMOVAL AT PROPOSED RAMPS IS SUBSIDIARY AND NOT AN ADDITIONAL PAY ITEM.
4. CONTRACTOR SHALL MAINTAIN EXISTING IRRIGATION IN WORKING ORDER.
5. MEDIAN NOSE ADJUSTMENT TO INCLUDE REMOVAL OF CURB, PAVEMENT, MEDIAN & ANY OTHER MISCELLANEOUS REMOVALS.



Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date
 TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
REMOVAL PLAN BELT LINE RD STA 90+00 TO STA 94+00					
HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A REMV 08	RM-8



LEGEND

- CONCRETE SIDEWALK TO BE REMOVED
- CONCRETE MEDIAN / ISLAND TO BE REMOVED FOR MEDIAN / ISLAND ADJUSTMENT (SEE PAVING PLANS - SHEETS P-1 TO P-26)

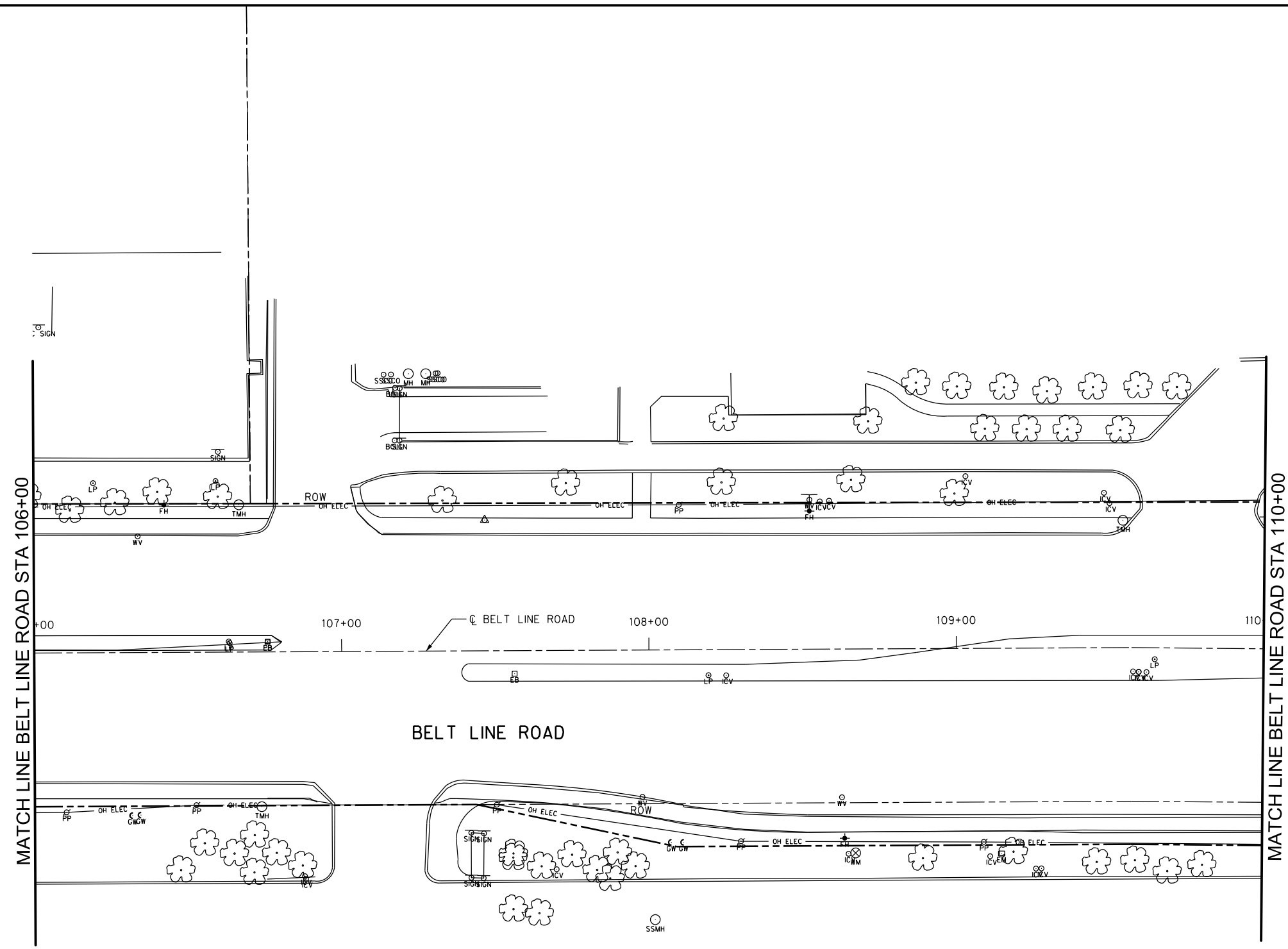
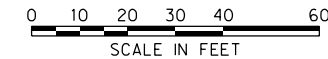
NOTES:

- SEE PAVING PLAN SHEETS FOR LOCATIONS OF KNOWN UTILITY APPURTENANCES WITHIN ROADWAY LIMITS & NOTES REGARDING UTILITY ADJUSTMENTS.
- SIDEWALK REMOVAL TO INCLUDE RAMP REMOVAL AND CURB & GUTTER REPLACEMENT. SIDEWALK REMOVAL SHALL BE TO NEAREST JOINT.
- CURB REMOVAL AT PROPOSED RAMPS IS SUBSIDIARY AND NOT AN ADDITIONAL PAY ITEM.
- CONTRACTOR SHALL MAINTAIN EXISTING IRRIGATION IN WORKING ORDER.
- MEDIAN NOSE ADJUSTMENT TO INCLUDE REMOVAL OF CURB, PAVEMENT, MEDIAN & ANY OTHER MISCELLANEOUS REMOVALS.



Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date
 TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT REMOVAL PLAN BELT LINE RD STA 98+00 TO STA 102+00			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A REMV 10	RM-10		



LEGEND

- CONCRETE SIDEWALK TO BE REMOVED
- CONCRETE MEDIAN / ISLAND TO BE REMOVED FOR MEDIAN / ISLAND ADJUSTMENT (SEE PAVING PLANS - SHEETS P-1 TO P-26)

NOTES:

1. SEE PAVING PLAN SHEETS FOR LOCATIONS OF KNOWN UTILITY APPURTENANCES WITHIN ROADWAY LIMITS & NOTES REGARDING UTILITY ADJUSTMENTS.
2. SIDEWALK REMOVAL TO INCLUDE RAMP REMOVAL AND CURB & GUTTER REPLACEMENT. SIDEWALK REMOVAL SHALL BE TO NEAREST JOINT.
3. CURB REMOVAL AT PROPOSED RAMPS IS SUBSIDIARY AND NOT AN ADDITIONAL PAY ITEM.
4. CONTRACTOR SHALL MAINTAIN EXISTING IRRIGATION IN WORKING ORDER.
5. MEDIAN NOSE ADJUSTMENT TO INCLUDE REMOVAL OF CURB, PAVEMENT, MEDIAN & ANY OTHER MISCELLANEOUS REMOVALS.

NO REMOVAL ITEMS ON THIS SHEET



Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date
TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
BELT LINE ROAD OVERLAY PROJECT			
REMOVAL PLAN BELT LINE RD STA 106+00 TO STA 110+00			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A REMV 12	RM-12		

USER: oh1299

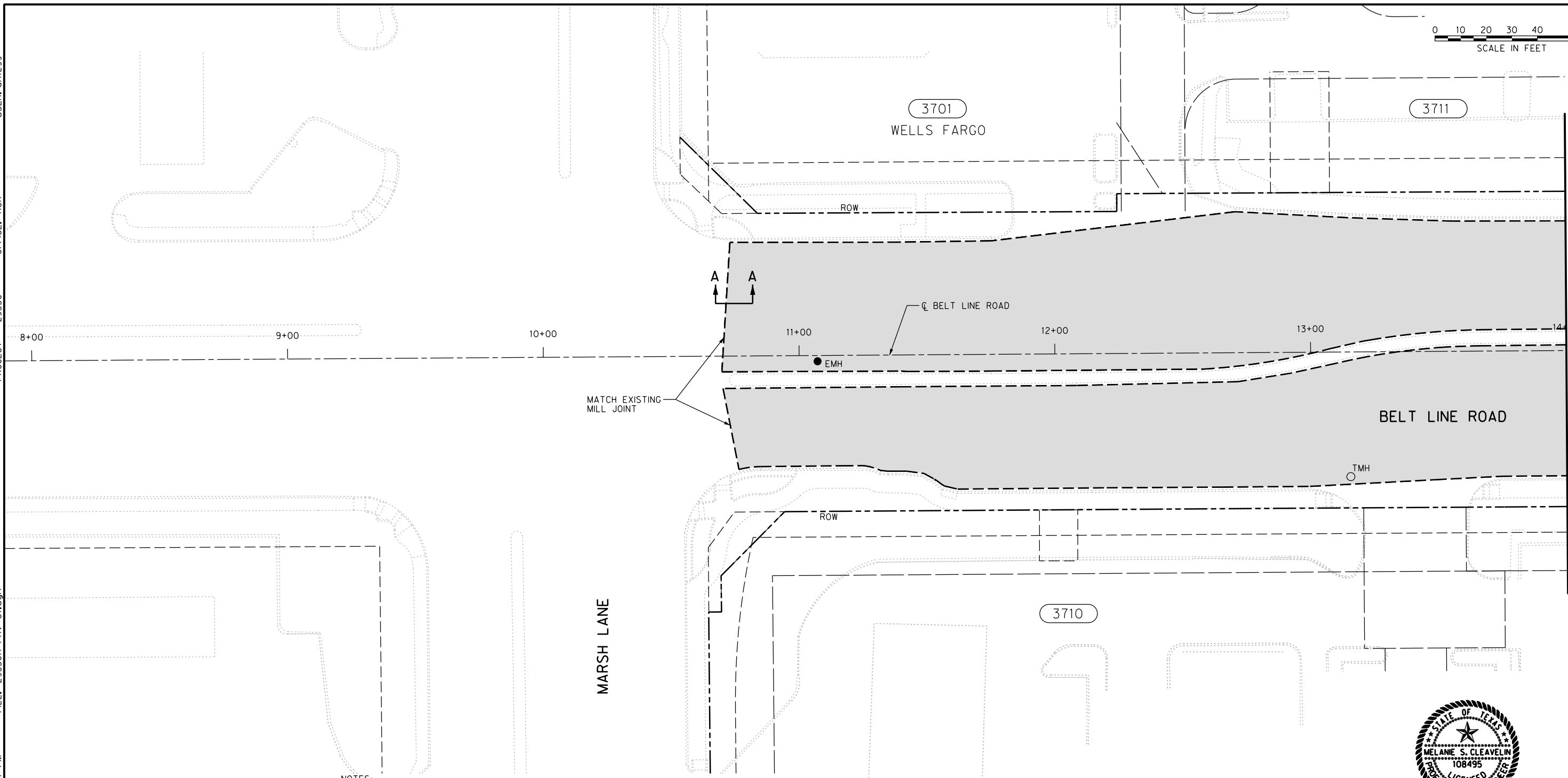
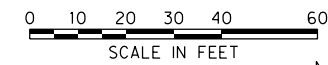
OFFICE: RCH

PROJECT # 29350

FILE: 29350A_PAV_01.dgn

TIME: 7:30:27 PM

DATE: 12/18/2017

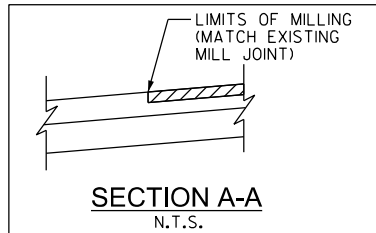


MATCH LINE BELT LINE ROAD STA 14+00

SHEET 18 OF 97

NOTES:

1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
9. ANY VALVES DETERMINED TO BE OBSOLETE BY THE TOWN SHALL BE LOWERED TO MILLED ELEVATION THEN PAVED OVER WITH OVERLAY. ALL REQUIRED WORK SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



LEGEND

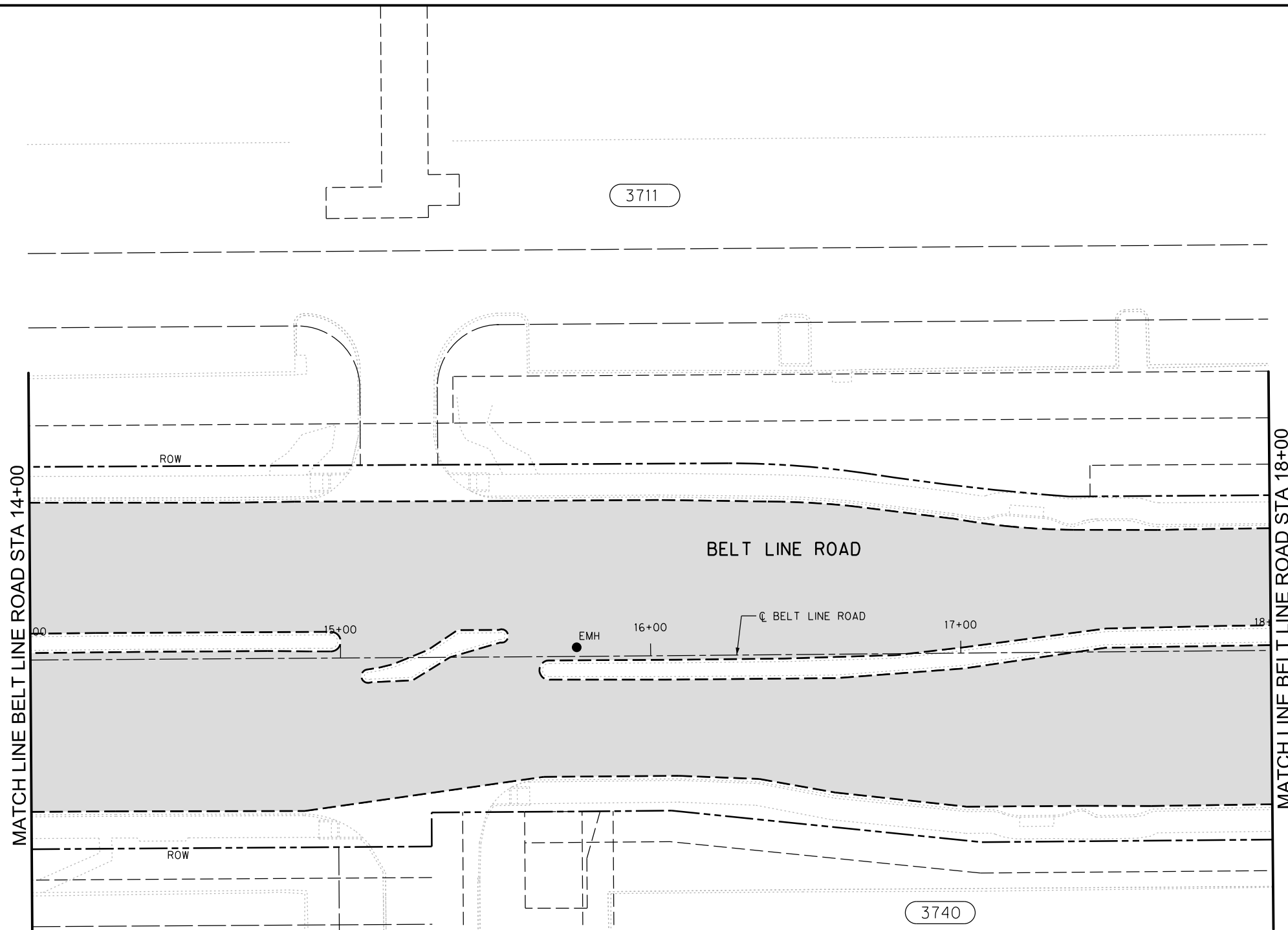
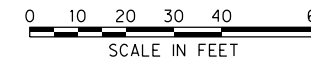
- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST. CONTRACTOR SHALL WORK AROUND.



Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
PAVING PLAN BELT LINE RD STA 10+00 TO STA 14+00					
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_PAV_01	P-1

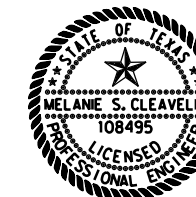


LEGEND

- 2' HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

NOTES:

1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
9. ANY VALVES DETERMINED TO BE OBSOLETE BY THE TOWN SHALL BE LOWERED TO MILLED ELEVATION THEN PAVED OVER WITH OVERLAY. ALL REQUIRED WORK SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
BELT LINE ROAD OVERLAY PROJECT			
PAVING PLAN BELT LINE RD STA 14+00 TO STA 18+00			
		1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095	
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A_PAV_02	P-2		



LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

NOTES:

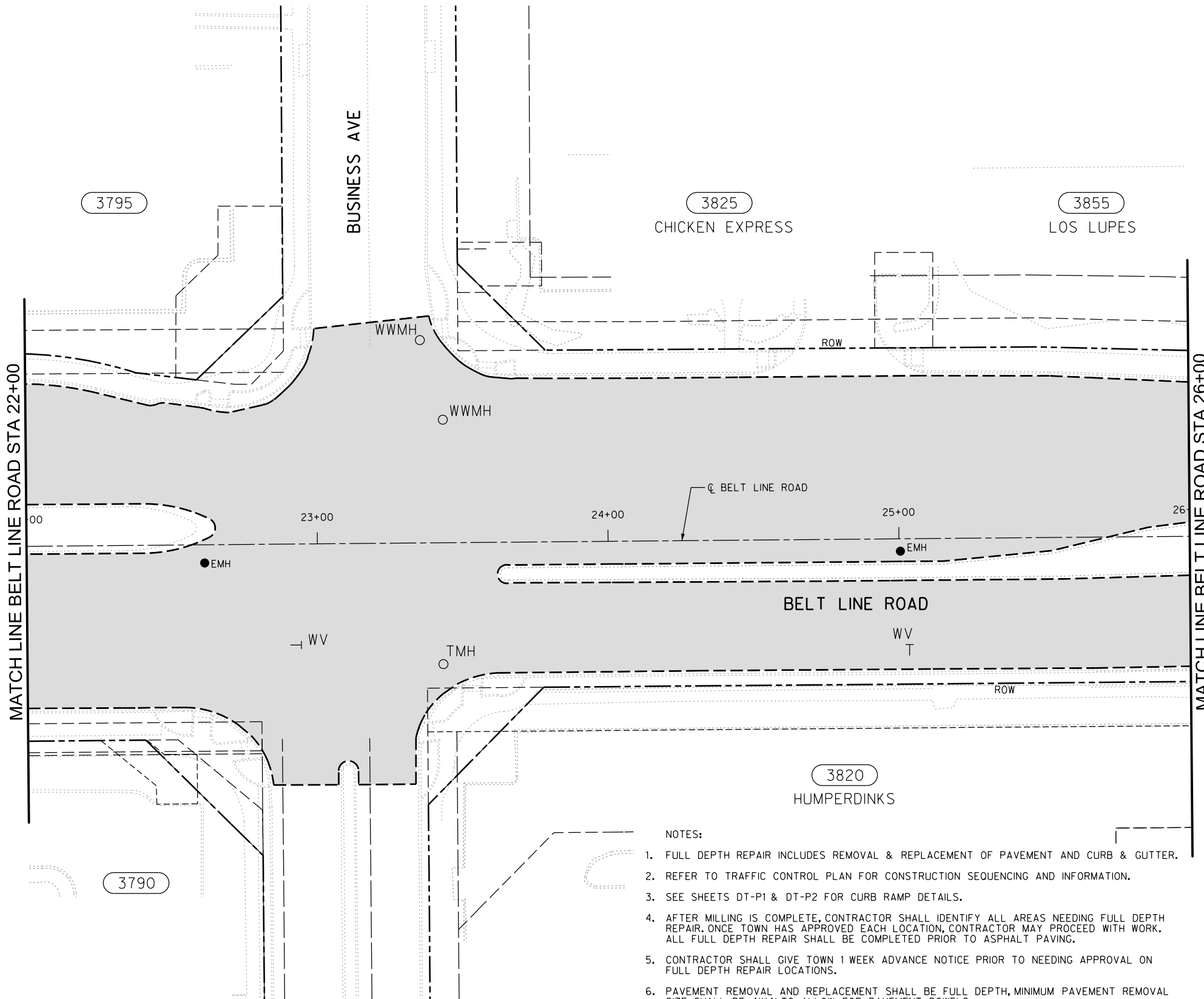
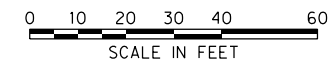
1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
9. ANY VALVES DETERMINED TO BE OBSOLETE BY THE TOWN SHALL BE LOWERED TO MILLED ELEVATION THEN PAVED OVER WITH OVERLAY. ALL REQUIRED WORK SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
BELT LINE ROAD OVERLAY PROJECT			
PAVING PLAN BELT LINE RD STA 18+00 TO STA 22+00			
HALFF		<small>1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095</small>	
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A_PAV_03	P-3		



LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

NOTES:

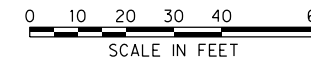
1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
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10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

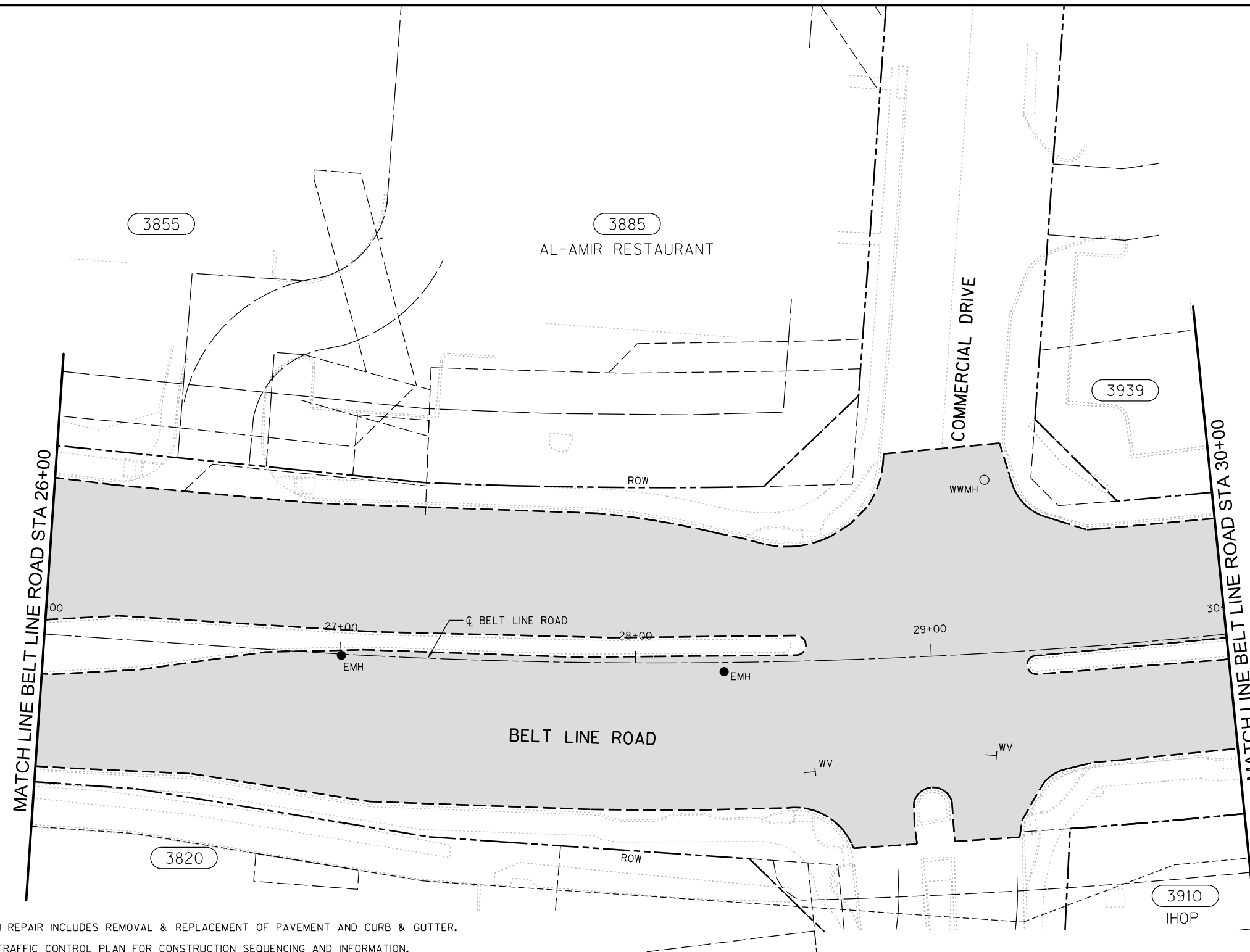
TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
BELT LINE ROAD OVERLAY PROJECT			
PAVING PLAN BELT LINE RD STA 18+00 TO STA 26+00			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A_PAV_04	P-4		



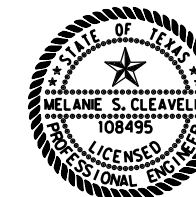
LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST. CONTRACTOR SHALL WORK AROUND.



NOTES:

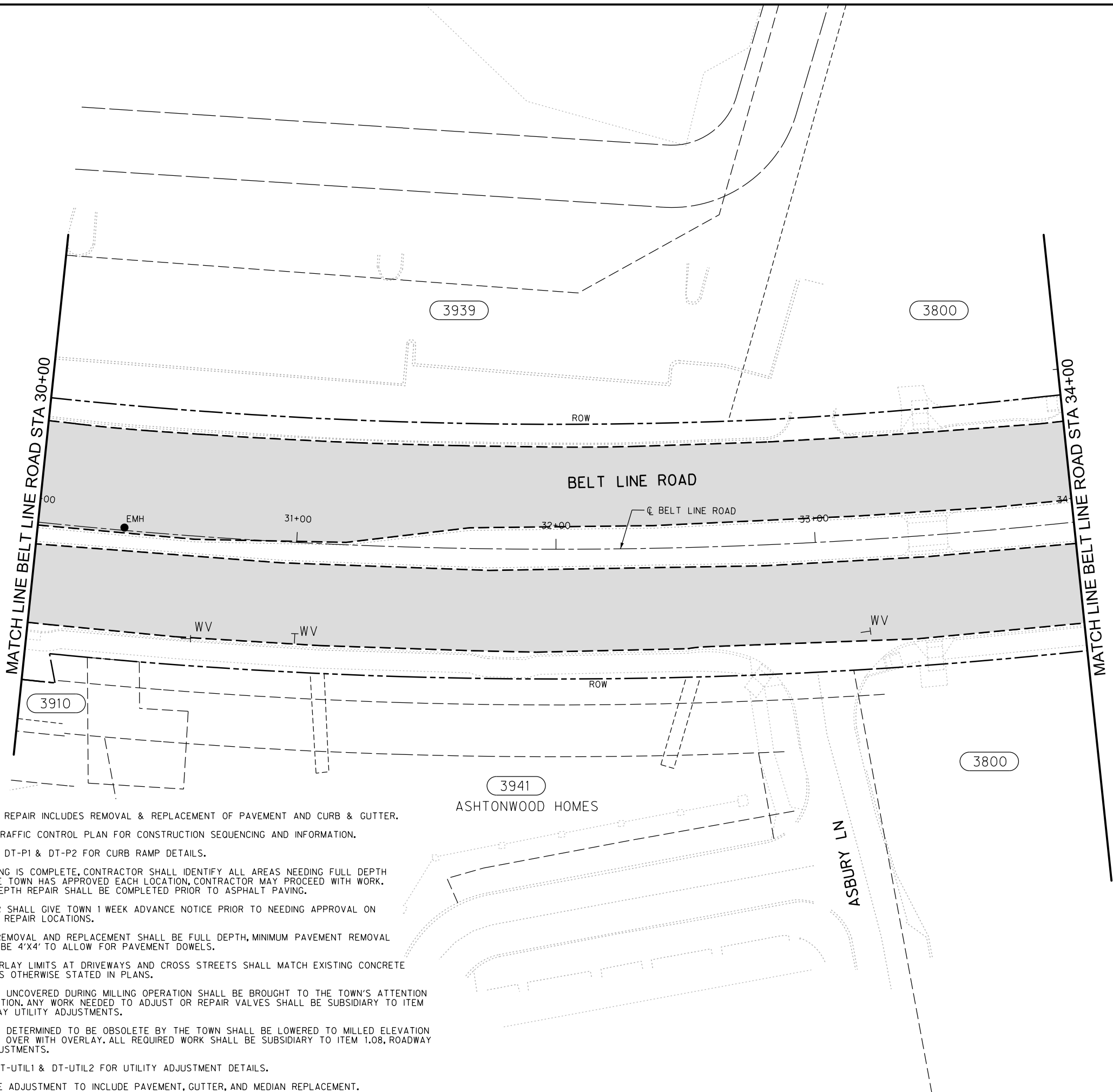
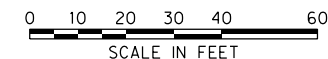
1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
9. ANY VALVES DETERMINED TO BE OBSOLETE BY THE TOWN SHALL BE LOWERED TO MILLED ELEVATION THEN PAVED OVER WITH OVERLAY. ALL REQUIRED WORK SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



Melanie S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
PAVING PLAN BELT LINE RD STA 26+00 TO STA 30+00					
HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_PAV_05	P-5



LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

NOTES:

1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
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10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
PAVING PLAN BELT LINE RD STA 30+00 TO STA 34+00					
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_PAV_06	P-6

USER: ohi299

OFFICE: RCH

PROJECT # 29350

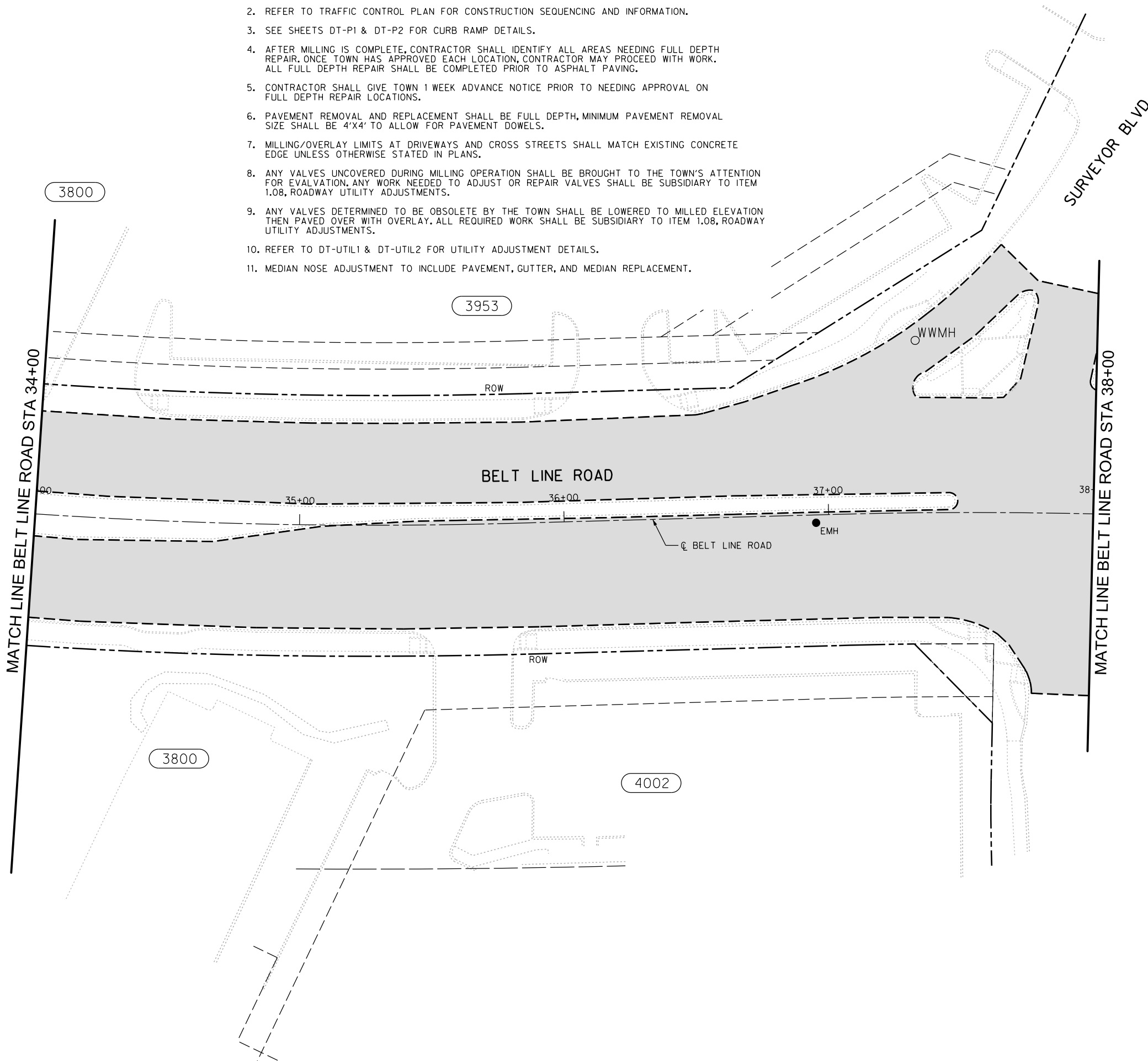
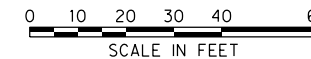
FILE: 29350A_PAV_07.dgn

TIME: 7:30:34 PM

DATE: 12/18/2017

NOTES:

1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
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10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



LEGEND

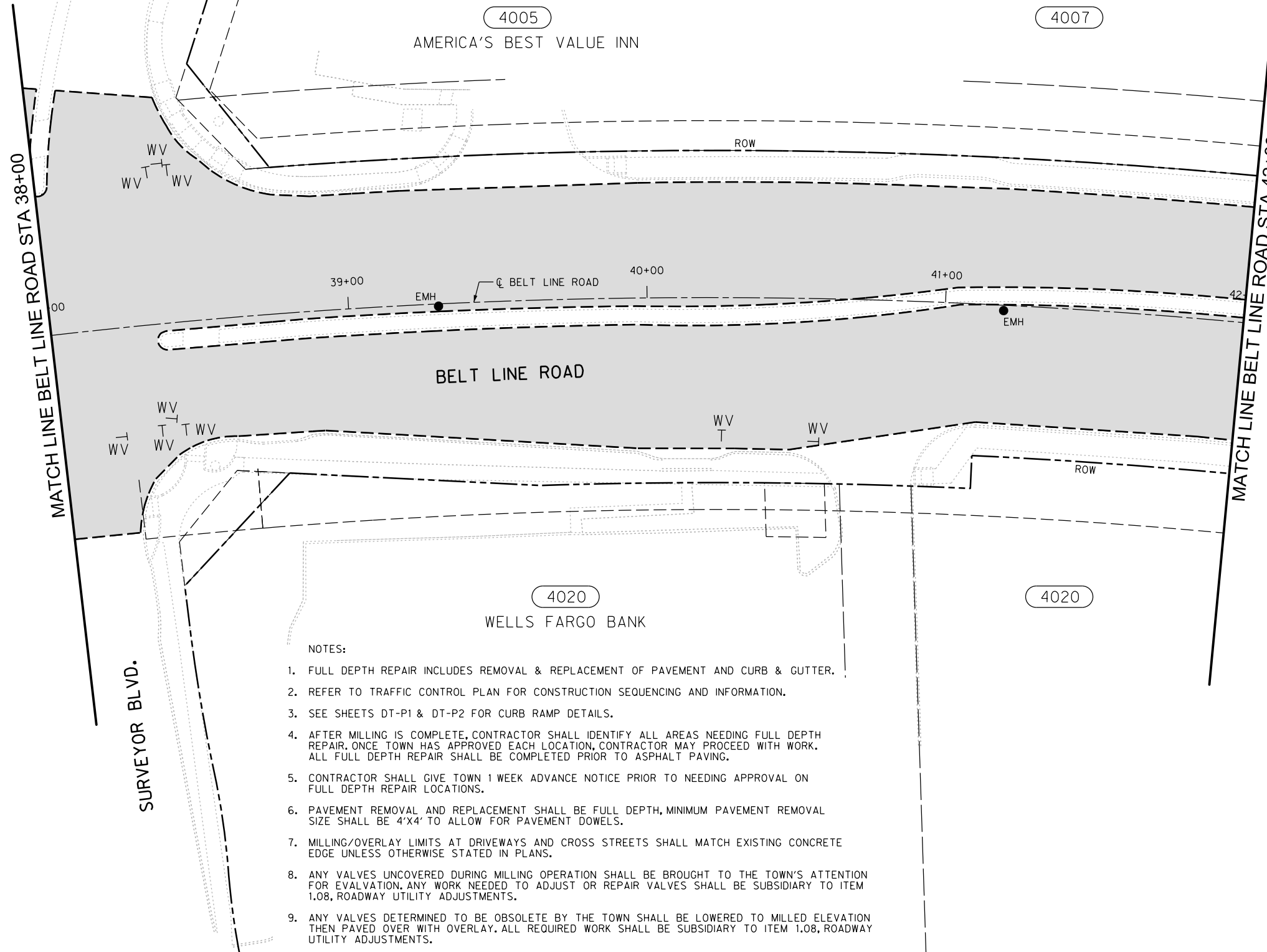
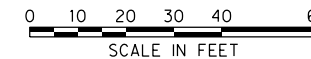
- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.



Melane S. Cleavelin P.E. 12/19/17
 Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
PAVING PLAN BELT LINE RD STA 34+00 TO STA 38+00					
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_PAV_07	P-7

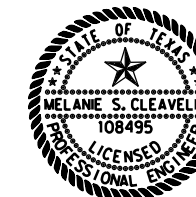


LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

NOTES:

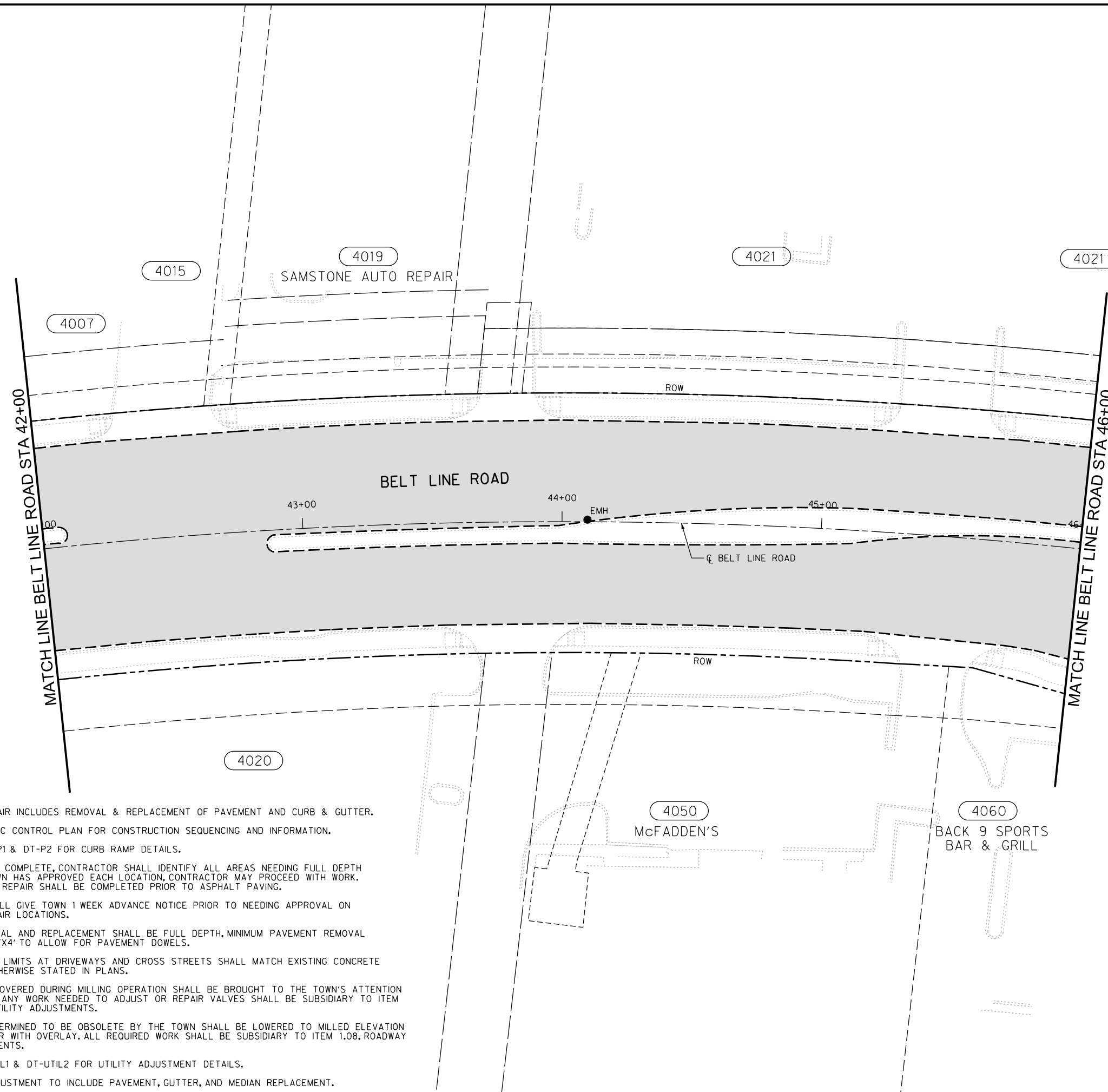
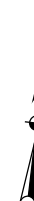
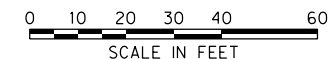
1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
9. ANY VALVES DETERMINED TO BE OBSOLETE BY THE TOWN SHALL BE LOWERED TO MILLED ELEVATION THEN PAVED OVER WITH OVERLAY. ALL REQUIRED WORK SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
PAVING PLAN BELT LINE RD STA 38+00 TO STA 42+00					
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_PAV_08	P-8



LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

NOTES:

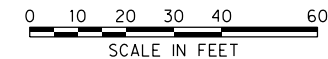
1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
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10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



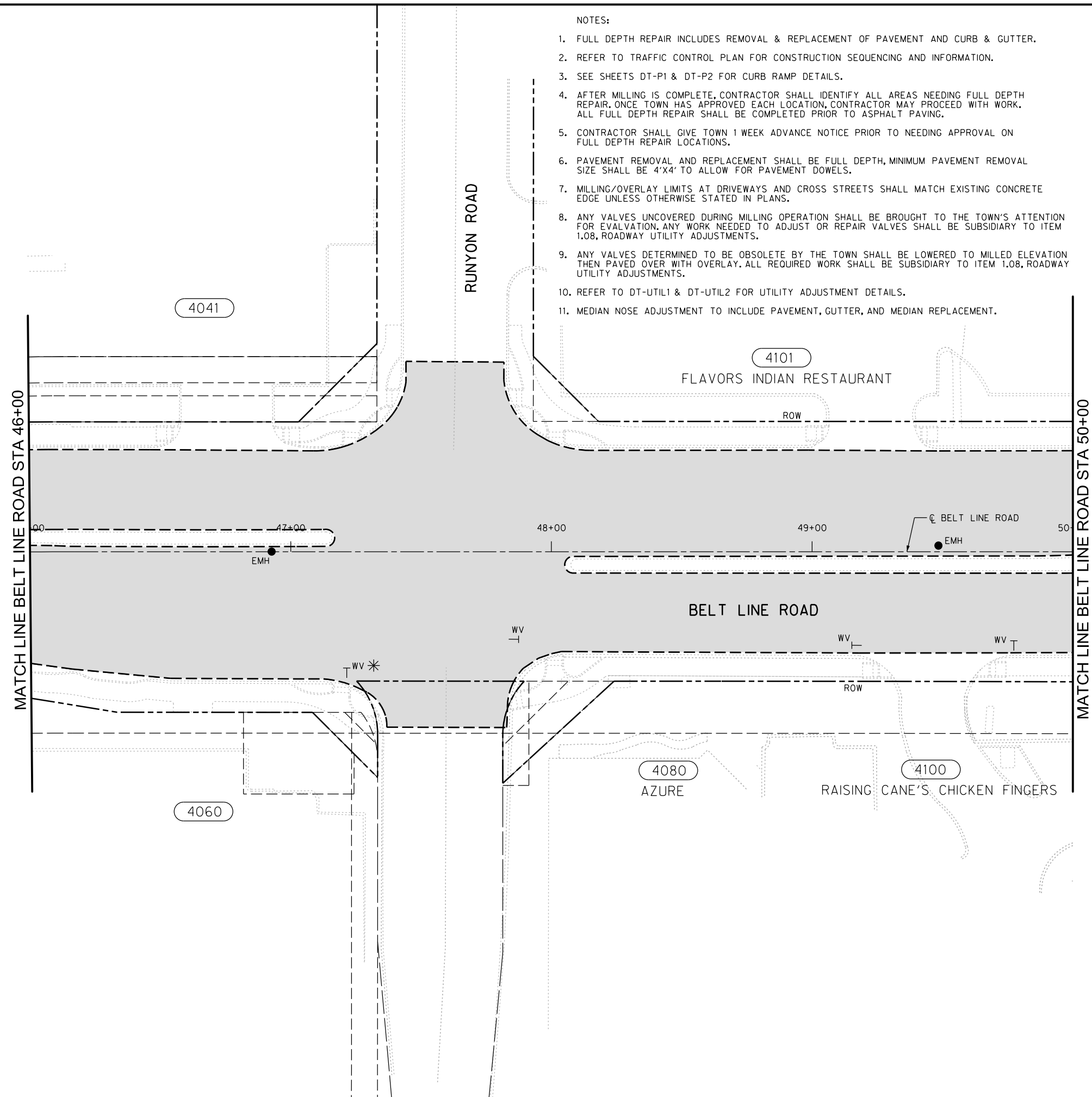
Melane S. Cleavelin 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
BELT LINE ROAD OVERLAY PROJECT			
PAVING PLAN BELT LINE RD STA 42+00 TO STA 46+00			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A_PAV_09	P-9		



- NOTES:
1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
 2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
 3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
 4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
 5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
 6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
 7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
 8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
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 10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
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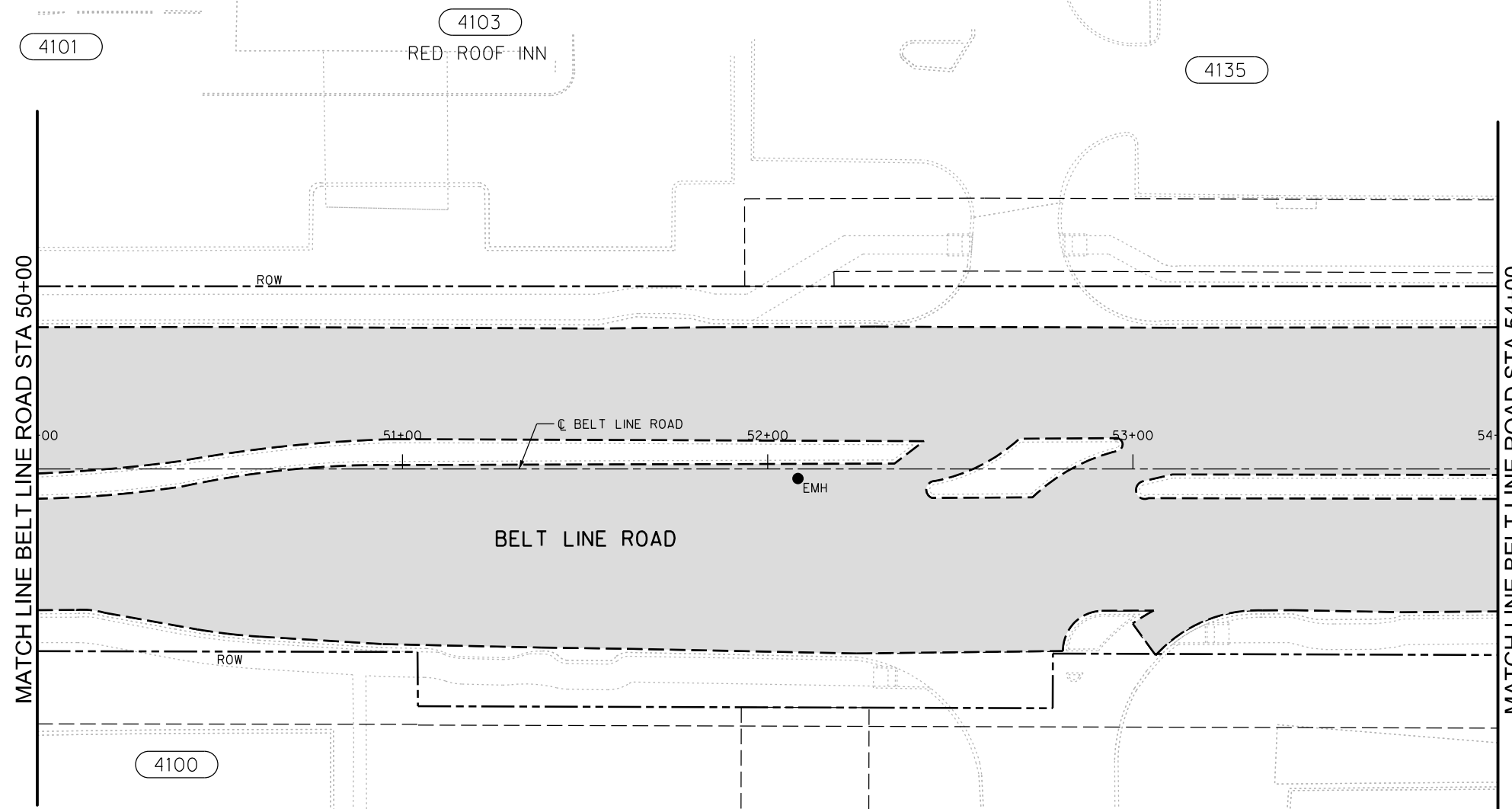
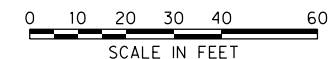
LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.



Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date
TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
PAVING PLAN BELT LINE RD STA 46+00 TO STA 50+00					
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_PAV_10	P-10



LEGEND

- 2' HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

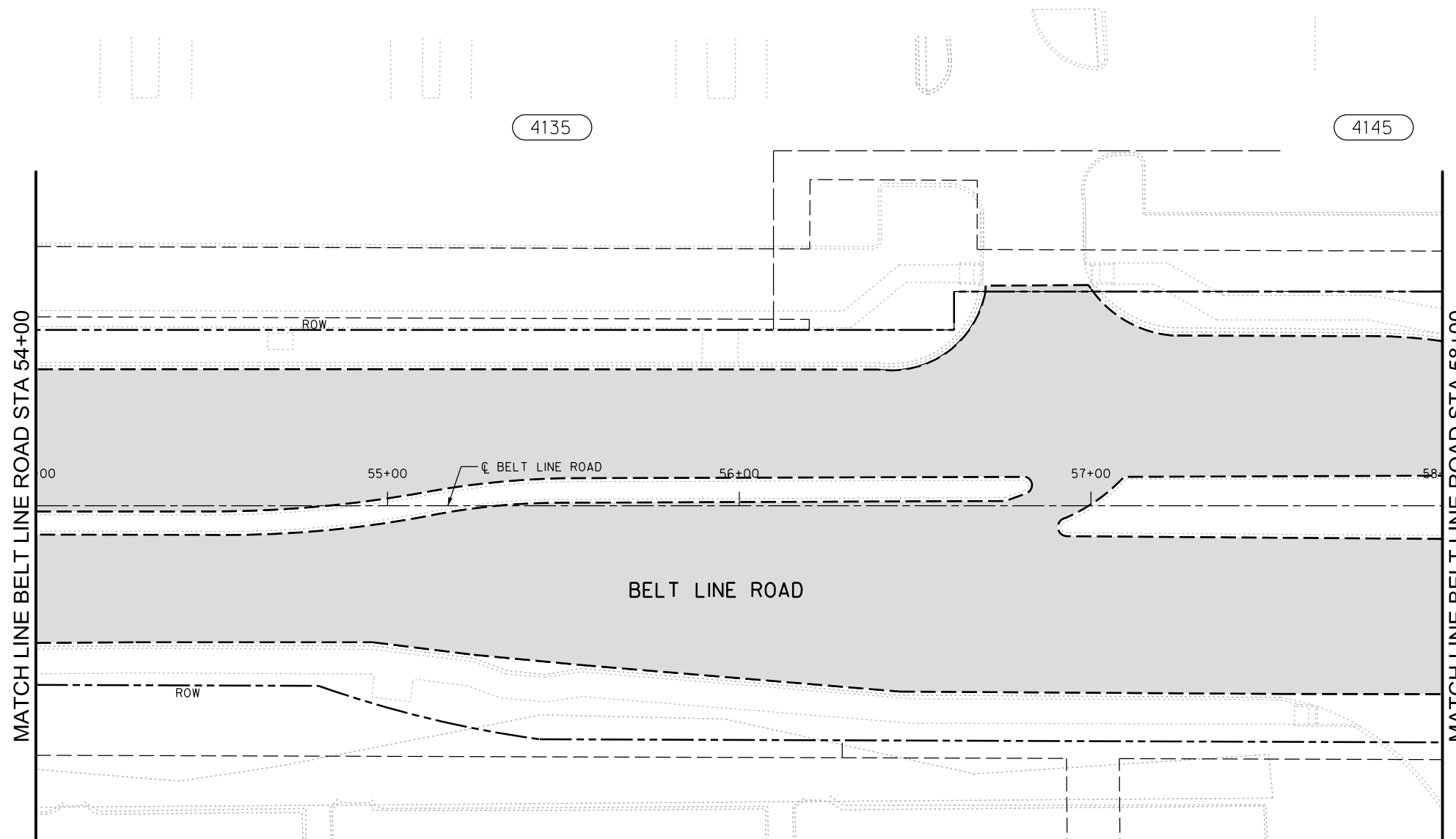
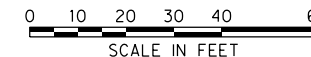
- NOTES:
1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
 2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
 3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
 4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
 5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
 6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
 7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
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 10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
 11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



Melane S. Cleavelin 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
BELT LINE ROAD OVERLAY PROJECT			
PAVING PLAN BELT LINE RD STA 50+00 TO STA 54+00			
HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A_PAV 11	P-11		



LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

NOTES:

1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
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11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



Melane S. Cleavelin 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
BELT LINE ROAD OVERLAY PROJECT			
PAVING PLAN BELT LINE RD STA 54+00 TO STA 58+00			
		<small>1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095</small>	
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A_PAV 12	P-12		

USER: dnl299

OFFICE: RCH

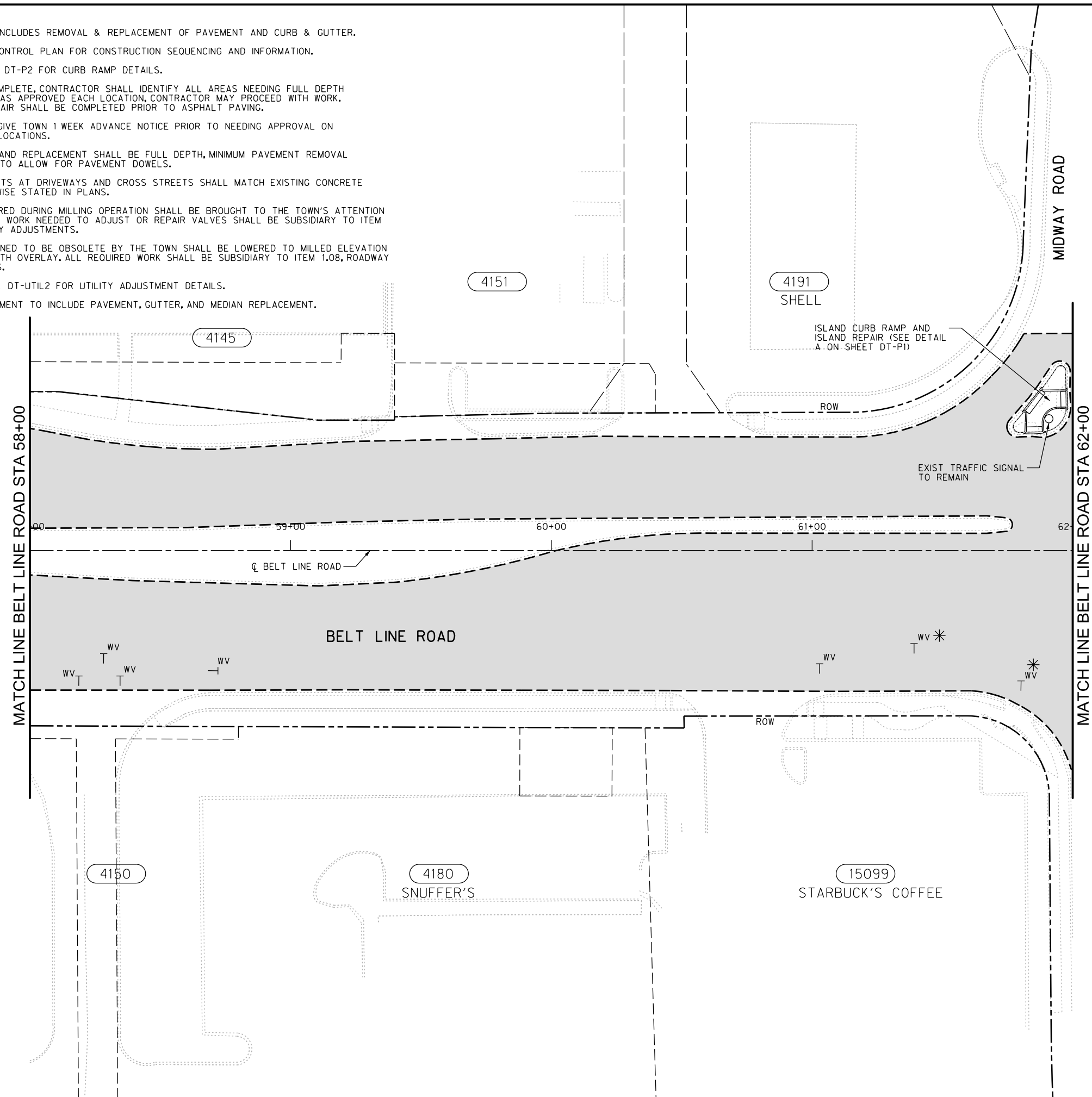
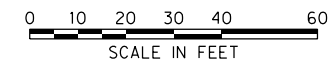
PROJECT # 29350

FILE: 29350A_PAV_13.dgn

TIME: 7:30:41 PM

DATE: 12/18/2017

- NOTES:
1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
 2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
 3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
 4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
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 6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
 7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
 8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
 9. ANY VALVES DETERMINED TO BE OBSOLETE BY THE TOWN SHALL BE LOWERED TO MILLED ELEVATION THEN PAVED OVER WITH OVERLAY. ALL REQUIRED WORK SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
 10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
 11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



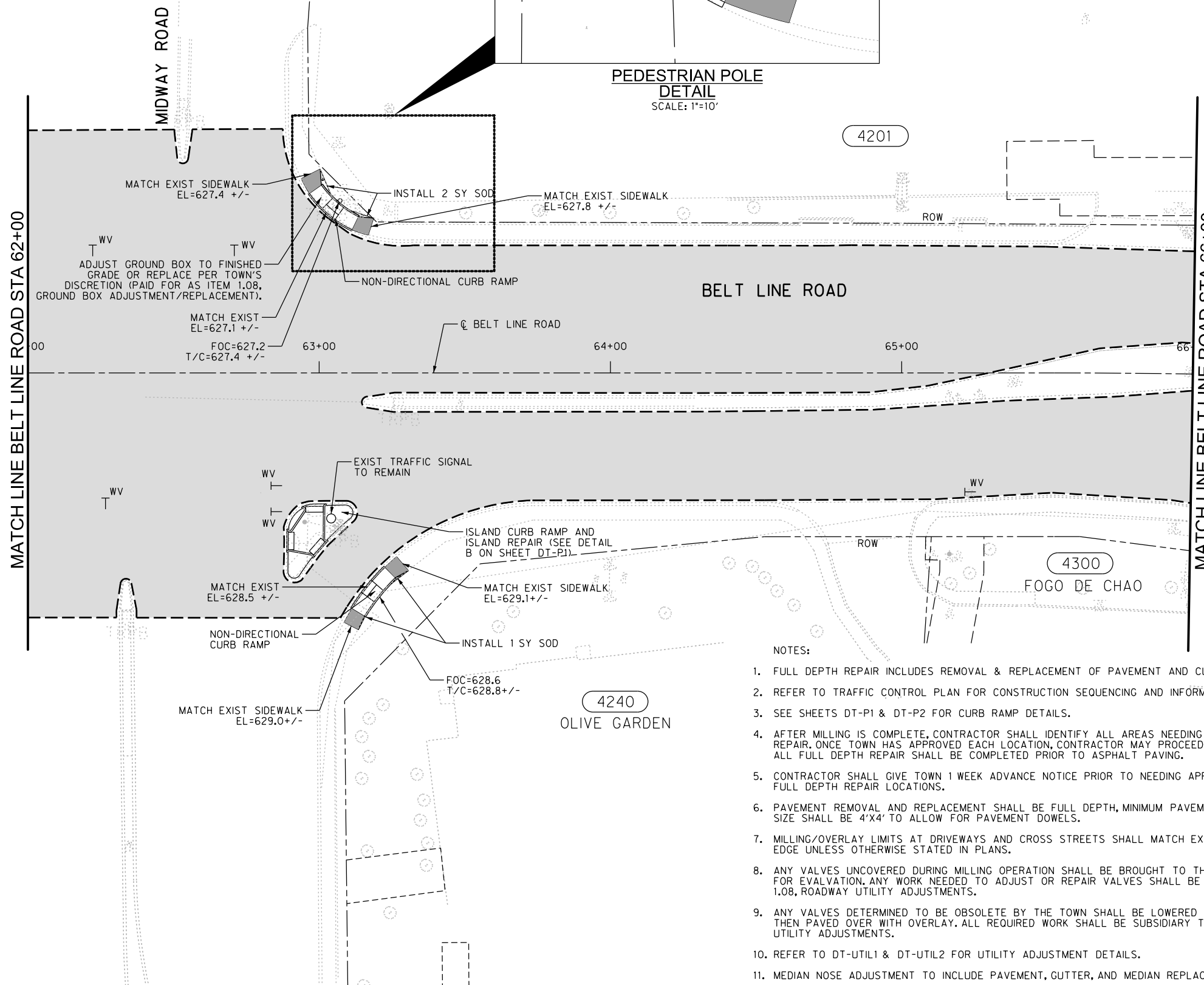
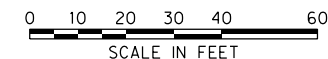
LEGEND

- 2' HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.



Melane S. Cleavelin 12/19/17
 Signature of Registrant Date
 TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
PAVING PLAN BELT LINE RD STA 58+00 TO STA 62+00					
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_PAV_13	P-13



LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

* USE 2 CONDUCTOR TYPE C CABLE IN 2" CONDUIT TO TIE BACK INTO TERMINAL ON ADJACENT TRAFFIC SIGNAL POLE. ALL PEDESTRIAN PUSH BUTTONS TO BE PROGRAMMABLE (VERBAL) APS TYPE, CONTRACTOR TO COORDINATE INSTALL & PROGRAMMING WITH TOWN ENGINEER.

** REMOVAL SUBSIDIARY TO PROPOSED PEDESTRIAN POLE.

NOTES:

1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
9. ANY VALVES DETERMINED TO BE OBSOLETE BY THE TOWN SHALL BE LOWERED TO MILLED ELEVATION THEN PAVED OVER WITH OVERLAY. ALL REQUIRED WORK SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



Melanee S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date
 TBPE FIRM REGISTRATION NUMBER: 312

NO.		REVISION		BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT PAVING PLAN BELT LINE RD STA 62+00 TO STA 66+00					
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_PAV 14	P-14

USER: ohi299

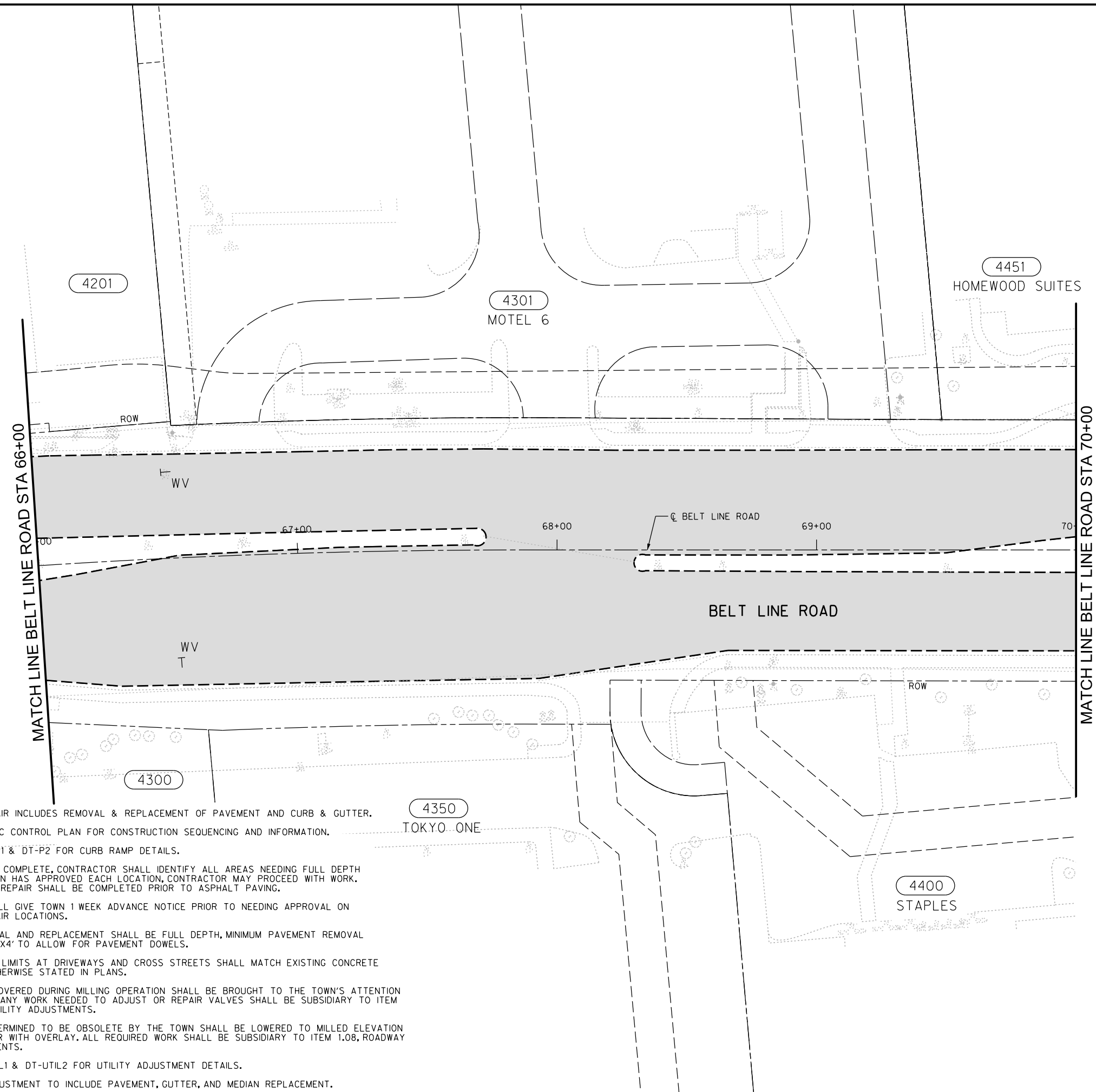
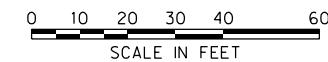
OFFICE: RCH

PROJECT # 29350

FILE: 29350A_PAV_15.dgn

TIME: 7:30:46 PM

DATE: 12/18/2017



LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

NOTES:

1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
9. ANY VALVES DETERMINED TO BE OBSOLETE BY THE TOWN SHALL BE LOWERED TO MILLED ELEVATION THEN PAVED OVER WITH OVERLAY. ALL REQUIRED WORK SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.

SHEET 32 OF 97



Melane S. Cleavelin 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.		REVISION		BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT PAVING PLAN BELT LINE RD STA 66+00 TO STA 70+00					
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_PAV_15	P-15

USER: dnl299

OFFICE: RCH

PROJECT # 29350

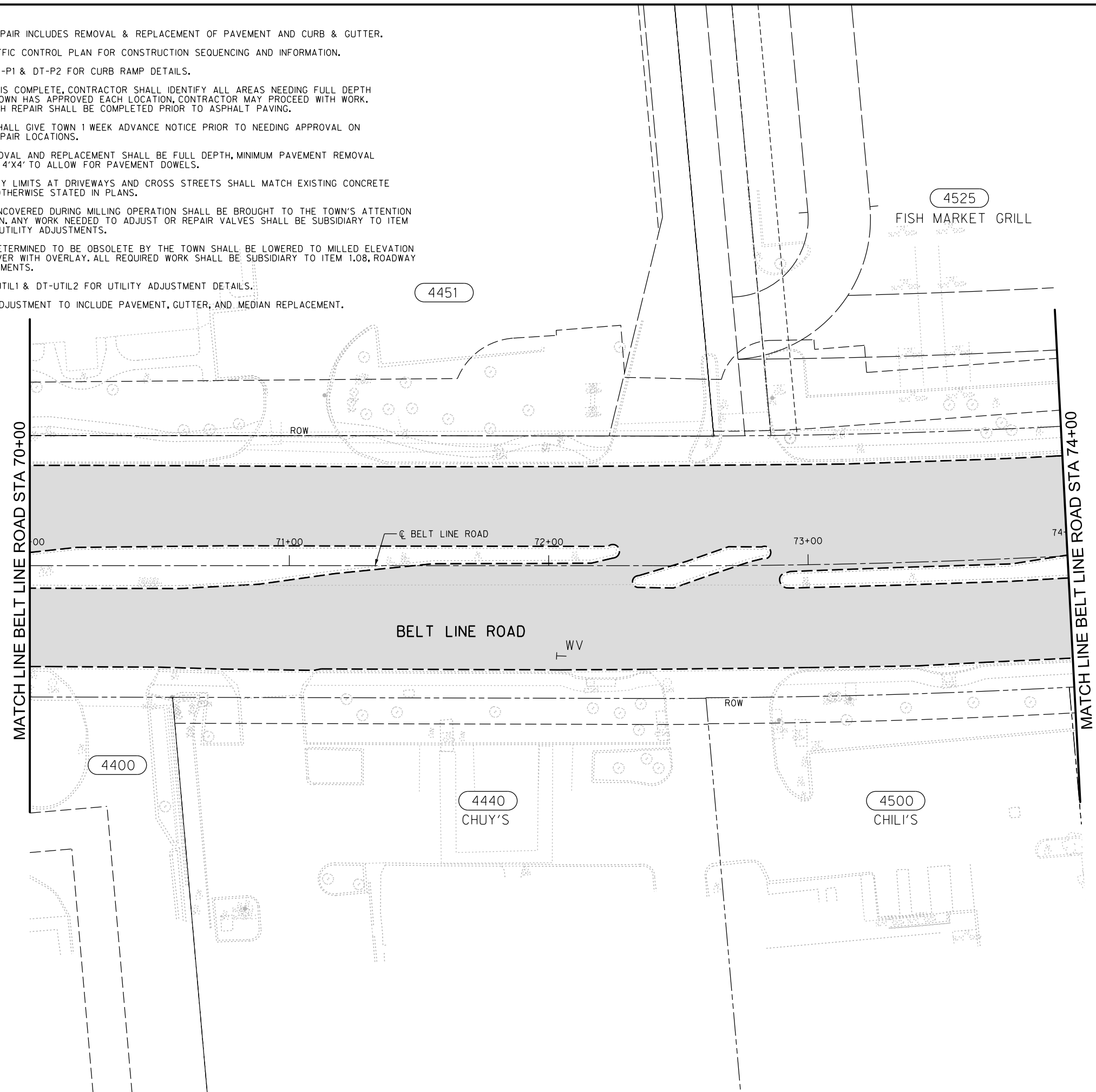
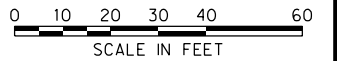
FILE: 29350A_PAV_16.dgn

TIME: 7:30:48 PM

DATE: 12/18/2017

NOTES:

1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
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10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



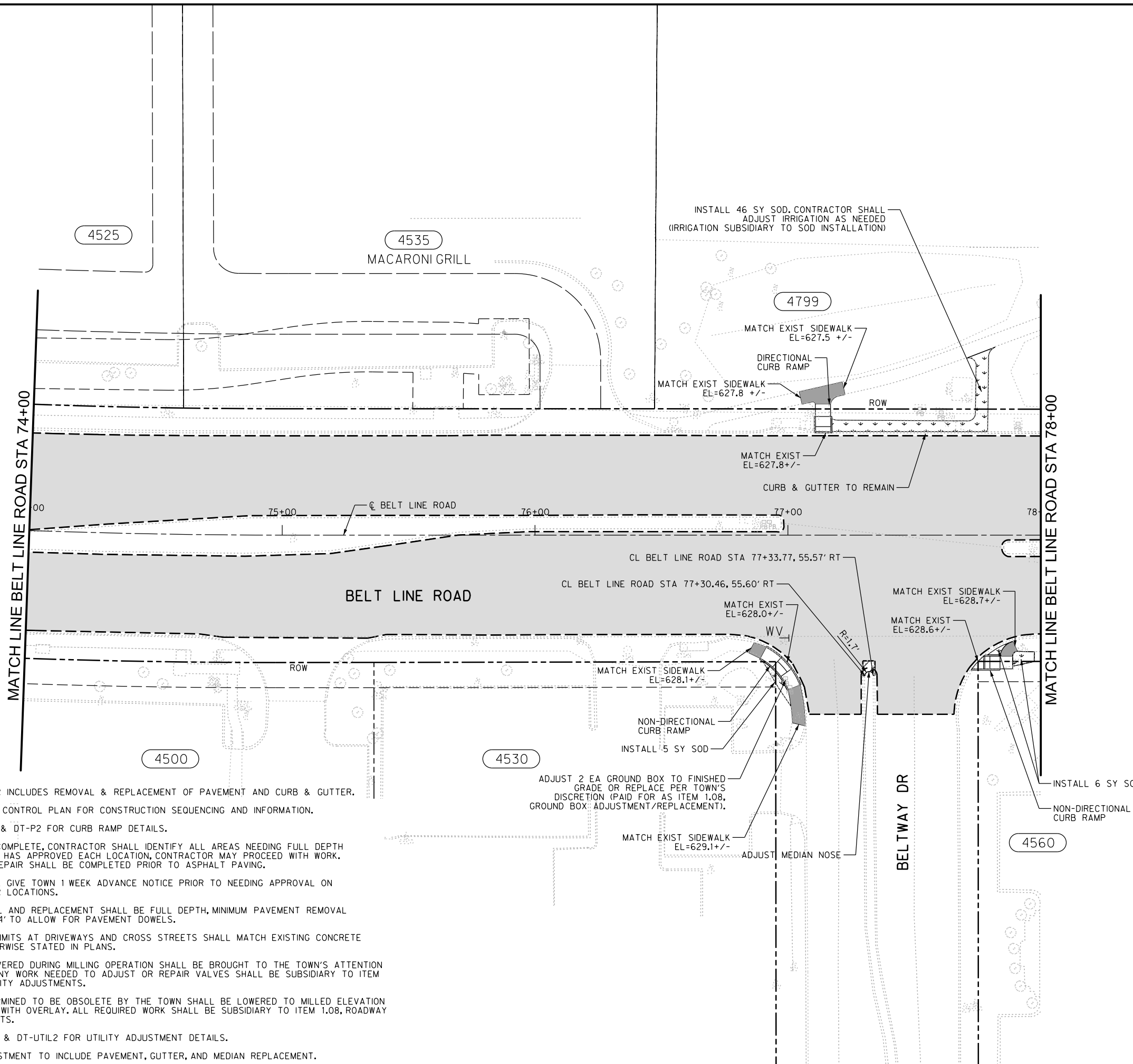
LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.



Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date
 TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT PAVING PLAN BELT LINE RD STA 70+00 TO STA 74+00			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A_PAV_16	P-16		



- NOTES:
1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
 2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
 3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
 4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
 5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
 6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH. MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
 7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
 8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
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 10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
 11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.

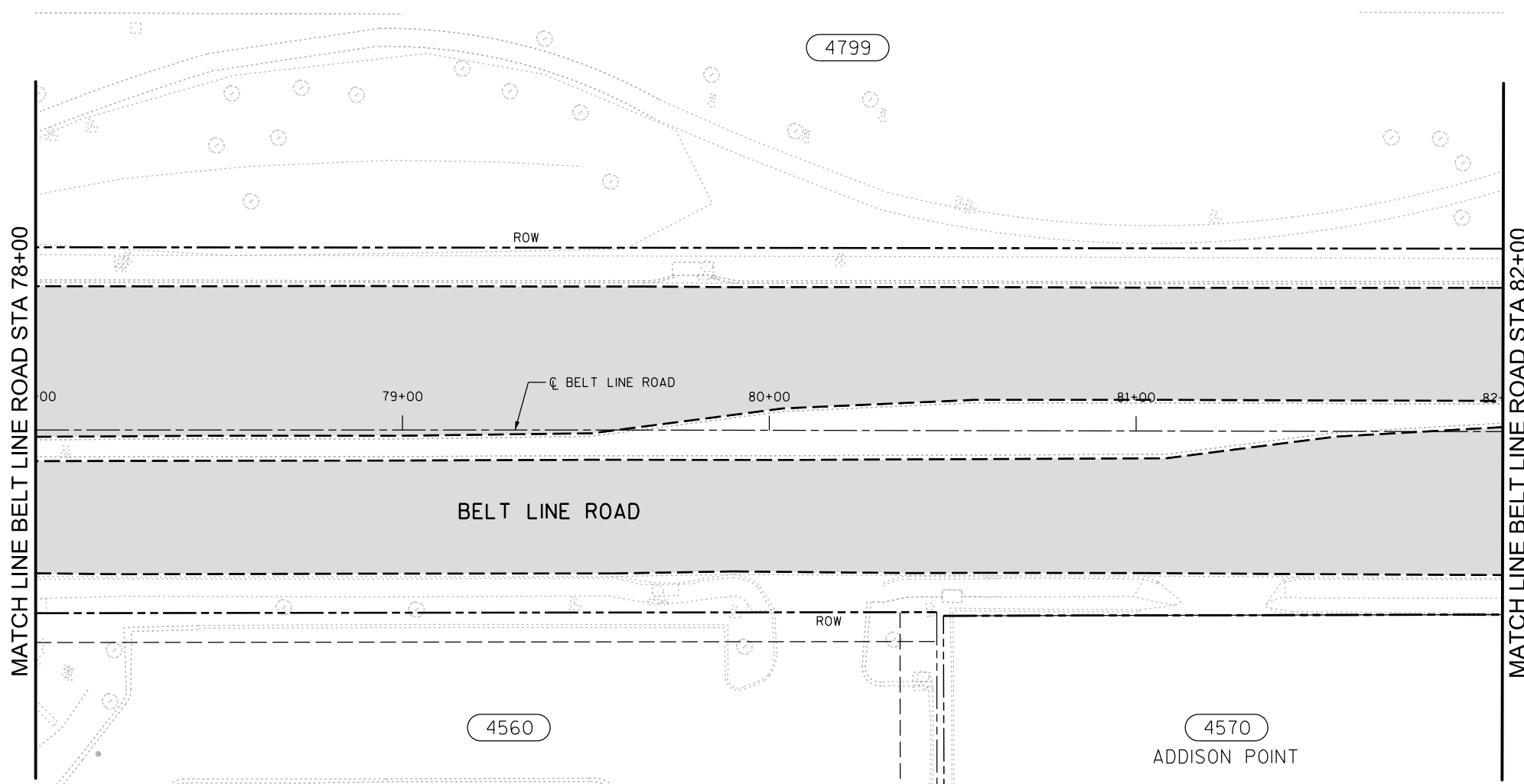
LEGEND

- 2' HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST. CONTRACTOR SHALL WORK AROUND.



Melane S. Cleavelin 12/19/17
 Signature of Registrant Date
 TBPE FIRM REGISTRATION NUMBER: 312

NO.		REVISION		BY		DATE	
TOWN OF ADDISON DALLAS COUNTY, TEXAS							
BELT LINE ROAD OVERLAY PROJECT							
PAVING PLAN BELT LINE RD STA 74+00 TO STA 78+00							
HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095							
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET		
33426	HALFF	HALFF	OCT. 2017	29350A_PAV_17	P-17		



LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

NOTES:

1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
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10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



Melane S. Cleavelin 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE

TOWN OF ADDISON
DALLAS COUNTY, TEXAS

BELT LINE ROAD
OVERLAY PROJECT

PAVING PLAN
BELT LINE RD STA 78+00 TO STA 82+00

1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275
TEL (214) 346-6200 FAX (214) 739-0095

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_PAV 18	P-18

USER: ohi299

OFFICE: RCH

PROJECT # 29350

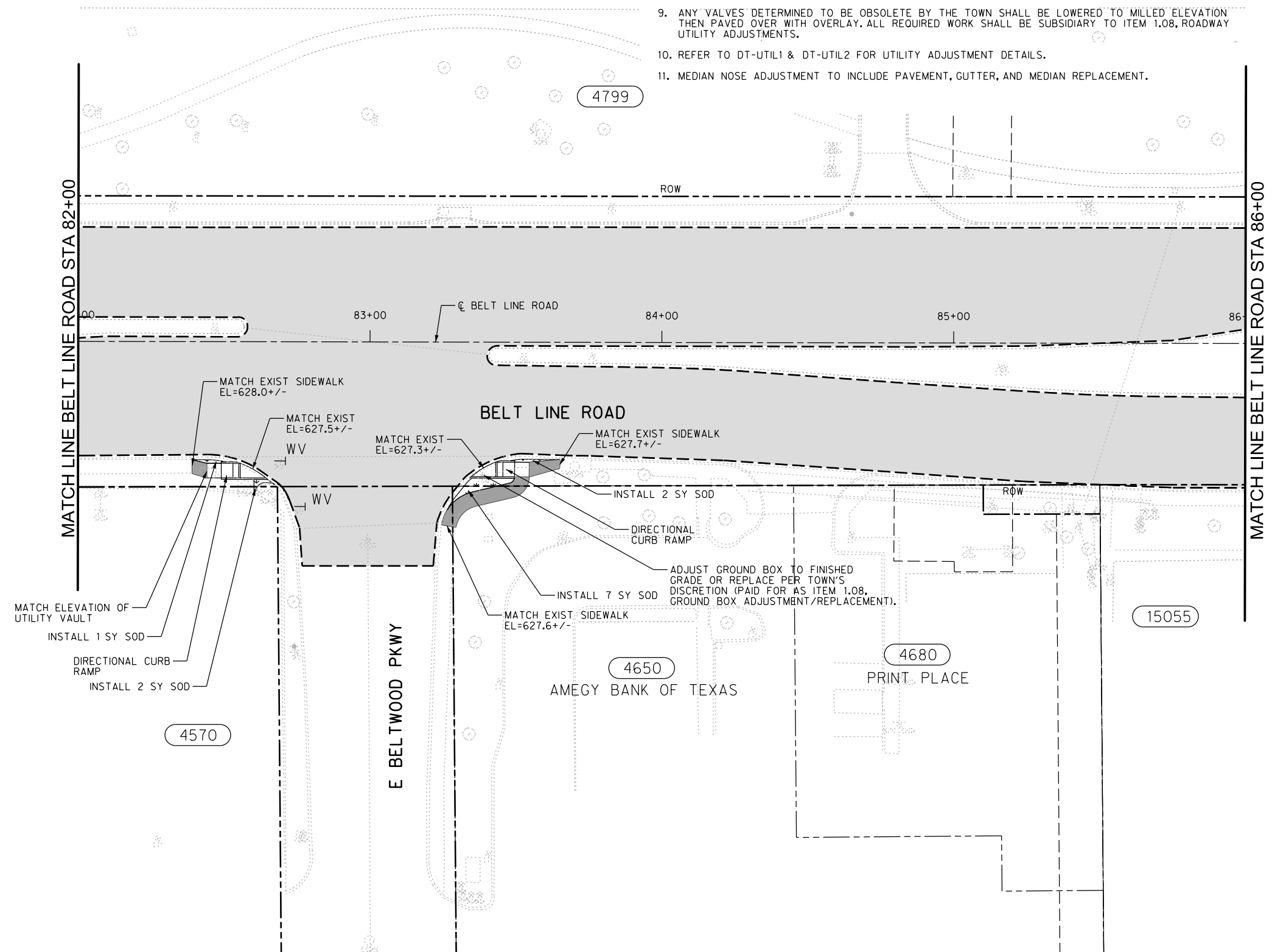
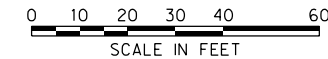
FILE: 29350A PAV 19.dgn

TIME: 7:30:55 PM

DATE: 12/18/2017

NOTES:

1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
9. ANY VALVES DETERMINED TO BE OBSOLETE BY THE TOWN SHALL BE LOWERED TO MILLED ELEVATION THEN PAVED OVER WITH OVERLAY. ALL REQUIRED WORK SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



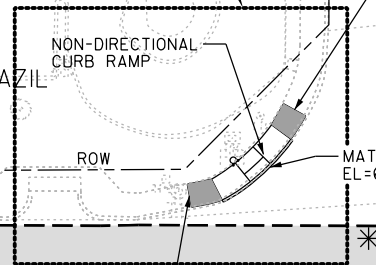
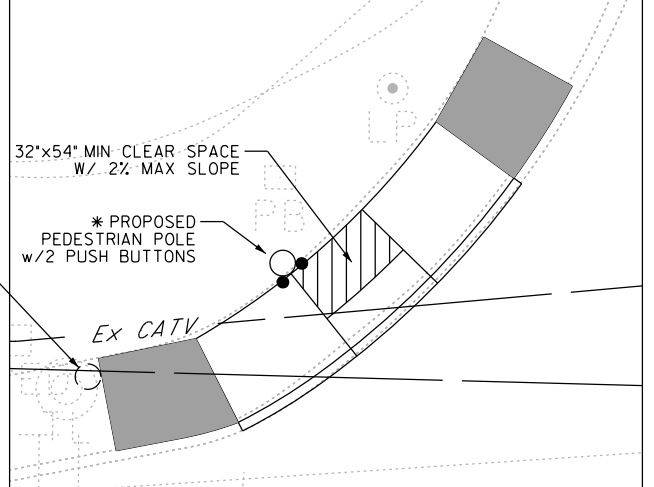
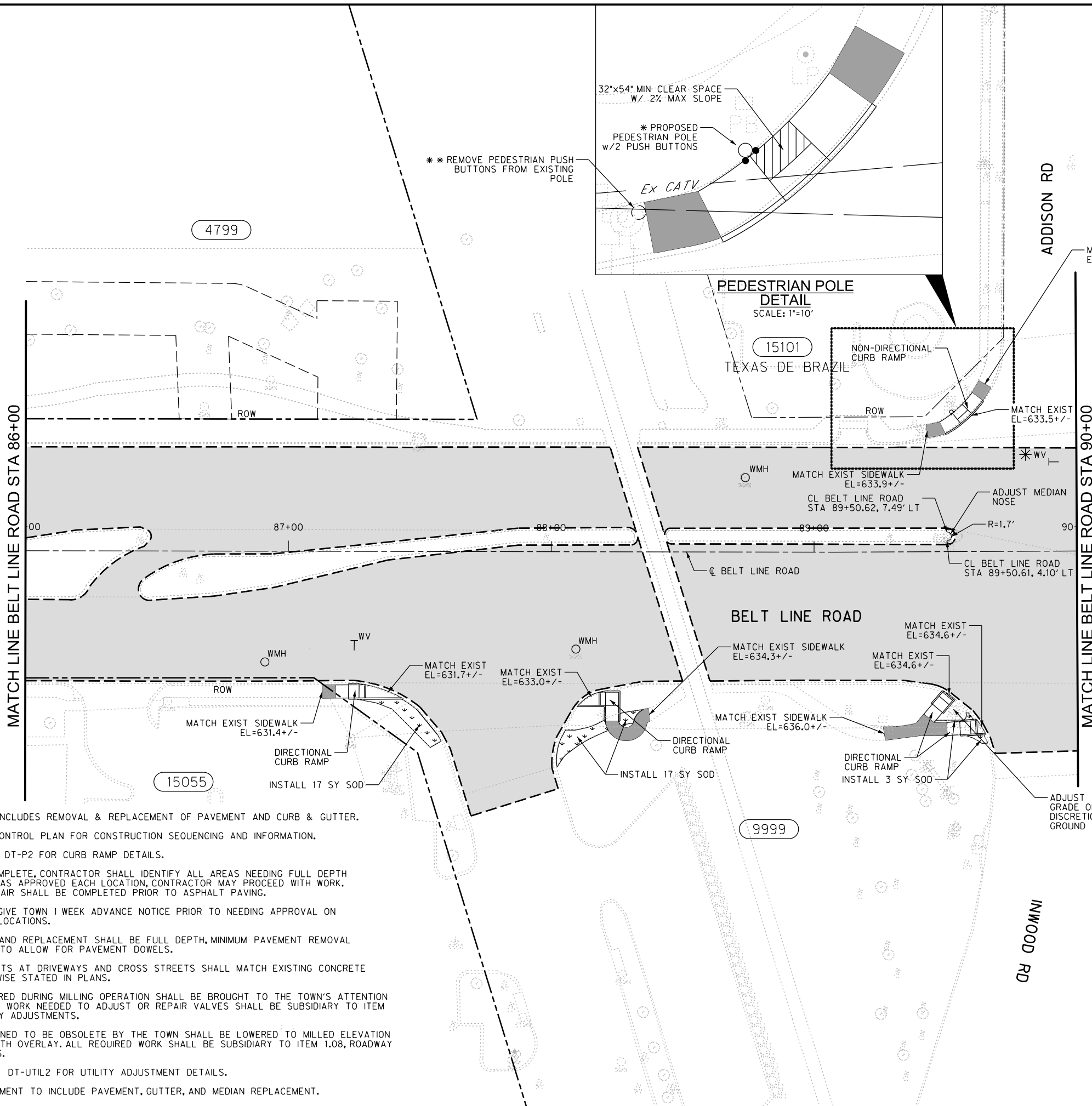
LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.



Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date
 TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT PAVING PLAN BELT LINE RD STA 82+00 TO STA 86+00			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A PAV 19	P-19		



LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

* USE 2 CONDUCTOR TYPE C CABLE IN 2" CONDUIT TO TIE BACK INTO TERMINAL ON ADJACENT TRAFFIC SIGNAL POLE. ALL PEDESTRIAN PUSH BUTTONS TO BE PROGRAMMABLE (VERBAL) APS TYPE. CONTRACTOR TO COORDINATE INSTALL & PROGRAMMING WITH TOWN ENGINEER.

** REMOVAL SUBSIDIARY TO PROPOSED PEDESTRIAN POLE.

- NOTES:**
- FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
 - REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
 - SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
 - AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
 - CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
 - PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
 - MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
 - ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
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 - REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
 - MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



Melanie S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date
 TBPE FIRM REGISTRATION NUMBER: 312

NO.		REVISION		BY		DATE	
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT PAVING PLAN BELT LINE RD STA 86+00 TO STA 90+00 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095							
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET		
33426	HALFF	HALFF	OCT. 2017	29350A_PAV_20	P-20		

USER: oml299

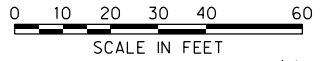
OFFICE: RCH

PROJECT # 29350

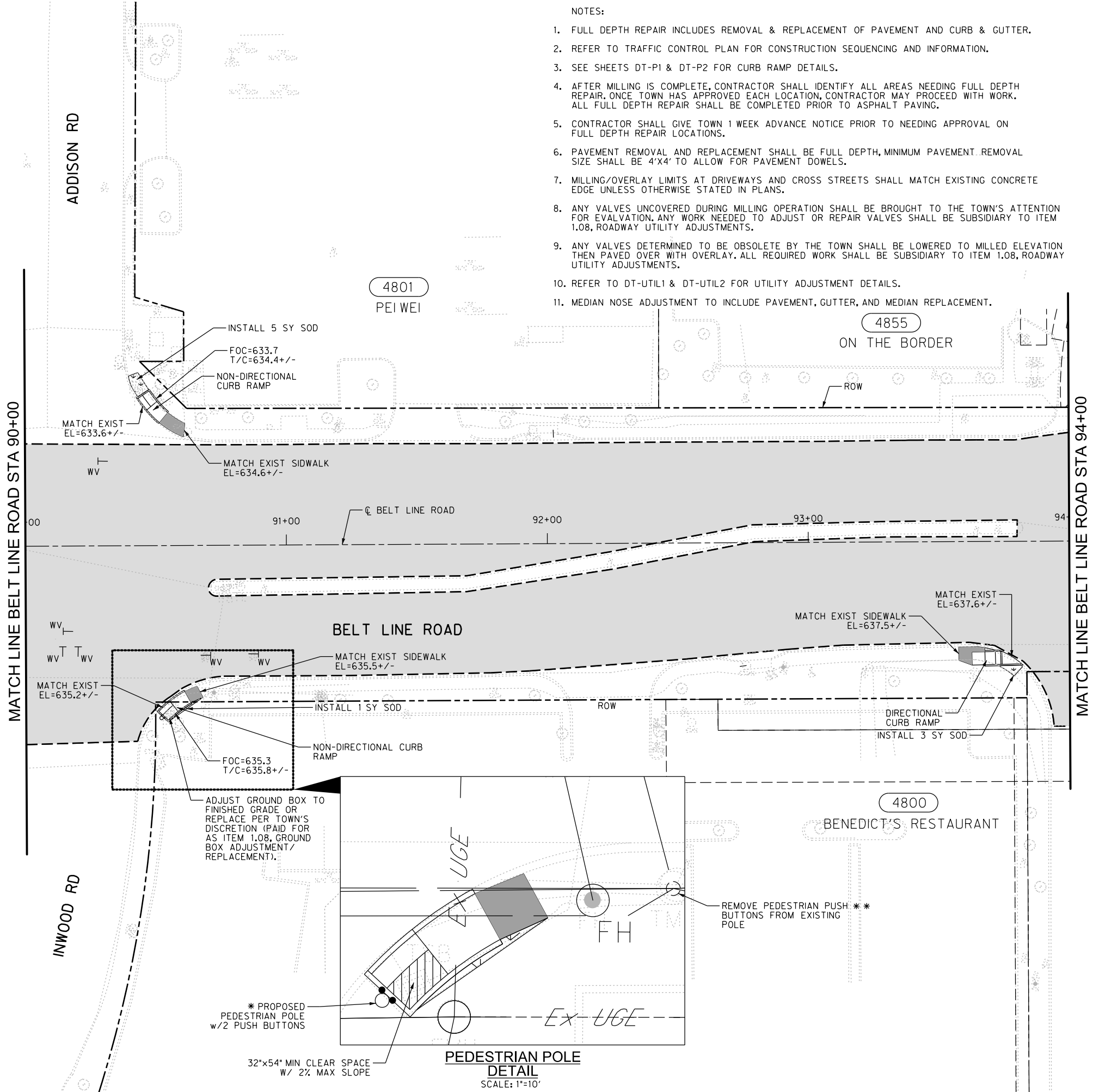
FILE: 29350A_PAV_21.dgn

TIME: 7:31:00 PM

DATE: 12/18/2017



- NOTES:
1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
 2. REFER TO TRAFFIC CONTROL PLAN FOR CONSTRUCTION SEQUENCING AND INFORMATION.
 3. SEE SHEETS DT-P1 & DT-P2 FOR CURB RAMP DETAILS.
 4. AFTER MILLING IS COMPLETE, CONTRACTOR SHALL IDENTIFY ALL AREAS NEEDING FULL DEPTH REPAIR. ONCE TOWN HAS APPROVED EACH LOCATION, CONTRACTOR MAY PROCEED WITH WORK. ALL FULL DEPTH REPAIR SHALL BE COMPLETED PRIOR TO ASPHALT PAVING.
 5. CONTRACTOR SHALL GIVE TOWN 1 WEEK ADVANCE NOTICE PRIOR TO NEEDING APPROVAL ON FULL DEPTH REPAIR LOCATIONS.
 6. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE FULL DEPTH, MINIMUM PAVEMENT REMOVAL SIZE SHALL BE 4'X4' TO ALLOW FOR PAVEMENT DOWELS.
 7. MILLING/OVERLAY LIMITS AT DRIVEWAYS AND CROSS STREETS SHALL MATCH EXISTING CONCRETE EDGE UNLESS OTHERWISE STATED IN PLANS.
 8. ANY VALVES UNCOVERED DURING MILLING OPERATION SHALL BE BROUGHT TO THE TOWN'S ATTENTION FOR EVALUATION. ANY WORK NEEDED TO ADJUST OR REPAIR VALVES SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
 9. ANY VALVES DETERMINED TO BE OBSOLETE BY THE TOWN SHALL BE LOWERED TO MILLED ELEVATION THEN PAVED OVER WITH OVERLAY. ALL REQUIRED WORK SHALL BE SUBSIDIARY TO ITEM 1.08, ROADWAY UTILITY ADJUSTMENTS.
 10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
 11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.



LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

* USE 2 CONDUCTOR TYPE C CABLE IN 2" CONDUIT TO TIE BACK INTO TERMINAL ON ADJACENT TRAFFIC SIGNAL POLE. ALL PEDESTRIAN PUSH BUTTONS TO BE PROGRAMMABLE (VERBAL) APS TYPE. CONTRACTOR TO COORDINATE INSTALL & PROGRAMMING WITH TOWN ENGINEER.

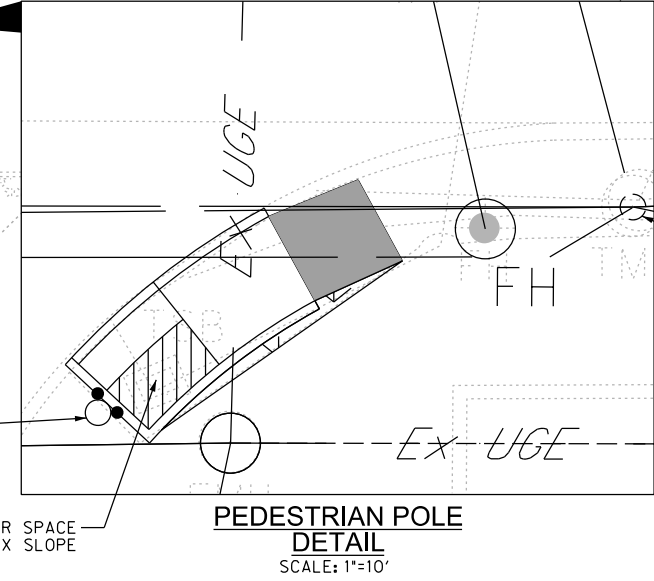
** REMOVAL SUBSIDIARY TO PROPOSED PEDESTRIAN POLE.



Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
BELT LINE ROAD OVERLAY PROJECT			
PAVING PLAN BELT LINE RD STA 90+00 TO STA 94+00			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A_PAV_21	P-21		



USER: ohi1299

OFFICE: RCH

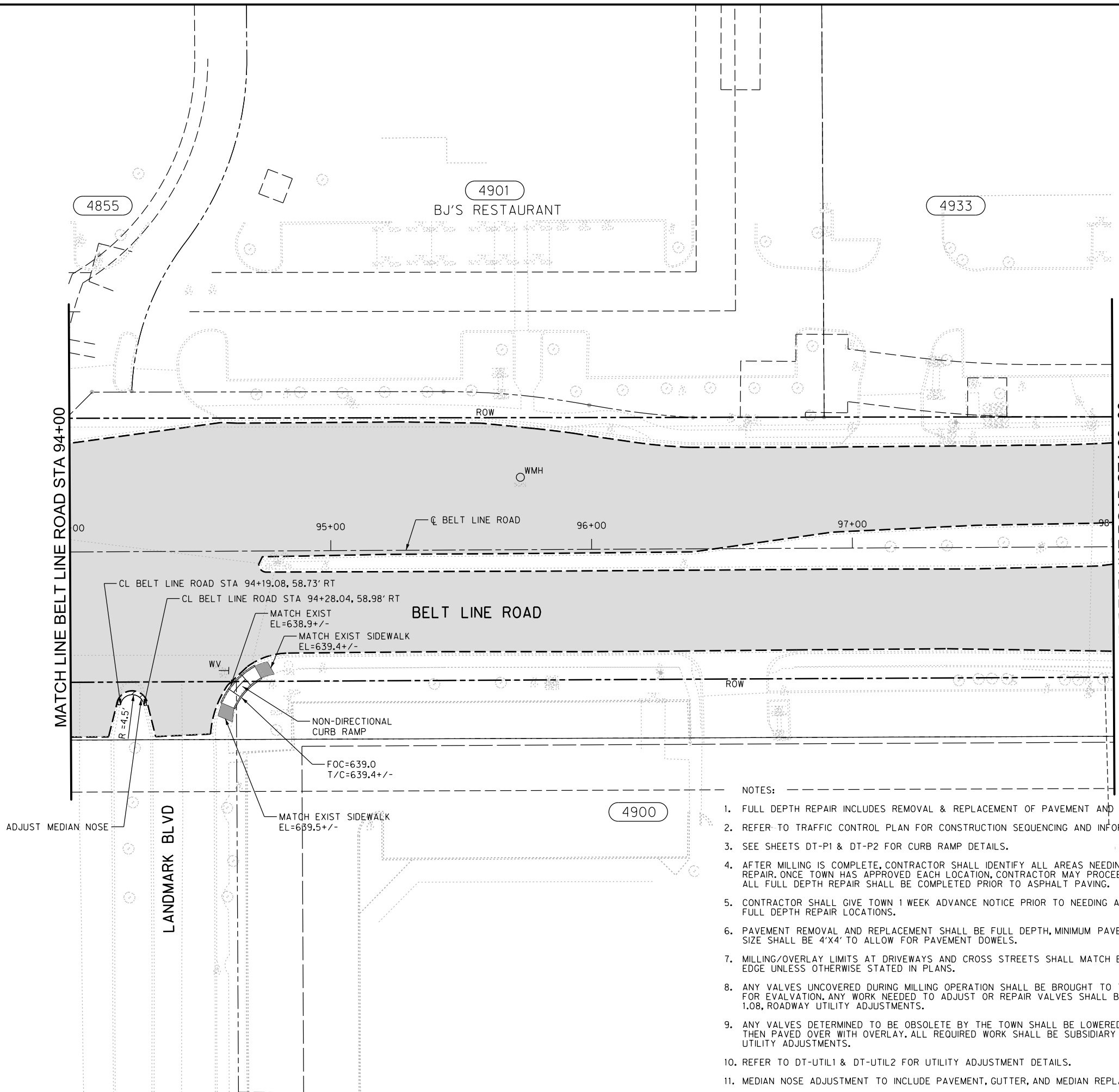
PROJECT # 29350

FILE: 29350A_PAV_22.dgn

TIME: 7:31:01 PM

DATE: 12/18/2017

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SCALE IN FEET



LEGEND

- 2' HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

SHEET 39 OF 97

MATCH LINE BELT LINE ROAD STA 94+00

MATCH LINE BELT LINE ROAD STA 98+00

CL BELT LINE ROAD STA 94+19.08, 58.73' RT

CL BELT LINE ROAD STA 94+28.04, 58.98' RT

MATCH EXIST EL=638.9+/-

MATCH EXIST SIDEWALK EL=639.4+/-

WV

NON-DIRECTIONAL CURB RAMP

FOC=639.0
T/C=639.4+/-

MATCH EXIST SIDEWALK EL=639.5+/-

ADJUST MEDIAN NOSE

LANDMARK BLVD

BELT LINE ROAD

ROW

CL BELT LINE ROAD

95+00 96+00 97+00 98+00

- NOTES:
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Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
ADDISON TOWN OF ADDISON DALLAS COUNTY, TEXAS			
BELT LINE ROAD OVERLAY PROJECT			
PAVING PLAN BELT LINE RD STA 94+00 TO STA 98+00			
<small>1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095</small>			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A_PAV_22	P-22		

USER: ohi1299

OFFICE: RCH

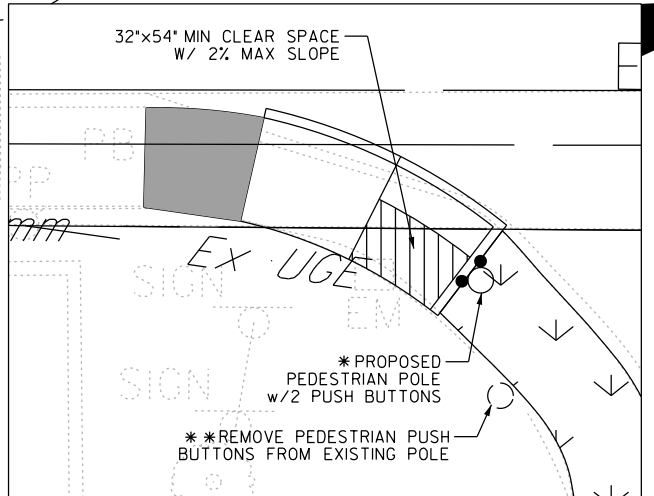
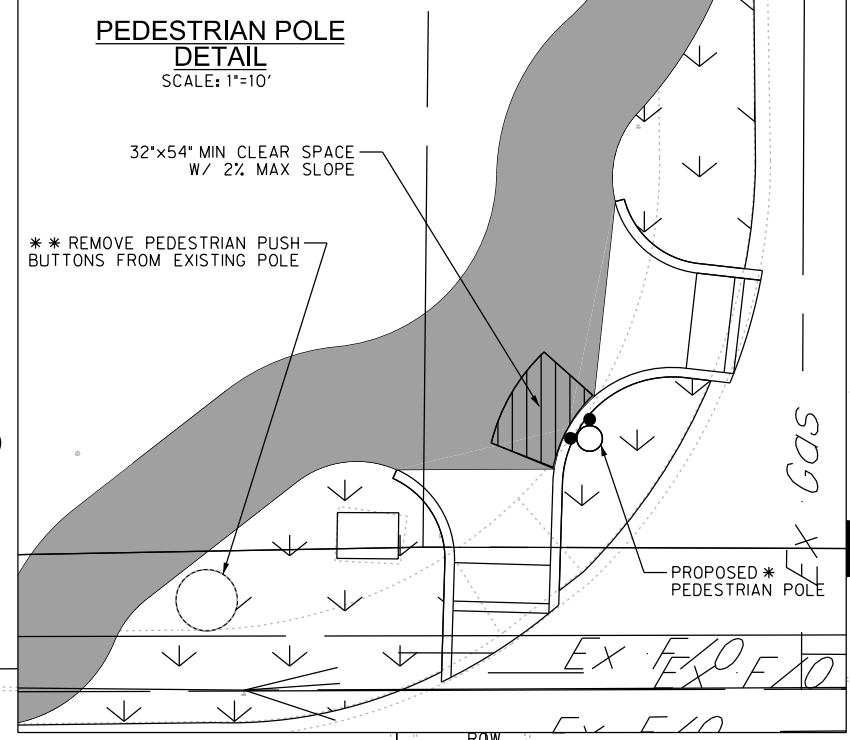
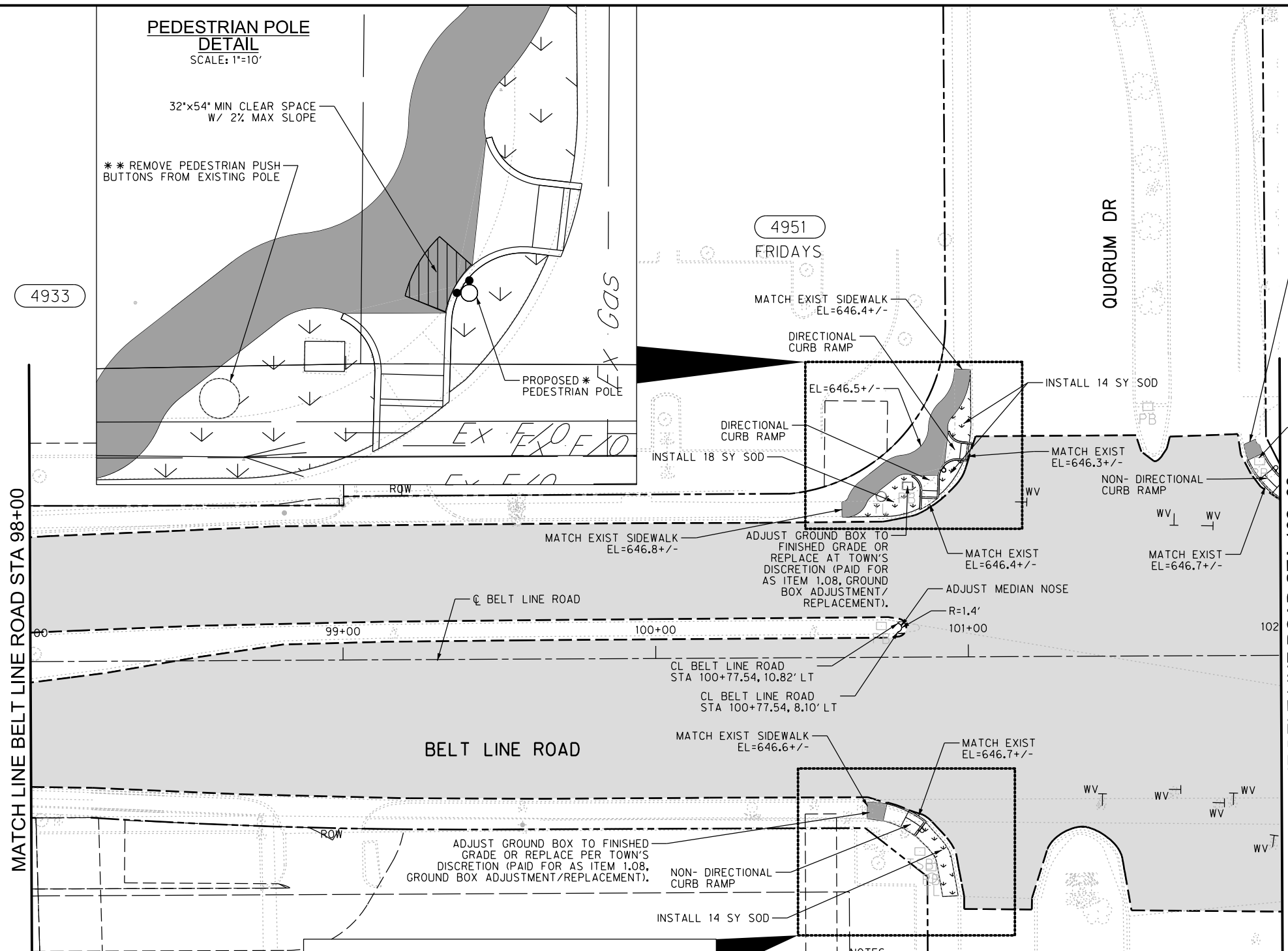
PROJECT # 29350

FILE: 29350A PAV 23.dwg

TIME: 7:31:04 PM

DATE: 12/18/2017

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SCALE IN FEET



LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

* USE 2 CONDUCTOR TYPE C CABLE IN 2" CONDUIT TO TIE BACK INTO TERMINAL ON ADJACENT TRAFFIC SIGNAL POLE. ALL PEDESTRIAN PUSH BUTTONS TO BE PROGRAMMABLE (VERBAL) APS TYPE, CONTRACTOR TO COORDINATE INSTALL & PROGRAMMING WITH TOWN ENGINEER.

** REMOVAL SUBSIDIARY TO PROPOSED PEDESTRIAN POLE.

- NOTES:
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Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE

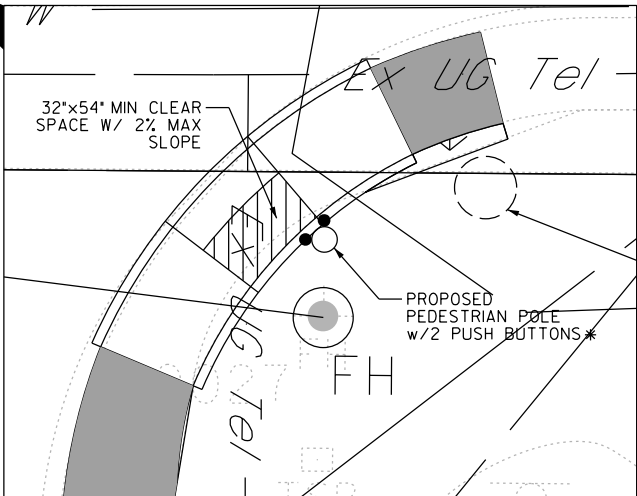
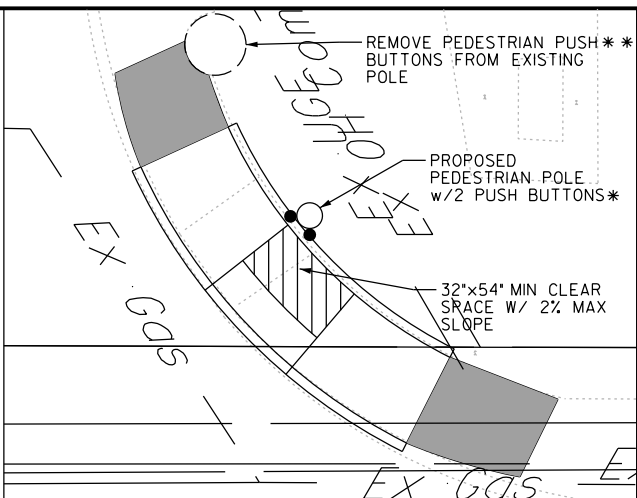
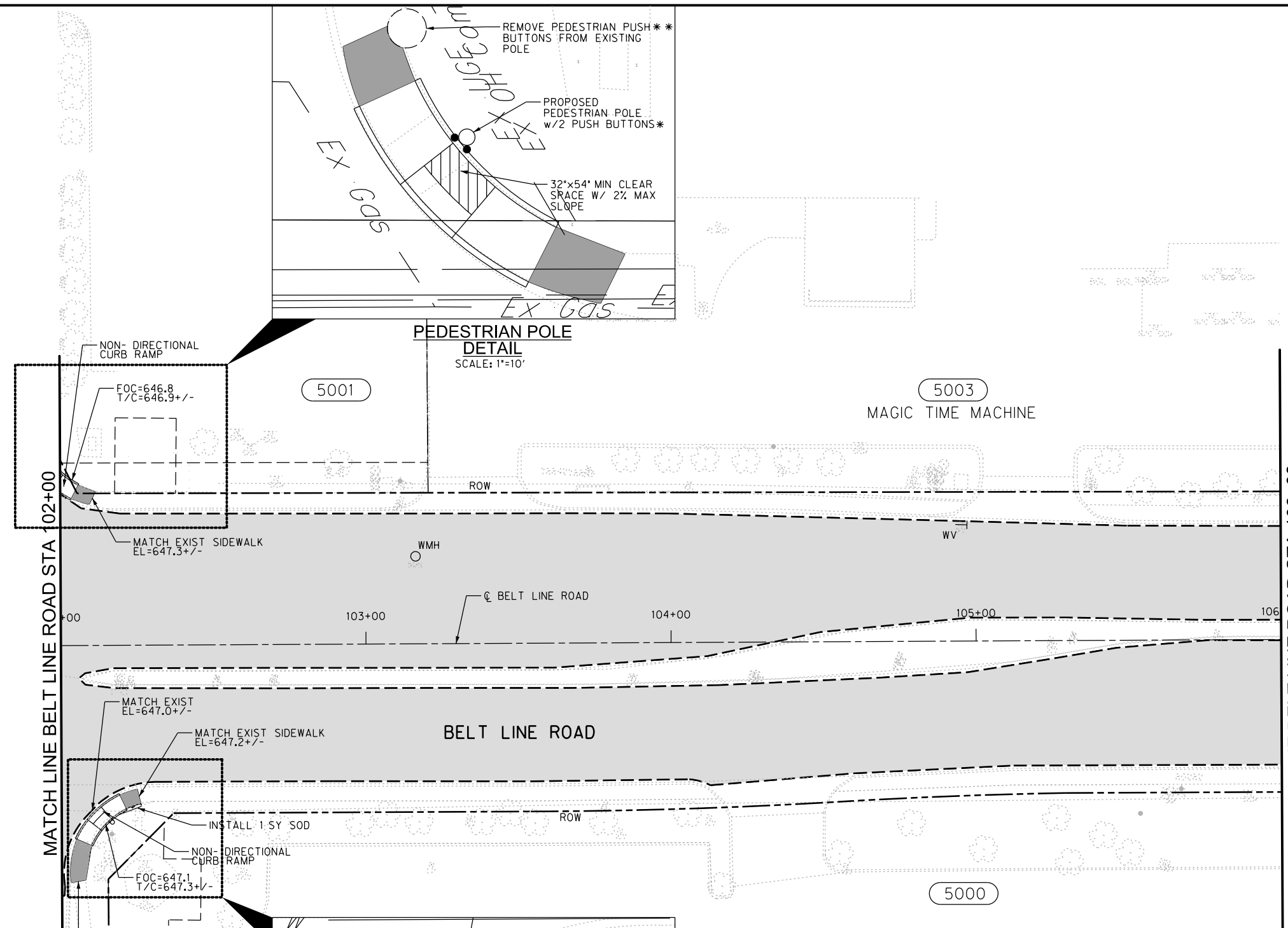
ADDISON TOWN OF ADDISON DALLAS COUNTY, TEXAS

BELT LINE ROAD OVERLAY PROJECT

PAVING PLAN
BELT LINE RD STA 98+00 TO STA 102+00

HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275
TEL (214) 346-6200 FAX (214) 739-0095

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426		HALFF	OCT. 2017	29350A PAV 23	P-23



LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
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** REMOVAL SUBSIDIARY TO PROPOSED PEDESTRIAN POLE.

NOTES:

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Melanie S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date
TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT PAVING PLAN BELT LINE RD STA 102+00 TO STA 106+00			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A PAV 24	P-24		

USER: ohi1299

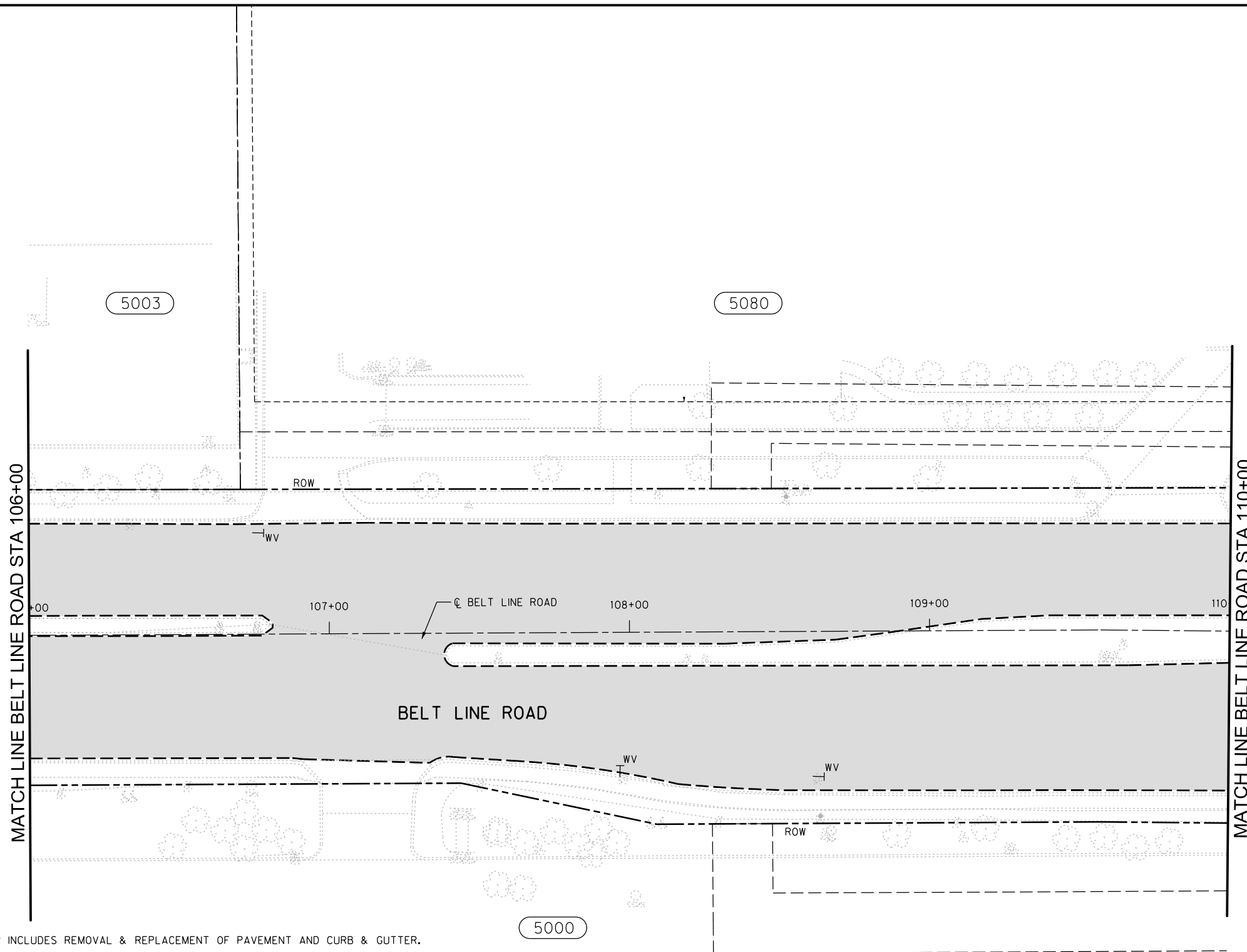
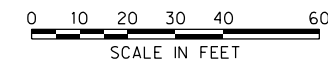
OFFICE: RCH

PROJECT # 29350

FILE: 29350A_PAV_25.dgn

TIME: 7:31:08 PM

DATE: 12/18/2017



LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

- NOTES:
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 10. REFER TO DT-UTIL1 & DT-UTIL2 FOR UTILITY ADJUSTMENT DETAILS.
 11. MEDIAN NOSE ADJUSTMENT TO INCLUDE PAVEMENT, GUTTER, AND MEDIAN REPLACEMENT.

SHEET 42 OF 97



Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
BELT LINE ROAD OVERLAY PROJECT			
PAVING PLAN BELT LINE RD STA 106+00 TO STA 110+00			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
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FILE	SHEET		
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USER: oml299

OFFICE: RCH

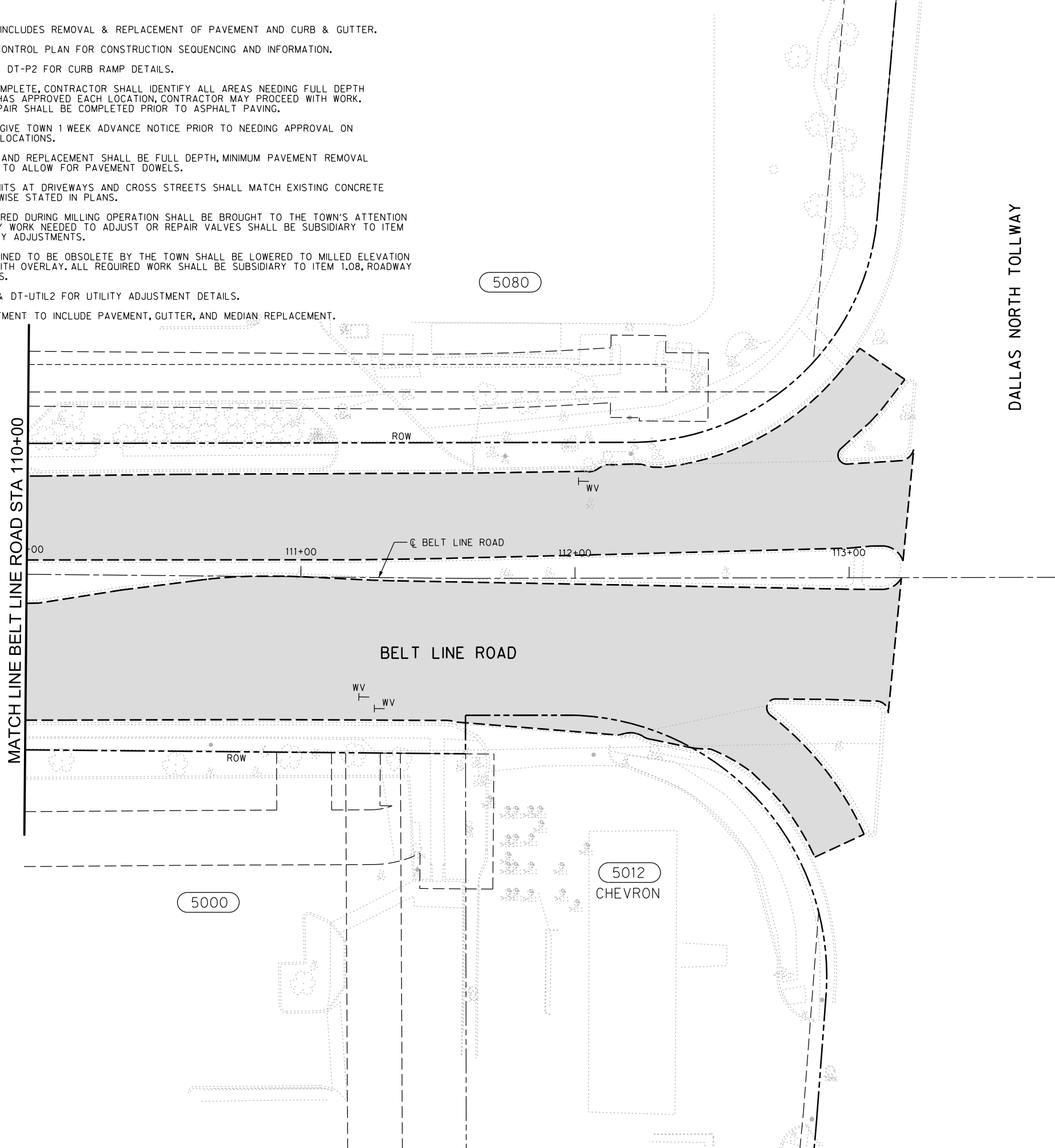
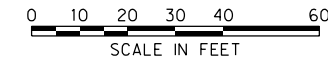
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FILE: 29350A_PAV_26.dgn

TIME: 7:31:10 PM

DATE: 12/18/2017

- NOTES:
1. FULL DEPTH REPAIR INCLUDES REMOVAL & REPLACEMENT OF PAVEMENT AND CURB & GUTTER.
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LEGEND

- 2" HMA OVERLAY
- PROPOSED SIDEWALK
- PAVEMENT REPAIR FOR MEDIAN NOSE ADJUSTMENT
- MILLING LIMITS
- TELEPHONE MANHOLE
- WASTEWATER MANHOLE
- WATER MANHOLE
- WATER VALVE
- PROPERTY ADDRESS
- UNABLE TO LOCATE
- ELECTRICAL MANHOLE - DO NOT ADJUST, CONTRACTOR SHALL WORK AROUND.

SHEET 43 OF 97



Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date
 TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE

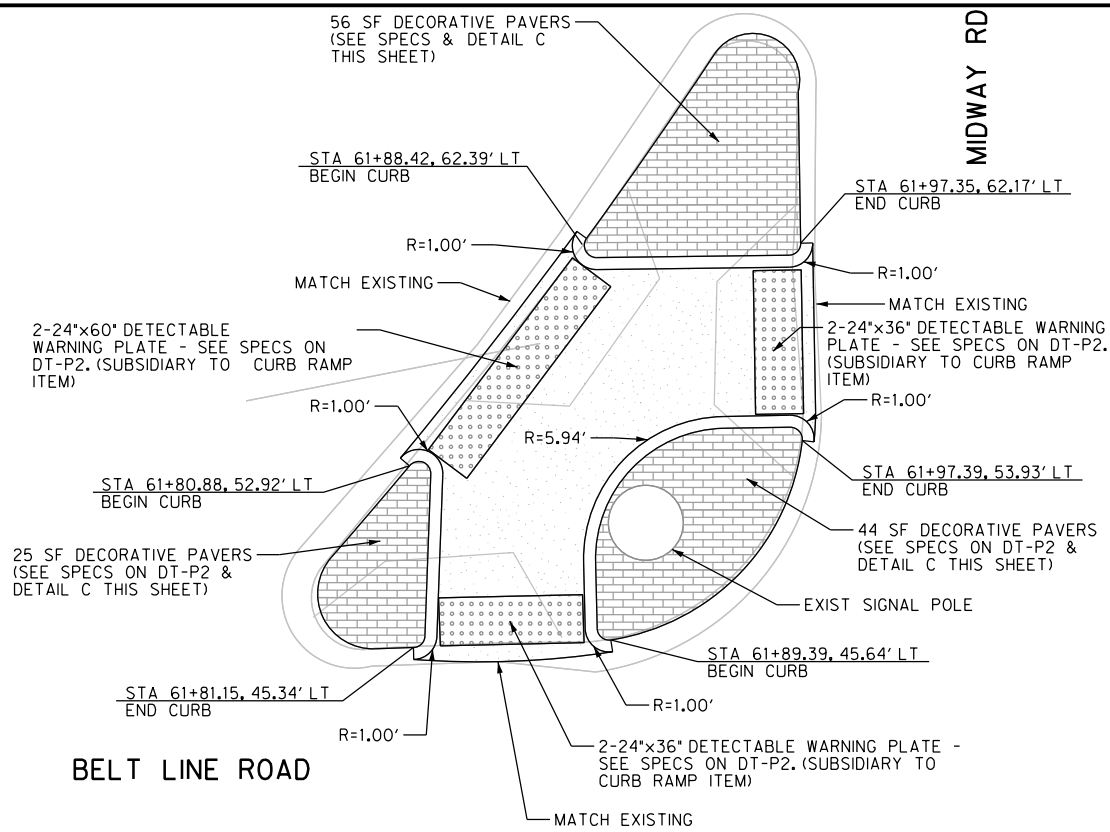
ADDISON TOWN OF ADDISON
 DALLAS COUNTY, TEXAS

BELT LINE ROAD
 OVERLAY PROJECT

PAVING PLAN
 BELT LINE RD STA 110+00 TO STA 113+00

HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275
 TEL (214) 346-6200 FAX (214) 739-0095

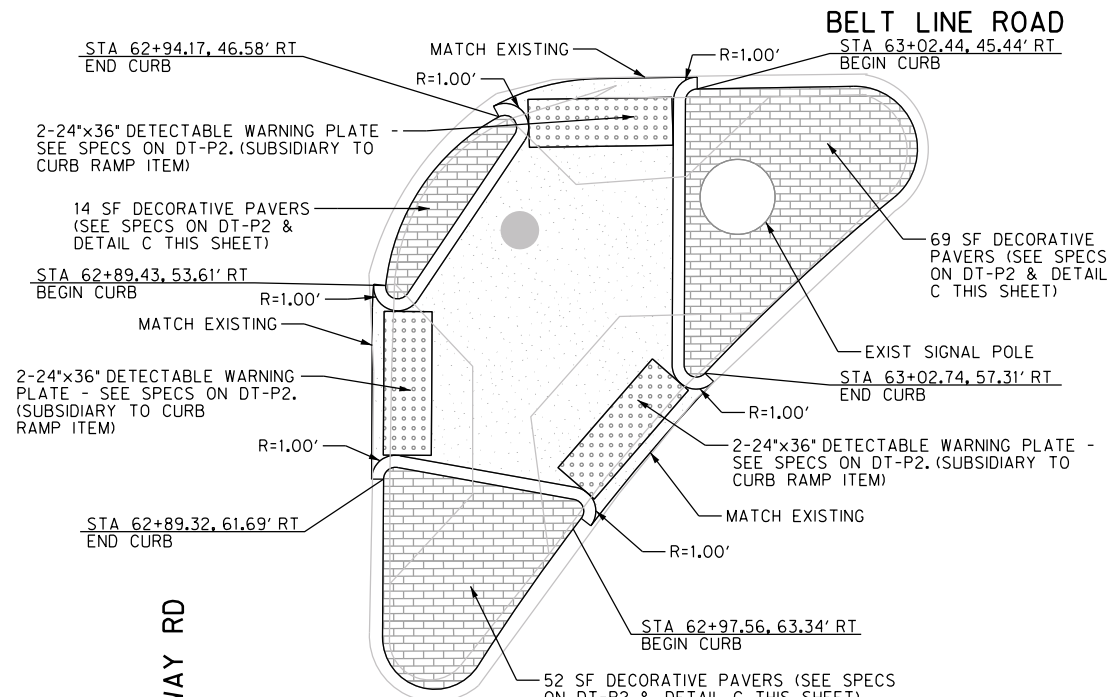
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33426	HALFF	HALFF	OCT. 2017	29350A_PAV_26	P-26



DETAIL A - ISLAND CURB RAMP

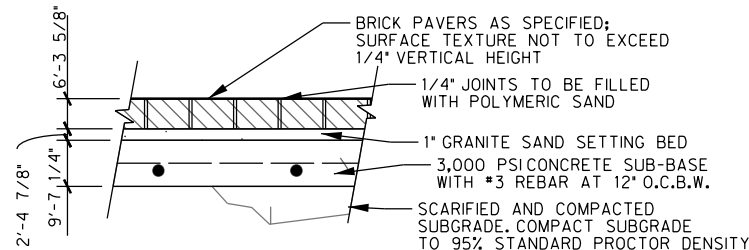
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* NOTE: ANY ADDITIONAL WORK OR MATERIALS BEYOND CURB RAMPS AND PAVERS SHALL BE SUBSIDIARY.



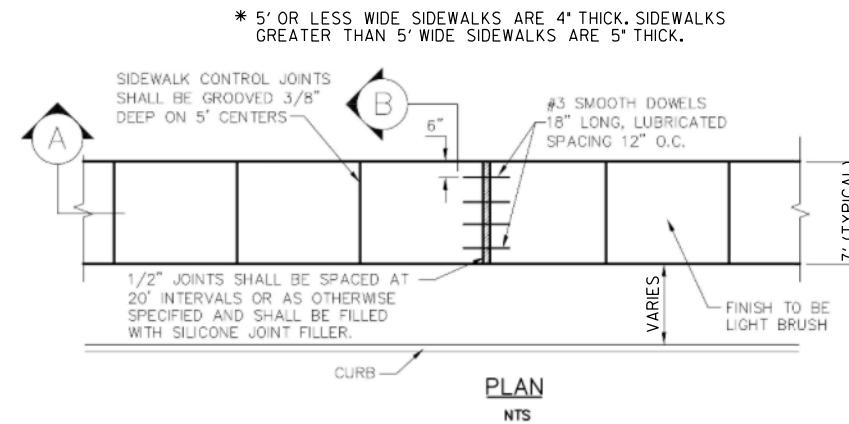
DETAIL B - ISLAND CURB RAMP

N.T.S.



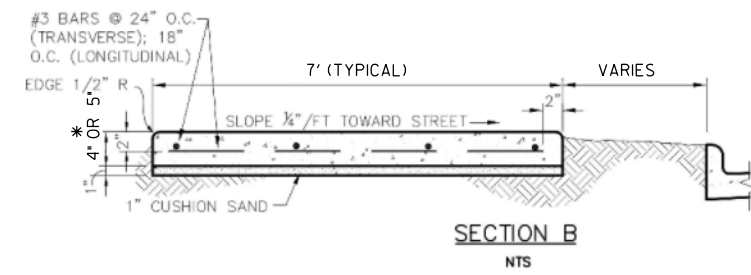
DETAIL C - DECORATIVE PAVERS

N.T.S.



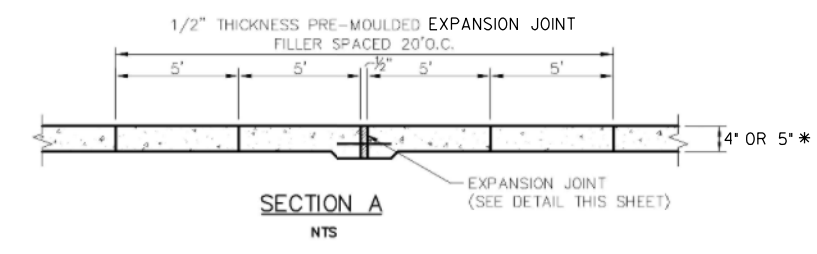
PLAN

NTS



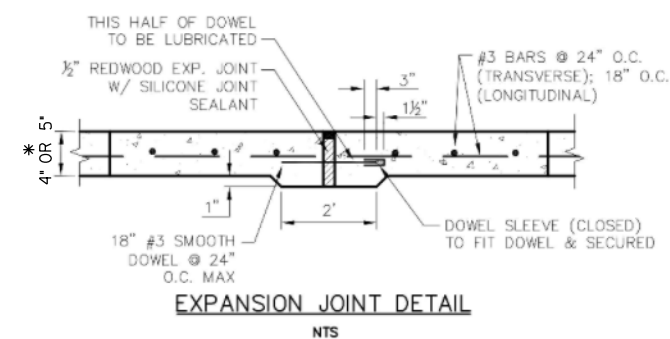
SECTION B

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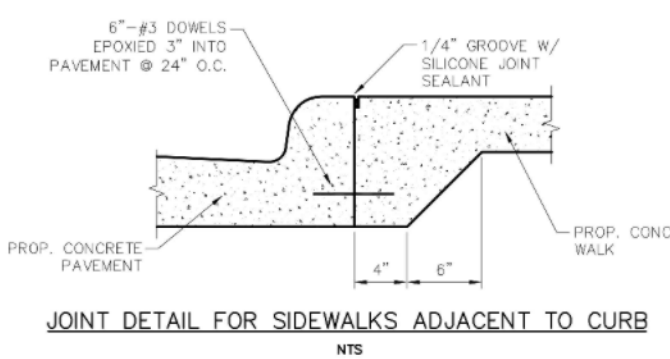
SECTION A

NTS



EXPANSION JOINT DETAIL

NTS



JOINT DETAIL FOR SIDEWALKS ADJACENT TO CURB

NTS

NOTE: WHEN CONCRETE WALK IS ADJACENT TO CURB, DEPTH OF EXPANSION JOINT MATERIAL SHALL BE SUFFICIENT TO PREVENT CONTACT BETWEEN WALK AND CURB.

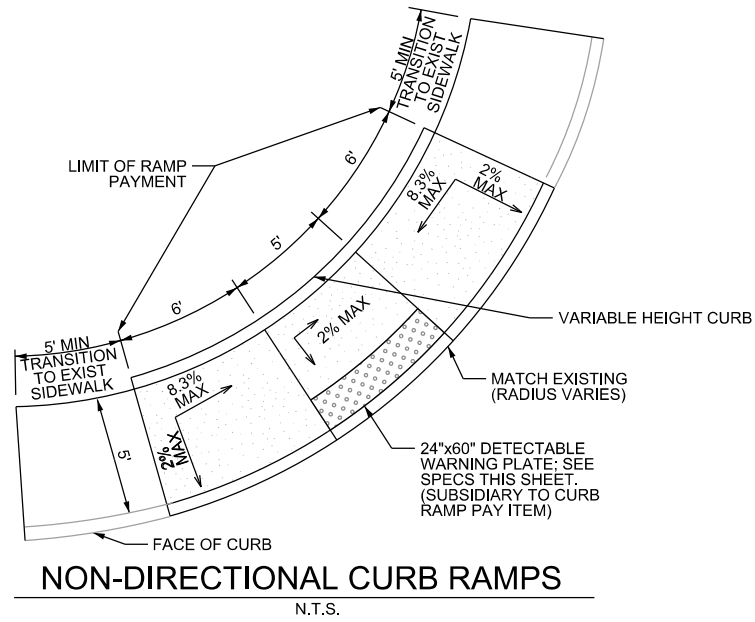


Melanee S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

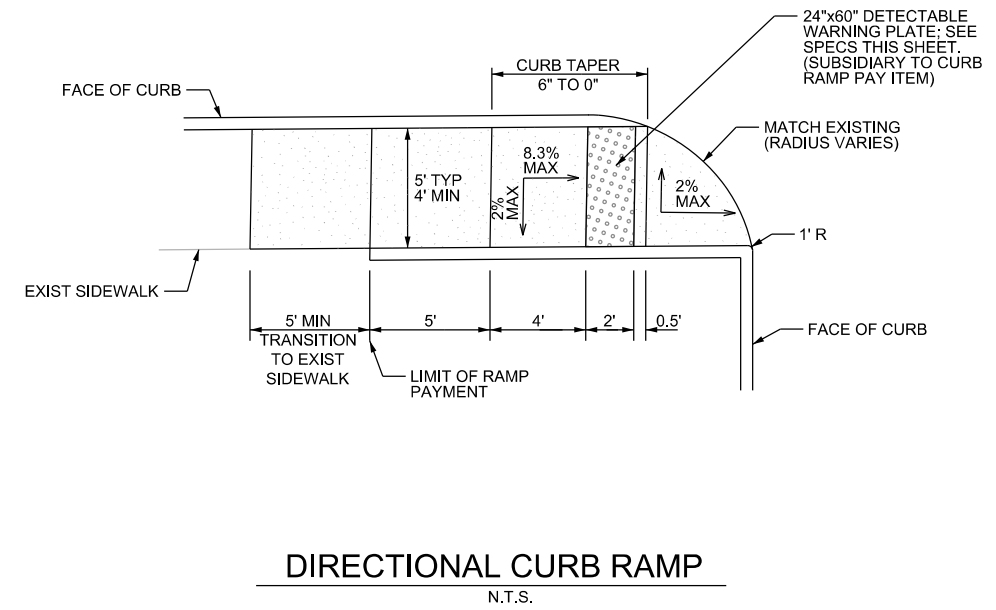
NO.						REVISION						BY						DATE																	
ADDISON												TOWN OF ADDISON DALLAS COUNTY, TEXAS																							
												BELT LINE ROAD OVERLAY PROJECT																							
PAVEMENT DETAILS																																			
PROJECT						DESIGN						DRAWN						DATE						FILE						SHEET					
33426						HALFF						HALFF						OCT. 2017						29530A DTPV 01						DT-P1					

HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275
TEL (214) 346-6200 FAX (214) 739-0095



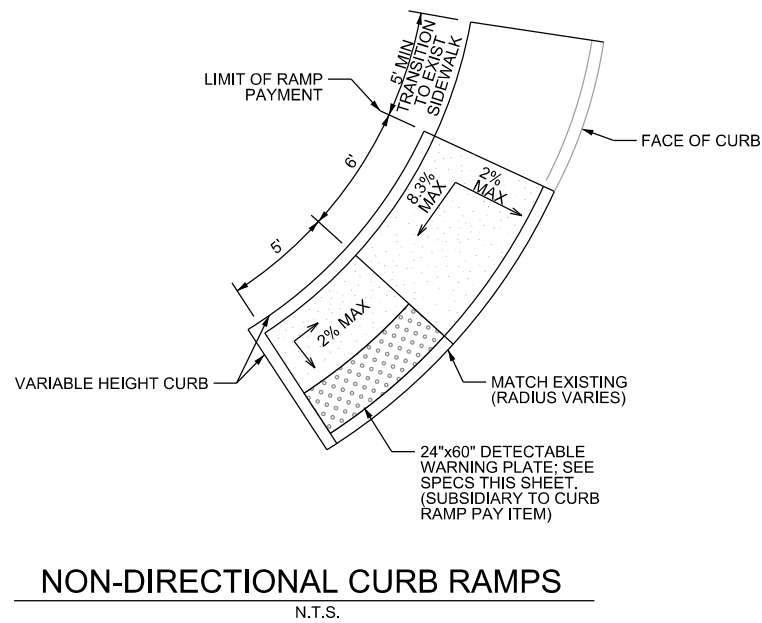
NON-DIRECTIONAL CURB RAMPS

N.T.S.



DIRECTIONAL CURB RAMP

N.T.S.



NON-DIRECTIONAL CURB RAMPS

N.T.S.

SPECIFICATIONS:

DETECTABLE WARNING PLATE

TYPE:	DESCRIPTION:
A6002436RADA	24"x36" RECTANGULAR PLATE
A6002448RADA	24"x48" RECTANGULAR PLATE
A6002460RADA	24"x60" RECTANGULAR PLATE

*LOCATION NOTED ON DRAWINGS

MANUFACTURER: ARMORCAST
-or approved equal-
COLOR: BRICK RED
INSTALL PER MANUFACTURER

SPECIFICATIONS:

TYPE: ENDICOTT BRICK PAVER
PATTERN: RUNNING BOND
SIZE: 4" x 8" x 2 5/8"
COLOR: MEDIUM IRONSPOT
(TO MATCH TOWN STANDARD)
CONTACT: ENDICOTT CLAY PRODUCTS CO.
402-729-3315; www.endicott.com



Melanie S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
PAVEMENT DETAILS					
HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29530A DTPV 02	DT-P2

USER: oml299

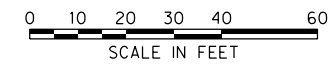
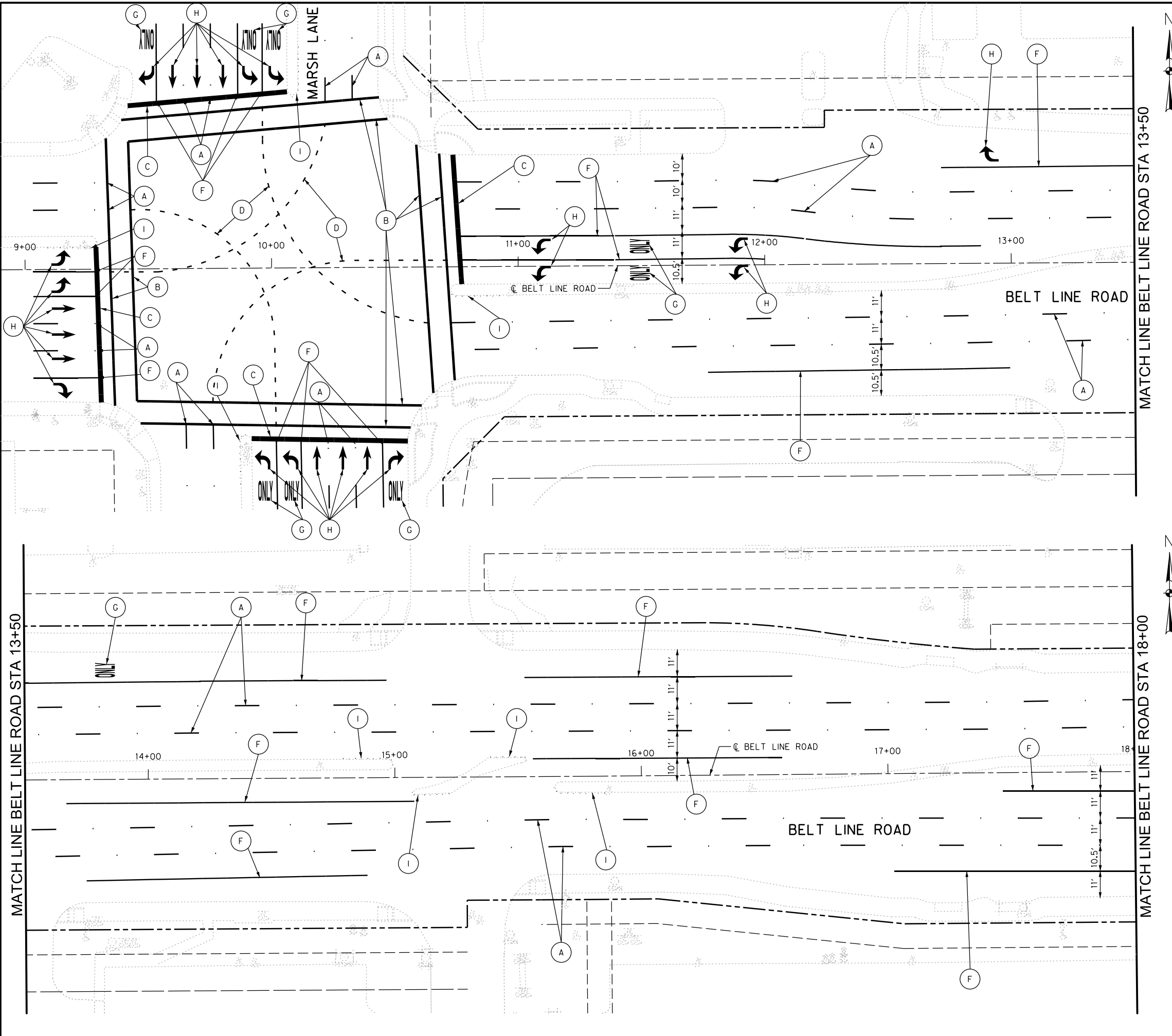
OFFICE: RCH

PROJECT # 29350

FILE: 29350A_SNP 01.dgn

TIME: 4:40:24 PM

DATE: 12/18/2017



LEGEND

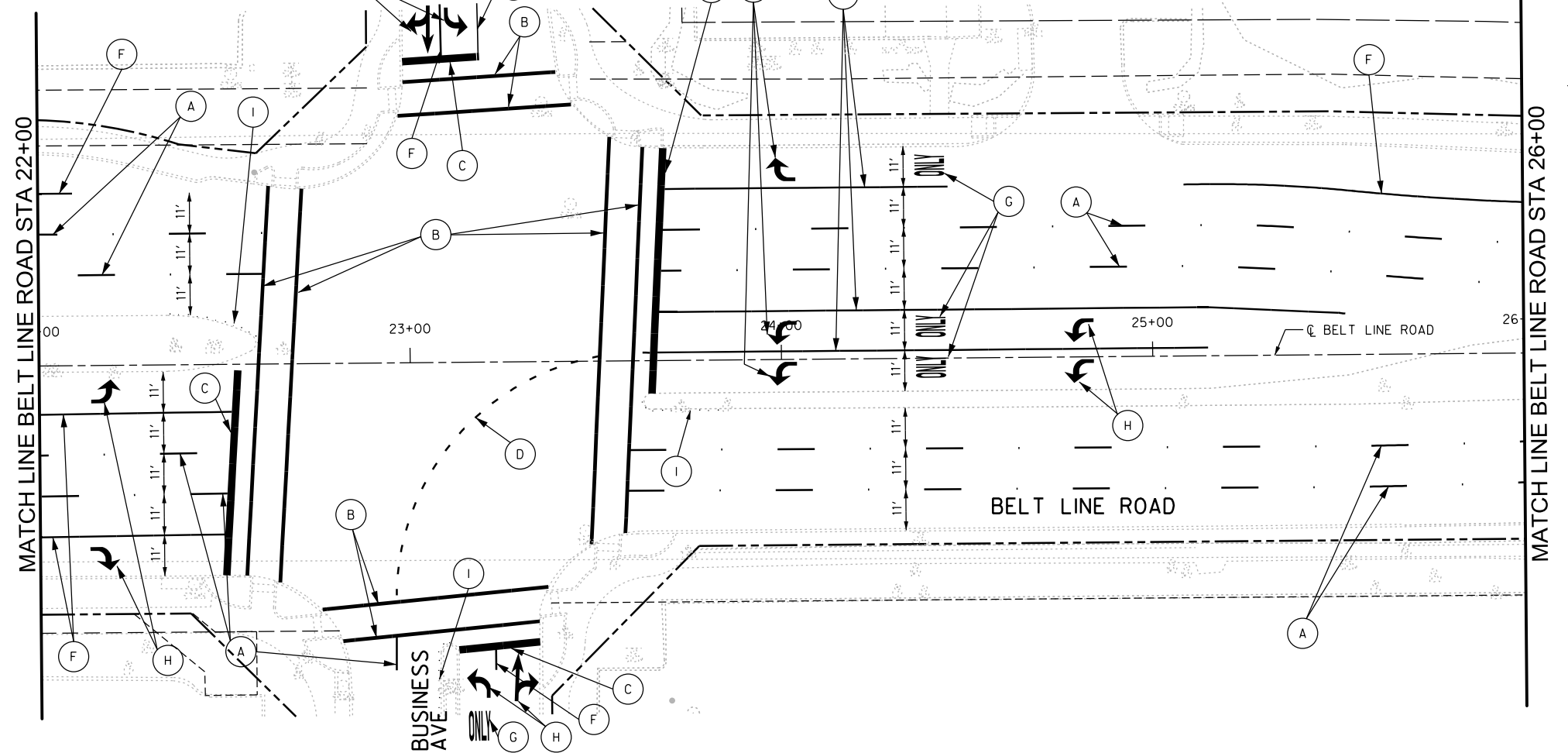
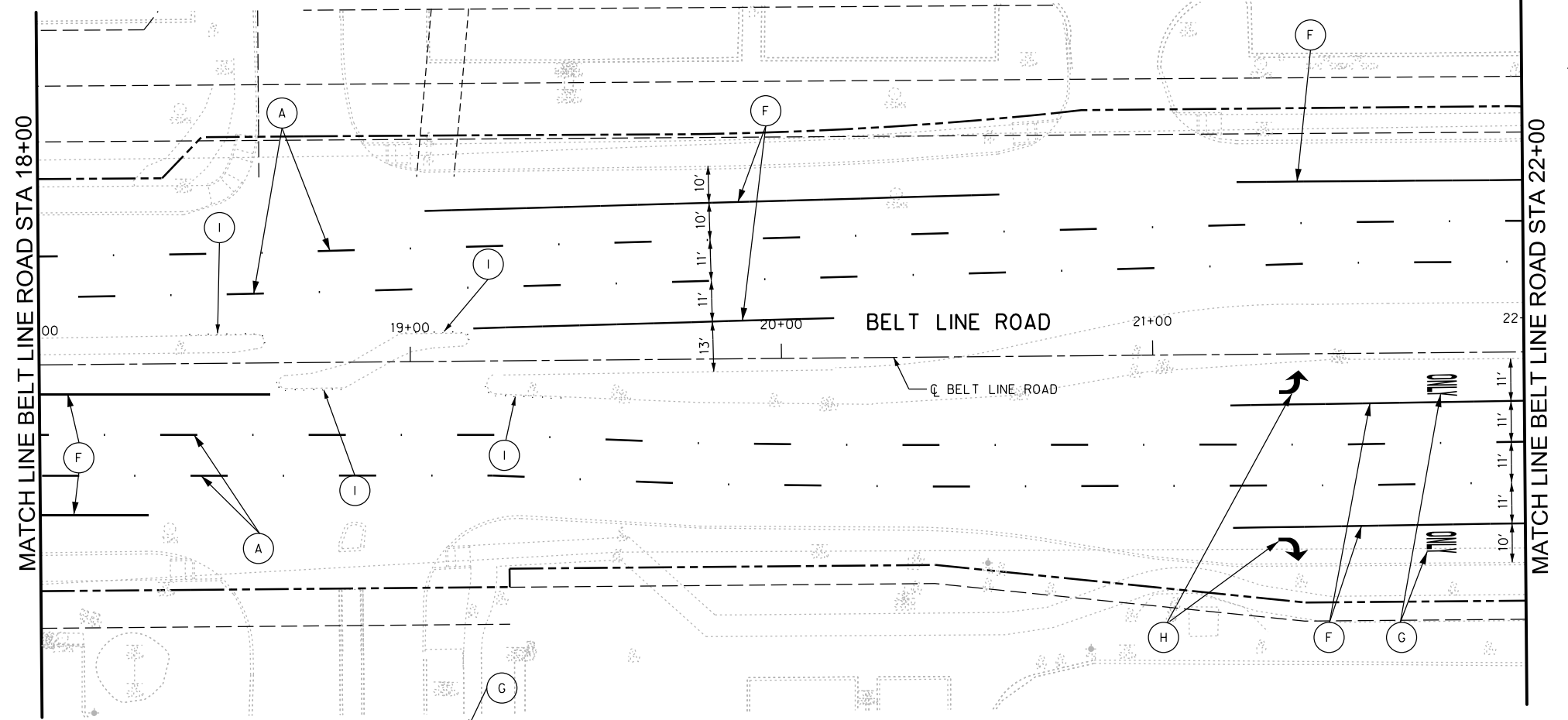
- (A) 4" WHITE BROKEN STRIPE 10' IN LENGTH WITH 30' GAPS SUPPLEMENTED BY TY-II-CR BUTTONS CENTERED ON GAP. CLEAR SIDE OF BUTTON SHALL FACE TRAFFIC FLOW. (SEE DETAIL 'A' ON SHEET DT-PM)
- (B) 12" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (C) 24" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (D) 4" WHITE DOT REFLECTORIZED PAVEMENT MARKING ('PUPPY TRACKS') (SEE DETAIL 'F' ON SHEET DT-PM)
- (E) DOUBLE 4" YELLOW SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED, BY TY-II-A-A BUTTONS. (SEE DETAIL 'B' ON SHEET DT-PM)
- (F) 8" WHITE SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED BY TY I-C BUTTONS (SEE DETAIL 'G' ON SHEET DT-PM)
- (G) WHITE REFLECTORIZED PAVEMENT MARKING WORD
- (H) WHITE REFLECTORIZED PAVEMENT MARKING ARROW
- (I) 4" ROUND NON-REFLECTIVE YELLOW MARKER AND YELLOW R.P.M. TYPE II-A-A (SEE DETAIL 'C' ON SHEET DT-PM)
- (J) WHITE REFLECTORIZED YIELD LINE (SEE DETAIL 'D' ON SHEET DT-PM)
- (K) WHITE REFLECTORIZED PAVEMENT MARKING FOR RAILROAD CROSSING (SEE SHEET RCD(1)-16)

NOTES:
 ALL SIGNING AND STRIPING SHALL COMPLY WITH THE LATEST VERSION OF T MUTCD.



Melane S. Cleavelin 12/19/17
 Signature of Registrant Date
 TBPE FIRM REGISTRATION NUMBER: 312

NO.		REVISION		BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT STRIPING & SIGNAGE LAYOUT BELT LINE RD STA 10+00 TO STA 18+00					
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_SNP 01	PM-1



LEGEND

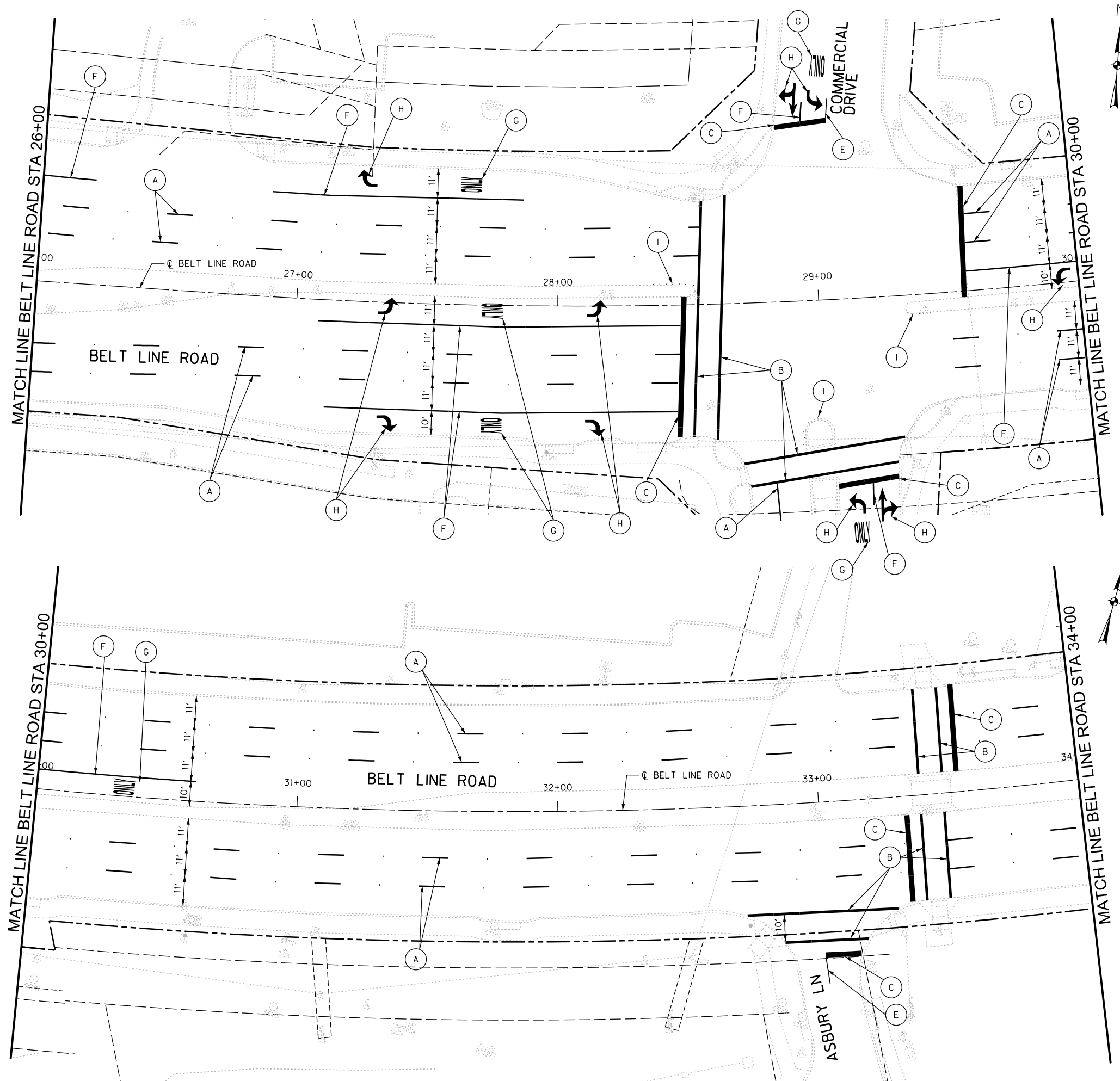
- (A) 4" WHITE BROKEN STRIPE 10' IN LENGTH WITH 30' GAPS SUPPLEMENTED BY TY-II-CR BUTTONS CENTERED ON GAP. CLEAR SIDE OF BUTTON SHALL FACE TRAFFIC FLOW. (SEE DETAIL 'A' ON SHEET DT-PM)
- (B) 12" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (C) 24" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (D) 4" WHITE DOT REFLECTORIZED PAVEMENT MARKING ('PUPPY TRACKS') (SEE DETAIL 'F' ON SHEET DT-PM)
- (E) DOUBLE 4" YELLOW SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED BY TY-II-A-A BUTTONS. (SEE DETAIL 'B' ON SHEET DT-PM)
- (F) 8" WHITE SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED BY TY I-C BUTTONS (SEE DETAIL 'G' ON SHEET DT-PM)
- (G) WHITE REFLECTORIZED PAVEMENT MARKING WORD
- (H) WHITE REFLECTORIZED PAVEMENT MARKING ARROW
- (I) 4" ROUND NON-REFLECTIVE YELLOW MARKER AND YELLOW R.P.M. TYPE II-A-A (SEE DETAIL 'C' ON SHEET DT-PM)
- (J) WHITE REFLECTORIZED YIELD LINE (SEE DETAIL 'D' ON SHEET DT-PM)
- (K) WHITE REFLECTORIZED PAVEMENT MARKING FOR RAILROAD CROSSING (SEE SHEET RCD(1)-16)

NOTES:
ALL SIGNING AND STRIPING SHALL COMPLY WITH THE LATEST VERSION OF TMTUCD.



Melane S. Cleavelin 12/19/17
 Signature of Registrant Date
 TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT STRIPING & SIGNAGE LAYOUT BELT LINE RD STA 18+00 TO STA 26+00			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A_SNP.M 02	PM-2		

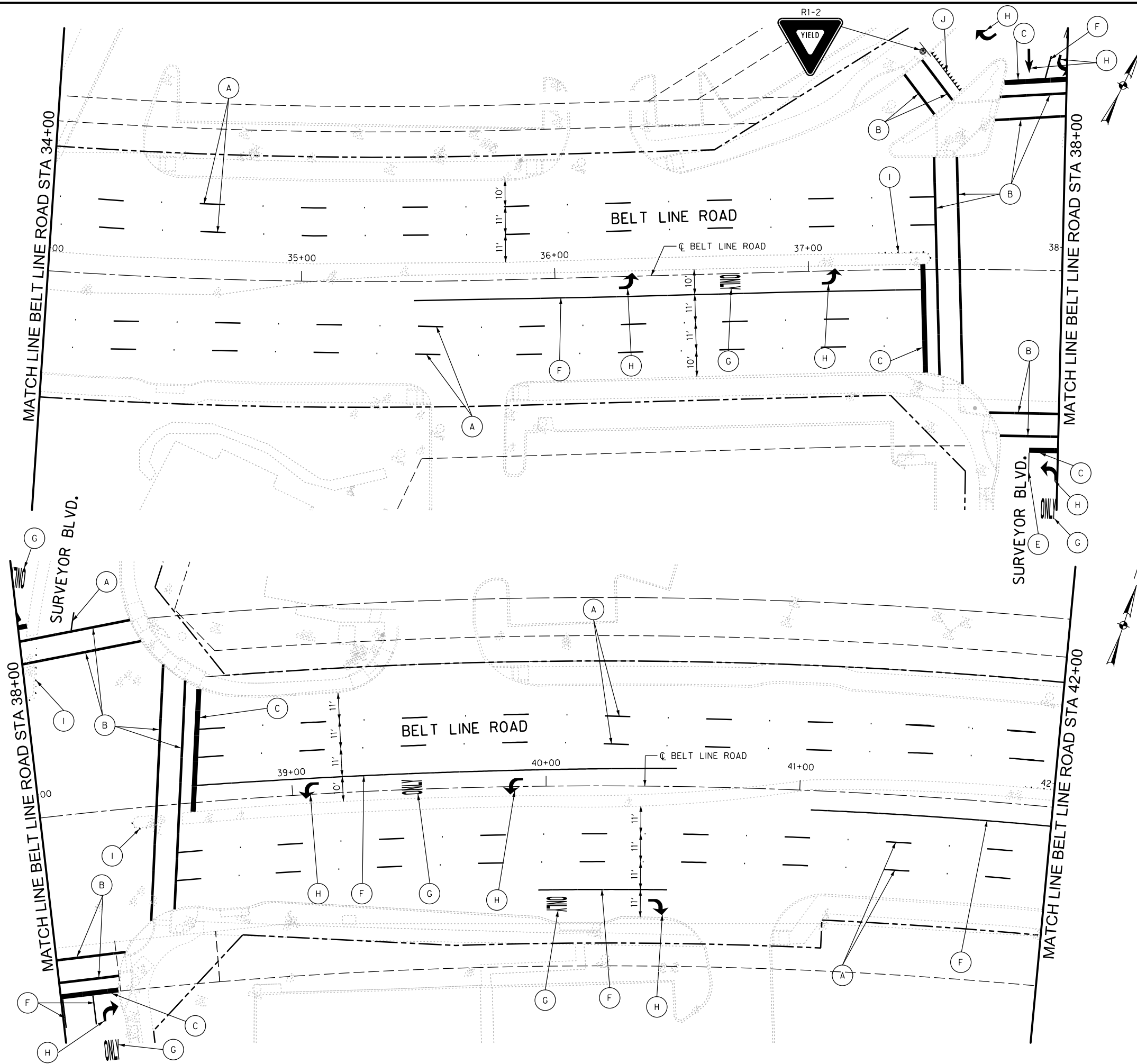


- LEGEND**
- (A) 4" WHITE BROKEN STRIPE 10' IN LENGTH WITH 30' GAPS SUPPLEMENTED BY TY-II-CR BUTTONS CENTERED ON GAP. CLEAR SIDE OF BUTTON SHALL FACE TRAFFIC FLOW. (SEE DETAIL 'A' ON SHEET DT-PM)
 - (B) 12" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
 - (C) 24" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
 - (D) 4" WHITE DOT REFLECTORIZED PAVEMENT MARKING ('PUPPY TRACKS') (SEE DETAIL 'F' ON SHEET DT-PM)
 - (E) DOUBLE 4" YELLOW SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED, BY TY-II-A-A BUTTONS. (SEE DETAIL 'B' ON SHEET DT-PM)
 - (F) 8" WHITE SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED BY TY I-C BUTTONS (SEE DETAIL 'G' ON SHEET DT-PM)
 - (G) WHITE REFLECTORIZED PAVEMENT MARKING WORD
 - (H) WHITE REFLECTORIZED PAVEMENT MARKING ARROW
 - (I) 4" ROUND NON-REFLECTIVE YELLOW MARKER AND YELLOW R.P.M. TYPE II-A-A (SEE DETAIL 'C' ON SHEET DT-PM)
 - (J) WHITE REFLECTORIZED YIELD LINE (SEE DETAIL 'D' ON SHEET DT-PM)
 - (K) WHITE REFLECTORIZED PAVEMENT MARKING FOR RAILROAD CROSSING (SEE SHEET RCD(1)-16)
- NOTES:**
ALL SIGNING AND STRIPING SHALL COMPLY WITH THE LATEST VERSION OF T MUTCD.



Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date
 TBPE FIRM REGISTRATION NUMBER: 312

NO.		REVISION		BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
STRIPING & SIGNAGE LAYOUT BELT LINE RD STA 26+00 TO STA 34+00					
HALFF		1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A SNPM 03	PM-3



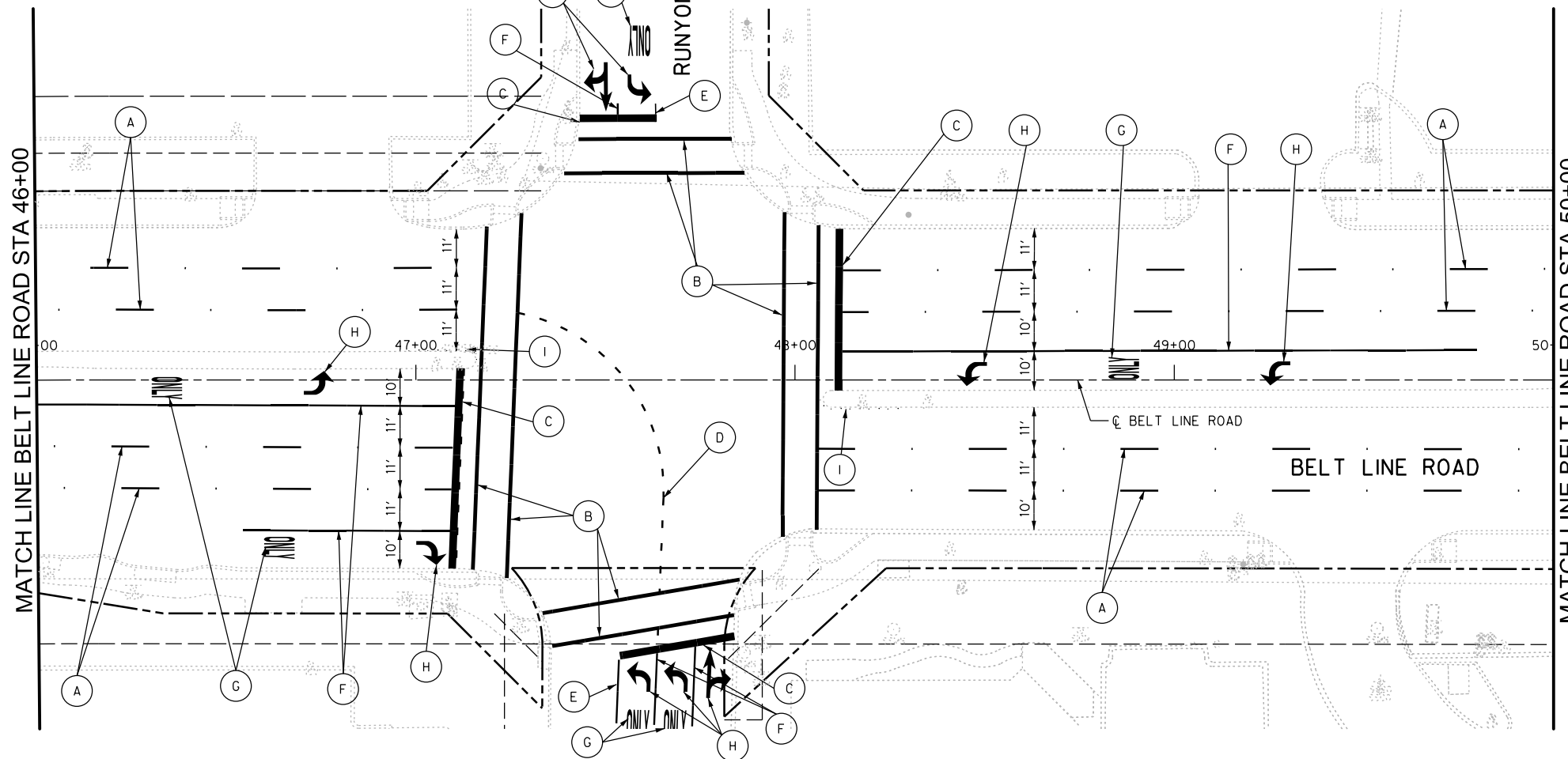
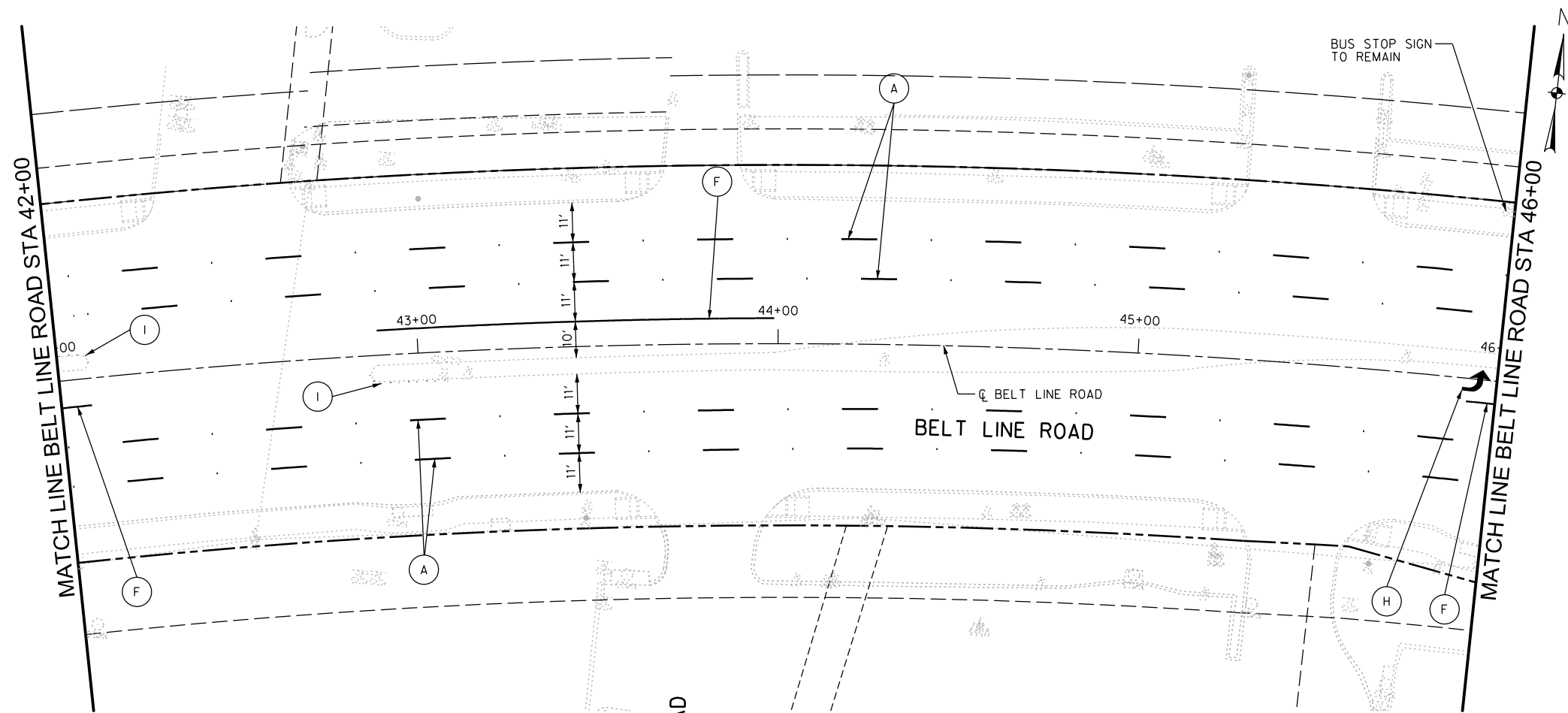
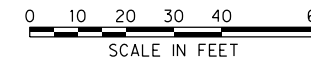
- LEGEND**
- (A) 4" WHITE BROKEN STRIPE 10' IN LENGTH WITH 30' GAPS SUPPLEMENTED BY TY-II-CR BUTTONS CENTERED ON GAP. CLEAR SIDE OF BUTTON SHALL FACE TRAFFIC FLOW. (SEE DETAIL 'A' ON SHEET DT-PM)
 - (B) 12" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
 - (C) 24" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
 - (D) 4" WHITE DOT REFLECTORIZED PAVEMENT MARKING ('PUPPY TRACKS') (SEE DETAIL 'F' ON SHEET DT-PM)
 - (E) DOUBLE 4" YELLOW SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED, BY TY-II-A-A BUTTONS. (SEE DETAIL 'B' ON SHEET DT-PM)
 - (F) 8" WHITE SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED BY TY I-C BUTTONS (SEE DETAIL 'G' ON SHEET DT-PM)
 - (G) WHITE REFLECTORIZED PAVEMENT MARKING WORD
 - (H) WHITE REFLECTORIZED PAVEMENT MARKING ARROW
 - (I) 4" ROUND NON-REFLECTIVE YELLOW MARKER AND YELLOW R.P.M. TYPE II-A-A (SEE DETAIL 'C' ON SHEET DT-PM)
 - (J) WHITE REFLECTORIZED YIELD LINE (SEE DETAIL 'D' ON SHEET DT-PM)
 - (K) WHITE REFLECTORIZED PAVEMENT MARKING FOR RAILROAD CROSSING (SEE SHEET RCD(1)-16)

NOTES:
ALL SIGNING AND STRIPING SHALL COMPLY WITH THE LATEST VERSION OF TMTUCD.



Melanee S. Cleavelin, P.E., 12/19/17
Signature of Registrant Date
TBPE FIRM REGISTRATION NUMBER: 312

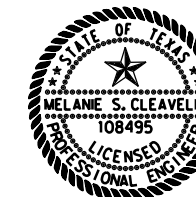
NO.		REVISION		BY		DATE	
TOWN OF ADDISON DALLAS COUNTY, TEXAS							
BELT LINE ROAD OVERLAY PROJECT							
STRIPING & SIGNAGE LAYOUT BELT LINE RD STA 34+00 TO STA 42+00							
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095							
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET		
33426	HALFF	HALFF	OCT. 2017	29350A_SNP_M_04	PM-4		



LEGEND

- (A) 4" WHITE BROKEN STRIPE 10' IN LENGTH WITH 30' GAPS SUPPLEMENTED BY TY-II-CR BUTTONS CENTERED ON GAP. CLEAR SIDE OF BUTTON SHALL FACE TRAFFIC FLOW. (SEE DETAIL 'A' ON SHEET DT-PM)
- (B) 12" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (C) 24" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (D) 4" WHITE DOT REFLECTORIZED PAVEMENT MARKING ('PUPPY TRACKS') (SEE DETAIL 'F' ON SHEET DT-PM)
- (E) DOUBLE 4" YELLOW SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED, BY TY-II-A-A BUTTONS. (SEE DETAIL 'B' ON SHEET DT-PM)
- (F) 8" WHITE SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED BY TY I-C BUTTONS (SEE DETAIL 'G' ON SHEET DT-PM)
- (G) WHITE REFLECTORIZED PAVEMENT MARKING WORD
- (H) WHITE REFLECTORIZED PAVEMENT MARKING ARROW
- (I) 4" ROUND NON-REFLECTIVE YELLOW MARKER AND YELLOW R.P.M. TYPE II-A-A (SEE DETAIL 'C' ON SHEET DT-PM)
- (J) WHITE REFLECTORIZED YIELD LINE (SEE DETAIL 'D' ON SHEET DT-PM)
- (K) WHITE REFLECTORIZED PAVEMENT MARKING FOR RAILROAD CROSSING (SEE SHEET RCD(1)-16)

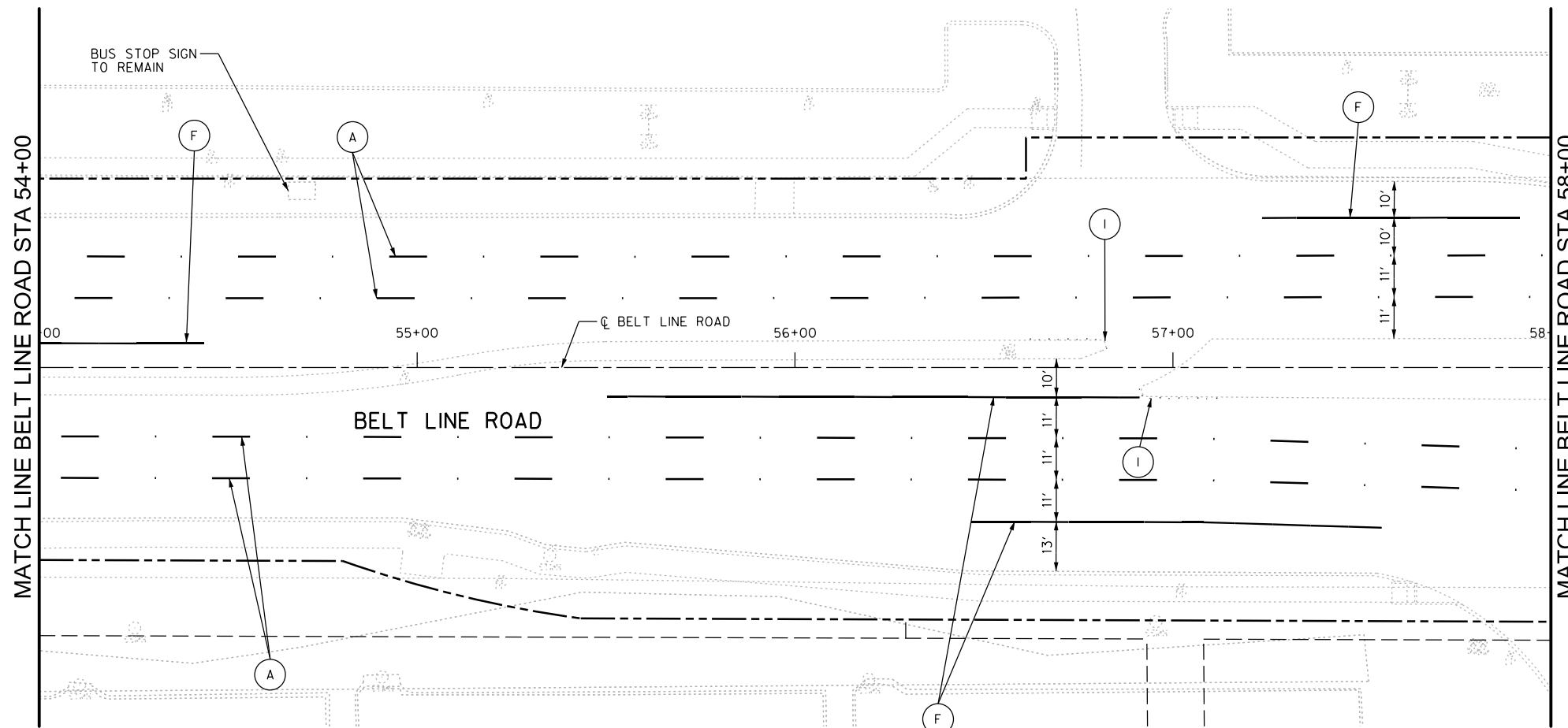
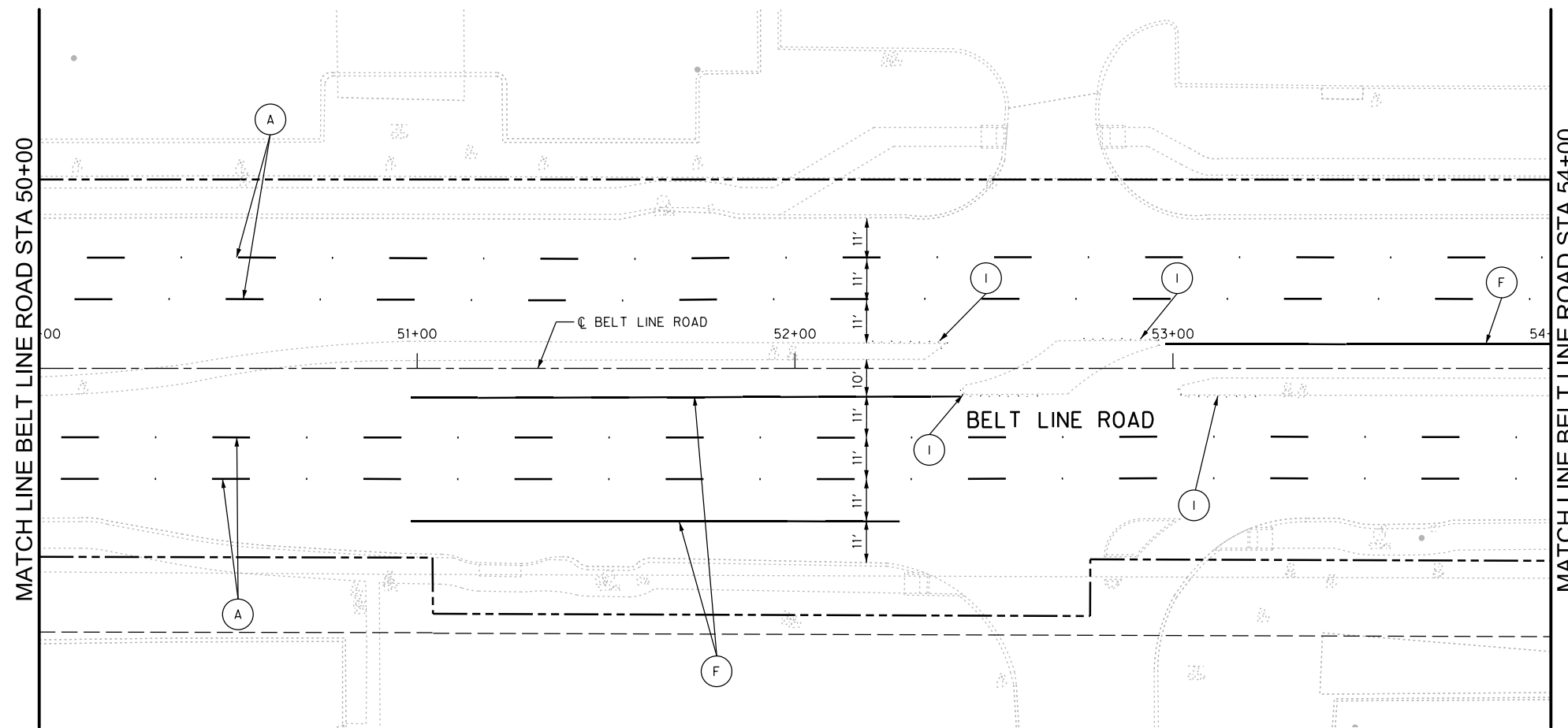
NOTES:
 ALL SIGNING AND STRIPING SHALL COMPLY WITH THE LATEST VERSION OF T MUTCD.



Melanie S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
STRIPING & SIGNAGE LAYOUT BELT LINE RD STA 42+00 TO STA 50+00					
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_SNP_05	PM-5



LEGEND



- (A) 4" WHITE BROKEN STRIPE 10' IN LENGTH WITH 30' GAPS SUPPLEMENTED BY TY-II-CR BUTTONS CENTERED ON GAP. CLEAR SIDE OF BUTTON SHALL FACE TRAFFIC FLOW. (SEE DETAIL 'A' ON SHEET DT-PM)
- (B) 12" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (C) 24" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (D) 4" WHITE DOT REFLECTORIZED PAVEMENT MARKING ('PUPPY TRACKS') (SEE DETAIL 'F' ON SHEET DT-PM)
- (E) DOUBLE 4" YELLOW SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED, BY TY-II-A-A BUTTONS. (SEE DETAIL 'B' ON SHEET DT-PM)
- (F) 8" WHITE SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED BY TY I-C BUTTONS (SEE DETAIL 'G' ON SHEET DT-PM)
- (G) WHITE REFLECTORIZED PAVEMENT MARKING WORD
- (H) WHITE REFLECTORIZED PAVEMENT MARKING ARROW
- (I) 4" ROUND NON-REFLECTIVE YELLOW MARKER AND YELLOW R.P.M. TYPE II-A-A (SEE DETAIL 'C' ON SHEET DT-PM)
- (J) WHITE REFLECTORIZED YIELD LINE (SEE DETAIL 'D' ON SHEET DT-PM)
- (K) WHITE REFLECTORIZED PAVEMENT MARKING FOR RAILROAD CROSSING (SEE SHEET RCD(1)-16)

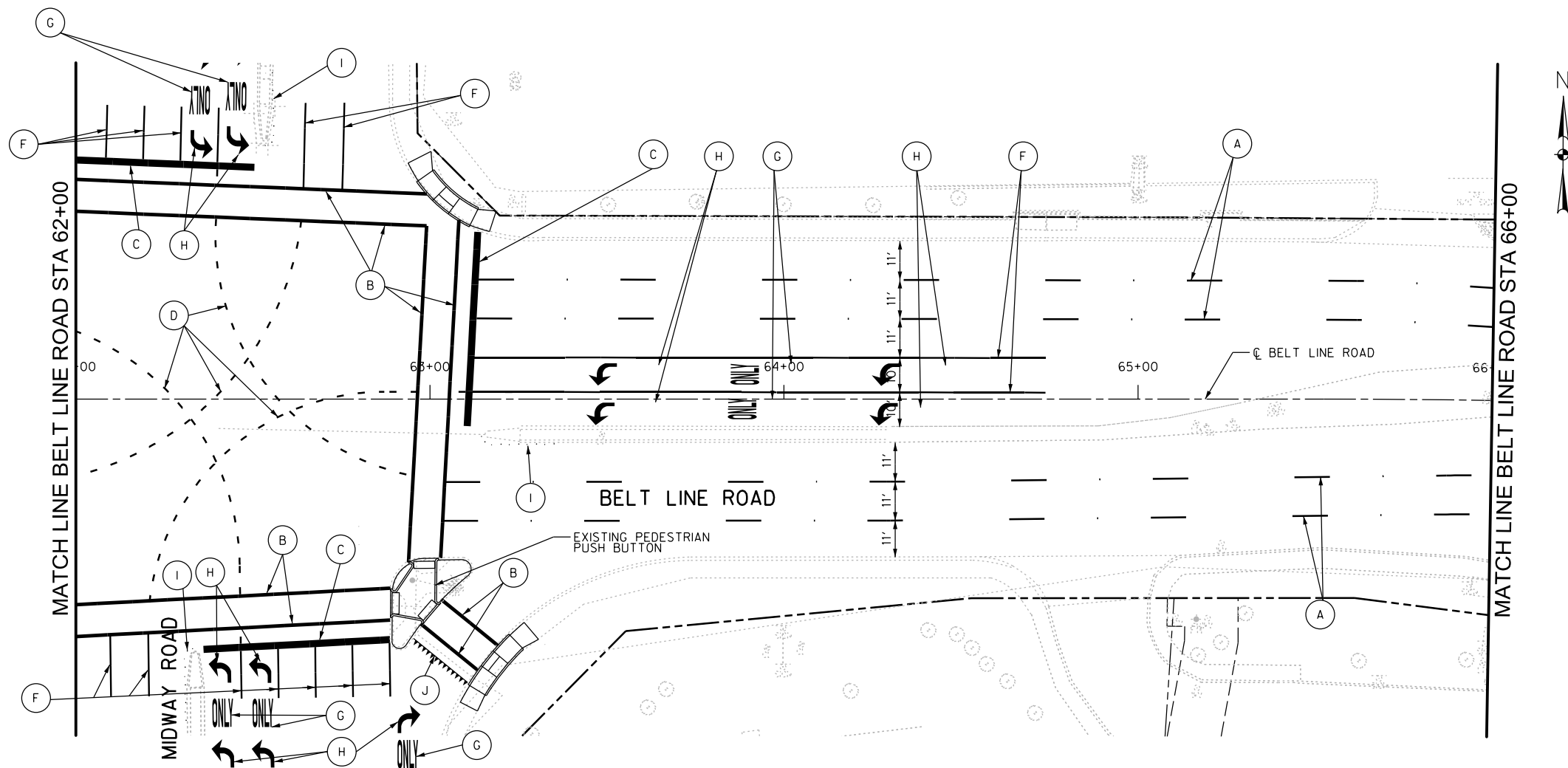
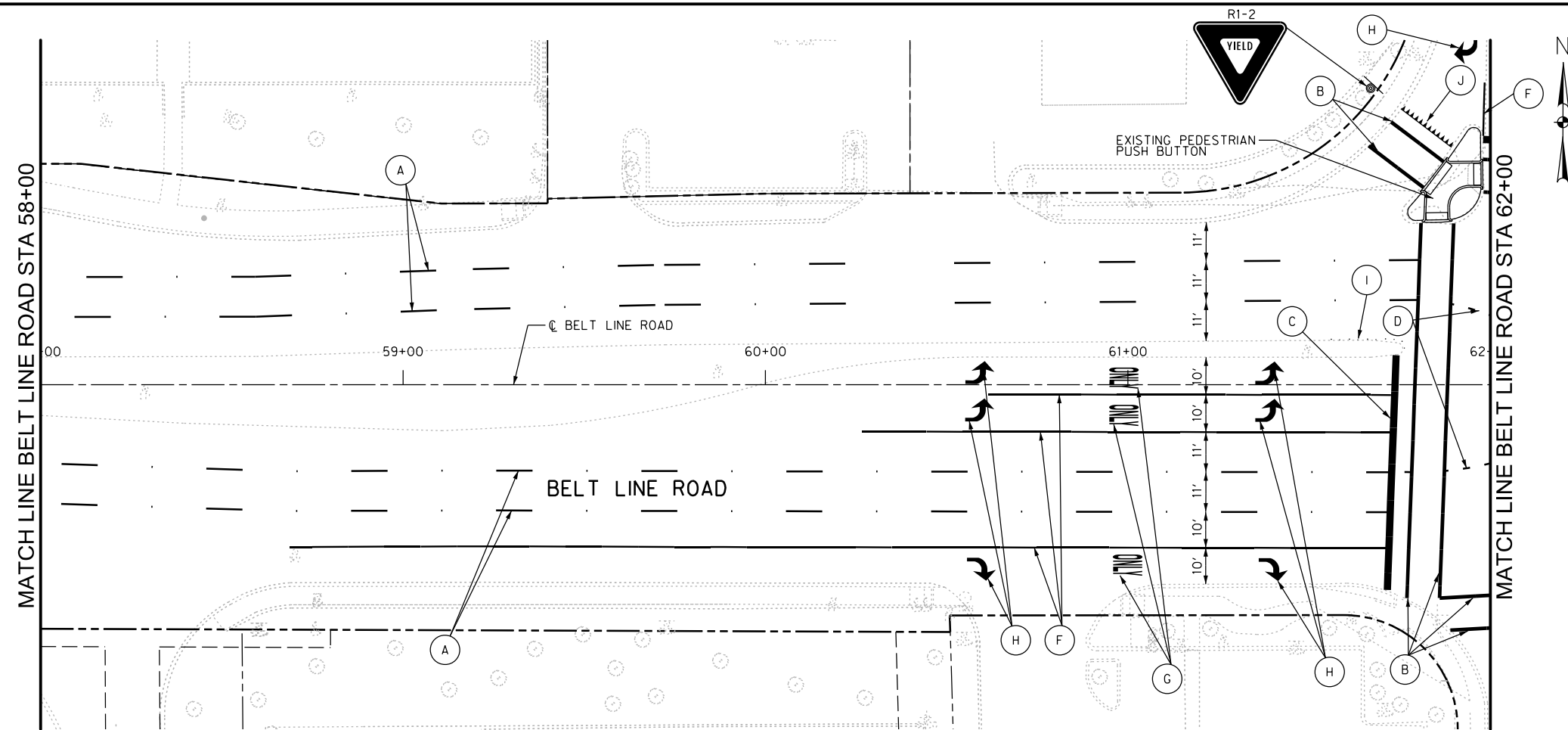
NOTES:
ALL SIGNING AND STRIPING SHALL COMPLY WITH THE LATEST VERSION OF TMTUCD.



Melanie S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
 TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
STRIPING & SIGNAGE LAYOUT BELT LINE RD STA 50+00 TO STA 58+00					
 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A SNPM 06	PM-6



LEGEND

- (A) 4" WHITE BROKEN STRIPE 10' IN LENGTH WITH 30' GAPS SUPPLEMENTED BY TY-II-CR BUTTONS CENTERED ON GAP. CLEAR SIDE OF BUTTON SHALL FACE TRAFFIC FLOW. (SEE DETAIL 'A' ON SHEET DT-PM)
- (B) 12" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (C) 24" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (D) 4" WHITE DOT REFLECTORIZED PAVEMENT MARKING ('PUPPY TRACKS') (SEE DETAIL 'F' ON SHEET DT-PM)
- (E) DOUBLE 4" YELLOW SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED, BY TY-II-A-A BUTTONS. (SEE DETAIL 'B' ON SHEET DT-PM)
- (F) 8" WHITE SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED BY TY I-C BUTTONS (SEE DETAIL 'G' ON SHEET DT-PM)
- (G) WHITE REFLECTORIZED PAVEMENT MARKING WORD
- (H) WHITE REFLECTORIZED PAVEMENT MARKING ARROW
- (I) 4" ROUND NON-REFLECTIVE YELLOW MARKER AND YELLOW R.P.M. TYPE II-A-A (SEE DETAIL 'C' ON SHEET DT-PM)
- (J) WHITE REFLECTORIZED YIELD LINE (SEE DETAIL 'D' ON SHEET DT-PM)
- (K) WHITE REFLECTORIZED PAVEMENT MARKING FOR RAILROAD CROSSING (SEE SHEET RCD(1)-16)

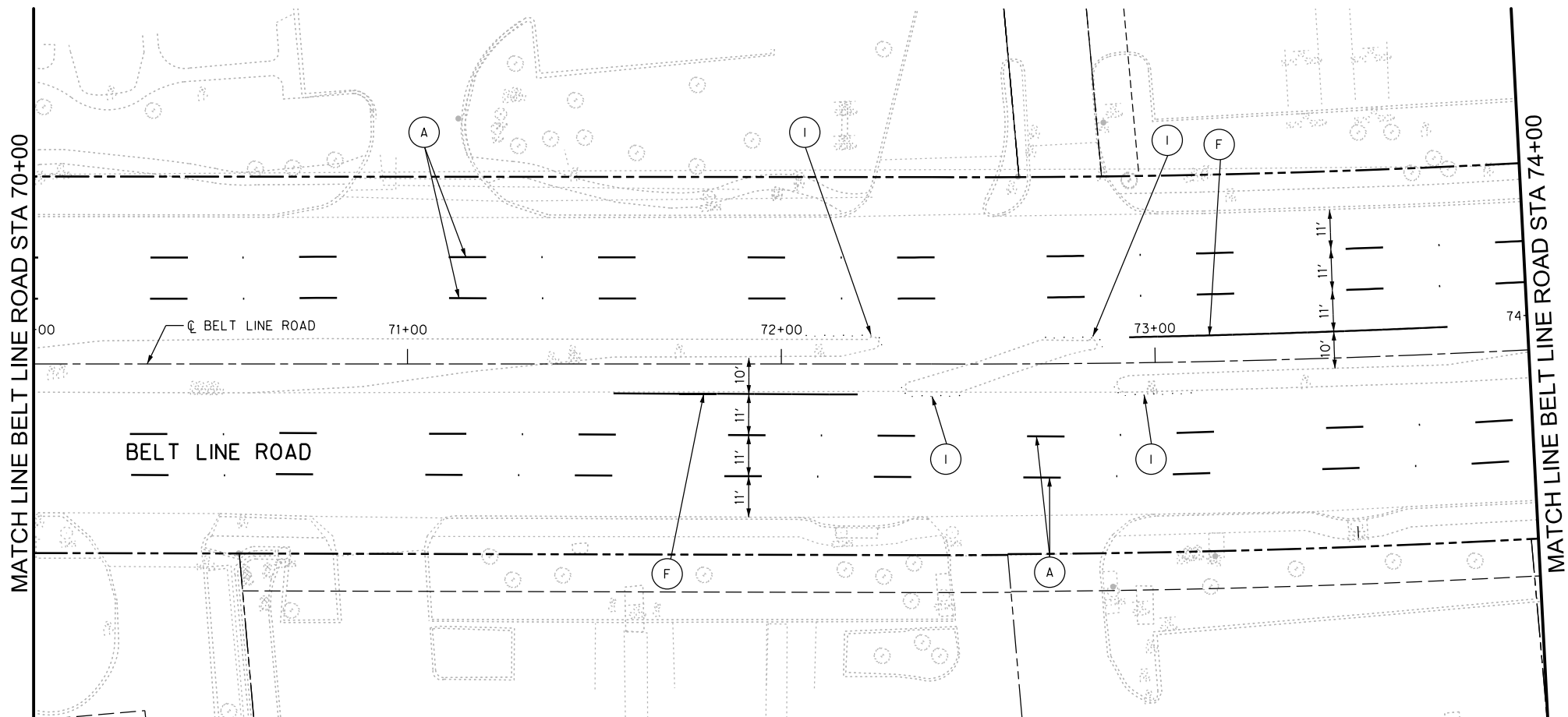
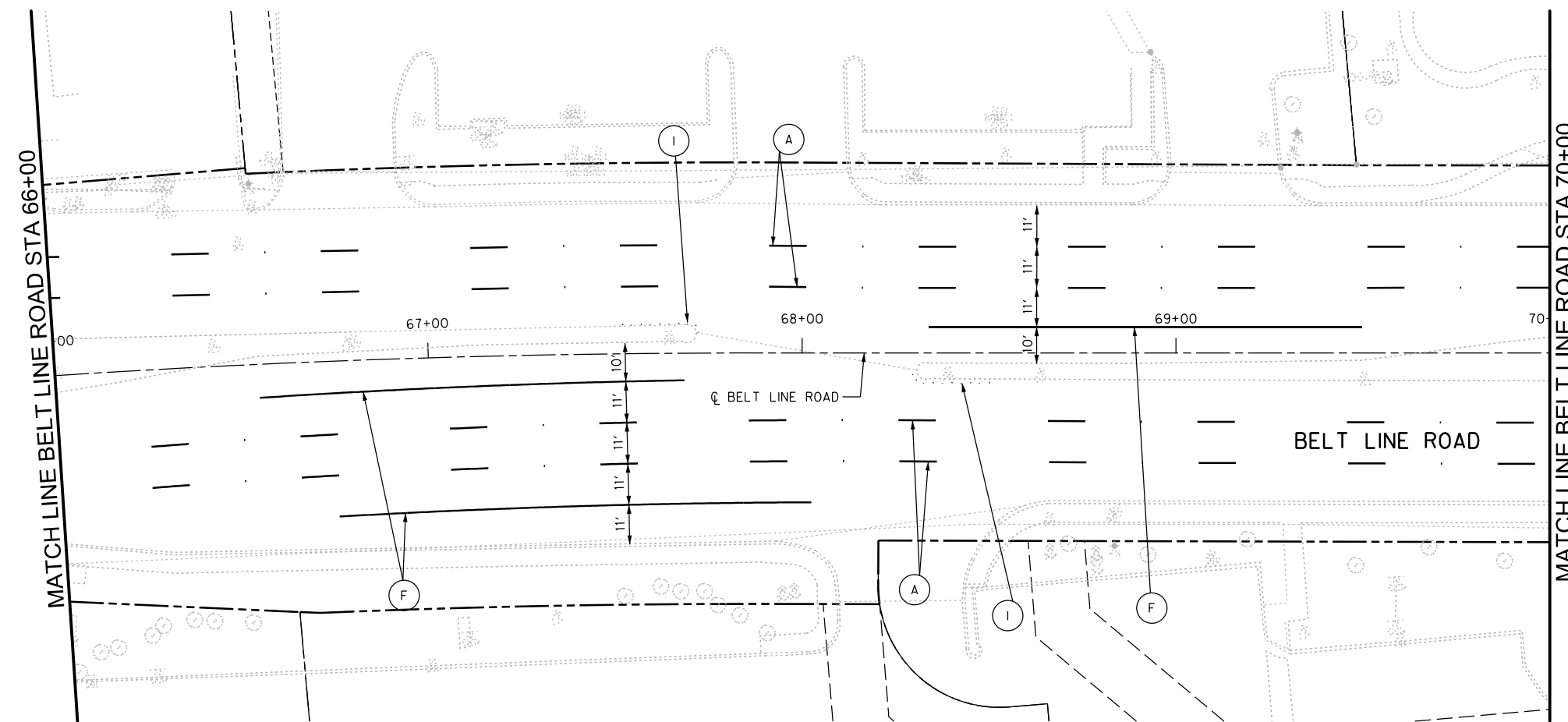
NOTES:
ALL SIGNING AND STRIPING SHALL COMPLY WITH THE LATEST VERSION OF TMUTCD.



Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT STRIPING & SIGNAGE LAYOUT BELT LINE RD STA 58+00 TO STA 66+00			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A SNPM 07	PM-7		



LEGEND

- (A) 4" WHITE BROKEN STRIPE 10' IN LENGTH WITH 30' GAPS SUPPLEMENTED BY TY-II-CR BUTTONS CENTERED ON GAP. CLEAR SIDE OF BUTTON SHALL FACE TRAFFIC FLOW. (SEE DETAIL 'A' ON SHEET DT-PM)
- (B) 12" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (C) 24" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (D) 4" WHITE DOT REFLECTORIZED PAVEMENT MARKING ('PUPPY TRACKS') (SEE DETAIL 'F' ON SHEET DT-PM)
- (E) DOUBLE 4" YELLOW SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED, BY TY-II-A-A BUTTONS. (SEE DETAIL 'B' ON SHEET DT-PM)
- (F) 8" WHITE SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED BY TY I-C BUTTONS (SEE DETAIL 'G' ON SHEET DT-PM)
- (G) WHITE REFLECTORIZED PAVEMENT MARKING WORD
- (H) WHITE REFLECTORIZED PAVEMENT MARKING ARROW
- (I) 4" ROUND NON-REFLECTIVE YELLOW MARKER AND YELLOW R.P.M. TYPE II-A-A (SEE DETAIL 'C' ON SHEET DT-PM)
- (J) WHITE REFLECTORIZED YIELD LINE (SEE DETAIL 'D' ON SHEET DT-PM)
- (K) WHITE REFLECTORIZED PAVEMENT MARKING FOR RAILROAD CROSSING (SEE SHEET RCD(1)-16)

NOTES:
ALL SIGNING AND STRIPING SHALL COMPLY WITH THE LATEST VERSION OF TMUTCD.



Melanie S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date
TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE

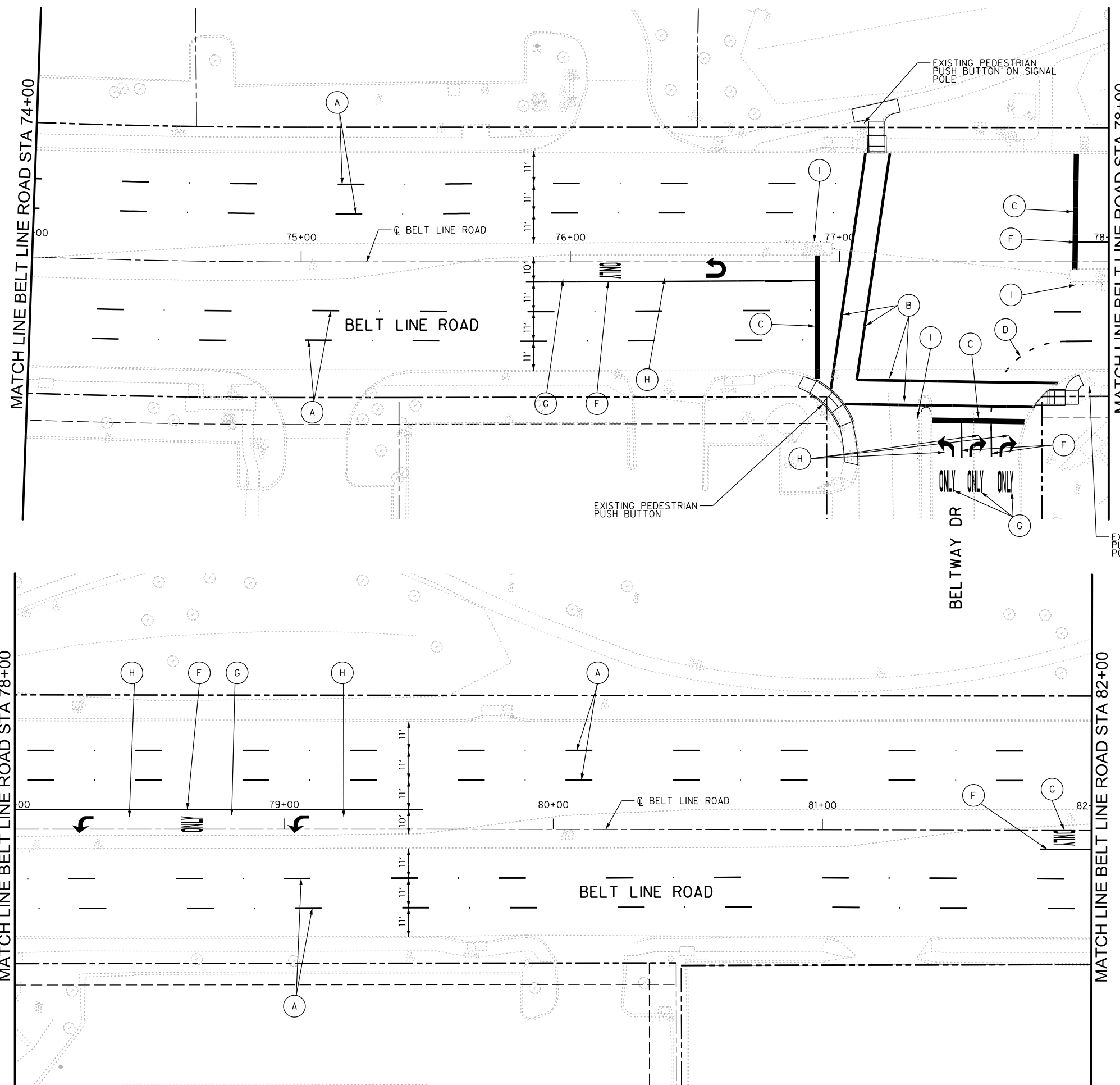
ADDISON TOWN OF ADDISON
DALLAS COUNTY, TEXAS

BELT LINE ROAD
OVERLAY PROJECT

STRIPING & SIGNAGE LAYOUT
BELT LINE RD STA 66+00 TO STA 74+00

HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275
TEL (214) 346-6200 FAX (214) 739-0095

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426		HALFF	OCT. 2017	29350A_SNP8_08	PM-8



LEGEND

- (A) 4" WHITE BROKEN STRIPE 10' IN LENGTH WITH 30' GAPS SUPPLEMENTED BY TY-II-CR BUTTONS CENTERED ON GAP. CLEAR SIDE OF BUTTON SHALL FACE TRAFFIC FLOW. (SEE DETAIL 'A' ON SHEET DT-PM)
- (B) 12" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (C) 24" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (D) 4" WHITE DOT REFLECTORIZED PAVEMENT MARKING ('PUPPY TRACKS') (SEE DETAIL 'F' ON SHEET DT-PM)
- (E) DOUBLE 4" YELLOW SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED, BY TY-II-A-A BUTTONS. (SEE DETAIL 'B' ON SHEET DT-PM)
- (F) 8" WHITE SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED BY TY I-C BUTTONS (SEE DETAIL 'G' ON SHEET DT-PM)
- (G) WHITE REFLECTORIZED PAVEMENT MARKING WORD
- (H) WHITE REFLECTORIZED PAVEMENT MARKING ARROW
- (I) 4" ROUND NON-REFLECTIVE YELLOW MARKER AND YELLOW R.P.M. TYPE II-A-A (SEE DETAIL 'C' ON SHEET DT-PM)
- (J) WHITE REFLECTORIZED YIELD LINE (SEE DETAIL 'D' ON SHEET DT-PM)
- (K) WHITE REFLECTORIZED PAVEMENT MARKING FOR RAILROAD CROSSING (SEE SHEET RCD(1)-16)

NOTES:
ALL SIGNING AND STRIPING SHALL COMPLY WITH THE LATEST VERSION OF TMUTCD.



Melanee S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date
TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE

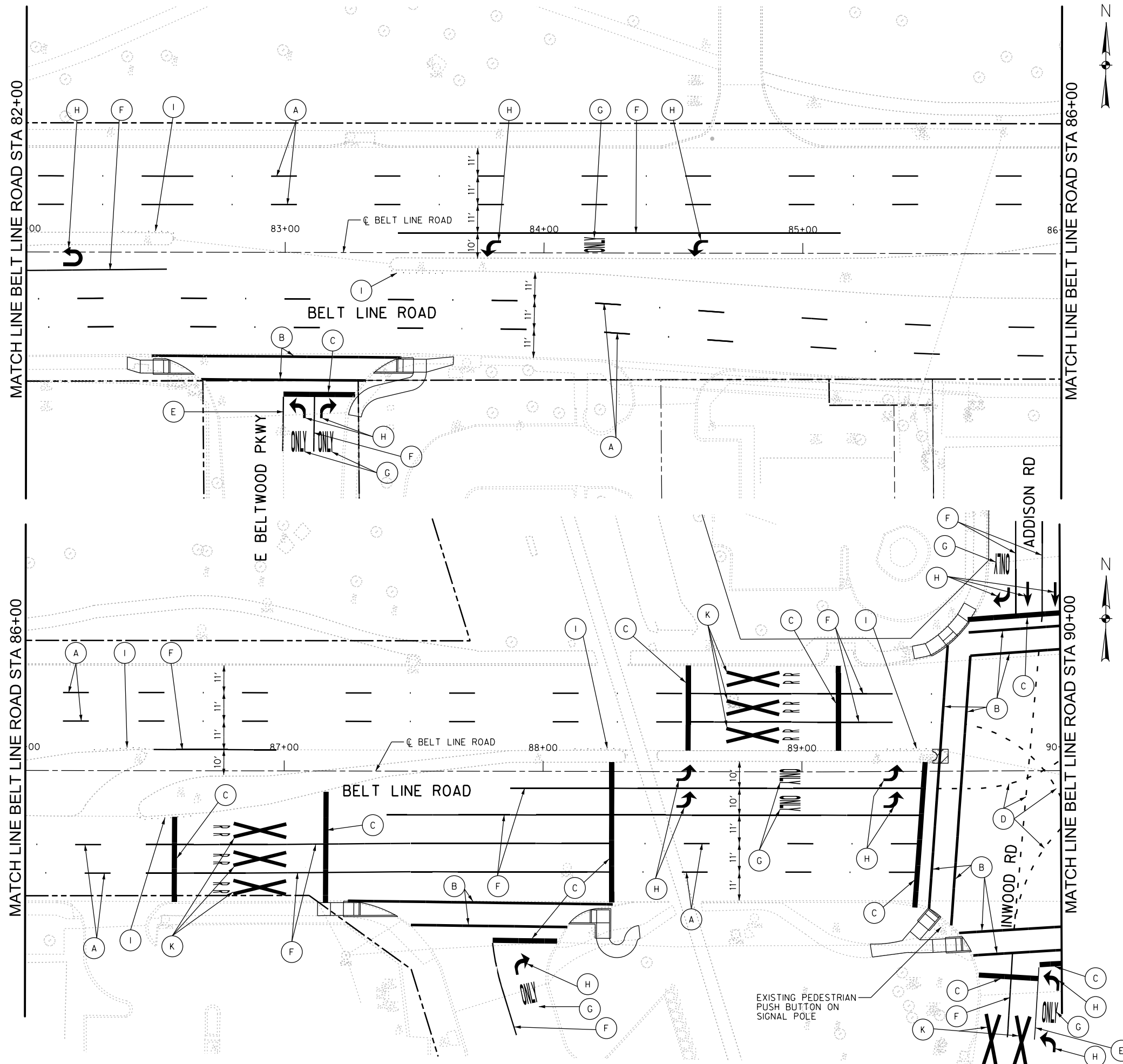
ADDISON TOWN OF ADDISON
DALLAS COUNTY, TEXAS

BELT LINE ROAD
OVERLAY PROJECT

STRIPING & SIGNAGE LAYOUT
BELT LINE RD STA 74+00 TO STA 82+00

HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275
TEL (214) 346-6200 FAX (214) 739-0095

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A SNPM 09	PM-9



LEGEND

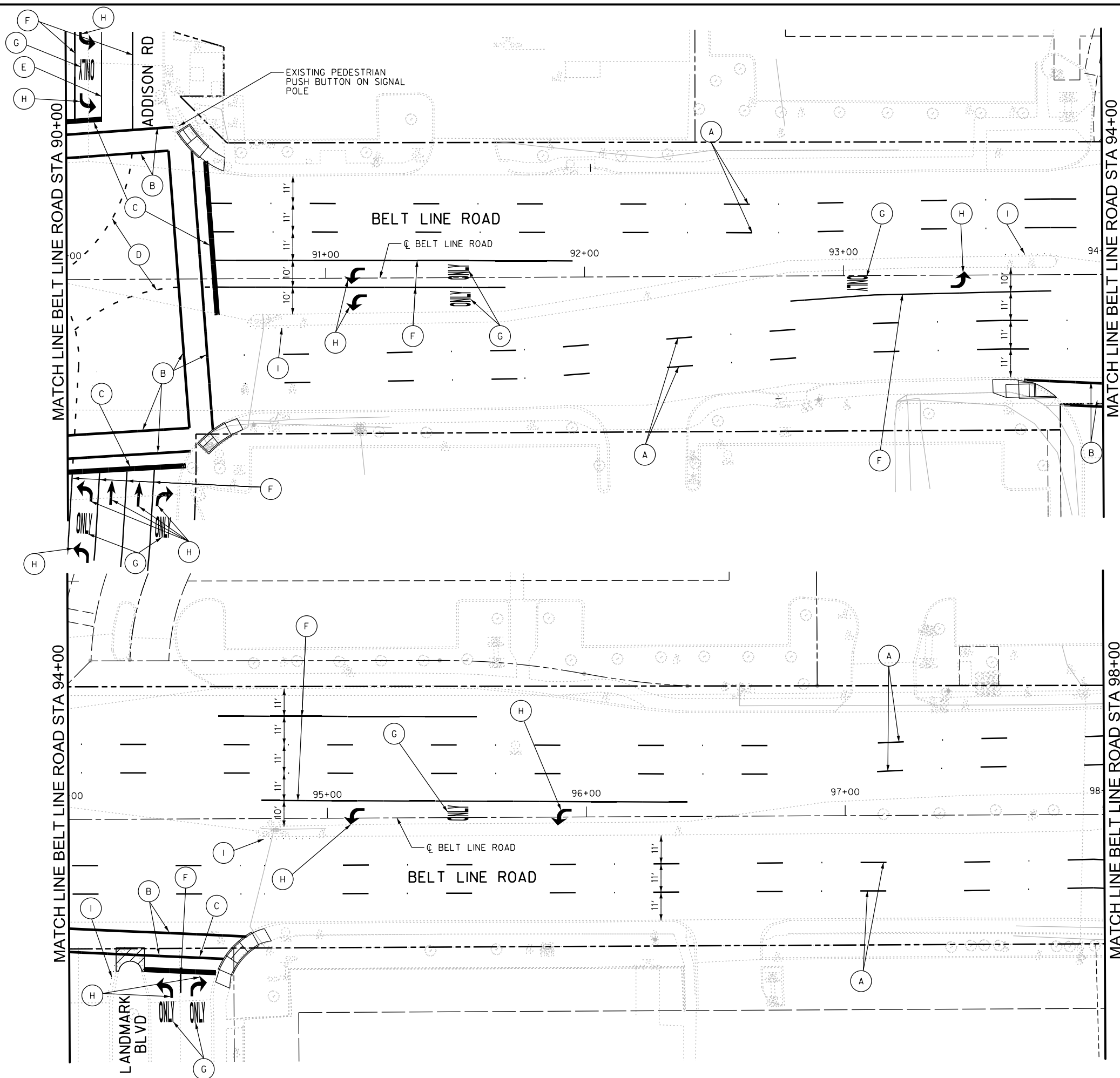
- (A) 4" WHITE BROKEN STRIPE 10' IN LENGTH WITH 30' GAPS SUPPLEMENTED BY TY-II-CR BUTTONS CENTERED ON GAP. CLEAR SIDE OF BUTTON SHALL FACE TRAFFIC FLOW. (SEE DETAIL 'A' ON SHEET DT-PM)
- (B) 12" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (C) 24" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (D) 4" WHITE DOT REFLECTORIZED PAVEMENT MARKING ('PUPPY TRACKS') (SEE DETAIL 'F' ON SHEET DT-PM)
- (E) DOUBLE 4" YELLOW SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED, BY TY-II-A-A BUTTONS. (SEE DETAIL 'B' ON SHEET DT-PM)
- (F) 8" WHITE SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED BY TY I-C BUTTONS (SEE DETAIL 'G' ON SHEET DT-PM)
- (G) WHITE REFLECTORIZED PAVEMENT MARKING WORD
- (H) WHITE REFLECTORIZED PAVEMENT MARKING ARROW
- (I) 4" ROUND NON-REFLECTIVE YELLOW MARKER AND YELLOW R.P.M. TYPE II-A-A (SEE DETAIL 'C' ON SHEET DT-PM)
- (J) WHITE REFLECTORIZED YIELD LINE (SEE DETAIL 'D' ON SHEET DT-PM)
- (K) WHITE REFLECTORIZED PAVEMENT MARKING FOR RAILROAD CROSSING (SEE SHEET RCD(1)-16)

NOTES:
ALL SIGNING AND STRIPING SHALL COMPLY WITH THE LATEST VERSION OF T MUTCD.



Melane S. Cleavelin 12/19/17
 Signature of Registrant Date
 TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT STRIPING & SIGNAGE LAYOUT BELT LINE RD STA 82+00 TO STA 90+00			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A_SNP10	PM-10		



LEGEND

- (A) 4" WHITE BROKEN STRIPE 10' IN LENGTH WITH 30' GAPS SUPPLEMENTED BY TY-II-CR BUTTONS CENTERED ON GAP. CLEAR SIDE OF BUTTON SHALL FACE TRAFFIC FLOW. (SEE DETAIL 'A' ON SHEET DT-PM)
- (B) 12" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (C) 24" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
- (D) 4" WHITE DOT REFLECTORIZED PAVEMENT MARKING ('PUPPY TRACKS') (SEE DETAIL 'F' ON SHEET DT-PM)
- (E) DOUBLE 4" YELLOW SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED, BY TY-II-A-A BUTTONS. (SEE DETAIL 'B' ON SHEET DT-PM)
- (F) 8" WHITE SOLID REFLECTORIZED PAVEMENT MARKING SUPPLEMENTED BY TY I-C BUTTONS (SEE DETAIL 'G' ON SHEET DT-PM)
- (G) WHITE REFLECTORIZED PAVEMENT MARKING WORD
- (H) WHITE REFLECTORIZED PAVEMENT MARKING ARROW
- (I) 4" ROUND NON-REFLECTIVE YELLOW MARKER AND YELLOW R.P.M. TYPE II-A-A (SEE DETAIL 'C' ON SHEET DT-PM)
- (J) WHITE REFLECTORIZED YIELD LINE (SEE DETAIL 'D' ON SHEET DT-PM)
- (K) WHITE REFLECTORIZED PAVEMENT MARKING FOR RAILROAD CROSSING (SEE SHEET RCD(1)-16)

NOTES:
ALL SIGNING AND STRIPING SHALL COMPLY WITH THE LATEST VERSION OF TMUTCD.



Melanee S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date
TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE

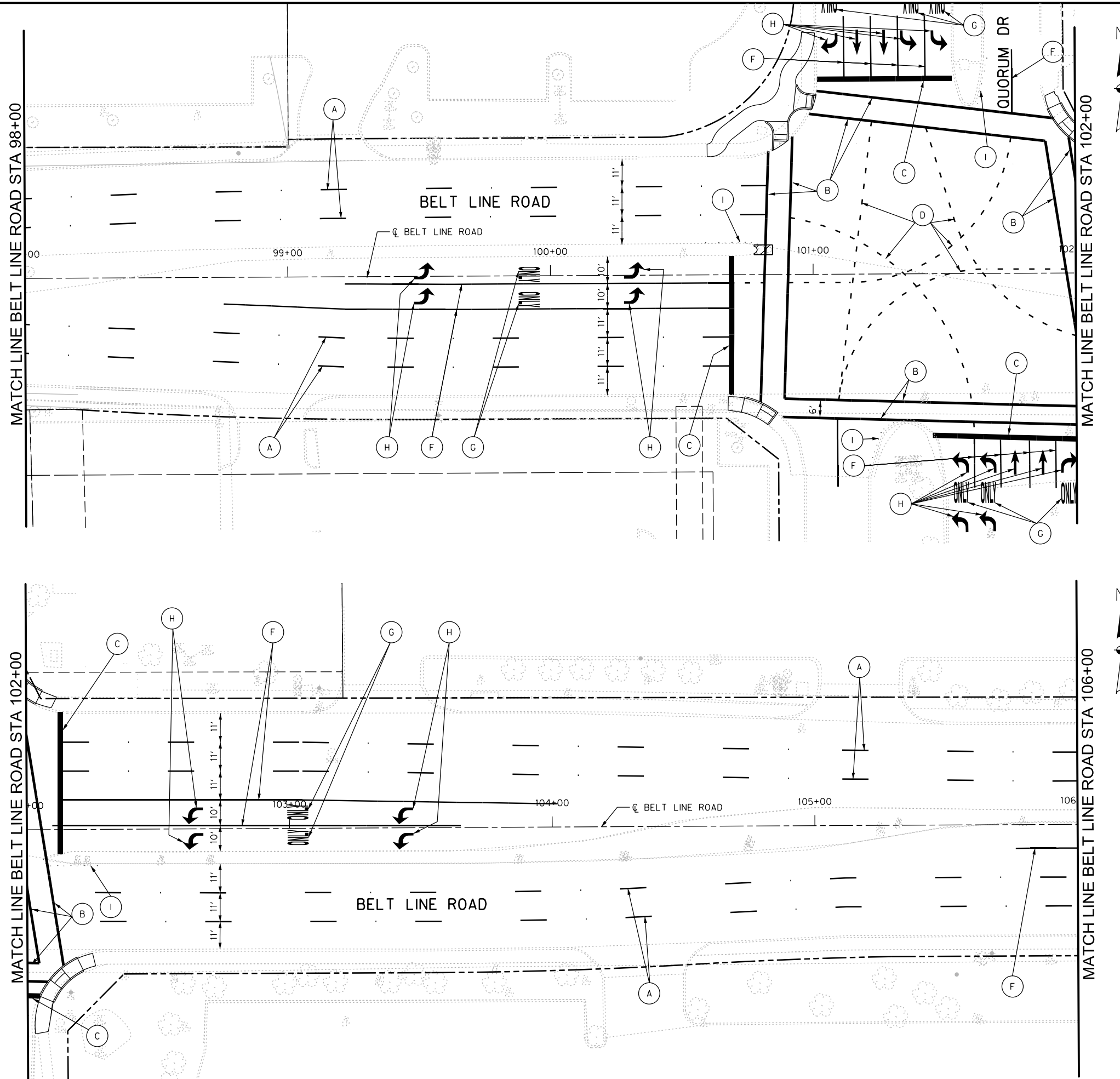
ADDISON TOWN OF ADDISON
DALLAS COUNTY, TEXAS

BELT LINE ROAD
OVERLAY PROJECT

STRIPING & SIGNAGE LAYOUT
BELT LINE RD STA 90+00 TO STA 98+00

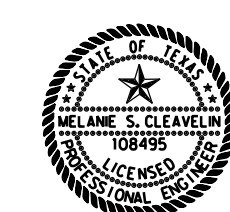
HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275
TEL (214) 346-6200 FAX (214) 739-0095

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_SNP11	PM-11



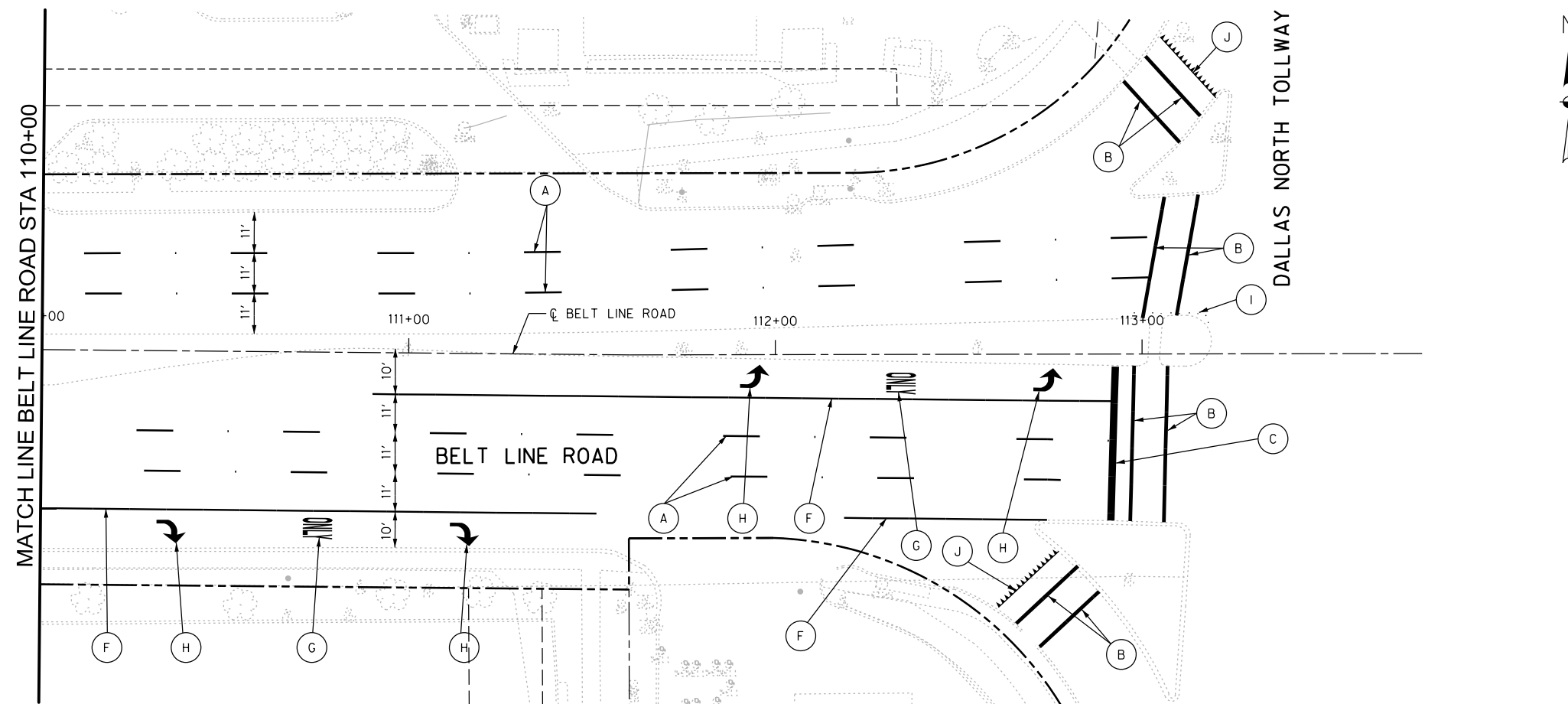
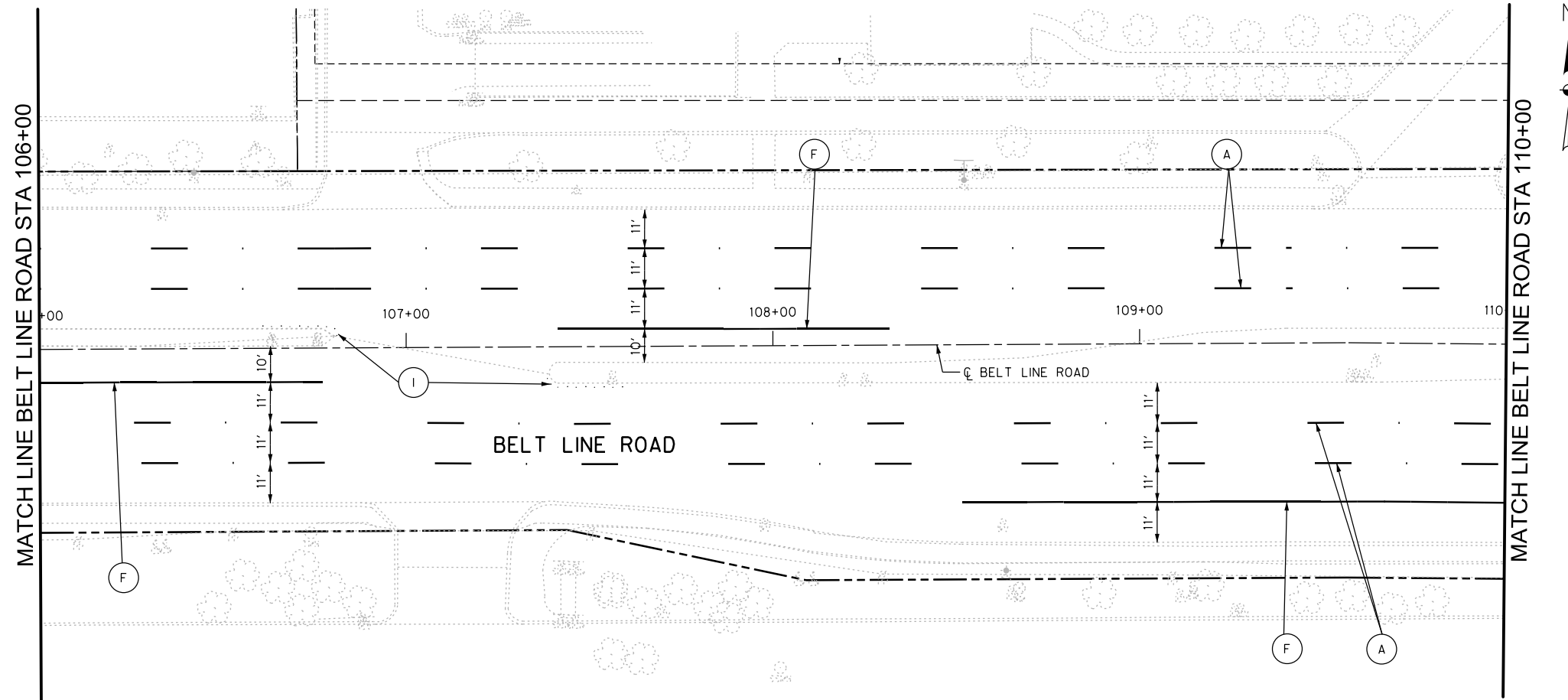
- LEGEND**
- (A) 4" WHITE BROKEN STRIPE 10' IN LENGTH WITH 30' GAPS SUPPLEMENTED BY TY-II-CR BUTTONS CENTERED ON GAP. CLEAR SIDE OF BUTTON SHALL FACE TRAFFIC FLOW. (SEE DETAIL 'A' ON SHEET DT-PM)
 - (B) 12" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
 - (C) 24" WHITE SOLID REFLECTORIZED PAVEMENT MARKING
 - (D) 4" WHITE DOT REFLECTORIZED PAVEMENT MARKING ('PUPPY TRACKS') (SEE DETAIL 'F' ON SHEET DT-PM)
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 - (G) WHITE REFLECTORIZED PAVEMENT MARKING WORD
 - (H) WHITE REFLECTORIZED PAVEMENT MARKING ARROW
 - (I) 4" ROUND NON-REFLECTIVE YELLOW MARKER AND YELLOW R.P.M. TYPE II-A-A (SEE DETAIL 'C' ON SHEET DT-PM)
 - (J) WHITE REFLECTORIZED YIELD LINE (SEE DETAIL 'D' ON SHEET DT-PM)
 - (K) WHITE REFLECTORIZED PAVEMENT MARKING FOR RAILROAD CROSSING (SEE SHEET RCD(1)-16)

NOTES:
ALL SIGNING AND STRIPING SHALL COMPLY WITH THE LATEST VERSION OF TMUTCD.



Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date
TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT STRIPING & SIGNAGE LAYOUT BELT LINE RD STA 98+00 TO STA 106+00 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350A SNPM 12	PM-12		



LEGEND

- (A) 4" WHITE BROKEN STRIPE 10' IN LENGTH WITH 30' GAPS SUPPLEMENTED BY TY-II-CR BUTTONS CENTERED ON GAP. CLEAR SIDE OF BUTTON SHALL FACE TRAFFIC FLOW. (SEE DETAIL 'A' ON SHEET DT-PM)
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- (K) WHITE REFLECTORIZED PAVEMENT MARKING FOR RAILROAD CROSSING (SEE SHEET RCD(1)-16)

NOTES:
ALL SIGNING AND STRIPING SHALL COMPLY WITH THE LATEST VERSION OF TMUTCD.



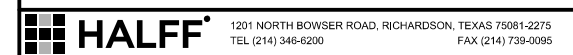
Melanie S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date
TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE

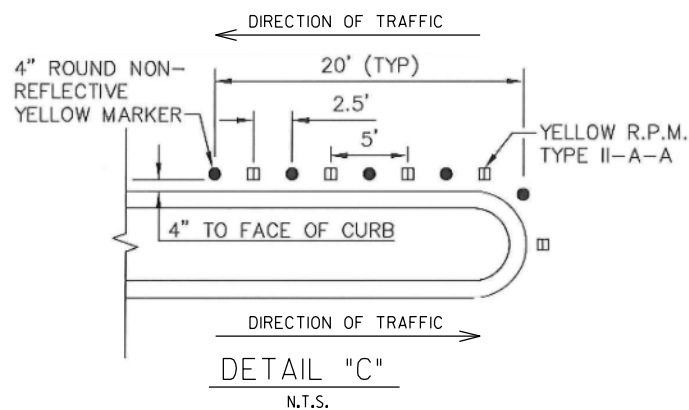
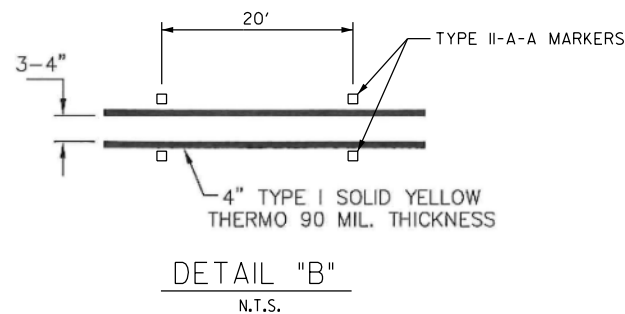
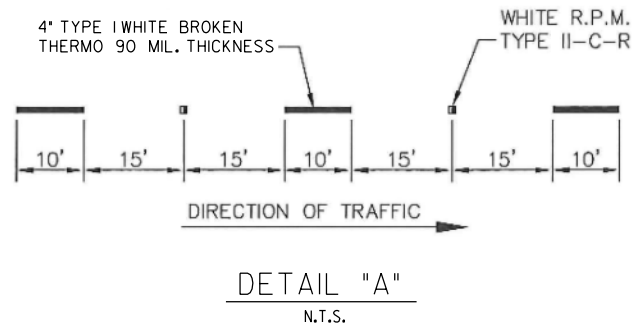
ADDISON TOWN OF ADDISON
DALLAS COUNTY, TEXAS

BELT LINE ROAD
OVERLAY PROJECT

STRIPING & SIGNAGE LAYOUT
BELT LINE RD STA 106+00 TO STA 113+00

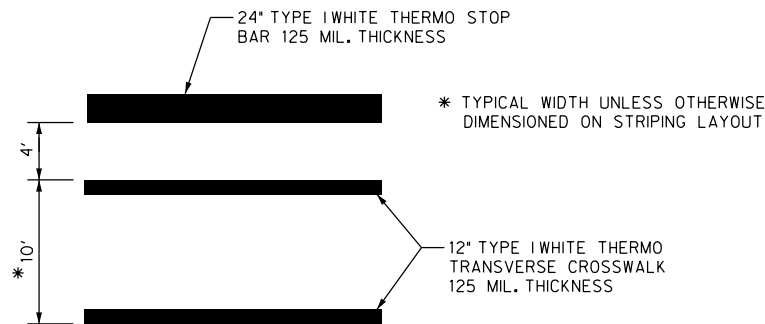


PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A_SNP13	PM-13

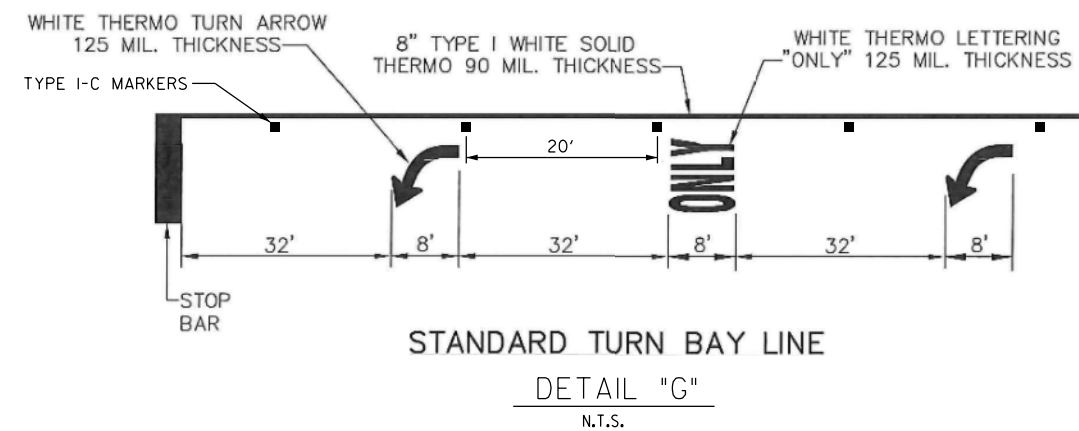
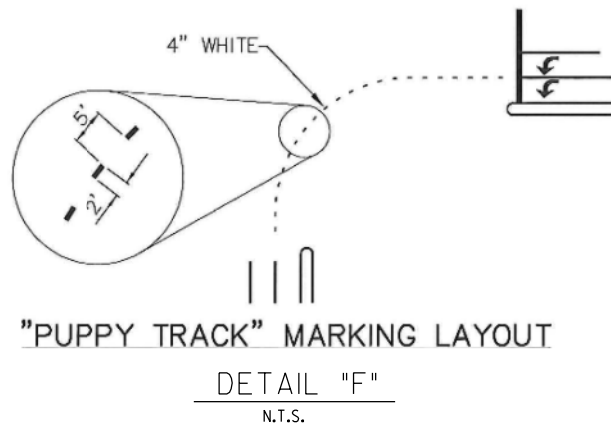


YIELD LINES

DETAIL "D"
N.T.S.



DETAIL "E"
CROSSWALK STRIPING LAYOUT
N.T.S.



Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT PAVEMENT MARKING DETAILS			
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29530A DTSN 01	DT-PM		

Short Term Outside Lane Closure for Sidewalk Work:

1. Outside lane closure for parkway and sidewalk construction shall only be allowed between 9:30 am and 3:30 pm.
2. Maintain access to businesses at all times.
3. Maintain a continuous accessible pedestrian path on either side of the road at all times through the entire project limits.

Overlay and Permanent Striping Construction:

1. To be done during the night one lane at a time, unless adjacent to Asbury Circle Neighborhood. If adjacent to Asbury Circle Neighborhood, work shall be done during daytime off peak hours, one lane at a time.
2. Use work vehicle with a trail vehicle and a shadow vehicle.
3. Open to traffic behind shadow vehicle once overlay can be driven on.
4. Maintain access at all times to businesses during their operating hours.

TRAFFIC CONTROL NOTES

1. Peak hours are 6:30 AM to 9:30 AM and 3:30 PM to 7:30 PM on weekdays. Night work shall be between 7:30 pm and 6:30 am.
2. Area adjacent to Asbury Circle Neighborhood consists of Belt Line Road from just east of Business Drive (Sta 24+00) to just west of Surveyor Boulevard (Sta 37+00).
3. Contractor shall not perform any work during the following Town events: Taste of Addison, Addison Kaboom Town, Addison Oktoberfest.
4. Maintain access to adjacent properties at all times, only one driveway closed to each property at any one time. Coordinate with property owner prior to closing driveway.
5. Provide 6 changeable message signs, at the locations shown in the plans for advance warning.
6. Only one consecutive median opening can be closed at a time.
7. When existing pavement markings are removed for construction, the contractor shall provide temporary pavement markings at the end of each night's work before opening the street to morning traffic. Cost is subsidiary to traffic control.
8. Contractor to provide temporary markings in accordance with the requirements of Item 662 of the TxDOT specifications.
9. Contractor to remove temporary pavement markings at the contractor's expense in accordance with Item 677 of the TxDOT standard specifications. Cost is subsidiary to bid item for traffic control.
10. Construction signs shall be removed upon completion of the work. Individual warning signs shall be removed, turned away from the view of traffic, or covered whenever the specific danger of which the particular sign warns has ceased to exist, either permanently or temporarily. The sign must be promptly replaced, turned into view, or uncovered when the situation again becomes a potential danger.
11. Contractor shall provide necessary lighting for night work at no additional cost to the Town.

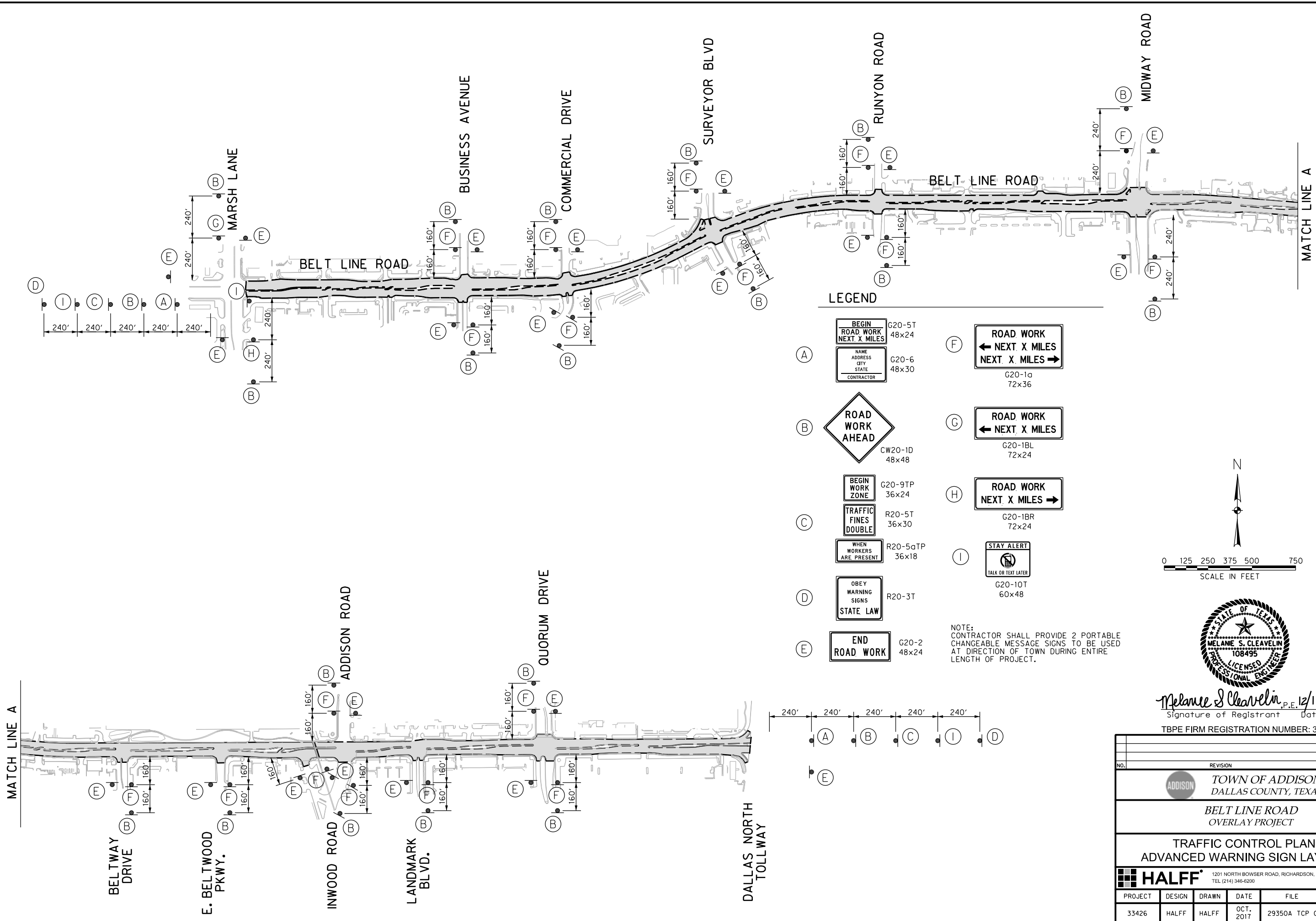


Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
BELT LINE ROAD OVERLAY PROJECT			
TRAFFIC CONTROL NARRATIVE & GENERAL NOTES			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29350 TCPN 01	TCP-00		

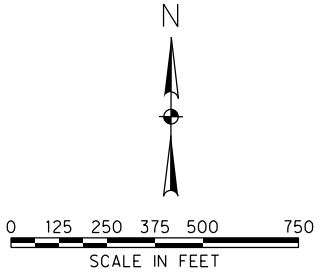
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275
 TEL (214) 346-6200 FAX (214) 739-0095



LEGEND

- (A) G20-5T 48x24
- (B) CW20-1D 48x48
- (C) R20-5T 36x30
- (D) R20-3T
- (E) G20-2 48x24
- (F) G20-1a 72x36
- (G) G20-1BL 72x24
- (H) G20-1BR 72x24
- (I) G20-10T 60x48

NOTE:
CONTRACTOR SHALL PROVIDE 2 PORTABLE
CHANGEABLE MESSAGE SIGNS TO BE USED
AT DIRECTION OF TOWN DURING ENTIRE
LENGTH OF PROJECT.



Melane S. Cleavelin 12/19/17
Signature of Registrant Date
TBPE FIRM REGISTRATION NUMBER: 312

NO.		REVISION		BY		DATE	
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT TRAFFIC CONTROL PLAN ADVANCED WARNING SIGN LAYOUT 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095							
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET		
33426	HALFF	HALFF	OCT. 2017	29350A TCP 01	TCP-0		

USER: ohi299

OFFICE: RCH

PROJECT # 29350

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MIN

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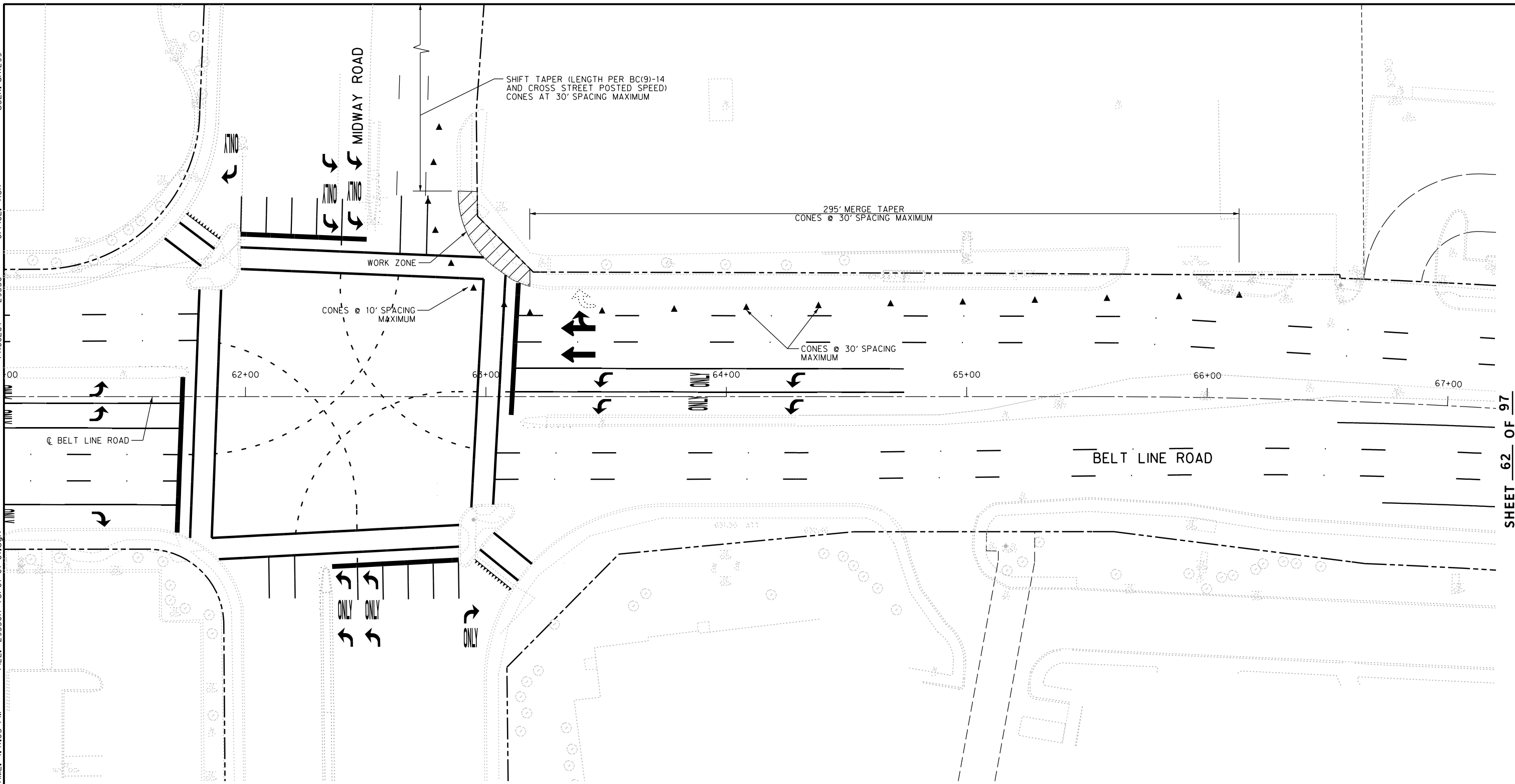
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MIN

FILE: 29350A.TCPO1-01-01.dgn

TIME: 4:41:05 PM

DATE: 12/18/2017



TYPICAL TREATMENT FOR
PARKWAY AREA CONSTRUCTION

LEGEND

- ▲ CONES
- ← LANES TO BE OPEN AT ALL TIMES
- ⇐ LANES TO BE CLOSED DURING OFF-PEAK HOURS ONLY

- NOTES:
1. CONTRACTOR TO ADD NECESSARY SIGNAGE AS NEEDED ACCORDING TO TMUTCD.
 2. CONTRACTOR TO ENSURE THAT EQUIPMENT DOES NOT BLOCK LINE OF SIGHT FOR DRIVERS.
 3. CONTRACTOR TO LEAVE OPENINGS IN CONE SPACING AS NECESSARY TO MAINTAIN ACCESS TO DRIVEWAYS.



Melanee S. Cleavelin P.E. 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE

ADDISON TOWN OF ADDISON
DALLAS COUNTY, TEXAS

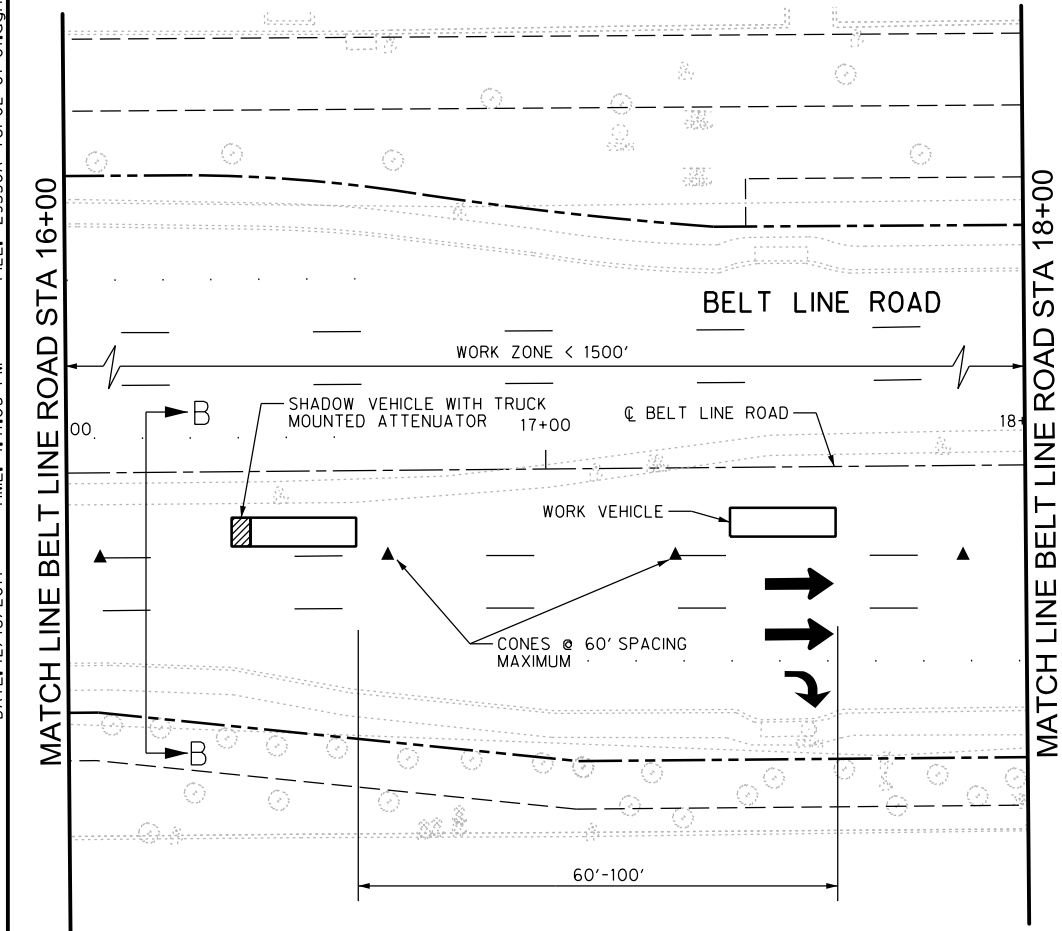
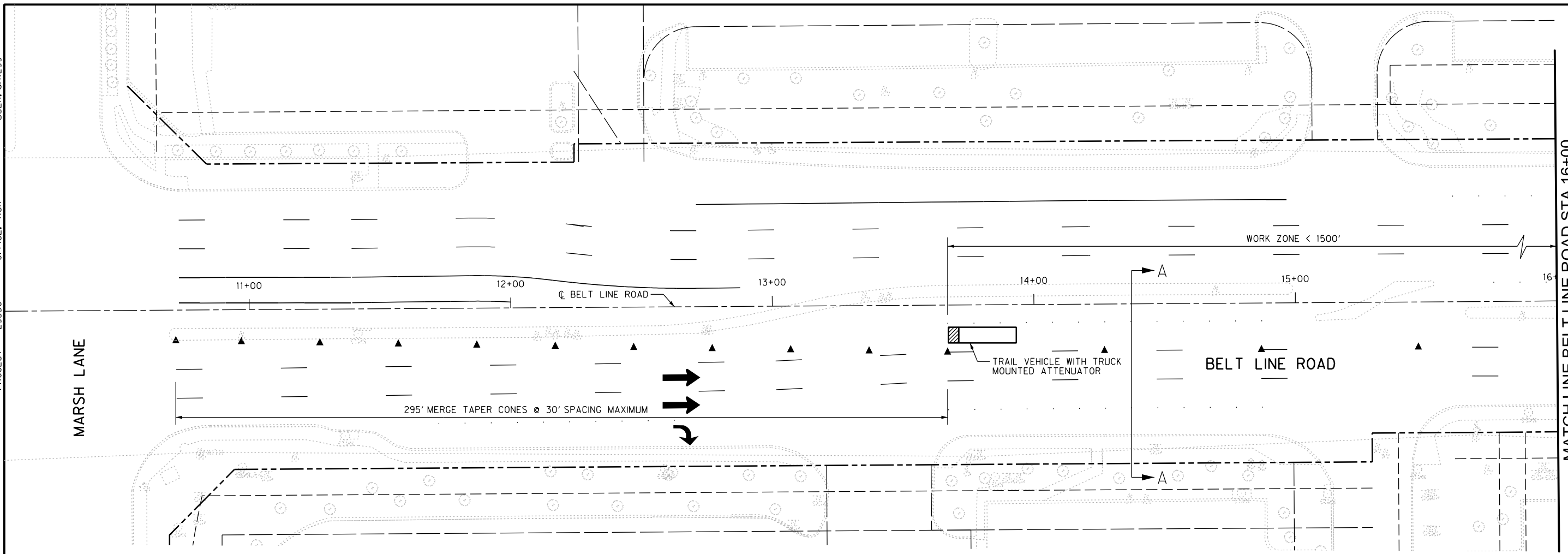
BELT LINE ROAD
OVERLAY PROJECT

TRAFFIC CONTROL PLAN - PARKWAY
PHASE 1

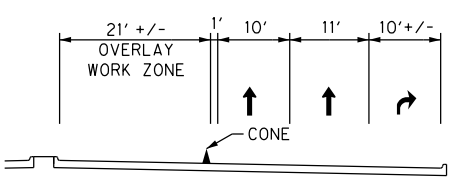
HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275
TEL (214) 346-6200 FAX (214) 739-0095

PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A TCPO1-01-01	TCP-1

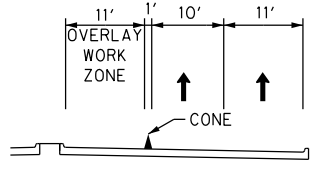
SHEET 62 OF 97



SEE TRAFFIC CONTROL NARRATIVE AND GENERAL NOTES SHEETS FOR ALLOWABLE WORKING HOURS FOR OVERLAY AND STRIPING - CONTRACTOR TO PROVIDE DETAILED TCP FOR OVERLAY WORK



SECTION A-A
(N.T.S.)

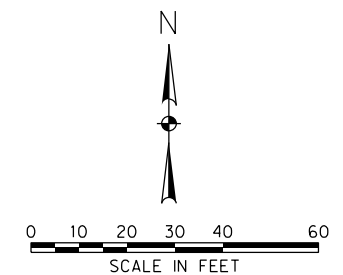


SECTION B-B
(N.T.S.)

LEGEND

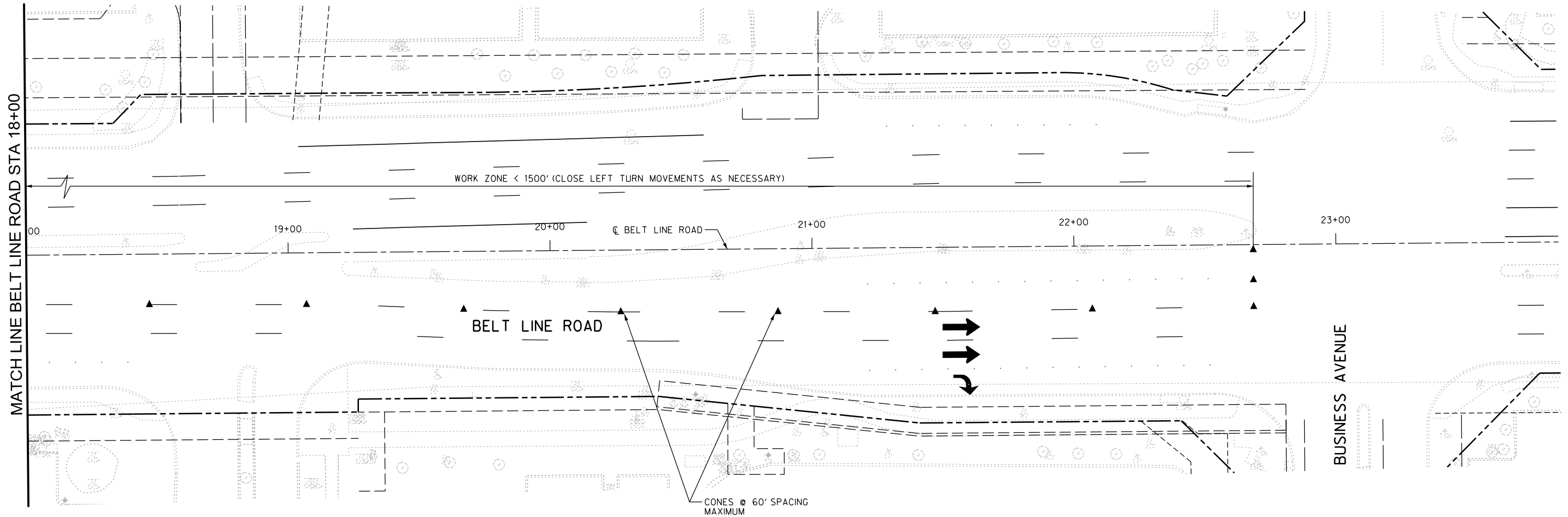
- ▲ CONES
- ← LANES TO BE OPEN AT ALL TIMES
- ⇄ LANES TO BE CLOSED DURING OFF-PEAK HOURS ONLY

- NOTES:
1. CONTRACTOR TO ADD NECESSARY SIGNAGE AS NEEDED ACCORDING TO TMUTCD.
 2. CONTRACTOR TO ENSURE THAT EQUIPMENT DOES NOT BLOCK LINE OF SIGHT FOR DRIVERS.
 3. CONTRACTOR TO LEAVE OPENINGS IN CONE SPACING AS NECESSARY TO MAINTAIN ACCESS TO DRIVEWAYS.






Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date
TBPE FIRM REGISTRATION NUMBER: 312

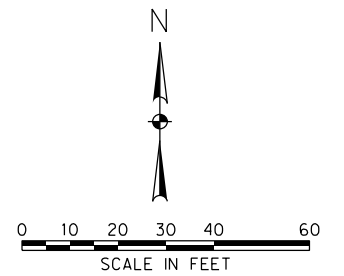
NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS Belt Line Road Overlay Project TRAFFIC CONTROL PLAN - OVERLAY PHASE 2, STEP 1 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A TCP02-01-01	TCP-2



LEGEND



-  CONES
-  LANES TO BE OPEN AT ALL TIMES
-  LANES TO BE CLOSED DURING OFF-PEAK HOURS ONLY

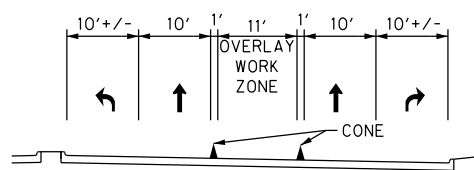
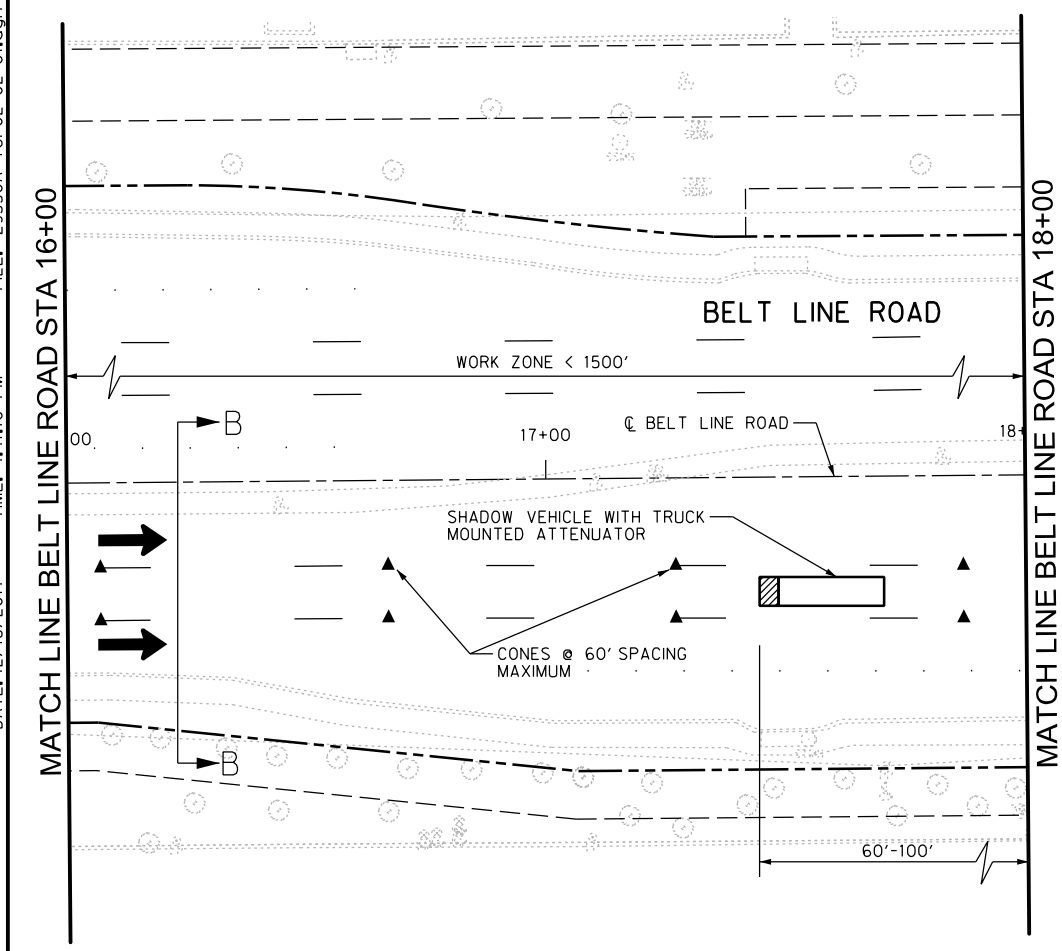
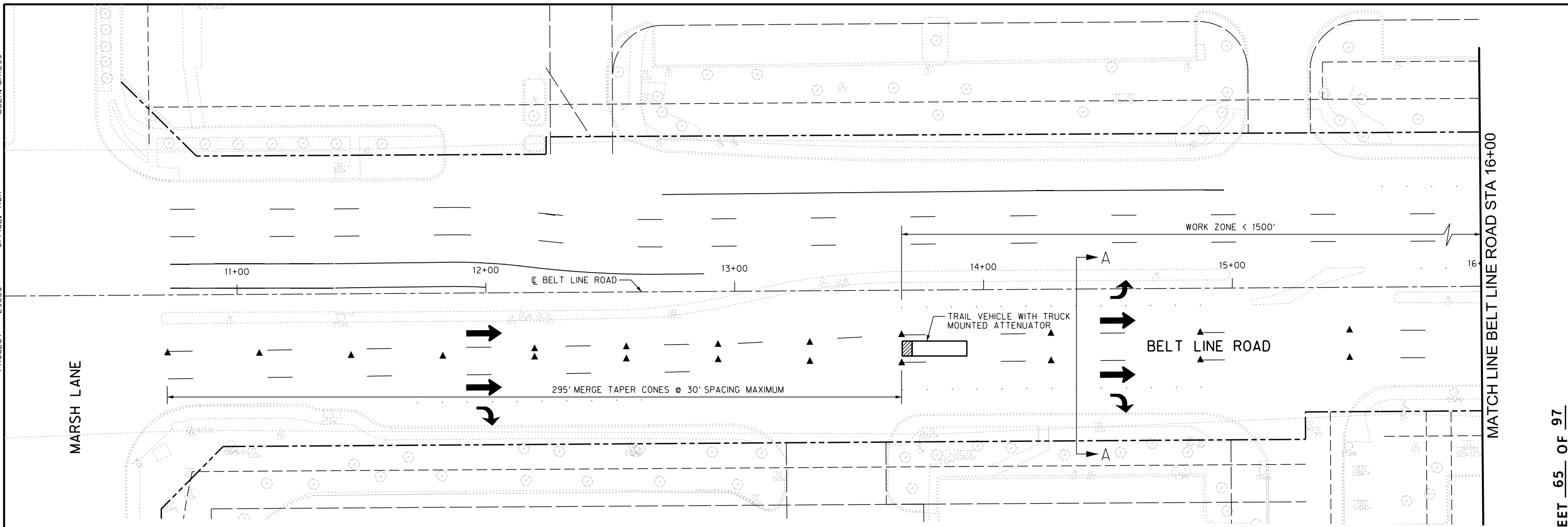
- NOTES:**
1. CONTRACTOR TO ADD NECESSARY SIGNAGE AS NEEDED ACCORDING TO TMUTCD.
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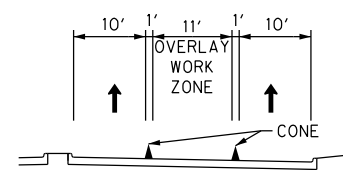
Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
 TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
TRAFFIC CONTROL PLAN - OVERLAY PHASE 2, STEP 1					
 HALFF 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A TCP02-01-02	TCP-3



SECTION A-A (N.T.S.)

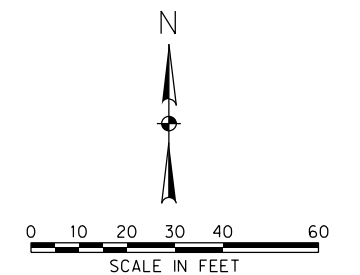


SECTION B-B (N.T.S.)

LEGEND

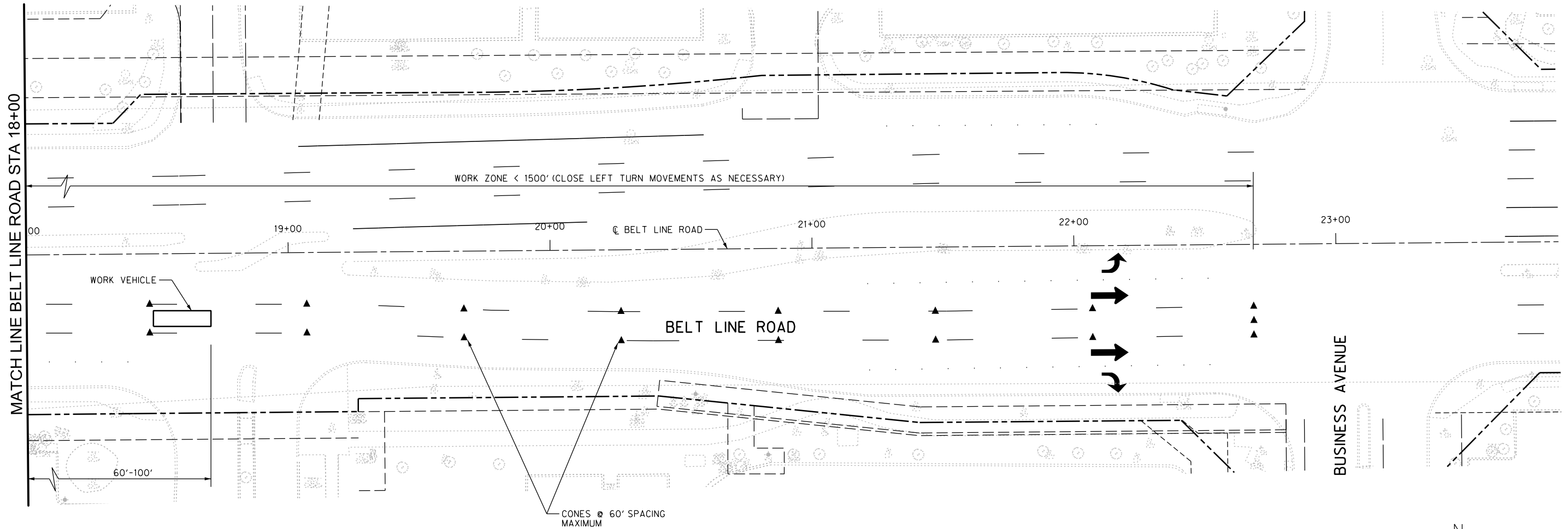
- CONES
- LANES TO BE OPEN AT ALL TIMES
- LANES TO BE CLOSED DURING OFF-PEAK HOURS ONLY

- NOTES:
1. CONTRACTOR TO ADD NECESSARY SIGNAGE AS NEEDED ACCORDING TO TMUTCD.
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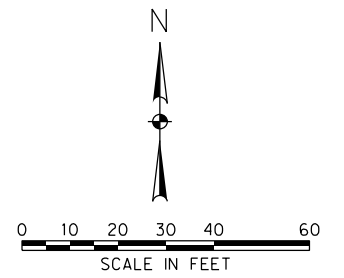
NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT TRAFFIC CONTROL PLAN - OVERLAY PHASE 2, STEP 2					
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A TCP02-02-01	TCP-4



LEGEND

- ▲ CONES
- ← LANES TO BE OPEN AT ALL TIMES
- ⇐ LANES TO BE CLOSED DURING OFF-PEAK HOURS ONLY

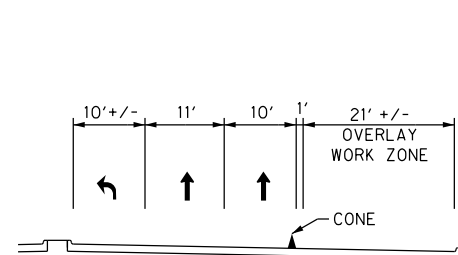
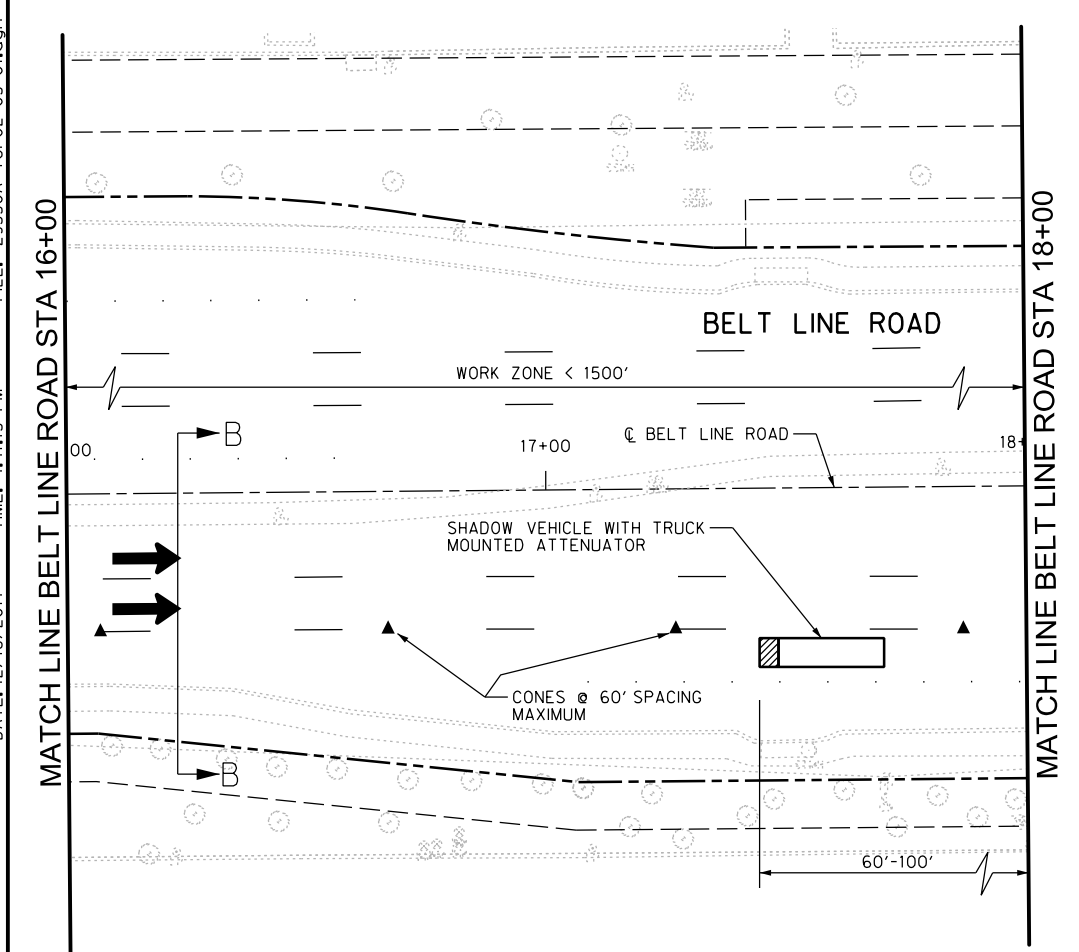
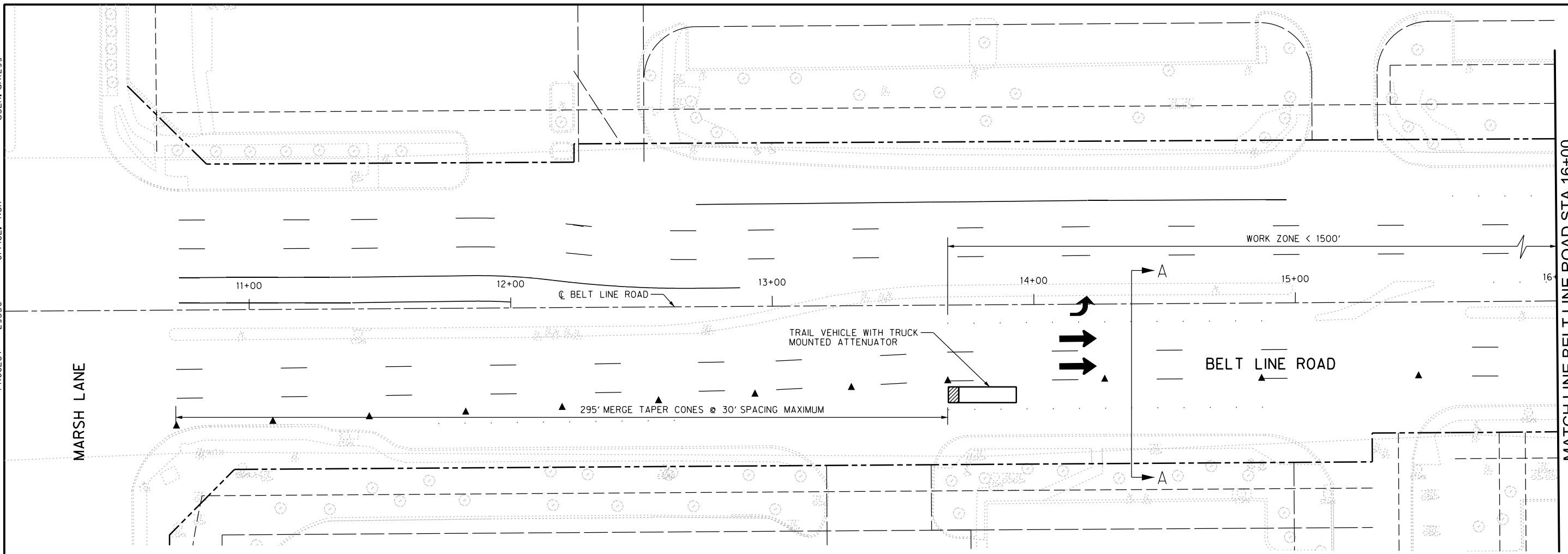
- NOTES:**
1. CONTRACTOR TO ADD NECESSARY SIGNAGE AS NEEDED ACCORDING TO TMUTCD.
 2. CONTRACTOR TO ENSURE THAT EQUIPMENT DOES NOT BLOCK LINE OF SIGHT FOR DRIVERS.
 3. CONTRACTOR TO LEAVE OPENINGS IN CONE SPACING AS NECESSARY TO MAINTAIN ACCESS TO DRIVEWAYS.



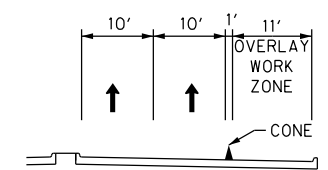
Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
TRAFFIC CONTROL PLAN - OVERLAY PHASE 2, STEP 2					
1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A TCP02-02-02	TCP-5



SECTION A-A
(N.T.S.)

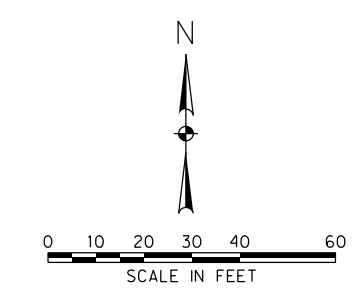


SECTION B-B
(N.T.S.)

LEGEND

- CONES
- LANES TO BE OPEN AT ALL TIMES
- LANES TO BE CLOSED DURING OFF-PEAK HOURS ONLY

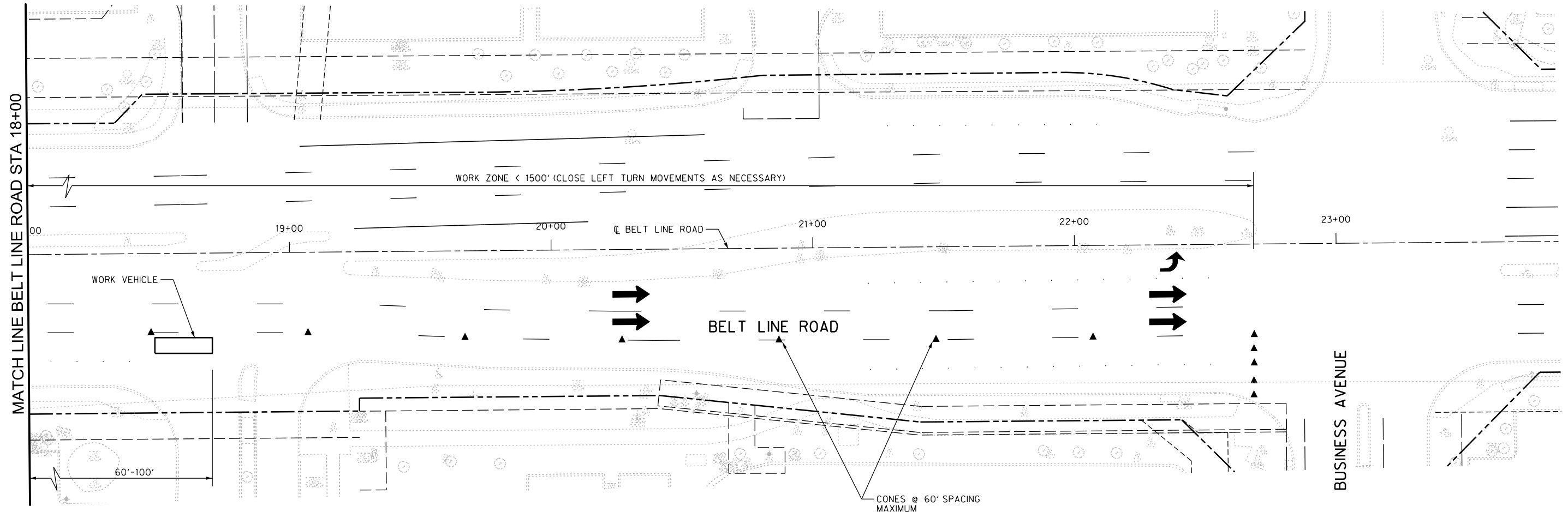
- NOTES:**
1. CONTRACTOR TO ADD NECESSARY SIGNAGE AS NEEDED ACCORDING TO TMUTCD.
 2. CONTRACTOR TO ENSURE THAT EQUIPMENT DOES NOT BLOCK LINE OF SIGHT FOR DRIVERS.
 3. CONTRACTOR TO LEAVE OPENINGS IN CONE SPACING AS NECESSARY TO MAINTAIN ACCESS TO DRIVEWAYS.






Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

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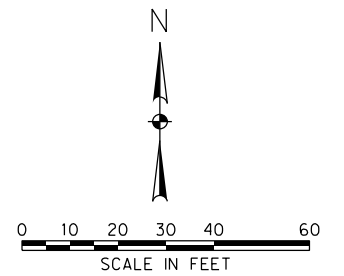
NO.	REVISION	BY	DATE		
TOWN OF ADDISON DALLAS COUNTY, TEXAS Belt Line Road Overlay Project TRAFFIC CONTROL PLAN - OVERLAY PHASE 2, STEP 3 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A TCP02-03-01	TCP-6



LEGEND



-  CONES
-  LANES TO BE OPEN AT ALL TIMES
-  LANES TO BE CLOSED DURING OFF-PEAK HOURS ONLY

- NOTES:**
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 2. CONTRACTOR TO ENSURE THAT EQUIPMENT DOES NOT BLOCK LINE OF SIGHT FOR DRIVERS.
 3. CONTRACTOR TO LEAVE OPENINGS IN CONE SPACING AS NECESSARY TO MAINTAIN ACCESS TO DRIVEWAYS.



Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE		
 TOWN OF ADDISON DALLAS COUNTY, TEXAS					
BELT LINE ROAD OVERLAY PROJECT					
TRAFFIC CONTROL PLAN - OVERLAY PHASE 2, STEP 3					
 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095					
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET
33426	HALFF	HALFF	OCT. 2017	29350A TCP02-03-02	TCP-7

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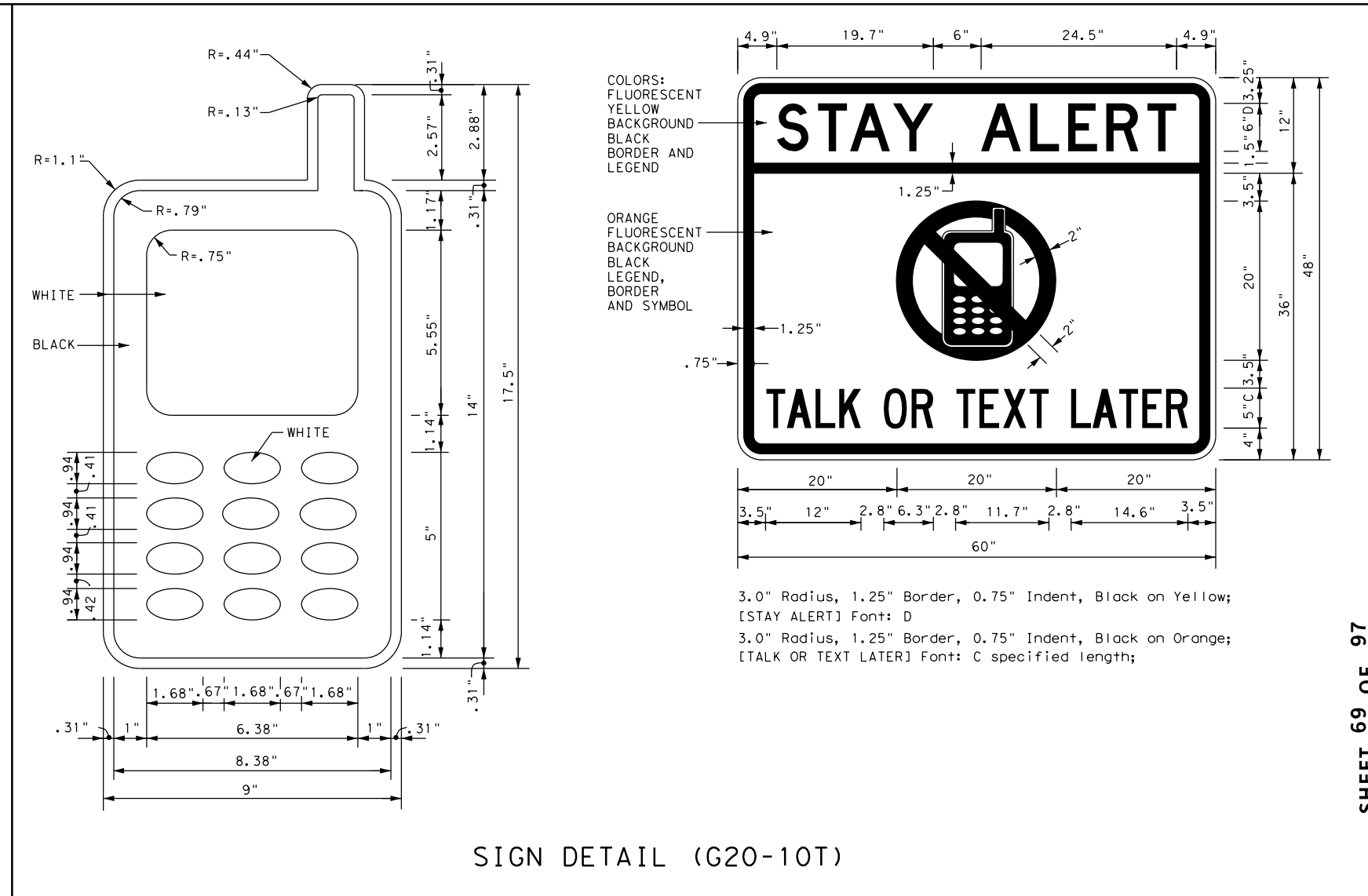
BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

- The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
- The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
- The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
- Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
- When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
- The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
- All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
- The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
- As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER (see Sign Detail G20-10T) and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. However, the TRAFFIC FINES DOUBLE sign will not be required on projects consisting solely of mobile operation work, such as striping or milling edgeline rumble strips. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.
- Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.
- The Engineer has the final decision on the location of all traffic control devices.
- Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY APPAREL NOTES:

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

DATE:
 FILE:



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

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

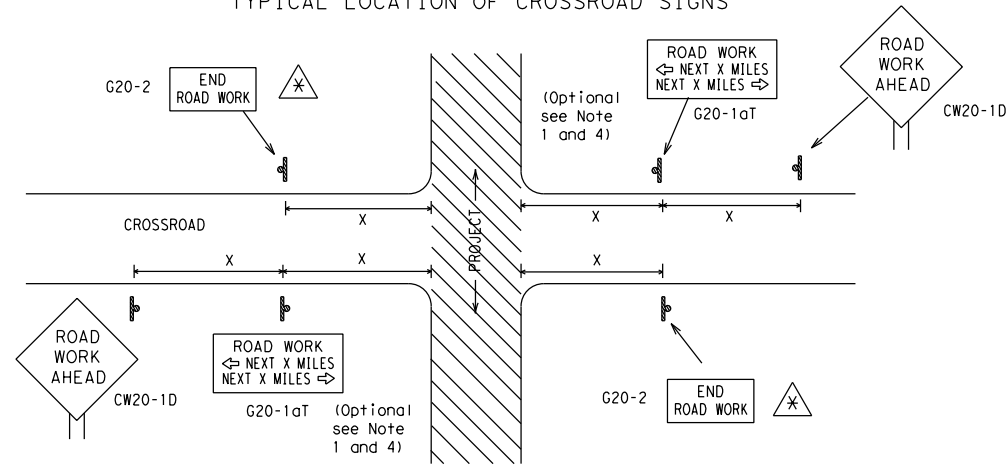
THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS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

SHEET 1 OF 12

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS			
BC (1) - 14			
FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
© TxDOT November 2002	CONT	SECT	JOB
REVISIONS		HIGHWAY	
4-03	5-10	8-14	
9-07	7-13		
DIST		COUNTY	SHEET NO.

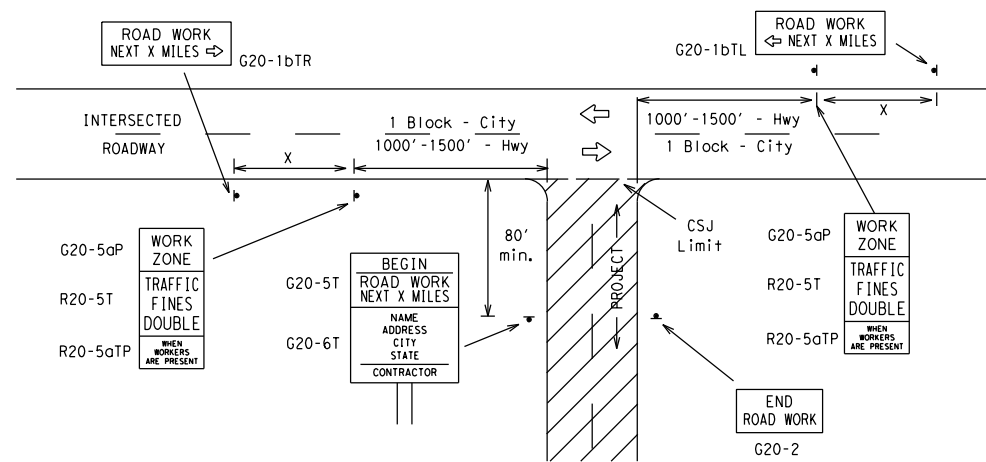
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TYPICAL LOCATION OF CROSSROAD SIGNS



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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

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

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

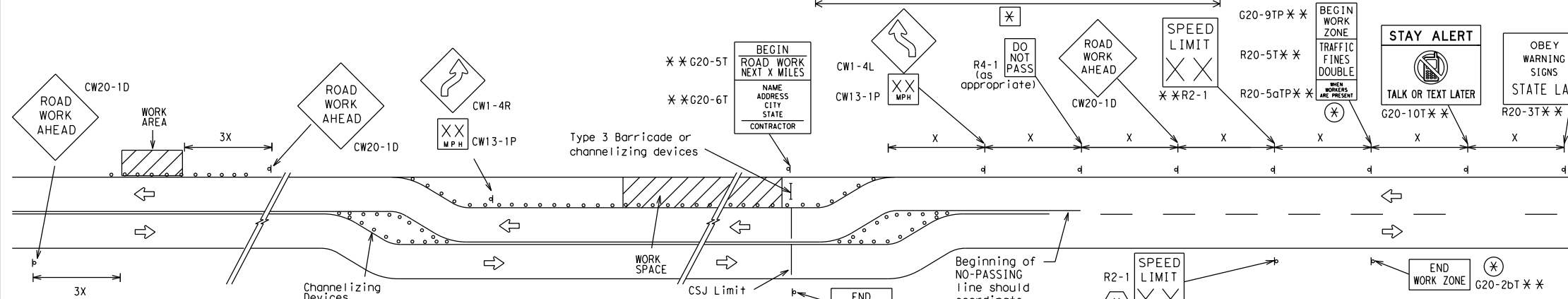
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

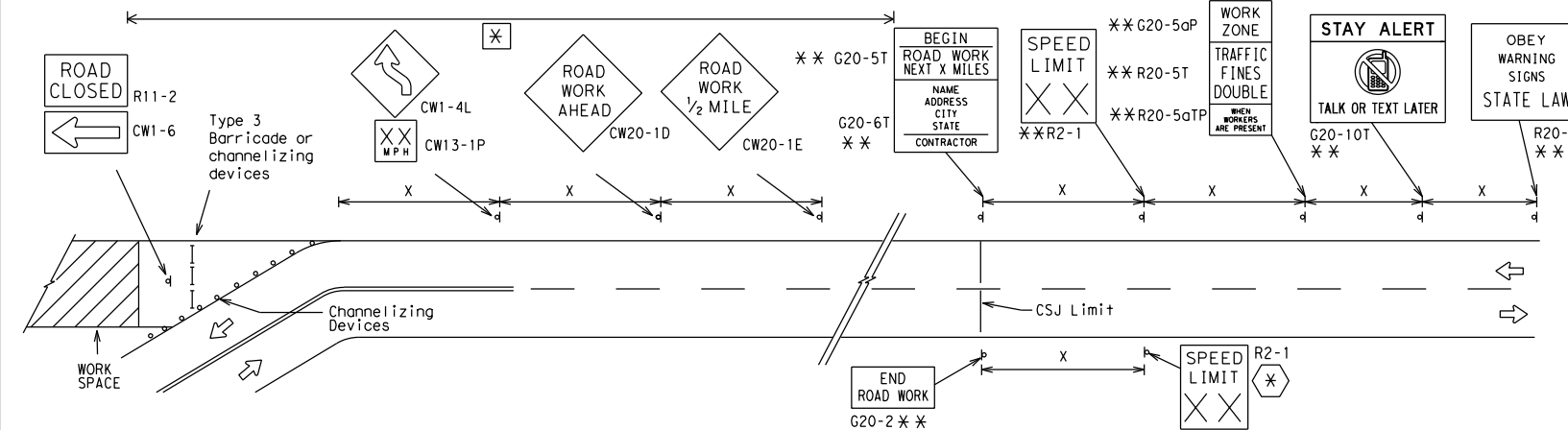
- Special or larger size signs may be used as necessary.
- Distance between signs should be increased as required to have 1500 feet advance warning.
- Distance between signs should be increased as required to have 1/2 mile or more advance warning.
- 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be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

WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

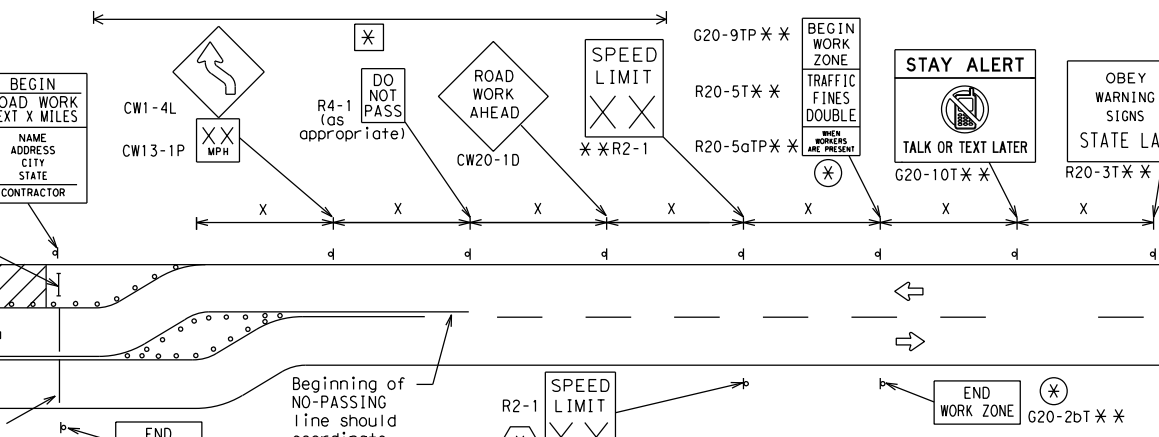


When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing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

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



SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS



NOTES

- The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.
- ⊗ The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.
- ** Required CSJ Limit signing. See Note 10 on BC(1). TRAFFIC FINES DOUBLE signs will not be required on projects consisting solely of mobile operations work.
- ⊗ Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.
- ⊗ Contractor will install a regulatory speed limit sign at the end of the work zone.

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

SHEET 2 OF 12



BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC (2) - 14

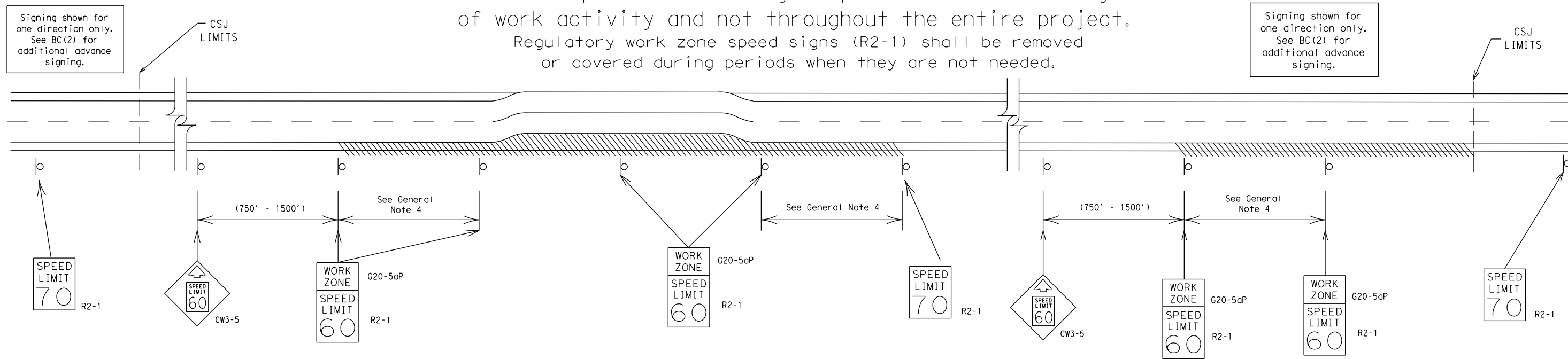
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© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
9-07	8-14	DIST	COUNTY	SHEET NO.
7-13				

DATE: FILE:

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

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

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

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

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

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

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SHEET 71 OF 97

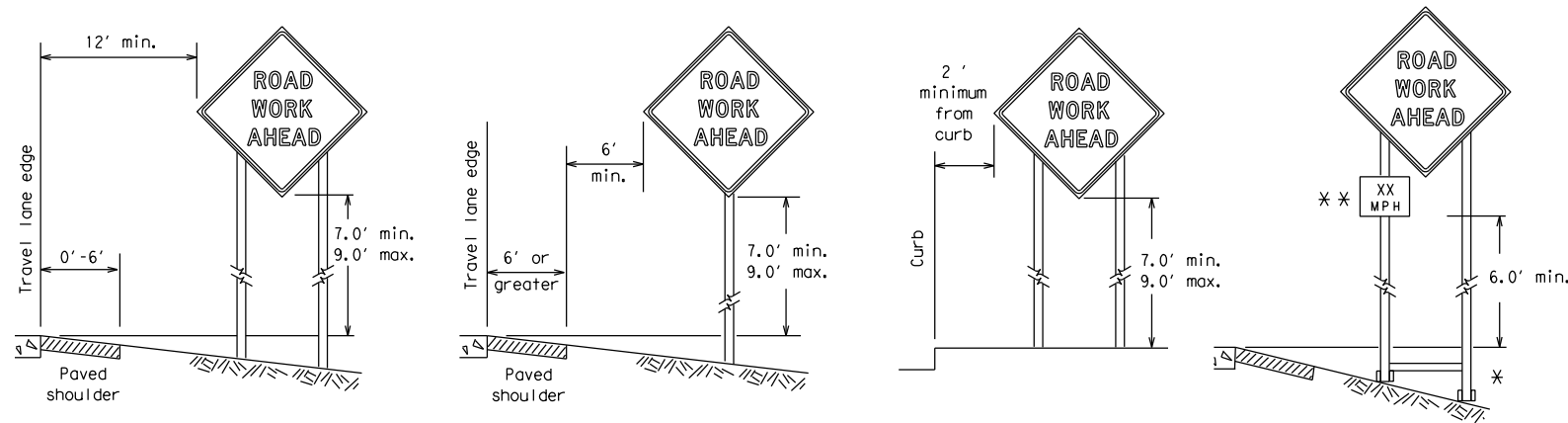
SHEET 3 OF 12

		Texas Department of Transportation		Traffic Operations Division Standard	
<h2>BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT</h2>					
<h3>BC (3) - 14</h3>					
FILE:	bc-14.dgn	DN:	TxDOT	CK:	TxDOT
© TxDOT	November 2002	CONT:	SECT:	JOB:	HIGHWAY:
REVISIONS					
9-07	8-14	DIST:	COUNTY:	SHEET NO.	
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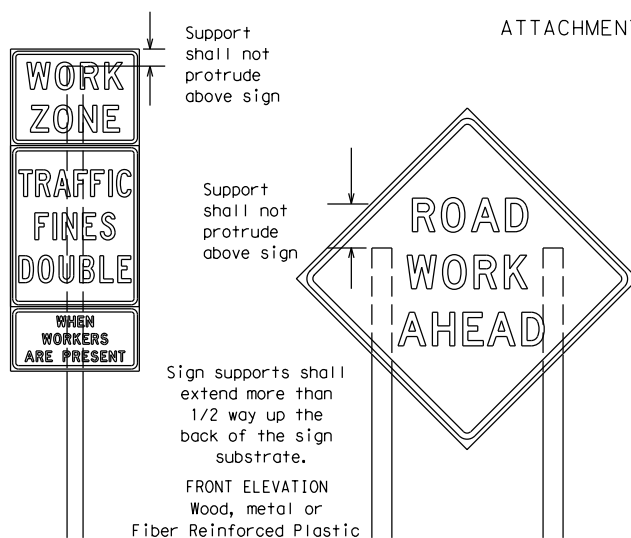
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



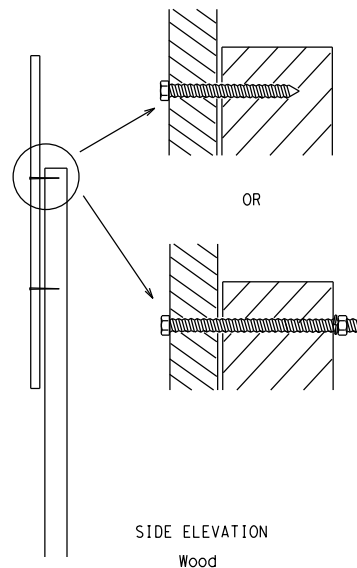
* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

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

ATTACHMENT FOR SIGN SUPPORTS



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

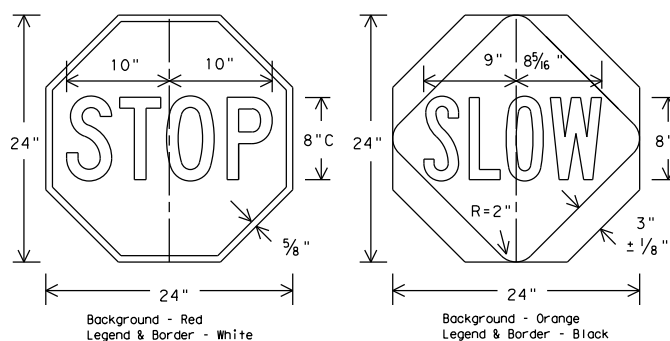


Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

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

STOP/SLOW PADDLES

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



CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
 - Wooden sign posts shall be painted white.
 - Barricades shall NOT be used as sign supports.
 - All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
 - The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
 - The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
 - The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
 - Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
 - The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.
- DURATION OF WORK** (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)
- The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
 - Long-term stationary - work that occupies a location more than 3 days.
 - Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
 - Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
 - Short, duration - work that occupies a location up to 1 hour.
 - Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

SHEET 4 OF 12



BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

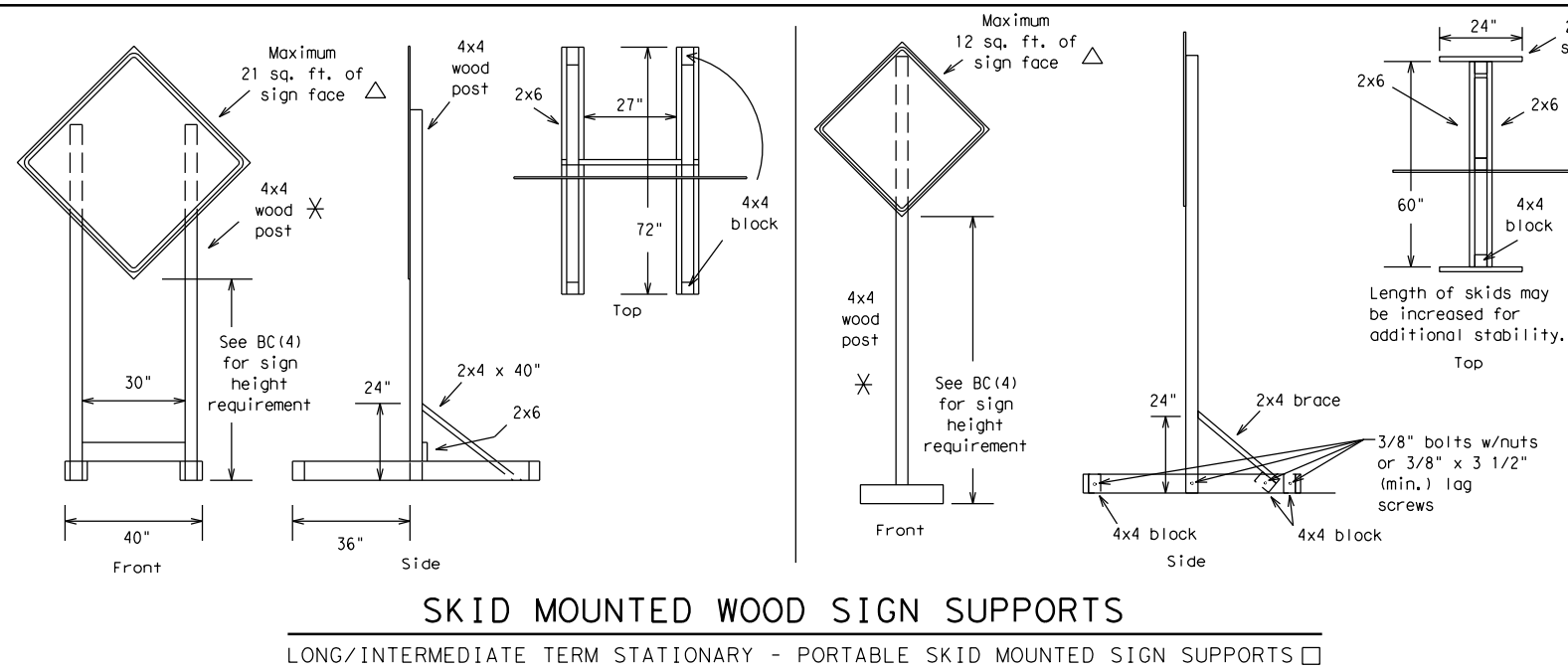
BC (4) - 14

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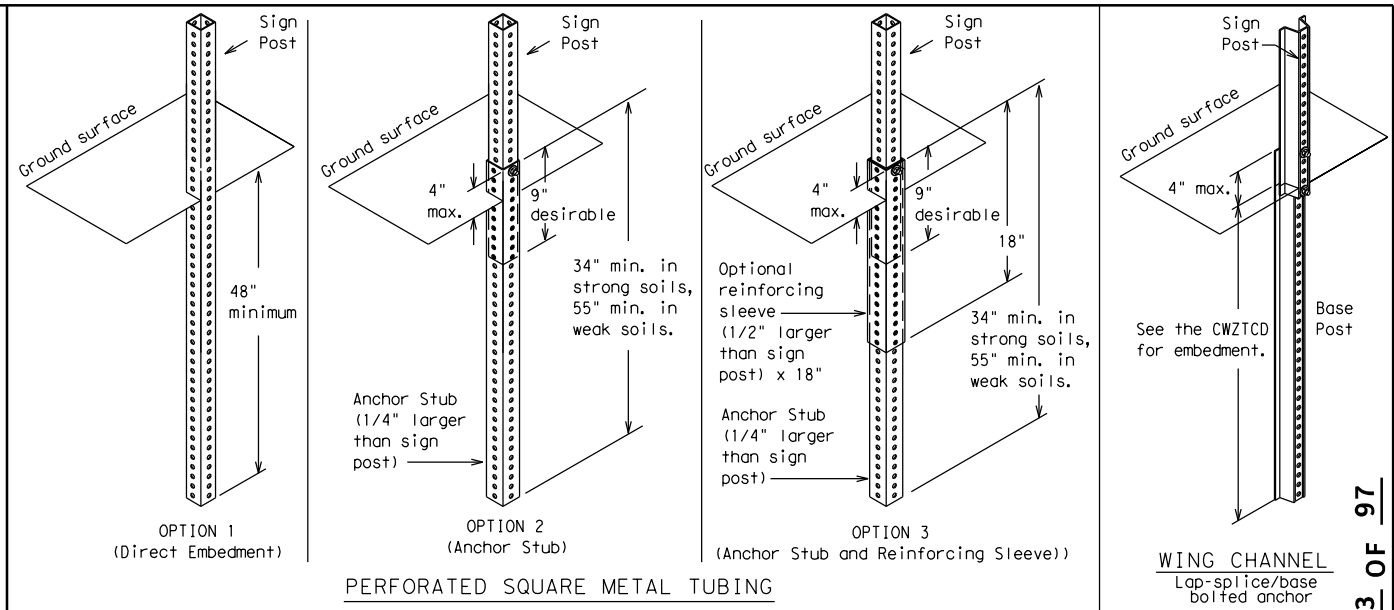
SHEET 72 OF 97

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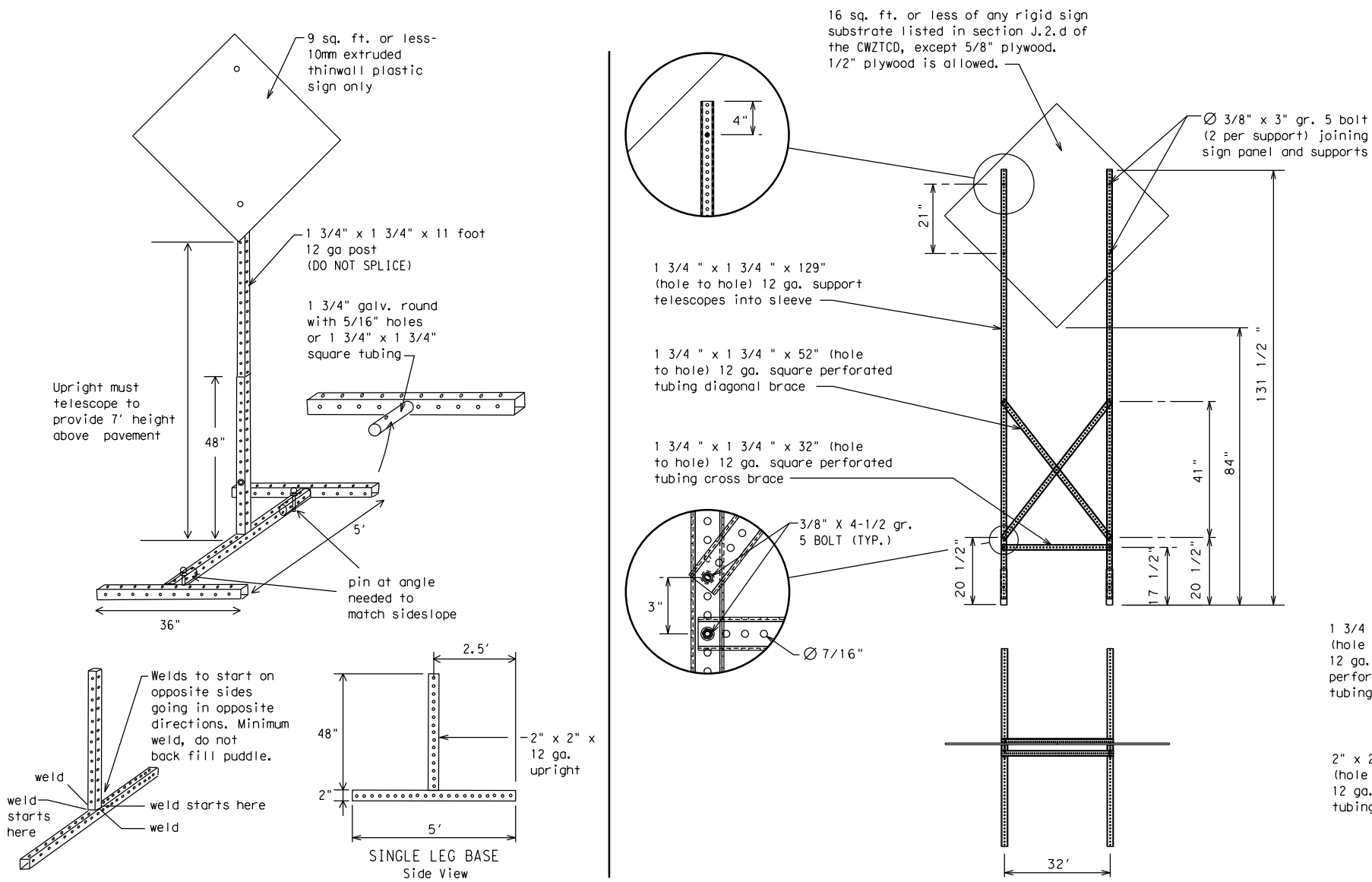
SKID MOUNTED WOOD SIGN SUPPORTS

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

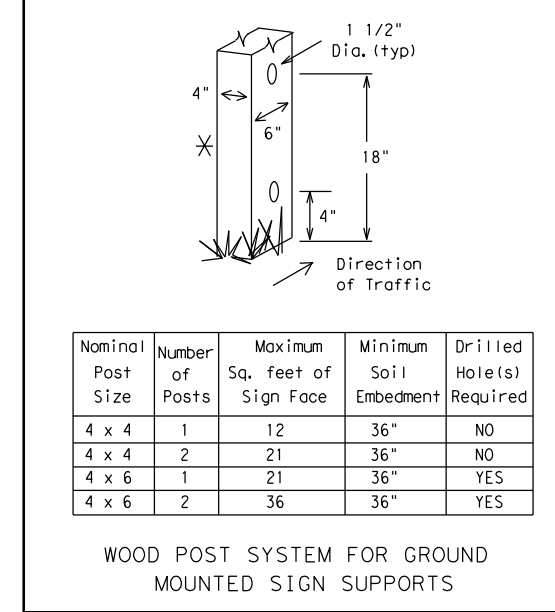


GROUND MOUNTED SIGN SUPPORTS

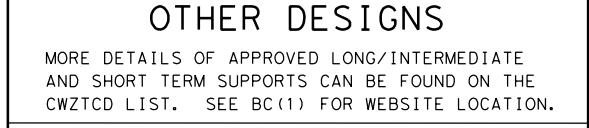
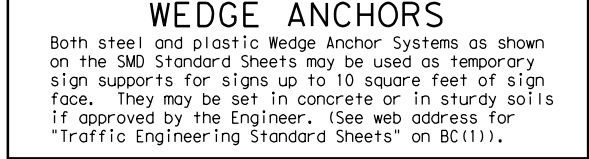
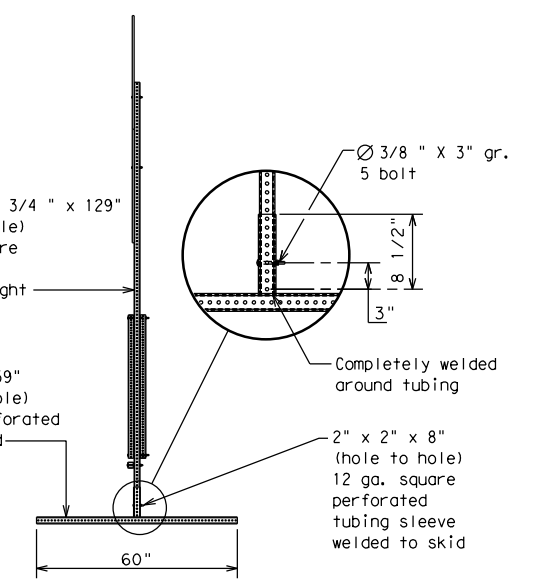
Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support. The maximum sign square footage shall adhere to the manufacturer's recommendation. Two post installations can be used for larger signs.



SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS



WOOD POST SYSTEM FOR GROUND MOUNTED SIGN SUPPORTS



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

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

SHEET 5 OF 12



BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC (5) - 14

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7-13		DIST	COUNTY	SHEET NO.

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WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

FRONTAGE ROAD CLOSED
SHOULDER CLOSED XXX FT
RIGHT LN CLOSED XXX FT
RIGHT X LANES OPEN
DAYTIME LANE CLOSURES
I-XX SOUTH EXIT CLOSED
EXIT XXX CLOSED X MILE
RIGHT LN TO BE CLOSED
X LANES CLOSED TUE - FRI

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

ROAD REPAIRS XXXX FT
LANE NARROWS XXXX FT
TWO-WAY TRAFFIC XX MILE
CONST TRAFFIC XXX FT
UNEVEN LANES XXXX FT
ROUGH ROAD XXXX FT
ROADWORK NEXT FRI-SUN
US XXX EXIT X MILES
LANES SHIFT *

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

MERGE RIGHT
DETOUR NEXT X EXITS
USE EXIT XXX
STAY ON US XXX SOUTH
TRUCKS USE US XXX N
WATCH FOR TRUCKS
EXPECT DELAYS
REDUCE SPEED XXX FT
USE OTHER ROUTES
STAY IN LANE *

FORM X LINES RIGHT
USE XXXXX RD EXIT
USE EXIT I-XX NORTH
USE I-XX E TO I-XX N
WATCH FOR TRUCKS
EXPECT DELAYS
PREPARE TO STOP
END SHOULDER USE
WATCH FOR WORKERS

Location List

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

Warning List

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

** Advance Notice List

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

** See Application Guidelines Note 6.

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

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

APPLICATION GUIDELINES

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

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

FULL MATRIX PCMS SIGNS

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

WORDING ALTERNATIVES

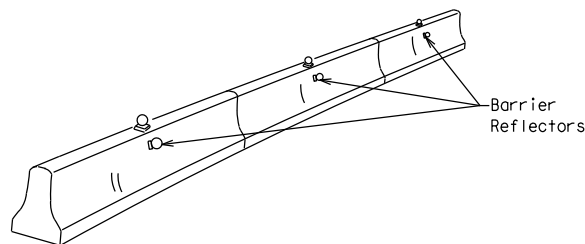
- The words RIGHT, LEFT and ALL can be interchanged as appropriate.
- Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
- EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
- Highway names and numbers replaced as appropriate.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

SHEET 6 OF 12

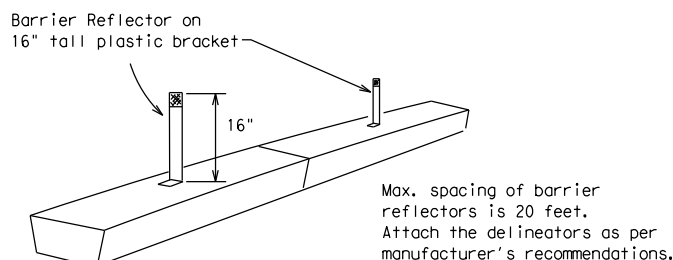
		Traffic Operations Division Standard	
<h3>BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)</h3>			
<h2>BC (6) - 14</h2>			
FILE:	bc-14.dgn	DN:	TxDOT
©TxDOT	November 2002	CK:	TxDOT
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9-07	8-14	JOB:	HIGHWAY:
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			SHEET NO.:

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

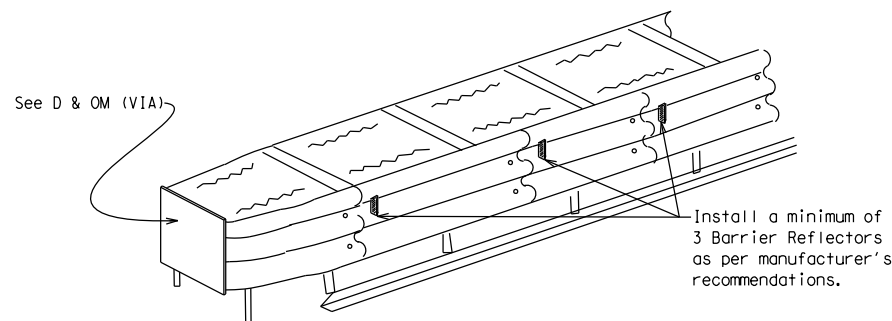


CONCRETE TRAFFIC BARRIER (CTB)



LOW PROFILE CONCRETE BARRIER (LPCB)

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



DELINEATION OF END TREATMENTS

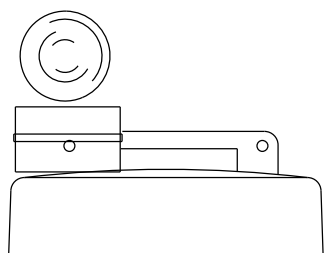
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

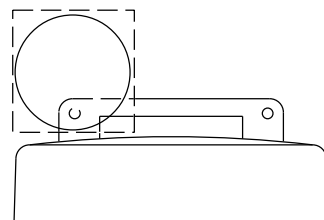
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet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



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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

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



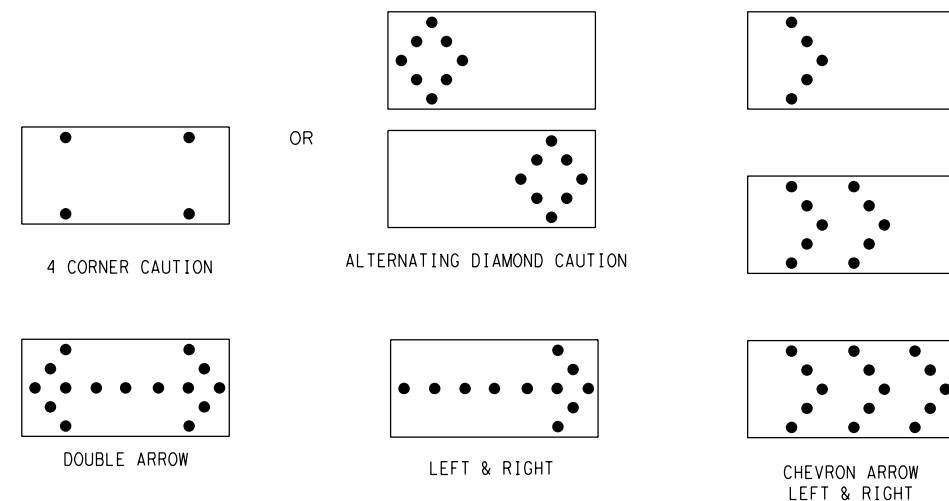
Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

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

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

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

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



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

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

ATTENTION
 Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the National Cooperative Highway Research Report No. 350 (NCHRP 350) or the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CWZTCD for a list of approved TMAs.
- TMAs are required on freeways unless otherwise noted in the plans.
- A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
- The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.



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

BC (7) - 14

FILE:	bc-14.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CR:	TxDOT
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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

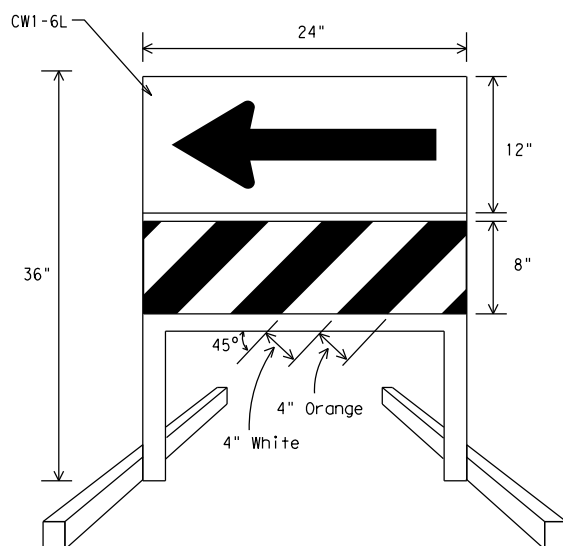
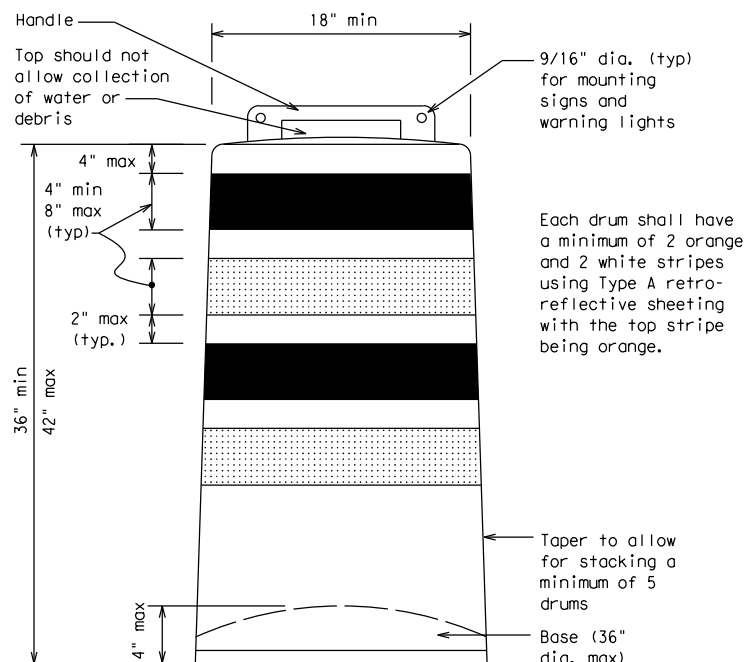
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

RETROREFLECTIVE SHEETING

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

BALLAST

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



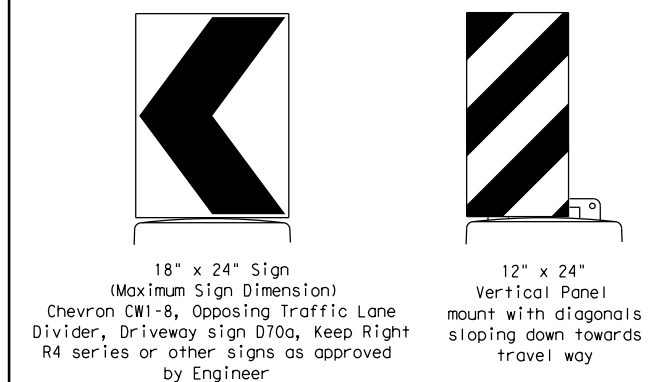
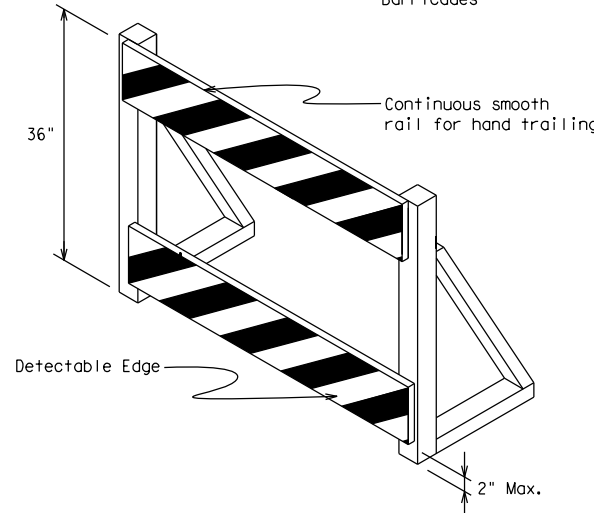
DIRECTION INDICATOR BARRICADE

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

DETECTABLE PEDESTRIAN BARRICADES

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

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



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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

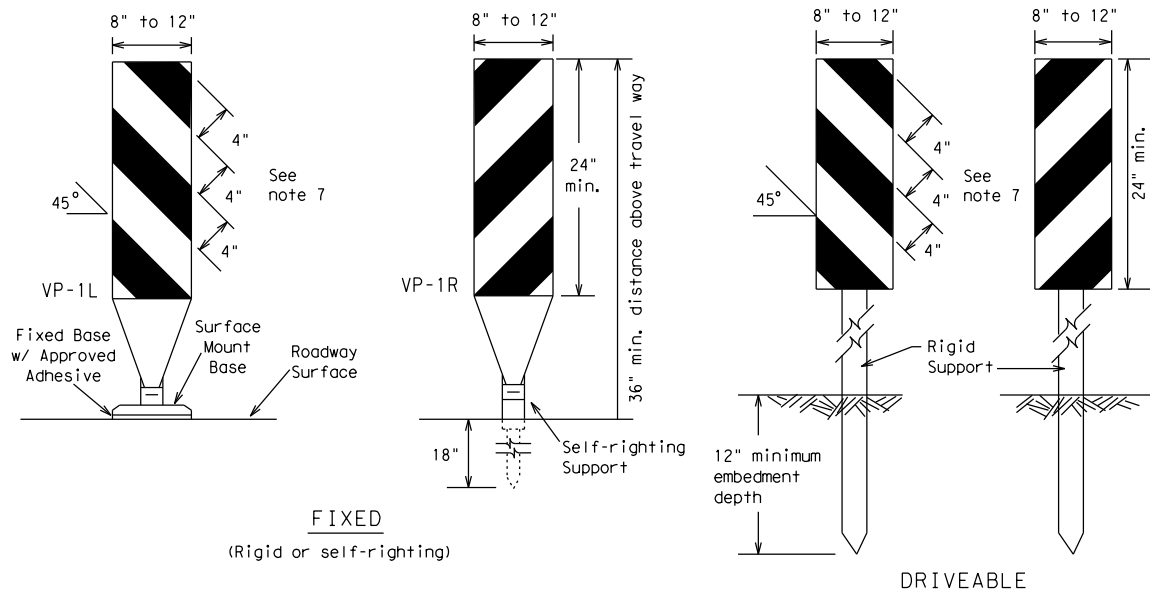
SHEET 8 OF 12

		Traffic Operations Division Standard	
BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES			
BC (8) - 14			
FILE:	bc-14.dgn	DW:	TxDOT
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		COUNTY:	TxDOT
		SHEET NO.:	TxDOT

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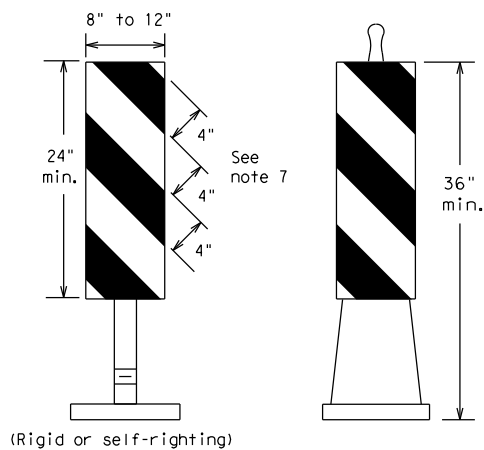
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FIXED
(Rigid or self-righting)

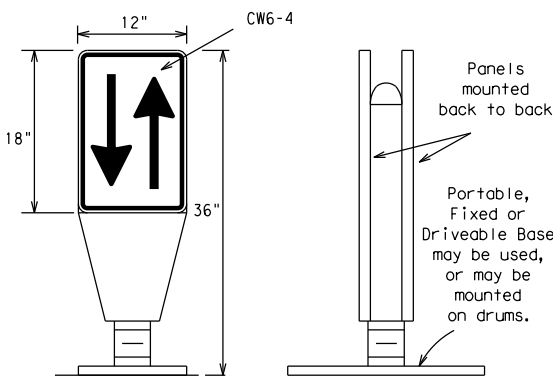
DRIVEABLE



PORTABLE

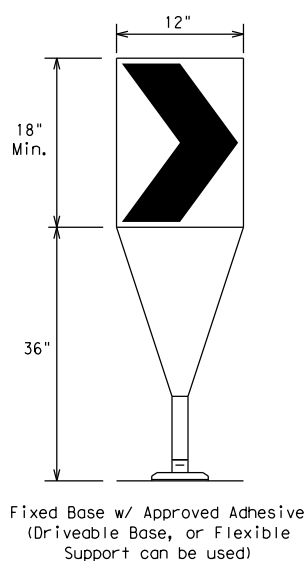
VERTICAL PANELS (VPs)

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



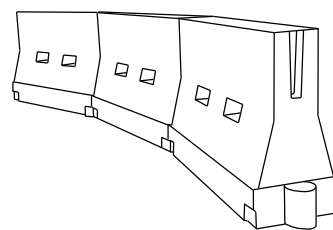
OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

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



- The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
- Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
- Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
- To be effective, the chevron should be visible for at least 500 feet.
- Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
- For Long Term Stationary use on tapers or transitions on freeways and divided highways self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS



LONGITUDINAL CHANNELIZING DEVICES (LCD)

- LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
- LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
- LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10) placed near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

GENERAL NOTES

- Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
- Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
- Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
- Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
- The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	L = WS ² / 60	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

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BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (9) - 14

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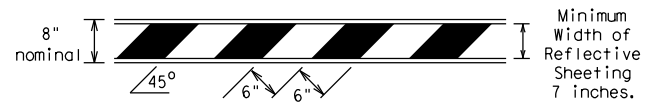
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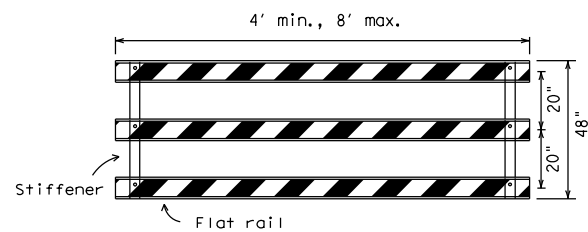
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.

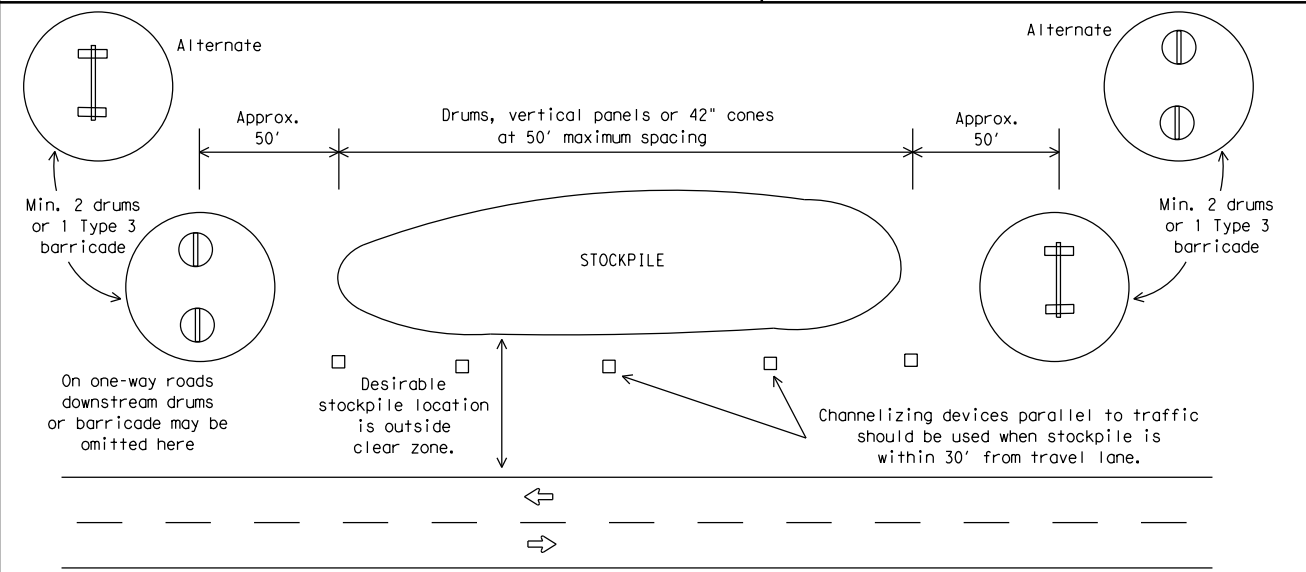


TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



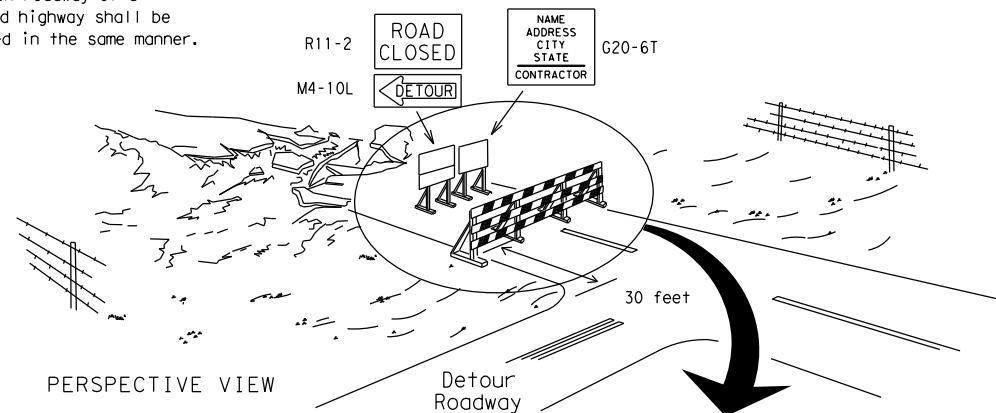
Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES



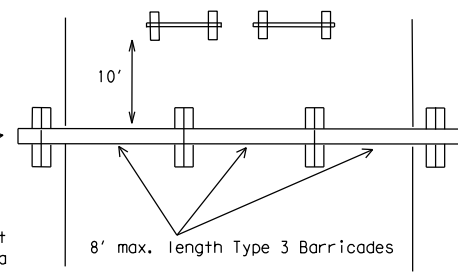
TRAFFIC CONTROL FOR MATERIAL STOCKPILES

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



PERSPECTIVE VIEW

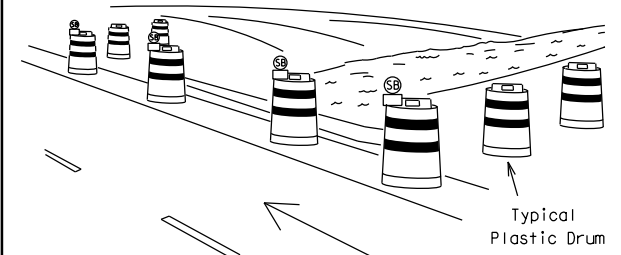
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic. Barricade striping should slant downward in the direction of detour.



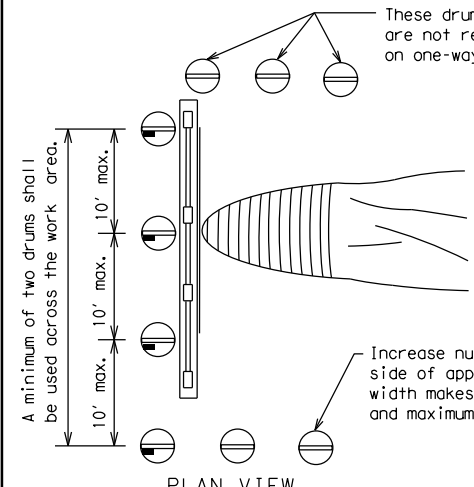
PLAN VIEW

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

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

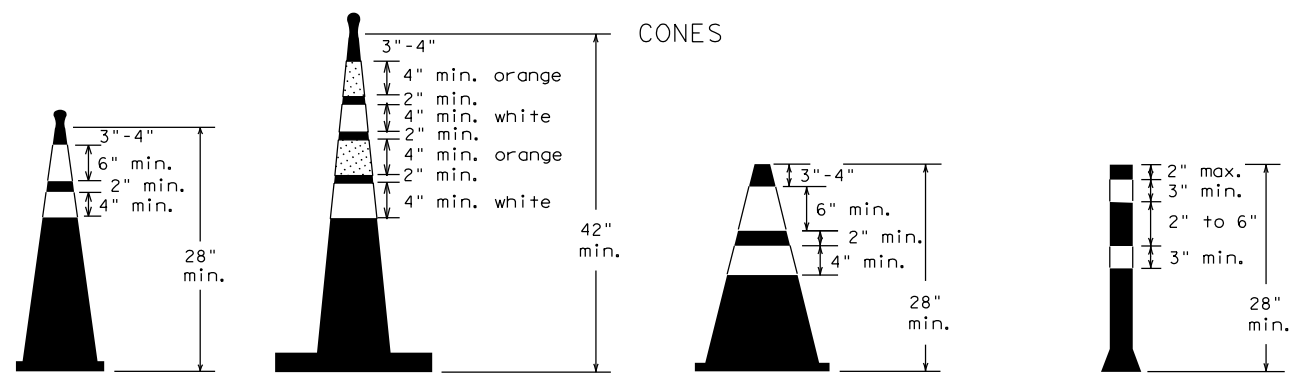


PLAN VIEW

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

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

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



Two-Piece cones

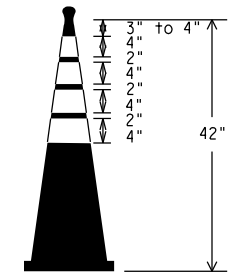
One-Piece cones

Tubular Marker

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

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

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



EDGELINE CHANNELIZER

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

SHEET 10 OF 12



BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC (10) - 14

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7-13				
	DIST	COUNTY		SHEET NO.

DATE: FILE:

WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

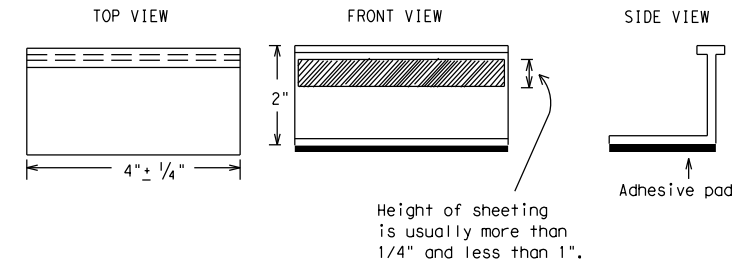
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

- Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
- Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
 - Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
 - Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
- Small design variances may be noted between tab manufacturers.
- See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

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SHEET 11 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

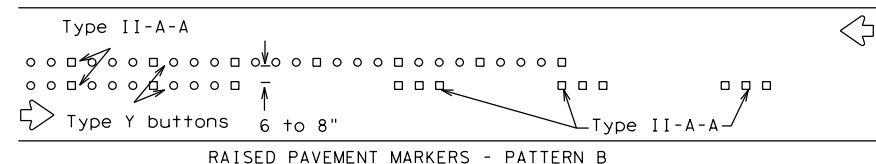
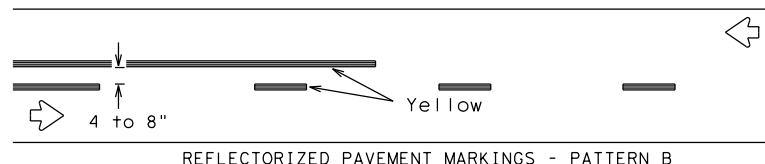
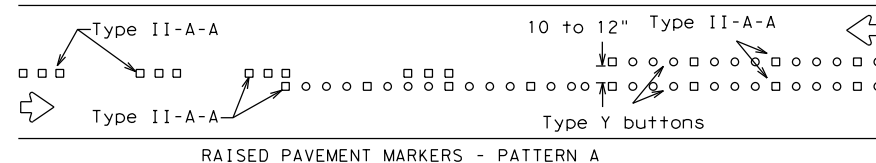
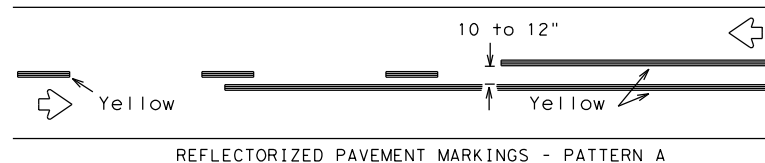
BC(11) - 14

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2-98 9-07				
1-02 7-13				
11-02 8-14				
	DIST	COUNTY	SHEET NO.	

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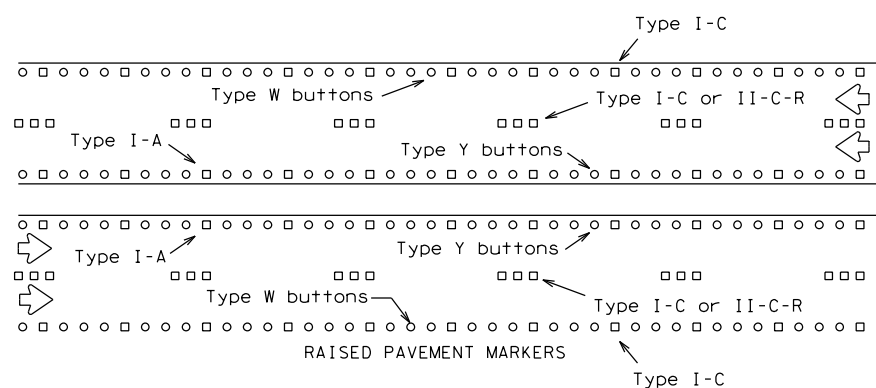
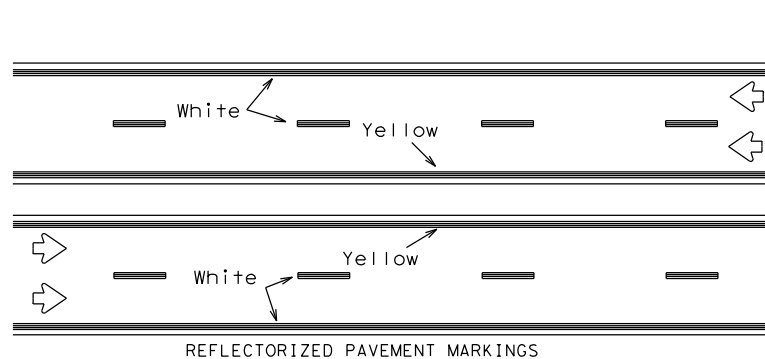
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PAVEMENT MARKING PATTERNS



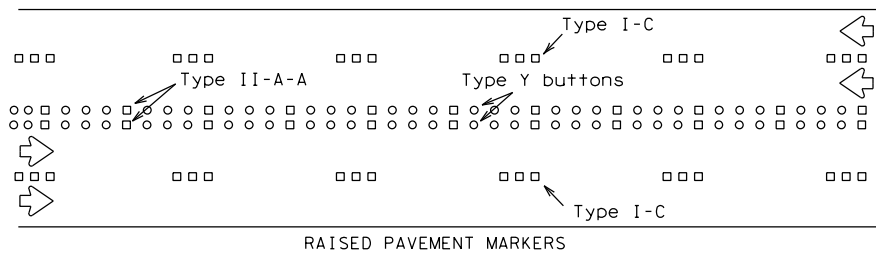
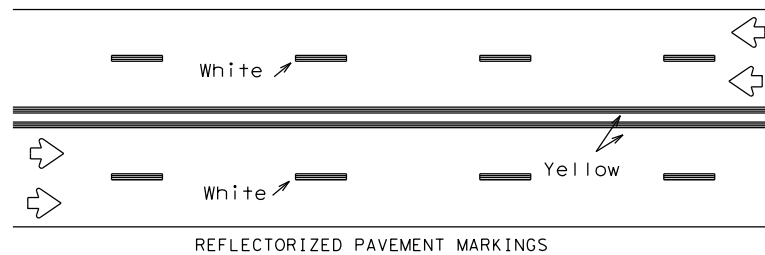
Pattern A is the TxDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectorized pavement markings.

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



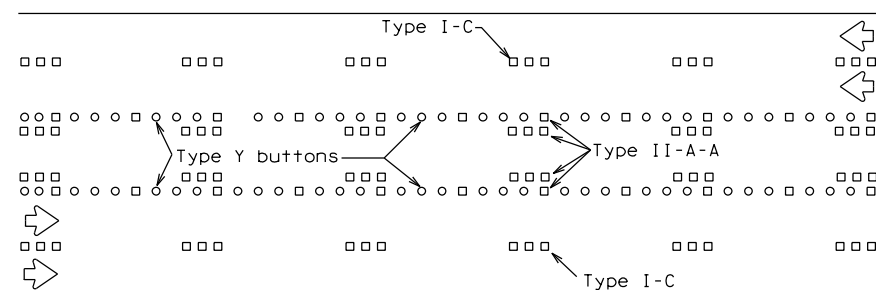
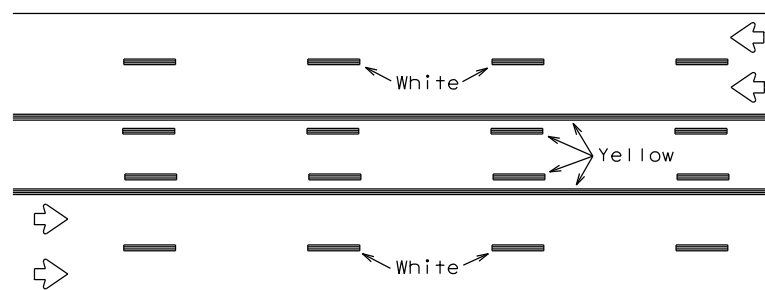
Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



Prefabricated markings may be substituted for reflectorized pavement markings.

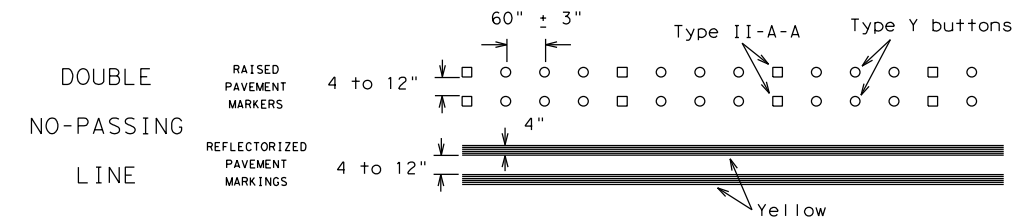
LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



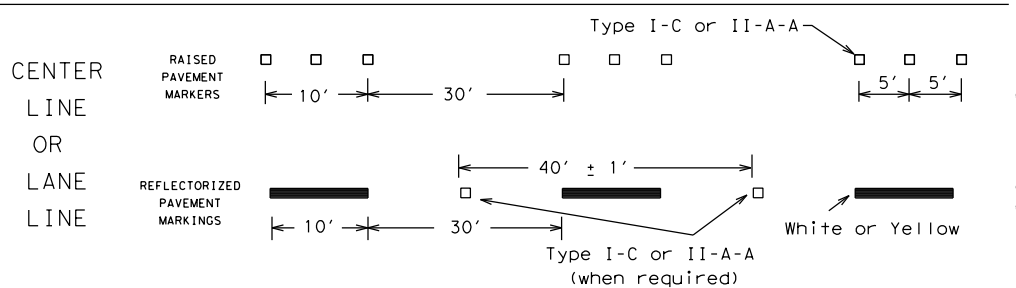
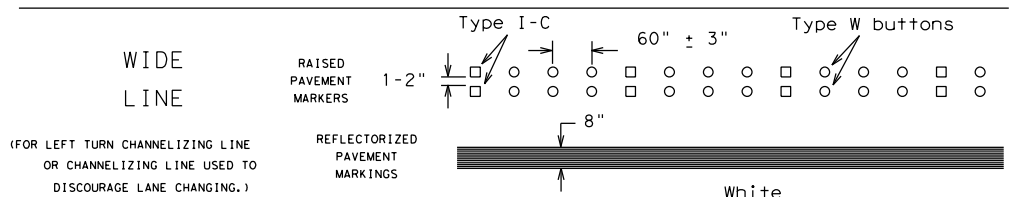
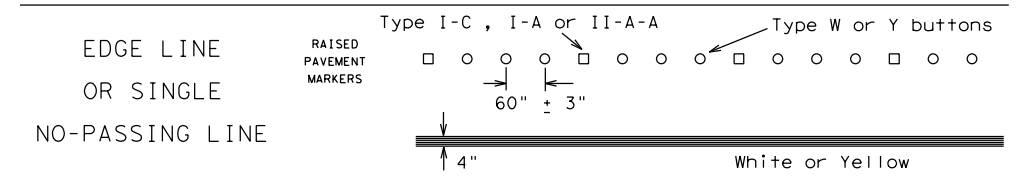
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

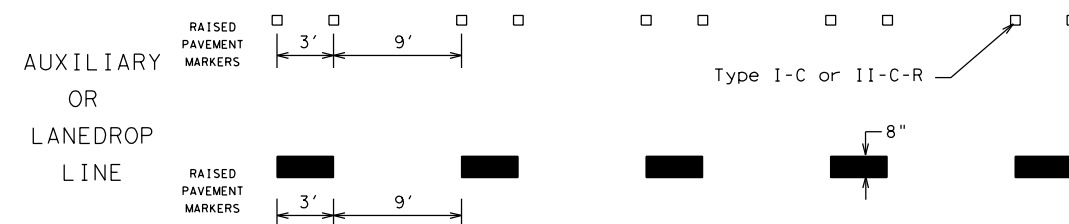
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



SOLID LINES

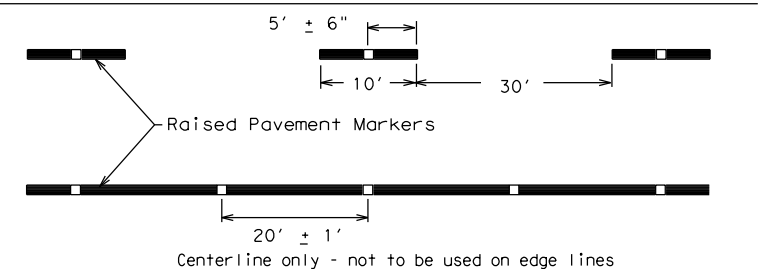


BROKEN LINES



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



SHEET 12 OF 12



BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC (12) - 14

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

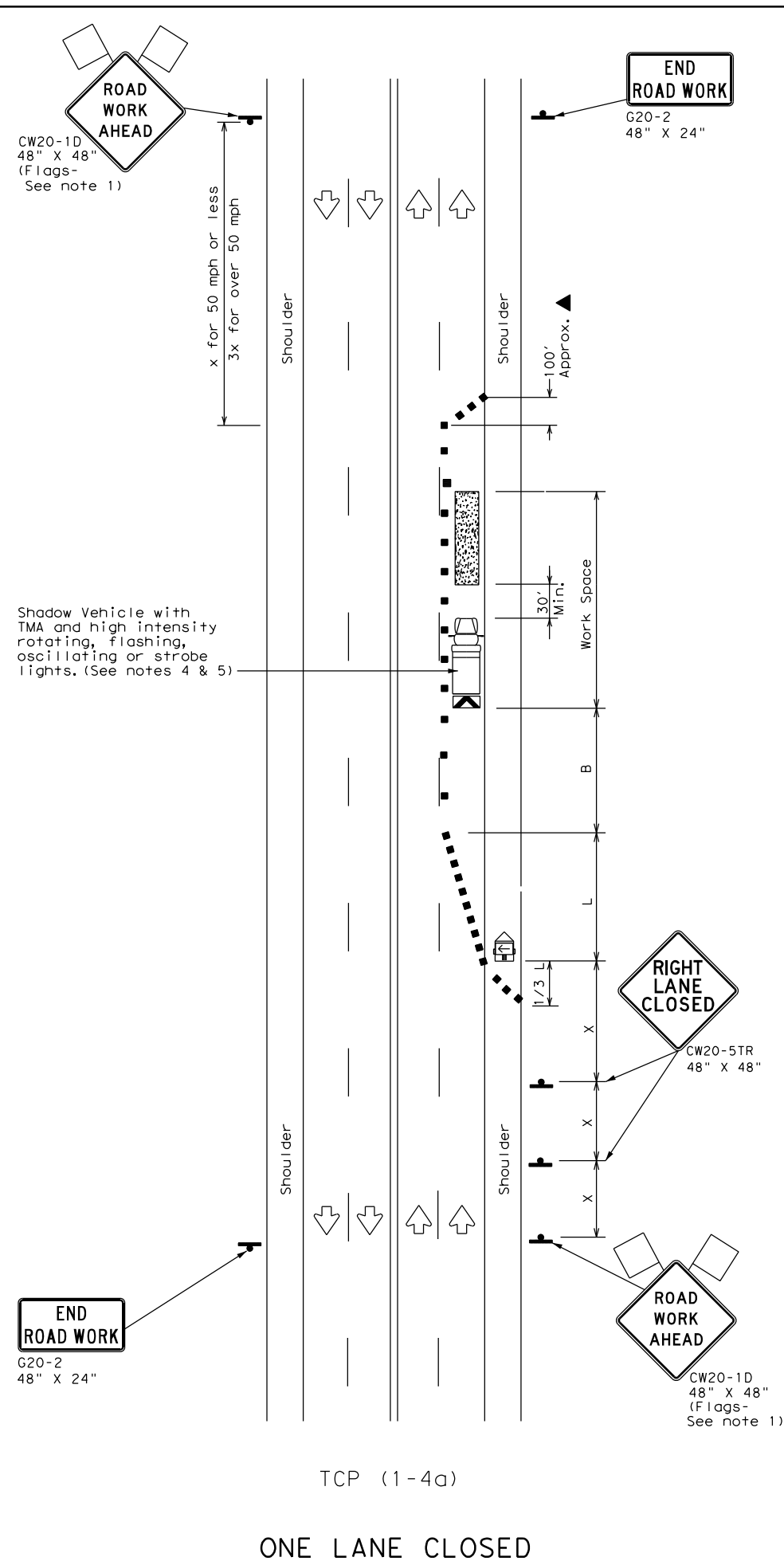
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© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
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1-97 9-07				
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11-02 8-14				
DIST	COUNTY	SHEET NO.		

DATE:
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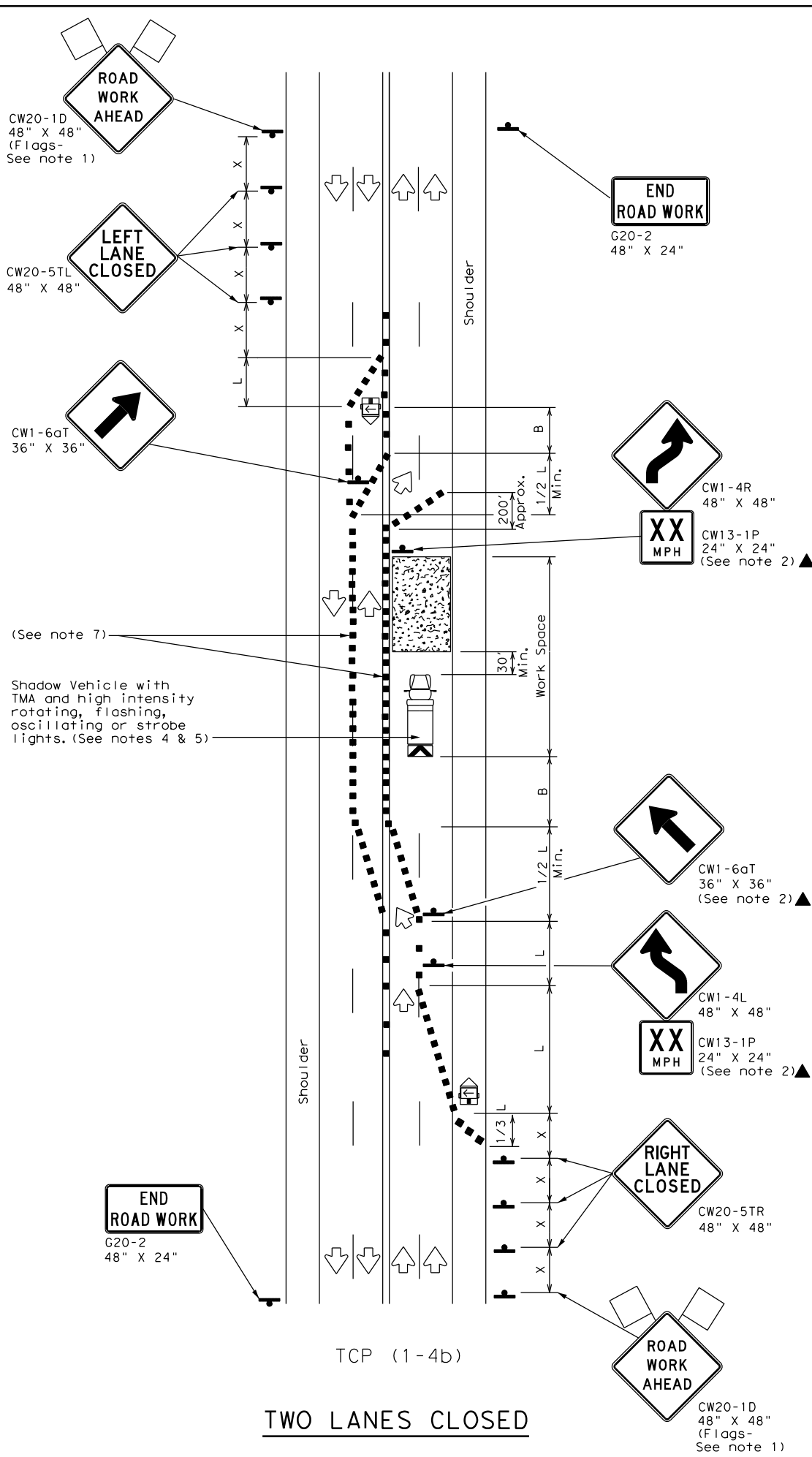
SHEET 80 OF 97

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TCP (1-4a)
ONE LANE CLOSED



TCP (1-4b)
TWO LANES CLOSED

LEGEND

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

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

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

TYPICAL USAGE

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

- GENERAL NOTES
- Flags attached to signs where shown are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - The CW20-1D "ROAD WORK AHEAD" sign may be repeated if the visibility of the work zone is less than 1500 feet.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
- TCP (1-4a)
- If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline where needed to protect the work space from opposing traffic with the arrow panel placed in the closed lane near the end of the merging taper.
- TCP (1-4b)
- Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the areas of conflicting markings, not the entire work zone.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation
 Traffic Operations Division

TRAFFIC CONTROL PLAN
 LANE CLOSURES ON MULTILANE
 CONVENTIONAL ROADS

TCP (1-4) -12

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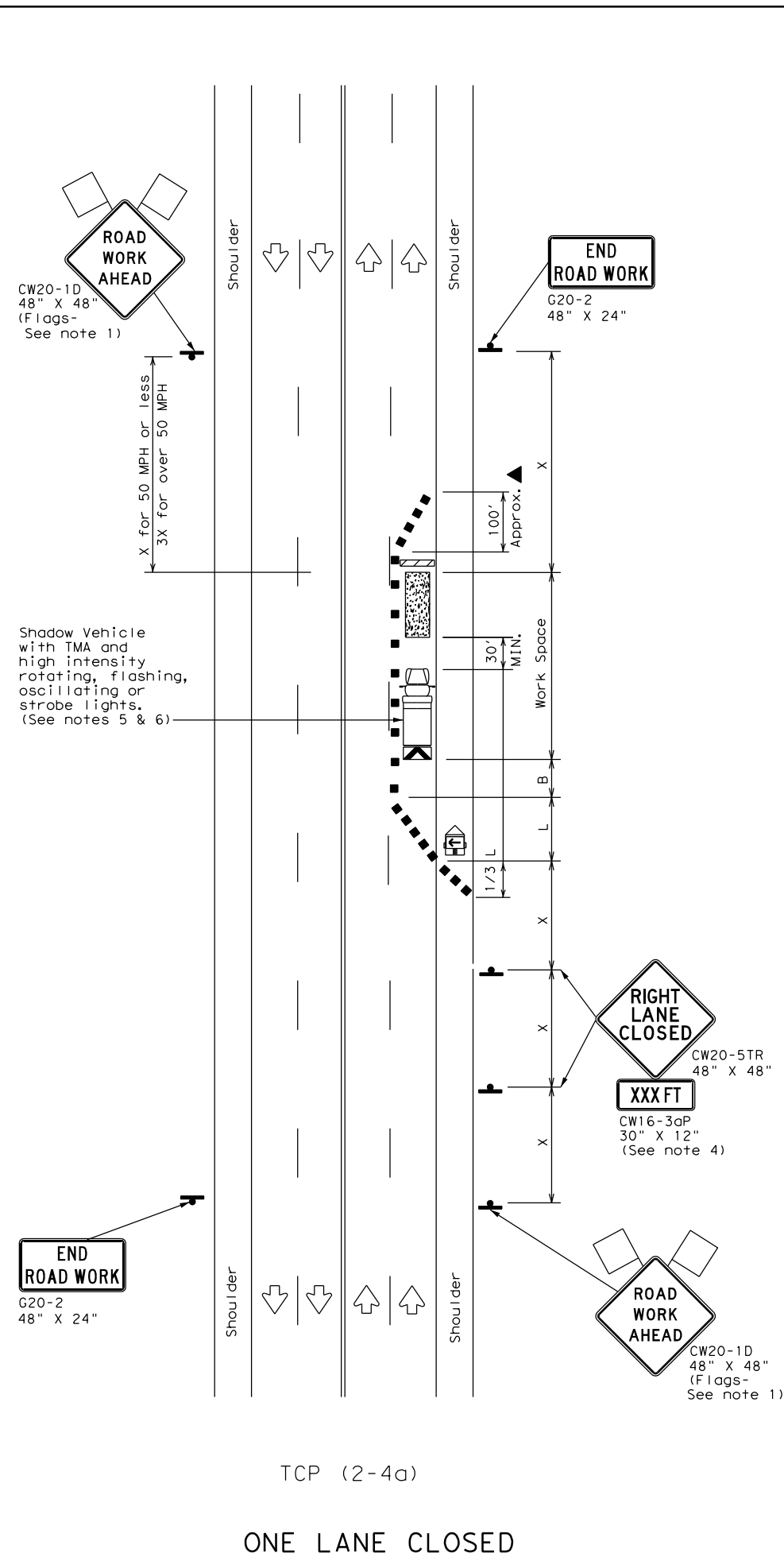
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CONTRACT	SECTION	JOB	HIGHWAY
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2-94 2-12
 8-95
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 4-98

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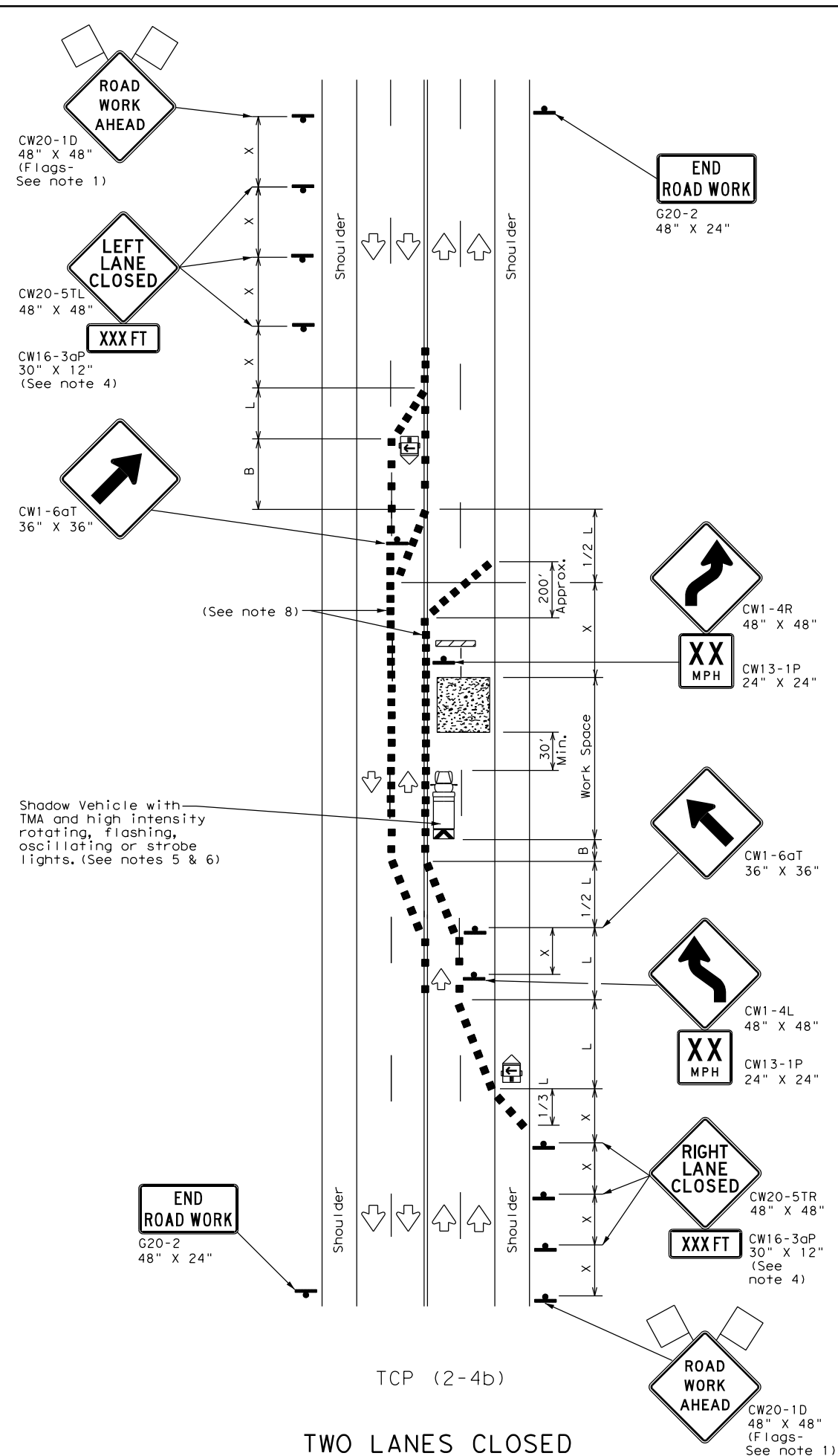
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TCP (2-4a)

ONE LANE CLOSED



TCP (2-4b)

TWO LANES CLOSED

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

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

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

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

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - The downstream taper is optional. When used, it should be 100 feet minimum length per lane.
 - For short term applications, when post mounted signs are not used, the distance legend may be shown on the sign face rather than on a CW16-3aP supplemental plaque.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-4a)**
- If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic with the arrow board placed in the closed lane near the end of the merging taper.
- TCP (2-4b)**
- For shorter durations where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20' or 15' if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(S) where S is the speed in mph. This tighter devices spacing is intended for the area of conflicting markings, not the entire work zone.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation
Traffic Operations Division

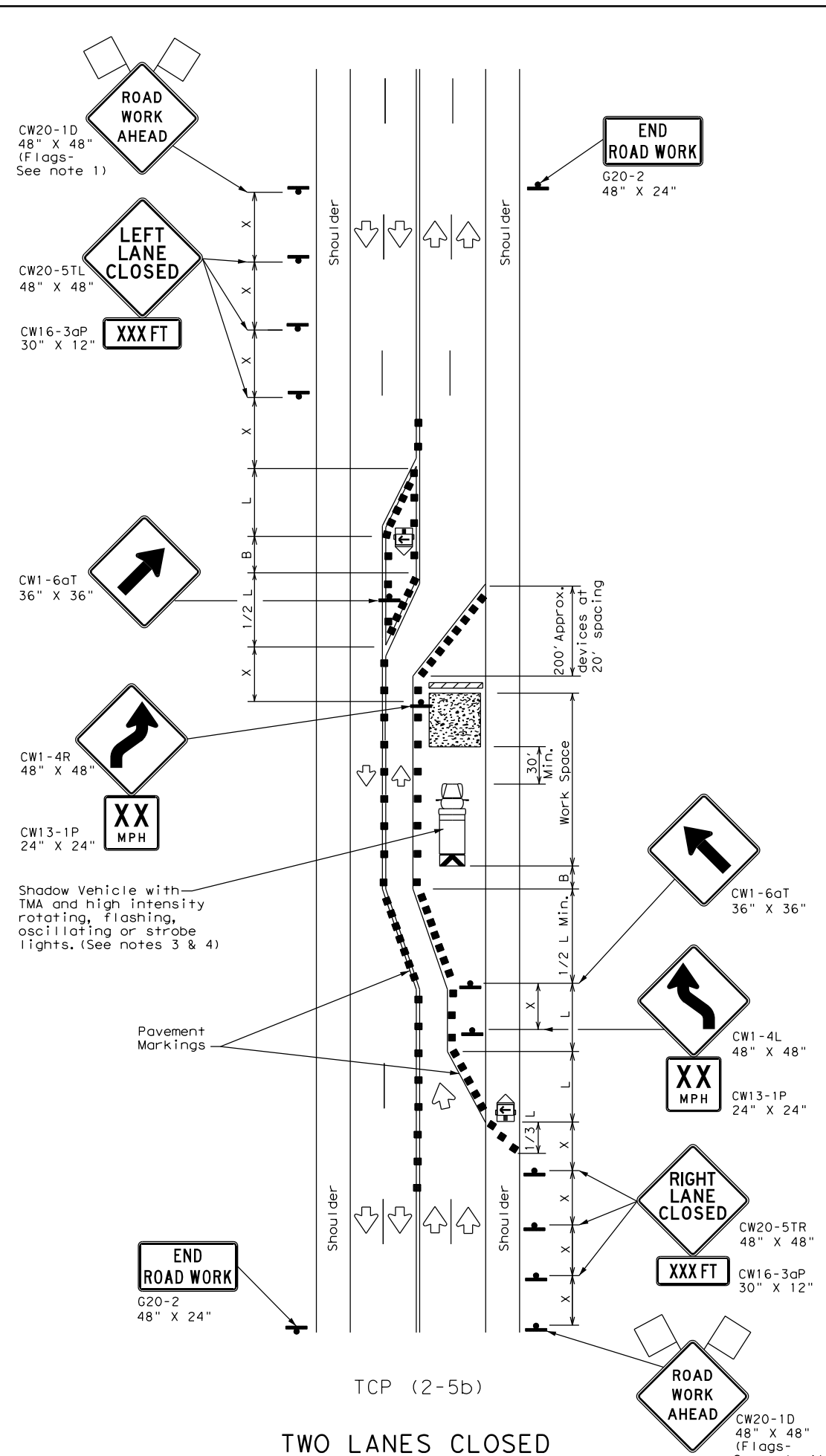
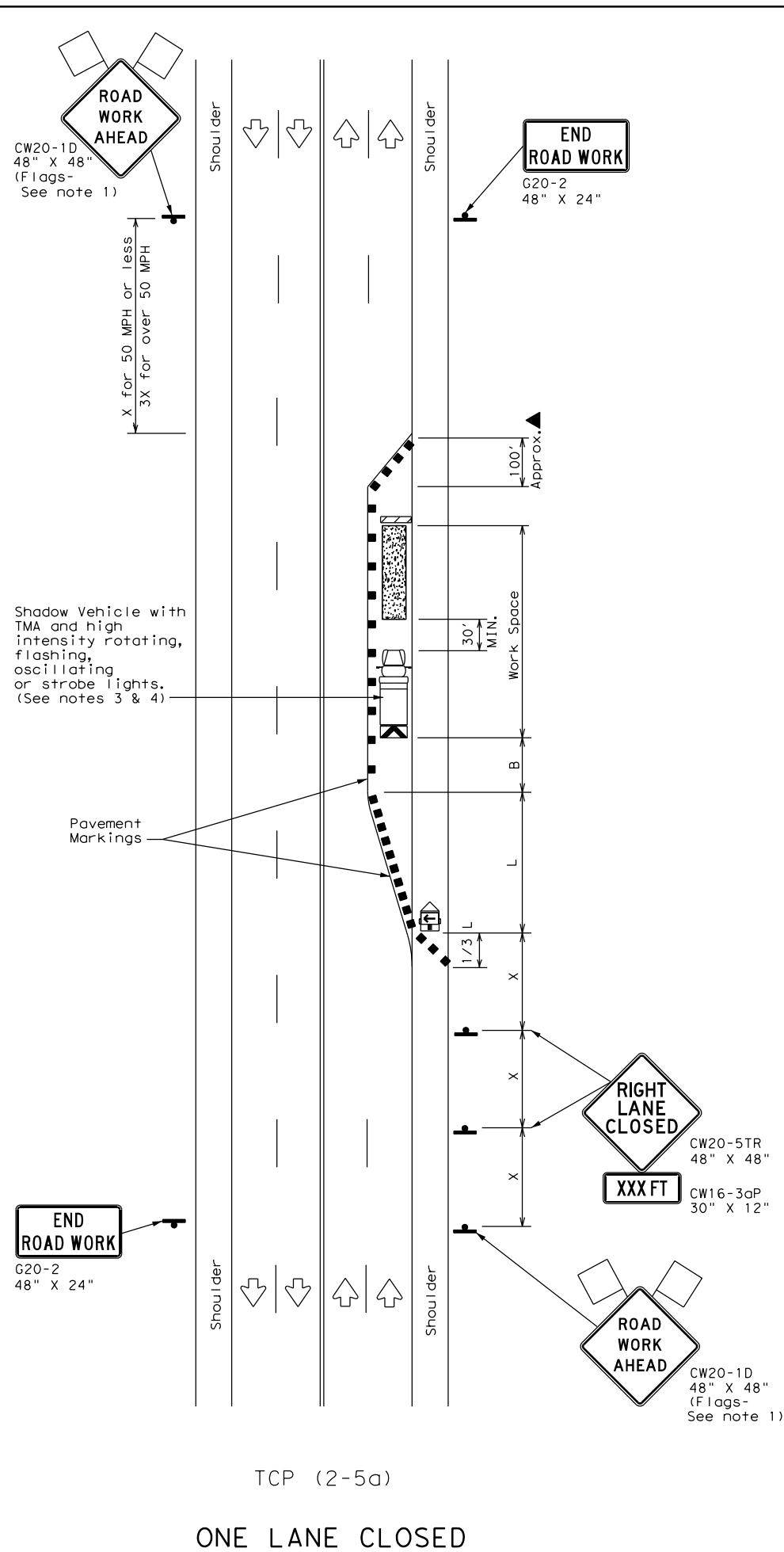
**TRAFFIC CONTROL PLAN
LANE CLOSURES ON MULTILANE
CONVENTIONAL ROADS**

TCP (2-4) -12

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4-98					
3-03		DIST	COUNTY		SHEET NO.
					164

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

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

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

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

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.
 - The downstream taper is optional. When used, it should be 100 feet approximately per lane, with channelizing devices spaced at 20 feet.
- TCP (2-5a)**
- If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline to protect the work space from opposing traffic, with the arrow board placed in the closed lane near the end of the merging taper.
- TCP (2-5b)**
- Conflicting pavement markings shall be removed for long-term projects.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation
Traffic Operations Division

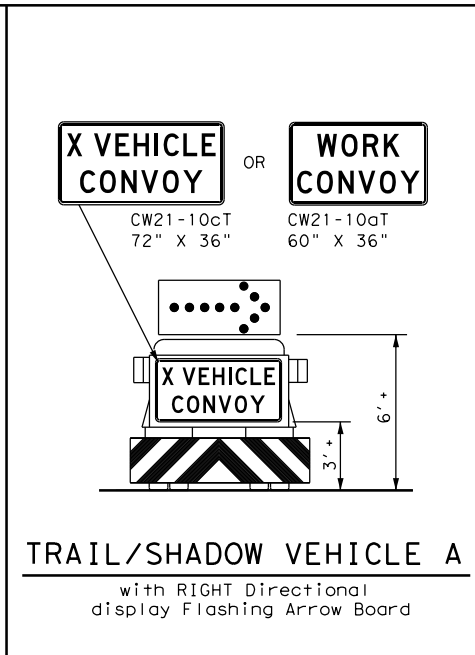
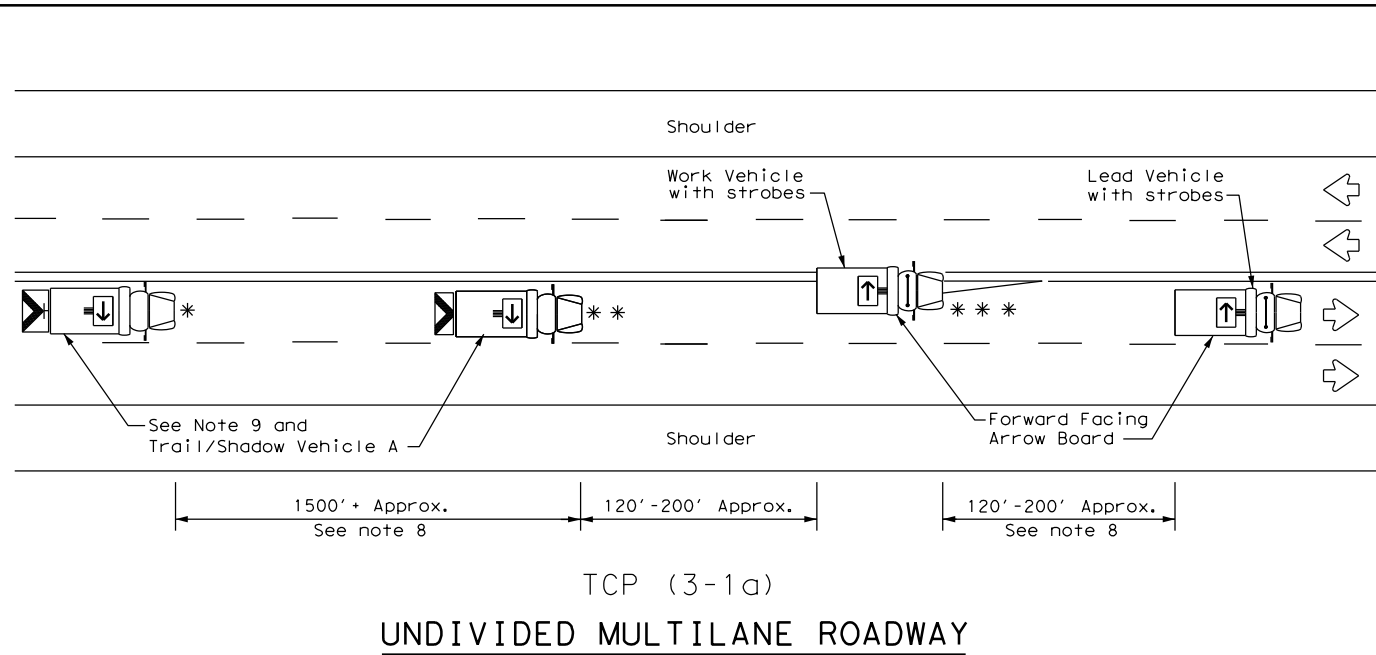
TRAFFIC CONTROL PLAN
LONG TERM LANE CLOSURES
MULTILANE CONVENTIONAL RDS.

TCP (2-5) -12

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REVISIONS		CONT	SECT	JOB	HIGHWAY
8-95	2-12				
1-97					
4-98					
3-03					
		DIST		COUNTY	SHEET NO.
					165

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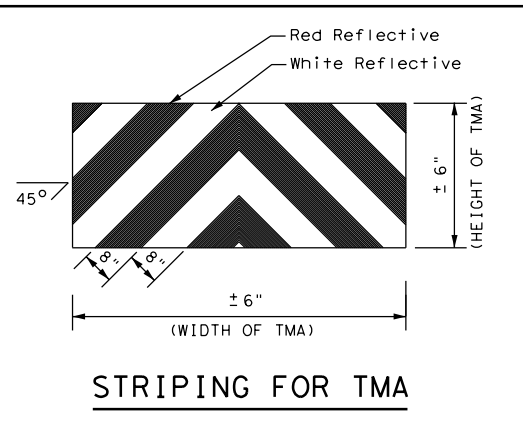
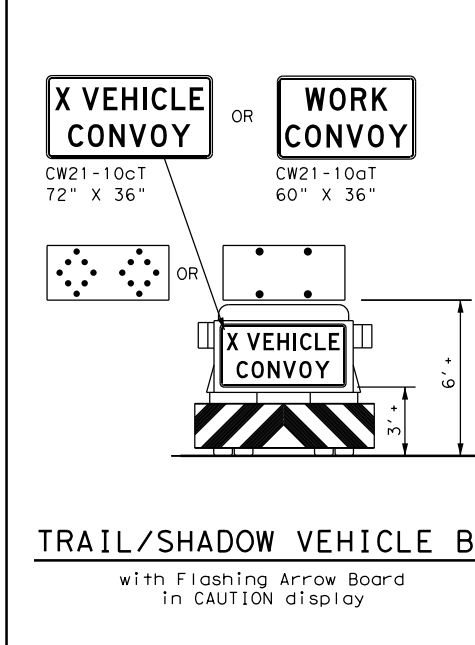
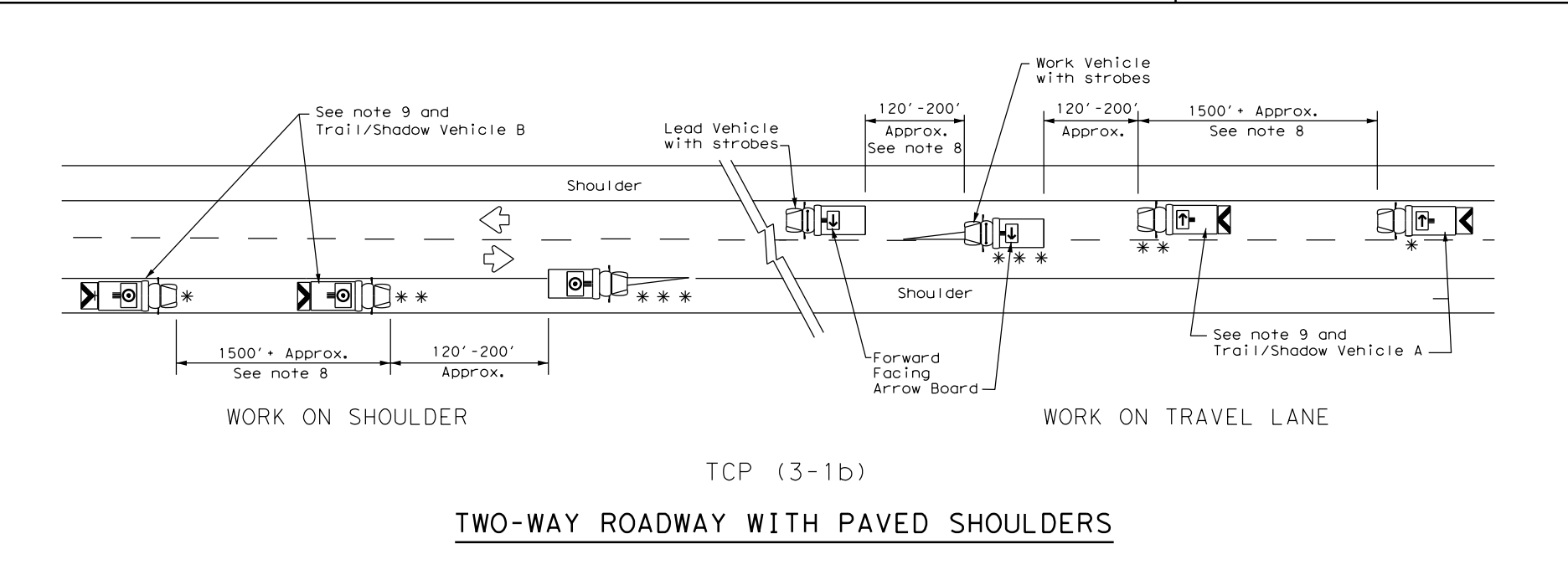


LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

GENERAL NOTES

1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used the WORK vehicle must be equipped with an arrow board. The Engineer will determine if the LEAD VEHICLE and/or TRAIL VEHICLE are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. "X VEHICLE CONVOY" (CW21-10cT) or "WORK CONVOY" (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" X 48" diamond shaped "WORK CONVOY" (CW21-10T) or "X VEHICLE CONVOY" (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The "X VEHICLE CONVOY" sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a "DO NOT PASS" (R4-1) sign should be placed on the back of the rearmost protection vehicle.



Texas Department of Transportation
Traffic Operations Division Standard

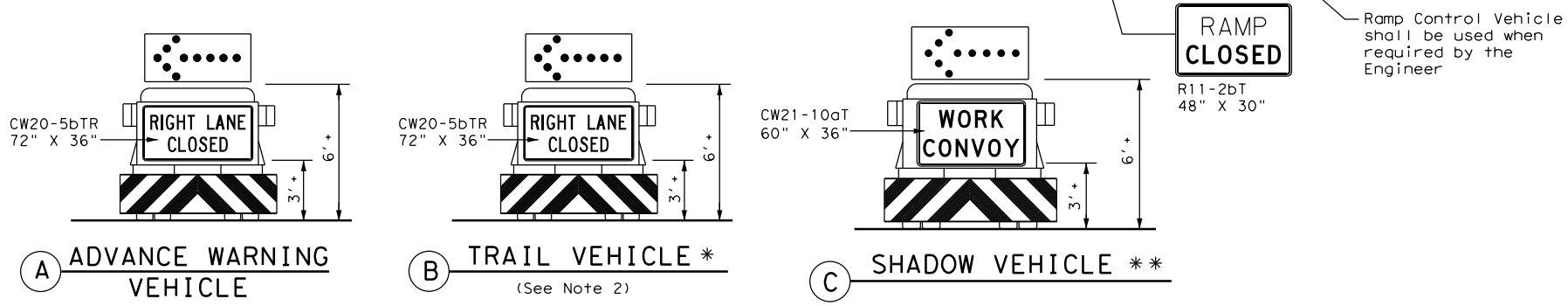
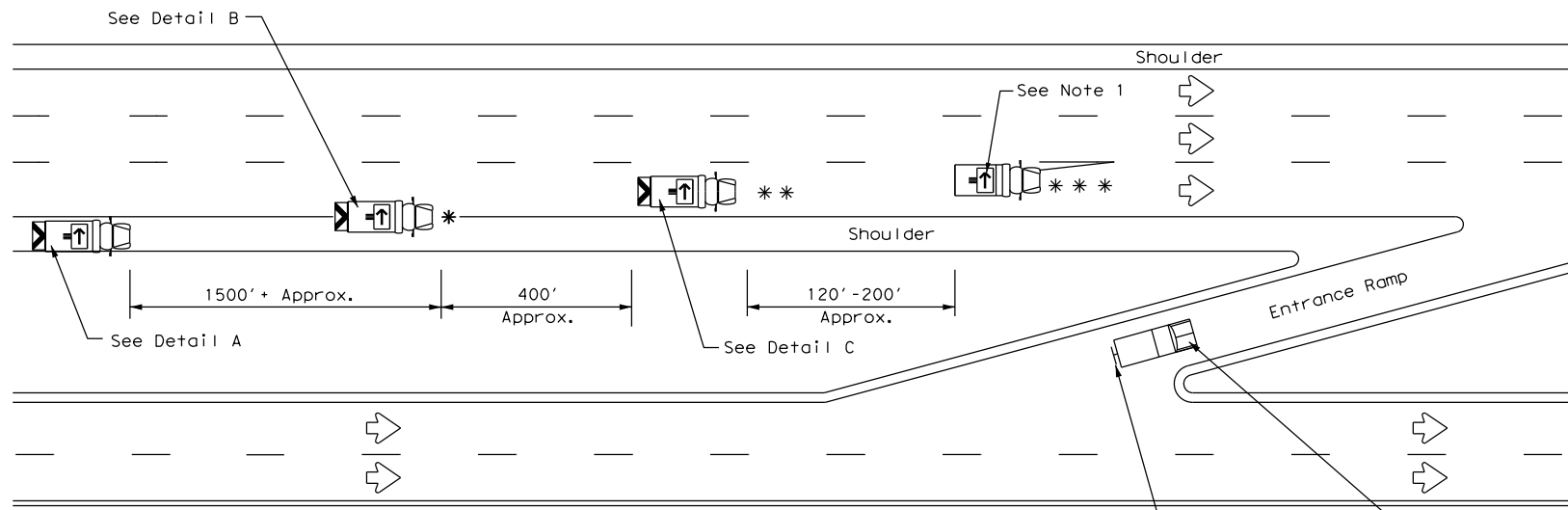
TRAFFIC CONTROL PLAN
MOBILE OPERATIONS
UNDIVIDED HIGHWAYS

TCP (3-1) - 13

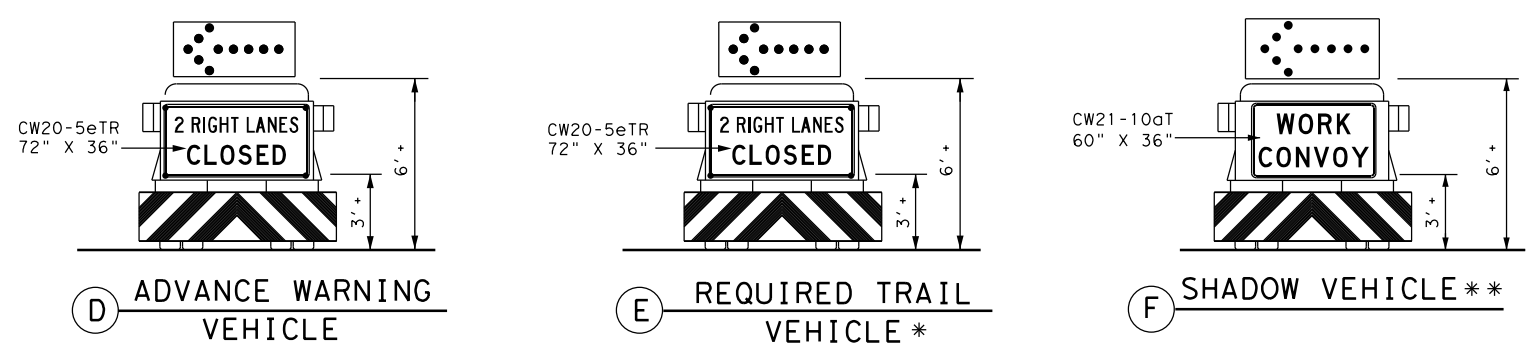
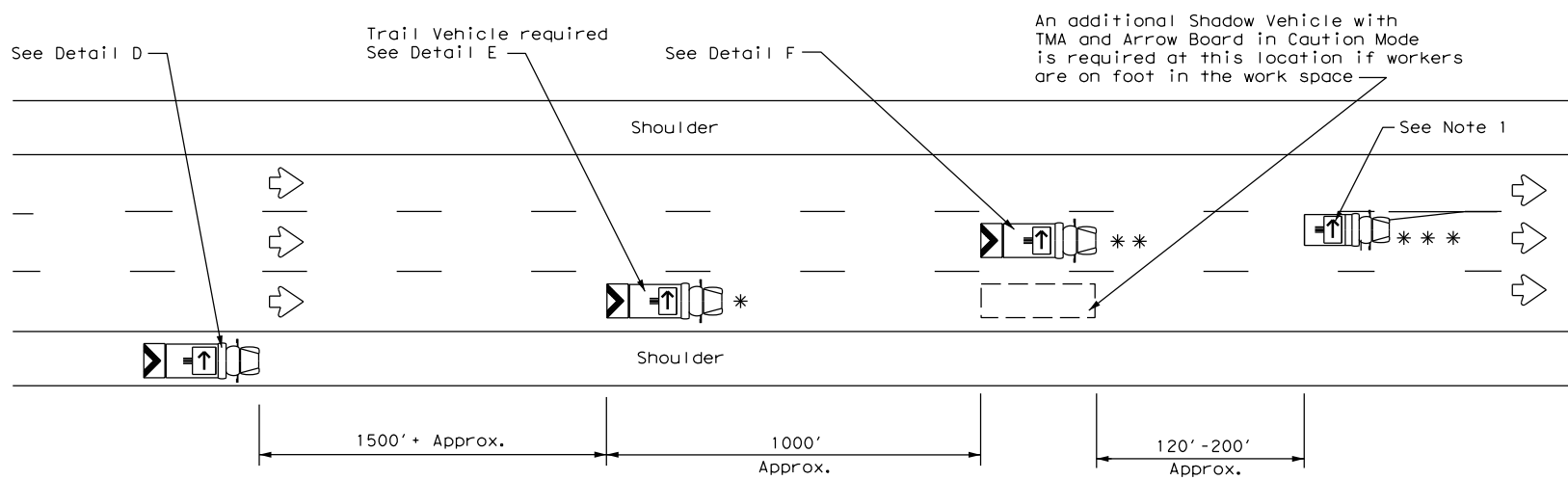
FILE:	tcp3-1.dgn	DN:	TxDOT	CK:	TxDOT	DW:	TxDOT	CK:	TxDOT
© TxDOT	December 1985	CONT:		SECT:		JOB:		HIGHWAY:	
REVISIONS									
2-94	4-98								
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RIGHT LANE CLOSURE ON DIVIDED HIGHWAY - TCP(3-2a)



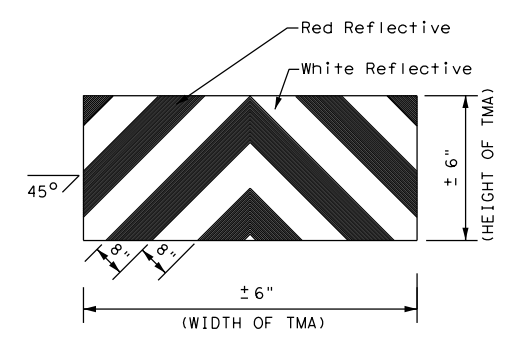
INTERIOR LANE CLOSURE ON MULTI-LANE DIVIDED HIGHWAY - TCP(3-2b)

LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle	→	RIGHT Directional
☐	Heavy Work Vehicle	←	LEFT Directional
▲	Truck Mounted Attenuator (TMA)	↔	Double Arrow
◁	Traffic Flow	⊠	CAUTION (Alternating Diamond or 4 Corner Flash)

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

GENERAL NOTES

- ADVANCE WARNING, TRAIL and SHADOW vehicles shall be equipped with Type B or Type C flashing arrow boards as per the Barricade and Construction (BC) standards. Arrow boards on WORK vehicles will be optional based on the type of work being performed. The arrow boards shall be operated from inside the vehicle.
- For TCP(3-2a) the Engineer will determine if the TRAIL VEHICLE is required based on prevailing roadway conditions, traffic volume, and sight distance restrictions. All other vehicles shown for both TCP(3-2a) and TCP(3-2b) are required.
- The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
- The use of truck mounted attenuators (TMA) on the ADVANCE WARNING, SHADOW, and TRAIL vehicles are required.
- Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DMS 8300, Type A.
- Each vehicle shall have two-way radio communication capability.
- When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
- Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE may vary according to terrain, work activity and other factors.
- Standard 48" X 48" diamond shaped warning signs with the same message as those shown may be used where adequate mounting space exists.
- The signs shown should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or a truck mounted changeable message sign (TMCMS) with a minimum character height of 12", and displaying the same legend may be substituted for these signs. An appropriate directional arrow display, simulating the size and legibility of the flashing arrow board, must be used in the second phase of the PCMS/TMCMS message. When this is done, the arrow board will not be required on the Advance Warning Vehicle.
- Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
- The principles on this sheet may be used to close lanes from the left side of the roadway considering the number of lanes, shoulder width, sight distance, and ramp frequency.
- Signs and flashing arrow board modes shall be appropriately altered when implementing left lane closures or interior closures which close the left lanes.
- The Advance Warning Vehicle may straddle the edgeline when shoulder width makes it necessary.

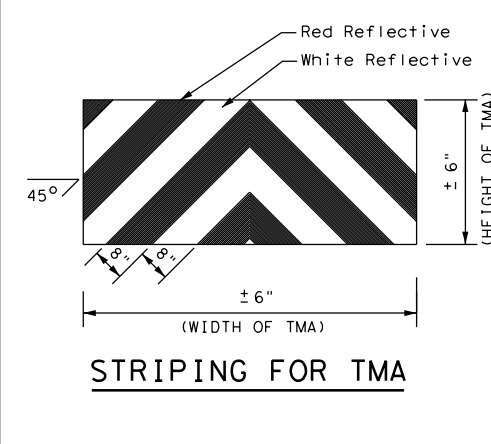
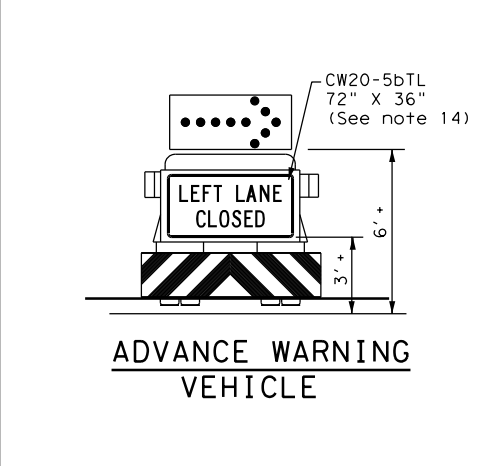
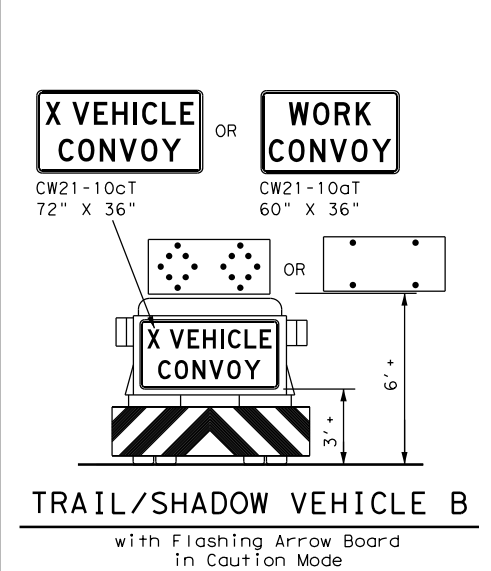
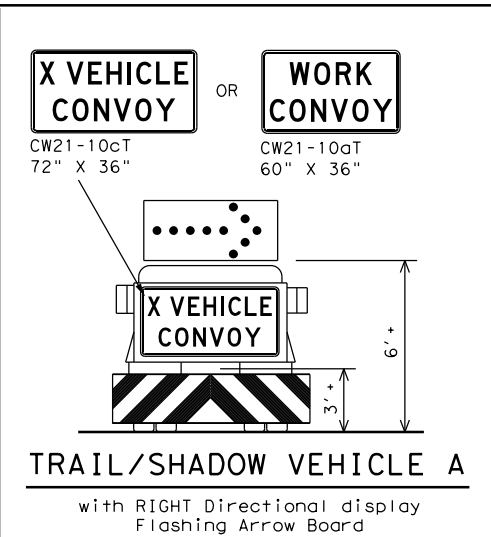
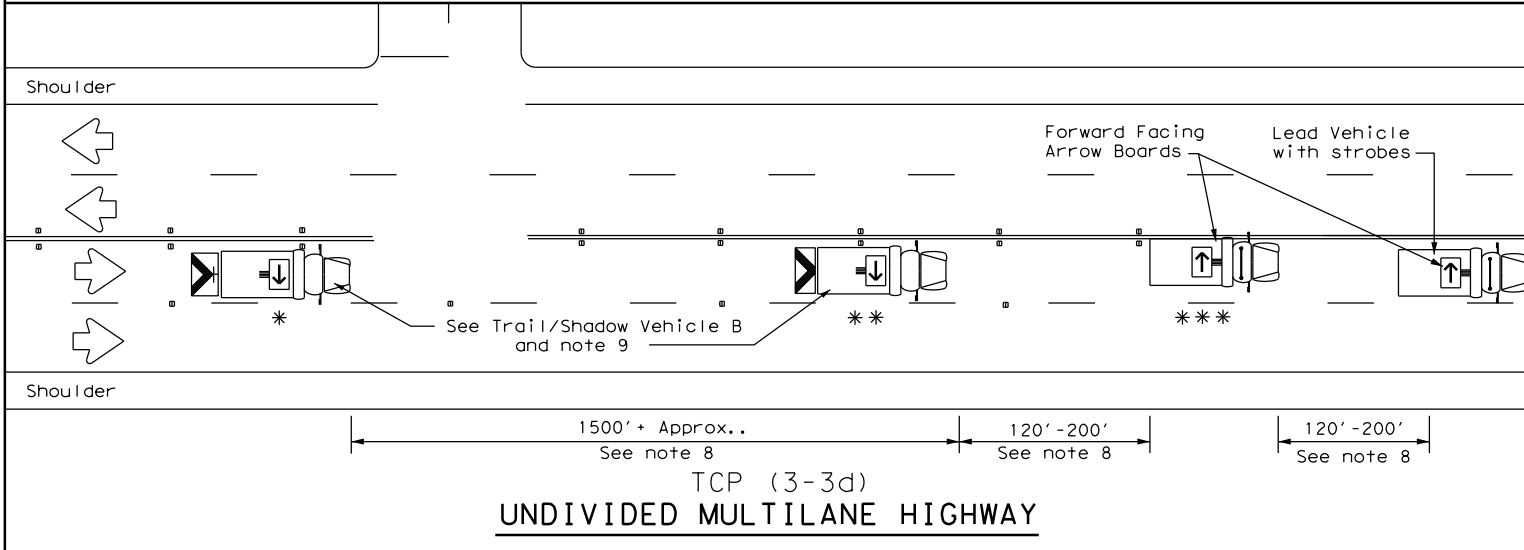
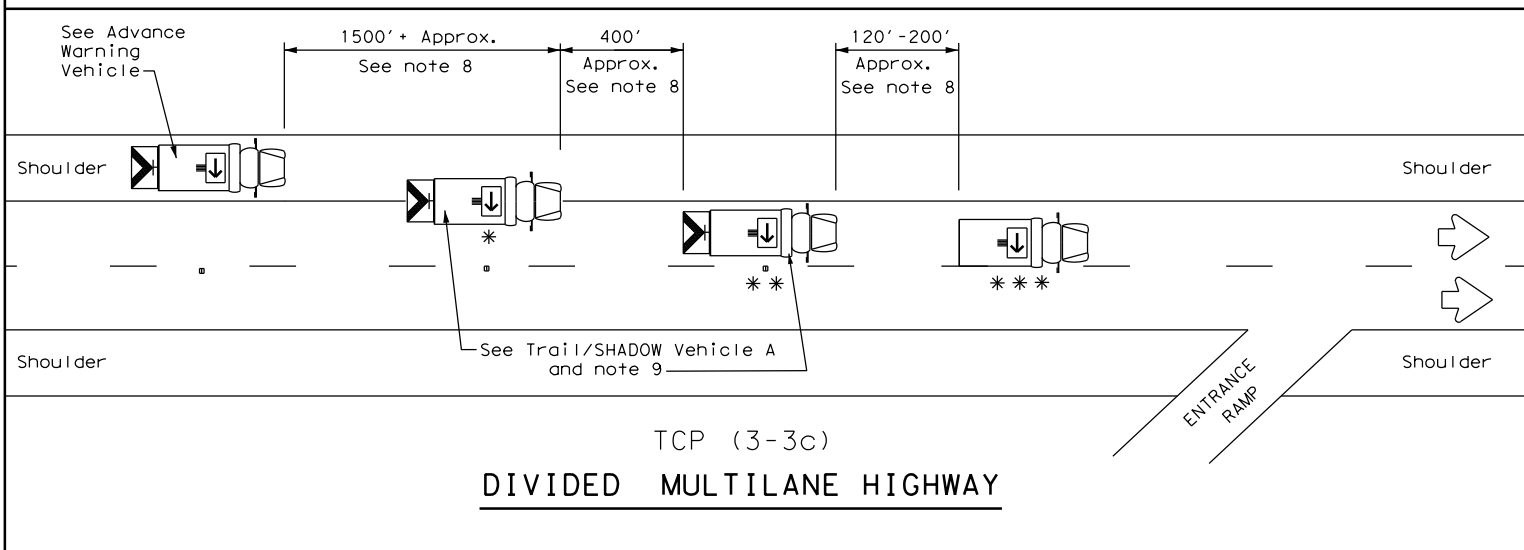
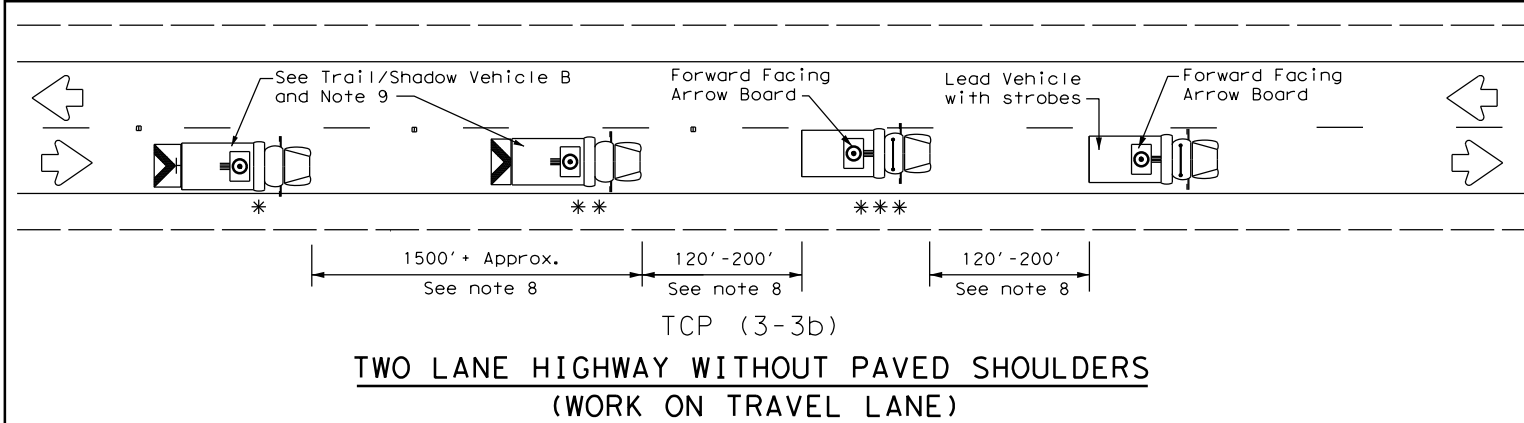
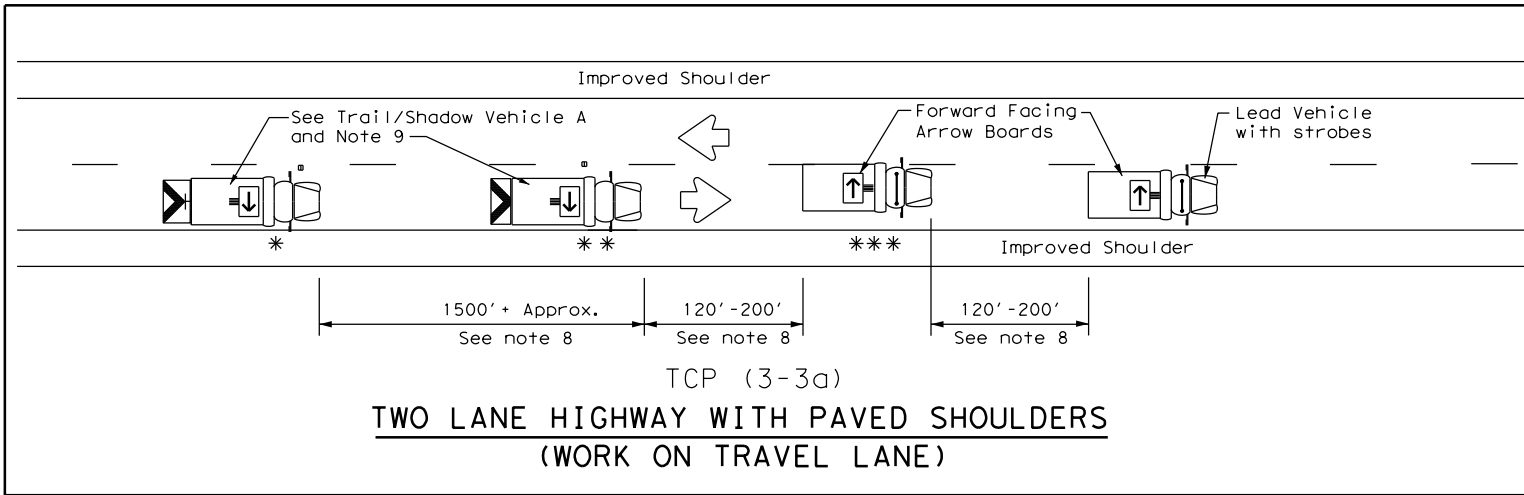


STRIPING FOR TMA

		Traffic Operations Division Standard	
TRAFFIC CONTROL PLAN MOBILE OPERATIONS DIVIDED HIGHWAYS			
TCP(3-2)-13			
FILE: tcp3-2.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT
© TxDOT December 1985	CONT	SECT	JOB
REVISIONS		HIGHWAY	
2-94 4-98			
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1-97			
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LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
** *	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)

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

GENERAL NOTES

1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used on two way roads the WORK vehicle must have an arrow board. For divided roadways, the arrow board on the WORK vehicle is optional based on the type of work being performed. The Engineer will determine if the LEAD vehicle and/or TRAIL vehicle are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating, or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE, ADVANCE WARNING and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. X VEHICLE CONVOY (CW21-10cT) or WORK CONVOY (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" x 48" diamond shaped WORK CONVOY (CW21-10T) or X VEHICLE CONVOY (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The X VEHICLE CONVOY sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. For divided highways with two or three lanes in one direction, the appropriate LEFT LANE CLOSED (CW20-5bTL), RIGHT LANE CLOSED (CW20-5bTR), or CENTER LANE CLOSED (CW20-5dT) sign should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or truck mounted changeable message sign (TMCMS) with a minimum character height of 12", and displaying the same legend may be substituted for these signs. An appropriate directional arrow display, simulating the size and legibility of the flashing arrow board may be used in the second phase of the PCMS/TMCMS message. When this is done, the arrow board will not be required on the Advance Warning Vehicle.
11. A double arrow shall not be displayed on the arrow board on the Advance Warning Vehicle.
12. For divided highways with three or four lanes in each direction, use TCP(3-2).
13. Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
14. The Advance Warning Vehicle may straddle the edgeline when Shoulder width makes it necessary.
15. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a DO NOT PASS (R4-1) sign should be placed on the back of the rearmost protection vehicle.

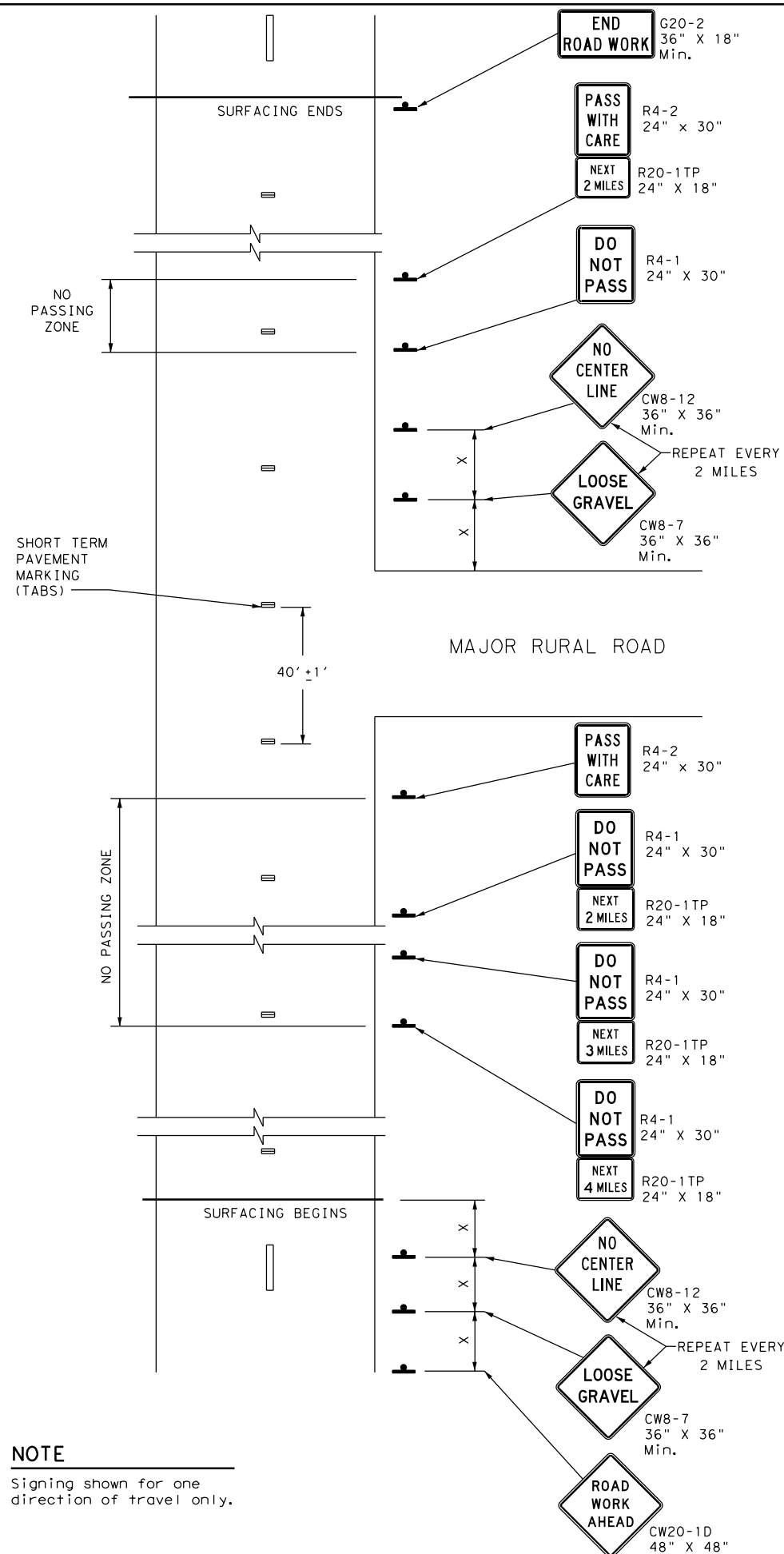


**TRAFFIC CONTROL PLAN
 MOBILE OPERATIONS
 RAISED PAVEMENT
 MARKER INSTALLATION/
 REMOVAL
 TCP (3-3) - 14**

FILE: fcp3-3.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT September 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS				
2-94 4-98				
8-95 7-13				
1-97 7-14				
	DIST	COUNTY	SHEET NO.	

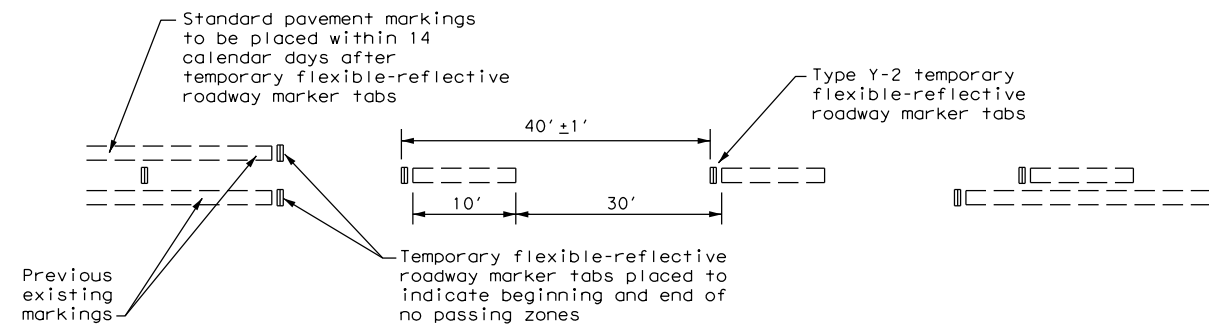
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NOTE
Signing shown for one direction of travel only.

NO PASSING ZONES ON TWO-LANE TWO-WAY ROADS



TABS ON CENTERLINES OF TWO-LANE TWO-WAY ROADS

For seal coat, micro-surface or similar operations

"DO NOT PASS" SIGN (R4-1) and NO-PASSING ZONES

- Prior to the beginning of construction, all currently striped no-passing zones shall be signed with the DO NOT PASS (R4-1) signs and PASS WITH CARE (R4-2) signs placed at the beginning and end of each zone for each direction of travel except as otherwise provided herein. Signs marking these individual no-passing zones need not be covered prior to construction if the signs supplement the existing pavement markings.
- At the discretion of the Engineer, in areas of numerous no-passing zones, several zones may be combined as a single zone. If passing is to be prohibited over one or more lengthy sections, a DO NOT PASS sign and a NEXT XX MILES (R20-1TP) plaque may be used at the beginning of such zones. The DO NOT PASS sign and the NEXT XX MILES plaque should be repeated every mile to the end of the no-passing zone. In areas where there is considerable distance between no-passing zones, the end of the no-passing zone may be signed with a PASS WITH CARE sign and a NEXT XX MILES plaque.
- Depending on traffic volumes and length of sections, it may be desirable to prohibit passing throughout the project to prevent damage to windshield and lights. The DO NOT PASS sign and NEXT XX MILES plaque should be used and repeated as often as necessary for this purpose. Where several existing zones are to be combined into one individual no-passing zone, the sign at the beginning of the zone should be covered until the surfacing operation has passed this location so as not to have the DO NOT PASS sign conflict with the existing pavement markings. Also, unless one days operation completes the entire length of such combined zones, appropriate DO NOT PASS and PASS WITH CARE signs should be placed at the beginning and end of the no-passing zones where the surfacing operation has stopped for the day.
- R4-1 and R4-2 are to remain in place until standard pavement markings are installed.

"NO CENTER LINE" SIGN (CW8-12)

- Center line markings are yellow pavement markings that delineate the separation of travel lanes that have opposite directions of travel on a roadway. Divided highways do not typically have center line markings.
- At the time construction activity obliterates the existing center line markings (low volume roads may not have an existing centerline), a NO CENTER LINE (CW8-12) sign should be erected at the beginning of the work area, at approximately 2 mile intervals within the work area, beyond major intersections and other locations deemed necessary by the Engineer.
- The NO CENTER LINE signs are to remain in place until standard pavement markings are installed.

"LOOSE GRAVEL" SIGN (CW8-7)

- When construction begins, a LOOSE GRAVEL (CW8-7) sign should be erected at each end of the work area and repeated at intervals of approximately 2 miles in rural areas and closer in urban areas.
- The LOOSE GRAVEL signs are to remain in place until the condition no longer exists.

PAVEMENT MARKINGS

- Temporary markings for surfacing projects shall be Temporary Flexible-reflective Roadway Marker Tabs unless otherwise approved by the Engineer. Tabs are to be installed to provide true alignment for striping crews or as directed by the Engineer. Tabs will be placed at the spacing indicated. Tabs should be applied to the pavement no more than two (2) days before the surfacing is applied. After the surfacing is rolled and swept, the cover over the reflective strip shall be removed.
- Tabs shall not be used to simulate edge lines.
- Tab placement for overlay/inlay operations shall be as shown on the WZ(STPM) standard sheet.

COORDINATION OF SIGN LOCATIONS

- The location of warning signs at the beginning and end of a work area are to be coordinated with other signing typically shown on the Barricade and Construction Standards for project limits to ensure adequate sign spacing.
- Where possible the ROAD WORK AHEAD (CW20-1D), LOOSE GRAVEL (CW8-7), and NO CENTER LINE (CW8-12) signs should be placed in the sequence shown following the OBEY WARNING SIGNS STATE LAW (R20-3T) and the TRAFFIC FINES DOUBLE (R20-5T) sign, and one "X" sign spacing prior to the CONTRACTOR (G20-6T) sign typically located at or near the limits of surfacing. LOOSE GRAVEL and NO CENTER LINE signs will then be repeated as described above.

Posted Speed *	Minimum Sign Spacing "X" Distance
30	120'
35	160'
40	240'
45	320'
50	400'
55	500'
60	600'
65	700'
70	800'
75	900'

* Conventional Roads Only

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

GENERAL NOTES

- The traffic control devices detailed on this sheet will be furnished and erected as directed by the Engineer on sections of roadway where tabs must be placed prior to the surfacing operation which will cover or obliterate the existing pavement markings.
- The devices shown on this sheet are to be used to supplement those required by the BC Standards or others required elsewhere in the plans.
- Signs shall be erected as detailed on the BC Standards or the Compliant Work Zone Traffic Control Devices List (CWZTCD) on supports approved for Long-Term / Intermediate-Term Work Zone Sign Supports.
- When surfacing operations take place on divided highways, freeways or expressways, the size of diamond shaped construction warning signs shall be 48" x 48".
- Signs on divided highways, freeways and expressways will be placed on both right and left sides of the roadway based on roadway conditions as directed by the Engineer.



TRAFFIC CONTROL DETAILS FOR SURFACING OPERATIONS

TCP (7-1) - 13

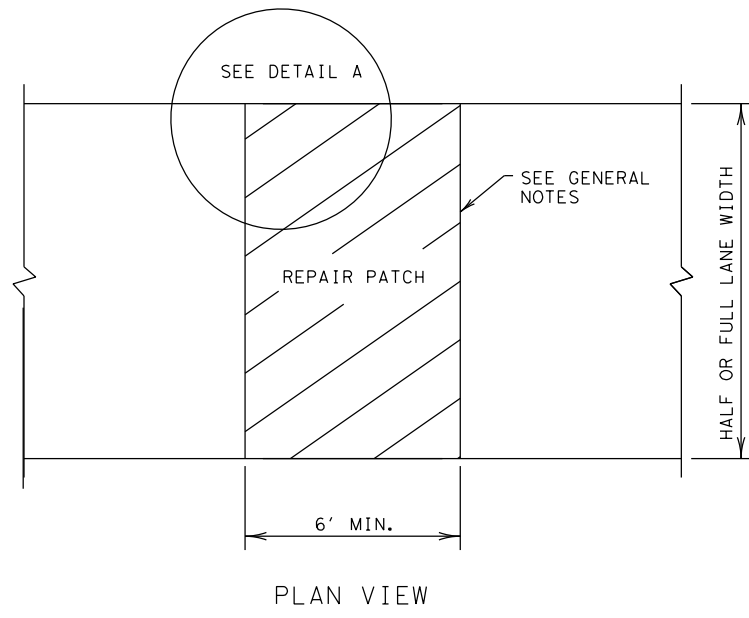
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TABLE NO.1 STEEL BAR SIZE AND SPACING						
TYPE PAVEMENT	SLAB THICKNESS AND BAR SIZE		LONGITUDINAL*		TRANSVERSE*	
			REGULAR BARS	TIEBARS	BARS	TIEBARS
	T (IN.)	BAR SIZE	SPACING (IN.)	SPACING (IN.)	SPACING (IN.)	SPACING (IN.)
CRCP	6.0	#5	7.5	7.5	24	24
	6.5		7.0	7.0		
	7.0		6.5	6.5		
	7.5		6.0	6.0		
	8.0	#6	9.0	9.0	24	24
	8.5		8.5	8.5		
	9.0		8.0	8.0		
	9.5		7.5	7.5		
	10.0		7.0	7.0		
	10.5		6.75	6.75		
11.0	6.5	6.5				
11.5	6.25	6.25				
≥12.0	6.0	6.0				
JRCP	<8.0	#5	24.0	12.0	24	24
	≥8.0	#6	24.0	12.0	24	24
CPCD	<8.0	#5	NONE	12.0	NONE	24
	≥8.0	#6	NONE	12.0	NONE	24

* USE 12" SPACING AS FIRST AND LAST SPACING AT END OR SIDE FOR ALL BARS.

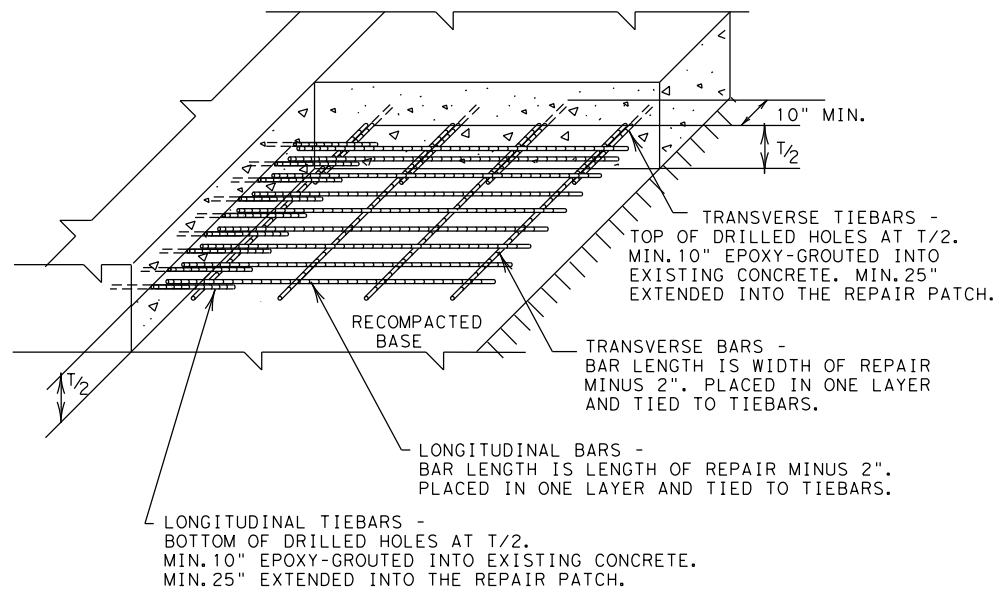


PLAN VIEW

FULL-DEPTH REPAIR OF CRCP, JRCP, AND CPCD

GENERAL NOTES

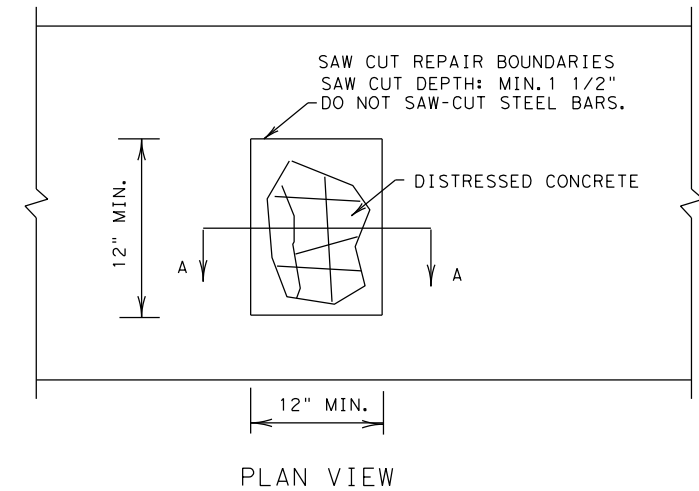
- ITEM 361, "REPAIR OF CONCRETE PAVEMENT" SHALL GOVERN FOR THIS WORK.
- MULTIPLE PIECE TIEBARS SHALL BE USED WHEN THE REPAIR AREA MUST BE PLACED IN TWO STAGES DUE TO SEQUENCE OF CONSTRUCTION.
- FULL DEPTH SAW CUTS SHALL BE MADE AROUND THE PERIMETER OF THE AREA TO BE REPAIRED. THE CUT SHALL BE MADE AT A RIGHT ANGLE TO THE PAVEMENT EDGE AND TO THE CENTER LINE OF THE PAVEMENT.
- AT LEAST ONE LONGITUDINAL FULL DEPTH SAW CUT SHALL BE AT AN EXISTING LONGITUDINAL JOINT.
- ADDITIONAL SAW CUTS MAY BE REQUIRED WITHIN THE AREA OF THE REPAIR TO FACILITATE REMOVAL OF THE CONCRETE OR TO ALLEVIATE BINDING OF THE FULL DEPTH SAW CUT AT THE REPAIR EDGE.
- THE SAW CUTS WHICH EXTEND OUTSIDE THE AREA OF THE REPAIR WILL BE CLEANED AND FILLED WITH A CEMENTITIOUS GROUT APPROVED BY THE ENGINEER.
- EXISTING LONGITUDINAL AND TRANSVERSE JOINTS REMOVED DUE TO REPAIR OPERATION SHOULD BE RESTORED IN ACCORDANCE WITH STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."



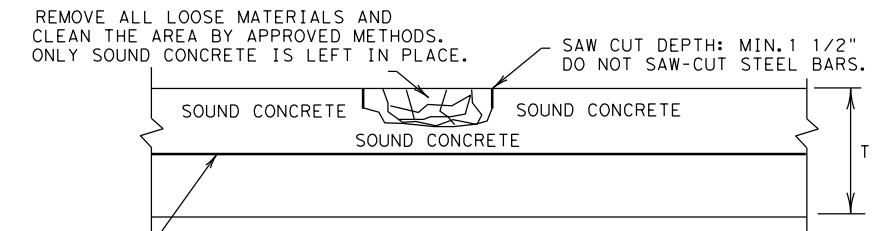
DETAIL A
GROUTED TIEBARS & REINFORCEMENT

GENERAL NOTES

- ITEM 361, "REPAIR OF CONCRETE PAVEMENT" SHALL GOVERN FOR THIS WORK.
- THE SAW CUTS WHICH EXTEND OUTSIDE THE AREA OF THE REPAIR WILL BE CLEANED AND FILLED WITH A CEMENTITIOUS GROUT APPROVED BY THE ENGINEER.
- EXISTING LONGITUDINAL AND TRANSVERSE JOINTS REMOVED DUE TO REPAIR OPERATION SHOULD BE RESTORED IN ACCORDANCE WITH STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."



PLAN VIEW



LONGITUDINAL STEEL BARS:

*REPAIR AREAS MAY BE ADJUSTED AFTER REMOVING DISTRESSED CONCRETE. SWITCH THE HALF-DEPTH REPAIR TO FULL-DEPTH REPAIR IF EXPOSED EXISTING LONGITUDINAL BARS ARE DEFICIENT, AS APPROVED. COMPENSATION WILL BE MADE FOR UNEXPECTED VOLUMES OF REPAIR AREAS OR CHANGES IN SCOPE OF WORK.

*INCREASE THE REPAIR AREA AND PERFORM A FULL-DEPTH REPAIR AS DIRECTED IF LONGITUDINAL STEEL BARS WERE DAMAGED BY THE REMOVAL OPERATIONS. NO ADDITIONAL COMPENSATION WILL BE MADE.

SECTION A-A
HALF-DEPTH REPAIR

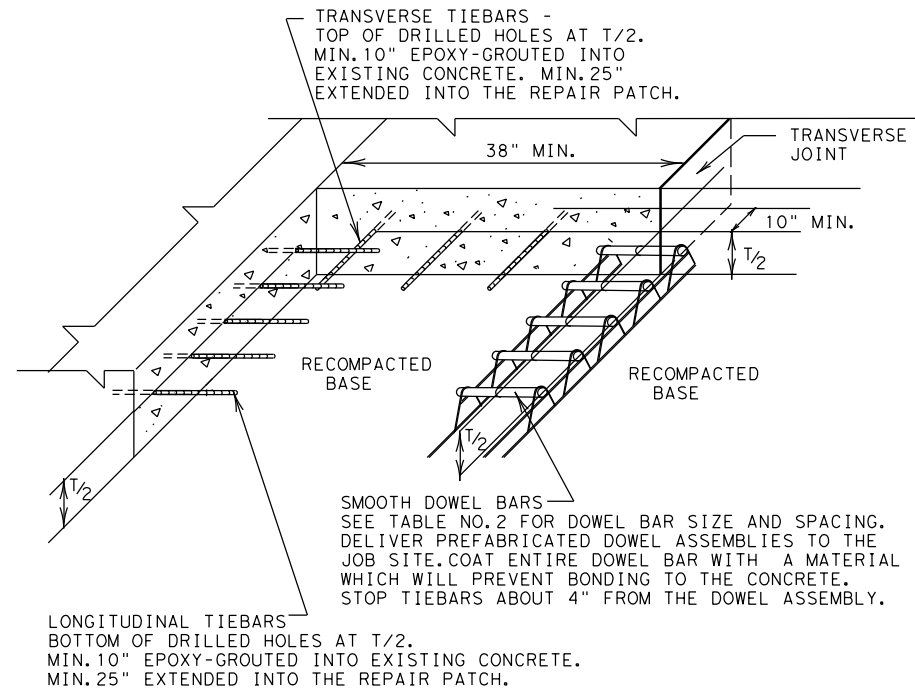
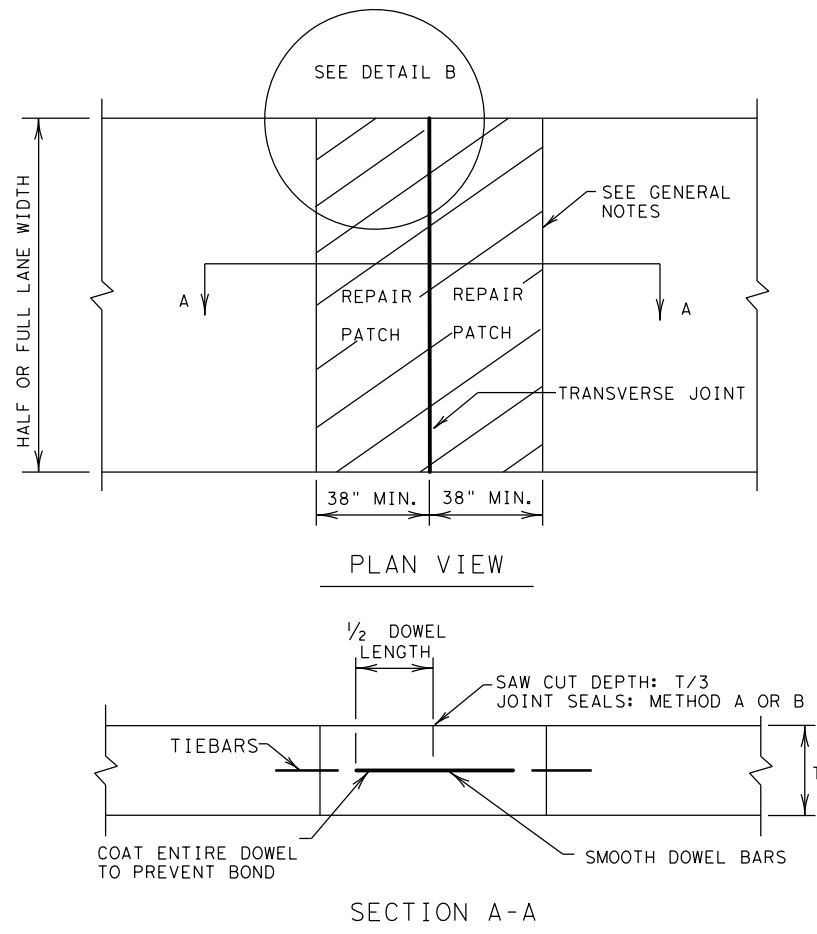
SHEET 1 OF 2

				Design Division Standard	
REPAIR OF CONCRETE PAVEMENT					
REPCP-14					
FILE: repcp14.dgn	DN: TxDOT	DN: HC	DW: HC	CK: AN	
© TxDOT: DECEMBER 2014	CONT	SECT	JOB	HIGHWAY	
REVISIONS		DIST	COUNTY	SHEET NO.	

SHEET 88 OF 97

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DATE:
FILE:



DETAIL B
GROUTED TIEBARS & DOWELS

REPAIR OF TRANSVERSE JOINT OF CPCD

GENERAL NOTES

- ITEM 361, "REPAIR OF CONCRETE PAVEMENT" SHALL GOVERN FOR THIS WORK.
- MULTIPLE PIECE TIEBARS SHALL BE USED WHEN THE REPAIR AREA MUST BE PLACED IN TWO STAGES DUE TO SEQUENCE OF CONSTRUCTION.
- FULL DEPTH SAW CUTS SHALL BE MADE AROUND THE PERIMETER OF THE AREA TO BE REPAIRED. THE CUT SHALL BE MADE AT A RIGHT ANGLE TO THE PAVEMENT EDGE AND TO THE CENTER LINE OF THE PAVEMENT.
- AT LEAST ONE LONGITUDINAL FULL DEPTH SAW CUT SHALL BE AT AN EXISTING LONGITUDINAL JOINT.
- ADDITIONAL SAW CUTS MAY BE REQUIRED WITHIN THE AREA OF THE REPAIR TO FACILITATE REMOVAL OF THE CONCRETE OR TO ALLEVIATE BINDING OF THE FULL DEPTH SAW CUT AT THE REPAIR EDGE.
- THE SAW CUTS WHICH EXTEND OUTSIDE THE AREA OF THE REPAIR WILL BE CLEANED AND FILLED WITH A CEMENTITIOUS GROUT APPROVED BY THE ENGINEER.
- EXISTING LONGITUDINAL AND TRANSVERSE JOINTS REMOVED DUE TO REPAIR OPERATION SHOULD BE RESTORED IN ACCORDANCE WITH STANDARD SHEET "CONCRETE PAVING DETAILS, JOINT SEALS."
- DOWEL BAR PLACEMENT TOLERANCE SHALL BE +/- 1/4 IN. HORIZONTALLY AND VERTICALLY UNLESS OTHERWISE SPECIFIED. WHERE DOWEL BAR BASKETS ARE USED, REMOVE THE SHIPPING WIRES.

PAVEMENT THICKNESS (INCHES)	SIZE AND DIA.	LENGTH (IN.)	SPACING (IN.)
<10	#8 (1 IN.)	18.0	12.0
≥10	#10 (1 1/4 IN.)		

SHEET 2 OF 2

		<i>Design Division Standard</i>	
<p>REPAIR OF CONCRETE PAVEMENT</p> <p>REPCP-14</p>			
FILE: repcp14.dgn	DN: TxDOT	DN: HC	CK: AN
© TxDOT: DECEMBER 2014	CONT	SECT	HIGHWAY
REVISIONS		DIST	SHEET NO.

SHEET 89 OF 97

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DATE: FILE:

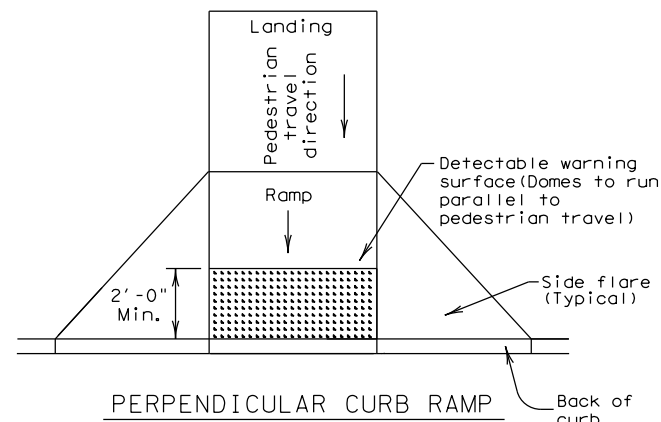
General Notes

Curb Ramps

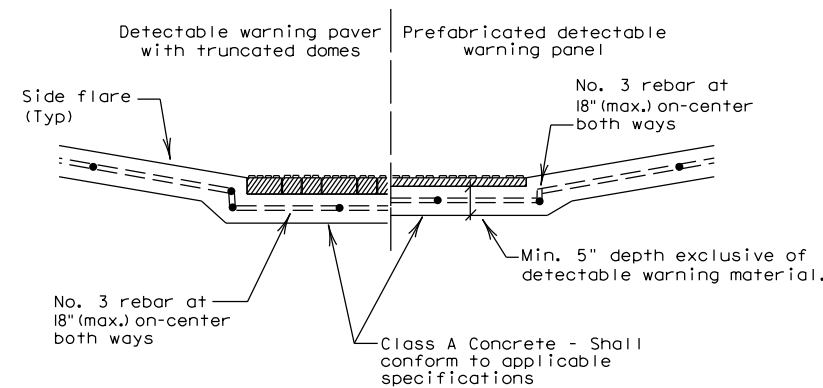
1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Lesser slopes that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5' x 5' passing areas at intervals not to exceed 200' are required.
4. Landings shall be 5' x 5' minimum with a maximum 2% slope in any direction.
5. Maneuvering space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
6. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) and 16 TAC 68.102.
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5' x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Handrails are not required on curb ramps. Provide curb ramps wherever on accessible route crosses (penetrates) a curb.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Provide a smooth transition where the curb ramps connect to the street.
16. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
17. Existing features that comply with TAS may remain in place unless otherwise shown on the plans.

Detectable Warning Material

18. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 705 of the TAS. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
19. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
20. Detectable warning surfaces must be slip resistant and not allow water to accumulate.
21. Detectable warning surfaces shall be a minimum of 24" in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
22. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb. Align the rows of domes to be perpendicular to the grade break between the ramp run and the street. Detectable warning surfaces may be curved along the corner radius.
23. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.



Typical placement of detectable warning surface on sloping ramp run.



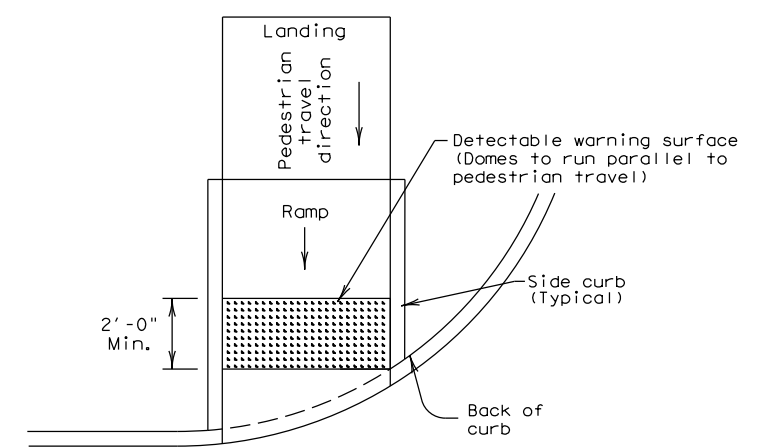
DETECTABLE WARNINGS

Detectable Warning Pavers

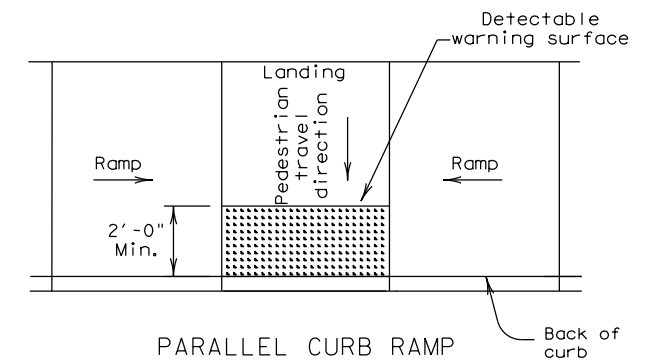
24. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
25. Lay full-size units first followed by closure units consisting of at least 25 percent of a full unit. Cut detectable warning paver units using a power saw.

Sidewalks

26. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within one or more reach ranges specified in TAS 308.
27. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
28. Street grades and cross slopes shall be as shown elsewhere in the plans.
29. Changes in level greater than 1/4 inch are not permitted.
30. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than 5% must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with TAS 505.
31. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
32. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
33. Sidewalk details are shown elsewhere in the plans.



Typical placement of detectable warning surface on sloping ramp run.



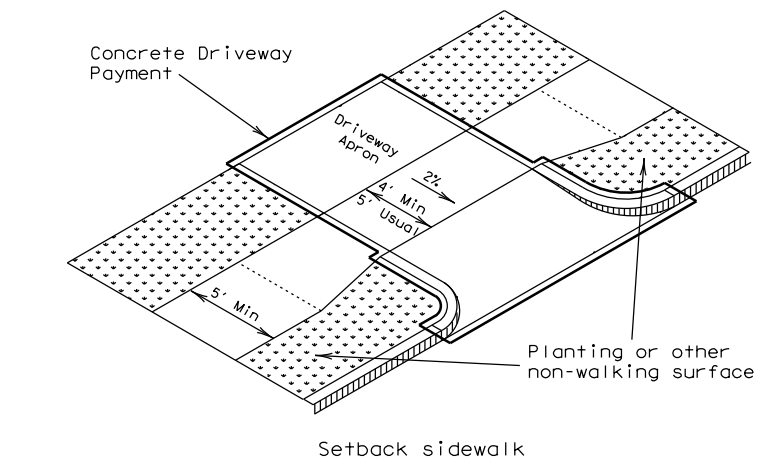
Typical placement of detectable warning surface on landing at street edge.

SHEET 2 OF 4

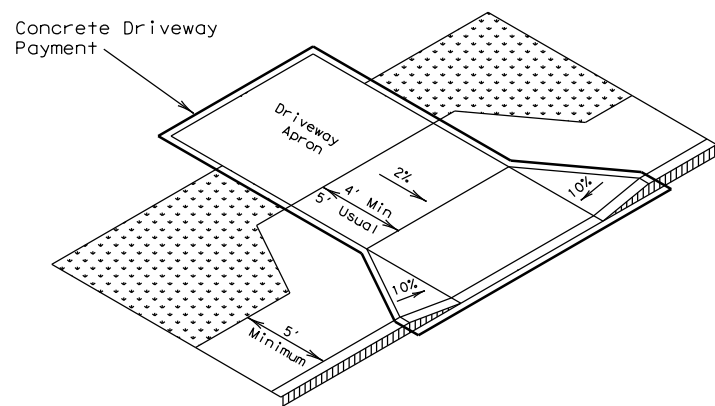
		Design Division Standard	
<h2>PEDESTRIAN FACILITIES</h2> <h3>CURB RAMPS</h3> <h1>PED-12A</h1>			
FILE: ped12a.dgn	DN: TxDOT	CK: PK	DW: TxDOT
© TxDOT March 2002	CONT	SECT	JOB
REVISIONS			
VP June 13, 2012	DIST	COUNTY	SHEET NO.

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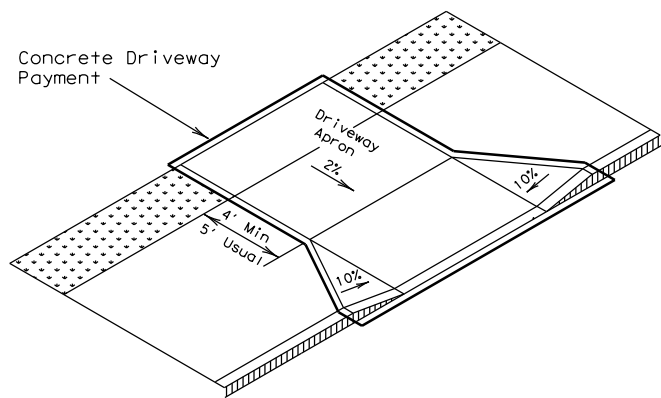
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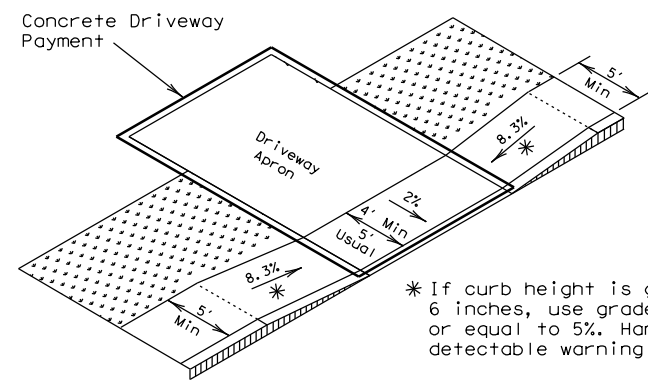
Setback sidewalk



Apron offset sidewalk



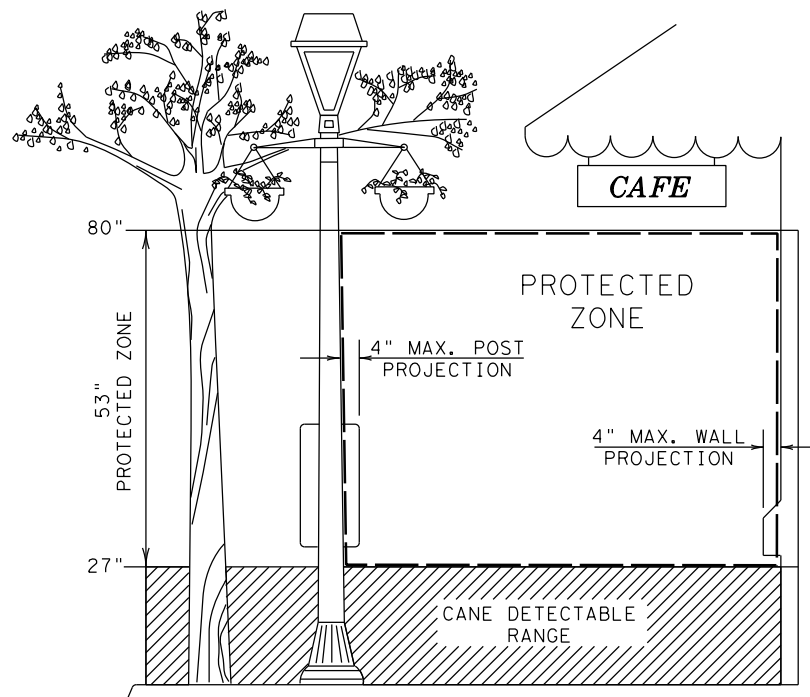
Wide sidewalk



Ramp sidewalk

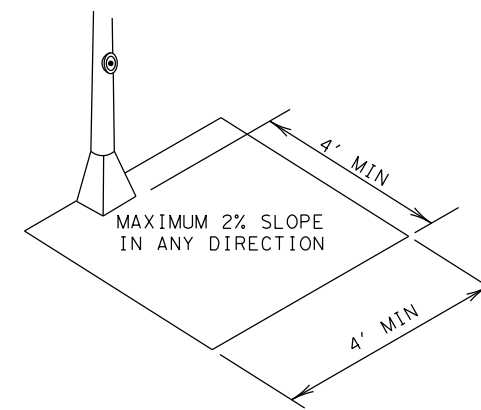
SIDEWALK TREATMENT AT DRIVEWAYS

* If curb height is greater than 6 inches, use grade less than or equal to 5%. Handrail and detectable warning not required.

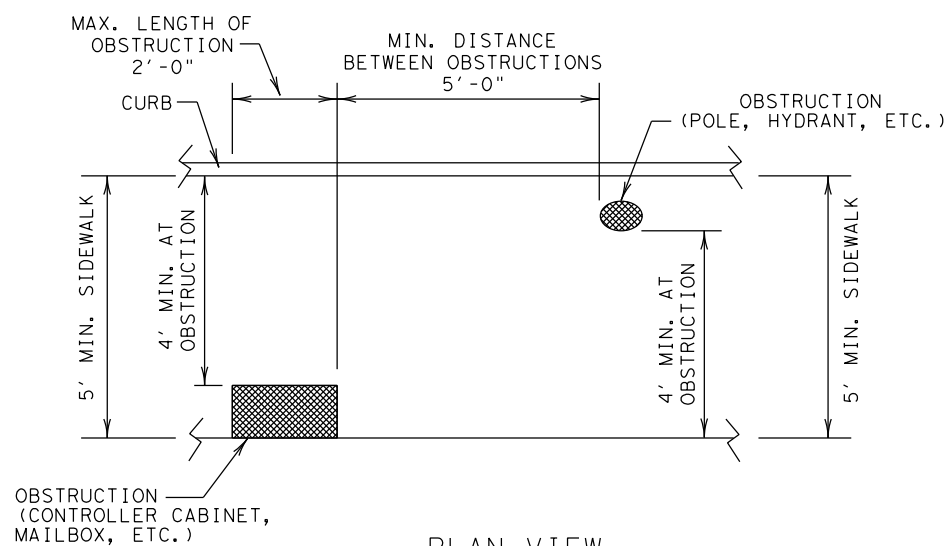


PROTECTED ZONE

In pedestrian circulation area, maximum 4" projection for post or wall mounted objects between 27" and 80" above the surface.



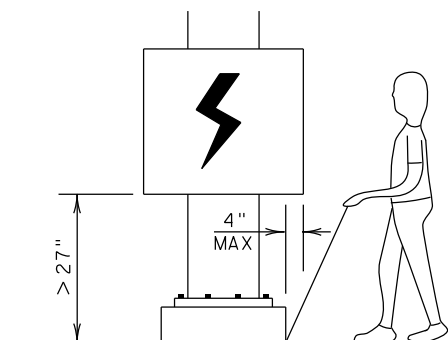
CLEAR GROUND SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



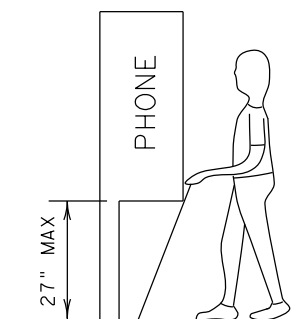
PLAN VIEW

PLACEMENT OF STREET FIXTURES

(ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' x 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.)



When an obstruction of a height greater than 27" from the surface would create a protrusion of more than 4" into the pedestrian circulation area, construct additional curb or foundation at the bottom to provide a maximum 4" overhang.



Protruding objects of a height $\leq 27"$ are detectable by cane and do not require additional treatment.

DETECTION BARRIER FOR VERTICAL CLEARANCE $< 80"$

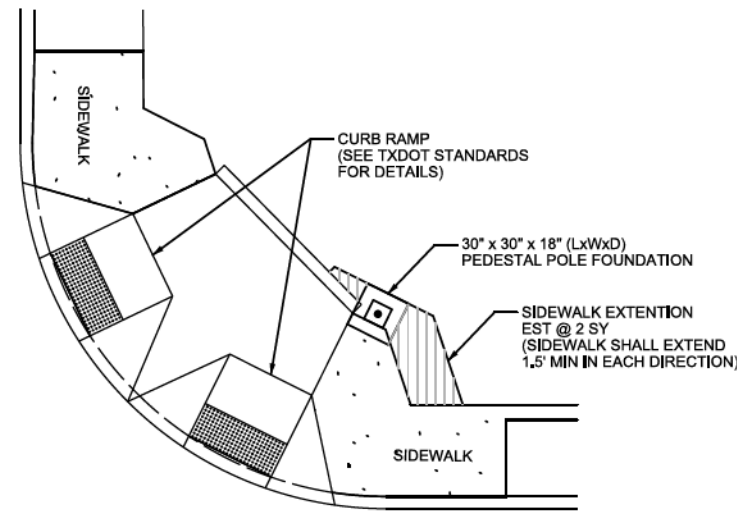
SHEET 3 OF 4



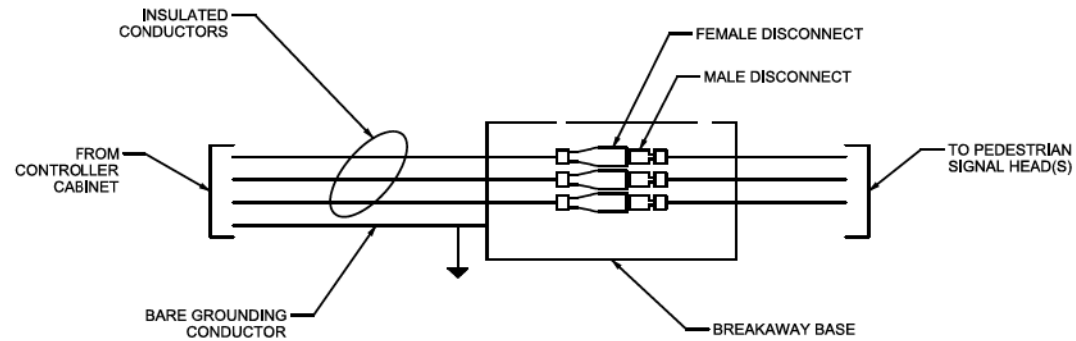
PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

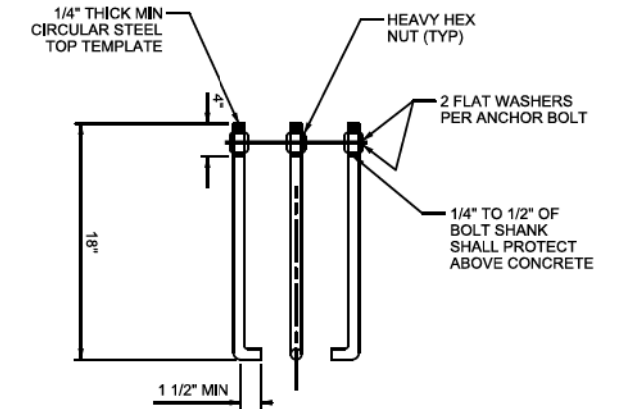
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© TxDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
VP June 13, 2012	DIST	COUNTY	SHEET NO.	



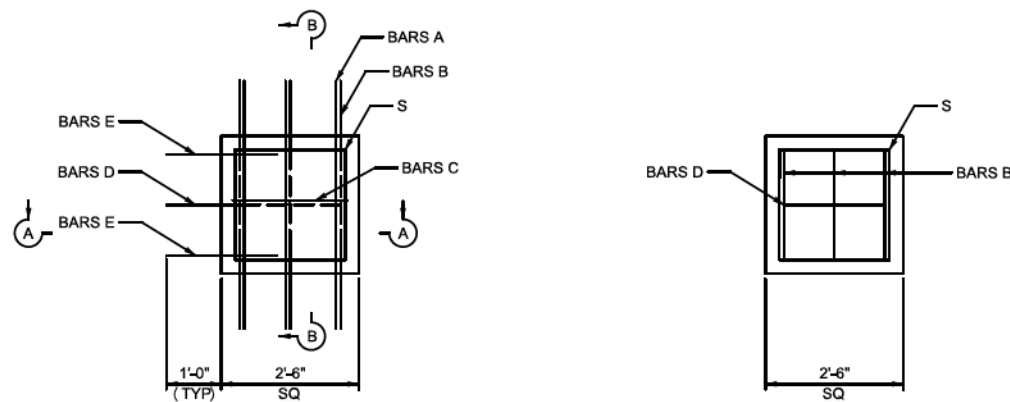
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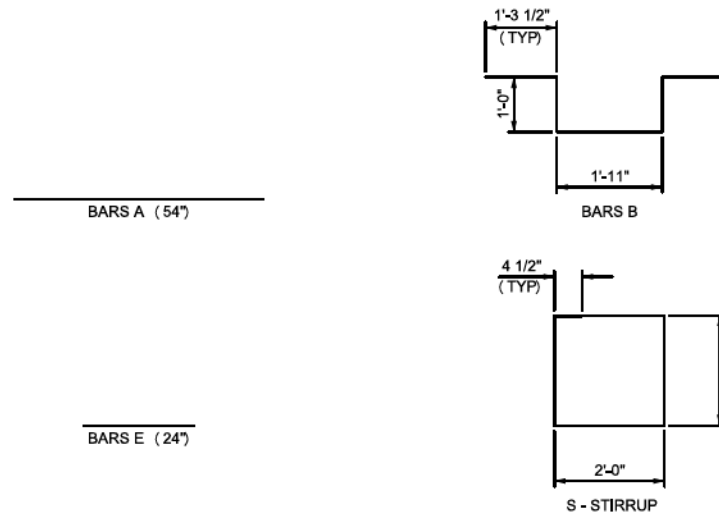
BREAKAWAY IN-LINE FUSEHOLDERS
N.T.S.



HOOKED ANCHOR
N.T.S.

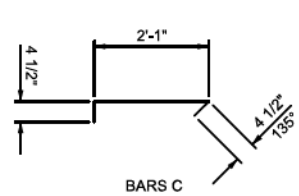


PEDESTAL POLE FOUNDATION PLAN VIEW
N.T.S.

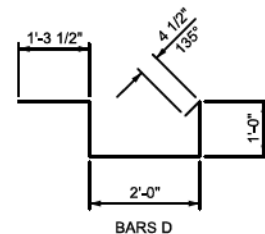


S - STIRRUP

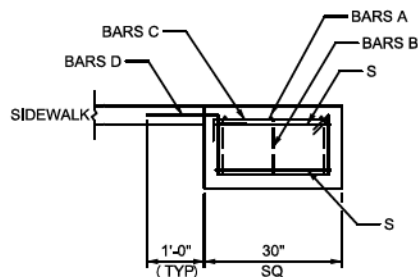
- NOTES:
1. THE PEDESTAL POLE ASSEMBLY DEPICTED ON THIS SHEET IS DESIGNED FOR SIGNAL HEADS WHERE ELECTRICAL POWER IS NEEDED WITH A BREAKAWAY POLE.
 2. POLE SHAFT SHALL BE ONE PIECE, SCHEDULE 40 ALUMINUM PIPE, ASTM B429 OR B221 (ALLOY 6061-T6 ONLY). ALUMINUM CONDUIT WILL NOT DEVELOP THE NECESSARY STRENGTH AND WILL NOT BE ALLOWED.
 3. ALL ELECTRICAL CONNECTORS FOR BREAKAWAY POLES SHALL BE WATER TIGHT BREAKAWAY FUSEHOLDERS (BUCHANAN 65U, BUSSMAN HEBW, LETTELFUSE LEB, HMC FLOOD-SEAL, FERRAZ-SHAWMUT, OR EQUAL). FUSES SHALL BE 10 AMP TIME DELAY, CONDUIT IN FOUNDATION AND WITHIN 6 INCHES OF FOUNDATION IS SUBSIDIARY TO THE ITEM, "PEDESTAL POLE ASSEMBLY."
 4. PER MANUFACTURER'S RECOMMENDATIONS, ENGAGE ALL THREADS ON THE PEDESTAL POLE BASE UNLESS THE PIPE IS FULLY SEATED INTO BASE.



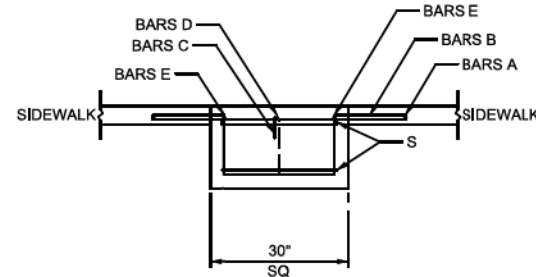
SECTION A-A
N.T.S.



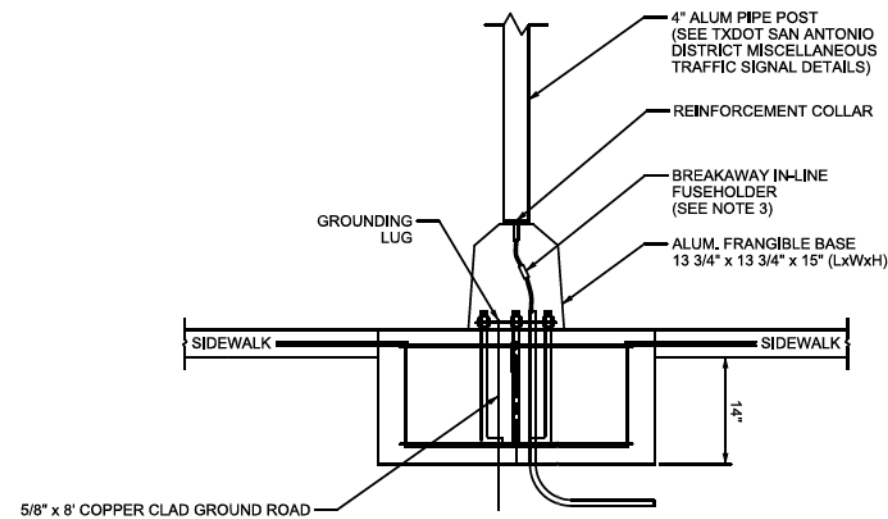
SECTION B-B
N.T.S.



ELEVATION
N.T.S.



ELEVATION
N.T.S.



ELEVATION
N.T.S.



S.P. Booth, P.E. 12/18/2017
Signature of Registrant Date

FIELD CHANGE ORDER		SPB	11/8/2016
NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS			
BELT LINE ROAD OVERLAY PROJECT			
PEDESTAL POLE SPECIAL FOUNDATION			
PROJECT		DESIGN	DRAWN
DATE		FILE	SHEET
33426	HALFF	HALFF	TS-1

GENERAL NOTES FOR ALL ELECTRICAL WORK

- The location of all conduits, junction boxes, ground boxes, and electrical services is diagrammatic and may be shifted to accommodate field conditions.
- Provide new and unused materials. Ensure that all materials and installations comply with the applicable articles of the National Electrical Code (NEC), TxDOT standards and specifications, National Electrical Manufacturers Association (NEMA), and are listed by Underwriters Laboratories (UL) or a Nationally Recognized Testing Lab (NRTL). NRTLs such as Canadian Standard Association (CSA), Intertek Testing Services NA Inc., or FM Approvals LLC can be considered equivalent to UL. Where reference is made to NEMA listed devices, International Electrotechnical Commission (IEC) listed devices will not be considered acceptable equal to a NEMA listed device. Acceptable devices may have both a NEMA and IEC listing. Faulty fabrication or poor workmanship in any material, equipment, or installation is justification for rejection. Replace or reinstall rejected material or equipment at no additional cost to the Department.
- Miscellaneous nuts, bolts and hardware, except for high strength bolts, may be stainless steel when plans specify galvanized, provided the bolt size is 1/2 in. or less in diameter.
- Provide the following test equipment as required by the Engineer to confirm compliance with the contract and the NEC: voltmeter, ammeter, megohm meter (1000 volt DC), ground resistance tester, torque wrenches, and torque screwdrivers. Ensure all equipment has been properly calibrated within the last year. Provide calibration certification to the Engineer upon request. Operate test equipment during inspection as requested by the Engineer.
- Install grounding as shown on the plans and in accordance with the NEC. Ensure all metallic conduits; metal poles; luminaires; and metal enclosures are bonded to the equipment grounding conductor. Provide stranded bare copper or green insulated grounding conductors. Ground rods, connectors, and bonding jumpers are subsidiary to the various bid items.
- When required by the Engineer, notify the Department in writing of materials from the Material Producers List (MPL) intended for use on each project. Prequalified materials are listed on the MPL on TxDOT's website under "Roadway Illumination and Electrical Supplies." No substitutions will be allowed for materials on this list.

CONDUIT

A. MATERIALS

- Provide conduit, junction boxes, fittings, and hardware as per TxDOT Departmental Material Specification (DMS) 11030 "Conduit" and Item 618 "Conduit" of TxDOT's "Standard Specifications For Construction And Maintenance Of Highways, Streets, And Bridges," latest edition. Provide conduits listed under Item 618 on the MPL under "Roadway Illumination and Electrical Supplies." Provide conduit types according to the descriptive code or as shown on the plans. Do not substitute other types of conduits for those shown. Provide liquidtight flexible metal conduit (LFMC) when flexible conduit is called for on galvanized steel rigid metallic conduit (RMC) systems. Provide liquidtight flexible nonmetallic conduit (LFNC) when flexible conduit is called for on polyvinyl chloride (PVC) systems.
- Provide galvanized steel RMC for all exposed conduits, unless otherwise shown on the plans. Properly bond all metal conduits.
- Unless otherwise shown on the plans, provide junction boxes with a minimum size as shown in the following table, which applies to the greatest number of conductors entering the box through one conduit with no more than four conduits per box. When a mixture of conductor sizes is present, count the conductors as if all are of the larger size. For situations not applicable to the table, size junction boxes in accordance with NEC.

AWG	3 CONDUCTORS	5 CONDUCTORS	7 CONDUCTORS
#1	10" x 10" x 4"	12" x 12" x 4"	16" x 16" x 4"
#2	8" x 8" x 4"	10" x 10" x 4"	12" x 12" x 4"
#4	8" x 8" x 4"	10" x 10" x 4"	10" x 10" x 4"
#6	8" x 8" x 4"	8" x 8" x 4"	10" x 10" x 4"
#8	8" x 8" x 4"	8" x 8" x 4"	8" x 8" x 4"

- Junction boxes with an internal volume of less than 100 cu. in. and supported by entering raceways must have threaded entries or hubs identified for the intended purpose and supported by connection of two or more rigid metal conduits. Secure conduit within 3 ft. of the enclosure or within 18 in. of the enclosure if all conduit entries are on the same side. Mechanically secure all junction boxes with an internal volume greater than 100 cu. inches.
- Provide hot dipped galvanized cast iron or sand cast aluminum outlet boxes for junction boxes containing only 10 AWG or 12 AWG conductors. Do not use die cast aluminum boxes. Size outlet boxes according to the NEC.
- Do not use intermediate metal conduit (IMC) or electrical metallic tubing (EMT) unless specifically required by the plan sheets. When EMT is called for, provide junction boxes made from galvanized steel sheeting, listed and approved for outdoor use, unless otherwise noted on the plans. Size all galvanized steel junction boxes in accordance with the NEC. Provide junction boxes for IMC conduit systems that meet the same requirements for junction boxes used with RMC systems.
- Provide PVC junction boxes intended for outdoor use on PVC conduit systems, unless otherwise noted on the plans.


- Provide PVC elbows in PVC conduit systems, unless otherwise shown on the plans. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the PVC conduit system. When galvanized steel RMC elbows are specifically called for in the plans and any portion of the RMC elbow is buried less than 18 in., ground the RMC elbow by means of a grounding bushing on a rigid metal extension. Grounding of the rigid metal elbow is not required if the entire RMC elbow is encased in a minimum of 2 in. of concrete. PVC extensions are allowed on these concrete encased rigid metal elbows. RMC or PVC elbows are subsidiary to various bid items.
- When required, provide High-Density Polyethylene (HDPE) conduit with factory installed internal conductors according to Item 622 "Duct Cable." At the Contractor's request and with approval by the Engineer, substitute HDPE conduit with no conductors for bored schedule 40 or schedule 80 PVC conduit bid under Item 618. Ensure bored HDPE substituted for PVC is schedule 40 and of the same size PVC called for in the plans. Ensure the substituted HDPE meets the requirements of Item 622, except that the conduit is supplied without factory-installed conductors. Make the transition of the HDPE conduit to PVC (or RMC elbow when required) at the bore pit. Provide conduit of the size and schedule as shown on the plans. Do not extend substituted conduit into ground boxes or foundations. Provide PVC or galvanized steel RMC elbows as called for at all ground boxes and foundations.
- Use two-hole straps when supporting 2 in. and larger conduits. On electrical service poles, properly sized stainless steel or hot dipped galvanized one-hole standoff straps are allowed on the service riser conduit.

B. CONSTRUCTION METHODS

- Provide and install expansion joint conduit fittings on all structure-mounted conduits at the structure's expansion joints to allow for movement of the conduit. In addition, provide and install expansion joint fittings on all continuous runs of galvanized steel RMC conduit externally exposed on structures such as bridges at maximum intervals of 150 ft. When requested by the project Engineer, supply manufacturer's specification sheet for expansion joint conduit fittings. Repair or replace expansion joint fittings that do not allow for movement at no additional cost to the Department. Provide the method of determining the amount of expansion to the Engineer upon request. Do not use LFMC or LFNC as a substitute for the required expansion conduit fittings.
- Space all conduit supports at maximum intervals of 5 ft. Install conduit spacers when attaching metal conduit to surface of concrete structures. See "Conduit Mounting Options" on ED(2). Install conduit support within 3 ft. of all enclosures and conduit terminations.
- Do not attach conduit supports directly to pre-stressed concrete beams except as shown specifically in the plans or as approved by the Engineer.
- Unless otherwise shown on the plans, jack or bore conduit placed beneath existing roadways, driveways, sidewalks, or after the base or surfacing operation has begun. Backfill and compact the bore pits below the conduit per Item 476 "Jacking, Boring, or Tunneling Pipe or Box" prior to installing conduit or duct cable to prevent bending of the connections.
- When placing conduit in the sub-grade of new roadways, backfill all trenches with excavated material unless otherwise noted on the plans. When placing conduit in the sub-base of new roadways, backfill all trenches with cement-stabilized base as per requirements of Items 110 "Excavation", 400 "Excavation and Backfill for Structures", 401 "Flowable Backfill", 402 "Trench Excavation Protection", and 403 "Temporary Special Shoring."
- Provide and place warning tape approximately 10 in. above all trenched conduit as per Item 618.
- During construction, temporarily cap or plug open ends of all conduit and raceways immediately after installation to prevent entry of dirt, debris and animals. Temporary caps constructed of durable duct tape are allowed. Tightly fix the tape to the conduit opening. Clean out the conduit and prove it clear in accordance with Item 618 prior to installing any conductors.
- Ensure conduit entry into the top of any enclosure is waterproof by installing conduit sealing hubs or using boxes with threaded bosses. This includes surface mounted safety switches, meter cans, service enclosures, auxiliary enclosures and junction boxes. Grounding bushings on water tight sealing hubs are not required.
- Fit the ends of all PVC conduit terminations with bushings or bell end fittings. Provide and install a grounding type bushing on all metal conduit terminations.
- Install a bonding jumper from each grounding bushing to the nearest ground rod, grounding lug, or equipment grounding conductor. Ensure all bonding jumpers are the same size as the equipment grounding conductor. Bonding of conduit used as a casing under roadways for duct cable is not required, if the duct extends the full length through the casing.
- At all electrical services, install a 6 AWG solid copper grounding electrode conductor.
- Place conduits entering ground boxes so that the conduit openings are between 3 in. and 6 in. from the bottom of the box. See the ground box detail on sheet ED(4).
- Seal ends of all conduits with duct seal, expandable foam, or by other methods approved by the Engineer. Seal conduit immediately after completion of conductor installation and pull tests. Do not use duct tape as a permanent conduit sealant. Do not use silicone caulk as a conduit sealant.
- File smooth the cut ends of all mounting strut and conduit. Before installing, paint the field cut ends of all mounting strut and RMC (threaded or non-threaded) with zinc rich paint (94% or more zinc content) to alleviate overspray. Use zinc rich paint to touch up galvanized material as allowed under Item 445 "Galvanizing." Do not paint non-galvanized material with a zinc rich paint as an alternative for materials required to be galvanized.

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					Traffic Operations Division Standard	
<h2>ELECTRICAL DETAILS CONDUITS & NOTES</h2> <h3>ED(1) - 14</h3>						
FILE:	ed1-14.dgn	DWG:	CK:	DW:	CK:	
© TxDOT	October 2014	CONT	SECT	JOB	HIGHWAY	
REVISIONS		DIST	COUNTY		SHEET NO.	

ELECTRICAL CONDUCTORS

A. MATERIAL INFORMATION

1. Provide Type XHHW insulated conductors in accordance with Departmental Material Specification (DMS) 11040 "Conductors" and Item 620 "Electrical Conductors." Provide conductors as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies" Item 620. Color code insulated conductors in conformance with the NEC. Identify grounded (neutral) conductors with white insulation. Identify grounding conductors (ground wires) with green insulation or bare conductors. Identify ungrounded (hot) conductors with any color insulation except green, white, or gray. Keep color scheme consistent throughout the wiring system. Identify conductors 6 American Wire Gauge (AWG) and smaller by continuous color jacket. Identify electrical conductors 4 AWG and larger by continuous color jacket or by colored tape. When identifying conductors with colored tape, mark at least 6 in. of the conductor's insulation with half laps of tape.
2. Provide a solid copper 6 AWG grounding electrode conductor to bond the electrical service equipment to the concrete encased grounding electrode or the ground rod at the service location. Connect the grounding electrode conductor to the ground rod with a UL listed connector in accordance with DMS 11040. Connect the grounding electrode conductor to the concrete encased grounding electrode as shown in the plans.
3. Where two or more circuits are present in one conduit or enclosure, permanently identify the conductors of each branch circuit by attaching a non-metallic tag around both circuit conductors at each accessible location. Provide tags with two straps, large enough to indicate circuit number, letter, or other identification as shown in the plans. Print circuit identification on the tag with a permanent marker.
4. Use listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors for splicing as specified in DMS 11040. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Provide UL listed gel-filled insulating splice covers. Splicing materials, insulating materials, breakaway disconnects, splice covers, and fuse holders are subsidiary to various bid items.

B. CONSTRUCTION METHODS

1. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the conduit system. After installing conductors in conduit, perform conductor pull test. If a conductor cannot be freely pulled, make any needed alterations or repairs at no additional cost to the department. Perform insulation resistance tests in accordance with Item 620. Coordinate with the Engineer to witness the tests.
2. Leave 2 ft. minimum, 3 ft. maximum length for each conductor up to the splice in ground boxes. Leave 3 ft. minimum, 4 ft. maximum length of conductor in ground boxes when pulled through with no splice. Leave 1 ft. minimum, 1.5 ft. maximum length of conductor at enclosures, weatherheads and pole bases.
3. Make splices only in junction boxes, ground boxes, pole bases, or electrical enclosures and use only listed compression or screw type pressure connectors, terminal blocks, or split bolt connectors. Insulate splices with heavy wall heat shrink tubing or gel-filled insulating splice covers to provide a watertight splice. Overlap conductor insulation with heat shrink tubing a minimum of 2 in. past both sides of the splice. Where heat shrink tubing may not shrink sufficiently to provide a watertight seal around the individual conductors, prior to heating the tubing, increase the diameter of the conductor insulation using hot melt adhesive tape to provide a watertight seal between the individual conductors and the heat shrink tubing. Ensure the tape extends past the heat shrink tubing. Use hot melt adhesive tape to fill the gap and seal the ends of heat shrink tubing. Heat shrink tubing that appears to have been burned, or overheated, is considered defective and must be replaced.
4. Size and install gel-filled insulating splice covers according to manufacturer's specifications when used in place of heat shrink tubing.
5. Wire nuts with factory applied waterproof sealant may be used for 8 AWG or smaller conductors in above ground junction boxes, but not in pole bases or ground boxes. Install wire nuts in an upright position to prevent the accumulation of water.
6. Support conductors in illumination poles with a J-hook at the top of the pole.
7. When terminating conductors, remove the insulation and jacketing material without nicking the individual strands of the conductor. Conductors with nicked individual conductor strands or removed strands will be considered damaged.
8. Replace conductors and cables that are damaged beyond repair or that fail an insulation resistance test at no additional cost to the department.
9. Do not repair damaged conductors with duct tape, electrical tape, or wire nuts. Use only approved splicing methods.
10. Do not terminate more than one conductor under a single connector, unless the connector is rated for multiple conductors. Do not exceed the pressure connector's listing for maximum number and size of conductors allowed.
11. Install breakaway connectors on conductors bid under Item 620 whenever those conductors pass through a breakaway support device. Follow manufacturer's instructions when terminating conductors to breakaway connectors. Properly torque threaded connections. Proper terminations are critical to the safe operation of breakaway devices. Trim waterproofing boots on breakaway connectors to fit snugly around the conductor to ensure waterproof connection. Only one conductor may enter a single opening in a boot. Provide waterproof boots with the correct number of openings. Leave unused openings factory sealed. Use prequalified breakaway connectors as shown on the MPL.

12. Provide and install a separate stranded equipment grounding conductor (EGC) in all conduits that contain circuit wiring of 50 volts or more. Unless shown elsewhere, size the EGC to be the same size as the largest current carrying conductor contained in the conduit. Ensure all EGCs are bonded together at every accessible location. For traffic signal installations, provide a minimum size 8 AWG EGC. The EGC is paid for under Item 620.

C. TEMPORARY WIRING

1. Install temporary conductors and electrical equipment in accordance with the NEC article "Temporary Installations" and Department standard sheets.
2. Provide a ground fault circuit interrupter (GFCI) for power outlets for portable electrical equipment, power tools, ice machines, ice storage bins and refrigerators located outdoors at grade. GFCI may be any one of the following: molded cord and plug set, receptacle, or circuit breaker type.
3. Use listed wire nuts with factory applied sealant for temporary wiring where approved.
4. Enclose conductor splices within a listed enclosure or ground box, or ensure the splices are more than 10 ft. above grade vertically and more than 5 ft. horizontally from any metal structure. Where installing temporary conductors in areas subject to vehicle traffic or mobile construction equipment, ensure the vertical clearance to ground is at least 18 ft. when measured at the lowest point. Ground messenger wires that support power conductors in conformance with the NEC.
5. Protect and when necessary repair any existing electrical conduits uncovered during the construction process in a timely manner and in conformance with the NEC.

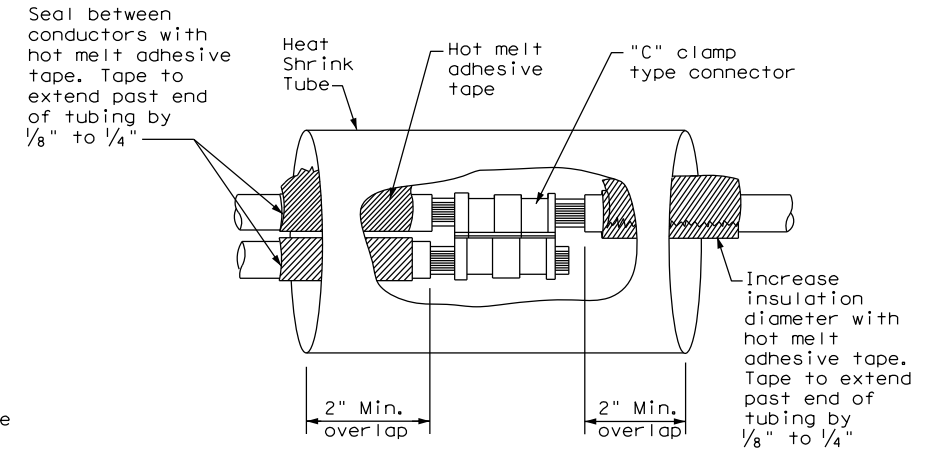
GROUND RODS & GROUNDING ELECTRODES

A. MATERIAL INFORMATION

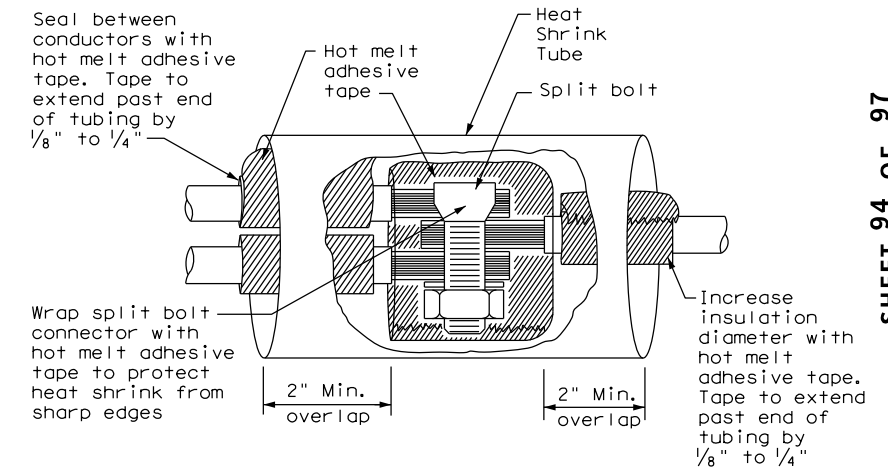
1. Provide and install a grounding electrode at electrical services. Provide ground rods according to DMS 11040 and the plans. Larger diameter or longer length rods may be called for in some specific locations, see the individual plans sheets. Concrete encased grounding electrodes may be called for in specific locations including electrical service, see individual plan sheets.

B. CONSTRUCTION METHODS

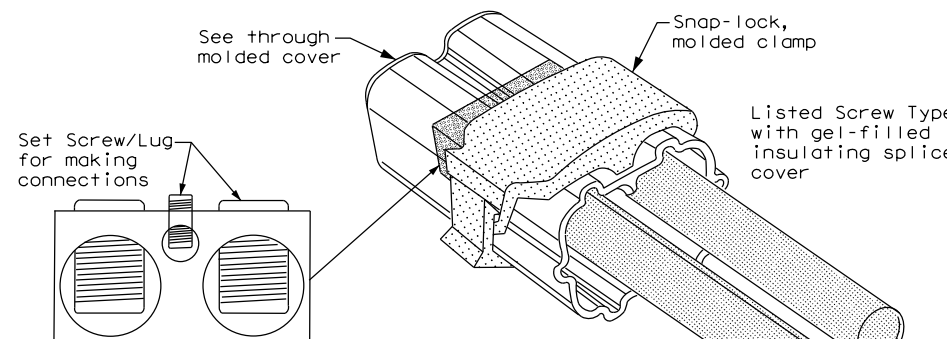
1. Furnish auxiliary ground rods for lightning protection and install in soil, concrete, or both, as called for in the plans. For ground rods installed in concrete, ensure the connection of the conductor to the ground rod is readily accessible for inspection or repairs. For ground rods installed in soil, ensure that the upper end is between 2 to 4 in. below finished grade.
2. Do not place ground rods in the same drilled hole as a timber pole.
3. Install ground rods so the imprinted part number is at the upper end of the rod.
4. Remove all non-conductive coatings such as concrete splatter from the rod at the clamp location.
5. Route all conductors as short and straight as possible for connection to lightning protection ground rods. When a bend is required, ensure a minimum radius bend of four inches for these conductors.
6. Unless otherwise called for in the plans, protect grounding electrode conductors with non-metallic conduit. When protecting grounding electrode conductors with metal conduit, provide and install a grounding type bushing and properly sized bonding jumper on each end of the metal conduit.
7. Written authorization is required before installing a ground rod in a horizontal trench for rocky soil or a solid rock bottom.



SPLICE OPTION 1
Compression Type



SPLICE OPTION 2
Split Bolt Type



SPLICE OPTION 3
Listed Screw Type

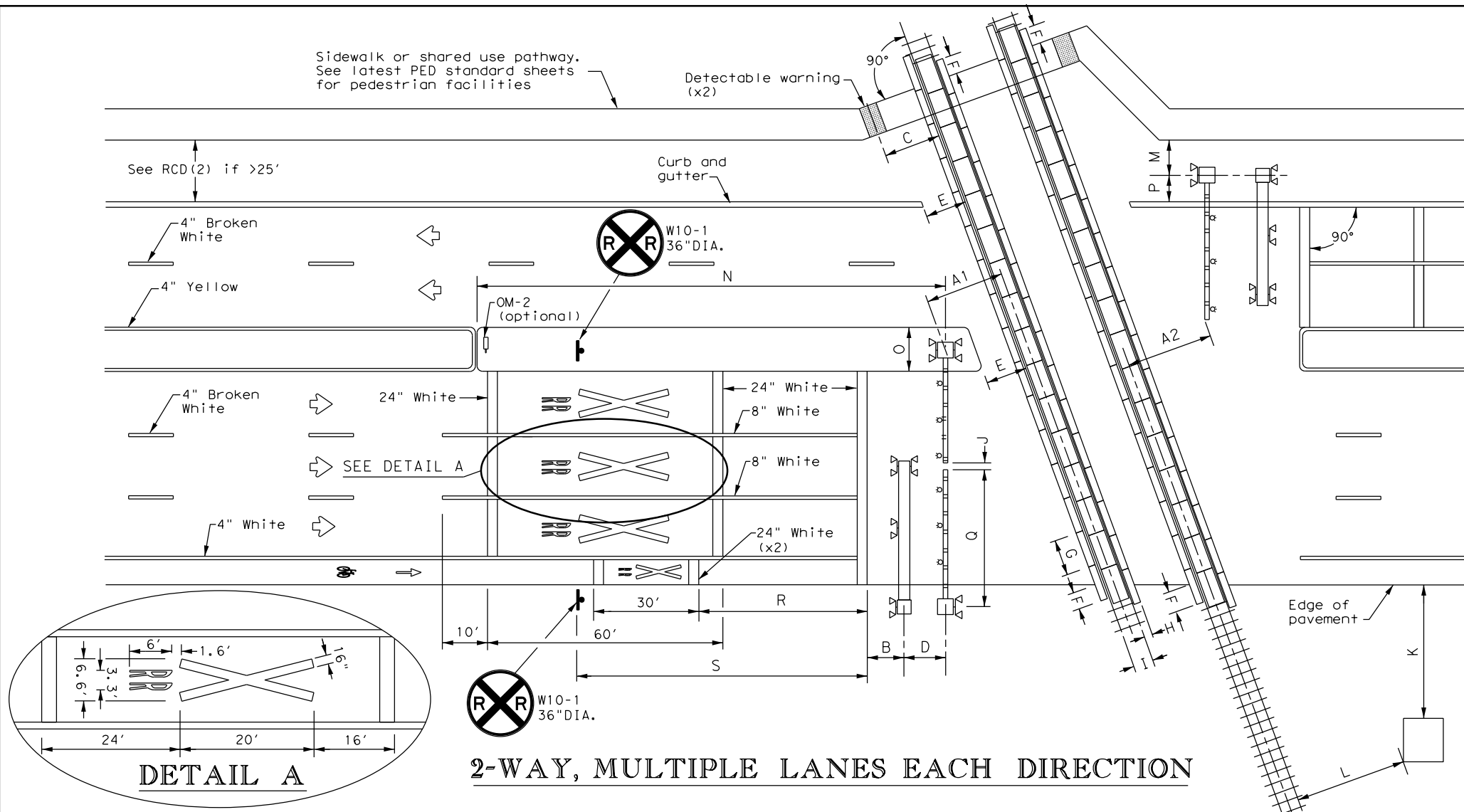
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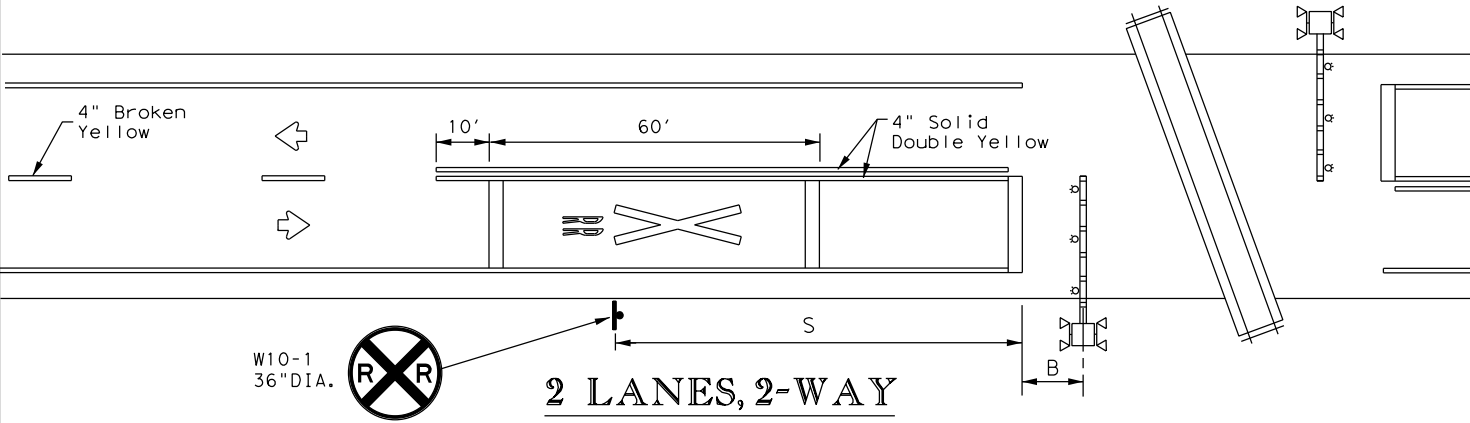
					Traffic Operations Division Standard		
<h2>ELECTRICAL DETAILS CONDUCTORS</h2> <h3>ED(3) - 14</h3>							
FILE:	ed3-14.dgn	DN:	TxDOT	CK:	TxDOT	CR:	TxDOT
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REVISIONS		DIST	COUNTY		SHEET NO.		

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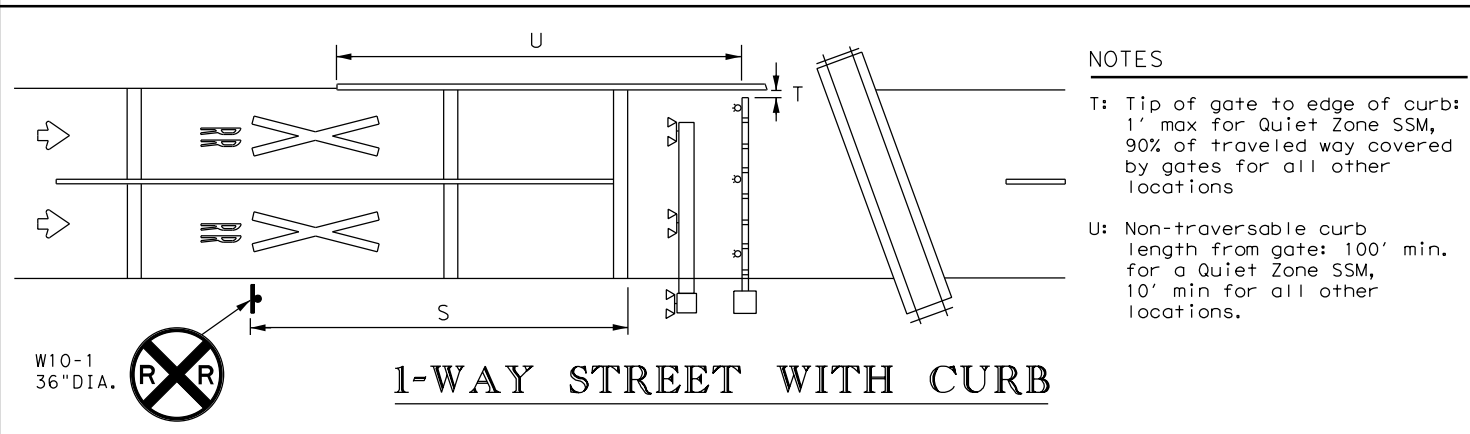
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2-WAY, MULTIPLE LANES EACH DIRECTION



2 LANES, 2-WAY



1-WAY STREET WITH CURB

- NOTES**
- T: Tip of gate to edge of curb: 1' max for Quiet Zone SSM, 90% of traveled way covered by gates for all other locations
 - U: Non-traversable curb length from gate: 100' min. for a Quiet Zone SSM, 10' min for all other locations.

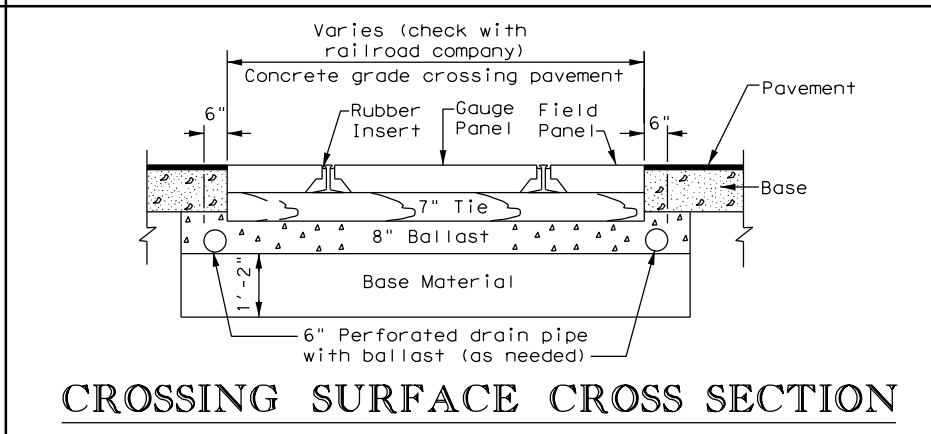
TABLE 1

Approach Speed (mph)	Desirable Placement (feet)
20	100
25	100
30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475
70	550
75	650

LEGEND

	Sign
	Object Marker
	Traffic Flow
	Cantilever
	Gate Assembly
	Mast Flasher Pair

- GENERAL NOTES**
- Medians and curbs must be non-traversable to qualify as a Quiet Zone Supplementary Safety Measure (SSM). Non-traversable curbs in Quiet Zones are 6" tall minimum and used on roadways where speed does not exceed 40 mph.
 - Raised pavement markers may be used to supplement striping. See PM(2) and PM(3) standard sheets.
 - Medians preferred whenever possible to prevent vehicles from driving around gates.
 - Longitudinal edge striping may be continued thru crossing as needed. Illumination may also be considered for nighttime visibility.
 - See SMD standard sheets for sign mounting details.
 - See the Standard Highway Sign Design for Texas (SHSD) manual for sign and pavement marking details.



CROSSING SURFACE CROSS SECTION

NOTES

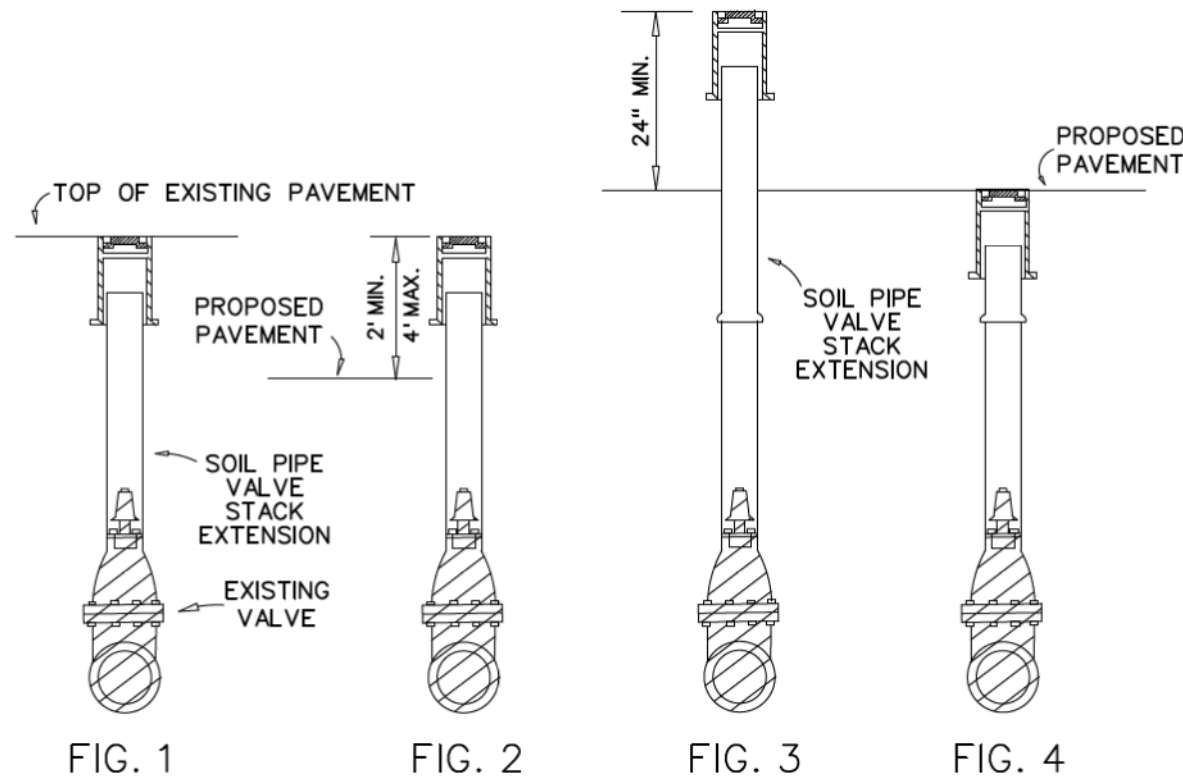
- A1: Center of RR mast to center of rail: 12' minimum, 15' typical.
- A2: Tip of gate to center of rail: 12' minimum, 15' typical.
- B: Center of mast (cantilever, gate, or mast flasher) of nearest active traffic control device to stop line: 8' (NOTE: Stop line may be moved as needed, but should be at least 8' back from gates, if present).
- C: Center of detectable warning device to nearest rail: 6' minimum
- D: Center of gate mast to center of cantilever mast: 6' typical. NOTE: Cantilever may be located in front or behind gates.
- E: Edge of median or curb to nearest rail: 10' typical. NOTE: Design median edge to be parallel with rail.
- F: Edge of planking panel from edge of pavement or sidewalk: 3' minimum. NOTE: Field panels need not be in line with gauge panels.
- G: Length of panels along rail: 8' typical.
- H: Width of field panel: 2' typical (check with railroad company).
- I: Distance between rails: 4'-8.5".
- J: Tip of gate to tip of gate: 2' maximum for Quiet Zone SSM or 90% of traveled way covered by gates for all other locations.
- K: Nearest edge of RR cabin from edge of pavement: 30' typical. NOTE: Cabinet not required to be parallel to edge of pavement.
- L: Nearest edge of RR cabin from nearest rail: 25' typical.
- M: Center of RR mast to edge of sidewalk: 6' minimum.
- N: Center of gate mast to leading edge of non-traversable median: 100' minimum to qualify as a Quiet Zone SSM. NOTE: 60' will suffice if there is a street intersection within the 100' and all street intersections within 60' are closed.
- O: Width of median: 8'-6" minimum, 10' typical when using median gates. NOTE: Center of gate mast minimum 4'-3" from face of curb.
- P: Center of RR mast to face of curb: 4'-3" minimum. Center of RR mast to edge of pavement (with shoulder): 6' minimum. Center of RR mast to edge of pavement (no shoulder): 8'-3" minimum. NOTE: BNSF prefers 5'-3", 7', and 9'-3" minimums, respectively.
- Q: Gate length: 28' or less typical, but railroad company may allow up to 32' under special circumstances.
- R: Stop line to first RR Crossing transverse line (bike lane): 50' typical.
- S: Stop line to GRADE CROSSING ADVANCE WARNING (W10-1) sign and adjacent RR Crossing pavement markings. See Table 1. See RCD(2) for other signs.

Texas Department of Transportation
Traffic Operations Division Standard

**RAILROAD CROSSING DETAILS
SIGNING, STRIPING, AND
DEVICE PLACEMENT
RCD(1)-16**

FILE: rcd1-16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	DIST	COUNTY	SHEET NO.	

SHEET 95 OF 97



NOTE: The valve cover must always be exposed so the valve can be operated at any time. Exceptions must be approved by the engineer in advance.

The existing valve cover and lid may be reused if not damaged during removal. If the valve cover and/or lid is damaged at any time prior to final acceptance, it will be replaced by the contractor at no cost to the City.

FIGURE 1 EXISTING VALVE STACK AND COVER

FIGURE 2 PRE-GRADING

1. If the proposed paving is 2' to 4' below the top of the existing valve cover, the entire valve stack and cover may be left in place until final adjustment for paving.

FIGURE 3 PRE-GRADING

2. If the proposed paving is less than 2' below the top of the existing valve cover, the valve stack must be extended.
 3. The cover is removed and an extension of soil pipe only is installed on the existing valve stack. The valve stack and extension must be properly aligned so that the valve can be operated properly. The extension must be connected to the existing valve stack with a bell and rubber gasket.

FIGURE 4 PRE-PAVING

4. The valve stack or extension is cut to a point not more than 3" below the proposed top of paving.
 5. The valve cover is installed over the valve stack or extension to the top of the paving grade.

ALTER & ADJUSTMENT OF VALVE STACK

DWU (PAGE NO.) 404
 DATE OCT. 2011



Melane S. Cleavelin, P.E. 12/19/17
 Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.	REVISION	BY	DATE
TOWN OF ADDISON DALLAS COUNTY, TEXAS BELT LINE ROAD OVERLAY PROJECT VALVE ADJUSTMENT DETAILS 1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095			
PROJECT	DESIGN	DRAWN	DATE
33426	HALFF	HALFF	OCT. 2017
FILE	SHEET		
29530A_DTUTIL_01	DT-UTIL1		

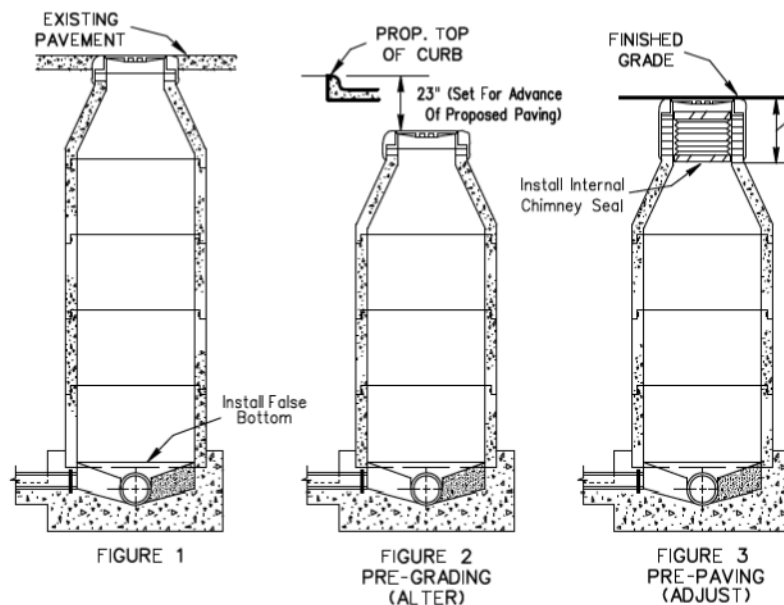


FIGURE 1 EXISTING MANHOLE

1. Install a false bottom in the manhole.
2. Remove and salvage the existing ring and cover and remove the existing grade rings or brick. If the ring and/or cover are damaged at any time prior to final acceptance, it will be replaced by the contractor at no cost to the City.
3. Remove the cone section and remove or add one or more riser section as required.

FIGURE 2 PRE-GRADING (ALTER)

4. Reset the cone section on the existing manhole. To meet the required depth, one or more existing riser sections may have to be removed and replaced with new riser section(s) of a different height.
5. Reset the salvaged ring and cover on the cone section with concrete mortar.

FIGURE 3 PRE-PAVING (ADJUST)

6. Remove the salvaged ring and cover and mortar.
7. Use precast concrete grade rings and non-shrink grout to raise M.H. frame and cover to final paving grade. (LIMITED TO 30" MAX. MANHOLE NECK EXTENSION, AS MEASURED FROM THE TOP TAPER OF THE M.H. CONE TO M.H. LID). When M.H. neck extension exceeds 30", then the M.H. cone is to be removed and reset in such a manner as to reduce the number of grade rings required to reset M.H. frame and cover to final grade.
8. Set the salvaged ring and cover in place with non-shrink grout. Install internal chimney seal.
9. Coat the entire outside of the neck with a waterproof bituminous coating.
10. The false bottom will be removed during the final inspection.

NOTE: If the existing wastewater main is in cone section or if there is only one riser section, the entire manhole must be removed and a new manhole is to be installed.

ALTER & ADJUSTMENT OF STANDARD PRECAST MANHOLE

DWU	(Page No.) 401
DATE DEC. 2001	

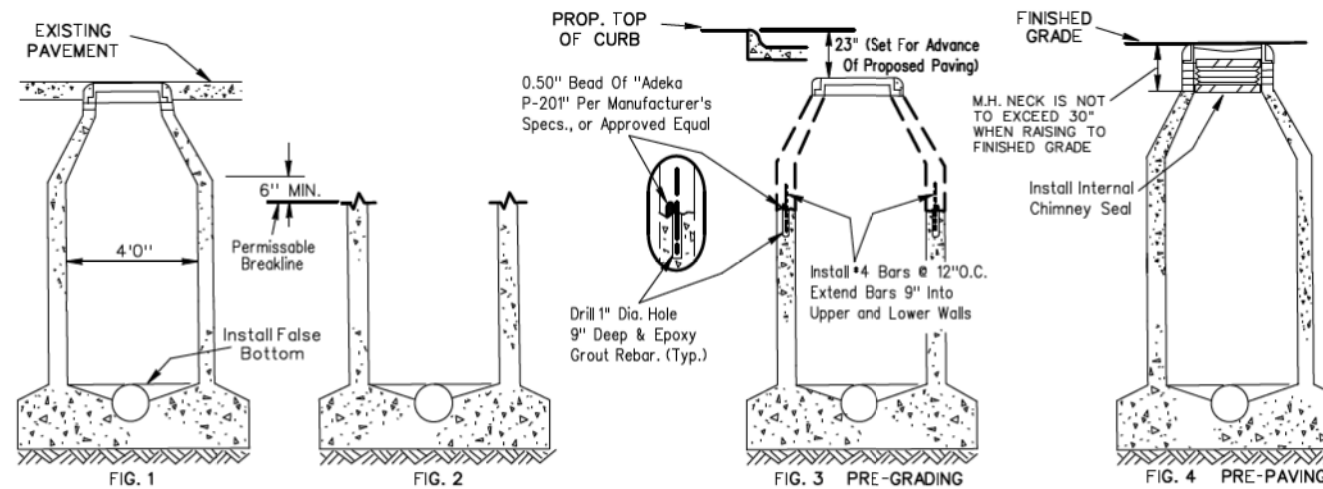


FIGURE 1 EXISTING MANHOLE

1. Install a false bottom in the manhole.
2. Remove the existing ring, cover and any grade rings or bricks.

FIGURE 2

3. Remove the existing manhole cone section to a minimum of 6" below the cone taper to M.H. Wall.

FIGURE 3 PRE-GRADING

4. Form and monolithically pour a new manhole extension with cone section. Use epoxy bonding agent, "Sikadur 32, HMod" or approved equal, to bond new concrete to existing concrete. Coat entire outside of the new concrete with a waterproof bituminous coating. Set a new ring and cover meeting current TCEQ requirements on top of the new section with concrete mortar.

FIGURE 4 PRE-PAVING

5. Remove the new ring and cover and mortar.
6. Use precast concrete grade rings to raise manhole frame and cover to final paving grade. (LIMITED TO 30" MAX. MANHOLE NECK EXTENSION, AS MEASURED FROM THE TOP TAPER OF THE MANHOLE CONE TO MANHOLE LID). When M.H. neck extension exceeds 30", then the manhole cone is to be removed and reset in such a manner as to reduce the number of grade rings required to reset manhole frame and cover to final grade.
7. Set the new ring and cover in place with non-shrink grout. Install internal chimney seal. See pg. 327
8. Coat the entire outside of the neck with a waterproof bituminous coating.
9. The false bottom will be removed during the final inspection.

ALTER & ADJUSTMENT OF STANDARD CAST-IN-PLACE MANHOLE

DWU	(Page No.) 402
DATE OCT. 2011	



Melane S. Cleavelin, P.E. 12/19/17
Signature of Registrant Date

TBPE FIRM REGISTRATION NUMBER: 312

NO.						REVISION						BY						DATE					
ADDISON												TOWN OF ADDISON DALLAS COUNTY, TEXAS											
												BELT LINE ROAD OVERLAY PROJECT											
												MANHOLE ADJUSTMENT DETAILS											
HALFF												1201 NORTH BOWSER ROAD, RICHARDSON, TEXAS 75081-2275 TEL (214) 346-6200 FAX (214) 739-0095											
PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET	PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET	PROJECT	DESIGN	DRAWN	DATE	FILE	SHEET						
33426	HALFF	HALFF	OCT. 2017	29530A_DTUTIL_02	DT-UTIL_2	33426	HALFF	HALFF	OCT. 2017	29530A_DTUTIL_02	DT-UTIL_2	33426	HALFF	HALFF	OCT. 2017	29530A_DTUTIL_02	DT-UTIL_2						