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Plotted By:Ryan, John September 17, 2025 06:50:43am K:\LAC_TPTD\Project\064563401_DallasCounty_CentralTrailExtension\CADD\PlanSheets\COVER SHEET.dwg
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FINAL PLANS

NAME OF CONTRACTOR: _____

DATE OF LETTING: _____

DATE WORK BEGAN: _____

DATE WORK COMPLETED: _____

DATE WORK ACCEPTED: _____

SUMMARY OF CHANGE ORDERS:

WORK WAS COMPLETED ACCORDING TO THE PLANS AND CONTRACT.

_____, P.E.
Signature of Registrant & Date

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
CENTRAL TRAIL EXTENSION

FEDERAL AID PROJECT

STP ( ) TP

CSJ: 918-47-473

CENTRAL TRAIL EXTENSION

DALLAS COUNTY

LIMITS: ALONG BUCKINGHAM RD FROM DART LRT TO GREENVILLE AVE.
ALONG GREENVILLE AVE FROM BUCKINGHAM RD TO WALNUT ST.
ALONG WALNUT ST FROM GREENVILLE AVE TO ABRAMS RD.

TOTAL LENGTH OF PROJECT = ROADWAY = 7,700 FT. = 1.458 MI.

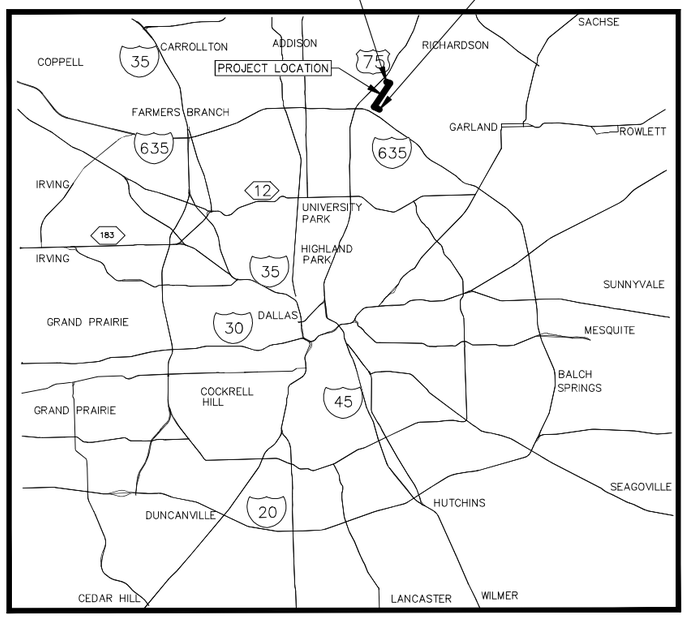
TYPE OF WORK: CONSTRUCT NEW SIDEWALK, BICYCLE AND PEDESTRIAN SIGNALIZATION AND INTERSECTION IMPROVEMENTS, AND SHARED-USE PATH.

CONSISTING OF: GRADING, DRAINAGE, CONCRETE PAVEMENT, SIGNALS, SIGNING AND PAVEMENT MARKINGS.

BUCKINGHAM ROAD STA 50+00 TO STA 68+90
GREENVILLE AVENUE STA 100+00 TO STA STA 151+00
WALNUT STREET STA 20+00 TO STA 40+00

BEGIN PROJECT
CSJ: 918-47-473
BUCKINGHAM RD STA 50+00

END PROJECT
CSJ: 918-47-473
WALNUT AVE STA 40+00



DALLAS COUNTY
NOT TO SCALE
DALLAS DISTRICT

EQUATIONS: NONE
EXCEPTIONS: NONE
RAILROAD CROSSINGS: DART ORANGE/RED LINE
CROSSING AT BUCKINGHAM RD STA 51+00

DESIGN	FED.RD. DIV.NO.	PROJECT NO.			
JWR	6	STP ( ) TP			
GRAPHICS	STATE	CONT	SECT	JOB	HIGHWAY NO.
MFP	TEXAS	918	47	473	VA
CHECK	CHECK	DIST	COUNTY		SHEET NO.
JWR	TPG	DALLAS	DALLAS		1

DESIGN SPEEDS
BUCKINGHAM ROAD = 35 MPH
GREENVILLE AVENUE = 40 MPH
WALNUT STREET = 40 MPH

NOTE:

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, SEPTEMBER 1, 2024, AND THE CONTRACT PROVISIONS LISTED AND DATED AS FOLLOWS SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, October 23, 2023)

Registered Accessibility Specialist (RAS) inspection required. TDLR No. TABS2025018479

STATE OF TEXAS
JOHN W. RYAN
141023
LICENSED
PROFESSIONAL ENGINEER
10/03/2025

Kimley»Horn
TBPELS REGISTERED ENGINEERING FIRM # F-928
225 E. JOHN W. CARPENTER FREEWAY, SUITE 1100,
IRVING, TEXAS 75062
P: 214-420-5600

SUBMITTED FOR LETTING: 10/03/2025

JOHN RYAN, P.E.
PROJECT MANAGER
KIMLEY HORN AND ASSOCIATES, INC.

CONCURRENCE: 9/24/2025
Alberta Blair
ALBERTA BLAIR, P.E.
DALLAS COUNTY DIRECTOR OF PUBLIC WORKS

CONCURRENCE: 9/19/2025
Mark Nelson
MARK NELSON
CITY OF RICHARDSON
DIRECTOR OF TRANSPORTATION & MOBILITY

CONCURRENCE: 10/03/2025
g.a.Khankarli
GHASSAN KHANKARLI, P.E.
CITY OF DALLAS
DIRECTOR OF TRANSPORTATION & PUBLIC WORKS

RECOMMENDED FOR LETTING: 10/22/2025
Signed by: James P. Campbell
, P.E.
DIRECTOR OF TRANSPORTATION PLANNING & DEVELOPMENT

RECOMMENDED FOR LETTING: 10/22/2025
DocuSigned by:
91B8F2112C2C409...
, P.E.
AREA ENGINEER

APPROVED FOR LETTING: 10/22/2025
DocuSigned by: Cesson Clemens
A879E0D16CD6464...
, P.E.
DISTRICT ENGINEER

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PART A
CENTRAL TRAIL EXTENSION
DALLAS COUNTY

LIMITS: ALONG BUCKINGHAM RD FROM DART LRT TO GREENVILLE AVE.
ALONG GREENVILLE AVE FROM BUCKINGHAM RD TO WALNUT ST.
ALONG WALNUT ST FROM GREENVILLE AVE TO ABRAMS RD.

TOTAL LENGTH OF PROJECT = ROADWAY = 7,700 FT. = 1.458 MI.

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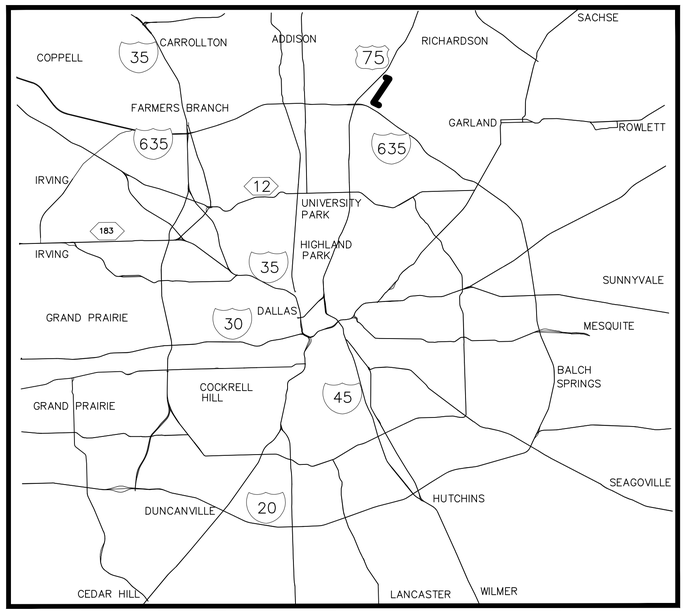
CONSISTING OF: GRADING, DRAINAGE, CONCRETE PAVEMENT, SIGNALS, SIGNING AND PAVEMENT MARKINGS.



N

DALLAS COUNTY
NOT TO SCALE
DALLAS DISTRICT

STATE OF TEXAS
THOMAS P. GRANT
100876
LICENSED
PROFESSIONAL ENGINEER
03/13/2026
Thomas P. Grant, P.E.

EQUATIONS: NONE
EXCEPTIONS: NONE
RAILROAD CROSSINGS: DART ORANGE/RED LINE
CROSSING AT BUCKINGHAM RD STA 51+00

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Plotted By:Pena, Mario June 15, 2026 03:30:38pm K:\AC_TPTO\Projects\06456340 1_DallasCounty_CentralTrailExtension\CADD\PlanSheets\COVER SHEET.dwg
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SHEET NO. DESCRIPTION

I. GENERAL

0.01 TITTLE SHEET
0.02 SHEET INDEX
0.03A GENERAL NOTES
0.03B GENERAL NOTES (2)
0.03C DALLAS COUNTY GENERAL NOTES
0.03D DALLAS COUNTY GENERAL NOTES (2)
0.04A–0.04G TXDOT GENERAL NOTES (7 SHEETS)
0.05–0.11 QUANTITY SUMMARY (7 SHEETS)

PROJECT CONTROL

BUCKINGHAM ROAD
0.12 STA 50+00 – STA 62+50
0.13 STA 62+50 – STA 68+90

GREENVILLE AVENUE
0.14 STA 100+00 – STA 115+20
0.15 STA 115+20 – STA 130+65
0.16 STA 130+65 – STA 146+05
0.17 STA 146+05 – STA 151+00

WALNUT SREET
0.18 STA 20+00 – STA 34+90
0.19 STA 34+90 – STA 40+00

0.20–0.22 TYPICAL SECTIONS (3 SHEETS)

II. REMOVALS

2.01 BEGIN – BUCKINGHAM STA 62+00
2.02 BUCKINGHAM STA 62+00 – GREENVILLE STA 105+00
2.03 GREENVILLE STA 105+00 – GREENVILLE STA 119+00
2.04 GREENVILLE STA 119+00 – GREENVILLE STA 133+00
2.05 GREENVILLE STA 133+00 – GREENVILLE STA 147+00
2.06 GREENVILLE STA 147+00 – WALNUT STA 27+00
2.07 WALNUT STA 27+00 – END
2.08 REMOVAL DETAIL – BUCKINGHAM RD AT GREENVILLE AVE
2.09 REMOVAL DETAIL – GREENVILLE AVE AT WALNUT ST

III. ROADWAY AND TRAIL DETAILS

3.01 HORIZONTAL ALIGNMENT DATA

BUCKINGHAM TRAIL PLAN AND PROFILE
3.02 STA 10+00 – STA 15+00
3.03 STA 15+00 – STA 20+00
3.04 STA 20+00 – STA 25+00
3.05 STA 25+00 – STA 27+00

GREENVILLE TRAIL PLAN AND PROFILE
3.06 STA 27+00 – STA 32+00
3.07 STA 32+00 – STA 37+00
3.08 STA 37+00 – STA 42+00
3.09 STA 42+00 – STA 47+00
3.10 STA 47+00 – STA 52+00
3.11 STA 52+00 – STA 57+00
3.12 STA 57+00 – STA 62+00
3.13 STA 62+00 – STA 67+00
3.14 STA 67+00 – 70+00
3.15 STA 70+00 – 73+50

WALNUT TRAIL PLAN AND PROFILE
3.16 STA 73+50 – 78+00
3.17 STA 78+00 – 83+00
3.18 STA 83+00 – 85+84

DRIVEWAY DETAILS
3.19 DRIVEWAY A & B
3.20 DRIVEWAY C & D

MEDIAN MODIFICATION DETAIL
3.21 BUCKINGHAM RD

INTERSECTION DETAIL
3.22 BUCKINGHAM RD AT GREENVILLE AVE
3.23 WALNUT ST AT GREENVILLE AVE

STANDARDS
3.24 CCCG–22
3.25–3.26 CITY OF RICHARDSON – STREET STANDARD DETAILS (2 SHEETS)**
3.27 CITY OF RICHARDSON – SIDEWALK STANDARD DETAIL**
3.28 CITY OF RICHARDSON – BARRIER FREE RAMPS**
3.29 CITY OF DALLAS – MONOLITHIC MEDIAN NOSE STANDARD DETAIL**
3.30 CITY OF DALLAS – BARRIER FREE DETAILS**

IV. STRUCTURES

4.01 PLAN AND PROFILE
4.02 STRUCTURAL DETAILS (1 OF 2)
4.03 STRUCTURAL DETAILS (2 OF 2)

V. PAVEMENT MARKING AND SIGNING

5.01 BEGIN – BUCKINGHAM STA 62+00
5.02 BUCKINGHAM STA 62+00 – GREENVILLE STA 105+00
5.03 GREENVILLE STA 105+00 – GREENVILLE STA 119+00
5.04 GREENVILLE STA 119+00 – GREENVILLE STA 133+00
5.05 GREENVILLE STA 133+00 – GREENVILLE STA 147+00
5.06 GREENVILLE STA 147+00 – WALNUT STA 27+00
5.07 WALNUT STA 27+00 – END

STANDARDS
5.08 SOSS (SHEET 1 OF 3)**
5.09 SOSS (SHEET 2 OF 3)**
5.10 SOSS (SHEET 3 OF 3)**
5.11–5.12 CITY OF RICHARDSON – TRAFFIC STANDARD DETAIL (2 SHEETS)**
5.13 CITY OF DALLAS – CROSSWALK DETAILS**
5.14 SMD (GEN) – 08**
5.15 SMD (SLIP–1) – 08 (DAL)**
5.16 SMD (SLIP–2) – 08**
5.17 SMD (SLIP–3) – 08**
5.18 TSR (3) – 13**
5.19 TSR (4) – 13**
5.20 TSR (5) – 13**

VI. DRAINAGE

6.01 PROPOSED DRAINAGE AREA MAP
6.02 DRAINAGE CALCULATIONS

DRAINAGE PLAN AND PROFILE
6.03 LATERALS 01 & 02
6.04–6.05 LATERALS 03 (2 SHEETS)
6.06 LATERALS 04 & 05
6.07 LATERALS 06
6.08 LATERALS 07 & 08

STANDARDS
6.09 CITY OF RICHARDSON – STORM SEWER STANDARD DETAILS**
6.10–6.11 I–CU (FTW) (2 SHEETS)**

VII. TRAFFIC SIGNAL PLANS

7.01 BUCKINGHAM RD AND GREENVILLE AVE – EXISTING CONDITIONS AND REMOVALS
7.02 BUCKINGHAM RD AND GREENVILLE AVE – PROPOSED LAYOUT
7.03 BUCKINGHAM RD AND GREENVILLE AVE – TRAFFIC SIGNAL CHARTS
7.05 GREENVILLE AVE AND WALNUT ST – EXISTING CONDITIONS AND REMOVALS
7.07 GREENVILLE AVE AND WALNUT ST – PROPOSED ABOVEGROUND CONDITIONS
7.06 GREENVILLE AVE AND WALNUT ST – PROPOSED UNDERGROUND CONDITIONS
7.08 GREENVILLE AVE AND WALNUT ST – CORNER DETAILS
7.09 GREENVILLE AVE AND WALNUT ST – TRAFFIC SIGNAL CHARTS

STANDARDS
7.10 BC(1)–21*
7.11 BC(2)–21*
7.12 BC(3)–21*
7.13 BC(4)–21*
7.14 BC(5)–21*
7.15 BC(6)–21*
7.16 BC(7)–21*
7.17 BC(8)–21*
7.18 BC(9)–21*
7.19 BC(10)–21*
7.20 BC(11)–21*
7.21 BC(12)–21*
7.22 ED(1)–25*
7.23 ED(2)–25*
7.24 ED(3)–25*
7.25 ED(4)–25*
7.26 SMA–80(1)–12*
7.27 SMA–80(2)–12*
7.28 TS–FD–12*

VIII. TRAFFIC CONTROL PLAN

8.01 SEQUENCE OF CONSTRUCTION
8.02–8.03 PHASE 1 (2 SHEETS)
8.04–8.10 PHASE 2 (7 SHEETS)

STANDARDS
8.11 TCP (2–1)–18**
8.12 TCP (2–4)–18**
8.13 TCP (2–5)–18**
8.14 WZ (BTS–1)– 13**
8.15 WZ (BTS–2)–13**
8.16 TREATMENT FOR VARIOUS EDGE CONDITIONS**

IX. EROSION CONTROL

9.01 SWP3 (SHEET 1 OF 2)
9.02 SWP3 (SHEET 2 OF 2)
9.03 BUCKINGHAM BEGIN – STA 62+00
9.04 BUCKINGHAM STA 62+00 – GREENVILLE STA 105+00
9.05 GREENVILLE STA 105+00 – STA 119+00
9.06 GREENVILLE STA 119+00 – STA 133+00
9.07 GREENVILLE STA 133+00 – STA 147+00
9.08 GREENVILLE STA 147+00 – WALNUT STA 27+00
9.09 WALNUT STA 27+00 TO END

STANDARDS
9.10 EC(1)–16
9.11–9.13 EC(9)–16 (3 SHEETS)***
9.14 EPIC***
9.15 VEGETATION ESTABLISHMENT SHEET***

X. CROSS SECTIONS

BUCKINGHAM
10.01 STA 50+00 – STA 61+50
10.02 STA 62+00 – STA 68+50

GREENVILLE
10.03 STA 100+00 – STA 111+50
10.04 STA 112+00 – STA 123+50
10.05 STA 124+00 – STA 135+50
10.06 STA 136+00 – STA 147+50
10.07 STA 148+00 – STA 151+00

WALNUT
10.08 STA 20+00 – STA 31+50
10.09 STA 32+00 – STA 39+00

*REFERENCE PLAN SET "CENTRAL TRAIL EXTENSION BUCKINGHAM RD AT DART RAIL CROSSING IMPROVEMENTS" FOR ALL IMPROVEMENTS INCLUDED AT THE DART RAIL CROSSING

*THE STANDARD TXDOT SHEETS, SPECIFICALLY IDENTIFIED IN THIS INDEX OF SHEETS, HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

Thomas P. Grant, P.E. — 6/16/2026
SIGNATURE OF REGISTRANT — DATE

**THE STANDARD TXDOT SHEETS, SPECIFICALLY IDENTIFIED IN THIS INDEX OF SHEETS, HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

6/16/2026
SIGNATURE OF REGISTRANT — DATE

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6/16/2026
SIGNATURE OF REGISTRANT — DATE

STATE OF TEXAS
THOMAS P. GRANT
100876
LICENSED
PROFESSIONAL ENGINEER
03/13/2026
Thomas P. Grant, P.E.

Kimley»Horn F-928

Texas Department of Transportation
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DALLAS COUNTY

CENTRAL TRAIL EXTENSION

SHEET INDEX

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.02
CONT.	SECT.	JOB	
0918	47	473	

Plotted By: Yarborough, Brendan March 13, 2026 09:08:45am K:\LAC_TPTO\project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\COVER SHEET.dwg
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GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF RICHARDSON (FOR THE SECTIONS WITHIN THE COR LIMITS), CITY OF DALLAS (FOR THE SECTIONS WITHIN THE COD LIMITS), LATEST EDITION OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENT (NCTCOG), AND TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) IN THIS ORDER, STANDARDS AND SPECIFICATIONS UNLESS NOTED OTHERWISE.
2. CONTRACTOR SHALL NOTIFY CITY INSPECTOR FOR THIS PROJECT AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO BEGINNING CONSTRUCTION.
3. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS AND SIDEWALKS ADJACENT TO THE PROJECT FREE OF MUD AND DEBRIS FROM THE CONSTRUCTION AT ALL TIMES.
4. DISTURBED AREAS THAT ARE SEEDED OR SODDED SHALL BE CHECKED PERIODICALLY TO SEE THAT GRASS COVERAGE IS PROPERLY MAINTAINED. DISTURBED AREAS SHALL BE WATERED, FERTILIZED, AND RESEEDED OR RESODDED, UNTIL VEGETATION IS ESTABLISHED.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN A NEAT AND ACCURATE RECORD OF CONSTRUCTION FOR THE CITY'S RECORDS. AT THE CONCLUSION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE THE CITY FULL SIZE MARKUPS THAT RECORD ALL CONSTRUCTION DEVIATING FROM THE PLANS.
6. CONTRACTOR SHALL NOT STORE MATERIALS, EQUIPMENT OR OTHER CONSTRUCTION ITEMS ON DRIVEWAYS, STREETS, SIDEWALKS, OR STORM DRAIN FLOWLINES. CONTRACTOR SHALL NOT STORE MATERIALS, EQUIPMENT OR OTHER CONSTRUCTION ITEMS ON ADJACENT PROPERTIES OR RIGHT OF WAY WITHOUT PRIOR WRITTEN CONSENT OF THE PROPERTY OWNER OR THE CITY (FOR RIGHT OF WAY). IF WRITTEN CONSENT IS PROVIDED BY THE PROPERTY OWNER, THE CONTRACTOR SHALL SUBMIT A COPY TO THE CITY PRIOR TO STORING MATERIALS, EQUIPMENT OR OTHER CONSTRUCTION ITEMS ON THE PROPERTY. ALL CONSTRUCTION MATERIALS TO BE REMOVED SHALL BE DISPOSED OF AT A LEGAL DISPOSAL LOCATION OFF SITE, UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE PROPERTY OWNER AND THE CITY.
7. UNUSABLE EXCAVATED MATERIAL AND ALL WASTE RESULTING FROM SITE CLEARING AND GRUBBING SHALL BE DISPOSED OF AT A LEGAL DISPOSAL FACILITY OFF SITE BY THE CONTRACTOR AT HIS EXPENSE UNLESS OTHERWISE SPECIFIED OR AGREED TO BY OWNER.
8. THE CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. CONTRACTOR SHALL CONTROL DUST BY SPRINKLING WATER, OR AS APPROVED BY THE CITY ENGINEER.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ANY IRON RODS OUTSIDE THE RIGHT OF WAY DURING THE COURSE OF CONSTRUCTION. ANY IRON RODS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR (NO SEPARATE PAY).
10. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING SURVEY MONUMENTS SHOWN ON PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED CONSTRUCTION SURVEYING AND STAKINGS.
11. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. THE DRAINAGE INCLUDES SURFACE AND GROUND WATER. ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY.
12. ALL EFFORTS SHALL BE MADE TO AVOID DAMAGE TO EXISTING TREES THAT ARE TO REMAIN. TREES SHALL BE TRIMMED AND PAINTED ONLY IF NECESSARY FOR THE SAFE MANEUVERING OF CONSTRUCTION EQUIPMENT. THE CONTRACTOR SHALL NOT SNAG OR TEAR TREE ROOTS. PRUNING OF TREES AND SHRUBS SHALL BE PERFORMED BY A CERTIFIED ARBORIST.
13. ALL ADJACENT PROPERTY DAMAGED BY THE PROPOSED CONSTRUCTION SHALL BE RESTORED TO EQUAL OR BETTER CONDITION THAN WHICH IT WAS FOUND BEFORE SUCH WORK WAS UNDERTAKEN (NO SEPARATE PAY).
14. CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS IN VICINITY OF ANY OVERHEAD ELECTRIC LINES. CONTRACTOR SHALL ABIDE BY NATIONAL ELECTRIC CODE AND ANY REQUIREMENT BY OWNER OF ELECTRIC LINE.
15. THE CONTRACTOR SHALL SUBMIT IN WRITING A SEQUENCE OF WORK SCHEDULE AND TRAFFIC CONTROL PLAN TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WORK.
16. NO EXCESS EXCAVATED MATERIAL SHALL BE DEPOSITED IN LOW AREAS OR ALONG NATURAL DRAINAGE WAYS, WITHOUT WRITTEN PERMISSION FROM THE CITY OF RICHARDSON. IF THE CONTRACTOR PLACES EXCESS MATERIAL IN AREAS WITHOUT WRITTEN PERMISSION, HE SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM SUCH FILL AND HE SHALL REMOVE THE MATERIAL AT HIS OWN COST IF THE CITY SO DIRECTS.
17. POWER POLES SHALL BE BRACED DURING CONSTRUCTION. ANY DAMAGE TO EXISTING POWER POLES OR OTHER STRUCTURES SHALL BE REPAIRED OR REPLACED TO A CONDITION AS GOOD OR BETTER THAN THE EXISTING CONDITION. BRACING, REMOVING, REPLACING, AND REPAIRING EXISTING STRUCTURES SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR VARIOUS ITEMS LISTED IN THE PROPOSAL. THE CONTRACTOR SHALL COORDINATED POWER POLE BRACING AND CONSTRUCTION ADJACENT TO ELECTRIC FACILITIES WITH ELECTRIC COMPANY. COORDINATION WITH FRANCHISE UTILITIES SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR THE VARIOUS BID ITEMS LISTED IN THE PROPOSAL.
18. CONTRACTOR SHALL MAINTAIN ADEQUATE SANITARY FACILITIES FOR USE BY WORKERS THROUGHOUT DURATION OF CONSTRUCTION.
19. ITEMS OF WORK NOT SPECIFICALLY INCLUDED AS SEPARATE PAY ITEMS SHALL BE CONSIDERED SUBSIDIARY TO OTHER PAY ITEMS AND AT NO SEPARATE PAY.
20. CONTRACTOR SHALL VIDEO RECORD PRE-CONSTRUCTION CONDITIONS ALONG THE ENTIRE LIMITS OF THE PROJECT AND SUBMIT ONE (1) COPY OF THE VIDEO RECORDING TO THE OWNER PRIOR TO MOBILIZATION AND/OR START OF CONSTRUCTION.
21. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO BEGINNING CONSTRUCTION.
22. **CONTRACTOR MUST OBTAIN ROW PERMIT FROM THE CITY OF DALLAS FOR CONSTRUCTION WITHIN COD LIMITS AND MUST USE APPLICABLE CITY STANDARDS INCLUDING 251-D AS APPLICABLE.**
23. ALL REFERENCES TO "CITY", "CITY ENGINEER", "CITY INSPECTOR", ETC., IS TO BE UNDERSTOOD TO BE REFERENCING THE RESPECTIVE CITY REPRESENTATIVE FROM THE CITIES OF RICHARDSON AND/OR DALLAS, AS APPLICABLE.

PAVING NOTES

24. FULLY ACCESSIBLE SIDEWALKS (ACCESSIBLE ROUTES) AND "BARRIER FREE RAMPS" ARE TO BE CONSTRUCTED ON ALL PERMANENT CURB RETURNS, AND AT INTERSECTIONS OF ALL STREETS AS DEPICTED IN THESE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR ASSURING THAT ALL WORK MEETS OR EXCEEDS THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) AND THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE CONTRACTOR SHALL REMOVE AND REPLACE ALL ITEMS NOT MEETING ADAAG AND TAS REQUIREMENTS. (NO SEPARATE PAY). REFERENCE CITY AND TXDOT STANDARD DETAILS FOR RAMPS.
25. ALL REINFORCING STEEL AND DOWEL BARS IN PAVEMENT SHALL BE SUPPORTED AND MAINTAINED AT THE CORRECT CLEARANCES BY THE USE OF BAR CHAIRS OR OTHER APPROVED SUPPORT.
26. THE USE OF WOOD FORMS FOR PAVEMENT CONSTRUCTION WILL BE PERMITTED.
27. CONTRACTION JOINTS SHALL BE SAWED IN THE PAVEMENT ON THIS PROJECT. CONTRACTION JOINTS SHALL BE SPACED A MAXIMUM OF 20 FEET ON CENTER. ALL CONTRACTION JOINTS SHALL BE SAWED NO LATER THAN 12 HOURS AFTER PLACEMENT OF THE PAVEMENT, OR AS DIRECTED BY THE CITY, HOWEVER, CONTRACTOR MUST COMPLY WITH NOISE ORDINANCE. SEE PAVING DETAILS (SHEET 1.24 TO SHEET 1.25) FOR ADDITIONAL INFORMATION.
28. ALL PAVING DIMENSIONS ARE TO EDGE OF PAVEMENT AND/OR FACE OF CURB UNLESS OTHERWISE NOTED.
29. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PERFORMING ALL CONSTRUCTION LAYOUTS FROM THE SITE LAYOUT CONTROL POINTS AND FROM THE DIMENSIONS AND CENTERLINES SHOWN. THE CONTRACTOR MUST NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
30. THE CONTRACTOR SHALL COORDINATE SIDEWALK LOCATIONS WITH ALL EXISTING SIDEWALKS AND ALL UTILITIES EXISTING AND PROPOSED. ADJUSTMENTS TO THE PROPOSED SIDEWALK SHALL IN NO WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO ENSURE THAT ALL SIDEWALK MEET OR EXCEED THE MINIMUM ADAAG AND TAS STANDARDS.
31. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY THE CITY AND THE ENGINEER WITH CONCRETE MIX DESIGN AT THE PRE-CONSTRUCTION MEETING. THE COST OF THIS DESIGN SHALL BE INCLUDED IN THE UNIT PRICE OF PAVEMENT MATERIAL.
32. WHERE APPLICABLE, THE CONTRACTOR SHALL PROTECT NEW AND EXISTING PAVEMENT BY PLACING MATS OR EARTH ON THE PAVEMENT TO PROTECT IT FROM TRACK MARKS AND/OR CRACKING DURING CONSTRUCTION (NO SEPARATE PAY).
33. THE CONTRACTOR SHALL PROTECT ANY EXISTING AND/OR PROPOSED STORM SEWER PIPE (RCP), WHICH IS IN THE PROPOSED SUBGRADE DURING SUBGRADE STABILIZATION PROCESS.
34. EXISTING DRIVEWAY OF CONCRETE, ASPHALT OR BRICK WILL BE REPLACED WITH CONCRETE WITHIN THE RIGHT OF WAY LIMITS, UNLESS NOTED OTHERWISE. ROCK OR GRAVEL DRIVEWAYS WILL BE REPLACED WITH SIMILAR ROCK OR GRAVEL.
35. CONTRACTOR TO COORDINATE WITH OWNER AND INSPECTOR PRIOR TO CONSTRUCTION OF CONCRETE RIPRAP (HARDENING) AND BARRIER FREE RAMPS.
36. EXISTING APPURTENANCES AND STRUCTURES TO REMAIN OR BE ADJUSTED SHALL BE LOCATED OUTSIDE OF SIDEWALKS, BIKE LANES, AND BARRIER FREE RAMPS OR BE EQUIPPED WITH A PEDESTRIAN AND BICYCLE RATED LID (NO SEPARATE PAY).
37. PRIOR TO FINAL ACCEPTANCE CONTRACTOR SHALL REMOVE ALL SILT, DIRT, DEBRIS, ETC FROM INLETS, STORM DRAINS, CULVERTS, MANHOLES, AND STREET GUTTERS.

PAVEMENT MARKING AND SIGNAGE NOTES

38. REMOVAL OF EXISTING AND TEMPORARY PAVEMENT MARKINGS IS SUBSIDIARY TO ALL PAVEMENT MARKING BID ITEMS.
39. THE CONTRACTOR SHALL PROVIDE PROPER PAVEMENT MARKINGS IN ACCORDANCE WITH THE CITY SPECIFICATIONS AND DETAIL SHEETS INCLUDED IN THESE PLANS. ALL MMA PAVEMENT MARKINGS SHALL BE INSTALLED USING APPROVED MMA MATERIAL. CONTACT THE CITY ENGINEERING DEPARTMENT FOR FURTHER INFORMATION.
40. THE CONTRACTOR SHALL REESTABLISH ALL SIGNS ALONG PROJECT REMOVED FOR CONVENIENCE OF CONSTRUCTION AFTER COMPLETION OF BACKFILLING IN THAT AREA.

STORM DRAIN NOTES

41. ALL CURB INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY STANDARDS, EXCEPT AS NOTED ON THE PLANS.
42. CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF CURB INLETS AND ALL UTILITIES CROSSING THE STORM SEWER.
43. AS INLETS ARE COMPLETED, TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED.

UTILITY NOTES

44. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. EXISTING FACILITIES ARE SHOWN IN APPROXIMATE LOCATIONS PER INFORMATION AND RECORDS AVAILABLE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AND SHALL UNCOVER AND VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING FACILITIES PRIOR TO CONSTRUCTION AS MAY BE NECESSARY TO AVOID DAMAGE.
45. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE, PRIOR TO EXCAVATION. THE INFORMATION AND DATA SHOWN WITH RESPECT TO EXISTING UNDERGROUND FACILITIES AT OR CONTIGUOUS TO THE SITE IS APPROXIMATE AND BASED ON INFORMATION FURNISHED BY THE OWNERS OF SUCH UNDERGROUND FACILITIES OR ON PHYSICAL APPURTENANCES OBSERVED IN THE FIELD. THE CITY OF RICHARDSON AND ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY SUCH INFORMATION OR DATA. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR REVIEWING AND CHECKING ALL SUCH INFORMATION OR DATA, FOR LOCATING ALL UNDERGROUND FACILITIES, FOR COORDINATION OF THE WORK WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES DURING CONSTRUCTION AND FOR THE SAFETY AND PROTECTION THEREOF AND REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK. THIS WORK SHALL BE CONSIDERED AS A SUBSIDIARY ITEM OF WORK, THE COST OF WHICH SHALL BE INCLUDED IN THE PRICE BID IN THE PROPOSAL FOR VARIOUS BID ITEMS. THE CONTRACTOR SHALL NOTIFY ANY AFFECTED OWNERS (UTILITY COMPANIES) OR AGENCIES IN WRITING AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
    A. NOTIFY TEXAS 811 (1-800-DIG-TESS OR WWW.TEXAS811.ORG) TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
    B. CAUTION! BURIED ELECTRIC LINES MAY EXIST ALONG THIS PROJECT. CONTACT ELECTRICAL PROVIDERS 48 HOURS PRIOR TO EXCAVATION.
    C. CAUTION! BURIED GAS LINES MAY EXIST ALONG THIS PROJECT. CONTACT GAS COMPANY 48 HOURS PRIOR TO EXCAVATION, AND WITHIN TWO (2) HOURS OF ENCOUNTERING A GAS LINE.
    D. CAUTION! BURIED COMMUNICATION CABLES MAY EXIST ALONG THIS PROJECT. CONTACT COMMUNICATION COMPANIES 48 HOURS PRIOR TO EXCAVATION.
    E. CAUTION! WHEN DOING WORK WITHIN 200 FEET OF ANY SIGNALIZED INTERSECTION, THE CONTRACTOR SHALL NOTIFY CITY OF RICHARDSON, 72 HOURS PRIOR TO EXCAVATION. THE CONTRACTOR SHALL PROTECT EXISTING SIGNAL HARDWARE, GROUND BOXES, DETECTION LOOPS, AND UNDERGROUND CONDUIT AT SIGNALIZED INTERSECTIONS. ANY DAMAGES AT SIGNALIZED INTERSECTIONS SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL CONTACT THE CITY OF RICHARDSON TO PERFORM CONDUIT LINE LOCATES AT SIGNALIZED INTERSECTIONS 72 HOURS PRIOR TO COMMENCING WORK AT THE INTERSECTION.
    F. THE CONTRACTOR SHALL NOTIFY THE CITY OF RICHARDSON PROJECT MANAGER 48 HOURS PRIOR TO THE START OF ANY EXCAVATION.
45. THE CONTRACTOR SHALL COORDINATE WITH CITY OF RICHARDSON INSPECTOR A MINIMUM OF 48 HOURS PRIOR TO CUTTING OR CONNECTING TO EXISTING UTILITY LINES. CITY OF RICHARDSON INSPECTOR SHALL DETERMINE THE MOST APPROPRIATE TIME FOR THESE ACTIVITIES TO TAKE PLACE.
46. THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS GOVERNING EXCAVATION. TRENCH SIDE SLOPES SHALL MEET OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS THAT ARE IN EFFECT AT THE TIME OF CONSTRUCTION. SHEETING, SHORING AND BRACING SHALL BE REQUIRED WHEN SIDE SLOPE STANDARDS ARE NOT MET. CONTRACTOR SHALL PREPARE A TRENCH SAFETY PLAN IN ACCORDANCE WITH SECTION 31 41 33.
47. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SERVICE LINES CROSSED OR EXPOSED BY CONSTRUCTION OPERATIONS. WHERE EXISTING SERVICE LINES ARE CUT, BROKEN OR DAMAGED, THE CONTRACTOR SHALL IMMEDIATELY REPLACE THE SERVICE LINE WITH SAME TYPE OF ORIGINAL CONSTRUCTION OR BETTER.
48. ALL PHASES OF CONSTRUCTION MUST BE COORDINATED WITH THE ENGINEER. FIELD ADJUSTMENTS MAY BE NECESSARY AND WILL BE CARRIED OUT AS DIRECTED BY THE ENGINEER (NO SEPARATE PAY).
49. THE CONTRACTOR SHALL MAINTAIN EXISTING WATER AND WASTEWATER SERVICE AT ALL TIMES DURING CONSTRUCTION.
50. THE CONTRACTOR SHALL MAINTAIN 24-INCHES OF CLEARANCE FROM ALL UTILITIES UNLESS OTHERWISE SHOWN.
51. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE WATER LINE CONNECTIONS AS SPECIFIED IN THE PLANS. ANY ADDITIONAL PIPE, FITTINGS, OR MATERIALS NOT SPECIFICALLY SHOWN IN THE PLANS BUT NEEDED TO MAKE THE CONNECTIONS SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR THE VARIOUS BID ITEMS LISTED IN THE PROPOSAL.
52. EXISTING WATER LINE TO REMAIN IN SERVICE UNTIL PROPOSED WATER LINE HAS SUCCESSFULLY COMPLETED ALL REQUIRED TESTING.
53. ALL WATER MAINS 4-INCH THROUGH 12-INCH TO BE PVC AWWA C-900-DR 14. 16-INCH WATER MAIN SHALL BE PVC AWWA C-900 DR 18. WATER MAINS SHALL BE BLUE. ALL WATER LINES 12 INCHES OR LARGER SHALL HAVE 5 FEET OF COVER PER CITY STANDARDS. ALL 6" WATER LINES SHALL HAVE 3.5 FEET OF COVER PER CITY STANDARDS. ALL 8" WATER LINES SHALL HAVE 4 FEET OF COVER PER CITY STANDARDS. CONTRACTOR SHALL NOTIFY CITY IF PROPOSED IMPROVEMENT SWILL REDUCE COVER BELOW THE MINIMUMS IDENTIFIED ABOVE FOR EXISTING WATER LINES.
54. CONCRETE THRUST BLOCKING SHALL BE USED AT HORIZONTAL BENDS, VERTICAL BENDS UP, TEES, AND WYES FOR THE PROPOSED WATER MAIN. VERTICAL BENDS DOWN SHALL BE RESTRAINED USING RESTRAINED JOINTS. RESTRAINED JOINTS SHALL ALSO BE PROVIDED WHERE SHOWN IN PLANS. JOINTS SHALL BE RESTRAINED USING SERIES 2800 MEGALUG RESTRAINING HARNESS AS MANUFACTURED BY EBAA IRON OR APPROVED EQUAL.
55. ALL DUCTILE IRON FITTINGS, VALVES, FIRE HYDRANTS AND OTHER METAL APPURTENANCES LOCATED BELOW GROUND SHALL BE WRAPPED IN POLYETHYLENE. ALL DUCTILE IRON FITTINGS SHALL BE MECHANICAL JOINT AND SHALL BE RESTRAINED WITH EEBA IRON SERIES MEGALUG, OR APPROVED EQUAL UNLESS OTHERWISE SHOWN IN PLANS.
56. ALL NONSTANDARD BENDS SHALL BE MADE WITH THE CLOSEST STANDARD MJ FITTINGS WITH THE ALLOWED JOINT DEFLECTIONS. CONTRACTOR SHALL NOT EXCEED 80% OF THE MANUFACTURER'S MAXIMUM ALLOWABLE ANGULAR DEFLECTION AT ANY JOINT LOCATION. IF THE PLANS INDICATE DEFLECTION IN EXCESS OF THIS REQUIREMENT, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ACHIEVE THIS DEFLECTION OVER MULTIPLE JOINTS IN ORDER TO MEET THE MANUFACTURER'S REQUIREMENTS AS WELL AS THE GENERAL INTENT OF PROPOSED HORIZONTAL AND VERTICAL PIPE ALIGNMENT. LONGITUDINAL BENDING OF THE PIPE WILL NOT BE ALLOWED.
57. ALL EXISTING WATER LINES SHOWN TO BE ABANDONED SHALL BE CUT, PLUGGED, AND ABANDONED IN PLACE. COST OF ABANDONMENT SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT AND REFLECTED IN THE UNIT BID PRICES.
58. ALL GATE VALVES AND WATER METERS SHALL BE PLACED CLEAR OF BARRIER-FREE RAMPS.
59. CONTRACTOR TO VERIFY EXISTING WATER SERVICE DIAMETER AND REPLACE WITH NEAREST CITY STANDARD SERVICE LINE SIZE.
60. CONTRACTOR SHALL CONNECT TO THE EXISTING WATER METER AS PART OF THE "1" AND 2" WATER SERVICE" BID ITEMS. EXISTING WATER BOXES SHALL BE REMOVED AND REPLACED AS PART OF THIS BID ITEM. IF EXISTING WATER METER SERVICE LOCATION CONFLICTS WITH PROPOSED IMPROVEMENTS, CONTRACTOR SHALL RELOCATE EXISTING WATER METER. IF EXISTING WATER METER IS LOCATED ON PRIVATE PROPERTY, IT SHALL BE RELOCATED TO RIGHT-OF-WAY LINE. FOLLOWING RELOCATION, CONTRACTOR SHALL RECONNECT WATER METER TO WATER SERVICE ON THE PRIVATE SIDE OF THE METER. FINAL LOCATION OF RELOCATED WATER METER SHALL BE DETERMINED IN THE FIELD WITH CITY INSPECTOR. IF EXISTING WATER METER BOX DOES NOT HAVE A METER , CONTRACTOR SHALL BE RESPONSIBLE FOR RUNNING NEW SERVICE TO BOX AND STUBBING SERVICE AS SHOWN IN DETAIL C-2/4.23.
61. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING WATER SERVICES PRIOR TO CONSTRUCTION AND RESTORING SERVICE FOLLOWING CONSTRUCTION. CONTRACTOR SHALL MAINTAIN WATER SERVICE THROUGHOUT CONSTRUCTION.
62. IF TEMPORARY WATER IS REQUIRED, LINES SHALL BE CHLORINATED AND SAMPLED PRIOR TO BEING PLACED IN SERVICE. CONTRACTOR SHALL COORDINATE WITH CITY INSPECTOR DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE TEMPORARY WATER SERVICE IF WATER LINES CONFLICT WITH PROPOSED 16" WATER MAIN.
63. ELEVATIONS OF EXISTING WATER LINES ARE APPROXIMATE. CONTRACTOR SHALL LOCATE PRIOR TO CONSTRUCTION.
64. ANY OBJECT TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF CORRECTLY.
65. LOCATION OF VALVE SYMBOLS IN THE PLANS ARE SCHEMATIC. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING VALVES IN THE FIELD TO AVOID EXISTING UTILITY CONFLICTS, PROPOSED CURB LINE, AND OTHER PROPOSED INFRASTRUCTURE.
66. ALL REDUCERS SHALL BE CONCENTRIC UNLESS OTHERWISE NOTED IN PLANS.
67. A MINIMUM COVER OF 48 INCHES ABOVE THE PROPOSED TOP OF WASTEWATER LINES SHALL BE MAINTAINED UNLESS OTHERWISE SHOWN.
68. 4", 8" AND 18" WASTEWATER LINES SHALL BE ASTM D2241 PVC SDR 26 WITH JOINTS PER ASTM D3139 AND GASKETS PER ASTM F477. 24" WASTEWATER LINES SHALL BE ASTM F679 PVC PS115. ALL WASTEWATER LINES SHALL BE GREEN.
69. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING WASTEWATER SERVICES PRIOR TO CONSTRUCTION. ALL EXISTING WASTEWATER SERVICES SHALL BE TRANSFERRED FROM WASTEWATER LINES BEING ABANDONED TO PROPOSED WASTEWATER LINES. PAYMENT FOR TRANSFERRING WASTEWATER SERVICES SHALL BE PAID PER EACH, UNDER THE APPROPRIATE BID SCHEDULE ITEM. WHERE WASTEWATER SERVICE CONFLICTS WITH PROPOSED IMPROVEMENTS (STORM INLET, TREE GRATES, ETC.) CONTRACTOR SHALL ADJUST SERVICE LOCATION IN FIELD TO AVOID CONFLICT.
70. ALL WASTEWATER PIPES SHALL BE LOW PRESSURE AIR TESTED ACCORDING TO NCTCOG ITEM 507.5.1.3. ALL WASTEWATER MANHOLES SHALL BE VACUUM TESTED PER NCTCOG ITEM 502.1.5.2.
71. AT SEWER TIE-IN LOCATIONS WHERE PROPOSED INTERCEPTOR OR COLLECTOR REQUIRES EXISTING WASTEWATER LINES TO BE REMOVED OR TAKEN OUT OF SERVICE, CONTRACTOR SHALL BYPASS PUMP SEWAGE.
72. GREEN MARKER TAPE WITH THE WORDING "BURIED SANITARY SEWER" SHALL BE INSTALLED IN THE BACKFILL MATERIAL NO MORE THAN TWELVE INCHES (12") ABOVE THE TOP OF THE PIPE
73. ALL WORK ON PRIVATE PROPERTY SHALL BE PERFORMED BY A LICENSED PLUMBER. CONTRACTOR SHALL BE REQUIRED TO SUBMIT ALL REQUIRED CITY PERMITS AS NECESSARY.
74. ALL MANHOLES, CLEAN-OUTS, WATER VALVES, FIRE HYDRANTS, AND OTHER APPURTENANCES SHALL BE ADJUSTED TO PROPER LINE AND GRADE BEFORE FINAL ACCEPTANCE BY THE CITY.
75. CONTRACTOR SHALL IMMEDIATELY NOTIFY CITY INSPECTOR OF ANY DAMAGE OR CHANGED CONDITION CAUSED BY CONSTRUCTION ACTIVITIES THAT MAY RESULT IN COMPROMISED WATER QUALITY ENTERING THE DISTRIBUTION SYSTEM.
76. THE CITY WILL DISTRIBUTE LETTERS TO ALL AFFECTED PROPERTY OWNERS PRIOR TO BEGINNING OF CONSTRUCTION TO INTRODUCE PROJECT AND POINTS OF CONTACT. THE CONTRACTOR SHALL DISTRIBUTE LETTERS TO PROPERTY OWNERS TO REQUEST RIGHT OF ENTRY A MINIMUM OF 48 HOURS IN ADVANCE OF PERFORMING ANY WORK ON PRIVATE PROPERTY. CONTRACTOR SHALL NOTIFY CITY PRIOR TO DISTRIBUTING LETTERS. DISTRIBUTION OF LETTERS SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
77. THE CONTRACTOR SHALL NOT BE ALLOWED TO STRING PIPE, FITTINGS, OR APPURTENANCES ALONG THE PROJECT.
78. NOTIFY TEXAS 811 TO LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
79. HORIZONTAL CONTROL POINTS AND VERTICAL BENCHMARKS HAVE BEEN ESTABLISHED ALONG THE ROUTE OF THE WATER AND WASTEWATER LINES AND ARE SHOWN ON THE PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ESTABLISH AND MAINTAIN HORIZONTAL AND VERTICAL ALIGNMENT OF THE WATER AND WASTEWATER LINES BEFORE AND DURING CONSTRUCTION. THE CONTRACTOR MUST NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. ELECTRONIC FILES WILL NOT BE PROVIDED FOR DIMENSION CONTROL OF PROJECT LAYOUT OR ANY OTHER PURPOSE
80. PURGING, STERILIZATION, AND TESTING OF THE WATER LINE SHALL BE IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS 01 45 16.16 "HYDROSTATIC TESTING AND DISINFECTION".
81. THE CONTRACTOR SHALL NOT PLACE FILL OR WASTE MATERIAL ON ANY PRIVATE PROPERTY WITHOUT PRIOR WRITTEN AGREEMENT WITH PROPERTY OWNER.
82. THE CONTRACTOR IS REQUIRED TO SAW CUT PAVED SURFACES PRIOR TO TRENCHING TO ASSURE AN EVEN CUT.
83. AT EXISTING PAVED AREA, IF CONTRACTOR DOES NOT INSTALL PERMANENT PAVEMENT IMMEDIATELY AFTER BACKFILLING, HE SHALL BE REQUIRED TO INSTALL A TEMPORARY ASPHALT PATCH. THE COST OF THE TEMPORARY PAVEMENT SHALL BE SUBSIDIARY TO THE OTHER BID ITEM.
84. TRACER WIRE SHALL BE ATTACHED TO THE WATER PIPE. UNDERGROUND TRACER WIRE SHALL BE A MINIMUM OF 4-INCHES WIDE, BLUE, COATED AND A MINIMUM 7 GAUGE WATER LINE TRACER WIRE. THE TRACER WIRE SHALL TERMINATE AT A TEST STATION ADJACENT TO THE IN-LINE GATE VALVE BOXES AND BE ACCESSIBLE BY THE CITY STAFF.
85. ONLY CITY STAFF WILL BE ALLOWED TO OPERATE EXISTING WATER LINE VALVES. CONTRACTOR SHALL COORDINATE WITH CITY STAFF FOR VALVE CLOSURES AND OPENINGS. ONCE A VALVE IS PLACED IN SERVICE FOR POTABLE USE, IT CAN NO LONGER BE OPERATED BY THE CONTRACTOR.
86. CONTRACTOR TO VERIFY LOCATIONS AND ELEVATIONS AT CONNECTION POINTS FOR EXISTING WATER LINES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE CITY OF ANY DISCREPANCIES IN THE PLANS PRIOR TO CONSTRUCTION. LOCATING EXISTING WATER LINES SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT COST AND REFLECTED IN THE UNIT BID PRICES FOR THE VARIOUS ITEMS LISTED IN THE PROPOSAL.
87. WHERE CONNECTIONS TO EXISTING PIPELINES ARE MADE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND DECHLORINATING THE EXISTING PIPELINES PER SECTION 33 12 25. DEWATERING AND DECHLORINATION SHALL BE INCLUDED IN THE UNIT PRICE FOR "CONNECT TO EXISTING WATER LINE"..
88. WATER AND SANITARY SEWER SEPARATION (VERTICAL AND HORIZONTAL) FOR BOTH PARALLEL AND CROSSING INSTALLATIONS SHALL BE MAINTAINED IN ACCORDANCE WITH TCEQ REQUIREMENTS. WHERE WATER AND WASTEWATER CROSSINGS EXIST, PROPOSED WATER PIPE SHALL BE CENTERED ON WASTEWATER LINE WITH WATER JOINTS EQUIDISTANCE & AT LEAST 9 FEET HORIZ. FROM CENTERLINE OF WASTEWATER MAIN OR LATERAL.
89. CONTRACTOR TO ADJUST ALL EXISTING AND PROPOSED PUBLIC UTILITY APPURTENANCES TO PROPOSED GRADE (N

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EROSION CONTROL NOTES

94. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO ANY SOIL DISTURBING ACTIVITIES AT THE PROJECT SITE.
95. CONTRACTOR SHALL INSTALL STABILIZED ENTRY/EXITS AND CONCRETE WASHOUT AREAS. CONTRACTOR SHALL VERIFY LOCATIONS WITH THE CITY PRIOR TO INSTALLATION.
96. EROSION CONTROL DEVICES SHALL BE INSPECTED WEEKLY AND AFTER MAJOR RAIN EVENTS TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY.
97. SEDIMENT SHALL BE REMOVED FROM EROSION CONTROL DEVICES WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY ONE-THIRD. EROSION CONTROL DEVICES THAT UTILIZE STONE SHALL HAVE THE STONE REPLACED WHEN THE VOIDS SPACES IN THE ROCK BECOME CLOGGED WITH SEDIMENT.
98. IF AN EROSION CONTROL DEVICE IS NOT FUNCTIONING PROPERLY TO ELIMINATE EROSION OR OFF-SITE SEDIMENTATION, THEN THE DEVICE MUST BE REPLACED OR MODIFIED. IN ADDITION, THE STORM WATER POLLUTION PLAN SHALL BE REVISED TO INDICATE THE CHANGE.
99. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

STREET LIGHT NOTES

100. ONLY MATERIALS WITH APPROVED PRODUCT CODES OR DESIGNATIONS, FROM PREQUALIFIED PRODUCERS, SHALL BE USED.
101. CONTRACTOR SHALL LOCATE ALL LUMINAIRES, ELECTRICAL SERVICE POINTS, GROUND BOXES AND CONDUIT AS DIRECTED.
102. ANY CONFLICT THAT MAY REQUIRE STREET LIGHT POLES TO BE MOVED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR DIRECTION.
103. WHERE POSSIBLE, CONDUIT RUNS SHOULD BE STRAIGHT AND PLACED WITH A MINIMUM NUMBER OF BENDS AND/OR GROUND BOXES. LAYOUT CONDUITS AND COORDINATE WITH ALL TRADES FOR ANY CONFLICTS PRIOR TO INSTALLATION.
104. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING ANY EXISTING UTILITIES PRIOR TO ANY TRENCHING, FOUNDATION DRILLING OR EXCAVATION. IF ANY EXISTING UTILITIES ARE DAMAGED BY THE CONTRACTOR, REPAIR AS DIRECTED, TO ENSURE PROPER OPERATION OF THE SYSTEM. ALL LABOR AND MATERIALS REQUIRED FOR THE TEMPORARY REPAIRS WILL BE AT THE CONTRACTOR'S EXPENSE. MAINTAIN THE TEMPORARY REPAIRS UNTIL PERMANENT REPAIRS ARE MADE.
105. PERMANENT REPAIRS SHALL CONSIST OF THE REPLACEMENT OF DAMAGED OR TEMPORARILY REPAIRED CONDUIT, CONDUCTOR, GROUND BOXES, ETC., AS DIRECTED. THESE REPAIRS SHALL BE CONSTRUCTED AND PAID FOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPROPRIATE BID ITEMS AND THIS PROJECT.
106. INSTALLED SYSTEMS SHALL OPERATE UNDER ALL CONDITIONS OF LOAD WITHOUT SOUND OR VIBRATION THAT IS OBJECTABLE TO THE OWNER, OBJECTABLE SOUND OR VIBRATION CONDITIONS DUE TO WORKMANSHIP SHALL BE CORRECTED IN APPROVED MANNER BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
107. GROUNDING: SHALL BE IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE ARTICLE 250. PROVIDE GROUND WIRES AS REQUIRED AND RESIZE CONDUIT IF NECESSARY.
108. DEMONSTRATION OF COMPLETE ELECTRICAL SYSTEMS: UPON COMPLETION OF THE WORK THE CONTRACTOR SHALL OBTAIN A CERTIFICATE OF APPROVAL FROM THE RESPECTIVE INSPECTION AGENCIES. CONTRACTOR SHALL NOTIFY AND MAKE ALL THE NECESSARY ARRANGEMENTS WITH THE INSPECTING AGENCY AND LOCAL AUTHORITIES SO THAT INSPECTION MAY BE CARRIED OUT AT THE PROPER TIME.

TRAFFIC CONTROL NOTES

109. 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 ", LATEST EDITION, PART 6 IN PARTICULAR. TRAFFIC FLOW AND ACCESS SHALL BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNLESS OTHERWISE NOTED ON THE APPROVED 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 DURING THE DURATION OF CONSTRUCTION ACTIVITIES.
110. THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE ALL NECESSARY TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (PART 6).THE CONTRACTOR SHALL PROVIDE ACCESS TO PROPERTIES AT ALL TIMES DURING EACH PHASE OF CONSTRUCTION TO ALL LOCAL RESIDENTS, BUSINESSES, MAIL SERVICE, TRASH PICK-UP AND EMERGENCY SERVICES.
111. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL SIDE STREETS AND DRIVEWAYS FOR VEHICULAR TRAFFIC INCLUDING EMERGENCY VEHICLES AT ALL TIMES.
112. ALL DRIVEWAYS SHOULD BE BUILT ONE HALF AT A TIME WHILE THE OTHER HALF REMAINS OPEN TO VEHICULAR TRAFFIC UNLESS A PARTICULAR DRIVEWAY IS NOT WIDE ENOUGH TO MAINTAIN A MINIMUM OF 10' WIDE ACCESS DURING THE CONSTRUCTION OF THE OTHER HALF. IF SO, THE CONTRACTOR SHALL MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES EXCEPT DURING OPERATIONS IMMEDIATELY IN FRONT OF THE DRIVEWAY. THIS WORK SHALL BE COORDINATED WITH THE CITY AND PROPERTY/BUSINESS OWNERS.
113. CONTRACTOR SHALL COORDINATE WITH BUSINESSES WAYS TO ACCOMMODATE ACCESS TO THEIR PROPERTIES AND MAKE ARRANGEMENTS AS NEEDED TO ACCOMMODATE SUCH ACCESS. TEMPORARY PAVING, MEDIAN MODIFICATIONS, AND SIGNS REQUIRED TO ACCOMMODATE SUCH ACCESS SHALL BE SUBSIDIARY TO BARRICADING AND TRAFFIC CONTROL BID ITEM.
114. TEMPORARY DRIVEWAYS, IF NECESSARY, SHALL BE COMPACTED FLEX BASE, OR APPROVED EQUAL, AND SHALL BE INSTALLED TO PROVIDE UNINTERRUPTED ACCESS TO THE BUSINESSES. TEMPORARY DRIVEWAYS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THIS PROJECT AND SHALL BE SUBSIDIARY TO DRIVEWAY CONSTRUCTION PAY ITEM.
115. IF THE CONTRACTOR DAMAGES EXISTING SIGNAGE, HE SHALL PAY THE CITY OF RICHARDSON FOR THE VALUE OF THE REPLACEMENT SIGN AND INSTALLATION.
116. CONTRACTOR SHALL REMOVE OR COVER ALL EXISTING TRAFFIC SIGNS AND PAVEMENT MARKINGS WITHIN WORK ZONE THAT CONFLICT WITH TRAFFIC CONTROL PLAN.
117. PRIOR TO THE PRE-CONSTRUCTION MEETING, THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC AND PEDESTRIAN CONTROL PLAN FOR REVIEW. CONSTRUCTION MAY NOT COMMENCE UNTIL THE TRAFFIC CONTROL PLAN HAS BEEN APPROVED BY THE CITY. IF A MODIFICATION TO THE PREVIOUSLY APPROVED TRAFFIC AND PEDESTRIAN CONTROL PLAN IS DEEMED NECESSARY BY THE CONTRACTOR, A REQUEST FOR A MODIFICATION MUST BE MADE TO THE CITY.
118. THE CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC AT LEAST ONE LANE IN EACH DIRECTION FOR COMMERCE DRIVE AND INTERNATIONAL PARKWAY INTERSECTIONS AT ALL TIMES DURING CONSTRUCTION, UNLESS OTHERWISE APPROVED BY THE CITY.
119. IF CONDITIONS IN THE FIELD WARRANT IT, ADDITIONAL TRAFFIC CONTROLS TO THOSE SHOWN AND APPROVED IN TRAFFIC CONTROL PLAN SHEETS COULD BE REQUESTED BY CITY AS NEEDED.

HARDSCAPE NOTES

120. ALL PAVING MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS, THE CITY STANDARD DETAILS AND SPECIFICATIONS, THE FINAL GEOTECHNICAL REPORT AND ALL ISSUED ADDENDA, AND COMMONLY ACCEPTED CONSTRUCTION STANDARDS. THE CITY SPECIFICATIONS SHALL GOVERN WHERE OTHER SPECIFICATIONS DO NOT EXIST. IN CASE OF CONFLICTING SPECIFICATIONS OR DETAILS, THE MORE RESTRICTIVE SPECIFICATION/DETAIL SHALL BE FOLLOWED.
121. ALL PUBLIC PAVING AND PAVING SUBGRADE SHALL COMPLY WITH CITY STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
122. CONTRACTOR IS RESPONSIBLE FOR ALL PAVING AND PAVING SUBGRADE TESTING AND CERTIFICATION, UNLESS SPECIFIED OTHERWISE BY OWNER. ALL PAVING AND PAVING SUBGRADE TESTING SHALL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR. TESTING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT AGENCY FOR TESTING PAVING AND SUBGRADE. OWNER SHALL APPROVE THE AGENCY NOMINATED BY THE CONTRACTOR FOR PAVING AND PAVING SUBGRADE TESTING.
123. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO SHOW, BY THE STANDARD TESTING PROCEDURES OF THE PAVING AND PAVING SUBGRADE, THAT THE WORK CONSTRUCTED MEETS THE PROJECT REQUIREMENTS AND CITY SPECIFICATIONS.
124. CONTRACTOR SHALL CONSTRUCT PROPOSED PAVEMENT TO MATCH EXISTING PAVEMENT WITH A SMOOTH, FLUSH, CONNECTION. IF PAVING HAS AN IRREGULAR PATTERN, ALL JOINTS EXCEEDING ¼" IN WIDTH SHALL BE FLUSH WITH ADJACENT PAVING SURFACE.
125. REFER TO CITY STANDARD DETAILS AND SPECIFICATIONS FOR JOINT LAYOUT PLAN REQUIREMENTS FOR PUBLIC PAVEMENT.
126. ALL REINFORCING STEEL SHALL CONFORM TO THE GEOTECHNICAL REPORT, CITY STANDARDS AND SHALL BE SUPPORTED BY BAR CHAIRS. CONTRACTOR SHALL USE THE MORE STRINGENT OF THE CITY AND GEOTECHNICAL STANDARDS.
127. ALL SAWCUTS SHALL BE FULL DEPTH FOR PAVEMENT REMOVAL AND CONNECTION TO EXISTING PAVEMENT.
128. CONTRACTOR IS RESPONSIBLE FOR INSTALLING NECESSARY CONDUIT FOR LIGHTING, IRRIGATION, ETC. PRIOR TO PLACEMENT OF PAVEMENT. ALL CONSTRUCTION DOCUMENTS SHALL BE CONSULTED.
129. CONTRACTOR SHALL TAKE FIELD SLOPE MEASUREMENTS ON FINISHED SUBGRADE AND FORM BOARDS PRIOR TO PLACING PAVEMENT TO VERIFY THAT ADA/TAS SLOPE REQUIREMENTS ARE PROVIDED. CONTRACTOR SHALL CONTACT ENGINEER PRIOR TO PAVING IF ANY EXCESSIVE SLOPES ARE ENCOUNTERED. NO CONTRACTOR CHANGE ORDERS WILL BE ACCEPTED FOR ADA AND TAS SLOPE COMPLIANCE ISSUES.

TREE PRESERVATION NOTES

130. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN A PROTECTIVE FENCE AT THE DRIP LINE OF ALL EXISTING TREES TO REMAIN, UNLESS NOTED OTHERWISE ON THE CONSTRUCTION DRAWINGS. ANY DAMAGE TO THE EXISTING TREES CAUSED BY CONSTRUCTION SHALL BE REPLACED TO THE SATISFACTION OF THE OWNER AND/OR THE CITY OF RICHARDSON AT THE CONTRACTOR'S EXPENSE. DAMAGED EXISTING TREES 6" OR GREATER AT BREAST HEIGHT MUST BE REPLACE WITH A MINIMUM 8" OR GREATER AT BREAST HEIGHT TREE TO MATCH DAMAGED TREE AT THE CONTRACTORS EXPENSE.
131. ALL PROTECTIVE MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY SITE OR GRADING WORK AND REMAIN IN PLACE UNTIL ALL EXTERIOR WORK HAS BEEN COMPLETED.
132. THE CITY INSPECTOR AND CITY PARKS DEPARTMENT SHALL BE CONTACTED TO APPROVE THE PLACEMENT OF THE TREE PRESERVATION FENCING PER THE TREE PROTECTION PRIOR TO BEGINNING OF SITE WORK ON PROPERTY.
133. THE FOLLOWING ACTIVITIES SHALL BE PROHIBITED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE: MATERIAL STORAGE, EQUIPMENT CLEANING/LIQUID DISPOSAL, AND CONSTRUCTION EQUIPMENT/VEHICULAR TRAFFIC. NO SIGNS OR WIRES SHALL BE ATTACHED TO TREES.
134. UNLESS SPECIFICALLY ALLOWED, NO GRADE CHANGES SHALL BE ALLOWED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE OF ANY PROTECTED TREE UNLESS THE CITY APPROVES ADEQUATE CONSTRUCTION METHODS.
135. NO TRIMMING OF TREES MAY OCCUR WITHIN THE TREE PRESERVATION FENCING LIMITS WITHOUT PRIOR CONSENT OF THE CITY. FOR TREE ROOT PRUNING REFERENCE TYPICAL TREE PROTECTION FENCING AND ROOT PRUNING DETAIL AND NOTES.
136. THE EXISTENCE AND LOCATIONS OF ALL TREES SHOWN WERE OBTAINED FROM AVAILABLE DATA AND ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY TREE INFORMATION AND ENSURE TREE PROTECTION IS PROVIDED WHERE NECESSARY.
137. ALL TREES SHOWN IN THE PLANS ARE SCHEMATICALLY SHOWN. ACTUAL CANOPY SIZE MAY VARY.

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION

GENERAL NOTES
(2 OF 2)

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.03B
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Galindo, Alejandra October 07, 2025 05:01:58pm K:\AC_TPTO\Project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\GENERAL NOTES.dwg
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DALLAS COUNTY GENERAL NOTES:

1. The Contractor Shall notify the Dallas County Department of Public Works, the City of Dallas, the City of Richardson, and utilities companies within forty-eight (48) hours prior to beginning of any construction.
   a. Dallas County Public Works, Project Manager, Mumtaz Ali, P.E., 214-653-6464
   b. Dallas County Public Works, Sr. Inspector, Ronald Cox, 214-653-5012
   c. City of Dallas, Park & Recreation Manager, Jason Ney, 214-671-5454
   d. City of Dallas Transportation and Public Works, Erick Steitle, 214-670-8458
   e. City of Dallas Traffic Eng., Joe Marchione, P.E., 214-670-3182
   f. City of Richardson, Mobility and Special Projects Manager, Daniel Herrig, P.E., 972-744-4321
2. The 2024 Edition of the Texas Department of Transportation (TxDOT) Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges shall apply unless otherwise specified in these plans.
3. The City of Dallas Addendum to the North Central Texas Council of Governments, Fifth Edition, 2017 (NCTCOG) Standard Specifications for Public Works construction shall apply.
4. In the adoption of the Texas Department of Transportation (TxDOT) Specifications, it is understood that any reference to TxDOT, shall be interpreted To include the County of Dallas as applicable. Any conflict between the General Provisions of the NCTCOG specifications, the TxDOT specifications and/or the County of Dallas specifications, as contained herein, shall be decided by the Engineer. The general order of precedence shall be as follows:
   a. County of Dallas General Provisions
   b. TxDOT General Provisions and Specifications
   c. City of Dallas Addendum to the NCTCOG General Provisions and Specifications
5. A very important feature of this contract is providing for the safety and convenience of the traveling public and abutting property owners. The schedule to be provided under Note 6 of these GENERAL NOTES shall insure this Provision. Where, in the opinion of the Engineer, local traffic and abutting property owners would be unduly inconvenience for an extended period of time, the Engineer shall limit the length of excavation that the contractor may open up at one time. For protection of the pavement subgrade and to reduce an unsightly condition, backfill behind curbs will be done in a reasonable time after pavement cures and forms are removed.
6. Prior to the start of the work, the Contractor shall develop, in detail, a construction schedule and method that shall cause minimum interference with traffic along, across, or adjacent to the project during construction. If the schedule or method becomes unworkable or unsatisfactory as works proceeds, adjustments shall be made. If, at any time during construction, the Contractor's proposed plan of operation results in unsafe traffic movement in the opinion of the Engineer, the Contractor shall immediately correct the unsatisfactory condition. Contractor shall submit a construction schedule with itemized tasks, subtasks, etc., for approval (4 Copies) on or before the date of the Pre-Construction meeting. This construction schedule shall be updated weekly.
7. It is the contractor's responsibility to maintain a neat and accurate record of construction for the County's records. At the conclusion of the project, the contractor shall provide the County full size markups that record all construction deviating from the plans.
8. No trees other than those shown in the plans to be removed shall be removed or disturbed without specific approval by the County under the guidance of the City.

County, including but not limited to, surplus flexible base and/or flexible pavement, pipe culverts, guard fence, etc., when Dallas County Road and Bridge Districts request the material. The Contractor shall load the material on the Dallas County Trucks following removal or shall stockpile the material at an agreed adjacent site to be loaded onto the County trucks by the Contractor at a later date. The Road and Bridge District in which the project is located shall have first choice of the salvable material. If no Road and Bridge District request the material, it shall become the property of the Contractor to be disposed of by him at his entire expense. The Contractor may remove old flexible base and asphalt for embankment including subgrade material, however, this material may not be used as finished flexible base.

36. All cut and fill slopes shall not exceed 4 horizontal to 1 vertical slope. Cut slopes may be steepened to protect existing trees and fences only with prior approval of the Engineer. Property adjacent to the proposed construction shall be graded as directed by the Engineer which shall be considered subsidiary to the various pay items of the contract.
37. Where applicable, the Contractor shall place rubber mats on the pavement to protect it from track marks and/or cracking during construction.
38. Contractor is responsible for obtaining all necessary permits and approvals prior to beginning construction.
39. Contractor shall video record pre-construction conditions along the entire limits of the project and submit one (1) copy of the video recording to the owner prior to mobilization and/or start of construction.
40. All adjacent properties damaged by the proposed construction shall be restored to the same or better than condition in which it was before such work was undertaken. This shall be considered subsidiary to the various pay items of the contract and will not be paid directly.
41. The ends of the Trail, sidewalk edges, constructed curbs and driveway pavement shall match the existing paving, unless otherwise directed by the Engineer. Payment for asphalt tie-ins shall be subsidiary to other items of work.
42. Fully accessible sidewalks (accessible routes) and "barrier free ramps" are to be constructed on all permanent curb returns, and at intersections of all streets as depicted in these drawings. The contractor is responsible for assuring that all work meets or exceeds the americans with disabilities act accessibility guidelines (adaag) and the texas accessibility standards (tas). The contractor shall remove and replace all items not meeting adaag and tas requirements. (no separate pay). Reference city and txdot standard details for ramps.
43. The contractor is solely responsible for performing all construction layouts from the site layout control points and from the dimensions and centerlines shown. The contractor must notify the engineer of any discrepancies before proceeding with the work.
44. No dirt, mud, or any other material shall be allowed to fall or be tracked onto the existing or finished roadway. It shall be the responsibility of the Contractor to maintain the existing traveled way in a clean condition at all times. Contractor is responsible for keeping streets and sidewalks adjacent to the project free of mud and debris from the construction.
45. The Contractor will obtain the General Permit for the storm water discharge from construction sites. The Contractor will become permittee. Costs for administering the Storm Water Pollution Prevention Plan (SWPPP) will not be paid for directly, but will be included in the various other bid items of the contract.
46. Surplus excavation and other materials must not be deposited in areas designated as Flood Plain or along natural drainage ways. Material so deposited will be required to be removed at the Contractor's expense and the area restored to its natural condition.
9. Two-way Traffic shall be maintained at all times (at least one lane in each direction), unless otherwise authorized by the Engineer in writing. At least one lane of traffic will be maintained at all driveways and entrances at all times.
10. The Contractor shall provide for continuous supervision of construction with a superintendent present at the project site at all times during working hours. The Superintendent shall, at all times, have in his immediate possession a complete set of current contract documents including the Plans and Specifications. The Superintendent shall be fully authorized to act on behalf of the Contractor in all matters pertaining to the work.
11. The items under which payment is to be made to Contractor are as listed in the Bid Proposal. Reference to other items in the Standard Specifications as pay requirements for such requirements are to be complied with and only the provisions for direct payment is deleted, such items are non- pay, (reference) items.
12. For work within the City of Richardson limits working hours are Monday thru Friday from 7a.m. to 6p.m.. For work within the City of Dallas limits working hours are Monday thru Friday from 7a.m. to 7p.m..Work is not allowed on Saturdays or Sundays without written permission from the Dallas County Planning & Development Project Manager and the City of Dallas for work within City of Dallas limits and City of Richardson for work within the City of Richardson limits. Saturday work, if approved, shall not commence until 9a.m. for work within the City of Richardson limits and until 8a.m. for work within the City of Dallas limits. No concrete from batch after 3:00 PM will be accepted.
13. Contractor shall notify Dallas County's Project Manager a minimum of 48 Hrs. prior to commencing construction.
14. Contractor shall notify all property owners 24 Hrs. in advance of any construction near their property.
15. No open cut trenches are allowed to remain open at the end of a workday without the written approval of the County's Project Manager unless used for boring and receiving pits.
16. Contractor shall remove all excess material at the end of each workday.
17. It is the Contractor's responsibility to keep all drainage facilities operating at all times (Ditches, Inlets, culverts, etc.).
18. No storage of materials is allowed under the canopy of trees or on private property without written permission of the property owner. If written permission is obtained the Contractor shall restore the private property to original or better condition; two (2) copies of each written permission shall be delivered to the Dallas County Public Works Project Manager.
19. Contact the Traffic Engineer Division in the City of Dallas at 214-671-9958 at least 48 Hrs prior to work requiring removal, modification, or relocation of traffic signs, traffic control equipment or other traffic control appurtenances.
20. When working in Street right-of-way within 300-feet of a traffic signal, contact the Traffic Engineer Division in the City of Dallas at 214-671-9958, at least 48 hours prior to the work for locations of underground traffic signal equipment
21. Item 502 Barricades, Sign & Traffic Handling – Contractor shall comply with the Traffic Control Plan included in the project plans. Any changes to the TCP shall be performed by a registered engineer for the Contractor, approved by the City and will be considered subsidiary to the various pay items of the contract and will not be paid for directly. Proper construction signage and barricading in accordance of the latest edition of the Texas Manual on Uniform Traffic Control Devices (TMUTCD) is required.
22. Two (2) project identification signs shall be furnished and installed by the Contractor, one on each end of the project at locations designated by the Engineer. The sign shall be constructed as shown in the Contract documents booklet. The signs should be considered subsidiary to the pay items and will not be paid directly.
23. The Contractor shall haul away all waste material such as rubbish, pavement, concrete pipe, unacceptable soil, etc., to an approved offsite landfill. Waste disposal shall be subsidiary to the various pay items of the contract.
24. Contractor shall comply with OSHA Regulations and State of Texas laws concerning excavation, trenching and shoring.
25. All existing street and traffic signs shall be maintained as needed throughout construction. Existing signs and posts to be relocated shall be maintained in good condition. Any signs damaged prior to installation in final position shall be replaced at no cost to the Owner. Payment for this work shall be subsidiary to other items of the contract.
26. Dewatering system or systems installed during construction shall be approved by the Engineer and are subsidiary to various other items of the contract. Trench and pit bottoms and excavations shall be maintained in dry stable condition until work is complete.
27. Disturbed areas that are seeded or sodded shall be checked periodically to see that grass coverage is properly maintained. Disturbed areas shall be watered, fertilized, and reseeded or resodded until vegetation is established.
28. All sprinkler systems and related components, fences, signs, etc., disturbed by construction are to be restored to existing conditions or better. This is subsidiary to pay items provided as part of this contract.
29. Contractor shall field verify all dimensions and conditions before commencing work. It shall be Contractor's responsibility to report any discrepancies to the Engineer before commencing work.
30. Contractor shall be responsible for providing required security to protect his own property, equipment and work in progress.
31. Water supply for use during construction shall be approved by the Engineer and secured and paid for by the Contractor.
32. The location of existing utilities indicated on the plans have been determined from field surveys and available public records. Probes for determination of location and elevation have been made only as shown on the plans. Exact location and elevation of all utilities are not guaranteed and shall be determined in the field by the Contractor prior to construction. It shall be the duty of the Contractor to ascertain whether any additional utilities other than those shown on the plans may exist and to locate the same in the field prior to construction. The Contractor shall also become familiar with any proposed adjustments to be made by the Utility Owners and extend full cooperation. Any cost resulting from the Contractor damages to utilities shall be the sole responsibility of the Contractor. The Contractor is required to maintain existing utilities in a safe and serviceable condition. No extra compensation will be allowed for additional work or materials to maintain service.
33. Contractor shall be responsible for and adequately protect existing structures, utilities, trees, shrubs, fences, signs, sprinkler systems, mail boxes and other adjoining facilities. Damages caused by Contractor shall be reported to the appropriate Property Owner and repaired or replaced at the Contractor's expense within twenty four (24) hours.
34. All gas, telephone, cable and power lines to be adjusted shall be done by others and shall be coordinated and assisted by the Contractor.
35. All salvable material encountered on this project shall become the property of Dallas Subcontractors for storage of equipment, materials and supplies, and/or each disposal site which the Contractor intents to use for "Waste" materials. Conditions and restrictions, if any, shall be clearly stated. Compliance is required and a release from the property Owner shall be obtained upon completion of the project.
47. The specific density for the Embankment, Excavation, Treated Subgrade and Flexible base shall be obtained with the moisture content at the optimum or above.
48. All structural excavation, shoring, backfilling and bedding material shall not be paid for directly, but shall be considered subsidiary to the various bid items of the contract.
49. The Contractor shall prepare and submit a Trench Safety Manual specific to this project.
50. Fertilizer used will have an analysis of 12-12-12 at will be applied at 350 pounds per acre and will not be paid for directly but will be considered subsidiary to the various bid items of the contract.
51. All existing slope, drainage and temporary easement areas shown in the plans will be included in item 100, preparing Right-of-Way, as measured along the centerline of the project.
52. Prior to any excavation or drilling in close proximity to existing utilities or sewers, the Contractor shall be required to probe or expose these facilities to determine their exact location. All costs involved will be subsidiary to the related bid items.
53. Access to all abutting property by automotive or pedestrian traffic shall be provided by the Contractor at all times by the use of grading, drainage, stabilization or other materials. The cost of materials, labor, equipment and related costs for providing such access will not be paid for directly but will be subsidiary to the other bid items of the contract.
54. The use of wood or steel forms for pavement construction will be permitted where necessary for intersections, drives, pavement transition and transverse construction joints, as directed by the Engineer.
55. All work required to maintain traffic control devices shall be included in the unit price established under item 502, Barricades, Signs, and Traffic Handling.
56. Existing concrete pavement, concrete curb or curb and gutter, or asphalt pavement or curb to be removed, whether in streets or drives, shall be sawed along neat lines where portions are to be left in place in accordance with item 104.
57. No (Stop) or (Yield) sign is to be relocated or moved without prior approval by the City.
58. Vegetative Watering shall be hauled to each site by truck. The cost of materials, labor, equipment and related costs for providing vegetative water will not be paid for directly but will be subsidiary to the other bid items of the contract.
59. The Contractor shall protect all storm sewer inlets receiving storm water runoff from the construction site.
60. The Contractor shall protect any existing and/or proposed storm sewer structure which is in the proposed subgrade during the subgrade stabilization process.
61. The Contractor shall be responsible for the integrity of existing structures in the vicinity of the proposed construction. (No separate pay)
62. Contractor shall not open, turn off, interfere with, attach any pipe or hose or connect anything with any fire hydrant, stop valve or stop cock, or tap any water main belonging to the City, unless duly authorized to do so by the City. Contractor shall contact City forty-eight (48) hours prior to taking any waterlines out of service.
63. No work shall commence within existing street right-of-way without an approved Traffic Control Plan. Contractor shall also notify the City at least two (2) normal business days prior to beginning work within the right-of-way, or before performing any work which will obstruct or impede the normal flow of traffic.
64. The Contractor shall furnish the Engineer a Copy of the signed agreement with any and all property Owners for any private property that will be used by the Contractor and/or
65. The Contractor shall control dust on this project by sprinkling or as ordered by Dallas County shall be considered subsidiary to the various bid items.
66. Contractor shall be responsible for protecting any iron rods outside the right of way during the course of construction. Any iron rods disturbed during construction shall be replaced by the contractor (no separate pay).
67. Contractor shall be responsible for protecting survey monuments shown on plans. Contractor shall be responsible for all required construction surveying and stakings.
68. Contractor shall not unload or store materials, permit workers to park, nor park equipment within the street right-of-way where street is open to public travel without prior approval of the City.
69. If indicated on the drawings, conduit shall be installed to provide continuous service for street lighting. All underground conduits shall be installed before final compaction of the pavement subgrade.
70. Sprinkler systems in the right-of-way will be plugged at the right-of-way line and the sprinkler heads will be delivered to the abutting property owner. This will not be paid for directly, but will be subsidiary to the other items of the contract.
71. The intent of the County is to preserve the natural state of the trail corridor and to preserve as many trees as possible and still allow for completion of the construction. It is the Contractor's responsibility to determine how construction access will be provided and to determine the physical impacts caused by those access routes. The Contractor shall prepare a construction access plan for submittal to the County that identifies how access will be provided and the physical impacts caused. The Contractor must receive written approval of the plan prior to any surface altering work. The Contractor shall at his own cost return any non-permanent graded areas to their original condition.
72. The Contractor will be responsible for identifying and acquiring adequate access to and along the project alignment to construct the project. It will be the Contractor's responsibility to identify and procure space for a construction office and parking area adequate for workers and County personnel. The cost for the Contractor's incidental work to provide access for construction and for the office facility will be considered as subsidiary to other pay items.
73. The Contractor will be compensated for tree removals and for replacement of protected trees that are located within the limits of grading and identified in the plans for removal. Any additional trees the Contractor desires to remove to ease construction will be at the Contractor's cost for removal and replacement, if required. Tree replacements will be done in accordance with the City of Dallas' Tree Ordinance.
74. Prior to any tree removal or cutting, the Contractor will coordinate with City of Ricardson staff.

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION

DALLAS COUNTY
GENERAL NOTES
(1 OF 2)

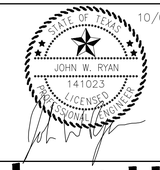
FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.03C
CONT.	SECT.	JOB	
0918	47	473	

75. 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 ", latest edition, part 6 in particular. Traffic flow and access shall be maintained during all phases of construction unless otherwise noted on the approved 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 during the duration of construction activities.
76. The contractor shall furnish, install, maintain and remove all necessary traffic control devices in conformance with the texas manual on uniform traffic control devices (part 6). The contractor shall provide access to properties at all times during each phase of construction to all local residents, businesses, mail service, trash pick-up and emergency services.
77. Contractor shall maintain access to all side streets and driveways for vehicular traffic including emergency vehicles at all times.
78. All driveways should be built one half at a time while the other half remains open to vehicular traffic unless a particular driveway is not wide enough to maintain a minimum of 10' wide access during the construction of the other half. If so, the contractor shall maintain access to driveways at all times except during operations immediately in front of the driveway. This work shall be coordinated with the city and property/business owners.
79. Contractor shall coordinate with businesses ways to accommodate access to their properties and make arrangements as needed to accommodate such access. Temporary paving, median modifications, and signs required to accommodate such access shall be subsidiary to barricading and traffic control bid item.
80. Temporary driveways, if necessary, shall be compacted flex base, or approved equal, and shall be installed to provide uninterrupted access to the businesses. Temporary driveways shall be maintained throughout the duration of this project and shall be subsidiary to driveway construction pay item.
81. If the contractor damages existing signage, he shall pay the City of Richardson for the value of the replacement sign and installation.
82. Contractor shall remove or cover all existing traffic signs and pavement markings within work zone that conflict with traffic control plan.
83. Prior to the pre-construction meeting, the contractor shall submit a detailed traffic and pedestrian control plan for review. Construction may not commence until the traffic control plan has been approved by the County. If a modification to the previously approved traffic and pedestrian control plan is deemed necessary by the Contractor, a request for a modification must be made to the County.
84. Installed systems shall operate under all conditions of load without sound or vibration that is objectable to the owner, objectable sound or vibration conditions due to workmanship shall be corrected in approved manner by the contractor at the contractor's expense.
85. Grounding: shall be in strict accordance with the national electrical code article 250. Provide ground wires as required and resize conduit if necessary.
86. Prior to construction, the contractor shall construct and maintain a protective fence at the drip line of all existing trees to remain, unless noted otherwise on the construction drawings. Any damage to the existing trees caused by construction shall be replaced to the satisfaction of the owner and/or the County at the contractor's expense. Damaged existing trees 6" or greater at breast height must be replace with a minimum 8" or greater at breast height tree to match damaged tree at the contractors expense.
87. All protective measures shall be in place prior to commencement of any site or grading work and remain in place until all exterior work has been completed.
88. The city inspector and city parks department shall be contacted to approve the placement of the tree preservation fencing per the tree protection prior to beginning of site work on property.
89. The following activities shall be prohibited within the limits of the primary root zone: material storage, equipment cleaning/liquid disposal, and construction equipment/vehicular traffic. No signs or wires shall be attached to trees.
90. Unless specifically allowed, no grade changes shall be allowed within the limits of the primary root zone of any protected tree unless the County approves adequate construction methods.
91. No trimming of trees may occur within the tree preservation fencing limits without prior consent of the County. For tree root pruning reference typical tree protection fencing and root pruning detail and notes.
92. The existence and locations of all trees shown were obtained from available data and are approximate. It is the responsibility of the contractor to verify tree information and ensure tree protection is provided where necessary.
93. All trees shown in the plans are schematically shown. Actual canopy size may vary.

SW3P Responsibilities

Contractor Area of Responsibility:
Responsible for all areas under their direct operational control which includes, though not limited to, areas used for field offices, equipment and/or material storage, and concrete or asphalt plants. These areas may be located on or off the subject project's R.O.W. Contractor Operational Responsibility:
Responsible for seeking coverage under the TPDES Construction General Permit (CGP) and adhering to all requirements of the permit for discharging storm water from the areas under their operational control. Perform regular inspections, prepare a written report of deficiencies, and repair deficiencies within the time frame set forth by the permit. File a Notice of Termination with TCEQ upon completion of the project when the exposed areas have been stabilized with a vegetative cover of at least 70%. Responsible under contractual obligations to Dallas County to install, clean, repair, replace or remove sediment and erosion control devices as indicated as required by daily construction practices or as ordered by Dallas County, within the time frame set forth by the permit.



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DALLAS COUNTY

CENTRAL TRAIL EXTENSION

DALLAS COUNTY
GENERAL NOTES
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FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
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STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.03D
CONT.	SECT.	JOB	
0918	47	473	

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General Notes: 2024 TxDOT Specification – Dallas District General Notes

SPECIFICATION DATA

Table 2: Basis of Estimate for Permanent Construction					
Item	Description	Thickness	Rate		Quantity
162	Block Sod	N/A	See Specifications		SY
168	Vegetative Watering (Warm)**	N/A	12	TGL/Ac/Day	TGL
**Use Summer rate for calculation, adjust for actual field conditions/temperatures as necessary. See Vegetation Establishment Plan Sheet for estimated daily rates.					
Note: (1) Base material weight based on 1.50 Ton/CY (dry- compacted) (2) Asphalt weight based on 110 Lbs./SY/In (3) Subgrade weight based on 25 Ton/CY (dry-compacted)					

Table 3: Basis of Estimate for Temporary Erosion Control Items				
Item	Description	Rate		Quantity
164	Drill Seed (Temp_Warm_Cool)	See Specifications		SY
166*	Fertilizer (12-6-6)	500	Lb/Ac	Ton
168	Vegetative Watering (Warm)**	12	TGL/Ac/Day	TGL
*For Contractor's Information Only. **Use Summer rate for calculation, adjust for Actual Field Conditions/Temperatures as Necessary. See Vegetation Establishment Sheet for estimated daily rates.				

GENERAL

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

The disturbed area for this project, as shown on the plans is 3.4 acres. However, the Total Disturbed Area (TDA) will establish the required authorization for storm water discharges. The TDA of this project will be determined by the sum of the disturbed area in all project locations in the contract, and all disturbed area on all Project-Specific Locations (PSL) located in the project limits and/or within 1 mile of the project limits. The department will obtain an authorization to discharge storm water from the Texas Commission on Environmental Quality (TCEQ) for the construction site as shown on the plans, according to the TDA of the project. The contractor will obtain any required authorization from the TCEQ for the discharge of storm water from any PSL

for construction support activities on or off of the project row according to the TDA of the project. When the TDA for the project exceeds 1 acre, provide a copy of the appropriate application of permit (NOI, or Construction Site Notice) to the engineer, for any PSL located in the project limits or within 1 mile of the project limits. Follow the directives and adhere to all requirements set forth in the TCEQ, Texas Pollution Discharge Elimination System, Construction General Permit (TPDES, CGP).

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

Install traffic marking signs prior to sealcoat application and remove within three days after placement of traffic markings.

Provide the County with a copy of all DBE subcontractor agreements prior to commencing work.

Pre-letting questions regarding this solicitation are to be submitted, in writing, to _____ by 2:00 PM (CST), _____day, __, 2025. These questions will be addressed during the Pre-Bid Conference.

All questions and responses will be made available exclusively through the Dallas County website for retrieval, located at the following web address:
http://www.dallascounty.org/department/purchasing/currentbids.html

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

For the project to be deemed complete, permanently stabilize all unpaved disturbed areas of the project with a vegetative cover at a minimum of 70% density for the control of erosion.

Place construction stakes/station markings at intervals of no more than 100 feet or as directed by the Engineer. Place stakes and markings so as not to interfere with normal construction operations.

Submit all shop drawings, working drawings, or other documents which require review sufficiently in advance of scheduled construction to allow no less than thirty (30) calendar days for review and response.

Locate all utilities, both underground and above ground, in the project area prior to beginning work so that conflicts are avoided.

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION
TXDOT
GENERAL NOTES
(1 OF 7)

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.04A
CONT.	SECT.	JOB	
0918	47	473	

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Provide to the County, in addition to any submittals required by the specifications and elsewhere in the general notes, a list of pre-qualified material to be used on the project.

Item 6:
The Buy America Material Classification Sheet is located at the below link. https://www.txdot.gov/business/resources/materials/buy-america-material-classification-sheet.html for clarification on material categorization.

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

Perform all electrical work in accordance with the National Electrical Code and Texas Department of Transportation Specifications.

Consult with appropriate electric company representatives according to their respective area to coordinate electrical services installations.

Contractor will be responsible for all costs associated with locating and/or exposing existing utilities. This includes existing utilities that may have been mismarked by the locator and/or utilities that are in the near vicinity of proposed construction. In addition, this includes all costs associated with pot-holing, mechanical vacuuming, hand-digging, etc. as needed to properly locate and protect all existing utilities.

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

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

No significant traffic generator events identified.

Item 8:
Refer to project bid book for information on working days and work week.

Item 100:

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

The Contractor shall be responsible for protecting all trees and shrubs. Unless designated to be removed, damaged trees and shrubs shall be replaced at the Contractor's expense.

Trees and shrubs shall be protected by tree protection fencing and is subsidiary to the other items included in the contract.

The Contractor shall avoid placing backfill and/or compaction against or under existing tree canopies or shrubs.

Minor changes in slope grading as directed by the County may be made to protect existing trees and shrubs.

Any tree or shrub removed shall be removed from the project site within 24 hours of removal.

The limits of preparing right of way will be measured from Buckingham Road Sta. 51+62 to Sta. 68+10, Greenville Avenue Sta. 101+87 to Sta. 149+87, and Walnut Street Sta. 23+66 to Sta. 38+00 along the centerline of construction. No other Prep ROW areas will be considered for payment.

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

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

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

Scarify and loosen the excavated areas, unpaved surface areas, except rock, to a depth of at least 8 inches and compact in accordance with the specifications.

Excavation and embankment for driveways, sleeper slabs, alleys and intersections will not be paid for directly, but will be considered subsidiary to these items.

Item 160:
Sequence construction operations to salvage topsoil from one location and spread on areas ready to receive topsoil. Keep stockpiling of topsoil to a minimum.

Use fertile clay or loam from the project site not more than six inches below natural grade as topsoil.

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION
TXDOT
GENERAL NOTES
(2 OF 7)

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.04B
CONT.	SECT.	JOB	
0918	47	473	

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County: Dallas

Highway: VA

Item 162:
Install block sod as shown in the plans and in any disturbed areas.

Item 168:
Water once a day where sod is installed. Include cost for this work in the unit bid price for this item.

Item 247:
Construct uniform layer thickness of 12 inches, or less with the required density and moisture content. Minimum PI is equal to three (3) for all grades.

Item 260:
Furnish and distribute MS-2 smoothly and evenly at the rate of 0.20 gallons per square yard (spray rate) to cure lime, as directed.

Provide Quick Lime Slurry and apply lime by slurry placement method.

Item 360:
Use of multiple piece tie bars will be required. Provide chairs for multiple piece tie bars, threaded connectors or other adequate devices, used in concrete paving, or tie them to the pavement reinforcing steel. If approved by the engineer for specific areas, in lieu of multiple piece tie bars, drill holes into the pavement and grout straight tie bars in place with epoxy. Use a non-impact, rotary core drill to prevent damage to the pavement unless otherwise directed. Clean the drill holes and then completely fill with epoxy before inserting the tie bar. Do not bend the tie bars or insert them into plastic concrete without the approval of the engineer.

At paving leave-outs, multi-piece tie bars will not be allowed for the required 10' longitudinal steel lap unless otherwise approved.

Provide curbs monolithically constructed with the concrete pavement. If continuous monolithic curb has to be temporarily omitted for any reason, provide dowelled curbs in the proposed areas, as detailed in the plans, and apply an approved epoxy resin to the pavement to receive the curb as directed. This work and materials will not be paid for directly, but is considered subsidiary to this item.

If asphalt curing is used, cure the concrete pavement with MS-2.

Stockpile the concrete aggregates at the plant site.

Provide pavement widening joints, as detailed in the plans, at all locations where concrete pavement is placed adjacent to existing concrete pavement. Installation of these joints is not paid for directly, but is considered subsidiary to this item.

Payment for furnishing and installing the pre-molded expansion joint material between the retaining walls and concrete pavement is not paid for directly, but is considered subsidiary to this item.

County: Dallas

Highway: VA

Provide a curing machine equipped with rubber tires, or other acceptable arrangement, so that the machine will span the pavement and monolithic curb.

Curb transition is paid for as Type II curb.

The installation of curb openings is not paid for directly, but is considered subsidiary to this item.

Place construction, sawed and contraction joints in accordance with the pavement detail sheet and as directed. Joint locations, other than as shown on the plans, are subject to approval.

Pavement leave outs are required on this project as necessary to provide for traffic at driveways and side streets as shown in the plans or as directed. The cost of providing these leaveouts, including the construction of a suitable crossover connection at each site, is not paid for directly but is considered subsidiary to this item.

If a traveling form paver is used, provide one equipped with an electronically operated horizontal control device.

Use "mechanical steel placing equipment" at the discretion of the engineer.
Provide Class HES concrete at the locations shown on the plans. Design Class HES to meet the requirements of Class P and a minimum average flexural strength of 450 psi or minimum average compressive strength of 3200 psi in 24 hr.

Supply the Engineer with a list of certified personnel and copies of their current ACI certificates and hard copies of calibration reports for testing equipment when required by the Engineer if the contractor is doing independent testing for quality control or early breaks.

If more than 30% of an area in any 1000-Ft section of roadway requires grinding, action will be taken by the Contractor to make that 1000-Ft full width section uniform without changing ride quality, compromising quality of pavement and decreasing skid resistance. Approved blasting method or other method approved by the Engineer will be performed at the Contractor's expense.

Item 416:
Provide a minimum of one core per bent, regardless of placement method.

Do not leave excavated drilled shafts open if they cannot be completed in a continuous operation.

Item 421:
Provide sulfate resistant concrete for box culverts and all drilled shafts.

Item 423:
All retaining walls will have a uniform texture and appearance.

STATE OF TEXAS
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PROFESSIONAL ENGINEER
10/03/2025

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION
TXDOT
GENERAL NOTES
(3 OF 7)

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.04C
CONT.	SECT.	JOB	
0918	47	473	

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Square foot surface area of retaining wall is measured from the top of retaining wall to the top of the leveling pad. Footing adjustments made to accommodate the available optional retaining walls are not measured.

Cement-Stabilized Backfill (CSB) is not permitted.

Unless otherwise noted on the plans, provide flowable backfill meeting the requirements of Item 401 between the back of panels and inlets or drainage pipes where the required compaction can not be achieved. Flowable backfill used for this purpose is subsidiary to this item.

Item 449:
Use Thomas & Betts Kopr-Shield, MG Chemicals #846, MG Chemicals #8463, NYOGEL #756G, Pro-Shield #7308, Cho-Lube #4220, or other approved electrically conducting lubricant compound.

Item 464:
The concrete collars and the connections of pipes to existing or proposed concrete boxes or pipe will not be paid for directly but will be considered subsidiary to the various bid items.

At locations where storm drains dead-end, plug with a concrete plug of a thickness equal to 1 ½ inches per foot of diameter of pipe with a minimum thickness of 3 inches. The cost of the plugs shall be included in the unit price bid per foot of the various storm drain pipes.

Item 479:
Accept ownership of inlet grates and manhole covers and properly dispose of them outside the limits of the right of way in accordance with federal, state and local regulations.

Item 496:
Concrete pavement removed as a result of removing the inlets will not be paid for directly but will be considered as subsidiary to Item 496.

Inlet grates and manhole covers become the property of the contractor for disposal.

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

Item 502:
Access will be provided to all business and residences at all times. Coordinate with stakeholders where their access will be impacted by construction. Where turning radii are limited during phased construction at intersections, provide all weather surfaces such as RAP or base in turning movements to accommodate and to protect the traffic from edge drop-offs. Materials, labor, maintenance and removal for these temporary accesses and radii will not be paid for directly but will be considered subsidiary to the various bid items.

The Contractor's Responsible Person or designee must be able to respond on the project 24 hours/day, 7 days/week within 60 minutes from initial notification of a work zone issue for the

duration of the project. The person must be knowledgeable of TxDOT Guidelines for traffic control devices and signs.

Provide written proposed lane closure information by 11:00 am on the business day prior to the proposed closures. Do not close lanes when this requirement is not met.

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

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

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

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

Limit lane closures along Buckingham Road, Greenville Avenue and Walnut Street to the hours between 9:00 am and 3:30 pm. Work in other areas of the project is not restricted to this time frame.

Additional lanes may be closed, started earlier, or extended later with written permission of the Engineer.

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

Provide SW3P Signs. Obtain from the Engineer a copy of the project's completed TPDES Storm Water Program Construction Site Notice and Contractor Site Notice. Laminate the sheets and bond with adhesive to 36" X 36" plywood sign blanks. Ensure the sheets remain dry. Apply Type C Blue reflective sheeting as the background and add the text "SW3P" in 5" white lettering, centered at the top. Attach the signs to approved temporary mounts and locate at each of the project limits just inside the right of way line at a readable height or as directed by the Engineer. If the sign cannot be placed outside the clear zone, it must adhere to the TMUTCD. SW3P signs, maintenance, and reposting (for replacement or as needed to ensure readability) will be subsidiary to Item 502. These signs must be maintained and posted until the NOT is filed.

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION
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GENERAL NOTES
(4 OF 7)

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.04D
CONT.	SECT.	JOB	
0918	47	473	

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

Item 529:
Provide grooved joints at 10-foot intervals and ¾ inch expansion joint material for doweled curb at the same locations as on the existing pavement.

For Curb and Gutter sections, provide grooved joints at 10-foot intervals and ¾ inch expansion joint material at a maximum of 50-foot centers and at all radius points and inlets.

Curb and Gutter transitions will be paid for by the foot at the unit price for the corresponding curb or curb and gutter section.

Saw joints at the same location as on the existing pavement.

Item 530:
Provide Class “HES” concrete for concrete intersections and driveways listed or shown on the plans.

Item 531:
Joint sealant is required when shown in the plans. This work will not be paid for directly but will be considered subsidiary to this Item.

Item 536:
Use Class “B” concrete for concrete medians and directional islands.

Joint sealant is required when shown in the plans. This work will not be paid for directly but will be considered subsidiary to this Item.

Item 618:
Place conduit under railroad tracks to maintain a minimum of 42" below the bottom of the ties.

The location of conduits and ground boxes are diagrammatic only and may be shifted to accommodate field conditions as directed.

Secure permission and approval from the proper authority prior to cutting into or removing any sidewalks or curbs for installation of this Item.

When holes are drilled through concrete structures, use a coring device. Do not use masonry or concrete drills.

Place conduit under existing pavement by an approved boring method. Do not place boring pits closer than 2 feet from the edge of the pavement unless otherwise directed. Do not use water jetting. When conduits are bored, do not exceed 18 inches in the vertical and horizontal tolerances as measured from the intended target point.

Do not use a pneumatically driven device for punching holes beneath the pavement (commonly known as a "missile").

Furnish and install a flat, high tensile strength polyester fiber pull tape in conduit runs in excess of 50 feet or for future use and protected with standard weather-tight conduit caps, as approved. Acceptable products include Garvin # PT-1250-3K, ComStar PUL 1250P3K, Ideal Part No. 31-315 or equal as approved by the County. This work will not be paid for directly, but is subsidiary to this Item.

Use a colored cleaner-primer on all PVC to PVC joints before application of PVC cement.

Seal all conduit ends with a permanently soft, non-toxic duct seal. Use a duct seal that does not adversely affect other plastic materials or corrode metals.

Existing conduit is proposed for reuse in this project. Conduit prep will be paid for under this item.

When using existing conduit, ensure that all conduits have bushings and are cleaned of mud and debris. Restrap conduit that is being relocated to new timber poles as if it were a new installation. This work will not be paid for directly, but is subsidiary to this Item.

Where sidewalk is removed to install trenched conduit, replace sidewalk to match existing material. This work will be subsidiary to Item 618 except where shown otherwise in the plans.

Communications cable shall be installed in a separate conduit and bored separately.

Item 620:
The equipment grounding conductor smaller than 4 AWG shall be identified by a continuous green colored jacket insulation or bare wire. Grounded conductors (Neutral) smaller than 4 AWG shall be identified by a continuous white colored jacket. Ungrounded conductors (Hot) in a 120/240v or 240/480v system shall be identified by each pole or leg. For 240-volt branch circuit fed from 120/240 source and 480-volt branch circuit fed from 240/480 source, ensure one leg is identified by a continuous black colored jacket and the other leg by a continuous red colored jacket. White phasing tape is not allowed to be used to signify a neutral on any conductor 6 AWG and smaller as per TxDOT specifications and the NEC.

For both transformer and shoe-base type illumination poles, provide double-pole breakaway fuse holder as shown on the Texas Department of Transportation (TxDOT) - Material and Test Division’s (MTD) materials producers list. Category is “Roadway Illumination and Electrical Supplies.” Fuse holder is shown on list under Items 610 & 620. Provide 10 amp time delay fuses.

Item 624:
Slack conductors required by Standard Sheet ED(3)-14 will be subsidiary to Item 624.

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10/03/2025

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION
TXDOT
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(5 OF 7)

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.04E
CONT.	SECT.	JOB	
0918	47	473	

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Concrete removal required for installation of ground boxes will be subsidiary to Item 624.

Item 636:
Unless otherwise shown on the plans, furnish and install all regulatory and street name sign panels and mounting hardware for attachment to traffic signal poles, pedestal poles, mast arms, and span wires. Mount with Astro-Sign Brac, Signfix aluminum channel, or equal as approved by the County. Submit five (5) sets of shop drawings for street name signs.

Item 644:
Prior to taking elevations to determine lengths for fabrication of sign posts, obtain verification of all proposed locations.

Provide two (2) sets of shop drawings for signs. The shop drawings shall conform to the details shown on the plans. The shop drawings shall show details of the panels, wind beams, stiffeners, joint backing plates, splices, fasteners, brackets, and sign support connections. The shop drawings shall show letter types and sizes, interline spacing and message arrangements.

Affix a sign identification decal to the back of all signs and mark out the installation date in accordance with item 636.

All sign mounts shall have a clamp base system for all small roadside sign assemblies.

Removal of concrete foundations of sign posts including steel shall be at full length for small and large sign assemblies, unless otherwise shown on the plans. Small sign removals shall be subsidiary to item 100 – PREP ROW.
Provide field galvanizing and metallizing equipment, as per Item 445, at all times and make repairs to galvanized surfaces according to the above specification item at intervals as directed.

After sign supports with signs attached have been erected, wash individual units requiring cleaning with an approved cleaning solution to remove all grease, oil, dirt, smears, streaks, and other foreign particles.

Item 656:
Form a 3/4-inch chamfer on the top edge of each pedestal pole foundation.

Probe for utilities and underground structures prior to drilling foundations. Foundations shall be paid for once regardless of extra work caused by obstructions.

Item 677:
A water blasting method approved by the Engineer will be the only method allowed for the removal of permanent and temporary pavement markings except on a sealcoat surface.

Item 680:
Requirements for this Item include the following work, all of which are subsidiary to this Item:

1. Notify the City of Richardson or City of Dallas one week before beginning any work involving traffic signals within their jursidiction.
2. Provide submittal literature for all traffic signal equipment before installation.
3. Furnish and install a new controller (eight phase NEMA TS 2 Type 1) and cabinet (NEMA TS 2 Size 6, 16 position load bay), meeting the requirements of Departmental Materials Specifications DMS-11170. Provide detector panel toggle switches that additionally permit the user to disconnect the detector. Provide new MMU with Ethernet port.
   Install the supplied traffic signal controller and cabinet.
4. Connect all field wiring to the controller assembly, including SSR coaxial cable termination into the polyphaser. The City will assist in determining how the detection cables are to be connected, and will also program the controller for operation, hook up the malfunction management unit (MMU) or conflict monitor, detector units, and other equipment, and turn on the controller. Pick up the signal cabinet from the City. Have a qualified technician and a representative from the controller supplier on the project site to place the traffic signals in operation.
5. Provide 250W Equivalent LED Fixtures with 120 - 277 volt electronic LED drivers as shown on the Material Producers List.
6. Install the emergency vehicle preemption equipment supplied by the City.
7. Have a qualified technician on the project site to place the traffic signal in operation.
8. Use qualified personnel to respond to and diagnose all trouble calls during the thirty-day test period. Repair any malfunction to Contractor-supplied signal equipment. Provide to the County a local telephone number, not subject to frequent changes and available on a 24-hour basis, for reporting trouble calls. Response time to reported calls must be less than 2 hours. Make appropriate repairs within 24 hours. Place a logbook in the controller cabinet and keep a record of each trouble call reported. Notify the County of each trouble call. Do not clear the error log in the conflict monitor or MMU during the thirty-day test period without approval.
9. Prevent any damage to property owner's poles, fences, shrubs, mailboxes, etc. Protect all underground and overhead utilities and repair any damage. Provide access to all driveways during construction.
10. The concrete foundation for the controller as shown on standard TS-CF is diagrammatic and the dimensions will be adjusted in the field to fit existing conditions.
11. Maintain the operation of the existing traffic signal until directed to remove it.

Item 682:
Install signal head attachments so that the wiring to each signal head passes from the mast arm through the attachment hardware to the signal head. Do not leave cable or wiring exposed.

Provide signal head attachments that allow for adjustment about the horizontal and vertical axis.

Provide aluminum pedestrian and vehicle signal heads in the following color: Federal Yellow #13538 of Federal Standard 595. Provide non-painted aluminum tubing. Provide back plates, louvers, and the inside of visors with a flat black finish. Provide aluminum vented back plates for all traffic signal heads.

Turn down signal heads or cover with burlap or other material, as approved, until traffic signal is placed in operation.

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION
TXDOT
GENERAL NOTES
(6 OF 7)

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.04F
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Galindo, Alejandra October 03, 2025 03:05:28pm K:\AC_TPTO\project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\GENERAL NOTES.dwg
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Mount signal heads level and plumb and aim as directed.

Provide louvers that have 5 vanes and a flat black finish on the inside surfaces. Securely fasten a hardware cloth screen with 5/8 inch or smaller mesh size to the front face of each louver to prevent entry by birds.

For City of Dallas Signals: Provide black polycarbonate pedestrian and vehicle signal heads with non-painted aluminum tubing. Provide black retroreflective aluminum non-vented back plates for all traffic signal heads.

Item 684:
Provide 18 AWG Type C signal cables for loop detector lead-ins.

Provide stranded 14 AWG Type A signal cables for LED signal heads and stranded 12 AWG Type C cables for APS units.

Provide a separate multi-conductor signal cable (14 AWG) inside pedestal poles and signal poles from the terminal strip to each signal head as shown on the plans.

Identify each cable as shown on the plans (cable 1, etc.) with permanent marking labels (Panduit Type PLM standard single marker tie, Thomas&Betts Type 548M, or equal) at each ground box, pole base, and controller.

Item 686:
Provide 12 circuit Buchanan Type 112SN, Kulka Type 985-GP-12 CU, or equal terminal strips in the signal pole access compartment. Provide additional terminal strips of 8 circuits each when more than 12 circuits are required. The conductors for the line and load side of the terminal strip shall be identified with a plastic label with two straps per tag. The load side shall have each signal head and ped head identified on the tag.

Mark pole shafts and mast arms with the identification numbers from the plans to facilitate field-assembly. Identify pole shafts and mast arms by intersection for projects with multiple intersections.

Provide nuts on top and bottom (double nuts) of the base plate as shown on the plans.

Set anchor bolts for mast arm signal poles and strain poles so that two are in tension and two are in compression. Obtain approval of anchor bolt placement before placing concrete.

Provide vertical clearance of 17 to 19 feet from the roadway to the lowest point of the signal head or mast arm. Except for supplemental nearside signal heads, all signal heads must be installed at least 40' from the stop line. If field adjustments result in the nearest signal head being more than 180' from the stop line, install a supplemental nearside signal head as directed by the County. Determine the field measurements and elevations from the actual field location of the poles, considering all above and below ground utilities and existing roadway elevations.

Provide vibration dampers for mast arms 28 feet to 48 feet in length. Install as shown on MA-DPD.

For mast arm poles designated with an ILSN bid code, the ILSN arm, clamps, bolts, and washers will be considered part of the complete pole assembly. The ILSN signs and mounting hardware will be furnished by the applicable City.

The bid price for this item is for a standard galvanized signal pole.

For existing signal poles, replacement of existing conductors is not required inside the poles. Plug any unused openings in existing mast arms and poles with an approved material.

Item 687:
The bid price for this item is for a standard galvanized pedestal pole.

Provide 12 circuit Buchanan Type 112SN, Kulka Type 985-GP-10 CU, or equal terminal strip in the pedestal pole base. The conductors for the line and load side of the terminal strip shall be identified with a plastic label with two straps per tag. The load side shall have each signal head and ped head identified on the tag.

Item 688:
Regulatory signs associated with APS units (e.g. R10-3eL, etc) will be not be paid for separately, but will be considered subsidiary to Item 688.

Verify the location of the APS units and the direction of the arrows on the signs prior to installation.

APS Units shall operate with hardwired connections for the communications path between the APS Units and the APS controller.

Item 6013:
Existing ground boxes are proposed for reuse in this project. Ground box prep will be paid for under this item.

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CENTRAL TRAIL EXTENSION

TXDOT
GENERAL NOTES
(7 OF 7)

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.04G
CONT.	SECT.	JOB	
0918	47	473	

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SUMMARY OF REMOVAL ITEMS

LOCATION	104 7001	104 7006	104 7008	104 7011	104 7013	479 7001	496 7017	496 7028	550 7007	752 7008	752 7009
	REMOV CONC (PAV)	REMOV CONC (RIPRAP)	REMOV CONC (MEDIANS)	REMOV CONC (DRIVEWAYS)	REMOV CONC (SIDEWALK, RAMP OR SUP)	ADJUSTING MANHOLES	REMOVE STR (RAIL)	REMOVE STR (BOLLARD)	CHAIN LINK FENCE (REMOVE)	TREE REMOVAL (24" - 30" DIA)	TREE REMOVAL (30" - 36" DIA)
	SY	SY	SY	SY	SY	EA	LF	EA	LF	EA	EA
REMOVAL PLAN 01		4		143	103	2	90		320	15	10
REMOVAL PLAN 02	501		51		82					4	5
REMOVAL PLAN 03	1667			52							1
REMOVAL PLAN 04	1754			52							
REMOVAL PLAN 05	1705							2			
REMOVAL PLAN 06	339		13	63	25						
REMOVAL PLAN 07	7										1
PROJECT TOTALS	5973	4	64	310	210	2	90	2	320	19	17

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

QUANTITY SUMMARY
REMOVAL ITEMS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.05
CONT.	SECT.	JOB	
0918	47	473	

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SUMMARY OF ROADWAY ITEMS

LOCATION	110 7001	132 7001	247 7067	360 7002	432 7014	451 7052	527 7002	529 7002	529 7009	530 7007	531 7001	531 7003	531 7005	531 7006	531 7010	531 7011	531 7013	536 7006	550 7001
	EXCAV (ROADWAY)	EMBANK (FNL)(OC)(TY A)	FL BS (CMP IN PLC)(TY A GR 1-2) (8")	CONC PVMT (CRCP) (8")	RIPRAP (MOW STRIP)(5 IN)	RETROFIT RAIL (ADD HSS)	COLORED TEXTURED CONC (5")	CONC CURB (TY II)	CONC CURB & GUTTER (TY II)	DRIVEWAYS (CONC) (HES)	CONC SIDEWALKS (4")	CONC SIDEWALKS (6")	CURB RAMPS (TY 1)	CURB RAMPS (TY 2)	CURB RAMPS (TY 7)	CURB RAMPS (TY 10)	CURB RAMPS (TY 21)	CONC MEDIAN (MONO NOSE)	CHAIN LINK FENCE (INSTALL) (6')
	CY	CY	SY	SY	CY	LF	SY	LF	LF	SY	SY	SY	EA	EA	EA	EA	EA	SY	LF
TRAIL PLAN & PROFILE 01					3	90		73		134	64	230		1		2			83
TRAIL PLAN & PROFILE 02					7							465							237
TRAIL PLAN & PROFILE 03			70	58				297	128			457							
TRAIL PLAN & PROFILE 04			124	109			6	350	119		154	184	1	2	5		2	18	
TRAIL PLAN & PROFILE 05								478				667							
TRAIL PLAN & PROFILE 06								489				667							
TRAIL PLAN & PROFILE 07								461		86		623							
TRAIL PLAN & PROFILE 08								448		90		622							
TRAIL PLAN & PROFILE 09								489				667							
TRAIL PLAN & PROFILE 10								478				667							
TRAIL PLAN & PROFILE 11								500				667							
TRAIL PLAN & PROFILE 12								500				667							
TRAIL PLAN & PROFILE 13								289				400							
TRAIL PLAN & PROFILE 14			10	10				207		118		318			2			4	
TRAIL PLAN & PROFILE 15							99					599							
TRAIL PLAN & PROFILE 16			13	7			105		61			658							
TRAIL PLAN & PROFILE 17							49					338							
PROJECT TOTALS	1271	773	217	184	10	90	259	5059	308	428	218	8896	1	3	7	2	2	22	320

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CENTRAL TRAIL EXTENSION

QUANTITY SUMMARY
ROADWAY ITEMS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.06
CONT.	SECT.	JOB	
0918	47	473	

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SUMMARY OF DRAINAGE ITEMS						
LOCATION	464 7003	464 7004	464 7005	465 7020	496 7002	496 7007
	RC PIPE (CL III)(18 IN)	RC PIPE (CL III)(21 IN)	RC PIPE (CL III)(24 IN)	INLET (COMPL)(PCO) (4FT)(BOTH)	REMOV STR (INLET)	REMOV STR (PIPE)
	LF	LF	LF	EA	EA	LF
DRAINAGE PLAN & PROFILE 01	24	10		2	2	24
DRAINAGE PLAN & PROFILE 02	864			2		
DRAINAGE PLAN & PROFILE 03	38			1	1	30
DRAINAGE PLAN & PROFILE 04	446			2	1	16
DRAINAGE PLAN & PROFILE 05	246		14	2	1	8
DRAINAGE PLAN & PROFILE 06	484			2	1	16
PROJECT TOTALS	2102	10	14	11	6	94

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QUANTITY SUMMARY
DRAINAGE ITEMS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.07
CONT.	SECT.	JOB	
0918	47	473	

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SUMMARY OF SIGNING AND PAVEMENT MARKING ITEMS

LOCATION	644 7001	644 7068	644 7073	658 7066	658 7078	666 7018	666 7033	666 7036	666 7042	666 7081	666 7411	672 7006	672 7007	677 7001	677 7002	677 7004	677 7007	677 7008	685 7004
	IN SM RD SN SUP&AM TY10BWG(1) SA(P)	RELOCATE SM RD SN SUP&AM TY TWT	REMOVE SM RD SN SUP&AM	INSTL OM ASSM (OM-3L)(TWT) GND	REMOVE DELIN & OBJECT MARKER ASSMS	REFL PAV MRK TY I (W)8"(DOT) (100MIL)	REFL PAV MRK TY I (W)18"(SLD) (100MIL)	REFL PAV MRK TY I (W)24"(SLD) (100MIL)	REFL PAV MRK TY I (W)(ARROW) (100MIL)	REFL PAV MRK TY I (W)(RR XING)(100MIL)	REFL PAV MRK TY I (W)6"(SLD) (100MIL)	REFL PAV MRKR TY II-C-R	TRAFFIC BUTTON TY W	ELIM EXT PM & MRKS (4")	ELIM EXT PM & MRKS (6")	ELIM EXT PM & MRKS (8")	ELIM EXT PM & MRKS (18")	ELIM EXT PM & MRKS (24")	INSTL RDSD FLSH BCN ASSM (SOLAR PWRD)
	EA	EA	EA	EA	EA	LF	LF	LF	EA	EA	LF	EA	EA	LF	LF	LF	LF	LF	EA
SIGNING & PAVEMENT MARKING PLAN 01	11		4					252		2									3
SIGNING & PAVEMENT MARKING PLAN 02	7	2	5	2	1	24		490	14			20	64	276		196		636	
SIGNING & PAVEMENT MARKING PLAN 03	3		1																
SIGNING & PAVEMENT MARKING PLAN 04	2																		
SIGNING & PAVEMENT MARKING PLAN 05																			
SIGNING & PAVEMENT MARKING PLAN 06	4						162	394			558				551		167	420	
SIGNING & PAVEMENT MARKING PLAN 07	1	1																	
PROJECT TOTALS	28	3	10	2	1	24	162	1136	14	2	558	20	64	276	551	196	167	1056	3

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CENTRAL TRAIL EXTENSION

QUANTITY SUMMARY
SIGNING AND STRIPING ITEMS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.08
CONT.	SECT.	JOB	
0918	47	473	

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SUMMARY OF WORKZONE TRAFFIC CONTROL ITEMS		
LOCATION	502 7001	503 7002
	BARRICADES, SIGNS AND TRAFFIC HANDLING	PORTABLE CHANGEABLE MESSAGE SIGN
	MO	EA
PHASE 1	7	4
PHASE 2	8	4
PROJECT TOTALS	15	8

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QUANTITY SUMMARY
TRAFFIC CONTROL ITEMS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.09
CONT.	SECT.	JOB	
0918	47	473	

SUMMARY OF EARTHWORK

ALIGNMENT	STATION	110-7001 EXCAV (ROADWAY) AREA (SF)	110-7001 EXCAV (ROADWAY) VOLUME (CY)	132-7001 EMBANK (FNL)(OC)(TY A) AREA (SF)	132-7001 EMBANK (FNL)(OC)(TY A) VOLUME (CY)
BUCKINGHAM RD	52+00	3.1	5.7	0.3	0.6
BUCKINGHAM RD	52+50	5.8	10.7	0.1	0.2
BUCKINGHAM RD	53+00	1.1	2.0	0.2	0.4
BUCKINGHAM RD	53+50	0	0.0	2.8	5.2
BUCKINGHAM RD	54+00	0	0.0	0	0.0
BUCKINGHAM RD	54+50	0	0.0	0	0.0
BUCKINGHAM RD	55+00	2.1	3.9	0.3	0.6
BUCKINGHAM RD	55+50	1.25	2.3	0.5	0.9
BUCKINGHAM RD	56+00	2.1	3.9	0.3	0.6
BUCKINGHAM RD	56+50	2.7	5.0	0.1	0.2
BUCKINGHAM RD	57+00	2.8	5.2	0.2	0.4
BUCKINGHAM RD	57+50	3.4	6.3	0.1	0.2
BUCKINGHAM RD	58+00	5.4	10.0	0	0.0
BUCKINGHAM RD	58+50	6.8	12.6	0	0.0
BUCKINGHAM RD	59+00	8.2	15.2	0	0.0
BUCKINGHAM RD	59+50	8.5	15.7	0	0.0
BUCKINGHAM RD	60+00	10.5	19.4	0	0.0
BUCKINGHAM RD	60+50	9.1	16.9	0	0.0
BUCKINGHAM RD	61+00	5.7	10.6	0	0.0
BUCKINGHAM RD	61+50	3.2	5.9	0.2	0.4
BUCKINGHAM RD	62+00	2.1	3.9	0.5	0.9
BUCKINGHAM RD	62+50	2.1	3.9	0.1	0.2
BUCKINGHAM RD	63+00	1.8	3.3	0.2	0.4
BUCKINGHAM RD	63+50	2	3.7	0.2	0.4
BUCKINGHAM RD	64+00	0.9	1.7	0.4	0.7
BUCKINGHAM RD	64+50	0.5	0.9	0.8	1.5
BUCKINGHAM RD	65+00	1.8	3.3	0.3	0.6
BUCKINGHAM RD	65+50	1.8	3.3	0.3	0.6
BUCKINGHAM RD	66+00	2.2	4.1	0.1	0.2
BUCKINGHAM RD	66+50	4.9	9.1	0.9	1.7
BUCKINGHAM RD	67+00	4.7	8.7	0	0.0
BUCKINGHAM RD	67+50	0	0.0	0	0.0
BUCKINGHAM RD	68+00	19.9	36.9	0	0.0
BUCKINGHAM RD TOTAL		116.45	215.6	8.3	15.4

ALIGNMENT	STATION	110-7001 EXCAV (ROADWAY) AREA (SF)	110-7001 EXCAV (ROADWAY) VOLUME (CY)	132-7001 EMBANK (FNL)(OC)(TY A) AREA (SF)	132-7001 EMBANK (FNL)(OC)(TY A) VOLUME (CY)
GREENVILLE AVE	102+00	1.3	2.4	1.1	2.0
GREENVILLE AVE	102+50	0	0.0	2.8	5.2
GREENVILLE AVE	103+00	0.5	0.9	3.7	6.9
GREENVILLE AVE	103+50	0	0.0	0	0.0
GREENVILLE AVE	104+00	10	18.5	0.15	0.3
GREENVILLE AVE	104+50	0.7	1.3	3.5	6.5
GREENVILLE AVE	105+00	1.5	2.8	3	5.6
GREENVILLE AVE	105+50	2.8	5.2	3.2	5.9
GREENVILLE AVE	106+00	2	3.7	2.9	5.4
GREENVILLE AVE	106+50	0.7	1.3	4	7.4
GREENVILLE AVE	107+00	0.4	0.7	4.6	8.5
GREENVILLE AVE	107+50	0.8	1.5	4.1	7.6
GREENVILLE AVE	108+00	1	1.9	4.1	7.6
GREENVILLE AVE	108+50	0.6	1.1	4.5	8.3
GREENVILLE AVE	109+00	0.7	1.3	4.4	8.1
GREENVILLE AVE	109+50	1	1.9	4.1	7.6
GREENVILLE AVE	110+00	1.4	2.6	4	7.4
GREENVILLE AVE	110+50	1.3	2.4	4.1	7.6
GREENVILLE AVE	111+00	0.3	0.6	4.5	8.3
GREENVILLE AVE	111+50	0	0.0	6.1	11.3
GREENVILLE AVE	112+00	0.1	0.2	4.9	9.1
GREENVILLE AVE	112+50	0	0.0	6.7	12.4
GREENVILLE AVE	113+00	0	0.0	8.6	15.9
GREENVILLE AVE	113+50	0	0.0	7.9	14.6
GREENVILLE AVE	114+00	0	0.0	7.2	13.3
GREENVILLE AVE	114+50	0	0.0	5.7	10.6
GREENVILLE AVE	115+00	0.3	0.6	5.6	10.4
GREENVILLE AVE	115+50	0.6	1.1	5.2	9.6
GREENVILLE AVE	116+00	1.4	2.6	3.6	6.7
GREENVILLE AVE	116+50	1.3	2.4	3.6	6.7
GREENVILLE AVE	117+00	2.2	4.1	1.5	2.8
GREENVILLE AVE	117+50	0.7	1.3	5	9.3
GREENVILLE AVE	118+00	0.2	0.4	5.2	9.6
GREENVILLE AVE	118+50	0.2	0.4	5.3	9.8
GREENVILLE AVE	119+00	1	1.9	3.9	7.2
GREENVILLE AVE	119+50	0.3	0.6	3.3	6.1
GREENVILLE AVE	120+00	0.3	0.6	5.6	10.4
GREENVILLE AVE	120+50	0.5	0.9	4.7	8.7
GREENVILLE AVE	121+00	0.8	1.5	4.2	7.8
GREENVILLE AVE	121+50	0.9	1.7	4.1	7.6
GREENVILLE AVE	122+00	1.2	2.2	3.5	6.5
GREENVILLE AVE	122+50	0.8	1.5	4	7.4
GREENVILLE AVE	123+00	0.2	0.4	4.2	7.8
GREENVILLE AVE	123+50	0.7	1.3	3.9	7.2
GREENVILLE AVE	124+00	1.2	2.2	3.5	6.5
GREENVILLE AVE	124+50	0.5	0.9	4	7.4
GREENVILLE AVE	125+00	0.4	0.7	4.4	8.1
GREENVILLE AVE	125+50	0.1	0.2	4.8	8.9
GREENVILLE AVE	126+00	0	0.0	5	9.3
GREENVILLE AVE	126+50	0.1	0.2	5.9	10.9
GREENVILLE AVE	127+00	0.1	0.2	5.3	9.8
GREENVILLE AVE	127+50	0	0.0	7.7	14.3
GREENVILLE AVE	128+00	0.3	0.6	6.4	11.9
GREENVILLE AVE	128+50	0.3	0.6	4.9	9.1
GREENVILLE AVE	129+00	0	0.0	5.5	10.2
GREENVILLE AVE	129+50	0	0.0	6.6	12.2
GREENVILLE AVE	130+00	0.4	0.7	4.9	9.1
GREENVILLE AVE	130+50	0.2	0.4	6	11.1
GREENVILLE AVE	131+00	0.2	0.4	5.1	9.4
GREENVILLE AVE	131+50	0	0.0	5.7	10.6
GREENVILLE AVE	132+00	0.3	0.6	4.7	8.7
GREENVILLE AVE	132+50	0.5	0.9	3.9	7.2
GREENVILLE AVE	133+00	0.9	1.7	4.2	7.8
GREENVILLE AVE	133+50	2.5	4.6	2.9	5.4
GREENVILLE AVE	134+00	2.1	3.9	2.5	4.6
GREENVILLE AVE	134+50	1.5	2.8	3	5.6
GREENVILLE AVE	135+00	1.4	2.6	3.3	6.1
GREENVILLE AVE	135+50	1.3	2.4	3.4	6.3
GREENVILLE AVE	136+00	2.2	4.1	3.3	6.1
GREENVILLE AVE	136+50	1.3	2.4	3.4	6.3
GREENVILLE AVE	137+00	1	1.9	3.6	6.7
GREENVILLE AVE	137+50	1.1	2.0	3.6	6.7
GREENVILLE AVE	138+00	0.8	1.5	4.1	7.6
GREENVILLE AVE	138+50	0.9	1.7	3.9	7.2
GREENVILLE AVE	139+00	0.9	1.7	3.8	7.0
GREENVILLE AVE	139+50	0.25	0.5	4.6	8.5
GREENVILLE AVE	140+00	0.4	0.7	4	7.4
GREENVILLE AVE	140+50	1.5	2.8	3.5	6.5
GREENVILLE AVE	141+00	0.6	1.1	4.6	8.5
GREENVILLE AVE	141+50	0.2	0.4	4.8	8.9
GREENVILLE AVE	142+00	0.7	1.3	4.7	8.7
GREENVILLE AVE	142+50	1.1	2.0	4.4	8.1
GREENVILLE AVE	143+00	1.6	3.0	4	7.4
GREENVILLE AVE	143+50	0	0.0	6.1	11.3
GREENVILLE AVE	144+00	0	0.0	6.5	12.0
GREENVILLE AVE	144+50	0	0.0	5	9.3
GREENVILLE AVE	145+00	0.1	0.2	6.3	11.7
GREENVILLE AVE	145+50	0	0.0	6	11.1
GREENVILLE AVE	146+00	0.1	0.2	5.7	10.6
GREENVILLE AVE	146+50	0.1	0.2	6	11.1
GREENVILLE AVE	147+00	0	0.0	5.3	9.8
GREENVILLE AVE	147+50	0.2	0.4	4.9	9.1
GREENVILLE AVE	148+00	2.7	5.0	2.6	4.8
GREENVILLE AVE	148+50	0	0.0	6.4	11.9
GREENVILLE AVE	149+00	0.2	0.4	4	7.4
GREENVILLE AVE	149+50	1.4	2.6	4	7.4
GREENVILLE AVE TOTAL		55.55	102.9	408.6	756.7

ALIGNMENT	STATION	110-7001 EXCAV (ROADWAY) AREA (SF)	110-7001 EXCAV (ROADWAY) VOLUME (CY)	132-7001 EMBANK (FNL)(OC)(TY A) AREA (SF)	132-7001 EMBANK (FNL)(OC)(TY A) VOLUME (CY)
WALNUT ST	25+50	9.3	17.2	0	0.0
WALNUT ST	26+00	10.8	20.0	0	0.0
WALNUT ST	26+50	10	18.5	0	0.0
WALNUT ST	27+00	14	25.9	0	0.0
WALNUT ST	27+50	22.7	42.0	0	0.0
WALNUT ST	28+00	37.8	70.0	0	0.0
WALNUT ST	28+50	51.8	95.9	0	0.0
WALNUT ST	29+00	55	101.9	0	0.0
WALNUT ST	29+50	49.8	92.2	0	0.0
WALNUT ST	30+00	47.9	88.7	0	0.0
WALNUT ST	30+50	33.4	61.9	0	0.0
WALNUT ST	31+00	28	51.9	0	0.0
WALNUT ST	31+50	17.4	32.2	0	0.0
WALNUT ST	32+00	13.9	25.7	0	0.0
WALNUT ST	32+50	10.3	19.1	0	0.0
WALNUT ST	33+00	9.9	18.3	0	0.0
WALNUT ST	33+50	12.2	22.6	0	0.0
WALNUT ST	34+00	10.2	18.9	0.1	0.2
WALNUT ST	34+50	7.3	13.5	0.1	0.2
WALNUT ST	35+00	12.4	23.0	0	0.0
WALNUT ST	35+50	19.9	36.9	0	0.0
WALNUT ST	36+00	15	27.8	0	0.0
WALNUT ST	36+50	12	22.2	0	0.0
WALNUT ST	37+00	12.2	22.6	0	0.0
WALNUT ST TOTAL		513.9	951.7	0.2	0.4

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OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

QUANTITY SUMMARY
EARTHWORK ITEMS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.10
CONT.	SECT.	JOB	
0918	47	473	

SUMMARY OF TRAFFIC SIGNAL ITEMS

LOCATION	416 7044	618 7054	618 7055	618 7060	618 7061	618 7090	620 7006	620 7009	620 7010	624 7007	624 7008	624 7013	636 7001	680 7002	680 7004	680 7011
	DRILL SHAFT (TRF SIG POLE) (36 IN)	CONDT (PVC) (SCH 80) (2")	CONDT (PVC) (SCH 80) (2") (BORE)	CONDT (PVC) (SCH 80) (3")	CONDT (PVC) (SCH 80) (3") (BORE)	CONDUIT (PREPARE)	ELEC CONDR (NO.10) INSULATED	ELEC CONDR (NO.6) BARE	ELEC CONDR (NO.6) INSULATED	GROUND BOX TY D (162922)	GROUND BOX TY D (162922)W/APRON	REMOVE GROUND BOX	ALUMINUM SIGNS (TY A)	INSTALL HWY TRF SIG (ISOLATED)	REMOVING TRAFFIC SIGNALS	INSTALL HWY TRF SIG (UPGRADE)
	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	EA	SF	EA	EA	EA
GREENVILLE AVE & BUCKINGHAM RD	52	10	135	180	950	0	1710	1275	150	2	3	5	41	1	1	1
GREENVILE AVE & WALNUT ST	0	0	0	30	0	170	0	75	0	0	0	0	0	0	0	0
TOTAL	52	10	135	210	950	170	1,710	1,350	150	2	3	5	41	1	1	1

MMARY OF TRAFFIC SIGNAL ITEMS

LOCATION	682 7001	682 7002	682 7003	682 7004	682 7005	682 7006	682 7018	682 7042	682 7044	684 7031	684 7036	684 7038	684 7046	684 7079	686 7043
	VEH SIG SEC (12")LED(GRN)	VEH SIG SEC (12")LED(GRN ARW)	VEH SIG SEC (12")LED(YEL)	VEH SIG SEC (12")LED(YEL ARW)	VEH SIG SEC (12")LED(RED)	VEH SIG SEC (12")LED(RED ARW)	PED SIG SEC (LED)(COUNTDOWN)	BACKPLATE W/REF BRDR(3 SEC)(VENT)ALUM	BACKPLATE W/REF BRDR(5 SEC)(VENT)ALUM	TRF SIG CBL (TY A)(14 AWG)(5 CONDR)	TRF SIG CBL (TY A)(14 AWG)(7 CONDR)	TRF SIG CBL (TY A)(14 AWG)(12 CONDR)	TRF SIG CBL (TY A)(14 AWG)(20 CONDR)	TRF SIG CBL (TY C)(12 AWG)(2 CONDR)	INS TRF SIG PL AM(S)1 ARM(40') LUM
	EA	EA	EA	EA	EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	EA
GREENVILLE AVE & BUCKINGHAM RD	10	4	10	8	10	8	8	10	4	620	1345	0	840	1440	1
GREENVILE AVE & WALNUT ST	0	0	0	0	0	0	1	0	0	20	0	200	0	205	0
TOTAL	10	4	10	8	10	8	9	10	4	640	1,345	200	840	1,645	1

MMARY OF TRAFFIC SIGNAL ITEMS

LOCATION	686 7045	686 7049	686 7051	687 7001	688 7001	690 7033	690 7089	6013 7006
	INS TRF SIG PL AM(S)1 ARM(44')	INS TRF SIG PL AM(S)1 ARM(48')	INS TRF SIG PL AM(S)1 ARM(48') LUM	PED POLE ASSEMBLY	PED DETECT PUSH BUTTON (APS)	REMOVAL OF TRAFFIC SIGNAL POLE FND	REMOVE PED POLE ASSM	GROUND BOX (PREPARE)
	EA	EA	EA	EA	EA	LF	EA	EA
GREENVILLE AVE & BUCKINGHAM RD	1	1	1	5	8	0	0	0
GREENVILE AVE & WALNUT ST	0	0	0	1	1	6	1	5
TOTAL	1	1	1	6	9	6	1	5

LANDSCAPE AND IRRIGATION

LOCATION	160 7002	162 7002	164 7000	168 7001	100 7014	100 7016	506 7039	506 7041
	FURN AND PLACE TOPSOIL (4")	BLOCK SODDING	BROADCAST SEEDING	VEGETATIVE WATERING	TREE PROTECTION (INSTALL)	TREE PROTECTION (REMOVE)	TEMP SEDMT CONT FENCE (INSTALL)	TEMP SEDMT CONT FENCE (REMOVE)
	SY	SY	SY	TGL	LF	LF	LF	LF
CITY OF RICHARDSON	5049	2082	2967	39	1555	1555	5277	5277
CITY OF DALLAS	665	47	618	13	0	0	0	0
TOTAL	5,714	2,129	3,585	52	1,555	1,555	5277	5277

MISCELLANEOUS

LOCATION	423 7016	506 7042	506 7046
	RETAINING WALL (CAST-IN-PLACE)	BIODEG EROSN CONT LOGS (INSTL)(8")	BIODEG EROSN CONT LOGS (REMOVE)
	SF	LF	LF
CITY OF RICHARDSON	460	435	435
CITY OF DALLAS	0	145	145
TOTAL	460	580	580

GENERAL

LOCATION	100 7002	500 7001	DC 504
	PREPARING ROW	MOBILIZATION	FIELD OFFICE & LABORATORY
	STA	LS	MO
CITY OF RICHARDSON	65	-	8
CITY OF DALLAS	14	-	7
TOTAL	79	1	15

2/26/2026

STATE OF TEXAS
THOMAS P. GRANT
100876
LICENSED
PROFESSIONAL ENGINEER

Thomas P. Grant, P.E.

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION

QUANTITY SUMMARY
TRAFFIC SIGNAL
LANDSCAPE AND IRRIGATION
MISCELLANEOUS
GENERAL

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.11
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Pena, Maria March 09, 2026 10:26:21am K:\LAC_TPTO\project\064583401_dallascounty_centraltrailextension\CADD\PlanSheets\QUANTITIES.dwg
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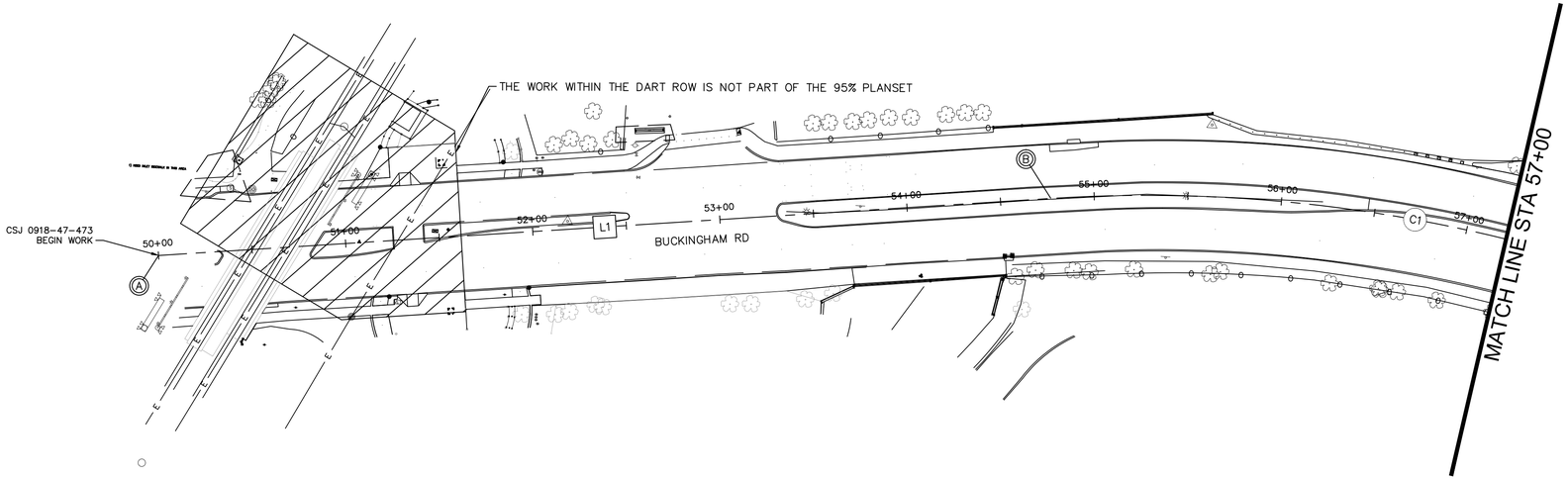


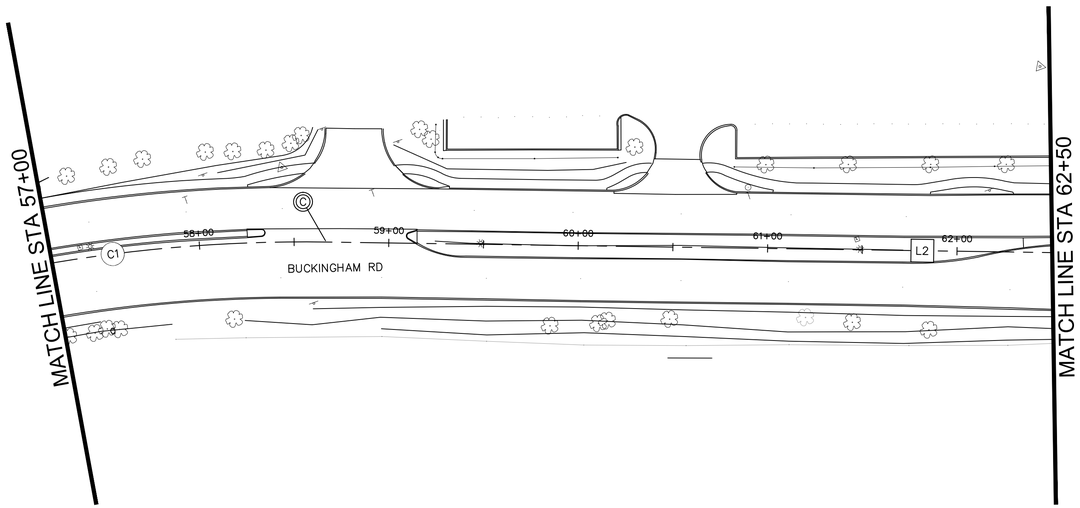
NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	799.23'	390.08'	S83°28'27"E	386.22'	27°57'53"	199.01'

LINE TABLE		
LINE	LENGTH	BEARING
L1	476.88	N82°32'36.49"E
L2	896.25	S69°29'30.84"E

POINT TABLE				
POINT	STATION CONTROL	DESC.	NORTHING	EASTING
A	50+00.00	BEGIN	7028959.82	2508575.87
B	54+76.88	PC	7029021.71	2509048.72



NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	799.23'	390.08'	S83°28'27"E	386.22'	27°57'53"	199.01'

LINE TABLE		
LINE	LENGTH	BEARING
L2	896.25	S69°29'30.84"E

POINT TABLE				
POINT	STATION CONTROL	DESC.	NORTHING	EASTING
C	58+66.97	PT	7028977.81	2509432.44

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

PROJECT CONTROL
BUCKINGHAM ROAD
STA 50+00 – STA 62+50

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.12
CONT.	SECT.	JOB	
0918	47	473	

Plotted By: Galindo, Alejandro October 03, 2025 02:23:56pm K:\LAC_TPTO\project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\PROJECT CONTROL.dwg
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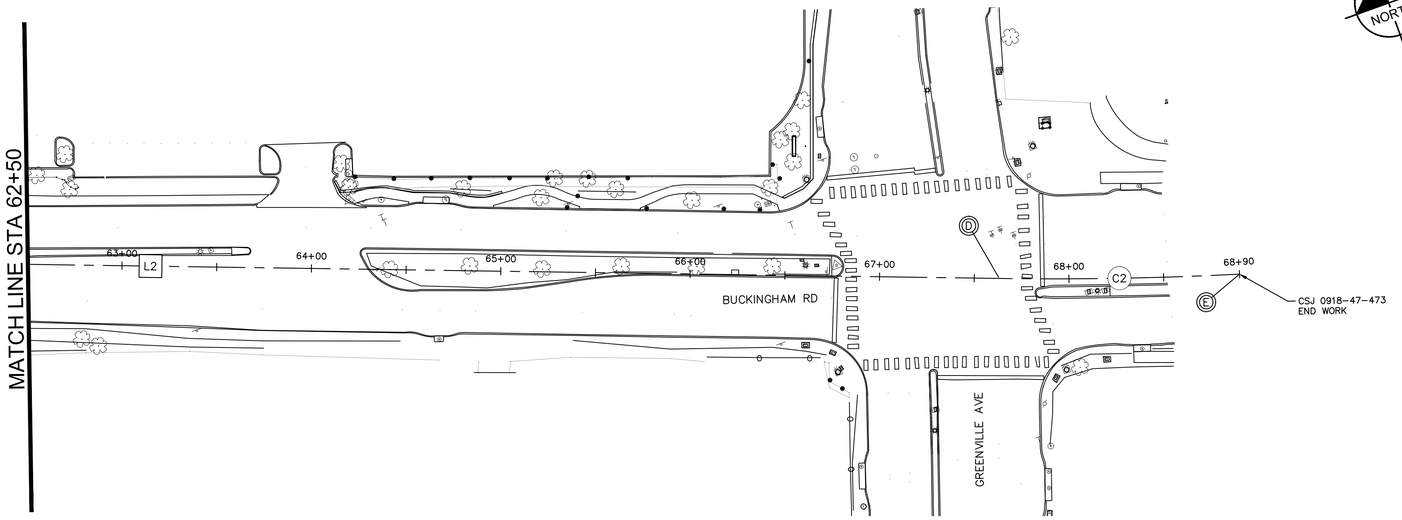

GRAPHIC SCALE IN FEET
0 20 40 80

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C2	1958.46'	126.86'	S71°20'51"E	126.84'	3°42'41"	63.45'

LINE TABLE		
LINE	LENGTH	BEARING
L2	896.25	S69°29'30.84"E

POINT TABLE				
POINT	STATION CONTROL	DESC.	NORTHING	EASTING
D	67+63.22	PC	7028663.82	2510271.89
E	68+90.08	END	7028623.25	2510392.07

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CENTRAL TRAIL EXTENSION

PROJECT CONTROL
BUCKINGHAM ROAD
STA 62+50 – STA 68+90

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.13
CONT.	SECT.	JOB	
0918	47	473	

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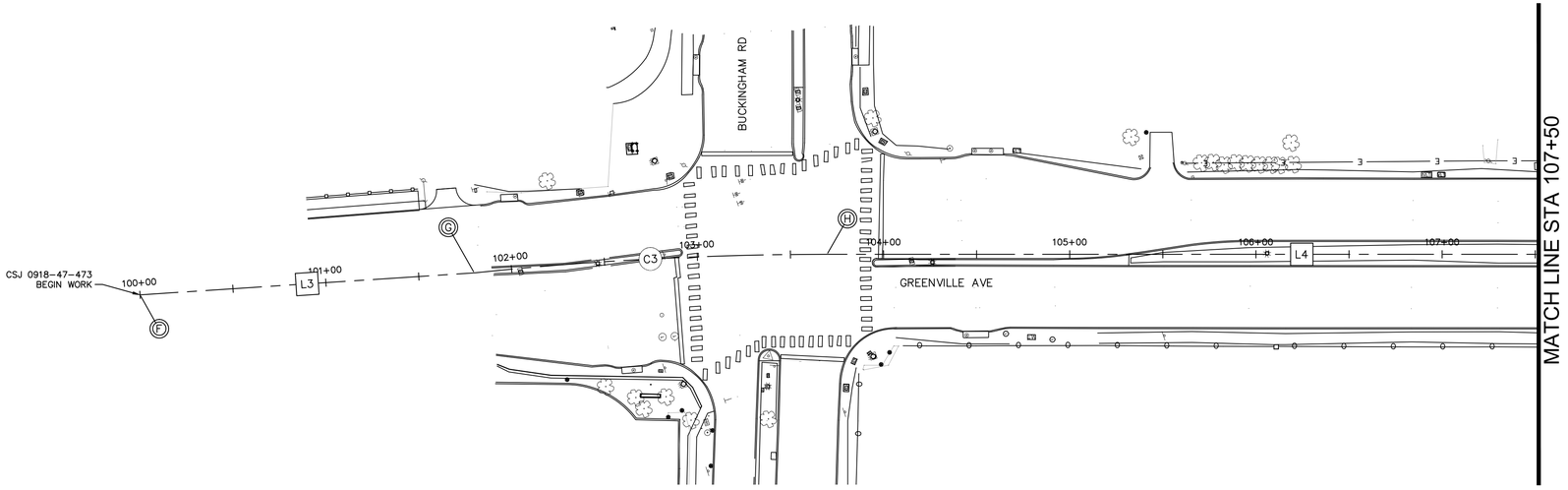
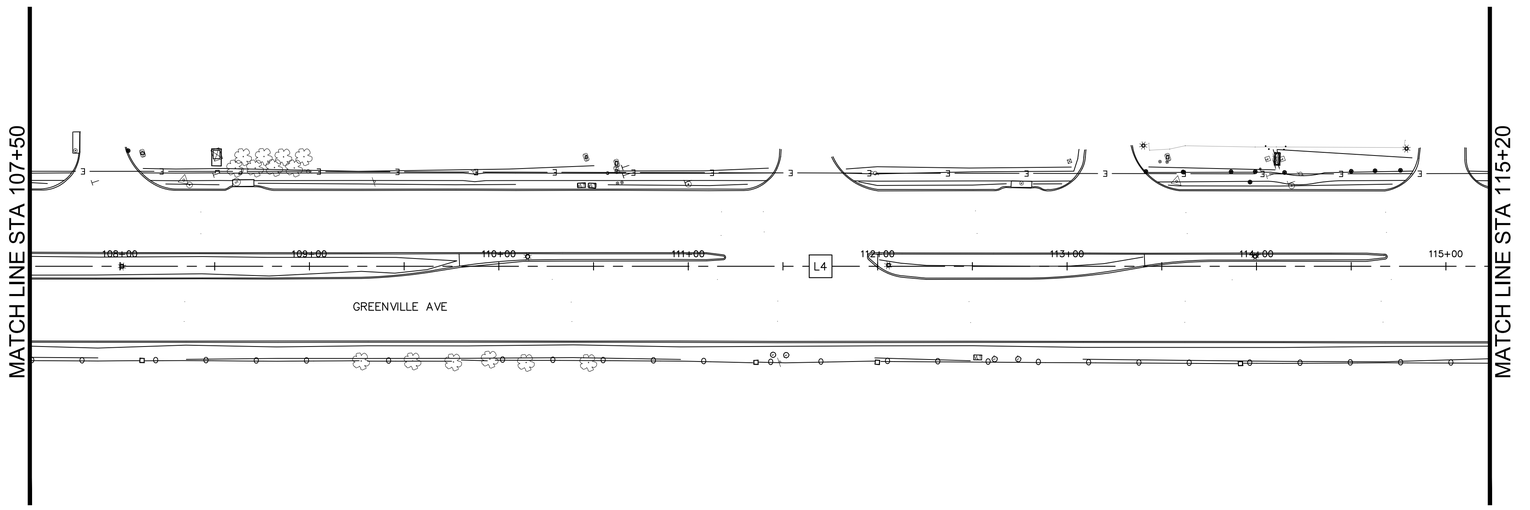


GRAPHIC SCALE IN FEET
0 20 40 80

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C3	1809.15'	189.82'	S15°38'22"W	189.73'	6°00'41"	95.00'

LINE TABLE		
LINE	LENGTH	BEARING
L3	179.85	S14°53'09.63"W
L4	2400.91	S18°38'42.56"W

POINT TABLE				
POINT	STATION CONTROL	DESC.	NORTHING	EASTING
F	100+00.00	BEGIN	7029008.49	2510332.28
G	101+79.85	PC	7028834.67	2510286.08
H	103+69.67	PT	7028651.97	2510234.93



GRAPHIC SCALE IN FEET
0 20 40 80

LINE TABLE		
LINE	LENGTH	BEARING
L4	2400.91	S18°38'42.56"W

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CENTRAL TRAIL EXTENSION

PROJECT CONTROL
GREENVILLE AVENUE
STA 100+00 – STA 115+20

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	
CONT.	SECT.	JOB	0.14
0918	47	473	

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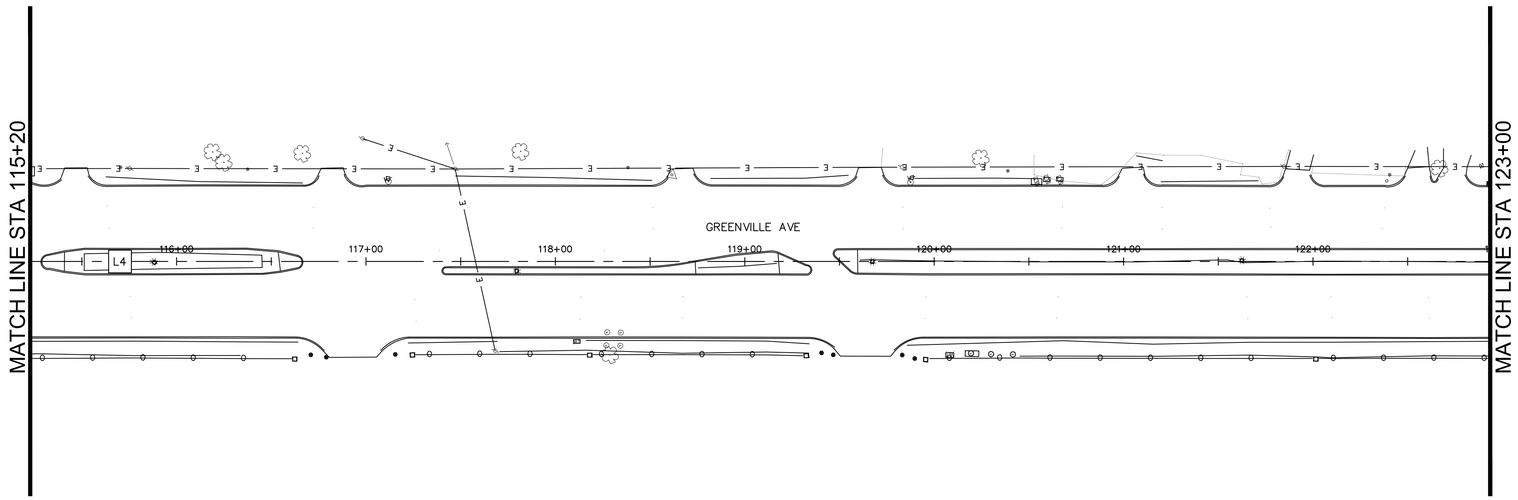
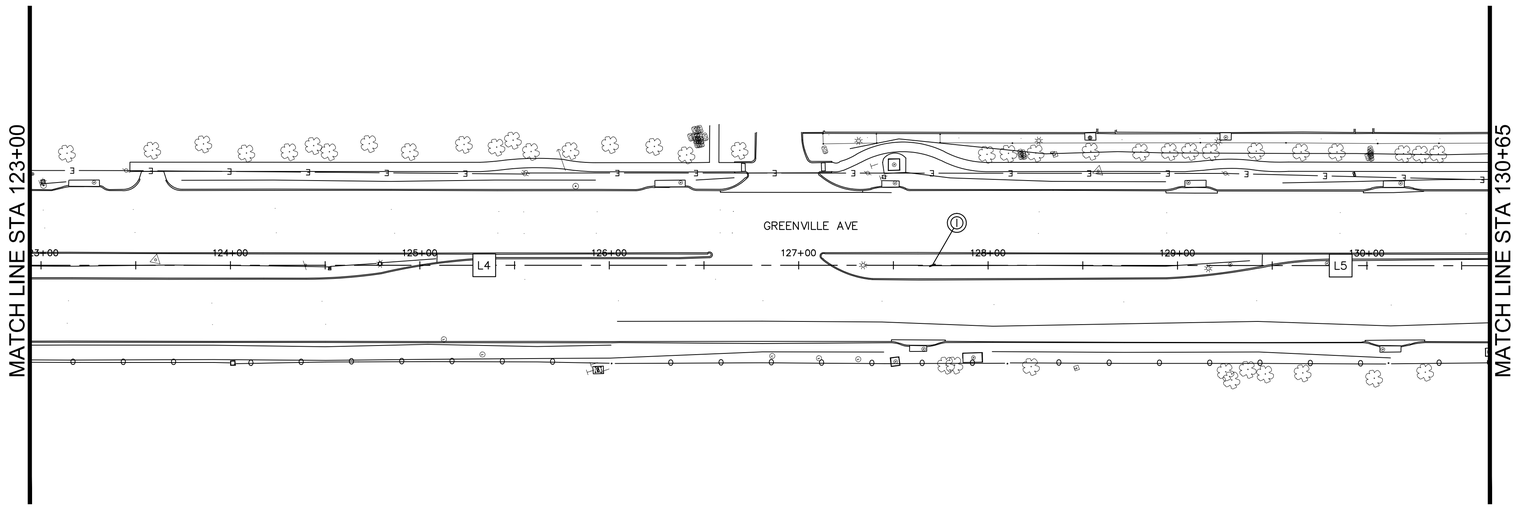


NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

LINE TABLE		
LINE	LENGTH	BEARING
L4	2400.91	S18°38'42.56"W



NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

LINE TABLE		
LINE	LENGTH	BEARING
L4	2400.91	S18°38'42.56"W
L5	1187.88	S18°41'04.26"W

POINT TABLE				
POINT	STATION CONTROL	DESC.	NORTHING	EASTING
1	127+70.58	PT	7026377.06	2509467.35

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CENTRAL TRAIL EXTENSION

PROJECT CONTROL
GREENVILLE AVENUE
STA 115+20 – STA 130+65

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.15
CONT.	SECT.	JOB	
0918	47	473	

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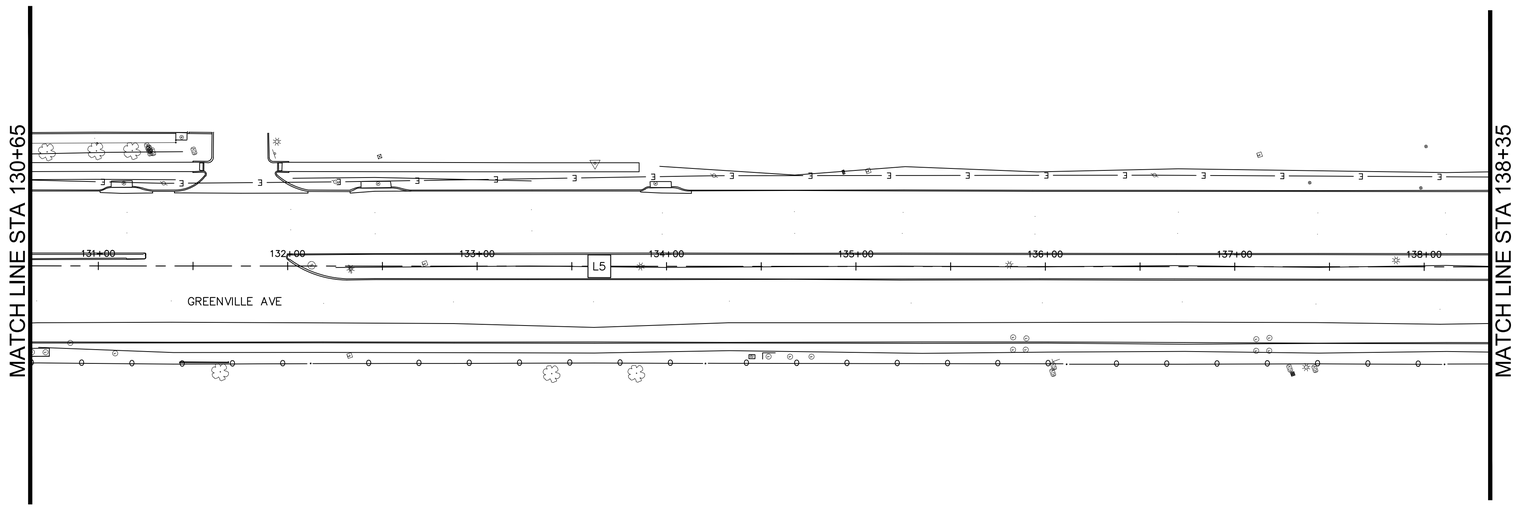
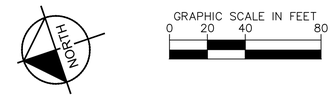
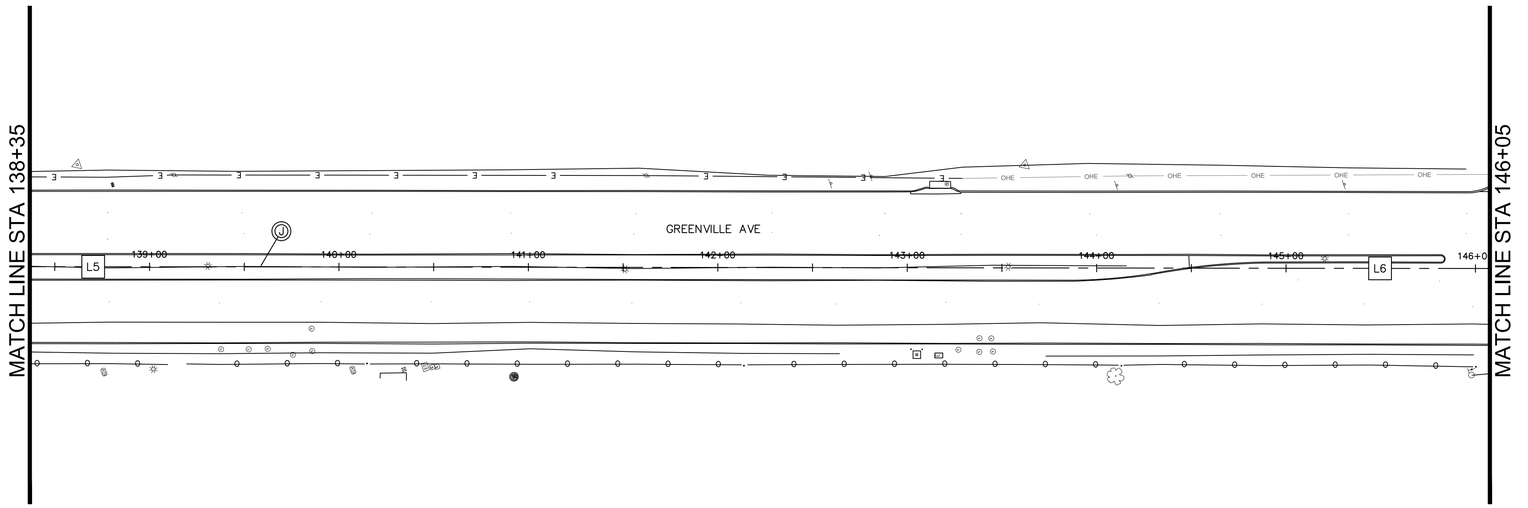
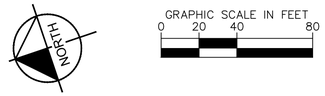




LINE TABLE		
LINE	LENGTH	BEARING
L5	1187.88	S18°41'04.26"W





LINE TABLE		
LINE	LENGTH	BEARING
L5	1187.88	S18°41'04.26"W
L6	1182.38	S18°43'25.95"W

POINT TABLE				
POINT	STATION CONTROL	DESC.	NORTHING	EASTING
J	139+58.46	PC	7025251.79	2509086.80

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

PROJECT CONTROL
GREENVILLE AVENUE
STA 130+65 – STA 146+05

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.16
CONT.	SECT.	JOB	
0918	47	473	

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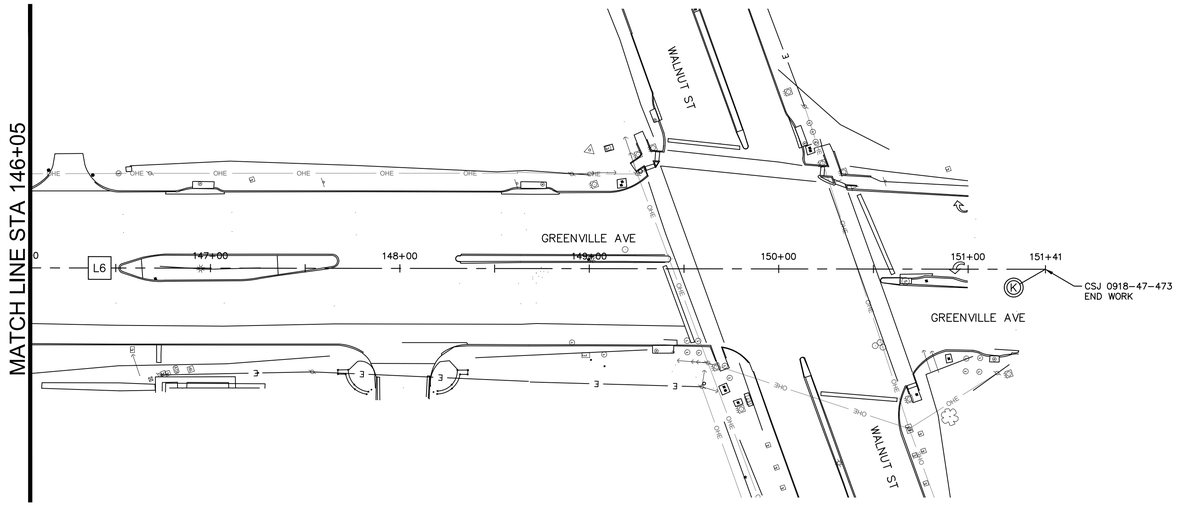

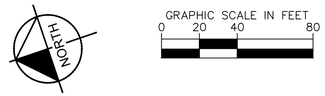

LINE TABLE		
LINE	LENGTH	BEARING
L6	1182.38	S18°43'25.95"W

POINT TABLE				
POINT	STATION CONTROL	DESC.	NORTHING	EASTING
K	151+40.84	END	7024131.99	2508707.25

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

PROJECT CONTROL
GREENVILLE AVENUE
STA 146+05 – STA 151+00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	
CONT.	SECT.	JOB	0.17
0918	47	473	

Plotted By:Galindo, Alejandra October 03, 2025 02:24:23pm K:\LAC_TPTO\project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\PROJECT CONTROL.dwg
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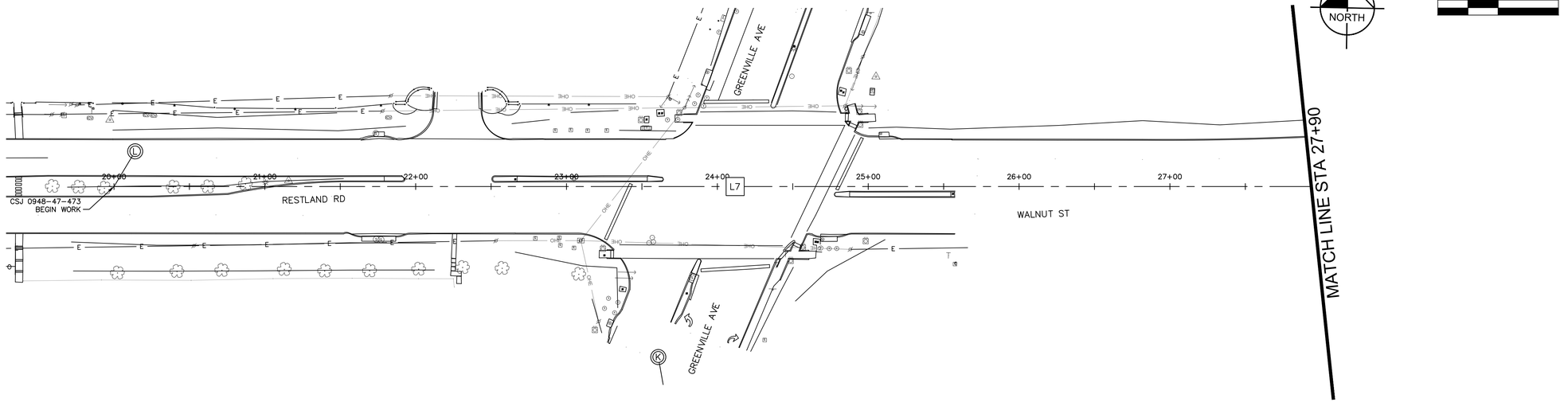
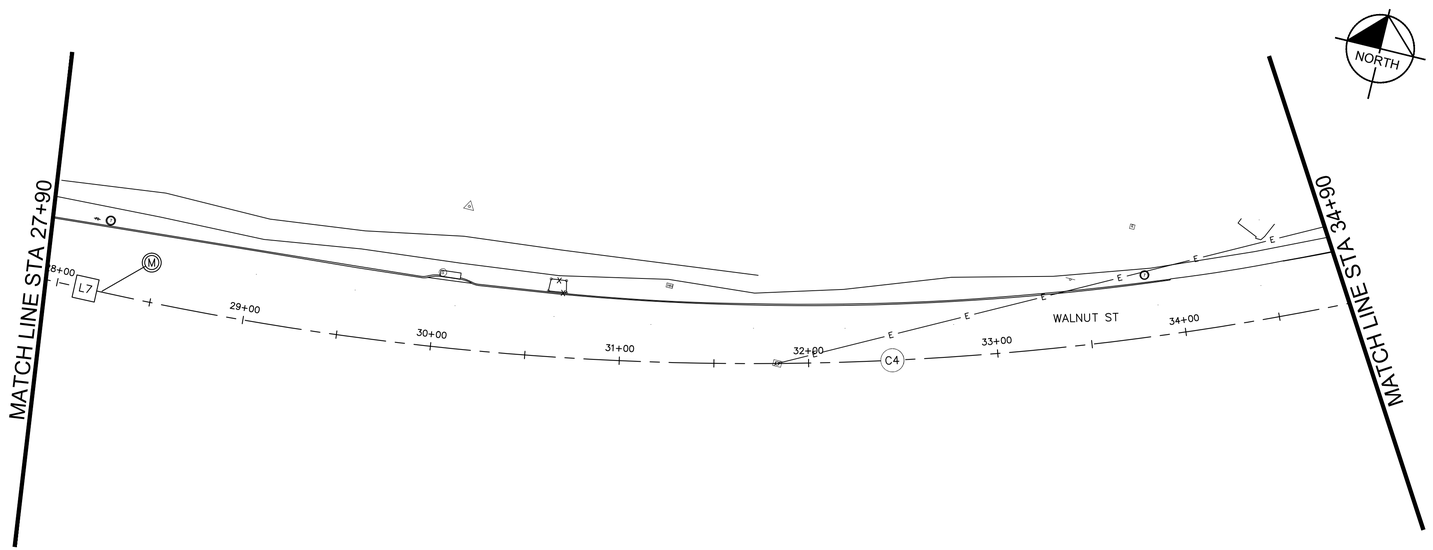


LINE TABLE		
LINE	LENGTH	BEARING
L7	823.54	N88°47'26.61"E

POINT TABLE				
POINT	STATION CONTROL	DESC.	NORTHING	EASTING
L	20+00.00	BEGIN	7024256.34	2508340.35



CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C4	1579.42'	841.42'	N73°32'05"E	831.51'	30°31'26"	430.95'

LINE TABLE		
LINE	LENGTH	BEARING
L7	823.54	N88°47'26.61"E

POINT TABLE				
POINT	STATION CONTROL	DESC.	NORTHING	EASTING
M	28+23.54	PC	7024273.72	2509163.71

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

PROJECT CONTROL
WALNUT STREET
STA 20+00 – STA 34+90

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	
CONT.	SECT.	JOB	0.18
0918	47	473	

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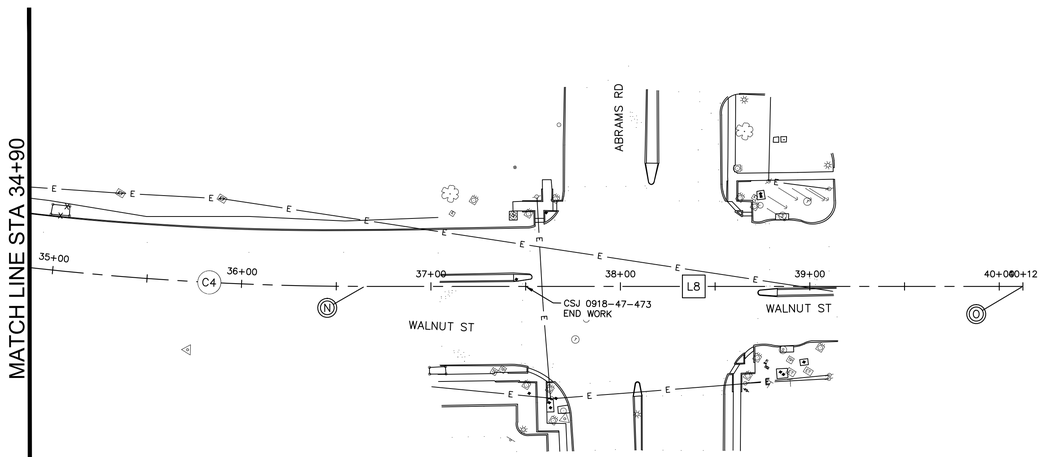

GRAPHIC SCALE IN FEET
0 20 40 80

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C4	1579.42'	841.42'	N73°32'05"E	831.51'	30°31'26"	430.95'

LINE TABLE		
LINE	LENGTH	BEARING
L8	347.53	N58°16'21.47"E

POINT TABLE				
POINT	STATION CONTROL	DESC.	NORTHING	EASTING
N	36+64.97	PC	7024509.40	2509961.12
O	40+12.50	END	7024692.15	2510256.71

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

PROJECT CONTROL
WALNUT STREET
STA 34+90 – STA 40+00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	
CONT.	SECT.	JOB	0.19
0918	47	473	

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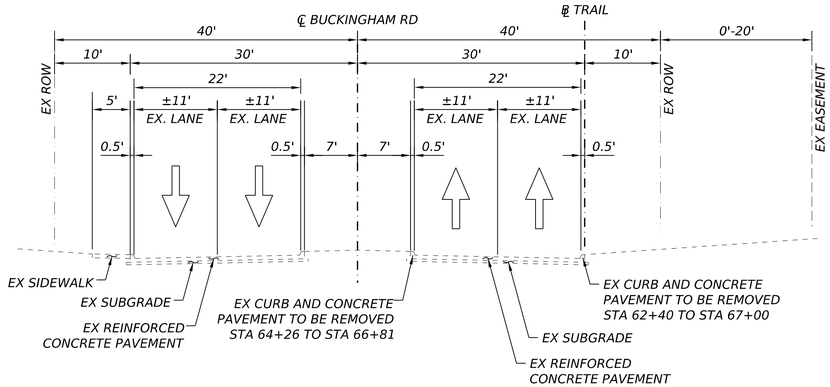
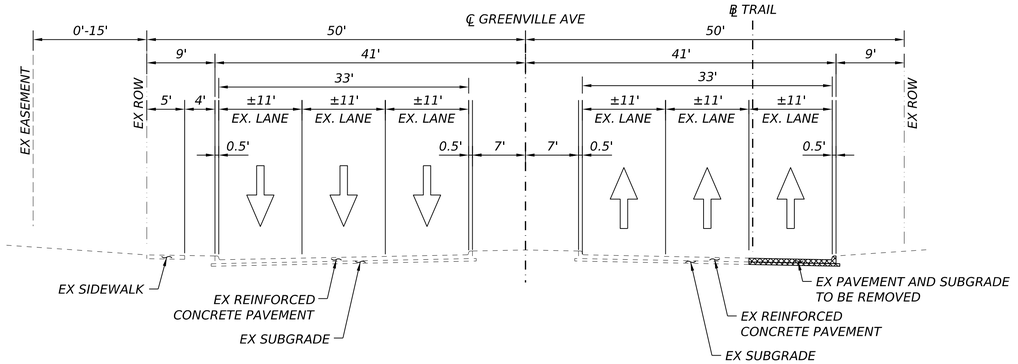


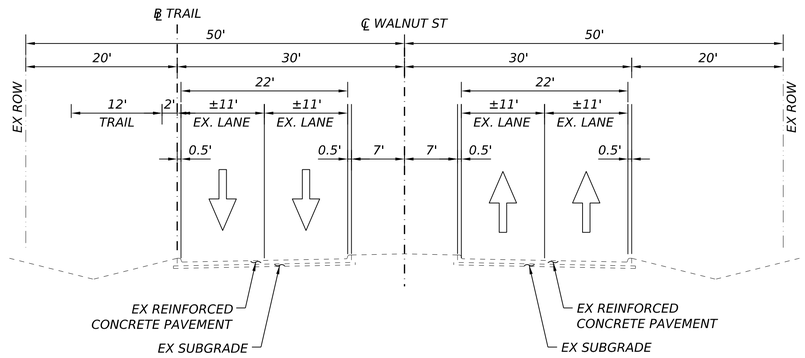
BUCKINGHAM RD EXISTING TYPICAL SECTIONS

℄ BUCKINGHAM STA 51+61.79 TO STA 67+00.00
(℄ TRAIL STA 10+61.88 TO STA 26+24.72)



GREENVILLE AVE EXISTING TYPICAL SECTIONS

℄ GREENVILLE STA 101+87.55 TO STA 149+00.00
(℄ TRAIL STA 26+24.72 TO STA 72+08.41)



WALNUT ST EXISTING TYPICAL SECTIONS

℄ WALNUT STA 24+65.00 TO STA 37+50.00
(℄ TRAIL STA 73+14.65 TO STA 85+61.02)

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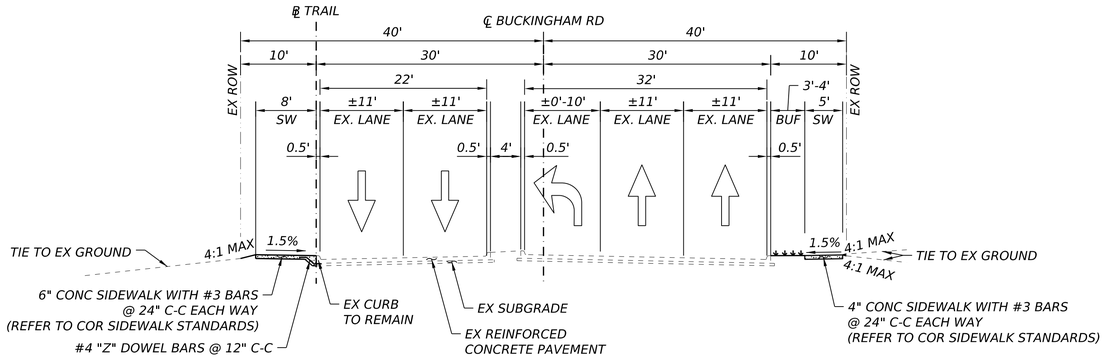
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

EXIST TYPICAL SECTIONS

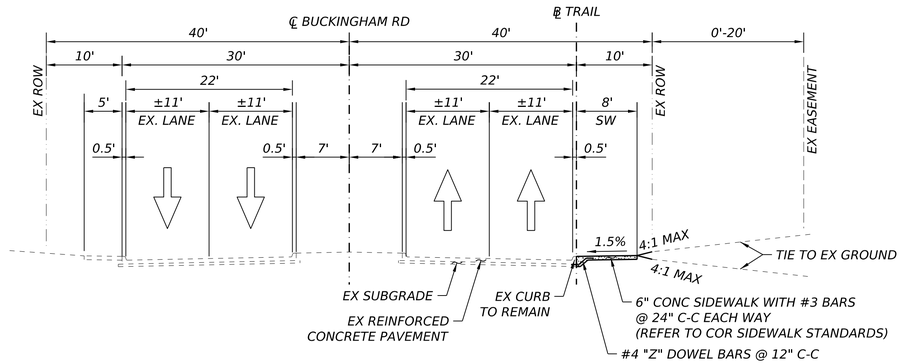
SHEET 1 OF 1

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.20
CONT.	SECT.	JOB	
0918	47	473	



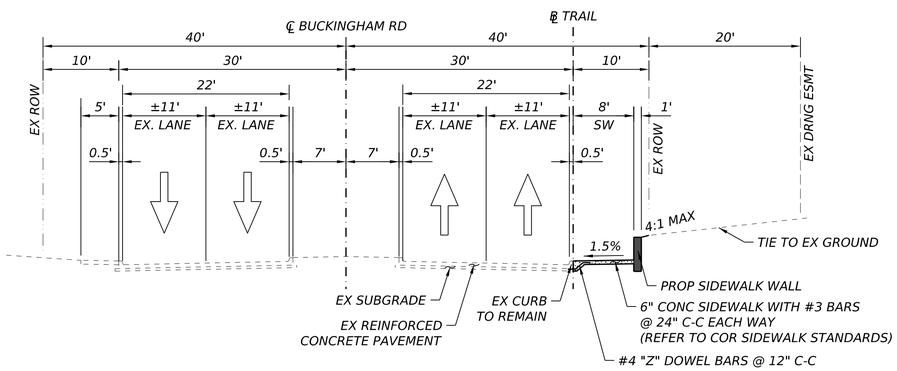
BUCKINGHAM RD PROPOSED TYPICAL SECTIONS

℄ BUCKINGHAM STA 51+61.79 TO STA 52+52.54
(℄ TRAIL STA 10+61.88 TO STA 11+54.89)



BUCKINGHAM RD PROPOSED TYPICAL SECTIONS

℄ BUCKINGHAM STA 53+21.25 TO STA 58+38.67
℄ BUCKINGHAM STA 61+15.00 TO STA 62+40.34
(℄ TRAIL STA 12+64.90 TO STA 17+91.61)
(℄ TRAIL STA 20+66.85 TO STA 21+92.18)



BUCKINGHAM RD PROPOSED TYPICAL SECTIONS

℄ BUCKINGHAM STA 58+38.67 TO STA 61+15.00
(℄ TRAIL STA 17+91.61 TO STA 20+66.85)

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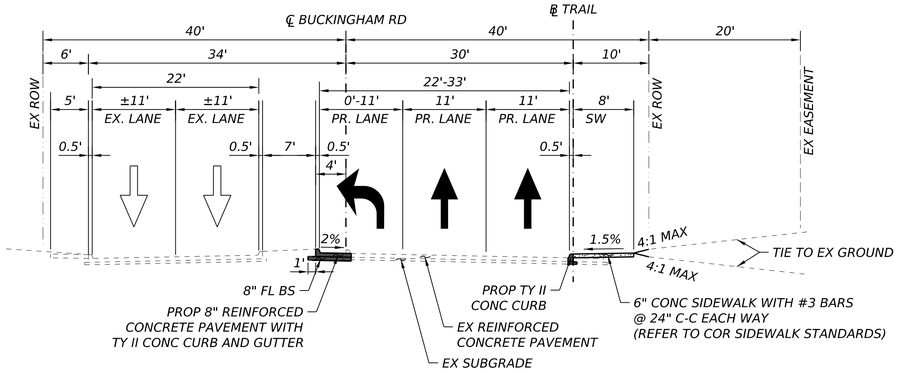
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

PROP TYPICAL SECTIONS

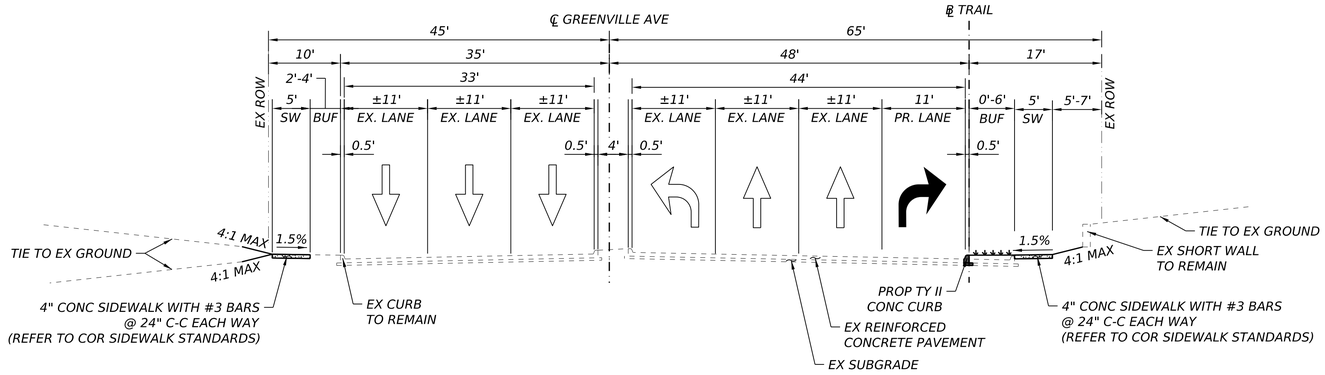
SHEET 1 OF 2

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.21
CONT.	SECT.	JOB	
0918	47	473	



BUCKINGHAM RD PROPOSED TYPICAL SECTIONS

℄ BUCKINGHAM STA 62+40.34 TO STA 67+00.00
(℄ TRAIL STA 21+92.18 TO STA 26+24.72)

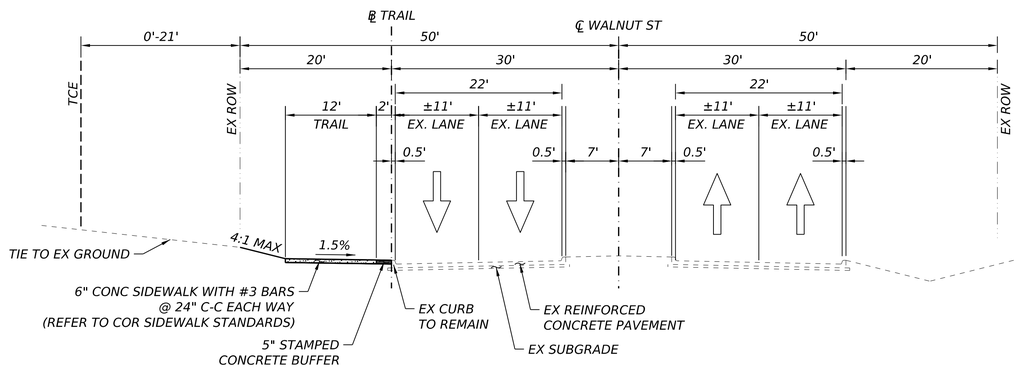


GREENVILLE AVE PROPOSED TYPICAL SECTIONS

℄ GREENVILLE STA 101+87.55 TO STA 104+00.00

GREENVILLE AVE PROPOSED TYPICAL SECTIONS

℄ GREENVILLE STA 104+00.00 TO STA 149+00.00
(℄ TRAIL STA 26+24.72 TO STA 72+08.41)



WALNUT ST PROPOSED TYPICAL SECTIONS

℄ WALNUT STA 24+65.00 TO STA 37+50.00
(℄ TRAIL STA 73+14.65 TO STA 85+61.02)

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

PROP TYPICAL SECTIONS

SHEET 2 OF 2

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.22
CONT.	SECT.	JOB	
0918	47	473	

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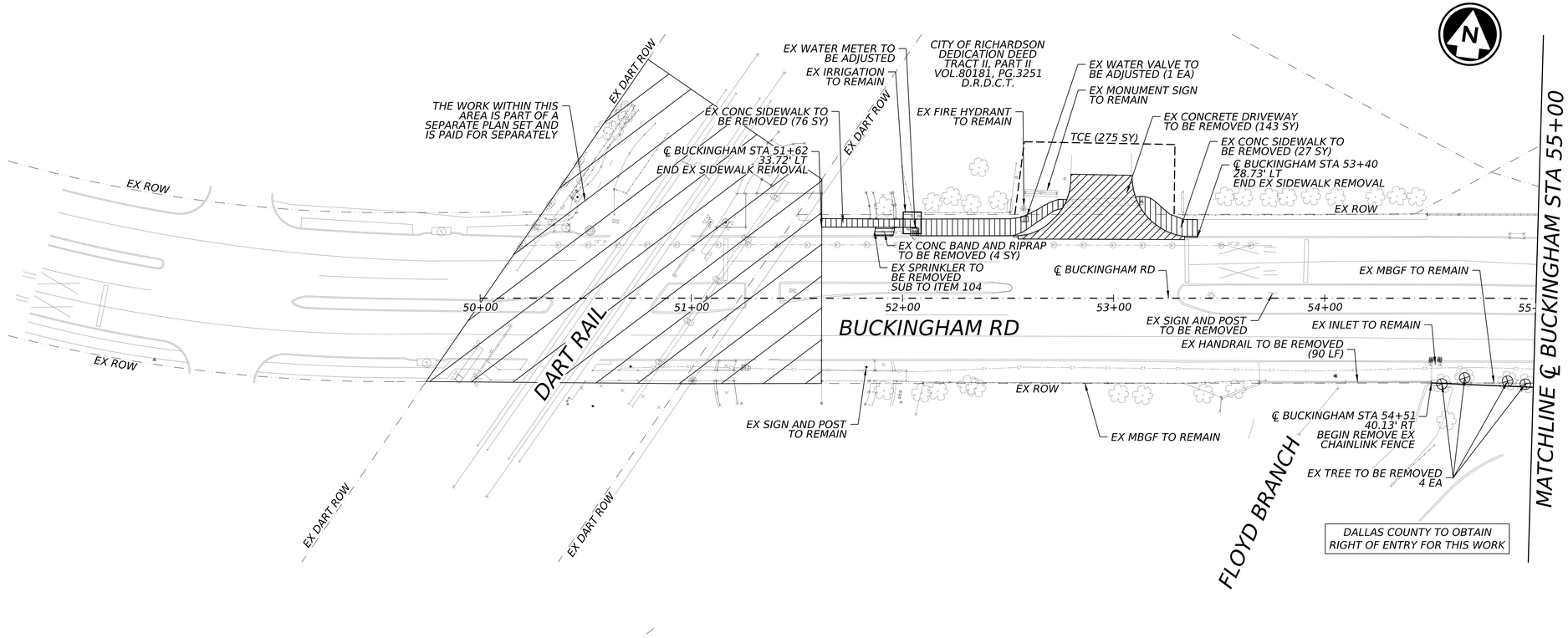

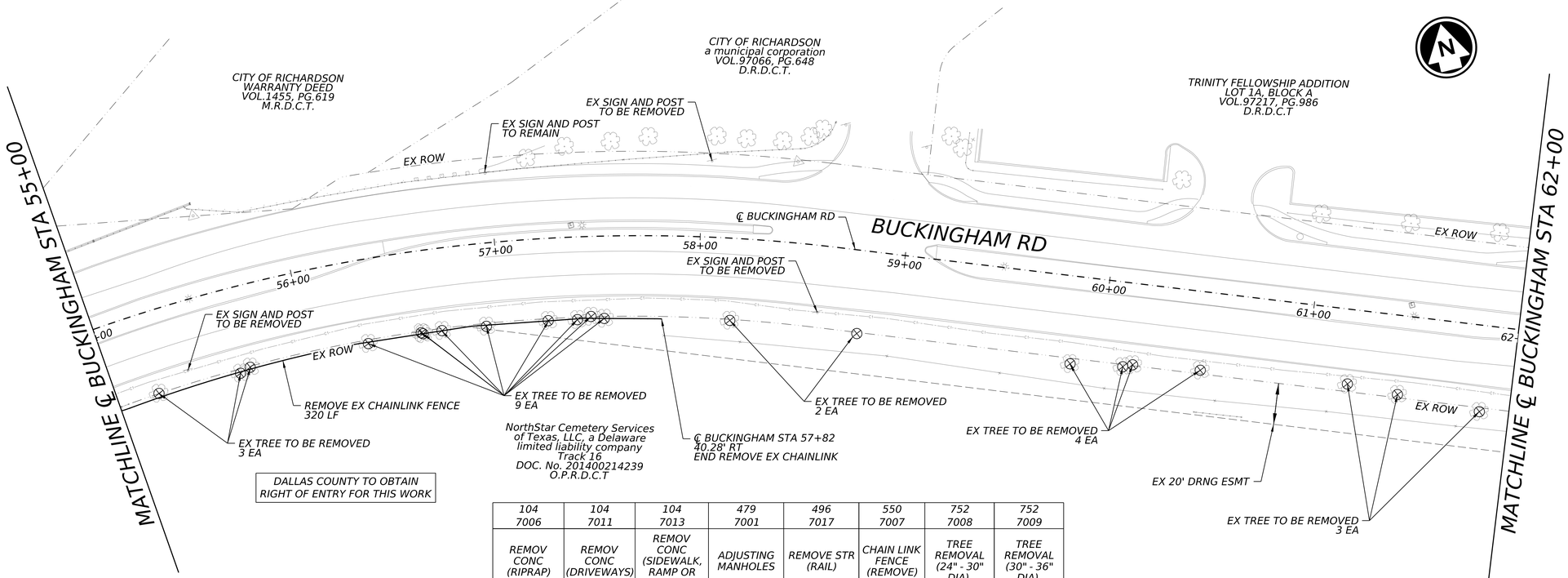

104 7006	104 7011	104 7013	479 7001	496 7017	550 7007	752 7008	752 7009
REMOV CONC (RIPRAP)	REMOV CONC (DRIVEWAYS)	REMOV CONC (SIDEWALK, RAMP OR SUP)	ADJUSTING MANHOLES	REMOVE STR (RAIL)	CHAIN LINK FENCE (REMOVE)	TREE REMOVAL (24" - 30" DIA)	TREE REMOVAL (30" - 36" DIA)
SY	SY	SY	EA	LF	LF	EA	EA
4	143	103	2	90	320	15	10

0' 30' 60'

LEGEND

- EX ROW
- TEMP CONSTRUCTION EASEMENT
- CONC PAVEMENT TO BE REMOVED
- CONC SIDEWALK AND RAMPS TO BE REMOVED
- CONC DRIVEWAY TO BE REMOVED
- CONC RIPRAP TO BE REMOVED
- EX TREE TO BE REMOVED
- EX UTILITY FEATURE TO BE ADJUSTED

NOTES:

1. ALL LANDSCAPING AND TREES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED. IF DAMAGED, CONTRACTOR SHALL RESTORE TO EQUAL OR BETTER CONDITION.
2. REFER TO SIGNING AND PAVEMENT MARKING PLAN FOR REMOVAL OF EXISTING SIGNS AND PAVEMENT MARKING.
3. ALL EXISTING UTILITIES NEAR CONSTRUCTION LIMITS TO BE PROTECTED UNLESS NOTED OTHERWISE.
4. REFER TO EXISTING TRAFFIC SIGNAL PLAN FOR REMOVAL OF TRAFFIC SIGNAL RELATED ITEMS.
5. REFER TO DRAINAGE PLAN AND PROFILE FOR REMOVAL OF EXISTING DRAINAGE ITEMS.
6. REMOVAL OF CONCRETE CURB, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTAL WORK, SHALL BE CONSIDERED SUBSIDIARY TO ITEM 104.

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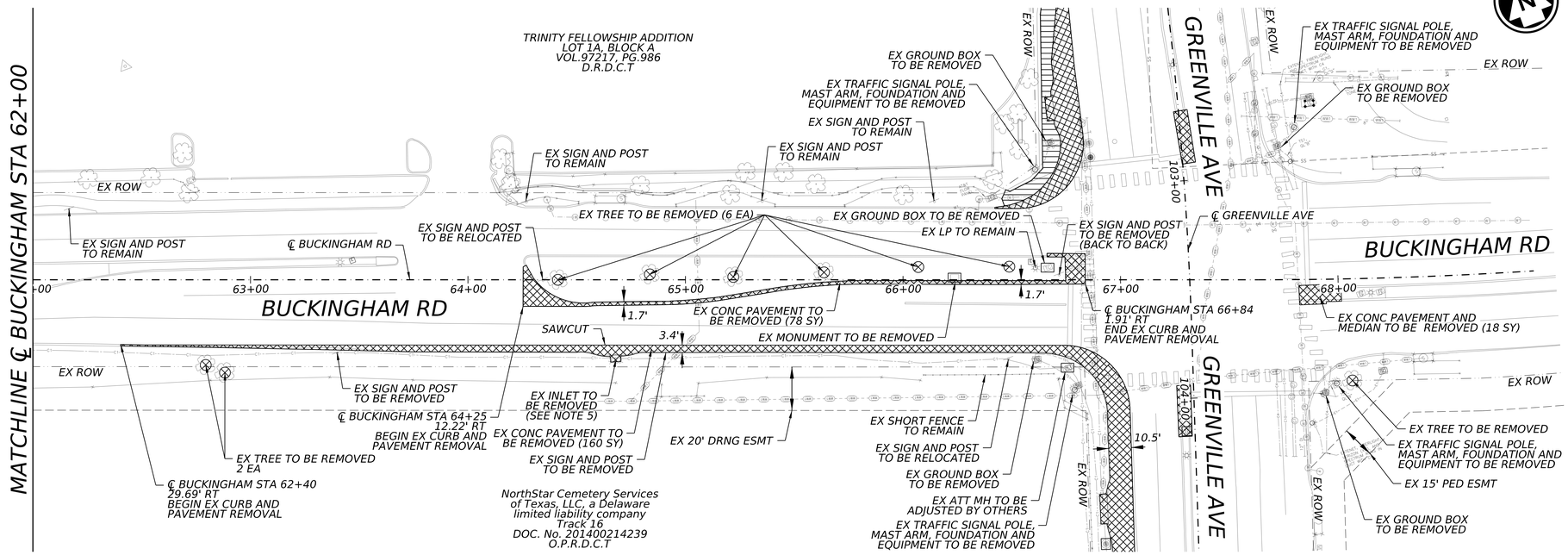
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

REMOVAL PLAN
BEGIN TO ℄ BUCKINGHAM STA 62+00

SHEET 1 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	2.01
CONT.	SECT.	JOB	
0918	47	473	



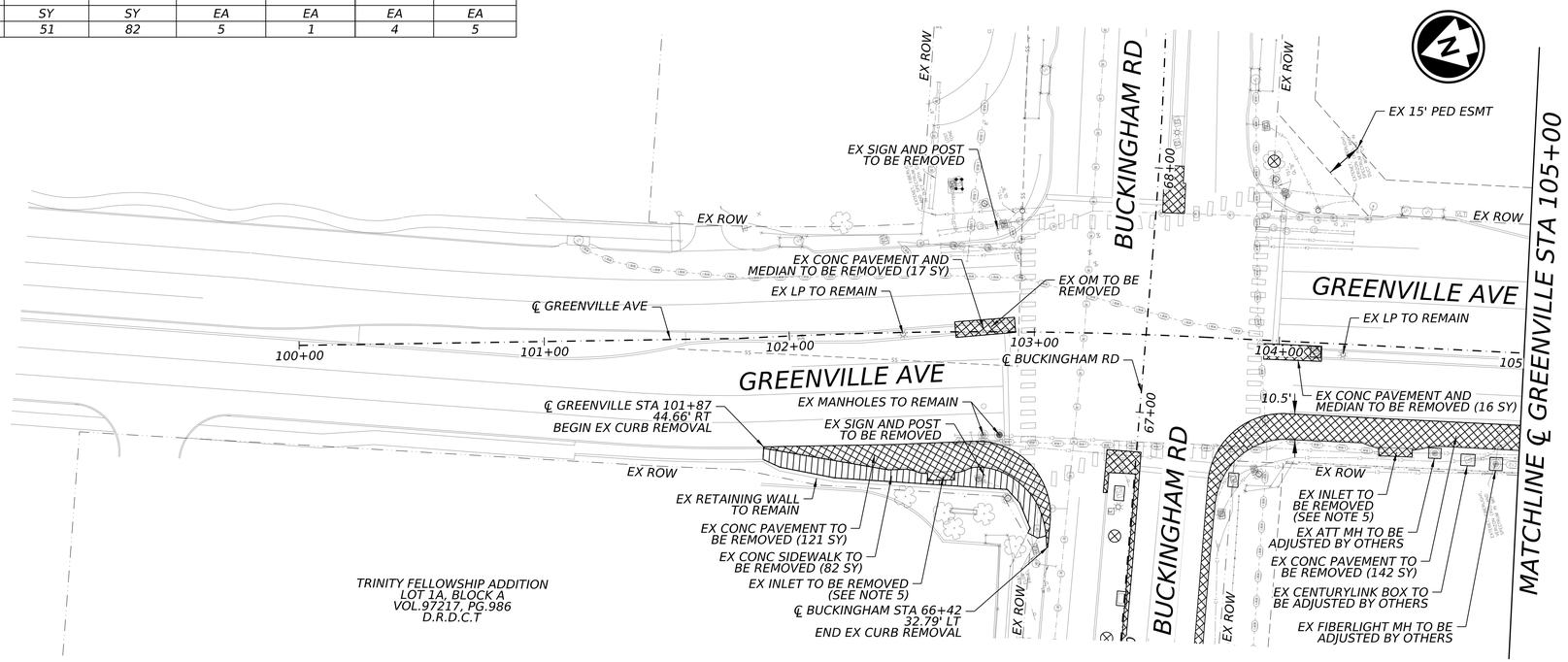
104 7001	104 7008	104 7013	624 7013	680 7004	752 7008	752 7009
REMOV CONC (PAV)	REMOV CONC (MEDIANS)	REMOV CONC (SIDEWALK, RAMP OR SUP)	REMOVE GROUND BOX	REMOVING TRAFFIC SIGNALS	TREE REMOVAL (24" - 30" DIA)	TREE REMOVAL (30" - 36" DIA)
SY	SY	SY	EA	EA	EA	EA
501	51	82	5	1	4	5

LEGEND

- EX ROW
- TEMP CONSTRUCTION EASEMENT
- CONC PAVEMENT TO BE REMOVED
- CONC SIDEWALK AND RAMPS TO BE REMOVED
- CONC DRIVEWAY TO BE REMOVED
- CONC RIPRAP TO BE REMOVED
- EX TREE TO BE REMOVED
- EX UTILITY FEATURE TO BE ADJUSTED

NOTES:

1. ALL LANDSCAPING AND TREES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED. IF DAMAGED, CONTRACTOR SHALL RESTORE TO EQUAL OR BETTER CONDITION.
2. REFER TO SIGNING AND PAVEMENT MARKING PLAN FOR REMOVAL OF EXISTING SIGNS AND PAVEMENT MARKING.
3. ALL EXISTING UTILITIES NEAR CONSTRUCTION LIMITS TO BE PROTECTED UNLESS NOTED OTHERWISE.
4. REFER TO EXISTING TRAFFIC SIGNAL PLAN FOR REMOVAL OF TRAFFIC SIGNAL RELATED ITEMS.
5. REFER TO DRAINAGE PLAN AND PROFILE FOR REMOVAL OF EXISTING DRAINAGE ITEMS.
6. REMOVAL OF CONCRETE CURB, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTAL WORK, SHALL BE CONSIDERED SUBSIDIARY TO ITEM 104.



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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

REMOVAL PLAN
℄ BUCKINGHAM STA 62+00 TO
℄ GREENVILLE STA 105+00

SHEET 2 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	2.02
CONT.	SECT.	JOB	
0918	47	473	

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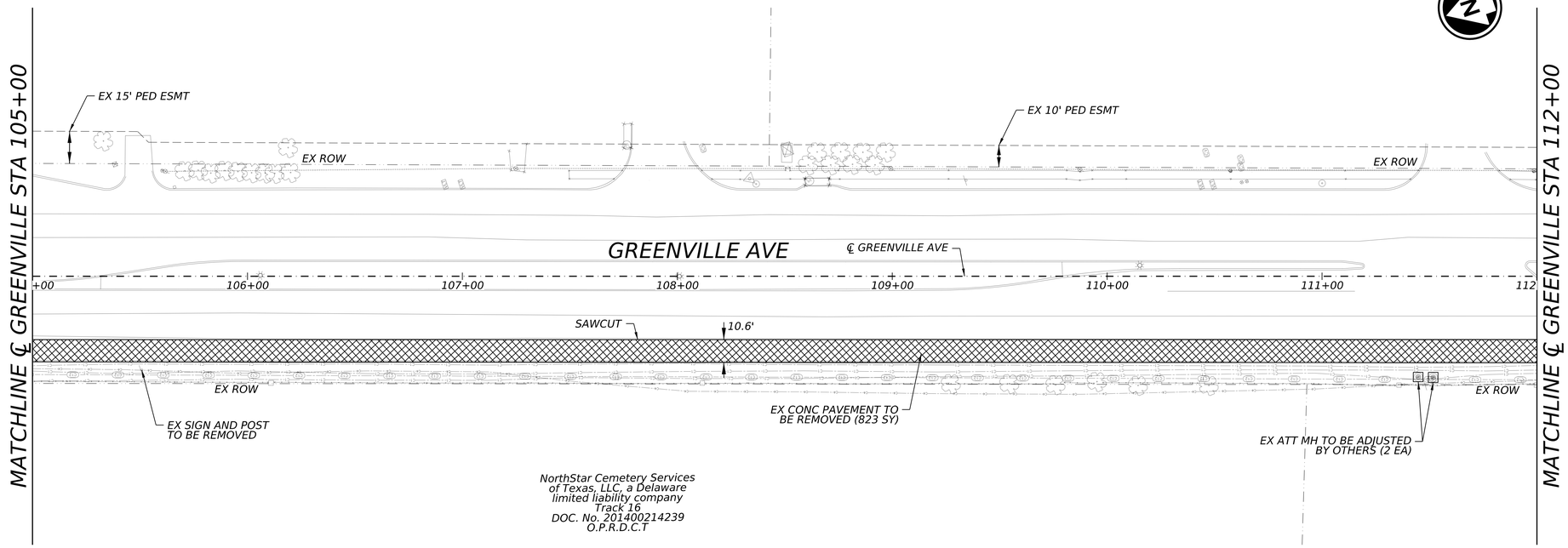
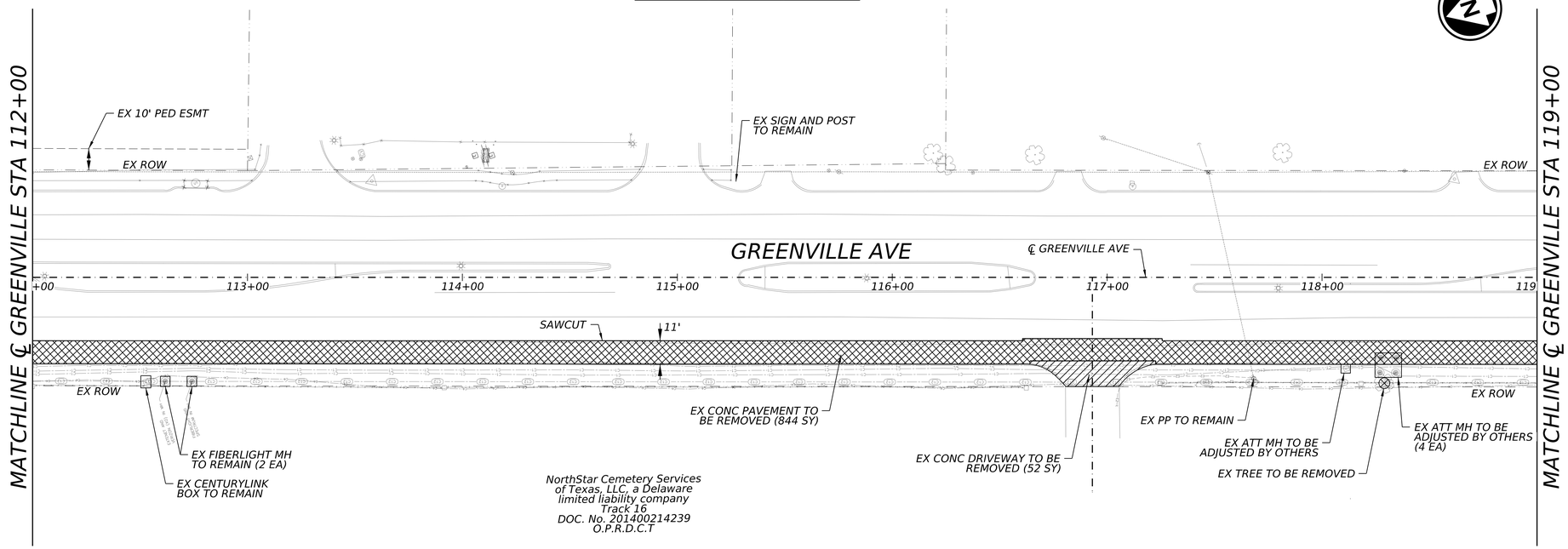


104 7001	104 7011	752 7009
REMOV CONC (PAV)	REMOV CONC (DRIVEWAYS)	TREE REMOVAL (30" - 36" DIA)
SY	SY	EA
1667	52	1



0' 30' 60'

LEGEND

- EX ROW
- TEMP CONSTRUCTION EASEMENT
- CONC PAVEMENT TO BE REMOVED
- CONC SIDEWALK AND RAMPS TO BE REMOVED
- CONC DRIVEWAY TO BE REMOVED
- CONC RIPRAP TO BE REMOVED
- EX TREE TO BE REMOVED
- EX UTILITY FEATURE TO BE ADJUSTED

NOTES:

1. ALL LANDSCAPING AND TREES NOT INDICATED TO BE REMOVED SHALL BE PROTECTED. IF DAMAGED, CONTRACTOR SHALL RESTORE TO EQUAL OR BETTER CONDITION.
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3. ALL EXISTING UTILITIES NEAR CONSTRUCTION LIMITS TO BE PROTECTED UNLESS NOTED OTHERWISE.
4. REFER TO EXISTING TRAFFIC SIGNAL PLAN FOR REMOVAL OF TRAFFIC SIGNAL RELATED ITEMS.
5. REFER TO DRAINAGE PLAN AND PROFILE FOR REMOVAL OF EXISTING DRAINAGE ITEMS.
6. REMOVAL OF CONCRETE CURB, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTAL WORK, SHALL BE CONSIDERED SUBSIDIARY TO ITEM 104.

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

REMOVAL PLAN
℄ GREENVILLE STA 105+00 TO
℄ GREENVILLE STA 119+00

SHEET 3 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	2.03
CONT.	SECT.	JOB	
0918	47	473	

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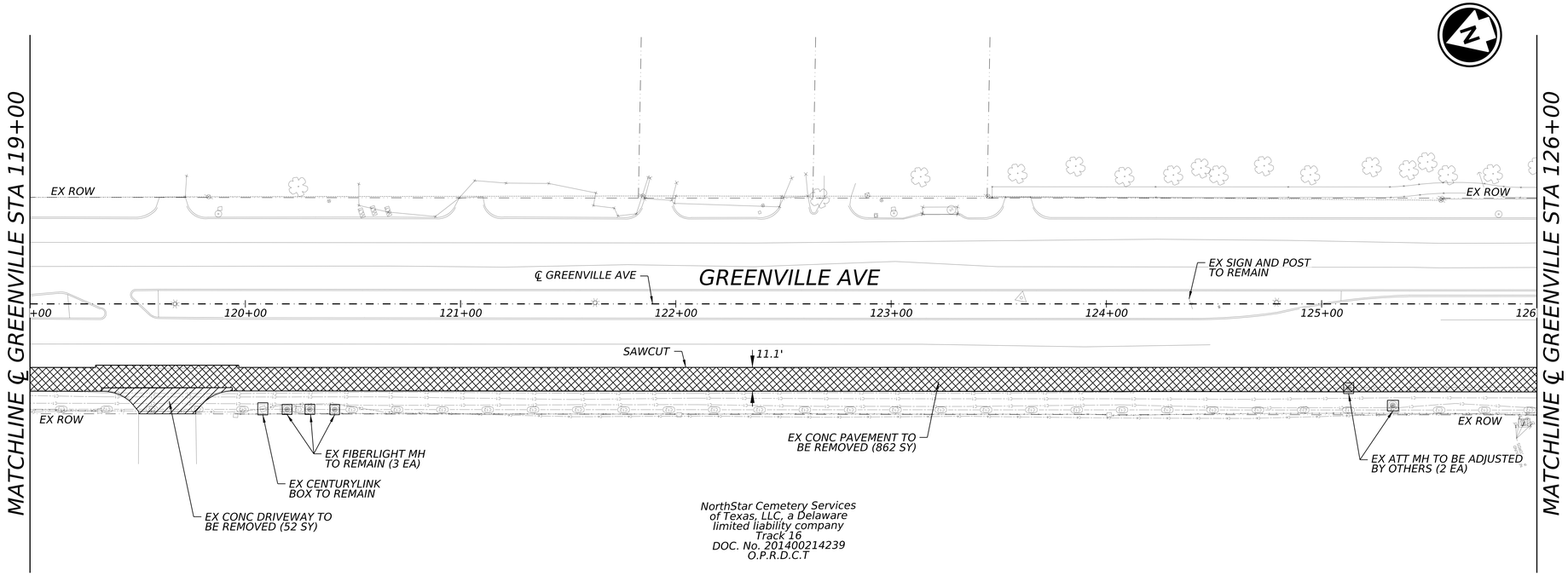
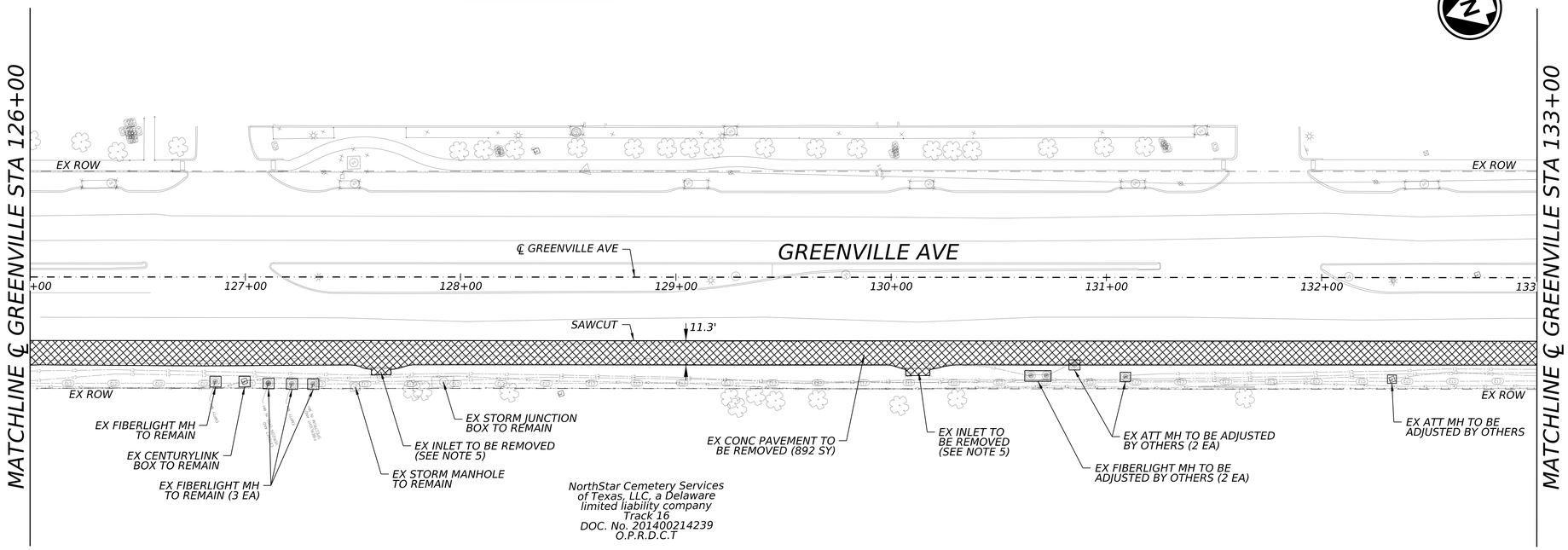


104 7001	104 7011
REMOV CONC (PAV)	REMOV CONC (DRIVEWAYS)
SY	SY
1754	52



0' 30' 60'

LEGEND

- EX ROW
- TEMP CONSTRUCTION EASEMENT
- CONC PAVEMENT TO BE REMOVED
- CONC SIDEWALK AND RAMPS TO BE REMOVED
- CONC DRIVEWAY TO BE REMOVED
- CONC RIPRAP TO BE REMOVED
- EX TREE TO BE REMOVED
- EX UTILITY FEATURE TO BE ADJUSTED

NOTES:

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6. REMOVAL OF CONCRETE CURB, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTAL WORK, SHALL BE CONSIDERED SUBSIDIARY TO ITEM 104.

STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED
PROFESSIONAL ENGINEER
2/20/2026

OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

REMOVAL PLAN
℄ GREENVILLE STA 119+00 TO
℄ GREENVILLE STA 133+00

SHEET 4 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	2.04
CONT.	SECT.	JOB	
0918	47	473	

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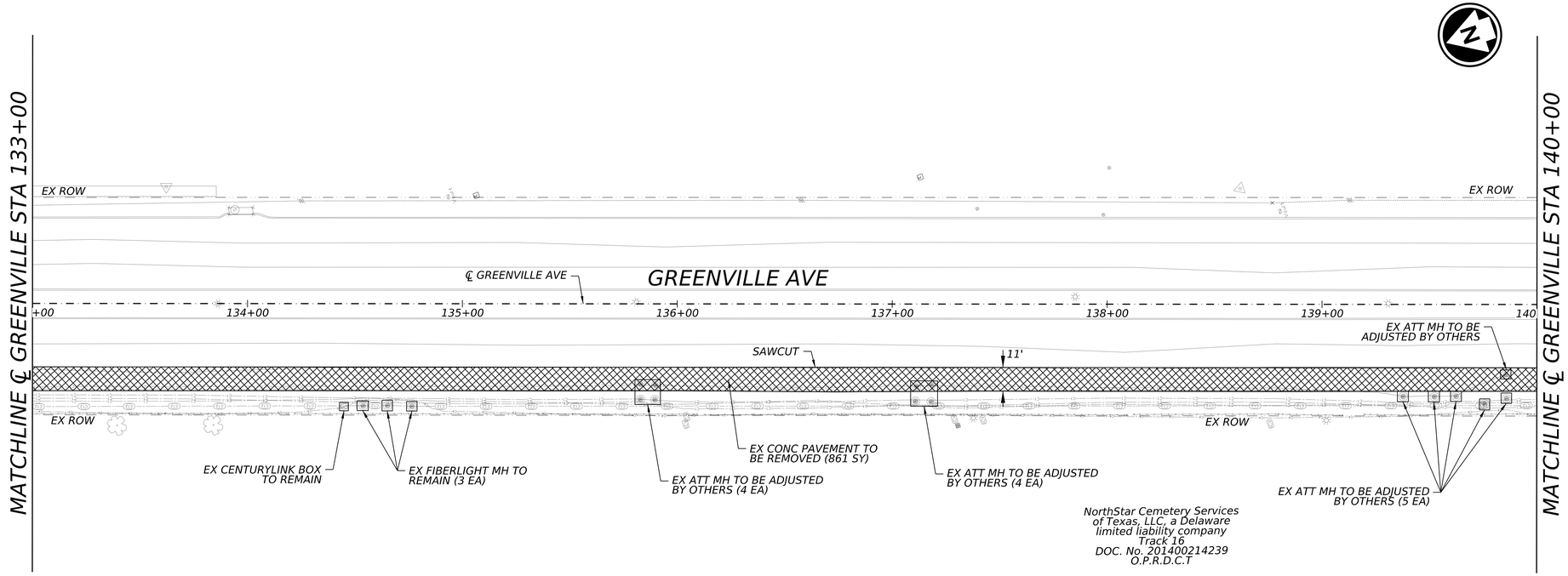
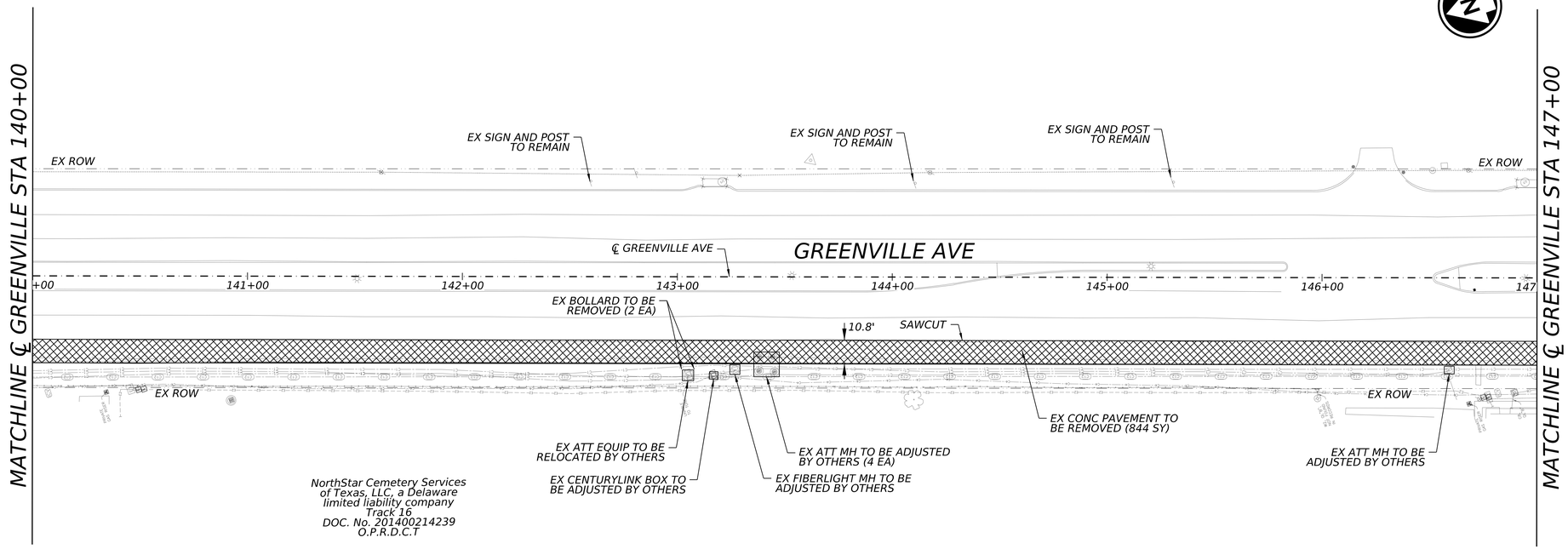


104	496
7001	7028
REMOV CONC (PAV)	REMOVE STR (BOLLARD)
SY	EA
1705	2



0' 30' 60'

LEGEND

- EX ROW
- TEMP CONSTRUCTION EASEMENT
- CONC PAVEMENT TO BE REMOVED
- CONC SIDEWALK AND RAMPS TO BE REMOVED
- CONC DRIVEWAY TO BE REMOVED
- CONC RIPRAP TO BE REMOVED
- EX TREE TO BE REMOVED
- EX UTILITY FEATURE TO BE ADJUSTED

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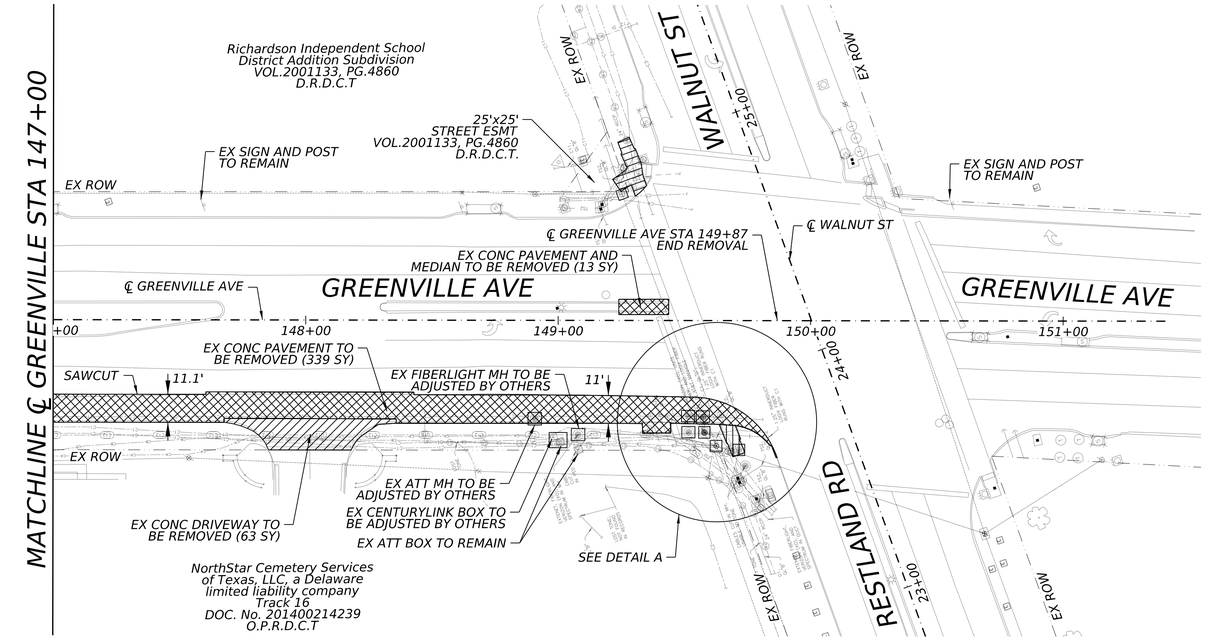
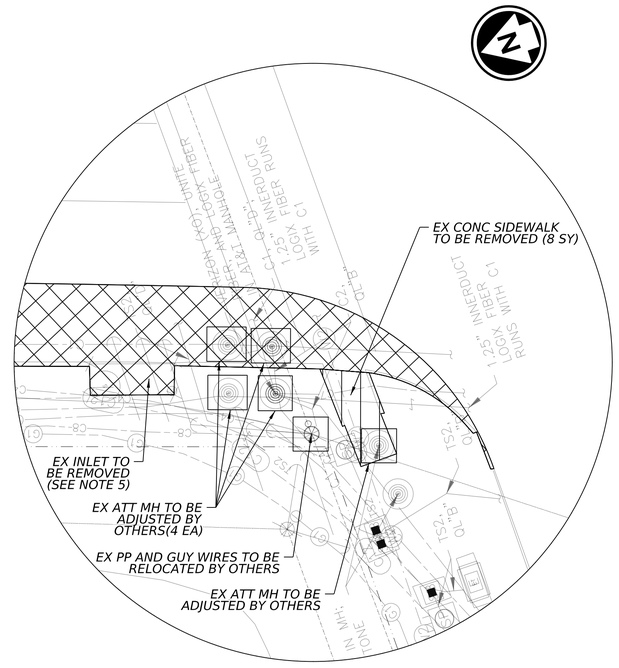
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

REMOVAL PLAN
℄ GREENVILLE STA 133+00 TO
℄ GREENVILLE STA 147+00

SHEET 5 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	2.05
CONT.	SECT.	JOB	
0918	47	473	

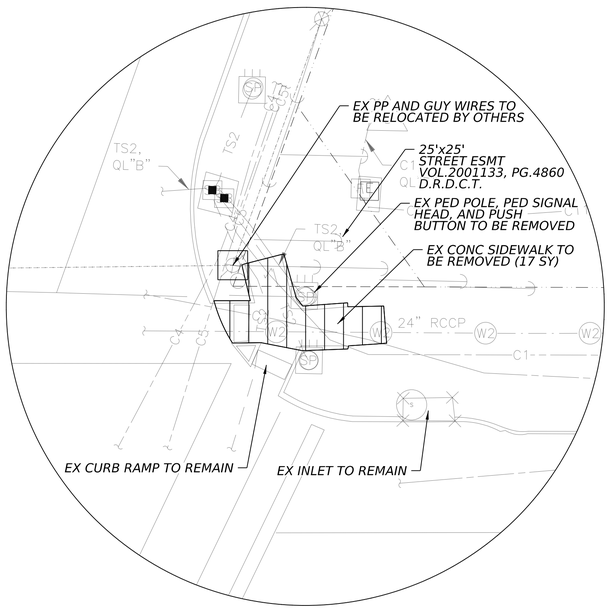




DETAIL A

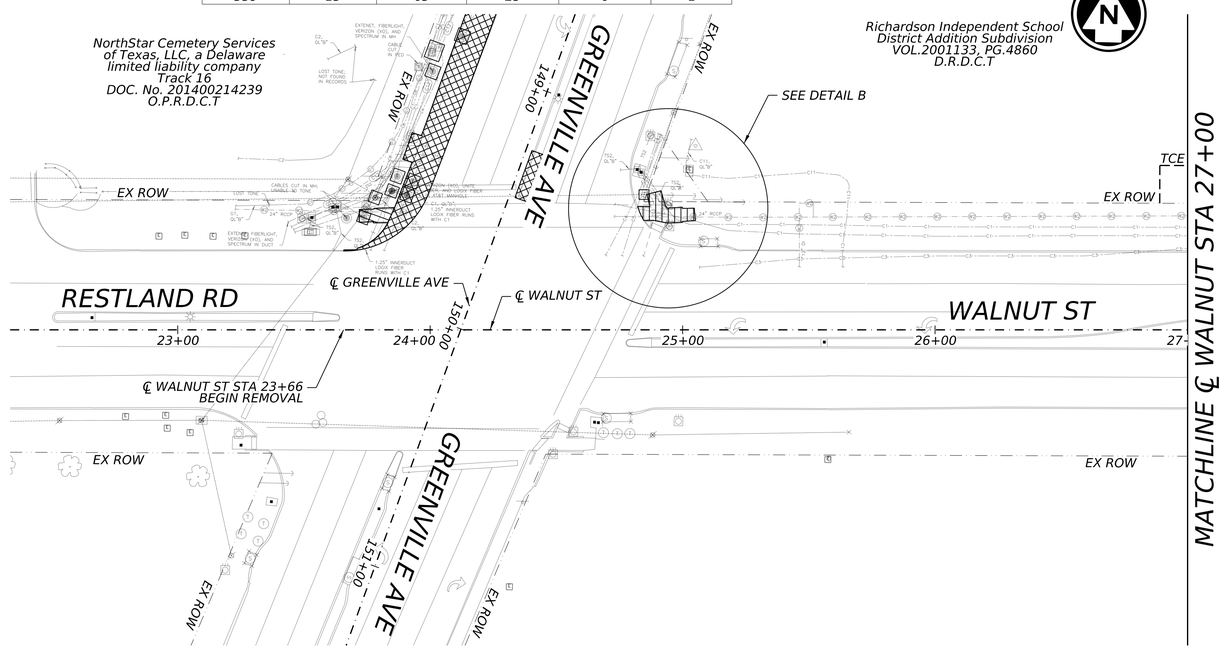
SCALE: 1"=10'

104 7001	104 7008	104 7011	104 7013	690 7033	690 7089
REMOV CONC (PAV)	REMOV CONC (MEDIANS)	REMOV CONC (DRIVEWAYS)	REMOV CONC (SIDEWALK, RAMP OR SUP)	REMOVAL OF TRAFFIC SIGNAL POLE FND	REMOVE PED POLE ASSM
SY	SY	SY	SY	LF	EA
339	13	63	25	6	1



DETAIL B

SCALE: 1"=10'



0' 30' 60'

LEGEND

- EX ROW
- TEMP CONSTRUCTION EASEMENT
- CONC PAVEMENT TO BE REMOVED
- CONC SIDEWALK AND RAMPS TO BE REMOVED
- CONC DRIVEWAY TO BE REMOVED
- CONC RIPRAP TO BE REMOVED
- EX TREE TO BE REMOVED
- EX UTILITY FEATURE TO BE ADJUSTED

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STATE OF TEXAS
IN SUNG HWANG
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2/20/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

REMOVAL PLAN
℄ GREENVILLE STA 147+00 TO
℄ GREENVILLE STA 149+87
℄ WALNUT STA 23+66 TO
℄ WALNUT STA 27+00

SHEET 6 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	2.06
CONT.	SECT.	JOB	
0918	47	473	

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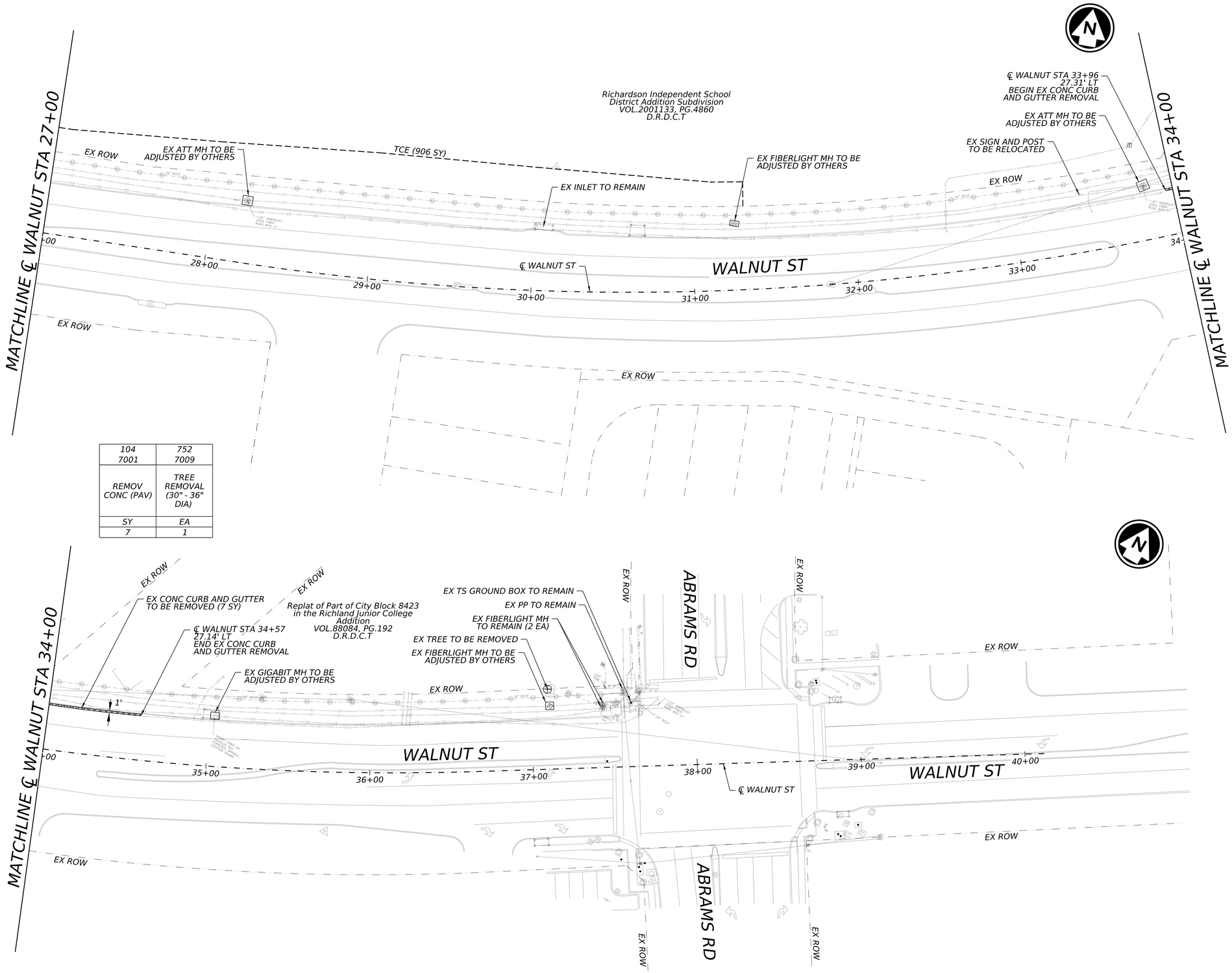

104	752
7001	7009
REMOV CONC (PAV)	TREE REMOVAL (30" - 36" DIA)
SY	EA
7	1

0' 30' 60'

LEGEND

- EX ROW
- TEMP CONSTRUCTION EASEMENT
- CONC PAVEMENT TO BE REMOVED
- CONC SIDEWALK AND RAMPS TO BE REMOVED
- CONC DRIVEWAY TO BE REMOVED
- CONC RIPRAP TO BE REMOVED
- EX TREE TO BE REMOVED
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STATE OF TEXAS
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

REMOVAL PLAN
℄ WALNUT STA 27+00 TO END

SHEET 7 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	2.07
CONT.	SECT.	JOB	
0918	47	473	

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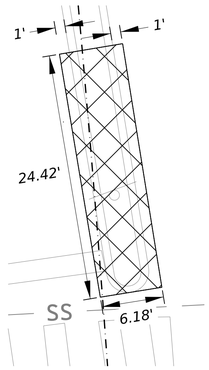
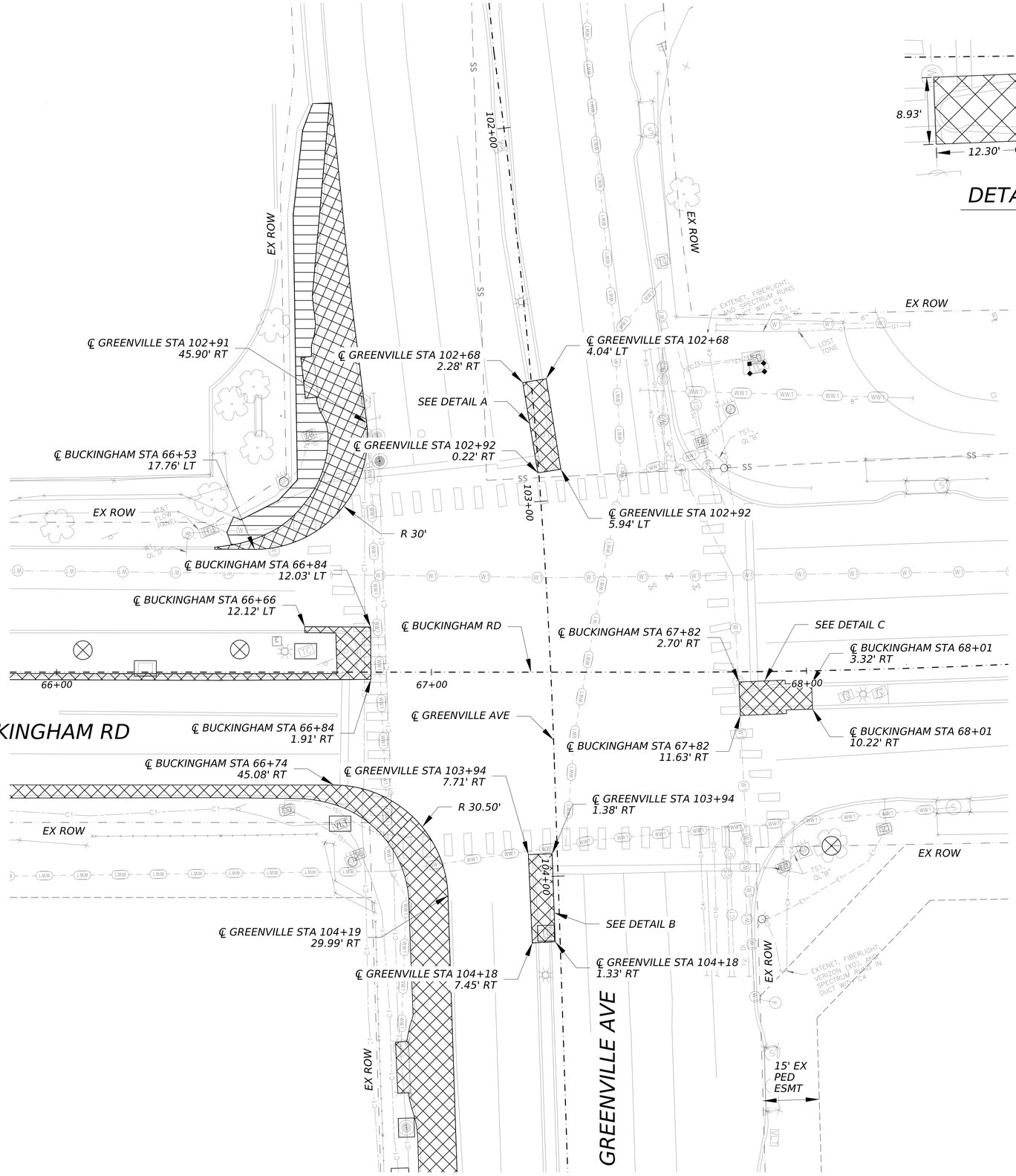
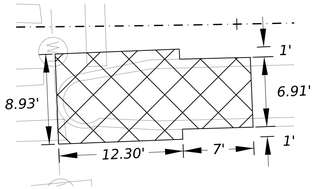


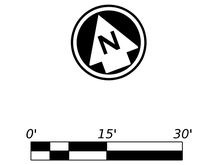
DETAIL A



DETAIL B



DETAIL C



LEGEND

- EX ROW
- EX EASEMENT
- CONC PAVEMENT TO BE REMOVED
- CONC SIDEWALK AND RAMPS TO BE REMOVED
- EX TREE TO BE REMOVED
- EX UTILITY FEATURE TO BE ADJUSTED

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

REMOVAL DETAIL

BUCKINGHAM RD AT
GREENVILLE AVE

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	2.08
CONT.	SECT.	JOB	
0918	47	473	

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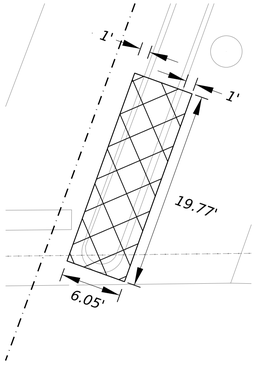
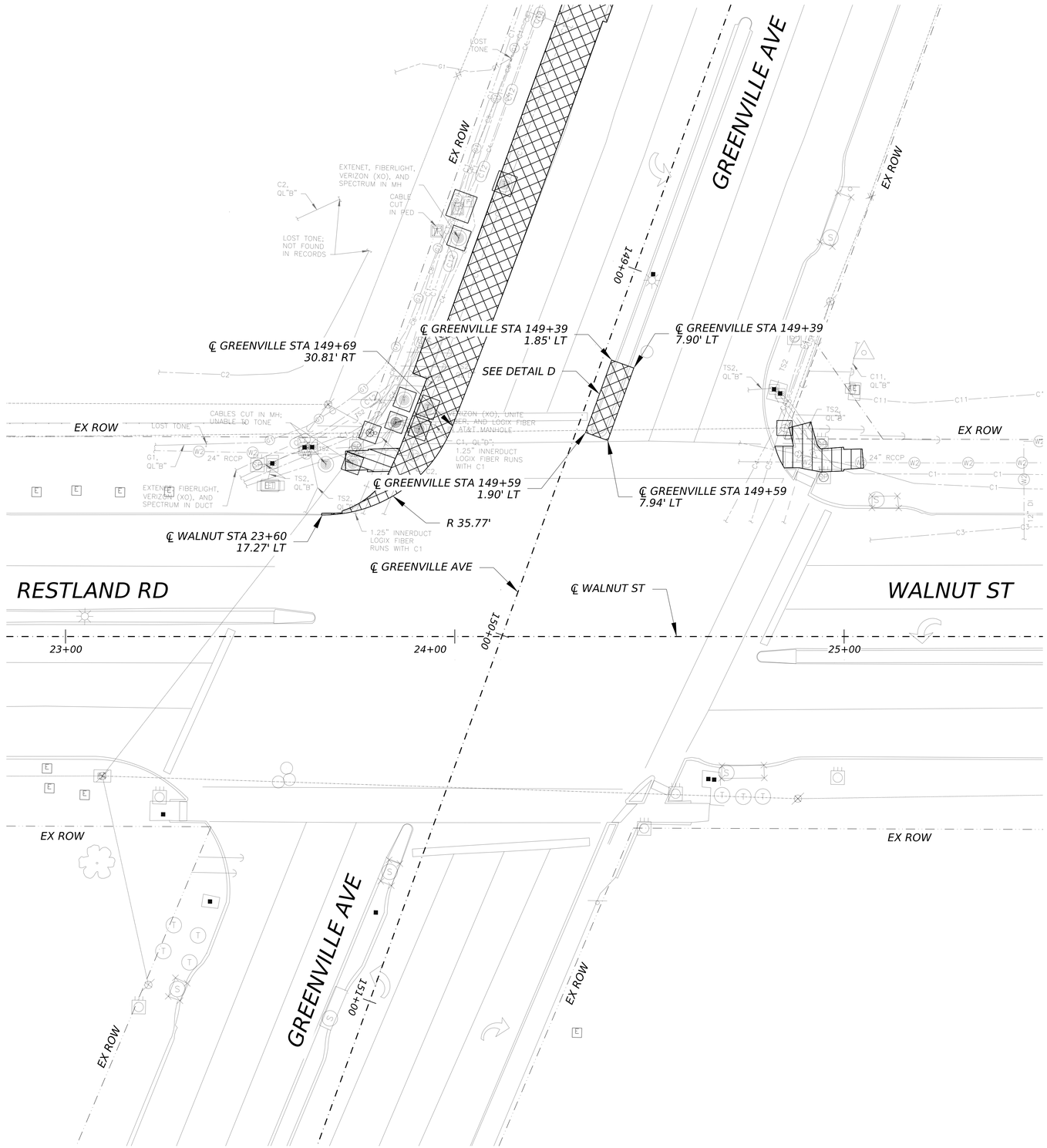


DETAIL D



0' 15' 30'

LEGEND

- EX ROW
- EX EASEMENT
- CONC PAVEMENT TO BE REMOVED
- CONC SIDEWALK AND RAMPS TO BE REMOVED
- EX TREE TO BE REMOVED
- EX UTILITY FEATURE TO BE ADJUSTED

2/20/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

REMOVAL DETAIL

GREENVILLE AVE AT
WALNUT ST

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	2.09
CONT.	SECT.	JOB	
0918	47	473	

Alignment Name: CL_Buckingham
Alignment Description:
Alignment Style: Alignment\Baseline

	Station	Northing	Easting
Element: Linear			
POT (POT)	5000.000 R1	7028959.821	2508575.867
PC (PC)	5476.885 R1	7029021.708	2509048.719
Tangential Direction:	N82.543°E		
Tangential Length:	476.885		
Element: Circular			
PC (PC)	5476.885 R1	7029021.708	2509048.719
PI (PI)	5675.893 R1	7029047.534	2509246.044
CC (CC)		7028229.239	2509152.438
PT (PT)	5866.968 R1	7028977.814	2509432.440
Radius:	799.227		
Delta:	27.965° Right		
Degree of Curvature (Arc):	23.520°		
Length:	390.083		
Tangent:	199.008		
Chord:	386.223		
Middle Ordinate:	23.681		
External:	24.404		
Back Tangent Direction:	N82.543°E		
Back Radial Direction:	S7.457°E		
Chord Direction:	S83.474°E		
Ahead Radial Direction:	S20.508°W		
Ahead Tangent Direction:	S69.492°E		
Element: Linear			
PT (PT)	5866.968 R1	7028977.814	2509432.440
PC (PC)	6763.218 R1	7028663.821	2510271.888
Tangential Direction:	S69.492°E		
Tangential Length:	896.251		
Element: Circular			
PC (PC)	6763.218 R1	7028663.821	2510271.888
PI (PI)	6826.672 R1	7028641.591	2510331.321
CC (CC)		7030498.159	2510958.015
PT (PT)	6890.082 R1	7028623.254	2510392.067
Radius:	1958.460		
Delta:	3.711° Left		
Degree of Curvature (Arc):	9.598°		
Length:	126.863		
Tangent:	63.454		
Chord:	126.841		
Middle Ordinate:	1.027		
External:	1.028		
Back Tangent Direction:	S69.492°E		
Back Radial Direction:	S20.508°W		
Chord Direction:	S71.348°E		
Ahead Radial Direction:	S16.797°W		
Ahead Tangent Direction:	S73.203°E		

Alignment Name: CL_Greenville
Alignment Description:
Alignment Style: Alignment\Baseline

	Station	Northing	Easting
Element: Linear			
POT (POT)	10000.000 R1	7029008.490	2510332.284
PC (PC)	10179.854 R1	7028834.673	2510286.081
Tangential Direction:	S14.886°W		
Tangential Length:	179.854		
Element: Circular			
PC (PC)	10179.854 R1	7028834.673	2510286.081
PI (PI)	10274.850 R1	7028741.977	2510265.303
CC (CC)		7029230.364	2508520.728
PT (PT)	10369.671 R1	7028651.967	2510234.933
Radius:	1809.155		
Delta:	6.012° Right		
Degree of Curvature (Arc):	10.390°		
Length:	189.818		
Tangent:	94.996		
Chord:	189.731		
Middle Ordinate:	2.489		
External:	2.492		
Back Tangent Direction:	S12.634°W		
Back Radial Direction:	N77.366°W		
Chord Direction:	S15.639°W		
Ahead Radial Direction:	N71.355°W		
Ahead Tangent Direction:	S18.645°W		
Element: Linear			
PT (PT)	10369.671 R1	7028651.967	2510234.933
PI (PI)	12770.584 R1	7026377.061	2509467.346
Tangential Direction:	S18.645°W		
Tangential Length:	2400.913		
Element: Linear			
PI (PI)	12770.584 R1	7026377.061	2509467.346
PI (PI)	13958.462 R1	7025251.788	2509086.801
Tangential Direction:	S18.685°W		
Tangential Length:	1187.878		
Element: Linear			
PI (PI)	13958.462 R1	7025251.788	2509086.801
POT (POT)	15140.837 R1	7024131.988	2508707.249
Tangential Direction:	S18.724°W		
Tangential Length:	1182.375		

Alignment Name: CL_Walnut
Alignment Description:
Alignment Style: Alignment\Baseline

	Station	Northing	Easting
Element: Linear			
POT (POT)	2000.000 R1	7024256.336	2508340.348
PC (PC)	2823.543 R1	7024273.717	2509163.707
Tangential Direction:	N88.791°E		
Tangential Length:	823.543		
Element: Circular			
PC (PC)	2823.543 R1	7024273.717	2509163.707
PI (PI)	3254.496 R1	7024282.768	2509594.566
CC (CC)		7025852.785	2509130.537
PT (PT)	3664.967 R1	7024509.396	2509961.117
Radius:	1579.417		
Delta:	30.524° Left		
Degree of Curvature (Arc):	11.902°		
Length:	841.424		
Tangent:	430.953		
Chord:	831.509		
Middle Ordinate:	55.702		
External:	57.739		
Back Tangent Direction:	N88.797°E		
Back Radial Direction:	S1.203°E		
Chord Direction:	N73.535°E		
Ahead Radial Direction:	S31.727°E		
Ahead Tangent Direction:	N58.273°E		
Element: Linear			
PT (PT)	3664.967 R1	7024509.396	2509961.117
POT (POT)	4012.497 R1	7024692.155	2510256.713
Tangential Direction:	N58.273°E		
Tangential Length:	347.530		

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PROFESSIONAL ENGINEER
2/20/2026

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FIRM REGISTRATION NO. F-1471

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

HORIZONTAL ALIGNMENT DATA

BUCKINGHAM RD
GREENVILLE AVE
WALNUT ST

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.01
CONT.	SECT.	JOB	
0918	47	473	

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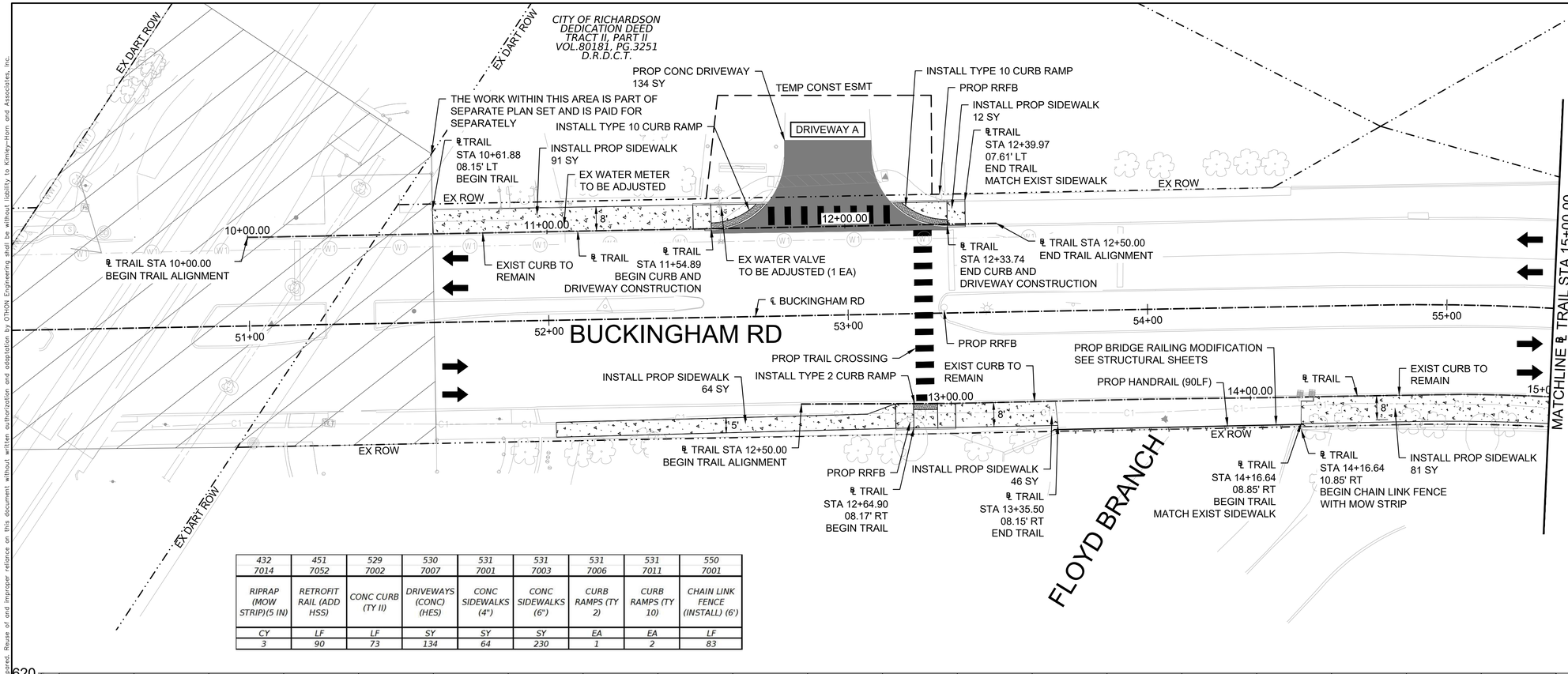
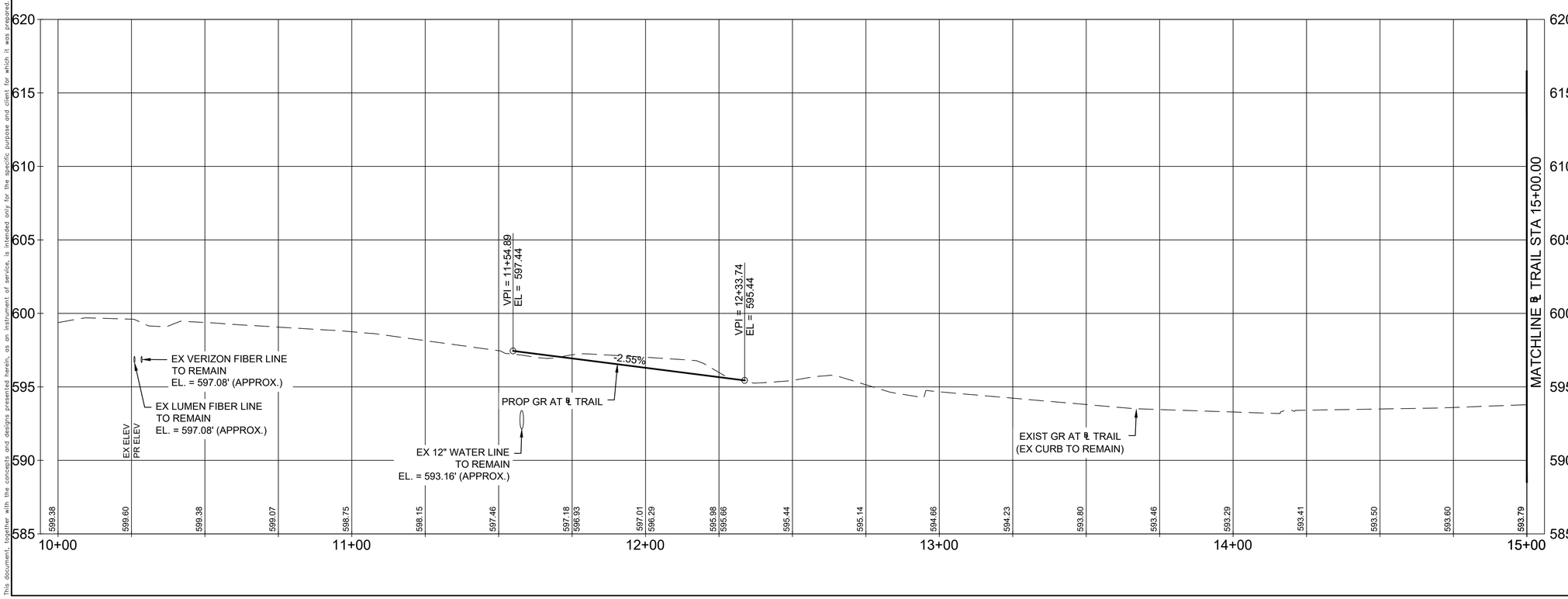
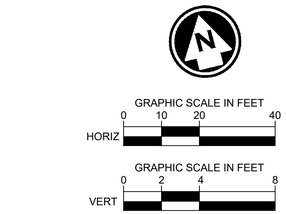


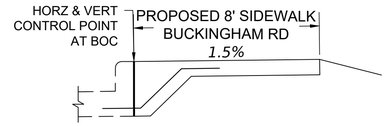
432 7014	451 7052	529 7002	530 7007	531 7001	531 7003	531 7006	531 7011	550 7001
RIPRAP (MOW STRIP)(5 IN)	RETROFIT RAIL (ADD HSS)	CONC CURB (TY II)	DRIVEWAYS (CONC) (HES)	CONC SIDEWALKS (4")	CONC SIDEWALKS (6")	CURB RAMPS (TY 2)	CURB RAMPS (TY 10)	CHAIN LINK FENCE (INSTALL) (6')
CY	LF	LF	SY	SY	SY	EA	EA	LF
3	90	73	134	64	230	1	2	83





LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



NOTES:

1. SEE DRIVEWAY, INTERSECTION, AND MEDIAN DETAILS FOR ADDITIONAL INFORMATION.
2. SEE TRAFFIC SIGNAL LAYOUTS FOR TRAFFIC SIGNAL IMPROVEMENT DETAILS.
3. SEE DRAINAGE PLAN AND PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. SEE REMOVAL PLAN FOR REMOVAL AND RELOCATION OF EXISTING ITEMS.
5. PROPOSED SIDEWALK/ TRAIL SHALL CONFORM TO CITY OF RICHARDSON SDW-A STANDARD DETAILS.

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAIL PLAN AND PROFILE
STA 10+00.00 TO STA 15+00.00
SHEET 1 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.02
CONT.	SECT.	JOB	
918	47	473	

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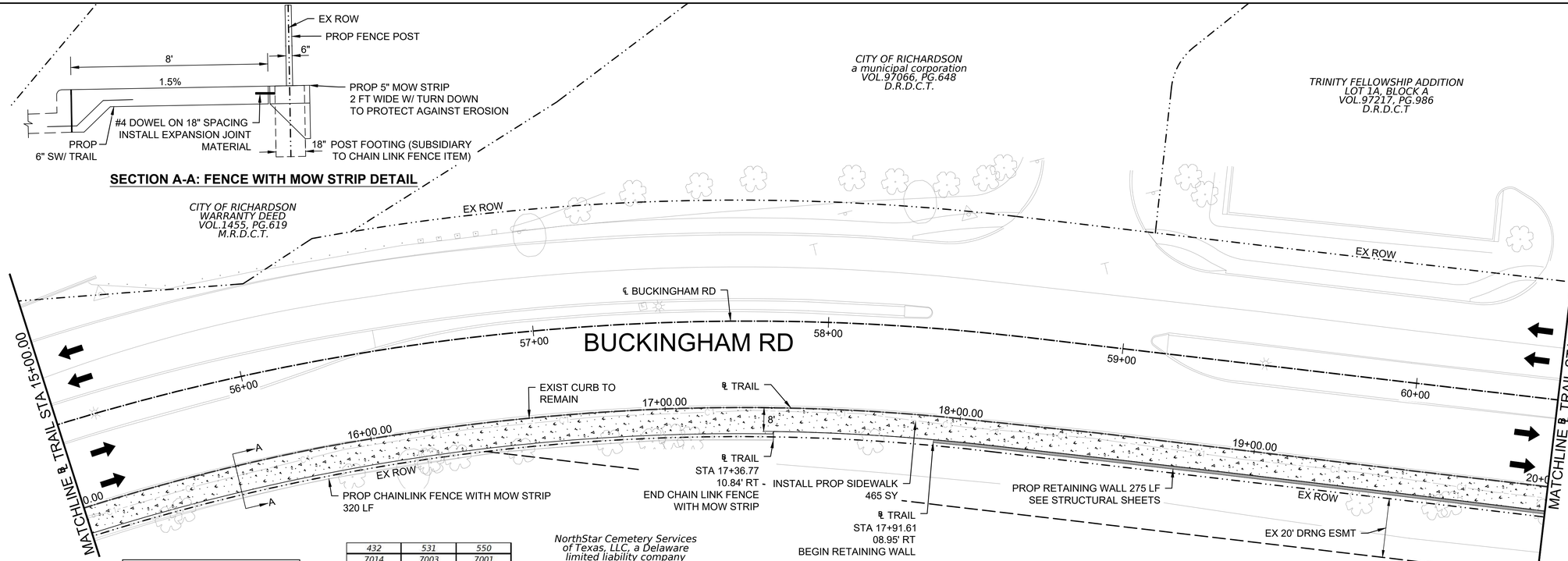
SECTION A-A: FENCE WITH MOW STRIP DETAIL



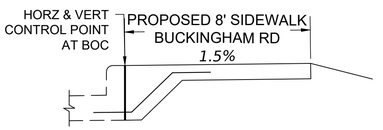
DALLAS COUNTY TO OBTAIN
RIGHT OF ENTRY FOR THIS WORK

432	531	550
7014	7003	7001
RIPRAP (MOW STRIP)(5 IN)	CONC SIDEWALKS (6")	CHAIN LINK FENCE (INSTALL) (6')
CY	SY	LF
7	465	237

NorthStar Cemetery Services of Texas, LLC, a Delaware limited liability company
Track 16
DOC. No. 201400214239
O.P.R.D.C.T

LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID — PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



NOTES:

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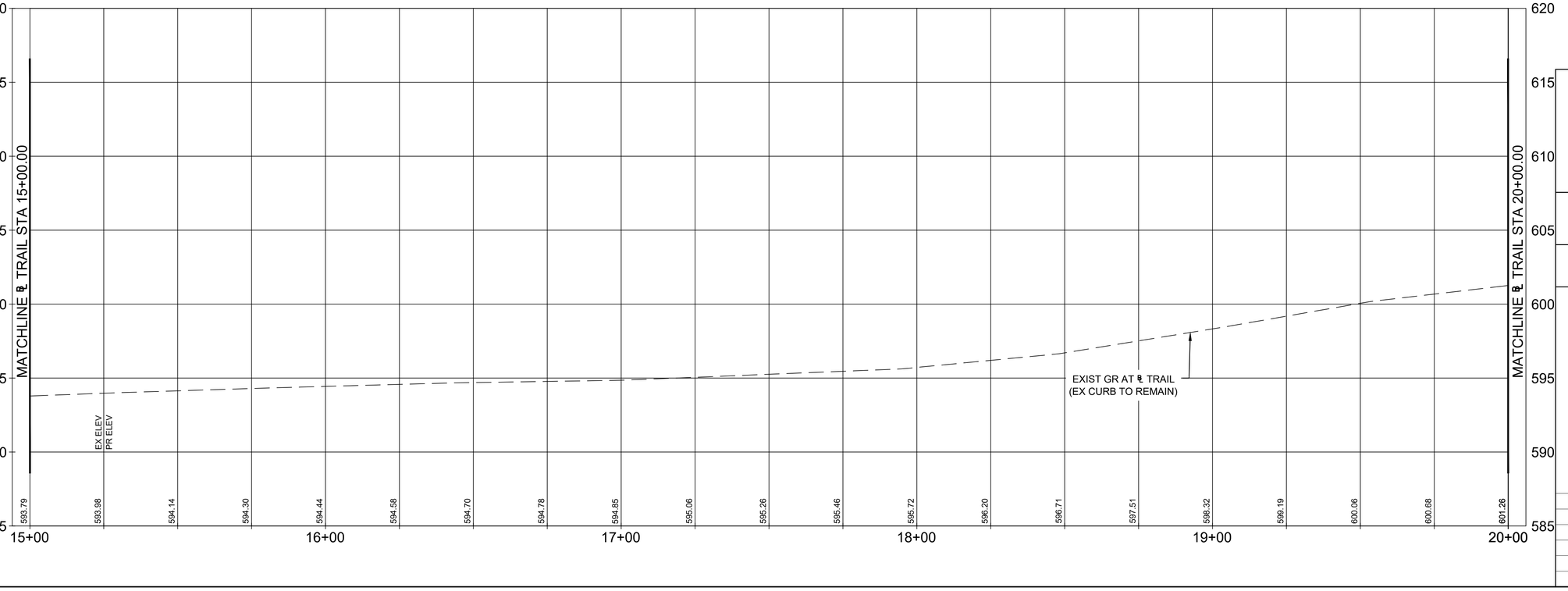

02/20/2026

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CENTRAL TRAIL EXTENSION

TRAIL PLAN AND PROFILE
STA 15+00.00 TO STA 20+00.00
SHEET 2 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.03
CONT.	SECT.	JOB	
918	47	473	

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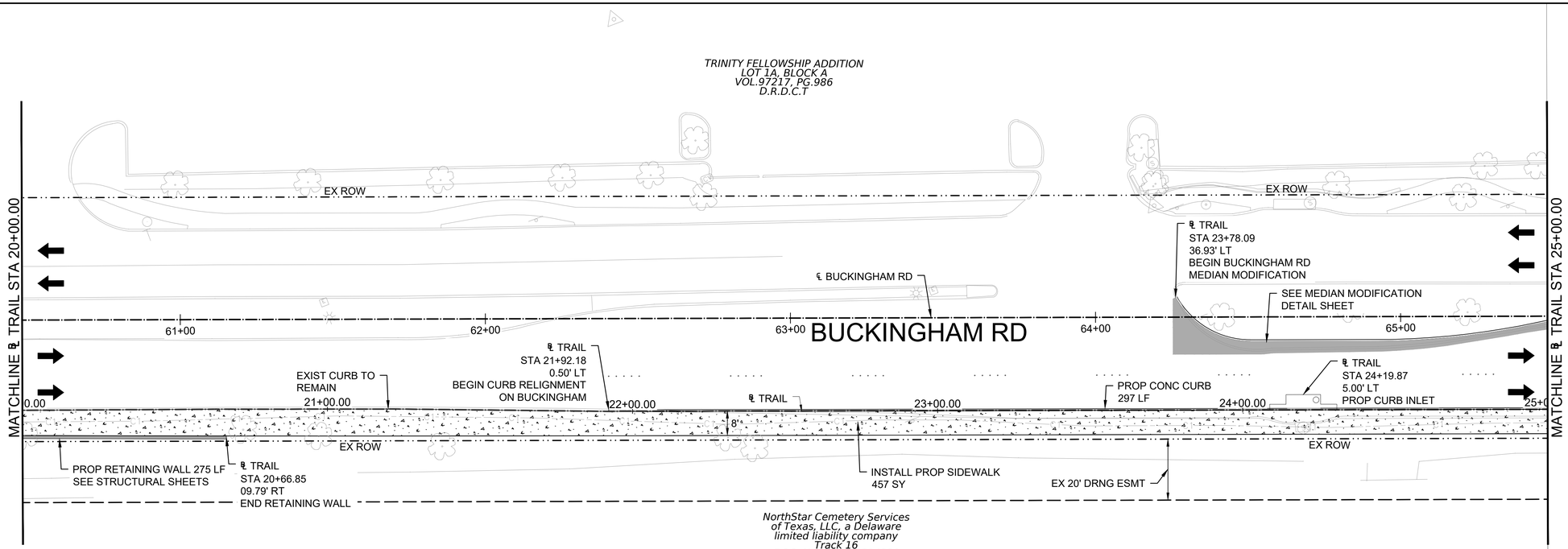
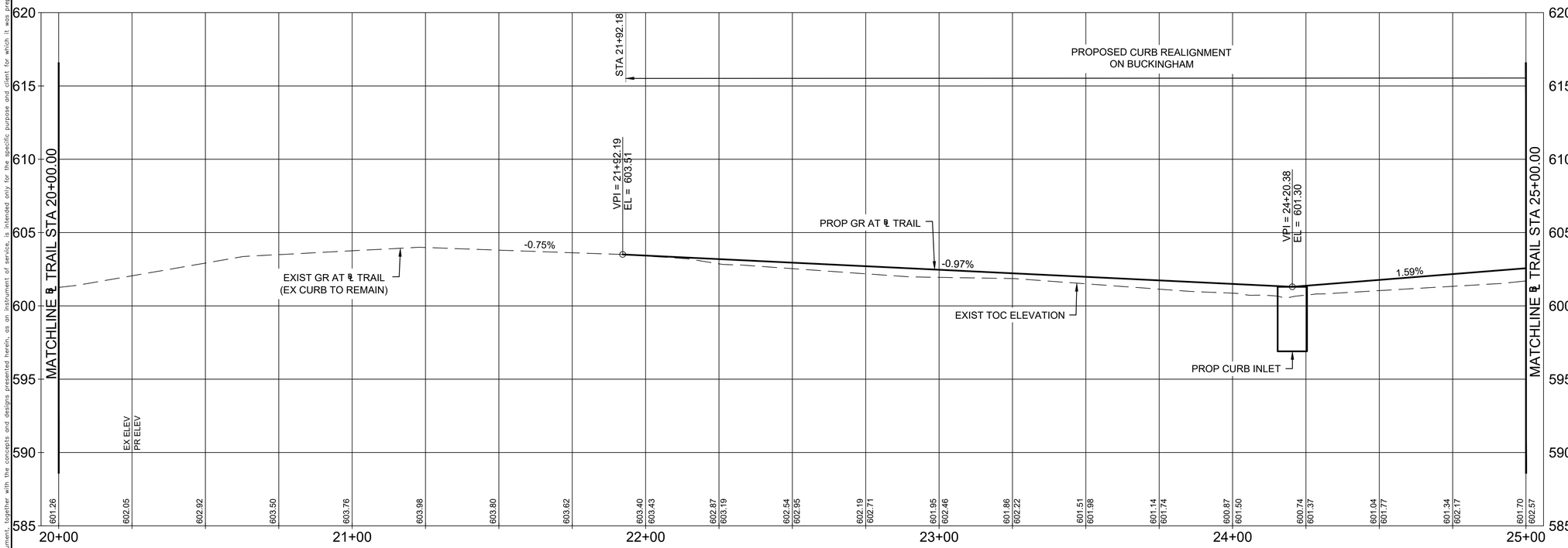
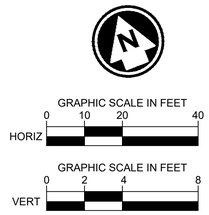


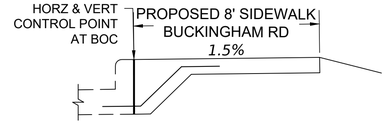
247	360	529	529	531
7067	7002	7002	7009	7003
FL BS (CMP IN PLC)(TY A GR 1-2) (8")	CONC PVMT (CRCP) (8")	CONC CURB (TY II)	CONC CURB & GUTTER (TY II)	CONC SIDEWALKS (6")
SY	SY	LF	LF	SY
70	58	297	128	457





LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID — PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



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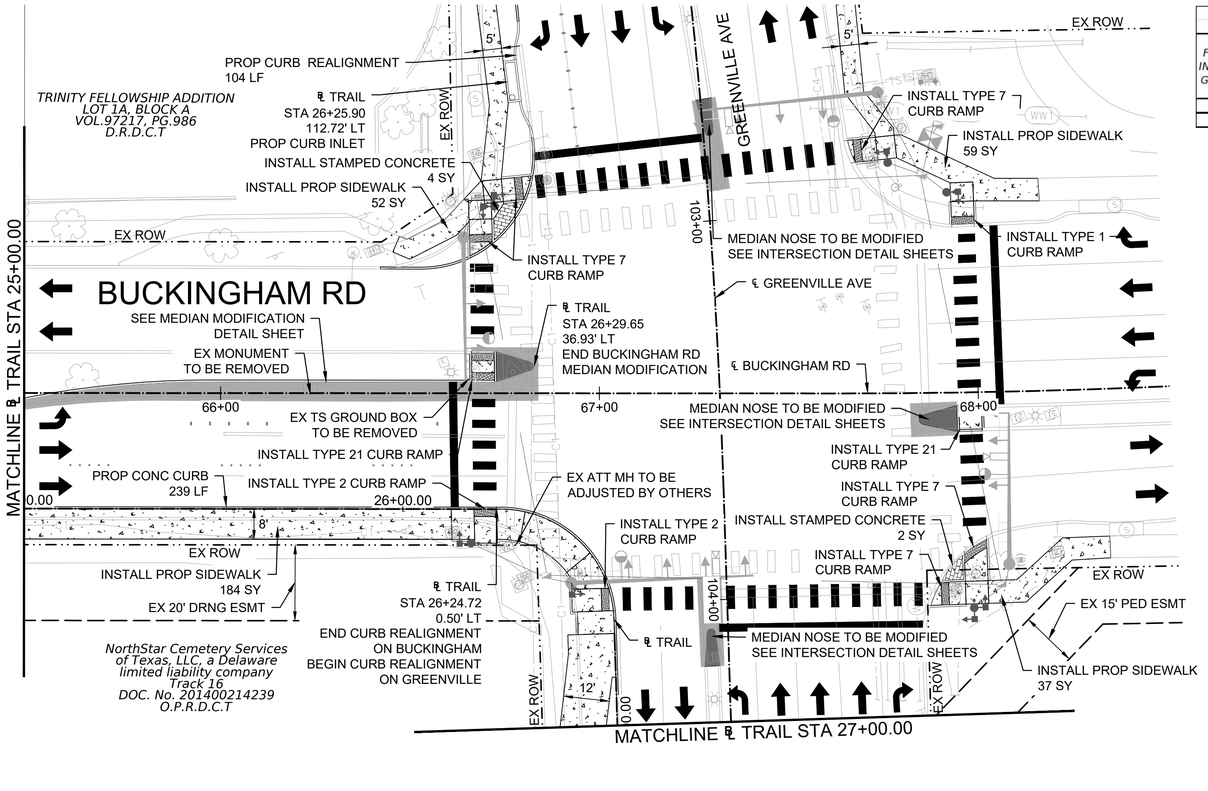
CENTRAL TRAIL EXTENSION

TRAIL PLAN AND PROFILE
STA 20+00.00 TO STA 25+00.00
SHEET 3 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.04
CONT.	SECT.	JOB	
918	47	473	



247 7067	360 7002	527 7002	529 7002	529 7009	531 7001	531 7003	531 7005	531 7006	531 7010	531 7013	536 7006
FL BS (CMP IN PLC)(TY A GR 1-2) (8")	CONC PVMT (CRCP) (8")	COLORED TEXTURED CONC (5")	CONC CURB (TY II)	CONC CURB & GUTTER (TY II)	CONC SIDEWALKS (4")	CONC SIDEWALKS (6")	CURB RAMPS (TY 1)	CURB RAMPS (TY 2)	CURB RAMPS (TY 7)	CURB RAMPS (TY 21)	CONC MEDIAN (MONO NOSE)
SY	SY	SY	LF	LF	SY	SY	EA	EA	EA	EA	SY
124	109	6	350	119	154	184	1	2	5	2	18

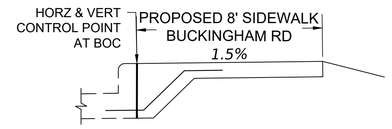
EX SIGNAL TO REMAIN OPERATIONAL UNTIL PROP TRAFFIC SIGNAL IS OPERATIONAL (RE: SIGNAL SHEETS)

GRAPHIC SCALE IN FEET
0 10 20 40
HORIZ

GRAPHIC SCALE IN FEET
0 2 4 8
VERT

LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



NOTES:

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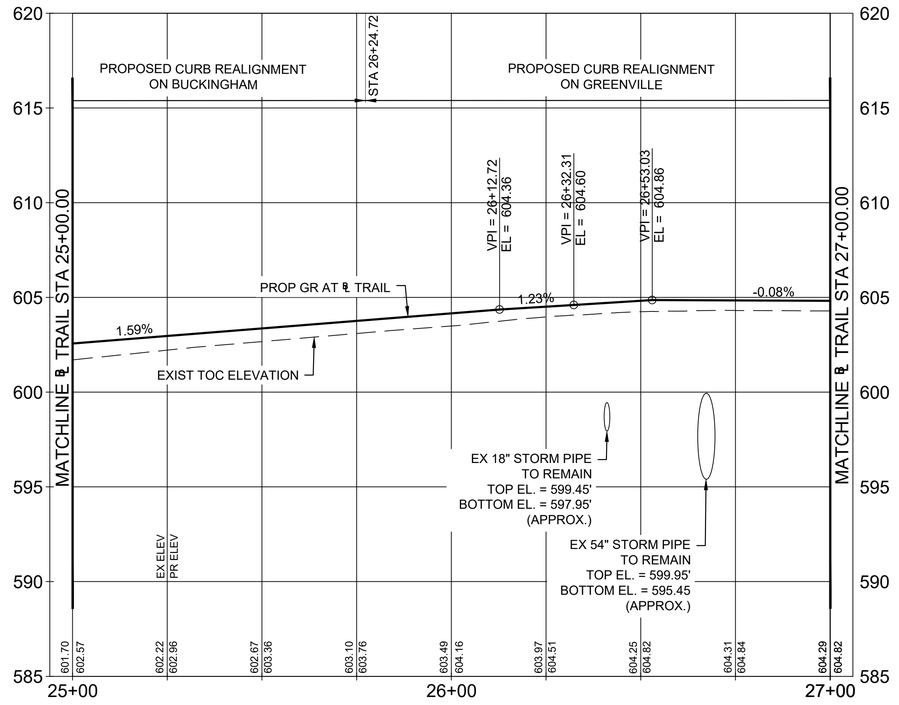

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TRAIL PLAN AND PROFILE
STA 25+00.00 TO STA 27+00.00
SHEET 4 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.	
6	SEE TITLE SHEET		VA	
STATE	DIST.	COUNTY		SHEET NO.
TEXAS	DALLAS	DALLAS		3.05
CONT.	SECT.	JOB		
918	47	473		

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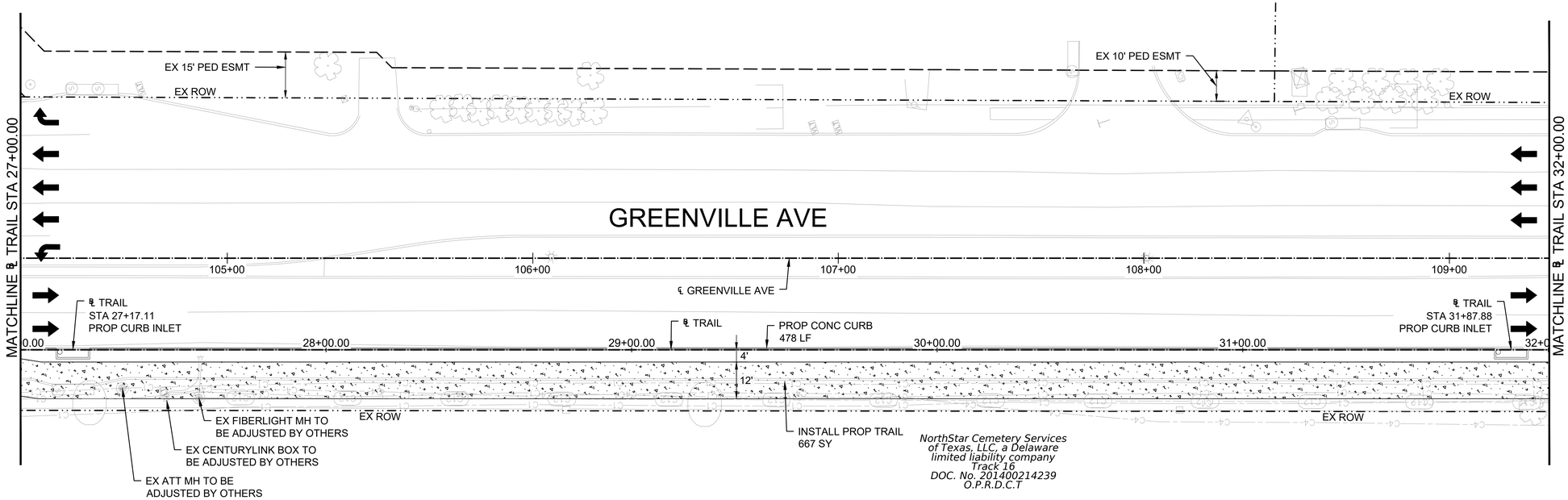
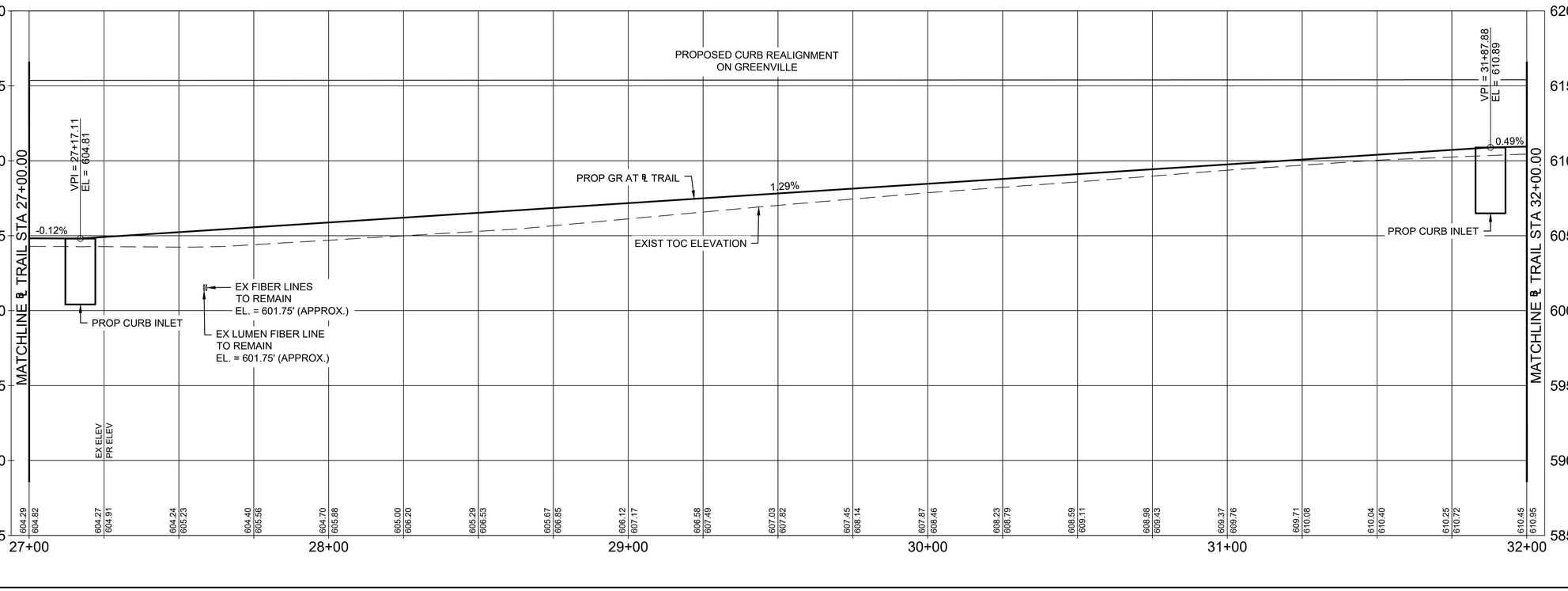
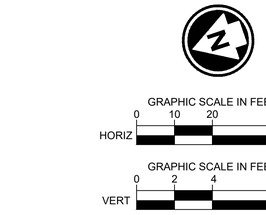


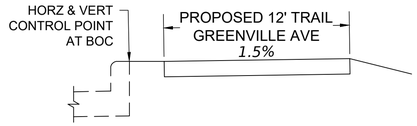
529	531
7002	7003
CONC CURB (TY II)	CONC SIDEWALKS (6")
LF	SY
478	667





LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID — PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



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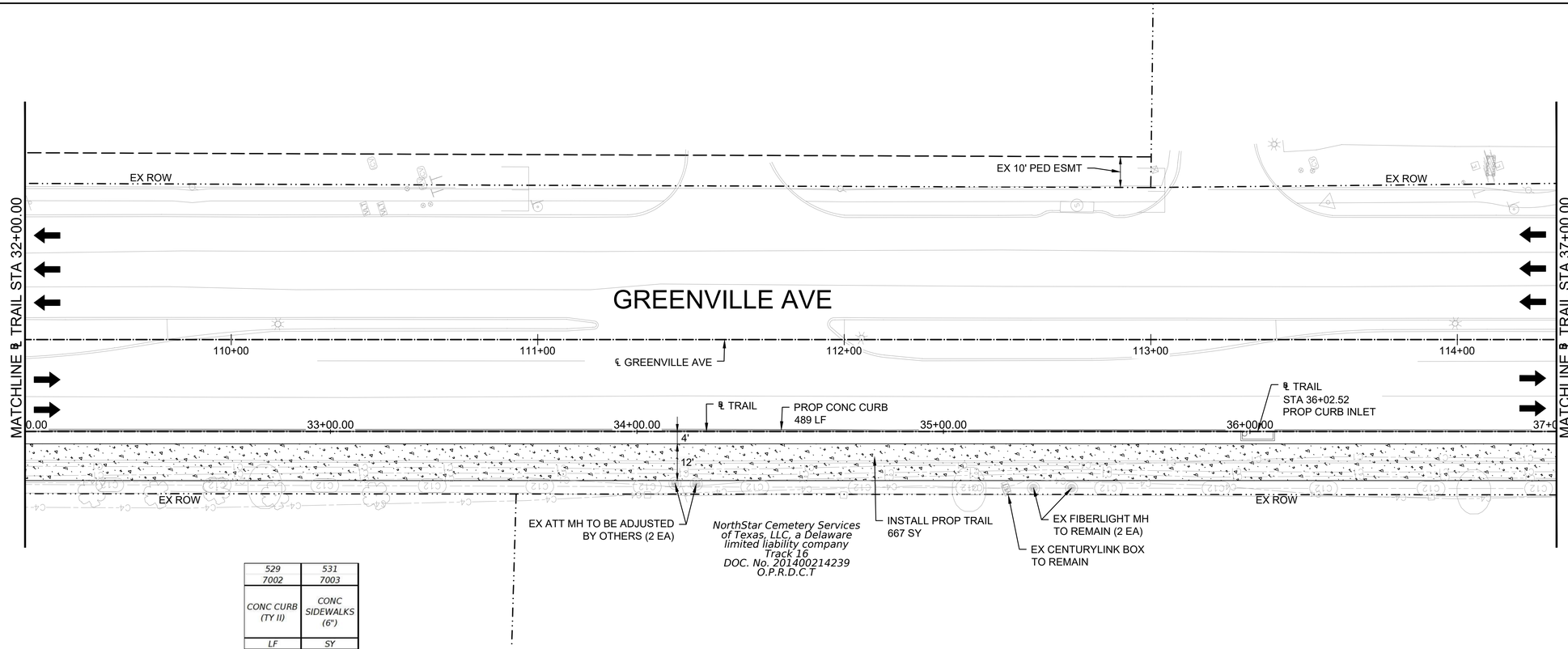
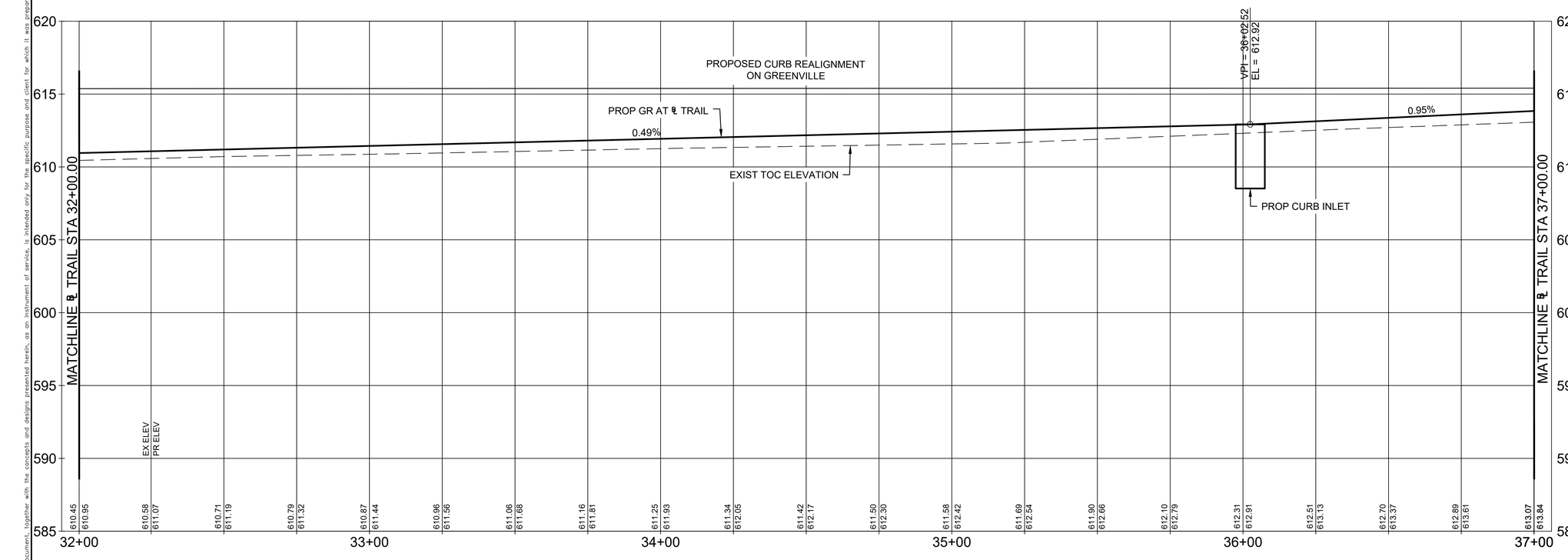
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

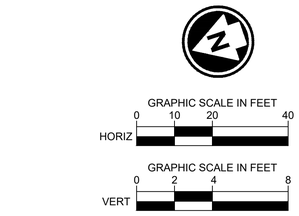
TRAIL PLAN AND PROFILE
STA 27+00.00 TO STA 32+00.00
SHEET 5 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.06
CONT.	SECT.	JOB	
918	47	473	



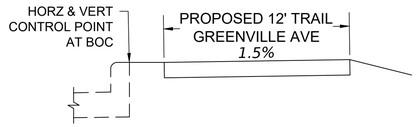
529 7002	531 7003
CONC CURB (TY II)	CONC SIDEWALKS (6")
LF	SY
489	667





LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID — PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



NOTES:

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4. SEE REMOVAL PLAN FOR REMOVAL AND RELOCATION OF EXISTING ITEMS.

STATE OF TEXAS
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CENTRAL TRAIL EXTENSION

TRAIL PLAN AND PROFILE
STA 32+00.00 TO STA 37+00.00
SHEET 6 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.07
CONT.	SECT.	JOB	
918	47	473	

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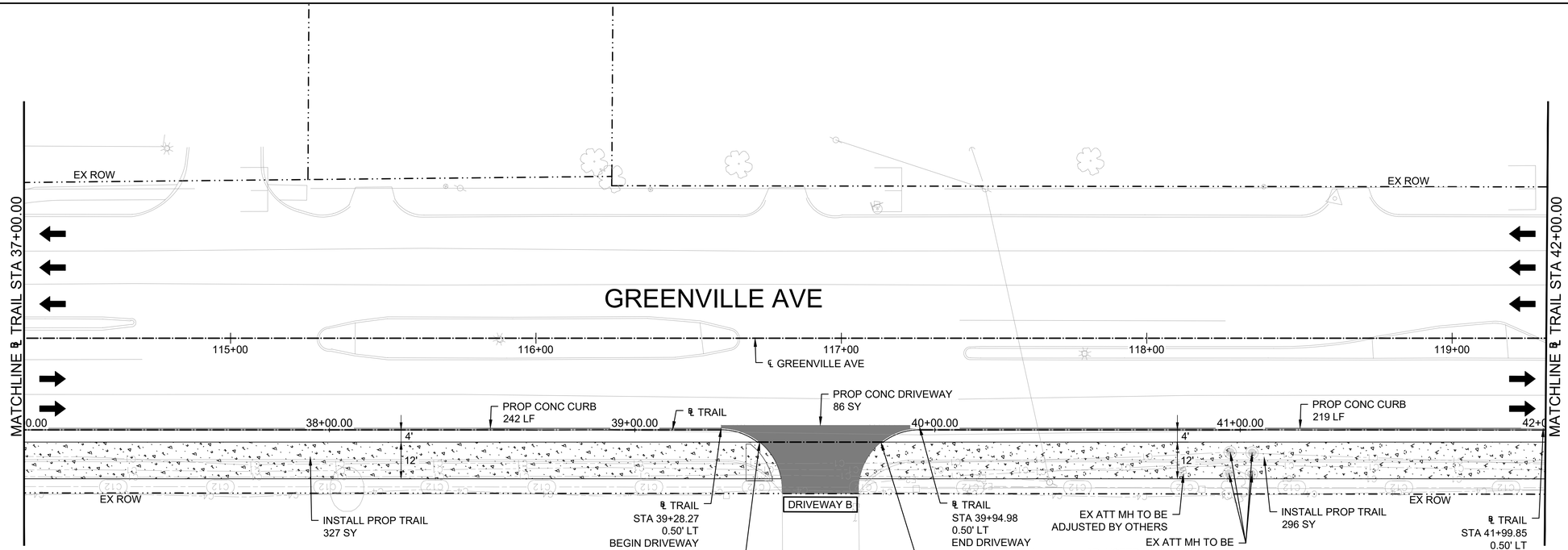
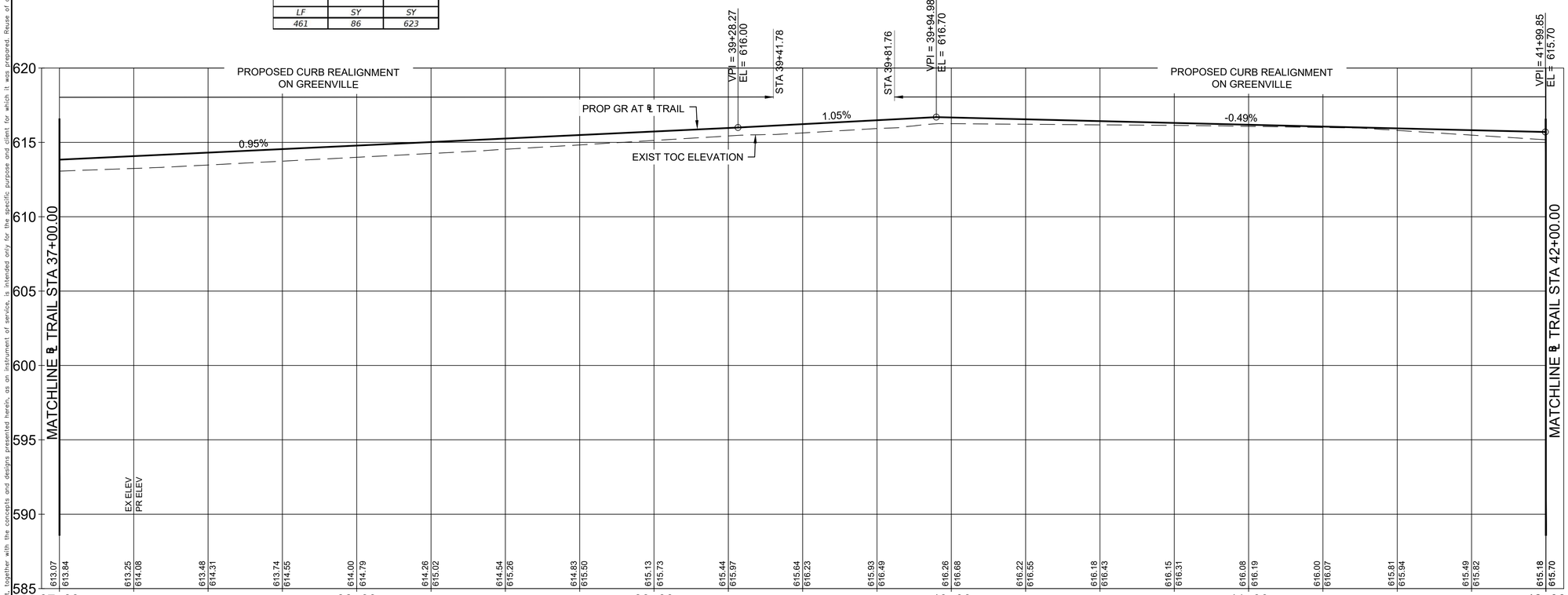
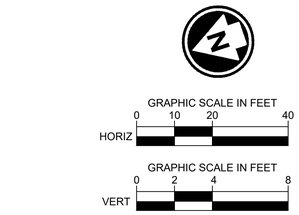


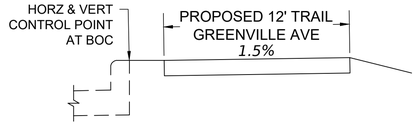
529 7002	530 7006	531 7003
CONC CURB (TY II)	DRIVEWAYS (CONC)	CONC SIDEWALKS (6")
LF	SY	SY
461	86	623





LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



NOTES:

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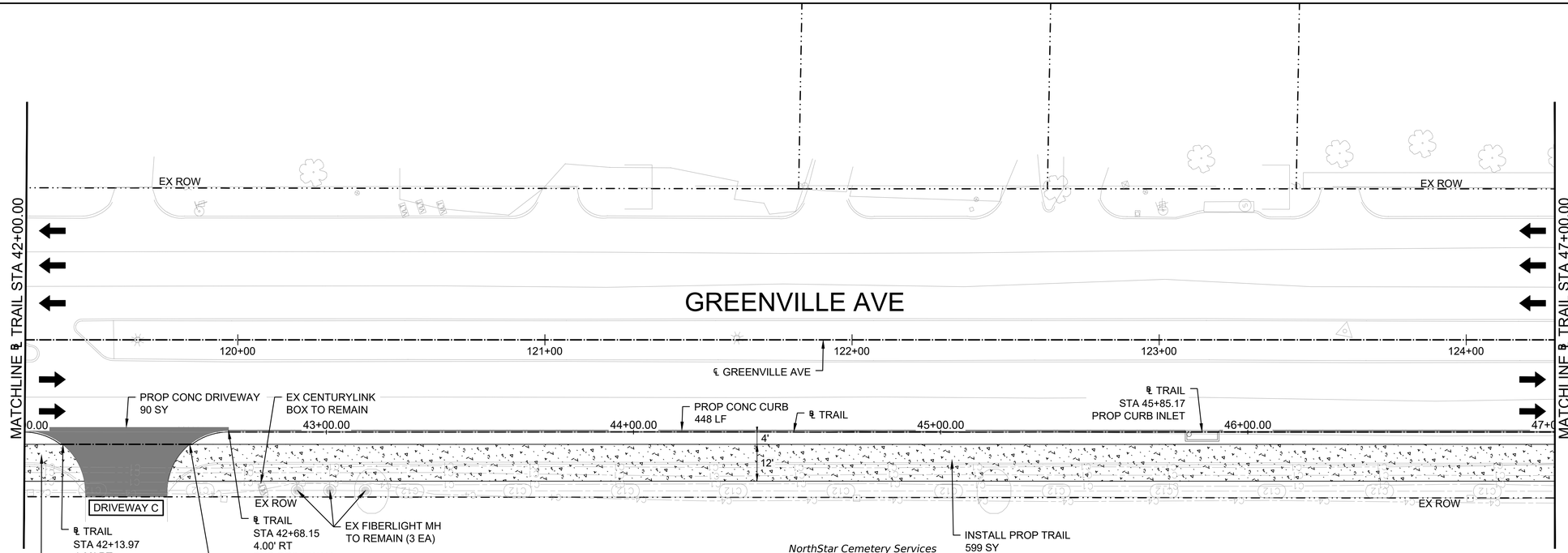
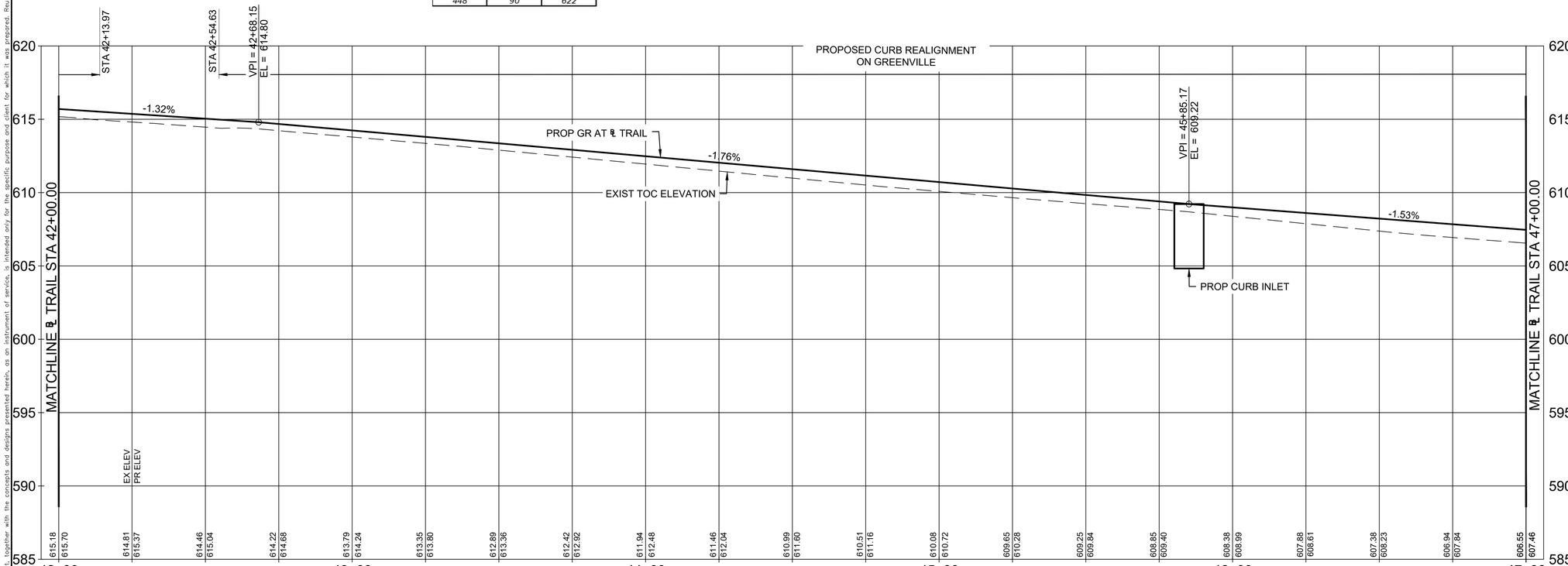
CENTRAL TRAIL EXTENSION

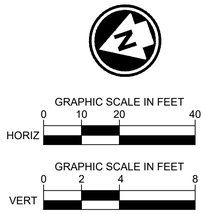
TRAIL PLAN AND PROFILE
STA 37+00.00 TO STA 42+00.00
SHEET 7 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.08
CONT.	SECT.	JOB	
918	47	473	



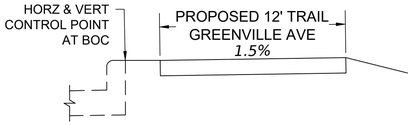
529	530	531
7002	7006	7003
CONC CURB (TY II)	DRIVEWAYS (CONC)	CONC SIDEWALKS (6")
LF	SY	SY
448	90	622





LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID — PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



NOTES:

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3. SEE DRAINAGE PLAN AND PROFILE SHEETS FOR ADDITIONAL INFORMATION.
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TRAIL PLAN AND PROFILE
STA 42+00.00 TO STA 47+00.00
SHEET 8 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.09
CONT.	SECT.	JOB	
918	47	473	

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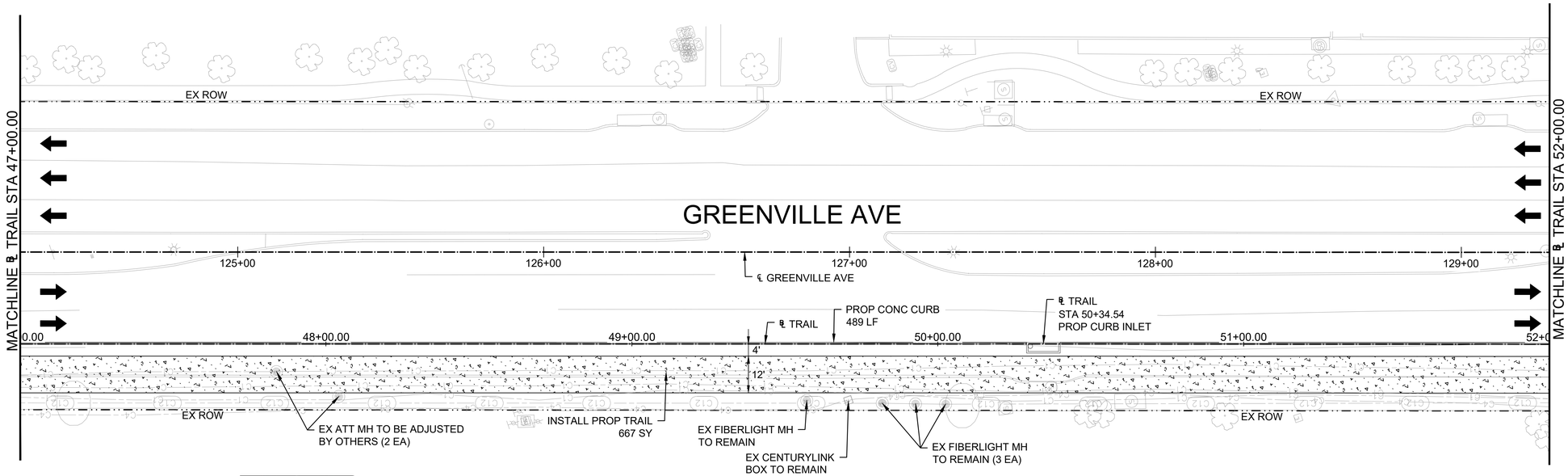
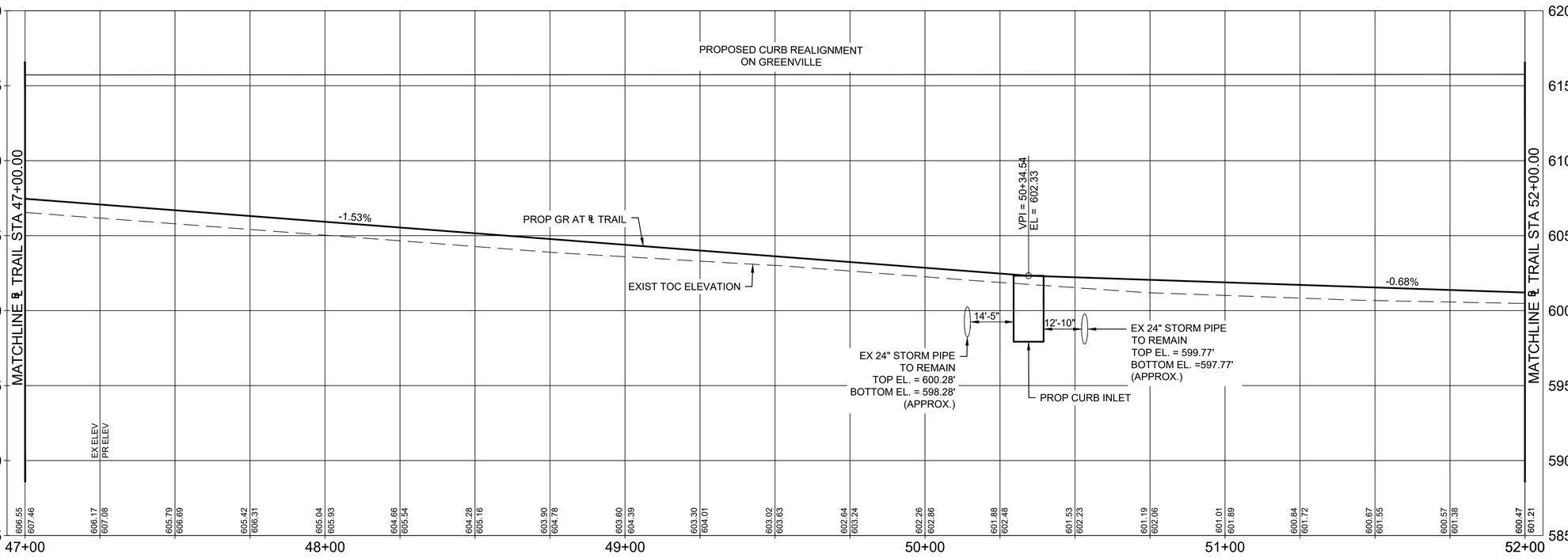
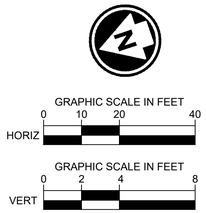


529	531
7002	7003
CONC CURB (TY II)	CONC SIDEWALKS (6")
LF	SY
489	667

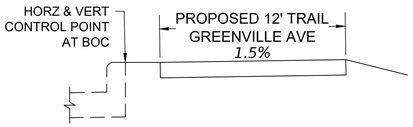
NorthStar Cemetery Services of Texas, LLC, a Delaware limited liability company Track 16 DOC. No. 201400214239 O.P.R.D.C.T





LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID — PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



NOTES:

1. SEE DRIVEWAY, INTERSECTION, AND MEDIAN DETAILS FOR ADDITIONAL INFORMATION.
2. SEE TRAFFIC SIGNAL LAYOUTS FOR TRAFFIC SIGNAL IMPROVEMENT DETAILS.
3. SEE DRAINAGE PLAN AND PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. SEE REMOVAL PLAN FOR REMOVAL AND RELOCATION OF EXISTING ITEMS.

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAIL PLAN AND PROFILE
STA 47+00.00 TO STA 52+00.00
SHEET 9 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.10
CONT.	SECT.	JOB	
918	47	473	

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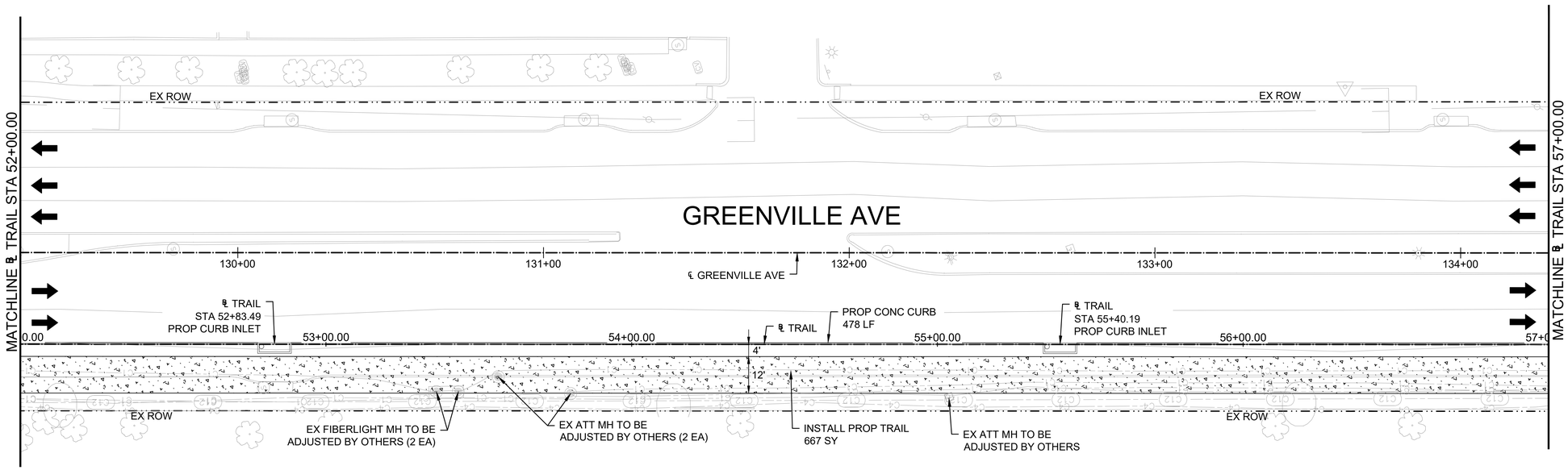


529	531
7002	7003
CONC CURB (TY II)	CONC SIDEWALKS (6")
LF	SY
478	667

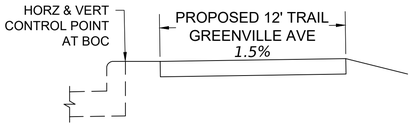
NorthStar Cemetery Services of Texas, LLC, a Delaware limited liability company Track 16 DOC. No. 201400214239 O.P.R.D.C.T

GRAPHIC SCALE IN FEET
0 10 20 40
HORIZ

GRAPHIC SCALE IN FEET
0 2 4 8
VERT

LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID — PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



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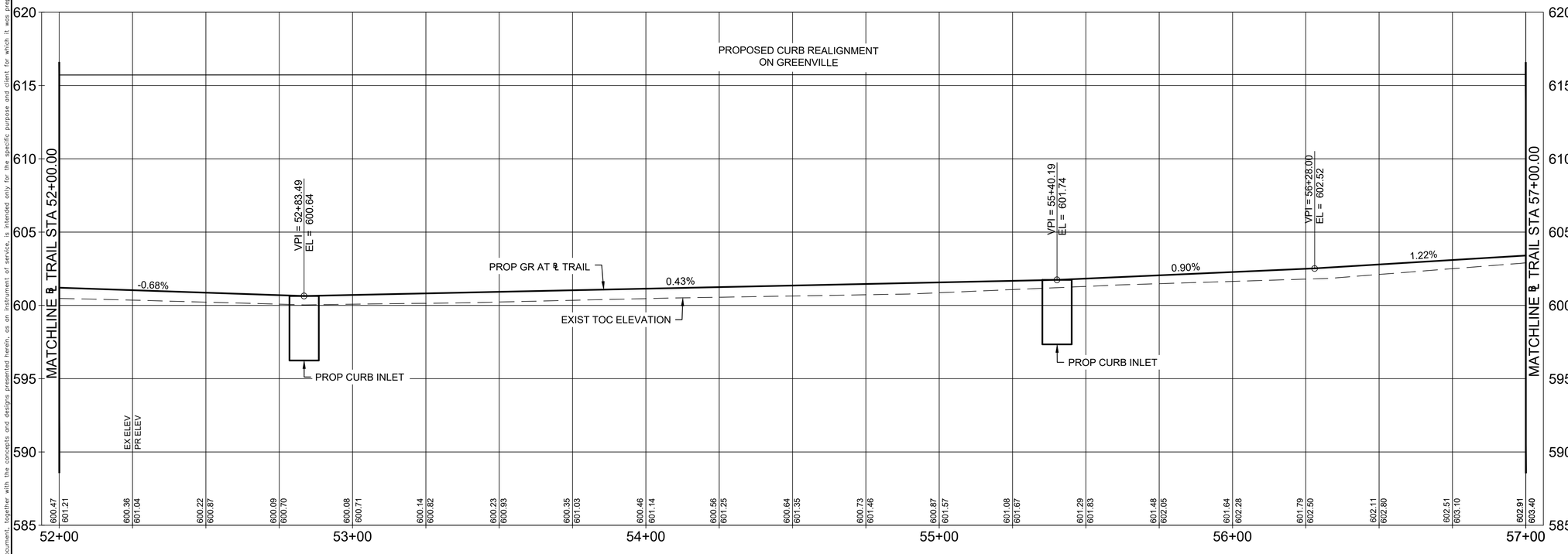

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PROFESSIONAL ENGINEER
02/20/2026

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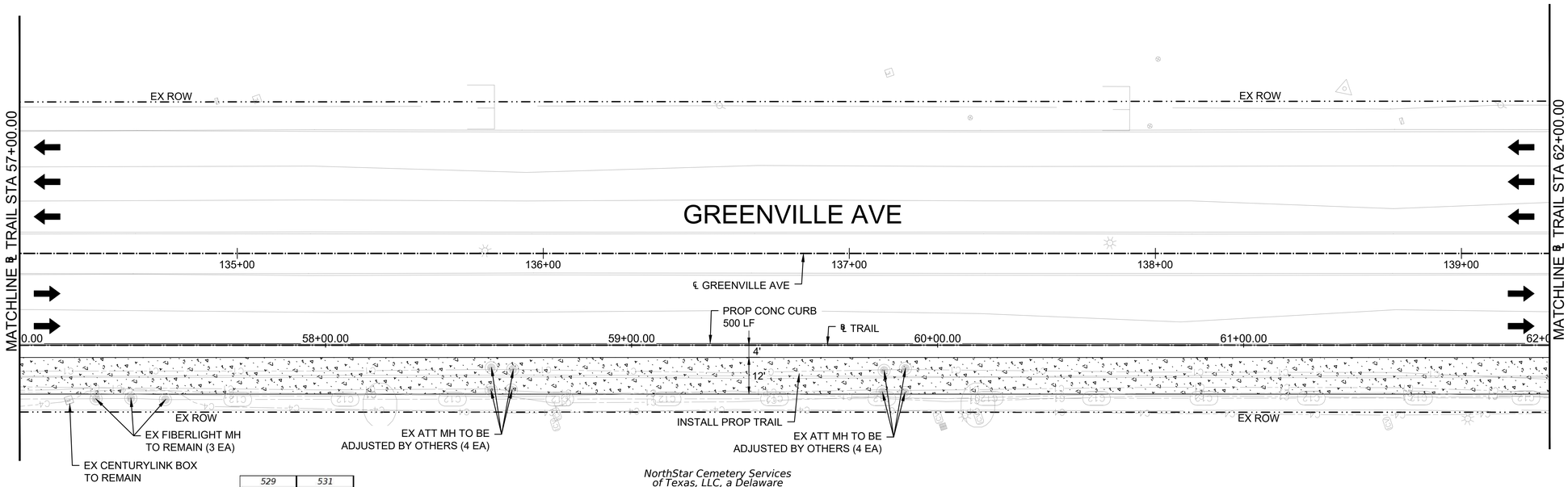
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

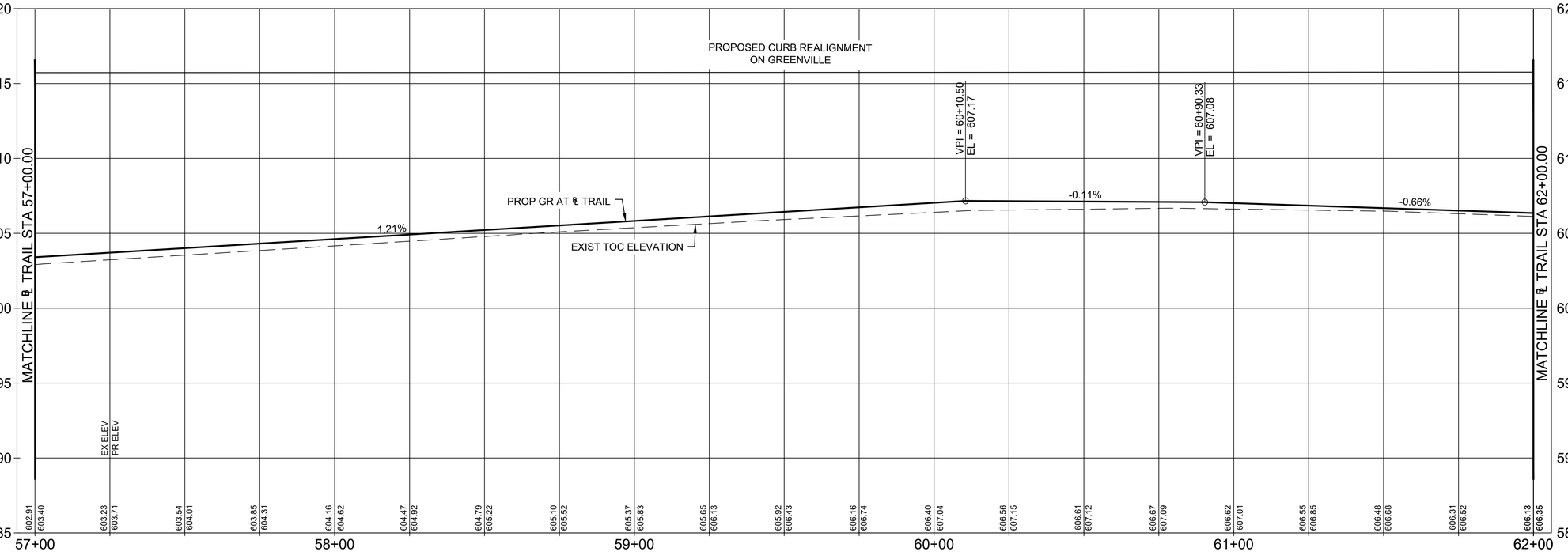
TRAIL PLAN AND PROFILE
STA 52+00.00 TO STA 57+00.00
SHEET 10 OF 17

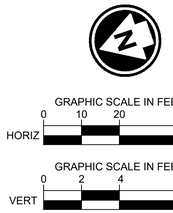
FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.11
CONT.	SECT.	JOB	
918	47	473	



529	531
7002	7003
CONC CURB (TY II)	CONC SIDEWALKS (6")
LF	SY
500	667

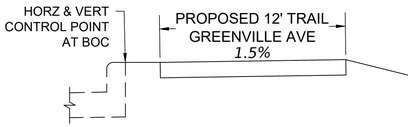
NorthStar Cemetery Services of Texas, LLC, a Delaware limited liability company Track 16 DOC. No. 201400214239 O.P.R.D.C.T





LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID — PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAIL PLAN AND PROFILE
STA 57+00.00 TO STA 62+00.00
SHEET 11 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.12
CONT.	SECT.	JOB	
918	47	473	

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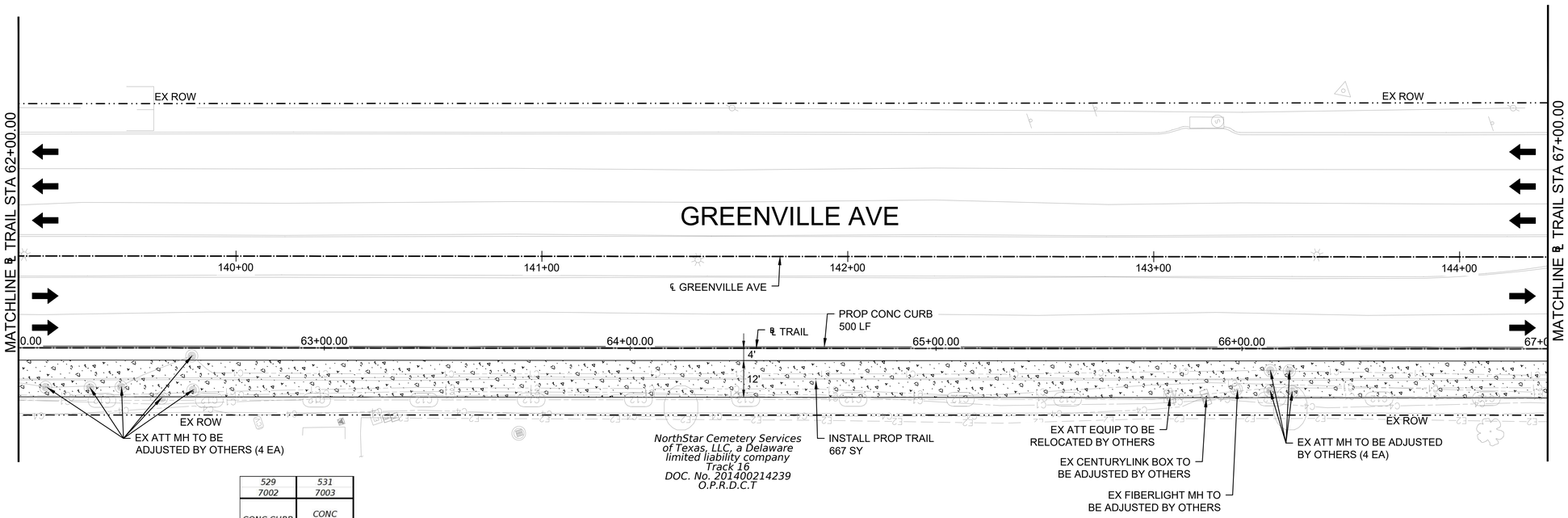
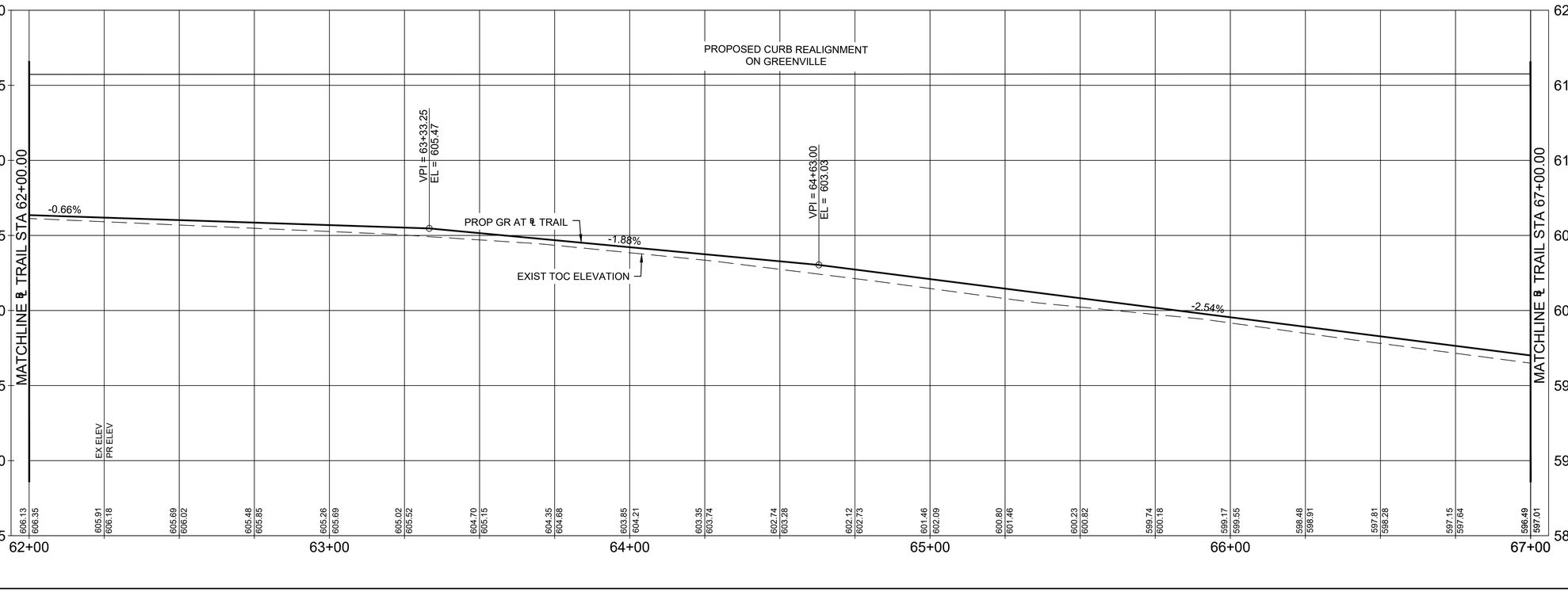
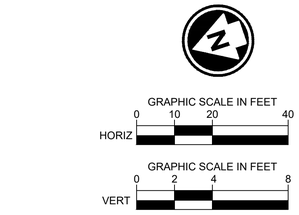


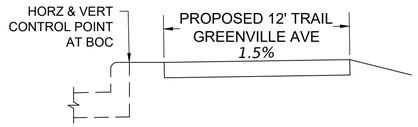
529	531
7002	7003
CONC CURB (TY II)	CONC SIDEWALKS (6")
LF	SY
500	667





LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID — PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



NOTES:

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3. SEE DRAINAGE PLAN AND PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. SEE REMOVAL PLAN FOR REMOVAL AND RELOCATION OF EXISTING ITEMS.

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAIL PLAN AND PROFILE
STA 62+00.00 TO STA 67+00.00
SHEET 12 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.13
CONT.	SECT.	JOB	
918	47	473	

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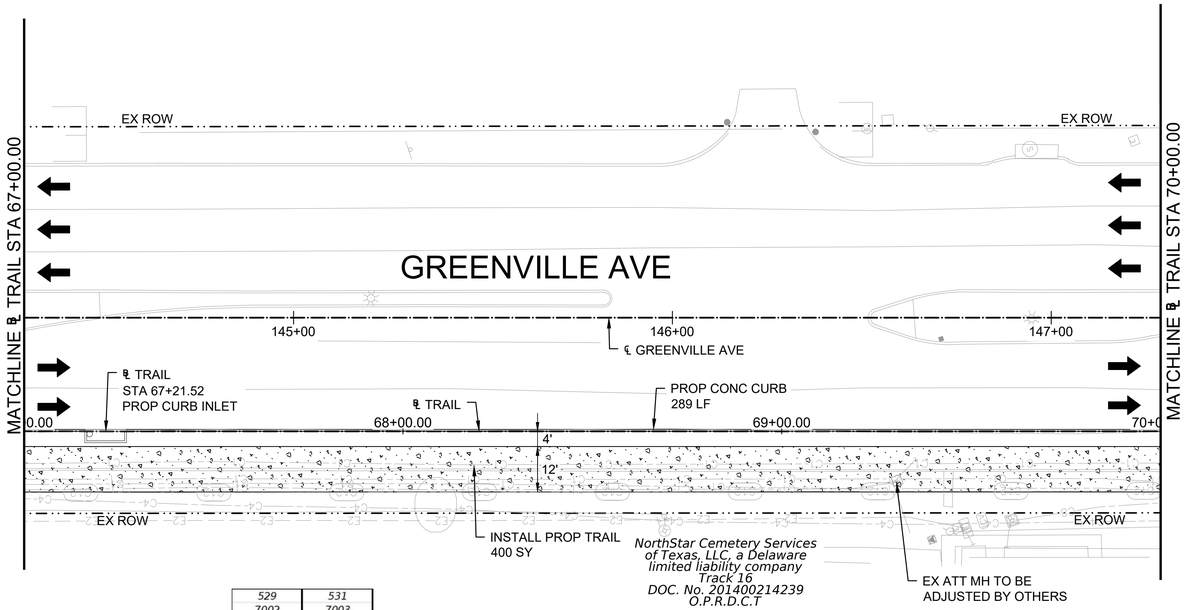
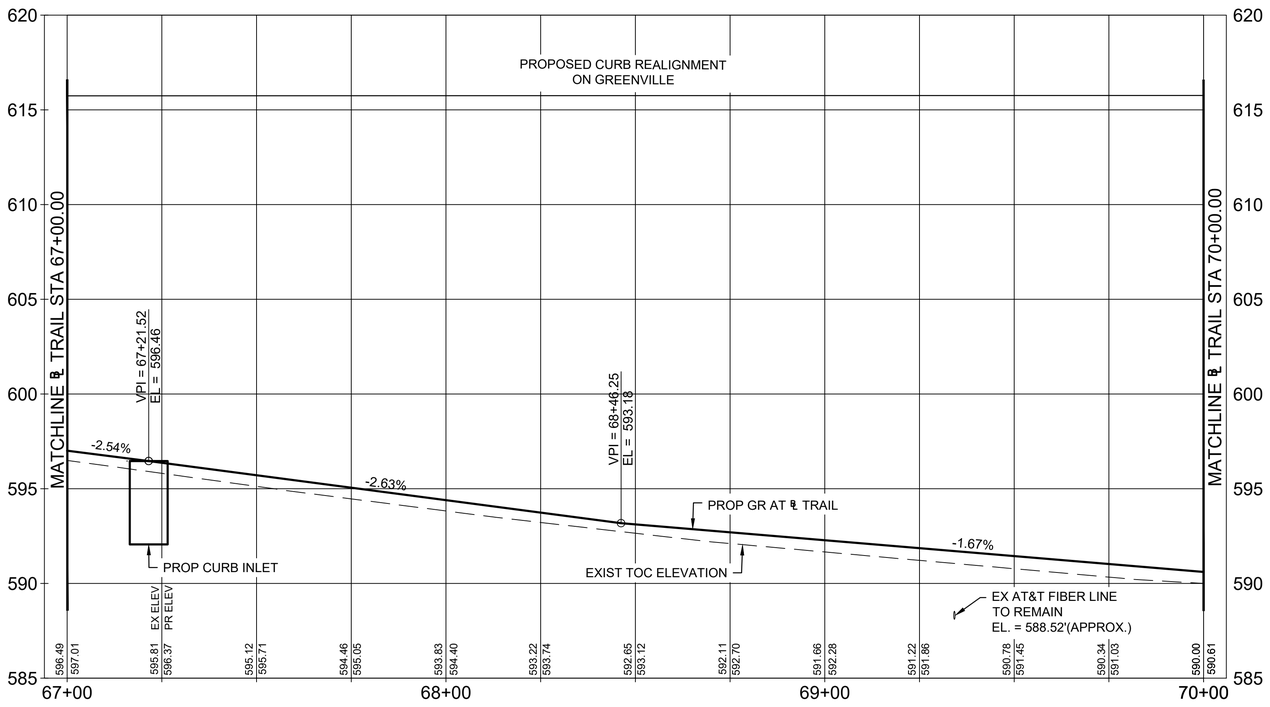
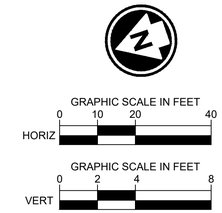


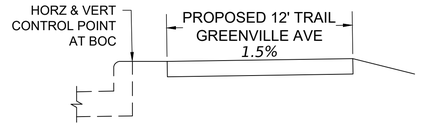
529 7002	531 7003
CONC CURB (TY II)	CONC SIDEWALKS (6")
LF	SY
289	400





LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID — PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



NOTES:

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3. SEE DRAINAGE PLAN AND PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. SEE REMOVAL PLAN FOR REMOVAL AND RELOCATION OF EXISTING ITEMS.

STATE OF TEXAS
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAIL PLAN AND PROFILE
STA 67+00.00 TO STA 70+00.00
SHEET 13 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.14
CONT.	SECT.	JOB	
918	47	473	

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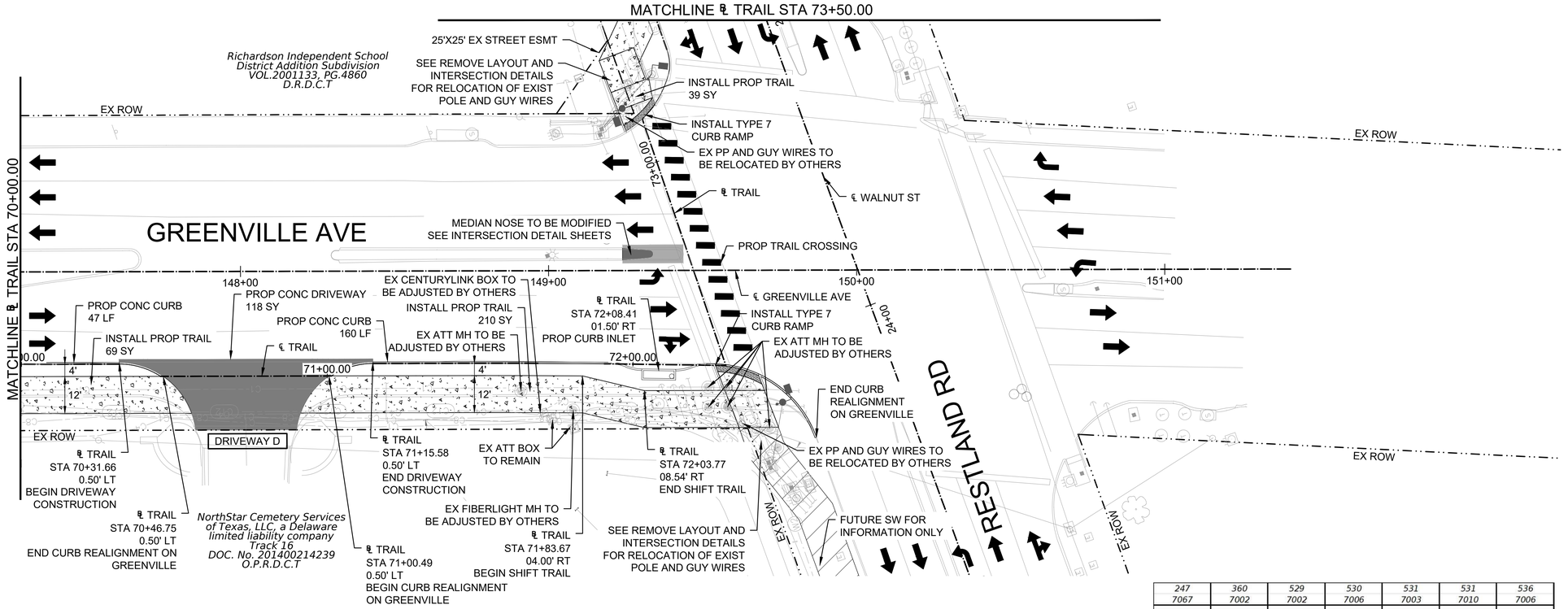
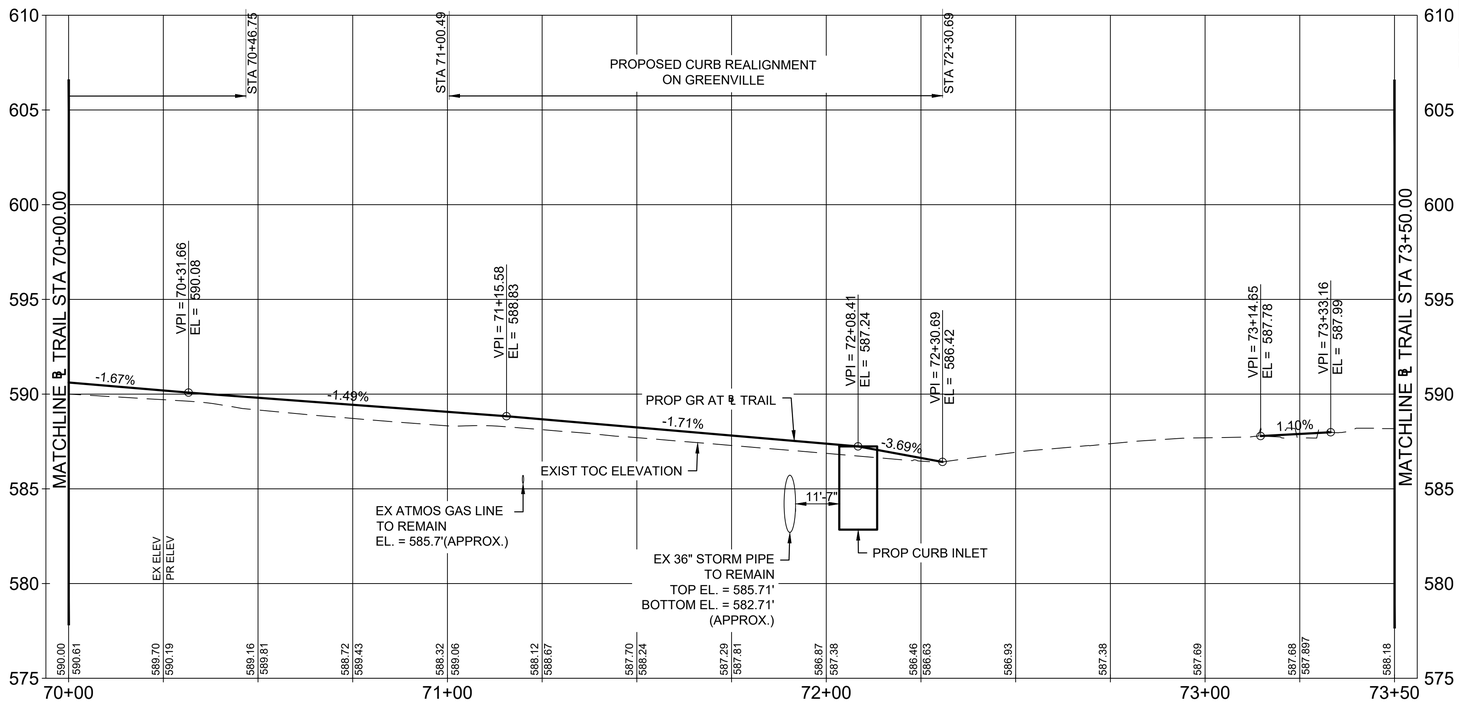




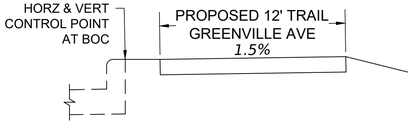
247 7067	360 7002	529 7002	530 7006	531 7003	531 7010	536 7006
FL BS (CMP IN PLC)(TY A GR 1-2) (8")	CONC PVMT (CRCP) (8")	CONC CURB (TY II)	DRIVEWAYS (CONC)	CONC SIDEWALKS (6")	CURB RAMPS (TY 7)	CONC MEDIAN (MONO NOSE)
SY	SY	LF	SY	SY	EA	SY
10	10	207	118	318	2	4

GRAPHIC SCALE IN FEET
0 10 20 40
HORIZ

GRAPHIC SCALE IN FEET
0 2 4 8
VERT

LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



NOTES:

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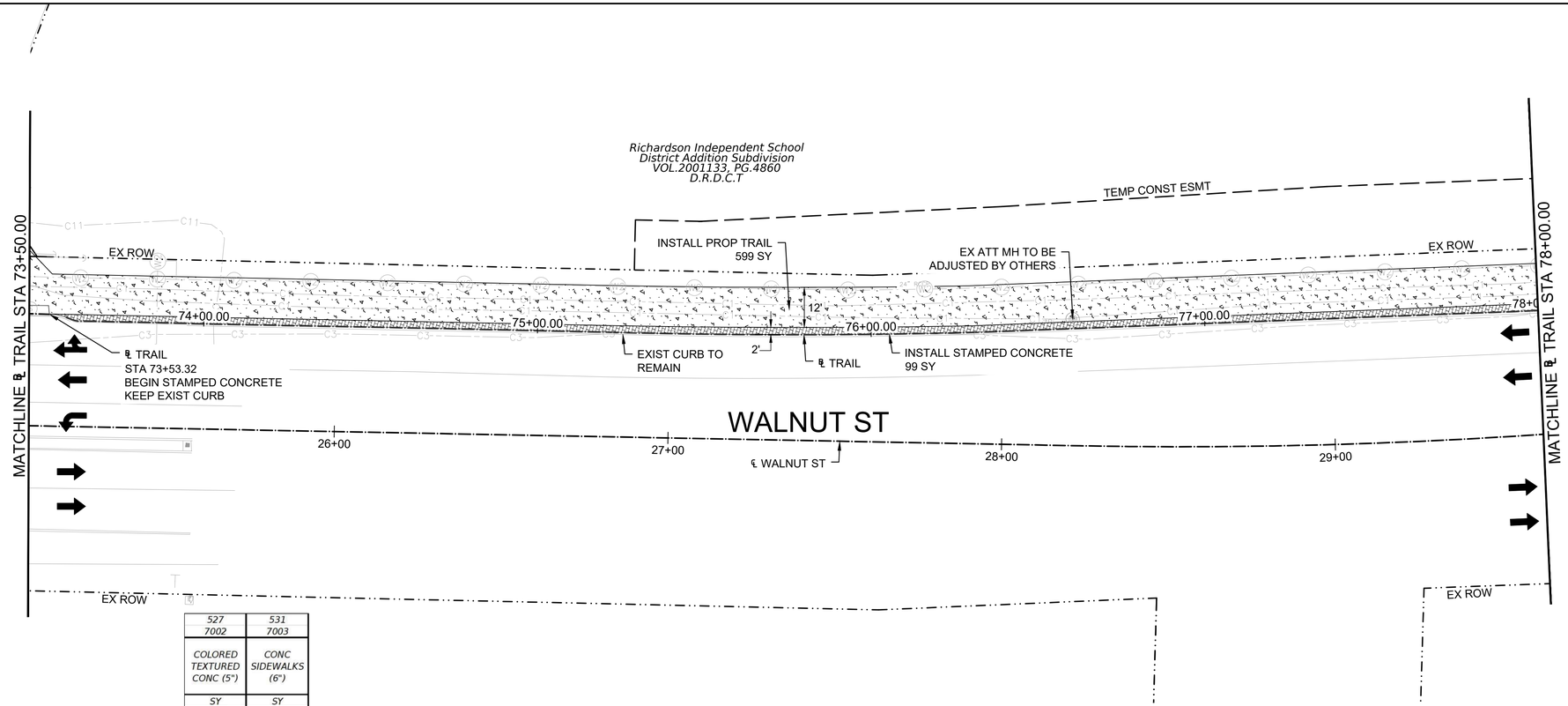
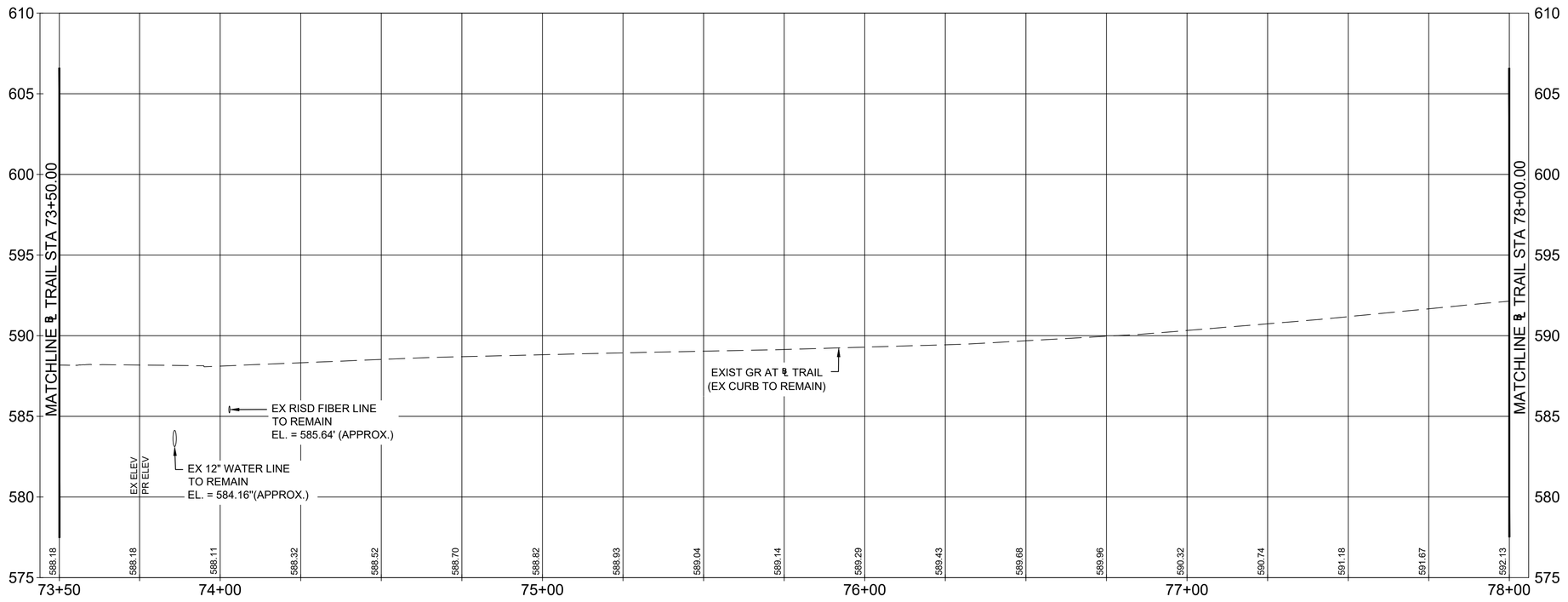
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

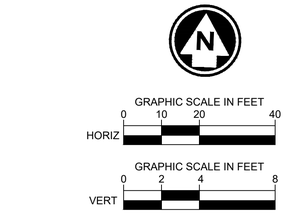
TRAIL PLAN AND PROFILE
STA 70+00.00 TO STA 73+50.00
SHEET 14 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.15
CONT.	SECT.	JOB	
918	47	473	



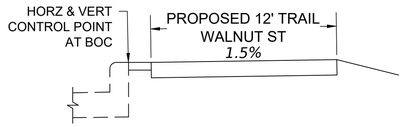
527 7002	531 7003
COLORED TEXTURED CONC (5")	CONC SIDEWALKS (6")
SY	SY
99	599





LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID — PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



NOTES:

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STATE OF TEXAS
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAIL PLAN AND PROFILE
STA 73+50.00 TO STA 78+00.00
SHEET 15 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.16
CONT.	SECT.	JOB	
918	47	473	

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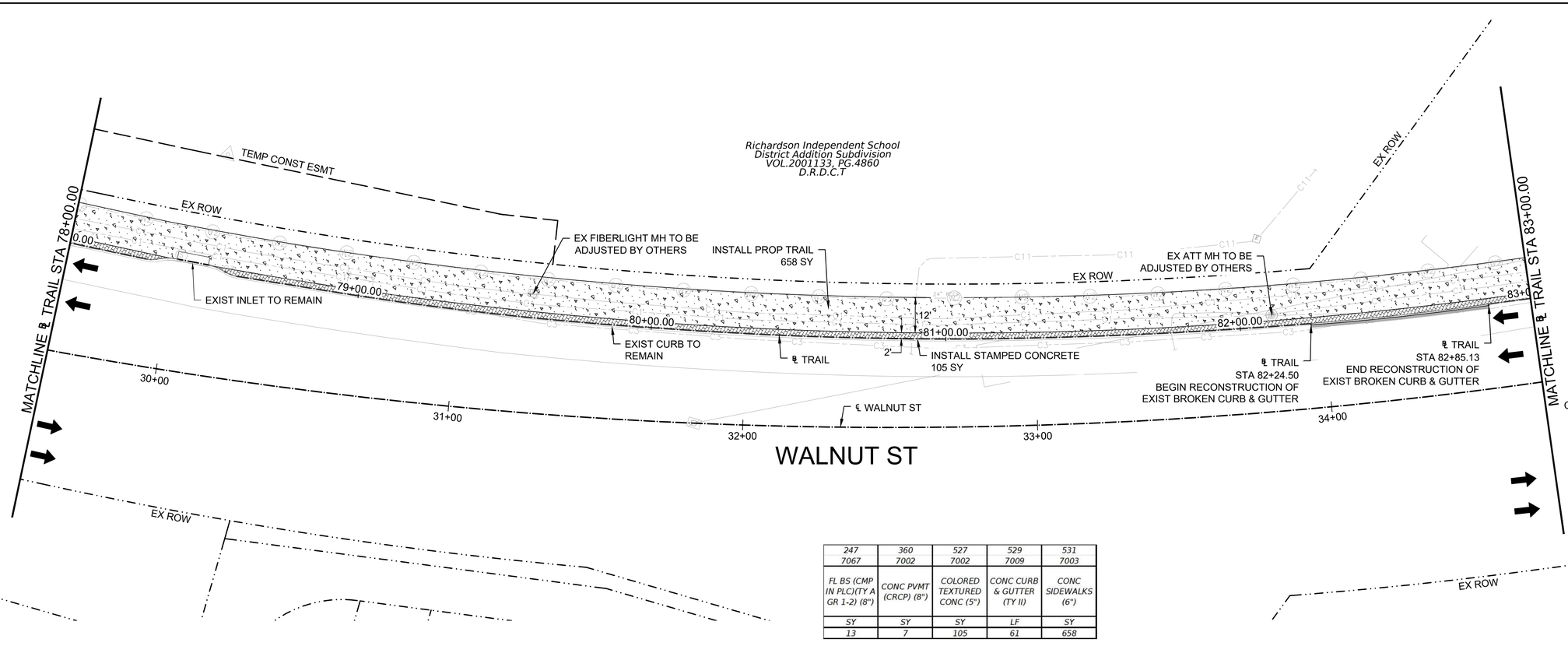
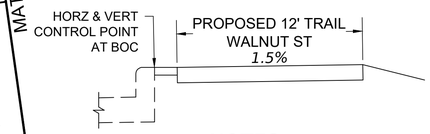


247 7067	360 7002	527 7002	529 7009	531 7003
FL BS (CMP IN PLC)(TY A GR 1-2) (8")	CONC PVMT (CRCP) (8")	COLORED TEXTURED CONC (5")	CONC CURB & GUTTER (TY II)	CONC SIDEWALKS (6")
SY	SY	SY	LF	SY
13	7	105	61	658

LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



NOTES:

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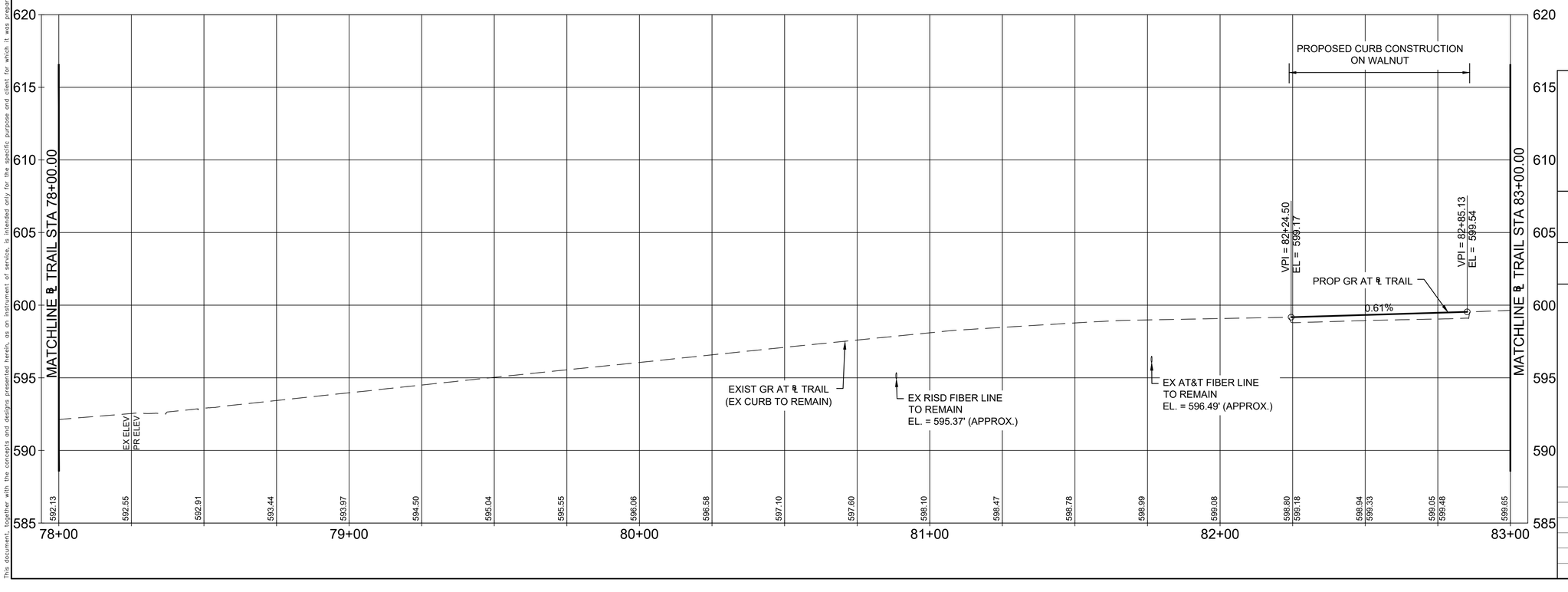
3. SEE DRAINAGE PLAN AND PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. SEE REMOVAL PLAN FOR REMOVAL AND RELOCATION OF EXISTING ITEMS.



02/20/2026

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FIRM REGISTRATION NO. F-1471

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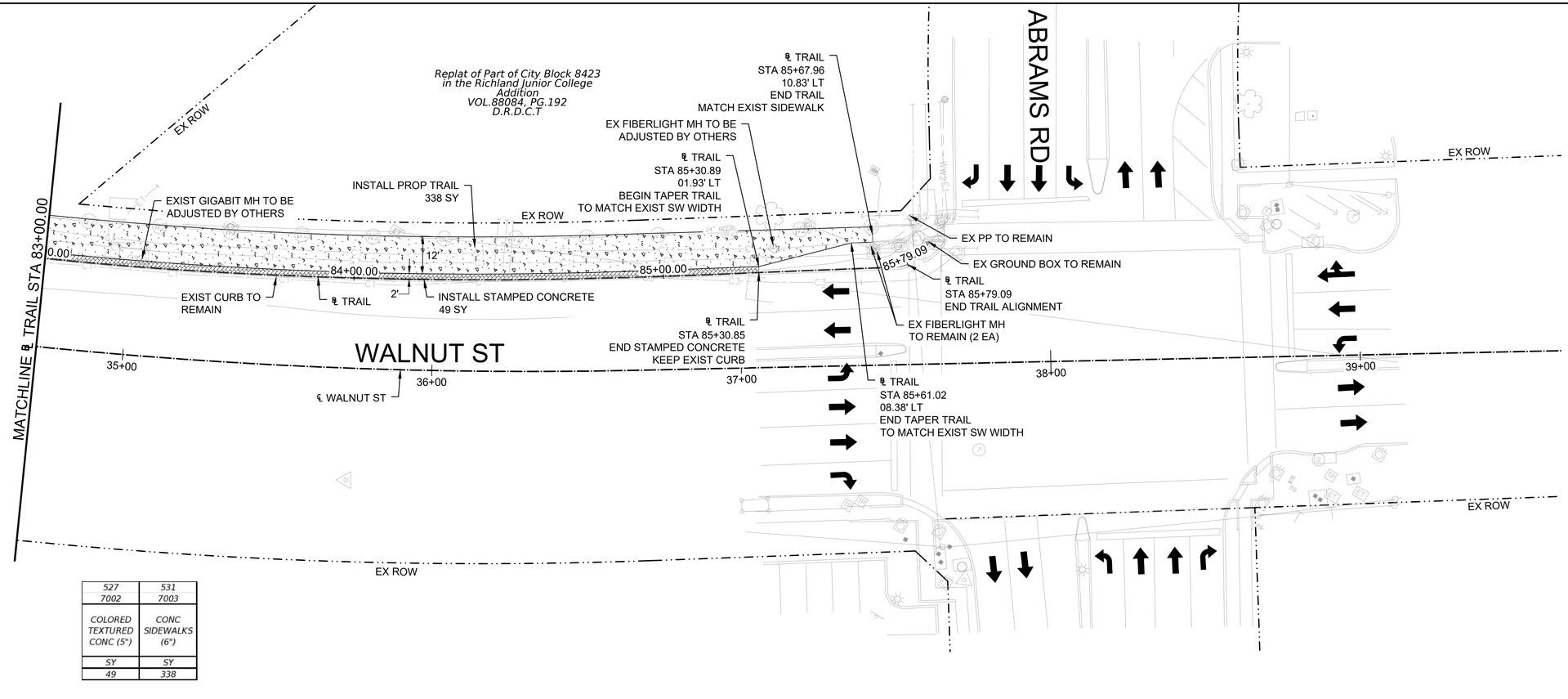
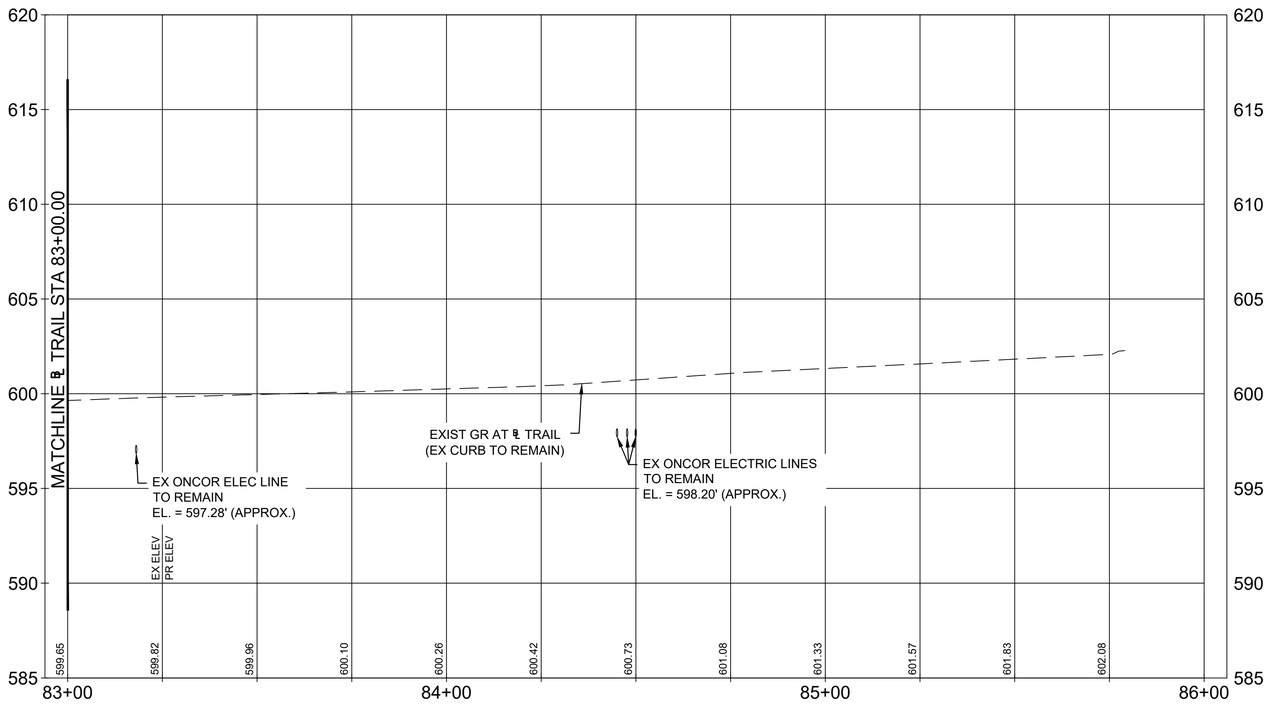
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAIL PLAN AND PROFILE
STA 78+00.00 TO STA 83+00.00
SHEET 16 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.17
CONT.	SECT.	JOB	
918	47	473	



527 7002	531 7003
COLORED TEXTURED CONC (5")	CONC SIDEWALKS (6")
SY	SY
49	338

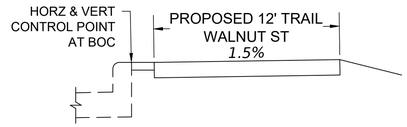


GRAPHIC SCALE IN FEET
0 10 20 40
HORIZ

GRAPHIC SCALE IN FEET
0 2 4 8
VERT

LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED TRAIL
- PROPOSED DRIVEWAY
- PROPOSED PAVEMENT
- ID — PROPOSED DRIVEWAY ID
- PROPOSED STAMPED CONC



NOTES:

1. SEE DRIVEWAY, INTERSECTION, AND MEDIAN DETAILS FOR ADDITIONAL INFORMATION.
2. SEE TRAFFIC SIGNAL LAYOUTS FOR TRAFFIC SIGNAL IMPROVEMENT DETAILS.
3. SEE DRAINAGE PLAN AND PROFILE SHEETS FOR ADDITIONAL INFORMATION.
4. SEE REMOVAL PLAN FOR REMOVAL AND RELOCATION OF EXISTING ITEMS.

STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED
PROFESSIONAL ENGINEER
02/20/2026

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FIRM REGISTRATION NO. F-1471

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAIL PLAN AND PROFILE
STA 83+00.00 TO STA 85+84.00
SHEET 17 OF 17

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.18
CONT.	SECT.	JOB	
918	47	473	

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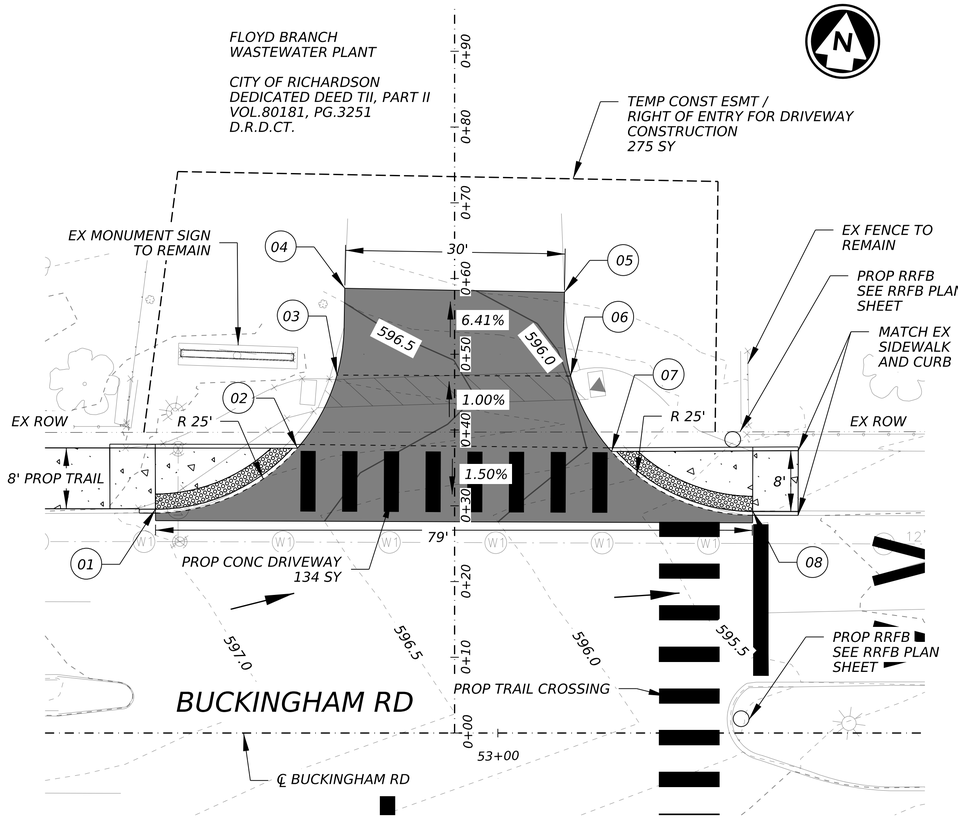
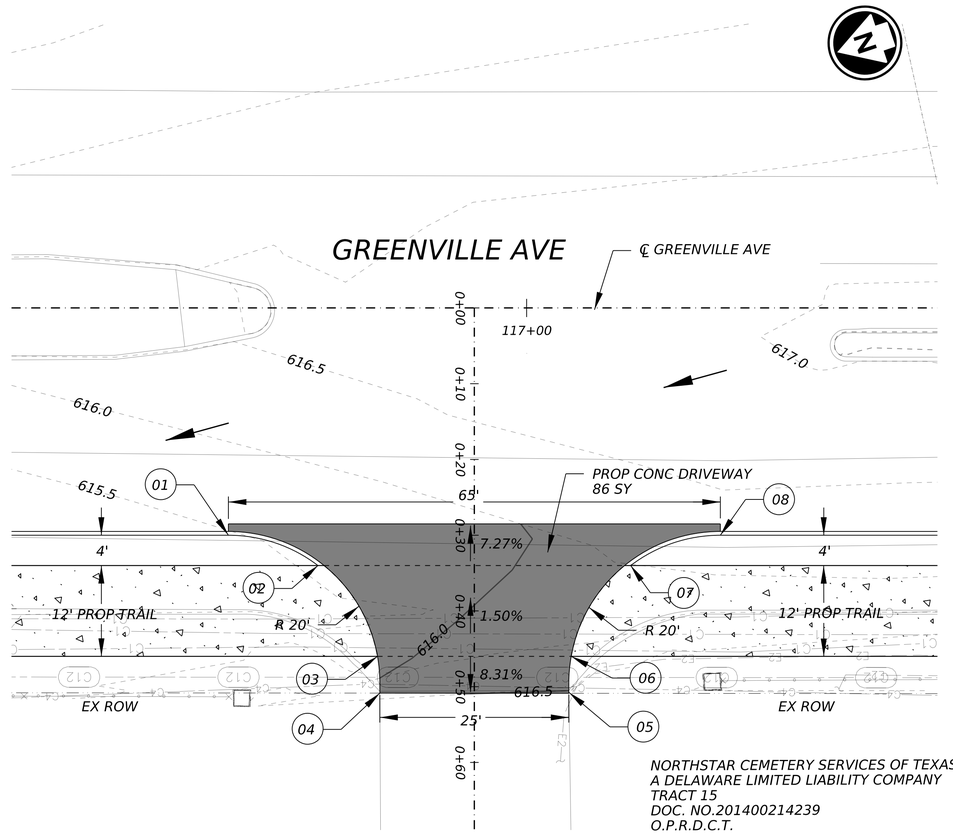




LEGEND

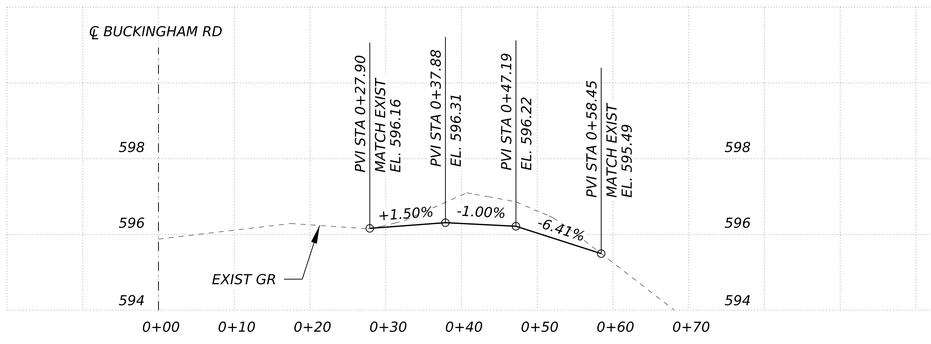
- EX ROW
- EX ESMT
- PROPOSED TRAIL
- PROPOSED STAMPED CONC
- PROPOSED DRIVEWAY
- PROPOSED CONC PAVEMENT

NOTES:

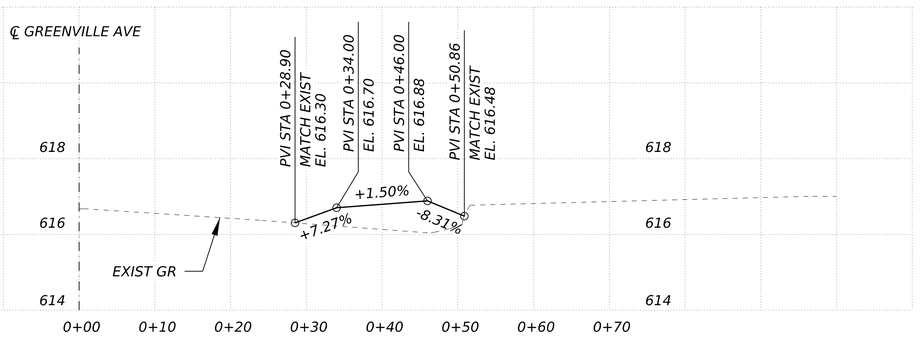
1. DRIVEWAY ACCESS SHALL BE MAINTAINED AT ALL TIMES.
2. POSITIVE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES.
3. TERMINATE DRIVEWAY CURBS PRIOR TO TRAIL PATH ACROSS THE DRIVEWAYS. MINIMIZE TRAIL PATH DIP DOWN ACROSS THE DRIVEWAYS. DO NOT PROVIDE DETECTABLE SURFACE FOR DRIVEWAYS B, C, AND D.

NORTHSTAR CEMETERY SERVICES OF TEXAS, LLC,
A DELAWARE LIMITED LIABILITY COMPANY
TRACT 15
DOC. NO.201400214239
O.P.R.D.C.T.

DRIVEWAY A

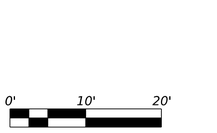


DRIVEWAY B



POINT ID	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
01	PC, BOC	BUCKINGHAM RD	52+54.79	29.54 LT	597.48
02	SIDEWALK BACK	BUCKINGHAM RD	52+73.53	37.60 LT	596.73
03	HIGH POINT	BUCKINGHAM RD	52+78.76	47.26LT	596.92
04	MATCH EXIST DRWY	BUCKINGHAM RD	52+79.79	58.71 LT	596.37
05	MATCH EXIST DRWY	BUCKINGHAM RD	53+08.79	58.19 LT	595.71
06	HIGH POINT	BUCKINGHAM RD	53+09.60	47.13 LT	595.97
07	SIDEWALK BACK	BUCKINGHAM RD	53+15.01	37.61 LT	595.77
08	PC, BOC	BUCKINGHAM RD	53+33.67	29.25 LT	595.15

POINT ID	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
01	PC, BOC	GREENVILLE AVE	116+60.62	30.00 RT	616.00
02	BOC	GREENVILLE AVE	116+72.46	34.00 RT	615.75
03	SIDEWALK BACK	GREENVILLE AVE	116+80.32	46.00 RT	615.96
04	MATCH EXIST DRWY	GREENVILLE AVE	116+80.62	50.85 RT	616.49
05	MATCH EXIST DRWY	GREENVILLE AVE	117+05.58	50.74 RT	616.52
06	SIDEWALK BACK	GREENVILLE AVE	117+05.89	46.00 RT	616.44
07	SIDEWALK FRONT	GREENVILLE AVE	117+13.75	34.00 RT	616.26
08	PC, BOC	GREENVILLE AVE	117+25.58	30.00 RT	616.66



2/20/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

DRIVEWAY DETAIL

DRIVEWAY A & B

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.19
CONT.	SECT.	JOB	
0918	47	473	

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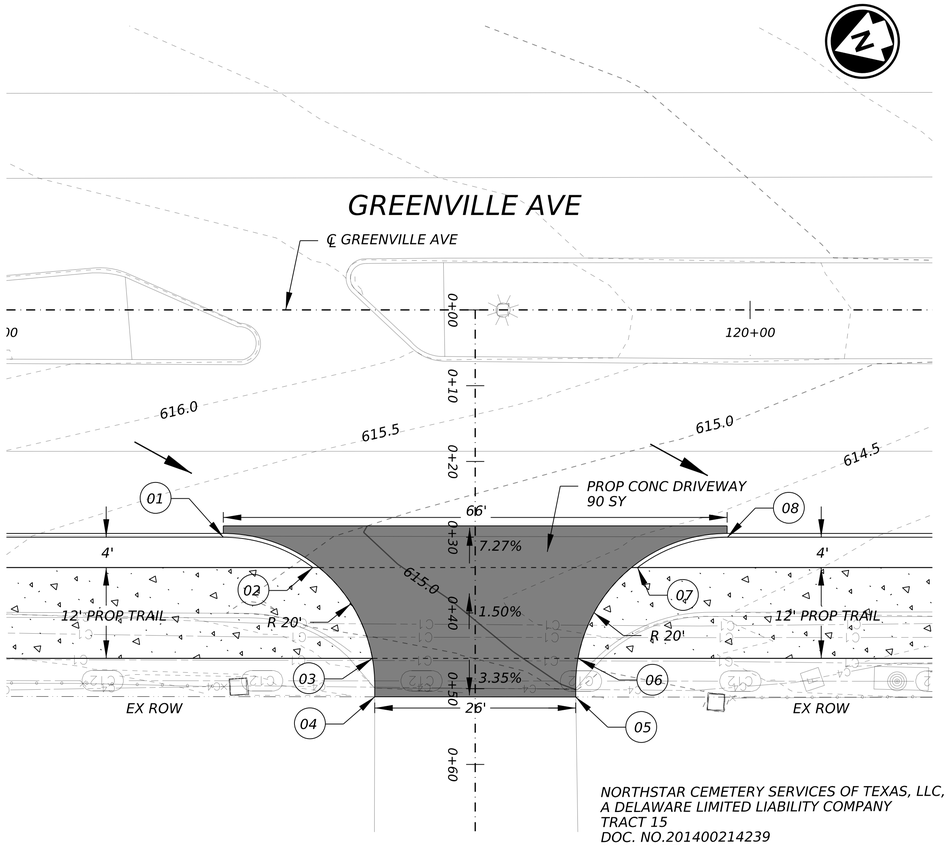
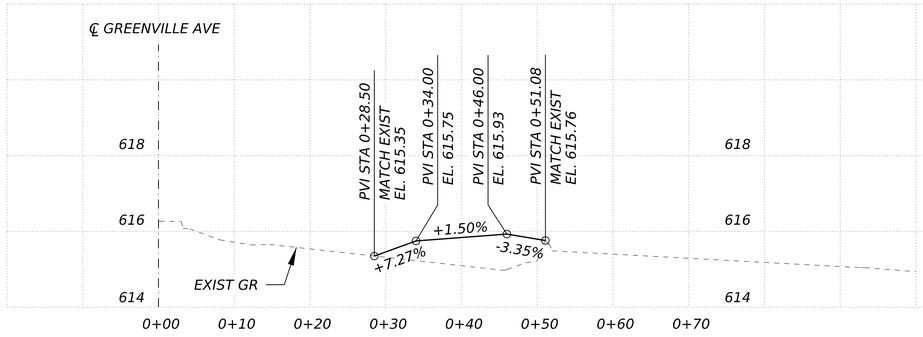
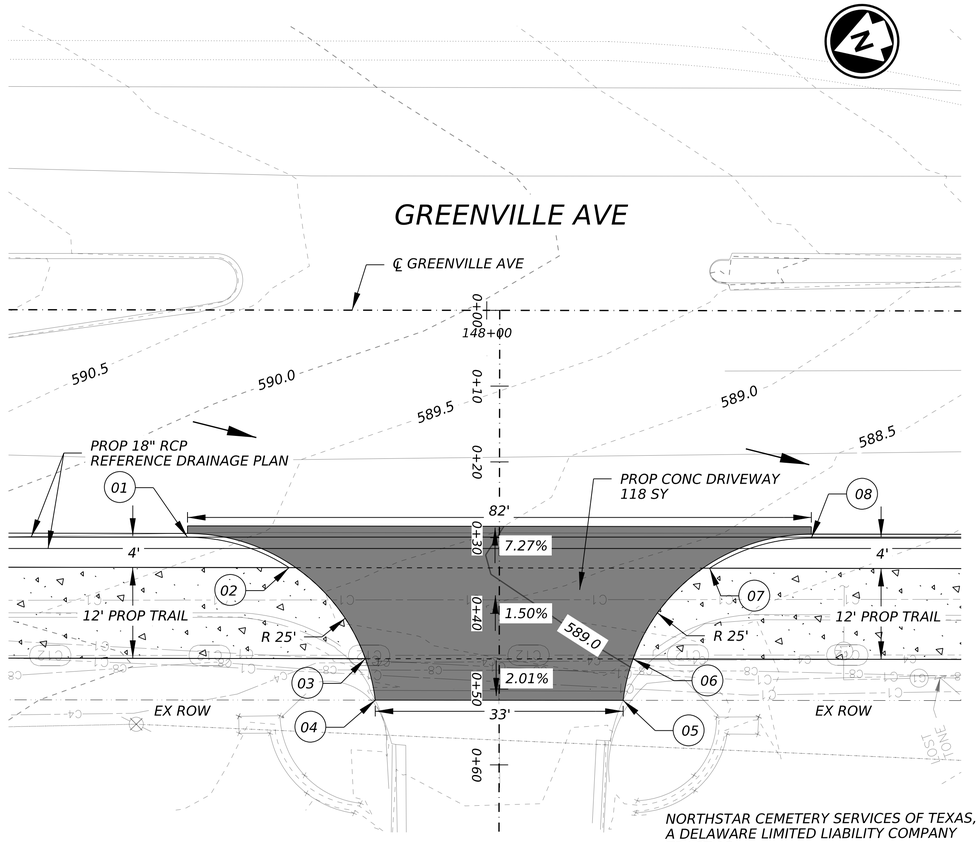


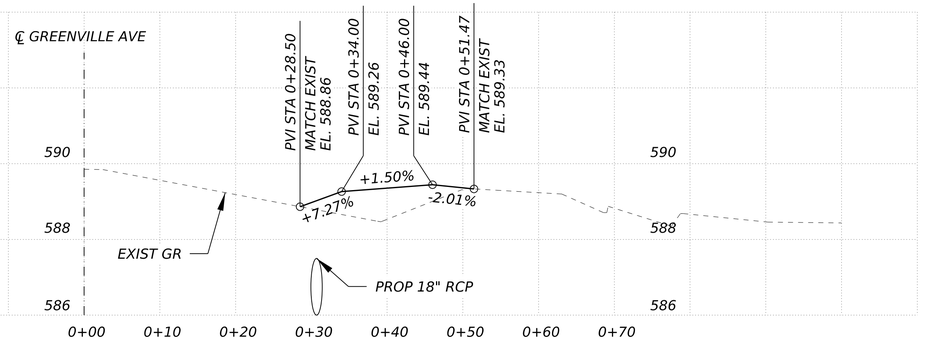
DRIVEWAY C



POINT ID	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
01	PC, BOC	GREENVILLE AVE	119+30.45	29.98 RT	615.74
02	BOC	GREENVILLE AVE	119+42.28	34.00 RT	615.55
03	SIDEWALK BACK	GREENVILLE AVE	119+50.14	46.00 RT	615.73
04	MATCH EXIST DRWY	GREENVILLE AVE	119+50.45	51.07 RT	615.82
05	MATCH EXIST DRWY	GREENVILLE AVE	119+76.98	51.09 RT	615.47
06	SIDEWALK BACK	GREENVILLE AVE	119+77.29	46.00 RT	615.39
07	SIDEWALK FRONT	GREENVILLE AVE	119+85.15	34.00 RT	615.21
08	PC, BOC	GREENVILLE AVE	119+96.99	30.04 RT	614.88



DRIVEWAY D



POINT ID	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
01	PC, BOC	GREENVILLE AVE	147+60.53	30.00 RT	589.88
02	BOC	GREENVILLE AVE	147+73.95	34.00 RT	589.47
03	SIDEWALK BACK	GREENVILLE AVE	147+84.04	46.00 RT	589.65
04	MATCH EXIST DRWY	GREENVILLE AVE	147+85.35	51.47 RT	589.71
05	MATCH EXIST DRWY	GREENVILLE AVE	148+18.08	51.46 RT	589.24
06	SIDEWALK BACK	GREENVILLE AVE	148+19.38	46.00 RT	589.20
07	SIDEWALK FRONT	GREENVILLE AVE	148+29.48	34.00 RT	589.02
08	PC, BOC	GREENVILLE AVE	148+42.89	30.00 RT	588.83

0' 10' 20'

LEGEND

- EX ROW
- EX ESMT
- PROPOSED TRAIL
- PROPOSED STAMPED CONC
- PROPOSED DRIVEWAY
- PROPOSED CONC PAVEMENT

NOTES:

1. DRIVEWAY ACCESS SHALL BE MAINTAINED AT ALL TIMES.
2. POSITIVE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES.
3. TERMINATE DRIVEWAY CURBS PRIOR TO TRAIL PATH ACROSS THE DRIVEWAYS. MINIMIZE TRAIL PATH DIP DOWN ACROSS THE DRIVEWAYS. DO NOT PROVIDE DETECTABLE SURFACE FOR DRIVEWAYS B, C, AND D.

STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED
PROFESSIONAL ENGINEER
2/20/2026

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FIRM REGISTRATION NO. F-1471

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

DRIVEWAY DETAIL

DRIVEWAY C & D

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.20
CONT.	SECT.	JOB	
0918	47	473	

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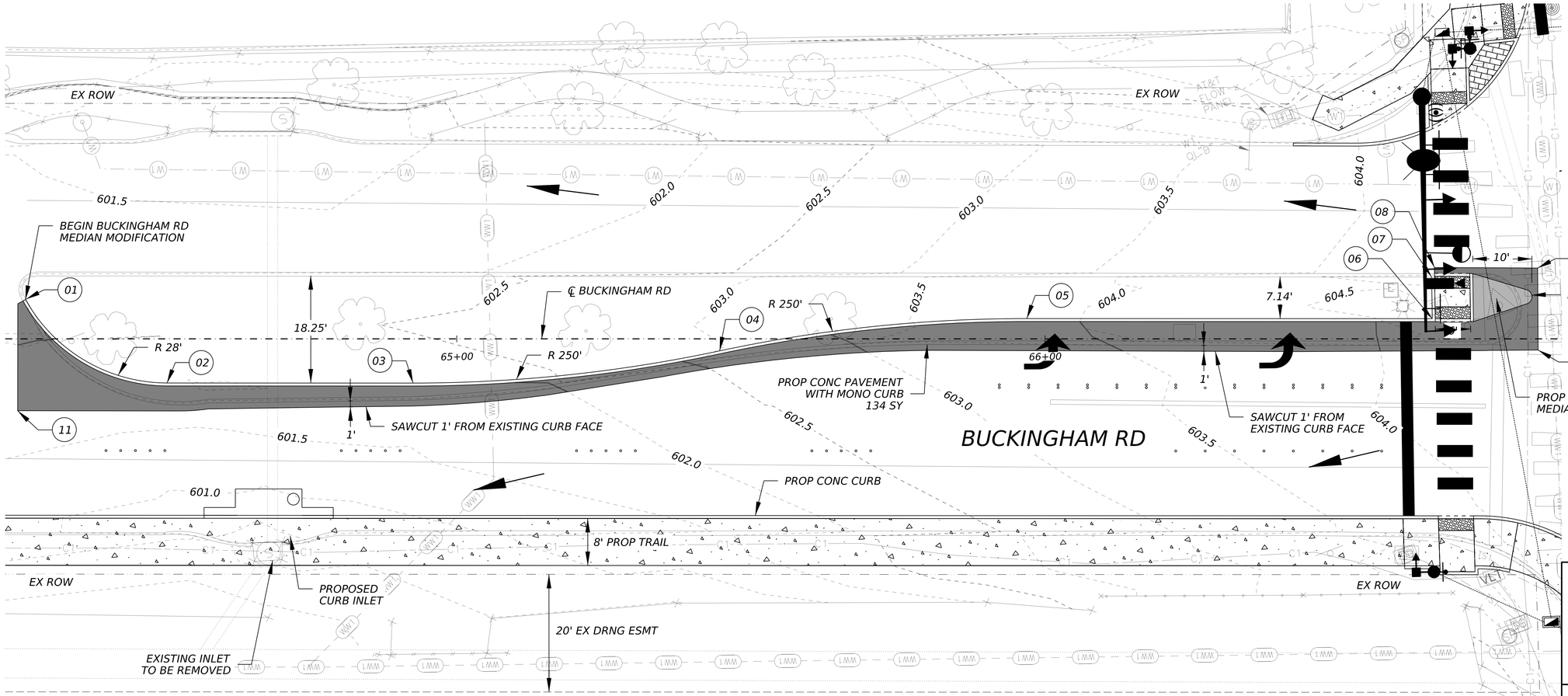

0' 10' 20'

LEGEND

- EX ROW
- EX ESMT
- PROPOSED TRAIL
- PROPOSED STAMPED CONC
- PROPOSED DRIVEWAY
- PROPOSED CONC PAVEMENT

POINT ID	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEV
01	PC, BOC, MATCH EXIST BOC	BUCKINGHAM RD	64+26.70	06.68 LT	602.40
02	PT, BOC	BUCKINGHAM RD	64+50.75	07.50 RT	602.19
03	PC, BOC	BUCKINGHAM RD	64+92.57	07.52 RT	602.20
04	PRC, BOC	BUCKINGHAM RD	65+44.69	02.04 RT	603.04
05	PT, BOC	BUCKINGHAM RD	65+96.93	03.45 LT	603.82
06	BOC	BUCKINGHAM RD	65+65.84	03.42 LT	604.70
07	BOC, MATCH EXIST BOC	BUCKINGHAM RD	65+65.74	10.51 LT	604.74
08	MATCH EXIST PVMT	BUCKINGHAM RD	65+66.21	12.12 LT	604.35
09	MATCH EXIST PVMT	BUCKINGHAM RD	65+83.76	12.03 LT	604.49
10	MATCH EXIST PVMT	BUCKINGHAM RD	65+83.84	01.91 RT	604.46
11	MATCH EXIST PVMT	BUCKINGHAM RD	64+25.36	12.22 RT	601.65

STATE OF TEXAS
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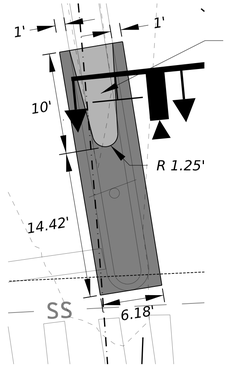
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

MEDIAN MODIFICATION DETAIL

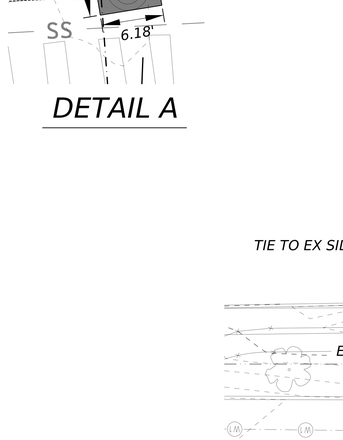
BUCKINGHAM RD

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.21
CONT.	SECT.	JOB	
0918	47	473	

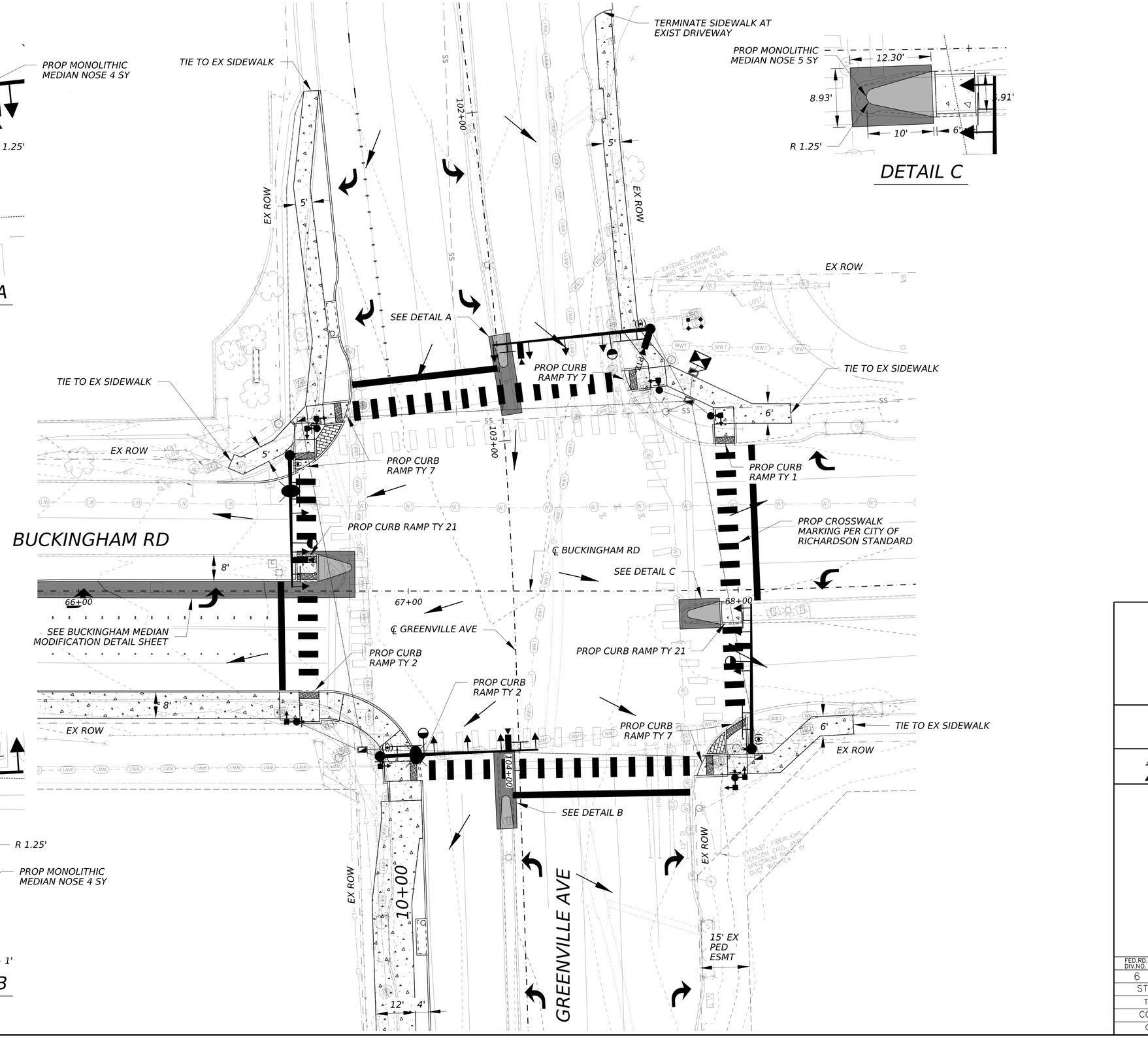


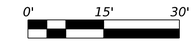
DETAIL A

DETAIL C



DETAIL B





LEGEND

- EX ROW
- EX ESMT
- PROPOSED TRAIL
- PROPOSED STAMPED CONC
- PROPOSED PAVEMENT

NOTES:

1. SEE TRAFFIC SIGNAL LAYOUT FOR PROPOSED SIGNAL IMPROVEMENTS.
2. SEE MEDIAN DETAIL SHEET FOR ADDITIONAL INFORMATION.
3. SEE DRAINAGE PLAN SHEETS FOR STORM DRAIN DETAILS.

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

INTERSECTION DETAIL

BUCKINGHAM RD AT
GREENVILLE AVE

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	
CONT.	SECT.	JOB	3.22
0918	47	473	

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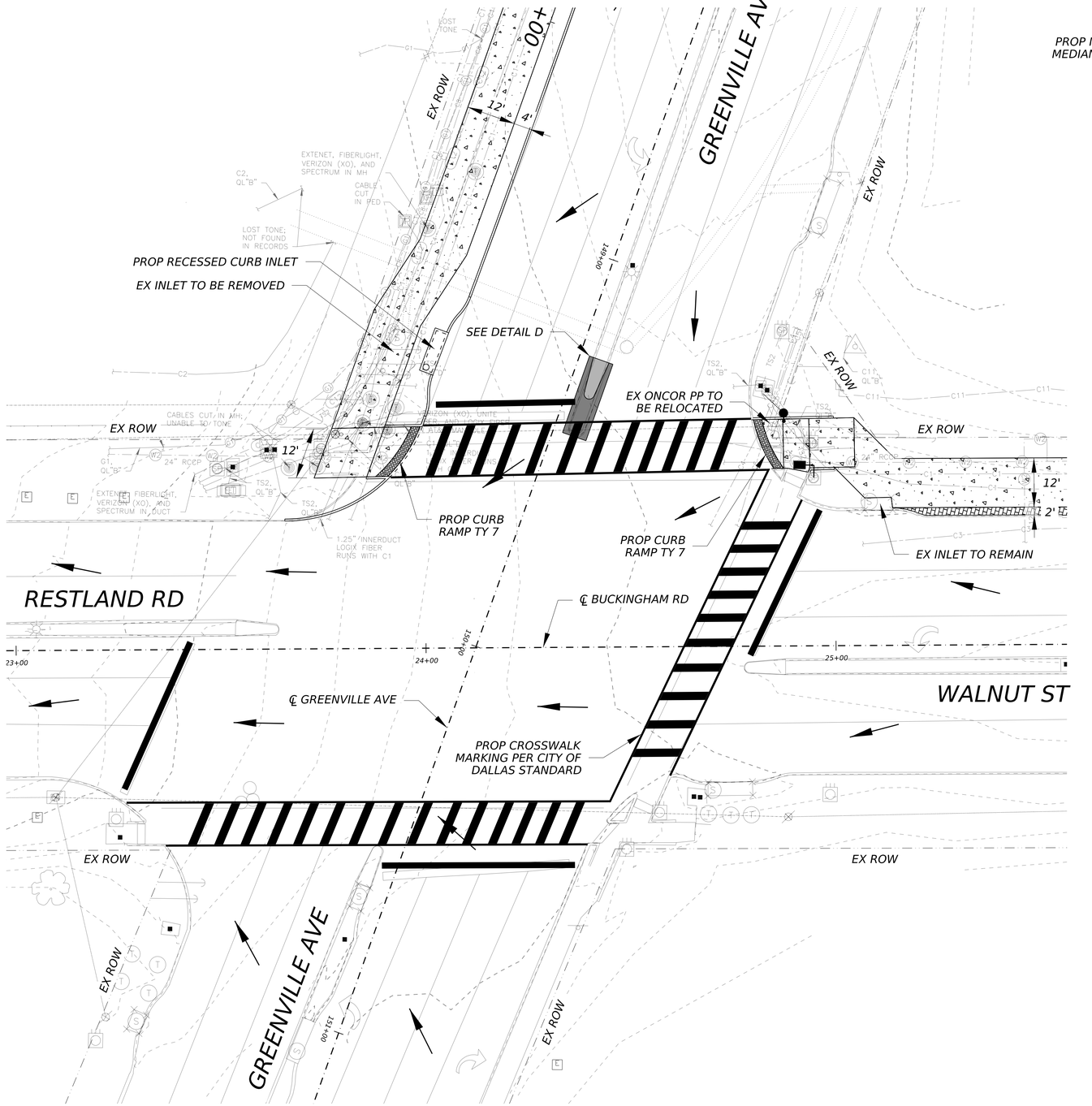

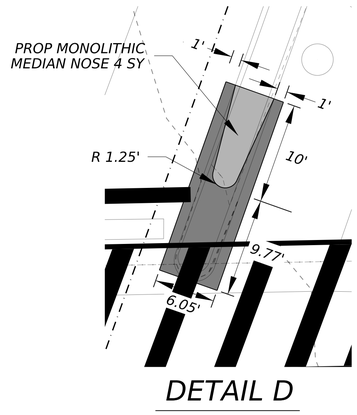

DETAIL D

0' 15' 30'

LEGEND

- EX ROW
- EX ESMT
- PROPOSED TRAIL
- PROPOSED STAMPED CONC
- PROPOSED PAVEMENT

NOTES:

1. SEE TRAFFIC SIGNAL LAYOUT FOR PROPOSED SIGNAL IMPROVEMENTS.
2. SEE MEDIAN DETAIL SHEET FOR ADDITIONAL INFORMATION.
3. SEE DRAINAGE PLAN SHEETS FOR STORM DRAIN DETAILS.

STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED
PROFESSIONAL ENGINEER
2/20/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

INTERSECTION DETAIL

WALNUT ST AT GREENVILLE AVE

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.23
CONT.	SECT.	JOB	
0918	47	473	

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DATE: 10/3/2025
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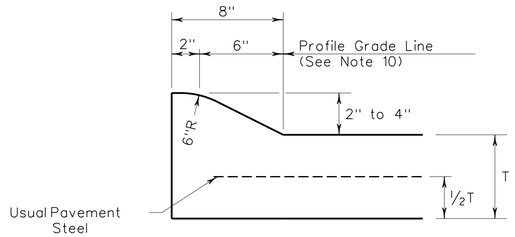
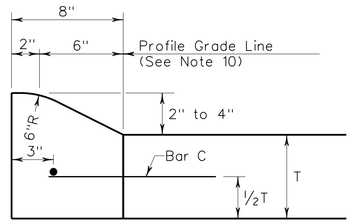
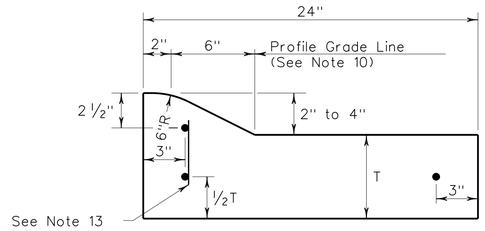


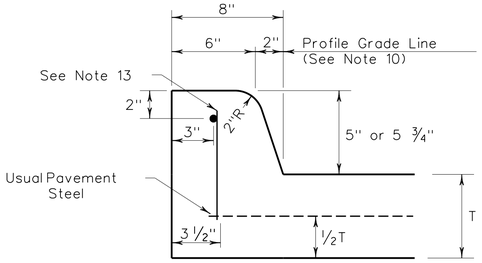
TYPE I CURB (MONOLITHIC)
2" - 4" HEIGHT



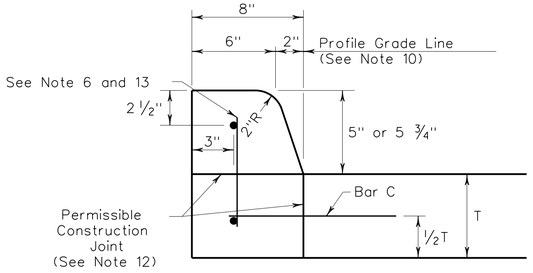
TYPE I CURB
2" - 4" HEIGHT



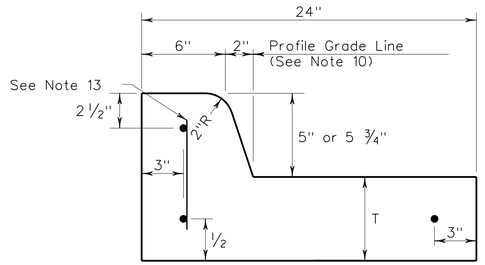
TYPE I CURB AND GUTTER
2" - 4" HEIGHT



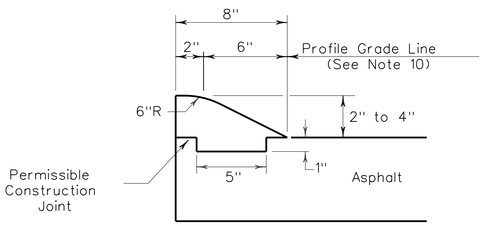
TYPE II CURB (MONOLITHIC)
5" - 5 3/4" HEIGHT



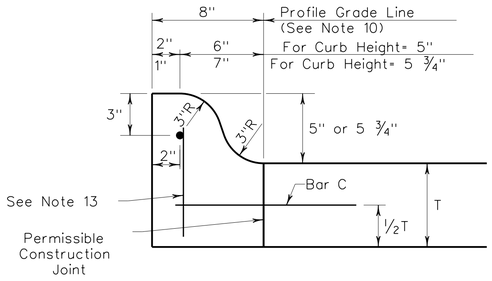
TYPE II CURB
5" - 5 3/4" HEIGHT



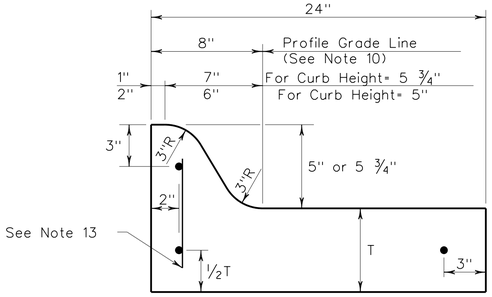
TYPE II CURB AND GUTTER
5" - 5 3/4" HEIGHT



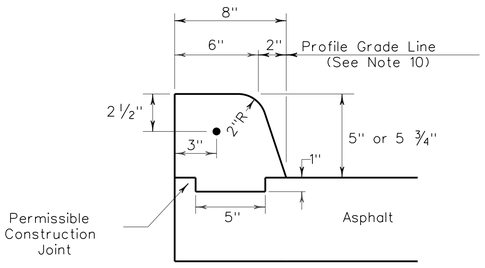
TYPE III CURB (KEYED)
2" - 4" HEIGHT



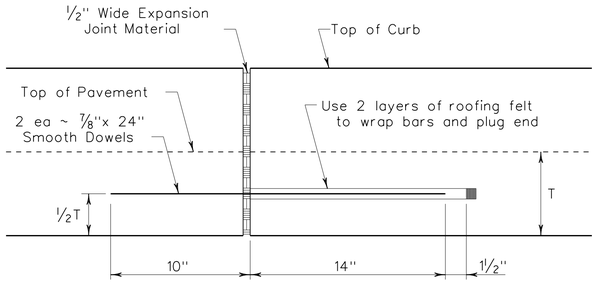
TYPE IIa CURB
5" - 5 3/4" HEIGHT



TYPE IIa CURB AND GUTTER
5" - 5 3/4" HEIGHT

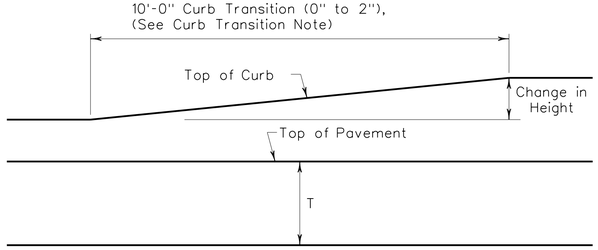


TYPE IV CURB (KEYED)
5" - 5 3/4" HEIGHT



EXPANSION JOINT DETAIL

CURB TRANSITION NOTE:
Field conditions may require a longer or shorter transition, and shall be shown elsewhere in the plans,or as directed by the Engineer.



CURB TRANSITION
Note: To be paid for as Highest Curb

GENERAL NOTES

1. All materials and construction shall be in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."
2. Concrete shall be Class A.
3. When reinforcing bars are used, they shall be No.4 unless otherwise shown. The use of fiber reinforced concrete in lieu of reinforcing steel is acceptable. Use fibers meeting the requirements of DMS 4550, "Fibers for Concrete," and dose fibers in accordance with Material Producers List (MPL) "Fibers for Class A and B Concrete Applications."
4. Round exposed sharp edges with a rounding tool, to a minimum radius of 1/4 inch.
5. All existing curbs and driveways to be removed shall be sawed or removed at existing joints.
6. Where concrete curb is to be placed on existing concrete pavement, Bar B may be drilled and grouted in place, or may be inserted into fresh concrete.
7. Expansion and contraction joints shall be constructed to match pavement joints in all curbs and curb and gutter adjacent to jointed concrete pavement. Where placement of curb or curb and gutter is not adjacent to concrete pavement, expansion joints shall be provided at structures, curb returns at streets, and at locations directed by The Engineer.
8. Vertical and horizontal dowel bars and transverse reinforcing bars shall be placed at four feet C~C.
9. Dimension 'T' shown is the thickness of concrete pavement. When curb is installed adjacent to flexible pavement dimension 'T' is 8" maximum.
10. Usual profile grade line. Refer to typical sections and plan-profile sheets for exact locations.
11. One-half inch expansion joint material shall be provided where curb or curb and gutter is adjacent to sidewalk or riprap.
12. When horizontal permissible construction joints are used, the longitudinal pavement steel shall be placed in accordance with pavement details shown elsewhere in the plans. Reinforcing steel for curb section shall then conform to that required for concrete curb.
13. Bar B placement as needed (typically at four ft. C-C) to support curb reinforcing steel during concrete placement.

BAR B

BAR C

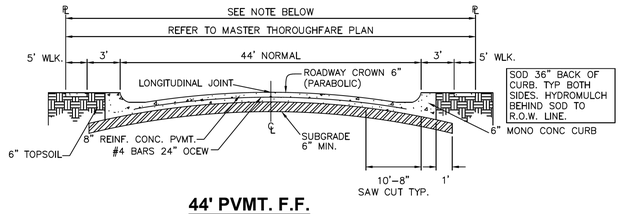
Texas Department of Transportation

Design Division Standard

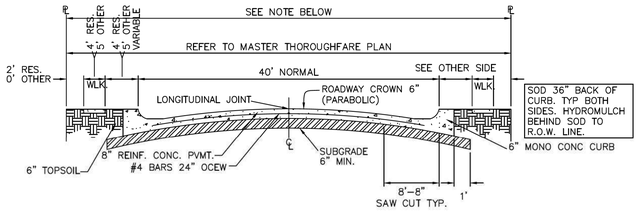
CONCRETE CURB AND CURB AND GUTTER

CCCG-22

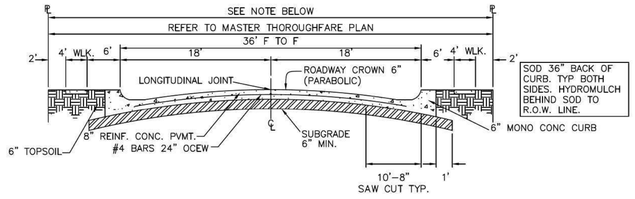
FILE: cccg21.dgn	DN: TXDOT	CK: AN	DW: CS	CK: KM
© TxDOT: JUNE 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		3.24



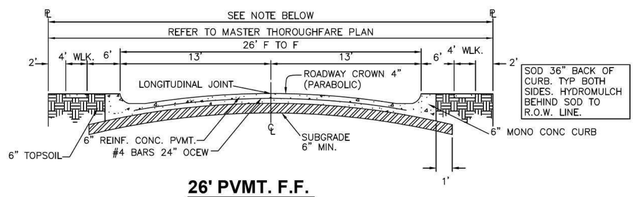
44' PVMT. F.F.



40' PVMT. F.F. (NORMAL)



36' PVMT. F.F.

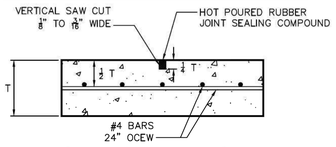


26' PVMT. F.F.

NOTE:

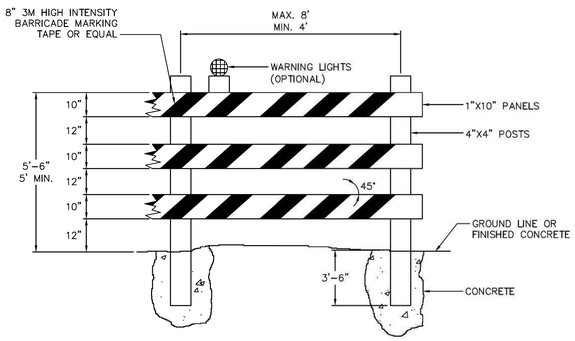
1. ALL R.O.W. SHALL BE COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR @ −2% TO +4% OPTIMUM MOISTURE.
2. SIDEWALK WIDTH VARIES ACCORDING TO ZONING, AND PRESENCE OF SCREENING WALL.

TABLE OF CROWN HEIGHTS				
ROADWAY WIDTH	TOTAL CROWN	3/4 POINT	MID-POINT	1/4 POINT
26'	4"	2-1/4"	1"	1/4"
36'	6"	3-3/8"	1 1/2"	3/8"
40'	6"	3-3/8"	1 1/2"	3/8"
44'	6"	3-3/8"	1 1/2"	3/8"

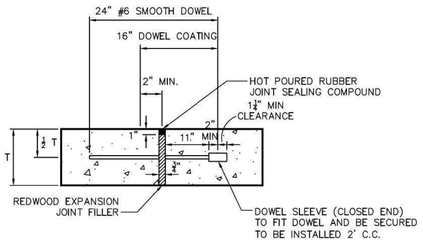


SAWED DUMMY JOINT

1. RAIL STRIPE WIDTHS SHALL BE 6", EXCEPT THAT 4" WIDE STRIPS MAY BE USED IF RAIL LENGTHS ARE LESS THAN 36".
2. THE SIDES OF BARRICADES FACING TRAFFIC SHALL HAVE RETROREFLECTIVE RAIL FACES.

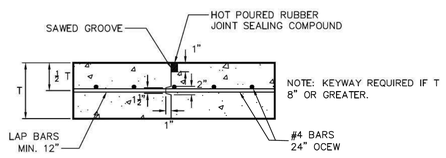


PERMANENT BARRICADE

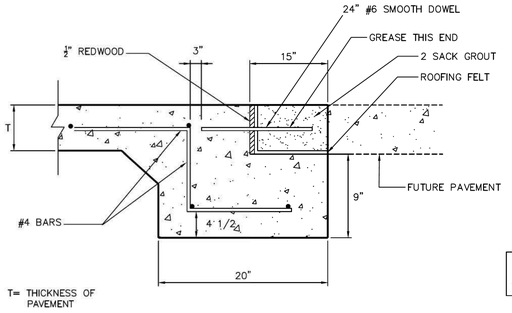


EXPANSION JOINTS TO BE PLACED ON 500' TO 700' INTERVALS AND RADIUS RETURNS, BOTH MEDIAN & INTERSECTION.

TRANSVERSE EXPANSION JOINT

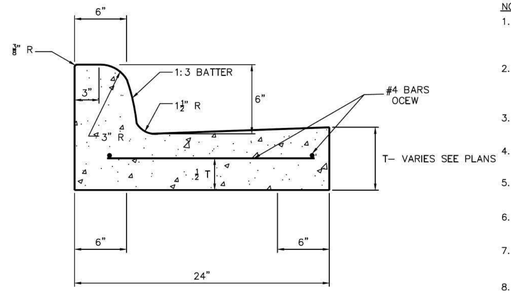


CONSTRUCTION JOINT

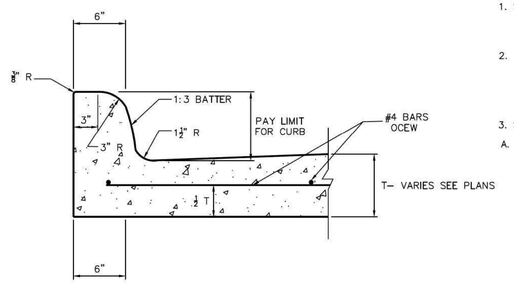


PAVEMENT HEADER

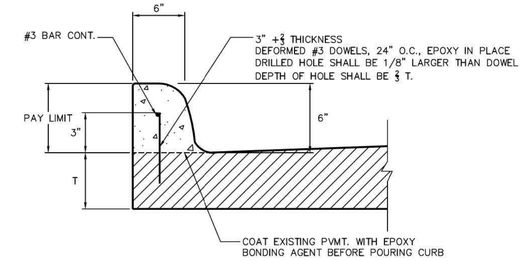
THIS SECTION TO BE USED FOR CONTINUATION OF FUTURE PAVEMENT



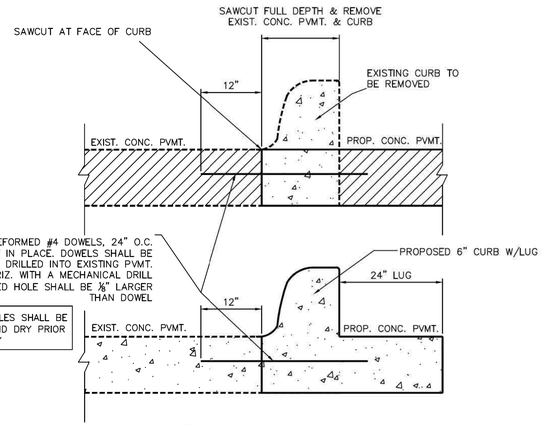
SEPARATE CURB AND GUTTER



INTEGRAL CURB AND GUTTER



DOWEL ON CURB



SAWCUT AND REMOVE CURB

CONNECTION TO EXISTING PAVEMENT

NOTES:

1. STREET CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION NORTH CENTRAL TEXAS." FOR THE DESIGN OF WATER AND SEWER LINES AND WATER DEPARTMENT STANDARDS.
2. ALL STREET PAVEMENT SHALL BE CLASS "C" CONCRETE PER NCTCOG ITEM 303.3.4.2(a), REINFORCED WITH #4 BARS, GRADE 60 SHOWN BOTH SPACED 24" O.C.E.W. HAND FINISHING WILL BE AS PER ITEM 303.5.6.2
3. ALL PARKWAYS SHALL SLOPE A MIN. OF 1/4" PER FOOT UP FROM THE CURB TO THE RIGHT-OF-WAY LINE, THEN AT A MAX 3:1 SLOPE TO MATCH EXISTING GRADE.
4. SAWING AND SEALING OF ALL LONGITUDINAL AND TRANSVERSE PAVEMENT JOINTS SHALL BE CONSIDERED SUBSIDIARY TO ALL PAVING ITEMS.
5. FOR PLACING OF CONCRETE PAVEMENT REFER TO ITEM 303.5.5 OF "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION NORTH CENTRAL TEXAS."
6. FOR MAXIMUM SLUMP OF CONCRETE FOR PAVEMENT REFER TO ITEM 303.3.4.4 OF "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION NORTH CENTRAL TEXAS."
7. ALL NONRESIDENTIAL PAVEMENT SHALL BE A MINIMUM OF 8" THICK, REINFORCED WITH #4 BARS, GRADE 60.
8. ALL COMMERCIAL AND RESIDENTIAL DRIVEWAYS SHALL BE CLASS "C" CONCRETE WITH #4 BARS GRADE 60 SPACED AT 24" OCEW.

PORTLAND CEMENT CONCRETE PAVEMENT:

1. STANDARD SPECIFICATIONS ITEM 303.2.1.3 – 'COARSE AGGREGATES' SHALL BE AMENDED THE FIRST SENTENCE IS DELETED AND REPLACED AS FOLLOWS "COARSE AGGREGATES SHALL BE 100% CRUSHED STONE"
2. STANDARD SPECIFICATIONS ITEM 303 SHALL BE AMENDED AS FOLLOWS:
   A. ITEM 303.2.4. FLY ASH IS ALLOWED: MAX 20% BY WEIGHT
   B. ITEM 303.2.5 SHALL BE DELETED. NO MINERAL FILLER IS ALLOWED
   C. ITEM 303.2.6 SHALL BE DELETED. NO FIBROUS REINFORCEMENT ALLOWED
3. STANDARD SPECIFICATIONS ITEM 303 SHALL BE AMENDED TO INCLUDE THE FOLLOWING:

A. ALL EQUIPMENT NECESSARY TO CONSTRUCT CONCRETE PAVEMENT SHALL BE APPROVED BY THE OWNER PRIOR TO STARTING THE PAVING OPERATION. PAVING EQUIPMENT REQUIREMENTS ARE

1. SIDEWALKS LESS THAN 8' IN WIDTH
   NO PAVING MACHINE REQUIRED. STINGER VIBRATORS AND METAL STRAIGHT EDGES SHALL BE USED TO CONSOLIDATE THE CONCRETE.
2. SIDEWALKS 8' IN WIDTH OR WIDER
   VIBRATING SCREED WITH TWO HAND HELD STINGER VIBRATORS SHALL BE USED TO CONSOLIDATE THE CONCRETE.
3. PARKING LOTS AND TURN LANES
   VIBRATING SCREED WITH TWO HAND HELD STINGER VIBRATORS SHALL BE USED TO CONSOLIDATE THE CONCRETE.
4. NEW STREET AND ALLEY PAVEMENT
   SLIPFORM PAVING EQUIPMENT AS DESCRIBED IN ITEM 303.4.3 OF THE STANDARD SPECIFICATIONS SHALL BE USED.
5. STREET AND ALLEY REPAIRS
   PAVING EQUIPMENT WILL BE DETERMINED BY THE OWNER.
6. FULL WIDTH ALLEY REPLACEMENT
   VIBRATING SCREED WITH TWO HAND HELD STINGER VIBRATORS SHALL BE USED TO CONSOLIDATE THE CONCRETE.

B. CONCRETE FINISH

NEW PAVEMENT: STREET AND ALLEY PAVEMENT SHALL BE TEXTURED WITH A NYLON BAKER BROOM THAT IS CLEAN AND FREE OF GROUT BUILDUP. DRAG BROOM LONGITUDINALLY OVER THE PAVEMENT AFTER BLEED WATER HAS EVAPORATED (CONCRETE WILL APPEAR DULL) BUT BEFORE CONCRETE HAS ATTAINED ITS INITIAL SET.

NEW SIDEWALK: SHALL BE TEXTURED WITH A TRANSVERSELY WITH A LIGHT BROOM FINISH. HAND FINISHING SHALL BE PER ITEM 303.5.6.2

PAVEMENT PATCHING: STREET AND ALLEY PAVEMENT SHALL BE TEXTURED LONGITUDINALLY WITH A HORSEHAIR BROOM OR A BURLAP DRAG FINISH.

C. CONCRETE TEMPERATURES

MAY 1 THROUGH SEPTEMBER 30

1. ALL MIXES AND MIX DESIGNS SHALL INCLUDE A RETARDING AGENT.
2. CONCRETE TEMPERATURE PRIOR TO PLACEMENT SHALL NOT EXCEED 95'F, (35'C).
3. THE TIME INTERVAL (FROM ADDITION OF INITIAL WATER):

AGITATED CONCRETE		
90'F OR ABOVE	(32.2'C)	45 MINUTES
75'F TO 89'F	(23.9' TO 31.6'C)	60 MINUTES
35'F TO 74'F	(1.6' TO 23.3'C)	90 MINUTES

NON AGITATED CONCRETE		
80'F OR ABOVE	(26.6'C)	15 MINUTES
35'F TO 79'F	(1.6' TO 26.1'C)	30 MINUTES

OCTOBER 1 THROUGH APRIL 30

1. CONCRETE TEMPERATURE PRIOR TO PLACEMENT SHALL NOT EXCEED 95'F, (35'C).
2. THE TIME INTERVAL (FROM ADDITION OF INITIAL WATER):

AGITATED CONCRETE		
90'F OR ABOVE	(32.2'C)	45 MINUTES
75'F TO 89'F	(23.9' TO 31.6'C)	60 MINUTES
35'F TO 74'F	(1.6' TO 23.3'C)	90 MINUTES

NON AGITATED CONCRETE		
80'F OR ABOVE	(26.6'C)	15 MINUTES
35'F TO 79'F	(1.6' TO 26.1'C)	30 MINUTES

Revisions:

City of Richardson
411 W. Arapaho Road
Suite 204
Richardson, Texas 75080
voice: 972 744-4280
fax: 972 744-5804

Drawn By: RGB
Checked By: COR

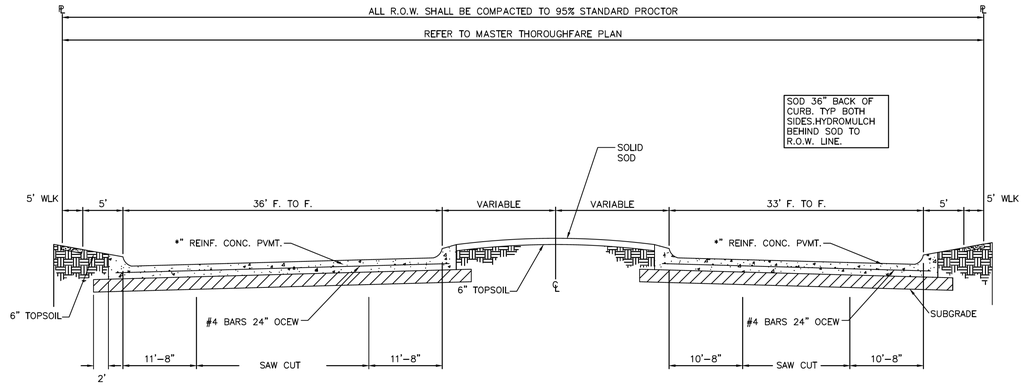
RICHARDSON TEXAS

STANDARD DETAILS

City of Richardson, Texas

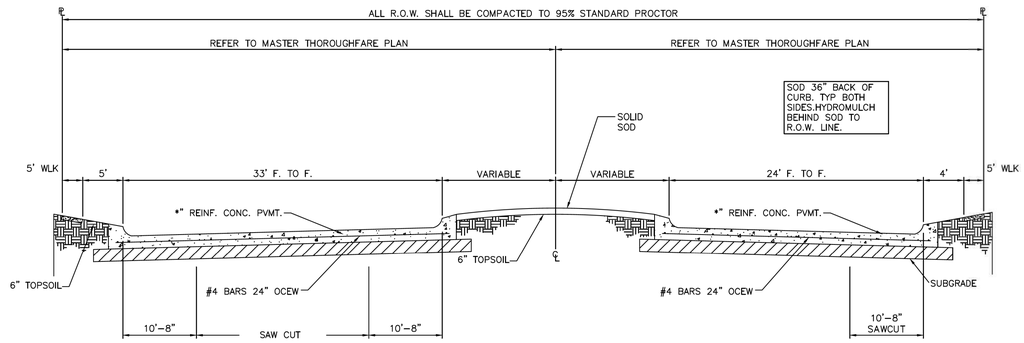
NO ADDITIONS OR CHANGES TO STANDARD DETAIL SHEETS UNLESS APPROVED BY CITY OF RICHARDSON

24"x36" Scale: NTS
11"x17" Scale: NTS
Vertical Scale: NA
Project Number: XXX
Issue Date: 03 MAY 18
Sheet Title: **STREET**
Sheet No.: **C-6**

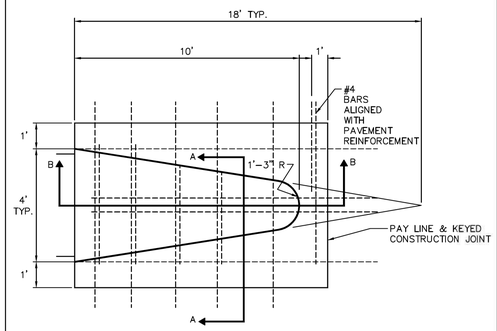


36'-33' PVMT. F.F.

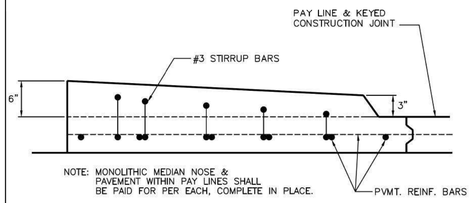
* 8" THK WITH LIME TREATED SUBGRADE
  9" THK WITHOUT LIME TREATED SUBGRADE
  10" THK AT ALL THOROUGHFARE TO THOROUGHFARE INTERSECTIONS, FROM RADIUS RETURN TO RADIUS RETURN



22'-33' PVMT. F.F.
TYPICAL PVMT. SECTION-DIVIDED ROADWAY

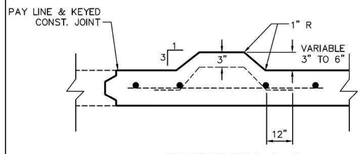


MONOLITHIC MEDIAN NOSE

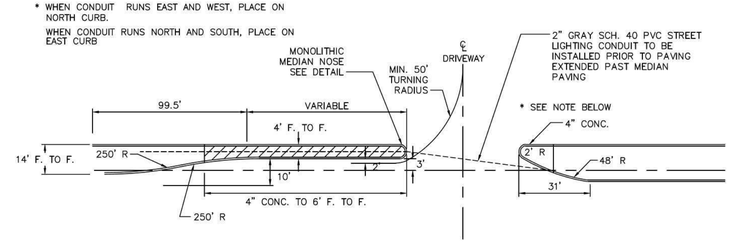


NOTE: MONOLITHIC MEDIAN NOSE & PAVEMENT WITHIN PAY LINES SHALL BE PAID FOR PER EACH, COMPLETE IN PLACE.

SECTION B-B



SECTION A-A



MEDIAN NOSE PLACEMENT:

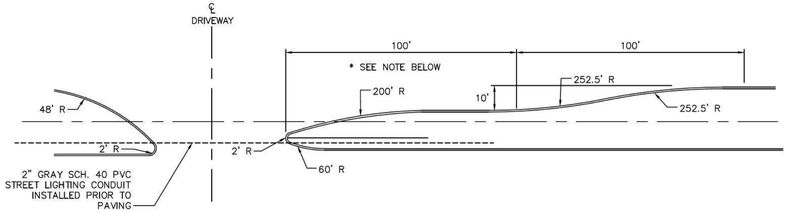
TYP. 1 FOOT MIN. PRECEDING PROJECTED LINES OF CURB RAMP (SEE SHEET C-11) OR AS REQUIRED BASED ON INTERSECTION GEOMETRY.

APPLIES ONLY @ INTERSECTIONS W/ CROSSWALKS.

SEE STREET MARKING STANDARD DETAIL FOR BUTTON TYPE AND LOCATION

LEFT TURN LANE FOR 14 FOOT MEDIAN

ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED



MEDIAN NOSE PLACEMENT:

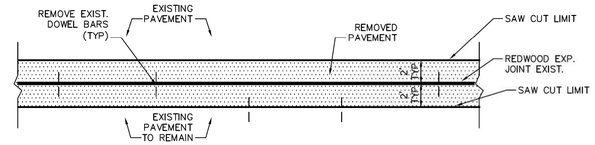
TYP. 1 FOOT MIN. PRECEDING PROJECTED LINES OF CURB RAMP (SEE SHEET C-11) OR AS REQUIRED BASED ON INTERSECTION GEOMETRY.

APPLIES ONLY @ INTERSECTIONS W/ CROSSWALKS.

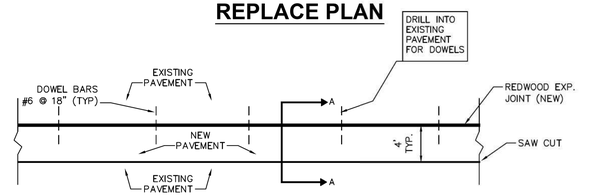
* STREET LIGHTING CONDUIT
  WHEN CONDUIT RUNS EAST AND WEST, PLACE ON NORTH CURB
  WHEN CONDUIT RUNS NORTH AND SOUTH, PLACE ON EAST CURB

SEE STREET MARKING STANDARD DETAIL FOR BUTTON TYPE AND LOCATION

LEFT TURN LANE FOR 28 FOOT (OR LARGER) MEDIAN

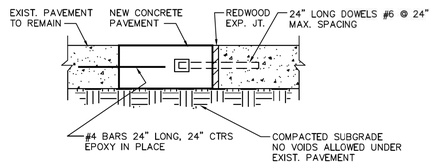


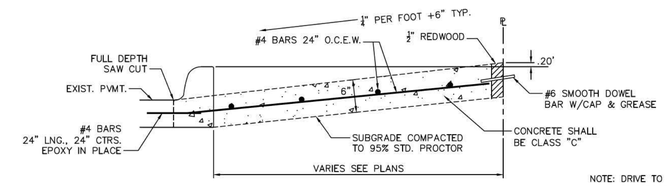
REPLACE PLAN



REDWOOD EXPANSION JOINT REPLACEMENT CURB TO CURB ONLY

EXISTING PLAN

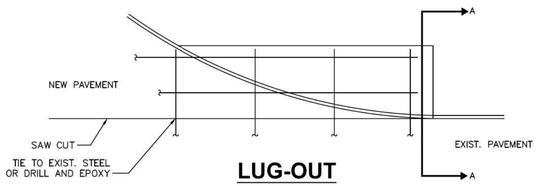




NOTE: DRIVE TO HAVE MAXIMUM OF 2% CROSS SLOPE @ SIDEWALK CROSSING

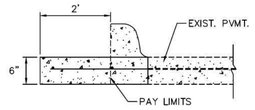
TYP. COMMERCIAL DRIVE APPROACH

CONNECTION TO EXIST. STREET

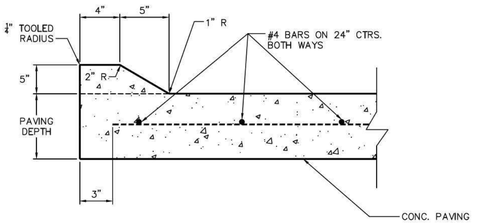


LUG-OUT

LUG-OUT



SECTION A-A



MOUNTABLE MONOLITHIC CURB TYPE 1

NOTES:

1. STREET CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION NORTH CENTRAL TEXAS."
2. ALL STREET PAVEMENT SHALL BE CLASS "C" CONCRETE PER ITEM 303.3.4.2, REINFORCED WITH #4 BARS, GRADE 60 SHOWN BOTH SPACED 24" O.C.E.W. HAND FINISHING WILL BE AS PER ITEM 303.5.6.2.
3. ALL PARKWAYS SHALL SLOPE A MIN. OF 1/4" PER FOOT UP FROM THE CURB TO THE RIGHT-OF-WAY LINE, THEN AT A MAX 3:1 SLOPE TO MATCH EXISTING GRADE.
4. SAWING AND SEALING OF ALL LONGITUDINAL AND TRANSVERSE PAVEMENT JOINTS SHALL BE CONSIDERED SUBSIDIARY TO ALL PAVING ITEMS.
5. FOR PLACING OF CONCRETE PAVEMENT REFER TO ITEM 303.5.5 OF "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION NORTH CENTRAL TEXAS."
6. FOR MAXIMUM SLUMP OF CONCRETE FOR PAVEMENT REFER TO ITEM 303.3.4.4 OF "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION NORTH CENTRAL TEXAS."
7. ALL MEDIAN PAVEMENT SHALL BE CLASS "A" CONCRETE, REINFORCED WITH #4 BARS, GRADE 60, MIN. AT 24" O.C.E.W

Revisions:

City of Richardson
411 W. Arapaho Road
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Richardson, Texas 75080
voice: 972 744-4280
fax: 972 744-5804

Drawn By: RGB
Checked By: COR

RICHARDSON TEXAS

STANDARD DETAILS
City of Richardson, Texas

NO ADDITIONS OR CHANGES TO STANDARD DETAIL SHEETS UNLESS APPROVED BY CITY OF RICHARDSON

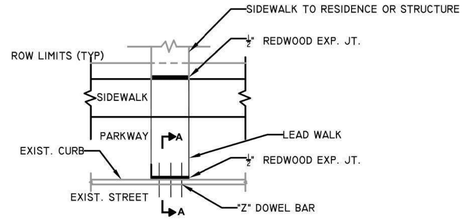
24"x36" Scale: NTS
11"x17" Scale: NTS
Vertical Scale: NA
Project Number: XXX
Issue Date: 03 MAY 18
Sheet Title: **STREET**
Sheet No.: **C-7**

1. ALL SIDEWALKS CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, OR AS AMENDED HEREIN.
2. ALL SIDEWALK CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINES, REQUIREMENTS OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) AND THE REQUIREMENTS OF THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).
3. THE FOLLOWING CRITERIA MUST BE MET ON ALL NEW SIDEWALKS:
   - 3.1. SIDEWALK MAXIMUM LONGITUDINAL SLOPE: 5%
   - 3.2. SIDEWALK MAXIMUM TRANSVERSE SLOPE: 2% (1.5% TYP.)
   - 3.3. A 5'X5' PASSING ZONE SHALL BE PROVIDED EVERY 200' (MAX). IT IS THE CITY'S PREFERENCE TO PROVIDE PASSING ZONE WHERE 5'X5' SPACES ARE ALREADY PLANNED (I.E. TOP OF CURB RAMPS). IF ADDITIONAL LOCATIONS ARE NEEDED TO MEET SPACING REQUIREMENT, CONSULT CITY PROJECT ENGINEER FOR DIRECTION ON LOCATION.
   - 3.4. CLEAR 48" MINIMUM WALKING SPACE AROUND ANY OBSTRUCTIONS (POWER POLES, ANCHORS, ETC.)
4. THE CONTRACTOR SHALL PROVIDE A LONGITUDINAL CONSTRUCTION JOINT BETWEEN NEW PAVEMENT AND EXISTING PAVEMENT INTERFACE. DOWEL BARS SHALL BE DRILLED AND EPOXY GROUTED INTO EXISTING PAVEMENT PER CITY OF RICHARDSON STANDARD DETAILS. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED BY THE CONTRACTOR AS REQUIRED. ALL JOINTS AND DOWELING ARE SUBSIDIARY TO THE OTHER BID ITEMS (NO SEPARATE PAYMENT), UNLESS A SPECIFIC BID ITEM IS PROVIDED.
5. SIDEWALKS SHALL BE REPLACED TO THE NEXT ADJACENT CONSTRUCTION JOINT. NO PARTIAL SIDEWALK PANELS WILL BE ALLOWED TO REMAIN.
6. NCTCOG STANDARD SPECIFICATIONS ITEM 303 SHALL BE AMENDED AS FOLLOWS:
   - 6.1. ITEM 303.2.1.3 - 'COARSE AGGREGATES' SHALL BE AMENDED THE FIRST SENTENCE IS DELETED AND REPLACED AS FOLLOW "COARSE AGGREGATES SHALL BE 100% CRUSHED STONE".
   - 6.2. ITEM 303.2.4 FLY ASH IS ALLOWED MAX 20% BY WEIGHT.
   - 6.3. ITEM 303.2.5 SHALL BE DELETED. NO MINERAL FILLER IS ALLOWED.
   - 6.4. ITEM 303.2.6 SHALL BE DELETED. NO FIBROUS REINFORCEMENT ALLOWED.
7. ALL EQUIPMENT NECESSARY TO CONSTRUCT CONCRETE PAVEMENT SHALL BE APPROVED BY THE OWNER PRIOR TO STARTING THE PAVING OPERATION. PAVING EQUIPMENT REQUIREMENTS ARE AS FOLLOWS:
   - 7.1. SIDEWALKS LESS THAN 8' IN WIDTH: NO PAVING MACHINE REQUIRED. STINGER VIBRATORS AND METAL STRAIGHT EDGES SHALL BE USED TO CONSOLIDATE CONCRETE.
   - 7.2. SIDEWALKS 8' IN WIDTH OR WIDER: VIBRATING SCREED WITH TWO HAND HELD STINGER VIBRATORS SHALL BE USED TO CONSOLIDATE CONCRETE.
   - 7.3. CONCRETE FINISH IS TO BE LIGHT BROOM FINISH. NO "WHIRLEY BIRD" TYPE FINISHING MACHINES WILL BE ALLOWED.
8. SIDEWALKS SHALL BE CLASS "A" CONCRETE.
9. CONCRETE TEMPERATURE PRIOR TO PLACEMENT SHALL NOT EXCEED 95°F, (35°C).
10. THE MAXIMUM TIME INTERVAL TO PLACE CONCRETE FROM ADDITION OF INITIAL WATER:
    - 10.1. AGITATED CONCRETE
      - 10.1.1. 90°F OR ABOVE 45 MINUTES
      - 10.1.2. 75°F TO 89°F 60 MINUTES
      - 10.1.3. 35°F TO 74°F 90 MINUTES
    - 10.2. NON-AGITATED CONCRETE
      - 10.2.1. 80°F OR ABOVE 15 MINUTES
      - 10.2.2. 35°F TO79°F 30 MINUTES
11. FROM MAY IST THROUGH SEPTEMBER 30 ALL MIXES SHALL INCLUDE A RETARDING AGENT
12. SIDEWALK SUBGRADE WILL BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY.
13. A MAXIMUM OF 1 INCH SAND MAY BE USED FOR LEVEL UP ONLY.
14. ½" EXPANSION JOINTS SHALL BE SPACED AT 60' MAXIMUM INTERVALS, OR AS OTHERWISE SPECIFIED. JOINTS SHALL BE REDWOOD WITH #3 @ 12" OC (MIN 4 BARS) 2' SLIP DOWELS WITH END CAPS AT EQUAL SPACING.
15. DOWEL SIDEWALKS ADJACENT TO INLETS INTO INLET PER CITY OF RICHARDSON STANDARD DETAILS.
16. SEAL ALL JOINTS WITH GRAY RUBBER SEALANT. CONTRACTOR TO SUBMIT SEALANT FOR APPROVAL.

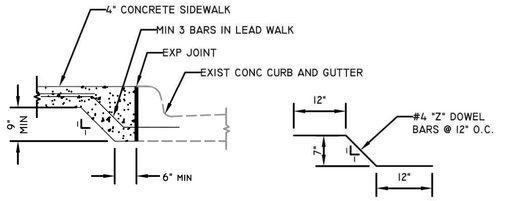
GENERAL NOTES (1 OF 2) SIDEWALK	REVISION	DESCRIPTION	DATE
	0	NEW FORMAT	12/29/2023
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-01			

17. WHEN CONCRETE WALK IS ADJACENT TO EXISTING CONCRETE, DEPTH AND BITUMINOUS EXPANSION JOINT FILLER SHALL BE SUFFICIENT TO PREVENT CONCRETE TO CONCRETE CONTACT BETWEEN WALK AND CONCRETE.
18. WHEN SIDEWALK IS ADJACENT TO CURB, A SITE SPECIFIC DETAIL SHALL BE PROVIDED.

GENERAL NOTES (2 OF 2) SIDEWALK	REVISION	DESCRIPTION	DATE
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-02			



REPLACEMENT PLAN



AT CURB SECTION A-A

LEAD WALK SIDEWALK	REVISION	DESCRIPTION	DATE
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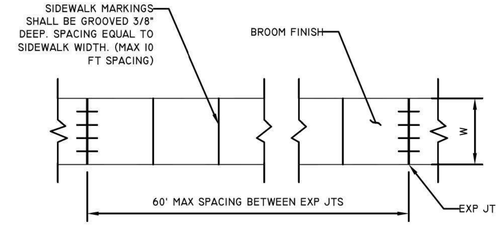
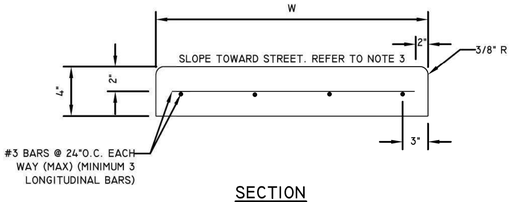
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-03			



PLAN



SECTION

CONCRETE SIDEWALK (<8 FT WIDTH)	REVISION	DESCRIPTION	DATE
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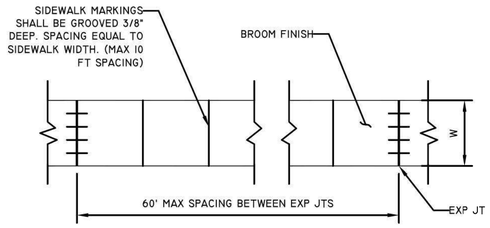
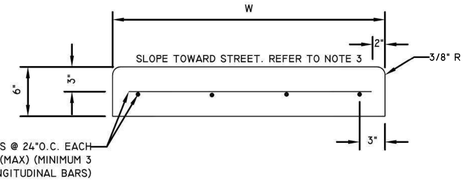
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-04			



PLAN



SECTION

NOTES:

1. DOWEL BASKETS SHALL BE USED AT EXPANSION JOINTS.

CONCRETE SIDEWALK (≥8 FT WIDTH)	REVISION	DESCRIPTION	DATE
	0	NEW FORMAT	12/29/2023
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-05			

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RESERVED	REVISION	DESCRIPTION	DATE
NOT TO SCALE			
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RESERVED	REVISION	DESCRIPTION	DATE
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-07			

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RESERVED	REVISION	DESCRIPTION	DATE
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-08			

RICHARDSON TEXAS

STANDARD DETAILS

CITY OF RICHARDSON, TEXAS

NO ADDITIONS OR CHANGES TO STANDARD DETAIL SHEETS UNLESS APPROVED BY CITY OF RICHARDSON

SHEET NAME: SIDEWALK

SHEET NO: SDW-A

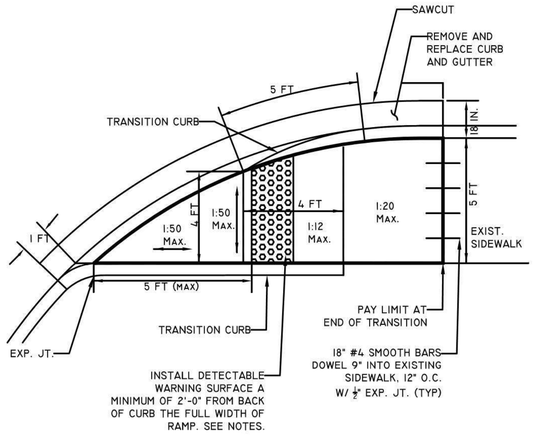
1. ALL BARRIER FREE RAMPS CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR), TEXAS ACCESSIBILITY STANDARDS (TAS), PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINES (P.R.O.W.A.G.) AND MATCH CITY OF RICHARDSON STANDARD DETAILS IN APPEARANCE AS MUCH AS POSSIBLE. DETAILS ARE REPRESENTATION OF REQUIREMENTS AND ARE INTENDED TO PROVIDE GUIDANCE. IT IS THE RESPONSIBILITY OF THE DESIGN PROFESSIONAL AND THE CONTRACTOR TO ENSURE THAT ALL RAMPS CONSTRUCTED MEET THE REQUIREMENTS.
2. SHOULD FIELD CONDITIONS VARY FROM PLAN INFORMATION, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
3. BARRIER FREE RAMPS SHALL BE FIELD APPROVED BY THE CITY PRIOR TO PLACEMENT OF CONCRETE.
4. THE FOLLOWING CRITERIA MUST BE MET ON ALL NEW RAMP CONSTRUCTION:
   - RAMP MAX. LONGITUDINAL SLOPE = 1:12 (8.33%)
   - RAMP MAX. TRANSVERSE SLOPE =2.0%
   - LANDING AREA MAX SLOPE IN ALL DIRECTIONS = 2%
   - TRANSITION AREA MAX. LONGITUDINAL SLOPE = 2%
5. CONTRACTOR SHALL FIELD SURVEY ALL TIE-IN POINTS AND VERIFY THE MAXIMUM SLOPES ARE NOT EXCEEDED PRIOR TO PLACEMENT OF PAVING.
6. DIMENSIONS SHOWN ON STANDARD DETAILS ARE APPROXIMATE AND WILL VARY DEPENDING ON EXISTING SIDEWALK AND STREET LONGITUDINAL AND CROSS SLOPES. DIMENSIONS SHOWN ASSUME EXISTING LONGITUDINAL AND CROSS SLOPES ARE LESS THAN 2%. RAMP LOCATIONS WITH LONGITUDINAL OR CROSS SLOPES EXCEEDING 2% SHOULD BE ADDRESSED BY SEPARATE DESIGN DETAILS THAT COMPLY WITH TEXAS PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINES (P.R.O.W.A.G.) AND MATCH CITY OF RICHARDSON STANDARD DETAILS IN APPEARANCE AS MUCH AS POSSIBLE.
7. RAMPS FOR SIDEWALK WITH WIDTHS OTHER THAN SHOWN ON THESE DETAILS SHOULD BE ADJUSTED TO FIT DIMENSIONS OF THE APPROACH SIDEWALKS CALLED FOR ON PLAN SHEETS.
8. PAYMENT FOR INSTALLATION OF BARRIER FREE RAMPS SHALL INCLUDE SAWCUT, REMOVAL AND DISPOSAL OF EXISTING CURB AND GUTTER, SIDEWALK, ALL EXCAVATION NECESSARY TO CONSTRUCT RAMPS PER CITY STANDARDS, INCLUDING ALL LABOR, MATERIAL AND OTHER MISCELLANEOUS APPURTENANCES.
9. THE CONTRACTOR MUST NOTIFY THE CITY PRIOR TO INSTALLATION OF CONCRETE IF THE APPROACH SLOPE OF THE EXISTING SIDEWALK EXCEEDS 5% OR HAS A CROSSFALL GREATER THAN 2% AND NO DESIGN DETAILS ARE PROVIDED FOR THAT SPECIFIC LOCATION.
10. A CURB SHALL BE CONSTRUCTED AT THE BACK OF THE RAMP WHEN ELEVATION DIFFERENCE EXCEEDS 6".
11. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24 INCHES IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH (2 INCH MAX BORDER) OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
12. DETECTABLE WARNINGS CAN BE A.D.A. REPLACEABLE (WET SET) COMPOSITE TACTILE WARNING SURFACE UNIT (GRAY) AVAILABLE FROM A.D.A. SOLUTIONS (OR APPROVED EQUAL) OR CONTRACTOR TRUNCATED DOME BRICK PAVERS PER DETAIL. IF COMPOSITE TACTILE WARNING SURFACE UNIT IS USED, CONTRACTOR SHALL CONTINUE SIDEWALK THICKNESS BENEATH TACTILE WARNING SURFACE UNIT. IF TRUNCATED DOME PAVERS ARE USED, CONTRACTOR SHALL FOLLOW BRICK PAVER OPTION DETAIL.

GENERAL NOTES
BARRIER FREE RAMP

NOT TO SCALE

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023

RICHARDSON TEXAS | STANDARD DETAILS | SDW-09

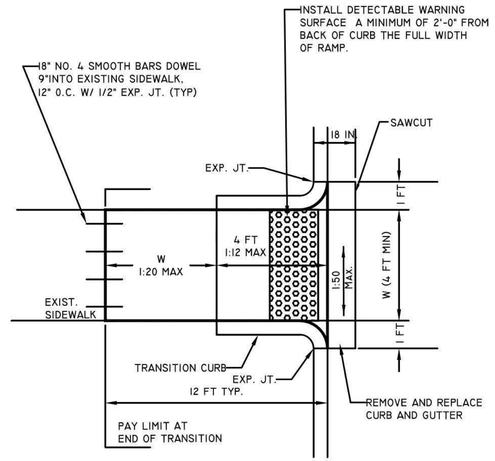


COMMERCIAL DRIVEWAY - TYPE A (ADJACENT TO CURB)
BARRIER FREE RAMP

NOT TO SCALE

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023

RICHARDSON TEXAS | STANDARD DETAILS | SDW-10

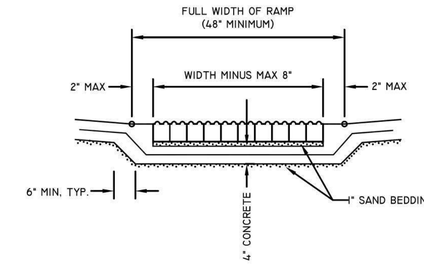


COMMERCIAL DRIVEWAY - TYPE B (OFFSET FROM CURB)
BARRIER FREE RAMP

NOT TO SCALE

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023

RICHARDSON TEXAS | STANDARD DETAILS | SDW-11



NOTES:

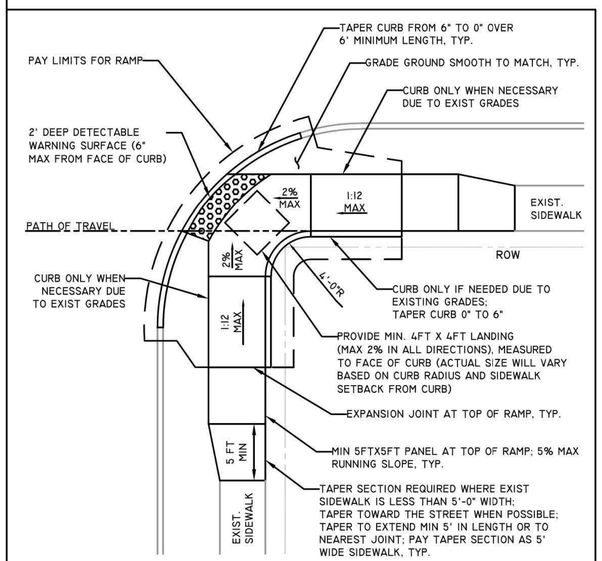
1. CONTRACTOR MAY CHOOSE TO USE BRICK PAVERS IN LIEU OF COMPOSITE TACTILE WARNING SURFACE.
2. BRICK PAVERS SHALL BE 7 7/8" x 3 5/8" x 2 1/4" WITH "CHARCOAL" COLOR MEETING ADA SECTION 4.29.2 (PAVESTONE DETECTABLE WARNING PAVER OR APPROVAL EQUAL). PAVERS SHALL HAVE DETECTABLE WARNING THAT CONSIST OF RAISED TRUNCATED DOMES WITH A DIA. OF 0.9 IN. (23MM), A HEIGHT OF NOMINAL 0.2 IN. (5MM) AND A CENTER TO CENTER SPACING OF NOMINAL 2.35 IN. (60MM). PAVERS SHALL BE SAWED (NOT BROKEN).
3. A VIBRATORY PLATE SHALL BE USED TO CONSOLIDATE PAVERS AFTER INSTALLATION. CONTRACTOR SHALL PREVENT DAMAGE TO PAVERS FROM VIBRATORY PLATE BY COVERING PAVERS WITH PLYWOOD, OR OTHER METHOD APPROVED BY THE CITY. ANY DAMAGE PAVERS WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

DETECTABLE WARNING - BRICK PAVER OPTION
BARRIER FREE RAMP

NOT TO SCALE

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023

RICHARDSON TEXAS | STANDARD DETAILS | SDW-12



NOTES:

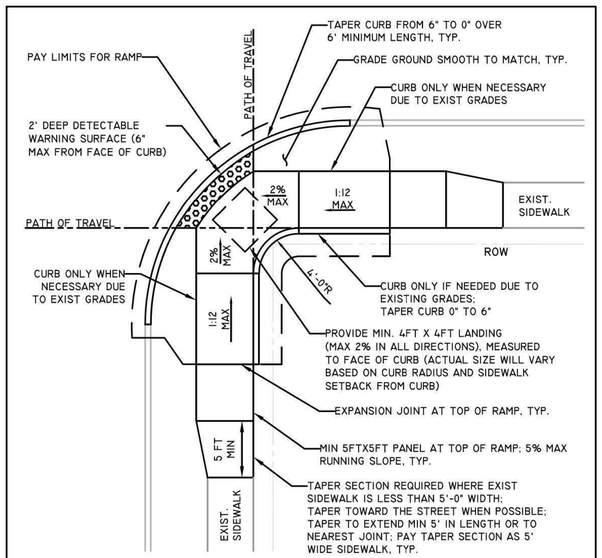
1. CURB SHOULD NOT BE LESS THAN 3" AT MAXIMUM HEIGHT. IF MAXIMUM CURB HEIGHT WILL BE 3" OR LESS, THEN GRADE GROUND TO AVOID NEED FOR CURB. GRADE TO SMOOTH TRANSITION TO EXIST GRADE (NO SHARP GRADE BREAKS)

RESIDENTIAL STREET - TYPE A (ONE DIRECTION CROSSING)
BARRIER FREE RAMP

NOT TO SCALE

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023

RICHARDSON TEXAS | STANDARD DETAILS | SDW-13



NOTES:

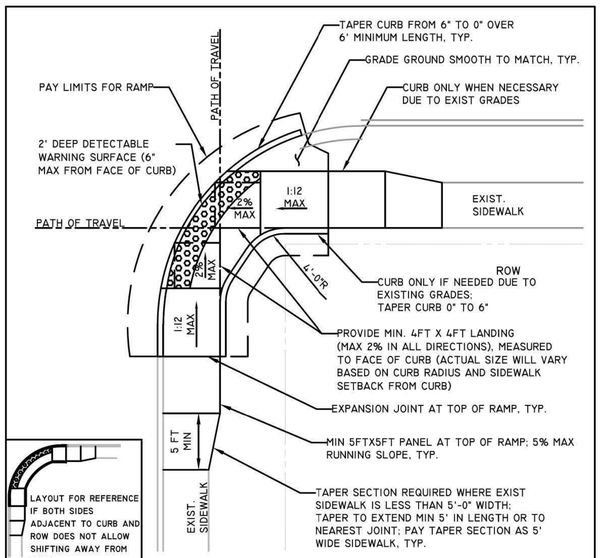
1. CURB SHOULD NOT BE LESS THAN 3" AT MAXIMUM HEIGHT. IF MAXIMUM CURB HEIGHT WILL BE 3" OR LESS, THEN GRADE GROUND TO AVOID NEED FOR CURB. GRADE TO SMOOTH TRANSITION TO EXIST GRADE (NO SHARP GRADE BREAKS)

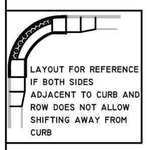
RESIDENTIAL STREET - TYPE B (TWO DIRECTION CROSSING)
BARRIER FREE RAMP

NOT TO SCALE

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023

RICHARDSON TEXAS | STANDARD DETAILS | SDW-14





NOTES:

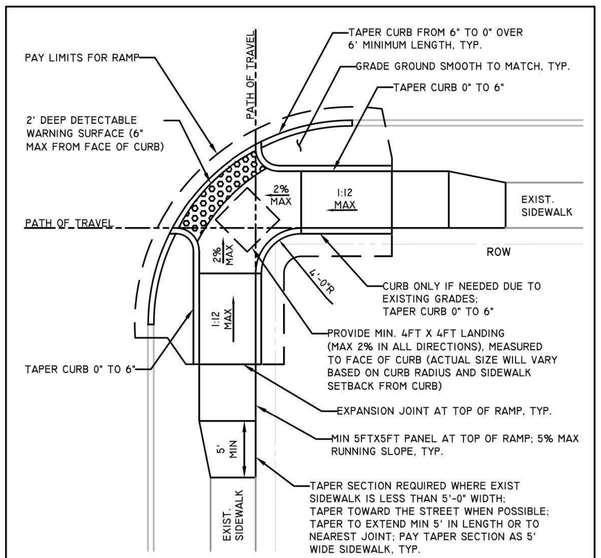
1. CURB SHOULD NOT BE LESS THAN 3 IN. AT MAXIMUM HEIGHT. IF MAXIMUM CURB HEIGHT WILL BE 3" OR LESS, THEN GRADE GROUND TO AVOID NEED FOR CURB. GRADE TO SMOOTH TRANSITION TO EXIST GRADE (NO SHARP GRADE BREAKS)
2. THIS DETAIL SHALL ONLY BE USED WHEN EXISTING SIDEWALK IS ADJACENT TO CURB AND SITE LIMITATIONS DO NOT ALLOW SIDEWALK TO BE SHIFTED AWAY FROM CURB. CITY PREFERRED OPTION IS TO SHIFT SIDEWALK TO ALLOW FOR TYPE A RAMP. TYPE C RAMP SHALL ONLY BE USED WHEN ALLOWED BY OWNER.

RESIDENTIAL STREET - TYPE C (ADJACENT TO CURB)
BARRIER FREE RAMP

NOT TO SCALE

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023

RICHARDSON TEXAS | STANDARD DETAILS | SDW-15



NOTES:

1. ARTERIAL AND COLLECTORS SHOULD UTILIZE THE CURRENT EDITION OF THE TXDOT STANDARD PED DETAILS AND SHOULD HAVE TWO DIRECTIONAL RAMPS. THIS DETAIL SHALL ONLY BE USED AT ARTERIALS AND COLLECTORS WHEN ROW LIMITATIONS DO NOT ALLOW FOR TWO DIRECTIONAL RAMPS. OWNER APPROVAL REQUIRED.

COLLECTOR/ARTERIAL STREET - TYPE D (TWO DIRECTION)
BARRIER FREE RAMP

NOT TO SCALE

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023

RICHARDSON TEXAS | STANDARD DETAILS | SDW-16

RICHARDSON TEXAS

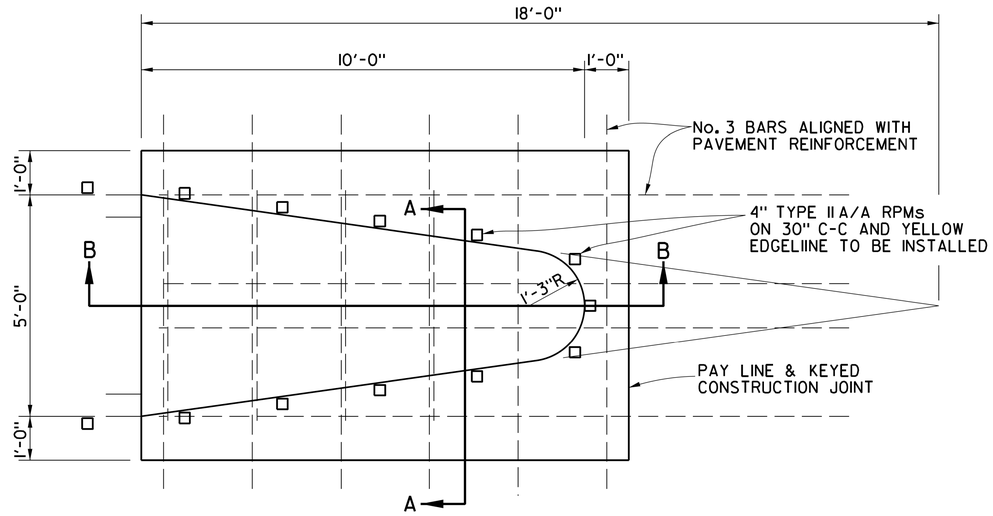
STANDARD DETAILS

CITY OF RICHARDSON, TEXAS

NO ADDITIONS OR CHANGES TO STANDARD DETAIL SHEETS UNLESS APPROVED BY CITY OF RICHARDSON

SHEET NAME: BARRIER FREE RAMPS

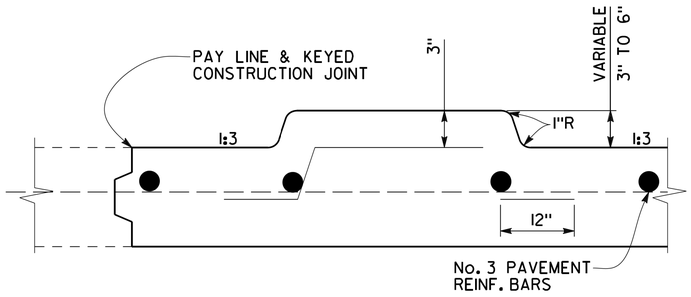
SHEET NO: SDW-B



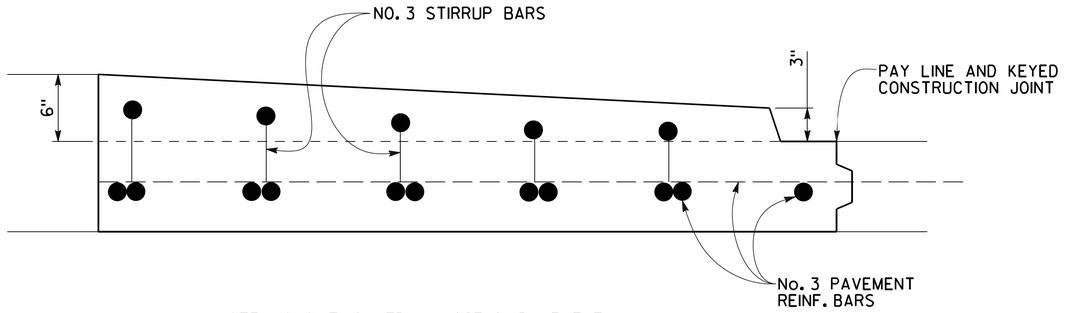
MONOLITHIC MEDIAN NOSE

NOTES:

1. ALL STEEL SHALL BE CLEAN AND RUST FREE GRADE 60 DEFORMED REINFORCING BARS.
2. GENERAL NOTES PROVIDED ON SHEET No. 1006 APPLY.
3. REDWOOD EXPANSION JOINTS SHALL BE PLACED AT OR NEAR THE RADIUS POINTS OF ALL INTERSECTIONS, AT ALL ABRUPT CHANGES IN ALIGNMENT OR WIDTH, OR AT MAX. DISTANCE OF 150 FT. REDWOOD EXPANSION JOINT WILL CONTINUE THROUGH MEDIAN PAVING AND SIDEWALK AND WALL WHEREVER APPLICABLE.
4. ALL MARKERS, MEDIAN NOSE BUTTONS AND MEDIAN EDGELINES SHALL BE INSTALLED AND ORIENTED AS SHOWN ON TYPICAL PAVEMENT MARKINGS DETAILS SHEET.

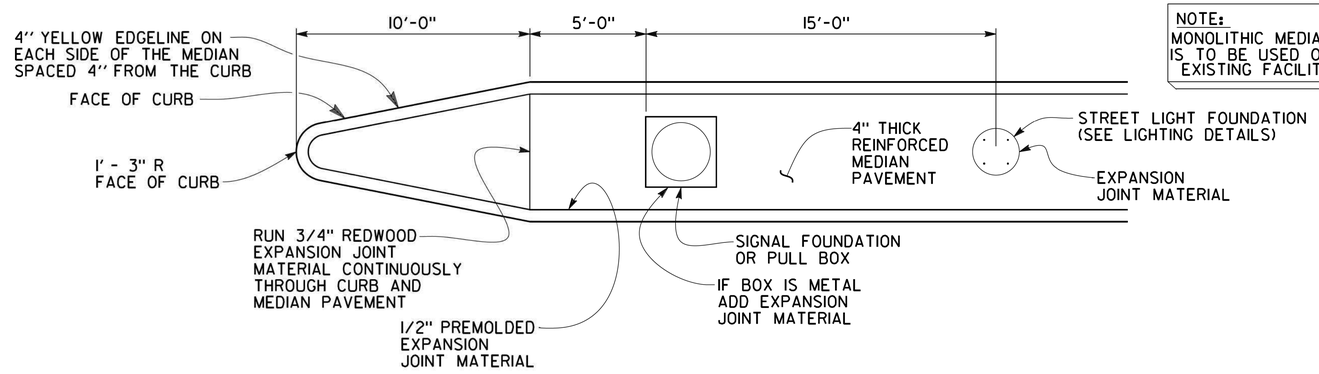


SECTION A-A



NOTE: MONOLITHIC MEDIAN NOSE & PAVEMENT WITHIN PAY LINES SHALL BE PAID FOR PER EACH, COMPLETE IN PLACE.

SECTION B-B



DETAIL OF 5' MEDIAN PAVEMENT

NOTE:
MONOLITHIC MEDIAN NOSE IS STANDARD (ROUNDED NOSE IS TO BE USED ONLY AT DIRECTION OF ENGINEER TO MATCH EXISTING FACILITIES).

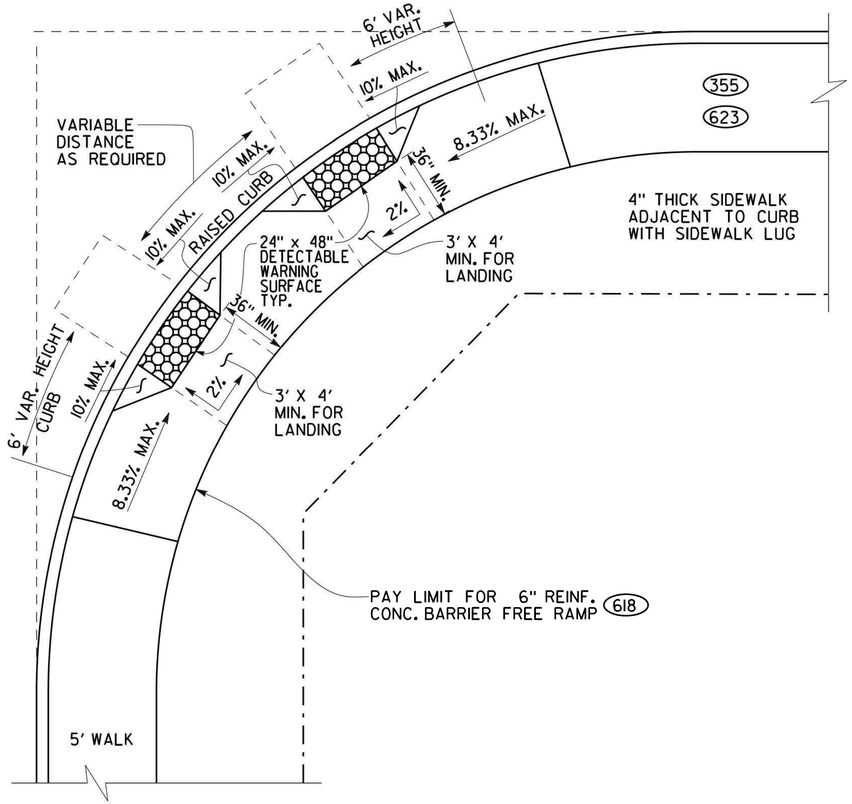
PAVING DETAILS

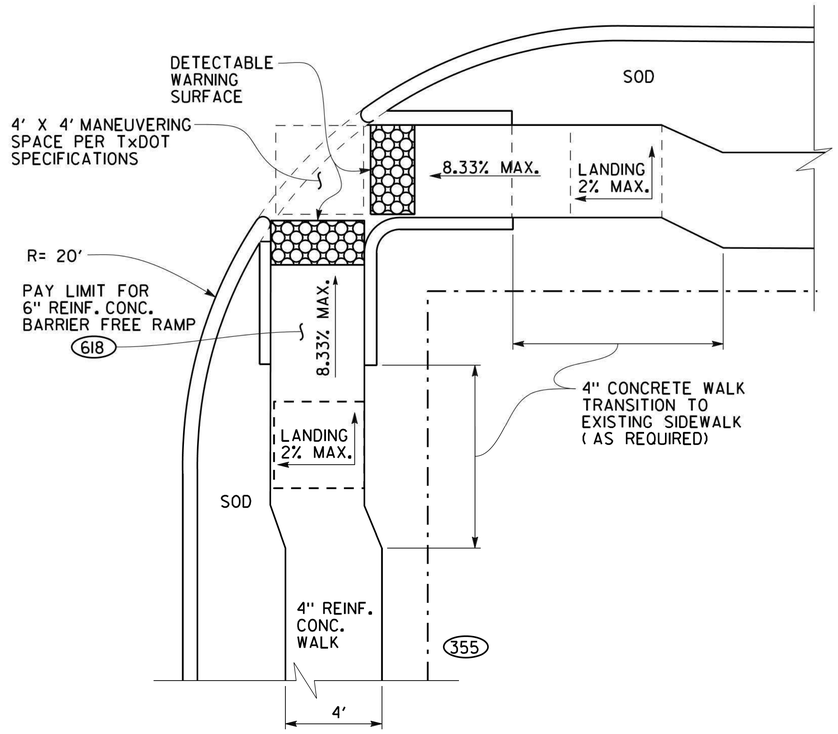
MONOLITHIC MEDIAN NOSE

DEPARTMENT OF PUBLIC WORKS
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE
REVISED: DECEMBER 2021

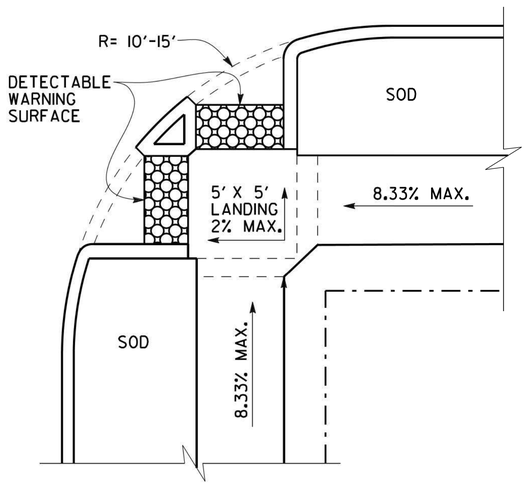
SHEET No.
1002A

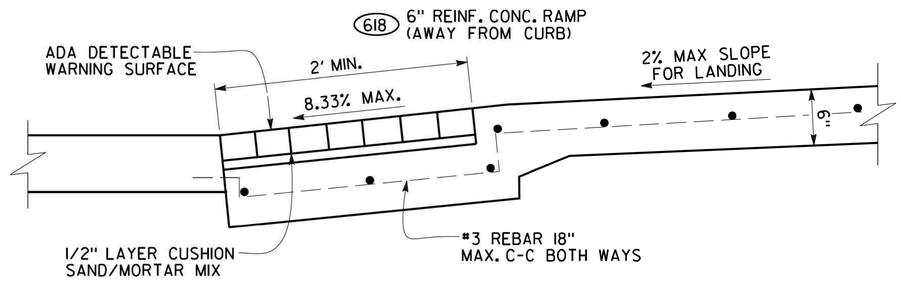




NOTES:

1. DETECTABLE WARNING SURFACE IS REQUIRED ON ALL RAMPS AND MUST MEET THE REQUIREMENTS OF SECTION 705 OFTAS
2. THE MAXIMUM CROSS SLOPE ON ALL SIDEWALKS AND LANDINGS IS 2%
3. SIDEWALK LUG IS NOT INCLUDED WITH 6" BFR CONSTRUCTION
4. THE 6" BFR SHALL BE DOWELED TO THE ADJACENT PAVEMENT IN ACCORDANCE WITH CONSTRUCTION STANDARDS MANUAL (25ID-1 SHEET 1020)
5. WHILE IT IS ACCEPTABLE TO USE BARRIER FREE RAMPS FROM TxDOT SPECIFICATION, THE CONCRETE DETAIL (I.E. THICKNESS, COMPRESSIVE STRENGTH, AND REINFORCEMENT) SHALL FOLLOW THE CITY OF DALLAS SPECIFICATION.
   THE TxDOT RAMPS DETAILS SHOULD PROVIDE GENERAL GUIDANCE ON RAMPS CONFIGURATIONS ONLY. HOWEVER, INSTALLATION OF PEDESTRIAN PUSH BUTTONS MAY NEED TO BE MODIFIED AS DIRECTED BY TRANSPORTATION DEPARTMENT
6. THE DESIRABLE MAX. SLOPE FOR THE RAMP IS 7.1% TO ALLOW FOR CONSTRUCTION TOLERANCE
7. FOR ANY SIGNALIZED INTERSECTION THE CONFIGURATION OF THE RAMP SHOULD BE VERIFIED AND APPROVED BY THE TRANSPORTATION DEPARTMENT
8. RAMP CONFIGURATIONS SHOULD AT A MINIMUM CONSIDER THE ELEVATION OF EXISTING SIGNAL INFRASTRUCTURE AND SHOULD ALLOW FOR A LEVEL LANDING AREA ADJACENT TO AND CENTERED BY TRAFFIC SIGNAL POLE INFRASTRUCTURE





BARRIER FREE RAMP PAVER DETAIL

IF APPROVED BY THE CITY

BARRIER FREE RAMPS

PAVING DETAILS	
BARRIER FREE RAMPS	
DETAILS	
DEPARTMENT OF PUBLIC WORKS CITY OF DALLAS, TEXAS	
DRAWINGS NOT TO SCALE REVISED: DECEMBER 2021	SHEET No. 1016

Plotted By: Turabi, Abuzar October 03, 2025 09:22:20am K:\LAC_TPTO\project\064563401_DallasCounty_CentralTrailExtension\CADD\PlanSheets\Structures\RETAINING WALL PLAN AND PROFILE.dwg
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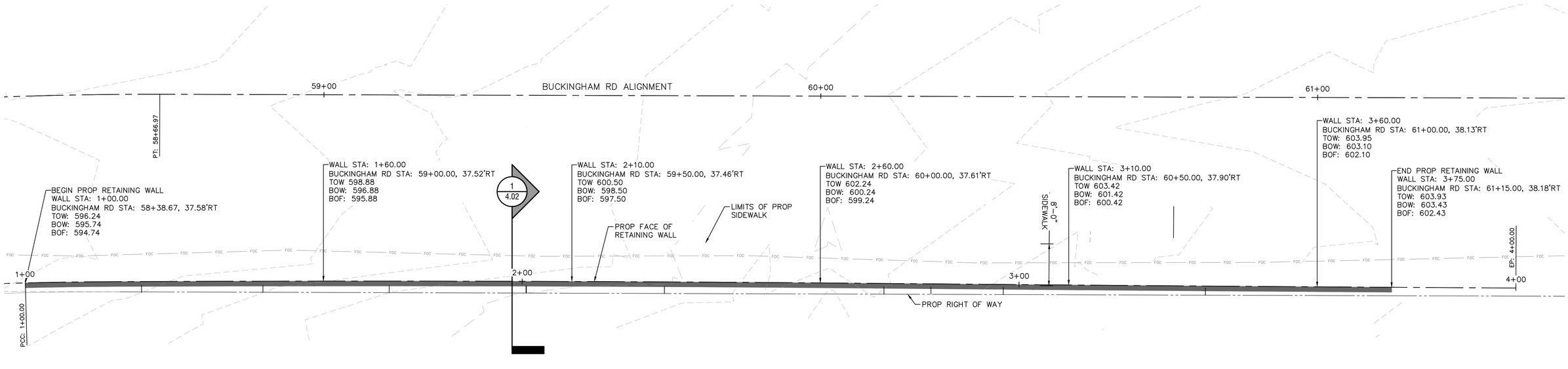

PLAN VIEW

LEGEND
TOW = TOP OF WALL
BOW = BOTTOM OF WALL/TOP OF SIDEWALK
BOF = BOTTOM OF FOOTING

NORTH

GRAPHIC SCALE IN FEET
0 5 10 20

SHEET SUMMARY
423 7016
RETAINING WALL (CAST-IN-PLACE)
SF
460

10/03/2025

STATE OF TEXAS
ABUZAR TURABI
151687
LICENSED
PROFESSIONAL ENGINEER

Kimley»Horn F-928

Texas Department of Transportation
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

STRUCTURAL DETAILS
RETAINING WALL
BUCKINGHAM ROAD PLAN

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	4.01
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Turabi, Abuzar October 03, 2025 09:22:29am K:\AC_TPTO\Project\064563401_DallasCounty_CentralTrailExtension\CADD\PlanSheets\Structures\STRUCTURAL DETAIL.dwg
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GENERAL

1. ALL NOTES ARE PART OF THE PROJECT REQUIREMENTS, BUT ARE NOT INTENDED TO REPLACE THE PROJECT SPECIFICATIONS. IN CASE OF CONFLICTS BETWEEN THE REQUIREMENTS OF THE SPECIFICATIONS AND THESE NOTES, THE MORE STRINGENT REQUIREMENT, AS INDICATED BY THE ENGINEER, SHALL GOVERN.
2. THE DRAWINGS, CALCULATIONS, SPECIFICATIONS, AND REPRODUCTIONS, RELATING TO THE STRUCTURAL PART OF THE PROJECT, ARE INSTRUMENTS OF SERVICE TO BE USED ONLY FOR THIS PROJECT.
3. IT IS UNDERSTOOD THAT THE STRUCTURAL ENGINEER OF RECORD MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, AS TO FINDINGS, DESIGNS, RECOMMENDATIONS, SPECIFICATIONS, OPINION, OR PROFESSIONAL ADVICE, EXCEPT THAT THESE INSTRUMENTS OF SERVICE HAVE BEEN PREPARED IN ACCORDANCE WITH THE CURRENT GENERALLY ACCEPTED PROFESSIONAL ENGINEER PRACTICES.
4. ALL NON-STRUCTURAL ELEMENTS INDICATED ON THE STRUCTURAL DRAWINGS HAVE BEEN SHOWN IN GENERAL TO THE RELATIONSHIP TO THE STRUCTURAL ELEMENTS. ACCORDINGLY, THEY SHALL NOT BE ASSUMED TO BE ACCURATE AND REFERENCE MUST BE MADE TO THE APPROPRIATE PLANS AND SPECIFICATIONS.
5. IT IS UNDERSTOOD THAT THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK ON THE PROJECT. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF THE PERSONS AND PROTECT THEM AGAINST INJURY: LIKEWISE, THE CONTRACTOR SHALL PROTECT ALL PROPERTY AGAINST DAMAGE OR LOSS.
6. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS, AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION FOR THE SAFETY OF PERSONS OR PROPERTY.
7. THE CONTRACTOR'S DUTIES AND RESPONSIBILITIES FOR THE SAFETY AND PROTECTION OF THE WORK SHALL CONTINUE UNTIL SUCH TIME AS THE WORK IS SATISFACTORILY COMPLETED, AND THE ENGINEER HAS ISSUED A NOTICE TO THAT EFFECT TO THE OWNER AND THE CONTRACTOR.
8. STRUCTURES DESIGNED IN ACCORDANCE WITH THE 2020 9th EDITION OF LRFD BRIDGE DESIGN SPECIFICATIONS.

DESIGN LOADS

1. STRUCTURE(S) DESIGNED FOR THE FOLLOWING LOADS:

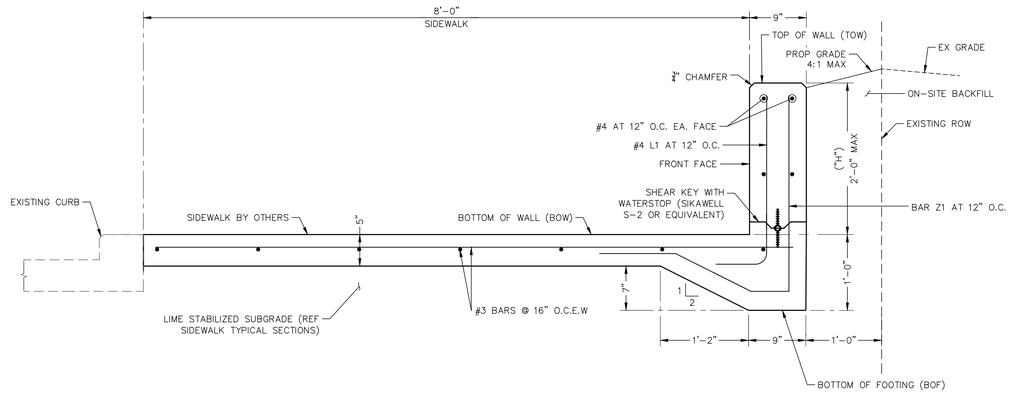
1.1.	DEAD LOAD:	SELF WEIGHT
1.2.	LIVE LOAD:	90 PSF
1.3.	LATERAL EARTH LOAD:	60 PSF/FT
1.4.	FULL WATER PRESSURE:	64 PSF

FOUNDATIONS AND EARTHWORK

1. ALL FOUNDATIONS, EARTHWORK, EXCAVATION, BACKFILL, AND SUBGRADE DRAINAGE SHALL BE SUBJECT TO OBSERVATION BY GEOTECHNICAL ENGINEER, DESIGNATED BY CITY, WHOSE APPROVAL IS REQUIRED PRIOR TO PLACEMENT OF CONCRETE FOUNDATIONS. COORDINATE SCHEDULES TO FACILITATE OBSERVATION.
2. BACKFILL SHALL BE AS IDENTIFIED ON THE PLANS. BACKFILL SHALL BE PLACED, COMPACTED, AND TESTED UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.

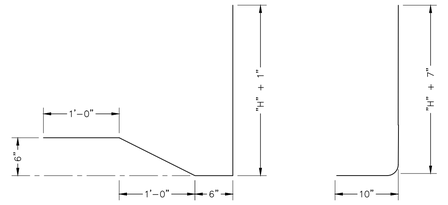
CONCRETE AND RELATED ITEMS

1. REFERENCE TO TXDOT SHALL BE THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES, 2024 EDITION.
2. CONTRACTOR RESPONSIBLE FOR DEWATERING THE AREA TO ENSURE PROPER CONSTRUCTION OF ALL STRUCTURE. NO SEPARATE PAY ITEMS.
3. ALL CONCRETE SHALL BE DESIGNED, MIXED, TRANSPORTED, AND PLACED IN ACCORDANCE WITH TXDOT, AND THE LATEST EDITION OF ACI-318.
4. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND SUBMIT SHOP DRAWINGS FOR ENGINEERS REVIEW PRIOR TO BEGINNING CONSTRUCTION.
5. CONCRETE MIX DESIGN SHALL BE IN ACCORDANCE WITH TXDOT ITEM 421, HYDRAULIC CEMENT CONCRETE CONTRACTOR SHALL SUBMIT ALL MIX DESIGNS FOR APPROVAL PRIOR TO CONSTRUCTION. CONCRETE FOR STRUCTURES SHALL BE CLASS C AND HAVE A MIN 28-DAY COMPRESSION STRENGTH OF 3,600 PSI.
6. ALL CONCRETE SHALL BE TESTED IN ACCORDANCE WITH TXDOT ITEM 421, HYDRAULIC CEMENT CONCRETE, SECTION 4.8, SAMPLING AND TESTING OF CONCRETE.
7. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
8. ALL REINFORCING STEEL SHALL BE ASTM A-615 GRADE 60 IN ACCORDANCE WITH TXDOT ITEM 440, REINFORCING STEEL. CONTRACTOR SHALL SUBMIT CERTIFICATION FOR REINFORCING STEEL. REINFORCING PLACEMENT SHALL BE IN ACCORDANCE WITH ACI-318.
9. IN LOCATIONS WHERE WALL HEIGHT DOES NOT EXCEED 1', WEEP HOLES CAN BE OMITTED.
10. CONTRACTOR SHALL ENSURE WALL JOINTS TO MATCH SIDEWALK JOINTS.
11. ALL CLEAR COVER FOR REINFORCING SHALL BE 2" IF FORMED AND 3" IF CAST AGAINST SOIL. ALL REINFORCING COVER DIMENSIONS ARE TO OUTSIDE OF BAR UNLESS OTHERWISE NOTED.
12. ALL JOINT FILLERS AND SEALANTS SHALL BE IN ACCORDANCE WITH TXDOT ITEM 438, CLEANING AND SEALING JOINTS. JOINT FILLERS AND SEALANTS SHALL BE SUBMITTED FOR APPROVAL.
13. IF TEMPORARY SHORING IS NECESSARY TO STABILIZE SLOPE OR TO TRANSITION BETWEEN FOOTING ELEVATIONS OF DIFFERENT WALL STATIONS, CONTRACTOR SHALL SUBMIT A SHORING DESIGN FOR APPROVAL PRIOR TO CONSTRUCTION. SHORING DESIGN SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS. NO SEPARATE PAY ITEM.
14. LIMITS OF PAYMENTS FOR RETAINING WALL ARE EXPOSED FACE OF WALL (TOP OF WALL (TW) TO TOP OF SIDEWALK (TS) IN SQUARE FOOT (SF).
15. SUBMIT ORIGINAL SHOP DRAWINGS FOR FABRICATION, BENDING, AND PLACEMENT OF CONCRETE REINFORCEMENT. PROVIDE BAR SCHEDULES, STIRRUP SPACING, DIAGRAMS OF BENT BARS, AND ARRANGEMENT OF CONCRETE REINFORCEMENT.
16. ALL HSS MEMBERS SHALL CONFORM TO ASTM 1085 OR A500 GR B. ALL ANCHOR RODS SHALL CONFORM TO ASTM F1554, GRADE 36. ALL NUTS MUST CONFORM TO ASTM A563.
17. GALVANIZE ALL METAL COMPONENTS OF STEEL RAIL.
18. SPLICE HSS MEMBERS AS REQUIRED 2'-0" BEYOND POST LOCATIONS. THE WELD MAY BE SQUARE GROOVE, OR SINGLE V GROOVE. GRIND SMOOTH.

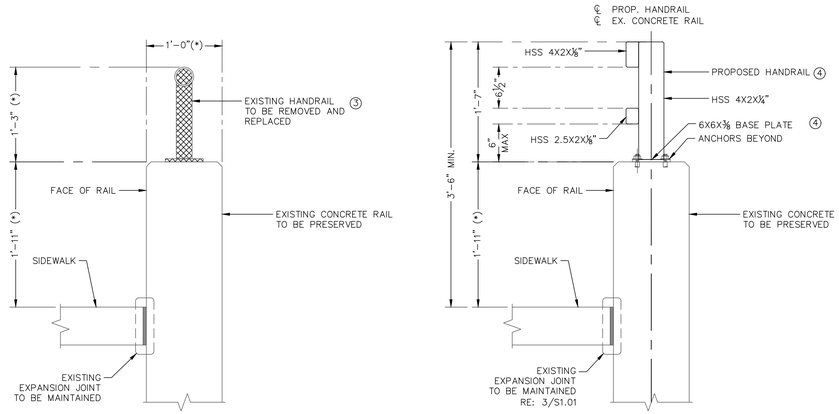


1 / 4.02 TYPICAL RETAINING WALL SECTION

SCALE: 1" = 1'-0"



#4 BAR Z1 #4 BAR L1

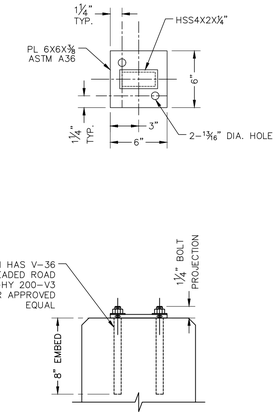


2 / 4.02 LIMITS OF REMOVAL

SCALE: 1"-1'-0"

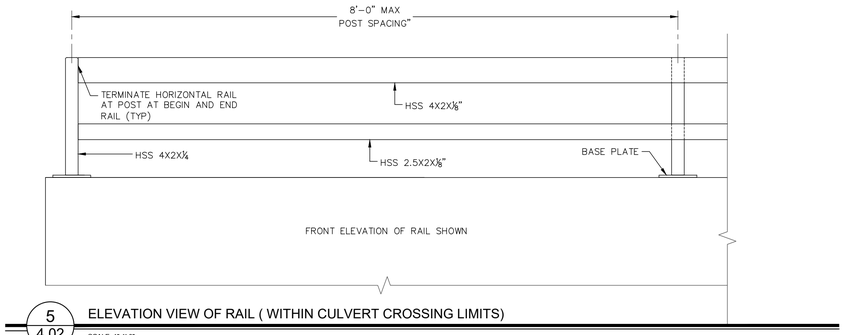
3 / 4.02 PROPOSED HANDRAIL

SCALE: 1"=1'-0"



4 / 4.02 BASE PLATE/ANCHOR DETAILS

SCALE: 1-1/2"-1'-0"



5 / 4.02 ELEVATION VIEW OF RAIL (WITHIN CULVERT CROSSING LIMITS)

SCALE: 1"-1'-0"

LEGEND

1. EXISTING REINFORCING DETAILS NOT SHOWN FOR CLARITY.
2. EXISTING HEADWALL/RAIL INFORMATION TAKEN FROM RECORD DRAWINGS. CONTRACTOR TO VERIFY ALL DIMENSIONS PRIOR TO COMMENCING WORK.
3. RAIL MODIFICATIONS TO BE WITHIN THE CULVERT CROSSING LIMITS.
4. CONTRACTOR TO SUBMIT HANDRAIL SHOP DRAWINGS FOR ENGINEERS APPROVAL.

10/03/2025

STATE OF TEXAS
ABUZAR TURABI
151687
LICENSED
PROFESSIONAL ENGINEER

Kimley»Horn F-928

Texas Department of Transportation

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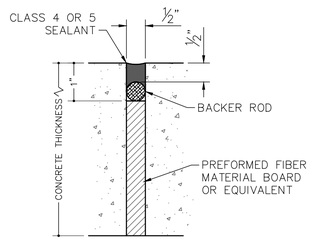
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

STRUCTURAL DETAILS

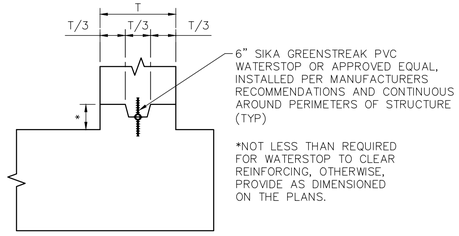
BUCKINGHAM ROAD
RETAINING WALL AND
FLOYD BRANCH CROSSING RAILING

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6			
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	4.02
CONT.	SECT.	JOB	
0918	47	473	



PLACE IN ACCORDANCE WITH ITEM 438
"CLEANING AND/OR SEALING JOINTS AND CRACKS".

EXPANSION JOINT DETAIL

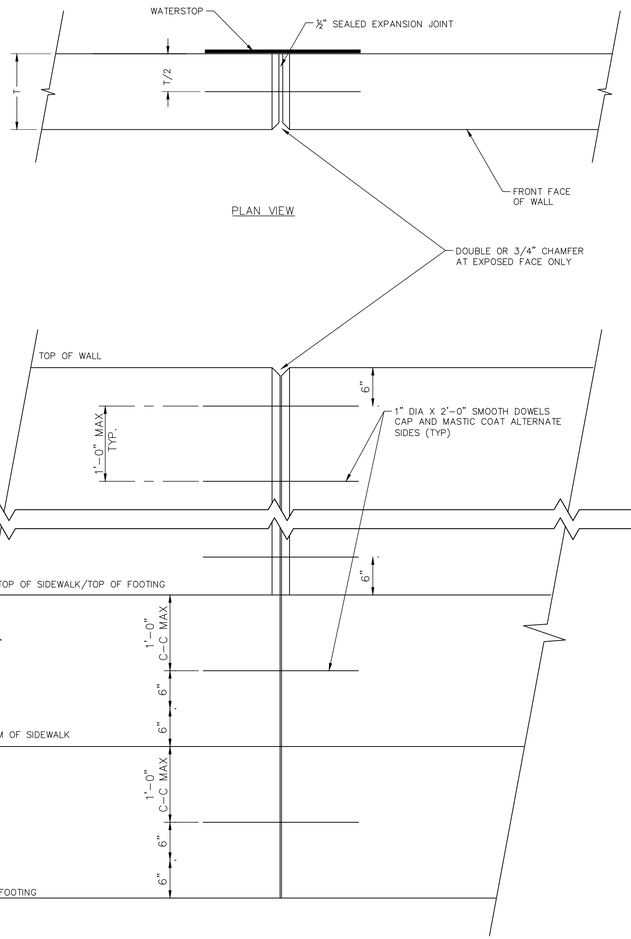


6" SIKA GREENSTREAK PVC WATERSTOP OR APPROVED EQUAL, INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND CONTINUOUS AROUND PERIMETERS OF STRUCTURE (TYP)

*NOT LESS THAN REQUIRED FOR WATERSTOP TO CLEAR REINFORCING, OTHERWISE, PROVIDE AS DIMENSIONED ON THE PLANS.

NOTE: REINFORCING NOT SHOWN FOR CLARITY

SHEAR KEY DETAIL



NOTE: REINFORCING NOT CONTINUOUS THROUGH EXPANSION JOINT.
PROVIDE EXPANSION JOINT THROUGHOUT AT 30' MAX SPACING.
ALTERNATE WITH CONSTRUCTION JOINT.

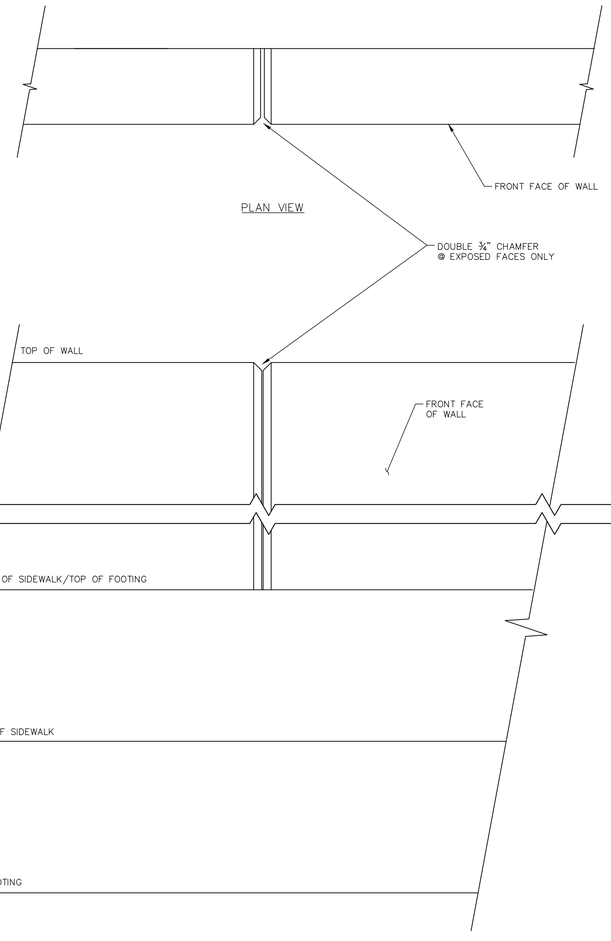
PLAN VIEW

ELEVATION VIEW

1
4.03

3/4" WALL EXPANSION JOINT DETAIL
RETAINING WALL SECTION

SCALE: 1" = 1'-0"



NOTE: REINFORCING CONTINUOUS THROUGH CONTROL JOINT.
PROVIDE CONTROL JOINT THROUGHOUT AT 30' MAX SPACING.
ALTERNATE WITH EXPANSION JOINT.

PLAN VIEW

ELEVATION VIEW

2
4.03

3/4" WALL CONSTRUCTION JOINT DETAIL
RETAINING WALL SECTION

SCALE: 1" = 1'-0"

10/03/2025

STATE OF TEXAS
ABUZAR TURABI
151687
LICENSED
PROFESSIONAL ENGINEER

Kimley»Horn F-928

Texas Department of Transportation
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

STRUCTURAL DETAILS

BUCKINGHAM ROAD

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6			
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	
CONT.	SECT.	JOB	4.03
0918	47	473	

Plotted By:Turabi, Abuzar October 03, 2025 09:22:42am K:\LAC_TPTO\Project\064563401_DallasCounty_CentralTrailExtension\CADD\PlanSheets\Structures\STRUCTURAL DETAILS.dwg
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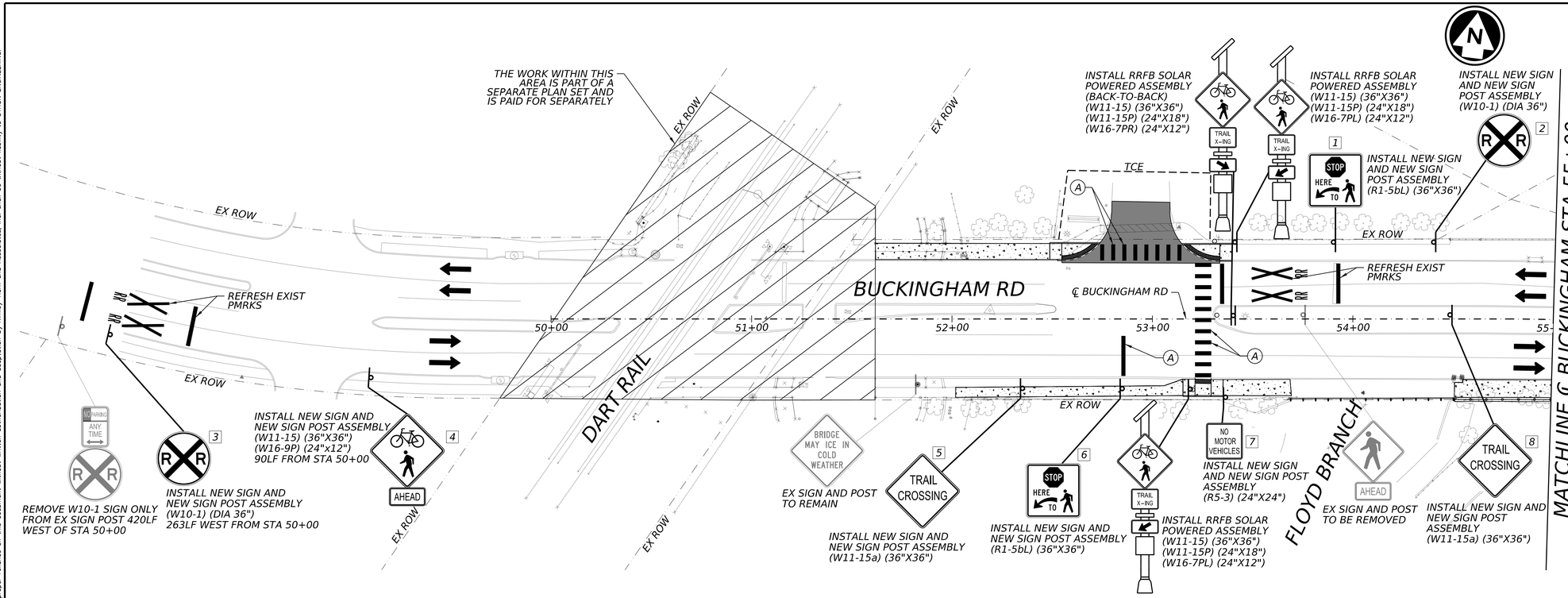

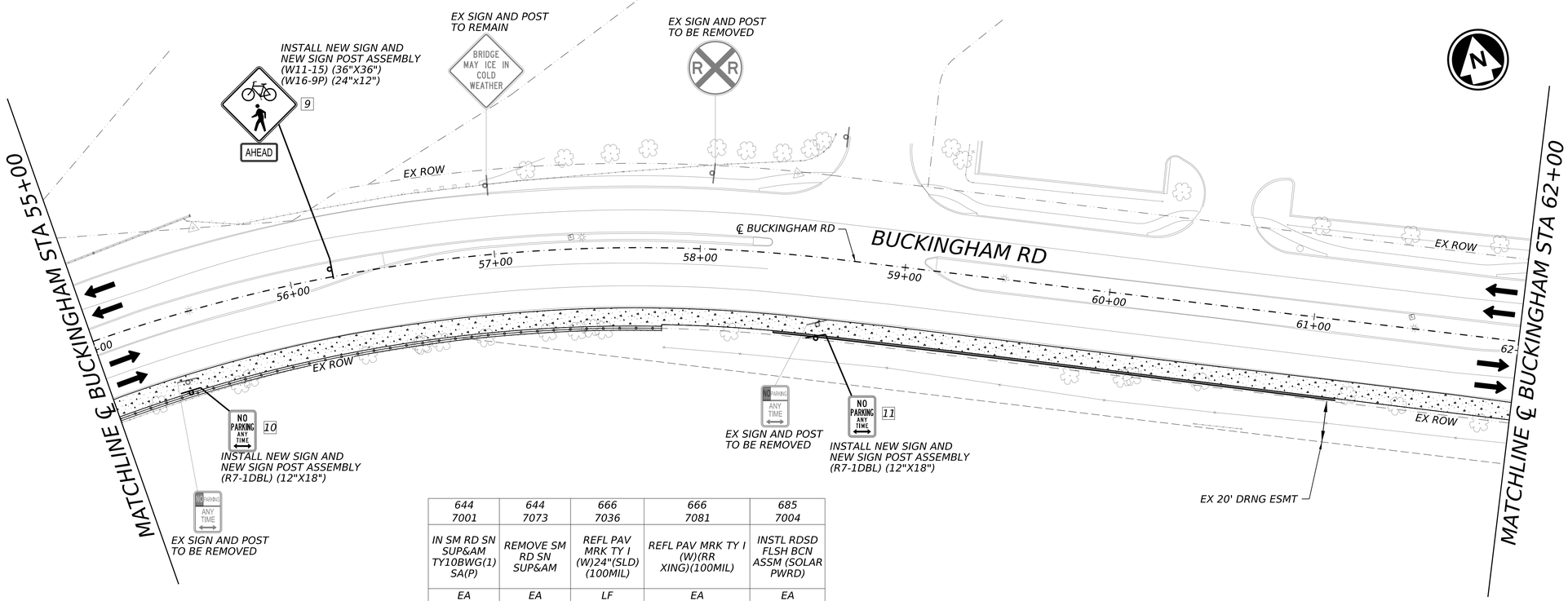

644 7001	644 7073	666 7036	666 7081	685 7004
IN SM RD SN SUP&AM TY10BWG(1) SA(P)	REMOVE SM RD SN SUP&AM	REFL PAV MRK TY I (W)24"(SLD) (100MIL)	REFL PAV MRK TY I (W)(RR XING)(100MIL)	INSTL RDSD FLSH BCN ASSM (SOLAR PWRD)
EA	EA	LF	EA	EA
11	4	252	2	3

LEGEND

- EX ROW
- EX ESMT
- EXISTING SMALL SIGN
- PROPOSED SMALL SIGN
- (A) 24" W SLD
- (B) 4" DASH LINE MRK / BUTTONS AND RPMS
- (C) 8" BAY LINE MRK / BUTTONS AND RPMS
- (D) W ARROW
- (E) 8" W DOT
- (F) 6" W SLD
- (G) 18" W SLD
- TRAFFIC DIRECTION
- [X] PROP SMALL SIGN ASSEMBLY

NOTES:

1. SMALL SIGN LOCATIONS ARE APPROXIMATE AND SHOULD BE BASED ON FINAL ROADWAY CONFIGURATION.
2. EXISTING SIGNS AND PAVEMENT MARKINGS NOT SHOWN ARE TO REMAIN UNLESS NOTED OTHERWISE.
3. ALL EXISTING PAVEMENT MARKINGS THAT ARE IN CONFLICT WITH THE PROPOSED CONDITION SHALL BE REMOVED.
4. INSTALL PROPOSED PAVEMENT MARKINGS PER CITY OF RICHARDSON AND CITY OF DALLAS STANDARDS. REFERENCE THE INCLUDED STANDARDS.
5. CONTRACTOR SHALL COORDINATE WITH DART REGARDING RELOCATION OF DART BUS SIGNS.

STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED PROFESSIONAL ENGINEER
2/20/2026

OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

Texas Department of Transportation
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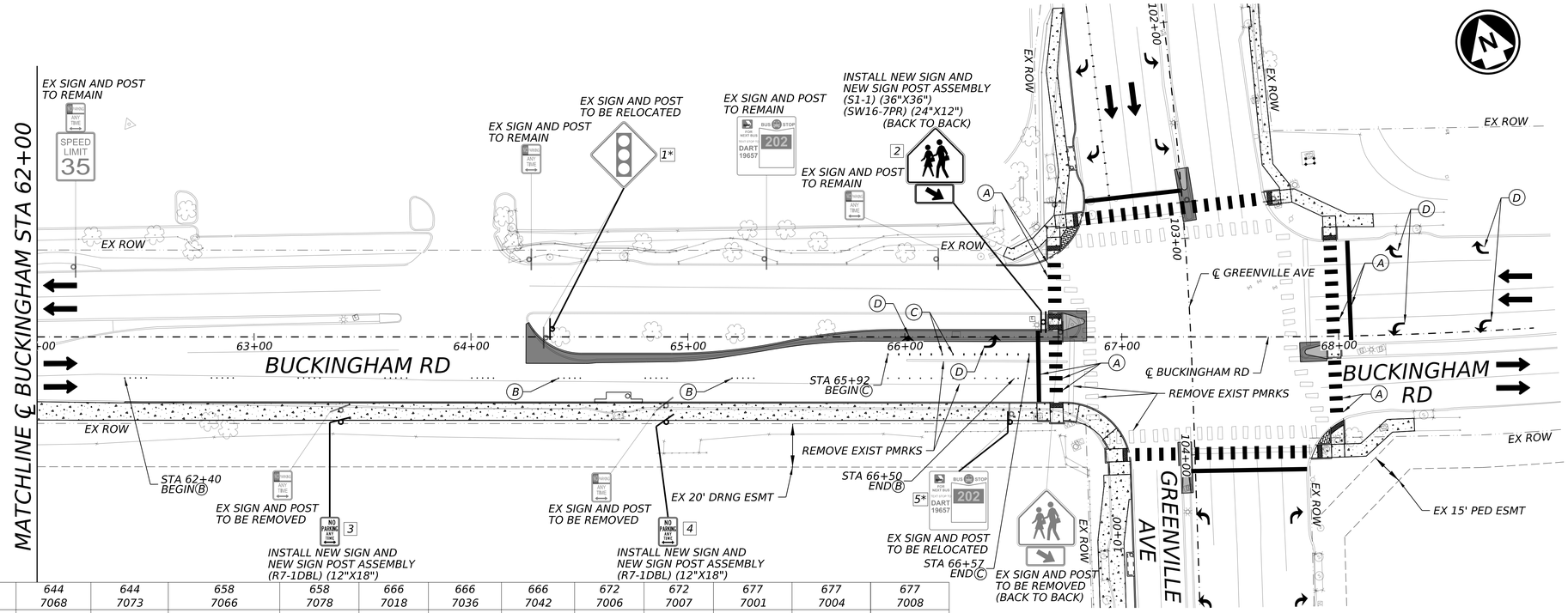
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

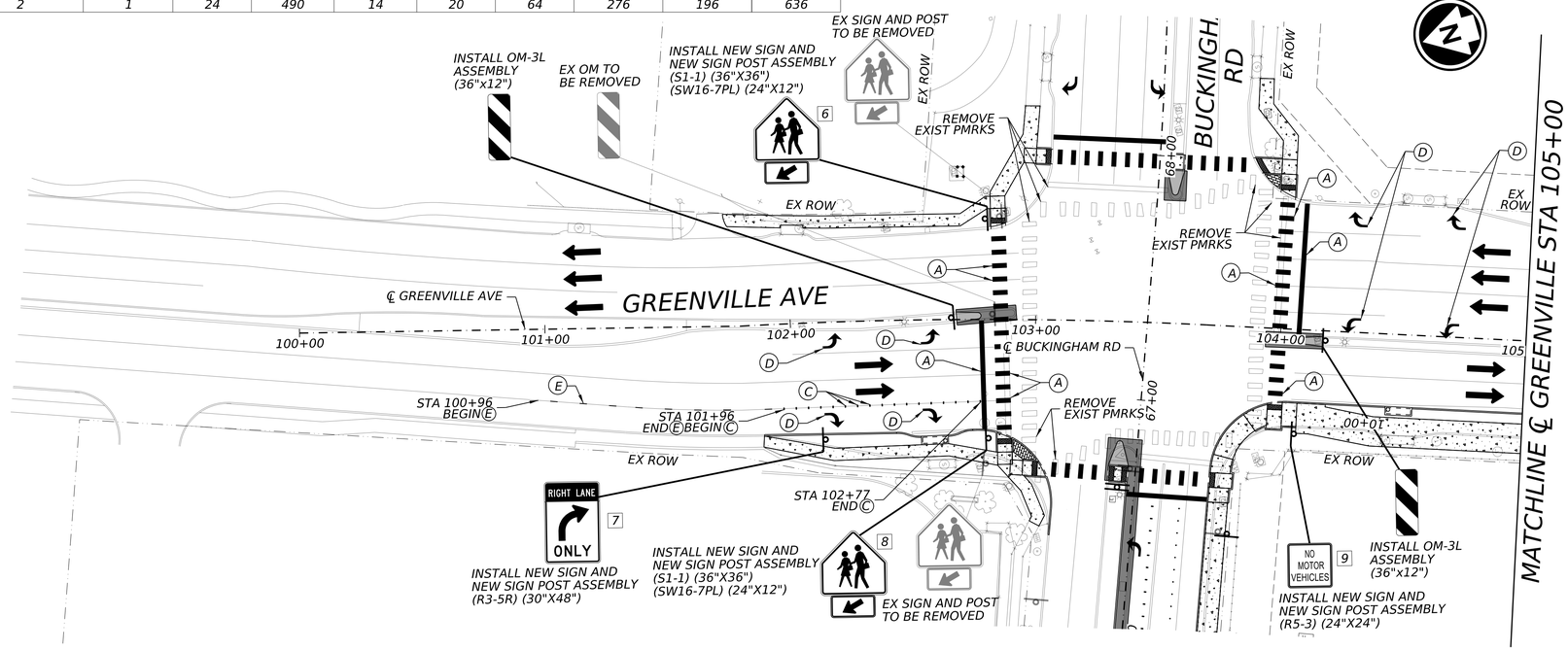
SIGNING & PAVEMENT MARKING PLAN
BEGIN TO ℄ BUCKINGHAM STA 62+00

SHEET 1 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	5.01
CONT.	SECT.	JOB	
0918	47	473	



644 7001	644 7068	644 7073	658 7066	658 7078	666 7018	666 7036	666 7042	672 7006	672 7007	677 7001	677 7004	677 7008
IN SM RD SN SUP&AM TY10BWG(1) SA(P)	RELOCATE SM RD SN SUP&AM TY TWT	REMOVE SM RD SN SUP&AM	INSTL OM ASSM (OM-3L)(TWT)GND	REMOVE DELIN & OBJECT MARKER ASSMS	REFL PAV MRK TY I (W)8"(DOT) (100MIL)	REFL PAV MRK TY I (W)24"(SLD) (100MIL)	REFL PAV MRK TY I (W)(ARROW) (100MIL)	REFL PAV MRKR TY II-C-R	TRAFFIC BUTTON TY W	ELIM EXT PM & MRKS (4")	ELIM EXT PM & MRKS (8")	ELIM EXT PM & MRKS (24")
EA	EA	EA	EA	EA	LF	LF	EA	EA	EA	LF	LF	LF
7	2	5	2	1	24	490	14	20	64	276	196	636



LEGEND

- EX ROW
- EX ESMT
- EXISTING SMALL SIGN
- PROPOSED SMALL SIGN
- Ⓐ 24" W SLD
- Ⓑ 4" DASH LINE MRK / BUTTONS AND RPMS
- Ⓒ 8" BAY LINE MRK / BUTTONS AND RPMS
- Ⓓ W ARROW
- Ⓔ 8" W DOT
- Ⓕ 6" W SLD
- Ⓖ 18" W SLD
- TRAFFIC DIRECTION
- [X] PROP SMALL SIGN ASSEMBLY

NOTES:

1. SMALL SIGN LOCATIONS ARE APPROXIMATE AND SHOULD BE BASED ON FINAL ROADWAY CONFIGURATION.
2. EXISTING SIGNS AND PAVEMENT MARKINGS NOT SHOWN ARE TO REMAIN UNLESS NOTED OTHERWISE.
3. ALL EXISTING PAVEMENT MARKINGS THAT ARE IN CONFLICT WITH THE PROPOSED CONDITION SHALL BE REMOVED.
4. INSTALL PROPOSED PAVEMENT MARKINGS PER CITY OF RICHARDSON AND CITY OF DALLAS STANDARDS. REFERENCE THE INCLUDED STANDARDS.
5. CONTRACTOR SHALL COORDINATE WITH DART REGARDING RELOCATION OF DART BUS SIGNS.

* SALVAGE SIGNS

STATE OF TEXAS
IN SUNG HWANG
131759
LICENSED
PROFESSIONAL ENGINEER
2/20/2026

OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

SIGNING & PAVEMENT MARKING PLAN
℄ BUCKINGHAM STA 62+00 TO
℄ GREENVILLE STA 105+00

SHEET 2 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	5.02
CONT.	SECT.	JOB	
0918	47	473	

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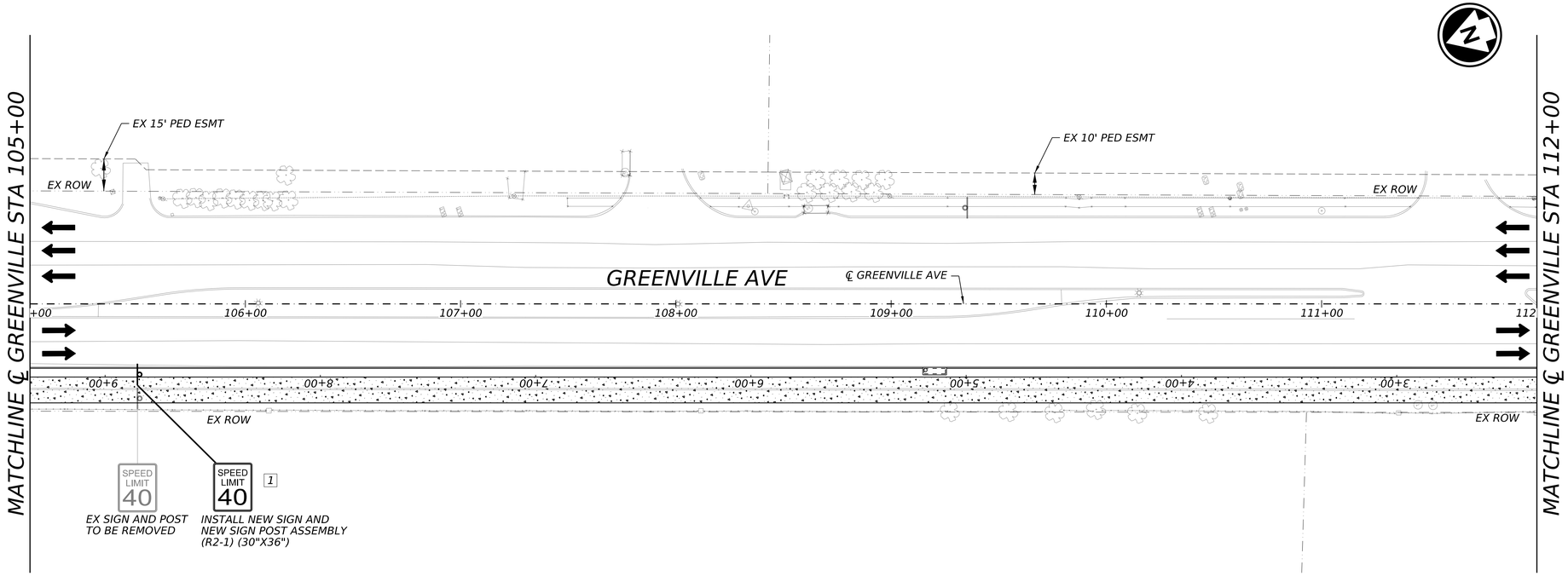
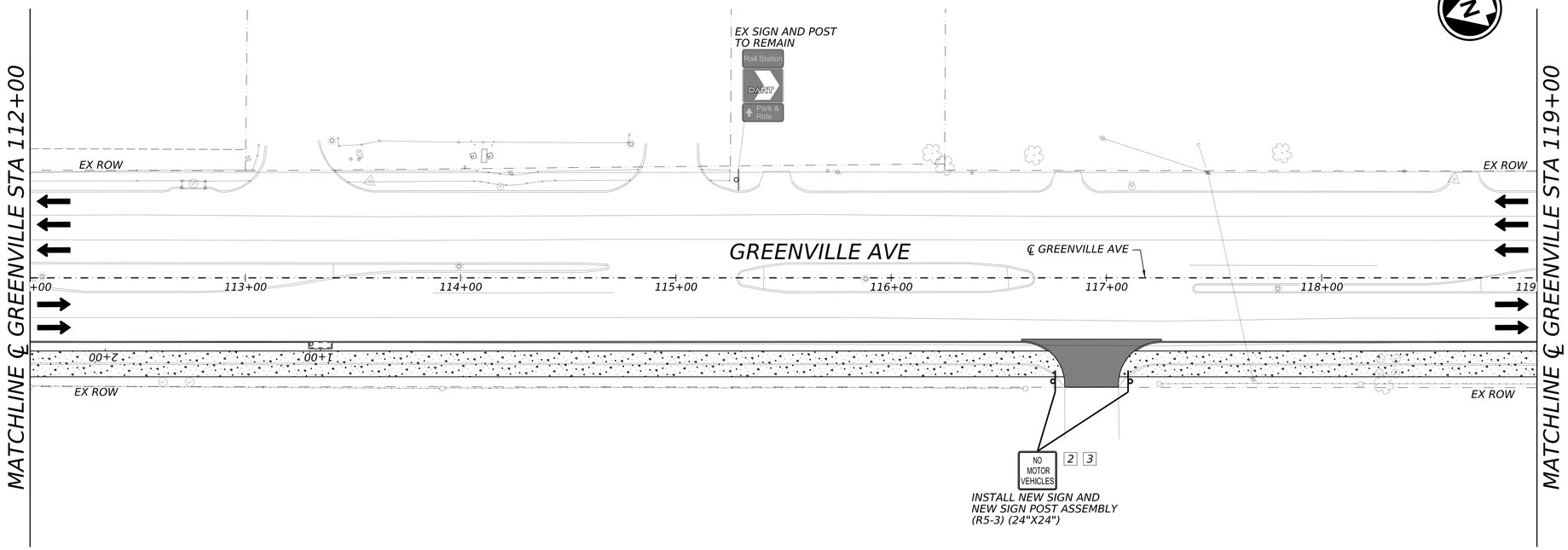


644 7001	644 7073
IN SM RD SN SUP&AM TY10BWG(1) SA(P)	REMOVE SM RD SN SUP&AM
EA	EA
3	1



LEGEND

- EX ROW
- EX ESMT
- EXISTING SMALL SIGN
- PROPOSED SMALL SIGN
- (A) 24" W SLD
- (B) 4" DASH LINE MRK / BUTTONS AND RPMS
- (C) 8" BAY LINE MRK / BUTTONS AND RPMS
- (D) W ARROW
- (E) 8" W DOT
- (F) 6" W SLD
- (G) 18" W SLD
- TRAFFIC DIRECTION
- [X] PROP SMALL SIGN ASSEMBLY

NOTES:

1. SMALL SIGN LOCATIONS ARE APPROXIMATE AND SHOULD BE BASED ON FINAL ROADWAY CONFIGURATION.
2. EXISTING SIGNS AND PAVEMENT MARKINGS NOT SHOWN ARE TO REMAIN UNLESS NOTED OTHERWISE.
3. ALL EXISTING PAVEMENT MARKINGS THAT ARE IN CONFLICT WITH THE PROPOSED CONDITION SHALL BE REMOVED.
4. INSTALL PROPOSED PAVEMENT MARKINGS PER CITY OF RICHARDSON AND CITY OF DALLAS STANDARDS. REFERENCE THE INCLUDED STANDARDS.
5. CONTRACTOR SHALL COORDINATE WITH DART REGARDING RELOCATION OF DART BUS SIGNS.

STATE OF TEXAS
IN SUNG HWANG
131159
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PROFESSIONAL ENGINEER
2/20/2026

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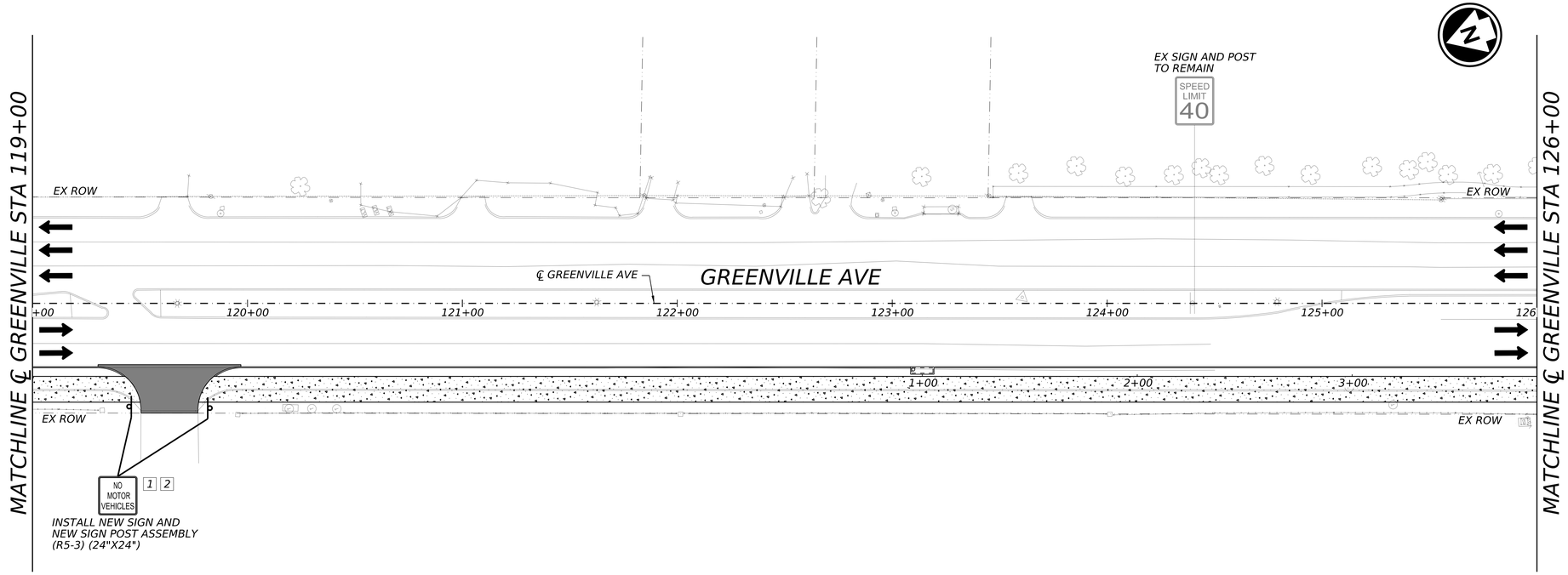
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

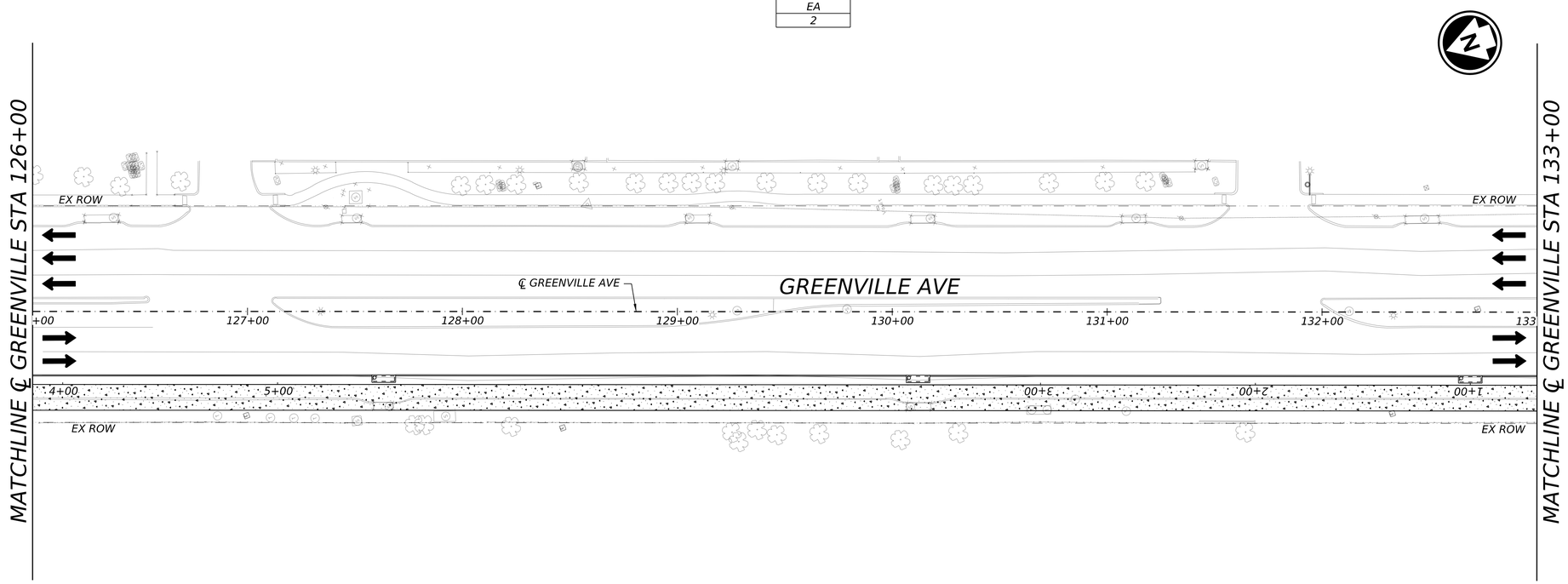
SIGNING & PAVEMENT MARKING PLAN
℄ GREENVILLE STA 105+00 TO
℄ GREENVILLE STA 119+00

SHEET 3 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	5.03
CONT.	SECT.	JOB	
0918	47	473	



644
7001
IN SM RD SN SUP&AM TY10BWG(1) SA(P)
EA
2



LEGEND

- EX ROW
- EX ESMT
- EXISTING SMALL SIGN
- PROPOSED SMALL SIGN
- (A) 24" W SLD
- (B) 4" DASH LINE MRK / BUTTONS AND RPMS
- (C) 8" BAY LINE MRK / BUTTONS AND RPMS
- (D) W ARROW
- (E) 8" W DOT
- (F) 6" W SLD
- (G) 18" W SLD
- TRAFFIC DIRECTION
- [X] PROP SMALL SIGN ASSEMBLY

NOTES:

1. SMALL SIGN LOCATIONS ARE APPROXIMATE AND SHOULD BE BASED ON FINAL ROADWAY CONFIGURATION.
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STATE OF TEXAS
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

SIGNING & PAVEMENT MARKING PLAN
℄ GREENVILLE STA 119+00 TO
℄ GREENVILLE STA 133+00

SHEET 4 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	5.04
CONT.	SECT.	JOB	
0918	47	473	

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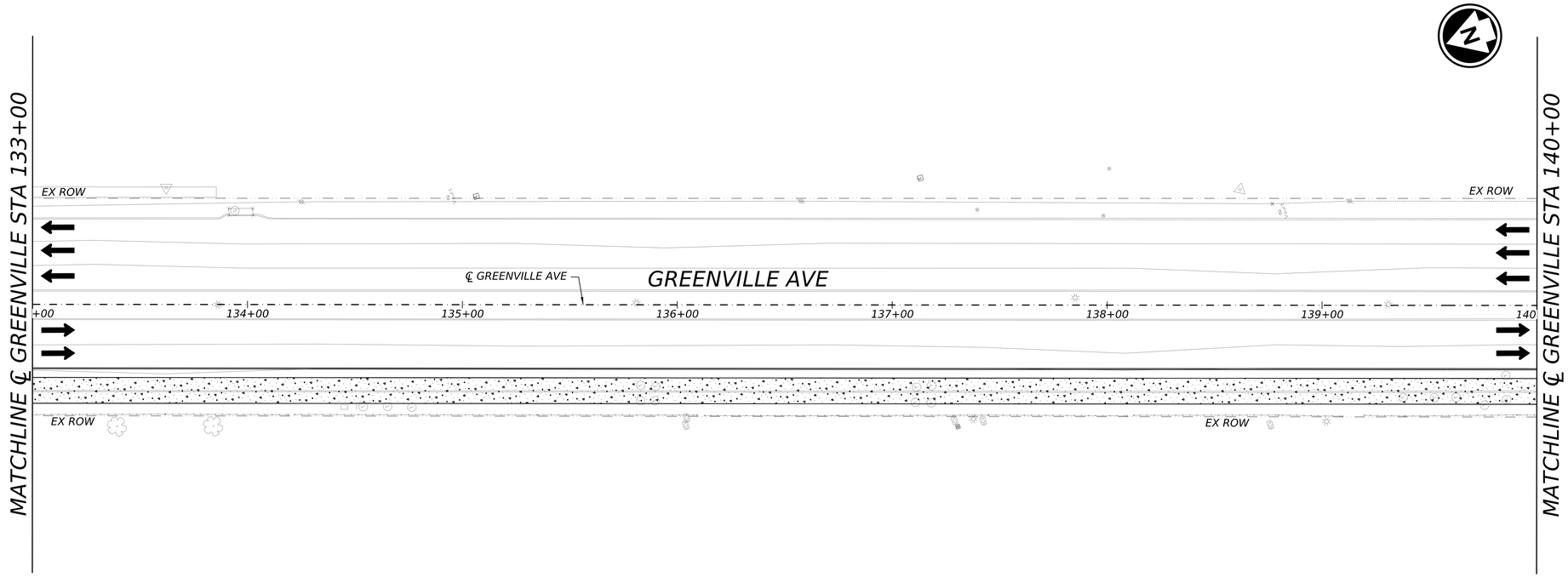

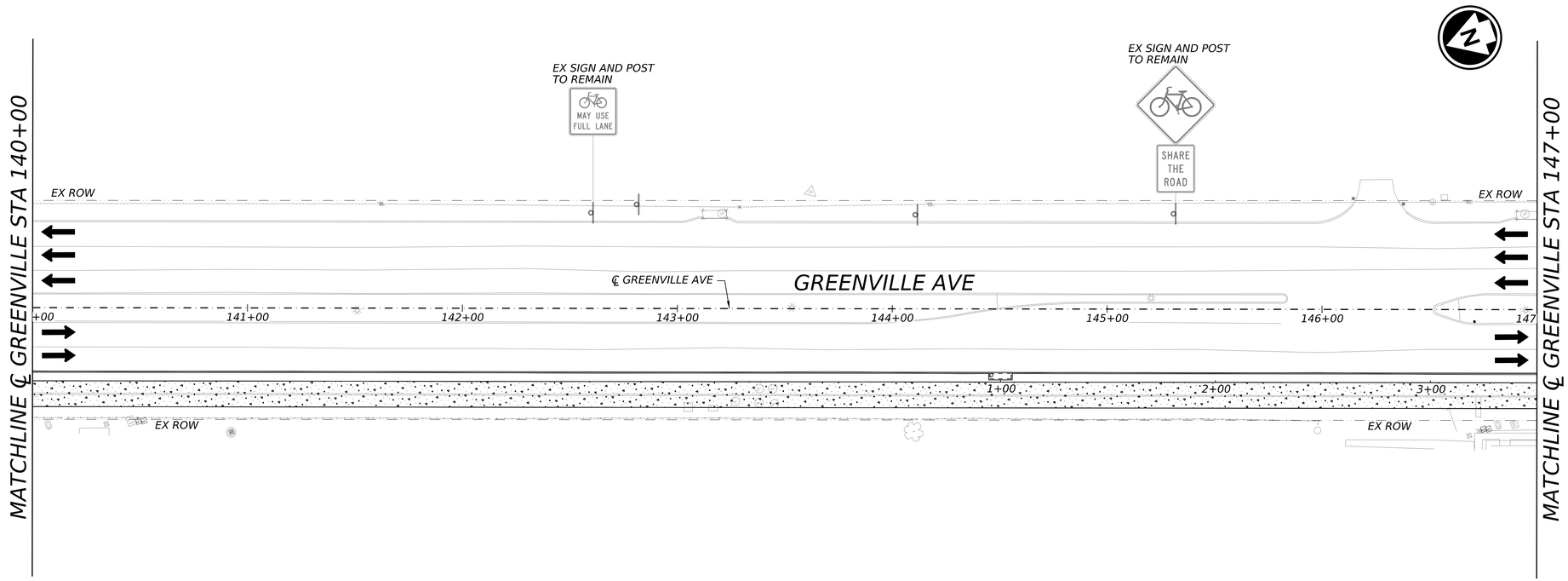

LEGEND

- EX ROW
- EX ESMT
- EXISTING SMALL SIGN
- PROPOSED SMALL SIGN
- (A) 24" W SLD
- (B) 4" DASH LINE MRK / BUTTONS AND RPMS
- (C) 8" BAY LINE MRK / BUTTONS AND RPMS
- (D) W ARROW
- (E) 8" W DOT
- (F) 6" W SLD
- (G) 18" W SLD
- TRAFFIC DIRECTION
- [X] PROP SMALL SIGN ASSEMBLY

NOTES:

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STATE OF TEXAS
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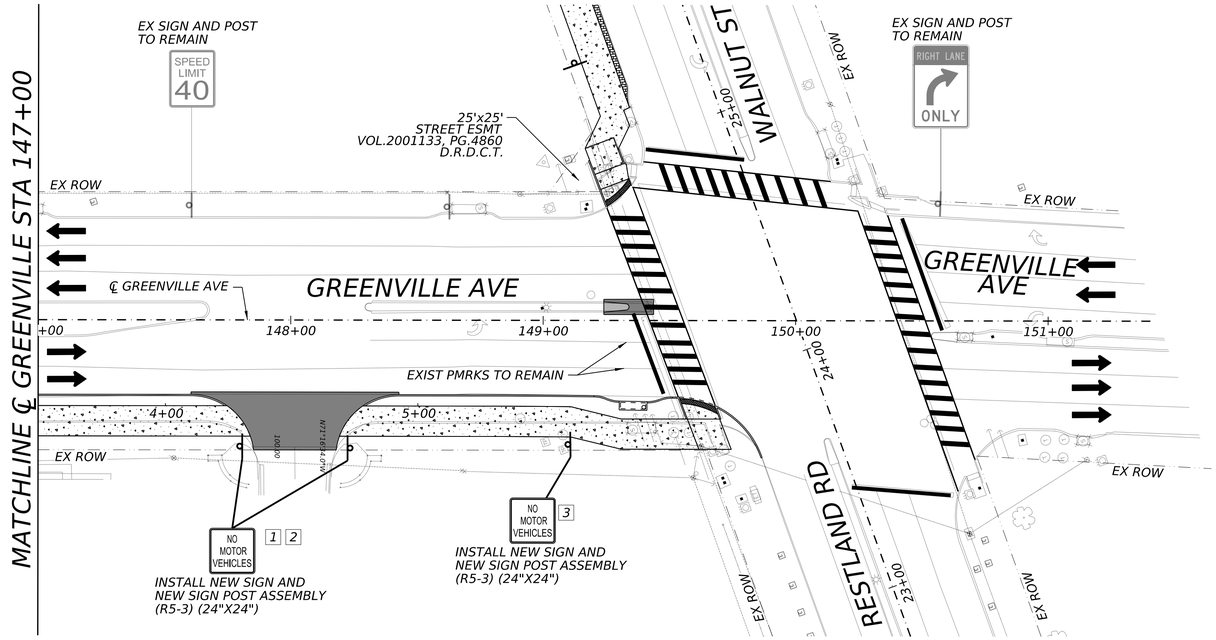
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

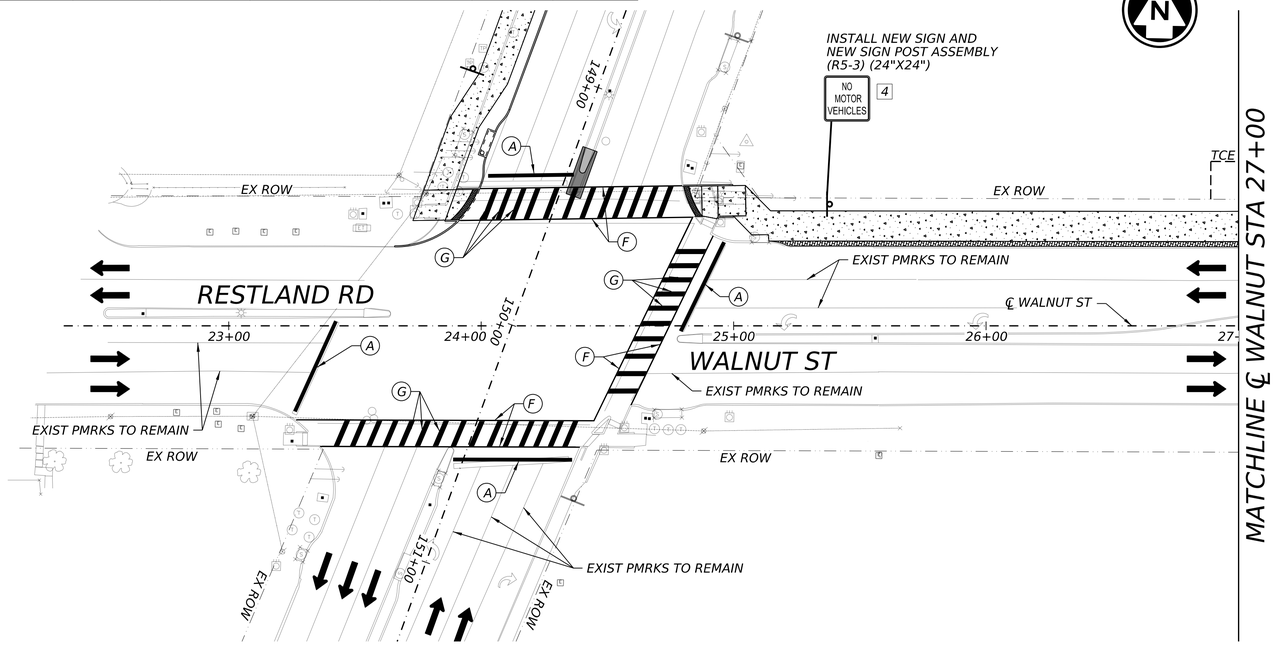
SIGNING & PAVEMENT MARKING PLAN
℄ GREENVILLE STA 133+00 TO
℄ GREENVILLE STA 147+00

SHEET 5 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	5.05
CONT.	SECT.	JOB	
0918	47	473	



644 7001	666 7033	666 7036	666 7411	677 7002	677 7007	677 7008
IN SM RD SN SUP&AM TY10BWG(1) SA(P)	REFL PAV MRK TY I (W)18"(SLD) (100MIL)	REFL PAV MRK TY I (W)24"(SLD) (100MIL)	REFL PAV MRK TY I (W)6"(SLD)(100MIL)	ELIM EXT PM & MRKS (6")	ELIM EXT PM & MRKS (18")	ELIM EXT PM & MRKS (24")
EA	LF	LF	LF	LF	LF	LF
4	162	394	558	551	167	420



LEGEND

- EX ROW
- EX ESMT
- EXISTING SMALL SIGN
- PROPOSED SMALL SIGN
- (A) 24" W SLD
- (B) 4" DASH LINE MRK / BUTTONS AND RPMS
- (C) 8" BAY LINE MRK / BUTTONS AND RPMS
- (D) W ARROW
- (E) 8" W DOT
- (F) 6" W SLD
- (G) 18" W SLD
- TRAFFIC DIRECTION
- [X] PROP SMALL SIGN ASSEMBLY

NOTES:

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5. CONTRACTOR SHALL COORDINATE WITH DART REGARDING RELOCATION OF DART BUS SIGNS.

STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED PROFESSIONAL ENGINEER
2/20/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

SIGNING & PAVEMENT MARKING PLAN
℄ GREENVILLE STA 147+00 TO
℄ WALNUT STA 27+00

SHEET 6 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	5.06
CONT.	SECT.	JOB	
0918	47	473	

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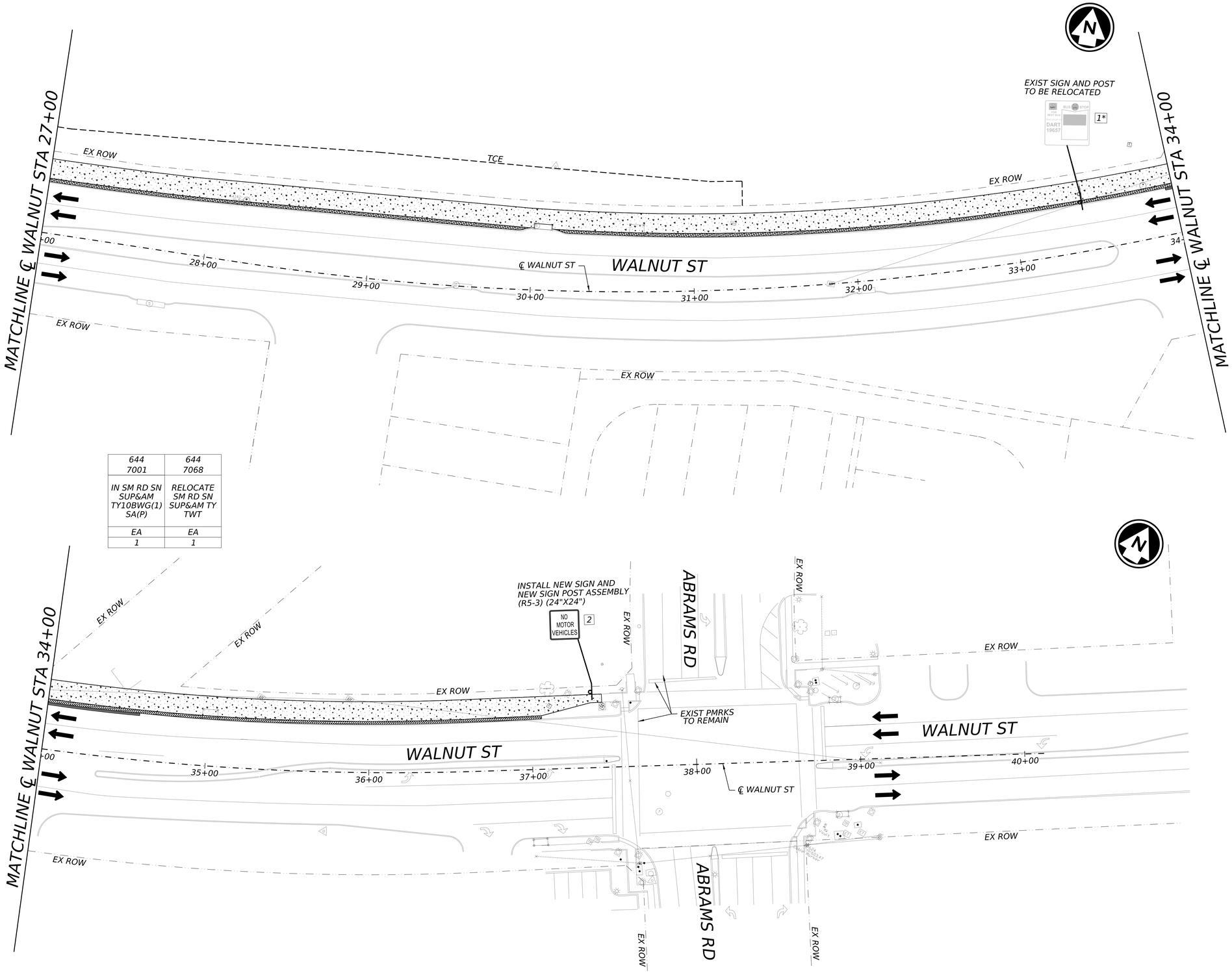

644 7001	644 7068
IN SM RD SN SUP&AM TY10BWG(1) SA(P)	RELOCATE SM RD SN SUP&AM TY TWT
EA	EA
1	1

LEGEND

- EX ROW
- EX ESMT
- EXISTING SMALL SIGN
- PROPOSED SMALL SIGN
- (A) 24" W SLD
- (B) 4" DASH LINE MRK / BUTTONS AND RPMS
- (C) 8" BAY LINE MRK / BUTTONS AND RPMS
- (D) W ARROW
- (E) 8" W DOT
- (F) 6" W SLD
- (G) 18" W SLD
- TRAFFIC DIRECTION
- [X] PROP SMALL SIGN ASSEMBLY

NOTES:

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* SALVAGE SIGNS

STATE OF TEXAS
IN SUNG HWANG
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PROFESSIONAL ENGINEER
2/20/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

SIGNING & PAVEMENT MARKING PLAN
℄ WALNUT STA 27+00 TO END

SHEET 7 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	5.07
CONT.	SECT.	JOB	
0918	47	473	

SUMMARY OF SMALL SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX) POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION		BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE
										PREFABRICATED		
1 OF 7							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	P = "Plain" T = "T" U = "U"	1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	TY N TY S
	1	R1-5bL		36"X36"	X		10BWG	1	SA	P		
	2	W10-1		DIA 36"	X		10BWG	1	SA	P		
	3	W10-1		DIA 36"	X		10BWG	1	SA	P		
	4	W11-15		36"X36"	X		10BWG	1	SA	P		
		W16-9P		24"X12"	X							
	5	W11-15a		36"X36"	X		10BWG	1	SA	P		
	6	R1-5bL		36"X36"	X		10BWG	1	SA	P		
	7	R5-3		24"X24"	X		10BWG	1	SA	P		
	8	W11-15a		36"X36"	X		10BWG	1	SA	P		
	9	W11-15		36"X36"	X		10BWG	1	SA	P		
		W16-9P		24"X12"	X							
	10	R7-1DBL		12"X18"	X		10BWG	1	SA	P		

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

NOTE:

1. Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

2/20/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

SUMMARY OF SMALL SIGNS

SHEET 1 OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	5.08
CONT.	SECT.	JOB	
0918	47	473	

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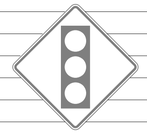
SUMMARY OF SMALL SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX) POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION PREFABRICATED	MOUNTING DESIGNATION	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	P = "Plain" T = "T" U = "U"	1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	TY N TY S
	11	R7-1DBL		12"X18"	X		10BWG	1	SA	P		
2 OF 7												
	1*	EXIST SIGN		KEEP EXIST SIGN	X		RELOCATE TY 10BWG					
	2	S1-1		36"X36"	X		10BWG	1	SA	P		
		SW16-7PR	(BACK-TO-BACK)	24"X12"	X							
	3	R7-1DBL		12"X18"	X		10BWG	1	SA	P		
	4	R7-1DBL		12"X18"	X		10BWG	1	SA	P		
	5*	EXIST SIGN		KEEP EXIST SIGN	X		RELOCATE TY 10BWG					
	6	S1-1		36"X36"	X		10BWG	1	SA	P		
		SW16-7PL		24"X12"	X							
	7	R3-5R		30"X48"	X		10BWG	1	SA	P		
	8	S1-1		36"X36"	X		10BWG	1	SA	P		
		SW16-7PL		24"X12"	X							
	9	R5-3		24"X24"	X		10BWG	1	SA	P		

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

SUMMARY OF SMALL SIGNS

SHEET 2 OF 3

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	5.09
CONT.	SECT.	JOB	
0918	47	473	

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SUMMARY OF SMALL SIGNS

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX) POST TYPE	POSTS	ANCHOR TYPE	MOUNTING DESIGNATION PREFABRICATED	MOUNTING DESIGNATION	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE
							FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	1 or 2	UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	P = "Plain" T = "T" U = "U"	1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	TY N TY S
3 OF 7												
	1	R2-1	SPEED LIMIT XX	30"X36"	X		10BWG	1	SA	P		
	2	R5-3	NO MOTOR VEHICLES	24"X24"	X		10BWG	1	SA	P		
	3	R5-3	NO MOTOR VEHICLES	24"X24"	X		10BWG	1	SA	P		
4 OF 7												
	1	R5-3	NO MOTOR VEHICLES	24"X24"	X		10BWG	1	SA	P		
	2	R5-3	NO MOTOR VEHICLES	24"X24"	X		10BWG	1	SA	P		
6 OF 7												
	1	R5-3	NO MOTOR VEHICLES	24"X24"	X		10BWG	1	SA	P		
	2	R5-3	NO MOTOR VEHICLES	24"X24"	X		10BWG	1	SA	P		
	3	R5-3	NO MOTOR VEHICLES	24"X24"	X		10BWG	1	SA	P		
	4	R5-3	NO MOTOR VEHICLES	24"X24"	X		10BWG	1	SA	P		
7 OF 7												
	1*	EXIST SIGN	BUS STOP FOR NEXT BUS INFO SCAN DART 19657	KEEP EXIST SIGN	X		RELOCATE TY 10BWG					
	2	R5-3	NO MOTOR VEHICLES	24"X24"	X		10BWG	1	SA	P		

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

NOTE:

1. Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

Texas Department of Transportation
©2025

DALLAS COUNTY
CENTRAL TRAIL EXTENSION

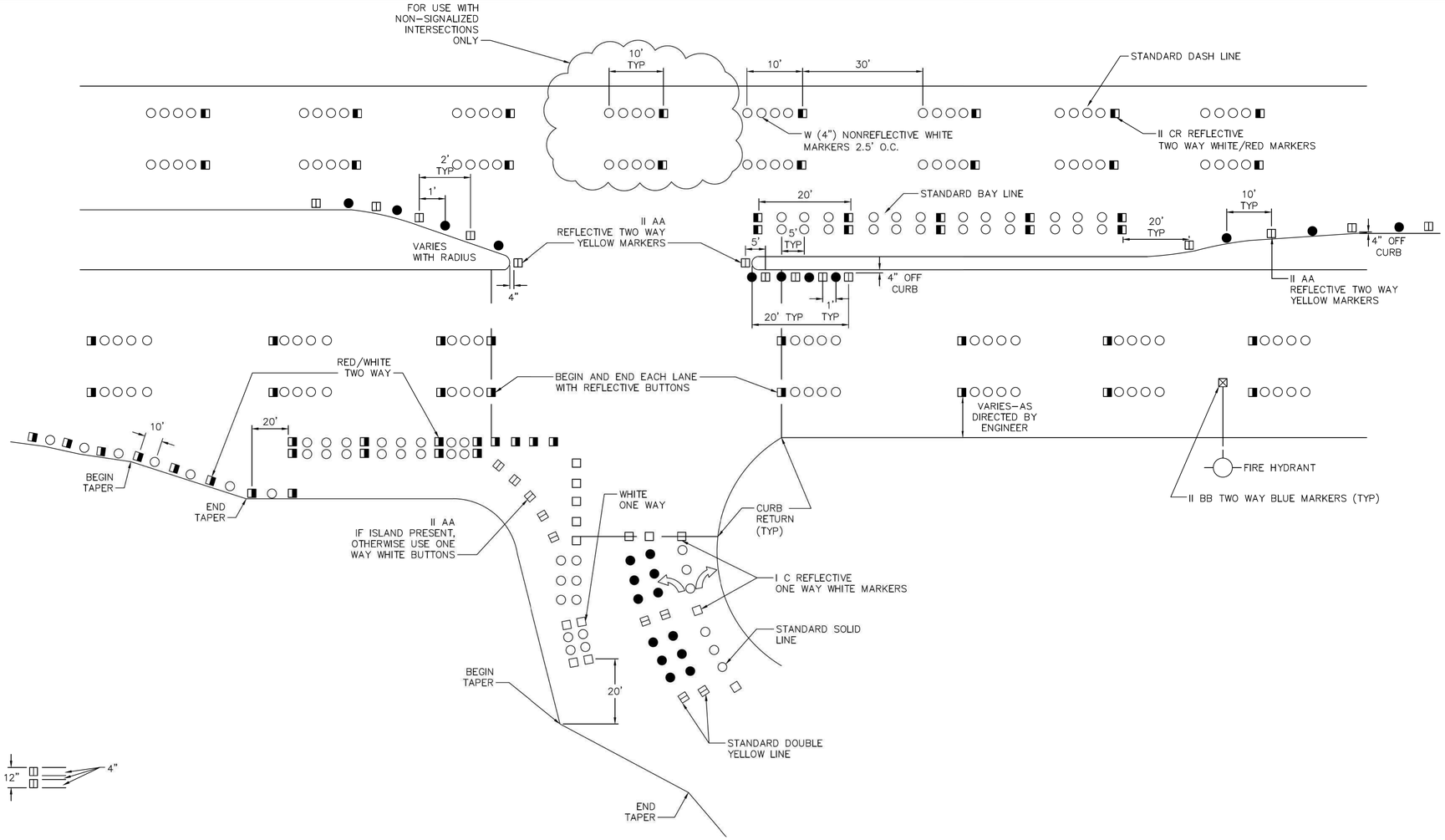
SUMMARY OF SMALL SIGNS

SHEET 3 OF 3

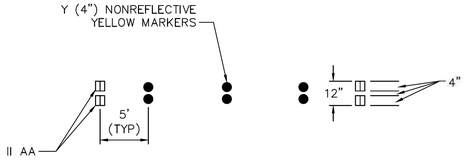
FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	5.10
CONT.	SECT.	JOB	
0918	47	473	

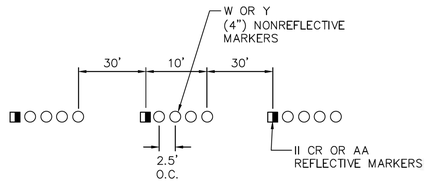
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to OTHON ENGINEERING.



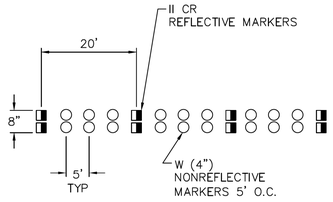
CITY OF RICHARDSON RAISED MARKINGS STANDARD DETAIL



STANDARD DOUBLE YELLOW LINE



STANDARD DASH LINE



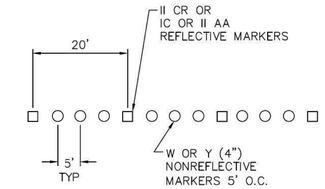
STANDARD BAY LINE

LEGEND

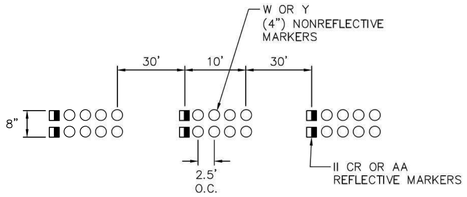
- II CR (4" SQUARE) TWO WAY REFLECTIVE RED/WHITE MARKER
- II AA (4" SQUARE) TWO WAY REFLECTIVE YELLOW MARKER
- II BB (4" SQUARE) TWO WAY REFLECTIVE BLUE MARKER
- I C (4" SQUARE) ONE WAY REFLECTIVE WHITE MARKER
- W (4" ROUND) NON REFLECTIVE WHITE MARKER
- Y (4" ROUND) NON REFLECTIVE YELLOW MARKER

C.O.R. WILL PROVIDE INITIAL DETAIL ASSISTANCE IN PAVING MARKING LAYOUT (AS REQUIRED)

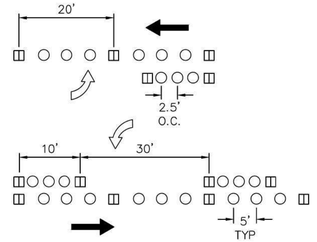
MATERIALS AS PER COR SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.



STANDARD SOLID LINE



DOUBLE DASH BAY LINE CATCH LANES



TWO WAY LEFT TURN LANE RAISED MARKINGS

Revisions:

City of Richardson
411 W. Arapaho Road
Suite 204
Richardson, Texas 75080
voice: 972 744-4280
fax: 972 744-5804

Drawn By: RGB
Checked By: COR

RICHARDSON TEXAS

STANDARD DETAILS

City of Richardson, Texas

NO ADDITIONS OR CHANGES TO STANDARD DETAIL SHEETS UNLESS APPROVED BY CITY OF RICHARDSON

24"x36" Scale: NTS
11"x17" Scale: NTS
Vertical Scale: NA
Project Number: XXX
Issue Date: 03 MAY 18
Sheet Title: **TRAFFIC**
Sheet No.: **T-3**

STANDARD INTERSECTION SURFACE MARKINGS

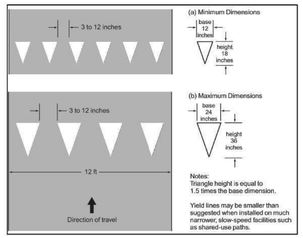
2' x 6' BARS PLACED ON THE LANE LINE & ON THE CENTER OF THE LANE PARALLEL TO TRAFFIC.
(NO STANDARD SPACING)

2' WIDE STOP BAR STAIR STEPPED AS NEEDED.

27' MIN

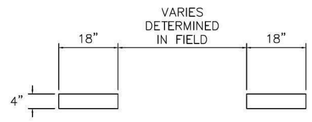
4' MIN

CATCH LANE



YIELD LINE SURFACE MARKINGS

MATERIALS AS PER COR SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.



CAT TRAX SURFACE MARKINGS

Revisions:

City of Richardson
411 W. Arapaho Road
Suite 204
Richardson, Texas 75080
voice: 972 744-4280
fax: 972 744-5804

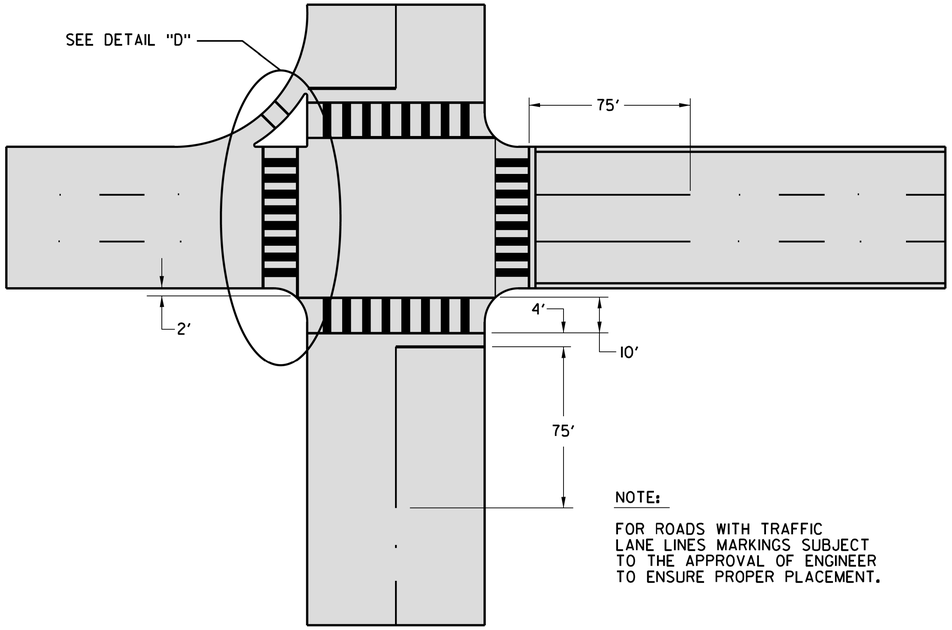
Drawn By: RGB
Checked By: COR

RICHARDSON TEXAS

STANDARD DETAILS
City of Richardson, Texas

NO ADDITIONS OR CHANGES TO STANDARD DETAIL SHEETS UNLESS APPROVED BY CITY OF RICHARDSON

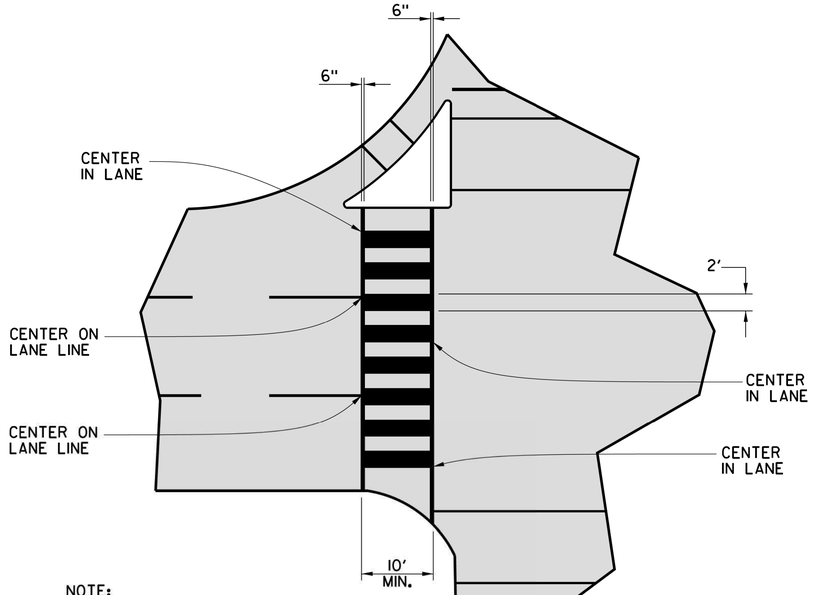
24"x36" Scale: NTS
11"x17" Scale: NTS
Vertical Scale: NA
Project Number: XXX
Issue Date: 03 MAY 18
Sheet Title: **TRAFFIC**
Sheet No.: **T-5**



NOTE:

FOR ROADS WITH TRAFFIC LANE LINES MARKINGS SUBJECT TO THE APPROVAL OF ENGINEER TO ENSURE PROPER PLACEMENT.

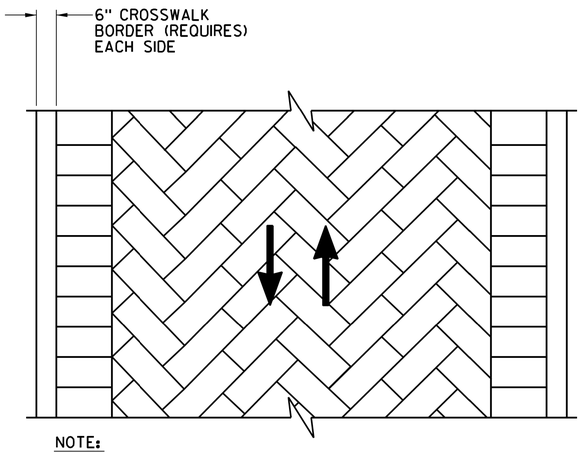
TYPICAL CROSSWALK LAYOUT



NOTE:

PLACEMENT OF CROSSWALK 24" SOLID WHITE LINES WILL VARY BASED UPON THE ROADWAY CONFIGURATION. PLEASE DISCUSS WITH THE DEPARTMENT OF TRANSPORTATION FIELD OPERATIONS PRIOR TO PLACEMENT.

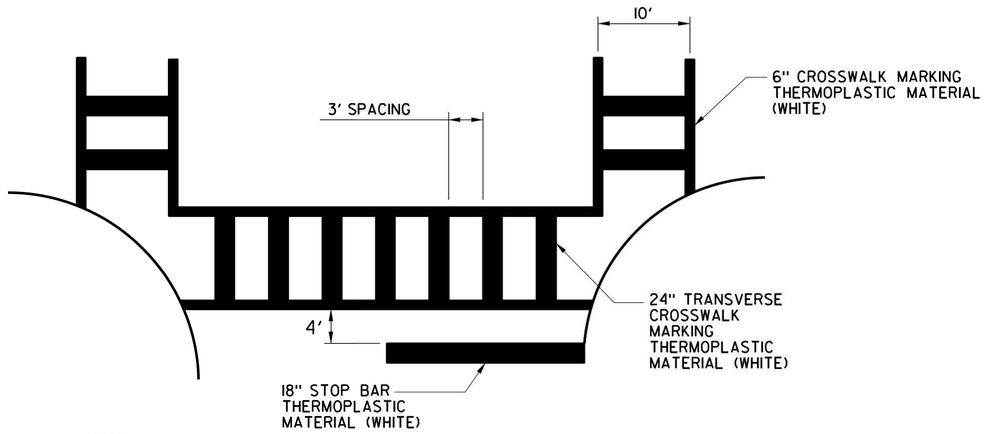
DETAIL D



NOTE:

DECORATIVE CROSSWALK COLOR AND PATTERNS SHALL BE APPROVED BY THE DEPARTMENT OF TRANSPORTATION PRIOR TO INSTALLATION.

DECORATIVE CROSSWALK



NOTE:

FOR ROADS WITHOUT TRAFFIC LANE LINES MARKINGS.

CROSSWALK DETAIL

TYPICAL PAVEMENT MARKINGS

CROSSWALK DETAILS

DEPARTMENT OF PUBLIC WORKS
CITY OF DALLAS, TEXAS

DRAWINGS NOT TO SCALE
REVISED: DECEMBER 2021

SHEET No.
5004

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type

FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
TWT = Thin-Walled Tubing (see SMD(TWT))
10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

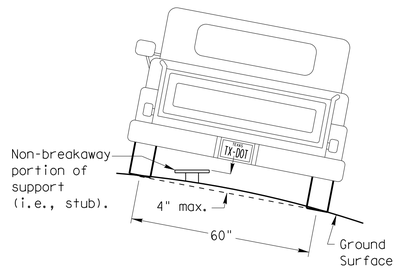
Anchor Type

UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
WS = Wedge Anchor Steel - (see SMD(TWT))
WP = Wedge Anchor Plastic (see SMD(TWT))
SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
IF REQUIRED
1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-1))

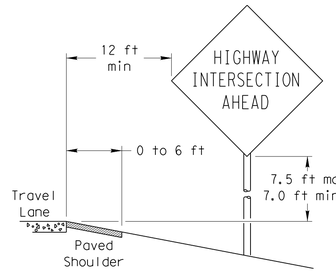
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

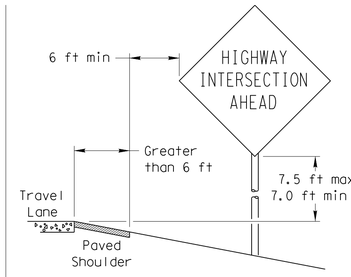
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

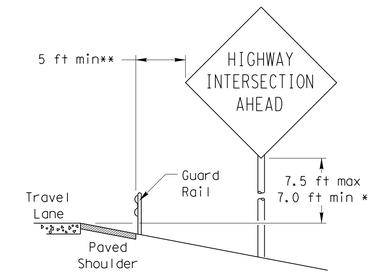
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



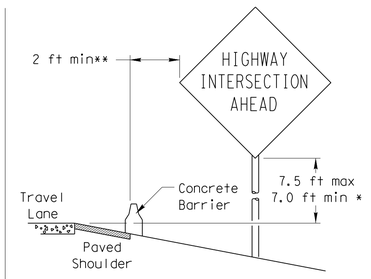
GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

BEHIND BARRIER



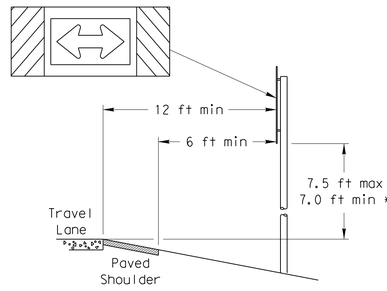
BEHIND GUARDRAIL



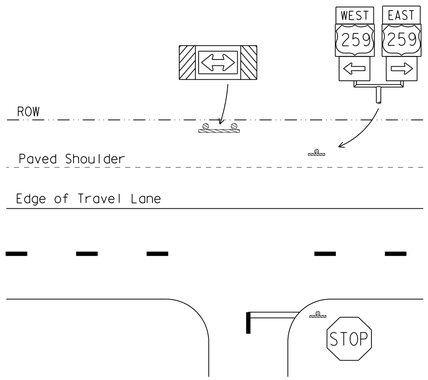
BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

T-INTERSECTION



When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

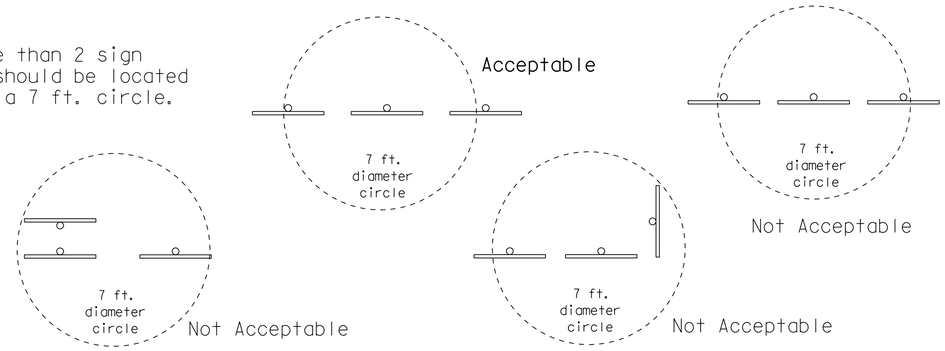
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

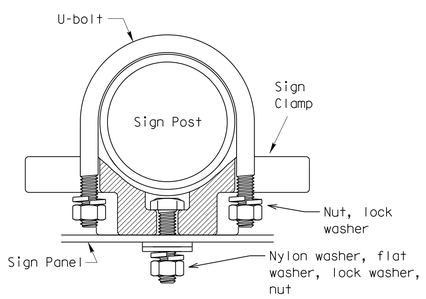
The website address is:
http://www.txdot.gov/publications/traffic.htm

No more than 2 sign posts should be located within a 7 ft. circle.



TYPICAL SIGN ATTACHMENT DETAIL

Single Signs

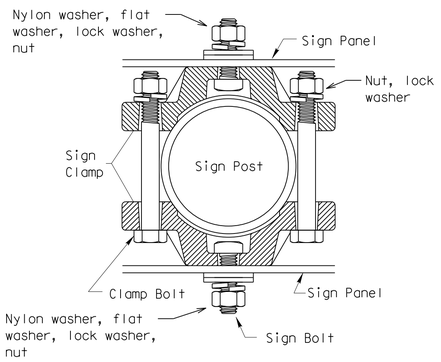


Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

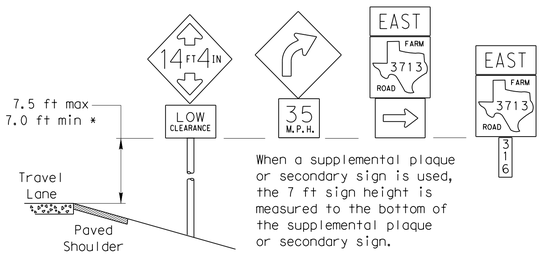
Sign clamps may be either the specific size clamp or the universal clamp.

Back-to-Back Signs



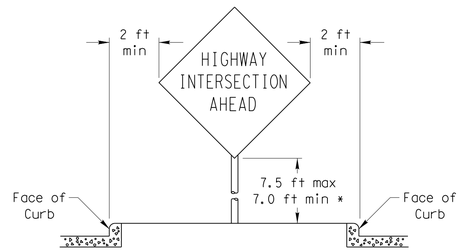
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



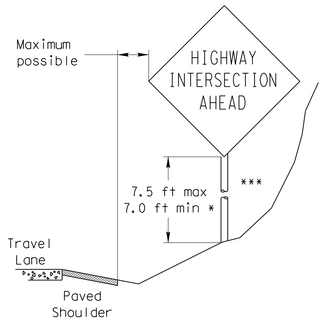
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

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REVISIONS
9-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
CONT	SECT	JOB	HIGHWAY
0918	47	473	VA
DIST	COUNTY		SHEET NO.
DAL	DALLAS		5.14

DATE: 2/20/2026 12:01:36 PM
FILE: c:\pw\working\othon-pw-01\mohammad.alam\dms19180\smdgen.dgn

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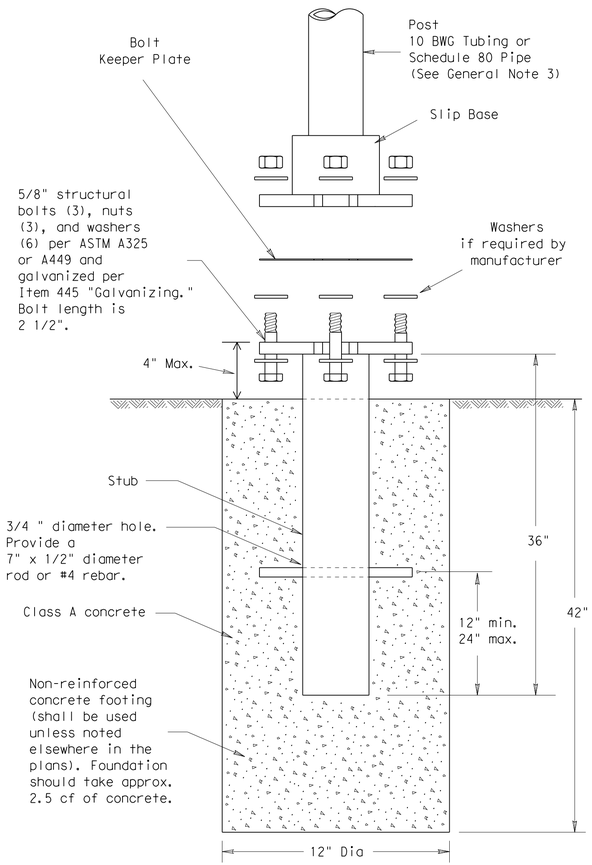
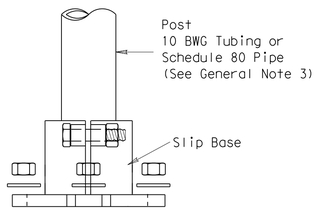
TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS

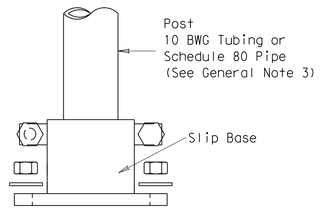


SM RD SGN ASSM TY XXXXX(X)SA(X-XXXX)

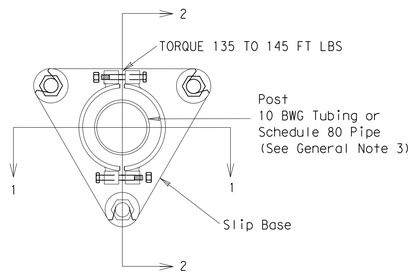
NOTE
The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.



SIDE VIEW 1-1



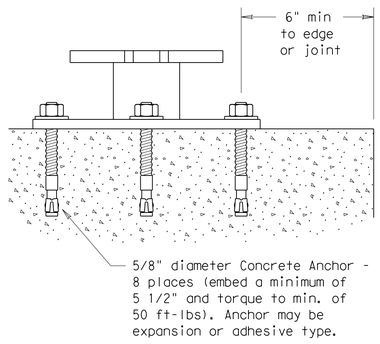
SIDE VIEW 2-2



TOP VIEW

DETAIL A

CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

GENERAL NOTES:

1. Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   - 0.134" nominal wall thickness
   - Seamless or electric-resistance welded steel tubing or pipe
   - Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   - Other steels may be used if they meet the following:
     - 55,000 PSI minimum yield strength
     - 70,000 PSI minimum tensile strength
     - 20% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   - Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   - Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.

   Schedule 80 Pipe (2.875" outside diameter)
   - 0.276" nominal wall thickness
   - Steel tubing per ASTM A500 Gr C
   - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
     - 46,000 PSI minimum yield strength
     - 62,000 PSI minimum tensile strength
     - 21% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   - Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   - Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
2. Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

ADDED DETAIL A FOR CLAMP BASE
10-2010

DATE:
FILE:

Texas Department of Transportation
Dallas District Standard

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08(DAL)

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DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS	CONT	SECT	JOB	HIGHWAY
9-08	0918	47	473	VA
12-10 (DISTRICT) ADDED CLAMP BASE DETAIL FOR SLIP BASE INSTALLATION	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		5.15

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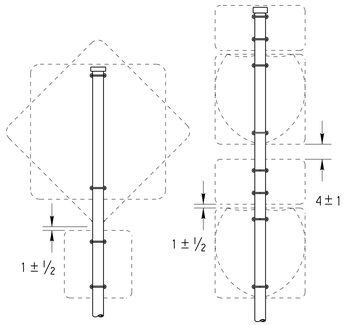

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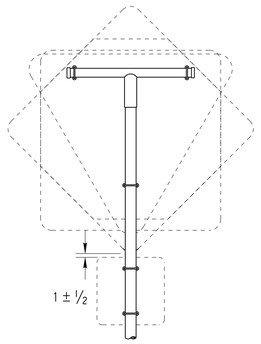

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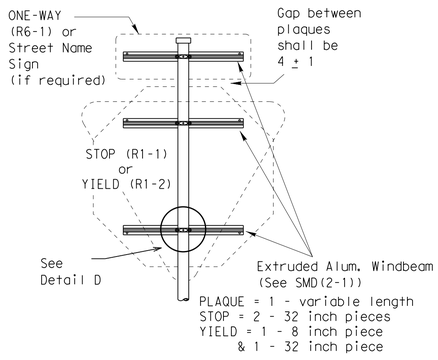

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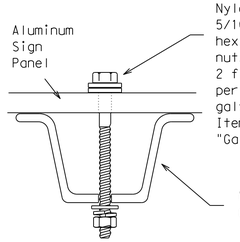

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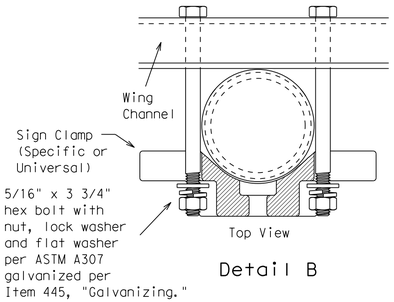

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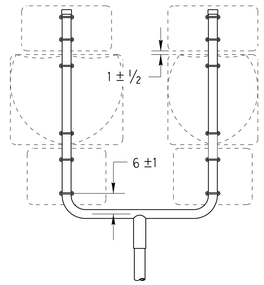

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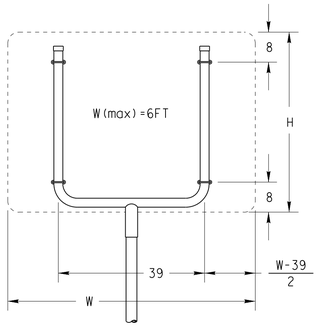

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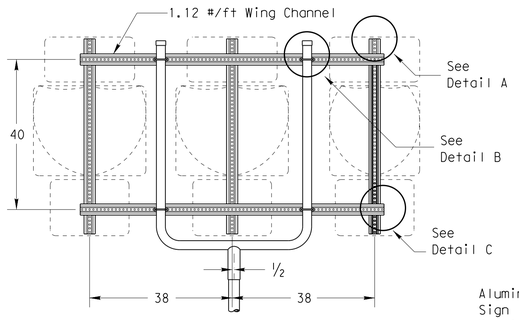
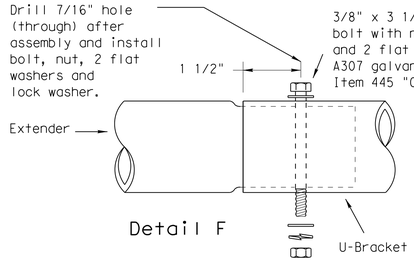
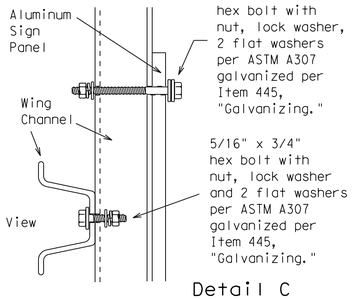


SM RD SGN ASSM TY XXXXX(1)XX(U-WC)
(See Note 11)

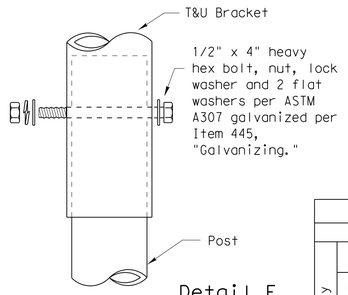


Detail F

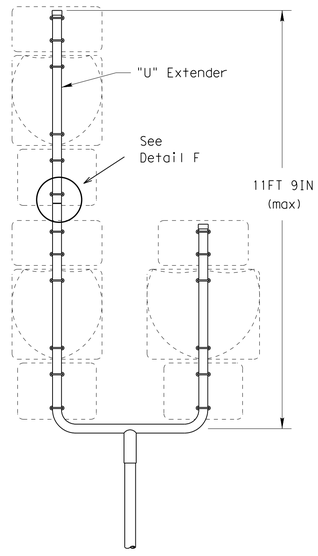
Splices shall only be allowed behind the sign substrate.



Detail C



Detail E



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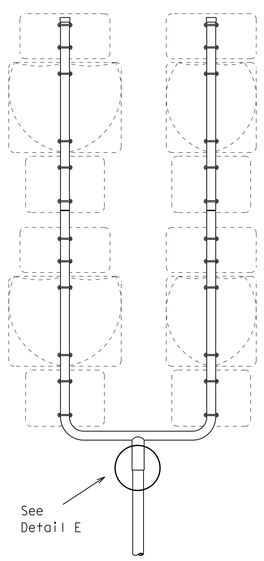

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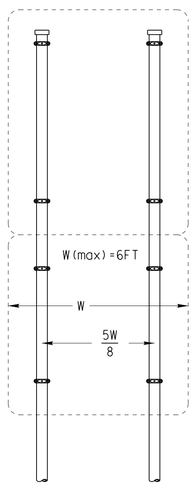
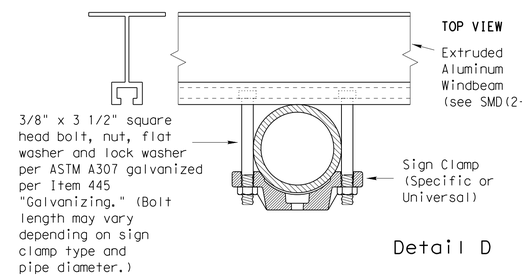
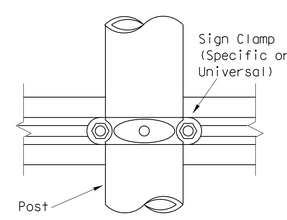


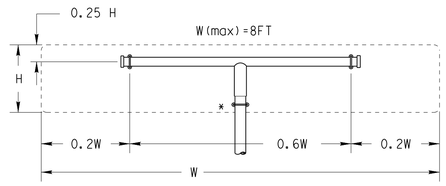
SM RD SGN ASSYM TY XXXXX(2)XX(P)

SIDE VIEW



Detail D

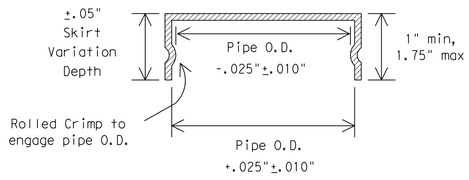




SM RD SGN ASSM TY XXXXX(1)XX(T)
(* - See Note 12)

All dimensions are in english unless detailed otherwise.

FRICTION CAP DETAIL



Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

GENERAL NOTES:

1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
11. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

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REVISIONS	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08	CONT	SECT	JOB	HIGHWAY
	0918	47	473	VA
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		5.16

26C

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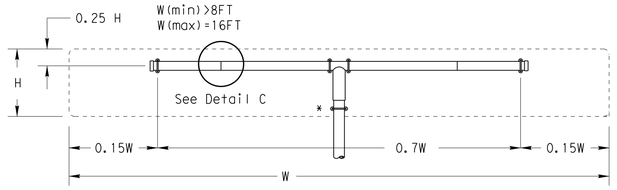
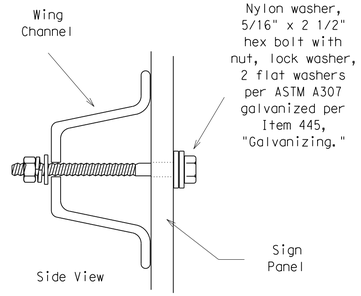
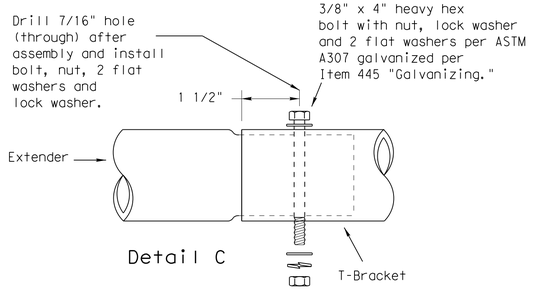


SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT)
(* - See Note 12)

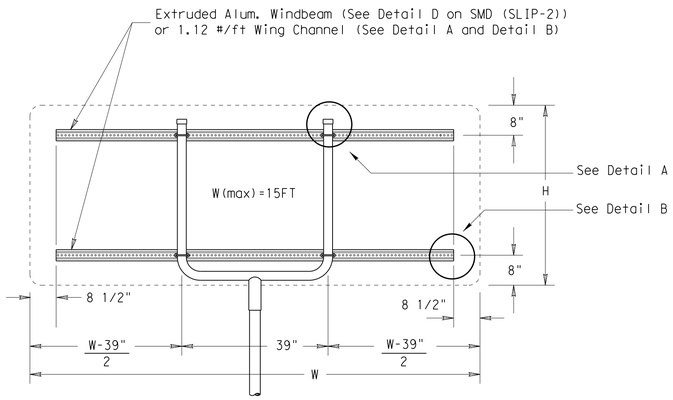


Detail B



Detail C

Splices shall only be allowed behind the sign substrate.



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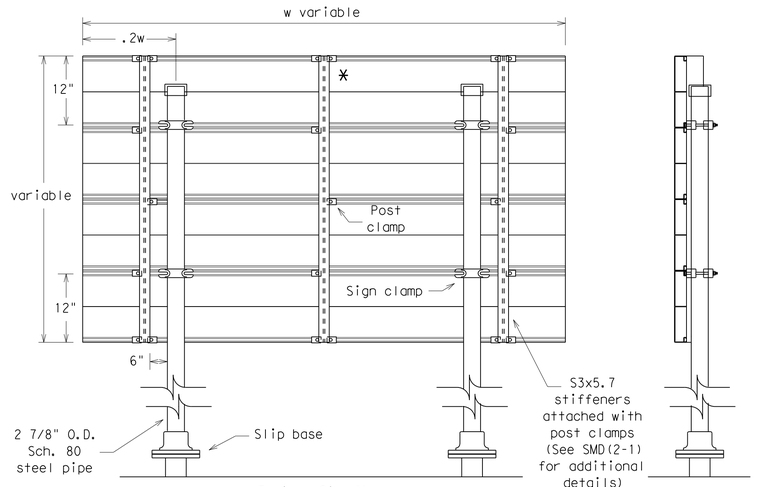
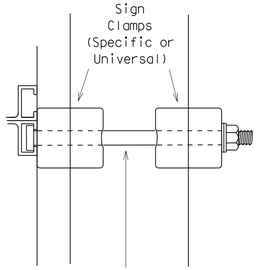


Typical Sign Mount

SM RD SGN ASSM TY S80(2)XX(P-EXAL)

* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.

See Detail E
for clamp installation



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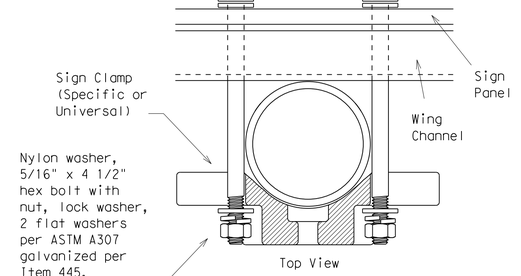
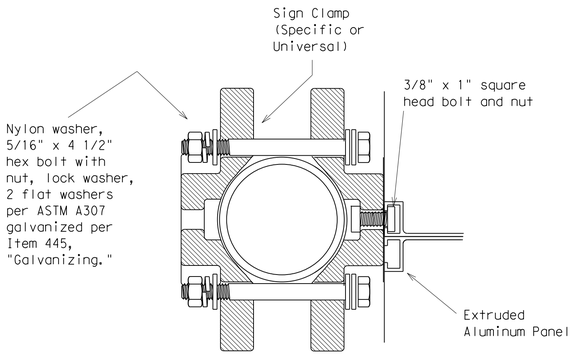
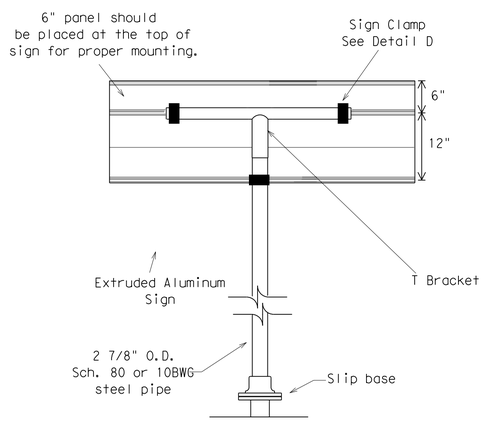


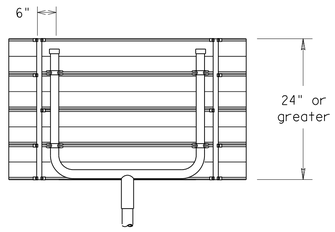
Detail A



Detail D
EXTRUDED ALUMINUM SIGN WITH T BRACKET



Extruded Aluminum Sign
With T Bracket



Use Extruded Alum. Windbeam as stiffeners
See SMD (2-1) for additional details

See Detail E
for clamp installation

GENERAL NOTES:

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
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7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Sign blanks shall be the sizes and shapes shown on the plans.
11. Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

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REVISIONS	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08	CONT	SECT	JOB	HIGHWAY
	0918	47	473	VA
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		5.17

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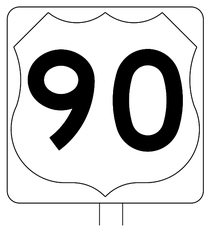
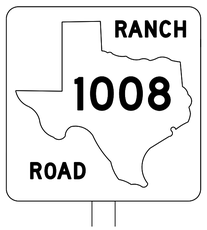
REQUIREMENTS FOR INDEPENDENT MOUNTED ROUTE SIGNS

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE A SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & BORDERS	ALL OTHERS	TYPE B or C SHEETING

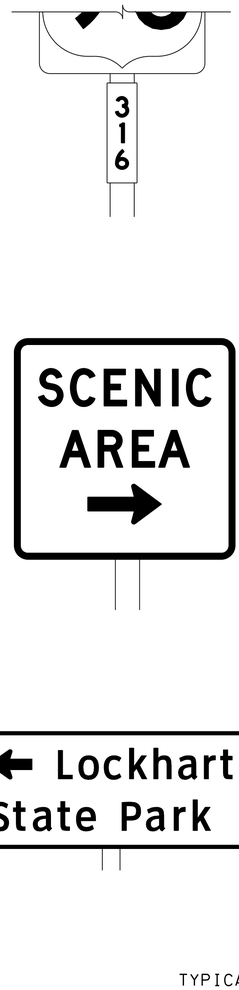


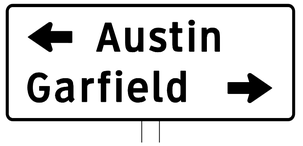


TYPICAL EXAMPLES

REQUIREMENTS FOR BLUE, BROWN & GREEN D AND I SERIES GUIDE SIGNS

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	ALL	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE D SHEETING
LEGEND, SYMBOLS & BORDERS	ALL OTHERS	TYPE B OR C SHEETING





TYPICAL EXAMPLES

GENERAL NOTES

1. Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).

2. White legend shall use the Clearview Alphabet. The following Clearview fonts shall be used to replace the existing white Federal Highway Administration (FHWA) Standard Highway Alphabets, when not specified in the SHSD, or in the plans.

B	CV-1W
C	CV-2W
D	CV-3W
E	CV-4W
Emod	CV-5WR
F	CV-6W

3. Route sign legend (ie. IH, US, SH and FM shields) shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets B, C, D, E, Emod or F).

4. Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.

5. Independent mounted route sign with white or colored legend and borders shall be applied by screening process with transparent color ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof. White legend, symbols and borders on all other signs shall be cut-out white sheeting applied to colored background sheeting.

6. Information regarding borders and radii for signs is found in the "Standard Highway Sign Designs for Texas". Dimensions shown and described for borders and corner radii on parent sign are nominal. Borders may vary in width as much as 1/2 inch. Corner radii above 3 inches may vary in width as much as 1 inch. Borders and corner radii within a parent sign must be of matching widths. The sign area outside the corner radius should be trimmed or rounded.

7. Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.

8. Mounting details of roadside signs are shown in the "SMD series" Standard Plan Sheets.

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

Texas Department of Transportation

Traffic Operations Division Standard

TYPICAL SIGN REQUIREMENTS

TSR(3)-13

FILE: tsr3-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
12-03 7-13	DIST	COUNTY		SHEET NO.
9-08	DAL	DALLAS		5.18

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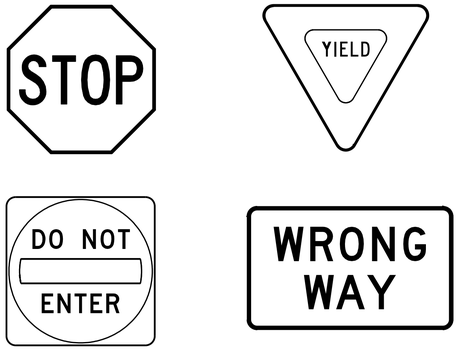
DATE: 2/20/2026 12:04:38 PM
FILE: c:\pw_working\othon-pw-01\mohammad.olam\dms19180\tsr4-13.dgn

REQUIREMENTS FOR RED BACKGROUND REGULATORY SIGNS

(STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)



REQUIREMENTS FOR FOUR SPECIFIC SIGNS ONLY

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	WHITE	TYPE B OR C SHEETING
LEGEND & BORDERS	WHITE	TYPE B OR C SHEETING
LEGEND	RED	TYPE B OR C SHEETING

REQUIREMENTS FOR WHITE BACKGROUND REGULATORY SIGNS

(EXCLUDING STOP, YIELD, DO NOT ENTER AND WRONG WAY SIGNS)

TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	ALL OTHERS	TYPE B OR C SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND, BORDERS AND SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

GENERAL NOTES

1. Signs to be furnished shall be as detailed elsewhere in the plans and/or as shown on sign tabulation sheet. Standard sign designs and arrow dimensions can be found in the "Standard Highway Sign Designs for Texas" (SHSD).
2. Sign legend shall use the Federal Highway Administration (FHWA) Standard Highway Alphabets (B, C, D, E, Emod or F).
3. Lateral spacing between letters and numerals shall conform with the SHSD, and any approved changes thereto. Lateral spacing of legend shall provide a balanced appearance when spacing is not shown.
4. Black legend and borders shall be applied by screening process or cut-out acrylic non-reflective black film to background sheeting, or combination thereof.
5. White legend and borders shall be applied by screening process with transparent colored ink, transparent colored overlay film to white background sheeting or cut-out white sheeting to colored background sheeting, or combination thereof.
6. Colored legend shall be applied by screening process with transparent colored ink, transparent colored overlay film or colored sheeting to background sheeting, or combination thereof.
7. Sign substrate shall be any material that meets the Departmental Material Specification requirements of DMS-7110 or approved alternative.
8. Mounting details for roadside mounted signs are shown in the "SMD series" Standard Plan Sheets.

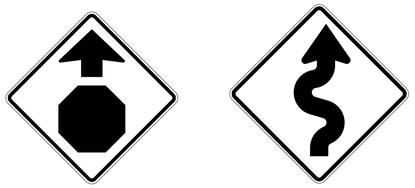
ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080
7.5 to 15	0.100
Greater than 15	0.125

DEPARTMENTAL MATERIAL SPECIFICATIONS	
ALUMINUM SIGN BLANKS	DMS-7110
SIGN FACE MATERIALS	DMS-8300

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

REQUIREMENTS FOR WARNING SIGNS



TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	FLOURESCENT YELLOW	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND & BORDERS	BLACK	ACRYLIC NON-REFLECTIVE FILM
LEGEND & SYMBOLS	ALL OTHER	TYPE B OR C SHEETING

REQUIREMENTS FOR SCHOOL SIGNS

TYPICAL EXAMPLES

SHEETING REQUIREMENTS		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	WHITE	TYPE A SHEETING
BACKGROUND	FLOURESCENT YELLOW GREEN	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND, BORDERS AND SYMBOLS	BLACK	ACRYLIC NON-REFLECTIVE FILM
SYMBOLS	RED	TYPE B OR C SHEETING

Texas Department of Transportation

Traffic Operations Division Standard

TYPICAL SIGN REQUIREMENTS

TSR(4)-13

FILE: tsr4-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
12-03 7-13 9-08	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		5.19

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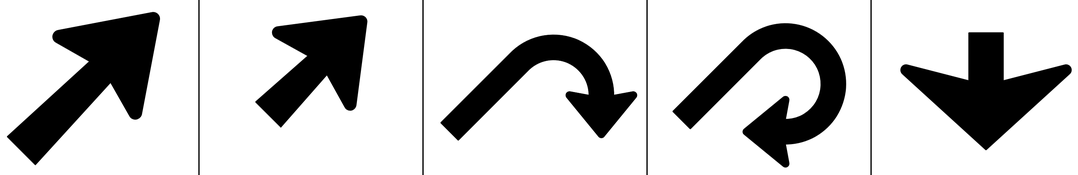
DATE: 2/20/2026 12:05:00 PM
FILE: c:\pw_working\othon-pw-01\mohammad.olam\dms19180\tsr5-13.dgn

ARROW DETAILS

for Large Ground-Mounted and Overhead Guide Signs



TYPE	LETTER SIZE	USE
A-1	10.67" U/L and 10" Caps	Single Lane Exits
A-2	13.33" U/L and 12" Caps	
A-3	16" & 20" U/L	
B-1	10.67" U/L and 10" Caps	Multiple Lane Exits
B-2	13.33" U/L and 12" Caps	
B-3	16" & 20" U/L	

CODE	USED ON SIGN NO.
E-3	E5-1aT
E-4	E5-1bT

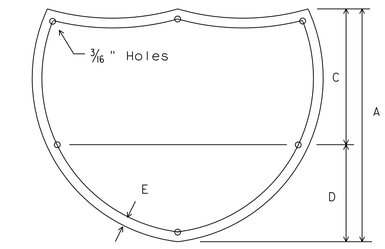
NOTE

Arrow dimensions are shown in the "Standard Highway Sign Designs for Texas" manual.

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

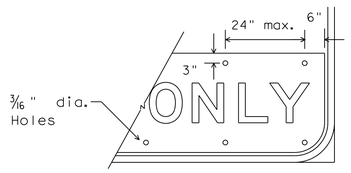
http://www.txdot.gov/

SIGN BLANK PUNCHING DETAILS FOR ATTACHMENTS WHEN SPECIFIED TO BE TYPE A ALUMINUM SIGNS (FOR MOUNTING TO GUIDE SIGN FACE)

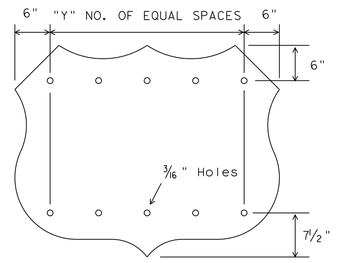


INTERSTATE ROUTE MARKERS

A	C	D	E
36	21	15	11/2
48	28	20	13/4

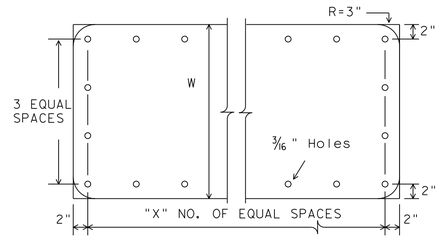


EXIT ONLY PANEL



U.S. ROUTE MARKERS

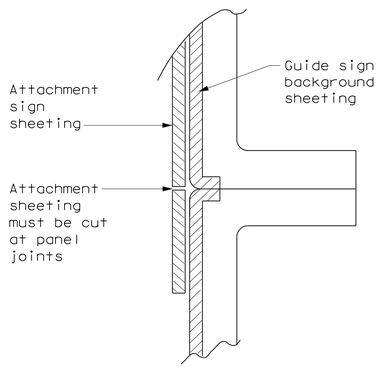
Sign Size	"Y"
24x24	2
30x24	3
36x36	3
45x36	4
48x48	4
60x48	5



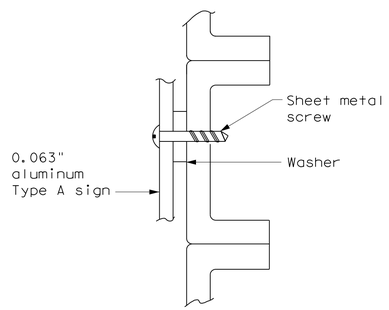
STATE ROUTE MARKERS

No. of Digits	W	X
4	24	4
4	36	5
4	48	6
3	24	3
3	36	4
3	48	5

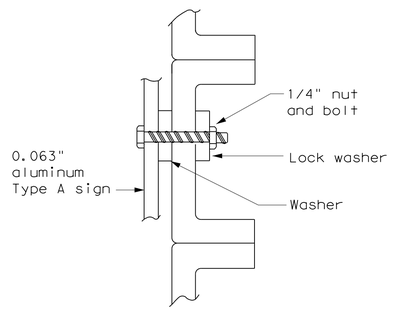
MOUNTING DETAILS OF ATTACHMENTS TO GUIDE SIGN FACE ("EXIT ONLY" AND "LEFT EXIT" PANELS, ROUTE MARKERS AND OTHER ATTACHMENTS)



DIRECT APPLIED ATTACHMENT



SCREW ATTACHMENT



NUT/BOLT ATTACHMENT

NOTE:

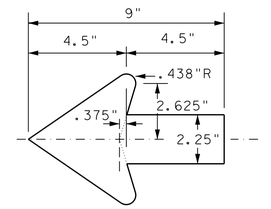
1. Sheeting for legend, symbols, and borders must be cut at panel joints.
2. Direct applied attachment signs will be subsidiary to "Aluminum Signs" or "Fiberglass Signs".

NOTE:

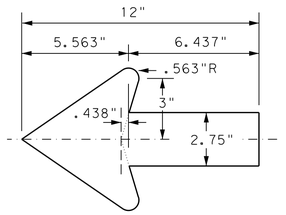
Furnish Type A aluminum sign attachments only when specified in the plans. These signs will be paid for under "Aluminum Signs".

ARROW DETAILS

for Destination Signs (Type D)



Standard arrow to be used with 6 inch letters.



Standard arrow to be used with 8 inch letters.

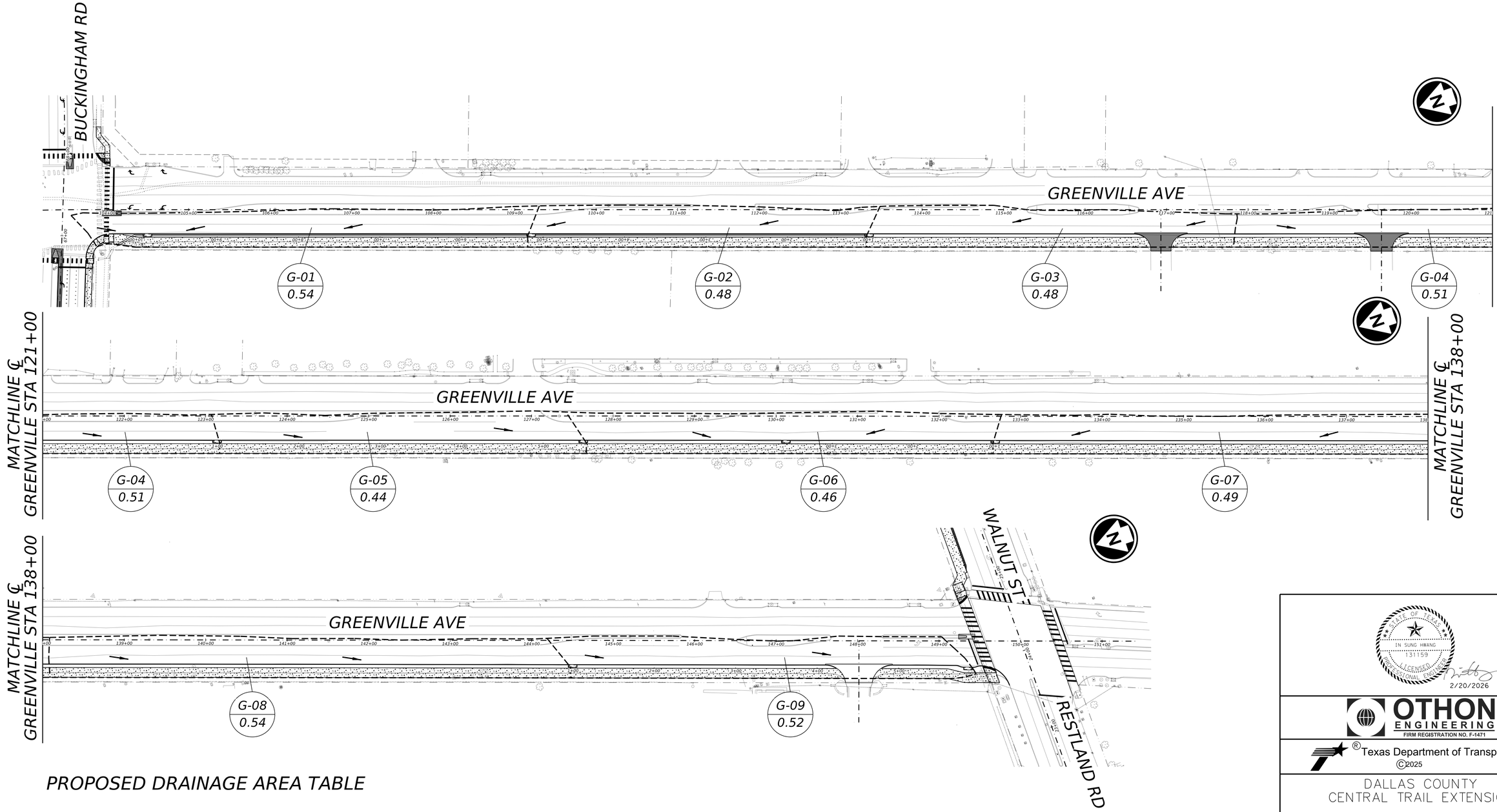
Texas Department of Transportation

Traffic Operations Division Standard

TYPICAL SIGN REQUIREMENTS

TSR(5)-13

FILE: tsr5-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT October 2003	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
12-03 7-13	DIST	COUNTY		SHEET NO.
9-08	DAL	DALLAS		5.20



PROPOSED DRAINAGE AREA TABLE

Drainage Area ID	Area (AC)	Time of Concentration (min)	Runoff Coefficient	Intensity 10-yr (in/hr)	Runoff 10-yr (cfs)	Intensity 100-yr (in/hr)	Runoff 100-yr (cfs)
G-01	0.54	10.00	0.9	6.63	3.22	9.67	4.70
G-02	0.48	10.00	0.9	6.63	2.86	9.67	4.18
G-03	0.48	10.00	0.9	6.63	2.86	9.67	4.18
G-04	0.51	10.00	0.9	6.63	3.04	9.67	4.44
G-05	0.44	10.00	0.9	6.63	2.63	9.67	3.83
G-06	0.46	10.00	0.9	6.63	2.74	9.67	4.00
G-07	0.49	10.00	0.9	6.63	2.92	9.67	4.26
G-08	0.54	10.00	0.9	6.63	3.22	9.67	4.70
G-09	0.52	10.00	0.9	6.63	3.10	9.67	4.53

0' 60' 120'

LEGEND

RUNOFF DIRECTION

DRAINAGE AREA BOUNDARY

G-XX / X.XX — DRAINAGE AREA ID / AREA (AC)

STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED PROFESSIONAL ENGINEER
2/20/2026

OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

PROPOSED DRAINAGE AREA MAP

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	6.01
CONT.	SECT.	JOB	
0918	47	473	

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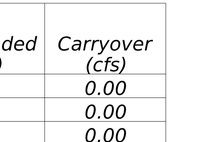
PONDED WIDTH CALCULATIONS - 100 YR

Drainage Area ID	Area (AC)	Time of Concentration (min)	Runoff Coefficient	Intensity 100-yr (in/hr)	Runoff 100-yr (cfs)	Longitudinal Grade (ft/ft)	Pavement Cross Slope (ft/ft)	Mannings "n"	Ponded Width Calculated (ft)	Allowable Ponded Width (ft)	Ponded Height Calculated (ft)	Allowable Ponded Height (ft)	Carryover (cfs)
G-01	0.54	10.00	0.9	9.67	4.70	0.0231	0.02	0.015	10.98	11.00	0.22	0.50	0.00
G-02	0.48	10.00	0.9	9.67	4.18	0.0187	0.02	0.015	10.93	11.00	0.22	0.50	0.00
G-03	0.48	10.00	0.9	9.67	4.18	0.0187	0.02	0.015	10.93	11.00	0.22	0.50	0.00
G-04	0.51	10.00	0.9	9.67	4.44	0.0205	0.02	0.015	10.99	11.00	0.22	0.50	0.00
G-05	0.44	10.00	0.9	9.67	3.83	0.0153	0.02	0.015	10.99	11.00	0.22	0.50	0.00
G-06	0.46	10.00	0.9	9.67	4.00	0.0168	0.02	0.015	10.98	11.00	0.22	0.50	0.00
G-07	0.49	10.00	0.9	9.67	4.26	0.0191	0.02	0.015	10.97	11.00	0.22	0.50	0.00
G-08	0.54	10.00	0.9	9.67	4.70	0.0234	0.02	0.015	10.96	11.00	0.22	0.50	0.00
G-09	0.52	10.00	0.9	9.67	4.53	0.0227	0.02	0.015	10.86	11.00	0.22	0.50	0.00

PONDED WIDTH CALCULATIONS - 10 YR

Drainage Area ID	Area (AC)	Time of Concentration (min)	Runoff Coefficient	Intensity 10-yr (in/hr)	Runoff 10-yr (cfs)	Longitudinal Grade (ft/ft)	Pavement Cross Slope (ft/ft)	Mannings "n"	Ponded Width Calculated (ft)	Allowable Ponded Width (ft)	Ponded Height Calculated (ft)	Allowable Ponded Height (ft)	Carryover (cfs)
G-01	0.54	10.00	0.9	6.63	3.22	0.0231	0.02	0.015	9.53	11.00	0.19	0.50	0.00
G-02	0.48	10.00	0.9	6.63	2.86	0.0187	0.02	0.015	9.49	11.00	0.19	0.50	0.00
G-03	0.48	10.00	0.9	6.63	2.86	0.0187	0.02	0.015	9.49	11.00	0.19	0.50	0.00
G-04	0.51	10.00	0.9	6.63	3.04	0.0205	0.02	0.015	9.54	11.00	0.19	0.50	0.00
G-05	0.44	10.00	0.9	6.63	2.63	0.0153	0.02	0.015	9.54	11.00	0.19	0.50	0.00
G-06	0.46	10.00	0.9	6.63	2.74	0.0168	0.02	0.015	9.53	11.00	0.19	0.50	0.00
G-07	0.49	10.00	0.9	6.63	2.92	0.0191	0.02	0.015	9.52	11.00	0.19	0.50	0.00
G-08	0.54	10.00	0.9	6.63	3.22	0.0234	0.02	0.015	9.51	11.00	0.19	0.50	0.00
G-09	0.52	10.00	0.9	6.63	3.10	0.0227	0.02	0.015	9.43	11.00	0.19	0.50	0.00



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FIRM REGISTRATION NO. F-1471

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

DRAINAGE CALCULATIONS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	6.02
CONT.	SECT.	JOB	
0918	47	473	

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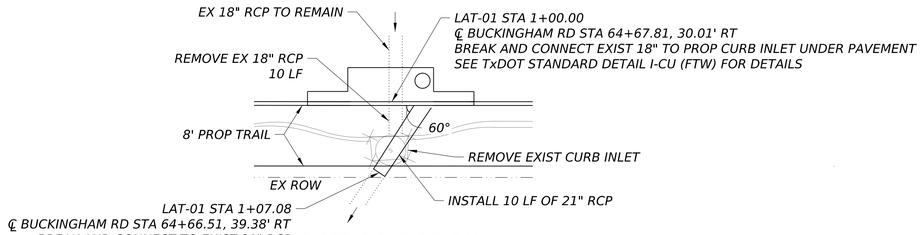
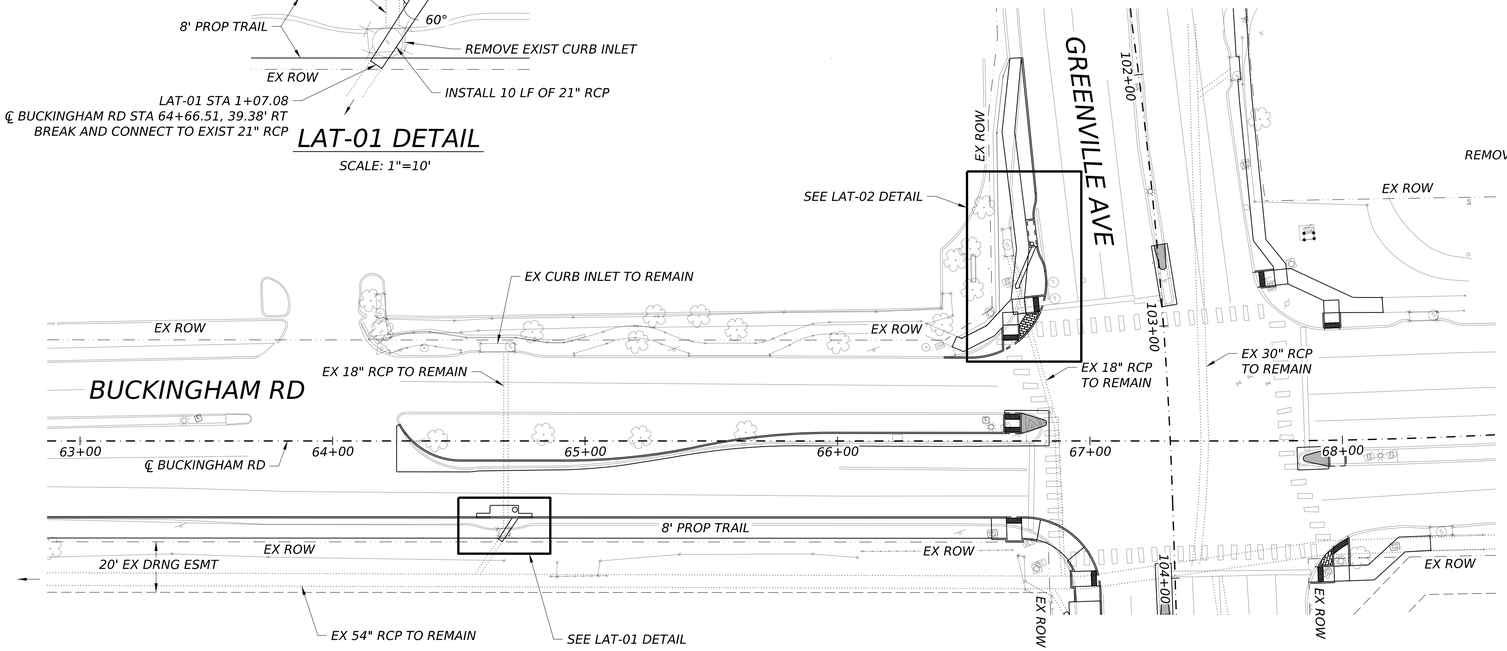
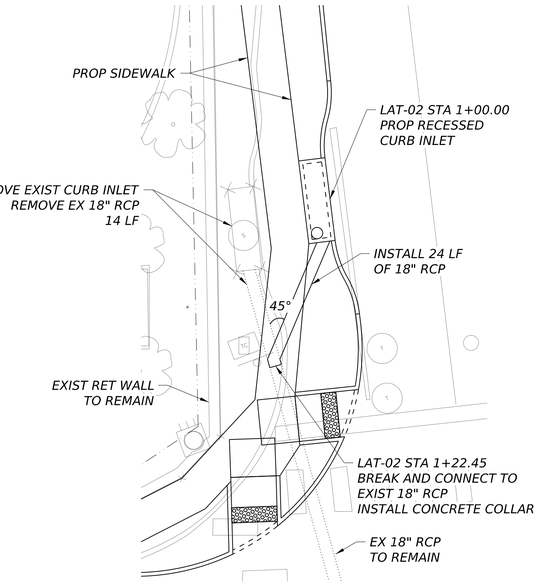
464 7003	464 7004	465 7020	496 7002	496 7007
RC PIPE (CL III)(18 IN)	RC PIPE (CL III)(21 IN)	INLET (COMPL)(PCO) (4FT)(BOTH)	REMOV STR (INLET)	REMOV STR (PIPE)
LF	LF	EA	EA	LF
24	10	2	2	24



LAT-01 DETAIL

SCALE: 1"=10'





LAT-02 DETAIL

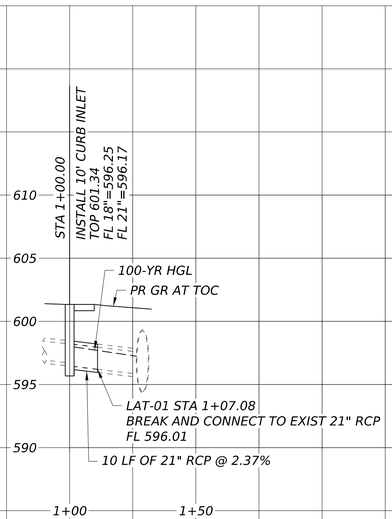
SCALE: 1"=10'

LEGEND

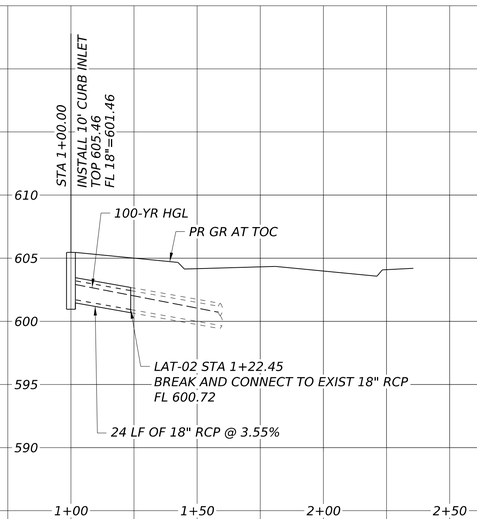
- EX ROW
- EX EASEMENT
- PROPOSED CURB INLET (SEE NOTE 1)
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE

NOTES:

1. PROPOSED INLETS SHALL BE 10 FT INLETS PER CITY OF RICHARDSON STORM SEWER STANDARD DETAILS.
2. CONCRETE COLLARS SHALL BE PER CITY OF RICHARDSON STORM SEWER STANDARD DETAILS.
3. FOLLOW TRENCH AND EMBEDMENT DETAILS PER CITY OF RICHARDSON STORM SEWER STANDARD DETAILS.
4. EXISTING STORM DRAIN INFORMATION WAS OBTAINED FROM AVAILABLE AS-BUILTS. CONTRACTOR SHALL VERIFY ALL INFORMATION AND NOTIFY ENGINEER IF SIGNIFICANT DISCREPANCY IS FOUND.
5. TRENCH EXCAVATION AND TRENCH PROTECTION REQUIRED FOR INSTALLATION OF STORM DRAIN PIPES AND INLETS SHALL BE CONSIDERED SUBSIDIARY TO ITEM 464.



LAT-01



LAT-02

STATE OF TEXAS
IN SUNG HWANG
131759
LICENSED
PROFESSIONAL ENGINEER
2/20/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

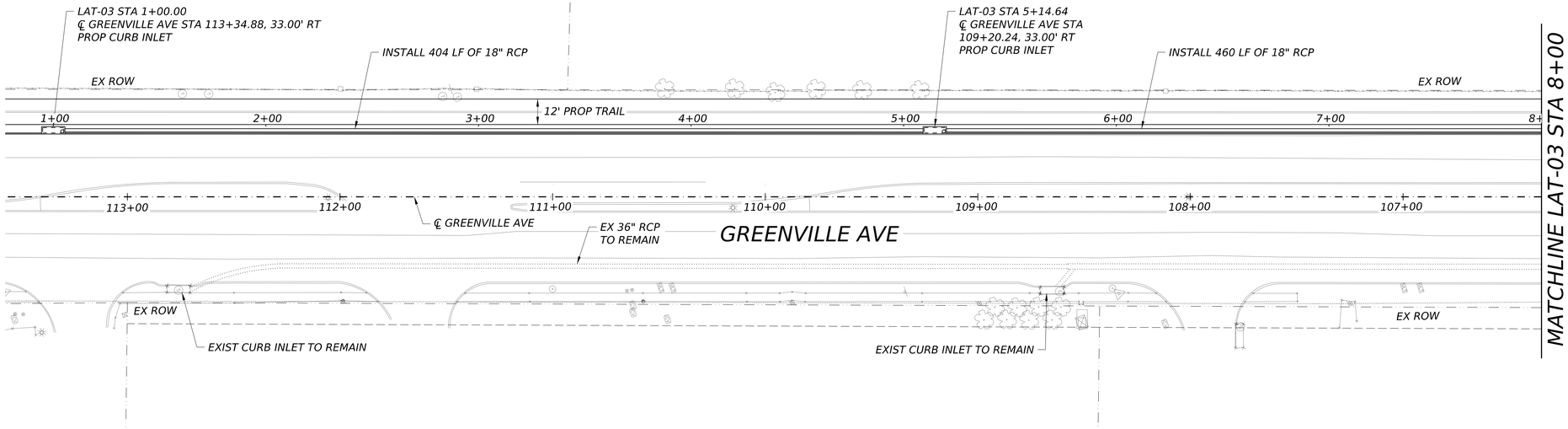
DRAINAGE PLAN AND PROFILE

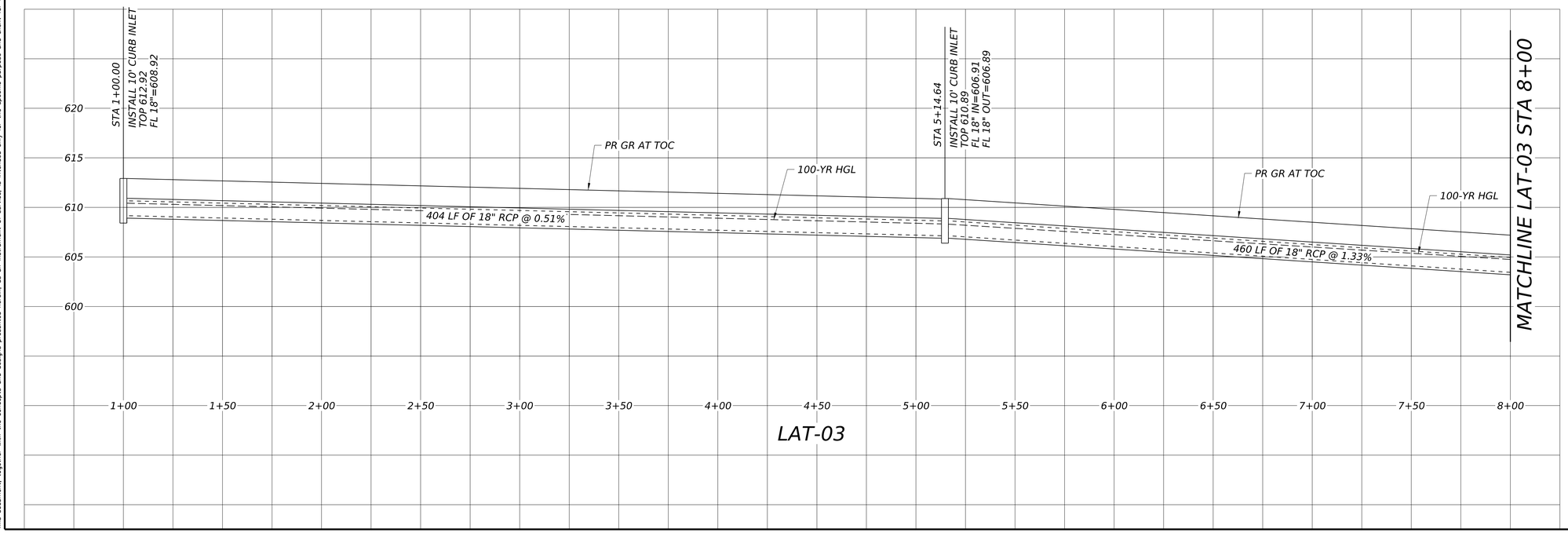
LATERALS 01 & 02

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	6.03
CONT.	SECT.	JOB	
0918	47	473	

464	465
7003	7020
RC PIPE (CL III)(18 IN)	INLET (COMPL)(PCO) (4FT)(BOTH)
LF	EA
864	2

NorthStar Cemetery Services of Texas, LLC,
a Delaware limited liability company
Track 16 DOC. No. 201400214239
O.P.R.D.C.T





HORZ 0' 30' 60'

VERT 0' 6' 12'

LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED CURB INLET (SEE NOTE 1)
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE

NOTES:

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STATE OF TEXAS
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

DRAINAGE PLAN AND PROFILE

LATERALS 03

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	6.04
CONT.	SECT.	JOB	
0918	47	473	

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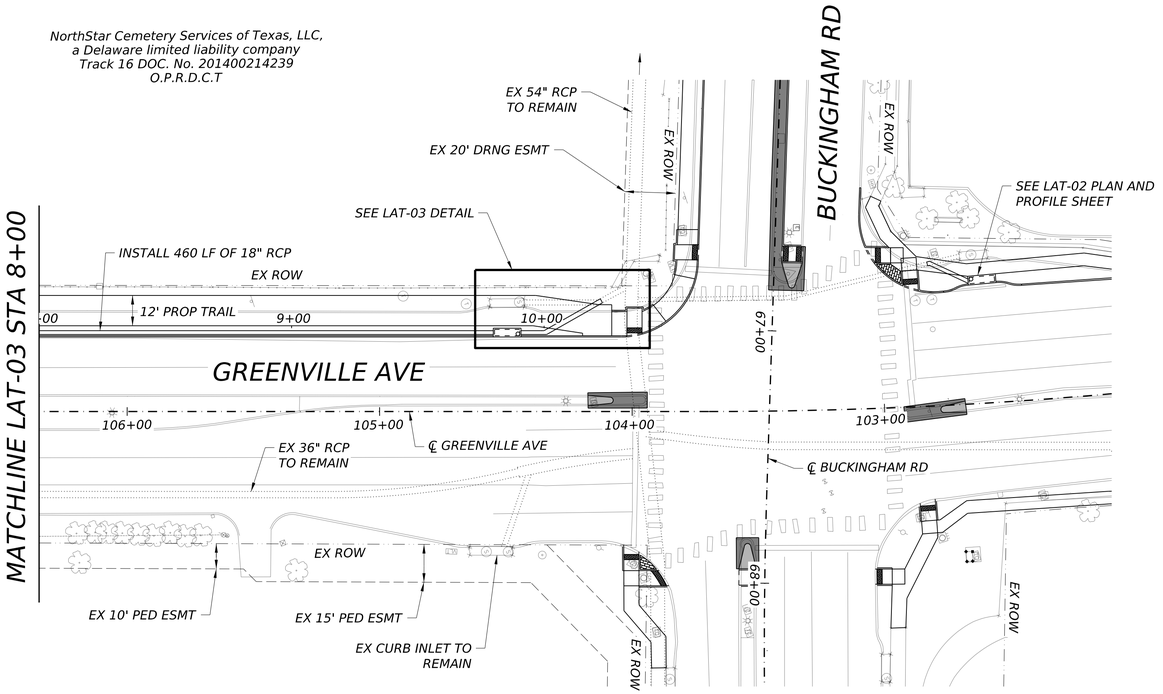

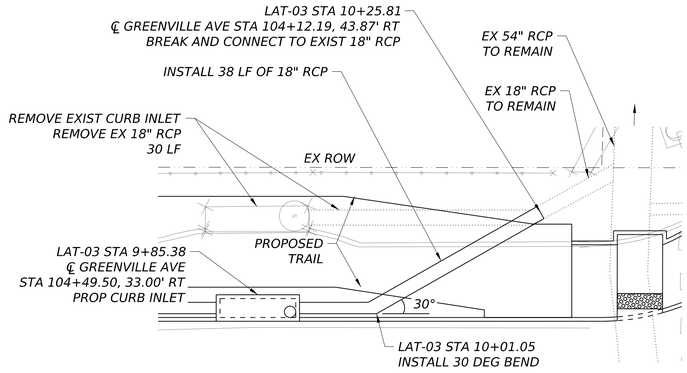

LAT-03 DETAIL

SCALE: 1"=10'

464 7003	465 7020	496 7002	496 7007
RC PIPE (CL III)(18 IN)	INLET (COMPL)(PCO) (4FT)(BOTH)	REMOV STR (INLET)	REMOV STR (PIPE)
LF	EA	EA	LF
38	1	1	30

HORZ 0' 30' 60'

VERT 0' 6' 12'

LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED CURB INLET (SEE NOTE 1)
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE

NOTES:

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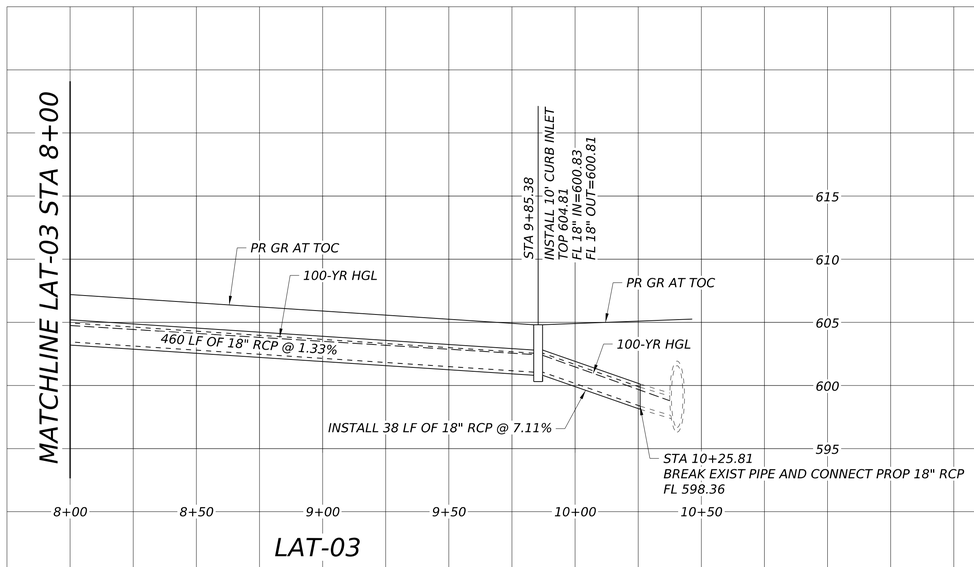

LAT-03

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CENTRAL TRAIL EXTENSION

DRAINAGE PLAN AND
PROFILE

LATERALS 03

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	6.05
CONT.	SECT.	JOB	
0918	47	473	

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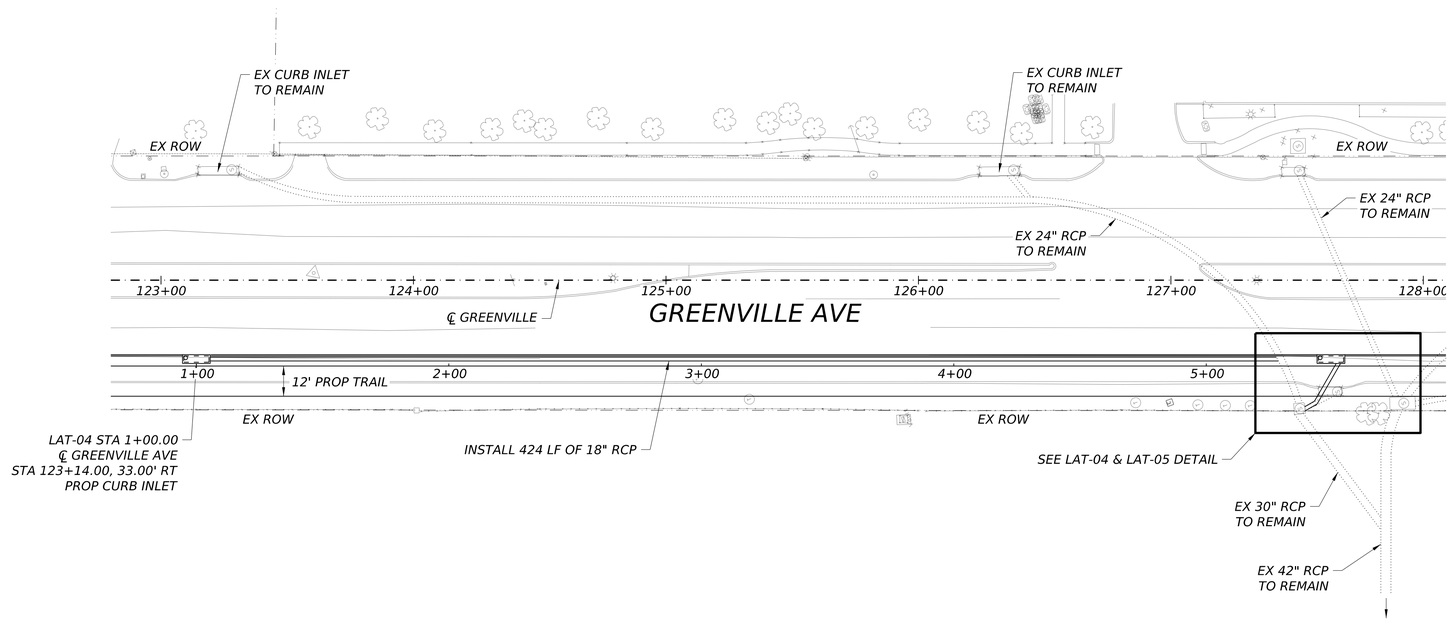

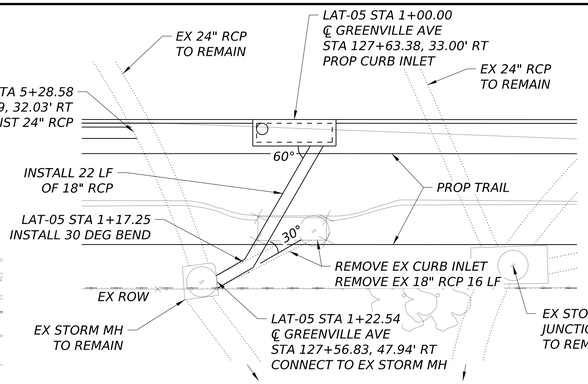

LAT-04 & 05 DETAIL

SCALE: 1"=10'

HORZ 0' 30' 60'

VERT 0' 6' 12'

LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED CURB INLET (SEE NOTE 1)
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE

464 7003	465 7020	496 7002	496 7007
RC PIPE (CL III)(18 IN)	INLET (COMPL)(PCO) (4FT)(BOTH)	REMOV STR (INLET)	REMOV STR (PIPE)
LF	EA	EA	LF
446	2	1	16

NOTES:

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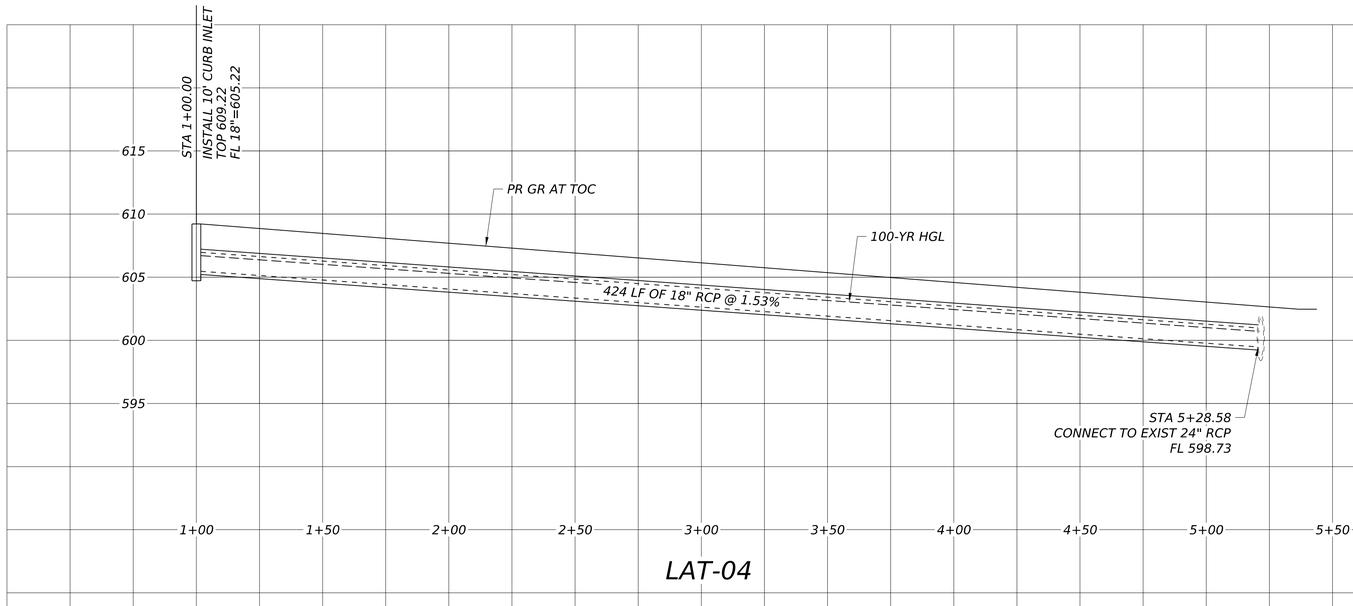
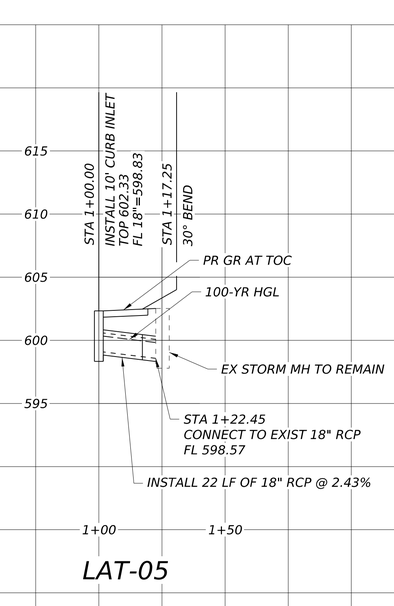


LAT-04



LAT-05

STATE OF TEXAS
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CENTRAL TRAIL EXTENSION

DRAINAGE PLAN AND PROFILE

LATERALS 04 & 05

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	6.06
CONT.	SECT.	JOB	
0918	47	473	

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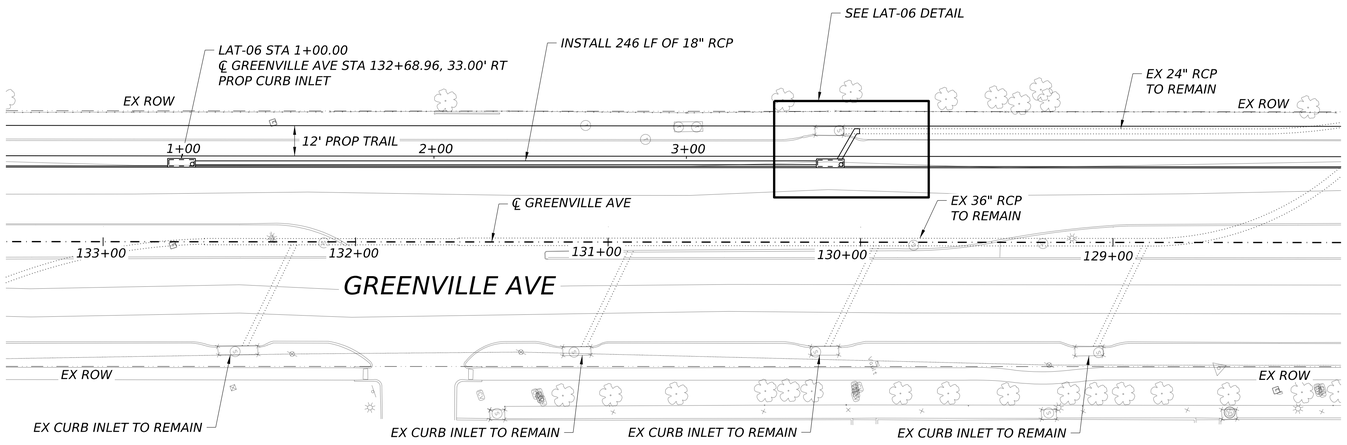
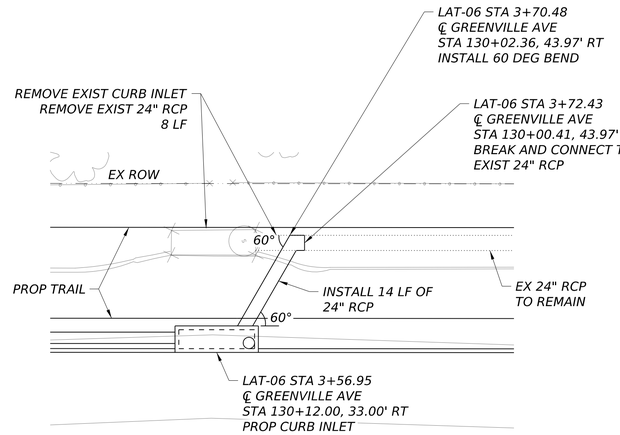
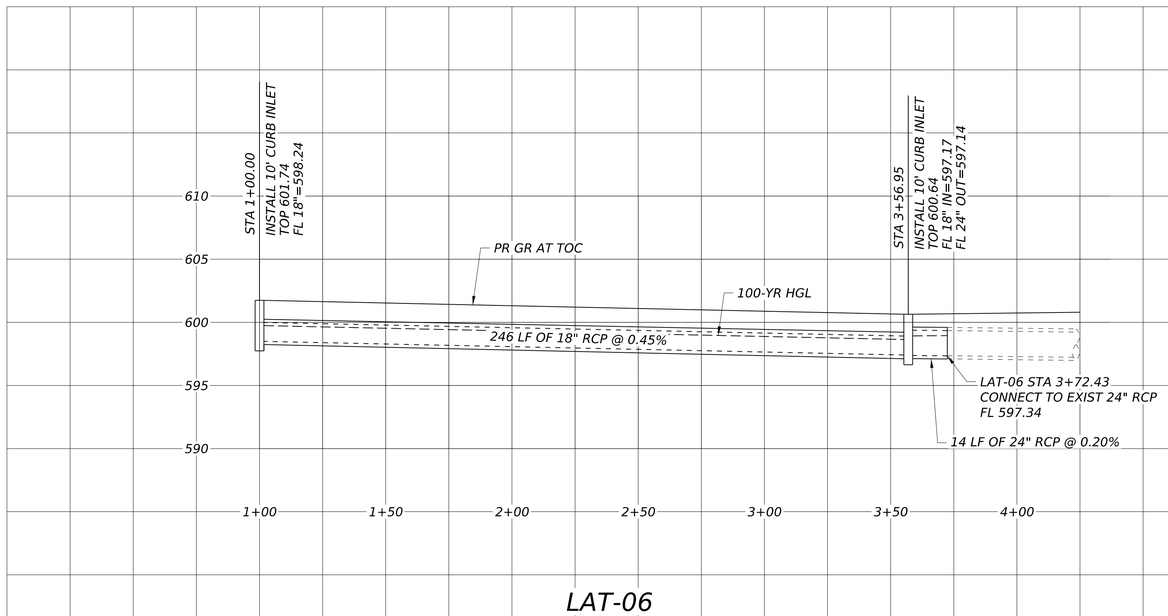




LAT-06 DETAIL

SCALE: 1"=10'

464 7003	464 7005	465 7020	496 7002	496 7007
RC PIPE (CL III)(18 IN)	RC PIPE (CL III)(24 IN)	INLET (COMPL)(PCO) (4FT)(BOTH)	REMOV STR (INLET)	REMOV STR (PIPE)
LF	LF	EA	EA	LF
246	14	2	1	8



LAT-06

HORZ 0' 30' 60'

VERT 0' 6' 12'

LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED CURB INLET (SEE NOTE 1)
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE

NOTES:

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STATE OF TEXAS
IN SUNG HWANG
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LICENSED
PROFESSIONAL ENGINEER
2/20/2026

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CENTRAL TRAIL EXTENSION

DRAINAGE PLAN AND PROFILE

LATERALS 06

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	6.07
CONT.	SECT.	JOB	
0918	47	473	

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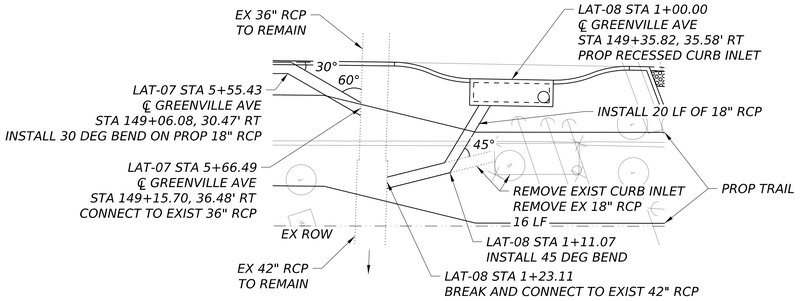
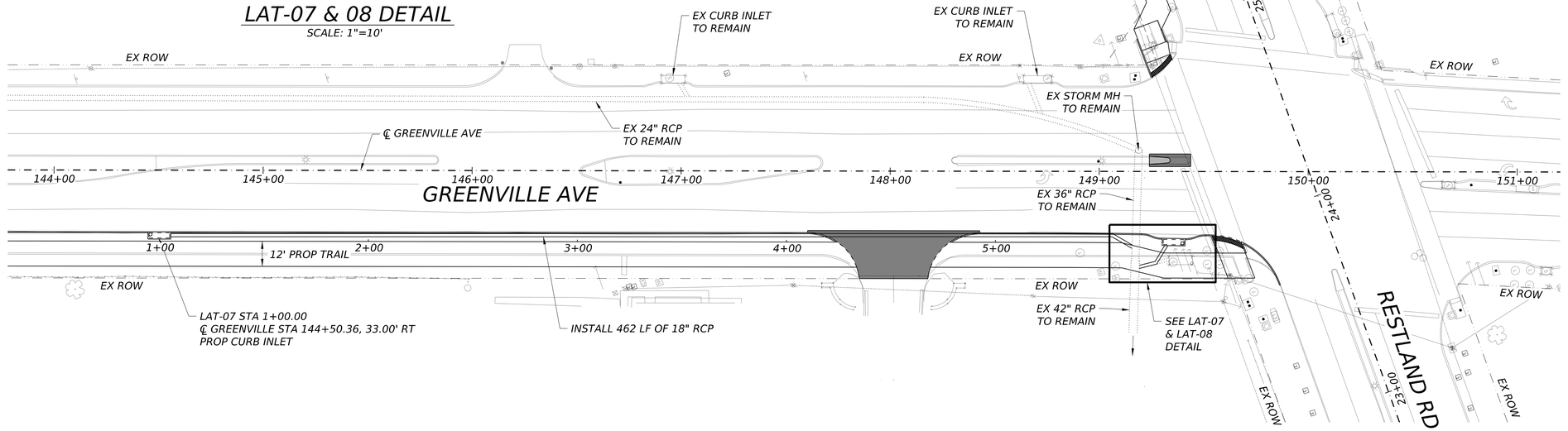


LAT-07 & 08 DETAIL

SCALE: 1"=10'

464 7003	465 7020	496 7002	496 7007
RC PIPE (CL III)(18 IN)	INLET (COMPL)(PCO) (4FT)(BOTH)	REMOV STR (INLET)	REMOV STR (PIPE)
LF	EA	EA	LF
484	2	1	16



LEGEND

- EX ROW
- EX EASEMENT
- PROPOSED CURB INLET (SEE NOTE 1)
- EXISTING STORM DRAIN PIPE
- PROPOSED STORM DRAIN PIPE

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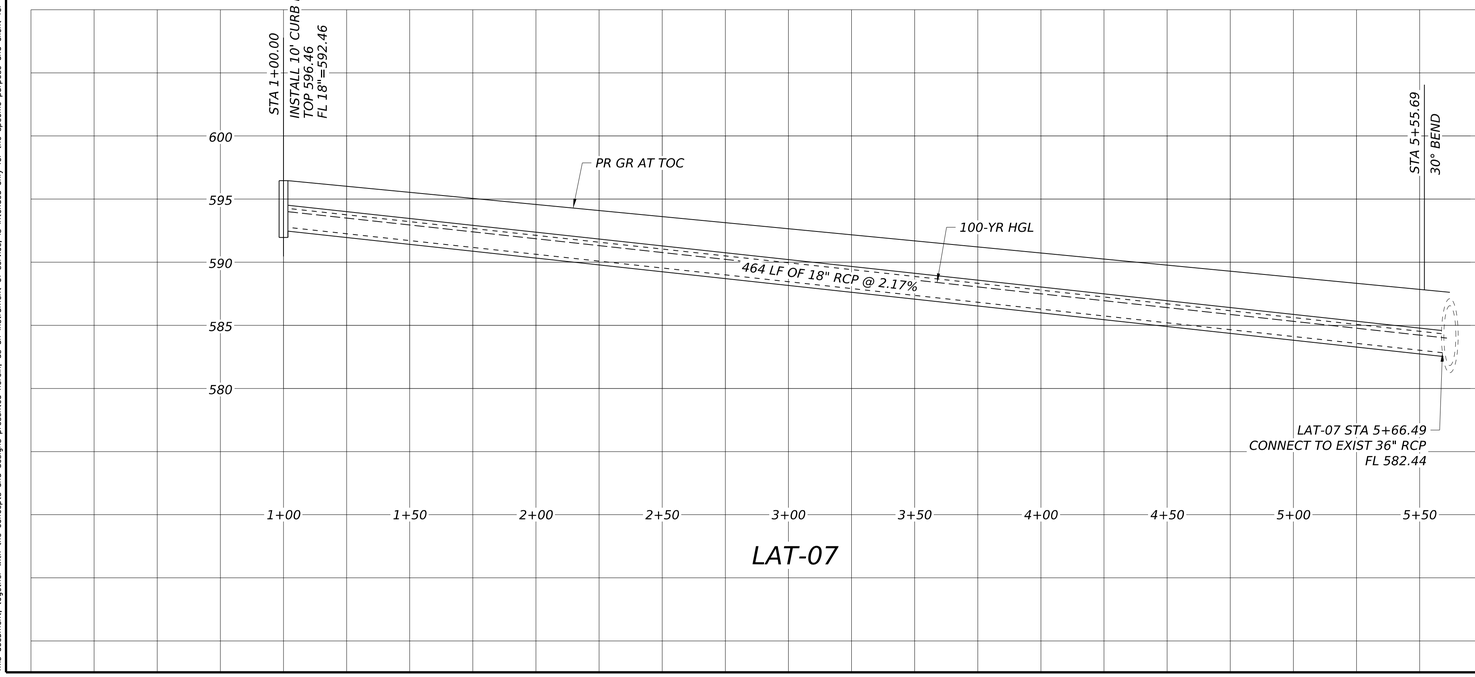

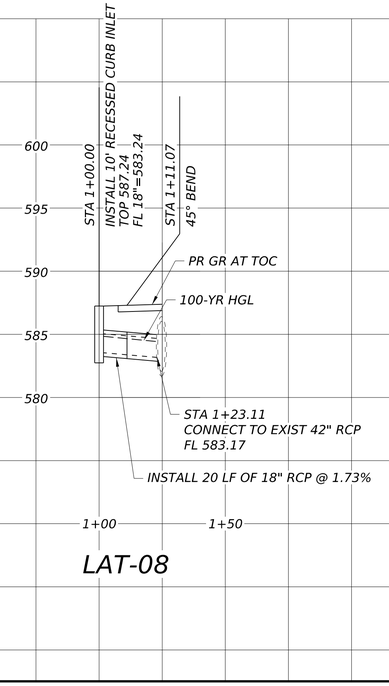

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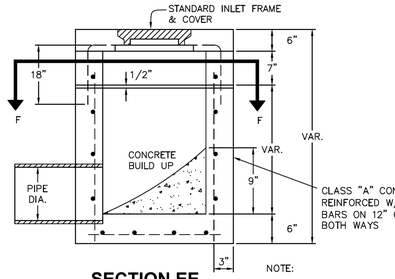
CENTRAL TRAIL EXTENSION

DRAINAGE PLAN AND PROFILE

LATERALS 07 & 08

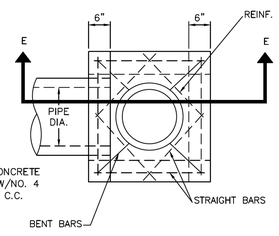
FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	6.08
CONT.	SECT.	JOB	
0918	47	473	



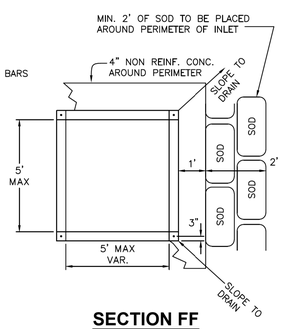
SECTION EE

NOTE:

TOP OF INLET ELEVATION SHALL BE AT OR BELOW THE LOWEST ADJACENT CURB.

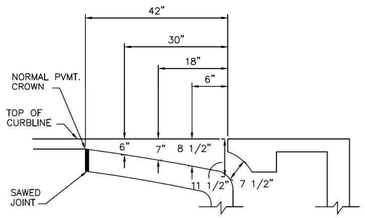


PLAN

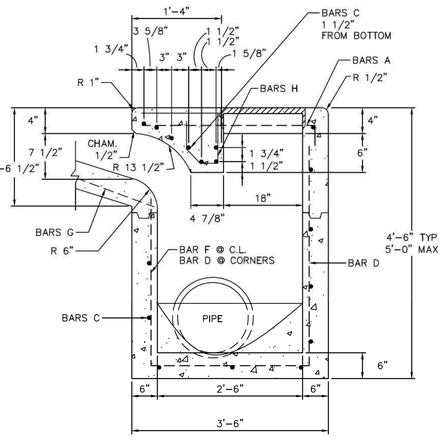


SECTION FF

"Y" TYPE INLET

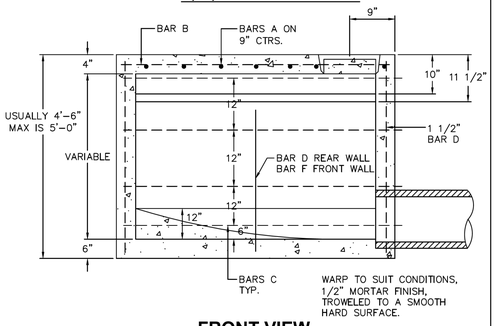


INLET THROAT DETAIL



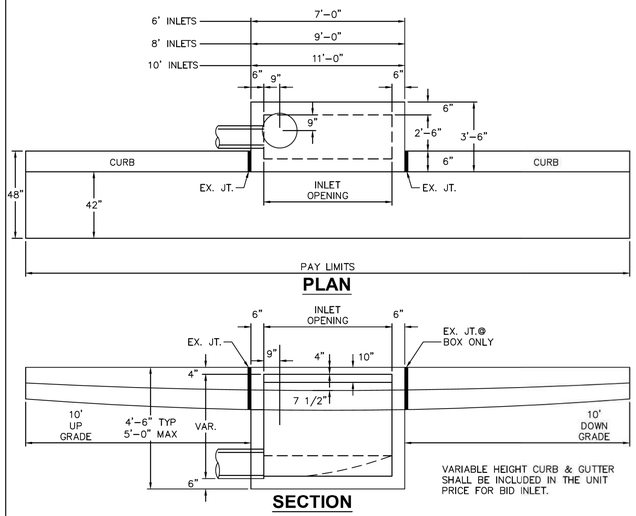
END VIEW

6, 8, & 10 FT. INLETS



FRONT VIEW

6, 8, & 10 FOOT INLETS



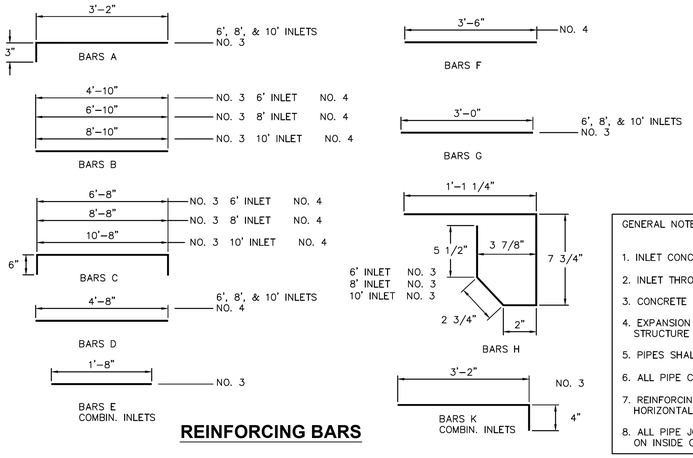
PLAN

VARIABLE HEIGHT CURB & GUTTER SHALL BE INCLUDED IN THE UNIT PRICE FOR BID INLET.

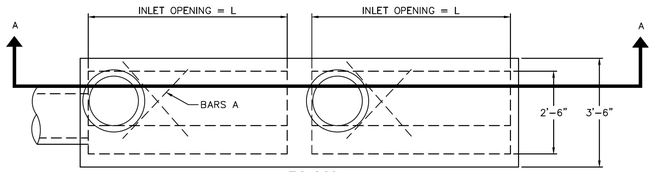
SECTION

6, 8, & 10 FT. INLETS

(SEE INLET THROAT DETAIL)



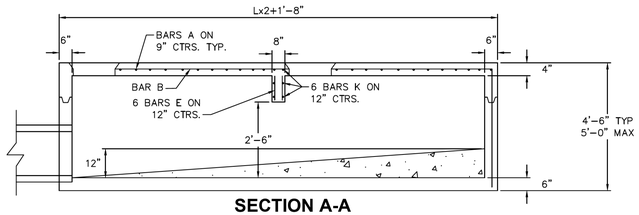
REINFORCING BARS



PLAN

COMBINATION INLETS

TO BE USED IN CONSTRUCTING 12', 14', 16', 18' & 20' INLETS



SECTION A-A

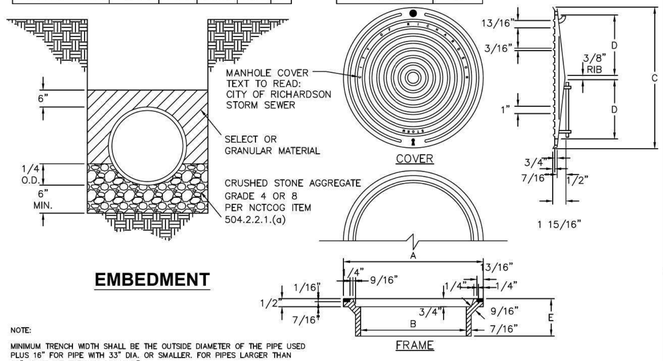
COMBINATION INLETS

FRAME & COVER TABLE OF DIMENSIONS

INLET SIZE	A	B	C	D	E
6, 8, & 10 FT. INLETS	22 1/8"	17 7/8"	19 7/16"	7 3/4"	4"

FRAME & COVER TABLE OF DIMENSIONS

INLET SIZE	F
"Y" INLET	30"



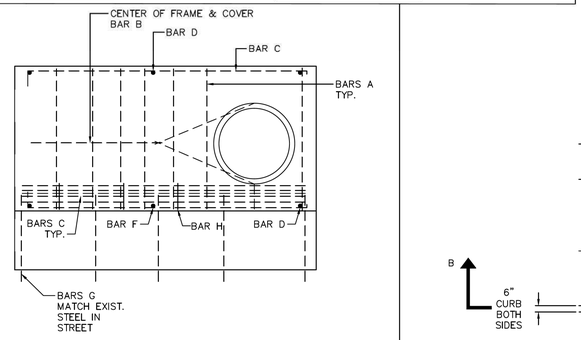
NOTE:

MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE USED PLUS 16" FOR PIPE WITH 33" DIA. OR SMALLER. FOR PIPES LARGER THAN 33" SHALL BE THE O.D. PLUS 24".

EMBEDMENT

FRAME

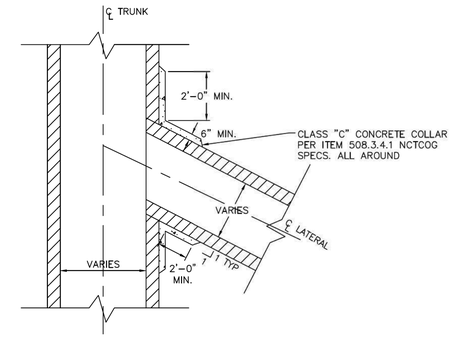
INLET FRAME & COVER (LOCKING TYPE)



REINFORCING PLAN

GENERAL NOTES

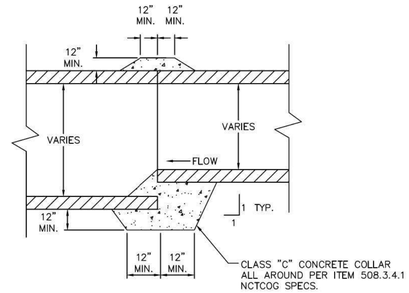
1. INLET CONCRETE SHALL BE CLASS "A".
2. INLET THROAT CONCRETE SHALL BE CLASS "C".
3. CONCRETE SHALL HAVE A TROWEL AND BRUSH FINISH.
4. EXPANSION JOINT MATERIAL SHALL BE PLACED BETWEEN INLET STRUCTURE AND CURB.
5. PIPES SHALL ONLY CONNECT TO THE ENDS OR SIDES OF INLETS.
6. ALL PIPE CONNECTIONS 48" AND SMALLER SHALL BE FACTORY WYES.
7. REINFORCING STEEL– NO. 3 12" O.C.E.W. EQUALLY SPACED HORIZONTALLY IN INLET FOOTINGS.
8. ALL PIPE JOINTS SHALL SHOW EVIDENCE OF JOINT MATERIAL 360° ON INSIDE OF PIPE.
9. NO PRECAST STRUCTURES ALLOWED FOR STORM SEWER.
10. SEE SHEET C–10 FOR STORM SEWER MANHOLE DETAILS.
11. SEE C–9 FOR ALLEY INLETS.



NOTE:

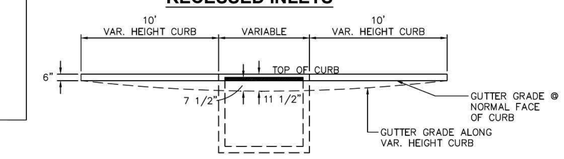
ALL PIPE CONNECTIONS 48" AND SMALLER SHALL BE FACTORY WYES

CONCRETE COLLAR FOR WYE CONNECTION

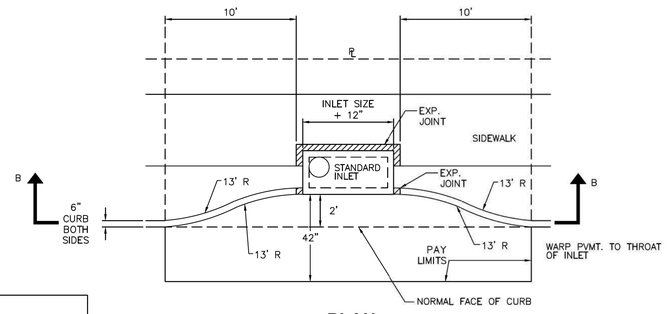


CONCRETE COLLAR FOR PIPE TO PIPE CONNECTION

RECESSED INLETS



SECTION B-B



PLAN

Revisions:

City of Richardson
411 W. Arapaho Road
Suite 204
Richardson, Texas 75080
voice: 972 744–4280
fax: 972 744–5804

Drawn By: RGB
Checked By: COR

RICHARDSON TEXAS 75

STANDARD DETAILS

City of Richardson, Texas

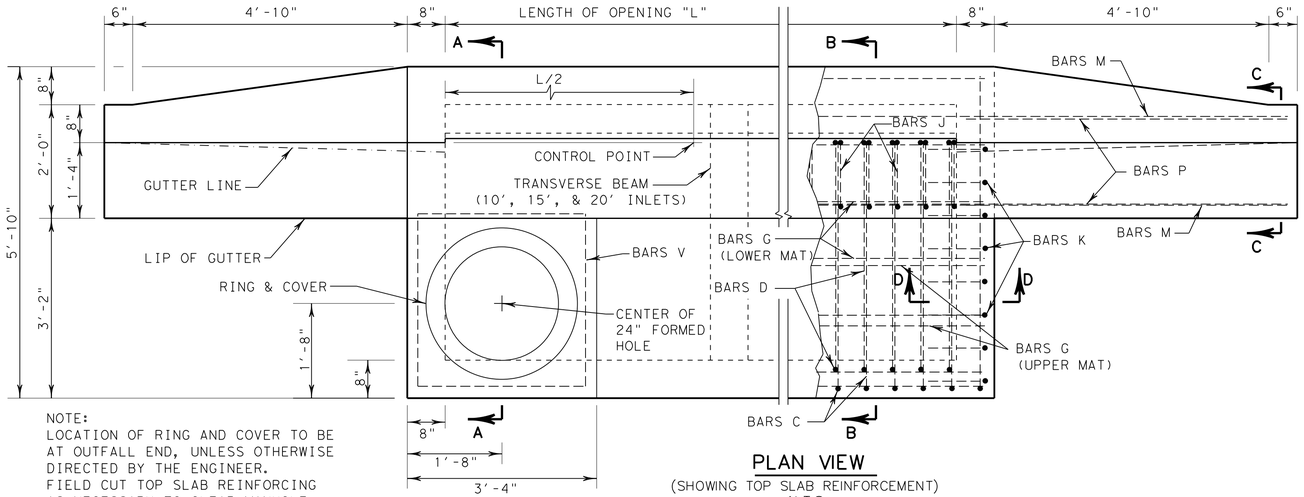
NO ADDITIONS OR CHANGES TO STANDARD DETAIL SHEETS UNLESS APPROVED BY CITY OF RICHARDSON

24"x36" Scale: NTS
11"x17" Scale: NTS
Vertical Scale: NA
Project Number: XXX
Issue Date: 03 MAY 18

Sheet Title: **STORM SEWER**

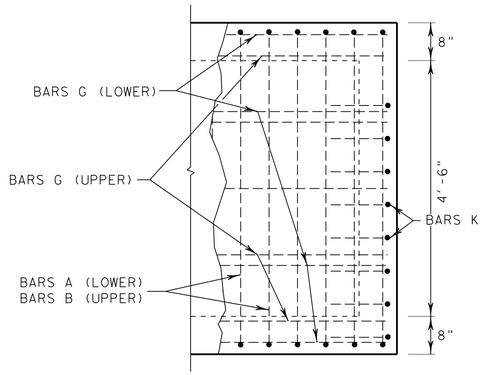
Sheet No.: **C-5**

DISCLAIMER :
THE USE OF THIS STANDARD IS GOVERNED BY THE "TEXAS ENGINEERING PRACTICE ACT". NO WARRANTY OF ANY KIND IS MADE BY TXDOT FOR ANY PURPOSE WHATSOEVER. TXDOT ASSUMES NO RESPONSIBILITY FOR THE CONVERSION OF THIS STANDARD TO OTHER FORMATS OR FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

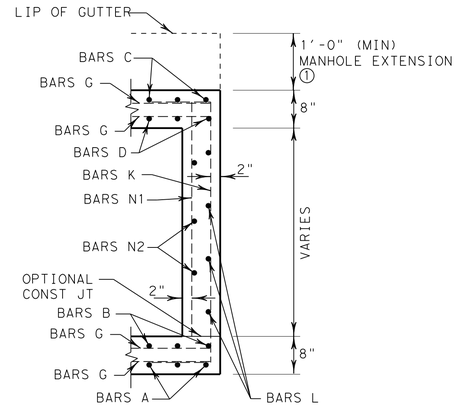


NOTE:
LOCATION OF RING AND COVER TO BE AT OUTFALL END, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. FIELD CUT TOP SLAB REINFORCING AS NECESSARY TO CLEAR MANHOLE.

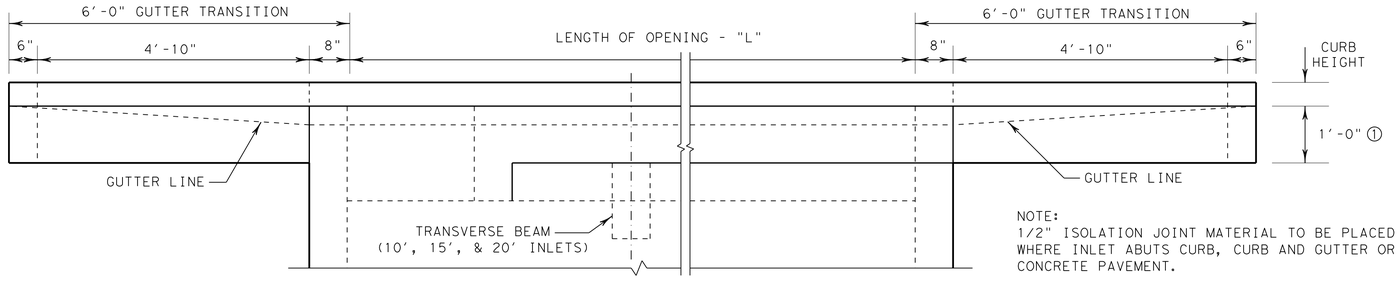
PLAN VIEW
(SHOWING TOP SLAB REINFORCEMENT)
N.T.S.



PARTIAL PLAN VIEW
(SHOWING BOTTOM SLAB REINFORCEMENT)
N.T.S.

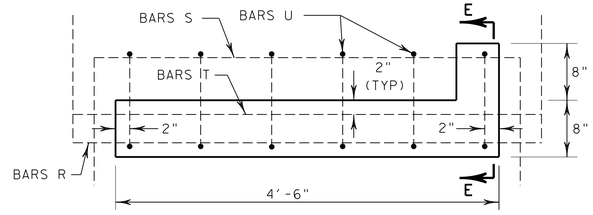


SECTION "D-D"
N.T.S.

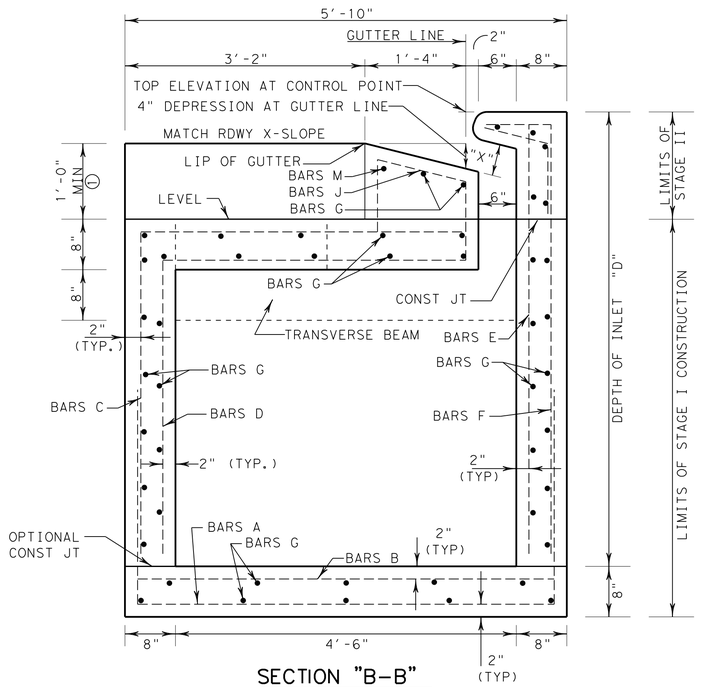


NOTE:
1/2" ISOLATION JOINT MATERIAL TO BE PLACED WHERE INLET ABUTS CURB, CURB AND GUTTER OR CONCRETE PAVEMENT.

FRONT ELEVATION VIEW
N.T.S.



TRANSVERSE BEAM DETAIL
BEAMS AT 5' C-C (10', 15', & 20' INLETS)
N.T.S.

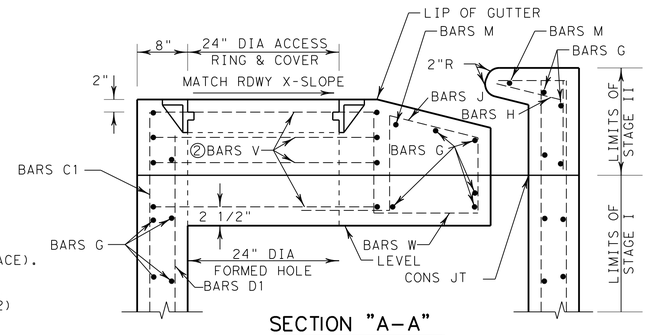


SECTION "B-B"
N.T.S.

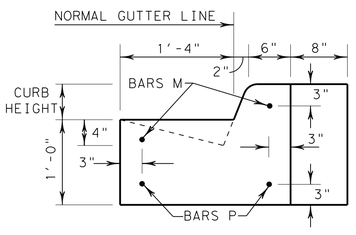
THROAT DIMENSION	
CURB HEIGHT (IN)	"X"
5	5"
6	5 7/8"
7	6 1/4"
8	6 1/2"

① MATCH DEPTH OF PAVEMENT STRUCTURE (BASE AND SURFACE). ADJUST BAR LENGTHS AS DIRECTED BY THE ENGINEER. (SEE DETAIL, SHEET 2 OF 2)

② STAGE II BARS V @ 3 EQUAL SPACES



SECTION "A-A"
N.T.S.



SECTION "C-C"
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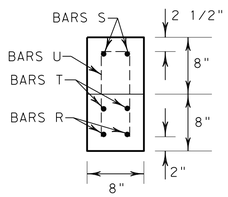

SECTION "E-E"
N.T.S.

MAXIMUM PARALLEL * CONDUIT SIZE	
PIPE DIAMETER (IN)	BOX SPAN (FT)
42	3

* PARALLEL TO ROADWAY

NOTE:
SEE SHEET 2 OF 2 FOR DETAILS OF REINFORCING STEEL, ESTIMATED QUANTITIES, AND GENERAL NOTES.

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SHEET 1 OF 2 SHEETS

Texas Department of Transportation

Fort Worth District Standard

CURB INLET UNDER PAVEMENT FOR USE WITH TYPE II CURB
I-CU (FTW)

ORIGINAL DRAWING: 05/2019 icu-ftw.dgn	FED.RD. DIV.NO.	PROJECT NO.	SHEET NO.
DATE REVISIONS	6	N/A	6.10
05/2019 NEW STANDARD	STATE	STATE DIST.NO.	COUNTY
04/2020 ADD MAX CONDUIT SIZE TABLE	TEXAS	FTW	DALLAS
11/2020 REVISE JOINT NOMENCLATURE	CONT.	SECT.	JOB / HIGHWAY NO.
	0918	47	473 / VA

http://www.dot.state.tx.us/ftw/specinfo/standard.htm
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DISCLAIMER :
THE USE OF THIS STANDARD IS GOVERNED BY THE "TEXAS ENGINEERING PRACTICE ACT". NO WARRANTY OF ANY KIND IS MADE BY TXDOT FOR ANY PURPOSE WHATSOEVER. TXDOT ASSUMES NO RESPONSIBILITY FOR THE CONVERSION OF THIS STANDARD TO OTHER FORMATS OR FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

BILL OF REINFORCING STEEL FOR "D" = 6'

Length "L"	Bars A		Bars B		Bars C		Bars C1		Bars D		Bars D1		Bars E		Bars F		Bars G		Bars H		Bars J		Bars K		Bars L		Bars M		Bars N1		Bars N2	
	#5	at 6" Spa	#5	at 6" Spa	#5	at 6" Spa	#5	at 6" Spa	#5	at 6" Spa	#5	at 6" Spa	#5	at 6" Spa	#5	at 6" Spa	#5		#4	at 12" Spa	#4	at 12" Spa	#4	at 7" Spa	#5	at 6" Spa	#4		#4	at 12" Spa	#4	at 12" Spa
[ft]	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt
5.0	13	151	13	75	6	54	7	39	4	38	7	37	11	67	13	90	54	338	7	9	7	21	16	72	14	138	2	22	10	29	8	29
10.0	23	268	23	132	16	145	7	39	14	131	7	37	21	128	23	160	54	620	12	15	12	35	16	72	14	138	2	29	10	29	8	29
15.0	33	384	33	189	26	235	7	39	24	225	7	37	31	189	33	229	54	901	17	21	17	50	16	72	14	138	2	36	10	29	8	29
20.0	43	501	43	247	36	325	7	39	34	319	7	37	41	249	43	299	54	1183	22	27	22	65	16	72	14	138	2	42	10	29	8	29

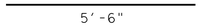
BILL OF REINFORCING STEEL FOR "D" = 6' (CONTINUED)

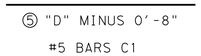
Length "L"	Bars P		Bars R		Bars S		Bars T		Bars U		Bars V		Bars W	
	#4		#6		#6		#6		#4	at 10" Spa	#4		#4	
[ft]	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt
5.0	4	15	0	0	0	0	0	0	0	0	4	35	6	11
10.0	4	15	2	23	2	21	2	17	6	13	4	35	6	11
15.0	4	15	4	45	4	43	4	33	12	26	4	35	6	11
20.0	4	15	6	68	6	64	6	50	18	39	4	35	6	11

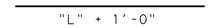
SUMMARY OF QUANTITIES

Total Reinf Steel	Steel Qty Adjust.	Class "C" Concrete	Concrete Qty Adjust.
Weight	P.L.F.		P.L.F.
[Lb]	[Lb]	[CY]	[CY]
1,269	157.9	5.43	0.54
2,139	236.1	8.31	0.78
3,010	314.3	11.19	1.03
3,881	392.5	14.07	1.28

* BASED ON 6" CURB HEIGHT. ADJUST FOR OTHER CURB HEIGHTS.







BAR G SPACING:

BOTTOM SLAB, LOWER MAT – 1'-4"
BOTTOM SLAB, UPPER MAT – 1'-2"
BACK WALL, OUTER MAT – 0'-6"
BACK WALL, INNER MAT – 0'-8"
FRONT WALL, OUTER MAT – 0'-6"
FRONT WALL, INNER MAT – 0'-8"
UPPER SLAB, LOWER MAT – 1'-0"
UPPER SLAB, UPPER MAT – 1'-0 3/4"
GUTTER – PLACE AS SHOWN

#5 BARS C

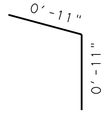
#5 BARS D

#5 BARS D1

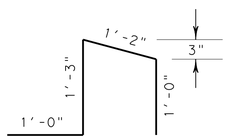
#5 BARS E

#5 BARS F

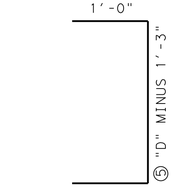
⑤ BASED ON 6" CURB HEIGHT. ADJUST FOR OTHER CURB HEIGHTS.



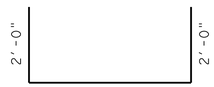
#4 BARS H



#4 BARS J

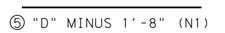


#4 BARS K

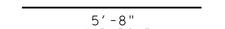


#5 BARS L

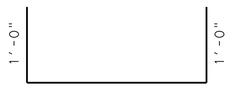
#4 BARS M
PLACE AS SHOWN



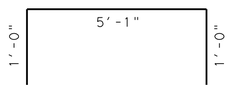
#4 BARS N



#4 BARS P
PLACE AS SHOWN

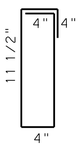


#6 BARS R
PLACE AS SHOWN

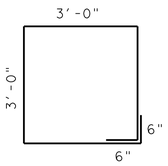


#6 BARS S
PLACE AS SHOWN

#6 BARS T
PLACE AS SHOWN



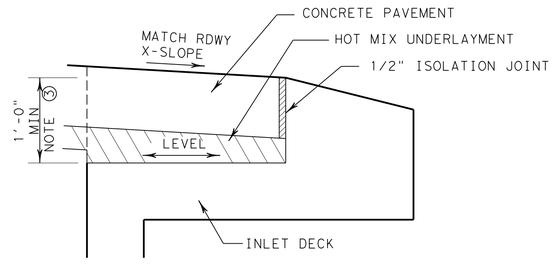
#4 BARS U



#4 BARS V

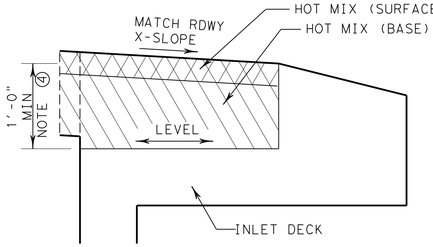
#4 BARS W

BARS W:
6 TOTAL TO BE PLACED AT 16" SPACING ALONG GUTTER SIDE AND INLET SIDE OF RING. (3 EACH SIDE)



③ THICKNESS OF CONCRETE PAVEMENT PLUS HOT MIX UNDERLAYMENT; IF LESS THAN 1'-0", INCREASE DEPTH OF HOT MIX UNDERLAYMENT.

INLET ADJACENT TO CONCRETE PAVEMENT



④ THICKNESS OF HOT MIX (SURFACE) PLUS HOT MIX (BASE) OR FLEX BASE. IF LESS THAN 1'-0", INCREASE DEPTH OF HOT MIX (BASE) OR FLEX BASE OVER INLET DECK.

MAXIMUM THICKNESS = 1'-6"

PLACE FLEX BASE IN MINIMUM 4" LIFTS

INLET ADJACENT TO HOT MIX PAVEMENT

GENERAL NOTES

1. DESIGNED FOR AASHTO LRFD HL-93 LOADING.
2. ALL CONCRETE FOR CAST-IN-PLACE STRUCTURES SHALL BE CLASS "C"; ALL CONCRETE FOR PRECAST STRUCTURES SHALL BE CLASS "H" (MINIMUM 5000 PSI DESIGN STRENGTH).
3. ALL REINFORCING STEEL SHALL BE GRADE 60.
4. STAGE I MAY BE EITHER CAST-IN-PLACE OR PRECAST. FABRICATE PRECAST STRUCTURES USING REBAR AS DETAILED HEREON, WITH BARS C, D, E, F AND J TO BE INCLUDED WITH STAGE I. SPLICING OF BARS WILL NOT BE PERMITTED, EXCEPT AS NOTED.
5. STAGE II SHALL BE CAST-IN-PLACE.
6. CHAMFER ALL EXPOSED CORNERS 3/4", EXCEPT WHERE NOTED OTHERWISE.
7. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO THE CENTERS OF BARS.
8. FIELD CUT AND BEND BARS AS NECESSARY TO ACCOMMODATE STORM DRAIN PIPE.
9. FOR PIPE AND BOX CONNECTIONS TO PRECAST INLETS, SEE STANDARD DETAIL SHEET PBGC.
10. INSTALL RING AND COVER AT OUTFALL END OF INLET, UNLESS OTHERWISE DIRECTED. CAST IRON RING AND COVER SHALL CONFORM TO ITEM 471. SEE STANDARD MDD (FTW) FOR RING AND COVER DETAILS.
11. DEPTHS OTHER THAN THOSE SHOWN MAY BE USED WHENEVER NECESSARY, UP TO A MAXIMUM DEPTH OF 15'. QUANTITIES FOR OTHER DEPTHS MAY BE DETERMINED BY INTERPOLATION.
12. DO NOT COMMENCE WITH STAGE II CONSTRUCTION UNTIL CONCRETE PAVEMENT AND CURB, OR CONCRETE CURB AND GUTTER CONSTRUCTION IS COMPLETED AT THE INLET SITE.
13. INSTALL A TEMPORARY WOOD COVER AFTER STAGE I IS COMPLETED, TO REMAIN IN PLACE UNTIL STAGE II CONSTRUCTION BEGINS.
14. THE LOCATION OF INLET AS SHOWN IN THE PLAN REFERS TO THE CONTROL POINT AT THE FACE OF CURB AND MID-POINT OF THE INLET.
15. IF CONCRETE PAVEMENT IS PLACED WITHOUT UNDERLAYMENT, PLACE BOND BREAKER (3 LAYERS OF 30# ROOFING FELT OR 1/2" EXPANSION JOINT MATERIAL) BETWEEN INLET DECK AND CONCRETE PAVEMENT.
16. PLACE A SEALED 1/2" ISOLATION JOINT ALONG ALL VERTICAL FACES ABUTTING CONCRETE PAVEMENT, CURB, CURB AND GUTTER, OR SIDEWALK. USE CLASS 5 OR 8 JOINT SEALANT TO SEAL THE JOINT. SEE STANDARD JS (FTW) FOR ADDTIONAL INFORMATION.

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Texas Department of Transportation

Fort Worth District Standard

CURB INLET UNDER PAVEMENT FOR USE WITH TYPE II CURB I-CU (FTW)

ORIGINAL DRAWING: 05/2019	icu-ftw.dgn	FED.RD. DIV.NO.	PROJECT NO.		SHEET NO.
DATE	REVISIONS	6	N/A		6.11
05/2019	REPLACES CI-2-08(FW)	STATE	STATE DIST.NO.	COUNTY	
04/2020	ADD MAX CONDUIT SIZE TABLE	TEXAS	FTW	DALLAS	
11/2020	REVISE JOINT NOMENCLATURE	CONT.	SECT.	JOB	HIGHWAY NO.
		0918	47	473	VA

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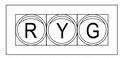
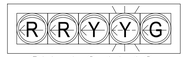
EXISTING SIGNALS (TO BE REMOVED)

H3



SH 2,3,7,8, 12,13,17,18

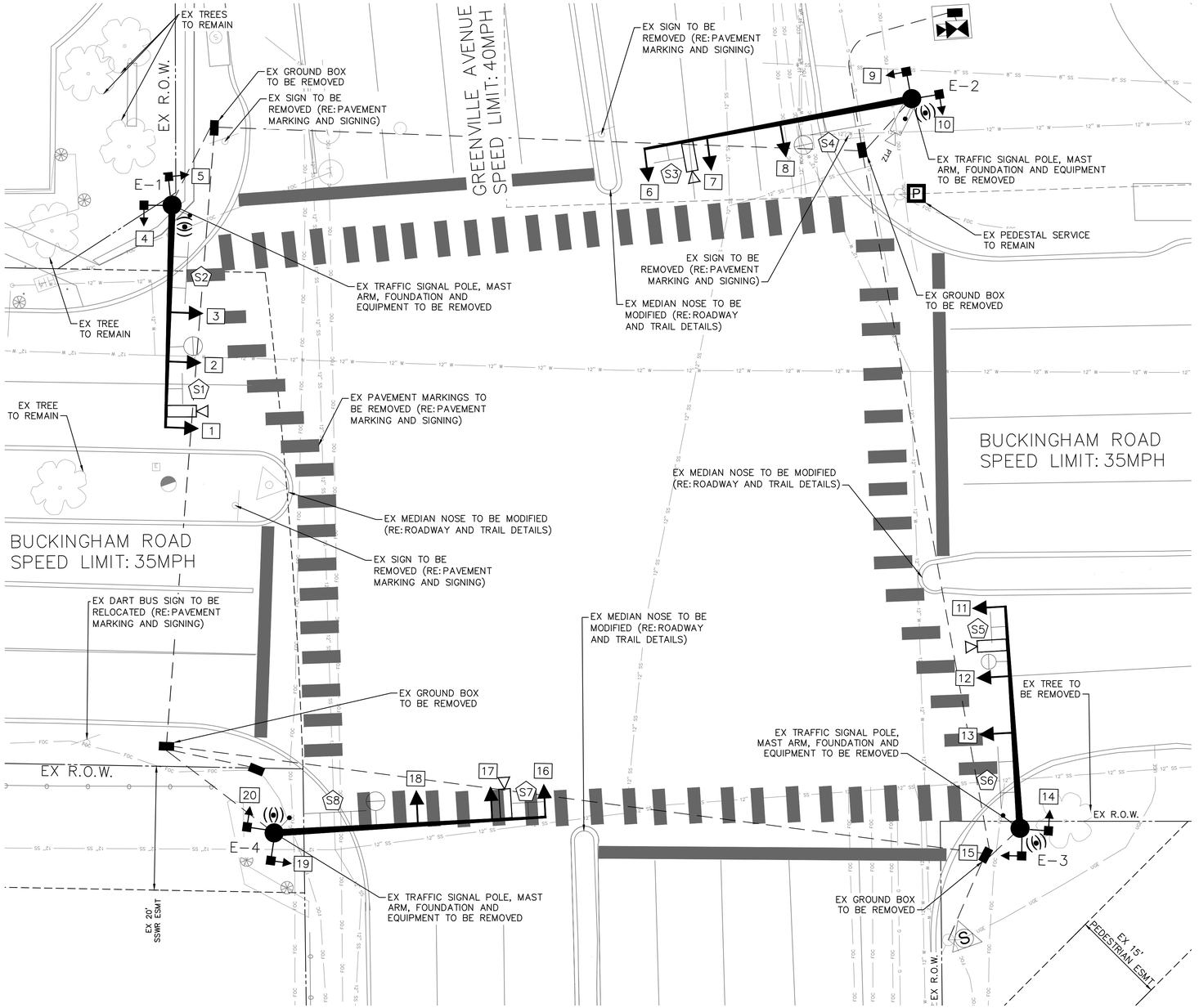
H5FYA



SH 1,6,11,16

LED COUNTDOWN PEDESTRIAN SIGNAL

SH 4,5,9,10,14, 15,19,20



GRAPHIC SCALE IN FEET
0 5 10 20

NORTH

LEGEND

- EXISTING TYPICAL MAST ARM COMBINATION SIGNAL / WITH PRE-EMPTION DETECTION, VIDEO DETECTION, RED LIGHT CONFIRMATION, AND SIGNAGE
- EXISTING TRAFFIC SIGNAL CONTROLLER CABINET AND BBU TO BE REMOVED
- EXISTING GROUND BOX TO BE REMOVED
- EXISTING CONDUIT RUNS TO BE ABANDONED
- EXISTING PEDESTRIAN SIGNAL HEAD AND PUSH BUTTON
- EXISTING ELECTRICAL SERVICE TO REMAIN
- EXISTING LIGHT POLE TO REMAIN
- EXISTING PEDESTAL SERVICE TO REMAIN
- [1] SIGNAL HEAD LABEL
- (S1) SIGN LABEL
- E-# EXISTING TRAFFIC SIGNAL POLE NUMBER

EXISTING SIGNS (TO BE REMOVED)

STREET NAME SIGNS

CITY OF RICHARDSON	S 935	Greenville	Ave 900	S2
CITY OF RICHARDSON	E 200	Buckingham	Rd 300	S4
CITY OF RICHARDSON	S 900	Greenville	Ave 935	S6
CITY OF RICHARDSON	E 300	Buckingham	Rd 200	S8

R10-12a(MOD)

36"X42"

S1 S3 S5 S7

680 7004
REMOVING TRAFFIC SIGNALS
EA
1

NOTES:

1. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING THE EXISTING TRAFFIC SIGNAL HARDWARE, PAVEMENT MARKINGS, SIGNING, RIGHT-OF-WAY, AND THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. BEFORE CONSTRUCTION, CONTRACTOR TO MAKE DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES TO AVOID DAMAGE THERETO.
2. THE ENGINEER DOES NOT CONFIRM OR VALIDATE THE EXISTING ITEMS SHOWN.
3. CONTRACTOR SHALL MAINTAIN THE EXISTING SIGNAL INSTALLATION AND OPERATIONS AT THIS INTERSECTION DURING CONSTRUCTION.
4. ELIMINATE EXISTING PAVEMENT MARKING WHICH CONFLICT WITH PROPOSED MARKINGS. ELIMINATE EXISTING PAVEMENT MARKINGS WITHIN THE INTERSECTION. REFER TO PAVEMENT MARKING AND SIGNING SHEETS FOR ADDITIONAL INFORMATION.
5. EXISTING TRAFFIC SIGNAL EQUIPMENT TO BE REMOVED SHALL BE SALVAGED TO THE CITY OF RICHARDSON. CONTRACTOR TO CONTACT DANIEL HERRIG AT DANIEL.HERRIG@COR.GOV TO COORDINATE DROP-OFF OF MATERIALS.

10/03/2025

Kimley»Horn F-928

Texas Department of Transportation

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION

TRAFFIC SIGNAL PLAN
GREENVILLE AVENUE AT BUCKINGHAM ROAD
EXISTING CONDITIONS AND REMOVALS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	7.01
CONT.	SECT.	JOB	
0918	47	473	

Plotted By: Galindo, Alejandro October 07, 2025 05:04:13pm K:\LAC_TPTO\project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\EX CONDITIONS - BUCKINGHAM GREENVILLE.dwg
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Plotted By: Yarborough, Brendan March 13, 2026 09:01:25am K:\LAC_TPTO\Project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\PROP CONDITIONS - BUCKINGHAM GREENVILLE.dwg
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PROPOSED SIGNS

STREET NAME SIGNS

E 200 Buckingham Rd 300	S2	
S 935 Greenville Ave 900	S6	
E 300 Buckingham Rd 200	S10	
S 900 Greenville Ave 935	S14	

R10-12a(MOD)

30"X36"

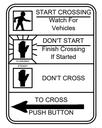
S1 S5 S9 S13

R10-3bR

9"X12"

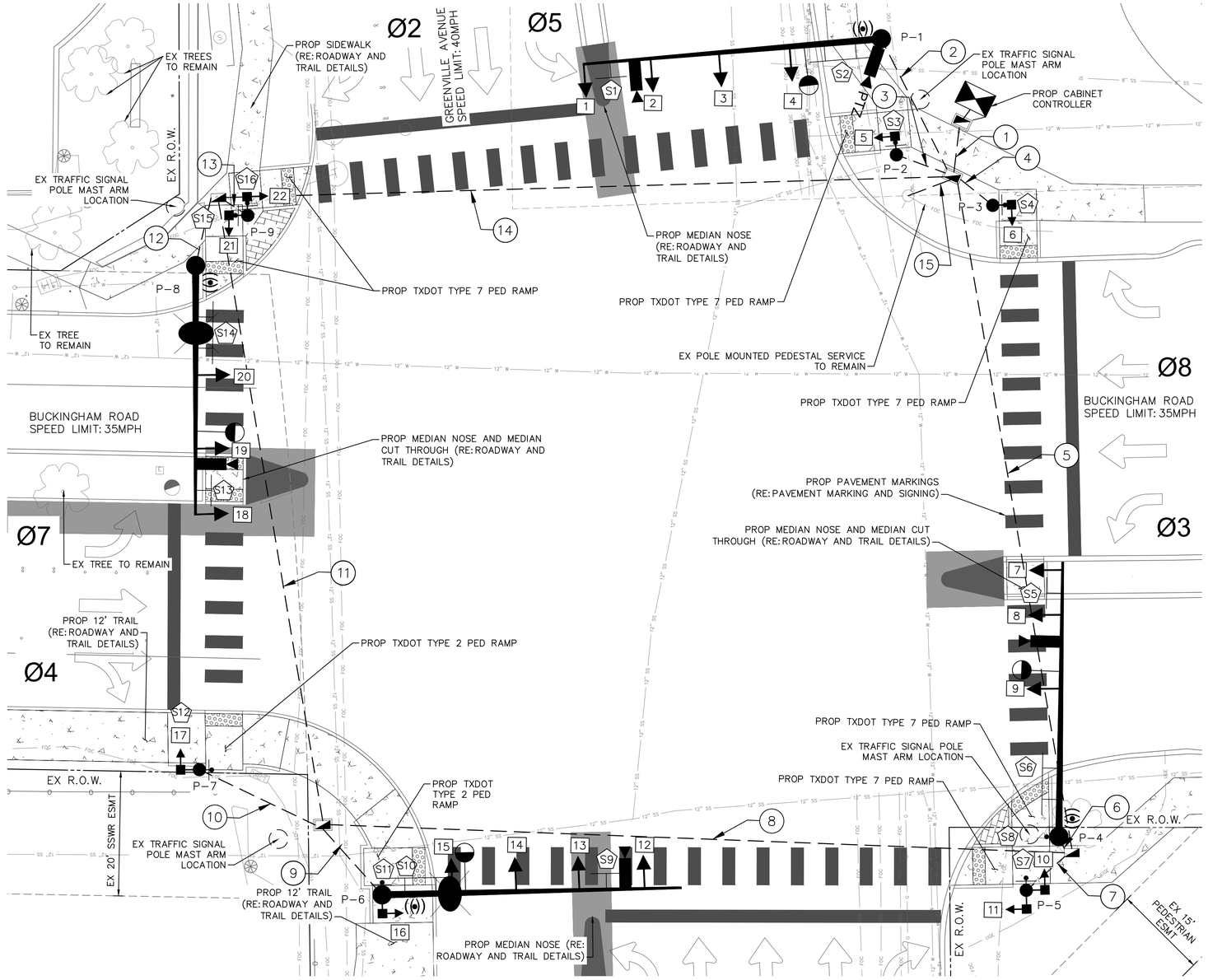
S3 S7 S12 S15

R10-3bL



9"X12"

S4 S8 S11 S16



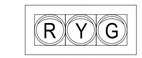
GRAPHIC SCALE IN FEET
0 5 10 20

LEGEND

- PROPOSED TYPICAL MAST ARM COMBINATION SIGNAL WITH PRE-EMPTION DETECTION, VEHICLE VIDEO DETECTION CAMERA, RED LIGHT CONFIRMATION, AND SIGNAGE
- PTZ — PROP PTZ CAMERA
- PROP GROUND BOX TY D W/ APPRON
- PROP TRAFFIC SIGNAL CONTROLLER
- (1) — PROP CONDUIT RUN AND CONDUIT LABEL
- EP — EX PEDESTAL SERVICE
- 1 — SIGNAL HEAD LABEL
- S1 — SIGN LABEL
- P-# — POLE LABEL
- Ø2 — PHASE LABEL

PROPOSED SIGNALS

H3



SH 2,3,4,8, 9,13,14,15,19,20

H5FYA

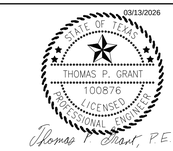
SH 1,7,12,18

LED COUNTDOWN PEDESTRIAN SIGNAL

SH 5,6,10,11, 16,17,21,22

NOTES:

1. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING THE EXISTING TRAFFIC SIGNAL HARDWARE, PAVEMENT MARKINGS, SIGNING, RIGHT-OF-WAY, AND THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. BEFORE CONSTRUCTION, CONTRACTOR TO MAKE DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES TO AVOID DAMAGE THERETO.
2. THE CITY OF RICHARDSON TRAFFIC OPERATIONS PERSONNEL WILL FIELD LOCATE POLES, PULL BOXES, AND CONDUIT RUNS AFTER UTILITIES HAVE BEEN LOCATED.
3. LOCATIONS SHOWN FOR DRILLED SHAFT FOUNDATIONS ARE APPROXIMATE.
4. CONTRACTOR SHALL COORDINATE THE PEDESTRIAN POLE FOUNDATION WORK WITH THE CURB RAMP AND SIDEWALK INSTALLATION. IF THE CURB RAMPS ARE CONSTRUCTED FIRST, CONTRACTOR SHALL NOTIFY THE CITY AND ENGINEER SO A FIELD MEETING CAN BE SCHEDULED TO DETERMINE IF THE FOUNDATION NEEDS TO BE SHIFTED TO BE ADJACENT TO THE LANDING AREAS. IF PEDESTRIAN POLE FOUNDATIONS ARE INSTALLED FIRST, THE CURB RAMPS AND SIDEWALKS SHALL BE MODIFIED SO THAT THE CURB RAMP LANDING AREAS ARE ADJACENT TO THE PUSH BUTTONS AND THE SIDE REACH TO THE PUSH BUTTONS ARE 10" OR LESS.
5. PROPOSED PUSH BUTTONS SHALL BE PLACED ADJACENT TO A LEVEL LANDING AREA (2% MAX IN ANY DIRECTION). IF THE DISTANCE FROM THE PUSH BUTTON TO THE EDGE OF ACCESSIBLE PATH EXCEEDS 10", THE CONTRACTOR SHALL FURNISH AND INSTALL A PUSH BUTTON EXTENDER TO MAKE THE REACH 10" OR LESS, MEASUREMENT AND PAYMENT SHALL BE CONSIDERED SUBSIDIARY TO THE INSTALLATION OF TRAFFIC SIGNAL EQUIPMENT.
6. ALL CABLES SHALL BE WIRED IN ACCORDANCE WITH THE CABINET PREPARATION NOTES SUPPLIED BY THE CITY OF RICHARDSON.
7. IF PEDESTRIAN POLES CANNOT BE INSTALLED IN THE LOCATIONS SHOWN ON THE PLANS, THE CONTRACTOR SHALL CONTACT THE CITY TO MEET ON SITE AND DISCUSS NEW LOCATIONS.
8. PROPOSED CURB RAMP LANDING SHALL BE POURED UP TO THE POLE FOUNDATION, LEAVING NO GAPS.
9. PROPOSED PRE-EMPTION DEVICES, VIDEO DETECTION CAMERAS AND CABLE WILL BE PROVIDED BY THE CITY OF RICHARDSON. CONTRACTOR SHALL INSTALL PRE-EMPTION DEVICES AND CABLE SUBSIDIARY TO ITEM 680 7002.
10. CONTRACTOR SHALL MAINTAIN THE EXISTING SIGNAL INSTALLATION AND OPERATIONS AT THIS INTERSECTION.



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Texas Department of Transportation
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DALLAS COUNTY

CENTRAL TRAIL EXTENSION

TRAFFIC SIGNAL PLAN
GREENVILLE AVENUE AT BUCKINGHAM ROAD
PROPOSED LAYOUT

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	7.02
CONT.	SECT.	JOB	
0918	47	473	

CONDUIT AND CABLE CHART
WIRE SIZE AND TYPE

RUN NO.	CONDUIT STATUS	ITEM 618 CONDUIT (SCH 80) 2" PVC (TRENCHED) QTY	2" PVC (TRENCHED) Len	2" PVC (BORED) QTY	2" PVC (BORED) Len	3" PVC (TRENCHED) QTY	3" PVC (TRENCHED) Len	3" PVC (BORED) QTY	3" PVC (BORED) Len	CABLE STATUS	ITEM 620 ELECTRICAL CONDUCTORS NO. 6 BARE WIRE QTY	NO. 6 BARE WIRE Len	NO. 6 XHHW WIRE QTY	NO. 6 XHHW WIRE Len	NO. 10 XHHW WIRE QTY	NO. 10 XHHW WIRE Len	ITEM 684 TRAFFIC SIGNAL CABLES TY C 2 CNDR NO. 12 QTY	TY C 2 CNDR NO. 12 Len	TY A 5 CNDR NO. 14 QTY	TY A 5 CNDR NO. 14 Len	TY A 7 CNDR NO. 14 QTY	TY A 7 CNDR NO. 14 Len	TY A 20 CNDR NO. 14 QTY	TY A 20 CNDR NO. 14 Len	ITEM 999 PRE-EMPTION CABLE QTY	PRE-EMPTION CABLE Len	FLIR DETECTION CABLE* QTY	FLIR DETECTION CABLE* Len	PTZ CAMERA/ CAT 5E CABLE* QTY	PTZ CAMERA/ CAT 5E CABLE* Len	TOTAL LENGTH OF RUN	RUN NO.
1	I			1	20	1	20			I	1	40	3	120	6	240	8	320			6	240	4	160	4	160	1	40	40	1
2	I					1	30			I	1	30											1	35	1	30	1	30	30	2
3	I					1	15			I	1	15					1	15			1	15							15	3
4	I					1	15			I	1	15					1	15			1	15							15	4
5	I							1	115	I	1	115			3	345													115	5
	I							1	115	I	1	115					3	345			2	230	2	230	2	230	2	230	115	
	I			1	115					I	1	115																115	
6	I					1	5			I	1	5					1	5					1	10	1	5	1	5	5	6
7	I					1	15			I	1	15					1	15			1	15							15	7
8	I							1	125	I	1	125			3	375							1	125	1	125	1	125	125	8
	I							1	125	I	1	125					1	125			1	125							125	
9	I					1	15			I	1	15			3	45	1	15			1	15	1	20	1	15	1	15	15	9
10	I					1	30			I	1	30					1	30			1	30							30	10
11	I							1	110	I	1	110											1	110	1	110	1	110	110	11
	I							1	110	I	1	110					1	110			1	110							110	
12	I					1	20			I	1	20			3	60							1	25	1	20	1	20	20	12
13	I					1	15			I	1	15					2	30			1	15							15	13
14	I							1	125	I	1	125			3	375													125	14
	I							1	125	I	1	125					3	375			2	250	1	125	1	125	1	125	125	
15	I	1	10							I	1	10	3	30															10	15
SUBTOTAL			10		135		180		950			1275		150		1440		1400		0		1060		840		820		820		70		
P-1	I									I										160		75				40		65		30	VARIES	P-1
P-2	I									I								5		10											VARIES	P-2
P-3	I									I								5		10											VARIES	P-3
P-4	I									I								5		115		70						60			VARIES	P-4
P-5	I									I								5		20											VARIES	P-5
P-6	I									I						135		5		175		75				45		65			VARIES	P-6
P-7	I									I								5		10											VARIES	P-7
P-8	I									I						135				100		65						60			VARIES	P-8
P-9	I									I								10		20											VARIES	P-9
SUBTOTAL			0		0		0		0			0		0		270		40		620		285		0		85		250		30		
TOTAL			10		135		180		950			1275		150		1710		1440		620		1345		840		905		1070		100		

CONDUIT STATUS: I=INSTALL; E=EXISTING; P=WIRE TO BE INSTALLED INSIDE STEEL POLE; A=ABANDON; REM=REMOVE AND SALVAGE

P-# = REFERS TO WIRING WITHIN THE SIGNAL POLE AND MAST ARM.

*CONTRACTOR SHALL FURNISH AND INSTALL THIS CABLE SUBSIDIARY TO ITEM 680. CABLE SHALL MATCH EXISTING CABLING.

SIGNAL HEADS (ITEM 682)

SIGNAL HEAD NUMBER	12" LED SIGNAL HEAD INDICATION: SIGNAL HEAD TYPE	STATUS	BACK PLATE 3 SEC EA	BACK PLATE 5 SEC EA	LED SIGNAL LAMPS <- G EA	LED SIGNAL LAMPS G EA	LED SIGNAL LAMPS <- Y EA	LED SIGNAL LAMPS Y EA	LED SIGNAL LAMPS <- R EA	LED SIGNAL LAMPS R EA	PED SIGN SEC (LED) (COUNTDOWN) EA
1	H5FYA	I		1	1		2		2		
2	H3	I	1			1		1		1	
3	H3	I	1			1		1		1	
4	H3	I	1			1		1		1	
5	PED	I									1
6	PED	I									1
7	H5FYA	I		1	1		2		2		
8	H3	I	1			1		1		1	
9	H3	I	1			1		1		1	
10	PED	I									1
11	PED	I									1
12	H5FYA	I		1	1		2		2		
13	H3	I	1			1		1		1	
14	H3	I	1			1		1		1	
15	H3	I	1			1		1		1	
16	PED	I									1
17	PED	I									1
18	H5FYA	I		1	1		2		2		
19	H3	I	1			1		1		1	
20	H3	I	1			1		1		1	
21	PED	I									1
22	PED	I									1
TOTAL (NEW)			10	4	4	10	8	10	8	10	8

STATUS: I = INSTALL; E = EXISTING; REM = EXISTING TO BE RMEOVED; REL = RELOCATE

GROUND BOX SUMMARY (ITEM 624)

ITEM NO.	DESCRIPTION	STATUS	UNIT	QUANTITY
0624 7007	TYPE D (162922)	INSTALL	EA	2
0624 7008	TYPE D (162922) W/ APRON	INSTALL	EA	3

SIGNAL HEAD AND POLE PLACEMENT (FT)

POLE NUMBER	STATUS	A (FT)	B (FT)	C (FT)	D (FT)	E (FT)	F (FT)	G (FT)	H (FT)	J (FT)	I (FT)	NO. OF HEADS (EA)*	VIDEO PRESENCE DET. (EA)	DUAL VIDEO DETECTION (EA)	LUM	DRILLED SHAFT LENGTH (FT) 24" DIA SUB TO ITEM 687	DRILLED SHAFT LENGTH (FT) 36" DIA TYPE A ITEM 416	FDN. TYPE WIND ZONE 80 MPH
P-1	I	11	15	12	11	11	48	-	20	-	-	4	-	-	N		13	36-A
P-2	I	9	PEDESTRIAN POLE						12	-	-	-	-	-	-	6		24-A
P-3	I	9	PEDESTRIAN POLE						12	-	-	-	-	-	-	6		24-A
P-4	I	11	23	12	8	-	44	-	20	-	-	3	-	-	N		13	36-A
P-5	I	13	PEDESTRIAN POLE						12	-	-	-	-	-	-	6		24-A
P-6	I	12	17	10	10	11	48	-	20	-	-	4	-	-	Y		13	36-A
P-7	I	10	PEDESTRIAN POLE						12	-	-	-	-	-	-	6		24-A
P-8	I	6	18	12	10	-	40	-	20	-	-	3	-	-	Y		13	36-A
P-9	I	7	PEDESTRIAN POLE						12	-	-	-	-	-	-	6		24-A
TOTAL (NEW)																30	52	

SIGNAL POLE STATUS: I=INSTALL; E=EXISTING; REM=REMOVE; F=INSTALL IN FUTURE PHASE

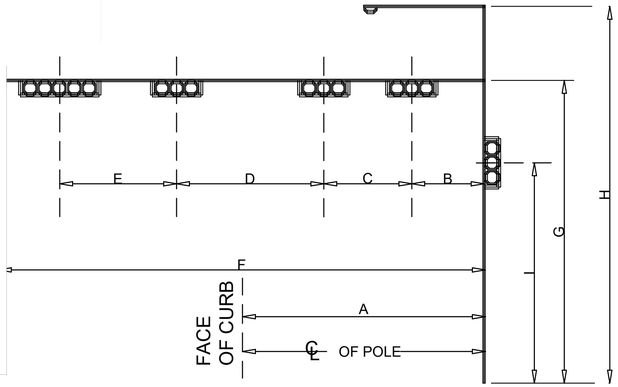
* - DOES NOT INCLUDE VERTICAL SIDEMOUNT SIGNAL HEADS OR PEDESTRIAN SIGNAL HEADS

SUMMARY OF PROPOSED SIGNS

SIGN ID	STATUS	SIGN NUMBER	SIGN NAME/TEXT	SIZE	LOCATION
1	I	R10-12a(MOD)	LEFT TURN YIELD ON FLASHING YELLOW ARROW	30"x36"	P-1 MAST ARM
2	I	D3-1G	200 BUCKINGHAM RD 300	VARx18"	P-1 MAST ARM
3	I	R10-3bR	TO CROSS PUSH BUTTON	9"x15"	P-2 POLE
4	I	R10-3bL	TO CROSS PUSH BUTTON	9"x15"	P-3 POLE
5	I	R10-12a(MOD)	LEFT TURN YIELD ON FLASHING YELLOW ARROW	30"x36"	P-4 MAST ARM
6	I	D3-1G	935 GREENVILLE AVE 900	VARx18"	P-4 MAST ARM
7	I	R10-3bR	TO CROSS PUSH BUTTON	9"x15"	P-5 POLE
8	I	R10-3bL	TO CROSS PUSH BUTTON	9"x15"	P-4 POLE
9	I	R10-12a(MOD)	LEFT TURN YIELD ON FLASHING YELLOW ARROW	30"x36"	P-6 MAST ARM
10	I	D3-1G	300 BUCKINGHAM RD 200	VARx18"	P-6 MAST ARM
11	I	R10-3bR	TO CROSS PUSH BUTTON	9"x15"	P-6 POLE
12	I	R10-3bR	TO CROSS PUSH BUTTON	9"x15"	P-7 POLE
13	I	R10-12a(MOD)	LEFT TURN YIELD ON FLASHING YELLOW ARROW	30"x36"	P-8 MAST ARM
14	I	D3-1G	900 GREENVILLE 935	VARx18"	P-8 MAST ARM
15	I	R10-3bR	TO CROSS PUSH BUTTON	9"x15"	P-9 POLE
16	I	R10-3bR	TO CROSS PUSH BUTTON	9"x15"	P-9 POLE

STATUS: I = INSTALL; E = EXISTING; REL = EXISTING TO BE RELOCATED

*- ALL SIGNS ARE TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR (SUB TO ITEM 636 7001)



NOTE:

1. REFER TO QUANTITY SUMMARY SHEET 0.11 FOR TRAFFIC SIGNAL ITEMS.

10/03/2025

STATE OF TEXAS · JOHN W. RYAN · 141023 · LICENSED PROFESSIONAL ENGINEER

Kimley»Horn F-928

Texas Department of Transportation

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION

TRAFFIC SIGNAL
GREENVILLE AVENUE AT BUCKINGHAM RD
TRAFFIC SIGNAL CHARTS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	7.03
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Galindo, Alejandro October 07, 2025 05:06:31pm K:\LAC_TPTO\Project\064563401_dallascounty_centraltrailextension\CAD\PlanSheets\SIGNAL CHARTS.dwg
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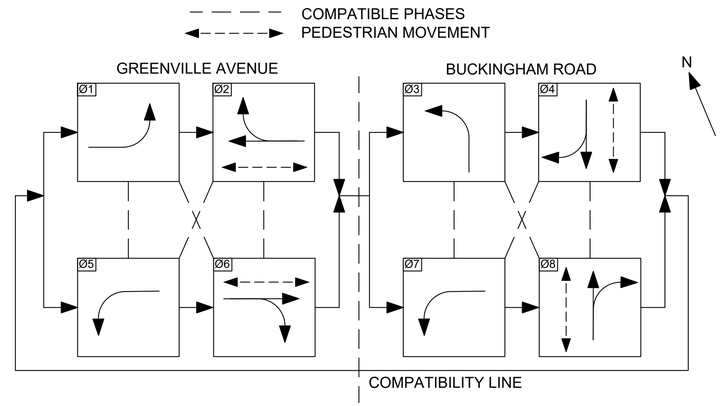
CABLE TERMINATION CHART											
COND. NO.	CONDUCTOR COLOR	CABLE 1 FROM P-1 TO CNTRL 20 CNDR	CABLE 2 FROM P-2 TO CNTRL 7 CNDR	CABLE 3 FROM P-3 TO CNTRL 7 CNDR	CABLE 4 FROM P-4 TO CNTRL 20 CNDR	CABLE 5 FROM P-5 TO CNTRL 7 CNDR	CABLE 6 FROM P-6 TO CNTRL 20 CNDR	CABLE 7 FROM P-6 TO CNTRL 7 CNDR	CABLE 8 FROM P-7 TO CNTRL 7 CNDR	CABLE 9 FROM P-8 TO CNTRL 20 CNDR	CABLE 10 FROM P-9 TO CNTRL 7 CNDR
1	BLACK	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
2	WHITE	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON
3	RED	SH 2, 3, 4 Ø6 R	SH 5 Ø8 DW	SH 6 Ø6 DW	SH 8, 9 Ø4 R	SH 10 Ø6 DW	SH 13, 14, 15 Ø2 R	SH 16 Ø4 DW	SH 17 Ø2 DW	SH 19, 20 Ø8 R	SH 21 Ø2 DW
4	GREEN	SH 2, 3, 4 Ø6 G	SH 5 Ø8 W	SH 6 Ø6 W	SH 8, 9 Ø4 G	SH 10 Ø6 W	SH 13, 14, 15 Ø2 G	SH 16 Ø4 W	SH 17 Ø2 W	SH 19, 20 Ø8 G	SH 21 Ø2 W
5	ORANGE	SH 2, 3, 4 Ø6 Y	SPARE	SPARE	SH 8, 9 Ø4 Y	SPARE	SH 13, 14, 15 Ø2 Y	SPARE	SPARE	SH 19, 20 Ø8 Y	SPARE
6	BLUE	SPARE	SPARE	SPARE	SPARE	SH 11 Ø4 DW	SPARE	SPARE	SPARE	SPARE	SH 22 Ø8 DW
7	WHITE/BLACK	SPARE	SPARE	SPARE	SPARE	SH 11 Ø4 W	SPARE	SPARE	SPARE	SPARE	SH 22 Ø8 W
8	RED/BLACK	SPARE			SPARE		SPARE			SPARE	
9	GREEN/BLACK	SPARE			SPARE		SPARE			SPARE	
10	ORANGE/BLACK	SPARE			SPARE		SPARE			SPARE	
11	BLUE/BLACK	SPARE			SPARE		SPARE			SPARE	
12	BLACK/WHITE	SPARE			SPARE		SPARE			SPARE	
13	RED/WHITE	SH 1 Ø1 RA			SH 7 Ø7 RA		SH 12 Ø5 RA			SH 18 Ø3 RA	
14	GREEN/WHITE	SH 1 Ø1 GA			SH 7 Ø7 GA		SH 12 Ø5 GA			SH 18 Ø3 GA	
15	BLUE/WHITE	SH 1 Ø1 YA			SH 7 Ø7 YA		SH 12 Ø5 YA			SH 18 Ø3 YA	
16	BLACK/RED	SPARE			SPARE		SPARE			SPARE	
17	WHITE/RED	SPARE			SPARE		SPARE			SPARE	
18	ORANGE/RED	SPARE			SPARE		SPARE			SPARE	
19	BLUE/RED	SPARE			SPARE		SPARE			SPARE	
20	RED/GREEN	RLC			RLC		RLC			RLC	

APS MESSAGE CHART			
POLE LOCATION	PEDESTRIAN MOVEMENT	FUNCTIONS	SPEECH MESSAGE/SOUND DETAILS
P-2	PHASE 8	BUTTON PUSH ON DW	WAIT TO CROSS GREENVILLE AVENUE AT BUCKINGHAM ROAD
		EXTENDED BUTTON PUSH	WAIT TO CROSS GREENVILLE AVENUE AT BUCKINGHAM ROAD
		LOCATOR TONE	SLOW TICK
		WALK INDICATION	GREENVILLE AVENUE, WALK SIGN IS ON TO CROSS GREENVILLE AVENUE
P-3	PHASE 6	BUTTON PUSH ON DW	WAIT TO CROSS BUCKINGHAM ROAD AT GREENVILLE AVENUE
		EXTENDED BUTTON PUSH	WAIT TO CROSS BUCKINGHAM ROAD AT GREENVILLE AVENUE
		LOCATOR TONE	SLOW TICK
		WALK INDICATION	BUCKINGHAM ROAD, WALK SIGN IS ON TO CROSS BUCKINGHAM ROAD
P-4	PHASE 6	BUTTON PUSH ON DW	WAIT TO CROSS BUCKINGHAM ROAD AT GREENVILLE AVENUE
		EXTENDED BUTTON PUSH	WAIT TO CROSS BUCKINGHAM ROAD AT GREENVILLE AVENUE
		LOCATOR TONE	SLOW TICK
		WALK INDICATION	BUCKINGHAM ROAD, WALK SIGN IS ON TO CROSS BUCKINGHAM ROAD
P-5	PHASE 4	BUTTON PUSH ON DW	WAIT TO CROSS GREENVILLE AVENUE AT BUCKINGHAM ROAD
		EXTENDED BUTTON PUSH	WAIT TO CROSS GREENVILLE AVENUE AT BUCKINGHAM ROAD
		LOCATOR TONE	SLOW TICK
		WALK INDICATION	GREENVILLE AVENUE, WALK SIGN IS ON TO CROSS GREENVILLE AVENUE
P-6	PHASE 4	BUTTON PUSH ON DW	WAIT TO CROSS GREENVILLE AVENUE AT BUCKINGHAM ROAD
		EXTENDED BUTTON PUSH	WAIT TO CROSS GREENVILLE AVENUE AT BUCKINGHAM ROAD
		LOCATOR TONE	SLOW TICK
		WALK INDICATION	GREENVILLE AVENUE, WALK SIGN IS ON TO CROSS GREENVILLE AVENUE
P-7	PHASE 2	BUTTON PUSH ON DW	WAIT TO CROSS BUCKINGHAM ROAD AT GREENVILLE AVENUE
		EXTENDED BUTTON PUSH	WAIT TO CROSS BUCKINGHAM ROAD AT GREENVILLE AVENUE
		LOCATOR TONE	SLOW TICK
		WALK INDICATION	BUCKINGHAM ROAD, WALK SIGN IS ON TO CROSS BUCKINGHAM ROAD
P-9	PHASE 2	BUTTON PUSH ON DW	WAIT TO CROSS BUCKINGHAM ROAD AT GREENVILLE AVENUE
		EXTENDED BUTTON PUSH	WAIT TO CROSS BUCKINGHAM ROAD AT GREENVILLE AVENUE
		LOCATOR TONE	SLOW TICK
		WALK INDICATION	BUCKINGHAM ROAD, WALK SIGN IS ON TO CROSS BUCKINGHAM ROAD
P-9	PHASE 8	BUTTON PUSH ON DW	WAIT TO CROSS GREENVILLE AVENUE AT BUCKINGHAM ROAD
		EXTENDED BUTTON PUSH	WAIT TO CROSS GREENVILLE AVENUE AT BUCKINGHAM ROAD
		LOCATOR TONE	SLOW TICK
		WALK INDICATION	GREENVILLE AVENUE, WALK SIGN IS ON TO CROSS GREENVILLE AVENUE

PHASE SEQUENCE



PHASE 1,3,5,7 SHALL ALLOW FOR PROTECTED-PERMITTED PHASING

10/03/2025

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION

TRAFFIC SIGNAL
GREENVILLE AVENUE AT BUCKINGHAM RD
TRAFFIC SIGNAL CHARTS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	7.04
CONT.	SECT.	JOB	
0918	47	473	

Plotted By: Galindo, Alejandro October 03, 2025 09:38:11am K:\LAC_TPTO\Project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\SIGNAL CHARTS.dwg
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Plotted By:Galindo, Alejandra October 07, 2025 05:07:40pm K:\ALC_TPTO\project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\EX CONDITIONS – GREENVILLE WALNUT.dwg
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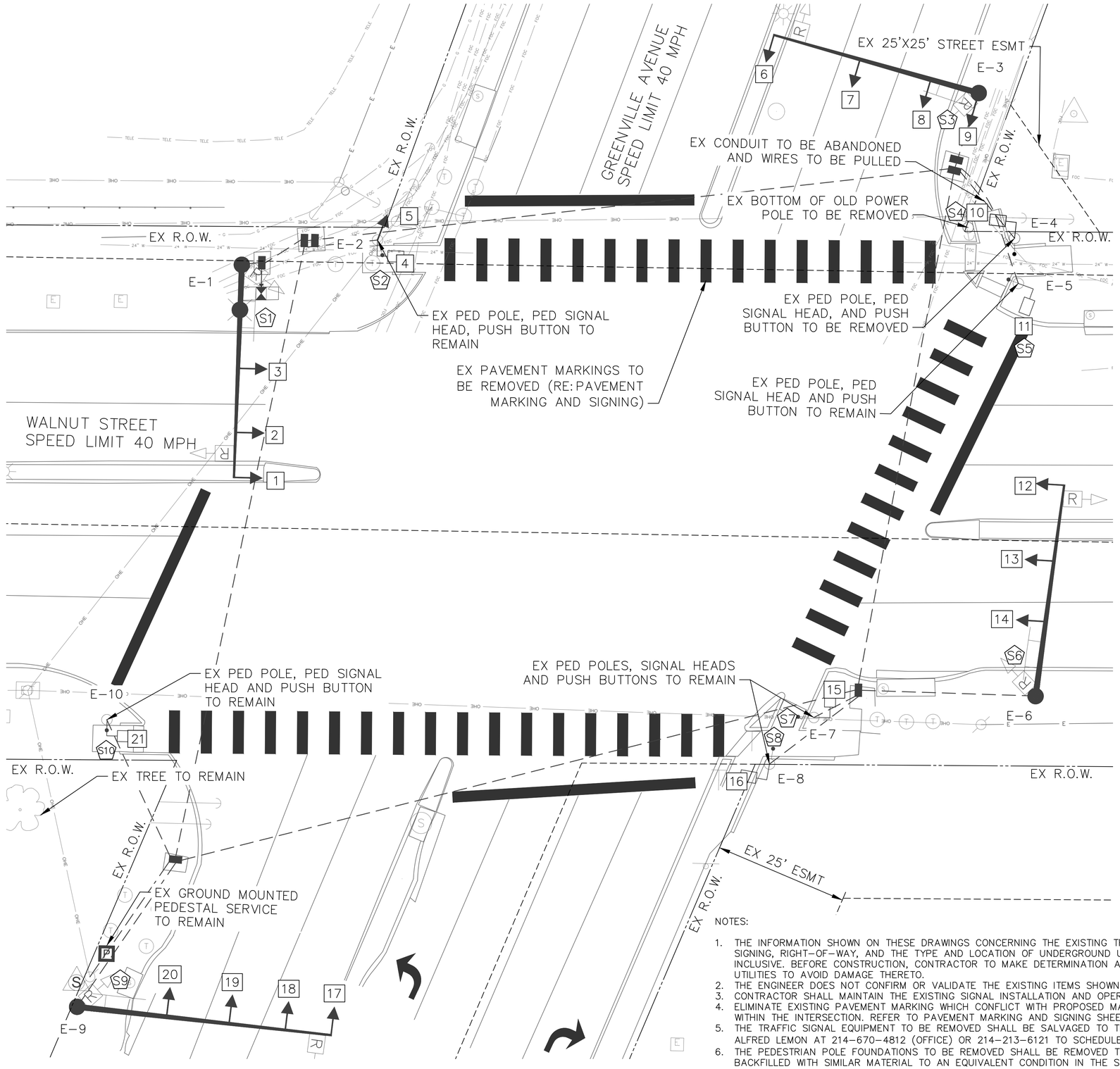


NORTH

GRAPHIC SCALE IN FEET
0 5 10 20

EXISTING SIGNS

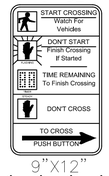
STREET NAME SIGN
Greenville
12900 13000
S1

STREET NAME SIGN
← Restland
Walnut →
S3

STREET NAME SIGN
Greenville
13000 12900
S6

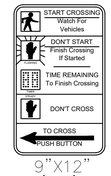
STREET NAME SIGN
← Walnut
Restland →
S9

R10-3ER



9"X12"
S2 S5 S8 S10

R10-3EL



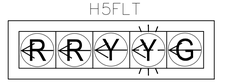
9"X12"
S4 S7

EXISTING SIGNALS

H3

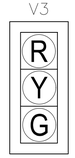
SH 2,3,7,8,13,14, 18,19,20

H5FLT



SH 1,6,12,17

V3



SH 5,9

LED COUNTDOWN PED

SH 4,10,11,15,16,21

LEGEND

- EX TRAFFIC SIGNAL MAST ARM
- EX TRAFFIC SIGNAL HEAD
- EX TRAFFIC SIGN
- EX EX RADAR DETECTION DEVICE
- EX OPTICOM DEVICE
- EX GROUND BOX
- EX TRAFFIC SIGNAL CONTROLLER AND BBU
- EX PEDESTRIAN PUSH BUTTON
- EX PED HEAD
- EX ELECTRICAL SERVICE TO REMAIN
- EX PEDESTAL SERVICE TO REMAIN
- EX CONDUIT
- EX LUMINAIRE
- SIGN LABEL
- SIGNAL HEAD LABEL
- E-# EX TRAFFIC SIGNAL POLE NUMBER

690 7033	690 7089
REMOVAL OF TRAFFIC SIGNAL POLE FND	REMOVE PED POLE ASSM
LF	EA
2	1

NOTES:

1. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING THE EXISTING TRAFFIC SIGNAL HARDWARE, PAVEMENT MARKINGS, SIGNING, RIGHT-OF-WAY, AND THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. BEFORE CONSTRUCTION, CONTRACTOR TO MAKE DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES TO AVOID DAMAGE THERETO.
2. THE ENGINEER DOES NOT CONFIRM OR VALIDATE THE EXISTING ITEMS SHOWN.
3. CONTRACTOR SHALL MAINTAIN THE EXISTING SIGNAL INSTALLATION AND OPERATIONS AT THIS INTERSECTION DURING CONSTRUCTION.
4. ELIMINATE EXISTING PAVEMENT MARKING WHICH CONFLICT WITH PROPOSED MARKINGS. ELIMINATE EXISTING PAVEMENT MARKINGS WITHIN THE INTERSECTION. REFER TO PAVEMENT MARKING AND SIGNING SHEETS FOR ADDITIONAL INFORMATION.
5. THE TRAFFIC SIGNAL EQUIPMENT TO BE REMOVED SHALL BE SALVAGED TO THE CITY OF DALLAS. CONTRACTOR TO CONTACT MR. ALFRED LEMON AT 214-670-4812 (OFFICE) OR 214-213-6121 TO SCHEDULE DROP-OFF OF MATERIALS.
6. THE PEDESTRIAN POLE FOUNDATIONS TO BE REMOVED SHALL BE REMOVED TO A MINIMUM OF 2' BELOW THE EXISTING SURFACE AND BACKFILLED WITH SIMILAR MATERIAL TO AN EQUIVALENT CONDITION IN THE SURROUNDING AREA.
7. REMOVAL OF SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS PUSH BUTTON ASSEMBLIES, AND ANY OTHER EQUIPMENT (INCLUDING WIRING ALL THE WAY BACK TO THE CABINET) RELATED TO THE PEDESTRIAN POLE SHALL BE SUBSIDIARY TO ITEM 690 7089.

STATE OF TEXAS
JOHN W. RYAN
141023
LICENSED PROFESSIONAL ENGINEER
10/03/2025

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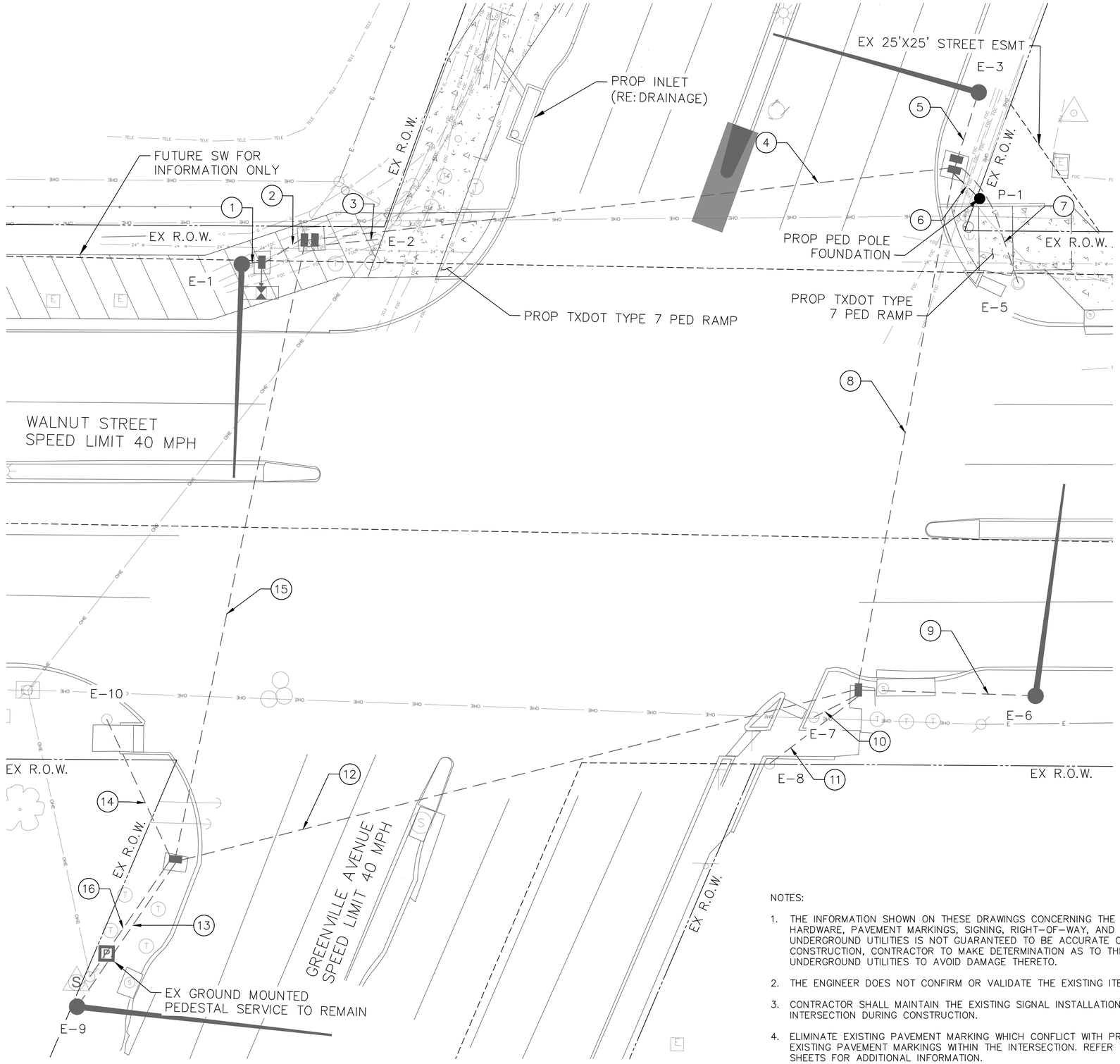
DALLAS COUNTY
CENTRAL TRAIL EXTENSION
TRAFFIC SIGNAL
GREENVILLE AVENUE AT WALNUT STREET
EXISTING CONDITIONS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	7.05
CONT.	SECT.	JOB	
0918	47	473	



NORTH

GRAPHIC SCALE IN FEET
0 5 10 20

LEGEND

- EX MAST ARM POLE
- PROP PED POLE FOUNDATION
- EX PED POLE
- PROP CONDUIT
- EX CONDUIT
- PROP SOD
- PROP TRAIL
- (1) CONDUIT RUN LABEL
- E-# EX POLE LABEL
- P-# PROP POLE LABEL

NOTES:

1. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING THE EXISTING TRAFFIC SIGNAL HARDWARE, PAVEMENT MARKINGS, SIGNING, RIGHT-OF-WAY, AND THE TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. BEFORE CONSTRUCTION, CONTRACTOR TO MAKE DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES TO AVOID DAMAGE THERETO.
2. THE ENGINEER DOES NOT CONFIRM OR VALIDATE THE EXISTING ITEMS SHOWN.
3. CONTRACTOR SHALL MAINTAIN THE EXISTING SIGNAL INSTALLATION AND OPERATIONS AT THIS INTERSECTION DURING CONSTRUCTION.
4. ELIMINATE EXISTING PAVEMENT MARKING WHICH CONFLICT WITH PROPOSED MARKINGS. ELIMINATE EXISTING PAVEMENT MARKINGS WITHIN THE INTERSECTION. REFER TO PAVEMENT MARKING AND SIGNING SHEETS FOR ADDITIONAL INFORMATION.

STATE OF TEXAS
JOHN W. RYAN
141023
LICENSED
PROFESSIONAL ENGINEER
10/03/2025

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION

TRAFFIC SIGNAL
GREENVILLE AVENUE AT WALNUT STREET
PROPOSED UNDERGROUND CONDITIONS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	7.06
CONT.	SECT.	JOB	
0918	47	473	

Plotted By: Galindo, Alejandra October 03, 2025 09:38:44am K:\LAC_TPTO\project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\PROP UNDERGROUND - GREENVILLE WALNUT.dwg
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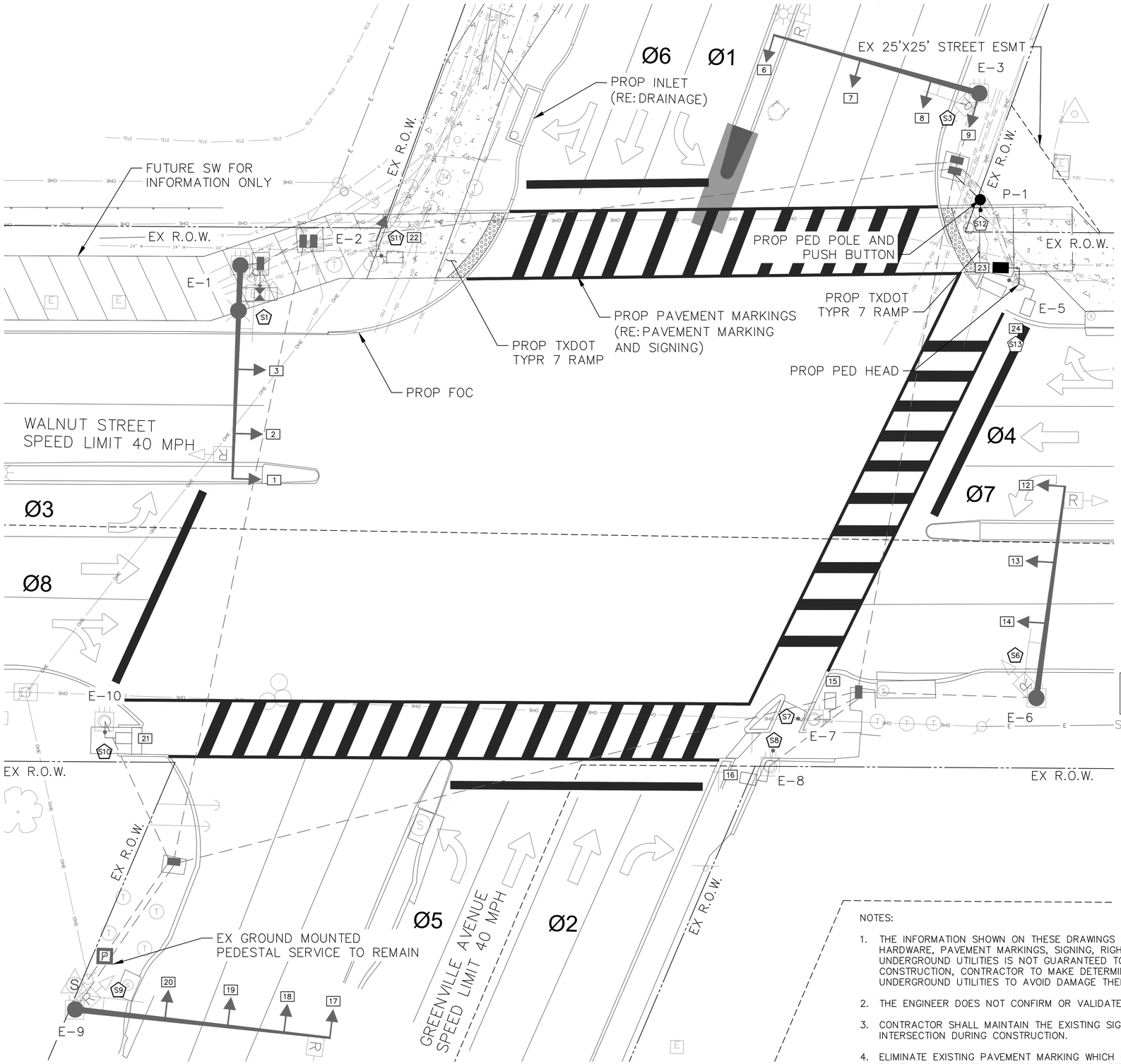

EXISTING SIGNS

STREET NAME SIGN — Greenville 12900 13000 — S1

STREET NAME SIGN — ←Restland Walnut→ — S3

STREET NAME SIGN — Greenville 13000 12900 — S6

STREET NAME SIGN — ←Walnut Restland→ — S9

R10-3ER — 9"X15" — S8 S10 S13

R10-3EL — 9"X15" — S7 S11

EXISTING SIGNALS

H3 — R Y G — SH 2,3,7,8,13,14, 18,19,20

H5FLT — R R Y Y G — SH 1,6,12,17

V3 — R Y G — SH 9

LED COUNTDOWN PED — 10 — SH 15,16,21, 22,24

NORTH

GRAPHIC SCALE IN FEET
0 # ## ##

LEGEND

- EX TYPICAL MAST ARM COMBINATION WITH SIGNAL HEADS, STREET NAME SIGN, AND RED-LIGHT CONFIRMATION
- PROP PED POLE, PED SIGNAL HAD, AND PUSH BUTTON
- PROP CONDUIT
- EX CONDUIT
- PROP SOD
- PROP TRAIL
- CONDUIT RUN LABEL
- E-# EX POLE LABEL
- P-# PROP POLE LABEL
- S1 SIGN LABEL
- 22 SIGNAL HEAD LABEL
- Ø4 PHASE LABEL

PROPOSED SIGNS

R10-3EL — 9"X15" — S12

PROPOSED SIGNALS

LED COUNTDOWN PED — 10 — SH 23

NOTES:

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2. THE ENGINEER DOES NOT CONFIRM OR VALIDATE THE EXISTING ITEMS SHOWN.
3. CONTRACTOR SHALL MAINTAIN THE EXISTING SIGNAL INSTALLATION AND OPERATIONS AT THIS INTERSECTION DURING CONSTRUCTION.
4. ELIMINATE EXISTING PAVEMENT MARKING WHICH CONFLICT WITH PROPOSED MARKINGS. ELIMINATE EXISTING PAVEMENT MARKINGS WITHIN THE INTERSECTION. REFER TO PAVEMENT MARKING AND SIGNING SHEETS FOR ADDITIONAL INFORMATION.

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION

TRAFFIC SIGNAL PLAN
GREENVILLE AVENUE AT WALNUT STREET
PROPOSED ABOVEGROUND CONDITIONS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	7.07
CONT.	SECT.	JOB	
0918	47	473	

Plotted By: Galindo, Alejandra October 06, 2025 08:50:35am K:\LAC_TPTQ\Iproject\06458340_dallascounty_centraltrailextension\CADD\PlanSheets\PROP OVERHEAD - GREENVILLE WALNUT.dwg
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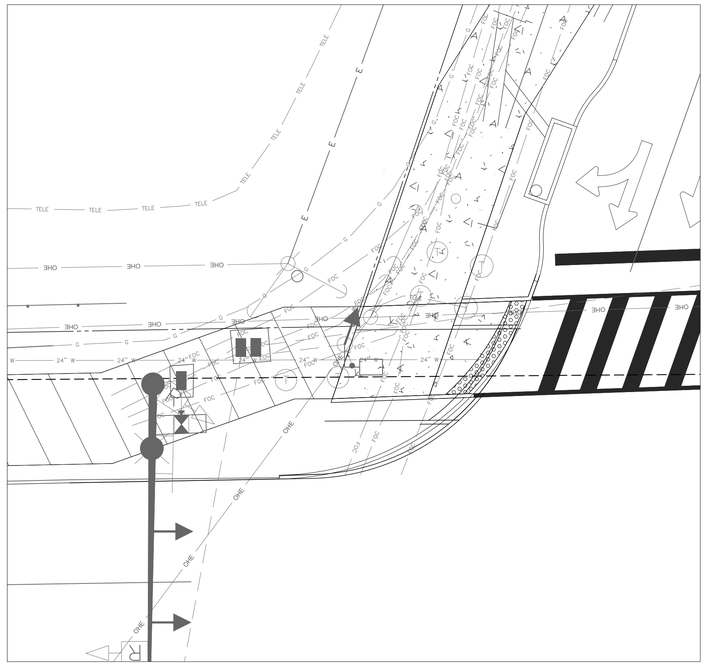
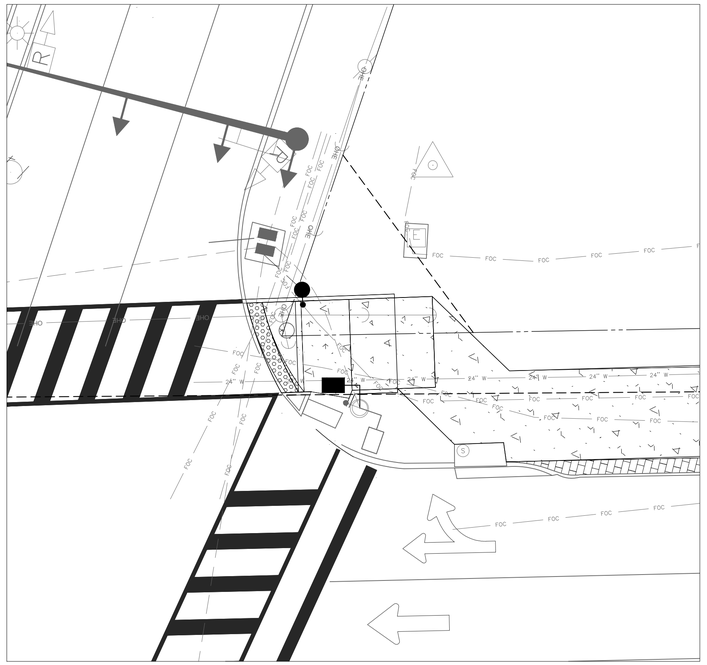
NW CORNER DETAILS



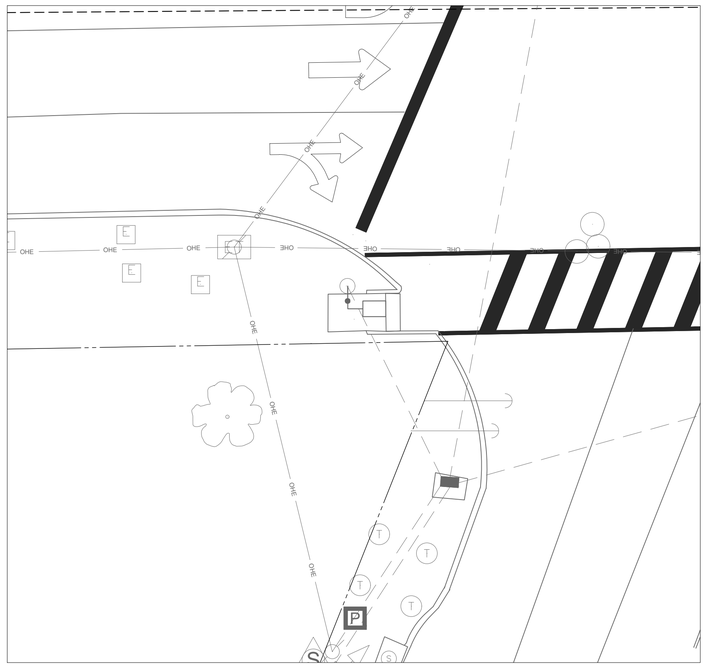
NE CORNER DETAILS



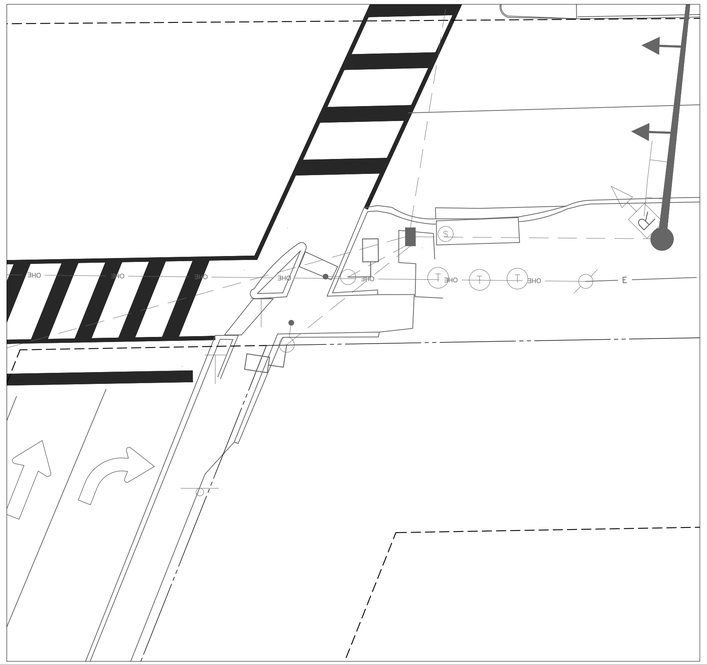
NORTH

GRAPHIC SCALE IN FEET
0 5 10 20

SW CORNER DETAILS



SE CORNER DETAILS



STATE OF TEXAS
JOHN W. RYAN
141023
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PROFESSIONAL ENGINEER
10/03/2025

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION

TRAFFIC SIGNAL
GREENVILLE AVENUE AT WALNUT STREET
PROPOSED LAYOUT

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	7.08
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Galindo, Alejandra October 03, 2025 09:39:28am K:\LAC_TPTO\project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\PROP CONDITIONS - GREENVILLE WALNUT.dwg
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CONDUIT AND CABLE CHART
WIRE SIZE AND TYPE

RUN NO.	CONDUIT STATUS	ITEM 618 CONDUIT (SCH 80)						CABLE STATUS	ITEM 620 ELECTRICAL		ITEM 684 TRAFFIC SIGNAL CABLES						TOTAL LENGTH OF RUN	RUN NO.
		CONDUIT (PREPARE)		2" PVC (BORED)		3" PVC (TRENCHED)			NO. 6 BARE WIRE		TY C 2 CNDR NO. 12		TY A 5 CNDR NO. 14		TY A 12 CNDR NO. 14			
		QTY	Len	QTY	Len	QTY	Len		QTY	Len	QTY	Len	QTY	Len	QTY	Len		
1	E																0	1
2	E																0	2
3	E																0	3
4	I					1	30	I	1	30	1	30			1	30	30	4
5	E	1	125					I			1	125			1	125	125	5
6	E	1	15					I	1	15	1	15			1	15	15	6
7	E	1	30					I	1	30	1	30			1	30	30	7
8	E																0	8
9	E																0	9
10	E																0	10
11	E																0	11
12	E																0	12
13	E																0	13
14	E																0	14
15	E																0	15
16	E																0	16
SUBTOTAL			170		0		30			75		200		0		200		
P-1	I							I				5		10			VARIES	P-2
E-5	E							I						10			VARIES	E-5
SUBTOTAL			0		0		0			0		5		20		0		
TOTAL			170		0		30			75		205		20		200		

CONDUIT STATUS: I=INSTALL; E=EXISTING; P=WIRE TO BE INSTALLED INSIDE STEEL POLE; A=ABANDON; REM=REMOVE AND SALVAGE

P-# = REFERS TO WIRING WITHIN THE SIGNAL POLE AND MAST ARM.

CABLE TERMINATION CHART

COND. NO.	CONDUCTOR COLOR	CABLE 1 FROM E-1 TO CNTRL 20 CNDR	CABLE 2 FROM E-2 TO CNTRL 12 CNDR	CABLE 3 FROM E-3 TO CNTRL 20 CNDR	CABLE 4 FROM E-5 TO CNTRL 12 CNDR	CABLE 5 FROM E-6 TO CNTRL 20 CNDR	CABLE 6 FROM E-7 TO CNTRL 12 CNDR	CABLE 7 FROM E-8 TO CNTRL 12 CNDR	CABLE 8 FROM E-9 TO CNTRL 20 CNDR	CABLE 9 FROM E-10 TO CNTRL 12 CNDR
1	BLACK	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
2	WHITE	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON	SIG COMMON
3	RED	SH 2, 3 Ø4 R	SH 22 Ø4 DW	SH 7, 8, 9 Ø2 R	SH 24 Ø2 DW	SH 13, 14 Ø8 R	SH 15 Ø2 DW	SH 16 Ø8 DW	SH 18, 19, 20 Ø6 R	SH 21 Ø8 DW
4	GREEN	SH 2, 3 Ø4 G	SH 22 Ø4 W	SH 7, 8, 9 Ø2 G	SH 24 Ø2 W	SH 13, 14 Ø8 G	SH 15 Ø2 W	SH 16 Ø8 W	SH 18, 19, 20 Ø6 G	SH 21 Ø8 W
5	ORANGE	SH 2, 3 Ø4 Y	SPARE	SH 7, 8, 9 Ø2 Y	SPARE	SH 13, 14 Ø8 Y	SPARE	SPARE	SH 18, 19, 20 Ø6 Y	SPARE
6	BLUE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
7	WHITE/BLACK	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
8	RED/BLACK	SPARE	SPARE	SPARE	SH 23 Ø4 DW	SPARE	SPARE	SPARE	SPARE	SPARE
9	GREEN/BLACK	SPARE	SPARE	SPARE	SH 23 Ø4 W	SPARE	SPARE	SPARE	SPARE	SPARE
10	ORANGE/BLACK	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
11	BLUE/BLACK	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
12	BLACK/WHITE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE
13	RED/WHITE	SH 1 Ø7 RA		SH 6 Ø5 RA		SH 12 Ø3 RA			SH 17 Ø1 RA	
14	GREEN/WHITE	SH 1 Ø7 GA		SH 6 Ø5 GA		SH 12 Ø3 GA			SH 17 Ø1 GA	
15	BLUE/WHITE	SH 1 Ø7 YA		SH 6 Ø5 YA		SH 12 Ø3 YA			SH 17 Ø1 YA	
16	BLACK/RED	SPARE		SPARE		SPARE			SPARE	
17	WHITE/RED	SPARE		SPARE		SPARE			SPARE	
18	ORANGE/RED	SPARE		SPARE		SPARE			SPARE	
19	BLUE/RED	SPARE		SPARE		SPARE			SPARE	
20	RED/GREEN	SPARE		SPARE		SPARE			SPARE	

ASSUMED EXISTING CABLE TERMINATION

SIGNAL HEAD AND POLE PLACEMENT (FT)

POLE NUMBER	STATUS	A (FT)	B (FT)	C (FT)	D (FT)	E (FT)	F (FT)	G (FT)	H (FT)	J (FT)	I (FT)	NO. OF HEADS (EA)*	VIDEO PRESENCE DET. (EA)	DUAL VIDEO DETECTION (EA)	LUM	DRILLED SHAFT LENGTH (FT) 24" DIA SUB TO ITEM 687	DRILLED SHAFT LENGTH (FT) 36" DIA TYPE A ITEM 416	FDN. TYPE WIND ZONE 80 MPH
E-1	E	7	19	12	8		40	20	25	-	-	3	-	-	Y			36-A
E-2	E	8	PEDESTRIAN POLE					12	-	-	-	-	-	-	-			24-A
E-3	E	4	9	14	17	-	40	20	-	-	-	3	-	-	N			36-A
E-4	REM	11	PEDESTRIAN POLE					12	-	-	-	-	-	-	-			24-A
P-1	I	6	PEDESTRIAN POLE					12	-	-	-	-	-	-	-	6		24-A
E-5	E	6	PEDESTRIAN POLE					12	-	-	-	-	-	-	-			24-A
E-6	E	6	14	12	14	-	40	20	-	-	-	3	-	-	N			36-A
E-7	E	8	PEDESTRIAN POLE					12	-	-	-	-	-	-	-			24-A
E-8	E	10	PEDESTRIAN POLE					12	-	-	-	-	-	-	-			24-A
E-9	E	10	17	12	11	9	48	20	-	-	-	4	-	-	N			36-A
E-10	E	7	PEDESTRIAN POLE					12	-	-	-	-	-	-	-			24-A
TOTAL (NEW)																6	0	

SIGNAL POLE STATUS: I=INSTALL; E=EXISTING; REM=REMOVE; F=INSTALL IN FUTURE PHASE

* - DOES NOT INCLUDE VERTICAL SIDEMOUNT SIGNAL HEADS OR PEDESTRIAN SIGNAL HEADS

SIGNAL HEADS (ITEM 682)

SIGNAL HEAD NUMBER	SIGNAL HEAD TYPE	STATUS	12" LED SIGNAL HEAD INDICATION								PED SIGN SEC (LED) (COUNTDOWN)
			BACK PLATE		LED SIGNAL LAMPS						
			3 SEC	5 SEC	<- G	G	<- Y	Y	<- R	R	
			EA	EA	EA	EA	EA	EA	EA	EA	EA
1	H5FYA	E		1	1		2		2		
2	H3	E	1			1		1		1	
3	H3	E	1			1		1		1	
6	H5FYA	E		1	1		2		2		
7	H3	E	1			1		1		1	
8	H3	E	1			1		1		1	
9	V3	E	1			1		1		1	
12	H5FYA	E		1	1		2		2		
13	H3	E	1			1		1		1	
14	H3	E	1			1		1		1	
15	PED	E									1
16	PED	E									1
17	H5FYA	E		1	1		2		2		
18	H3	E	1			1		1		1	
19	H3	E	1			1		1		1	
20	H3	E	1			1		1		1	
21	PED	E									1
22	PED	E									1
23	PED	I									1
24	PED	E									1
TOTAL (NEW)			0	0	0	0	0	0	0	0	1

STATUS: I = INSTALL; E = EXISTING; REM = EXISTING TO BE RMEOVED; REL = RELOCATE

APS MESSAGE CHART

POLE LOCATION	PEDESTRIAN MOVEMENT	FUNCTIONS	SPEECH MESSAGE/SOUND DETAILS
P-1	PHASE 4	BUTTON PUSH ON DW	WAIT TO CROSS GREENVILLE AVENUE AT WALNUT STREET
		EXTENDED BUTTON PUSH	WAIT TO CROSS GREENVILLE AVENUE AT WALNUT STREET
		LOCATOR TONE	SLOW TICK
		WALK INDICATION	GREENVILLE AVENUE, WALK SIGN IS ON TO CROSS GREENVILLE AVENUE
E-5	PHASE 2	BUTTON PUSH ON DW	WAIT TO CROSS WALNUT STREET AT GREENVILLE AVENUE
		EXTENDED BUTTON PUSH	WAIT TO CROSS WALNUT STREET AT GREENVILLE AVENUE
		LOCATOR TONE	SLOW TICK
		WALK INDICATION	WALNUT STREET, WALK SIGN IS ON TO CROSS WALNUT STREET

SUMMARY OF PROPOSED SIGNS

SIGN ID	STATUS	SIGN NUMBER	SIGN NAME/TEXT	SIZE	LOCATION
1	E	D3-1G	12900 GREENVILLE 13000	VARx18"	E-1 MAST ARM
3	E	D3-1G	⬅ RESTLAND WALNUT ➡	VARx18"	E-3 MAST ARM
6	E	D3-1G	13000 GREENVILLE 12900	VARx18"	E-6 MAST ARM
7	E	R10-3eL	TO CROSS PUSH BUTTON	9"x15"	E-7 POLE
8	E	R10-3eR	TO CROSS PUSH BUTTON	9"x15"	E-8 POLE
9	E	D3-1G	⬅ WALNUT RESTLAND ➡	VARx18"	E-9 MAST ARM
10	E	R10-3eR	TO CROSS PUSH BUTTON	9"x15"	E-10 POLE
11	E	R10-3eL	TO CROSS PUSH BUTTON	9"x15"	E-2 POLE
12	I	R10-3eL	TO CROSS PUSH BUTTON	9"x15"	P-1 POLE
13	E	R10-3eR	TO CROSS PUSH BUTTON	9"x15"	E-5 POLE

STATUS: I = INSTALL; E = EXISTING; REL = EXISTING TO BE RELOCATED

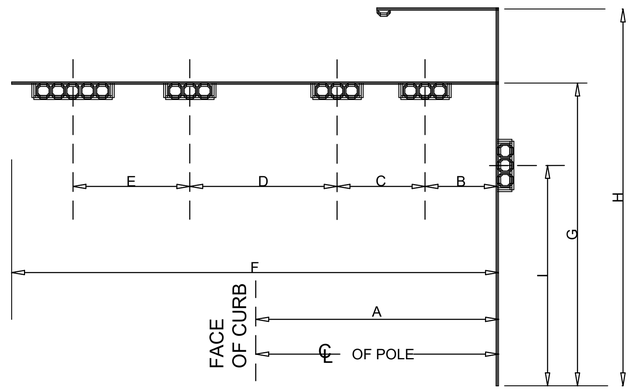
*- ALL SIGNS ARE TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR (SUB TO ITEM 636 7001)

GROUND BOX SUMMARY (ITEM 624)

ITEM NO.	DESCRIPTION	STATUS	UNIT	QUANTITY
0624 7007	TYPE D (162922)	EXISTING	EA	7

NOTE:

1. REFER TO QUANTITY SUMMARY SHEET 0.11 FOR TRAFFIC SIGNAL ITEMS.



10/03/2025

JOHN W. RYAN
141023
LICENSED PROFESSIONAL ENGINEER

Kimley»Horn F-928

Texas Department of Transportation

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION

TRAFFIC SIGNAL
GREENVILLE AVENUE AT WALNUT STREET
TRAFFIC SIGNAL CHARTS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	7.09
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Galindo, Alejandro October 07, 2025 05:08:49pm K:\LAC_TPTO\project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\WALNUT SIGNAL CHARTS.dwg
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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).

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

3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.

4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.

5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.

6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.

7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.

8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.

10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.

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

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

13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:

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

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

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

2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
4-03 7-13	DIST	COUNTY		SHEET NO.
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5-10 5-21				

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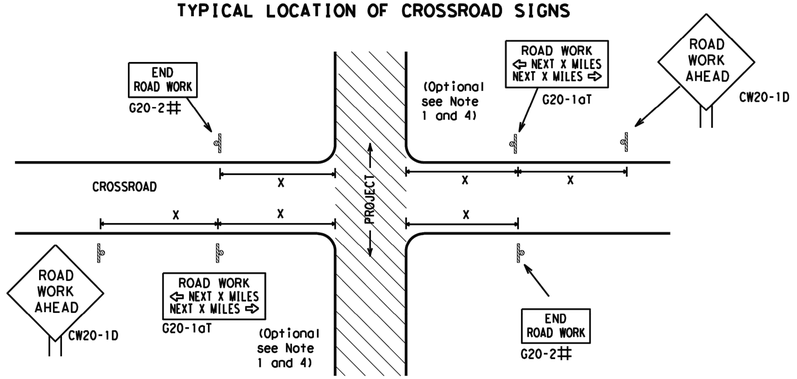
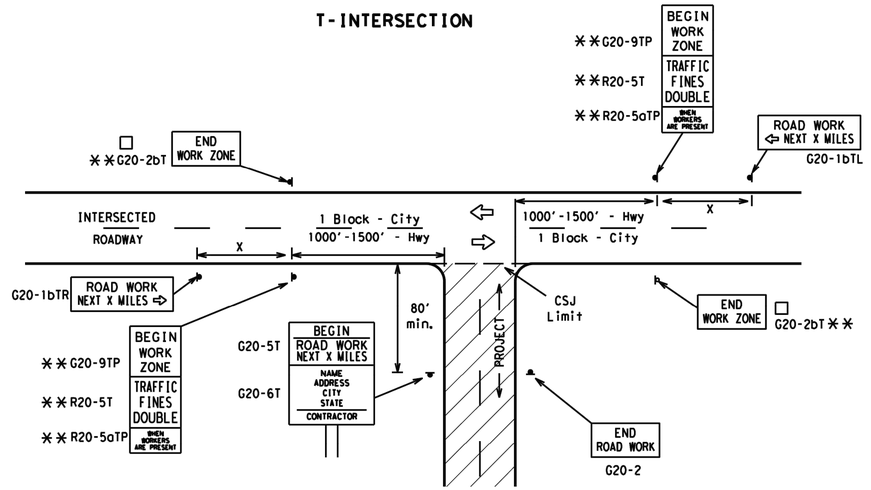
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING[1,5,6]

SIZE

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

SPACING

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

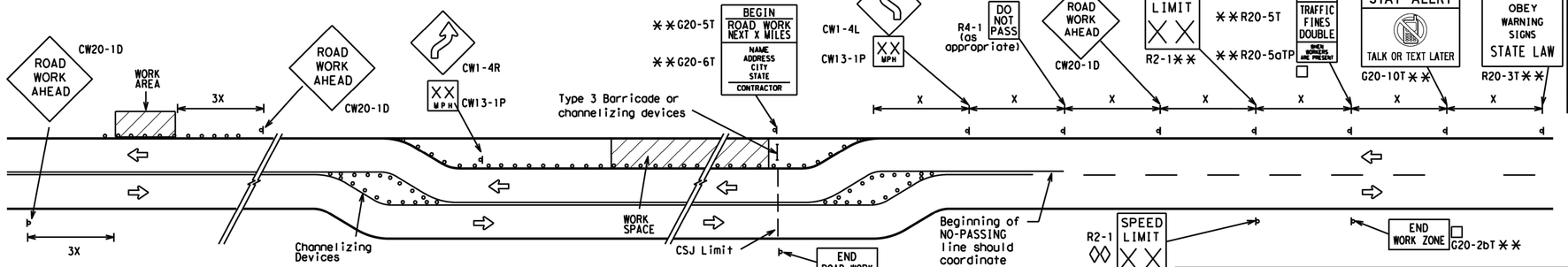
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

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

GENERAL NOTES

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

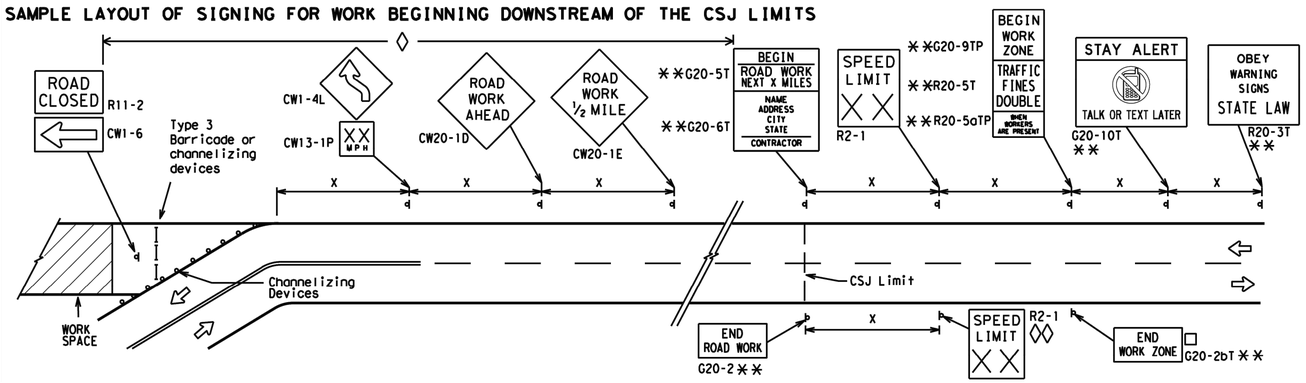
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



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

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

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



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES"(G20-5T)sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

□ The "BEGIN WORK ZONE"(G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

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

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

◊◊ Contractor will install a regulatory speed limit sign at the end of the work zone.

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0918	47	473	VA
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7-13 5-21	DAL	DALLAS		7.11

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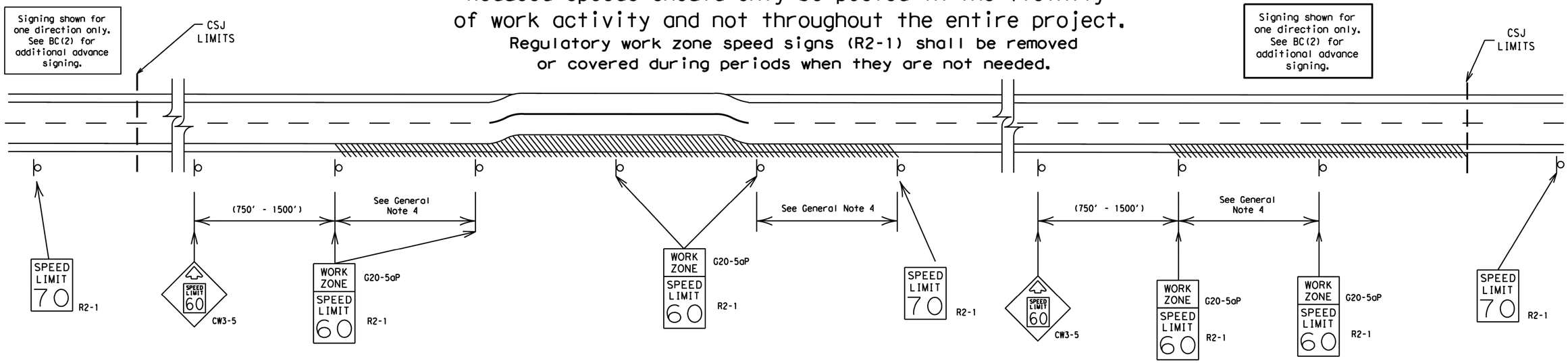
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, erection and maintenance of the"ADVANCE SPEED LIMIT"(CW3-5)sign, "WORK ZONE"(G20-5aP) plaque and the "SPEED LIMIT"(R2-1)signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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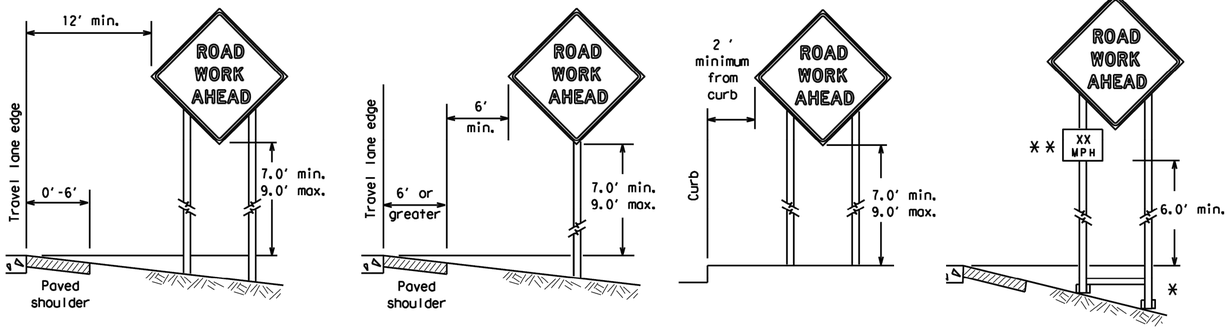
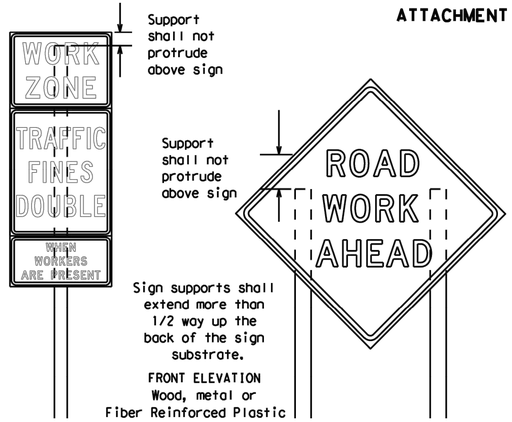
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

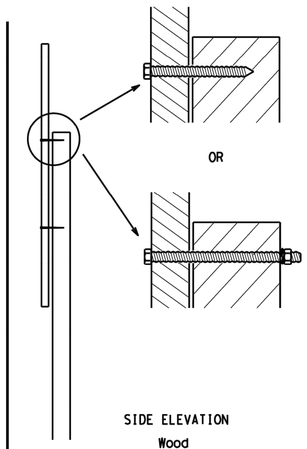


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

* * 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





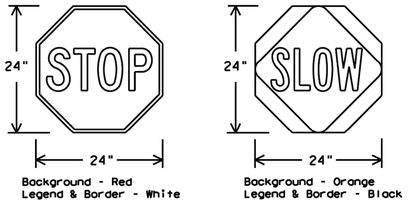
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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 spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

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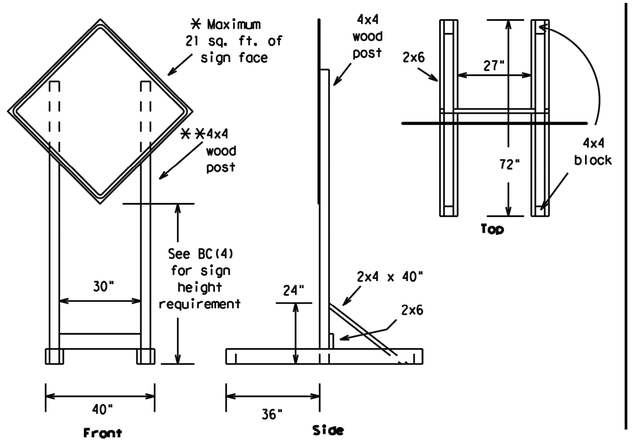
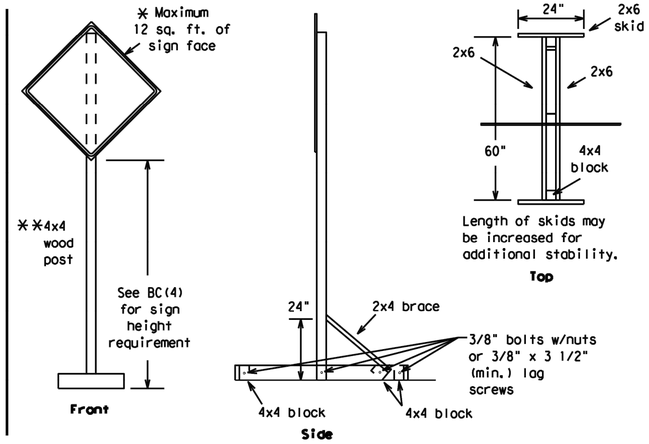
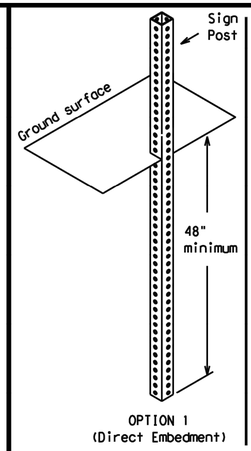
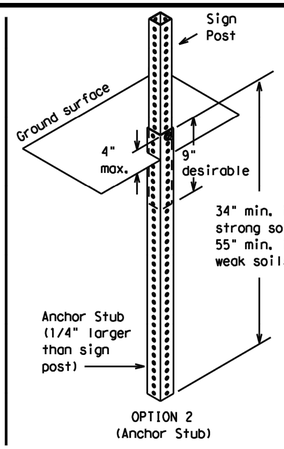


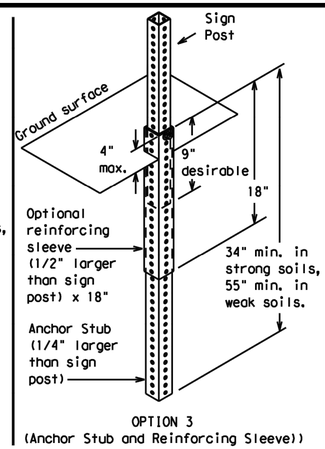


SKID MOUNTED WOOD SIGN SUPPORTS

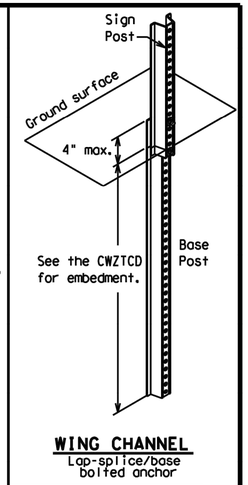
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS







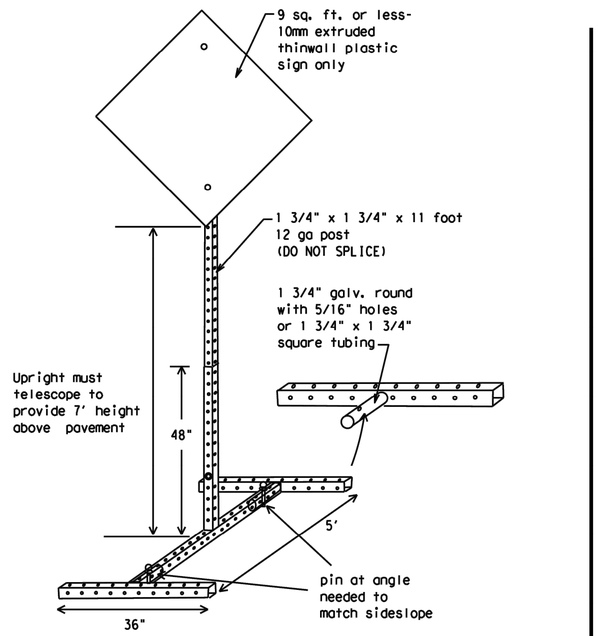
PERFORATED SQUARE METAL TUBING

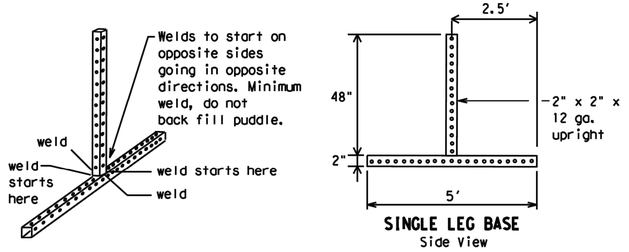


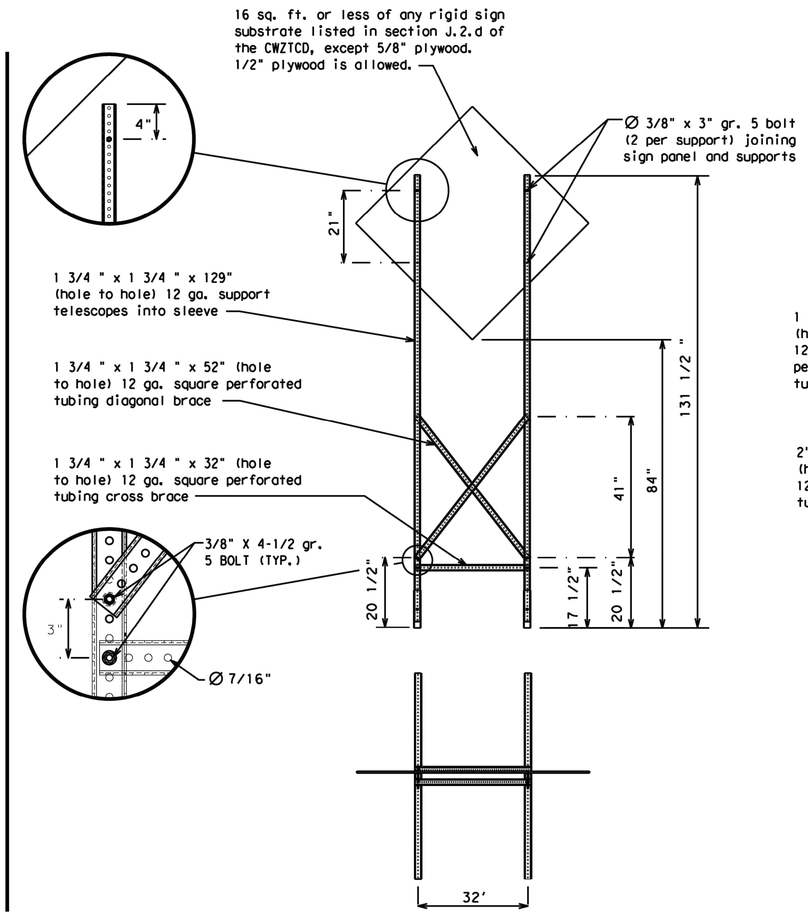
WING CHANNEL
Lap-splice/base bolted anchor

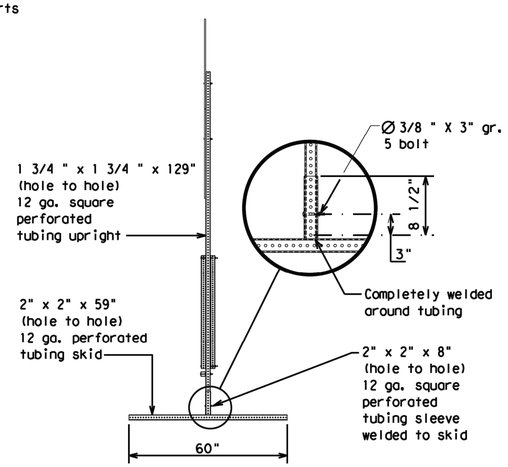
GROUND MOUNTED SIGN SUPPORTS

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









SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

* See BC(4) for definition of "Work Duration."

** Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

☐ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

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

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

- MERGE RIGHT
- FORM X LINES RIGHT
- DETOUR NEXT X EXITS
- USE XXXXX RD EXIT
- USE EXIT XXX
- USE EXIT I-XX NORTH
- STAY ON US XXX SOUTH
- USE I-XX E TO I-XX N
- TRUCKS USE US XXX N
- WATCH FOR TRUCKS
- WATCH FOR TRUCKS
- EXPECT DELAYS
- EXPECT DELAYS
- PREPARE TO STOP
- REDUCE SPEED XXX FT
- END SHOULDER USE
- USE OTHER ROUTES
- WATCH FOR WORKERS
- STAY IN LANE *

Location List

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

Warning List

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

** Advance Notice List

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

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

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
9-07 8-14	DIST	COUNTY		SHEET NO.
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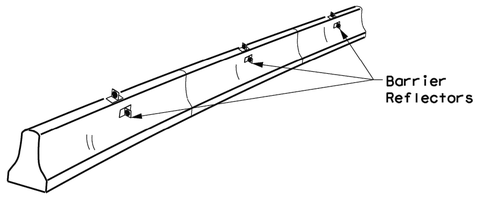
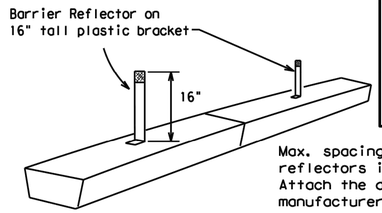
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



CONCRETE TRAFFIC BARRIER (CTB)

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

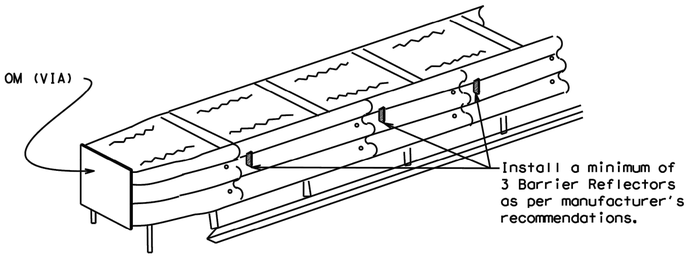


Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

LOW PROFILE CONCRETE BARRIER (LPCB)

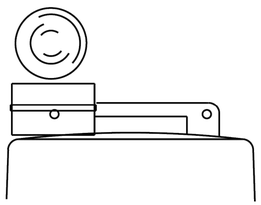


DELINEATION OF END TREATMENTS

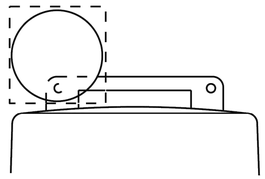
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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



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

WARNING LIGHTS

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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

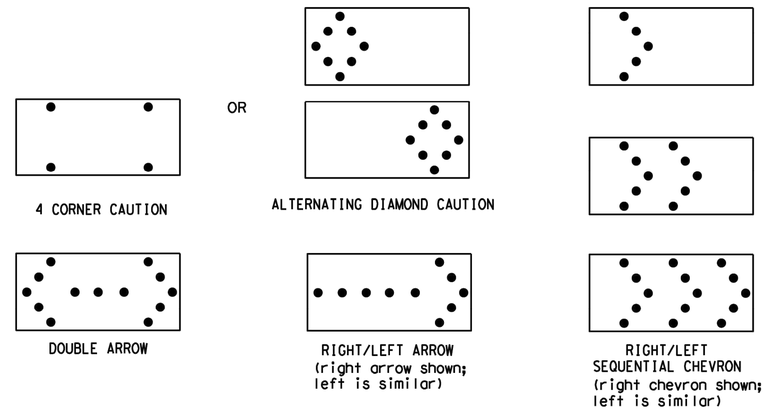
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing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

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

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

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

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



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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

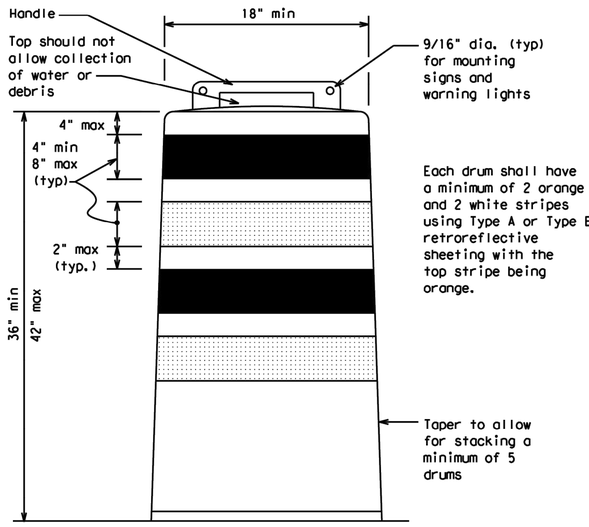
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

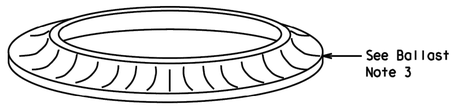
RETROREFLECTIVE SHEETING

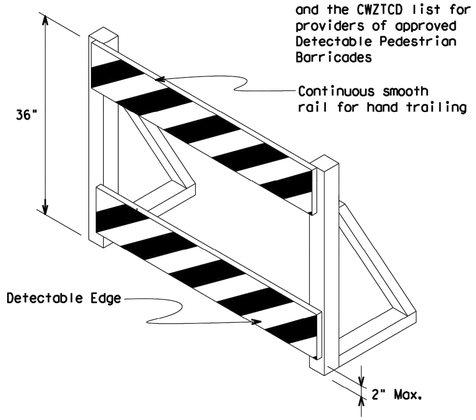
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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

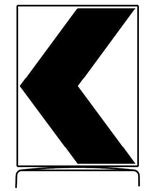




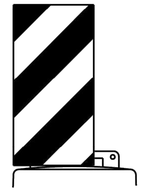


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0918	47	473	VA
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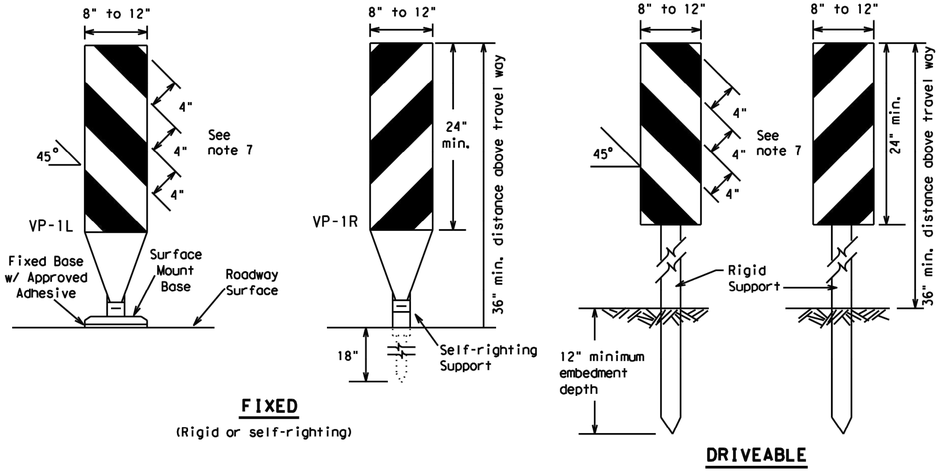
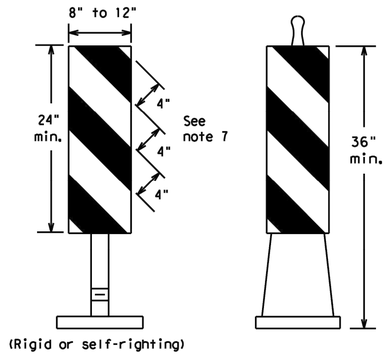


FIXED
(Rigid or self-righting)

DRIVEABLE

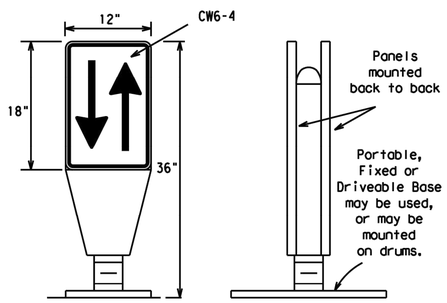


(Rigid or self-righting)

PORTABLE

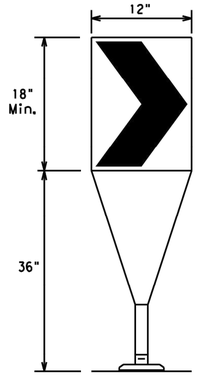
VERTICAL PANELS (VPs)

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



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



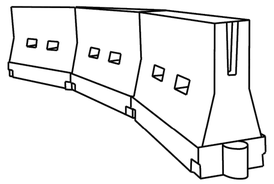
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
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7-13 5-21	DAL	DALLAS		7.18

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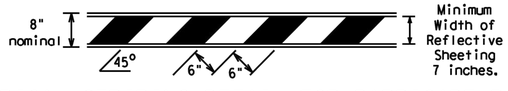
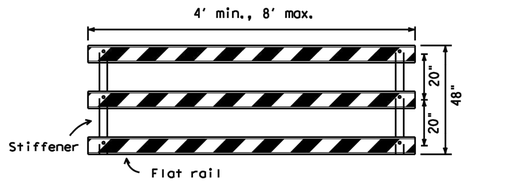
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



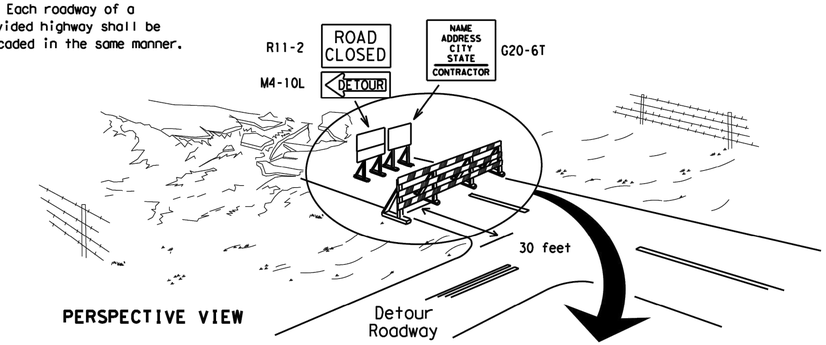
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

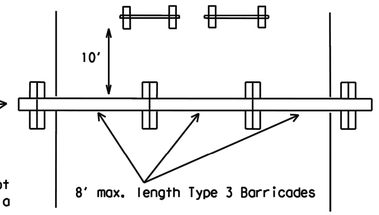
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.

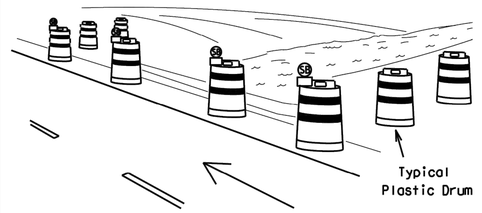
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

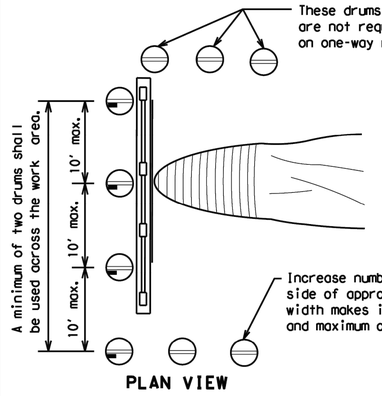
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

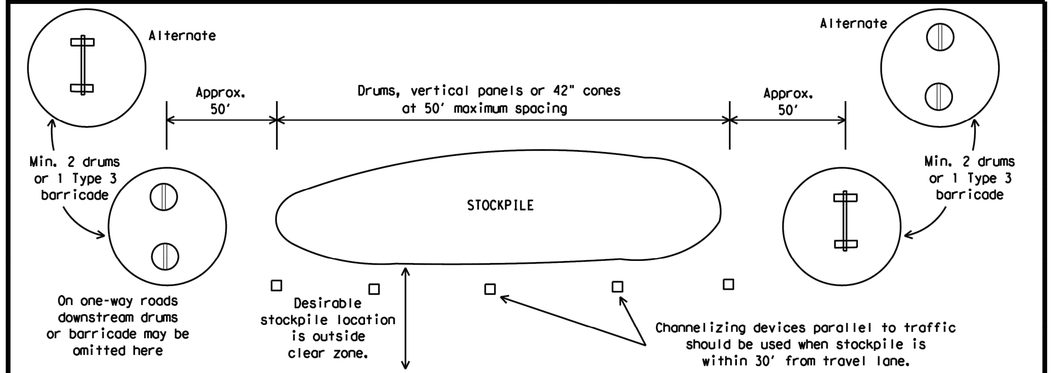
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



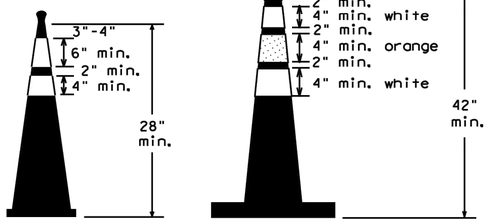
LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

PLAN VIEW

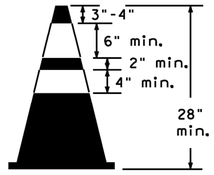
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



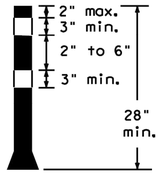
TRAFFIC CONTROL FOR MATERIAL STOCKPILES



Two-Piece cones



One-Piece cones



Tubular Marker

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

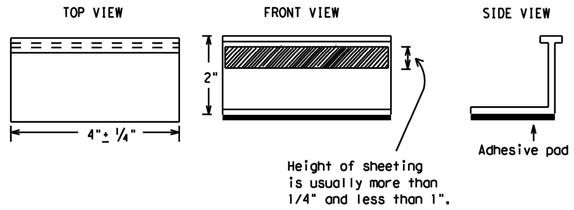
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

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REVISIONS	0918	47	473	VA
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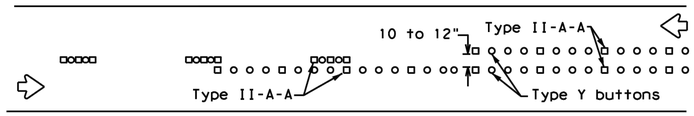
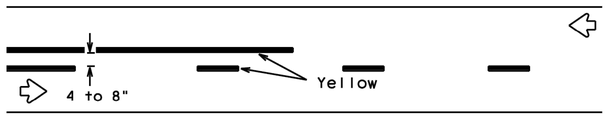
PAVEMENT MARKING PATTERNS

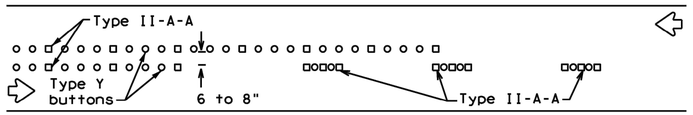
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



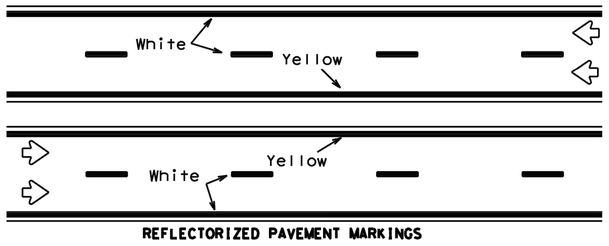
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



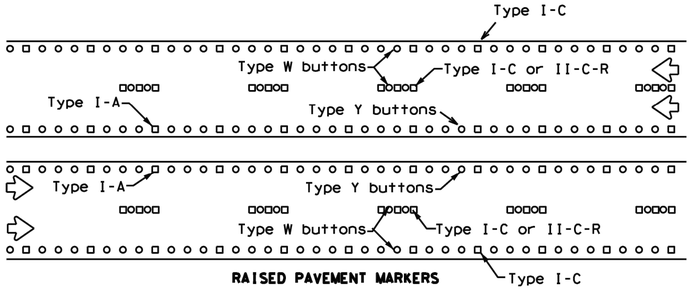
RAISED PAVEMENT MARKERS - PATTERN B

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

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



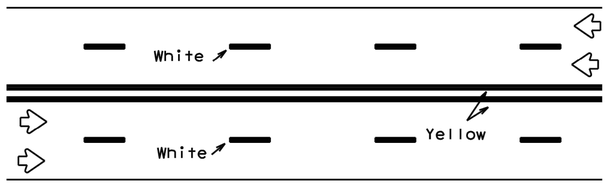
REFLECTORIZED PAVEMENT MARKINGS



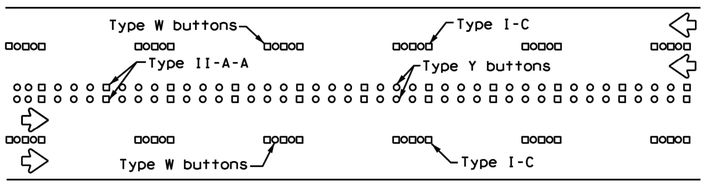
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



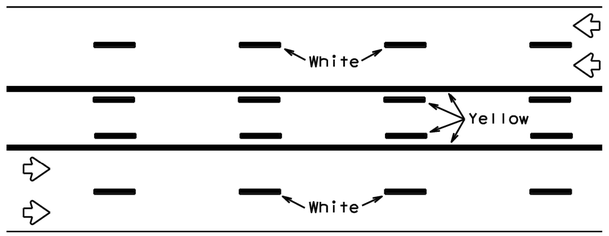
REFLECTORIZED PAVEMENT MARKINGS



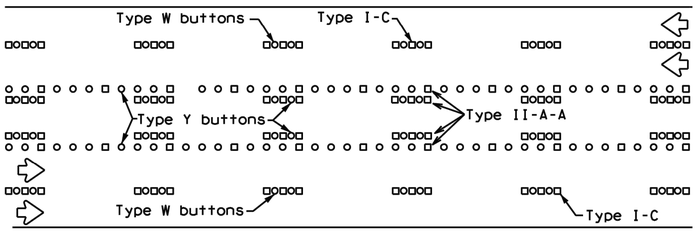
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

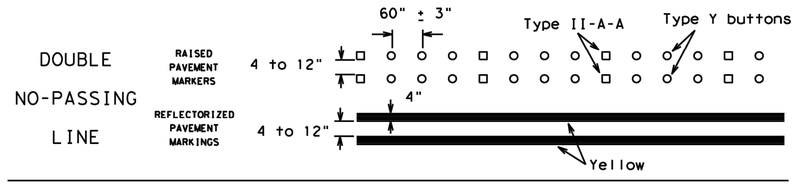
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

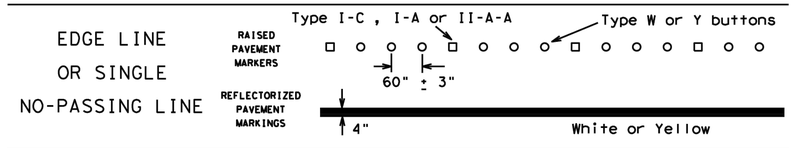
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

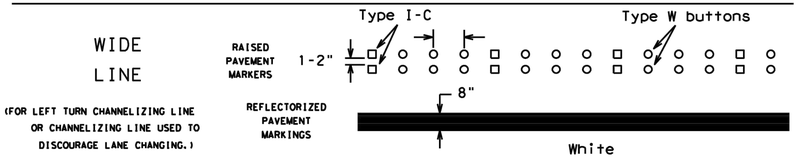


EDGE LINE OR SINGLE NO-PASSING LINE



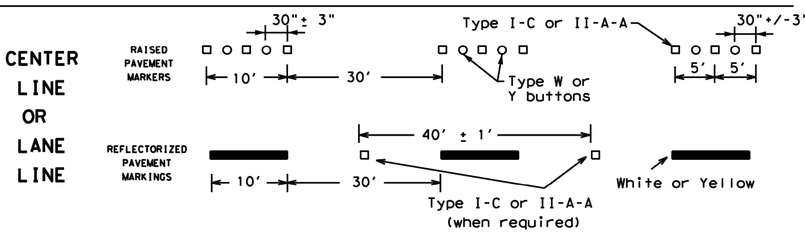
WIDE LINE

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

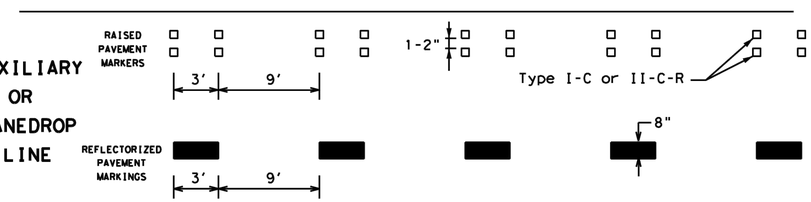


BROKEN LINES

CENTER LINE OR LANE LINE

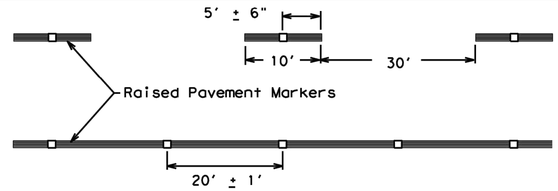


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 1-97 9-07 5-21 2-98 7-13 11-02 8-14	0918	47	473	VA
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		7.21

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GENERAL NOTES FOR ALL ELECTRICAL WORK

1. The location of all conduits, junction boxes, ground boxes, and electrical services is diagrammatic and may be shifted to accommodate field conditions.

2. Provide new, unused, and undamaged materials. Ensure that all materials and installations comply with 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 CSA Group, Intertek Testing Services, or FM Approvals can be considered equivalent to UL. Where reference is made to NEMA listed devices, International Electrotechnical Commission (IEC) listed devices will not be considered an acceptable equal to NEMA. 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.

3. 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.

4. 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.

5. 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 an 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.

6. When required by the Engineer, notify the Department in writing of materials from the Material Producer 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

1. Provide conduit, junction boxes, fittings, and hardware 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 Metal Conduit (RMC) systems. Provide Liquidtight Flexible Nonmetallic Conduit (LFNC) when flexible conduit is called for on Polyvinyl Chloride (PVC) systems.

2. Provide galvanized steel RMC for all exposed conduits, unless otherwise shown on the plans. Properly bond all metal conduits.

3. 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 are present, count the conductors as if all are of the larger size. For situations not applicable to this table, size junction boxes per the NEC.

JUNCTION BOX SIZES

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"

4. Junction boxes with internal volumes up to 100 cu. in. and that are supported by entering raceways must have threaded entries or hubs identified for the intended purpose and be supported by connection of two or more rigid metal conduits. Secure conduit within 3 ft. of the box or within 18 in. of the box if all conduit entries are on the same side. Mechanically secure all junction boxes with an internal volume greater than 100 cu. in.

5. 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.

6. 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 sized as directed above, listed and approved for outdoor use, unless otherwise noted on the plans. Provide junction boxes for IMC conduit systems that meet the same requirements for junction boxes used with RMC systems.

7. Provide PVC junction boxes intended for outdoor use on PVC conduit systems, unless otherwise noted on the plans.

8. Provide PVC elbows, unless otherwise shown in the plans. Use only a flat, high tensile strength polyester fiber pull tape for pulling conductors through the PVC conduit system.

A. MATERIALS (CONTINUED)

9. 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. below grade or bottom of the ground box, ground the RMC elbow with 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. Elbows are subsidiary to various bid items.

10. When required, provide High-Density Polyethylene (HDPE) conduit with factory installed internal conductors according to DMS-11060, "Duct Cable." At the Contractor's request and with approval by the Engineer, substitute HDPE conduit with no conductors according to DMS-11030 for PVC conduit bid under Item 618. Provide conduit of the size and schedule as shown on the plans. Do not extend HDPE conduit into ground boxes or foundations. Provide PVC elbows at all ground boxes and foundations.

11. Use two-hole straps or strut straps when supporting 2 in. and larger conduits. On electrical service poles, properly sized stainless steel or hot dipped galvanized strut straps or stand-off straps are allowed on the service riser conduit.

B. CONSTRUCTION METHODS

1. 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.

2. Space all conduit supports at maximum intervals of 5 ft. Install conduit spacers when attaching metal conduit to surfaces of concrete structures. See "Conduit Mounting Options" on ED(2). Install conduit supports within 3 ft. of all enclosures and conduit terminations.

3. Do not attach conduit supports directly to pre-stressed concrete beams, except as shown specifically in the plans or as approved by the Engineer.

4. 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.

5. When placing conduit in the subgrade of new roadways, backfill all trenches with excavated material unless otherwise noted on the plans. When placing conduit in the subbase 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."

6. 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 affix the tape to the conduit opening. Clean out the conduit and prove it clear in accordance with Item 618 prior to installing any conductors.

7. Ensure conduit entry into the top of an 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.

8. Fit the ends of all PVC conduit terminations with bushings or bell end fittings. Provide and install a grounding bushing on all metal conduit terminations.

9. 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.

10. 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).

11. After completion of conductor installation, immediately seal ends of all conduits emerging from ground with duct seal, expandable foam, or other methods approved by the Engineer. Do not use silicone caulking. Do not use duct tape as a permanent seal.

12. File smooth the cut ends of all mounting strut and conduit. To avoid overspray, paint the field cut ends of all mounting strut and RMC (threaded or non-threaded) with zinc rich paint (94% min. zinc content as specified on DMS-8103 and listed on the MPL for Galvanizing Repair Paints) before installing. Use zinc rich paint to touch up galvanized material as allowed under Item 445 "Galvanizing." Do not paint non-galvanized material with zinc rich paint as an alternative for materials required to be galvanized.

13. For all conduits, ensure the burial depth is 18" min. For conduits placed under a roadway, ensure the burial depth is 24" min.

Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS CONDUITS & NOTES

ED(1)-25

FILE:	ed1-25.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	April 2025	CONT	SECT	JOB	HIGHWAY
REVISIONS		0918	47	473	VA
1-92 3-03 4-25 4-98 5-03 12-00 10-14		DIST	COUNTY		SHEET NO.
		DAL	DALLAS		7.22

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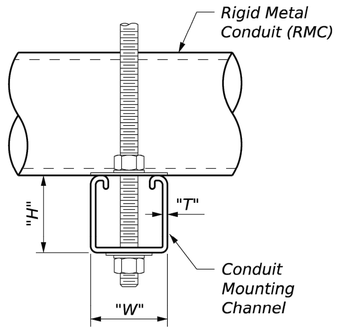
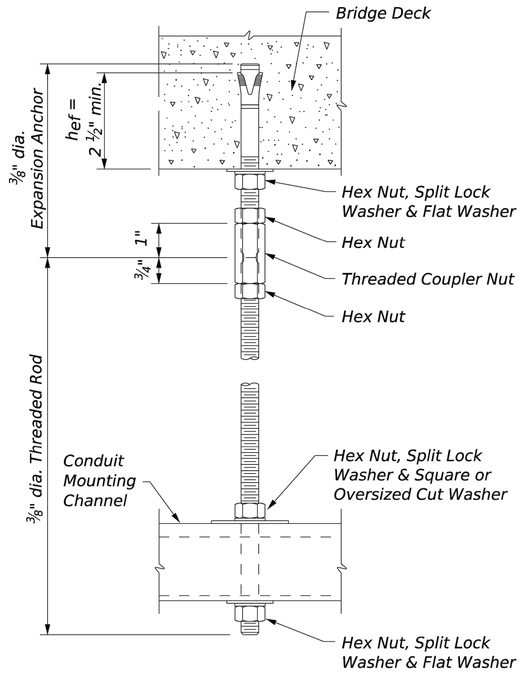
ELECTRIC CONDUIT TO BRIDGE DECK ATTACHMENT

HANGER ASSEMBLY DETAIL

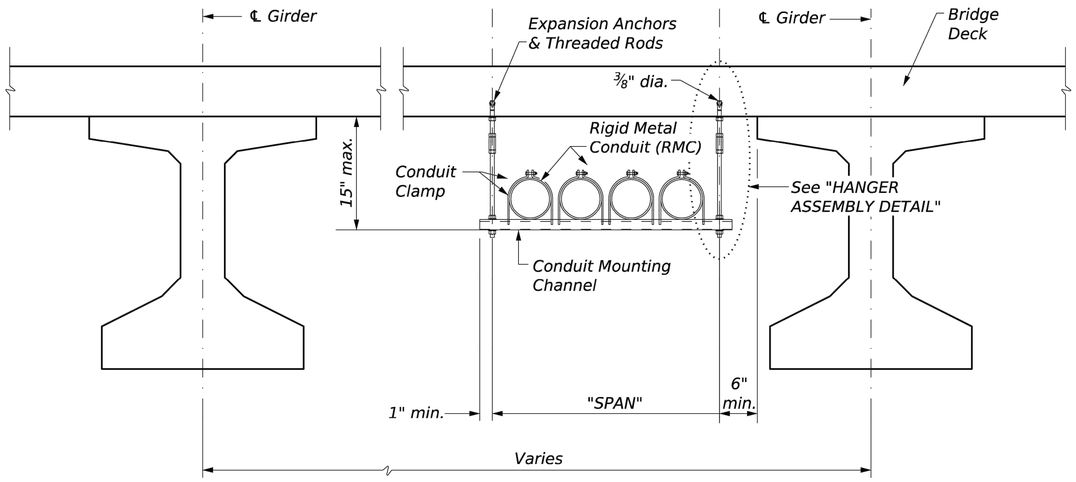
CONDUIT MOUNTING CHANNEL		
"SPAN"	"W" x "H"	"T"
less than 2'	1 5/8" x 1 3/8"	12 ga.
2'-0" to 2'-6"	1 5/8" x 1 5/8"	12 ga.
>2'-6" to 3'-0"	1 5/8" x 2 7/16"	12 ga.

NOTE: Channels with round or short slotted hole patterns are allowed, provided the load carrying capacity is not reduced by more than 15%.



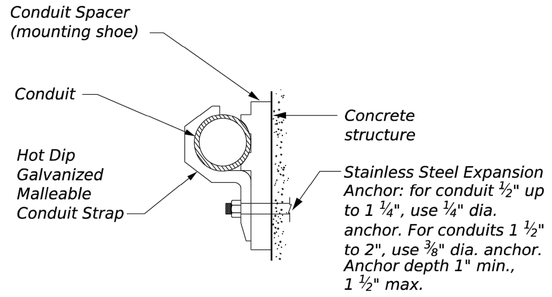


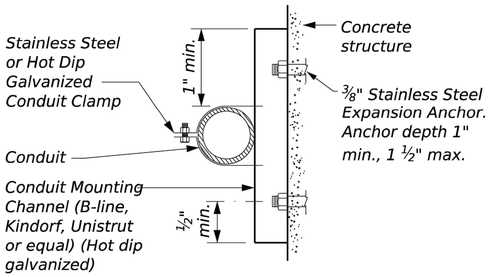
CONDUIT HANGING DETAIL



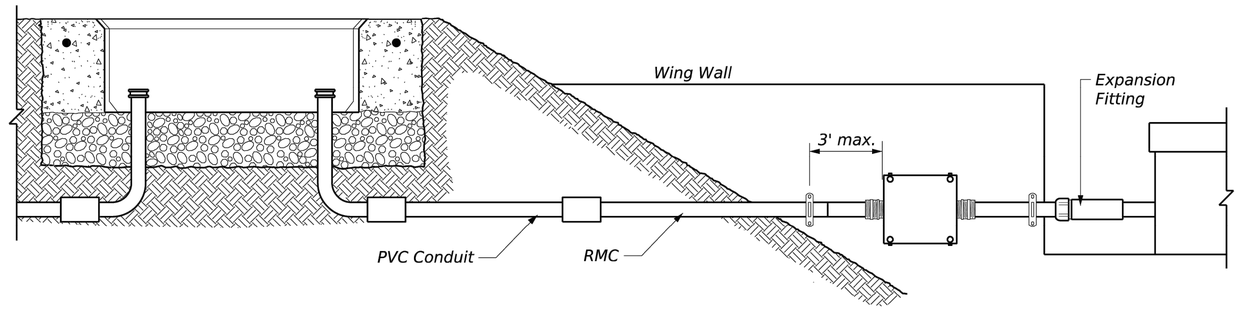
CONDUIT MOUNTING OPTIONS

ATTACHMENT TO CONCRETE SURFACES -
SEE ED(1), CONDUIT, NOTE B.2





TYPICAL CONDUIT ENTRY TO BRIDGE STRUCTURE DETAIL



EXPANSION ANCHOR NOTES FOR BRIDGE DECK ATTACHMENT:

1. Use torque controlled mechanical expansion anchors that are approved for use in cracked concrete by the International Code Council, Evaluation Service (ICC-ES). The chosen anchor product shall have a designated ICC-ES Evaluation Report number, and its approval status shall be maintained on the ICC-ES website under Division 031600 for Concrete Anchors.

2. Unless otherwise approved by the Engineer: do not use adhesive anchors; do not use expansion anchors that are not included in the ICC-ES approval list; and do not use expansion anchors that are only approved for use in uncracked concrete.

3. Use anchors manufactured with stainless steel expansion wedges. Anchors manufactured with carbon steel expansion wedges are not allowed. Anchor bodies can be either zinc-plated carbon steel or stainless steel. Provide only stainless steel anchor bodies and expansion wedges for applications in marine environments.

4. Install anchors as shown on the plans and in accordance with the anchor manufacturer's published installation instructions. Arrange a field demonstration test to evaluate the procedures and tools. The test shall be witnessed and approved by the Engineer prior to furnishing anchors on the structure.

5. Prior to hole drilling, use rebar locator to ensure clearing of existing deck strands or reinforcement. Install anchors to ensure a minimum effective embedment depth, (h_{ef}), as shown. Increase (h_{ef}) as needed to ensure sufficient thread length for proper torquing and tightening of anchors.

6. Use anchors of at least 1600 lbs. tensile capacity (minimum of steel, concrete breakout, and concrete pullout strengths as determined by ACI 318 Appendix D) at the required minimum embedment depth (h_{ef}). No lateral loads shall be introduced after conduit installation.

Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS CONDUIT SUPPORTS

ED(2)-25

FILE: ed2-25.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT April 2025	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
10-14 10-22 4-25	DIST	COUNTY		SHEET NO.
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71B

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ELECTRICAL CONDUCTORS

A. MATERIAL INFORMATION

1. Provide Type XHHW insulated copper conductors in accordance with Departmental Material Specification DMS-11040, "Conductors" and Item 620, "Electrical Conductors." Provide conductors as listed on the Material Producer List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies" Item 620.

2. 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 at each accessible location.

3. Insulated grounding conductors may be substituted for bare conductors, unless otherwise shown in the plans. Insulated grounding conductors must be color coded green in accordance with Note 2.

4. Provide a 6 AWG bare solid copper 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.

5. Where two or more circuits are present in one conduit or enclosure, permanently label the conductors of each branch circuit by attaching a non-metallic, weather resistant tag around both circuit conductors at each accessible location. Provide one-piece tags with two $\frac{3}{16}$" 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.

6. Use listed compression connectors, mechanical lugs, 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.

2. Leave 2 ft. to 3 ft. of length for each conductor up to the splice in ground boxes. Leave 3 ft. to 4 ft. of length for each conductor in ground boxes when pulled through with no splice. Leave 1 ft. to 1.5 ft. of length for each conductor at enclosures and pole bases. Leave 1.5 ft. to 3 ft. of length as required by electric utility for conductors exiting weatherheads.

3. Make splices only in junction boxes, ground boxes, pole bases, or electrical enclosures and use only listed compression connectors, mechanical lugs, 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 each conductor 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 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.

B. CONSTRUCTION METHODS (CONTINUED)

10. Do not terminate more than one conductor under a single lug unless it is rated for multiple conductors. Do not exceed the lug's listing for maximum number and size of conductors allowed.

11. 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 a 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 in the conduit. Bond all EGCs together at every accessible location. For ITS installations, bond and ground metal ground box covers and other metal equipment as shown on ITS standards.

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 powering 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. When 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 locations. Concrete encased grounding electrodes may be called for in some locations including electrical services — see plan sheets.

B. CONSTRUCTION METHODS

1. Furnish and install ground rods 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 or concrete pole.

3. Install ground rods so the imprinted part number is at the upper end of the rod.

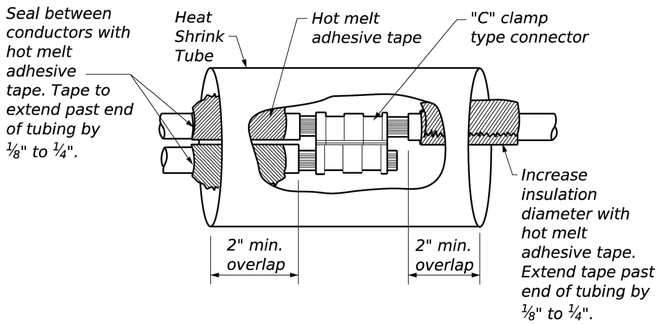
4. Remove all non-conductive material such as concrete splatter from the rod at the clamp location.

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 4 in.

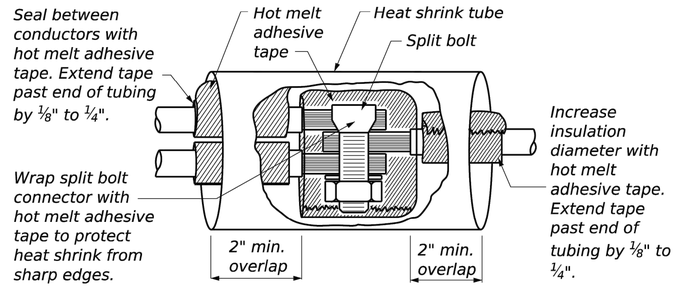
6. Unless otherwise called for in the plans, protect grounding electrode conductors with non-metallic conduit. When protecting grounding electrode conductors with metal conduit, provide and install a grounding bushing and properly sized bonding jumper on each end of the metal conduit.

7. Written authorization is required before installing a ground rod in a horizontal trench for rocky soil or a solid rock bottom.

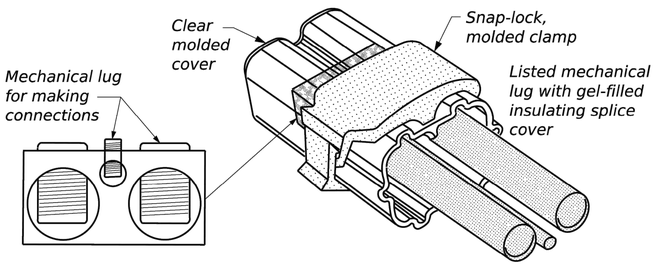
COMPRESSION SPLICE
OPTION 1



SPLIT BOLT SPLICE
OPTION 2



GEL-FILLED INSULATED SPLICE
OPTION 3



Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS CONDUCTORS

ED(3)-25

FILE: ed3-25.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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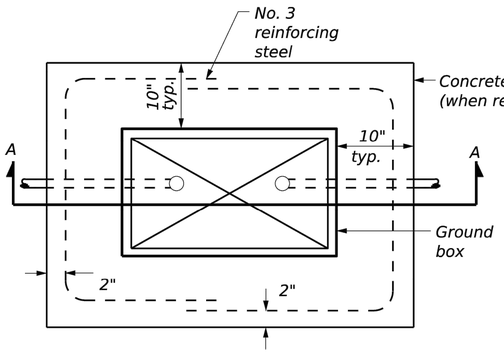
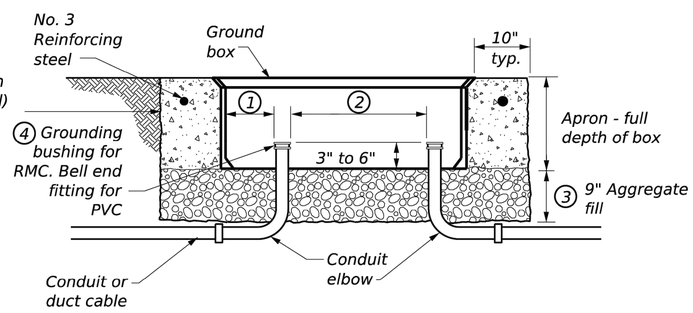
REVISIONS	0918	47	473	VA
1-92 12-00 10-14 10-93 3-03 4-25 4-98 5-03	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		7.24

APRON FOR GROUND BOX

PLAN VIEW



SECTION A - A



SECTION A - A NOTES:

1. *Uniformly space ends of conduits within the ground box. Position ends of conduits so that ground box walls do not interfere with the installation of grounding bushings or bell end fittings.*
2. *Maintain sufficient space between conduits to allow for proper installation of bushing.*
3. *Place aggregate under the box, not in the box. Aggregate should not encroach on the interior volume of the box.*
4. *Install a grounding bushing on the upper end of all RMC terminating in a ground box. Ground RMC elbows when any part of the elbow is less than 18 in. below the bottom of the ground box. Install a PVC bushing or bell end fitting on the upper end of all PVC conduits terminating in a ground box.*

GROUND BOXES	
TYPE	OUTSIDE DIMENSIONS (Width x Length X Depth)
A	12" X 23" X 11"
B	12" X 23" X 22"
C	16" X 29" X 11"
D	16" X 29" X 22"
E	12" X 23" X 17"

GROUND BOX COVERS								
TYPE	DIMENSIONS							
	H	I	J	K	L	M	N	P
A, B & E	23 ¼"	23"	13 ¾"	13 ½"	9 ⅞"	5 ⅛"	1 ⅜"	2"
C & D	30 ½"	30 ¼"	17 ½"	17 ¼"	13 ¼"	6 ¾"	1 ⅜"	2"

NOTES:

A. MATERIALS

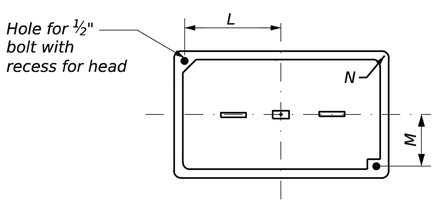
1. *Provide polymer concrete ground boxes measuring 16 in. x 30 in. x 24 in. (W x L x D) or smaller in accordance with Departmental Material Specification DMS-11070, "Ground Boxes" and Item 624, "Ground Boxes."*
2. *Provide Type A, B, C, D, and E ground boxes as shown in the plans and as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 624.*
3. *Ensure ground box cover is correctly labeled in accordance with DMS-11070.*
4. *Provide larger ground boxes in accordance with Item 624 and as shown in the plans.*

B. CONSTRUCTION METHODS

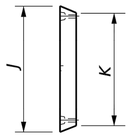
1. *Before setting ground box and after placing and capping conduits, lay an aggregate bed a minimum of 9 in. deep that extends 10 in. beyond the sides of the ground box. Provide coarse aggregate sized 3/4 in. to 2 in., with no more than 20% material passing through a no. 8 sieve, and as defined by the current ASTM C33/33M standard. Clean aggregate and dirt from conduits according to Item 618.*
2. *Cast ground box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Ground box aprons, including concrete and reinforcing steel, are subsidiary to ground boxes when called for by descriptive code.*
3. *Keep bolt holes in the box clear of dirt. Bolt covers down when not working in ground boxes.*
4. *Install all conduits and elbows in a professional and skillful manner. Uniformly space conduits so grounding bushings and bell end fittings can easily be installed.*
5. *Temporarily seal all conduits in the ground box until conductors are installed.*
6. *Permanently seal conduits immediately after the completion of conductor installation. Permanently seal the ends of all conduits with duct seal, expandable foam, or other method as approved. Do not use duct tape as a permanent conduit seal. Do not use silicone caulk as a sealant.*
7. *Bond all equipment grounding conductors in a ground box together with listed connectors.*
8. *When a Type B or D ground box is stacked to meet volume requirements, an appropriately sized hole may be cut for conduit entry in the side wall at least 18 in. below grade.*
9. *If an existing ground box in the contract has a metal cover, bond the cover to the equipment grounding conductor with a 3 ft. long stranded bonding jumper that is the same size as the grounding conductor. The bonding jumper is subsidiary to various bid items. Verify existing ground boxes with metal covers are shown on the plans, with notes fully describing the work required.*
10. *If other ground boxes with metal covers are within the project limits but are not part of the contract, the Engineer may direct the Contractor to bond the metal covers, identifying the specific boxes in writing. This work will be paid for separately.*
11. *Bond metal ground box covers to the grounding conductor with a tank ground type lug.*

GROUND BOX COVER

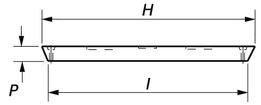
PLAN VIEW



END



SIDE



Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS GROUND BOXES

ED(4)-25

FILE: ed4-25.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2025	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
1-92 3-03 4-25 4-98 5-03 12-00 10-14	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		7.25

71D

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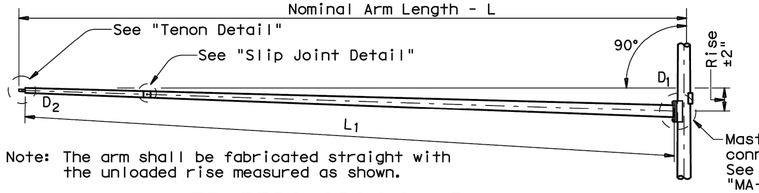
Arm Length	ROUND POLES					POLYGONAL POLES					Foundation Type
	D_B	D_{19}	D_{24}	D_{30}	① thk	D_B	D_{19}	D_{24}	D_{30}	① thk	
ft.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	
20	10.5	7.8	7.1	6.3	.179	11.5	8.5	7.7	6.8	.179	30-A
24	11.0	8.3	7.6	6.8	.179	12.0	9.0	8.2	7.3	.179	30-A
28	11.5	8.8	8.1	7.3	.179	12.5	9.5	8.7	7.8	.179	30-A
32	12.5	9.8	9.1	8.3	.179	12.0	9.0	8.2	7.3	.239	30-A
36	12.0	9.3	8.6	7.8	.239	12.5	9.5	8.7	7.8	.239	36-A
40	12.0	9.3	8.6	7.8	.239	13.5	10.5	9.7	8.8	.239	36-A
44	12.5	9.8	9.1	8.3	.239	14.0	11.0	10.2	9.3	.239	36-A
48	13.0	10.3	9.6	8.8	.239	15.0	12.0	11.2	10.3	.239	36-A

Arm Length	ROUND ARMS					POLYGONAL ARMS				
	L_1	D_1	D_2	① thk	Rise	L_1	D_1	② D_2	① thk	Rise
ft.	ft.	in.	in.	in.		ft.	in.	in.	in.	
20	19.1	6.5	3.8	.179	1′-9"	19.1	7.0	3.5	.179	1′-8"
24	23.1	7.5	4.3	.179	1′-10"	23.1	7.5	3.5	.179	1′-9"
28	27.1	8.0	4.2	.179	1′-11"	27.1	8.0	3.5	.179	1′-10"
32	31.0	9.0	4.7	.179	2′-1"	31.0	9.0	3.5	.179	2′-0"
36	35.0	9.5	4.6	.179	2′-4"	35.0	10.0	3.5	.179	2′-1"
40	39.0	9.5	4.1	.239	2′-8"	39.0	9.5	3.5	.239	2′-3"
44	43.0	10.0	4.1	.239	2′-11"	43.0	10.0	3.5	.239	2′-6"
48	47.0	10.5	4.1	.239	3′-4"	47.0	11.0	3.5	.239	2′-9"

D_B = Pole Base O.D.
D_{19} = Pole Top O.D. with no Luminaire and no ILSN
D_{24} = Pole Top O.D. with ILSN w/out Luminaire
D_{30} = Pole Top O.D. with Luminaire
D_1 = Arm Base O.D.
D_2 = Arm End O.D.
L_1 = Shaft Length
L = Nominal Arm Length

① Thickness shown are minimums, thicker materials may be used.

② D_2 may be increased by up to 1" for polygonal arms.



Note: The arm shall be fabricated straight with the unloaded rise measured as shown.

TRAFFIC SIGNAL ARM

(Fixed Mount)

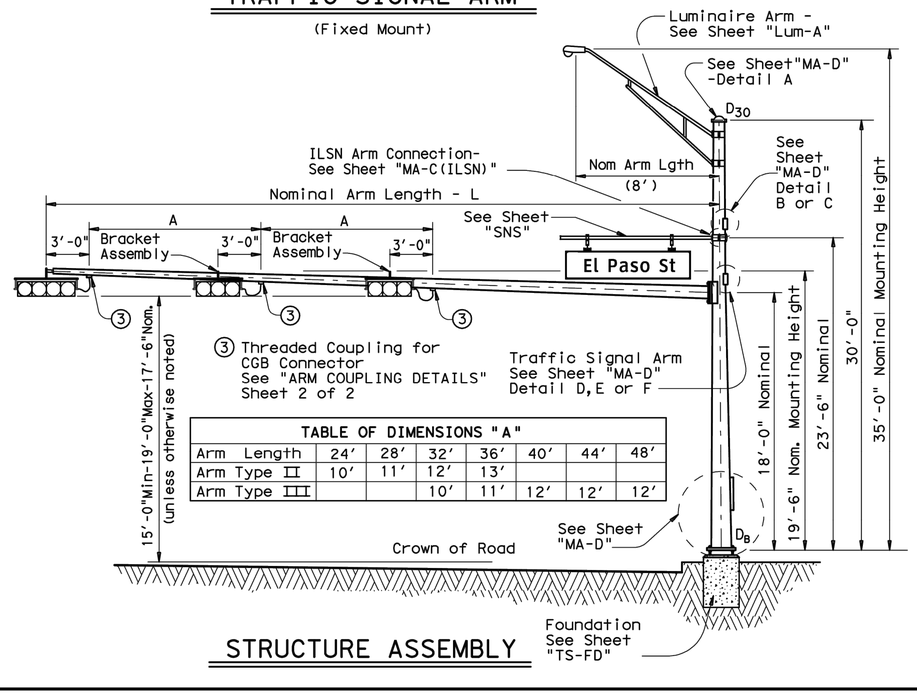


TABLE OF DIMENSIONS "A"

Arm Length	24′	28′	32′	36′	40′	44′	48′
Arm Type II	10′	11′	12′	13′			
Arm Type III			10′	11′	12′	12′	12′

STRUCTURE ASSEMBLY

SHIPPING PARTS LIST

Ship each pole with the following attached: enlarged hand hole, pole cap, fixed-arm connection bolts and washers and any additional hardware listed in the table.

Nominal Arm Length	30′ Poles With Luminaire		24′ Poles With ILSN		19′ Poles With No Luminaire and No ILSN	
	Above hardware plus: One (or two if ILSN attached) small hand hole, clamp-on simplex		Above hardware plus one small hand hole		See note above	
ft	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20L-80		20S-80		20-80	
24	24L-80		24S-80		24-80	
28	28L-80		28S-80		28-80	
32	32L-80		32S-80		32-80	
36	36L-80		36S-80		36-80	
40	40L-80	1	40S-80		40-80	1
44	44L-80		44S-80		44-80	
48	48L-80	1	48S-80		48-80	1

Traffic Signal Arms (1 per Pole) Ship each arm with the listed equipment attached

Nominal Arm Length	Type I Arm (1 Signal)		Type II Arm (2 Signals)		Type III Arm (3 Signals)	
	1 CGB connector		1 Bracket Assembly and 2 CGB Connectors		2 Bracket Assemblies and 3 CGB Connectors	
ft	Designation	Quantity	Designation	Quantity	Designation	Quantity
20	20I-80					
24	24I-80		24II-80			
28	28I-80		28II-80			
32			32II-80		32III-80	
36			36II-80		36III-80	
40					40III-80	
44					44III-80	
48					48III-80	

Luminaire Arms (1 per 30′ pole)

Nominal Arm Length	Quantity
8′ Arm	2

ILSN Arm (Max. 2 per pole) Ship with clamps, bolts and washers

Nominal Arm Length	Quantity
7′ Arm	
9′ Arm	

Anchor Bolt Assemblies (1 per pole)

Anchor Bolt Diameter	Anchor Bolt Length	Quantity
1 ½"	3′-4"	
1 ¾"	3′-10"	4

Each anchor bolt assembly consists of the following: Top and Bottom templates, 4 anchor bolts, 8 nuts, 8 flat washers, and 4 nut anchor devices (Type 2) per Standard Drawing "TS-FD".

Templates may be removed for shipment.

STATE OF TEXAS
JOHN W. RYAN
141023
LICENSED
PROFESSIONAL ENGINEER
10/03/2025
*SEAL IS FOR QUANTITIES ONLY

SHEET 1 OF 2

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES

SINGLE MAST ARM ASSEMBLY

(80 MPH WIND ZONE)

SMA-80(1)-12

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DN: MS CK: JSY DW: MMF CK: JSY

REVISIONS
5-96
11-99
1-12

CONT	SECT	JOB	HIGHWAY
0918	47	473	VA
DIST	COUNTY		SHEET NO.
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122A

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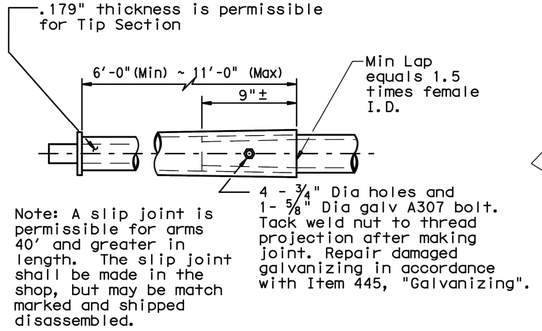
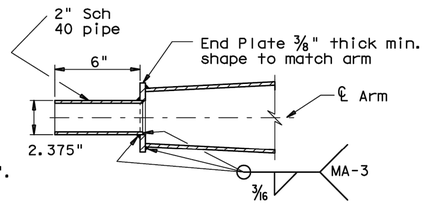


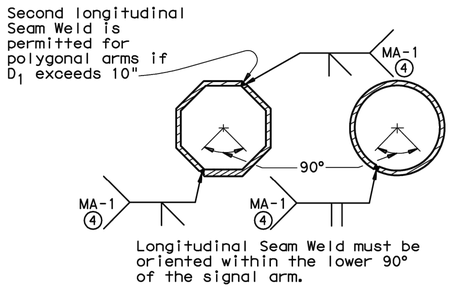
SLIP JOINT DETAIL



TENON DETAIL

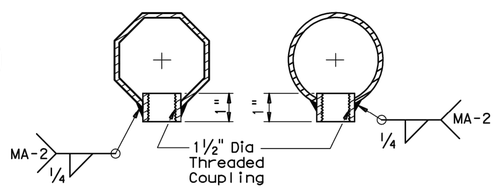
Stainless steel bands (or Cables) and cast bracket as in "Astro-Brac", "Sky Bracket" or "Easy Bracket" with 1 ½" Dia Threaded Coupling.

BRACKET ASSEMBLY



ARM WELD DETAIL

④ 60% Min. penetration 100% pemetration within 6" of circumferential base welds.



ARM COUPLING DETAILS

VIBRATION WARNING

Mast Arms of SMA and DMA structures and clamp-on Arms of LMA structures of approximately 40 ft or longer are subject to harmonic vertical vibrations in light wind conditions due to the aeroelastic characteristics of a few of the myriads of possible combinations of the following: signal numbers, weights and positions; existence/solidity of backplates; presence of additional attachments to the arm, such as signs and cameras; arm-wind orientation; and arm-pole stiffness.

Such vibrations may cause fatigue damage to the structure and may lead to galloping in moderate wind conditions which may further damage the structure and alarm the public. Tests have indicated that when wind is blowing toward the back side of signal heads having un-vented backplates attached the probability of unacceptable harmonic vibration and/or galloping is rather high.

If backplates are not required for improved visibility they should not be applied to the signal heads or, if they must be applied, they should be vented as a first and inexpensive measure to mitigate vibrations.

The traffic signal mast arms shall be visually inspected in 5 to 20 mph wind conditions after installation of signal heads and any attachments, including any required backpates. If vertical movements with a total excursion (maximum upward excursion to maximum downward excursion) of more than approximately 8" are observed at the arm tip, a damping plate shall be fitted to the arm. See "Damping Plate Mounting Details" on standard sheet, MA-DPD-10.

This visual inspection shall be repeated after each modification of the structure that could affect its aeroelastic response. Excessive vibrations shall not be allowed to continue for more than two days.

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals and Interim Specifications thereto. Design Wind Speed equals 80 mph plus a 1.3 gust factor.

Poles are designed to support one 8'-0" luminaire arm, one 9'-0" internally lighted street name sign and one traffic signal arm with a length as tabulated. The specified luminaire load applied at the end of the luminaire arm equals 60 lbs vertical dead load plus the horizontal wind load on an effective projected area of 1.6 sq ft. The specified internally lighted street name sign load applied 4.5 ft from the centerline of the pole equals 85 lbs vertical dead load plus horizontal wind load on an effective projected area of 11.5 sq ft. The specified signal load applied at the end of the traffic signal arm equals 180 lbs vertical dead load plus the horizontal wind load on an effective projected area of 32.4 sq ft (actual area times drag coefficient).

See Standard Sheet "MA-D" for pole details, "MA-C" for traffic signal arm connection details, "MA-C (ILSN)" for internally lighted street name sign arm connection details, "LUM-A" for luminaire arm and connection details, "SNS" for internally lighted street name sign details, and "TS-FD" for anchor bolt and foundation details. See "MA-C" for material specifications.

Fabrication shall be in accordance with Item 686, "Traffic Signal Pole Assemblies (Steel)" and with the details, dimensions, and weld procedures shown herein. Weld references call for preapproved weld procedures which the Fabricator must obtain prior to fabrication. Materials, fabrication tolerances, and shipping practices shall meet the requirements of this sheet and Item 686, "Traffic Signal Pole Assemblies (Steel)".

Unless otherwise noted, all parts shall be galvanized in accordance with Item 445, "Galvanizing", after fabrication.

Deviation from the details and dimensions shown herein require submission of shop drawings in accordance with Item 441, "Steel Structures". Alternate designs are not acceptable.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL SUPPORT STRUCTURES

SINGLE MAST ARM ASSEMBLY

(80 MPH WIND ZONE)

SMA-80(2)-12

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DN: MS	CK: JSY	DW: MMF	CK: JSY

REVISIONS
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CONT	SECT	JOB	HIGHWAY
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DAL	DALLAS		7.27

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FOUNDATION DESIGN TABLE

FDN TYPE	DRILLED SHAFT DIA	REINFORCING STEEL		EMBEDDED DRILLED SHAFT LENGTH-ft ④, ⑤, ⑥			ANCHOR BOLT DESIGN ①				FOUNDATION DESIGN LOAD ②		TYPICAL APPLICATION
		VERT BARS	SPIRAL & PITCH	TEXAS CONE PENETROMETER N blows/ft 10	15	40	ANCHOR BOLT DIA	Fy (ksi)	BOLT CIR DIA	ANCHOR TYPE	MOMENT K-ft	SHEAR Kips	
24-A	24"	4- #5	#2 at 12"	5.7	5.3	4.5	¾"	36	12 ¾"	1	10	1	Pedestal pole, pedestal mounted controller.
30-A	30"	8- #9	#3 at 6"	11.3	10.3	8.0	1 ½"	55	17"	2	87	3	Mast arm assembly. (see Selection Table)
36-A	36"	10- #9	#3 at 6"	13.2	12.0	9.4	1 ¾"	55	19"	2	131	5	Mast arm assembly. (see Selection Table) 30' strain pole with or without luminaire.
36-B	36"	12- #9	#3 at 6"	15.2	13.6	10.4	2"	55	21"	2	190	7	Mast arm assembly. (see Selection Table) Strain pole taller than 30' & strain pole with mast arm
42-A	42"	14- #9	#3 at 6"	17.4	15.6	11.9	2 ¼"	55	23"	2	271	9	Mast arm assembly. (see Selection Table)

NOTES:

① Anchor bolt design develops the foundation capacity given under Foundation Design Loads.

② Foundation Design Loads are the allowable moments and shears at the base of the structure.

③ Foundations may be listed separately or grouped according to similarity of location and type. Quantities are for the Contractor's information only.

④ Field Penetrometer readings at a depth of approximately 3 to 5 feet may be used to adjust shaft lengths.

⑤ If rock is encountered, the Drilled Shaft shall extend a minimum of two diameters into solid rock.

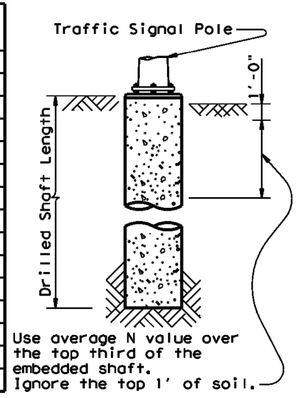
⑥ Decimal lengths in Design Table are to allow interpolation for other penetrometer values. Round to nearest foot for entry into Summary Table.

FOUNDATION SUMMARY TABLE ③

LOCATION IDENTIFICATION	AVG. N BLOW /ft.	FDN TYPE	NO. EA	DRILLED SHAFT LENGTH ⑥ (FEET) 24-A	30-A	36-A	36-B	42-A
GREENVILLE P-1	10	36-A	1			13		
GREENVILLE P-2	10	24-A	1	6				
GREENVILLE P-3	10	24-A	1	6				
GREENVILLE P-4	10	36-A	1			13		
GREENVILLE P-5	10	24-A	1	6				
GREENVILLE P-6	10	36-A	1			13		
GREENVILLE P-7	10	24-A	1	6				
GREENVILLE P-8	10	36-A	1			13		
GREENVILLE P-9	10	24-A	1	6				
WALNUT P-1	10	24-A	1	6				
TOTAL DRILLED SHAFT LENGTHS				42		52		

FOUNDATION SELECTION TABLE FOR STANDARD MAST ARM PLUS ILSN SUPPORT ASSEMBLIES (ft)

		FDN 30-A	FDN 36-A	FDN 36-B	FDN 42-A
80 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH	32'	48'		
	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS	24' X 24'			
		28' X 28'			
		32' X 28'	32' X 32'		
			36' X 36'		
			40' X 36'		
			44' X 28'	44' X 36'	
100 MPH DESIGN WIND SPEED	MAX SINGLE ARM LENGTH		36'	44'	
	MAXIMUM DOUBLE ARM LENGTH COMBINATIONS		24' X 24'		
			28' X 28'		
			32' X 24'	32' X 32'	
				36' X 36'	
				40' x24'	40' X 36'
					44' x 36'

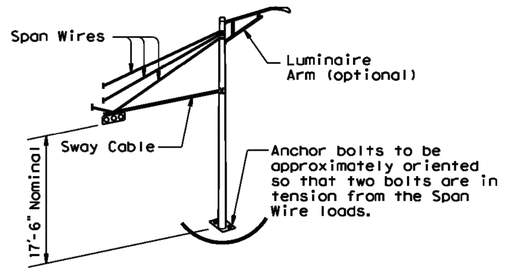


ANCHOR BOLT & TEMPLATE SIZES

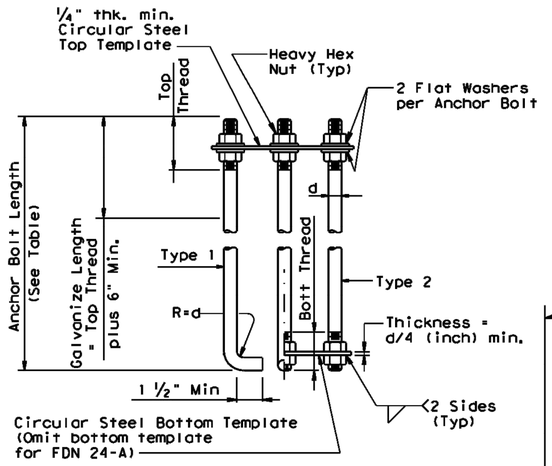
BOLT DIA IN.	⑦ BOLT LENGTH	TOP THREAD	BOTTOM THREAD	BOLT CIRCLE	R2	R1
¾"	1'-6"	3"	—	12 ¾"	7 ⅛"	5 ⅝"
1 ½"	3'-4"	6"	4"	17"	10"	7"
1 ¾"	3'-10"	7"	4 ½"	19"	11 ¼"	7 ¾"
2"	4'-3"	8"	5"	21"	12 ½"	8 ½"
2 ¼"	4'-9"	9"	5 ½"	23"	13 ¾"	9 ¼"

⑦ Min dimensions given, longer bolts are acceptable.

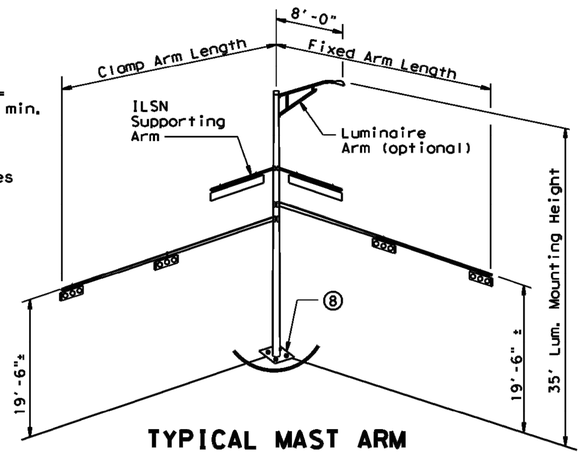
EXAMPLE:
1. For 80mph design wind speed, foundation 30-A can support up to a 32' arm with another arm up to 28'
2. For 100mph design wind speed, foundation 36-A can support a single 36' mast arm.



TYPICAL STRAIN POLE ASSEMBLY



ANCHOR BOLT ASSEMBLY



TYPICAL MAST ARM ASSEMBLY

⑧ Orient anchor bolts orthogonal with the fixed arm direction to ensure that two bolts are in tension under dead load.

FOUNDATION DETAILS

10/03/2025

STATE OF TEXAS
JOHN W. RYAN
141023
LICENSED
PROFESSIONAL ENGINEER

*SEAL IS FOR QUANTITIES ONLY

GENERAL NOTES:

Design conforms to 1994 AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals and interim revisions thereto.

Reinforcing steel shall conform to Item 440, "Reinforcing Steel".

Concrete shall be Class "C".

Threads for anchor bolts and nuts shall be rolled or cut threads of 8UN series up to 2" in diameter or UNC series for all sizes. Bolts and nuts shall have Class 2A and 2B fit tolerances. Galvanized nuts shall be tapped after galvanizing.

Anchor bolts that are larger than 1" in diameter shall conform to "alloy steel" or "medium-strength mild steel" per Item 449, "Anchor Bolts". Anchor bolts that are 1" in diameter or less shall conform to ASTM A36. Galvanize a minimum of the top end thread length plus 6" for all anchor bolts unless otherwise noted. Exposed washers and exposed nuts shall be galvanized. All galvanizing shall be in accordance with Item 445, "Galvanizing".

Templates and embedded nuts need not be galvanized. Lubricate and tighten anchor bolts when erecting the structure in accordance with Item 449, "Anchor Bolts".

Texas Department of Transportation
Traffic Operations Division

TRAFFIC SIGNAL POLE FOUNDATION

TS-FD-12

©TxDOT August 1995

REVISIONS	DN: MS	CK: JSY	DW: MAO/MMF	CK: JSY/TEB
5-96 11-98 1-12	CONT	SECT	JOB	HIGHWAY
	0918	47	473	VA
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		7.28

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TRAFFIC CONTROL GENERAL NOTES

1. PLACE TRAFFIC CONTROL DEVICES SUCH AS WORK ZONE SIGNS, CHANNELIZING DEVICES, AND BARRICADES AS SHOWN IN THE BC AND WZ STANDARDS AND IN ACCORDANCE WITH THE TMUTCD.
2. THE CONTRACTOR SHALL INSPECT TRAFFIC CONTROL DEVICES AND REPLACE THOSE DAMAGED AT ALL TIMES. ALL TRAFFIC CONTROL DEVICES SHALL BE CLEAN AND CLEARLY VISIBLE AT NIGHT. THE OWNER OR ENGINEER MAY REQUEST ADDITIONAL TRAFFIC CONTROL DEVICES AS DEEMED NECESSARY WITH NO ADDITIONAL COST.
3. INSTALL ALL TEMPORARY EROSION CONTROL ITEMS AS SHOWN ON THE PLANS PRIOR TO BEGIN WORK AND REMOVE AFTER WORK IS COMPLETED.
4. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO BEGIN WORK.
5. THE CONTRACTOR SHALL REGULATE ALL CONSTRUCTION TRAFFIC SO AS TO CAUSE A MINIMUM INCONVENIENCE AND TO PROTECT THE TRAVELING PUBLIC. PROVIDE WARNING SIGNS AND FLAGGERS AS NECESSARY.
6. THE CONTRACTOR SHALL CONTACT DALLAS COUNTY TO OBTAIN APPROVAL AND IMPLEMENT THIS TRAFFIC CONTROL PLAN. THE CONTRACTOR MAY SUBMIT HIS OWN TRAFFIC CONTROL PLAN SIGNED/SEALED BY A PROFESSIONAL ENGINEER FOR APPROVAL.
7. MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES. ALL TEMPORARY RIDING SURFACE NECESSARY TO PROVIDE ACCESS TO ALL BUSINESSES AND RESIDENCES SHALL BE SUBSIDIARY TO THE ITEM 502.
8. MAINTAIN POSITIVE DRAINAGE AT ALL TIMES.
9. ALL TCP DEVICES AND SIGNS SHOWN ON TCP PLAN ARE CONSIDERED MINIMUM. ADDITIONAL DEVICES AND SIGNS MAY BE NECESSARY AND SUBSIDIARY TO ITEM 502.
10. ALL TRAFFIC CONTROL SHALL CONFORM TO THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, ALL APPLICABLE TXDOT STANDARDS AND AS DIRECTED BY THE ENGINEER.
11. TEMPORARY SW3P EROSION CONTROL MEASURES SHALL ONLY BE PLACED IN AREAS WHERE SOIL DISTURBANCE OR POTENTIAL POLLUTANT-GENERATING ACTIVITIES ARE EXPECTED TO OCCUR WITHIN TWO WEEKS.
12. TEMPORARY SW3P EROSION CONTROL MEASURES SHALL BE REMOVED IN THEIR CONTROL AREA WITHIN TWO WEEKS OF VEGETATION ESTABLISHMENT OR AS APPROVED BY THE ENGINEER.

SUGGESTED SEQUENCE OF CONSTRUCTION

PHASE 1

1. PLACE ADVANCE WARNING SIGNS, WORK ZONE SIGNS, CHANNELIZING DEVICES, AND BARRICADES PER TXDOT STANDARDS AND IN ACCORDANCE WITH THE TMUTCD. REMOVE OR COVER ANY CONFLICTING SIGNS. REMOVE ANY CONFLICTING PAVEMENT MARKINGS AS NECESSARY.
2. PLACE TEMPORARY EROSION CONTROL DEVICES FOR ENTIRE PROJECT CORRIDOR AS SHOWN ON THE PLANS PER TXDOT STANDARDS.
3. CONSTRUCT DART CROSSING IMPROVEMENTS AND PROPOSED TRAIL NORTH SIDE OF BUCKINGHAM RD. CONSTRUCT DRIVEWAY A. MERGE WESTBOUND TRAFFIC AS SHOWN ON THE TRAFFIC CONTROL PLAN. NO IMPACT TO WESTBOUND TRAFFIC.
4. CONSTRUCT BUCKINGHAM RD MEDIAN MODIFICATION AND INTERSECTION IMPROVEMENTS AT GREENVILLE AVE INTERSECTION INCLUDING TRAFFIC SIGNAL IMPROVEMENTS AND DRAINAGE IMPROVEMENTS. SHIFT NORTHBOUND AND SOUTHBOUND GREENVILLE AVE AS SHOWN ON THE TRAFFIC CONTROL PLAN.
5. INSTALL APPLICABLE PERMANENT SIGNS AND PAVEMENT MARKINGS.

PHASE 2

1. PLACE ADVANCE WARNING SIGNS, WORK ZONE SIGNS, CHANNELIZING DEVICES, AND BARRICADES PER TXDOT STANDARDS AND IN ACCORDANCE WITH THE TMUTCD. REMOVE OR COVER ANY CONFLICTING SIGNS. REMOVE ANY CONFLICTING PAVEMENT MARKINGS AS NECESSARY.
2. SHIFT WESTBOUND BUCKINGHAM RD BACK TO EXISTING CONFIGURATION. MERGE EASTBOUND TRAFFIC AS SHOWN ON THE TRAFFIC CONTROL PLAN.
3. CONSTRUCT INTERSECTION IMPROVEMENTS AT GREENVILLE AVE AT WALNUT ST INCLUDING TRAFFIC SIGNAL IMPROVEMENTS AND DRAINAGE IMPROVEMENTS.
4. CONSTRUCT PROPOSED TRAIL SOUTH SIDE OF BUCKINGHAM RD, WEST SIDE OF GREENVILLE AVE, AND NORTH SIDE OF WALNUT ST. RECONSTRUCT DRIVEWAYS B, C, AND D.
5. INSTALL APPLICABLE PERMANENT SIGNS AND PAVEMENT MARKINGS.
6. CLEAN UP AND REMOVE ALL TEMPORARY EROSION CONTROL DEVICES.

NOTES: THIS PROJECT SHALL BE CONSTRUCTED WITH THE ADJACENT DART RAIL CROSSING PROJECT. CONTRACTOR SHALL COORDINATE WITH DART AND MEET ALL REQUIREMENTS WITH DART RIGHT OF ENTRY, INSURANCE AND FLAGGING REQUIREMENTS. CONTRACTOR SHALL IMPLEMENT TRAFFIC CONTROL THAT ADHERES TO ANY AND ALL DART REQUIREMENTS.

2/20/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAFFIC CONTROL PLAN

SEQUENCE OF CONSTRUCTION

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	8.01
CONT.	SECT.	JOB	
0918	47	473	

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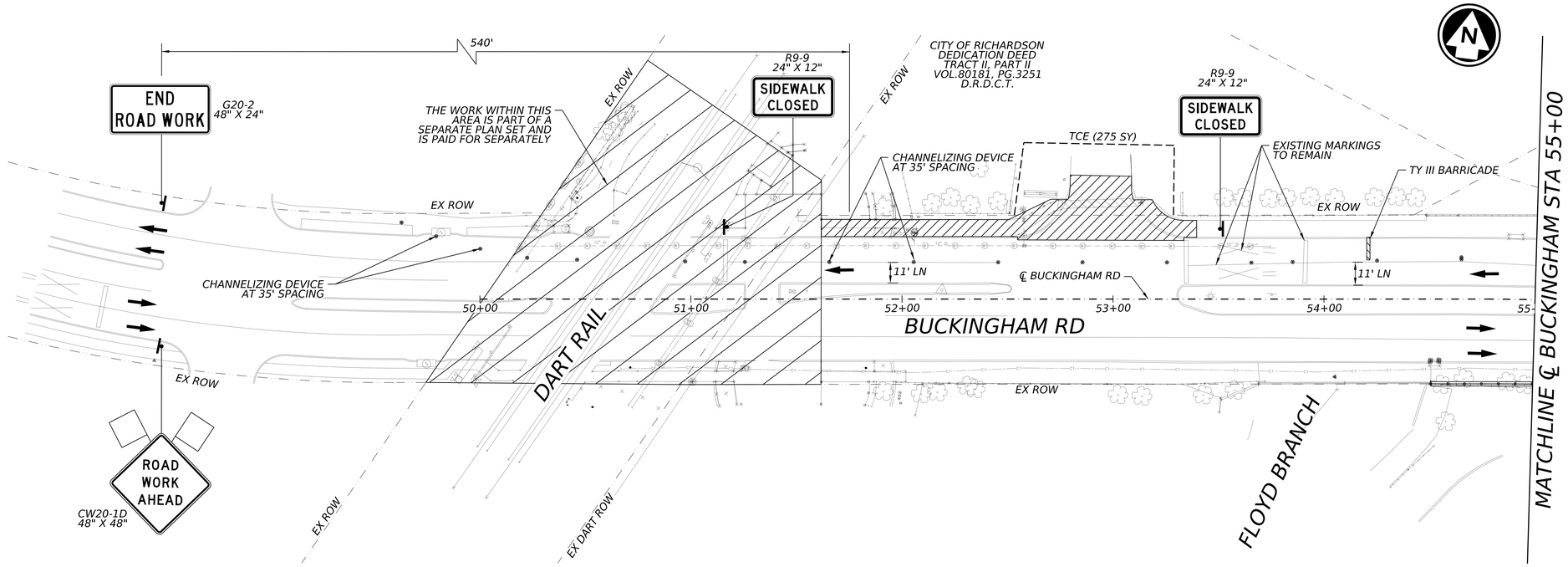

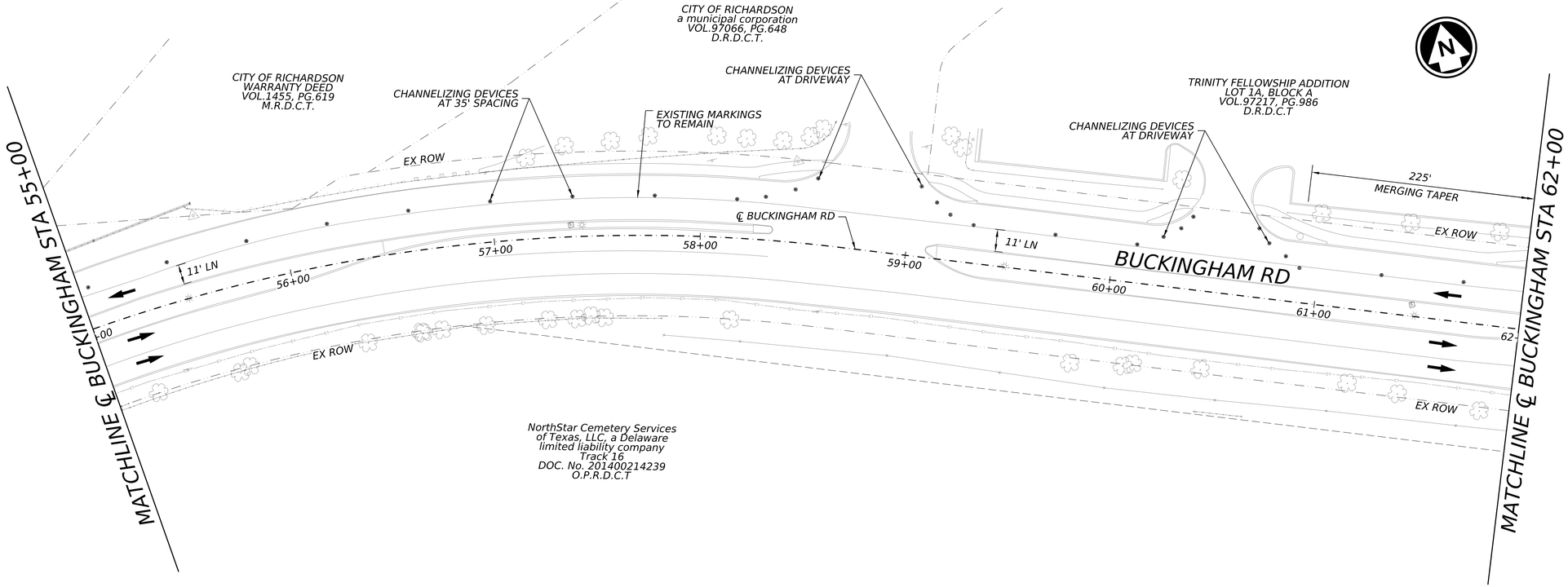

0' 30' 60'

LEGEND

- WORK ZONE THIS PHASE
- CONSTRUCTION PREVIOUS PHASE
- CONSTRUCTION SIGN
- CHANNELIZING DEVICE
- TYPE III BARRICADES
- TRAFFIC FLOW
- FLASHING ARROW BOARD

NOTES:

1. PLACE WORKZONE AND TRAFFIC CONTROL DEVICES PER TxDOT BC AND WZ STANDARDS.
2. ACCESS SHALL BE PROVIDED TO ALL PROPERTIES AT ALL TIMES.

STATE OF TEXAS
IN SUNG HWANG
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LICENSED
PROFESSIONAL ENGINEER
2/20/2026

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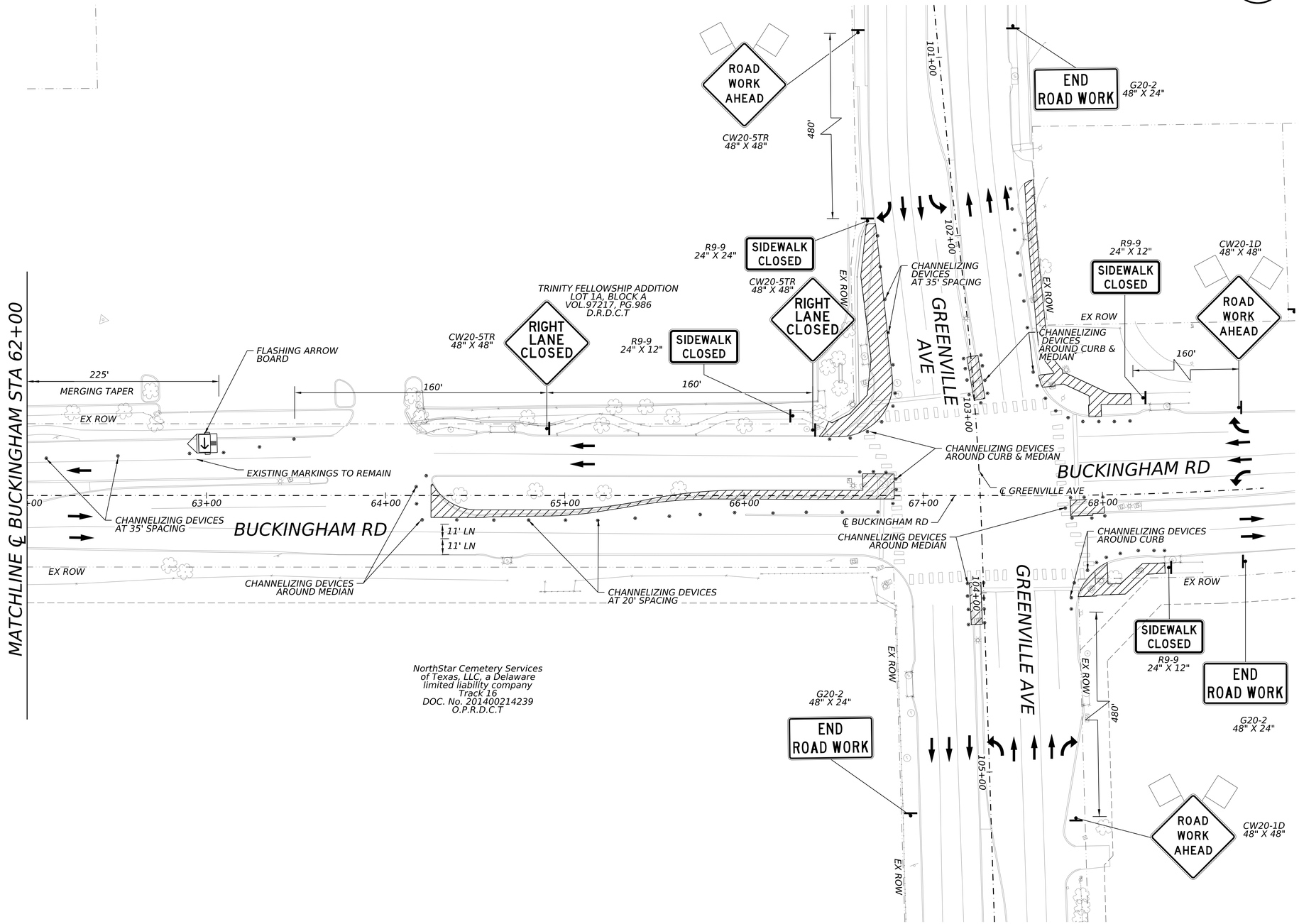
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAFFIC CONTROL PLAN
PHASE 1

SHEET 1 OF 2

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	8.02
CONT.	SECT.	JOB	
0918	47	473	



LEGEND

- WORK ZONE THIS PHASE
- CONSTRUCTION PREVIOUS PHASE
- CONSTRUCTION SIGN
- CHANNELIZING DEVICE
- TYPE III BARRICADES
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAFFIC CONTROL PLAN
PHASE 1

SHEET 2 OF 2

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	8.03
CONT.	SECT.	JOB	
0918	47	473	

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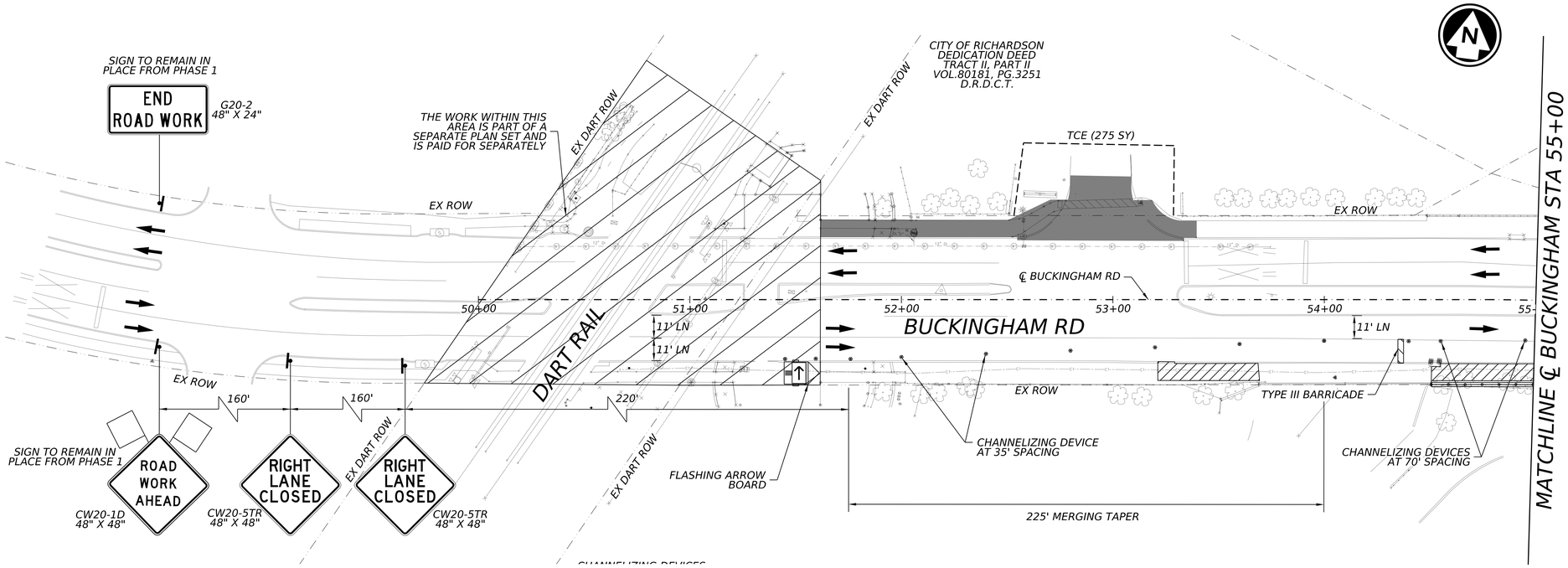

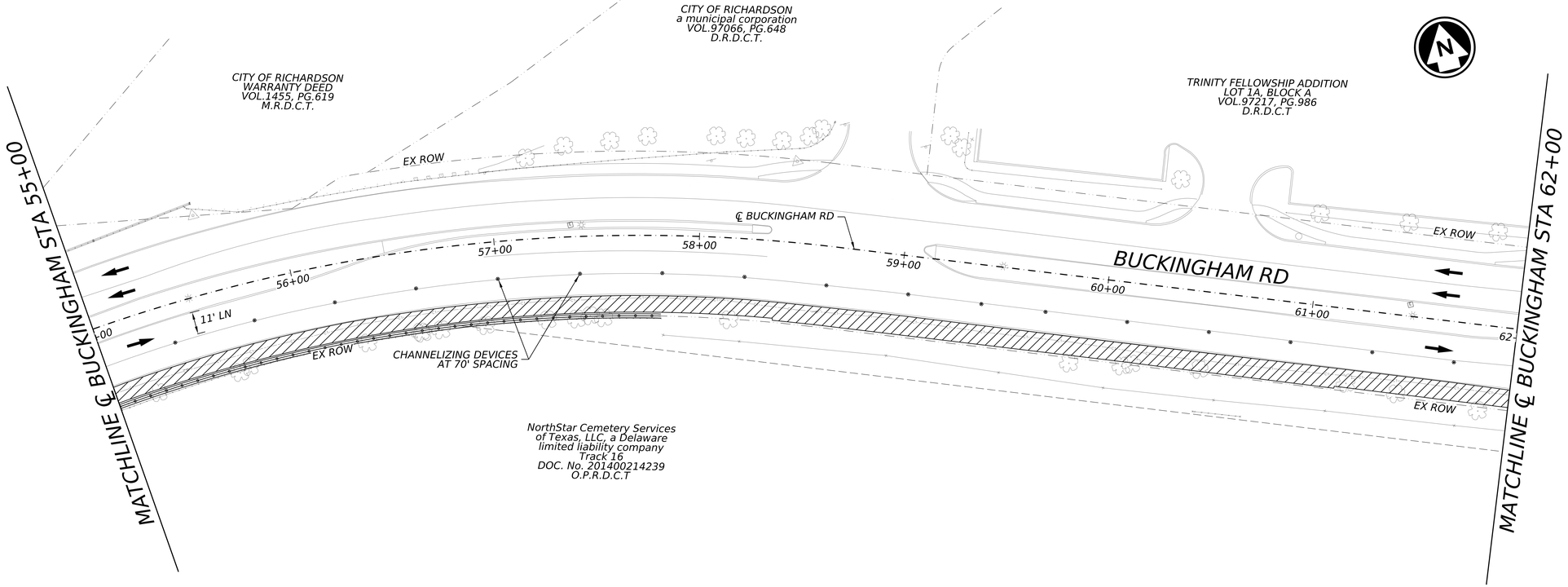

0' 30' 60'

LEGEND

- WORK ZONE THIS PHASE
- CONSTRUCTION PREVIOUS PHASE
- CONSTRUCTION SIGN
- CHANNELIZING DEVICE
- TYPE III BARRICADES
- TRAFFIC FLOW
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAFFIC CONTROL PLAN
PHASE 2

SHEET 1 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	8.04
CONT.	SECT.	JOB	
0918	47	473	

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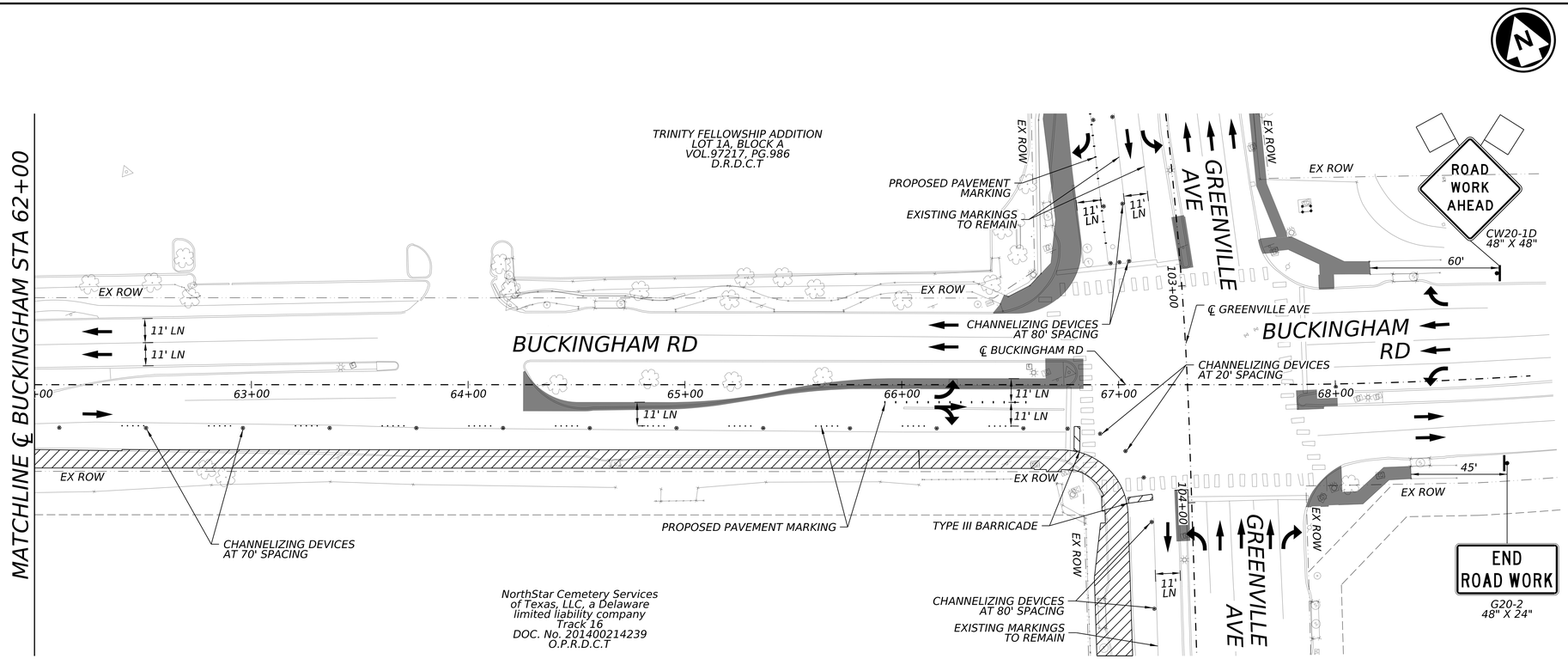

LEGEND

- WORK ZONE THIS PHASE
- CONSTRUCTION PREVIOUS PHASE
- CONSTRUCTION SIGN
- CHANNELIZING DEVICE
- TYPE III BARRICADES
- TRAFFIC FLOW
- FLASHING ARROW BOARD

NOTES:

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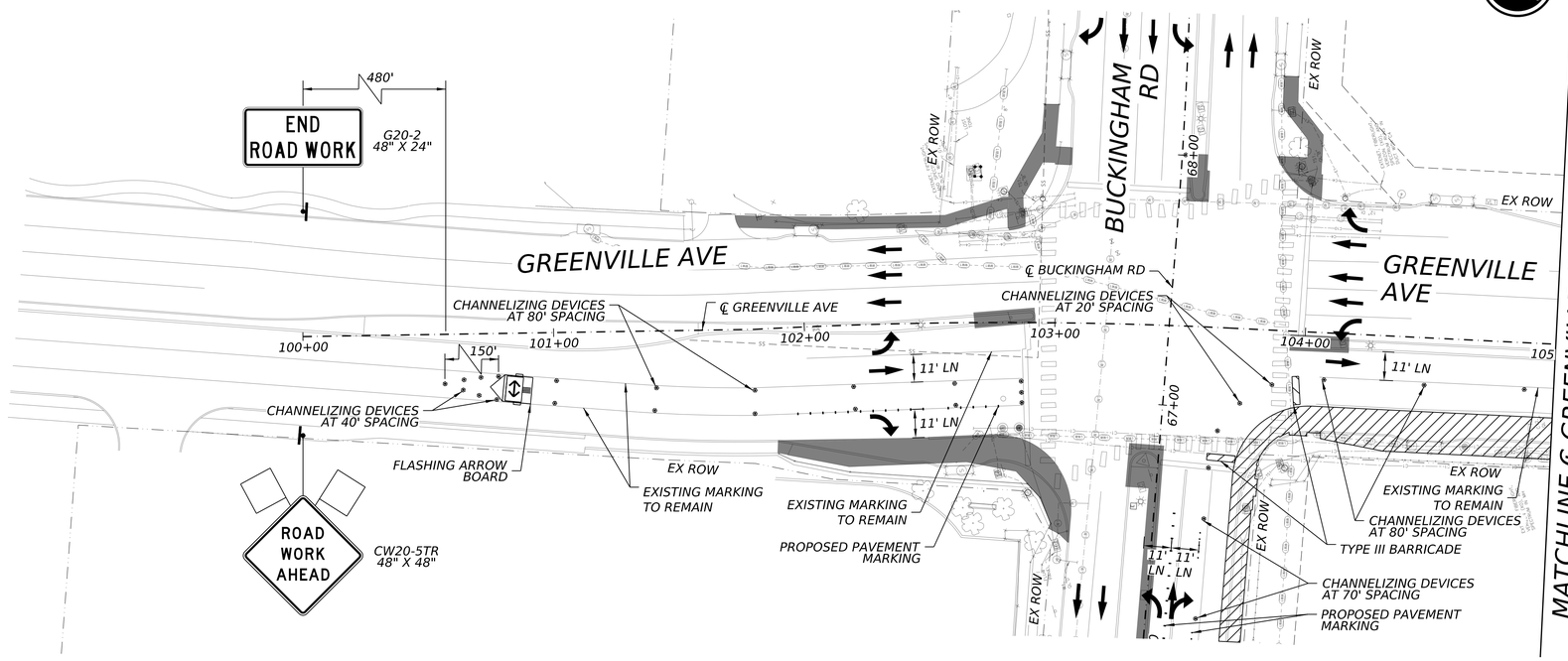

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAFFIC CONTROL PLAN
PHASE 2

SHEET 2 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	8.05
CONT.	SECT.	JOB	
0918	47	473	

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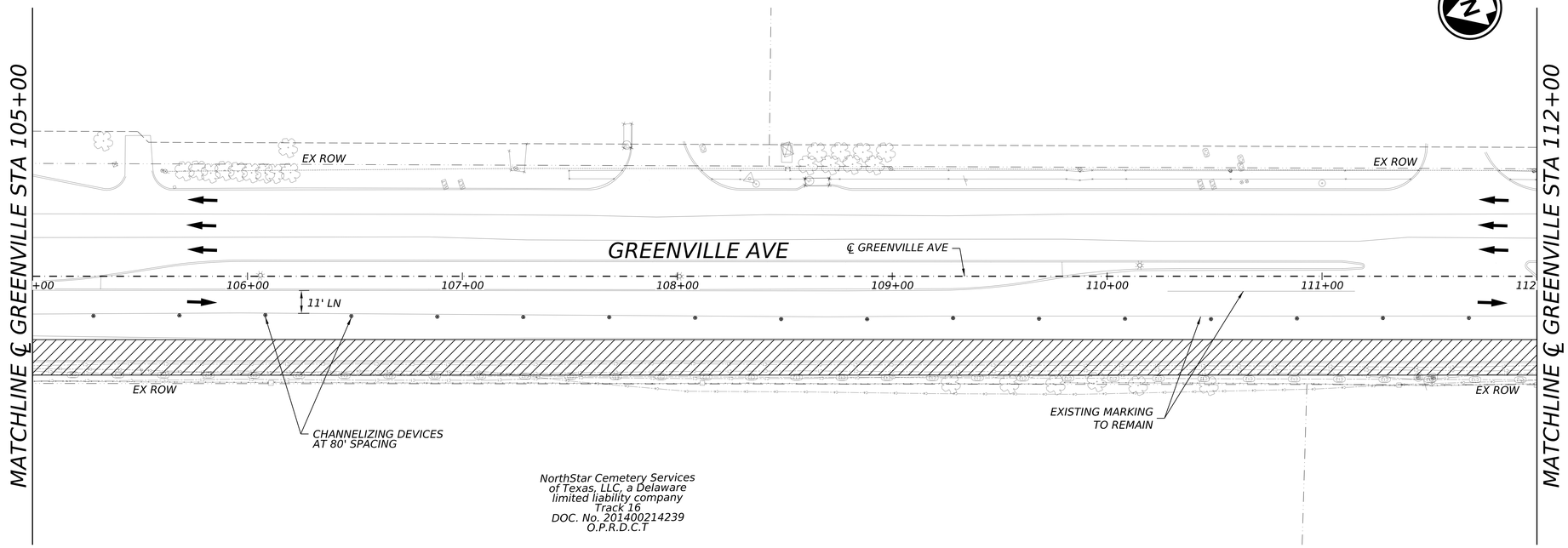

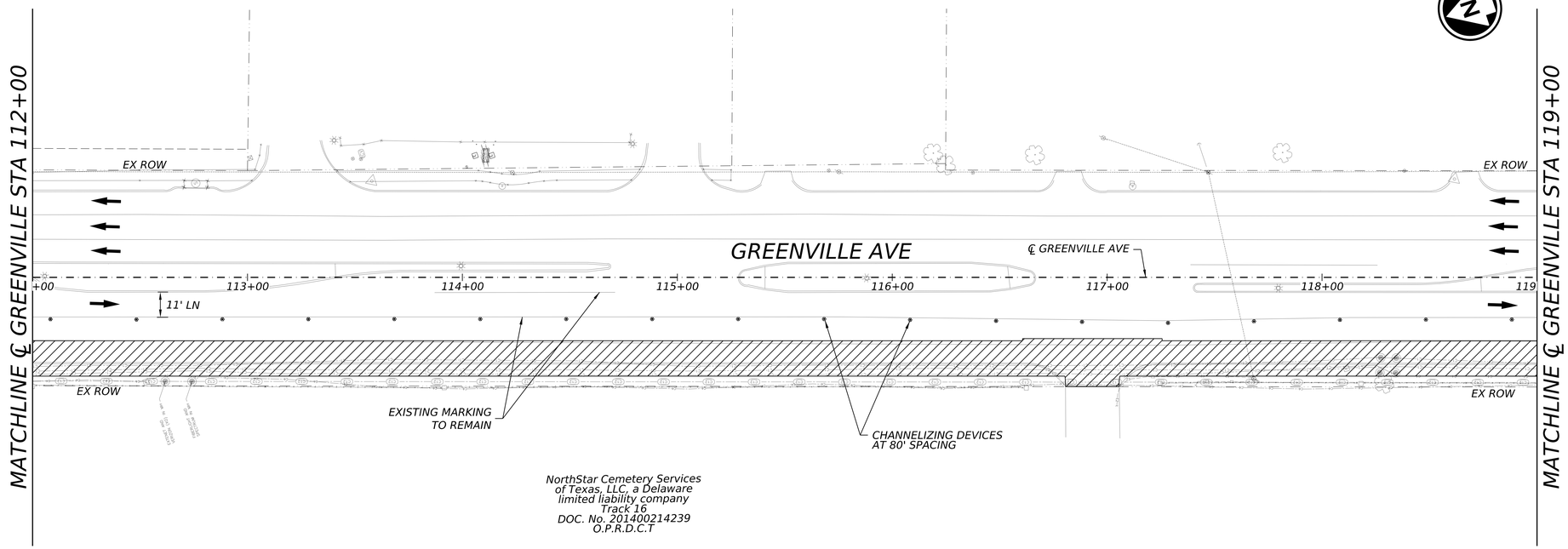

0' 30' 60'

LEGEND

- WORK ZONE THIS PHASE
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAFFIC CONTROL PLAN
PHASE 2

SHEET 3 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	8.06
CONT.	SECT.	JOB	
0918	47	473	

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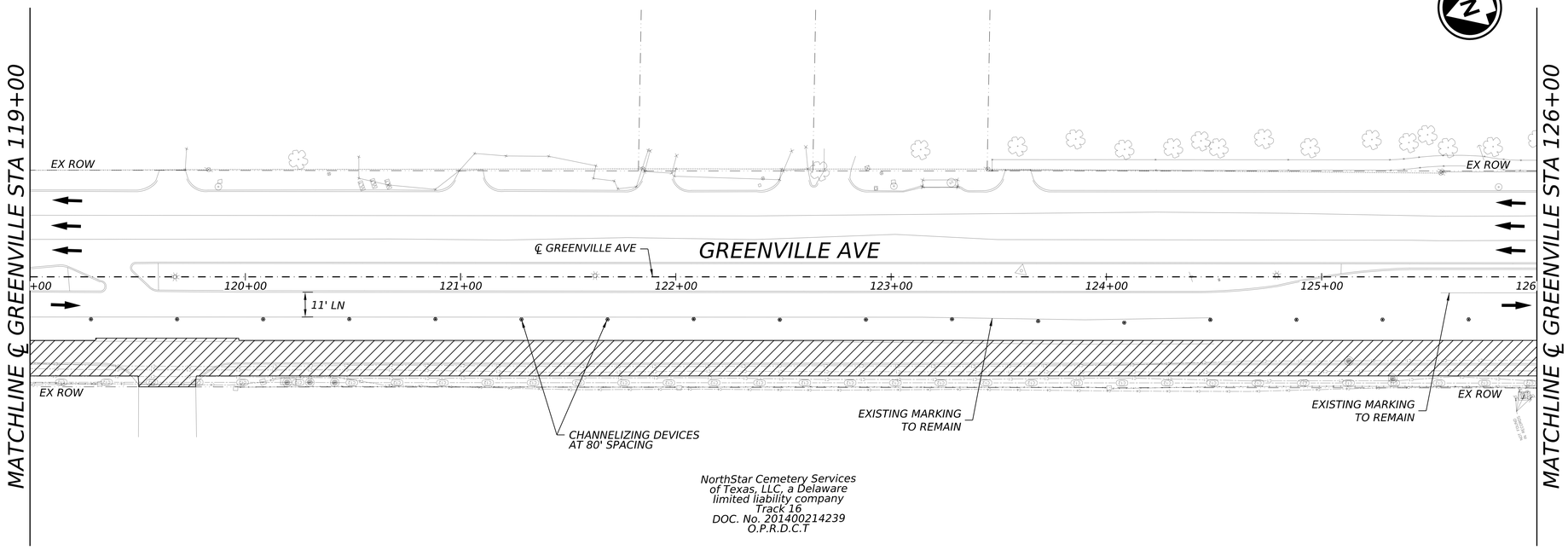

LEGEND

- WORK ZONE THIS PHASE
- CONSTRUCTION PREVIOUS PHASE
- CONSTRUCTION SIGN
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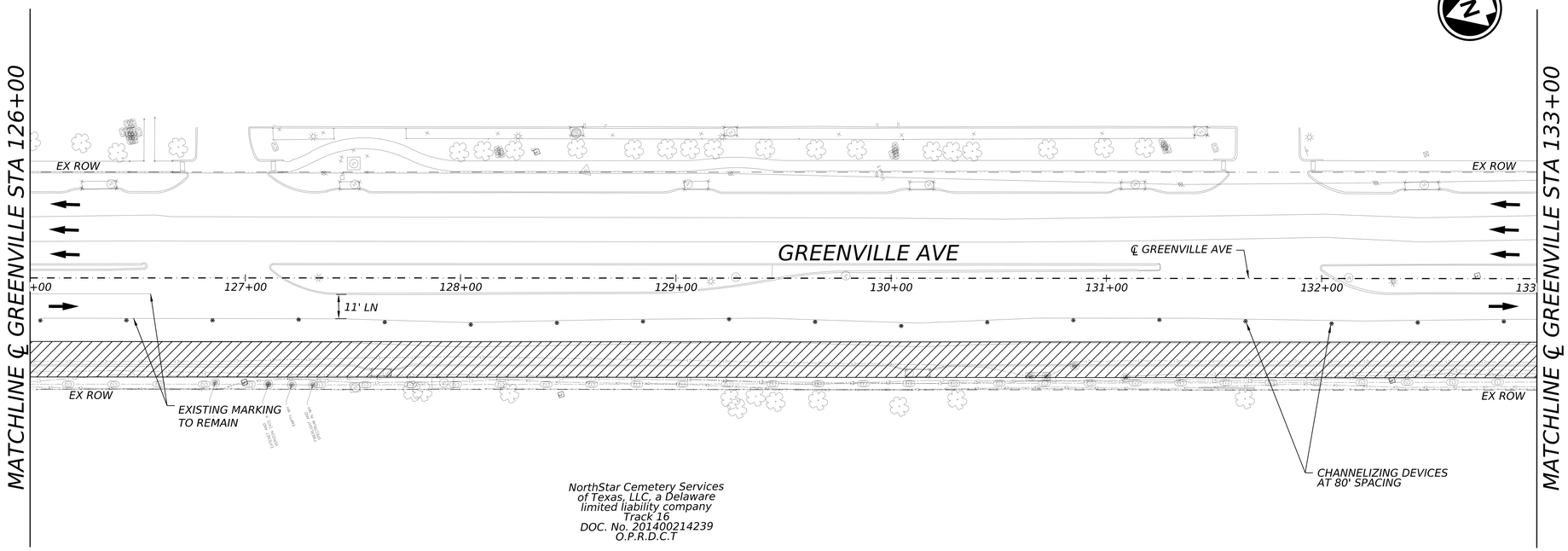

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAFFIC CONTROL PLAN
PHASE 2

SHEET 4 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	8.07
CONT.	SECT.	JOB	
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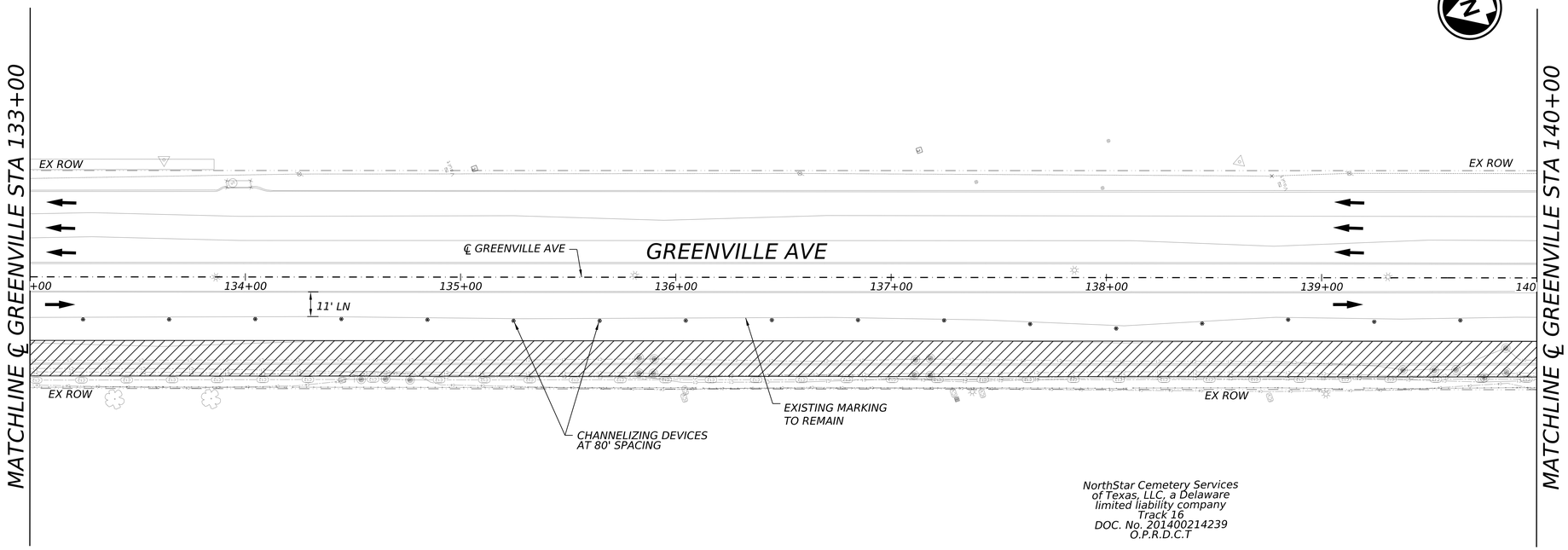

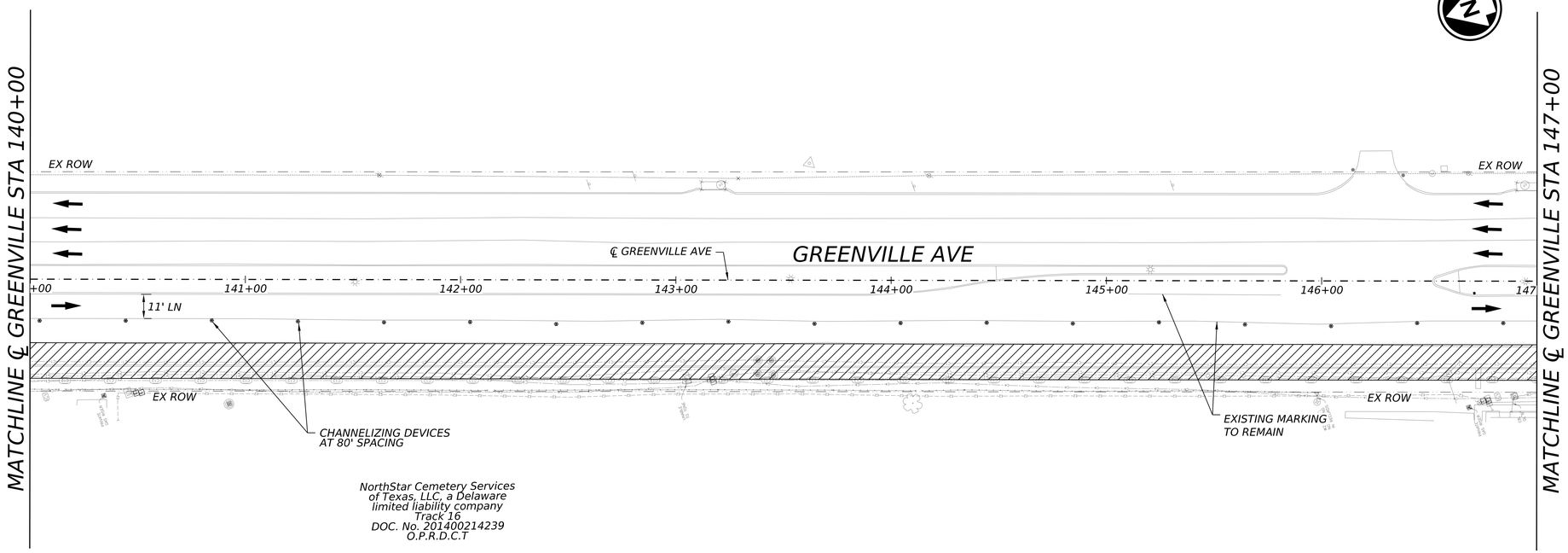

0' 30' 60'

LEGEND

- WORK ZONE THIS PHASE
- CONSTRUCTION PREVIOUS PHASE
- CONSTRUCTION SIGN
- CHANNELIZING DEVICE
- TYPE III BARRICADES
- TRAFFIC FLOW
- FLASHING ARROW BOARD

NOTES:

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2. ACCESS SHALL BE PROVIDED TO ALL PROPERTIES AT ALL TIMES.

STATE OF TEXAS
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAFFIC CONTROL PLAN
PHASE 2

SHEET 5 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	8.08
CONT.	SECT.	JOB	
0918	47	473	

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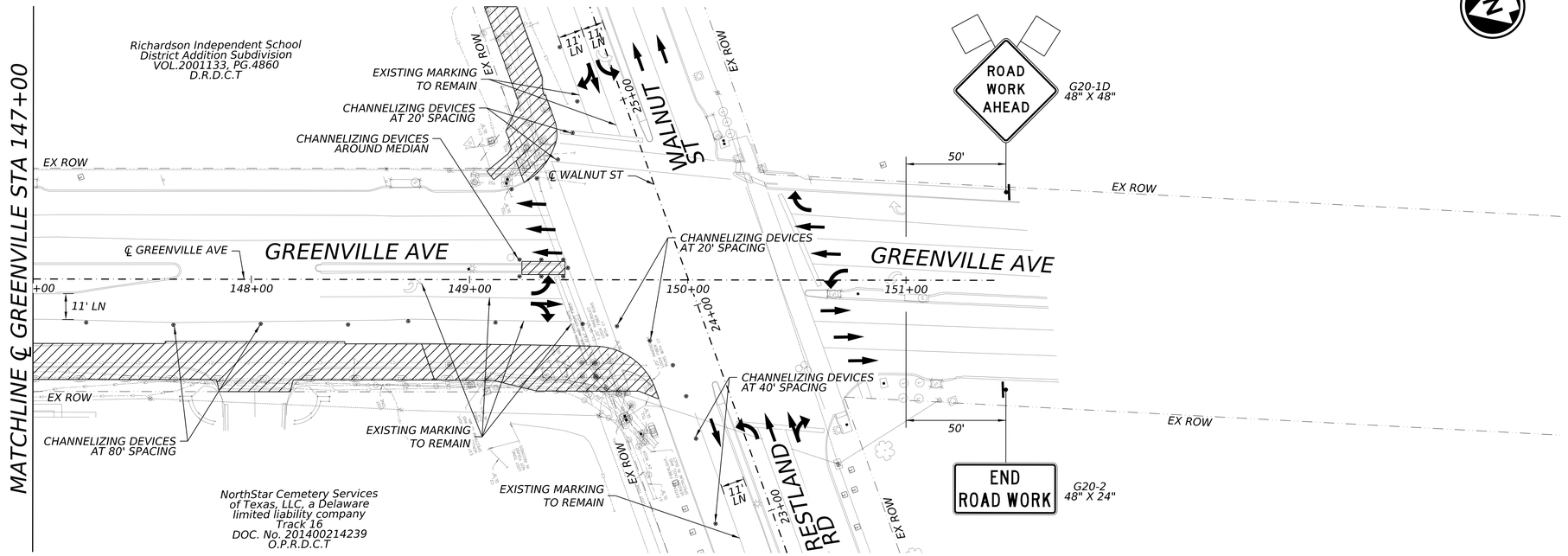

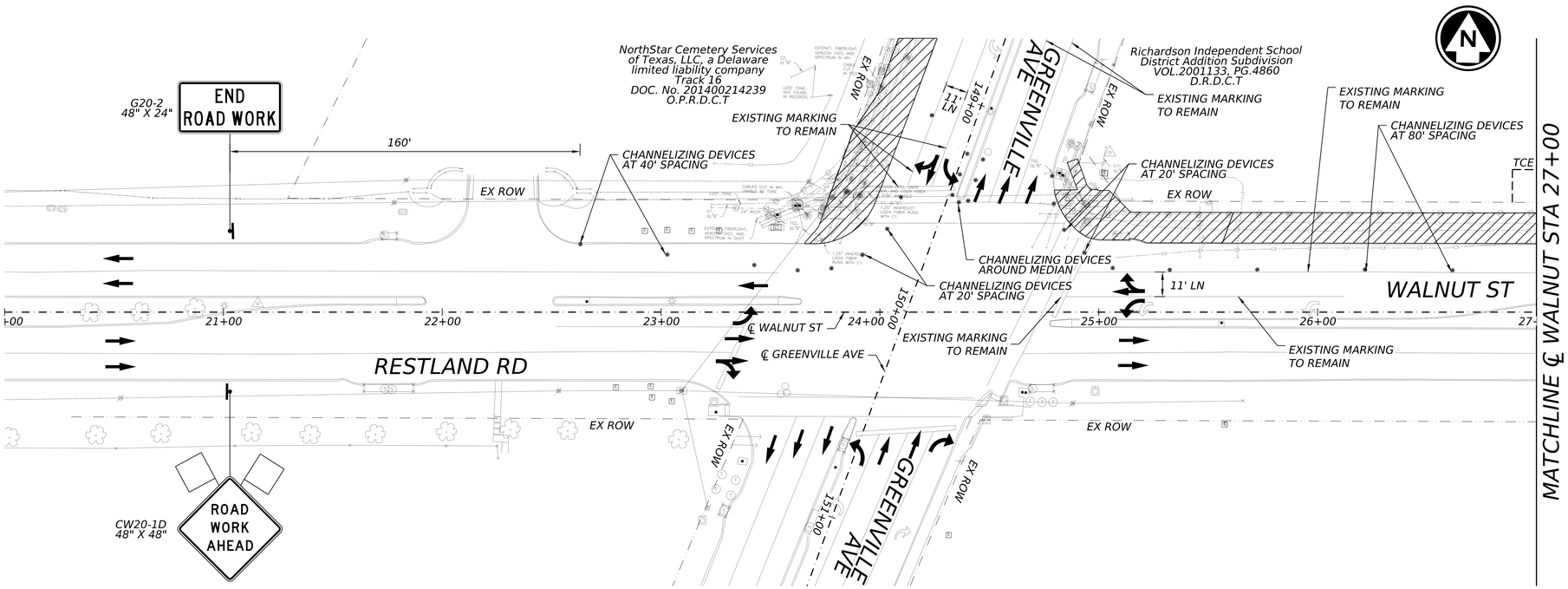

LEGEND

- WORK ZONE THIS PHASE
- CONSTRUCTION PREVIOUS PHASE
- CONSTRUCTION SIGN
- CHANNELIZING DEVICE
- TYPE III BARRICADES
- TRAFFIC FLOW
- FLASHING ARROW BOARD

NOTES:

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STATE OF TEXAS
IN SUNG HWANG
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LICENSED PROFESSIONAL ENGINEER
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAFFIC CONTROL PLAN
PHASE 2

SHEET 6 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	8.09
CONT.	SECT.	JOB	
0918	47	473	

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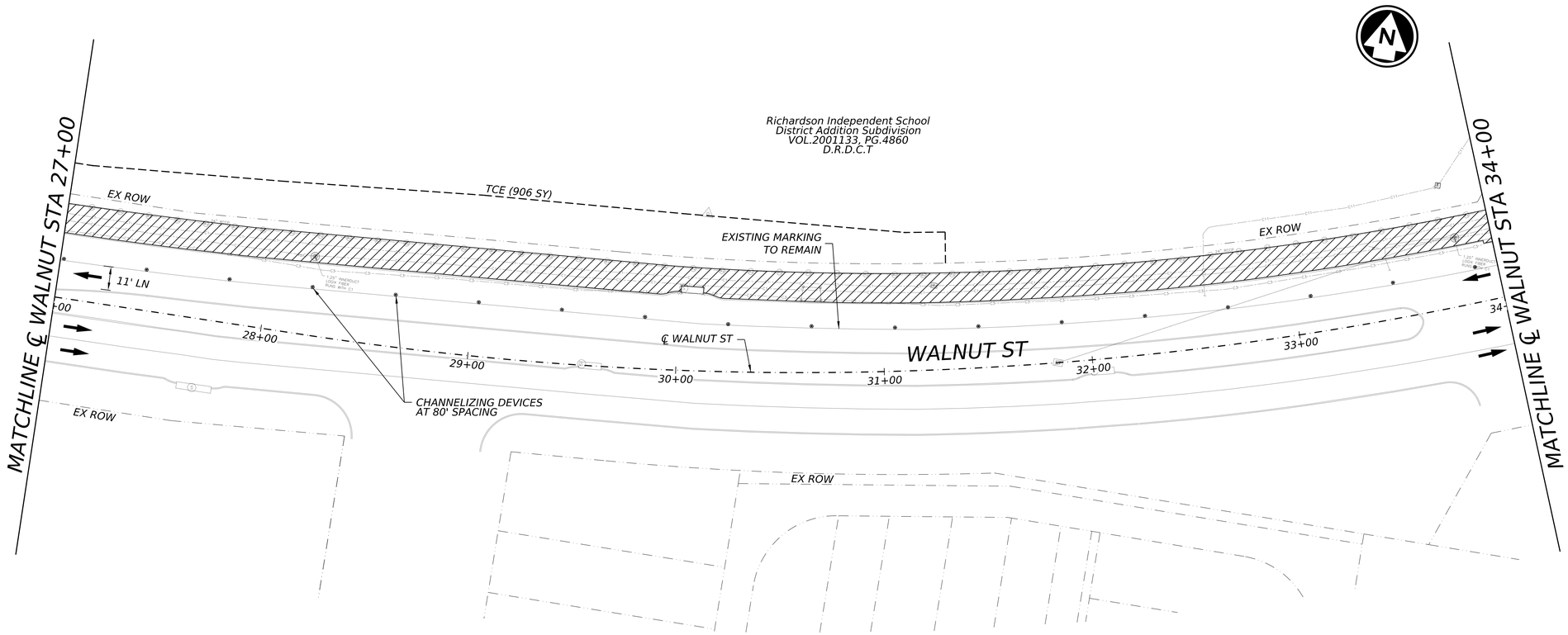

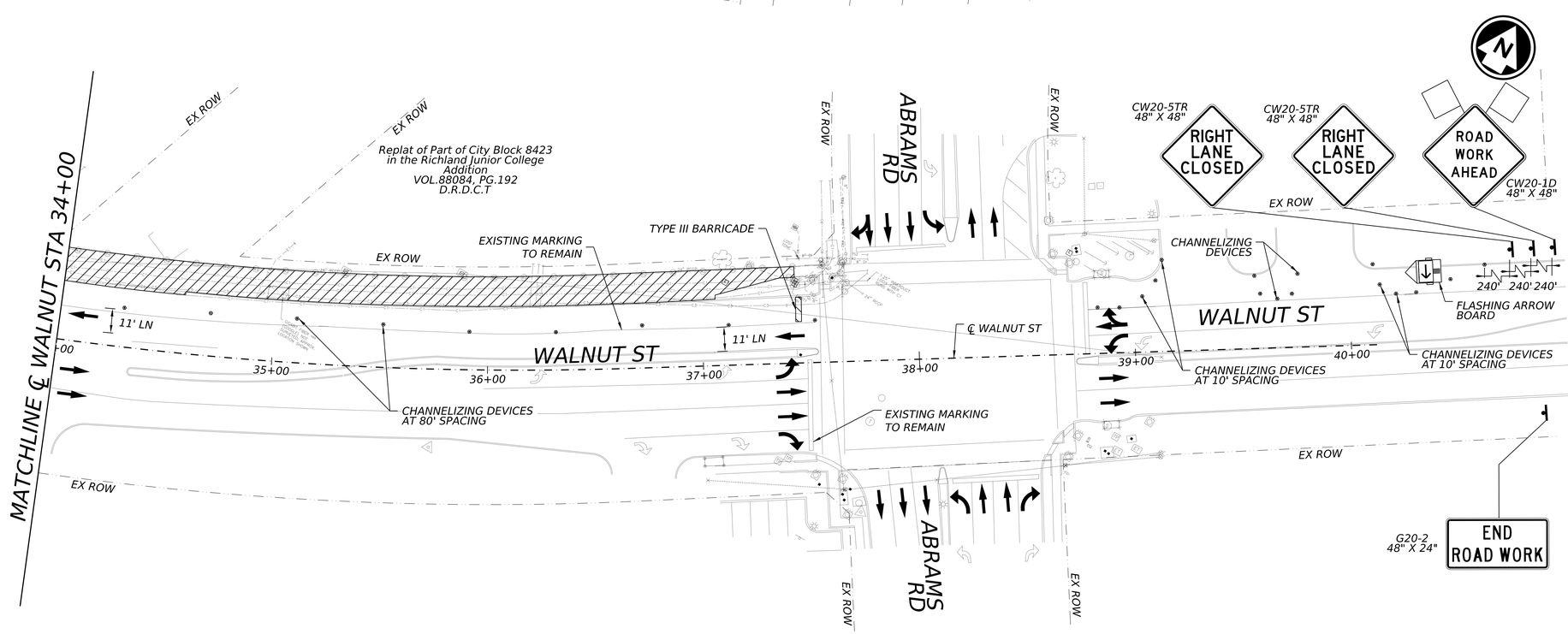

LEGEND

- WORK ZONE THIS PHASE
- CONSTRUCTION PREVIOUS PHASE
- CONSTRUCTION SIGN
- CHANNELIZING DEVICE
- TYPE III BARRICADES
- TRAFFIC FLOW
- FLASHING ARROW BOARD

NOTES:

1. PLACE WORKZONE AND TRAFFIC CONTROL DEVICES PER TxDOT BC AND WZ STANDARDS.
2. ACCESS SHALL BE PROVIDED TO ALL PROPERTIES AT ALL TIMES.

STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED
PROFESSIONAL ENGINEER
2/20/2026

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FIRM REGISTRATION NO. F-1471

Texas Department of Transportation
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

TRAFFIC CONTROL PLAN
PHASE 2

SHEET 7 OF 7

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	8.10
CONT.	SECT.	JOB	
0918	47	473	

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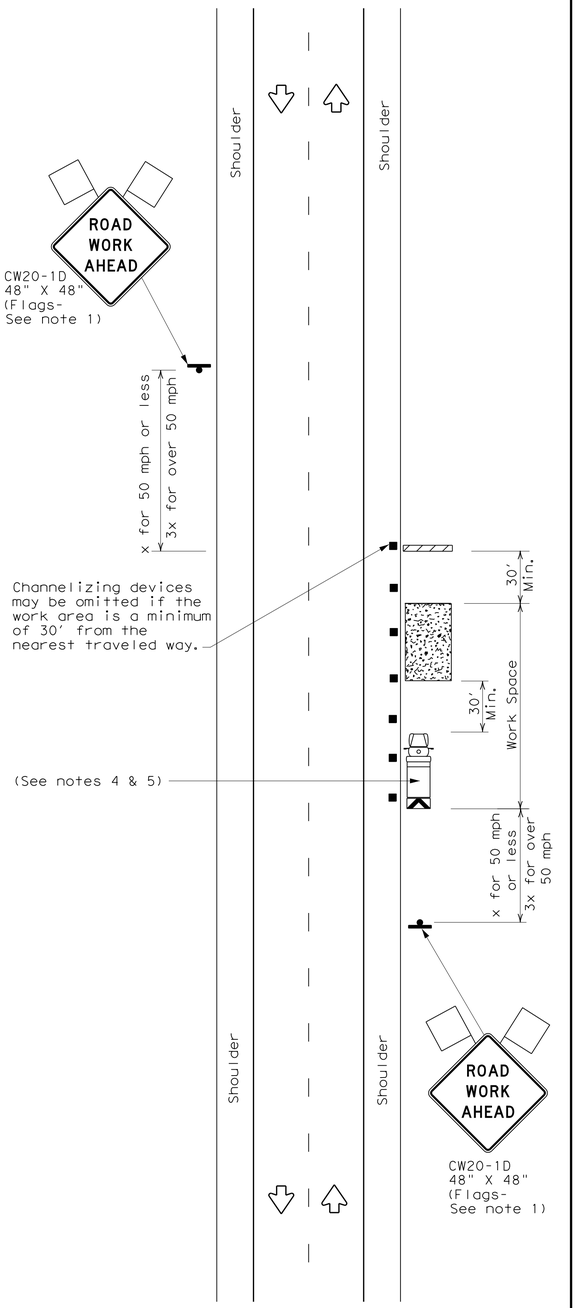
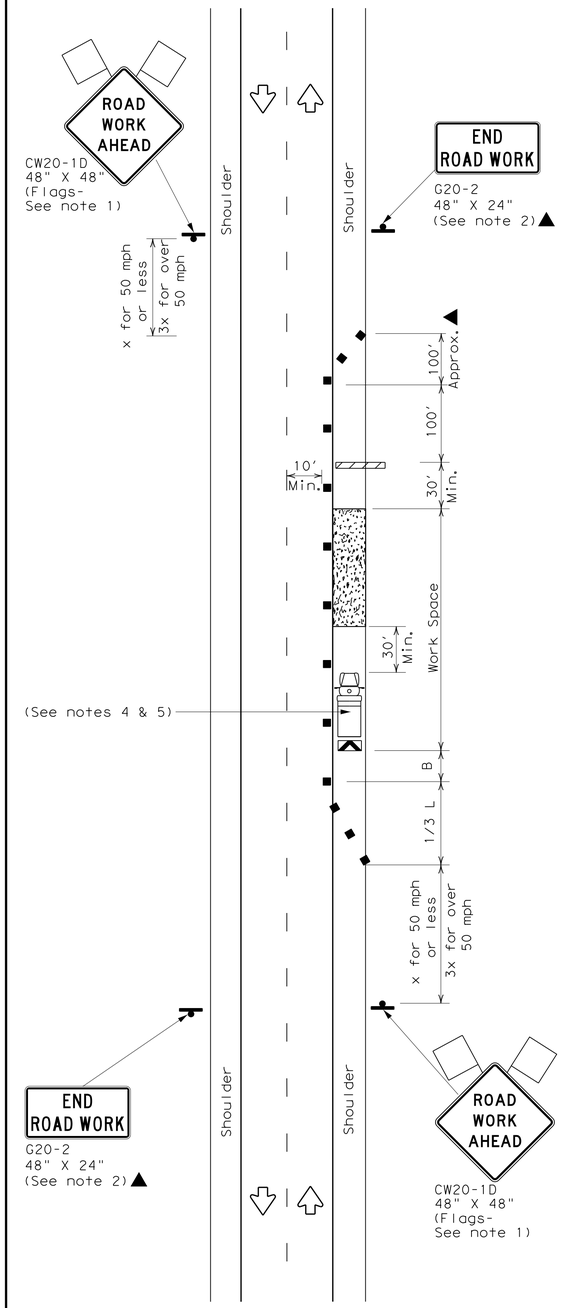


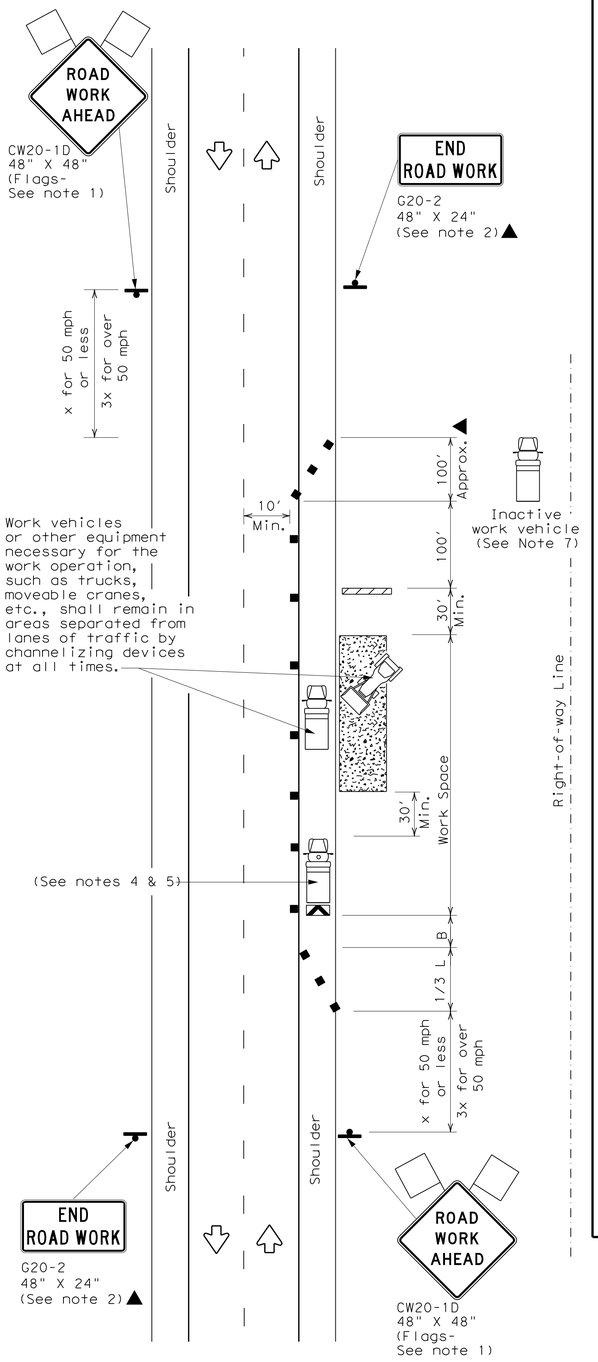
TCP (2-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (2-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

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

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

* Conventional Roads Only

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

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

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
3. Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
4. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
8. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(2-1)-18

FILE: tcp2-1-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12	DAL	DALLAS		8.11
1-97 2-18				

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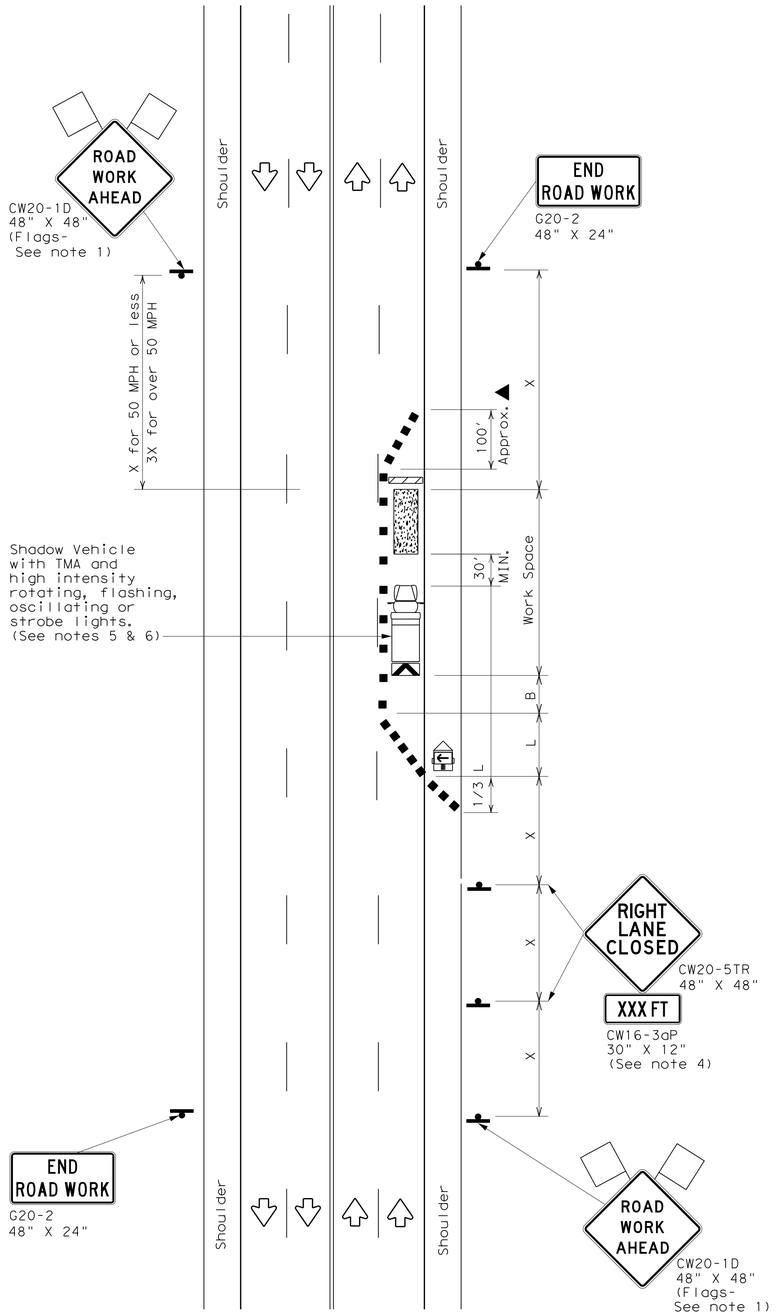
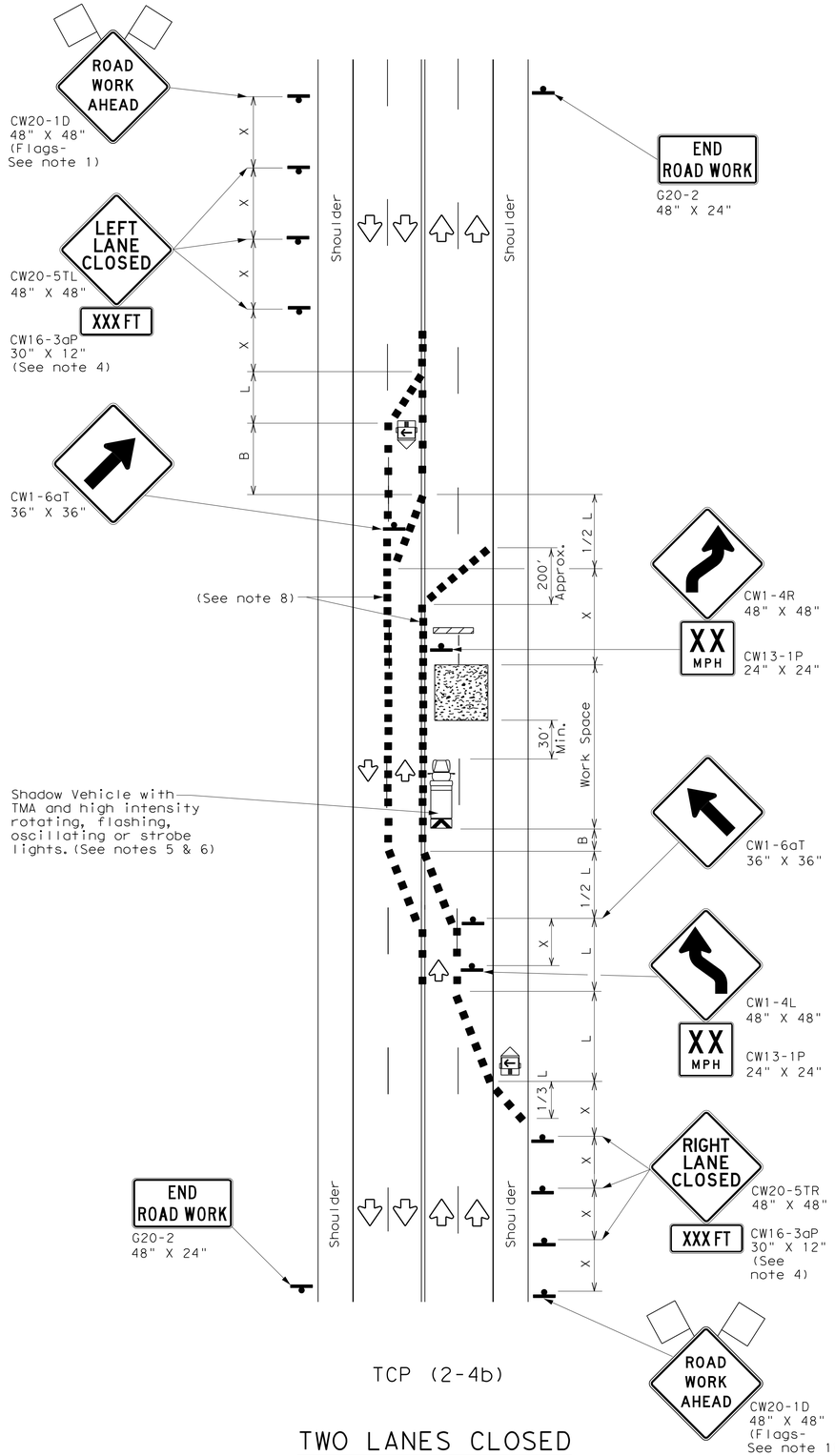


TCP (2-4a)

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	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

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

* Conventional Roads Only

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

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

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The downstream taper is optional. When used, it should be 100 feet minimum length per lane.
4. 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.
5. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
6. Additional Shadow Vehicles with TMAs may be positioned 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)

7. 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)

8. 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.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
LANE CLOSURES ON MULTILANE CONVENTIONAL ROADS

TCP(2-4)-18

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© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
8-95 3-03	DIST	COUNTY		SHEET NO.
1-97 2-12	DAL	DALLAS		8.12
4-98 2-18				

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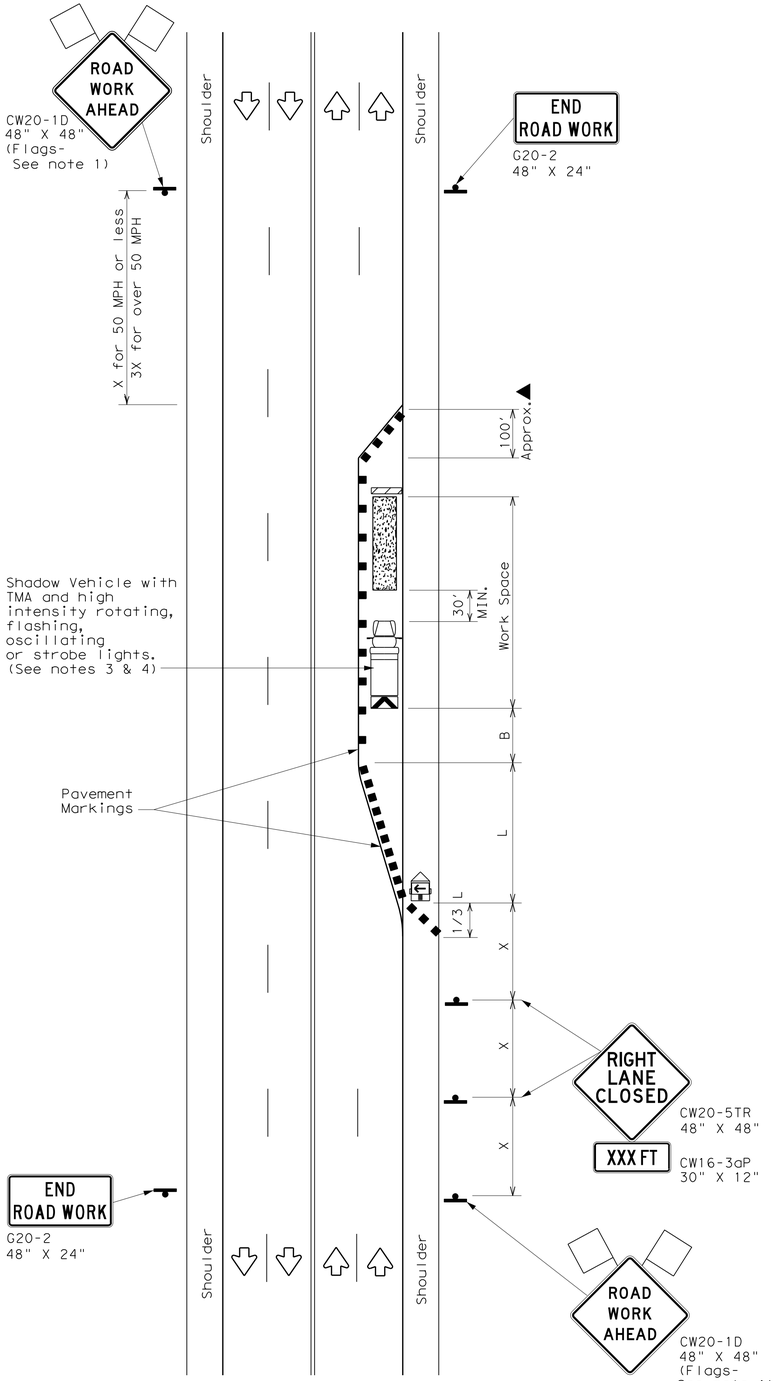
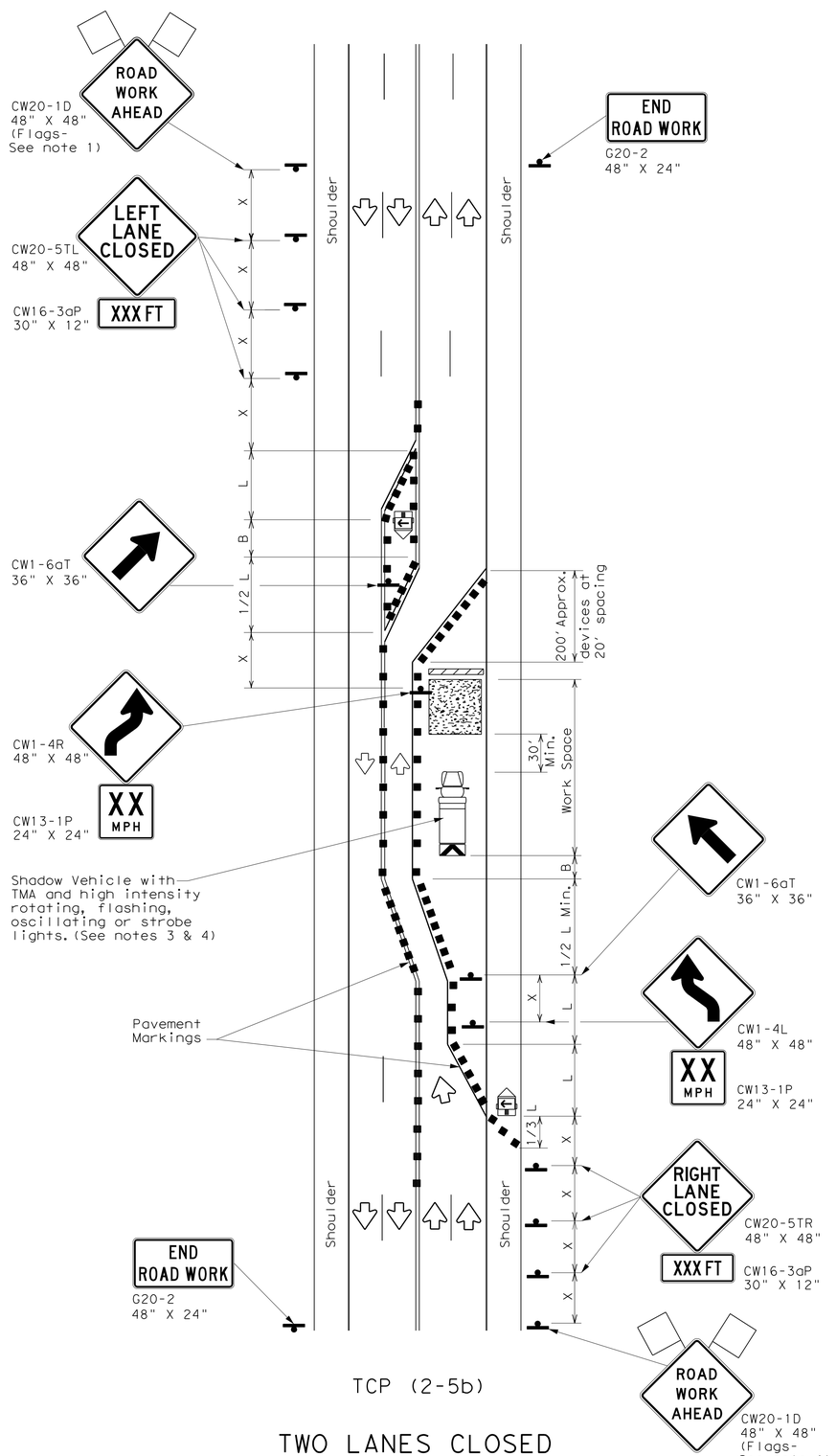


TCP (2-5a)

ONE LANE CLOSED



TCP (2-5b)

TWO LANES CLOSED

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

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

* Conventional Roads Only

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

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

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. 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 substitutued for the Shadow Vehicle and TMA.
4. 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.
5. 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)

6. If this TCP is used for a left lane closure, CW20-5TL "LEFT LANE CLOSED" signs shall be used and channelizing devices shall be placed on the centerline 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)

7. Conflicting pavement markings shall be removed for long-term projects.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
LONG TERM LANE CLOSURES
MULTILANE CONVENTIONAL RDS.

TCP(2-5)-18

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4-98 2-18	DAL	DALLAS		8.13

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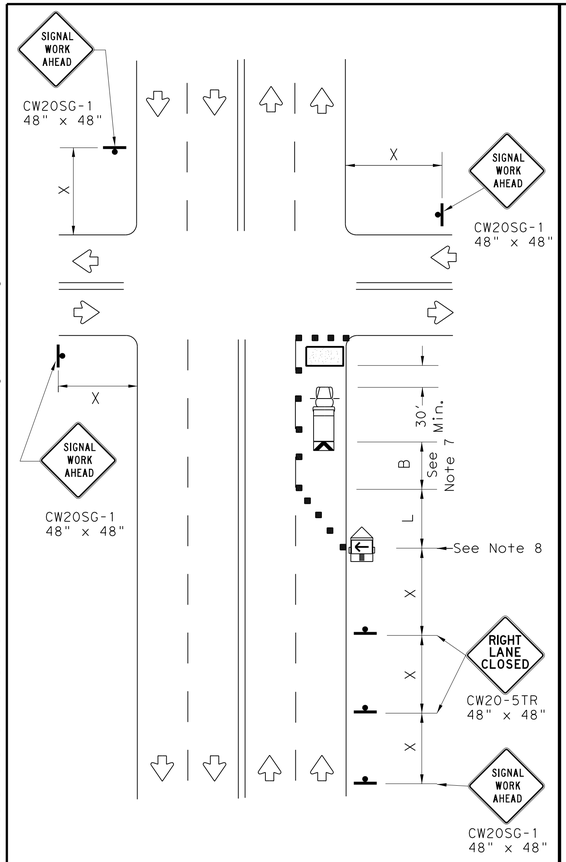
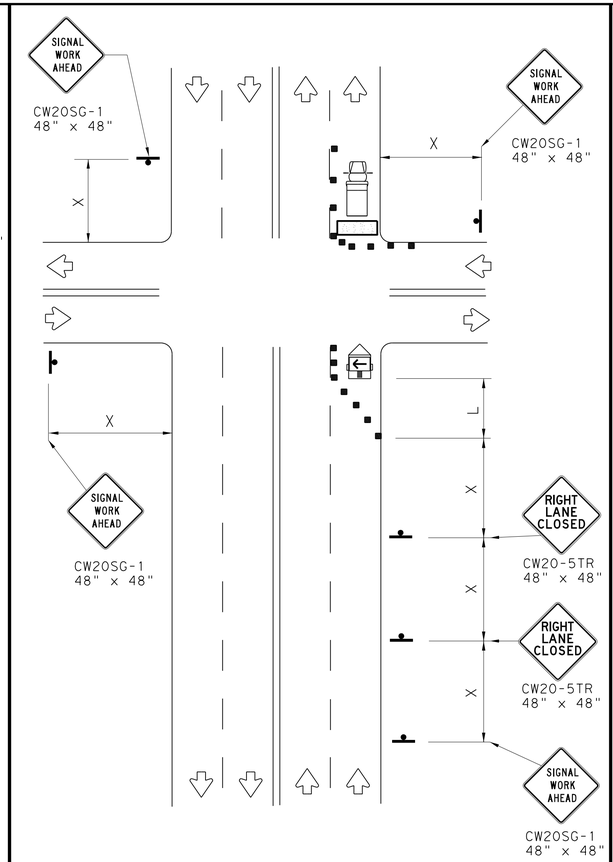


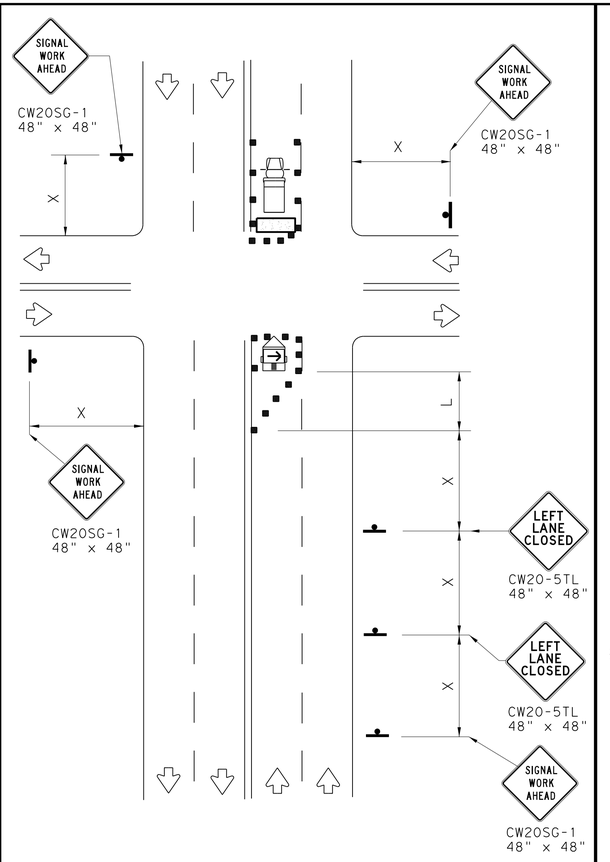
NEAR SIDE LANE CLOSURE

SHORT DURATION OR SHORT TERM STATIONARY



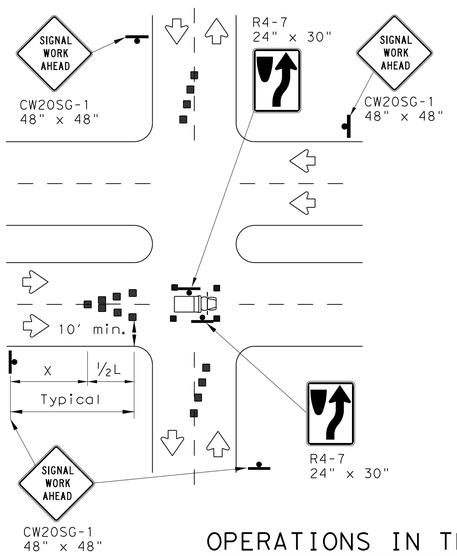
FAR SIDE RIGHT LANE CLOSURE

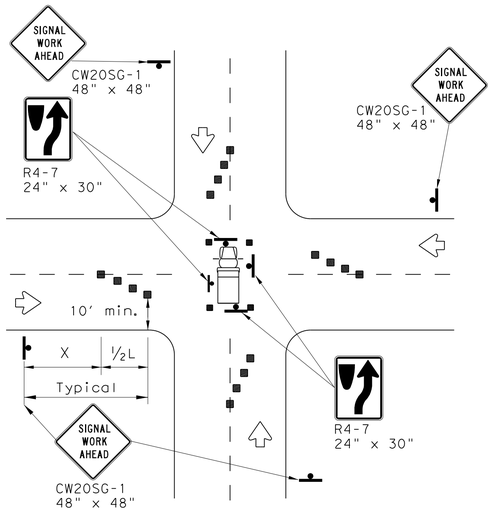
SHORT DURATION OR SHORT TERM STATIONARY



FAR SIDE LEFT LANE CLOSURE

SHORT DURATION OR SHORT TERM STATIONARY





OPERATIONS IN THE INTERSECTION

SHORT DURATION

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

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

* Conventional Roads Only

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

WORKERS IN BUCKET TRUCKS SHALL NOT WORK ABOVE OPEN LANES OF TRAFFIC.

GENERAL NOTES

1. The minimum size channelizing device is the 28" cone. 42" Two-piece cones, drums, vertical panels or barricades will be required when the device must be left unattended at night.
2. Obstructions or hazards at the work area shall be clearly marked and delineated at all times.
3. Flaggers and Flagger Symbol (CW20-7) signs may be required according to field conditions.
4. Vehicles parked in roadway shall be equipped with at least two high intensity rotating, flashing, oscillating or strobe type lights.
5. High level warning devices (flag trees) may be used at corners of the vehicle.
6. When work operations are performed on existing signals, the signals may be placed in flashing red mode when approved by the engineer. If existing signals do not have power, All-Way Stop (R1-1 and R1-3P) signs may be implemented when approved by the engineer.
7. For Short-Term Stationary work the buffer space "B" from the above table should be used if field conditions permit. For Short Duration (less than 1 hour) any buffer space provided will enhance the safety of the setup.
8. The arrow board at this location may be omitted for Short Duration work if the work vehicle has an arrow board in operation. As an option, the arrow board may be placed at the end of the taper in the closed lane if space is not available at the beginning of the taper.
9. Signs and devices for the NEAR SIDE LANE CLOSURE may be altered for a left lane closure by using a LEFT LANE CLOSED (CW20-5TL) and adding channelizing devices on the centerline to protect the work space from opposing traffic.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC SIGNAL WORK TYPICAL DETAILS

WZ(BTS-1)-13

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©TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
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2-98 10-99 7-13	DIST	COUNTY		SHEET NO.
4-98 3-03	DAL	DALLAS		8.14

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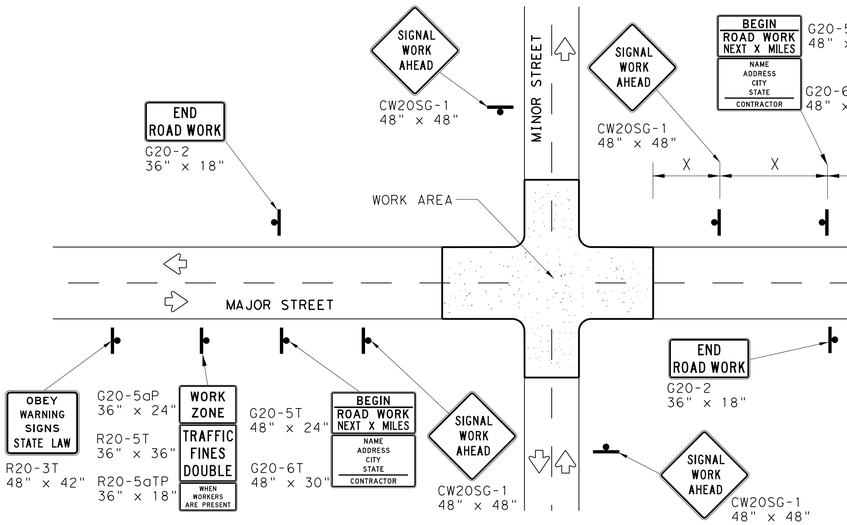


TYPICAL ADVANCE SIGNAL PROJECT SIGNING

FOR LONG TERM and INTERMEDIATE-TERM STATIONARY WORK OPERATIONS

NOTES

1. Project signing as shown shall be in place whenever signal contract work is in progress.
2. For closely adjoining projects, advance signing may not be required in advance of each intersection, but only in advance of the intersections at the project limits. Actual locations will be as directed by the Engineer.
3. Advance signs shall be removed when signal construction operations are no longer under way, as directed by the Engineer.
4. Warning sign spacing shown is typical for both directions.
5. See the Table on sheet 1 of 2 for Typical warning sign spacing.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Signs shall be installed and maintained in a straight and plumb condition.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. Nails shall NOT be used to attach signs to any support.
5. All signs shall be installed in accordance with the plans or as directed by the Engineer.
6. The Contractor shall furnish the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD).
7. The Contractor shall furnish sign supports and substrates listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD), installed as per the manufacturer's recommendations.
8. Temporary signs that have damaged or cracked substrates and/or damaged or marred reflective sheeting shall be replaced as directed by the Engineer.
9. 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".
10. Damaged wood posts shall be replaced. Splicing wood posts will not be allowed.

DURATION OF WORK

1. Work zone durations are defined in Part 6, Section 6G.02 of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

SIGN MOUNTING HEIGHT

1. Sign height of Long-term/Intermediate-term warning signs shall be as shown on Figure 6F-1 of the TMUTCD.
2. Sign height of Short-term/Short Duration warning signs shall be as shown on Figure 6F-2 of the TMUTCD.
3. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered, unless otherwise approved by the Engineer.
2. 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, or heavy materials such as plywood or aluminum shall not be used to cover signs.
3. Duct tape or other adhesive material shall NOT be affixed to a sign face.
4. Signs and anchor stubs shall be removed and holes back filled upon completion of the work.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the requirements of the DMS and color usage table shown on this sheet.

SIGN SUPPORT WEIGHTS

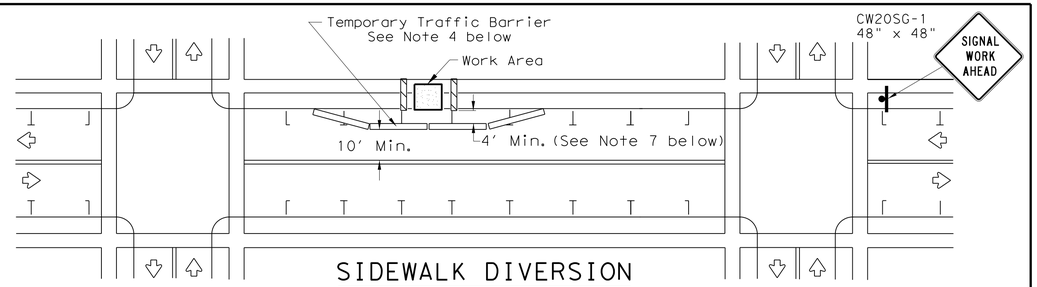
1. Weights used to keep signs from turning over should be sandbags filled with dry, cohesionless material.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects will not be permitted for use as sign support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

LEGEND	
	Sign
	Channelizing Devices
	Type 3 Barricade

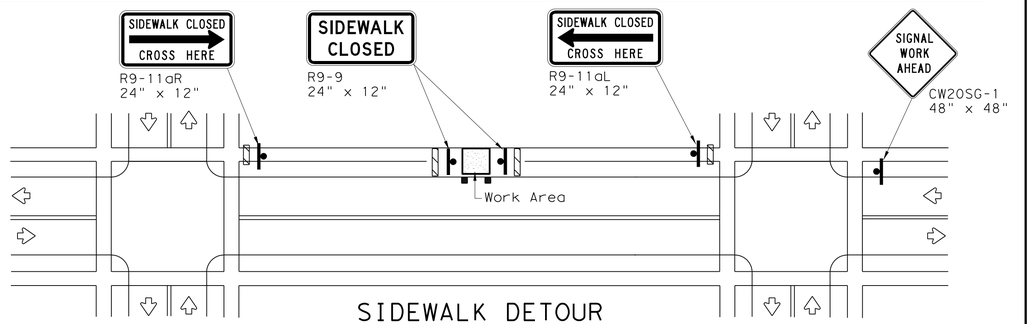
DEPARTMENTAL MATERIAL SPECIFICATIONS	
SIGN FACE MATERIALS	DMS-8300
FLEXIBLE ROLL-UP REFLECTIVE SIGNS	DMS-8310

COLOR	USAGE	SHEETING MATERIAL
ORANGE	BACKGROUND	TYPE B_{FL} OR TYPE C_{FL} SHEETING
WHITE	BACKGROUND	TYPE A SHEETING
BLACK	LEGEND & BORDERS	ACRYLIC NON-REFLECTIVE SHEETING

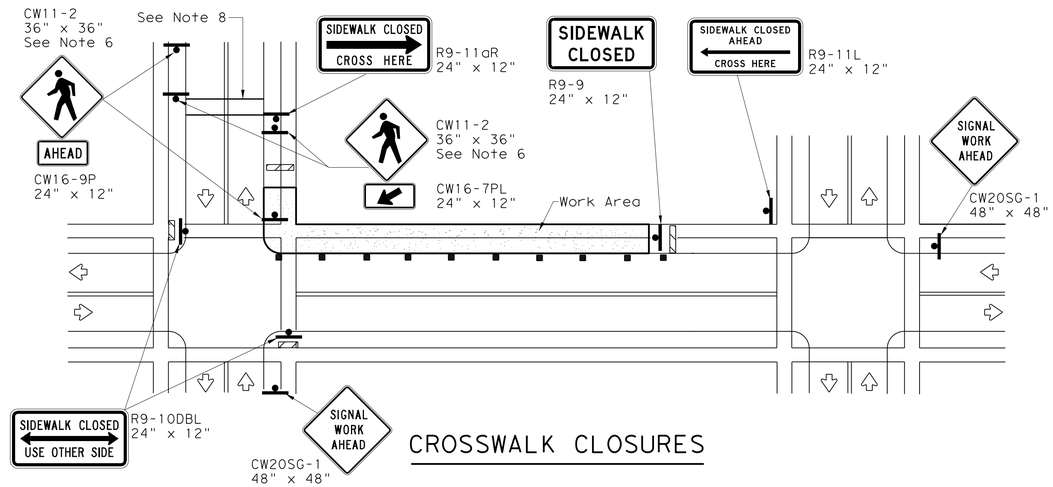
Only pre-qualified products shall be used. A copy of the "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found at the following web address:
http://www.txdot.gov/txdot_library/publications/construction.htm



SIDEWALK DIVERSION



SIDEWALK DETOUR



CROSSWALK CLOSURES

PEDESTRIAN CONTROL

1. Holes, trenches or other hazards shall be adequately protected by covering, delineating or surrounding the hazard with orange plastic pedestrian fencing or longitudinal channelizing devices, or as directed by the Engineer.
2. "CROSSWALK CLOSURES" as detailed above will require the Engineer's approval prior to installation.
3. R9 series signs shown may be placed on supports detailed on the BC standards or CWZTCD list, or when fabricated from approved lightweight plastic substrates, they may be mounted on top of a plastic drum at or near the location shown.
4. For speeds less than 45 mph longitudinal channelizing devices may be used instead of traffic barriers when approved by the Engineer. Attenuation of blunt ends and installation of water filled devices shall be as per BC(9) and manufacturer's recommendations.
5. Location of devices are for general guidance. Actual device spacing and location must be field adjusted to meet actual conditions.
6. Where pedestrians with visual disabilities normally use the closed sidewalk Detectable Pedestrian Barricades should be used instead of the Type 3 Barricades shown.
7. The width of existing sidewalk should be maintained if practical.
8. Pavement markings for mid-block crosswalks shall be paid for under the appropriate bid items.
9. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC SIGNAL WORK BARRICADES AND SIGNS

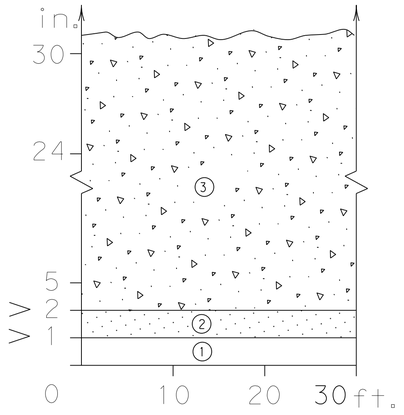
WZ(BTS-2)-13

FILE: wzbts-13.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT April 1992	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
2-98 10-99 7-13	DIST	COUNTY		SHEET NO.
4-98 3-03	DAL	DALLAS		8.15

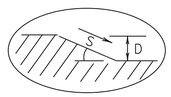
DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

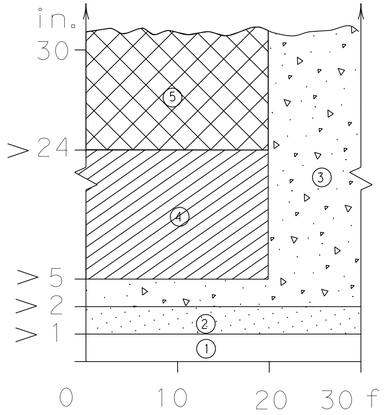
DEFINITION OF TREATMENT ZONES FOR VARIOUS EDGE CONDITIONS

Edge Height (D) in Inches versus Lateral Clearance (Y) in Feet

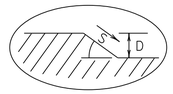


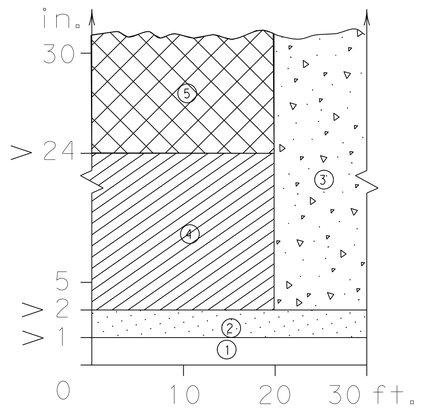
Edge Condition I
S = (3:1) (or flatter)



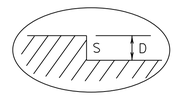


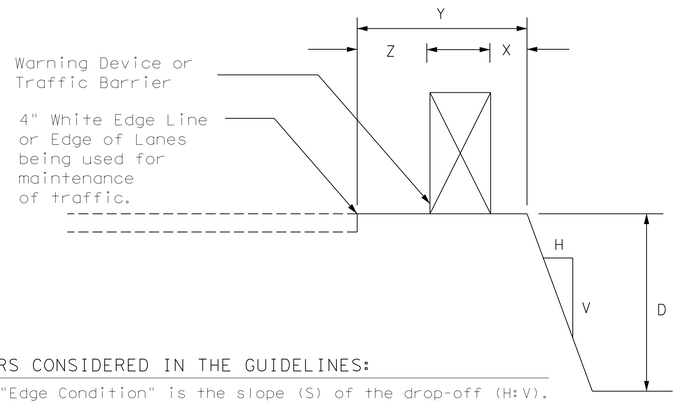
Edge Condition II
S = ((2.99):1) to (1:1)





Edge Condition III
S is steeper than (1:1)





FACTORS CONSIDERED IN THE GUIDELINES:

1. The "Edge Condition" is the slope (S) of the drop-off (H:V). The "Edge Height is the depth of the drop-off "D".

2. Distance "X" is to be the maximum practical under job conditions. Two feet minimum for high speed conditions. Distance "Y" is the lateral clearance from edge of travel lane to edge of dropoff. Distance "Z" does not have a minimum.

3. In addition to the factors considered in the guidelines, each construction zone drop-off situation should be analyzed individually, taking into account other variables, such as: traffic mix, posted speed in the construction zone, horizontal curvature, and the practicality of the treatment options.

4. The conditions for indicating the use of positive or protective barriers are given by Zone-5 and Figure-1. Traffic barriers are primarily applicable for high speed conditions. Urban areas with speeds of 30 mph or less may have a lesser need for signing, delineation, and barriers. Right-angled edges, however, with "D" greater than 2 inches and located within a lateral offset of 6 feet, may indicate a higher level of treatment.

5. If the distance "Y" must be less than 3 feet, the use of a positive barrier may not be feasible. In such a case, consider either: 1) narrowing the lanes to a desired 11 to 12 feet or 10 foot minimum (see CW20-8 sign), or 2) provide an edge slope such as Edge Condition I.

Zone	Treatment Types Guidelines:
①	No treatment
②	CW 8-11 "Uneven Lanes" signs.
③	CW 8-9a Shoulder Drop-Off" or CW 8-11 signs plus vertical panels.
④	CW8-9a or CW 8-11, signs plus drums. Where restricted space precludes the use of drums, use vertical panels. An edge slope to that of the profered Edge Condition I.
⑤	Check indications (Figure-1) for possitive barrier. Where positive barrier is not indicated, the treatment shown above for Zone-4 may be used after consideration of other applicable factors.

Edge Condition Notes:

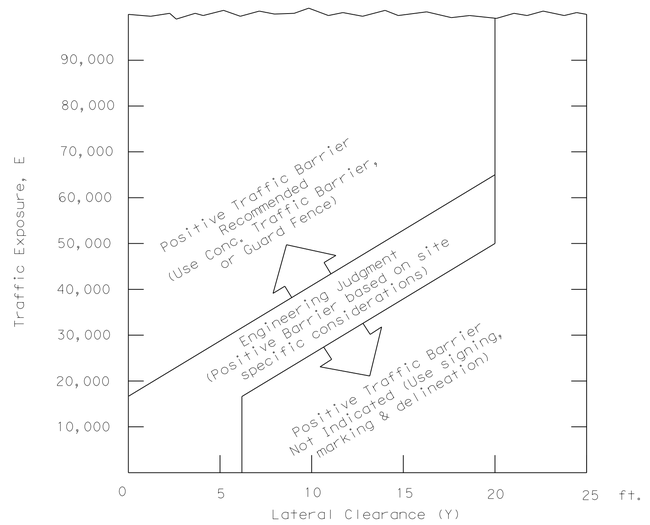
1. Edge Condition I: Most vehicles are able to traverse an edge condition with a slope rate of (3 to 1) or flatter. The slope must be constructed with a compacted material capable of supporting vehicles.

2. Edge Condition II: Most vehicles are able to traverse an edge condition with a slope between (2.99 to 1) and (1 to 1) so long as "D" does not exceed 5 inches. Under-carriage drag on most automobiles will occur when "D" exceeds 6 inches. As "D" exeeds 24 inches, the possibility for rollover is greater in most vehicles.

3. Edge Condition III: When slopes are greater than (1 to 1) and where "D" is greater than 2 inches, a more difficult control factor may exist for some vehicles, if not properly treated. For example, where "D" is greater than 2 inches and up to 24 inches different types of vehicles may experience different steering control at different edge heights. Automobiles might experience more steering control differential when "D" is greater than 2 inches and up to 5 inches. Trucks, particularly those with high loads, have more steering control differential when "D" is greater than 5 inches and up to 24 inches. When "D" exceeds 24 inches, the possibility of rollover is greater for most vehicles.

4. Milling or overlay operations that result in Edge Condition III should not be in place without appropriate warning treatments, and these conditions should not be left in place for extended periods of time.

FIGURE-1: CONDITIONS INDICATING USE OF POSITIVE BARRIER FOR ZONE 5 (▨)



1. E = ADT x T
   Where ADT is that portion of the average daily traffic volume traveling within 20 feet (generally two adjacent lanes) of the edge dropoff condition; and, T is the duration time in years of the dropoff condition.

2. Figure-1 provides a practical approach to the use of positive barriers for the protection of vehicles from pavement drop-offs. Other factors, such as the presence of heavy machinery, construction workers, or the mix and volume of traffic may make the use of positive barriers appropriate, even when the edge condition alone may not justify the use of a barrier.

3. An approved end treatment should be provided for any positive barrier end located within the clear zone.

These guidelines apply to temporary traffic control areas or work zones where continuous pavement edges or drop-offs exists parallel and adjacent to a lane used by traffic. The edge conditions may be present between shoulders and travel lanes, between adjacent or opposing travel lanes, or at intermediate points across the width of the paved surface. Due to the variability in construction operations, tolerances in the variables may be allowed by the engineer. These guidelines do not apply to short term operations. These guidelines do not constitute a rigid standard or policy; rather, they are guidance to be used in conjunction with engineering judgement. These guidelines may be updated on the Design Division's on-line manuals.

Engineer's Seal

Date 2/20/2026

Texas Department of Transportation

Traffic Safety Division Standard

TREATMENT FOR VARIOUS EDGE CONDITIONS

FILE: edgecon.dgn	DN:	CK:	DW:	CK:
©TxDOT August 2000	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
03-01 08-01 9-21	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		8.16

DATE: 2/20/2026 12:18:26 PM
FILE: c:\pw_working\othon-pw-01\mohammad.alam\dms19177\edgecon-21.dgn

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

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

For all projects with soil disturbing activity and for projects that have Environmental, Permits, Issues, and Commitments (EPICs) dependent on stormwater controls and water quality measures TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office, Area Office, or electronically.

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

1.0 SITE/PROJECT DESCRIPTION

1.1 PROJECT CONTROL SECTION JOB (CSJ):

0918-47-473

1.2 PROJECT LIMITS:

From: DART R.R. AND W BUCKINGHAM RD, ALONG W BUCKINGHAM RD FROM DART LRT

To: WALNUT ST AND ABRAMS RD INTERSECTION. S GREENVILLE AVE FROM BUCKINGHAM RD

1.3 PROJECT COORDINATES:

BEGIN: (Lat) 32.936254 ,(Long) -96.740443

END: (Lat) 32.923977 ,(Long) -96.736202

1.4 TOTAL PROJECT AREA (Acres): 3.2

1.5 TOTAL AREA TO BE DISTURBED (Acres): 3.4

1.6 NATURE OF CONSTRUCTION ACTIVITY:

CONSTRUCTION OF A SHARED-USE PATH (8'-12') INCLUDING AN ENHANCED DART RAIL CROSSING, A MID-BLOCK RRFB CROSSWALK ACROSS BUCKINGHAM ROAD, A RETAINING WALL ALONG BUCKINGHAM ROAD, IMPROVEMENTS TO SIGNALIZED INTERSECTIONS TO ACCOMMODATE LANE CLOSURES DUE TO TRAIL IMPROVEMENTS.

1.7 MAJOR SOIL TYPES:

Soil Type	Description
AUSTIN-URBAN LAND COMPLEX, 0 TO 2% SLOPES	BUCKINGHAM STA: 59+00 TO GREENVILLE STA: 114+00, GREENVILLE STA: 120+00 TO STA: 125+00, AND GREENVILLE STA: 134+00 TO WALNUT STA: 36+50
HOUSTON BLACK-URBAN LAND COMPLEX, 0 TO 4% SLOPES	GREENVILLE STA: 114+00 TO STA: 120+00, GREENVILLE STA: 125+00 TO STA: 134+00, WALNUT STA: 36+50 TO 38+00
LEWISVILLE-URBAN LAND COMPLEX, 0 TO 4% SLOPES	BUCKINGHAM STA: 52+00 TO 59+00

1.8 PROJECT SPECIFIC LOCATIONS (PSLs):

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

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

Type	Sheet #s

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

1.9 CONSTRUCTION ACTIVITIES:

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

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

1.10 POTENTIAL POLLUTANTS AND SOURCES:

- ☑ Sediment laden stormwater from stormwater conveyance over disturbed area
- ☑ Fuels, oils, and lubricants from construction vehicles, equipment, and storage
- ☑ Solvents, paints, adhesives, etc. from various construction activities
- ☑ Transported soils from offsite vehicle tracking
- ☑ Construction debris and waste from various construction activities
- ☑ Contaminated water from excavation or dewatering pump-out water
- ☐ Sanitary waste from onsite restroom facilities
- ☑ Trash from various construction activities/receptacles
- ☑ Long-term stockpiles of material and waste
- ☑ Discharges from concrete washout activities, runoff from concrete cutting activities, and other concrete related activities.
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

1.11 RECEIVING WATERS:

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

Tributaries	Classified Waterbody
FLOYD BRANCH	COTTONWOOD CREEK (0827B); NOT IMPAIRED, NOT CLASSIFIED
NO TDMLs or I-PLANS WERE IDENTIFIED	

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

1.12 ROLES AND RESPONSIBILITIES: TxDOT

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

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

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

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

MS4 Entity
DANIEL HERRIG CITY OF RICHARDSON DANIEL.HERRIG@COR.GOV
JESSICA SCOTT CITY OF RICHARDSON JESSICA.SCOTT@COR.GOV

10/03/2025

STATE OF TEXAS
JACOB REINIG
117137
LICENSED
PROFESSIONAL ENGINEER

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

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July 2023 Sheet 1 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	CENTRAL TRAIL EXTENSION		9.01
STATE	STATE DIST.	COUNTY	
TEXAS	DALLAS	DALLAS	
CONT.	SECT.	JOB	HIGHWAY NO.
0918	47	473	VA

STORMWATER POLLUTION PREVENTION PLAN (SWP3):

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

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

2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:

T / P

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

2.2 SEDIMENT CONTROL BMPs:

T / P

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

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

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

T / P

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

2.3 PERMANENT CONTROLS:

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

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To

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

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- ☑ Excess dirt/mud on road removed daily
- ☑ Haul roads dampened for dust control
- ☑ Loaded haul trucks to be covered with tarpaulin
- ☐ Stabilized construction exit
- ☑ Daily street sweeping
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- ☑ Chemical Management
- ☑ Concrete and Materials Waste Management
- ☑ Debris and Trash Management
- ☑ Dust Control
- ☐ Sanitary Facilities
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.6 VEGETATED BUFFER ZONES:

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

Type	Stationing	
	From	To
BLOCK SODDING	GREENVILLE AVE STA 102+00	GREENVILLE AVE STA 149+50

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

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

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

2.8 DEWATERING:

Dewatering discharges of accumulated stormwater, groundwater, and surface water including discharges from dewatering of trenches, excavations, foundations, vaults, and other points of accumulation are prohibited unless managed by appropriate controls to prevent and minimize the offsite discharge of sediment and other pollutants.

2.9 INSPECTIONS:

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

When dewatering activities are present, a daily inspection will be conducted once per day during those activities and documented in accordance with CGP and TxDOT requirements.

2.10 MAINTENANCE:

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

10/03/2025

STATE OF TEXAS
JACOB REINIG
117137
LICENSED
PROFESSIONAL ENGINEER

STORMWATER POLLUTION PREVENTION PLAN (SWP3)

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July 2023 Sheet 2 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6	CENTRAL TRAIL EXTENSION		9.02
STATE	STATE DIST.	COUNTY	
TEXAS	DALLAS	DALLAS	
CONT.	SECT.	JOB	HIGHWAY NO.
0918	47	473	VA

INSTALLATION LOG

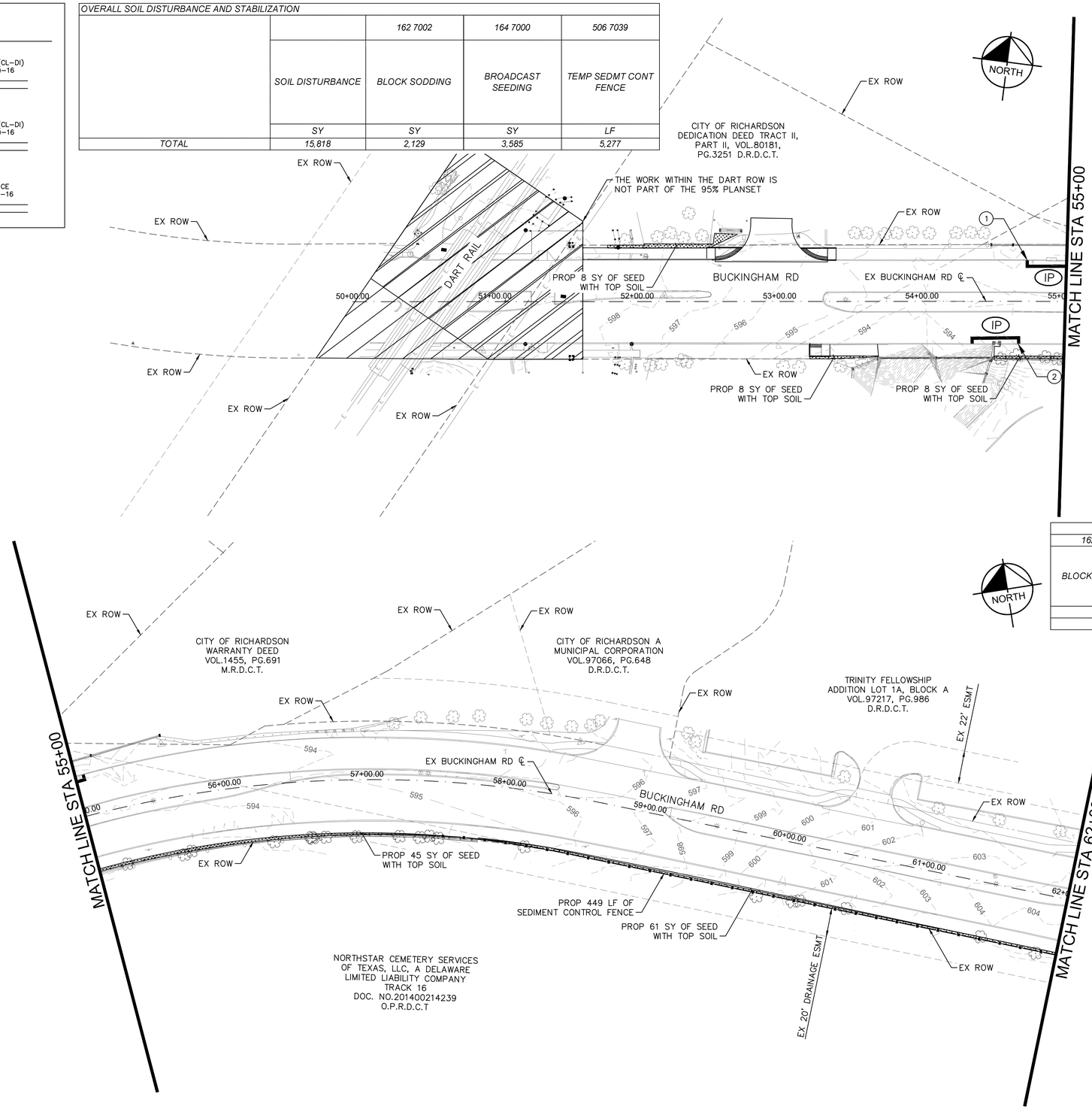
① (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

② (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

③ (449 LF) TEMP SEDMT CONT FENCE
REFERENCE TXDOT DETAIL EC (1)-16
INSTALLED DATE:_____
REMOVED DATE: _____

OVERALL SOIL DISTURBANCE AND STABILIZATION

		162 7002	*164 7000*	*506 7039*
	SOIL DISTURBANCE	*BLOCK SODDING*	*BROADCAST SEEDING*	*TEMP SEDMT CONT FENCE*
	SY	*SY*	*SY*	*LF*
TOTAL	*15,818*	*2,129*	*3,585*	*5,277*



SHEET SUMMARY

162 7002	*164 7000*	*506 7039*
BLOCK SODDING	*BROADCAST SEEDING*	*TEMP SEDMT CONT FENCE (INSTALL)*
SY	*SY*	*LF*
0	*130*	*449*

LEGEND

IP — INLET PROTECTION

SEDIMENT CONTROL FENCE

SOD WITH TOPSOIL

SEED WITH TOPSOIL

NOTES:

1. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDED PER NCTCOG ITEM 202.
2. WASHOUT WATER FROM CONCRETE DELIVERY AND WORKS MUST BE CONTAINED AND MANAGED ON SITE ON AN ADEQUATE SYSTEM. NO DISCHARGE OF CONCRETE WASHOUT WATER TO STORM DRAIN SYSTEM OR OFFSITE ROADWAYS WILL BE PERMITTED.
3. ANY TRACKING OR ACCUMULATION OF SEDIMENT ON PAVED AREAS OR PUBLIC STREETS MUST BE SWEPT OR CLEANED UP.
4. SEE EROSION CONTROL DETAILS FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR ALL EXISTING DOWNSTREAM CURB INLETS.
6. ANY NECESSARY FERTILIZER SHALL BE CONSIDERED SUBSIDIARY TO PAY ITEM 162 AND PAY ITEM 164.

3/5/2026

STATE OF TEXAS
JACOB REINIG
117137
LICENSED
PROFESSIONAL ENGINEER

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

EROSION CONTROL

BUCKINGHAM BEGIN – STA 62+00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	9.03
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Pena, Maria March 05, 2026 08:46:59pm K:\LAC_TPTO\project\08456340l_dallascounty_centraltrailextension\CADD\PlanSheets\EROSION CONTROL.dwg
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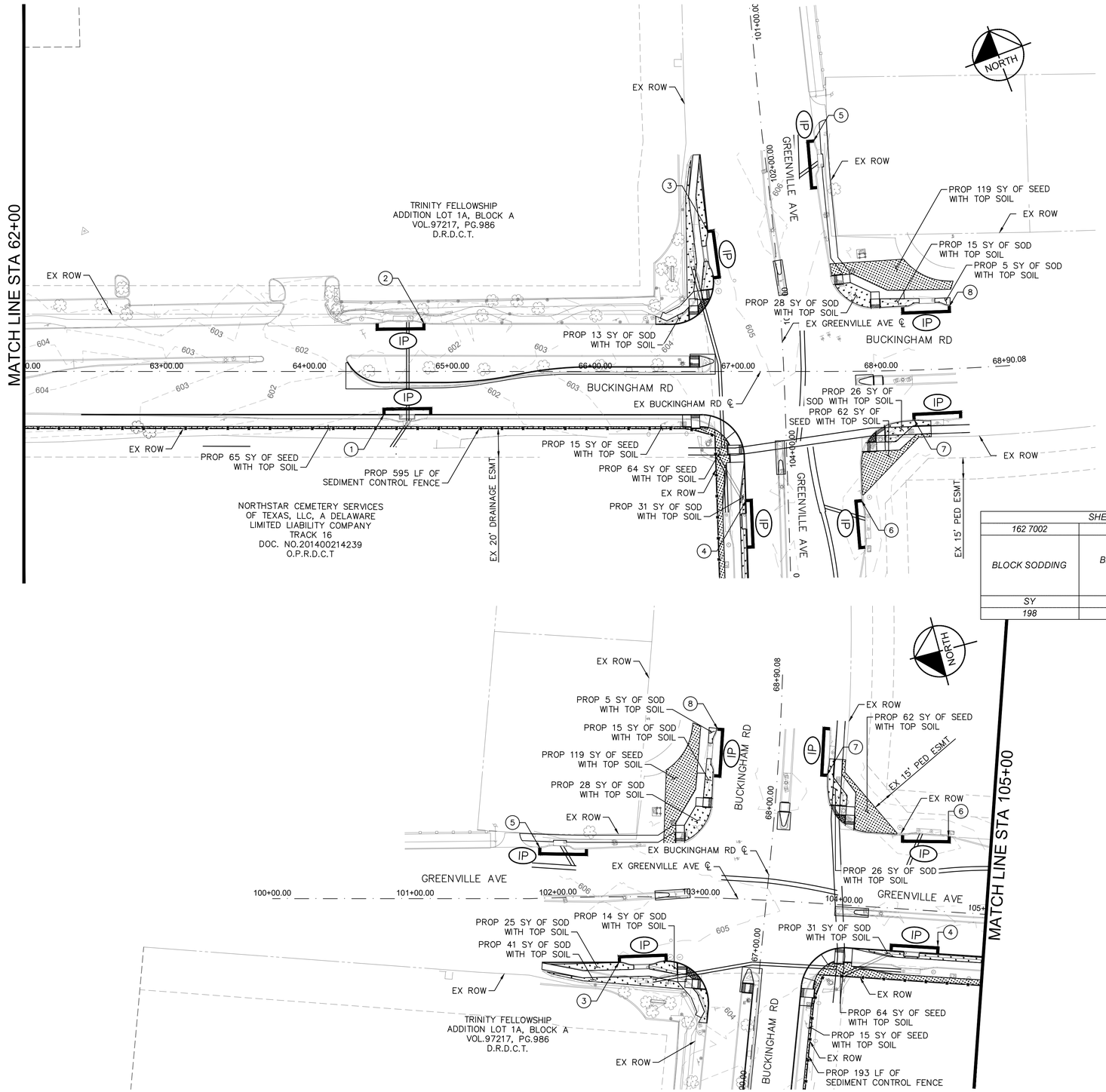
INSTALLATION LOG

1. (35 LF) EROSION CONTROL LOG (CL-DI)
   REFERENCE TXDOT DETAIL EC (9)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____
2. (35 LF) EROSION CONTROL LOG (CL-DI)
   REFERENCE TXDOT DETAIL EC (9)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____
3. (35 LF) EROSION CONTROL LOG (CL-DI)
   REFERENCE TXDOT DETAIL EC (9)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____
4. (35 LF) EROSION CONTROL LOG (CL-DI)
   REFERENCE TXDOT DETAIL EC (9)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____
5. (35 LF) EROSION CONTROL LOG (CL-DI)
   REFERENCE TXDOT DETAIL EC (9)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____
6. (37 LF) EROSION CONTROL LOG (CL-DI)
   REFERENCE TXDOT DETAIL EC (9)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____
7. (35 LF) EROSION CONTROL LOG (CL-DI)
   REFERENCE TXDOT DETAIL EC (9)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____
8. (35 LF) EROSION CONTROL LOG (CL-DI)
   REFERENCE TXDOT DETAIL EC (9)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____
9. (595 LF) TEMP SEDMT CONT FENCE
   REFERENCE TXDOT DETAIL EC (1)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____



GRAPHIC SCALE IN FEET
0 20 40 80

LEGEND

IP — INLET PROTECTION

SEDIMENT CONTROL FENCE

SOD WITH TOPSOIL

SEED WITH TOPSOIL

NOTES:

1. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDED PER NCTCOG ITEM 202.
2. WASHOUT WATER FROM CONCRETE DELIVERY AND WORKS MUST BE CONTAINED AND MANAGED ON SITE ON AN ADEQUATE SYSTEM. NO DISCHARGE OF CONCRETE WASHOUT WATER TO STORM DRAIN SYSTEM OR OFFSITE ROADWAYS WILL BE PERMITTED.
3. ANY TRACKING OR ACCUMULATION OF SEDIMENT ON PAVED AREAS OR PUBLIC STREETS MUST BE SWEPT OR CLEANED UP.
4. SEE EROSION CONTROL DETAILS FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR ALL EXISTING DOWNSTREAM CURB INLETS.
6. ANY NECESSARY FERTILIZER SHALL BE CONSIDERED SUBSIDIARY TO PAY ITEM 164 AND PAY ITEM 164.

SHEET SUMMARY		
162 7002	*164 7000*	*506 7039*
BLOCK SODDING	*BROADCAST SEEDING*	*TEMP SEDMT CONT FENCE (INSTALL)*
SY	*SY*	*LF*
198	*325*	*595*

3/5/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

EROSION CONTROL

BUCKINGHAM STA 62+00 –
GREENVILLE STA 105+00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	9.04
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Pena, Maria March 05, 2026 08:47:11pm K:\LAC_TPTO\project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\EROSION CONTROL.dwg
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INSTALLATION LOG

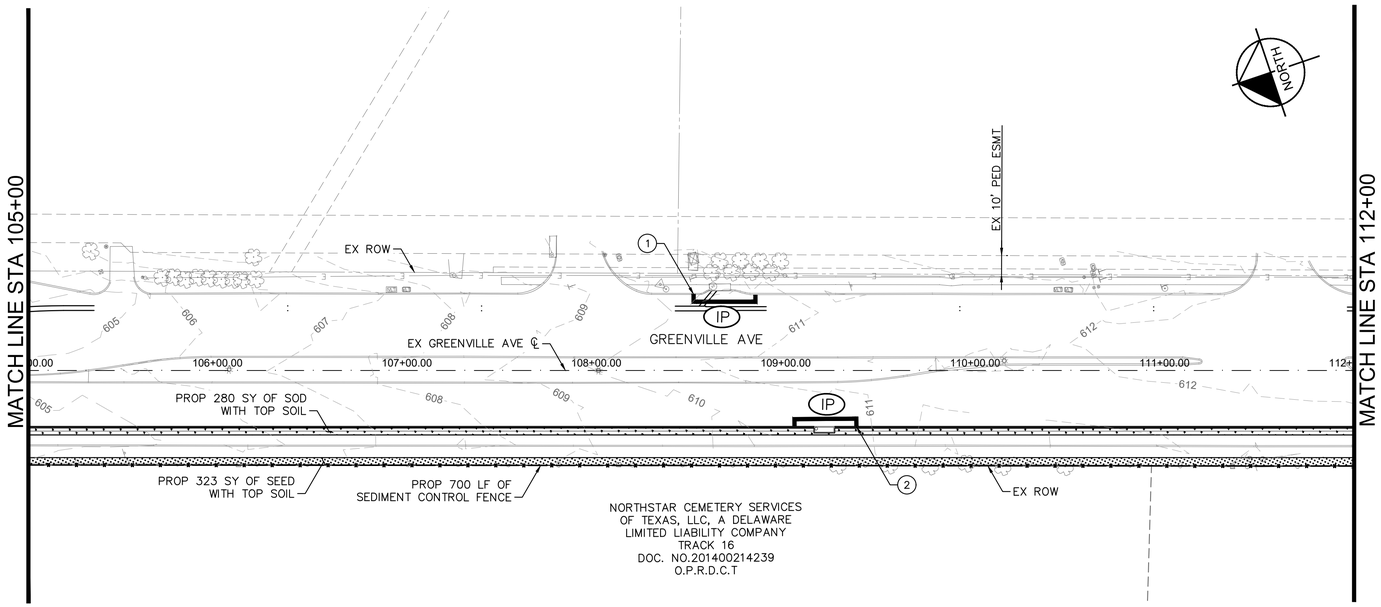
① (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

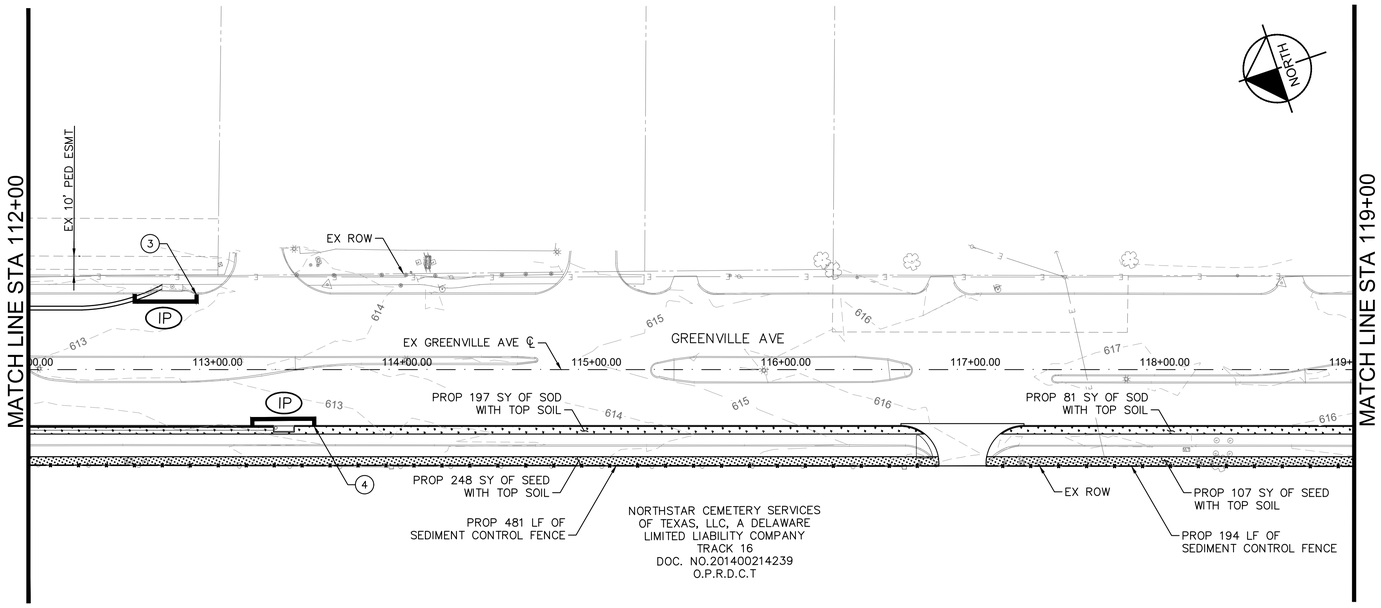
② (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

③ (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

④ (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

⑤ (1,375 LF) TEMP SEDMT CONT FENCE
REFERENCE TXDOT DETAIL EC (1)-16
INSTALLED DATE:_____
REMOVED DATE: _____





GRAPHIC SCALE IN FEET
0 20 40 80

LEGEND

IP — INLET PROTECTION

SEDIMENT CONTROL FENCE

SOD WITH TOPSOIL

SEED WITH TOPSOIL

NOTES:

1. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDED PER NCTCOG ITEM 202.
2. WASHOUT WATER FROM CONCRETE DELIVERY AND WORKS MUST BE CONTAINED AND MANAGED ON SITE ON AN ADEQUATE SYSTEM. NO DISCHARGE OF CONCRETE WASHOUT WATER TO STORM DRAIN SYSTEM OR OFFSITE ROADWAYS WILL BE PERMITTED.
3. ANY TRACKING OR ACCUMULATION OF SEDIMENT ON PAVED AREAS OR PUBLIC STREETS MUST BE SWEPT OR CLEANED UP.
4. SEE EROSION CONTROL DETAILS FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR ALL EXISTING DOWNSTREAM CURB INLETS.
6. ANY NECESSARY FERTILIZER SHALL BE CONSIDERED SUBSIDIARY TO PAY ITEM 162 AND PAY ITEM 164.

SHEET SUMMARY		
162 7002	*164 7000*	*506 7039*
BLOCK SODDING	*BROADCAST SEEDING*	*TEMP SEDMT CONT FENCE (INSTALL)*
SY	*SY*	*LF*
558	*678*	*1,375*

3/5/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

EROSION CONTROL

GREENVILLE STA 105+00 – STA 119+00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	9.05
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Pena, Maria March 05, 2026 08:47:28am K:\LAC_TPTO\project\0845634O1_dallascounty_centraltrailextension\CADD\PlanSheets\EROSION CONTROL.dwg
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INSTALLATION LOG

① (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

② (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

③ (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

④ (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

⑤ (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

⑥ (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

⑦ (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

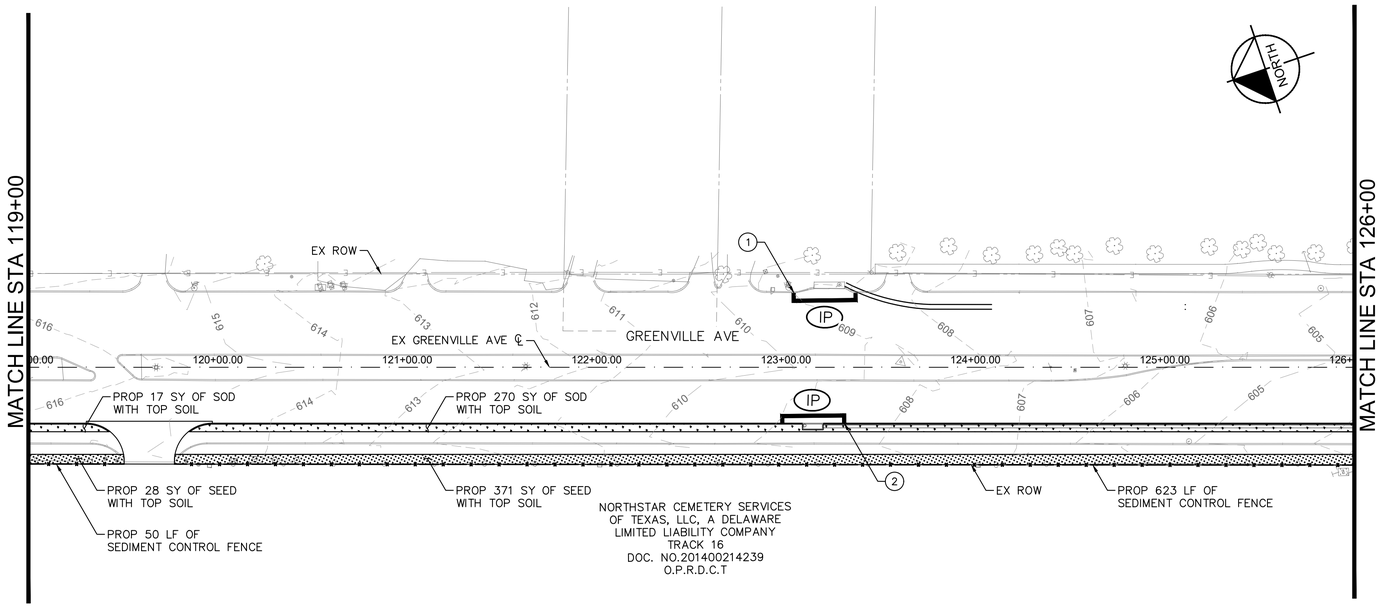
⑧ (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

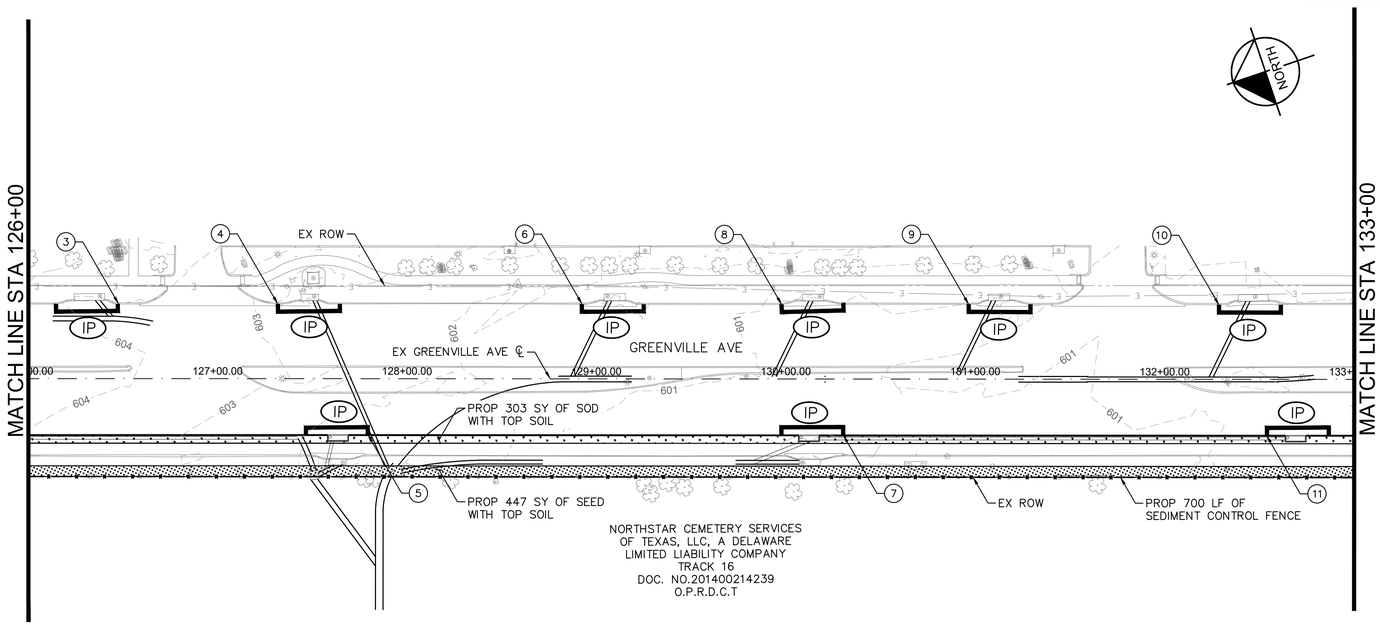
⑨ (37 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

⑩ (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

⑪ (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

⑫ (1,373 LF) TEMP SEDMT CONT FENCE
REFERENCE TXDOT DETAIL EC (1)-16
INSTALLED DATE:_____
REMOVED DATE: _____





GRAPHIC SCALE IN FEET
0 20 40 80

LEGEND

IP — INLET PROTECTION

SEDIMENT CONTROL FENCE

SOD WITH TOPSOIL

SEED WITH TOPSOIL

NOTES:

1. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDED PER NCTCOG ITEM 202.
2. WASHOUT WATER FROM CONCRETE DELIVERY AND WORKS MUST BE CONTAINED AND MANAGED ON SITE ON AN ADEQUATE SYSTEM. NO DISCHARGE OF CONCRETE WASHOUT WATER TO STORM DRAIN SYSTEM OR OFFSITE ROADWAYS WILL BE PERMITTED.
3. ANY TRACKING OR ACCUMULATION OF SEDIMENT ON PAVED AREAS OR PUBLIC STREETS MUST BE SWEPT OR CLEANED UP.
4. SEE EROSION CONTROL DETAILS FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR ALL EXISTING DOWNSTREAM CURB INLETS.
6. ANY NECESSARY FERTILIZER SHALL BE CONSIDERED SUBSIDIARY TO PAY ITEM 162 AND PAY ITEM 164.

SHEET SUMMARY		
162 7002	164 7000	506 7039
BLOCK SODDING	BROADCAST SEEDING	TEMP SEDMT CONT FENCE (INSTALL)
SY	SY	LF
590	846	1,373

3/5/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

EROSION CONTROL

GREENVILLE STA 119+00 – STA 133+00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.	
6				
STATE	DIST.	COUNTY		SHEET NO.
TEXAS	DALLAS	DALLAS		9.06
CONT.	SECT.	JOB		
0918	47	473		

Plotted By:Pena, Maria March 05, 2026 08:47:42pm K:\LAC_TPTO\project\06456340\1_dallascounty_centraltrailextension\CADD\PlanSheets\EROSION CONTROL.dwg
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INSTALLATION LOG

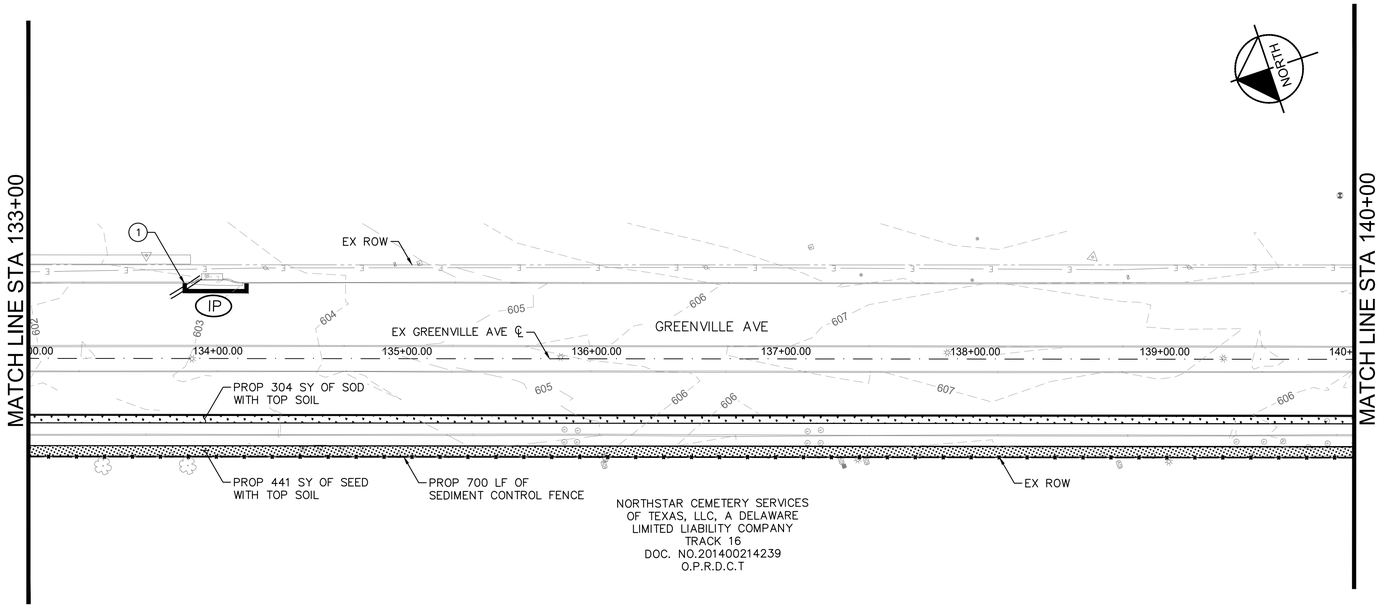
① (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

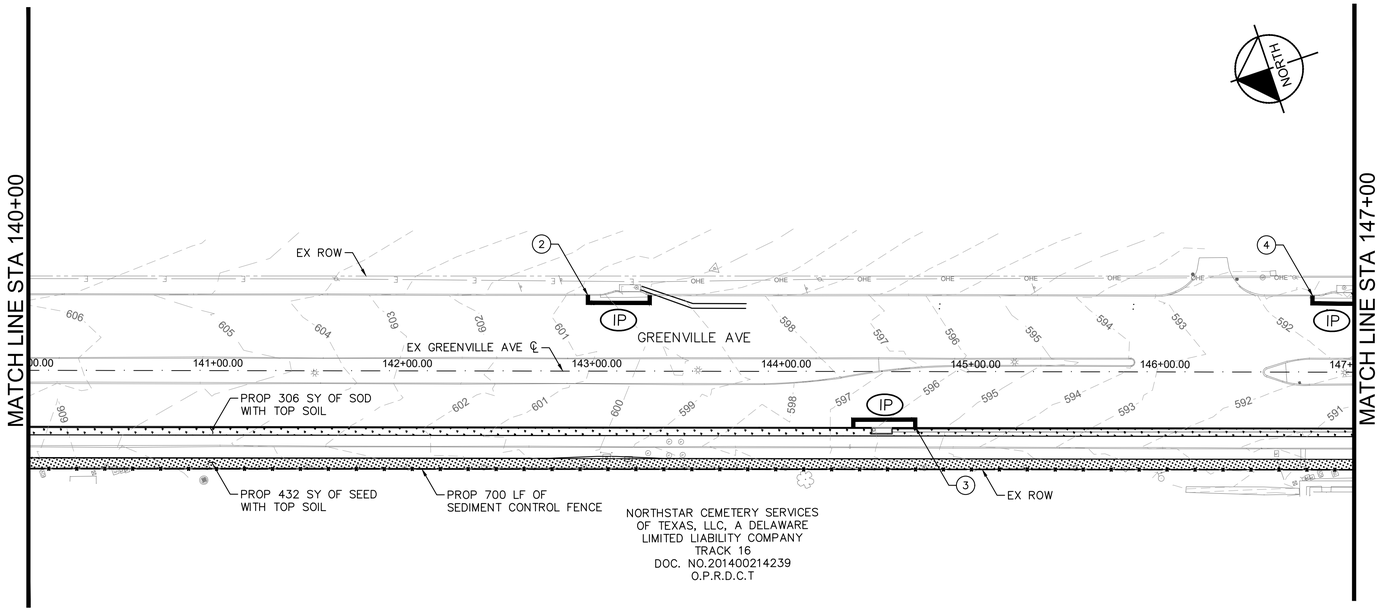
② (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

③ (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

④ (35 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____

⑤ (1,400 LF) TEMP SEDMT CONT FENCE
REFERENCE TXDOT DETAIL EC (1)-16
INSTALLED DATE:_____
REMOVED DATE: _____





GRAPHIC SCALE IN FEET
0 20 40 80

LEGEND

IP — INLET PROTECTION

SEDIMENT CONTROL FENCE

SOD WITH TOPSOIL

SEED WITH TOPSOIL

NOTES:

1. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDED PER NCTCOG ITEM 202.
2. WASHOUT WATER FROM CONCRETE DELIVERY AND WORKS MUST BE CONTAINED AND MANAGED ON SITE ON AN ADEQUATE SYSTEM. NO DISCHARGE OF CONCRETE WASHOUT WATER TO STORM DRAIN SYSTEM OR OFFSITE ROADWAYS WILL BE PERMITTED.
3. ANY TRACKING OR ACCUMULATION OF SEDIMENT ON PAVED AREAS OR PUBLIC STREETS MUST BE SWEPT OR CLEANED UP.
4. SEE EROSION CONTROL DETAILS FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR ALL EXISTING DOWNSTREAM CURB INLETS.
6. ANY NECESSARY FERTILIZER SHALL BE CONSIDERED SUBSIDIARY TO PAY ITEM 162 AND PAY ITEM 164.

3/5/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

EROSION CONTROL

GREENVILLE STA 133+00 – STA 147+00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6			
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	9.07
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Pena, Maria March 05, 2026 08:47:53pm K:\LAC_TPTO\1project\064563401_dallascounty_centraltrailextension\CADD\PlanSheets\EROSION CONTROL.dwg
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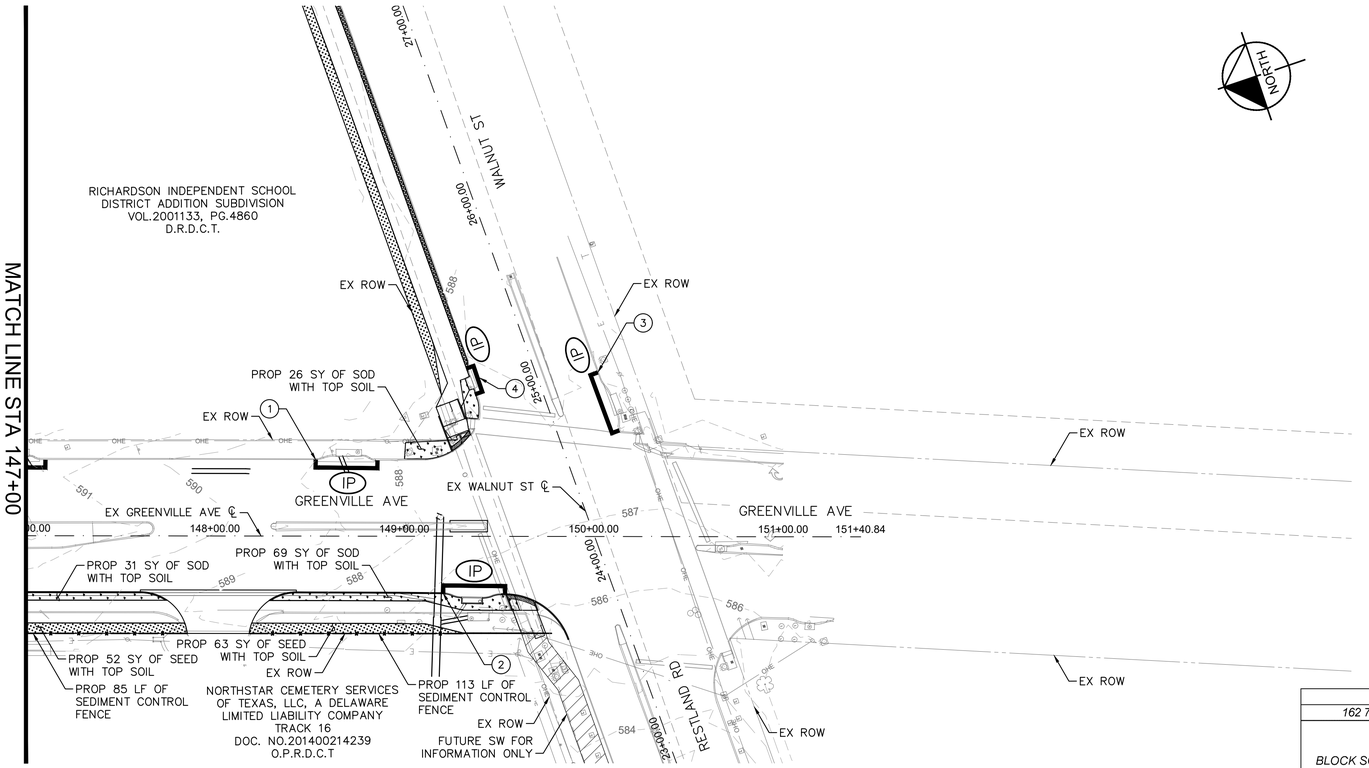
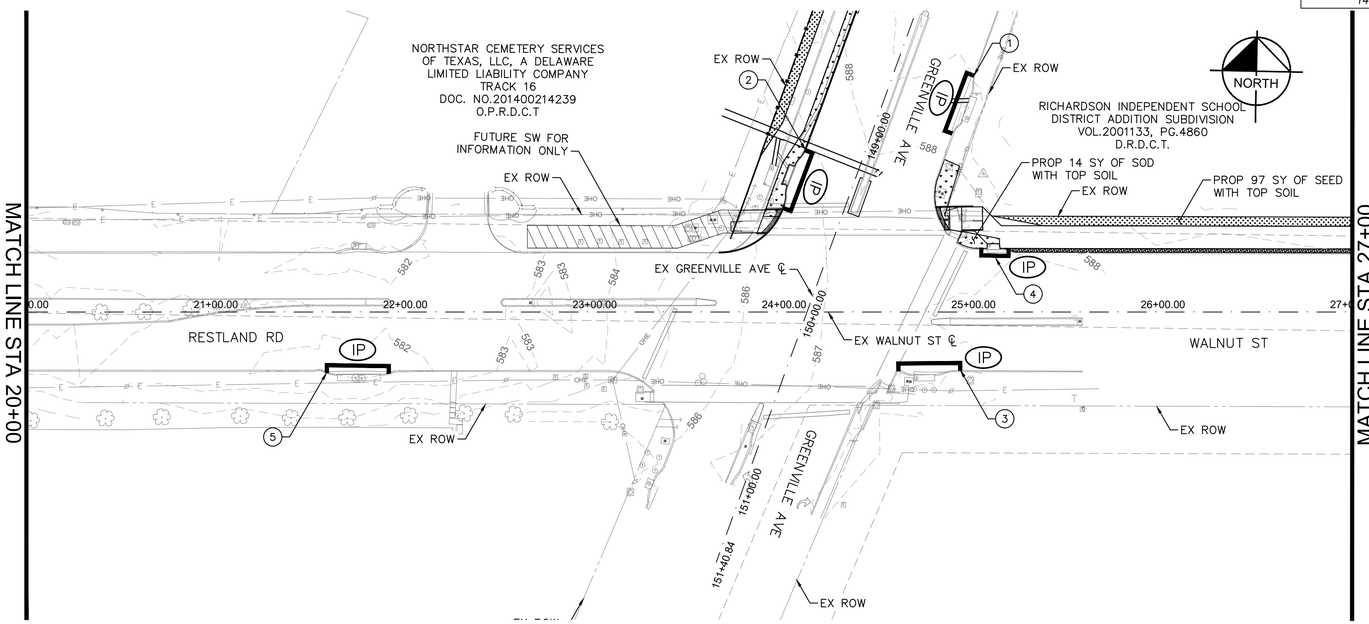
INSTALLATION LOG

1. (37 LF) EROSION CONTROL LOG (CL-DI)
   REFERENCE TXDOT DETAIL EC (9)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____
2. (35 LF) EROSION CONTROL LOG (CL-DI)
   REFERENCE TXDOT DETAIL EC (9)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____
3. (35 LF) EROSION CONTROL LOG (CL-DI)
   REFERENCE TXDOT DETAIL EC (9)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____
4. (22 LF) EROSION CONTROL LOG (CL-DI)
   REFERENCE TXDOT DETAIL EC (9)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____
5. (35 LF) EROSION CONTROL LOG (CL-DI)
   REFERENCE TXDOT DETAIL EC (9)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____
6. (85 LF) TEMP SEDMT CONT FENCE
   REFERENCE TXDOT DETAIL EC (1)-16
   INSTALLED DATE:_____
   REMOVED DATE: _____





LEGEND

- IP — INLET PROTECTION
- SEDIMENT CONTROL FENCE
- SOD WITH TOPSOIL
- SEED WITH TOPSOIL

NOTES:

1. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDED PER NCTCOG ITEM 202.
2. WASHOUT WATER FROM CONCRETE DELIVERY AND WORKS MUST BE CONTAINED AND MANAGED ON SITE ON AN ADEQUATE SYSTEM. NO DISCHARGE OF CONCRETE WASHOUT WATER TO STORM DRAIN SYSTEM OR OFFSITE ROADWAYS WILL BE PERMITTED.
3. ANY TRACKING OR ACCUMULATION OF SEDIMENT ON PAVED AREAS OR PUBLIC STREETS MUST BE SWEPT OR CLEANED UP.
4. SEE EROSION CONTROL DETAILS FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR ALL EXISTING DOWNSTREAM CURB INLETS.
6. ANY NECESSARY FERTILIZER SHALL BE CONSIDERED SUBSIDIARY TO PAY ITEM 162 AND PAY ITEM 164.

SHEET SUMMARY		
162 7002	164 7000	506 7039
BLOCK SODDING	BROADCAST SEEDING	TEMP SEDMT CONT FENCE (INSTALL)
SY	SY	LF
140	212	85

3/5/2026

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

EROSION CONTROL

GREENVILLE STA 147+00 – WALNUT STA 27+00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6			
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	9.08
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Pena, Maria March 05, 2026 08:48:03pm K:\LAC_TPTO\project\086563401_dallascounty_centraltrailextension\CADD\PlanSheets\EROSION CONTROL.dwg
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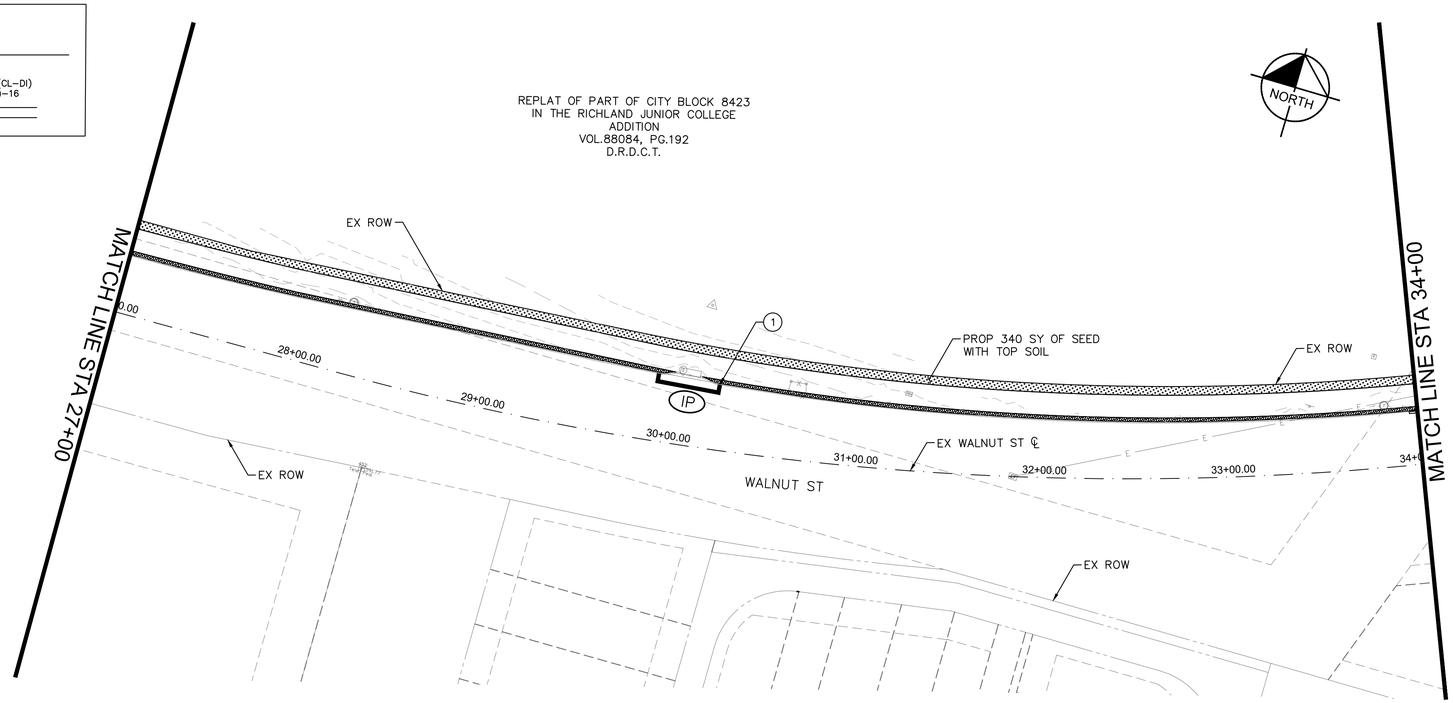
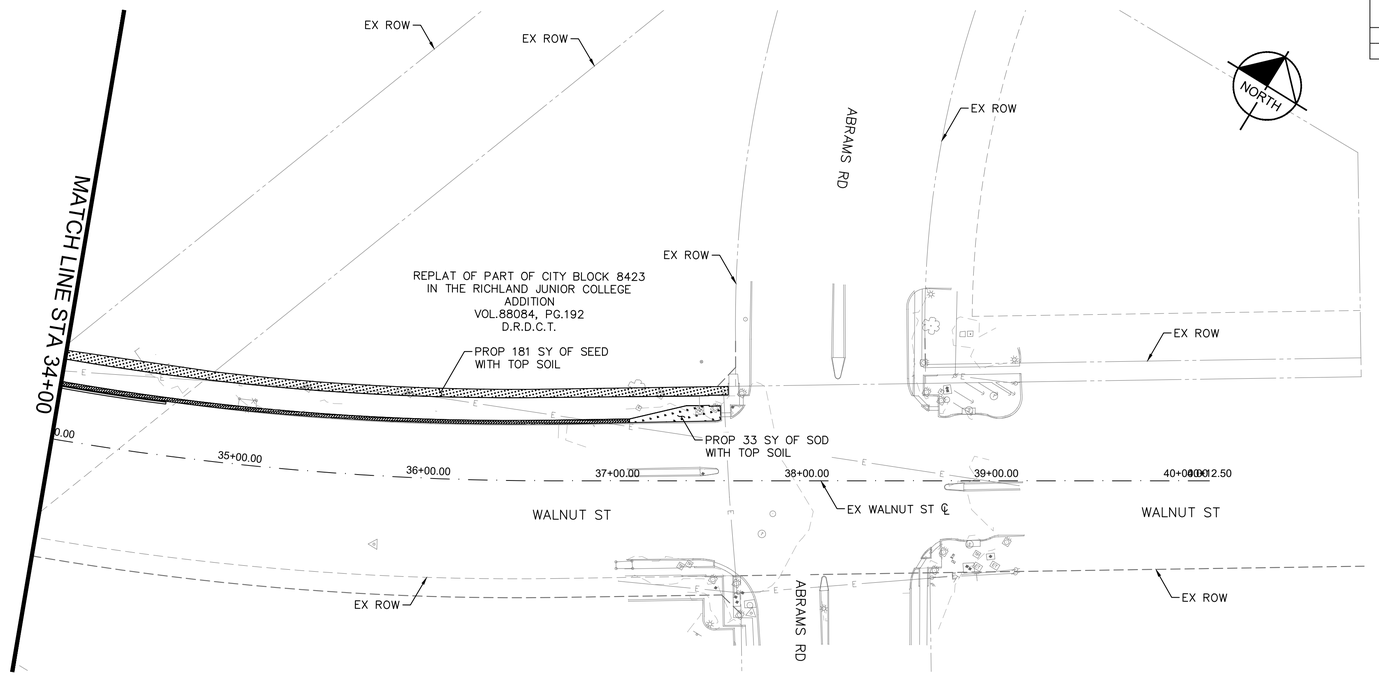
INSTALLATION LOG

① (37 LF) EROSION CONTROL LOG (CL-DI)
REFERENCE TXDOT DETAIL EC (9)-16
INSTALLED DATE:_____
REMOVED DATE: _____



SHEET SUMMARY		
162 7002	164 7000	506 7039
BLOCK SODDING	BROADCAST SEEDING	TEMP SEDMT CONT FENCE (INSTALL)
SY	SY	LF
33	521	0



LEGEND

IP — INLET PROTECTION

SEDIMENT CONTROL FENCE

SOD WITH TOPSOIL

SEED WITH TOPSOIL

NOTES:

1. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE SEEDED PER NCTCOG ITEM 202.
2. WASHOUT WATER FROM CONCRETE DELIVERY AND WORKS MUST BE CONTAINED AND MANAGED ON SITE ON AN ADEQUATE SYSTEM. NO DISCHARGE OF CONCRETE WASHOUT WATER TO STORM DRAIN SYSTEM OR OFFSITE ROADWAYS WILL BE PERMITTED.
3. ANY TRACKING OR ACCUMULATION OF SEDIMENT ON PAVED AREAS OR PUBLIC STREETS MUST BE SWEPT OR CLEANED UP.
4. SEE EROSION CONTROL DETAILS FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR ALL EXISTING DOWNSTREAM CURB INLETS.
6. ANY NECESSARY FERTILIZER SHALL BE CONSIDERED SUBSIDIARY TO PAY ITEM 162 AND PAY ITEM 164.

3/5/2026

STATE OF TEXAS
JACOB REINIG
117137
LICENSED
PROFESSIONAL ENGINEER

Kimley»Horn F-928

Texas Department of Transportation
©2026

DALLAS COUNTY
CENTRAL TRAIL EXTENSION

EROSION CONTROL
WALNUT STA 27+00 TO END

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	9.09
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Pena, Maria March 05, 2026 08:48:14pm K:\LAC_TPTO\1project\086456301_dallascounty_centraltrailextension\CADD\PlanSheets\EROSION CONTROL.dwg
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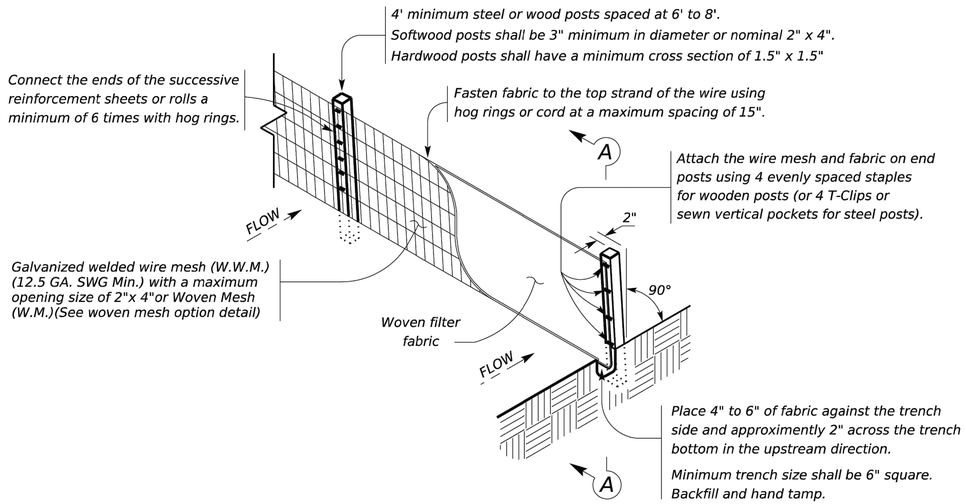
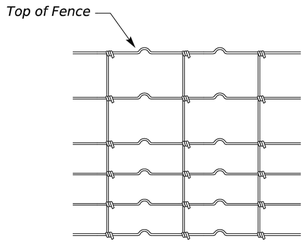
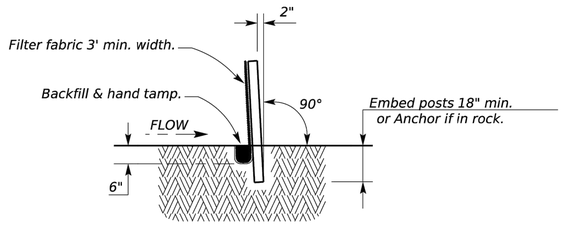


TEMPORARY SEDIMENT CONTROL FENCE

SCF





SECTION A-A

HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

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

SEDIMENT CONTROL FENCE USAGE GUIDELINES

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

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

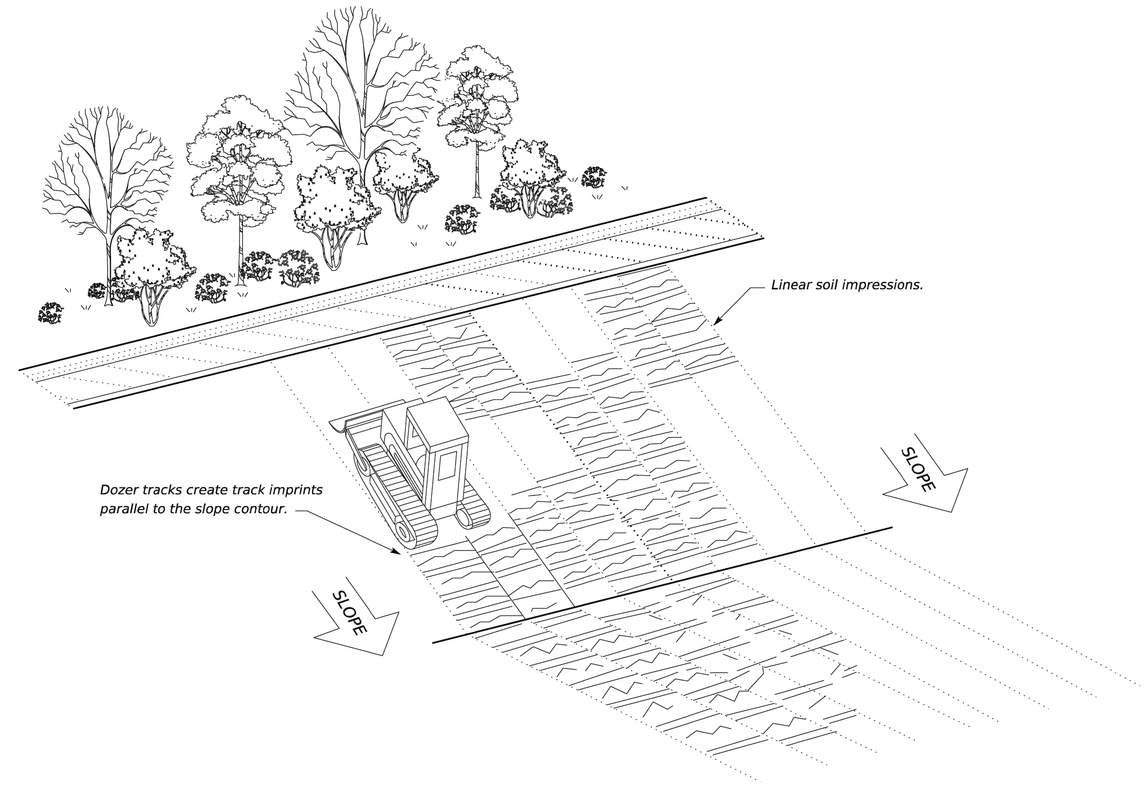
LEGEND

Sediment Control Fence

SCF

GENERAL NOTES

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



VERTICAL TRACKING

DATE
FILE

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

FENCE & VERTICAL TRACKING

EC(1)-16

FILE: ec116	DN: TxDOT		CK: KM		DW: VP	DN/CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB		HIGHWAY	
REVISIONS	0918	47	473		VA	
	DIST	COUNTY			SHEET NO.	
	DAL	DALLAS			9.10	

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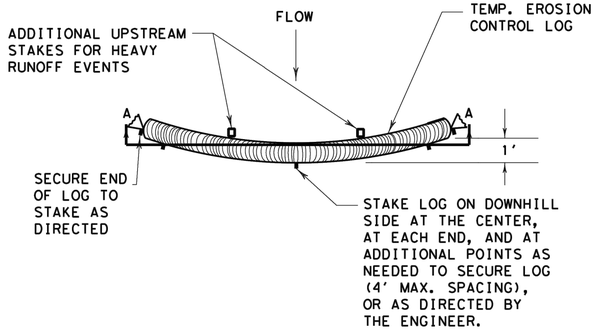
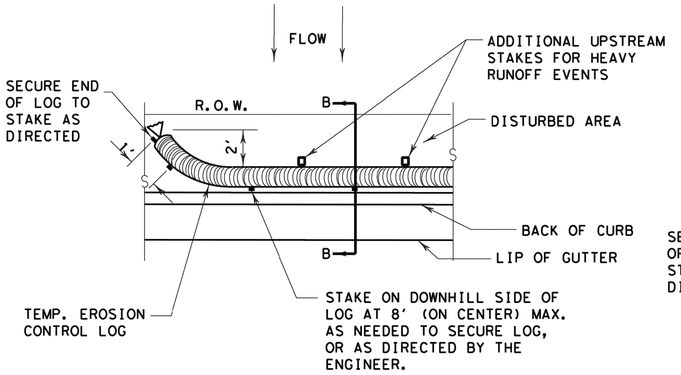
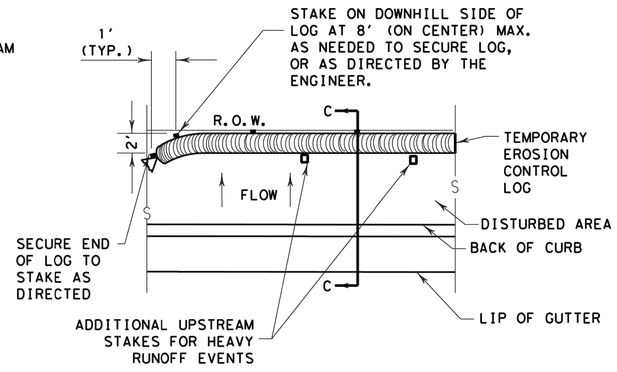


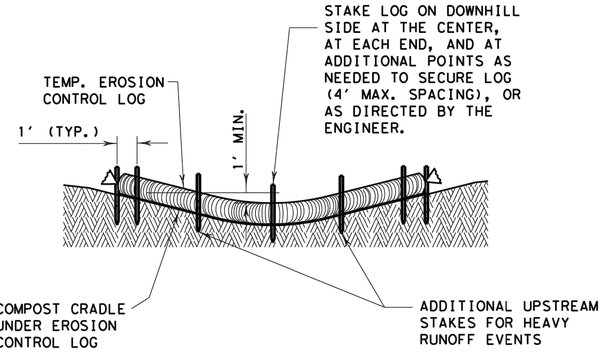
PLAN VIEW



PLAN VIEW



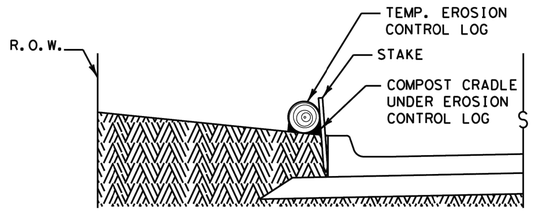
PLAN VIEW



SECTION A-A

EROSION CONTROL LOG DAM

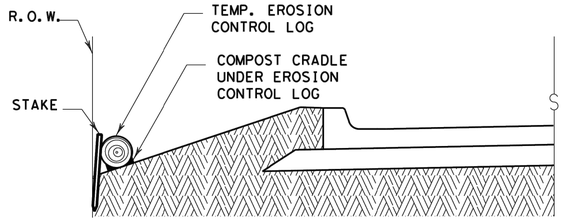
CL-D



SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

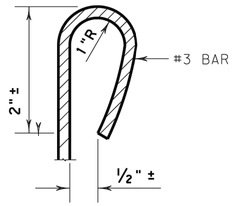
CL-BOC



SECTION C-C

EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



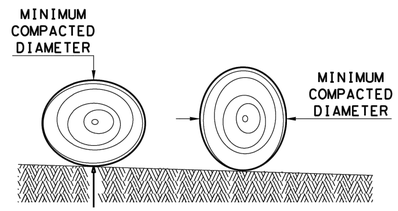
REBAR STAKE DETAIL

LEGEND

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

GENERAL NOTES:

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



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

SEDIMENT BASIN & TRAP USAGE GUIDELINES

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

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

Control logs should be placed in the following locations:

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

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

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

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT		CK: KM		DW: LS/PT	CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB		HIGHWAY	
REVISIONS	0918	47	473		VA	
	DIST		COUNTY			SHEET NO.
	DAL		DALLAS			9.11

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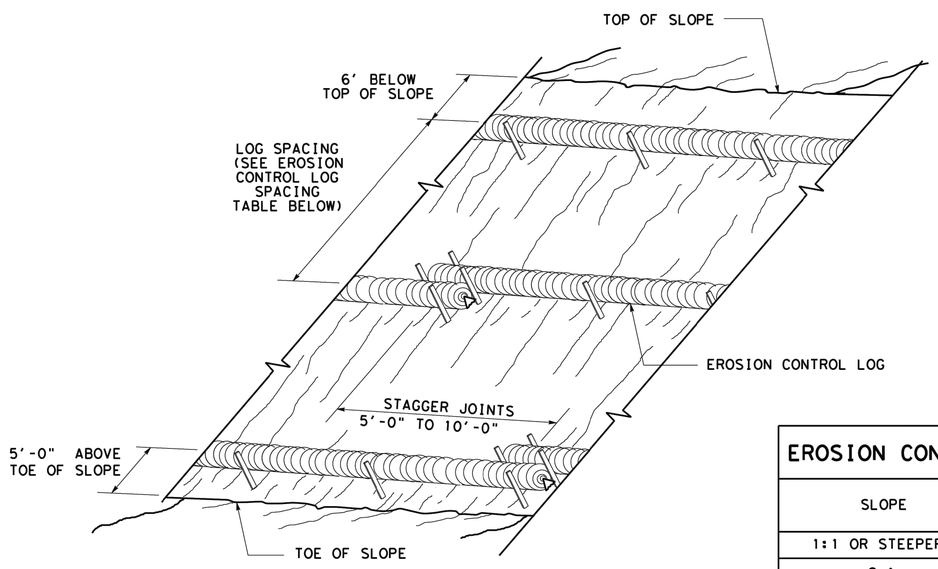
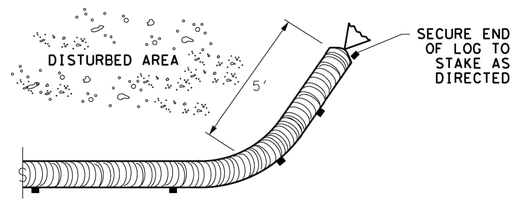


EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING

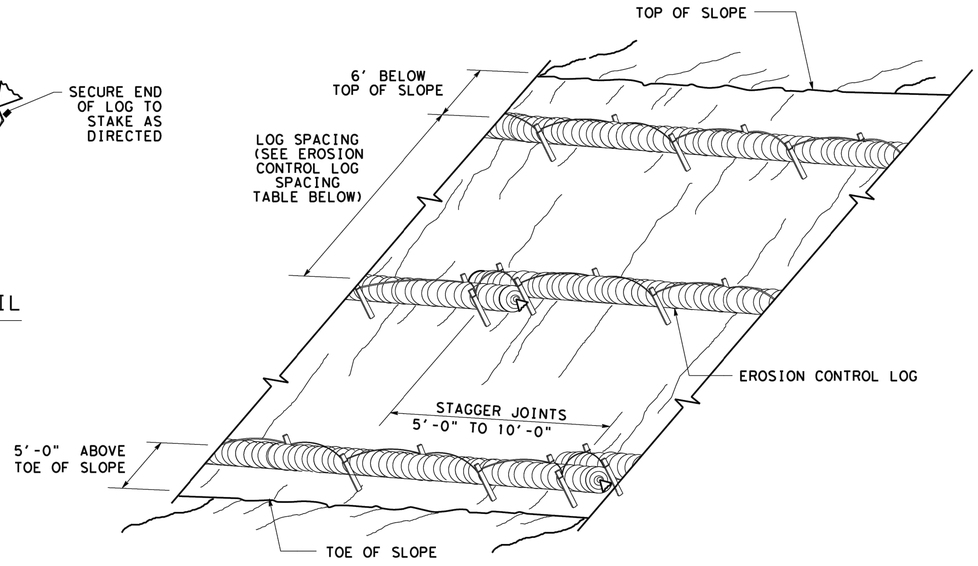
CL-SST



END SECTION RAP DETAIL

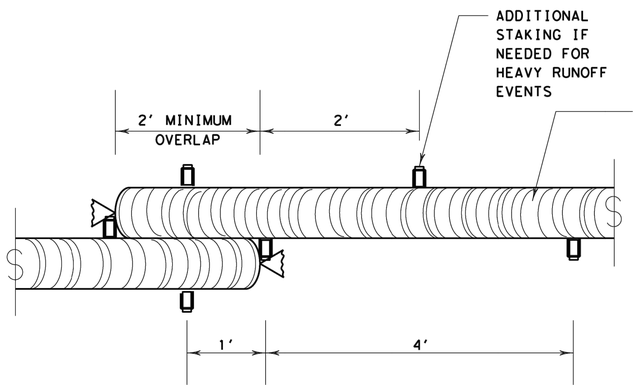
EROSION CONTROL LOG SPACING TABLE				
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

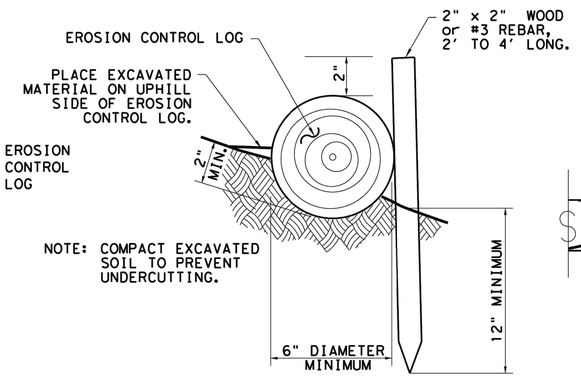
* ADJUSTMENTS CAN BE MADE FOR SOIL TYPE:
SOFT, LOAMY SOILS-ADJUST ROWS CLOSER TOGETHER;
HARD, ROCKY SOILS- ADJUST ROWS FARTHER APART



EROSION CONTROL LOGS ON SLOPES
STAKE AND LASHING ANCHORING

CL-SSL

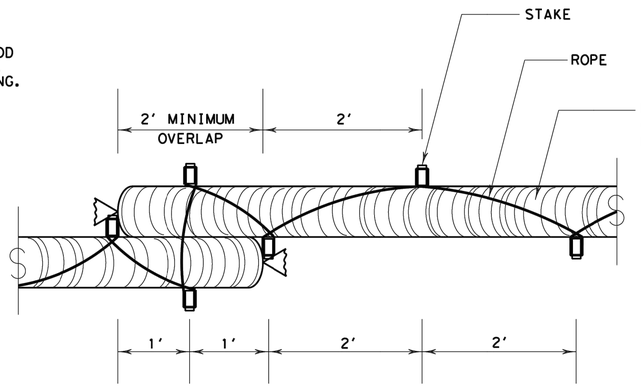


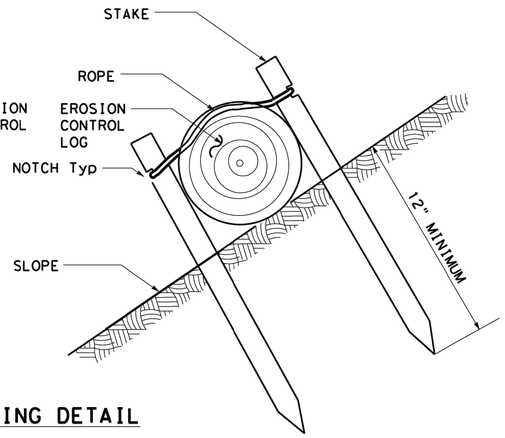


STAKE AND TRENCHING ANCHORING DETAIL

CL-SST

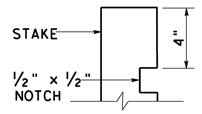
TRENCH DEPTH TABLE	
LOG DIAMETER	DEPTH
6"	2"
8"	3"
12"	4"
18"	5"





STAKE AND LASHING ANCHORING DETAIL

CL-SSL



STAKE NOTCH DETAIL

Texas Department of Transportation

Design Division Standard

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

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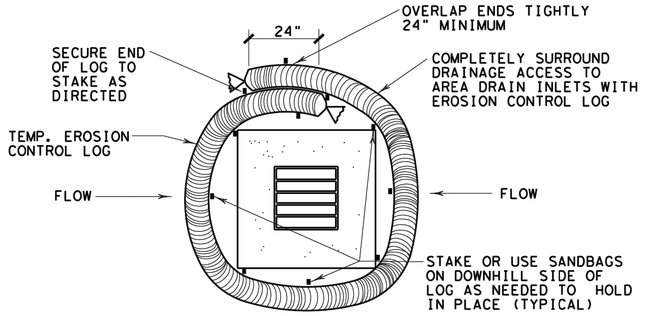
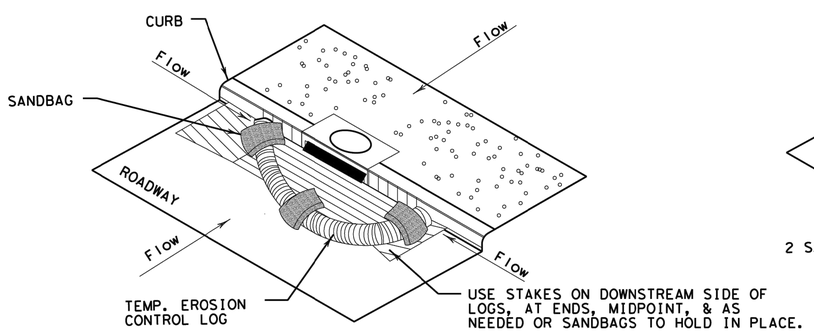


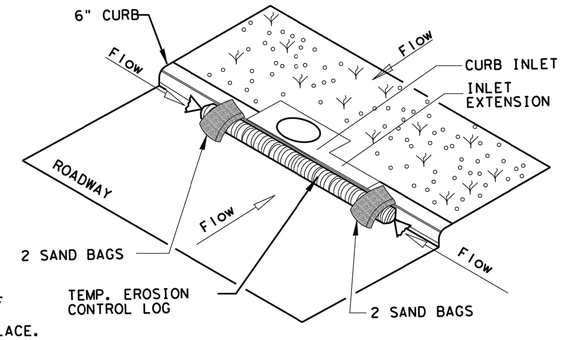
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

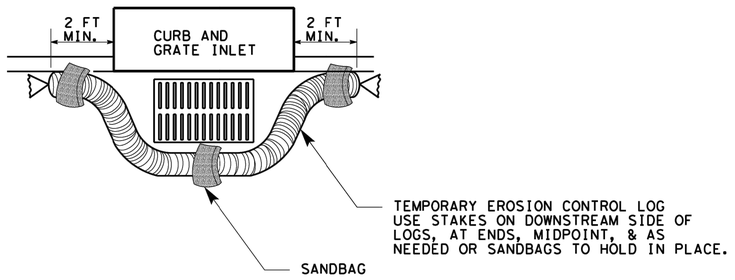
CL-CI



EROSION CONTROL LOG AT CURB INLET

CL-CI

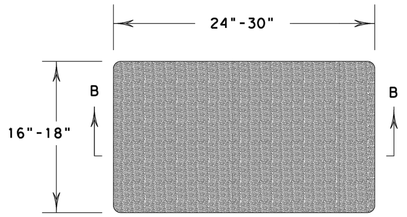
NOTE:
EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI

SECTION B-B



SANDBAG DETAIL

SHEET 3 OF 3

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
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REVISIONS	0918	47	473	VA
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		9.13

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

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with one or more acres disturbed soil. However, projects with less than one acre of soil disturbance do not require CGP authorization. Regardless of size, all projects involving soil disturbance must implement measures to prevent erosion and sedimentation. Refer to TxDOT Standard Specifications and/or the SW3P sheets included in the plan set.

- ☐ Less than 1 acre, Construction General Permit (CGP) not required
- ☒ Between 1 and 5 acres, Construction Site Notice (CSN) required
- ☐ Greater than 5 acres, CSN and Notice of Intent (NOI) required

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

USACE Permit required for filling, dredging, excavating, or other work in any waterbodies, rivers, creeks, streams, wetlands, or wet areas. Refer to the SW3P sheets included in the plan set for Best Management Practices applicable to 401 General Conditions.

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

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

III. CULTURAL RESOURCES

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

- ☒ No Action Required
- ☐ Action Required

IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practicable. Refer to TxDOT Standard Specifications in order to comply with requirements for invasive species, beneficial landscaping, and tree/brush removal.

- ☒ No Action Required
- ☐ Action Required

V. FEDERALLY LISTED, PROPOSED THREATENED/ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES.

Avoid impacts to Federal and/or State species. Refer to "Beneficial Management Practices: Avoiding, Minimizing, and Mitigating Impacts of Transportation Projects on State Natural Resources" for avoiding, minimizing, and mitigating impacts to state listed species available.

- ☐ No Action Required
- ☒ Action Required

Action Number:

1. The Migratory Bird Treaty Act of 1918 states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit. The contractor would remove all old inactive migratory bird nests from any structure or trees where work would be done from October 1 to February 15. In addition, the contractor would be prepared to prevent migratory birds from building nests between February 15 to October 1. Exclusion devices can be installed after the removal of inactive nests. This can be accomplished by hand every 3-4 days, netting, or bird repellant gel. If migratory birds are encountered on-site during project construction, avoid adverse impacts on birds, active nests, eggs, and/or young. Active migratory bird nests on structures or trees within the project limits cannot be destroyed.

LIST OF ABBREVIATIONS

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

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

Refer to TxDOT Standard Specifications in the event potentially contaminated materials are observed, such as dead or distressed vegetation, trash disposal areas, drums, canisters, barrels, leaching or seepage of substances, unusual smells or odors, or stained soil, cease work in the immediate area and contact the Engineer immediately.

Hazardous Materials or Contamination Issues:

- ☒ No Action Required
- ☐ Action Required

VII. OTHER ENVIRONMENTAL ISSUES

(Issues such as Noise Abatement Walls, etc.)

- ☒ No Action Required
- ☐ Action Required

General Note:

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

Revised 08/18/2025

DALLAS DISTRICT
Texas Department of Transportation

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPICS)

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CONT	SECT	JOB	HIGHWAY
0918	47	473	VARIOUS
DIST	COUNTY		SHEET NO.
DAL	DALLAS		9.14

USER ID

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

SURFACE PREPARATION

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

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

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

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

APPLICATION OF COMPOST MANUFACTURED TOPSOIL (4")

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

FERTILIZER ITEM 166* FERTILIZER AC

SOIL ANALYSIS FOR FERTILIZER APPLICATION RATE

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

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

SEEDING FOR EROSION CONTROL ITEM 164* DRILL SEEDING AC

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

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

****Note:** The amount of Pure Live Seed (PLS) in one pound of bulk seed is based on three factors: % Purity, % Germination, and % Dormant. Use the following formula to calculate PLS in bulk seed: PLS = % Purity X (% Germination + % Dormant) Ensure that the specified amount of pure live seed is placed.

TXDOT REFERENCE MATERIALS:

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

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

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

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

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

WATERING SCHEDULE

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

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

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

ROADSIDE MOWING ITEM 730* PROJECT MAINTENANCE AC

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

SEQUENCE OF WORK:

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

Texas Department of Transportation
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VEGETATION ESTABLISHMENT SHEET

(DALLAS DISTRICT)

TEMPLATE REVISION DATE: 02/21/19

DESIGN	FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
CPB	6	(See Title Sheet)		
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
XXX	TEXAS	DALLAS	DALLAS	9.15
CHECK	CONTROL	SECTION	JOB	
XXX	0918	47	473	
CHECK				
XXX				

DATE

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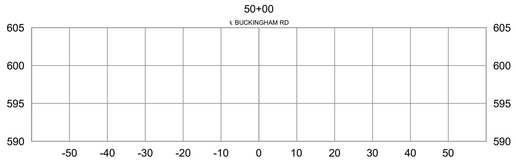

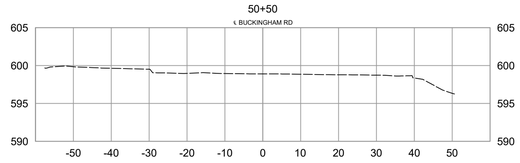

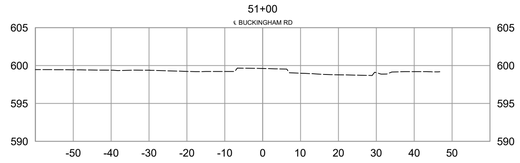

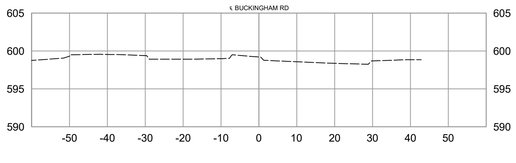

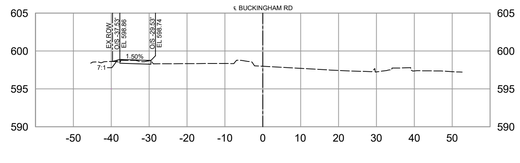

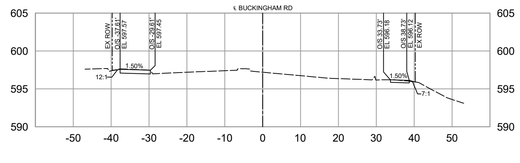

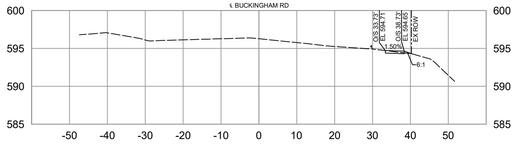

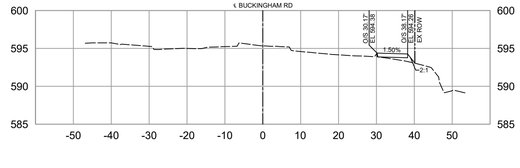

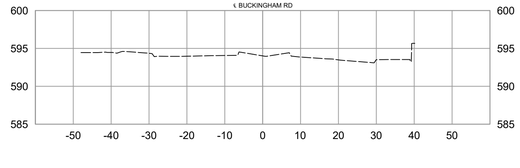

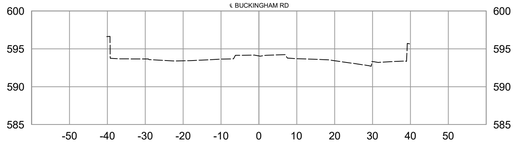

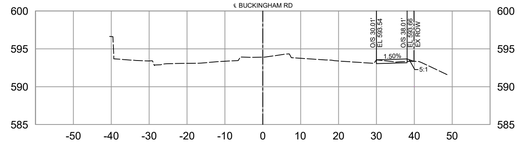

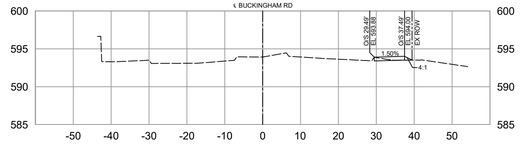

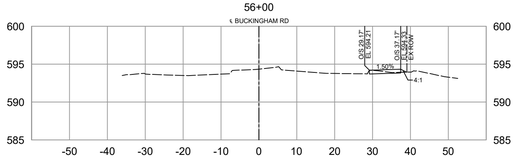

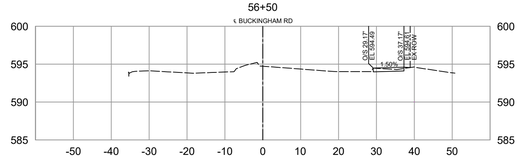

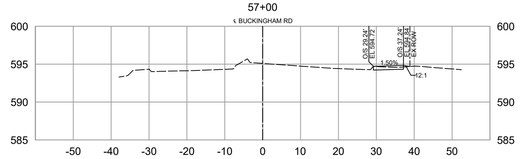

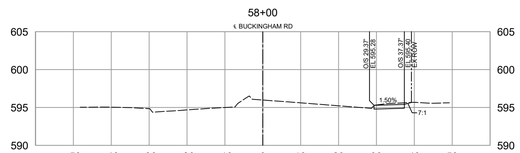

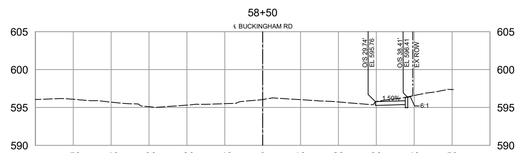

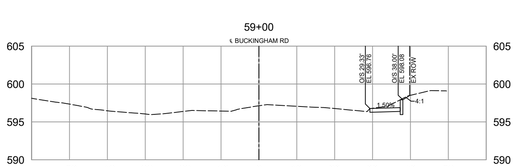

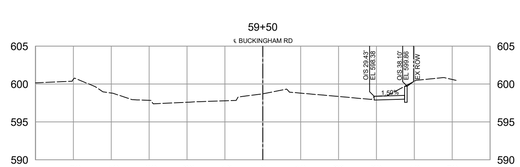

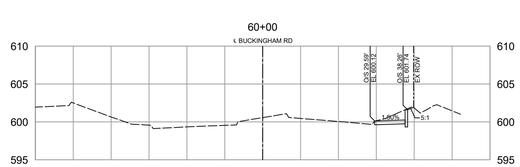

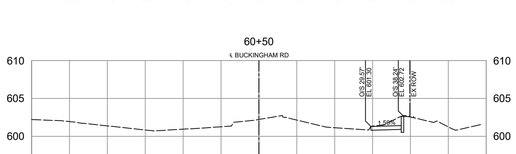

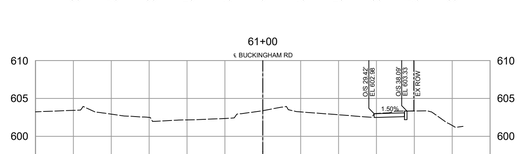

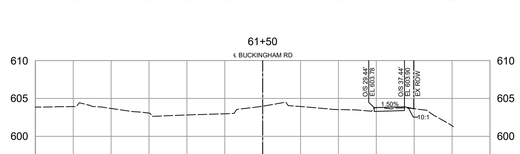

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GRAPHIC SCALE IN FEET
0 5 10 20
VERT

NOTES

1. OFFSETS ARE TO THE BACK OF CURB AND BACK OF SIDEWALK UNLESS NOTED OTHERWISE.

CAUTION!!

THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND SHALL NOTIFY THE CONSTRUCTION MANAGER AND ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN) WITHIN SCOPE OF CONSTRUCTION . IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE. CALL 811 AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION IN VICINITY.

STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED PROFESSIONAL ENGINEER
02/20/2026

OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

Texas Department of Transportation
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

CROSS SECTIONS
BUCKINGHAM RD
RDWY STA 50+00.00 TO STA 61+50.00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	10.01
CONT.	SECT.	JOB	
918	47	473	

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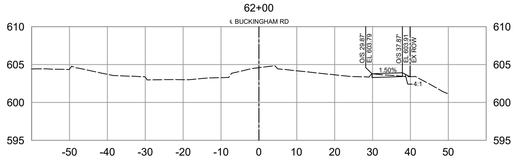

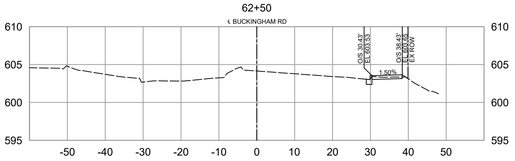

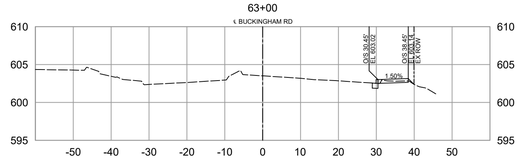

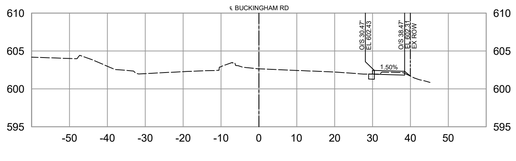

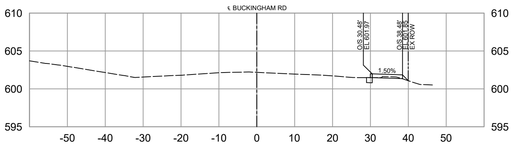

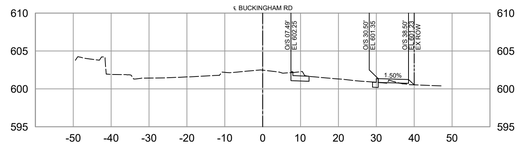

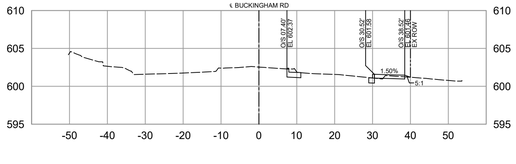

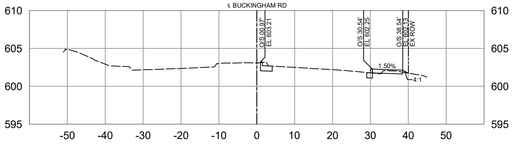

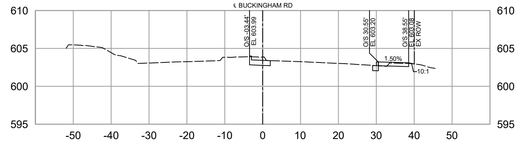

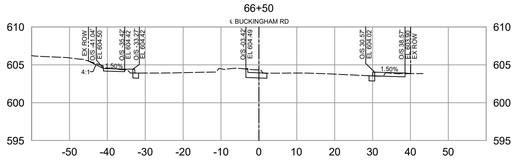

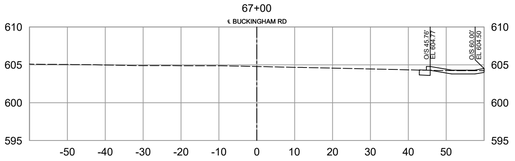

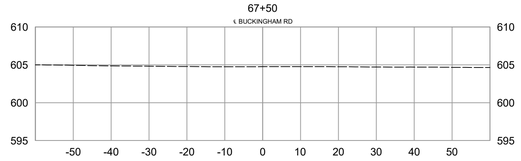

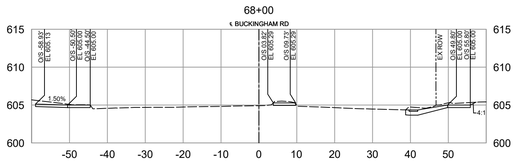

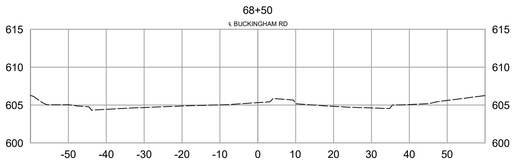

GRAPHIC SCALE IN FEET
0 10 20 40
HORIZ

GRAPHIC SCALE IN FEET
0 5 10 20
VERT

NOTES

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STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED PROFESSIONAL ENGINEER
02/20/2026

OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

Texas Department of Transportation
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

CROSS SECTIONS
BUCKINGHAM RD
RDWY STA 62+00.00 TO STA 68+50.00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	10.02
CONT.	SECT.	JOB	
918	47	473	

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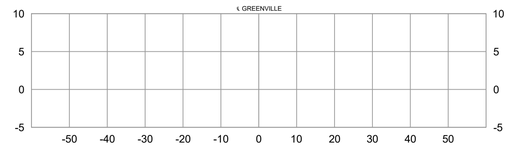
100+00



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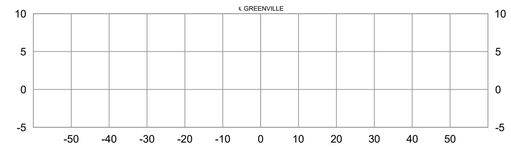

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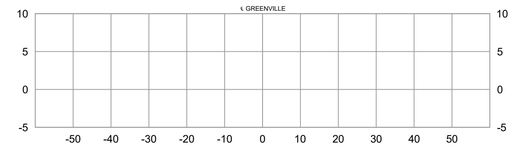

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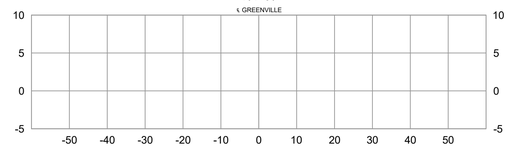

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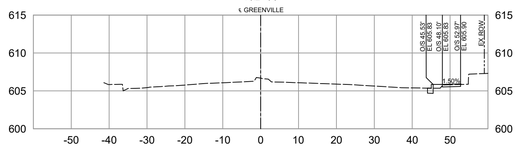

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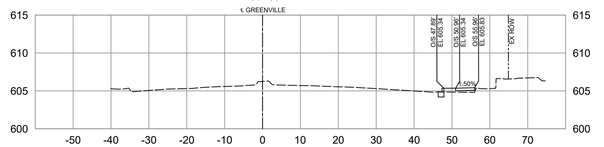

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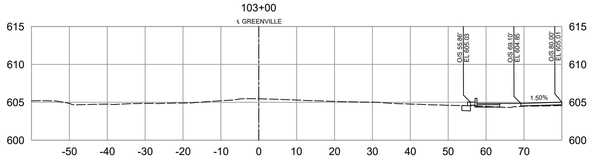

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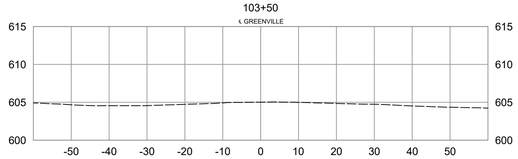

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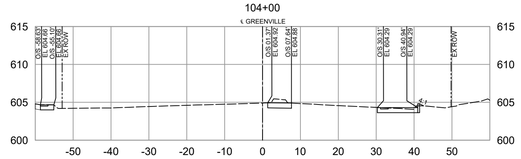

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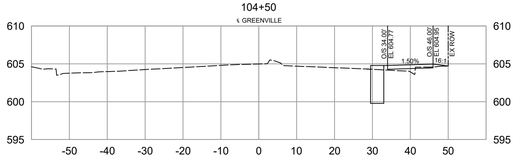

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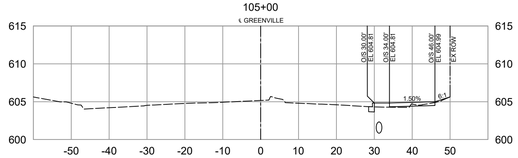

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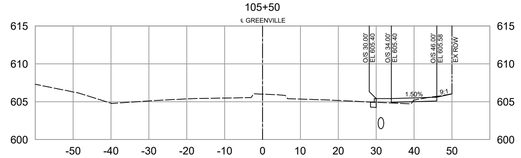

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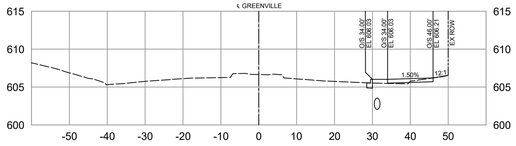

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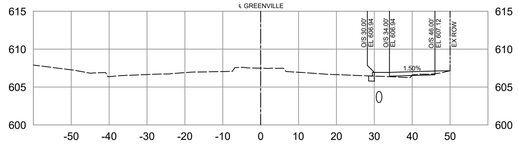

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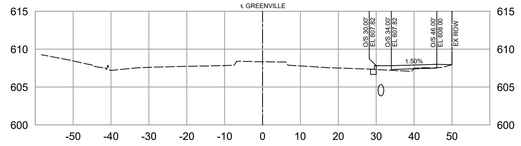

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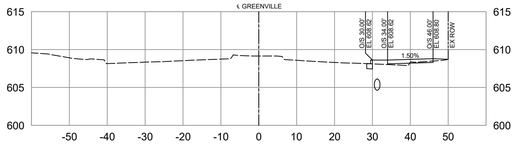

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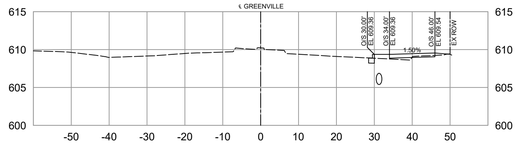

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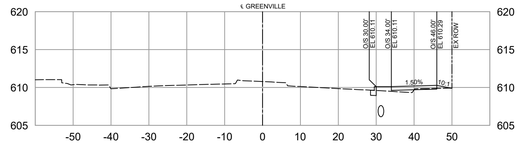

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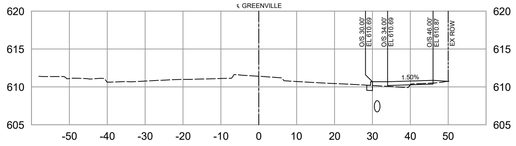

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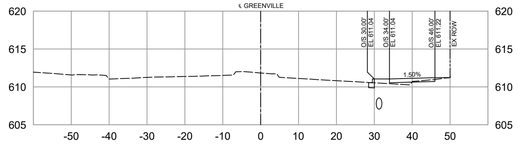

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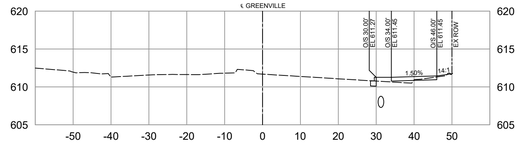

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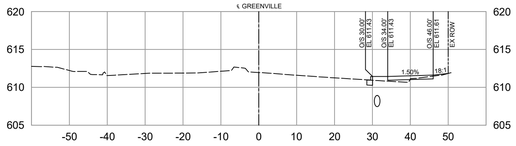

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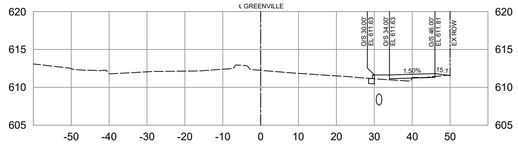

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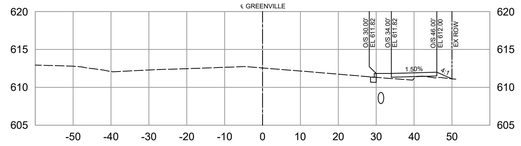

GRAPHIC SCALE IN FEET
0 10 20 40
HORIZ

GRAPHIC SCALE IN FEET
0 5 10 20
VERT

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IN SUNG HWANG
131159
LICENSED PROFESSIONAL ENGINEER
02/20/2026

OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

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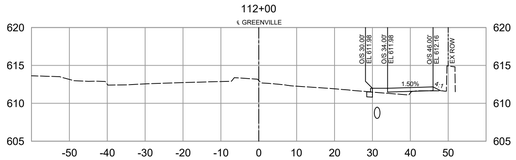
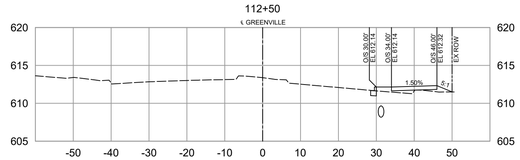
DALLAS COUNTY
CENTRAL TRAIL EXTENSION

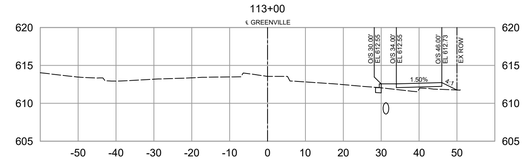
CROSS SECTIONS
GREENVILLE AVE
RDWY STA 100+00.00 TO STA 111+50.00

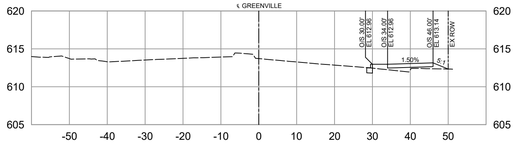
FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

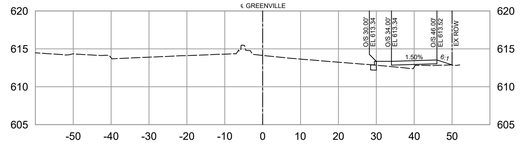
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	10.03
CONT.	SECT.	JOB	
918	47	473	

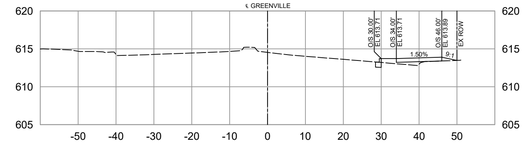


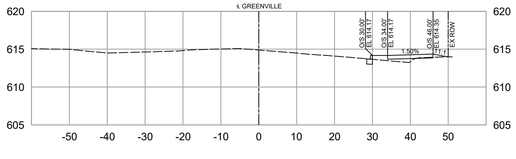


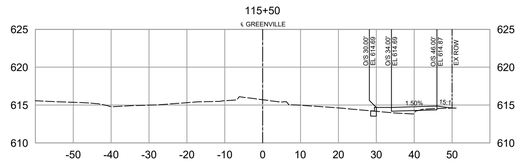


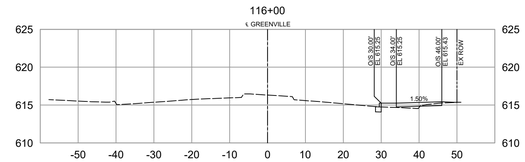


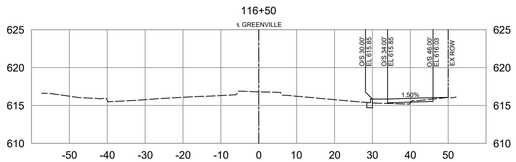


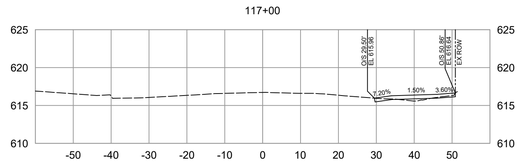


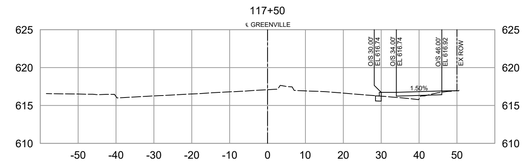


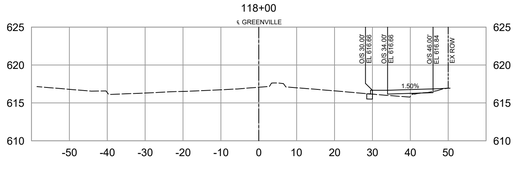


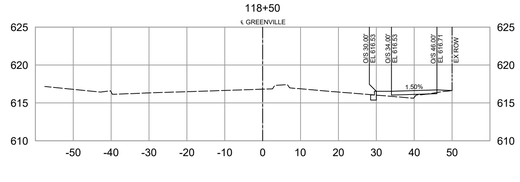


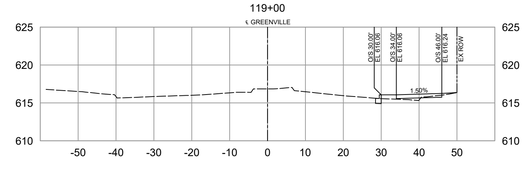


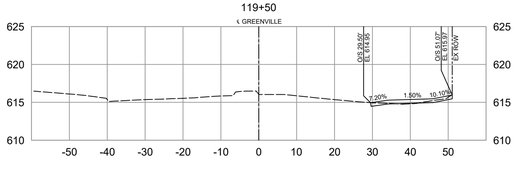


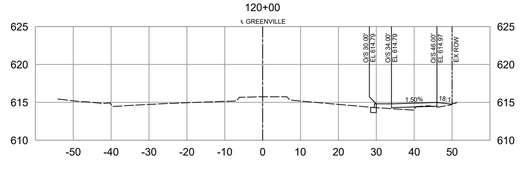


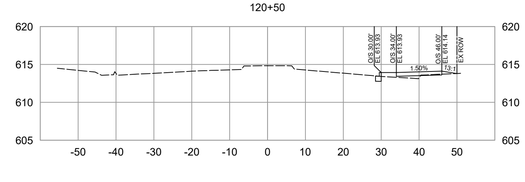


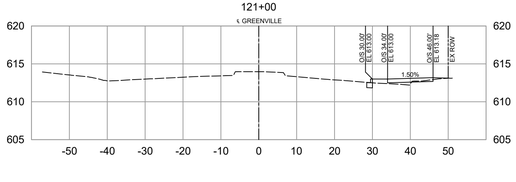


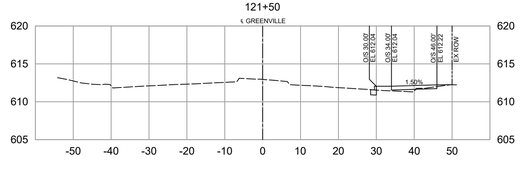


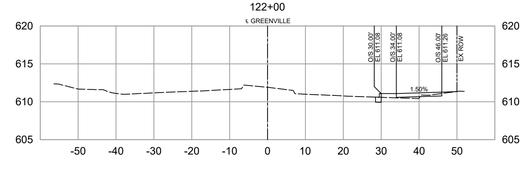


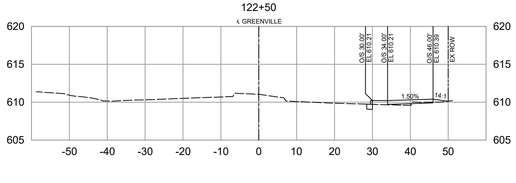


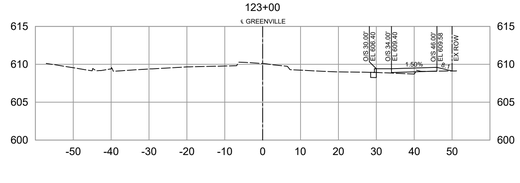


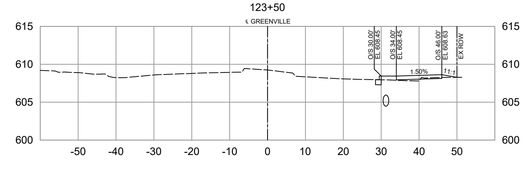












GRAPHIC SCALE IN FEET
0 10 20 40
HORIZ

GRAPHIC SCALE IN FEET
0 5 10 20
VERT

NOTES

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STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED PROFESSIONAL ENGINEER
02/20/2026

OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

CROSS SECTIONS
GREENVILLE AVE
RDWY STA 112+00.00 TO STA 123+50.00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	10.04
CONT.	SECT.	JOB	
918	47	473	

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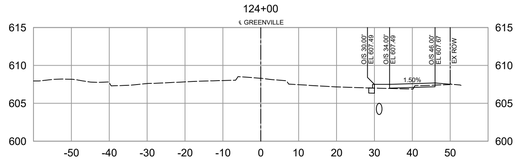

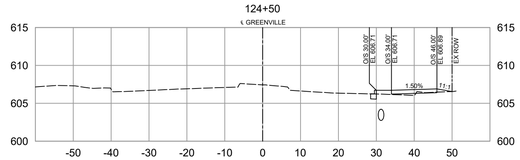

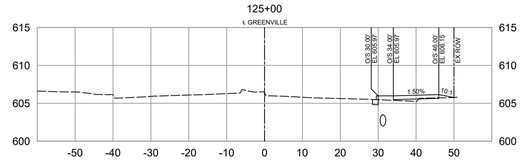

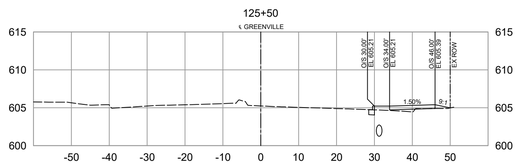

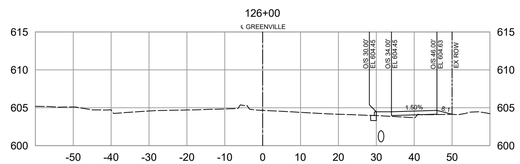

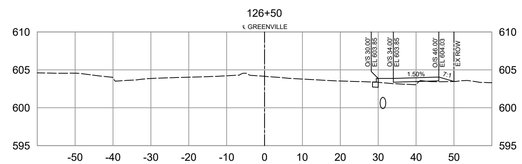

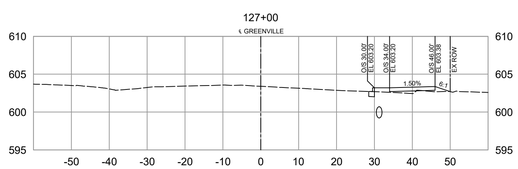

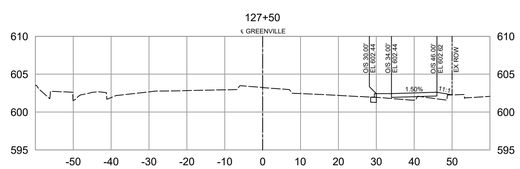

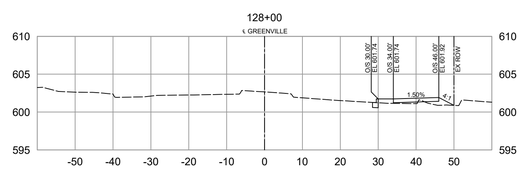

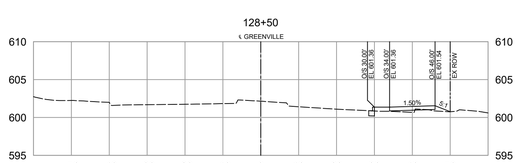

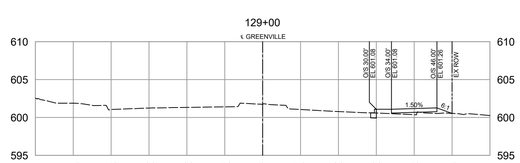

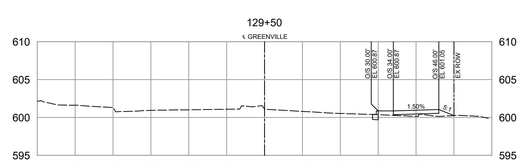

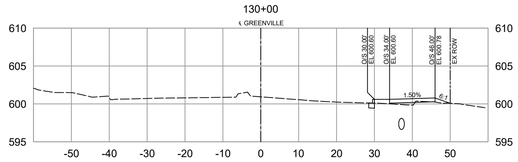

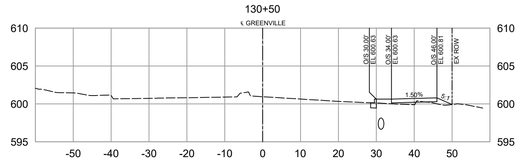

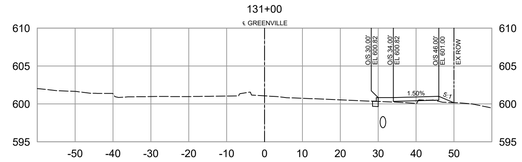

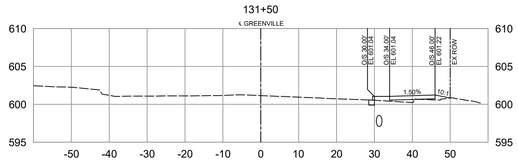

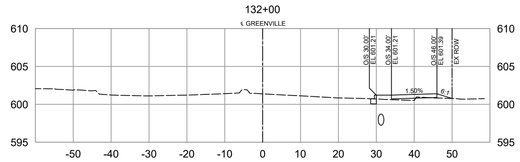

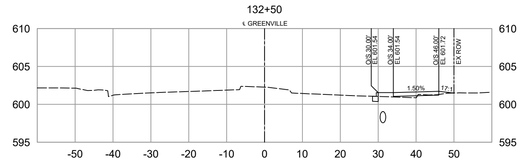

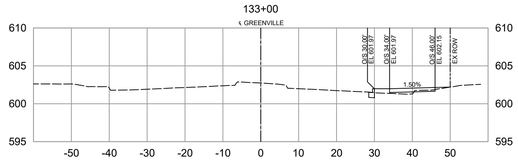

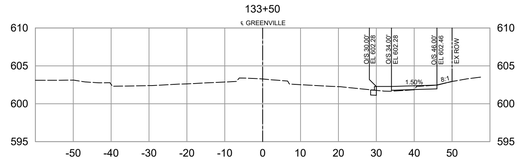

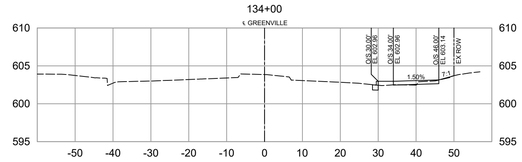

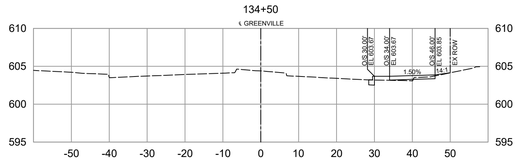

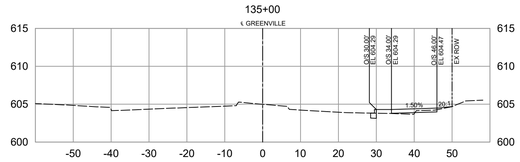

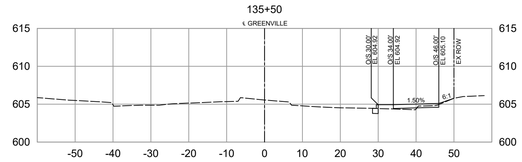

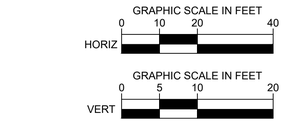

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OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

Texas Department of Transportation
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

CROSS SECTIONS
GREENVILLE AVE
RDWY STA 124+00.00 TO STA 135+50.00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	10.05
CONT.	SECT.	JOB	
918	47	473	

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136+00
℄ GREENVILLE
OS 30.00' EL 605.55
OS 34.00' EL 605.35
OS 46.00' EL 605.13
EX ROW
1.50%
9:1

136+50
℄ GREENVILLE
OS 30.00' EL 606.19
OS 34.00' EL 606.00
OS 46.00' EL 605.35
EX ROW
1.50%
20:1

137+00
℄ GREENVILLE
OS 30.00' EL 606.82
OS 34.00' EL 606.62
OS 46.00' EL 606.00
EX ROW
1.50%

137+50
℄ GREENVILLE
OS 30.00' EL 607.54
OS 34.00' EL 607.34
OS 46.00' EL 607.22
EX ROW
1.50%

138+00
℄ GREENVILLE
OS 30.00' EL 607.77
OS 34.00' EL 607.57
OS 46.00' EL 607.05
EX ROW
1.50%

138+50
℄ GREENVILLE
OS 30.00' EL 607.70
OS 34.00' EL 607.50
OS 46.00' EL 607.00
EX ROW
1.50%

139+00
℄ GREENVILLE
OS 30.00' EL 606.82
OS 34.00' EL 606.62
OS 46.00' EL 607.00
EX ROW
1.50%
17:1

139+50
℄ GREENVILLE
OS 30.00' EL 606.44
OS 34.00' EL 606.24
OS 46.00' EL 606.62
EX ROW
1.50%
15:1

140+00
℄ GREENVILLE
OS 30.00' EL 606.06
OS 34.00' EL 606.00
OS 46.00' EL 606.19
EX ROW
1.50%

140+50
℄ GREENVILLE
OS 30.00' EL 605.57
OS 34.00' EL 605.57
OS 46.00' EL 605.76
EX ROW
1.50%

141+00
℄ GREENVILLE
OS 30.00' EL 604.92
OS 34.00' EL 604.92
OS 46.00' EL 605.10
EX ROW
1.50%
16:1

141+50
℄ GREENVILLE
OS 30.00' EL 604.54
OS 34.00' EL 604.44
OS 46.00' EL 604.63
EX ROW
1.50%

142+00
℄ GREENVILLE
OS 30.00' EL 602.72
OS 34.00' EL 602.72
OS 46.00' EL 602.90
EX ROW
1.50%

142+50
℄ GREENVILLE
OS 30.00' EL 600.97
OS 34.00' EL 600.97
OS 46.00' EL 600.79
EX ROW
1.50%
16:1

143+00
℄ GREENVILLE
OS 30.00' EL 600.59
OS 34.00' EL 600.40
OS 46.00' EL 600.40
EX ROW
1.50%

143+50
℄ GREENVILLE
OS 30.00' EL 599.10
OS 34.00' EL 598.90
OS 46.00' EL 599.28
EX ROW
1.50%

144+00
℄ GREENVILLE
OS 30.00' EL 597.76
OS 34.00' EL 597.56
OS 46.00' EL 597.37
EX ROW
1.50%

144+50
℄ GREENVILLE
OS 34.00' EL 596.42
OS 46.00' EL 596.60
EX ROW
1.50%

145+00
℄ GREENVILLE
OS 30.00' EL 595.07
OS 34.00' EL 595.07
OS 46.00' EL 595.25
EX ROW
1.50%

145+50
℄ GREENVILLE
OS 30.00' EL 593.81
OS 34.00' EL 593.81
OS 46.00' EL 593.99
EX ROW
1.50%

146+00
℄ GREENVILLE
OS 30.00' EL 592.68
OS 34.00' EL 592.68
OS 46.00' EL 592.87
EX ROW
1.50%
16:1

146+50
℄ GREENVILLE
OS 30.00' EL 591.79
OS 34.00' EL 591.79
OS 46.00' EL 591.97
EX ROW
1.50%

147+00
℄ GREENVILLE
OS 30.00' EL 590.91
OS 34.00' EL 590.91
OS 46.00' EL 590.55
EX ROW
1.50%
8:1

147+50
℄ GREENVILLE
OS 30.00' EL 590.06
OS 34.00' EL 590.06
OS 46.00' EL 589.42
EX ROW
1.50%
8:1

GRAPHIC SCALE IN FEET
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HORIZ

GRAPHIC SCALE IN FEET
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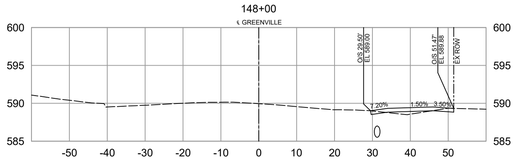
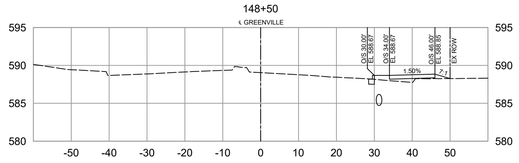
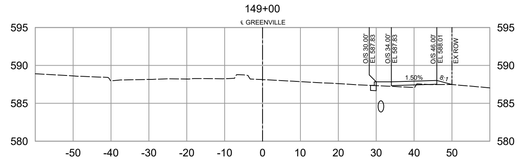
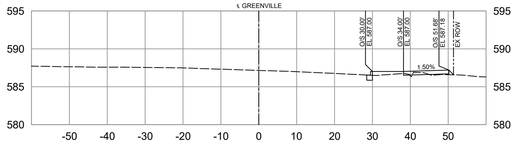
6	SEE TITLE SHEET	VA

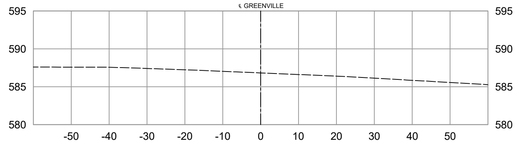
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	10.06
CONT.	SECT.	JOB	
918	47	473	

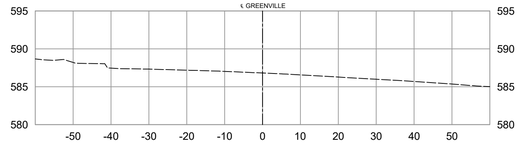


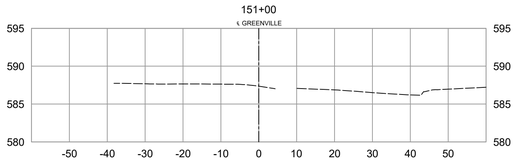


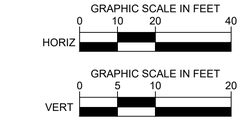












NOTES

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OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

Texas Department of Transportation
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

CROSS SECTIONS
GREENVILLE AVE
RDWY STA 148+00.00 TO STA 151+00.00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	10.07
CONT.	SECT.	JOB	
918	47	473	

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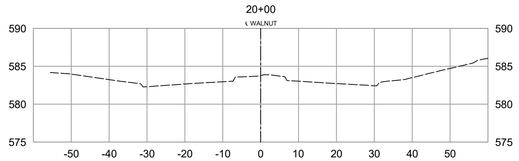

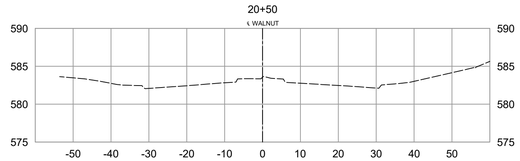

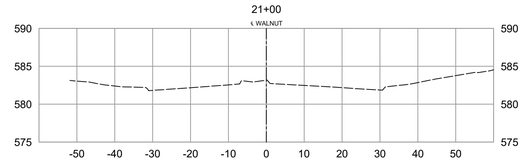

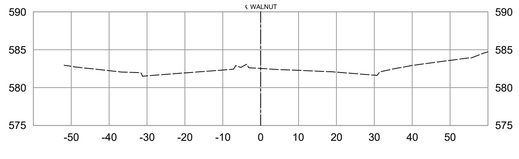

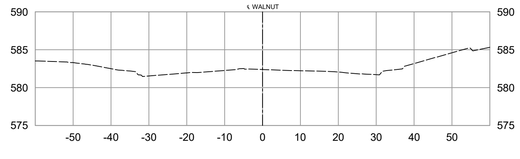

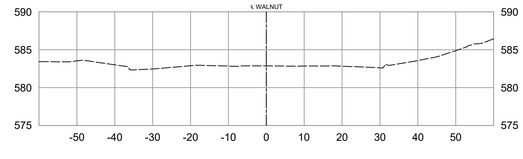

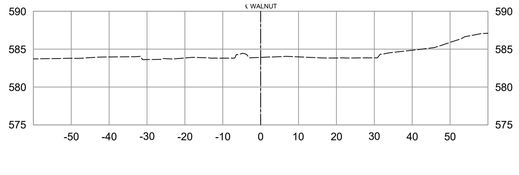

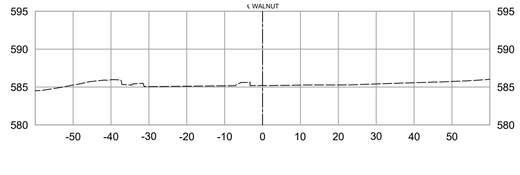

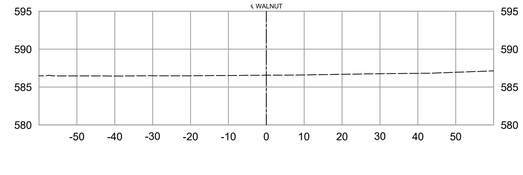

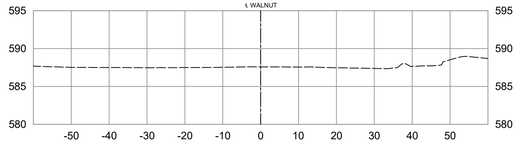

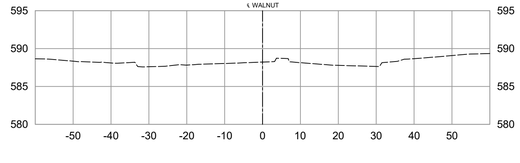

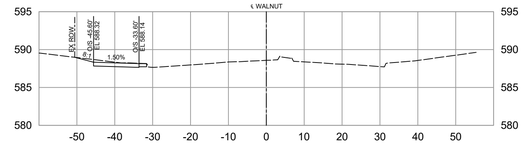

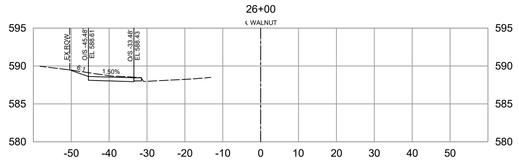

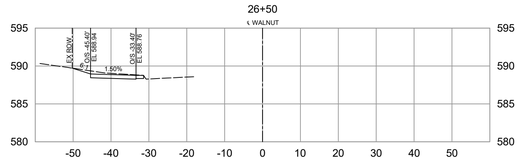

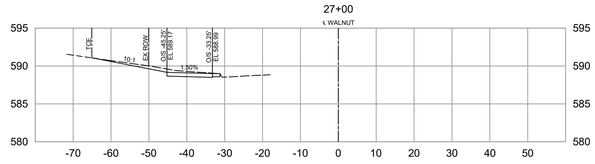

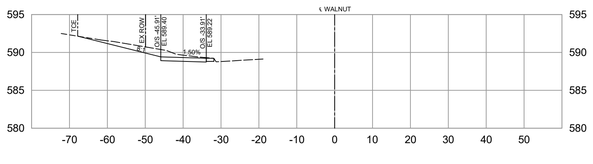

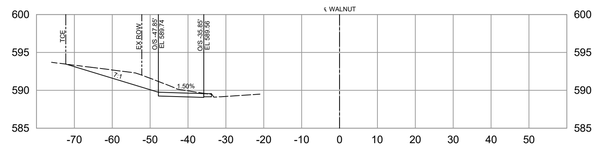

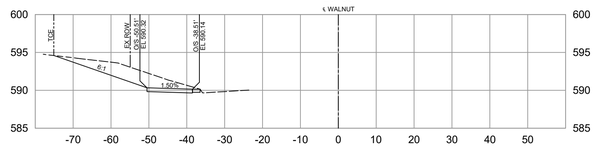

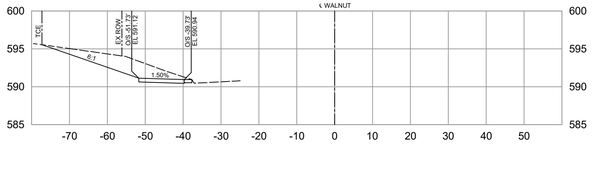

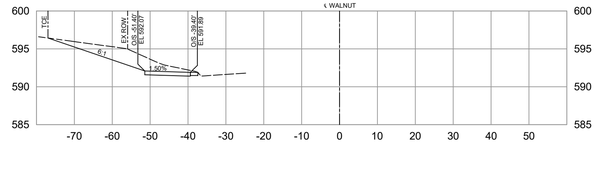

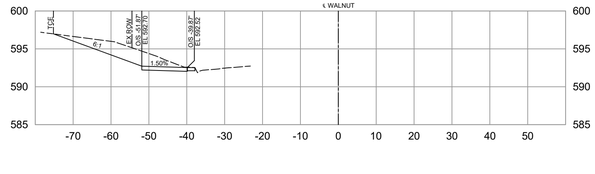

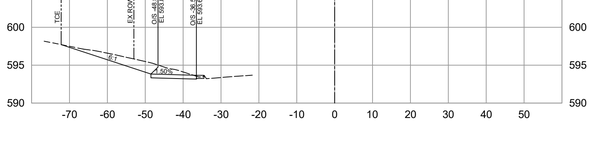

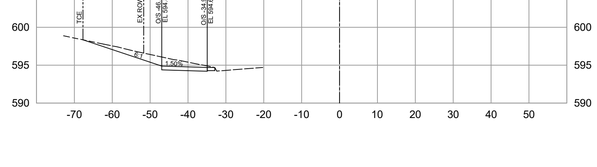

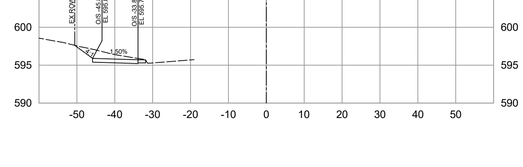

GRAPHIC SCALE IN FEET
0 10 20 40
HORIZ

GRAPHIC SCALE IN FEET
0 5 10 20
VERT

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STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED PROFESSIONAL ENGINEER
02/20/2026

OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

Texas Department of Transportation
©2025

DALLAS COUNTY
CENTRAL TRAIL EXTENSION

CROSS SECTIONS
WALNUT ST
RDWY STA 20+00.00 TO STA 31+50.00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	10.08
CONT.	SECT.	JOB	
918	47	473	

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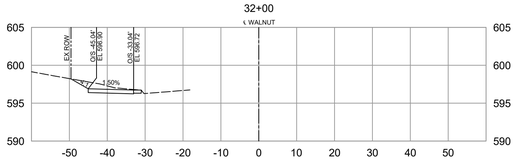

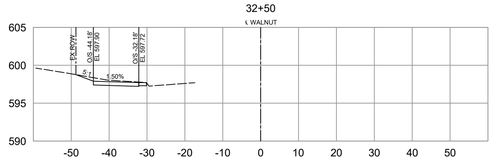

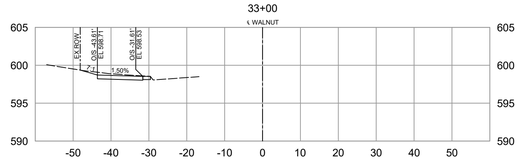

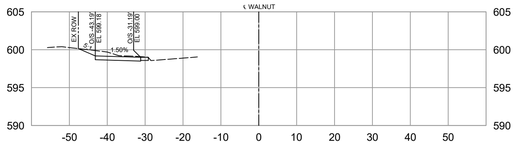

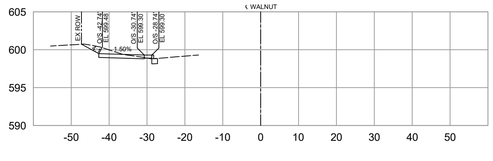

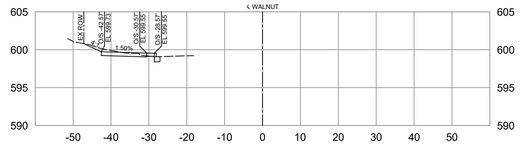

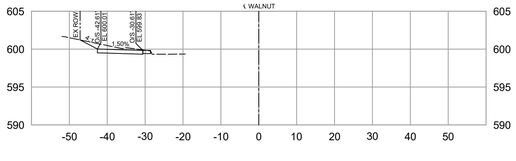

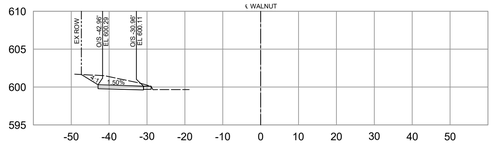

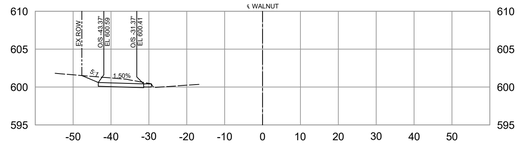

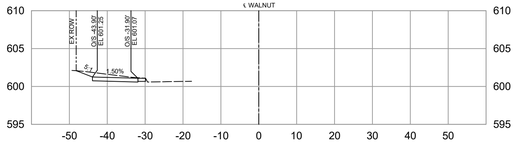

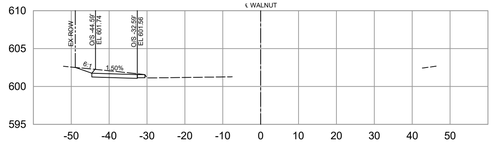

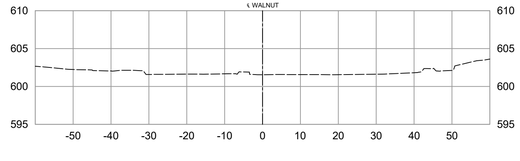

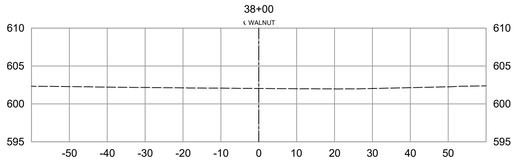

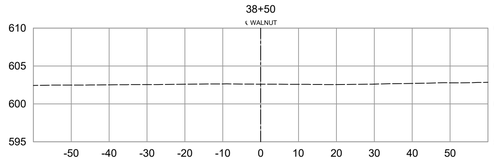

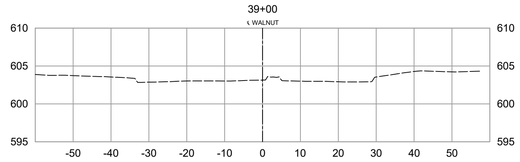

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HORIZ

GRAPHIC SCALE IN FEET
0 5 10 20
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STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED
PROFESSIONAL ENGINEER
02/20/2026

OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

Texas Department of Transportation
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DALLAS COUNTY
CENTRAL TRAIL EXTENSION

CROSS SECTIONS
WALNUT ST
RDWY STA 32+00.00 TO STA 39+00.00

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	10.09
CONT.	SECT.	JOB	
918	47	473	

PART B
CENTRAL TRAIL EXTENSION
BUCKINGHAM RD AT DART RAIL CROSSING IMPROVEMENTS

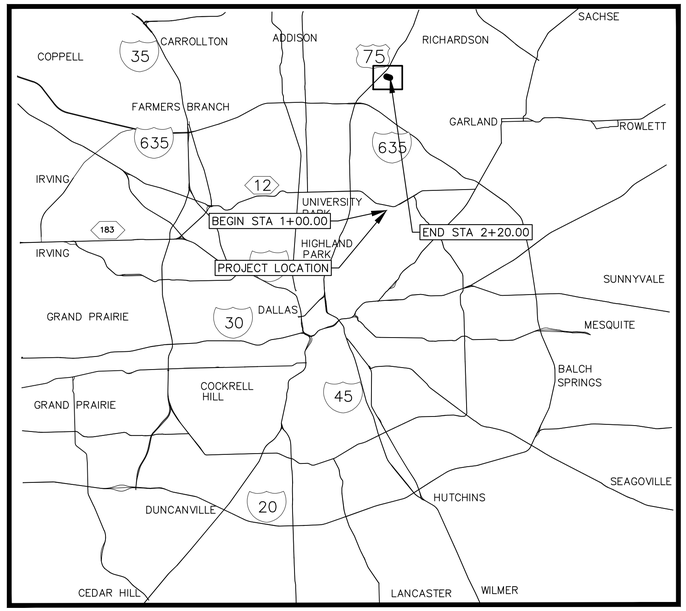
DALLAS COUNTY

FROM: STA 1+00.00 W BUCKINGHAM ROAD FROM DART LRT.
TO: STA 2+20.00 E BUCKINGHAM ROAD FROM DART LRT.

TOTAL LENGTH OF PROJECT = ROADWAY = 125 FT. = 0.24 MI.

TYPE OF WORK: CONSTRUCT NEW SIDEWALK, EMERGENCY PEDESTRIAN GATES, LIGHTING, BICYCLE AND PEDESTRIAN SIGNALIZATION AND RAILROAD CROSSING IMPROVEMENTS.

CONSISTING OF: GRADING, CONCRETE PAVEMENT, SIGNALS, SIGNING AND PAVEMENT MARKINGS, AND LIGHTING.



N

DALLAS COUNTY
NOT TO SCALE
DALLAS DISTRICT

03/13/2026
STATE OF TEXAS
THOMAS P. GRANT
100876
LICENSED
PROFESSIONAL ENGINEER
Thomas P. Grant, P.E.

EQUATIONS: NONE
EXCEPTIONS: NONE
RAILROAD CROSSINGS: DART ORANGE/RED LINE CROSSING AT BUCKINGHAM RD

EXHIBIT "A"

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Plotted By:Pena, Mario June 15, 2026 03:29:05pm K:\LAC_TPTO\project\0645633401_DallasCounty_CentralTrailExtension\CADD\PlanSheets\DART Crossing\COVER SHEET.dwg
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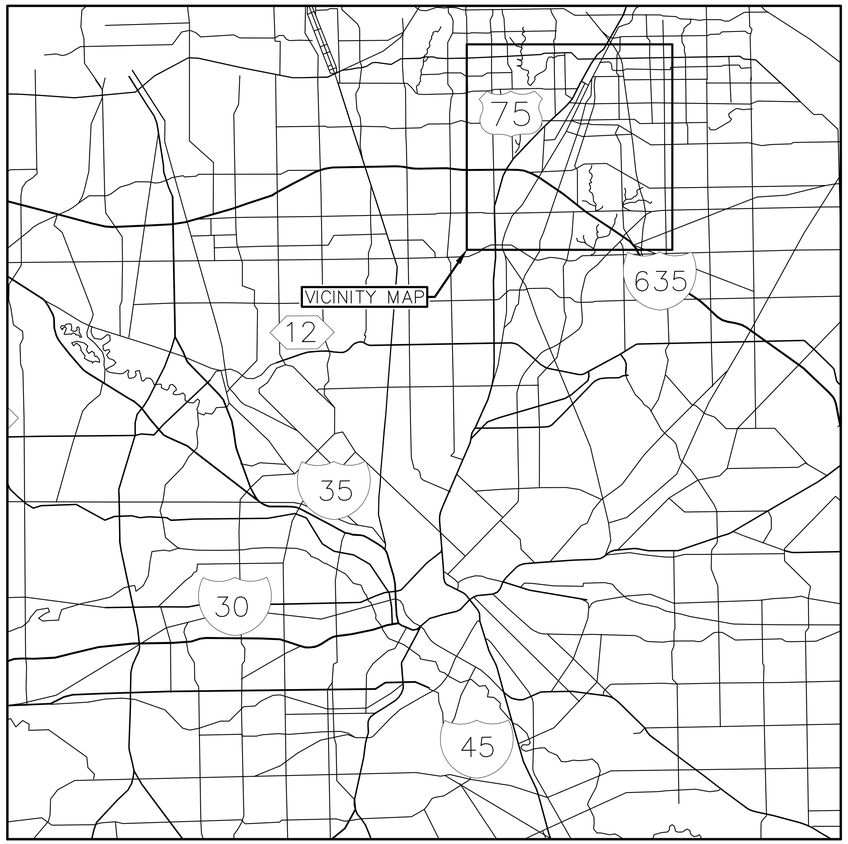
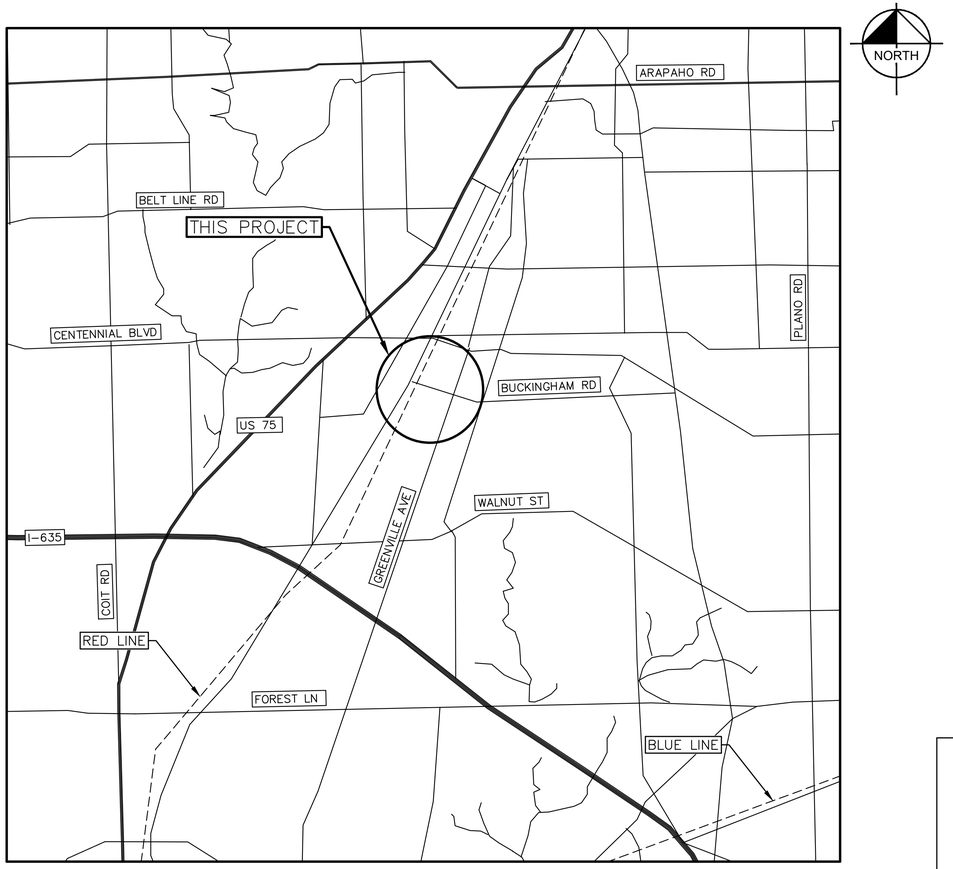


LOCATION MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

10/03/2025

STATE OF TEXAS
JOHN W. RYAN
141023
LICENSED
PROFESSIONAL ENGINEER

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS
VICINITY MAP

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.02
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Galindo, Alejandra October 03, 2025 02:46:53pm K:\LAC_TPTO\1project\064563401_DallasCounty_CentralTrailExtension\CADD\PlanSheets\DART Crossing\VICINITY MAP.dwg
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2	0.02	0		VICINITY MAP
3	0.03	0		SHEET INDEX
4	0.04A	0		CIVIL QUANTITY SUMMARY
5	0.04B	0		SYSTEMS QUANTITY SUMMARY
6	0.04C	0		LIGHTING QUANTITY SUMMARY
7	0.04D	0		STRUCTURAL QUANTITY SUMMARY
8	0.05A	0		GENERAL NOTES (1 OF 2)
9	0.05B	0		GENERAL NOTES (2 OF 2)
10	0.06A	0		SYMBOLS/LEGEND (1 OF 2)
11	0.06B	0		SYMBOLS/LEGEND (2 OF 2)
12	0.07A	0		ABBREVIATIONS (1 OF 2)
13	0.07B	0		ABBREVIATIONS (2 OF 2)
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14	0.08	0		HORIZONTAL AND VERTICAL CONTROL
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17	2.03	0		FENCE GATE AND SIGN DETAIL
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36	2.22	0		BC(7)-21
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V. STRUCTURAL DRAWINGS				
67	5.01	0		STRUCTURAL GENERAL NOTES
68	5.02	0		CONCRETE DETAILS

DALLAS AREA RAPID TRANSIT
RECOMMEND:

Project Manager Date

APPROVED:

AVP STREETCAR & SYSTEMS ENGINEERING DATE

STATE OF TEXAS
JOHN W. RYAN
141023
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PROFESSIONAL ENGINEER
10/03/2025

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS

SHEET INDEX

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.03
CONT.	SECT.	JOB	
0918	47	473	

Plotted By:Galindo, Alejandra October 03, 2025 02:45:55pm K:\LAC_TPTO\1project\064563401_DallasCounty_CentralTrailExtension\CADD\PlanSheets\DART Crossing\COVER SHEET.dwg
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SUMMARY OF REMOVAL ITEMS

LOCATION	104 7001	104 7006	104 7013	479 7001	496 7028	550 7007
	REMOV CONC (PAV)	REMOV CONC (RIPRAP)	REMOV CONC (SIDEWALK, RAMP OR SUP)	ADJUSTING MANHOLES	REMOVE STR (BOLLARD)	CHAIN LINK FENCE (REMOVE)
	SY	SY	SY	EA	EA	LF
DEMOLITION PLAN	27	16	124	1	1	52
PROJECT TOTALS	27	16	124	1	1	52

SUMMARY OF ROADWAY ITEMS

LOCATION	162 7002	529 7009	531 7003	531 7005	536 7002	550 7001
	BLOCK SODDING	CONC CURB & GUTTER (TY II)	CONC SIDEWALKS (6")	CURB RAMPS (TY 1)	CONC MEDIAN	CHAIN LINK FENCE (INSTALL) (6')
	SY	LF	SY	EA	SY	LF
CIVIL PLAN	68	66	157	2	17	50
PROJECT TOTALS	68	66	157	2	17	50

SUMMARY OF SIGNING AND PAVEMENT MARKING ITEMS

LOCATION	644 7001	644 7073	666 7036
	IN SM RD SN SUP&AM TY10BWG(1) SA(P)	REMOVE SM RD SN SUP&AM	REFL PAV MRK TY I (W)24"(SLD) (100MIL)
	EA	EA	LF
SIGNING & PAVEMENT MARKING PLAN	6	2	40
PROJECT TOTALS	6	2	40

STATE OF TEXAS
IN SUNG HWANG
131159
LICENSED
PROFESSIONAL ENGINEER
10/2/2025

OTHON ENGINEERING
FIRM REGISTRATION NO. F-1471

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS

CIVIL QUANTITY SUMMARY

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.04A
CONT.	SECT.	JOB	
0918	47	473	

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SUMMARY OF SYSTEM ITEMS												
	02780	02780	02910	02931	16901	16901	16908	16932	16932	16932	16976	16998
LOCATION	EXISTING MANHOLE/UTILITY MODIFICATIONS	1XD4" CONDUIT/DUCT CONCRETE ENCASED	TOPSOIL AND FINISHED GRADING	SEEDING AND SODDING - NON-IRRIGATED AREAS	SIGNAL SYSTEM PRELIMINARY DESIGN & DESIGN REVIEW (INCLUDED IN GEN REQMTS)	SIGNAL SYSTEM FINAL DESIGN & DESIGN REVIEW, TX PE SIGN/SEAL (INCLUDED IN GEN REQMTS)	17C GRADE CROSSING GATE CABLE FURNISH, INSTALLATION, AND TESTING	GRADE CROSSING PEDESTRIAN GATE FURNISH/INSTALL ON FOUNDATION	BUCKINGHAM RD AHCW XING CONTROLLER AND POWER MODIFICATIONS/ WIRING	STRYTEN ABSOLYTE AGPS 50G15 BATTERY	4AWG COPPER GROUND CONDUCTOR AND GROUND ROD	SIGNAL SYSTEM/GRADE CROSSING PEDESTRIAN GATE FUNCTIONAL/INTEGRATED TESTING
	LS	LF	CY	SF	LS	LS	LF	EA	LS	EA	EA	LS
SYSTEM PLANS	1	35	6	60	1	1	150	2	1	7	2	1
PROJECT TOTALS	1	35	6	60	1	1	150	2	1	7	2	1

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS

SYSTEMS QUANTITY SUMMARY

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.04B
CONT.	SECT.	JOB	
0918	47	473	

SUMMARY OF LIGHTING ITEMS		
	610 7030	624 7002
	IN RD IL (TYSA) 20S-4 (250W EW) LED	GROUND BOX TY A (122311) W/ APRON
	EA	EA
LIGHTING PLAN 4.01	2	2
TOTAL	2	2

10-03-2025

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS

LIGHTING QUANTITY SUMMARY

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.04C
CONT.	SECT.	JOB	
918	47	473	

Plotted By:Emmanuel Castro October 03, 2025 11:31:02am Z:\Projects\05213 - Kimley-Horn\05213.07 - DART Ped-Bike Xing\08-E\E201.dwg
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SUMMARY OF STRUCTURAL ITEMS			
LOCATION	0416 6002	0416 6002	0420 6043
	DRILL SHAFT (24 IN)	DRILL SHAFT (24 IN)	CL C CONC (FOOTING)
	LF	LF	CY
ILLUMINATION FOUNDATION	19 (9'-6" x 2 EA)	0	0
PEDESTRIAN GATE ARM FOUNDATION	0	19 (9'-6" x 2 EA)	0
EMERGENCY SWING GATE FOUNDATION	0	0	1

PONCE-FUESS ENGINEERING
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PFE PROJECT NO. 25156 FIRM REG. NO. F-12125

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION
STRUCTURAL QUANTITY SUMMARY

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.03D
CONT.	SECT.	JOB	

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GUIDEWAY

1. THE FOLLOWING NOTES GOVERN THIS PROJECT AND ARE APPLICABLE TO ALL DRAWINGS.

2. THE CONSTRUCTION OF THE LIGHT RAIL GUIDEWAY SHALL BE DONE IN CONFORMANCE WITH THESE DRAWINGS AND SPECIFICATIONS AND DART STANDARD DRAWINGS AND SPECIFICATIONS INCLUDED HEREIN.

3. UNLESS OTHERWISE NOTED, THE WORK INVOLVING DRAINAGE FACILITIES AND STREET RECONSTRUCTION OR IMPROVEMENTS WITHIN THE PUBLIC RIGHTS-OF-WAY SHALL BE DONE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS AND STANDARD CONSTRUCTION DETAILS OF THE JURISDICTIONAL AUTHORITIES.

4 THE RIGHT-HAND TRACK IS DETERMINED BY LOOKING IN THE DIRECTION OF INCREASING TRACK STATIONING. THIS TRACK IS REFERENCED AS THE MAIN TRACK. THE MAIN TRACK IS USED FOR HORIZONTAL ALIGNMENT CONTROL. PROFILE AND CROSS SECTION STATIONING FOR THIS PROJECT IS BASED ON STATIONS ESTABLISHED FOR THE CENTERLINE OF THE MAIN TRACK, UNLESS OTHERWISE NOTED.

5. SUBSURFACE INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THE PROJECT. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE HIS OWN DETERMINATION AS TO ALL SUBSURFACE CONDITIONS.

6. CONTRACTOR SHALL CONSTRUCT ALL WORK RELATED TO LIGHT RAIL GUIDEWAY AS INDICATED ON THE PLANS IN REFERENCE TO THE FINAL TOP OF RAIL ELEVATIONS, INCLUDING THE SUB-BALLAST. IF THE BALLAST, TIES, RAIL, AND SPECIAL TRACKWORK ARE UNDER SEPARATE CONTRACT, THE CONTRACTOR SHALL COORDINATE WORK WITH THE TRACK CONTRACTOR AS DIRECTED BY THE AUTHORITY. TRACKWORK STANDARD DRAWINGS ARE PROVIDED FOR INFORMATION ONLY.

7. ALL DISTURBED AREAS WITHIN THE PROJECT LIMITS SHALL BE SEEDED OR SODDED IN ACCORDANCE WITH THE SPECIFICATIONS, UNLESS INDICATED OTHERWISE IN THE PLANS.

8. DART HAS ADOPTED THE Texas State Plane Coordinates (North Central Zone), NAD 1983, 1993 ADJUSTMENT AS THE BASIS FOR ITS HORIZONTAL SYSTEM AND NATIONAL GEODETIC VERTICAL DATUM OF 1988 (NGVD 1988) AS THE BASIS FOR ITS VERTICAL SYSTEM. THE OFFICIAL COMBINED SCALE FACTOR IS ESTABLISHED SYSTEM WIDE AS 1.000136506, TO CONVERT FROM GRID TO SURFACE. ALL COORDINATES AND DISTANCES WILL BE PUBLISHED AS SURFACE VALUES.

9. CONTRACTORS MUST MAINTAIN AT ALL TIMES, FENCING, SIGNS, DETOURS, FLAGMEN, SIGNALS, ETC. FOR ANY OPEN TRENCH OR HOLE AND SHALL CONFORM WITH ALL THE LOCAL JURISDICTIONAL AUTHORITY'S RULES AND REGULATIONS FOR LANE AND STREET CLOSURES WITH PROPER PERMITS AND NOTIFICATIONS. (REFER TO CONSTRUCTION STAGING/SEQUENCING PLANS)

10. DUE TO EXCESSIVE CONGESTION AND CONFLICTS BETWEEN EXISTING AND PROPOSED FEATURES OF THIS CONSTRUCTION, THE LINES AND GRADES SHOWN ON THE PLANS ARE, IN MOST INSTANCES, EXTREMELY CRITICAL. THE CONTRACTOR MAY NOT ADJUST ANY LINE, GRADE OR LOCATION IN THE FIELD WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE AUTHORITY AND CONSULTATION WITH THE DESIGN ENGINEER, EVEN IF NO CONFLICT IS APPARENT.

11. THE RETAINING WALL LOCATIONS ARE DETAILED IN THESE GUIDEWAY PLANS AND THEIR HEIGHT IS ESTABLISHED ON THE GRADING PLANS. THE STATION AND OFFSET CALLOUTS FOR THE RETAINING WALL LOCATIONS ARE TO THE BACK OF THE WALL. NOTE AS SHOWN ON THE RETAINING WALL DETAIL SHEETS THE SIDEWALK PORTION OF THE RETAINING WALL WILL BE PAID FOR AS SIDEWALK WITHOUT COMPENSATION FOR THE EXTRA THICKNESS.

PAVING AND GRADING

1. CONNECTIONS TO EXISTING PAVING SHALL BE MADE BY SAWCUTTING THE EXISTING PAVING TO THE LINES INDICATED ON THE PLANS AND CONSTRUCTING A BUTT JOINT, AS SHOWN ON DETAIL 5, STANDARD DRAWING CS6-0001.

2. THE LIMITS OF SIDEWALK REPLACEMENT ARE SHOWN ON THE SIDEWALK PLANS AND/OR THE GRADING PLANS.

3. CONSTRUCT THE DRIVEWAYS TO THE PROFILES SHOWN ON THE DRIVEWAY PROFILE SHEETS. THE DRIVEWAY SHALL BE CONSTRUCTED FROM THE STREET ALL THE WAY TO THE RIGHT-OF-WAY LINE.

4. THE FINISH GRADES FOR THE SIDEWALKS ARE SHOWN ON THE GRADING PLANS.

STORM DRAINAGE

1. BASIS OF DRAINAGE DESIGN IS THE LOCAL JURISDICTIONAL AUTHORITY'S DRAINAGE MANUAL, USING A 100 YEAR FREQUENCY STORM EVENT.

2. ALL PIPES ON SLOPES OF 10.00% AND GREATER SHALL BE BEDDED IN AND BACKFILLED TO ONE FOOT ABOVE THE TOP OF PIPE WITH CEMENT STABILIZED SAND BACKFILL.

UTILITIES

1. THE CONTRACTOR SHALL PROTECT ALL UTILITIES DURING HIS CONSTRUCTION OPERATIONS TO ENSURE THAT THERE ARE NO INTERRUPTIONS IN SERVICE. TEMPORARY RE-ROUTES OF MAINS AND SERVICES MAY BE REQUIRED.

2. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY IN ANY AREA OF THE PROJECT, THE CONTRACTOR SHALL CONTACT ALL COMPANIES KNOWN TO OPERATE UTILITY SYSTEMS IN THE AREA AND SHALL HAVE THEIR FACILITIES PHYSICALLY LOCATED.

3. GAS LINE REARRANGEMENTS ARE SHOWN ON UTILITY MODIFICATION COMPOSITES AND WILL BE CONSTRUCTED AS PART OF THIS DESIGN-BUILD PROJECT.

4. THE RELOCATION WORK INVOLVING OTHER UTILITIES (ELECTRIC POWER, GAS, TELEPHONE, CABLE TELEVISION) SHALL BE DONE BY THE OWNING/OPERATING UTILITY COMPANY. THE UTILITY COMPANIES SHALL COORDINATE THIS WORK WITH THE DESIGN-BUILD CONTRACTOR.

5. UTILITY INFORMATION IS BASED UPON FIELD MEASUREMENTS AND THE AVAILABLE RECORDS. FIELD DATA IS LIMITED TO THAT WHICH IS VISIBLE AND CAN BE MEASURED. THIS DOES NOT PRECLUDE THE EXISTENCE OF OTHER UNDERGROUND ITEMS. RECORD INFORMATION IS BASED UPON DATA COLLECTED FROM BOTH PUBLIC AND PRIVATE SOURCES. THE COMPLETENESS AND/OR ACCURACY OF THESE RECORDS CANNOT BE GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UNCOVER AND VERIFY THE ACTUAL DEPTH AND CONDITION OF ALL AFFECTED UNDERGROUND UTILITIES WITHIN THE AREA AND SHALL PROTECT EACH UTILITY FROM DAMAGE DURING TEMPORARY OR PERMANENT CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES AND COSTS OF REPAIR THEREOF. FRANCHISE UTILITY REARRANGEMENT PLANS SHALL RESIDE AT THE DESIGN-BUILD CONTRACTOR'S OFFICE.

WATER AND WASTEWATER

1. THE CONTRACTOR SHALL COORDINATE ALL WATER AND WASTEWATER SERVICE CONNECTIONS DUE TO RELOCATIONS OR IMPROVEMENTS WITH THE AFFECTED PROPERTY OWNER AND THE AUTHORITY. NOTIFY EACH OCCUPANT AT LEAST SEVEN (7) CALENDAR DAYS PRIOR TO CONSTRUCTION OF THE MAIN. DO NOT DISCONNECT WATER SERVICE TO A BUILDING OR PROPERTY WITHOUT THE WRITTEN PERMISSION OF THE AUTHORITY.

2. THE TERMS "WASTEWATER" AND "SANITARY SEWER" ARE USED INTERCHANGEABLY THROUGHOUT THESE PLANS AND SPECIFICATIONS.

3. APPROVAL AND INSPECTION OF WATER AND WASTEWATER IMPROVEMENTS LIES WITH LOCAL JURISDICTIONAL AUTHORITY.

4. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT SIZES OF EXISTING SERVICES PRIOR TO TAPPING THEM FOR PROPOSED SERVICE.

5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE EXISTING SANITARY SEWER LATERALS (HORIZONTAL AND VERTICAL) PRIOR TO SETTING WYE'S ON PROPOSED SEWER MAINS FOR LATERAL CONNECTION.

6. THE CONTRACTOR WILL BE RESPONSIBLE FOR RELOCATING EXISTING METER BOXES AND METERS AS INDICATED ON THE PLANS AND CONNECTING THE METER TO THE SERVICE LINE FROM THE MAIN AND TO THE SERVICE LINE INTO THE BUILDING. IN THE EVENT THE METER BOX OR METER CANNOT BE SALVAGED, THE CONTRACTOR WILL BE RESPONSIBLE FOR PURCHASING NEW BOXES AND OBTAINING METERS FROM THE LOCAL JURISDICTIONAL AUTHORITY AND INSTALLING THEM AS DIRECTED BY THE LOCAL JURISDICTIONAL AUTHORITY. ALL METER BOXES, VAULTS, METERS AND SERVICES SHALL CONFORM TO LOCAL JURISDICTIONAL AUTHORITY REQUIREMENTS AND DETAILS.

7. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING EXISTING WASTEWATER SERVICE FROM BUILDINGS TO THE LATERALS AS INDICATED ON THE PLANS.

8. THE CONTRACTOR SHALL PROVIDE FOR CONTINUOUS WASTEWATER SERVICE TO ALL PROPERTIES THROUGH THE DURATION OF THE CONSTRUCTION THROUGH THE USE OF TEMPORARY SERVICES, PUMP TRUCKS, TEMPORARY PUMPING BETWEEN MANHOLES, ETC.

9. CONTRACTOR WILL BE RESPONSIBLE FOR ADJUSTING ALL EXISTING VALVE COVERS, CLEANOUTS, MANHOLE COVERS, FIRE HYDRANTS AND OTHER SURFACE APPURTENANCES THAT WILL REMAIN IN SERVICE AND ARE AFFECTED BY GRADE CHANGES.

10. UPON THE RELEASE OF THE PLANS FOR CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE LOCAL JURISDICTIONAL AUTHORITY INSPECTION DIVISION FOR THE ASSIGNMENT OF AN INSPECTOR FOR THE PROJECT.

11. THESE PLANS AND ANY SUBSEQUENT REVISIONS TO THEM (INCLUDING FIELD CHANGES) MUST BE APPROVED BY THE LOCAL JURISDICTIONAL AUTHORITY IN ADVANCE OF CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL APPROVALS ARE OBTAINED PRIOR TO CONSTRUCTION.

12. THRUST BLOCKING WILL BE USED ON WATER MAIN CONSTRUCTION IN ADDITION TO RESTRAINED JOINTS ON ALL BENDS, TEES, VALVES, ETC. AS PER NCTCOG STANDARD DRAWINGS, DIVISION 4000.

13. IN ORDER TO CONSTRUCT THE WATER LINES AS SHOWN, IT MAY BE NECESSARY TO ISOLATE EXISTING LINES AND TEMPORARILY REMOVE THEM FROM SERVICE. THE PROCEDURE FOR THIS WORK IS GENERALLY AS FOLLOWS (CONTACT THE LOCAL JURISDICTIONAL AUTHORITY FOR ADDITIONAL DETAIL):

- THE CONTRACTOR SHALL CONTACT THE LOCAL JURISDICTIONAL AUTHORITY AT LEAST 7 DAYS BEFORE HE IS READY TO TAP AN EXISTING MAIN.
- JURISDICTIONAL AUTHORITY WILL DETERMINE THE MOST APPROPRIATE VALVES FOR ISOLATION OF THE LINE AND WILL CONTACT ALL CUSTOMERS THAT WILL BE AFFECTED BY THE SHUTDOWN.
- THE LOCAL JURISDICTIONAL AUTHORITY WILL DETERMINE THE MOST APPROPRIATE TIME TO SHUT DOWN THE LINE AND WILL INFORM THE AFFECTED CUSTOMERS AND THE CONTRACTOR OF THE MAXIMUM DURATION THAT THE LINE WILL BE OUT OF SERVICE.
- THE CONTRACTOR WILL MAKE THE TAP SUBJECT TO THE LOCAL JURISDICTIONAL AUTHORITY INSPECTION AND THE LOCAL JURISDICTIONAL AUTHORITY WILL BRING THE LINE BACK INTO SERVICE.
- THE CONTRACTOR SHALL NOT, FOR ANY REASON, OPERATE ANY VALVES ON THE WATER DISTRIBUTION SYSTEM.

14. THE CONTRACTOR SHOULD EXPECT THAT MOST INTERRUPTIONS IN WATER SERVICE MUST OCCUR AT OFF-PEAK HOURS AND HE SHOULD THEREFORE PLAN TO WORK THROUGH THE NIGHT AND ON WEEKENDS FOR MOST OF THE CONNECTIONS TO EXISTING WATER. GREATER RESTRICTIONS WILL BE IMPOSED IN COMMERCIAL DISTRICTS, INDUSTRIAL SITES AND OTHER AREAS WHERE THERE ARE RESTAURANTS OR UNUSUAL HOURS OF UNINTERUPTABLE SERVICE.

STATE OF TEXAS
MICHAEL KALB
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10/3/2025

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS

GENERAL NOTES
SHEET 1 OF 2

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.05A
CONT.	SECT.	JOB	
0918	47	473	

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ELECTRIC

1. CONSTRUCTION OF ELECTRIC DISTRIBUTION FACILITIES UNDER THIS CONTRACT CONSISTS OF THE DUCT SYSTEMS (CONDUITS, MANHOLES, PULL BOXES, VAULT MODIFICATIONS, ETC.) ONLY. LOCAL ELECTRIC COMPANY WILL BE RESPONSIBLE FOR PULLING AND SPLICING ALL CABLE, SETTING EQUIPMENT AND SWITCHING CUSTOMERS TO NEW SERVICE. ALL DUCT AND MANHOLE RECONSTRUCTION IN THIS CONTRACT INVOLVING LIVE ELECTRIC FACILITIES MUST BE PERFORMED BY A LOCAL ELECTRIC COMPANY APPROVED CONTRACTOR. (SEE SPECIAL PROVISIONS FOR MORE INFORMATION. ALL DUCT CONSTRUCTION SHALL BE PERFORMED IN A MANNER AND SEQUENCE WHICH WILL ALLOW LOCAL ELECTRIC COMPANY TO MAINTAIN SERVICE TO THEIR CUSTOMERS AT ALL TIMES, UNLESS OTHERWISE ARRANGED THROUGH LOCAL ELECTRIC COMPANY.

2. JURISDICTION FOR APPROVAL AND INSPECTION OF ELECTRICAL DUCT SYSTEMS LIES WITH LOCAL ELECTRIC COMPANY. THE CONTRACTOR SHALL NOTIFY LOCAL ELECTRIC COMPANY ONE WEEK PRIOR TO START OF ACTUAL CONSTRUCTION. THE CONTRACTOR SHALL MAKE ARRANGEMENTS TO HAVE AN INSPECTOR ON THE JOB SITE WHEN WORK BEGINS.

3. ALL ELECTRIC CONSTRUCTION, UNLESS OTHERWISE NOTED IN THESE DRAWINGS, SHALL COMPLY WITH LOCAL ELECTRIC COMPANY CONSTRUCTION STANDARDS, SPECIFICATIONS AND DETAILS INCLUDING LOCAL ELECTRIC COMPANY NETWORK UNDERGROUND APPURTENANCE SHEETS.

4. DUE TO THE COMPLEXITY OF THE DUCT SYSTEM, IT MAY NOT BE READILY APPARENT WHICH EXISTING DUCTS ARE TO BE ABANDONED AND WHICH ARE TO REMAIN UNTIL THE UTILITY COMPANIES HAVE PULLED THEIR CABLE. THEREFORE, THE CONTRACTOR SHOULD EXERCISE CAUTION AND CAREFULLY COORDINATE WITH THE UTILITY COMPANIES PRIOR TO REMOVING ANY PORTION OF AN EXISTING DUCT.

5. AS A SUPPLEMENT TO THE STATIONING AND OFFSETS INDICATED IN THE PLANS, HORIZONTAL GEOMETRIC DESIGN DATA BASED ON STATE PLANE COORDINATES WILL BE SUPPLIED TO THE CONTRACTOR FOR THE PURPOSE OF FIELD LAYOUT OF THE ELECTRIC SYSTEM BY DART.

6. THE USE OF DRAGLINES OR OTHER BOOM-TYPE EQUIPMENT IN CONNECTION WITH ANY WORK ON LOCAL ELECTRIC COMPANY PROPERTY OR EASEMENTS MUST COMPLY WITH CHAPTER 752, TEXAS HEALTH AND SAFETY CODE, THE NATIONAL ELECTRIC CODE AND ANY OTHER CLEARANCE REQUIREMENTS. IN NO EVENT SHALL EQUIPMENT BE WITHIN FIFTEEN FEET OF POWER LINES. CONTRACTOR MUST NOTIFY THE SUPERVISOR OF THE DALLAS REGION TRANSMISSION AT (972) 721-6281, 48 HOURS PRIOR TO THE USE OF ANY BOOM-TYPE EQUIPMENT ON LOCAL ELECTRIC COMPANY PROPERTY OR EASEMENTS. LOCAL ELECTRIC COMPANY RESERVES THE RIGHT TO REFUSE CONTRACTOR PERMISSION TO USE BOOM-TYPE EQUIPMENT.

7. ALL BOOM EQUIPMENT SHALL BE CHAINED IN LOCAL ELECTRIC COMPANY RIGHT-OF-WAY.

TELECOMMUNICATIONS

1. TELECOMMUNICATIONS CONSTRUCTION UNDER THIS CONTRACT CONSISTS OF THE DUCT SYSTEMS (CONDUITS, MANHOLES, PULL BOXES, VAULT MODIFICATIONS, ETC.), ONLY. THE VARIOUS TELECOMMUNICATIONS COMPANIES WILL PULL THEIR OWN CABLE AND SET ANY EQUIPMENT AS SEGMENTS OF THE NEW DUCT SYSTEMS ARE COMPLETED. ALL DUCT CONSTRUCTION SHALL BE PERFORMED IN A MANNER AND SEQUENCE WHICH WILL ALLOW THE INDIVIDUAL UTILITY COMPANIES TO MAINTAIN SERVICE TO THEIR CUSTOMERS AT ALL TIMES, UNLESS OTHERWISE ARRANGED THROUGH THE UTILITY COMPANIES.

2. CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY ONE WEEK PRIOR TO COMMENCEMENT OF ACTUAL CONSTRUCTION OF THEIR FACILITIES. THE CONTRACTOR SHALL MAKE ARRANGEMENTS TO HAVE AN INSPECTOR ON THE JOB SITE WHEN WORK BEGINS.

3. THESE NOTES SUPPLEMENT AND DO NOT SUPPLANT THE STANDARD PRACTICES OF THE TELECOMMUNICATIONS COMPANIES.

4. ALL DUCT SYSTEM CONSTRUCTION SHALL CONFORM TO THE STANDARD PRACTICES AND SPECIFICATIONS OF THE APPROPRIATE UTILITY COMPANY.

5. ALL DUCT SYSTEM CONSTRUCTION, INCLUDING BACKFILL, SHALL BE IN ACCORDANCE WITH THE MOST STRINGENT OF APPLICABLE CITY, COUNTY, STATE OR FEDERAL REQUIREMENTS AND THESE SPECIFICATIONS.

6. ALL BACKFILL SHALL BE MECHANICALLY TAMPED IN CONFORMANCE WITH APPLICABLE SECTIONS OF THE SPECIFICATIONS.

7. UNLESS OTHERWISE INDICATED ON THE PLANS, SUBSIDIARY DUCTS AND LATERALS SHALL HAVE A MINIMUM COVER OF 3.0 FEET FROM FINISHED GRADE.

8. ALL PLASTIC BENDS AND SWEEPS SHALL BE ENCASED IN CONCRETE WITH A MINIMUM 3 INCH CAP.

9. THE MANHOLE NUMBER (IF DESIGNATED ON THESE PLANS) IS TO BE WELDED ON EACH MANHOLE COVER. IN ADDITION, A TAG BEARING THE MANHOLE NUMBER AND ITS VOLUME SHALL BE PLACED IN THE NECK OF EACH MANHOLE SO THAT IT CAN BE READ WITHOUT ENTERING THE MANHOLE

10. ALL TELECOMMUNICATIONS MANHOLES SHALL BE EQUIPPED WITH MANHOLE LADDERS AND HARDWARE PER UTILITY COMPANY'S SPECIFICATIONS.

11. THE CONTRACTOR SHALL PULL A SLUG THROUGH AT LEAST ONE CONDUIT IN EACH DUCT BANK SECTION FOR THE PURPOSE OF PROVIDING WALL-TO-WALL DUCT MEASUREMENTS TO THE AFFECTED UTILITY COMPANIES FOR THEIR CABLE PULLING OPERATIONS.

12. A NYLON PULL STRING SHALL BE PLACED IN EACH CONDUIT OF EACH UTILITY DUCT BANK.

13. ELEVATIONS AT POINTS OF INTERCEPTION OF EXISTING CONDUIT RUNS AND BUILDING SERVICES MAY REQUIRE FIELD ADJUSTMENT DUE TO THE LACK OF COMPLETE RECORDS.

14. THE FOLLOWING CLEARANCES SHALL BE MAINTAINED BETWEEN TELEPHONE CONDUIT AND POWER OR OTHER FOREIGN CONDUIT:
    3" CONCRETE ENCASEMENT OR
    4" MASONRY ENCASEMENT OR
    12" EARTH SEPARATION, NON-ENCASED

15. THE FOLLOWING CLEARANCES SHALL BE MAINTAINED BETWEEN TELEPHONE CONDUIT AND OIL, GAS, WATER OR OTHER PIPELINES:
    6 INCHES WHEN CROSSING
    12 INCHES WHEN PARALLEL

16. DUE TO THE COMPLEXITY OF THE DUCT SYSTEM, IT MAY NOT BE READILY APPARENT WHICH EXISTING DUCTS ARE TO BE ABANDONED AND WHICH ARE TO REMAIN UNTIL THE UTILITY COMPANIES HAVE PULLED THEIR CABLE. THEREFORE, THE CONTRACTOR SHOULD EXERCISE CAUTION AND CAREFULLY COORDINATE WITH THE UTILITY COMPANIES PRIOR TO REMOVING ANY PORTION OF AN EXISTING DUCT.

17. TRAFFIC SIGNAL INTERCONNECT CABLES MAKE USE OF THE TELEPHONE CONDUIT SYSTEM. COORDINATE REMOVAL OF EXISTING DUCTS AND PLACEMENT OF NEW CABLES WITH THE TRAFFIC SIGNALIZATION PLANS. (DART CONTRACTOR INSTALLS INTERCONNECT CABLES.)

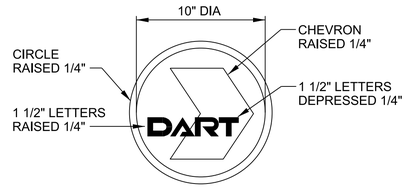
18. AS A SUPPLEMENT TO THE STATIONING AND OFFSETS INDICATED IN THE PLANS, HORIZONTAL GEOMETRIC DESIGN DATA BASED ON STATE PLANE COORDINATES WILL BE SUPPLIED TO THE CONTRACTOR FOR THE PURPOSE OF FIELD LAYOUT OF THE TELECOMMUNICATIONS DUCT SYSTEMS BY DART.

ADDITIONAL NOTES

1. FOR ADDITIONAL DISCIPLINE SPECIFIC NOTES OR GENERAL NOTES, SEE VARIOUS PLAN SECTIONS AS FOLLOWS:

   ARCHITECTURAL
   BRIDGE STRUCTURES
   RETAINING WALLS
   SWPPP
   UTILITIES
   TRACKWORK
   SYSTEMS

2. ALL CAST COVERS (I.E. MANHOLE LIDS, CLEANOUT COVERS, ETC.) SHALL CONTAIN THE DART LOGO IN THE CENTER OF THE COVER PER THE DETAIL SHOWN ON THIS SHEET.



TYPICAL CAST COVER LOGO DETAIL

NTS

NOTES:

1. 10" DIAMETER LOGO TO BE CENTERED IN COVERS 18" AND LARGER.

2. LOGO TO BE REDUCED IN SIZE FOR COVERS LESS THAN 18". MINIMUM LOGO DIAMETER TO BE 4".

3. LETTERS WITHIN THE "CHEVRON" SHALL BE 1/4" LOWER THAN "CHEVRON".

4. LETTERS OUTSIDE "CHEVRON" SHALL BE RAISED 1/4" TO MATCH TOP OF "CHEVRON".

GENERAL BID ITEM NOTES:

SCHEDULE 8 - MISCELLANOUS - ITEM 2016 DART SS

1. FORCE ACCOUNT/ALLOWANCE TO COVER WORK CONSISTING OF FINAL DESIGN AND INSTALLATION OF ALL CIVIL, STRUCTURAL, SYSTEMS, AND LIGHTING IMPROVEMENTS ASSOCIATED WITH THE INTEGRATION OF TWO NEW AUTOMATIC PEDESTRIAN GRADE CROSSING WARNING GATES INTO THE EXISTING DALLAS AREA RAPID TRANSIT (DART) BUCKINGHAM RD. AUTOMATIC HIGHWAY CROSSING WARNING (AHCW) BUNGALOW AS DESCRIBED IN THE PLANS (CENTRAL TRAIL EXTENSION BUCKINGHAM RD AT DART RAIL CROSSING IMPROVEMENTS) AND FURTHER DETAILED IN THE DART SPECIAL SPECIFICATIONS INCLUDED IN THESE CONTRACT DOCUMENTS. THIS FORCE ACCOUNT/ALLOWANCE INCLUDES GENERAL REQUIREMENTS, MOBILIZATION, BONDING, INSURANCE, LIGHT RAIL FLAGGING, AND MANDATORY ROADWAY WORKER PROTECTION SAFETY TRAINING REQUIRED BY DART FOR ALL WORKERS WITHIN 25 FT. OF LIGHT RAIL TRACKS. TO ENSURE THAT A HIGHLY QUALIFIED AND EXPERIENCED CONTRACTOR COMPLETES THE SPECIALIZED WORK REQUIRED ADJACENT TO AND ALONG DART LIGHT RAIL RIGHT-OF-WAY, ONLY THE DART MAJOR ON-CALL CONSTRUCTION SERVICES CONTRACTOR LISTED BELOW WHO HAS PERFORMED AND IS CURRENTLY DOING WORK OF SIMILAR SCOPE AND SCALE FOR DART SHALL BE ELIGIBLE TO PERFORM THIS WORK.

   STACY AND WITBECK INC
   ATTN: DESMOND WASHINGTON
   15400 KNOLL TRAIL DR., SUITE 601, DALLAS, TX 75248

2. RIGHT OF ENTRY (ROE) AGREEMENT: ALL WORK WITHIN OR AFFECTING DALLAS AREA RAPID TRANSIT (DART) RIGHT-OF-WAY SHALL REQUIRE A FULLY EXECUTED DART RIGHT OF ENTRY (ROE) AGREEMENT PRIOR TO COMMENCEMENT OF WORK. THIS REQUEST SHALL BE SUBMITTED THROUGH THE DARTSPACE PORTAL: DART.ORG/DARTSPACE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COORDINATING WITH DART TO OBTAIN, EXECUTE, AND MAINTAIN THE REQUIRED ROE AGREEMENT, INCLUDING COMPLIANCE WITH ALL INSURANCE, SAFETY, FLAGGING, AND ADMINISTRATIVE REQUIREMENTS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ITEM 5L, LOCAL GOVERNMENT GENERAL REQUIREMENTS AND COVENANTS, SECTION 40 CONTROL OF WORK, AND APPLICABLE DART SPECIAL SPECIFICATIONS.

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MICHAEL KALB
121456
LICENSED PROFESSIONAL ENGINEER
10/3/2025

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SYMBOLS

- PROFILE GRADE LINE / ELEVATION CONTROL POINT
- DIRECTION OF FLOW
- C OR B CENTERLINE OR BASELINE
- FUTURE OR NOT IN CONTRACT
- CENTERLINE
- BASELINE
- PROPERTY LINE
- DIMENSION LINE CONTINUES
- MATCH LINE
- 510 CONTOUR LINE
- TRACK (TRANSIT) CENTER LINE
- X X X EXISTING FENCE LINE
- X X X PROPOSED FENCE LINE
- STRUCTURE OUTLINE
- RAILROAD TRACKS
- CO CLEANOUT
- MH MANHOLE
- SIDEWALK AND MISC. LINES
- DROP INLET, CATCH BASIN OR DRAIN
- CULVERT HEADWALLS
- + 543.5 SPOT ELEVATION
- CURB LINE
- EXISTING BARRIER/RETAINING WALL
- PROPOSED RETAINING WALL
- PROPOSED BALLAST WALL
- NOISE IMPACT AREA
- GUARD RAIL
- HAND RAIL
- UNPAVED ROAD
- CONCRETE GUARD FENCE
- VEGETATION LINE
- TREE
- SHRUB
- POLE
- UTILITY POLE

- SS SANITARY (DIRECTION OF FLOW) , PLUG
- GRID OF THE STATE PLANE COORDINATE SYSTEM
- BILLBOARD
- TOTAL CENTRAL ANGLE OF SPIRAL AND CIRCULAR CURVES
- C1 SUFFIX (1) AT THE SYMBOL DENOTES DATA FOR THE FIRST CIRCULAR CURVE OF A COMPOUND CURVE
- C2 SUFFIX (2) AT THE SYMBOL DENOTES DATA FOR THE SECOND CIRCULAR CURVE OF A COMPOUND CURVE
- S CENTRAL ANGLE OF SPIRAL OR SPIRAL ANGLE
- aAC CENTRAL ANGLE OF COMPOUND SPIRAL OR COMPOUND ANGLE (CS1 TO CS2)
- sAT TOTAL CENTRAL ANGLE OF COMPOUND SPIRAL OR TOTAL COMPOUND SPIRAL ANGLE (FROM SPO TO SC2)
- WWMH WASTEWATER MANHOLE
- SMH STORM SEWER MANHOLE
- EMH, TMH, WUMH ELECTRICAL, TELEPHONE, OR WESTERN UNION MANHOLE
- REDUCER
- WM WATER METER
- WV WATER VALVE
- FH FIRE HYDRANT
- CAP OR PLUG
- GV GAS VALVE
- GM GAS METER
- PB PULL BOX OR SPLICING CHAMBER
- LIGHT POLE
- FS FIRE SERVICE STAND PIPE
- EXISTING TRAFFIC SIGN
- PROPOSED TRAFFIC SIGN
- POLE GUY AND ANCHOR
- TRANSMISSION LINE TOWER
- TRAFFIC CONTROL GATE
- CANTILEVERED RAILROAD CROSSING SIGNAL
- TEST BORING LOCATION
- (O/H) OVERHEAD LINES
- (O/H) E OVERHEAD ELECTRIC LINES
- POINT NUMBER DART PRIMARY CONTROL POINT
- OTHER SURVEY MONUMENTS

- T (UG) UNDERGROUND TELEPHONE LINE
- UG(E) UNDERGROUND ELECTRIC LINE
- OH AERIAL UTILITY
- UTILITY FACILITY LESS THAN 24"
- MAJOR UTILITY FACILITY 24" OR LARGER IN PLAN VIEW
- FACILITY TO BE ABANDONED
- DOUBLE CROSSOVER
- POINT OF SWITCH
- EXISTING DITCH
- DITCH PROPOSED SPECIAL DITCH
- STM STORM DRAIN/CULVERT
- UD UNDERDRAIN
- WW WASTEWATER
- W WATER LINE
- G GAS LINE
- TS TRAFFIC SIGNALIZATION LINE
- E ELECTRIC POWER LINE
- ESL ELECTRIC LINE, STREET LIGHTING
- T TELEPHONE LINE
- TG TELEGRAPH LINE
- TV CABLEVISION LINE
- PROPOSED CASING
- PROPOSED STREET CLOSING
- PROPOSED STREET CONSTRUCTION
- EXISTING STREET/RAILROAD RIGHT-OF-WAY LINE
- EXISTING PROPERTY LINE
- DART PROPOSED RIGHT-OF-WAY LINE
- EXISTING EASEMENT LINE
- DART PROPOSED EASEMENT LINE
- EXIST / SET COPPER, IRON PIN, PIPE IRON ROD MARKERS OR ANY PROPERTY CORNER
- RIGHT-OF-WAY, CONTROL MONUMENT OR MARKERS
- EXISTING INTERSECTION OF PROPERTY LINES
- INTERSECTION OF PROPOSED DART RIGHT-OF-WAY LINES
- PROPOSED DART RIGHT-OF-WAY MONUMENT

- POINT OF SWITCH
- LEFT HAND TURNOUT
- RIGHT HAND TURNOUT
- DERAIL SWITCH
- CENTERLINE
- GAUGE LINE
- LEFT HAND CURVE / RIGHT HAND CURVE — ARROW INDICATES DIRECTION OF INCREASED STATIONING
- SINGLE CROSSOVER,LH SHOWN
- CONTINUOUS WELDED RAIL
- PI/PVI/PITO
- NON-INSULATED JOINT
- INSULATED RAIL JOINT-BOTH RAILS
- INSULATED RAIL JOINT - L RAIL
- INSULATED RAIL JOINT - R RAIL
- INSULATED RAIL JOINT
- RESTRAINING RAIL
- PRE-CURVED RAIL
- STANDARD RAIL,GIRDER RAIL
- PREMIUM RAIL
- F SWITCH NUMBERING "F" INDICATES FUTURE
- 136#/115# TRANSITION RAIL
- NE3-A CURVE NUMBER
- BLUE FLAG
- BUMPING POST
- EQUILATERAL TURNOUT
- POWER POINT POLE
- FH PROPOSED FIRE HYDRANT
- REMOVE AND REPLACE MANHOLE
- RAILROAD GATE/CANTILEVER LOCATION
- HW_{100} HEADWATER ELEVATION
- TW_{100} TAILWATER ELEVATION
- CORROSION CONTROL TEST STATION
- 235 CONDUIT RUN NUMBER

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SYMBOLS

- EXISTING TRAFFIC SIGNAL POLE WITH MAST ARM
- PROPOSED TRAFFIC SIGNAL POLE WITH MAST ARM
- EXISTING TRAFFIC SIGNAL HEAD
- PROPOSED TRAFFIC SIGNAL HEAD
- EXISTING TRAFFIC SIGNAL CONTROLLER, BASE MOUNTED
- PROPOSED TRAFFIC SIGNAL CONTROLLER, BASE MOUNTED
- EXISTING TRAFFIC SIGNAL CONTROLLER, POLE MOUNTED
- PROPOSED TRAFFIC SIGNAL CONTROLLER, POLE MOUNTED
- EXISTING SPAN WIRE POLE
- PROPOSED SPAN WIRE POLE
- EXISTING TRAFFIC PULLBOX
- PROPOSED TRAFFIC PULLBOX
- EXISTING PEDESTRIAN SIGNAL
- PROPOSED PEDESTRIAN SIGNAL
- EXISTING LOOP DETECTOR
- PROPOSED LOOP DETECTOR
- RED LENS
- YELLOW LENS
- GREEN LENS
- PROPOSED PARCEL NUMBER
- EXISTING COUNTY BLOCK NUMBER
- EXISTING PARCEL OWNERSHIP SAME AS ADJACENT PARCEL
- (WW°XX'YY") EXISTING DEGREE, MINUTES & SECONDS
- WW°XX'YY" PROPOSED DEGREE, MINUTES & SECONDS
- EXISTING MUNICIPAL BOUNDARY-CITY/COUNTY
- (XXX') EXISTING PROPERTY/ROW LINE WITH CALLOUT
- XXX' PROPOSED PROPERTY/ROW LINE WITH CALLOUT
- POINT ON ALIGNMENT
- LETTER DENOTING SECTION
- SECTION DESIGNATION
- DRAWING WHERE SECTION IS SHOWN (- IF SHOWN ON SAME DRAWING)

- CONCRETE
- ELASTOMER
- INSULATING WASHER OR SLEEVE
- GROUT, PLASTER, LIGHTWEIGHT, CONCRETE
- TIMBER
- ASPHALT, CMU
- STEEL
- WELDING
- BALLAST
- GRAVEL
- SUBGRADE, EARTH
- QUENCHED CARBON STEEL
- SUBBALLAST, FLEXIBLE BASE

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CIVIL ABBREVIATIONS

PF	POINT OF FROG
PG	PROFILE GRADE
PGL	PROFILE GRADE LINE
PGP	PROPOSED GRADE POINT
PI	POINT OF INTERSECTION, PLASTICITY INDEX
PIC	POINT OF INTERSECTION - CIRCULAR CURVE
PIS	POINT OF INTERSECTION - SPIRAL
PITO	POINT OF INTERSECTION -TURNOUT
PK	SURVEY NAIL
PL	PROPERTY LINE
PM	PREVENTATIVE MAINTENANCE, PARKING METER
POA	POINT OF ALIGNMENT
POB	POINT OF BEGINNING
POC	POINT ON CURVE
POE	POINT OF ENDING
POLY	POLYETHYLENE PIPE
POLYGHP	POLYETHYLENE GAS HIGH PRESSURE
POS	POINT ON SPIRAL
POT	POINT ON TANGENT
PP	POWER POLE
PRC	POINT OF REVERSE CURVE
PREM	PREMOLDED
PROP	PROPOSED
PROT	PROTECTION
PS	POINT OF SWITCH
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF CHANGE FROM CIRCULAR CURVE TO TANGENT
PVC	POINT OF VERTICAL CURVE, POLYVINYL CHLORIDE PIPE
PVCC	POLYVINYL CHLORIDE CONDUIT, POINT OF COMPOUND VERTICAL CURVE
PVCP	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVRC	POINT OF REVERSE VERTICAL CURVE
PVT	POINT ON VERTICAL TANGENT
Q	STORM WATER DISCHARGE
R	RADIUS
R/T	RIGHT TRACK
RBM	RAILBOUND MANGANESE
RCB	REINFORCED CONCRETE BOX CULVERT
RCCP	REINFORCED CONCRETE CYLINDER PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REF	REFERENCE
REFL	REFLECTIVE
REINF	REINFORCING, REINFORCED, REINFORCEMENT
REQD	REQUIRED
RET	RETAINING
REV	REVISED, REVISION
RH	RIGHT HAND
ROW	RIGHT-OF-WAY
RR	RAILROAD
RS	REVERSE SPIRAL
RSC	RAILROAD SIGNAL CABLE
RT	RIGHT (DEFLECTION)
RW	RETAINING WALL
S	SOUTH, SLOPE, SHRUB
S & I	SERVICE & INSPECTION
SAN SWR	SANITARY SEWER
SB	SOUTHBOUND
SC	SPIRAL TO CURVE
SCHED	SCHEDULE
SD	STORM DRAIN
SDWK	SIDEWALK
SE, S/E	SOUTHEAST
SEJ	SEALED EXPANSION JOINT
SF	SQUARE FOOT
SH	STATE HIGHWAY
SHC	SHOTCRETE
SHLD	SHOULDER
SHT	SHEET
SI	POINT OF INTERSECTION - SPIRAL
SIG	SIGNAL, SIGNAL BUNGALOW
SIM	SIMILAR
SL	SURVEY LINE
SMH	SEWER MANHOLE
SP	STEEL PIPE
SPC	SPACE
SPDC	SIGNAL POWER DISTRIBUTION CENTER
SQ	SQUARE
SS	SANITARY SEWER, SIDE SLOPE, STAINLESS STEEL, SPIRAL TO SPIRAL
ST	SPIRAL TO TANGENT, STREET, SHORT TANGENT OF SPIRAL
ST SGN	STREET SIGN
STA	STATION, STATIONING
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURE
STY	STORY
SUB	SUBSTATION
SUBD	SUBDIVISION
SURF	SURFACE
SW, S/W	SOUTHWEST, SWITCH
SWBT	SOUTHWESTERN BELL TELEPHONE
SWPP, SW3P	STORM WATER POLLUTION PREVENTION PLAN
SY	SQUARE YARD
SYM	SYMMETRICAL
SYS	SYSTEM
SZ	SIZE
T	LENGTH OF TANGENT, TELEPHONE, TREE
T(UG)	UNDERGROUND TELEPHONE
TXUED	TXU ENERGY DELIVERY
T/D	TOP OF DITCH
T/G	TOP OF GROUND LINE
T/P	TOP OF PAVEMENT
T/R	TOP OF RAIL
T/S	TOP OF SLOPE
T/W	TOP OF WALL
TAN	TANGENT
TBD	TO BE DETERMINED
TBM	TEMPORARY BENCHMARK
TBR	TO BE REMOVED
TC	TIME OF CONCENTRATION, TRAIN CONTROL
TC, T/C	TOP OF CURB
TCEQ	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
TCI	TELECOMMUNICATIONS, INC.
TEMP	TEMPORARY
TG	TELEGRAPH
TGMH	TELEGRAPH MANHOLE
TL	TRAFFIC POLE, TRAFFIC LIGHT, TENSION LENGTH
TLT	TRANSMISSION LINE TOWER
TMH	TELEPHONE MANHOLE
TMUTCD	TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
TNRCC	TEXAS NATURAL RESOURCES CONSERVATION COMMISSION
TO	TURNOUT
TOC	TOP OF CONCRETE
TOPO	TOPOGRAPHY
TPSS	TRACTION POWER SUBSTATION
TRA	TRINITY RIVER AUTHORITY
TRANS	TRANSITION
TRF SIG	TRAFFIC SIGNAL
TRK	TRACK
TS	TANGENT TO SPIRAL, TRAFFIC SIGNAL LINE OR CONDUIT
Ts	TANGENT DISTANCE FROM TS OR ST TO PI
TUE	TEXAS UTILITIES ELECTRIC CO.
TV	CABLE TELEVISION, TELEVISION
TVM	TELEVISION MANHOLE
TWEL	TAILWATER ELEVATION
TXDOT	TEXAS DEPARTMENT OF TRANSPORTATION
TY	TYPE
TYP	TYPICAL
UD	UNDERDRAIN
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UP	UNDERPASS
UPRR	UNION PACIFIC RAILROAD
USC&GS	U.S. COAST & GEODETIC SURVEY
USGS	UNITED STATES GEOLOGICAL SURVEY
UTIL	UTILITY
V	VELOCITY, VOLT
VAR	VARIES, VARIABLE
VCP	VITRIFIED CLAY PIPE
VEH	VEHICLE, VEHICULAR
VERT	VERTICAL
VOL	VOLUME
W	WEST, WATER, WATT
W/	WITH
W/O	WITHOUT
WB	WESTBOUND
WC	WATER CLOSET
WCO	WALL CLEANOUT
WD	WELDED
WE	WATER ELEVATION
WIP	WROUGHT IRON PIPE
WL	WATER LINE, WIND LOAD
WM	WATER METER
WMH	WATER MANHOLE
WP	WORK POINT
WR	WRAPPED
WSEL	WATER SURFACE ELEVATION
WT	WEIGHT
WTR	WATER
WU/ATS	WESTERN UNION / ADVANCED TRANSMISSION SYSTEM
WUMH	WESTERN UNION MANHOLE
WV	WATER VALVE
WW	WASTEWATER, WATERWAY
WWF	WELDED WIRE FABRIC
X-ING	CROSSING
X-OVER	CROSSOVER
Xs	TANGENT DISTANCE FROM TS TO SC OR ST TO CS
X-SECT	CROSS SECTION
Ys	TANGENT OFFSET AT SC OR CS

NOTES:

1. FOR ADDITIONAL ABBREVATIONS NOT SHOWN ON THIS DRAWING, SEE THE FOLLOWING DISCIPLINES:

ARCHITECTURAL
STRUCTURAL
HVAC
ELECTRICAL
PLUMBING & FIRE PROTECTION
TRACKWORK
SYSTEMS

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MICHAEL KALB
121458
LICENSED
PROFESSIONAL ENGINEER

10/3/2025

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
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DALLAS COUNTY

CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS

CIVIL ABBREVIATIONS
SHEET 2 OF 2

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.07B
CONT.	SECT.	JOB	
0918	47	473	

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SUMMARY OF SYSTEM ITEMS												
	02780	02780	02910	02931	16901	16901	16908	16932	16932	16932	16976	16998
LOCATION	EXISTING MANHOLE/UTILITY MODIFICATIONS	1XD4" CONDUIT/DUCT CONCRETE ENCASED	TOPSOIL AND FINISHED GRADING	SEEDING AND SODDING - NON-IRRIGATED AREAS	SIGNAL SYSTEM PRELIMINARY DESIGN & DESIGN REVIEW (INCLUDED IN GEN REQMTS)	SIGNAL SYSTEM FINAL DESIGN & DESIGN REVIEW, TX PE SIGN/SEAL (INCLUDED IN GEN REQMTS)	17C GRADE CROSSING GATE CABLE FURNISH, INSTALLATION, AND TESTING	GRADE CROSSING PEDESTRIAN GATE FURNISH/INSTALL ON FOUNDATION	BUCKINGHAM RD AHCW XING CONTROLLER AND POWER MODIFICATIONS/ WIRING	STRYTEN ABSOLYTE AGPS 50G15 BATTERY	4AWG COPPER GROUND CONDUCTOR AND GROUND ROD	SIGNAL SYSTEM/GRADE CROSSING PEDESTRIAN GATE FUNCTIONAL/INTEGRATED TESTING
	LS	LF	CY	SF	LS	LS	LF	EA	LS	EA	EA	LS
SYSTEM PLANS	1	35	6	60	1	1	150	2	1	7	2	1
PROJECT TOTALS	1	35	6	60	1	1	150	2	1	7	2	1

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SYSTEMS QUANTITY SUMMARY

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.04B
CONT.	SECT.	JOB	
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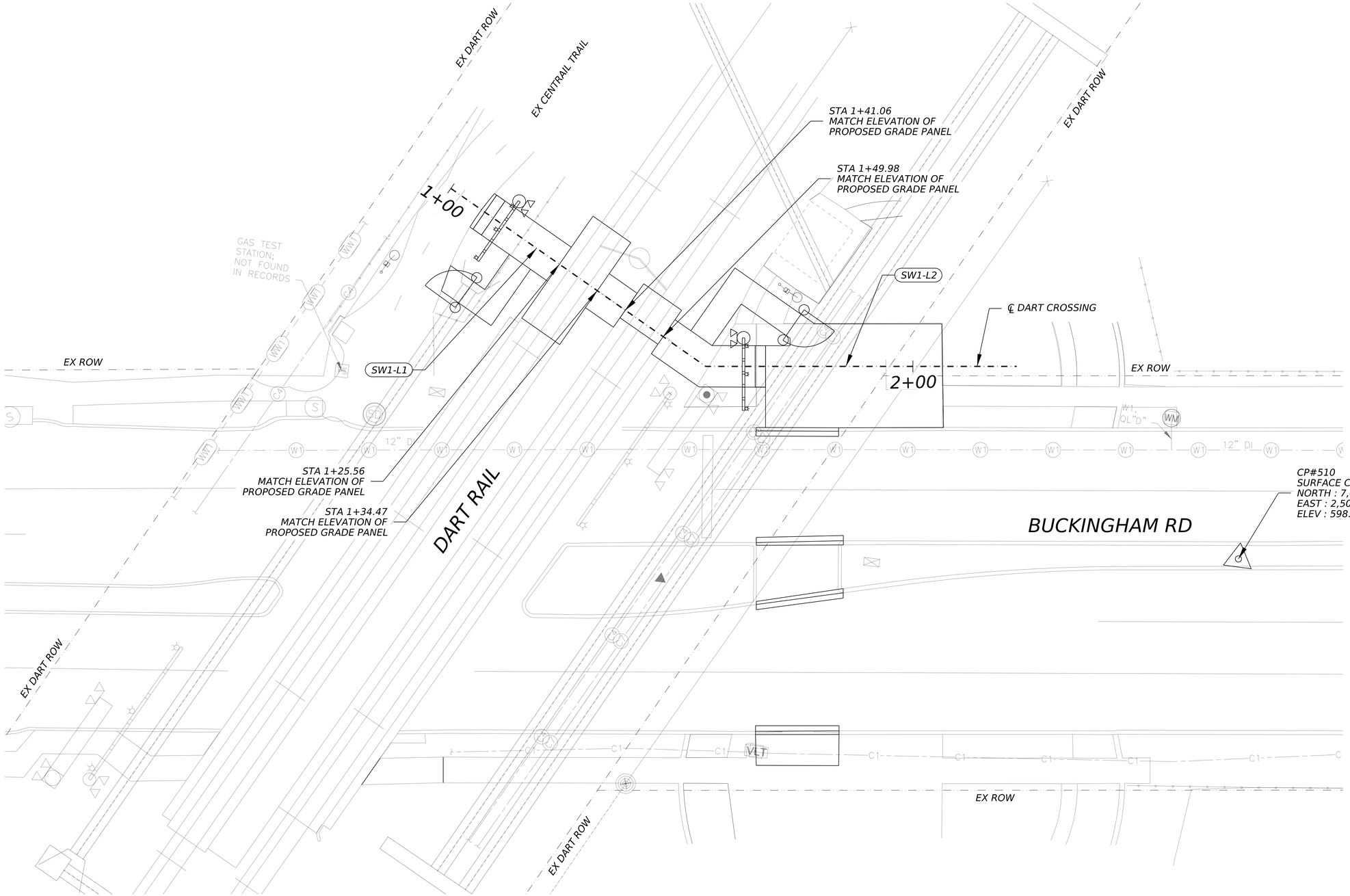

	BEARING	LINE LENGTH	EASTING	NORTHING	STATION
SW1-L1	S 62° 33' 52.40" E	60.00	2,508,632.276	7,029,043.558	1+00.00
SW1-L2	N 82° 30' 30.80" E	60.00	2,508,685.528	7,029,015.913	1+60.00
SW1-END			2,508,745.016	7,029,023.736	2+20.00

0' 10' 20'

TRAFFIC CONTROL NOTES:

1. COORDINATE WITH DART FOR TRAFFIC CONTROL AND FLAGGING REQUIREMENTS WITHIN DART ROW
2. CONTRACTOR SHALL OBTAIN RIGHT OF ENTRY FROM DART PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN DART ROW.

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS
HORIZONTAL AND VERTICAL CONTROL

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	0.08
CONT.	SECT.	JOB	
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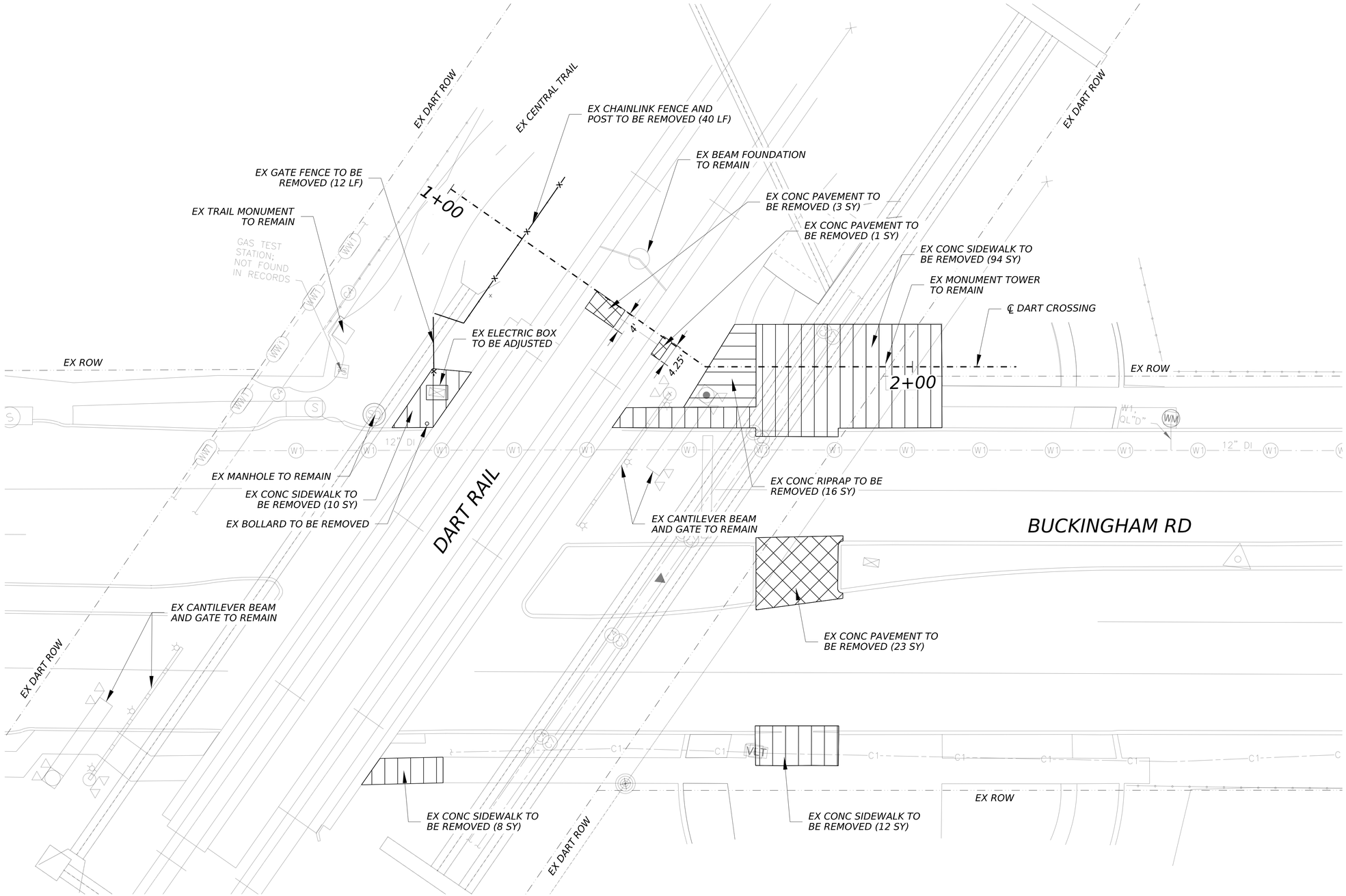

104 7001	104 7006	104 7013	479 7001	496 7028	550 7007
REMOV CONC (PAV)	REMOV CONC (RIPRAP)	REMOV CONC (SIDEWALK, RAMP OR SUP)	ADJUSTING MANHOLES	REMOVE STR (BOLLARD)	CHAIN LINK FENCE (REMOVE)
SY	SY	SY	EA	EA	LF
27	16	124	1	1	52

0' 10' 20'

LEGEND

- EX ROW
- CHAINLINK FENCE REMOVAL
- CONC PAVEMENT TO BE REMOVED
- CONC SIDEWALK AND RAMPS TO BE REMOVED
- CONC RIPRAP TO BE REMOVED
- EX CONC C&G TO BE REMOVED

NOTES:

1. REMOVAL OF EXISTING CONCRETE CURB & GUTTER AND SIDEWALK SHALL BE BY SAWCUT. SAWCUT 1 FT FROM FACE OF CURB.
2. CONTRACTOR SHALL CONFIRM ALL EXISTING UTILITIES PRIOR TO DEMOLITION WORK.

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CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS

DEMOLITION PLAN

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	2.01
CONT.	SECT.	JOB	
0918	47	473	

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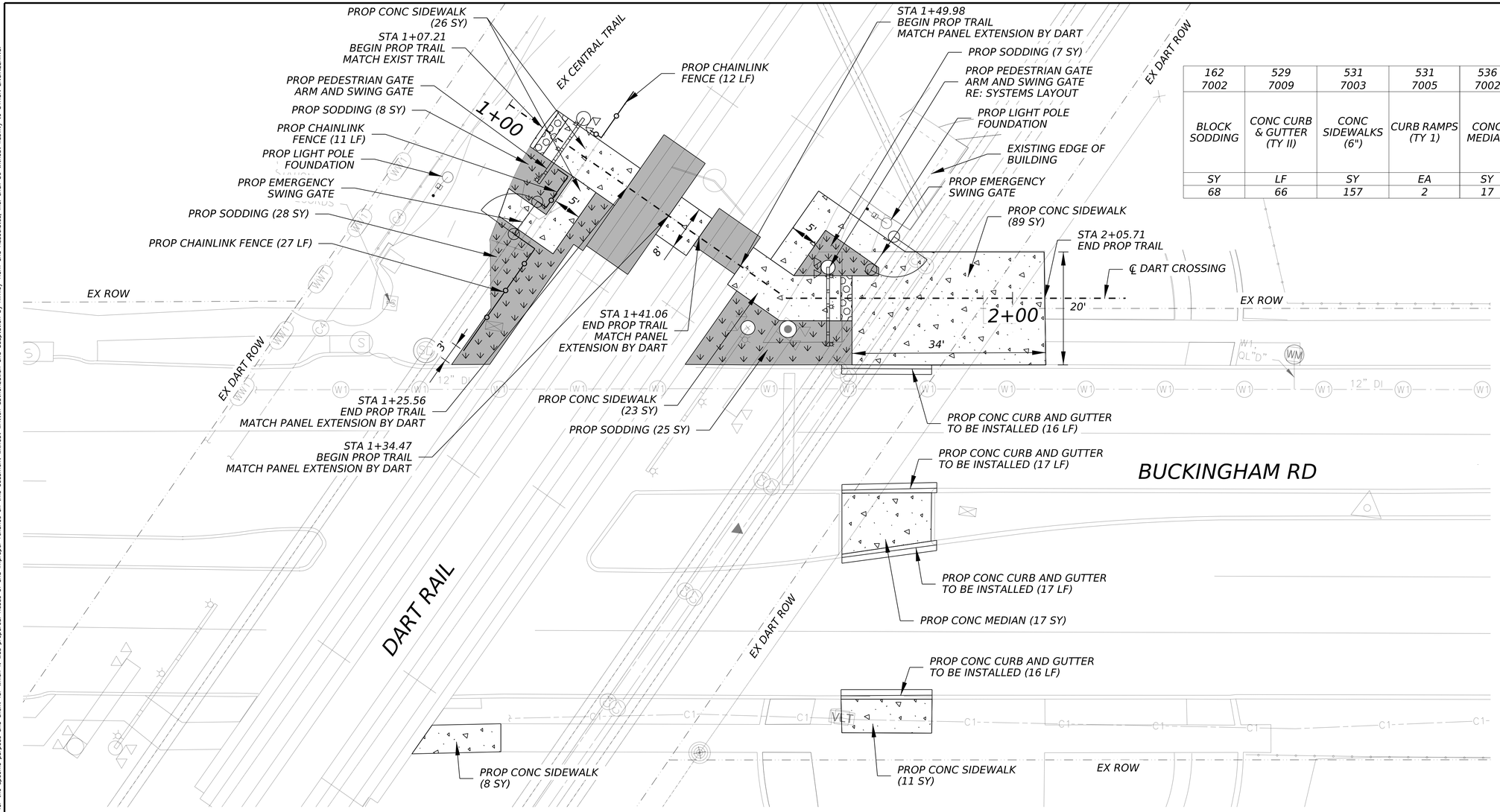
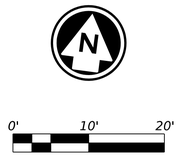


162 7002	529 7009	531 7003	531 7005	536 7002	550 7001
BLOCK SODDING	CONC CURB & GUTTER (TY II)	CONC SIDEWALKS (6")	CURB RAMPS (TY 1)	CONC MEDIAN	CHAIN LINK FENCE (INSTALL) (6')
SY	LF	SY	EA	SY	LF
68	66	157	2	17	50

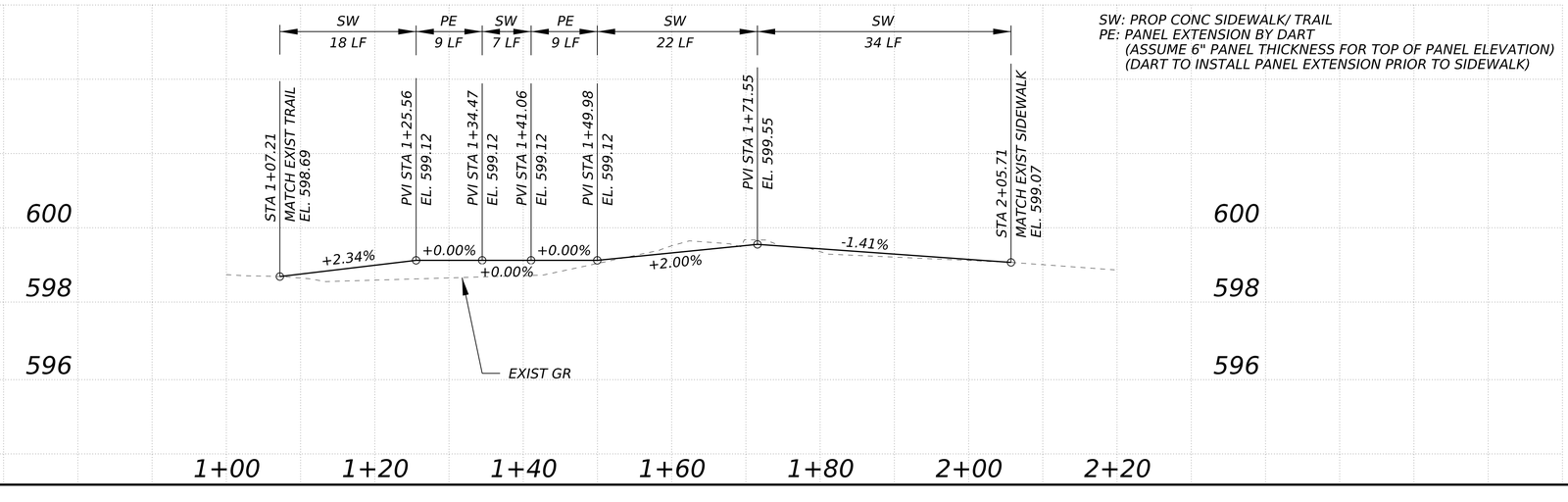


LEGEND

- EX ROW
- PROPOSED CHAINLINK FENCE RE: DART FENCE DETAILS
- PROPOSED SIDEWALK
- PROPOSED PANEL EXTENSION BY DART
- PROPOSED SODDING
- DETECTABLE WARNING SURFACE RE: CITY RAMP DETAILS

NOTES:

1. SIDEWALK CROSS SLOPE SHALL BE 1.5%.
2. DETECTABLE WARNING SURFACE MUST MEET THE REQUIREMENTS OF SECTION 705 OF TAS AND SHALL BE CHARCOAL IN COLOR.
3. FENCE DETAILS SHALL MEET DART STANDARD DWG NO. CS1-0008 AND CS1-0009.
4. SIDEWALK SHALL FOLLOW CITY OF RICHARDSON SIDEWALK STANDARD DETAILS SDW-04 AND SDW-05. PROVIDE EXP JOINT WHERE SIDEWALK MEETS PANEL EXTENSION BY DART.
5. CONCRETE MEDIAN AND C&G SHALL FOLLOW CITY OF RICHARDSON STREET STANDARD DETAILS.
6. TAKE CAUTION OF THE GROUND GRID SURROUNDING THE BUNGALOW.



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DALLAS COUNTY

CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS

CIVIL PLAN

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	2.02
CONT.	SECT.	JOB	
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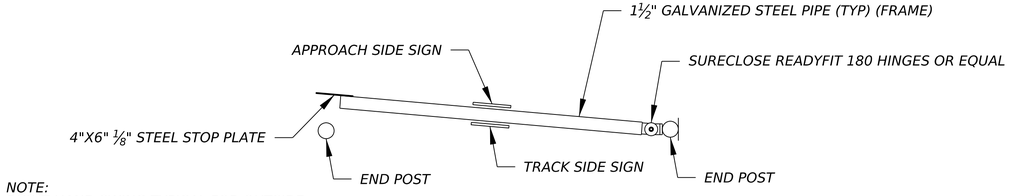
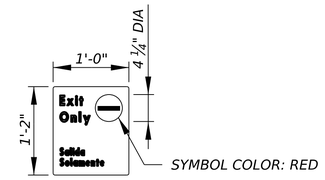
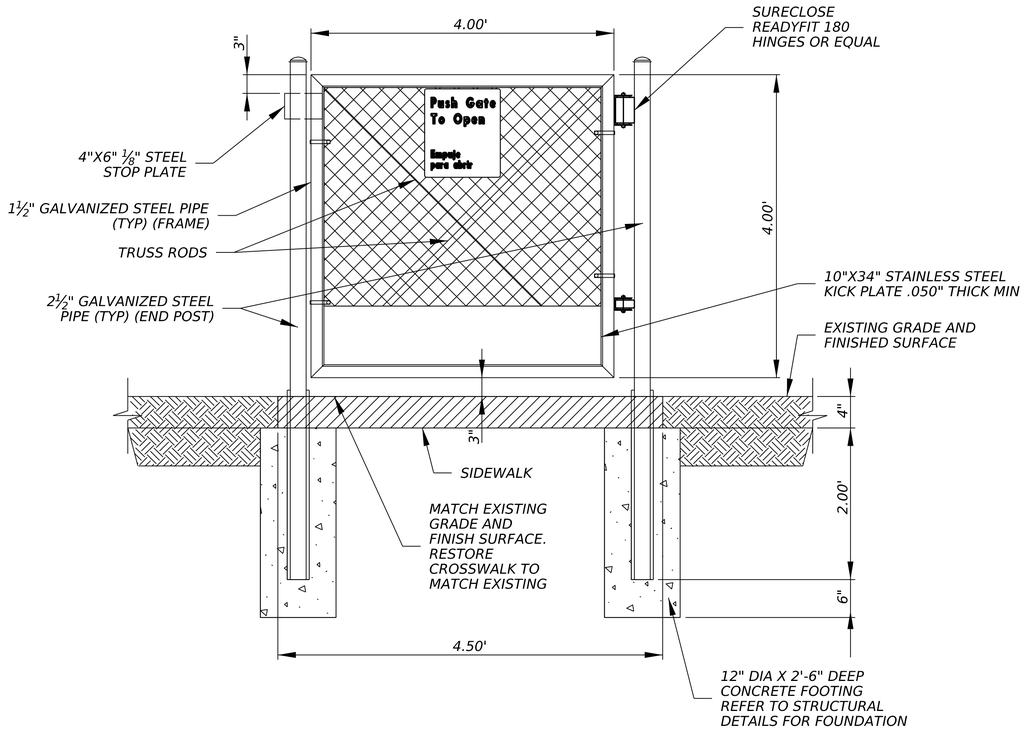


NOTE:
RIGHT HAND SWING TYPICAL FOR OUTSIDE ESCAPE PATHS.
LEFT HAND SWING TYPICAL FOR INSIDE ESCAPE PATHS.

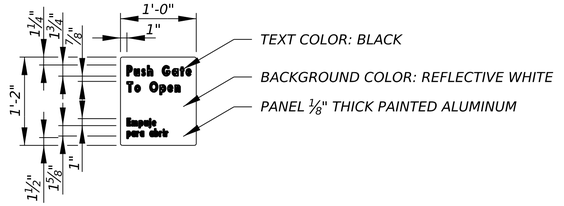
GATE PLAN



APPROACH SIDE SIGN



EMERGENCY SWING GATE ELEVATION VIEW FROM TRACK SIDE



TRACK SIDE SIGN

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CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS

FENCE GATE AND SIGN DETAIL

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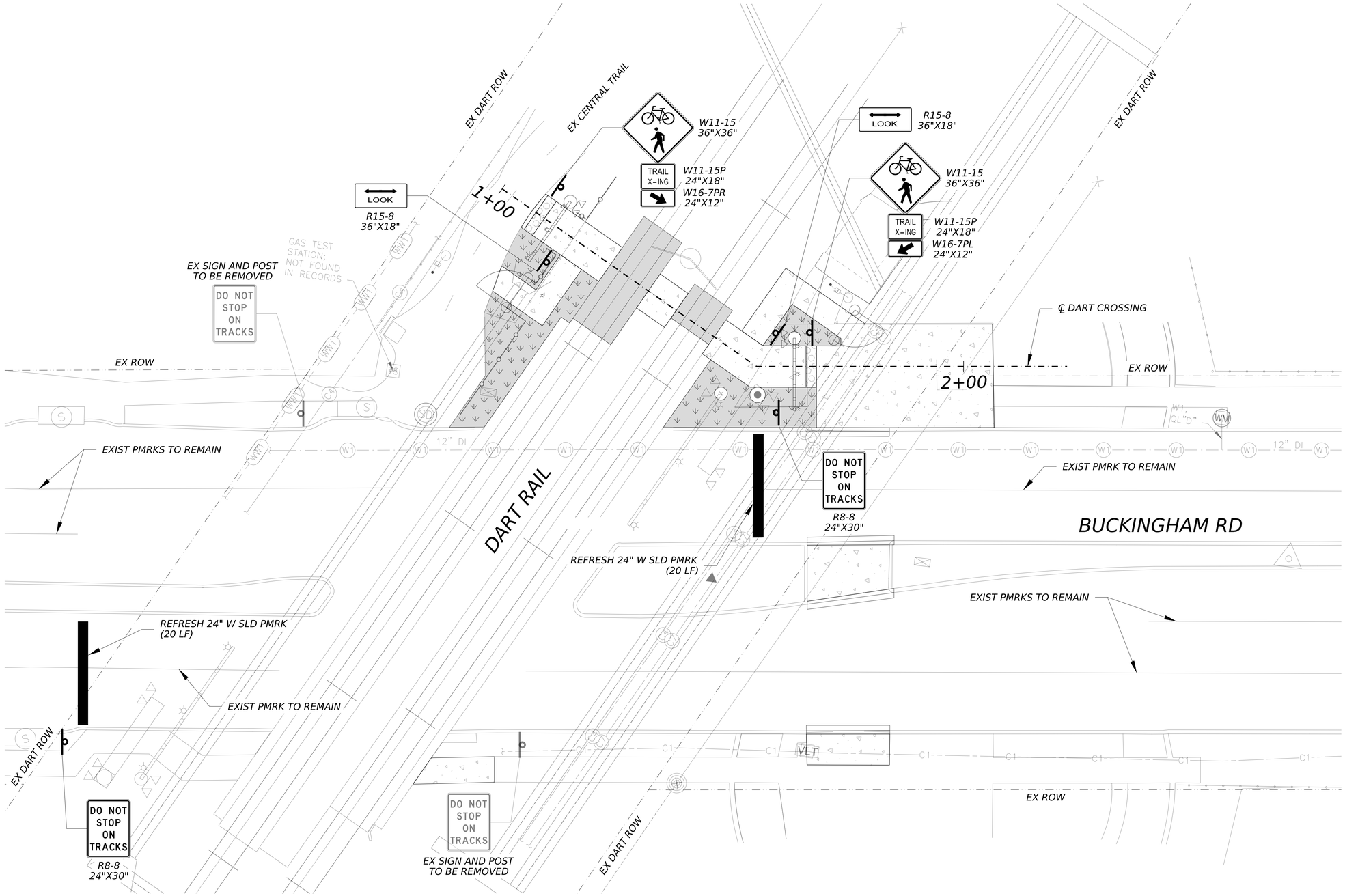
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	2.03
CONT.	SECT.	JOB	
0918	47	473	



644	644	666
7001	7073	7036
IN SM RD SN SUP&AM TY10BWG(1) SA(P)	REMOVE SM RD SN SUP&AM	REFL PAV MRK TY I (W)24"(SLD) (100MIL)
EA	EA	LF
6	2	40

N

0' 10' 20'

LEGEND

- EX ROW
- EXISTING SIGN POST
- PROPOSED SIGN POST

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CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS

SIGNING & PAVEMENT MARKING PLAN

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	2.04
CONT.	SECT.	JOB	
0918	47	473	

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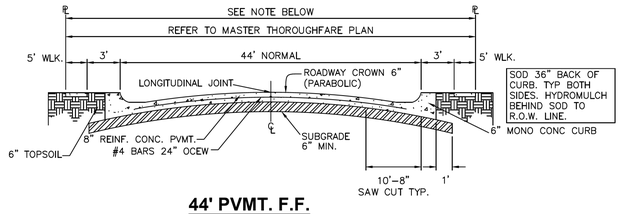
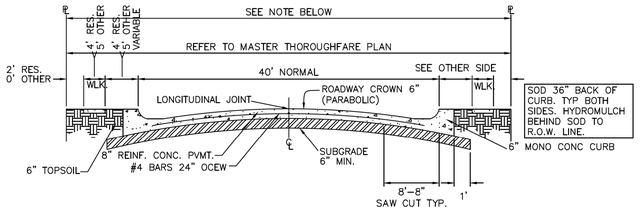
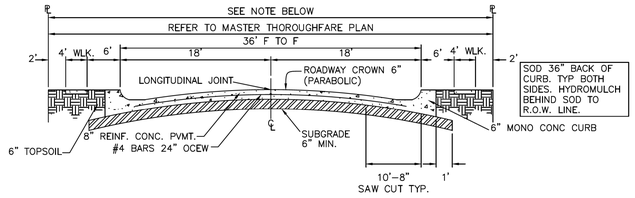


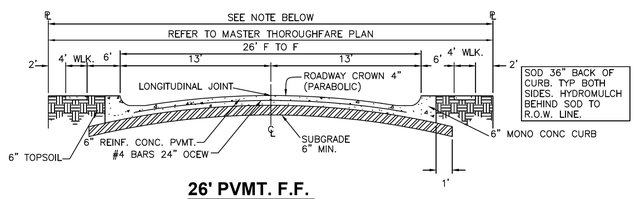
44' PVMT. F.F.



40' PVMT. F.F. (NORMAL)



36' PVMT. F.F.

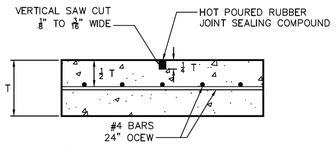


26' PVMT. F.F.

NOTE:

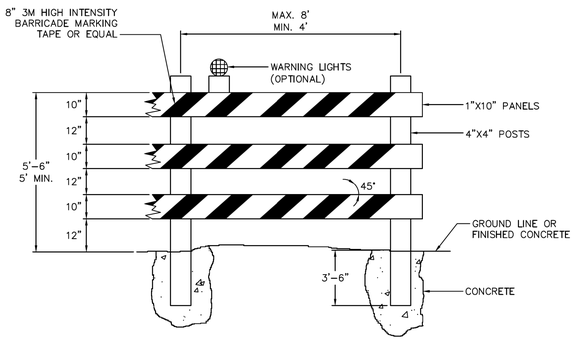
1. ALL R.O.W. SHALL BE COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR @ −2% TO +4% OPTIMUM MOISTURE.
2. SIDEWALK WIDTH VARIES ACCORDING TO ZONING, AND PRESENCE OF SCREENING WALL.

TABLE OF CROWN HEIGHTS				
ROADWAY WIDTH	TOTAL CROWN	3/4 POINT	MID-POINT	1/4 POINT
26'	4"	2-1/4"	1"	1/4"
36'	6"	3-3/8"	1 1/2"	3/8"
40'	6"	3-3/8"	1 1/2"	3/8"
44'	6"	3-3/8"	1 1/2"	3/8"

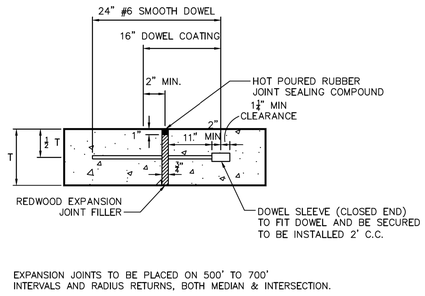


SAWED DUMMY JOINT

1. RAIL STRIPE WIDTHS SHALL BE 6", EXCEPT THAT 4" WIDE STRIPS MAY BE USED IF RAIL LENGTHS ARE LESS THAN 36".
2. THE SIDES OF BARRICADES FACING TRAFFIC SHALL HAVE RETROREFLECTIVE RAIL FACES.

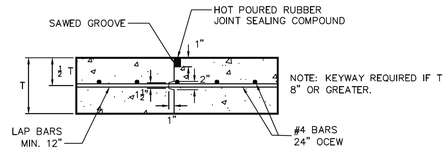


PERMANENT BARRICADE

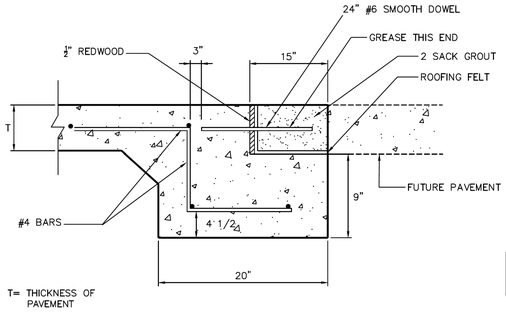


EXPANSION JOINTS TO BE PLACED ON 500' TO 700' INTERVALS AND RADIUS RETURNS, BOTH MEDIAN & INTERSECTION.

TRANSVERSE EXPANSION JOINT

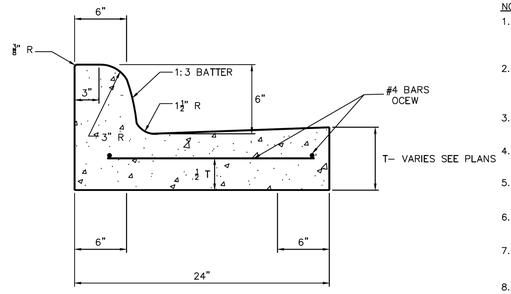


CONSTRUCTION JOINT

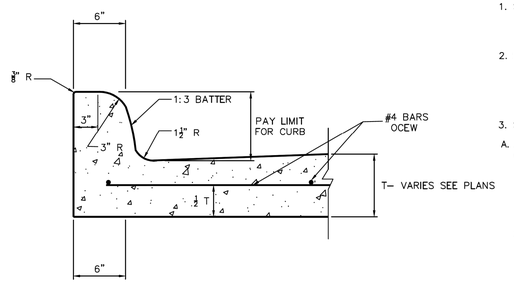


PAVEMENT HEADER

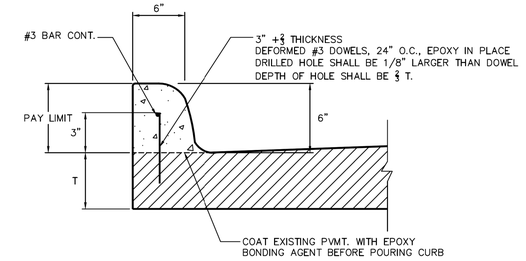
THIS SECTION TO BE USED FOR CONTINUATION OF FUTURE PAVEMENT



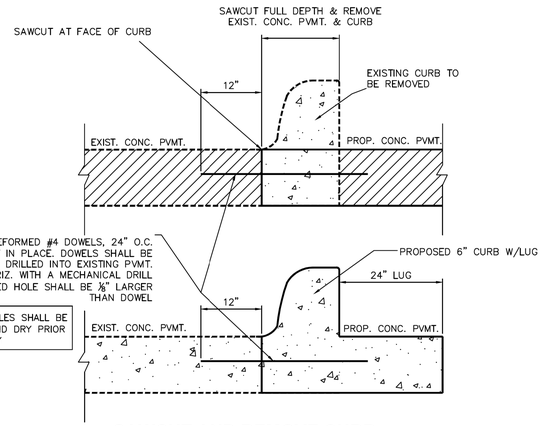
SEPARATE CURB AND GUTTER



INTEGRAL CURB AND GUTTER



DOWEL ON CURB



SAWCUT AND REMOVE CURB

CONNECTION TO EXISTING PAVEMENT

NOTES:

1. STREET CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION NORTH CENTRAL TEXAS." FOR THE DESIGN OF WATER AND SEWER LINES AND WATER DEPARTMENT STANDARDS.
2. ALL STREET PAVEMENT SHALL BE CLASS "C" CONCRETE PER NCTCOG ITEM 303.3.4.2(a), REINFORCED WITH #4 BARS, GRADE 60 SHOWN BOTH SPACED 24" O.C.E.W. HAND FINISHING WILL BE AS PER ITEM 303.5.6.2
3. ALL PARKWAYS SHALL SLOPE A MIN. OF 1/4" PER FOOT UP FROM THE CURB TO THE RIGHT-OF-WAY LINE, THEN AT A MAX 3:1 SLOPE TO MATCH EXISTING GRADE.
4. SAWING AND SEALING OF ALL LONGITUDINAL AND TRANSVERSE PAVEMENT JOINTS SHALL BE CONSIDERED SUBSIDIARY TO ALL PAVING ITEMS.
5. FOR PLACING OF CONCRETE PAVEMENT REFER TO ITEM 303.5.5 OF "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION NORTH CENTRAL TEXAS."
6. FOR MAXIMUM SLUMP OF CONCRETE FOR PAVEMENT REFER TO ITEM 303.3.4.4 OF "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION NORTH CENTRAL TEXAS."
7. ALL NONRESIDENTIAL PAVEMENT SHALL BE A MINIMUM OF 8" THICK, REINFORCED WITH #4 BARS, GRADE 60.
8. ALL COMMERCIAL AND RESIDENTIAL DRIVEWAYS SHALL BE CLASS "C" CONCRETE WITH #4 BARS GRADE 60 SPACED AT 24" OCEW.

PORTLAND CEMENT CONCRETE PAVEMENT:

1. STANDARD SPECIFICATIONS ITEM 303.2.1.3 – 'COARSE AGGREGATES' SHALL BE AMENDED THE FIRST SENTENCE IS DELETED AND REPLACED AS FOLLOWS "COARSE AGGREGATES SHALL BE 100% CRUSHED STONE"
2. STANDARD SPECIFICATIONS ITEM 303 SHALL BE AMENDED AS FOLLOWS:
   A. ITEM 303.2.4. FLY ASH IS ALLOWED: MAX 20% BY WEIGHT
   B. ITEM 303.2.5 SHALL BE DELETED. NO MINERAL FILLER IS ALLOWED
   C. ITEM 303.2.6 SHALL BE DELETED. NO FIBROUS REINFORCEMENT ALLOWED
3. STANDARD SPECIFICATIONS ITEM 303 SHALL BE AMENDED TO INCLUDE THE FOLLOWING:

A. ALL EQUIPMENT NECESSARY TO CONSTRUCT CONCRETE PAVEMENT SHALL BE APPROVED BY THE OWNER PRIOR TO STARTING THE PAVING OPERATION. PAVING EQUIPMENT REQUIREMENTS ARE

1. SIDEWALKS LESS THAN 8' IN WIDTH
   NO PAVING MACHINE REQUIRED. STINGER VIBRATORS AND METAL STRAIGHT EDGES SHALL BE USED TO CONSOLIDATE THE CONCRETE.
2. SIDEWALKS 8' IN WIDTH OR WIDER
   VIBRATING SCREED WITH TWO HAND HELD STINGER VIBRATORS SHALL BE USED TO CONSOLIDATE THE CONCRETE.
3. PARKING LOTS AND TURN LANES
   VIBRATING SCREED WITH TWO HAND HELD STINGER VIBRATORS SHALL BE USED TO CONSOLIDATE THE CONCRETE.
4. NEW STREET AND ALLEY PAVEMENT
   SLIPFORM PAVING EQUIPMENT AS DESCRIBED IN ITEM 303.4.3 OF THE STANDARD SPECIFICATIONS SHALL BE USED.
5. STREET AND ALLEY REPAIRS
   PAVING EQUIPMENT WILL BE DETERMINED BY THE OWNER.
6. FULL WIDTH ALLEY REPLACEMENT
   VIBRATING SCREED WITH TWO HAND HELD STINGER VIBRATORS SHALL BE USED TO CONSOLIDATE THE CONCRETE.

B. CONCRETE FINISH

NEW PAVEMENT: STREET AND ALLEY PAVEMENT SHALL BE TEXTURED WITH A NYLON BAKER BROOM THAT IS CLEAN AND FREE OF GROUT BUILDUP. DRAG BROOM LONGITUDINALLY OVER THE PAVEMENT AFTER BLEED WATER HAS EVAPORATED (CONCRETE WILL APPEAR DULL) BUT BEFORE CONCRETE HAS ATTAINED ITS INITIAL SET.

NEW SIDEWALK: SHALL BE TEXTURED WITH A TRANSVERSELY WITH A LIGHT BROOM FINISH. HAND FINISHING SHALL BE PER ITEM 303.5.6.2

PAVEMENT PATCHING: STREET AND ALLEY PAVEMENT SHALL BE TEXTURED LONGITUDINALLY WITH A HORSEHAIR BROOM OR A BURLAP DRAG FINISH.

C. CONCRETE TEMPERATURES

MAY 1 THROUGH SEPTEMBER 30

1. ALL MIXES AND MIX DESIGNS SHALL INCLUDE A RETARDING AGENT.
2. CONCRETE TEMPERATURE PRIOR TO PLACEMENT SHALL NOT EXCEED 95°F, (35°C).
3. THE TIME INTERVAL (FROM ADDITION OF INITIAL WATER):

AGITATED CONCRETE

90°F OR ABOVE	(32.2°C)	45 MINUTES
75°F TO 89°F	(23.9° TO 31.6°C)	60 MINUTES
35°F TO 74°F	(1.6° TO 23.3°C)	90 MINUTES

NON AGITATED CONCRETE

80°F OR ABOVE	(26.6°C)	15 MINUTES
35°F TO 79°F	(1.6° TO 26.1°C)	30 MINUTES

OCTOBER 1 THROUGH APRIL 30

1. CONCRETE TEMPERATURE PRIOR TO PLACEMENT SHALL NOT EXCEED 95°F, (35°C).
2. THE TIME INTERVAL (FROM ADDITION OF INITIAL WATER):

AGITATED CONCRETE

90°F OR ABOVE	(32.2°C)	45 MINUTES
75°F TO 89°F	(23.9° TO 31.6°C)	60 MINUTES
35°F TO 74°F	(1.6° TO 23.3°C)	90 MINUTES

NON AGITATED CONCRETE

80°F OR ABOVE	(26.6°C)	15 MINUTES
35°F TO 79°F	(1.6° TO 26.1°C)	30 MINUTES

Revisions:

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Drawn By: RGB
Checked By: COR

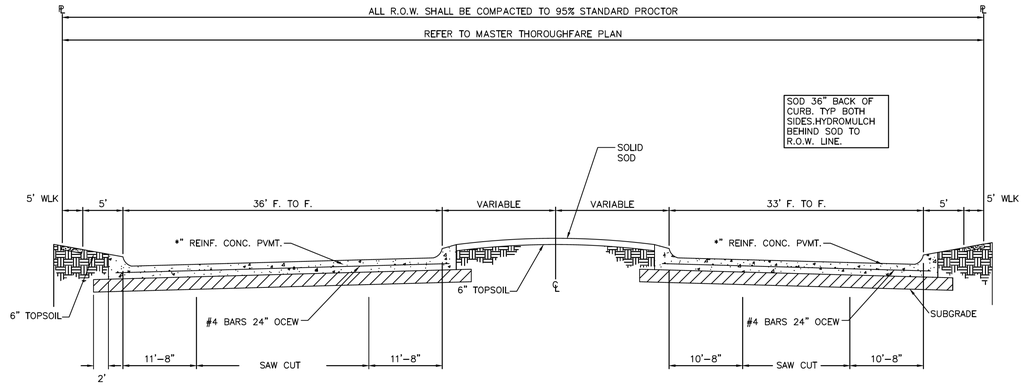
RICHARDSON TEXAS

STANDARD DETAILS

City of Richardson, Texas

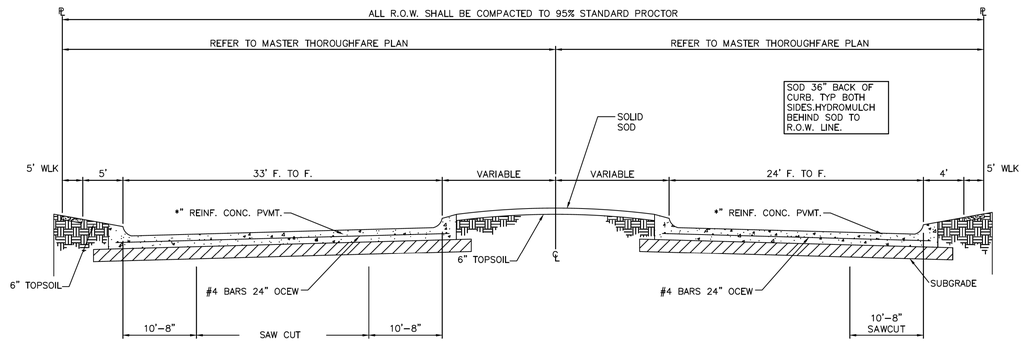
NO ADDITIONS OR CHANGES TO STANDARD DETAIL SHEETS UNLESS APPROVED BY CITY OF RICHARDSON

24"x36" Scale: NTS
11"x17" Scale: NTS
Vertical Scale: NA
Project Number: XXX
Issue Date: 03 MAY 18
Sheet Title: **STREET**
Sheet No.: **2.05**

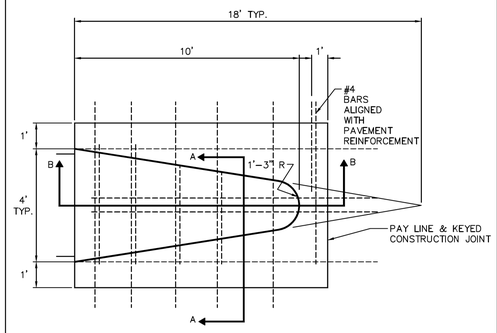


36'-33' PVMT. F.F.

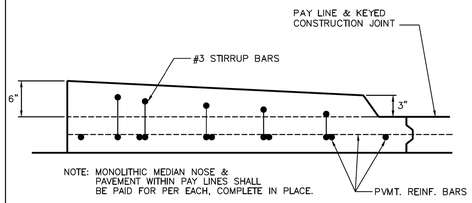
* 8" THK WITH LIME TREATED SUBGRADE
  9" THK WITHOUT LIME TREATED SUBGRADE
  10" THK AT ALL THOROUGHFARE TO THOROUGHFARE INTERSECTIONS, FROM RADIUS RETURN TO RADIUS RETURN



22'-33' PVMT. F.F.
TYPICAL PVMT. SECTION-DIVIDED ROADWAY

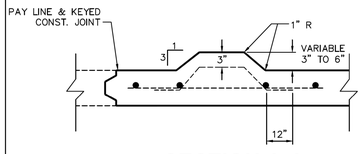


MONOLITHIC MEDIAN NOSE



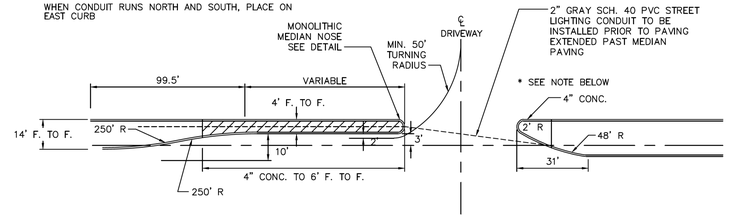
NOTE: MONOLITHIC MEDIAN NOSE & PAVEMENT WITHIN PAY LINES SHALL BE PAID FOR PER EACH, COMPLETE IN PLACE.

SECTION B-B



SECTION A-A

* WHEN CONDUIT RUNS EAST AND WEST, PLACE ON NORTH CURB.
WHEN CONDUIT RUNS NORTH AND SOUTH, PLACE ON EAST CURB



MEDIAN NOSE PLACEMENT:

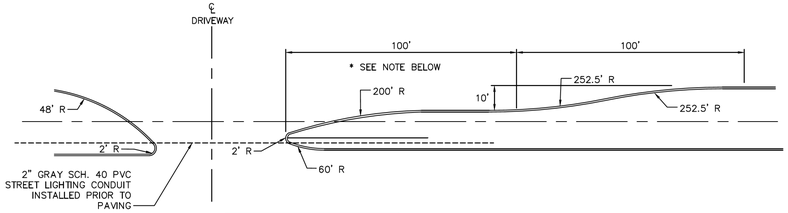
TYP. 1 FOOT MIN. PRECEDING PROJECTED LINES OF CURB RAMP (SEE SHEET C-11) OR AS REQUIRED BASED ON INTERSECTION GEOMETRY.

APPLIES ONLY @ INTERSECTIONS W/ CROSSWALKS.

SEE STREET MARKING STANDARD DETAIL FOR BUTTON TYPE AND LOCATION

LEFT TURN LANE FOR 14 FOOT MEDIAN

ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED



MEDIAN NOSE PLACEMENT:

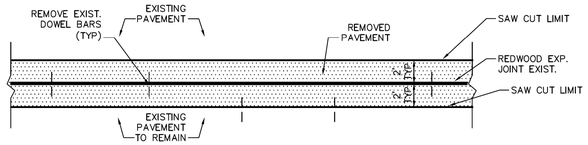
TYP. 1 FOOT MIN. PRECEDING PROJECTED LINES OF CURB RAMP (SEE SHEET C-11) OR AS REQUIRED BASED ON INTERSECTION GEOMETRY.

APPLIES ONLY @ INTERSECTIONS W/ CROSSWALKS.

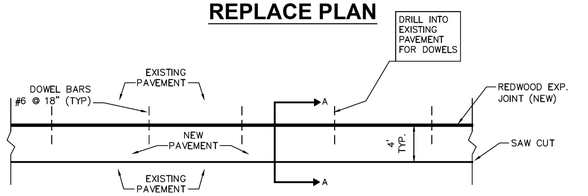
* STREET LIGHTING CONDUIT
WHEN CONDUIT RUNS EAST AND WEST, PLACE ON NORTH CURB
WHEN CONDUIT RUNS NORTH AND SOUTH, PLACE ON EAST CURB

SEE STREET MARKING STANDARD DETAIL FOR BUTTON TYPE AND LOCATION

LEFT TURN LANE FOR 28 FOOT (OR LARGER) MEDIAN

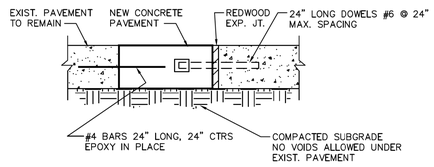


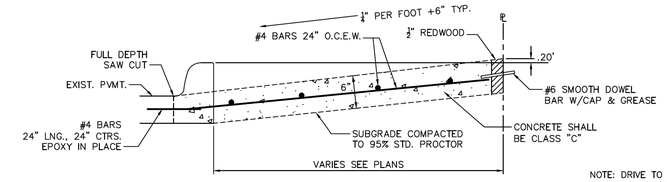
REPLACE PLAN



REDWOOD EXPANSION JOINT REPLACEMENT CURB TO CURB ONLY

EXISTING PLAN

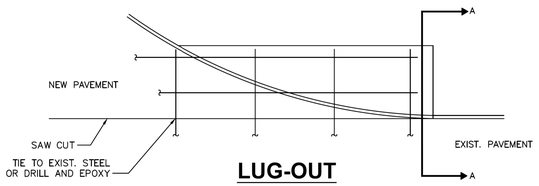




NOTE: DRIVE TO HAVE MAXIMUM OF 2% CROSS SLOPE @ SIDEWALK CROSSING

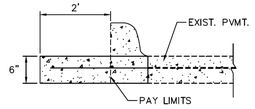
TYP. COMMERCIAL DRIVE APPROACH

CONNECTION TO EXIST. STREET

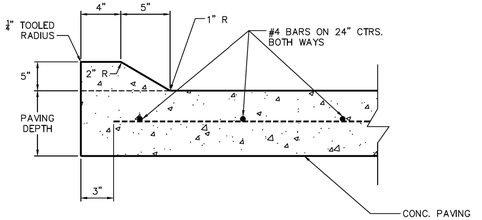


LUG-OUT

LUG-OUT



SECTION A-A



MOUNTABLE MONOLITHIC CURB TYPE 1

NOTES:

1. STREET CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION NORTH CENTRAL TEXAS."
2. ALL STREET PAVEMENT SHALL BE CLASS "C" CONCRETE PER ITEM 303.3.4.2, REINFORCED WITH #4 BARS, GRADE 60 SHOWN BOTH SPACED 24" O.C.E.W. HAND FINISHING WILL BE AS PER ITEM 303.5.6.2.
3. ALL PARKWAYS SHALL SLOPE A MIN. OF 1/4" PER FOOT UP FROM THE CURB TO THE RIGHT-OF-WAY LINE, THEN AT A MAX 3:1 SLOPE TO MATCH EXISTING GRADE.
4. SAWING AND SEALING OF ALL LONGITUDINAL AND TRANSVERSE PAVEMENT JOINTS SHALL BE CONSIDERED SUBSIDIARY TO ALL PAVING ITEMS.
5. FOR PLACING OF CONCRETE PAVEMENT REFER TO ITEM 303.5.5 OF "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION NORTH CENTRAL TEXAS."
6. FOR MAXIMUM SLUMP OF CONCRETE FOR PAVEMENT REFER TO ITEM 303.3.4.4 OF "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION NORTH CENTRAL TEXAS."
7. ALL MEDIAN PAVEMENT SHALL BE CLASS "A" CONCRETE, REINFORCED WITH #4 BARS, GRADE 60, MIN. AT 24" O.C.E.W

Revisions:

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Checked By: COR

RICHARDSON TEXAS

STANDARD DETAILS
City of Richardson, Texas

NO ADDITIONS OR CHANGES TO STANDARD DETAIL SHEETS UNLESS APPROVED BY CITY OF RICHARDSON

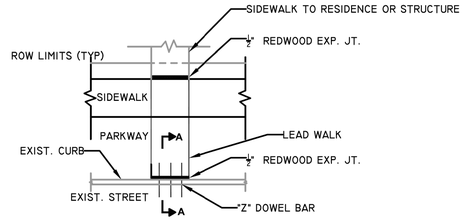
24"x36" Scale: NTS
11"x17" Scale: NTS
Vertical Scale: NA
Project Number: XXX
Issue Date: 03 MAY 18
Sheet Title: **STREET**
Sheet No.: **2.06**

1. ALL SIDEWALKS CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, OR AS AMENDED HEREIN.
2. ALL SIDEWALK CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINES, REQUIREMENTS OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) AND THE REQUIREMENTS OF THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).
3. THE FOLLOWING CRITERIA MUST BE MET ON ALL NEW SIDEWALKS:
   - 3.1. SIDEWALK MAXIMUM LONGITUDINAL SLOPE: 5%
   - 3.2. SIDEWALK MAXIMUM TRANSVERSE SLOPE: 2% (1.5% TYP.)
   - 3.3. A 5'X5' PASSING ZONE SHALL BE PROVIDED EVERY 200' (MAX). IT IS THE CITY'S PREFERENCE TO PROVIDE PASSING ZONE WHERE 5'X5' SPACES ARE ALREADY PLANNED (I.E. TOP OF CURB RAMPS). IF ADDITIONAL LOCATIONS ARE NEEDED TO MEET SPACING REQUIREMENT, CONSULT CITY PROJECT ENGINEER FOR DIRECTION ON LOCATION.
   - 3.4. CLEAR 48" MINIMUM WALKING SPACE AROUND ANY OBSTRUCTIONS (POWER POLES, ANCHORS, ETC.)
4. THE CONTRACTOR SHALL PROVIDE A LONGITUDINAL CONSTRUCTION JOINT BETWEEN NEW PAVEMENT AND EXISTING PAVEMENT INTERFACE. DOWEL BARS SHALL BE DRILLED AND EPOXY GROUTED INTO EXISTING PAVEMENT PER CITY OF RICHARDSON STANDARD DETAILS. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED BY THE CONTRACTOR AS REQUIRED. ALL JOINTS AND DOWELING ARE SUBSIDIARY TO THE OTHER BID ITEMS (NO SEPARATE PAYMENT), UNLESS A SPECIFIC BID ITEM IS PROVIDED.
5. SIDEWALKS SHALL BE REPLACED TO THE NEXT ADJACENT CONSTRUCTION JOINT. NO PARTIAL SIDEWALK PANELS WILL BE ALLOWED TO REMAIN.
6. NCTCOG STANDARD SPECIFICATIONS ITEM 303 SHALL BE AMENDED AS FOLLOWS:
   - 6.1. ITEM 303.2.1.3 - 'COARSE AGGREGATES' SHALL BE AMENDED THE FIRST SENTENCE IS DELETED AND REPLACED AS FOLLOW "COARSE AGGREGATES SHALL BE 100% CRUSHED STONE".
   - 6.2. ITEM 303.2.4 FLY ASH IS ALLOWED MAX 20% BY WEIGHT.
   - 6.3. ITEM 303.2.5 SHALL BE DELETED. NO MINERAL FILLER IS ALLOWED.
   - 6.4. ITEM 303.2.6 SHALL BE DELETED. NO FIBROUS REINFORCEMENT ALLOWED.
7. ALL EQUIPMENT NECESSARY TO CONSTRUCT CONCRETE PAVEMENT SHALL BE APPROVED BY THE OWNER PRIOR TO STARTING THE PAVING OPERATION. PAVING EQUIPMENT REQUIREMENTS ARE AS FOLLOWS:
   - 7.1. SIDEWALKS LESS THAN 8' IN WIDTH: NO PAVING MACHINE REQUIRED. STINGER VIBRATORS AND METAL STRAIGHT EDGES SHALL BE USED TO CONSOLIDATE CONCRETE.
   - 7.2. SIDEWALKS 8' IN WIDTH OR WIDER: VIBRATING SCREED WITH TWO HAND HELD STINGER VIBRATORS SHALL BE USED TO CONSOLIDATE CONCRETE.
   - 7.3. CONCRETE FINISH IS TO BE LIGHT BROOM FINISH. NO "WHIRLEY BIRD" TYPE FINISHING MACHINES WILL BE ALLOWED.
8. SIDEWALKS SHALL BE CLASS "A" CONCRETE.
9. CONCRETE TEMPERATURE PRIOR TO PLACEMENT SHALL NOT EXCEED 95°F, (35°C).
10. THE MAXIMUM TIME INTERVAL TO PLACE CONCRETE FROM ADDITION OF INITIAL WATER:
    - 10.1. AGITATED CONCRETE
      - 10.1.1. 90°F OR ABOVE 45 MINUTES
      - 10.1.2. 75°F TO 89°F 60 MINUTES
      - 10.1.3. 35°F TO 74°F 90 MINUTES
    - 10.2. NON-AGITATED CONCRETE
      - 10.2.1. 80°F OR ABOVE 15 MINUTES
      - 10.2.2. 35°F TO79°F 30 MINUTES
11. FROM MAY IST THROUGH SEPTEMBER 30 ALL MIXES SHALL INCLUDE A RETARDING AGENT
12. SIDEWALK SUBGRADE WILL BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR DENSITY.
13. A MAXIMUM OF 1 INCH SAND MAY BE USED FOR LEVEL UP ONLY.
14. ½" EXPANSION JOINTS SHALL BE SPACED AT 60' MAXIMUM INTERVALS, OR AS OTHERWISE SPECIFIED. JOINTS SHALL BE REDWOOD WITH #3 @ 12" OC (MIN 4 BARS) 2' SLIP DOWELS WITH END CAPS AT EQUAL SPACING.
15. DOWEL SIDEWALKS ADJACENT TO INLETS INTO INLET PER CITY OF RICHARDSON STANDARD DETAILS.
16. SEAL ALL JOINTS WITH GRAY RUBBER SEALANT. CONTRACTOR TO SUBMIT SEALANT FOR APPROVAL.

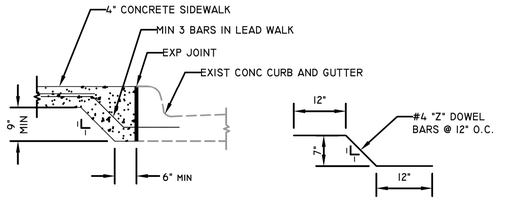
GENERAL NOTES (1 OF 2) SIDEWALK	REVISION	DESCRIPTION	DATE
	0	NEW FORMAT	12/29/2023
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-01			

17. WHEN CONCRETE WALK IS ADJACENT TO EXISTING CONCRETE, DEPTH AND BITUMINOUS EXPANSION JOINT FILLER SHALL BE SUFFICIENT TO PREVENT CONCRETE TO CONCRETE CONTACT BETWEEN WALK AND CONCRETE.
18. WHEN SIDEWALK IS ADJACENT TO CURB, A SITE SPECIFIC DETAIL SHALL BE PROVIDED.

GENERAL NOTES (2 OF 2) SIDEWALK	REVISION	DESCRIPTION	DATE
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-02			

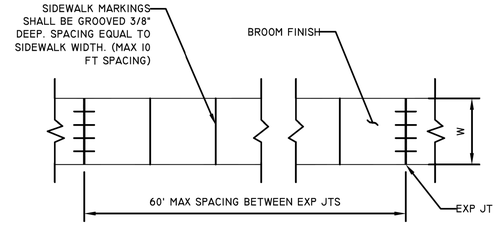


REPLACEMENT PLAN

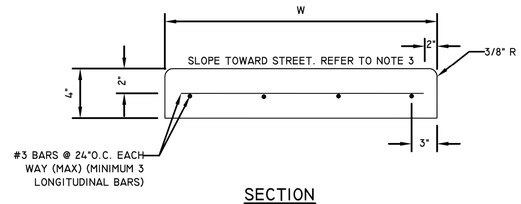


AT CURB SECTION A-A

LEAD WALK SIDEWALK	REVISION	DESCRIPTION	DATE
	0	NEW FORMAT	12/29/2023
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-03			

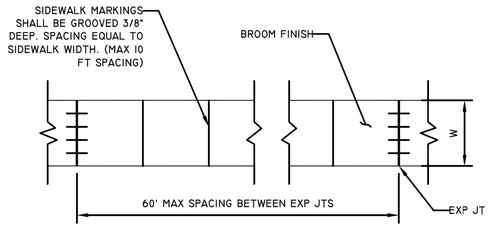


PLAN

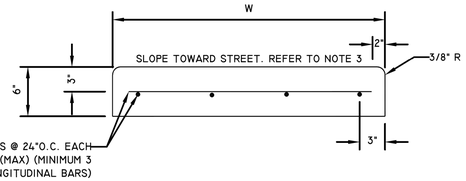


SECTION

CONCRETE SIDEWALK (<8 FT WIDTH)	REVISION	DESCRIPTION	DATE
	0	NEW FORMAT	12/29/2023
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-04			



PLAN



SECTION

NOTES:

1. DOWEL BASKETS SHALL BE USED AT EXPANSION JOINTS.

CONCRETE SIDEWALK (≥8 FT WIDTH)	REVISION	DESCRIPTION	DATE
	0	NEW FORMAT	12/29/2023
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-05			

INTENTIONALLY LEFT BLANK

RESERVED	REVISION	DESCRIPTION	DATE
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-06			

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RESERVED	REVISION	DESCRIPTION	DATE
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-07			

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RESERVED	REVISION	DESCRIPTION	DATE
NOT TO SCALE			
RICHARDSON TEXAS STANDARD DETAILS SDW-08			

RICHARDSON TEXAS

STANDARD DETAILS

CITY OF RICHARDSON, TEXAS

NO ADDITIONS OR CHANGES TO STANDARD DETAIL SHEETS UNLESS APPROVED BY CITY OF RICHARDSON

SHEET NAME: SIDEWALK

SHEET NO: 2.07

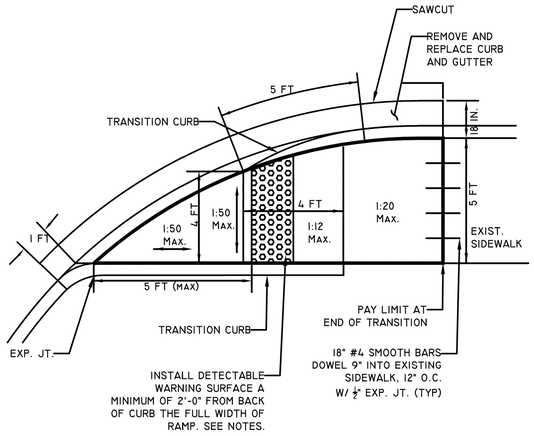
1. ALL BARRIER FREE RAMPS CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR), TEXAS ACCESSIBILITY STANDARDS (TAS), PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINES (P.R.O.W.A.G.) AND MATCH CITY OF RICHARDSON STANDARD DETAILS IN APPEARANCE AS MUCH AS POSSIBLE. DETAILS ARE REPRESENTATION OF REQUIREMENTS AND ARE INTENDED TO PROVIDE GUIDANCE. IT IS THE RESPONSIBILITY OF THE DESIGN PROFESSIONAL AND THE CONTRACTOR TO ENSURE THAT ALL RAMPS CONSTRUCTED MEET THE REQUIREMENTS.
2. SHOULD FIELD CONDITIONS VARY FROM PLAN INFORMATION, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
3. BARRIER FREE RAMPS SHALL BE FIELD APPROVED BY THE CITY PRIOR TO PLACEMENT OF CONCRETE.
4. THE FOLLOWING CRITERIA MUST BE MET ON ALL NEW RAMP CONSTRUCTION:
   - RAMP MAX. LONGITUDINAL SLOPE = 1:12 (8.33%)
   - RAMP MAX. TRANSVERSE SLOPE =2.0%
   - LANDING AREA MAX SLOPE IN ALL DIRECTIONS = 2%
   - TRANSITION AREA MAX. LONGITUDINAL SLOPE = 2%
5. CONTRACTOR SHALL FIELD SURVEY ALL TIE-IN POINTS AND VERIFY THE MAXIMUM SLOPES ARE NOT EXCEEDED PRIOR TO PLACEMENT OF PAVING.
6. DIMENSIONS SHOWN ON STANDARD DETAILS ARE APPROXIMATE AND WILL VARY DEPENDING ON EXISTING SIDEWALK AND STREET LONGITUDINAL AND CROSS SLOPES. DIMENSIONS SHOWN ASSUME EXISTING LONGITUDINAL AND CROSS SLOPES ARE LESS THAN 2%. RAMP LOCATIONS WITH LONGITUDINAL OR CROSS SLOPES EXCEEDING 2% SHOULD BE ADDRESSED BY SEPARATE DESIGN DETAILS THAT COMPLY WITH TEXAS PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINES (P.R.O.W.A.G.) AND MATCH CITY OF RICHARDSON STANDARD DETAILS IN APPEARANCE AS MUCH AS POSSIBLE.
7. RAMPS FOR SIDEWALK WITH WIDTHS OTHER THAN SHOWN ON THESE DETAILS SHOULD BE ADJUSTED TO FIT DIMENSIONS OF THE APPROACH SIDEWALKS CALLED FOR ON PLAN SHEETS.
8. PAYMENT FOR INSTALLATION OF BARRIER FREE RAMPS SHALL INCLUDE SAWCUT, REMOVAL AND DISPOSAL OF EXISTING CURB AND GUTTER, SIDEWALK, ALL EXCAVATION NECESSARY TO CONSTRUCT RAMPS PER CITY STANDARDS, INCLUDING ALL LABOR, MATERIAL AND OTHER MISCELLANEOUS APPURTENANCES.
9. THE CONTRACTOR MUST NOTIFY THE CITY PRIOR TO INSTALLATION OF CONCRETE IF THE APPROACH SLOPE OF THE EXISTING SIDEWALK EXCEEDS 5% OR HAS A CROSSFALL GREATER THAN 2% AND NO DESIGN DETAILS ARE PROVIDED FOR THAT SPECIFIC LOCATION.
10. A CURB SHALL BE CONSTRUCTED AT THE BACK OF THE RAMP WHEN ELEVATION DIFFERENCE EXCEEDS 6".
11. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24 INCHES IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH (2 INCH MAX BORDER) OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
12. DETECTABLE WARNINGS CAN BE A.D.A. REPLACEABLE (WET SET) COMPOSITE TACTILE WARNING SURFACE UNIT (GRAY) AVAILABLE FROM A.D.A. SOLUTIONS (OR APPROVED EQUAL) ~~OR CONTRACTOR TRUNCATED DOME BRICK PAVERS PER DETAIL~~. IF COMPOSITE TACTILE WARNING SURFACE UNIT IS USED, CONTRACTOR SHALL CONTINUE SIDEWALK THICKNESS BENEATH TACTILE WARNING SURFACE UNIT. ~~IF TRUNCATED DOME PAVERS ARE USED, CONTRACTOR SHALL FOLLOW BRICK PAVER OPTION DETAIL.~~

GENERAL NOTES
BARRIER FREE RAMP

NOT TO SCALE

RICHARDSON TEXAS | STANDARD DETAILS | SDW-09

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023

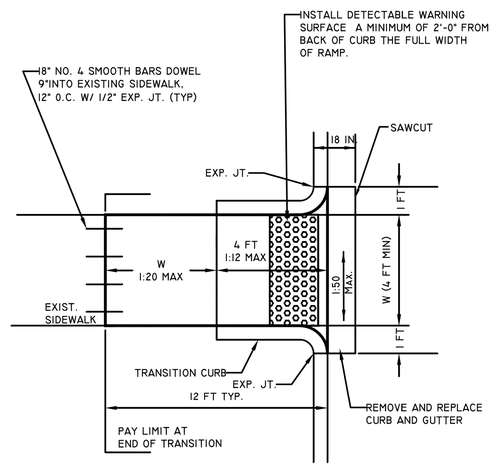


COMMERCIAL DRIVEWAY - TYPE A (ADJACENT TO CURB)
BARRIER FREE RAMP

NOT TO SCALE

RICHARDSON TEXAS | STANDARD DETAILS | SDW-10

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023

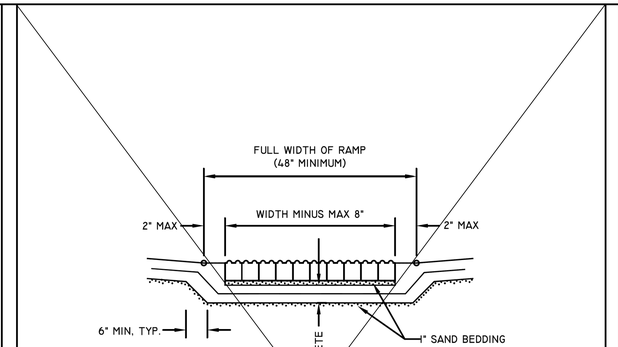


COMMERCIAL DRIVEWAY - TYPE B (OFFSET FROM CURB)
BARRIER FREE RAMP

NOT TO SCALE

RICHARDSON TEXAS | STANDARD DETAILS | SDW-11

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023



NOTES:

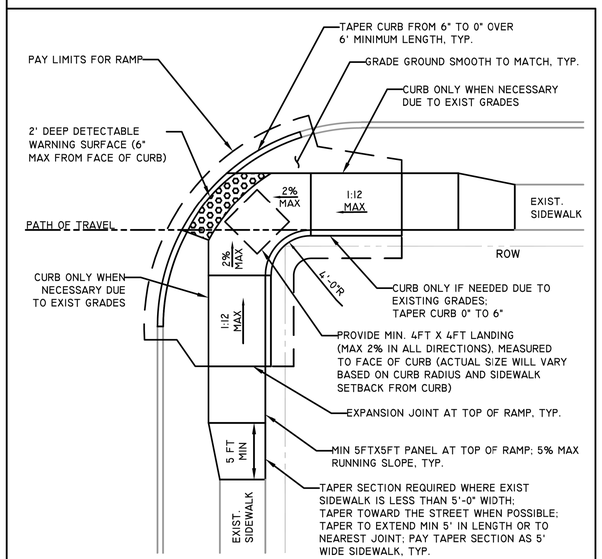
1. CONTRACTOR MAY CHOOSE TO USE BRICK PAVERS IN LIEU OF COMPOSITE TACTILE WARNING SURFACE.
2. BRICK PAVERS SHALL BE 7 7/8" x 3 11/16" x 2 1/4" WITH "CHARCOAL" COLOR MEETING ADA SECTION 4.29.2 (PAVESTONE DETECTABLE WARNING PAVER OR APPROVAL EQUAL). PAVERS SHALL HAVE DETECTABLE WARNING THAT CONSIST OF RAISED TRUNCATED DOMES WITH A DIA. OF 0.9 IN. (23MM), A HEIGHT OF NOMINAL 0.2 IN. (5MM) AND A CENTER TO CENTER SPACING OF NOMINAL 2.35 IN. (60MM). PAVERS SHALL BE SAWED (NOT BROKEN).
3. A VIBRATORY PLATE SHALL BE USED TO CONSOLIDATE PAVERS AFTER INSTALLATION. CONTRACTOR SHALL PREVENT DAMAGE TO PAVERS FROM VIBRATORY PLATE BY COVERING PAVERS WITH PLYWOOD, OR OTHER METHOD APPROVED BY THE CITY. ANY DAMAGE PAVERS WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

DETECTABLE WARNING - BRICK PAVER OPTION
BARRIER FREE RAMP

NOT TO SCALE

RICHARDSON TEXAS | STANDARD DETAILS | SDW-12

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023



NOTES:

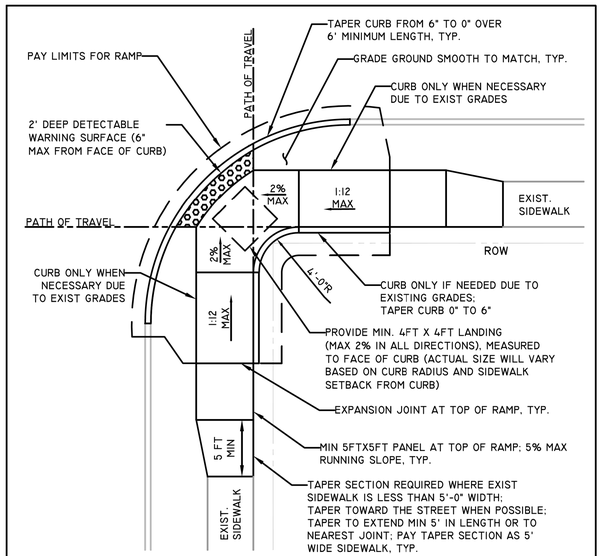
1. CURB SHOULD NOT BE LESS THAN 3" AT MAXIMUM HEIGHT. IF MAXIMUM CURB HEIGHT WILL BE 3" OR LESS, THEN GRADE GROUND TO AVOID NEED FOR CURB. GRADE TO SMOOTH TRANSITION TO EXIST GRADE (NO SHARP GRADE BREAKS)

RESIDENTIAL STREET - TYPE A (ONE DIRECTION CROSSING)
BARRIER FREE RAMP

NOT TO SCALE

RICHARDSON TEXAS | STANDARD DETAILS | SDW-13

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023



NOTES:

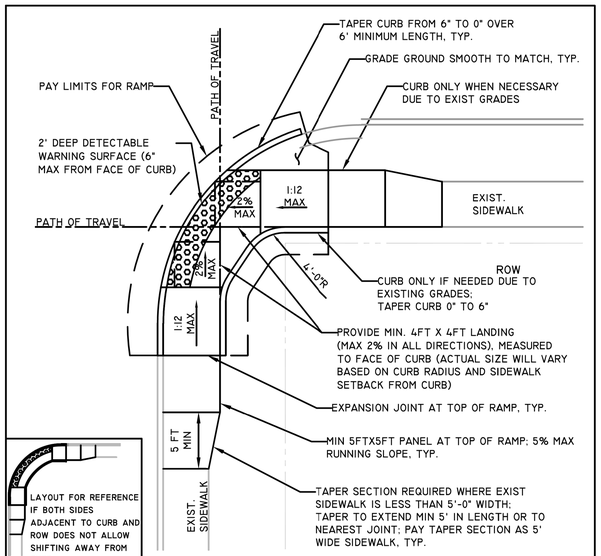
1. CURB SHOULD NOT BE LESS THAN 3" AT MAXIMUM HEIGHT. IF MAXIMUM CURB HEIGHT WILL BE 3" OR LESS, THEN GRADE GROUND TO AVOID NEED FOR CURB. GRADE TO SMOOTH TRANSITION TO EXIST GRADE (NO SHARP GRADE BREAKS)

RESIDENTIAL STREET - TYPE B (TWO DIRECTION CROSSING)
BARRIER FREE RAMP

NOT TO SCALE

RICHARDSON TEXAS | STANDARD DETAILS | SDW-14

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023



NOTES:

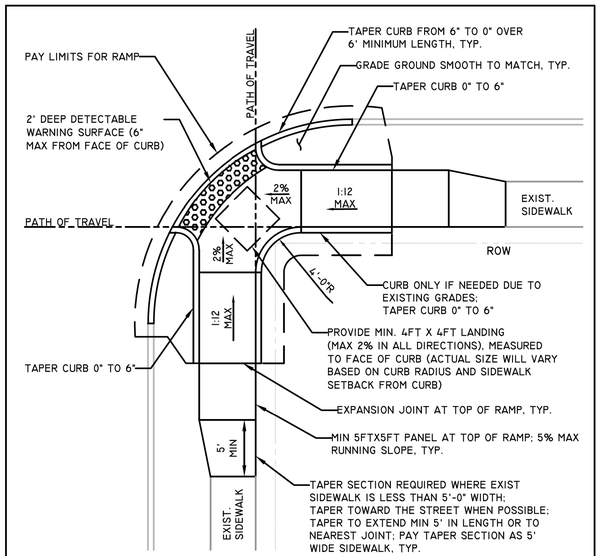
1. CURB SHOULD NOT BE LESS THAN 3 IN. AT MAXIMUM HEIGHT. IF MAXIMUM CURB HEIGHT WILL BE 3" OR LESS, THEN GRADE GROUND TO AVOID NEED FOR CURB. GRADE TO SMOOTH TRANSITION TO EXIST GRADE (NO SHARP GRADE BREAKS)
2. THIS DETAIL SHALL ONLY BE USED WHEN EXISTING SIDEWALK IS ADJACENT TO CURB AND SITE LIMITATIONS DO NOT ALLOW SIDEWALK TO BE SHIFTED AWAY FROM CURB. CITY PREFERRED OPTION IS TO SHIFT SIDEWALK TO ALLOW FOR TYPE A RAMP. TYPE C RAMP SHALL ONLY BE USED WHEN ALLOWED BY OWNER.

RESIDENTIAL STREET - TYPE C (ADJACENT TO CURB)
BARRIER FREE RAMP

NOT TO SCALE

RICHARDSON TEXAS | STANDARD DETAILS | SDW-15

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023



NOTES:

1. ARTERIAL AND COLLECTORS SHOULD UTILIZE THE CURRENT EDITION OF THE TXDOT STANDARD PED DETAILS AND SHOULD HAVE TWO DIRECTIONAL RAMPS. THIS DETAIL SHALL ONLY BE USED AT ARTERIALS AND COLLECTORS WHEN ROW LIMITATIONS DO NOT ALLOW FOR TWO DIRECTIONAL RAMPS. OWNER APPROVAL REQUIRED.

COLLECTOR/ARTERIAL STREET - TYPE D (TWO DIRECTION)
BARRIER FREE RAMP

NOT TO SCALE

RICHARDSON TEXAS | STANDARD DETAILS | SDW-16

REVISION	DESCRIPTION	DATE
0	NEW FORMAT	12/29/2023

RICHARDSON TEXAS

STANDARD DETAILS

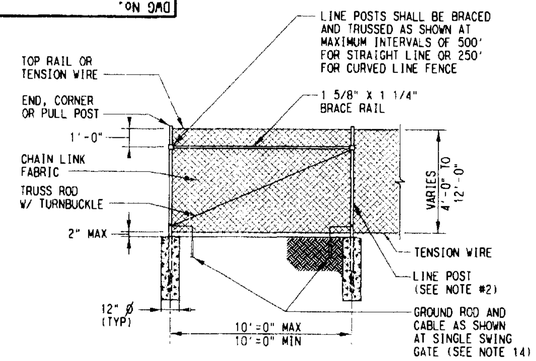
CITY OF RICHARDSON, TEXAS

NO ADDITIONS OR CHANGES TO STANDARD DETAIL SHEETS UNLESS APPROVED BY CITY OF RICHARDSON

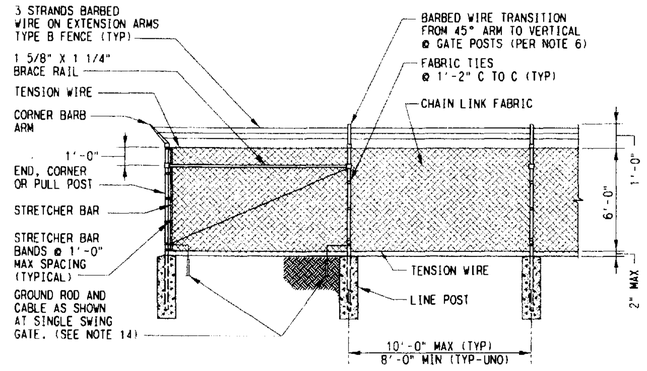
SHEET NAME: BARRIER FREE RAMPS

SHEET NO: 2.08

DWG No. CS1-0008



1 — TYPE A AND A-1 FENCE
NTS



2 — TYPE B FENCE
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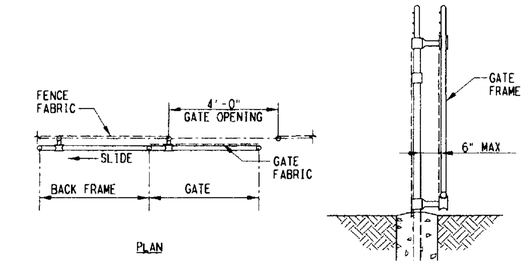
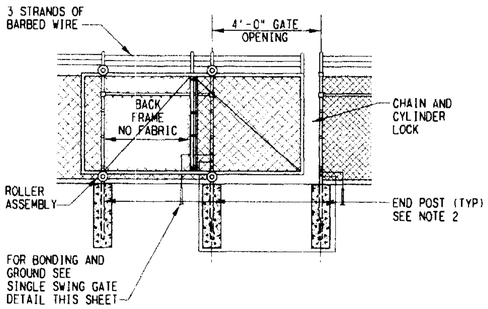
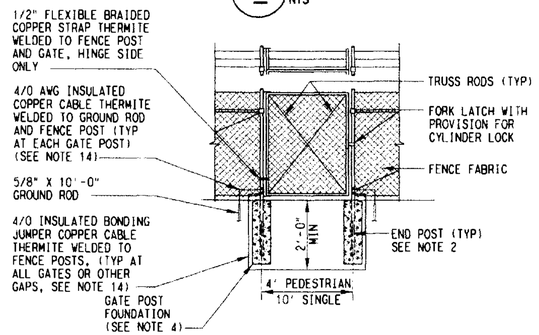


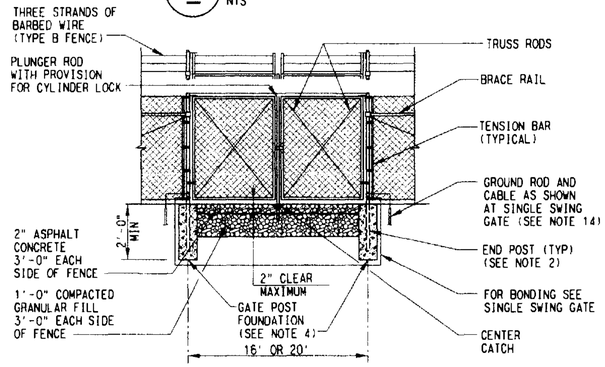
3 — SLIDING GATE
NTS



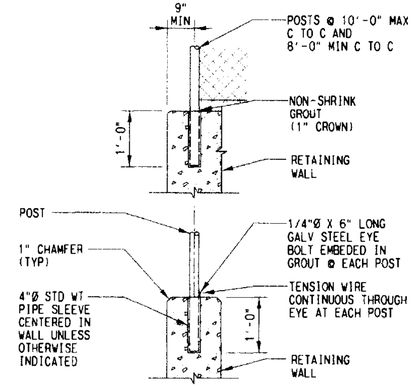
4 — SLIDING GATE ELEVATION
NTS



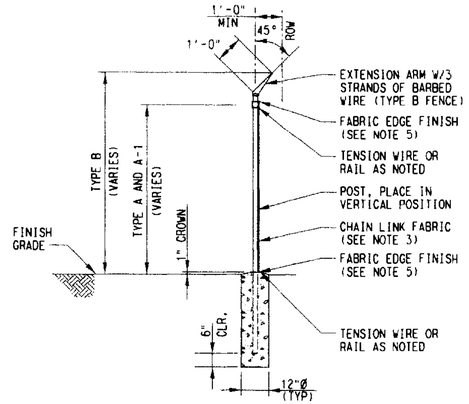
5 — SINGLE SWING GATE
NTS



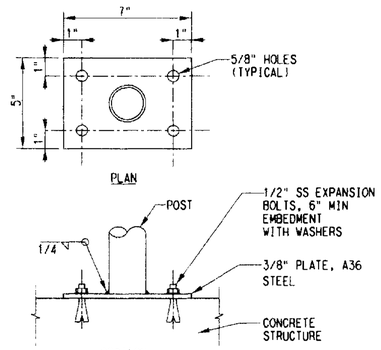
6 — DOUBLE SWING GATE
NTS



7 — FENCE ON RETAINING WALL
NTS



8 — TYPICAL FENCE POST
NTS



NOTE:
POST AND PLATE SHALL BE HOT DIPPED GALV AFTER FABRICATION.

9 — ALTERNATIVE FENCE/HANDRAIL POST MOUNTING
NTS

NOTES:

1. LOCATION OF FENCE AND GATES, GATE WIDTH AND DIRECTION OF SWING, AND ANY SPECIAL FEATURES NECESSARY FOR CONSTRUCTION SHALL BE SHOWN ON PLAN/PROFILE SHEETS..
2. FENCE POSTS FOR 6 FOOT HIGH FENCE TO BE AS FOLLOWS UNLESS OTHERWISE NOTED.
   LINE POST: 1 1/2" NPS GALVANIZED STEEL PIPE WEIGHING 2.72 LBS/FT. SET IN CONCRETE IN A HOLE 2'-6" DEEP AND 12 INCHES DIAMETER.
   TERMINAL, END POST AND CORNER POST: 2 1/2" NPS GALVANIZED STEEL PIPE WEIGHING 5.80 LBS/FT. SET IN CONCRETE IN A HOLE 3 FEET DEEP AND 12 INCHES IN DIAMETER.
   TOP RAIL: 1 1/4" NPS GALVANIZED STEEL PIPE WEIGHING 2.27 LBS/FT.
   POSTS FOR FENCES GREATER THAN 6 FEET IN HEIGHT TO BE AS NOTED ON OTHER DRAWINGS.
3. ALL FENCE FABRIC SHALL BE BARBED ON THE TOP EDGE AND SHALL BE GALVANIZED STEEL UNLESS OTHERWISE NOTED ON OTHER DRAWINGS.
4. THE CONTRACTOR SHALL CONSULT WITH THE GATE MANUFACTURER TO DETERMINE THE SIZE OF THE GATE POST FOUNDATION. THE FOUNDATION SIZE SHALL BE SHOWN ON THE SHOP DRAWINGS.
5. TYPE A AND B FENCE - TENSION WIRE AT TOP AND BOTTOM, FENCE TIED TO TENSION WIRE WITH HOG RINGS 2'-0" CENTER TO CENTER. TYPE A-1 FENCE- TOP RAIL AT TOP OF FENCE, FABRIC TIED TO TOP RAIL WITH TIE WIRES, AND SHALL HAVE ENDS TWISTED TOGETHER DURING INSTALLATION.
6. WHEN 3 STRAND BARBED WIRE IS TO BE ADDED TO TOP OF FENCE, POST EXTENSIONS AND BARBED WIRE ARMS ON THE GATES SHALL BE VERTICAL.
7. POSTS, RAILS AND RODS TO BE INSTALLED INSIDE OF FENCE FABRIC.
8. FENCE AND GATE POSTS AND FRAMES SHALL BE GROUNDED. SEE SPECIFICATIONS FOR FABRICATION, INSTALLATION, AND GROUNDING REQUIREMENTS FOR FENCING.
9. COAT ALL THERMITEE WELDS WITH COAL TAR EPOXY OR EQUIVALENT.
10. THE MINIMUM HEIGHT FOR TYPE B FENCE WITH BARBED WIRE IS SEVEN FEET.
11. LOCATE FENCE POSTS AS SHOWN ON CONTRACT DRAWINGS.
12. SEE ARCHITECTURAL STANDARDS FOR ADDITIONAL FENCING REQUIREMENTS.
13. REFER TO CONSTRUCTION PLANS FOR FABRIC SIZE, GAUGE AND FENCING LIMITS.
14. GROUNDING AND BONDING SHALL BE IN ACCORDANCE WITH NATIONAL ELECTRIC SAFETY CODE (IEEE C2-1990). GROUND RODS ARE REQUIRED AT EACH END POST, GATE POST, POWER LINE CROSSING (OVERHEAD OR UNDER-GROUND AND AT INTERVALS OF 150 FEET (MAXIMUM). A BURIED BONDING JUMPER IS REQUIRED AT EVERY GATE OR GAP.

FENCE CODE: (1) (2) (3) (4)
CL-6WA

(1) TYPE OF CHAIN LINK FABRIC:
CL = ZINC COATED STEEL
ACS = ALUMINUM COATED STEEL
ACL = ALUMINUM CLAD STEEL
AA = ALUMINUM ALLOY
PVC = POLY-VINYL COATED STEEL

(2) WIDTH OF FABRIC IN FEET/HEIGHT ERECTED

(3) TYPE OF TOP/BOTTOM SUPPORTS
W = TENSION WIRE
P = PIPE RAIL

(4) INCLINATION OF EXTENSION ARMS
A = AWAY FROM PROTECTED FACILITY
O = NO BARBED WIRE OR EXTENSION ARMS USED

TYPE	HEIGHT FENCE	TOP LINE	BOTTOM LINE	SELVAGE
A	4'-0" - 12'-0"	TENSION WIRE	TENSION WIRE	TWISTED AND BARBED TOP AND BOT.
A-1	4'-0" - 12'-0"	TOP RAIL	TENSION WIRE	TWISTED AND BARBED TOP AND BOT.
B	7'-0" MIN W/ BARBED WIRE	TENSION WIRE	TENSION WIRE	TWISTED AND BARBED TOP AND BOT.

CONTRACT SHEET No. 2.09

REV	AMEND	CR	DATE	DESCRIPTION	BY	ENG	CHK	APP

B. N. REDDY CHIDAMANDA 58001 REGISTERED PROFESSIONAL ENGINEER STATE OF TEXAS 12/23/05

CARTER BURGESS
JACOBS CIVIL INC
STV INCORPORATED
KAI ALLIANCE

DART PROJECT

SCALE: NOT TO SCALE
DRAWN: B. SKINNER
DESIGNED: T. WILLIAMS
CHECKED: G. CELERIER
IN CHARGE: B.N. REDDY CHIDAMANDA
DATE: 30 NOV 05

CIVIL STANDARD

CHAIN LINK FENCE DETAILS SHEET 1 OF 2

CONTRACT | DWG No. CS1-0008 | REV 0

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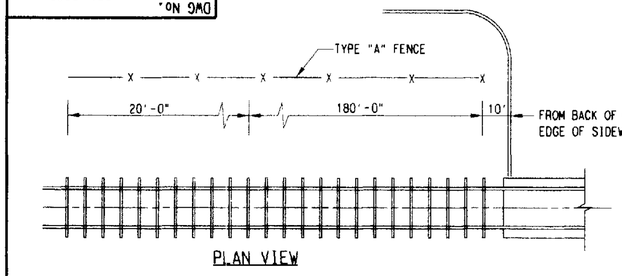
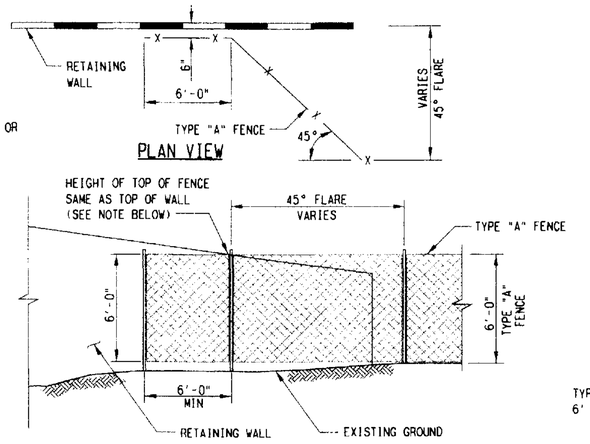
DWG No. CS1-0009



NOTE: FOR FENCES LOCATED WITHIN 50' OR LESS FROM NEAREST TRACK CENTER LINE.

FENCE TAPER AT GRADE CROSSINGS (1)

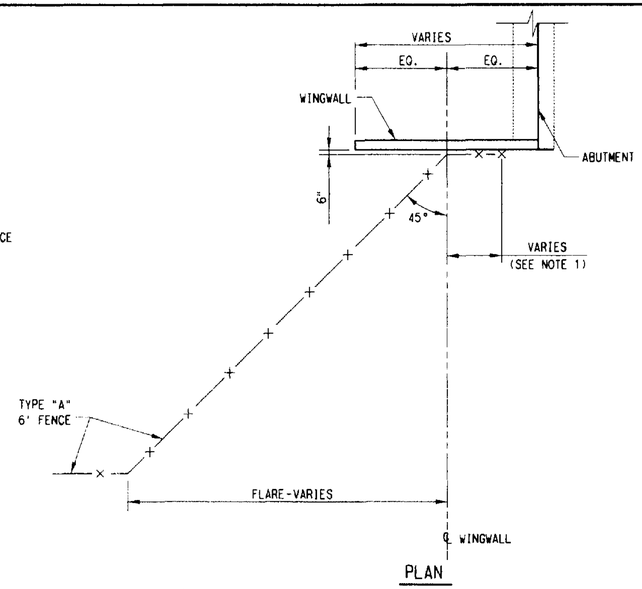
NTS



NOTE: FENCE SHALL EXTEND ALONG RETAINING WALL TO THE LOCATION WHERE THE WALL IS 6'-0" IN HEIGHT, MINIMUM, PLUS AN ADDITIONAL 6'-0".

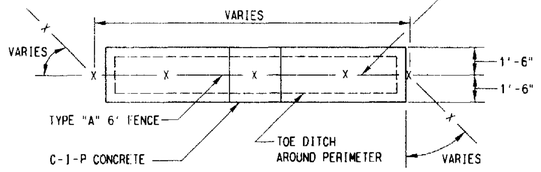
FENCE TERMINATION AT RETAINING WALL (2)

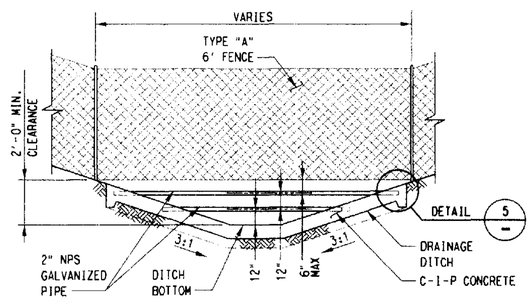
NTS



NOTE:

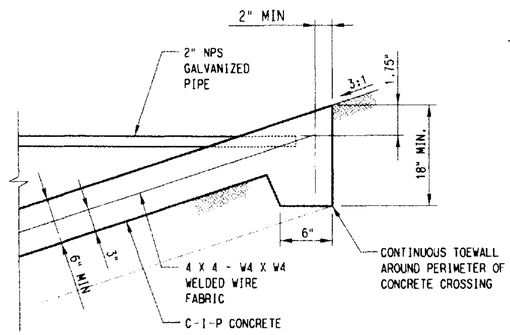
1. FENCE SHALL EXTEND DOWN SLOPE TO A POINT WHERE THE WING WALL IS AT LEAST 6'-0" HIGH.
2. 2" NPS GALVANIZED PIPE NOT SHOWN FOR CLARITY. PIPE ALIGNS UNDER FENCE.





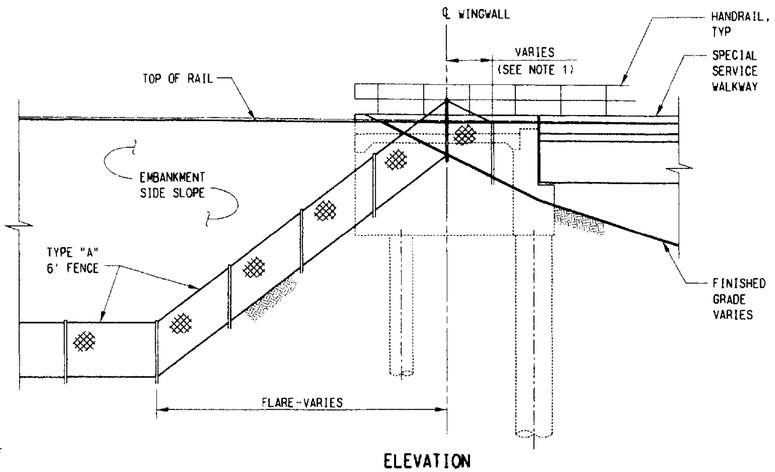
FENCE CROSSING OVER DRAINAGE DITCH (3)

NTS



DETAIL (5)

NTS



FENCE TERMINATION AT BRIDGE ABUTMENTS (4)

NTS

REV	AMEND	CR	DATE	DESCRIPTION	BY	ENG	CHK	APP

STATE OF TEXAS — B. N. REDDY CHIDANANDA — 58001 — LICENSED PROFESSIONAL ENGINEER — 12/23/05

CARTER BURGESS
JACOBS CIVIL INC
STV INCORPORATED
KAI ALLIANCE

DART PROJECT

SCALE	NOT TO SCALE
DRAWN	B. SKINNER
DESIGNED	T. WILLIAMS
CHECKED	G. CELERIER
IN CHARGE	B.N. REDDY CHIDANANDA
DATE	30 NOV 05

CONTRACT SHEET No. 2.10

CIVIL STANDARD

CHAIN LINK FENCE DETAILS SHEET 2 OF 2

CONTRACT	DWG No.	REV
	CS1-0009	0

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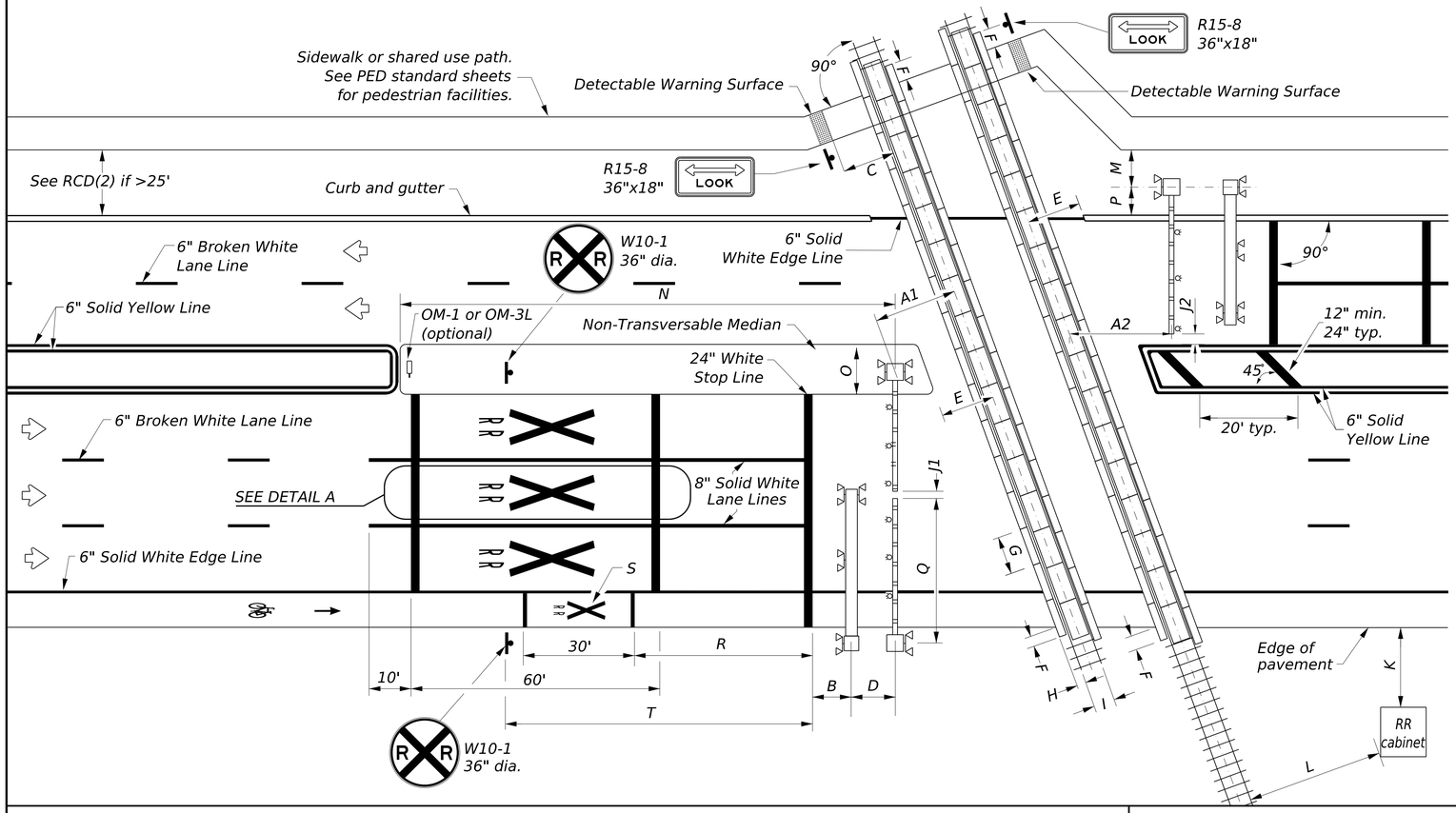
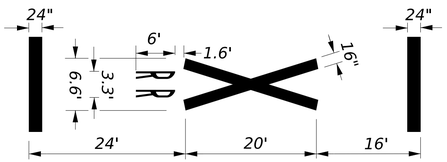
TWO-WAY, MULTIPLE LANES EACH DIRECTION



CALLOUTS:

A1: Center of RR mast to center of rail: 12 ft. minimum, 15 ft. typical.
A2: Tip of gate to center of rail: 12 ft. minimum, 15 ft. typical.
B: Center of nearest active traffic control device (cantilever, gate, or mast flasher) to stop line: 8 ft. (NOTE: Stop line may be moved as needed, but should be at least 8 ft. back from nearest active traffic control device, if present).
C: Near edge of detectable warning surface to nearest rail: 12 ft. minimum and 2 ft. upstream of railroad flashing light signals (if present).
D: Center of gate mast to center of cantilever mast: 6 ft. typical. NOTE: Cantilever may be located in front or behind gates.
E: Edge of median or curb to center of track: 10 ft. typical. NOTE: Design median edge to be parallel with rail.
F: Edge of planking panel from edge of pavement or sidewalk: 3 ft. minimum. NOTE: Field panels need not be in line with gauge panels.
G: Length of panels along rail: 8 ft. typical.
H: Width of field panel: 2 ft. typical (check with railroad company).
I: Distance between rails: 4 ft. 8½ in.
J1: Tip of gate to tip of gate: 2 ft. maximum.
J2: Tip of gate to edge of traveled way: 1 ft. maximum.
K: Nearest edge of RR cabinet from edge of pavement: 30 ft. typical. NOTE: Cabinet not required to be parallel to edge of pavement.
L: Nearest edge of RR cabinet from nearest rail: 25 ft. typical.
M: Center of RR mast to edge of sidewalk: 6 ft. minimum.
N: Center of gate mast to leading edge of non-traversable median: 100 ft. minimum to qualify as a Quiet Zone SSM. NOTE: 60 ft. will suffice if there is a street intersection within the 100 ft. and all street intersections within 60 ft. are closed.
O: Width of median for RR gate assembly: 11 ft. typical (face of curb to face of curb) when using median gates. NOTE: Center of gate mast 5 ft. 3 in. minimum from face of curb.
P: Center of RR mast to face of curb: 5 ft. 3 in. minimum. Center of RR mast to edge of pavement (with shoulder): 7 ft. minimum. Center of RR mast to edge of pavement (no shoulder): 9 ft. 3 in. minimum. NOTE: Final location determined by the railroad company.
Q: Gate length: 28 ft. or less typical, but railroad company may allow up to 32 ft. under special circumstances.
R: Stop line to first RR Crossing transverse line (bicycle lane): 50 ft. typical.
S: See the SHSD for bicycle lane railroad crossing symbol details.
T: 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.

DETAIL A



TWO LANES, TWO-WAY

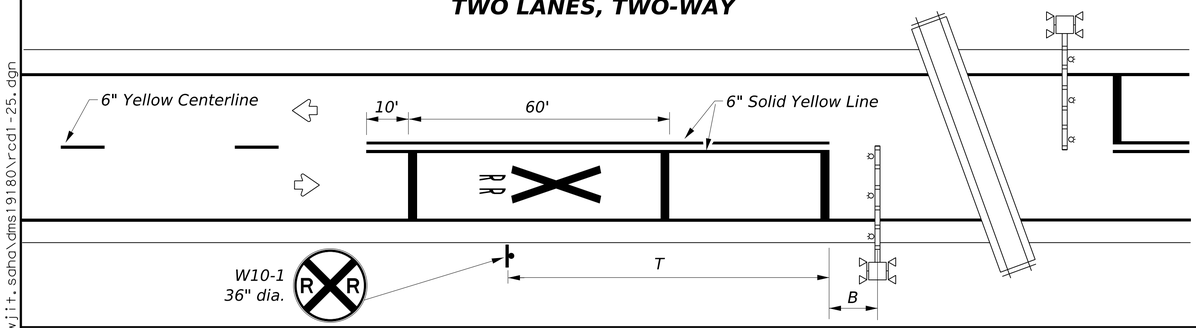


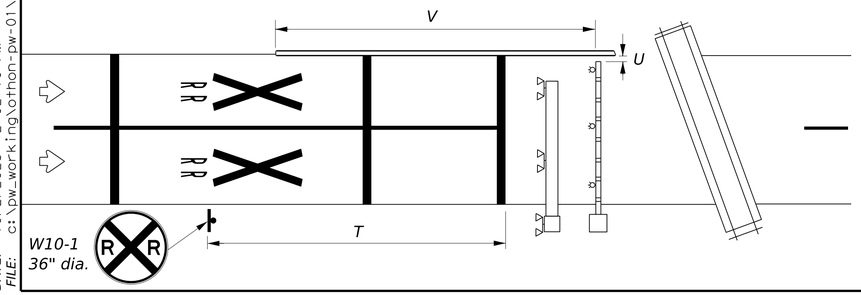
TABLE 1	
Approach Speed (MPH)	Desirable Placement (feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

LEGEND	
	Cantilever
	Gate Assembly
	Mast Flasher Pair
	Object Marker
	Sign
	Traffic Flow

GENERAL NOTES:

1. 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 in. tall minimum and used on roadways where speed does not exceed 40 mph.
2. Raised pavement markers may be used to supplement striping. See PM(2) and PM(3) standard sheets.
3. Medians preferred whenever possible to prevent vehicles from driving around gates.
4. Longitudinal edge striping may be continued thru crossing as needed. Illumination may also be considered for nighttime visibility.
5. See SMD standard sheets for sign mounting details.
6. See the Standard Highway Sign Designs for Texas (SHSD) for sign details.
7. Transverse lines for a railroad crossing symbol are not paid for directly, but are subisdiary to the bid item for the symbol marking.

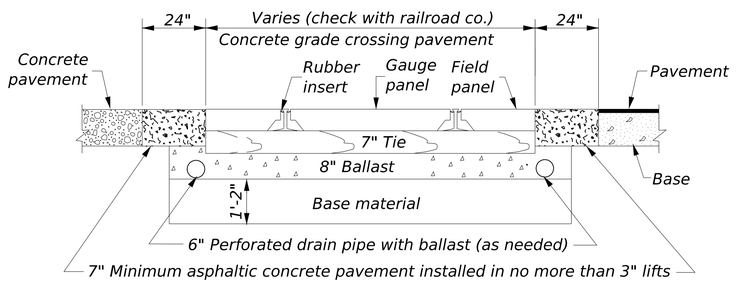
ONE-WAY STREET WITH CURB



CALLOUTS:

T: 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.
U: Tip of gate to edge of curb: 1 ft. maximum for Quiet Zone SSM, 90% of traveled way covered by gates for all other locations.
V: Non-traversable curb length from gate: 100 ft. minimum for a Quiet Zone SSM, 10 ft. minimum for all other locations.

CROSSING SURFACE CROSS SECTION



Texas Department of Transportation

Traffic Safety Division Standard

RAILROAD CROSSING DETAILS SIGNING, STRIPING, AND DEVICE PLACEMENT RCD(1)-25

FILE: rcd1-25.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2025	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-16 4-25 11-22	0918	47	473	VA
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		2.11

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type

FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
TWT = Thin-Walled Tubing (see SMD(TWT))
10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

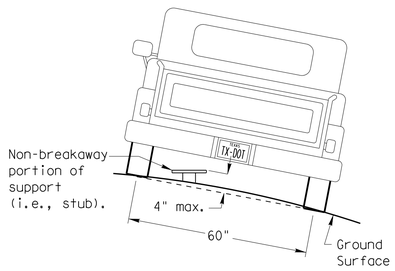
Anchor Type

UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
WS = Wedge Anchor Steel - (see SMD(TWT))
WP = Wedge Anchor Plastic (see SMD(TWT))
SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
IF REQUIRED
1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-1))

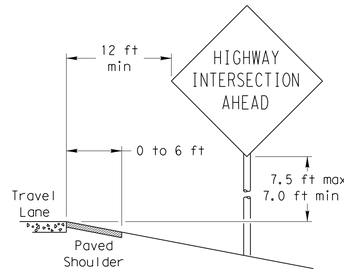
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

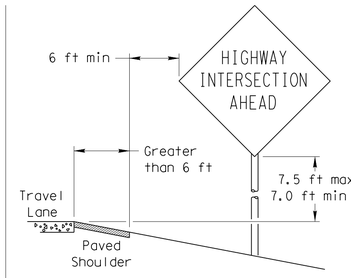
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

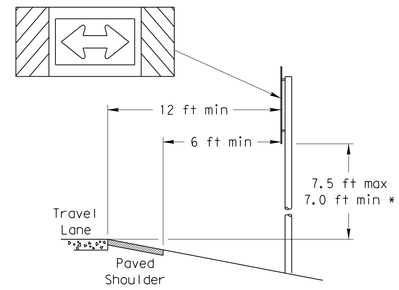
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



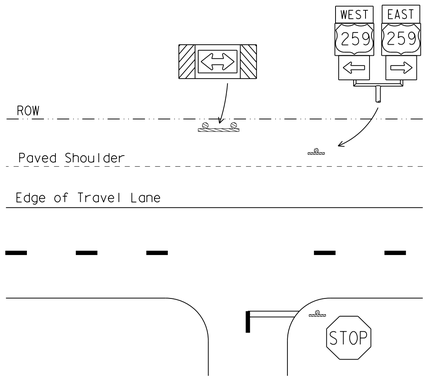
GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

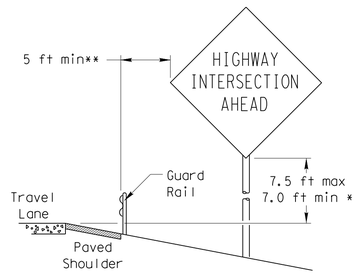
T-INTERSECTION



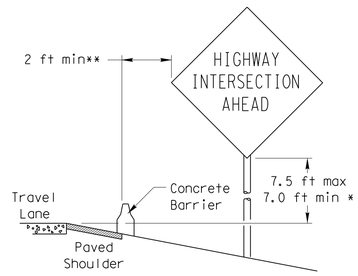
When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



BEHIND BARRIER



BEHIND GUARDRAIL



BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

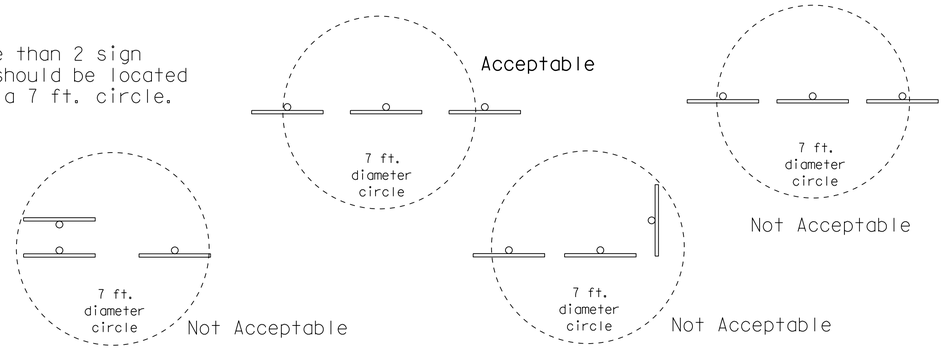
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

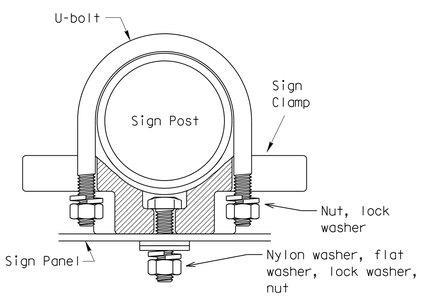
The website address is:
http://www.txdot.gov/publications/traffic.htm

No more than 2 sign posts should be located within a 7 ft. circle.



TYPICAL SIGN ATTACHMENT DETAIL

Single Signs

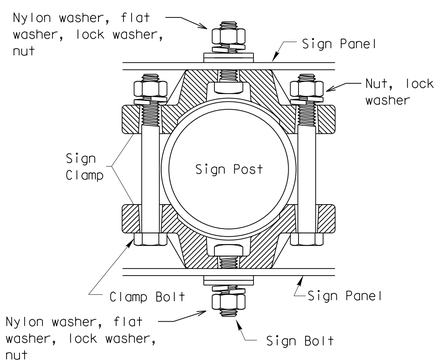


Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

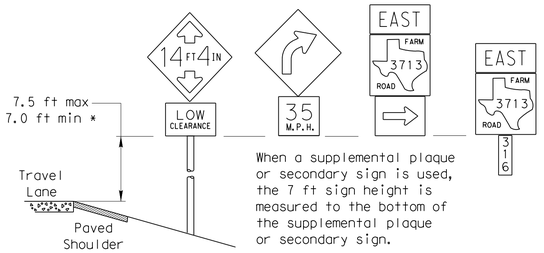
Sign clamps may be either the specific size clamp or the universal clamp.

Back-to-Back Signs



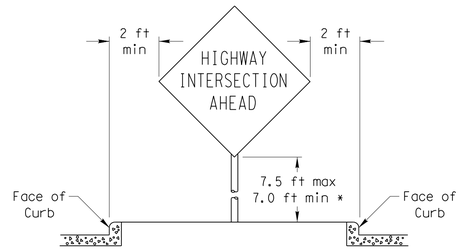
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



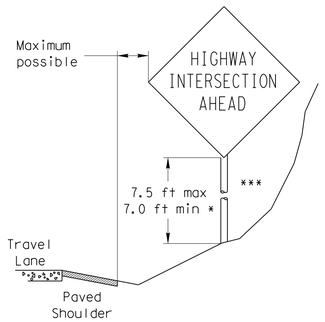
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

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9-08	CONT	SECT	JOB	HIGHWAY
	0918	47	473	VA
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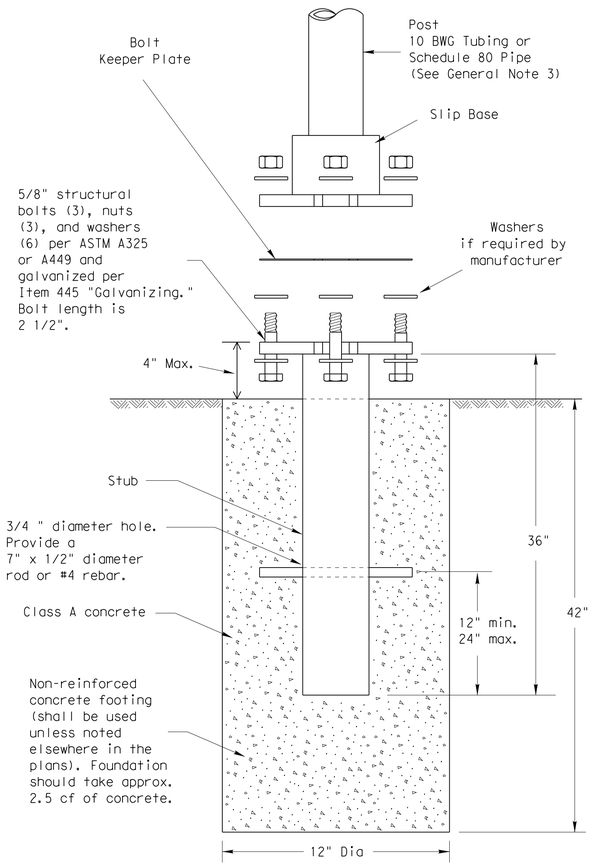
TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



SM RD SGN ASSM TY XXXXX(X)SA(X-XXXX)

NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

1. Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   - 0.134" nominal wall thickness
   - Seamless or electric-resistance welded steel tubing or pipe
   - Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   - Other steels may be used if they meet the following:
     - 55,000 PSI minimum yield strength
     - 70,000 PSI minimum tensile strength
     - 20% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   - Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   - Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.

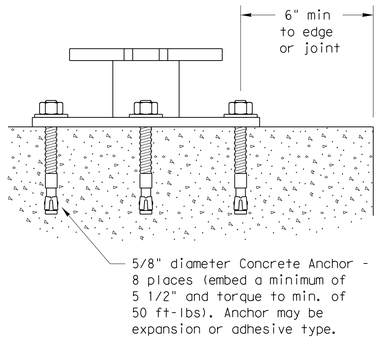
   Schedule 80 Pipe (2.875" outside diameter)
   - 0.276" nominal wall thickness
   - Steel tubing per ASTM A500 Gr C
   - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
     - 46,000 PSI minimum yield strength
     - 62,000 PSI minimum tensile strength
     - 21% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   - Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   - Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
2. Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

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REVISIONS
9-08

CONT	SECT	JOB	HIGHWAY
0918	47	473	VA

DIST	COUNTY	SHEET NO.
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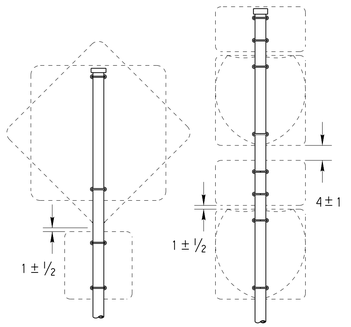

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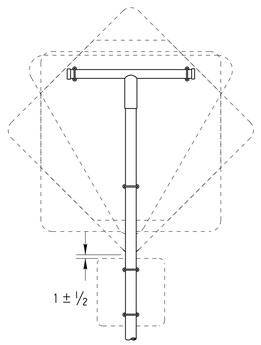

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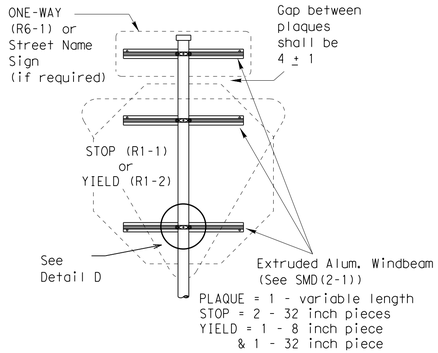

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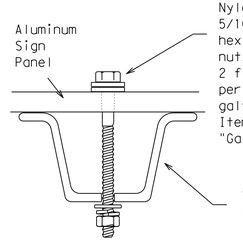
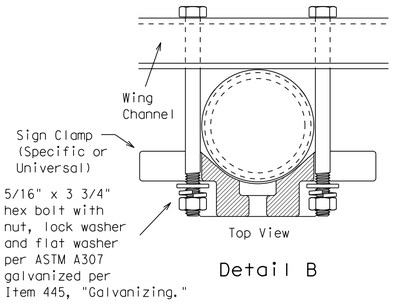
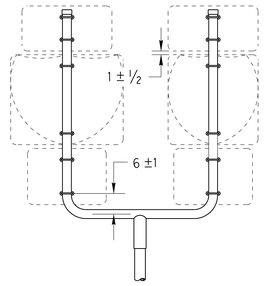


Detail A



Detail B



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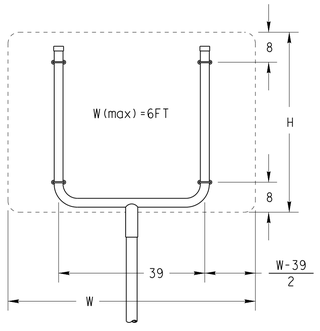

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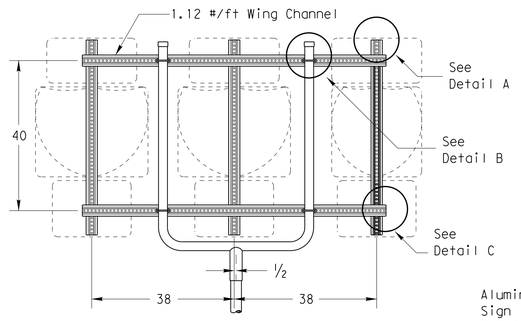
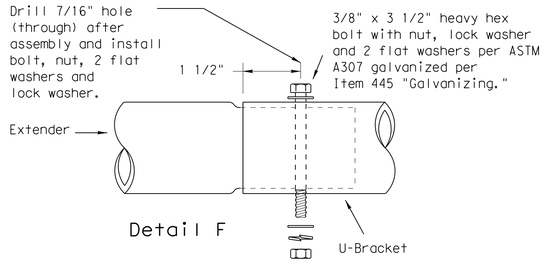
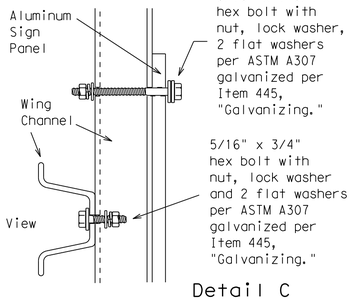


SM RD SGN ASSM TY XXXXX(1)XX(U-WC)
(See Note 11)

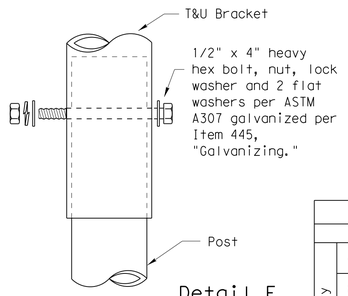


Detail F

Splices shall only be allowed behind the sign substrate.



Detail C



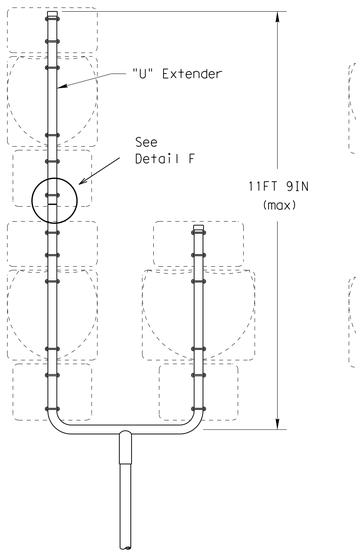
Detail E

GENERAL NOTES:

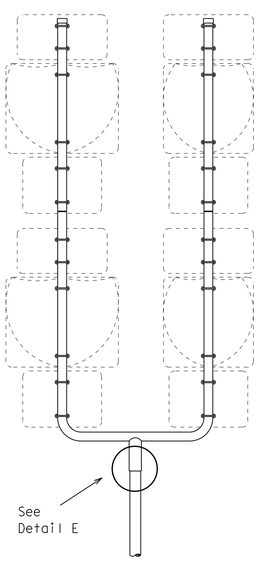
1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
11. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.



SM RD SGN ASSM TY S80(1)XX(U-1EXT)



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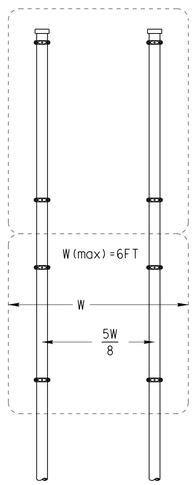
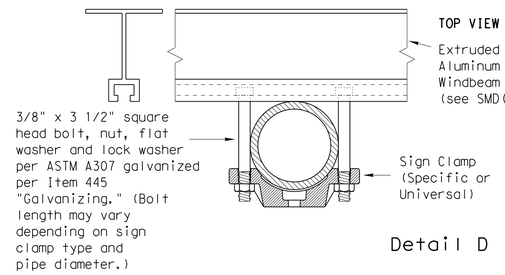
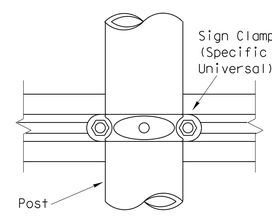


SM RD SGN ASSYM TY XXXXX(2)XX(P)

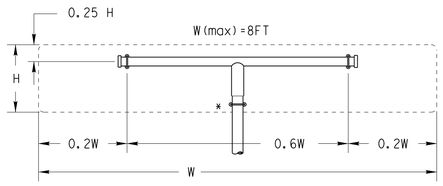
SIDE VIEW



Detail D



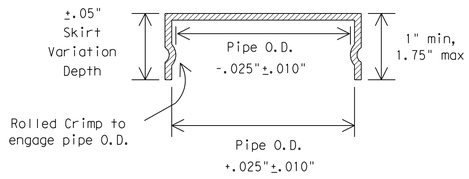
REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)



SM RD SGN ASSM TY XXXXX(1)XX(T)
(* - See Note 12)

All dimensions are in english unless detailed otherwise.

FRICTION CAP DETAIL



Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

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DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

CONT	SECT	JOB	HIGHWAY
0918	47	473	VA

DIST	COUNTY	SHEET NO.
DAL	DALLAS	2.14

9-08 REVISIONS

26C

DATE: 10/2/2025 2:02:47 PM
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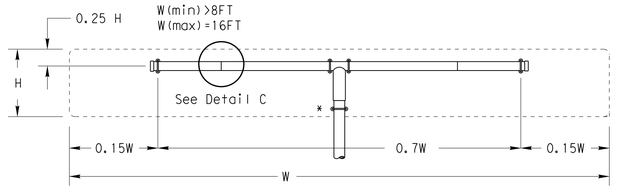
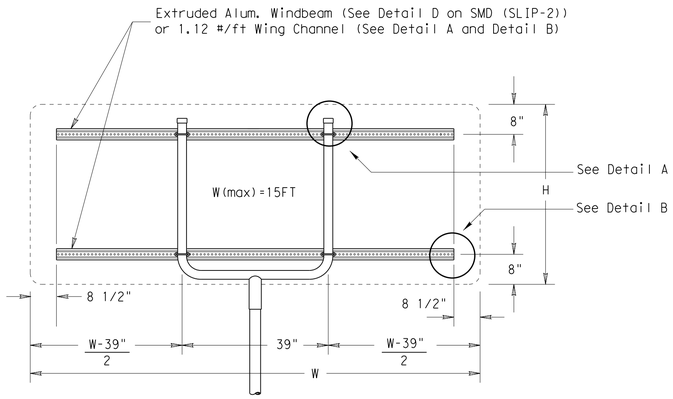


SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT)
(* - See Note 12)



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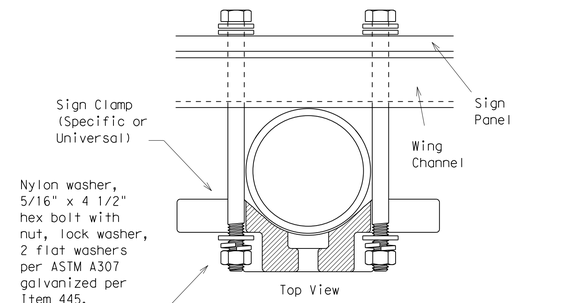
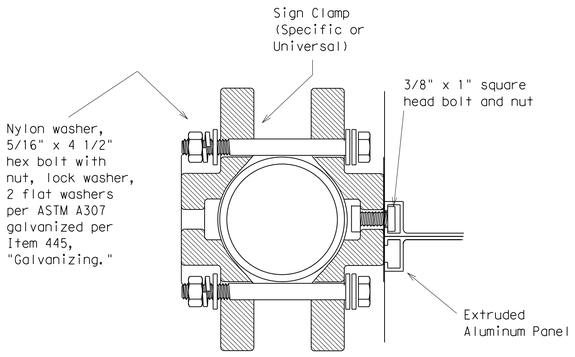
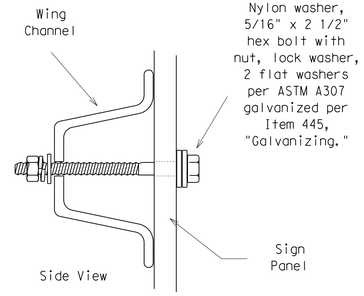


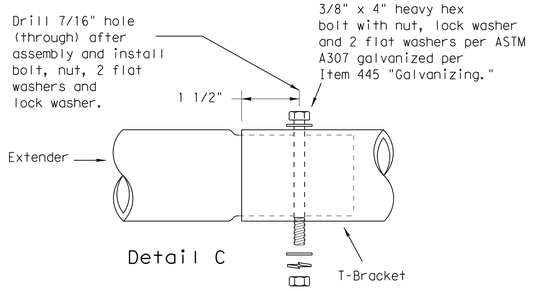
Detail A



Detail D
EXTRUDED ALUMINUM SIGN WITH T BRACKET

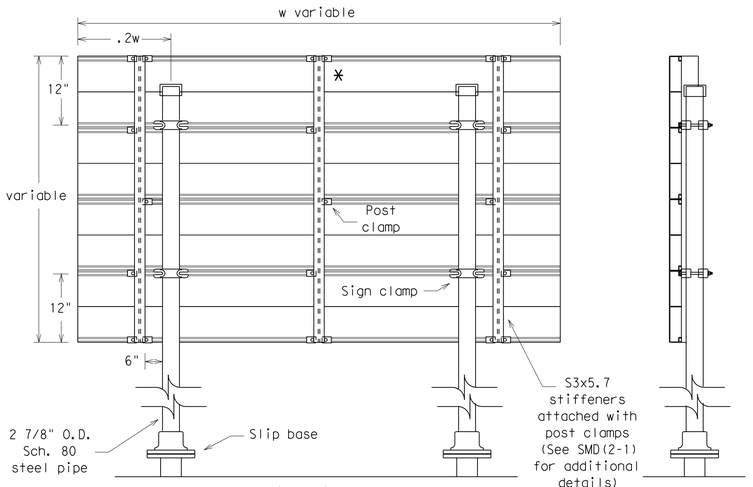


Detail B



Detail C

Splices shall only be allowed behind the sign substrate.

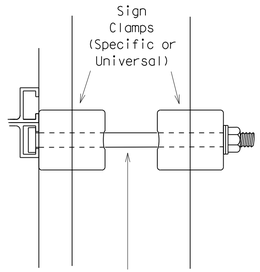


Typical Sign Mount

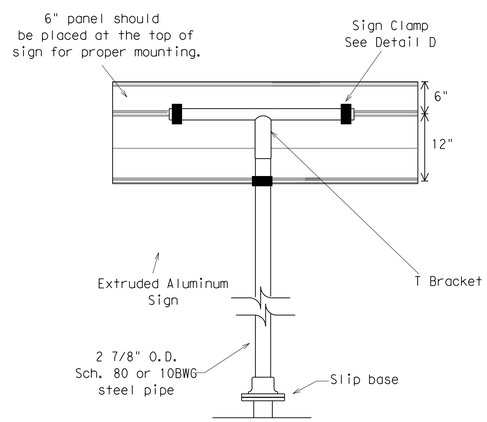
SM RD SGN ASSM TY S80(2)XX(P-EXAL)

* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.

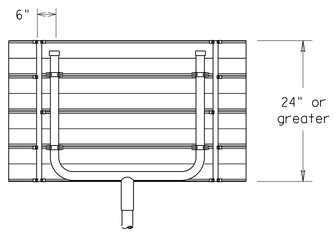
See Detail E
for clamp installation



Detail E



Extruded Aluminum Sign
With T Bracket



Use Extruded Alum. Windbeam as stiffeners
See SMD (2-1) for additional details

See Detail E
for clamp installation

GENERAL NOTES:

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

1. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
2. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
3. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
4. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
5. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
6. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
7. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
8. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
9. Sign blanks shall be the sizes and shapes shown on the plans.
10. Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
11. Post open ends shall be fitted with Friction Caps.

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

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REVISIONS	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08	CONT	SECT	JOB	HIGHWAY
	0918	47	473	VA
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		2.15

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BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).

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

3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.

4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.

5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.

6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.

7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.

8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.

10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.

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

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

13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:

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

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

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

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

2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14	DAL	DALLAS		2.16
5-10 5-21				

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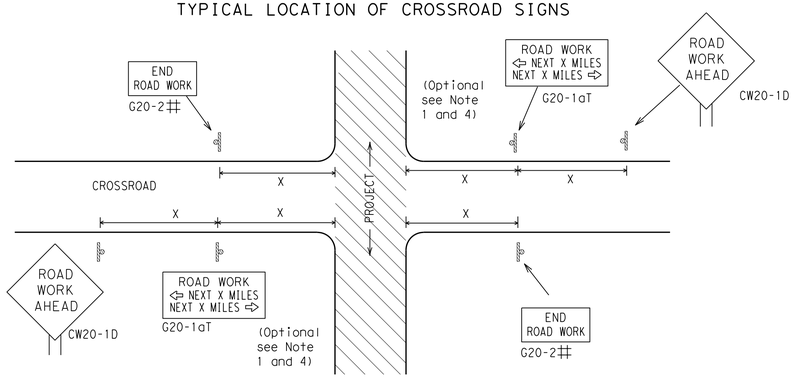
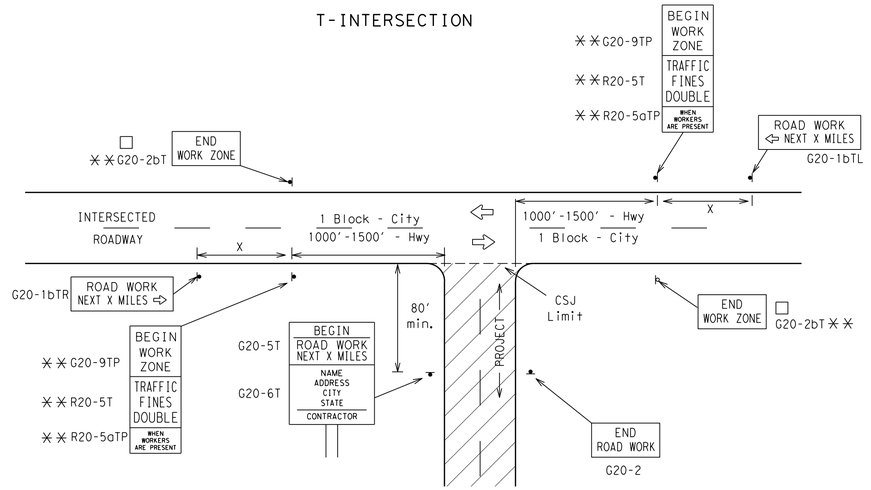
TYPICAL LOCATION OF CROSSROAD SIGNS



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

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

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

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

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING[1,5,6]

SIZE

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

SPACING

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

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

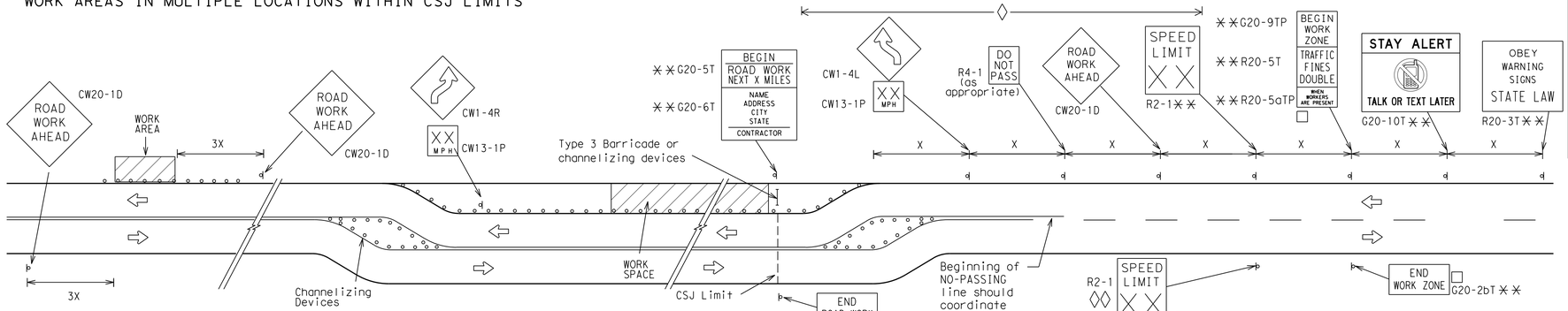
△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

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

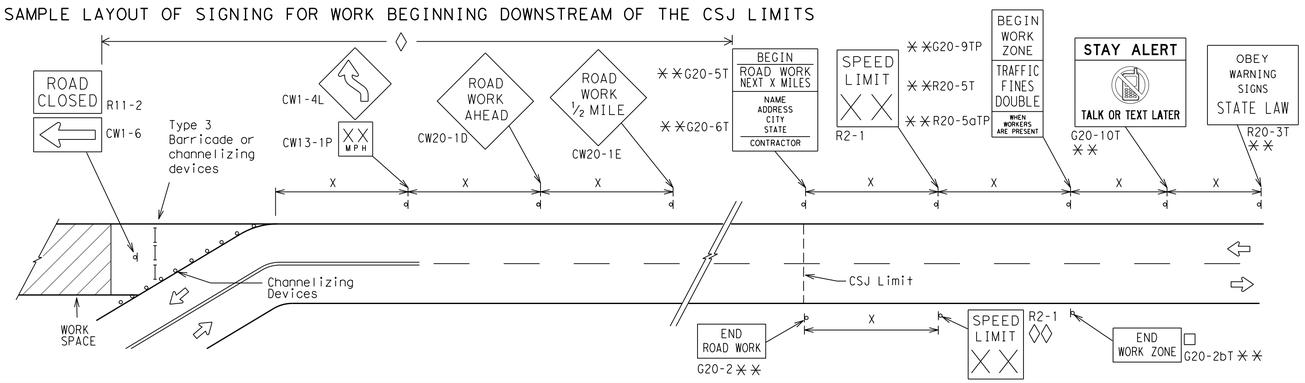
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE 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



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES"(G20-5T)sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

□ The "BEGIN WORK ZONE"(G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

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

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

◊◊ Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

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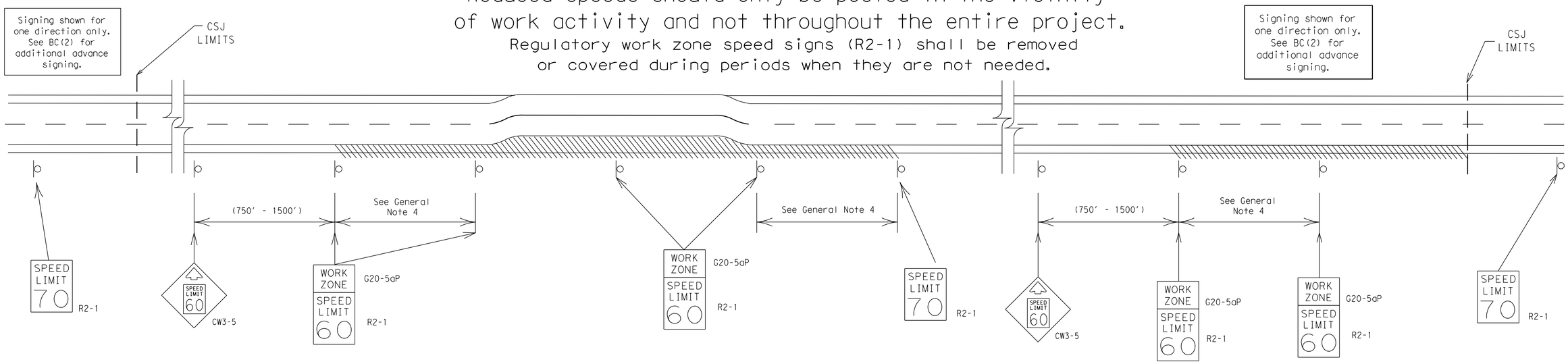
TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

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

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

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



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

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

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

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

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

SHORT TERM WORK ZONE SPEED LIMITS

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

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

GENERAL NOTES

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, erection and maintenance of the"ADVANCE SPEED LIMIT"(CW3-5)sign, "WORK ZONE"(G20-5aP) plaque and the "SPEED LIMIT"(R2-1)signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

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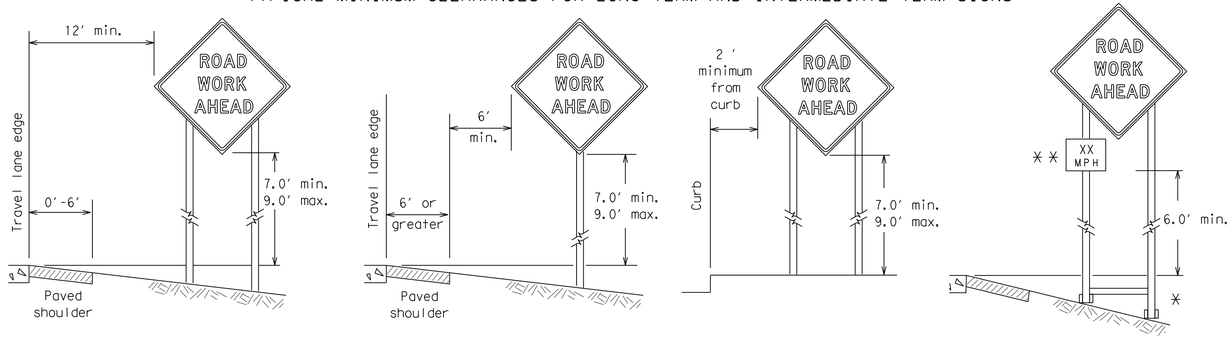
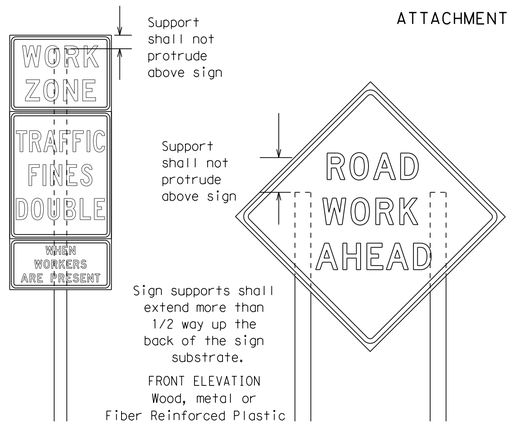
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

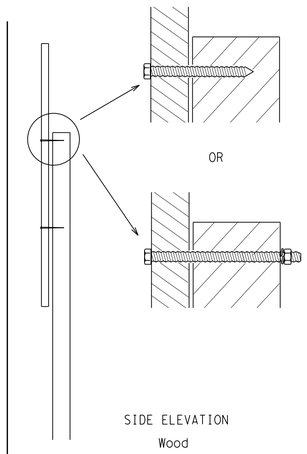


⁎ When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

⁎⁎ 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





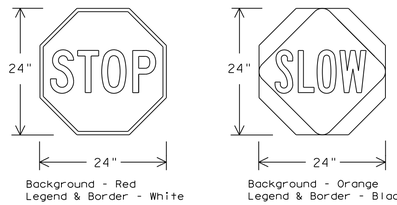
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

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 spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

STOP/SLOW PADDLES

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



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

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

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

GENERAL NOTES FOR WORK ZONE SIGNS

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

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

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

SIGN MOUNTING HEIGHT

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

SIZE OF SIGNS

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

SIGN SUBSTRATES

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

REFLECTIVE SHEETING

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

SIGN LETTERS

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

REMOVING OR COVERING

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

SIGN SUPPORT WEIGHTS

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

FLAGS ON SIGNS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

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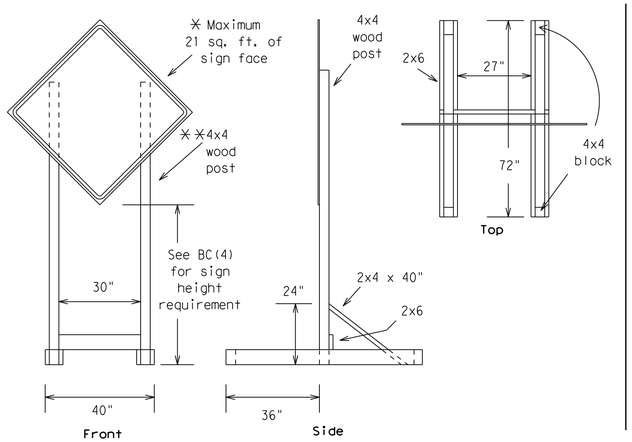
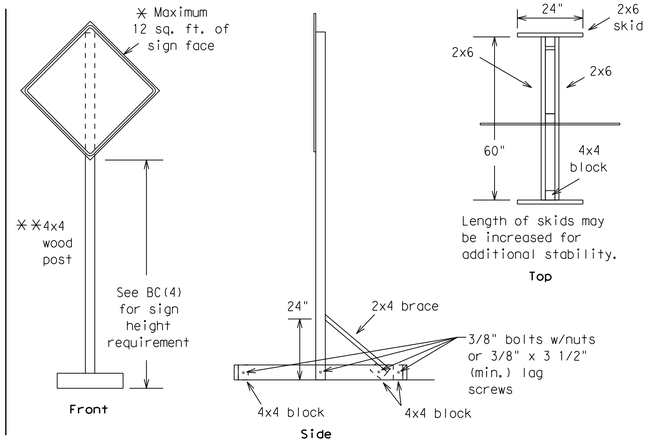
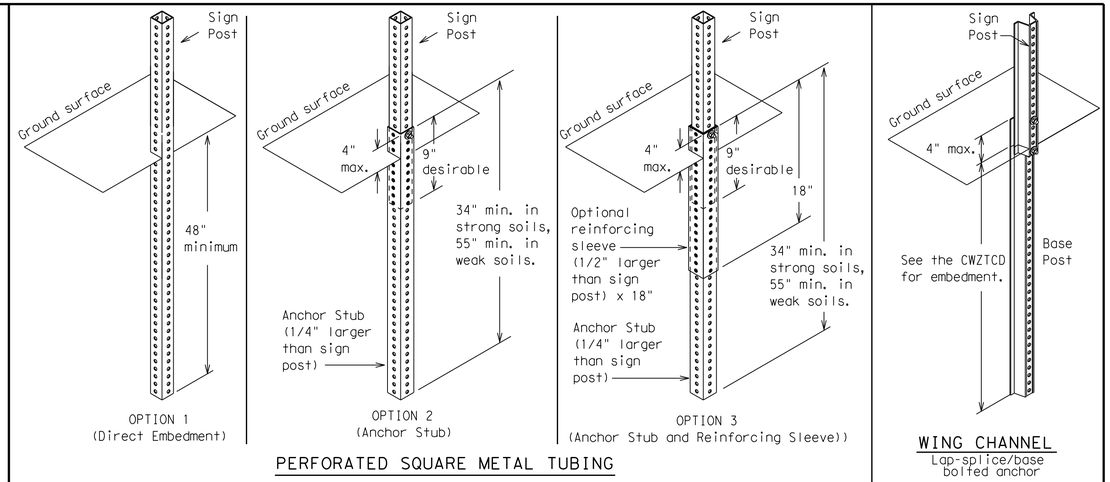




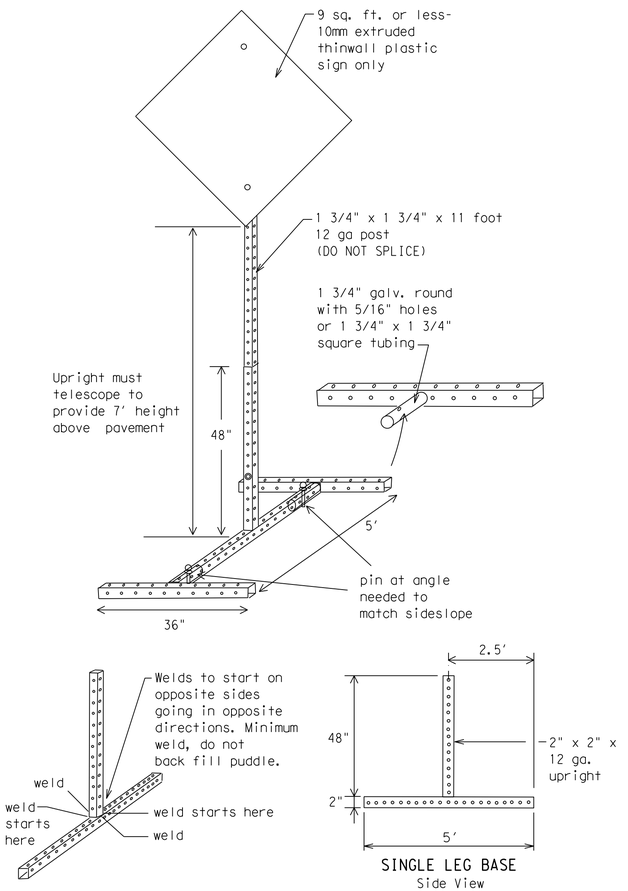
SKID MOUNTED WOOD SIGN SUPPORTS

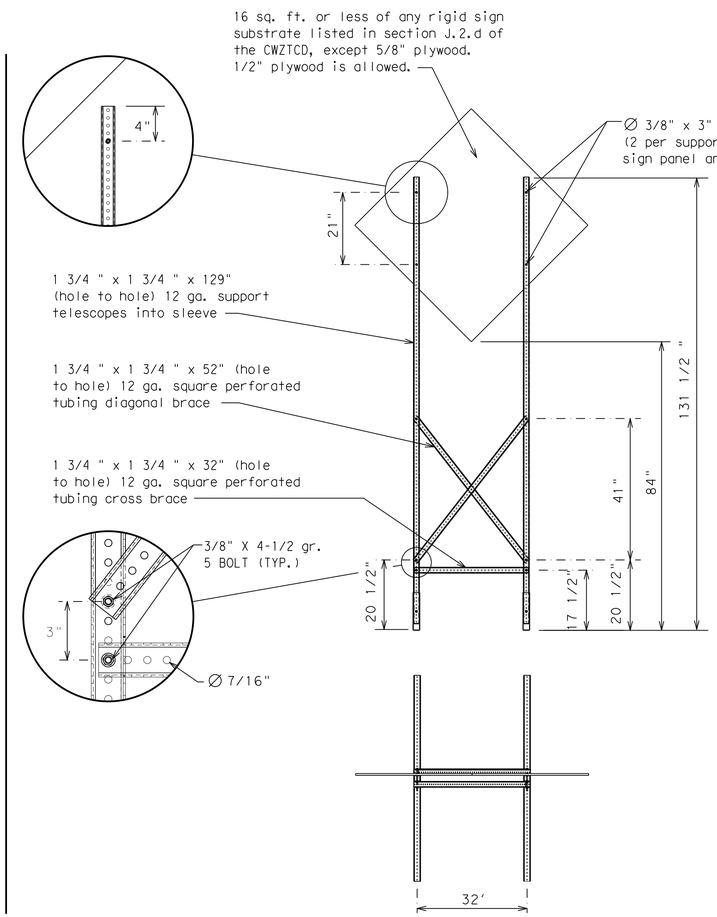
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

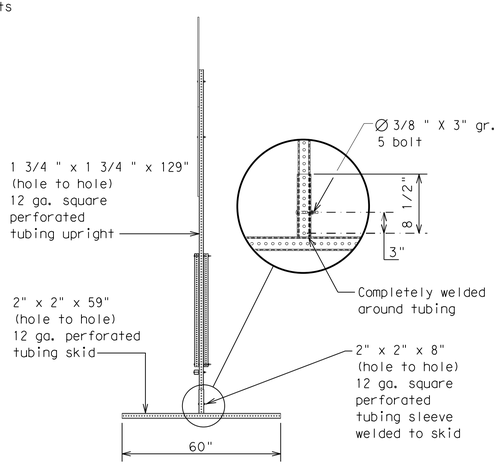


GROUND MOUNTED SIGN SUPPORTS

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







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

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

WEDGE ANCHORS

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

OTHER DESIGNS

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

GENERAL NOTES

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

* See BC(4) for definition of "Work Duration."

** Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

☐ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

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

PORTABLE CHANGEABLE MESSAGE SIGNS

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

WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy	HOV
Vehicle Highway	HWY
Hour(s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT

WORD OR PHRASE	ABBREVIATION
Major	MAJ
Miles	MI
Miles Per Hour	MPH
Minor	MNR
Monday	MON
Normal	NORM
North	N
Northbound	(route) N
Parking	PKING
Road	RD
Right Lane	RT LN
Saturday	SAT
Service Road	SERV RD
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	(route) S
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Thursday	THURS
To Downtown	TO DWNTN
Traffic	TRAF
Travelers	TRVLRS
Tuesday	TUES
Time Minutes	TIME MIN
Upper Level	UPR LEVEL
Vehicles (s)	VEH, VEHS
Warning	WARN
Wednesday	WED
Weight Limit	WT LIMIT
West	W
Westbound	(route) W
Wet Pavement	WET PVMT
Will Not	WONT

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

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

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

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

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

Other Condition List

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

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

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

- MERGE RIGHT
- FORM X LINES RIGHT
- DETOUR NEXT X EXITS
- USE XXXXX RD EXIT
- USE EXIT XXX
- USE EXIT I-XX NORTH
- STAY ON US XXX SOUTH
- USE I-XX E TO I-XX N
- TRUCKS USE US XXX N
- WATCH FOR TRUCKS
- WATCH FOR TRUCKS
- EXPECT DELAYS
- EXPECT DELAYS
- PREPARE TO STOP
- REDUCE SPEED XXX FT
- END SHOULDER USE
- USE OTHER ROUTES
- WATCH FOR WORKERS
- STAY IN LANE ⁂

Location List

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

Warning List

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

⁑ Advance Notice List

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

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

⁑ See Application Guidelines Note 6.

APPLICATION GUIDELINES

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

WORDING ALTERNATIVES

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

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

FULL MATRIX PCMS SIGNS

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	DAL	DALLAS		2.21

100

DATE: 10/2/2025 2:03:47 PM
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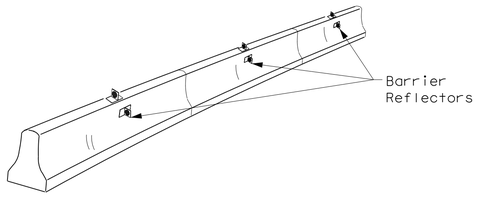
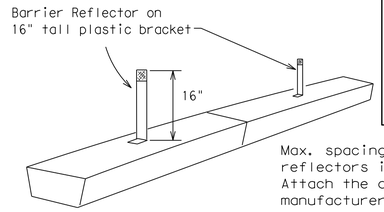
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



CONCRETE TRAFFIC BARRIER (CTB)

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

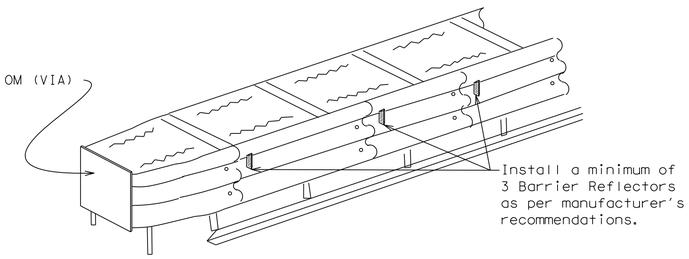


Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB)

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

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

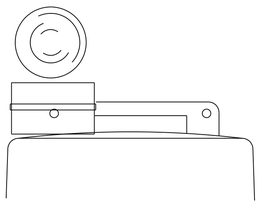


DELINEATION OF END TREATMENTS

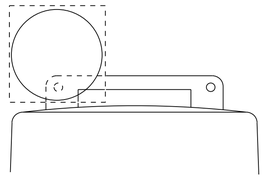
END TREATMENTS FOR CTB'S USED IN WORK ZONES

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

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



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



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

WARNING LIGHTS

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

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

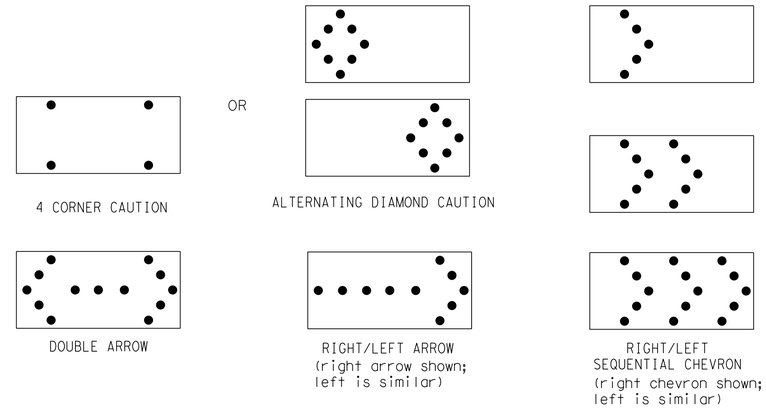
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing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

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

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

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

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



4 CORNER CAUTION

ALTERNATING DIAMOND CAUTION

DOUBLE ARROW

RIGHT/LEFT ARROW
(right arrow shown;
left is similar)

RIGHT/LEFT
SEQUENTIAL CHEVRON
(right chevron shown;
left is similar)

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

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

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

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

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

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

Texas Department of Transportation

Traffic Safety Division Standard

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

BC(7)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	DAL	DALLAS		2.22

101

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GENERAL NOTES

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

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

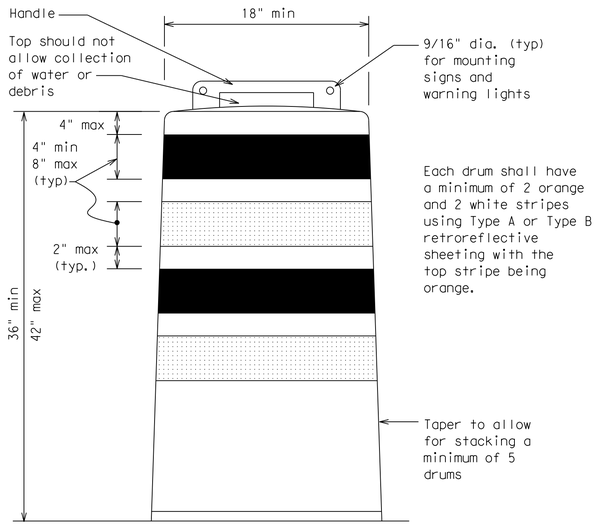
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents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

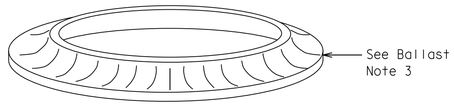
RETROREFLECTIVE SHEETING

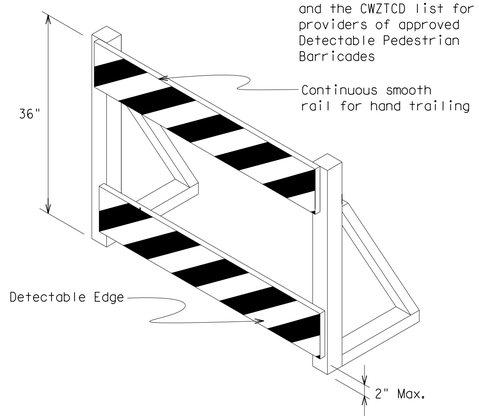
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall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

BALLAST

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

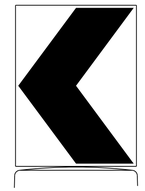




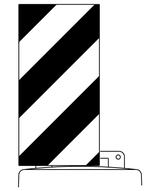


DETECTABLE PEDESTRIAN BARRICADES

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



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



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

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

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

.

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	0918	47	473	VA
4-03 8-14	DIST	COUNTY		SHEET NO.
9-07 5-21	DAL	DALLAS		2.23
7-13				

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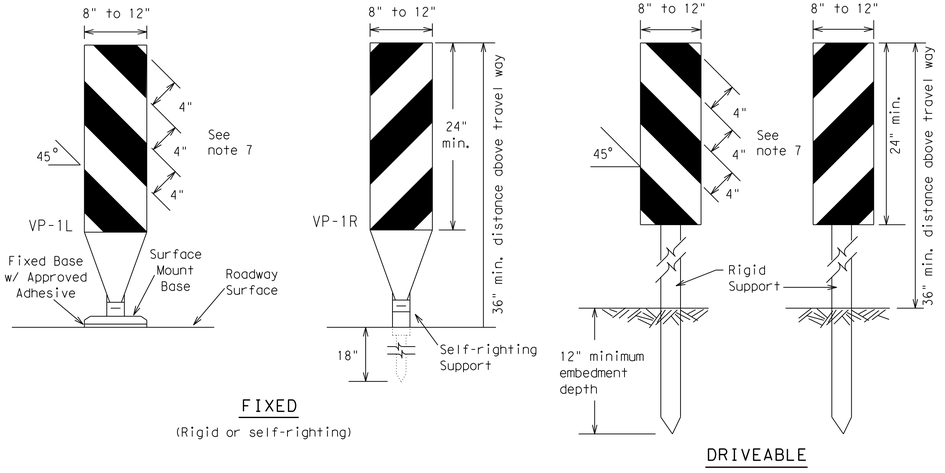
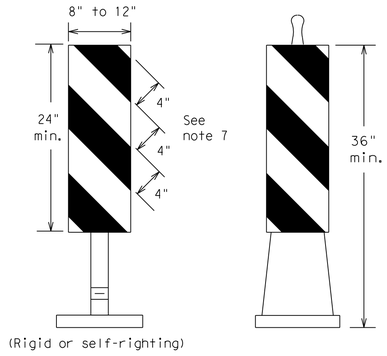


FIXED

(Rigid or self-righting)

DRIVEABLE

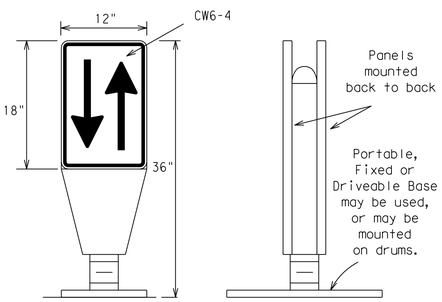


(Rigid or self-righting)

PORTABLE

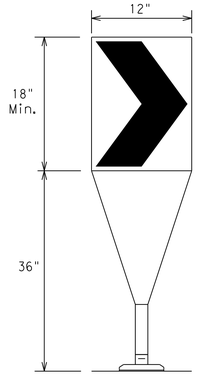
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is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

VERTICAL PANELS (VPs)



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

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



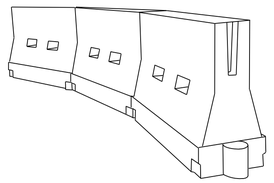
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

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

CHEVRONS

GENERAL NOTES

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



LONGITUDINAL CHANNELIZING DEVICES (LCD)

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

WATER BALLASTED SYSTEMS USED AS BARRIERS

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

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

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

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

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

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

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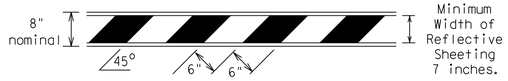
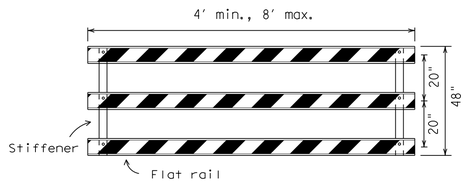
TYPE 3 BARRICADES

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

Barricades shall NOT be used as a sign support.



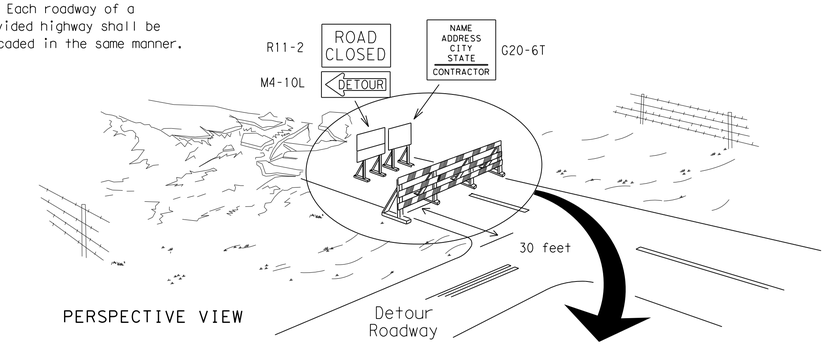
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



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

TYPICAL PANEL DETAIL
FOR SKID OR POST TYPE BARRICADES

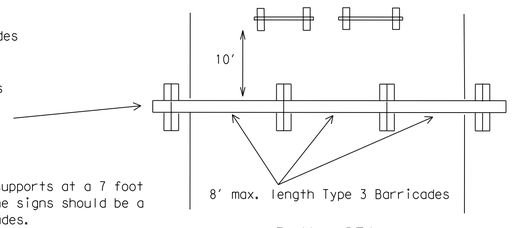
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.

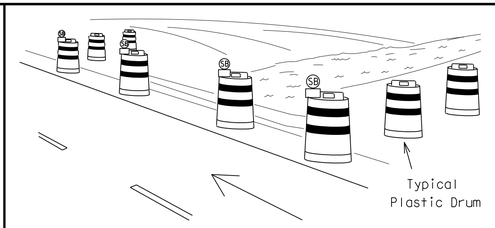
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

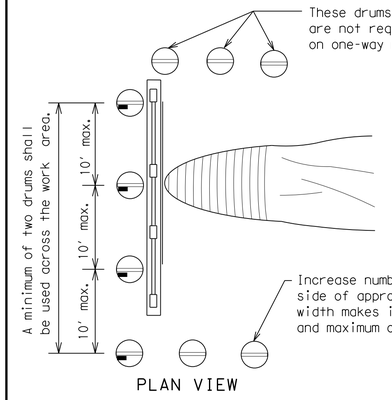
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

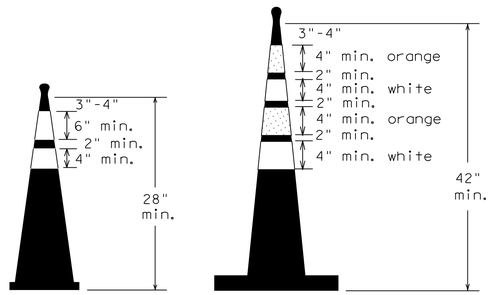
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder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



PLAN VIEW

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

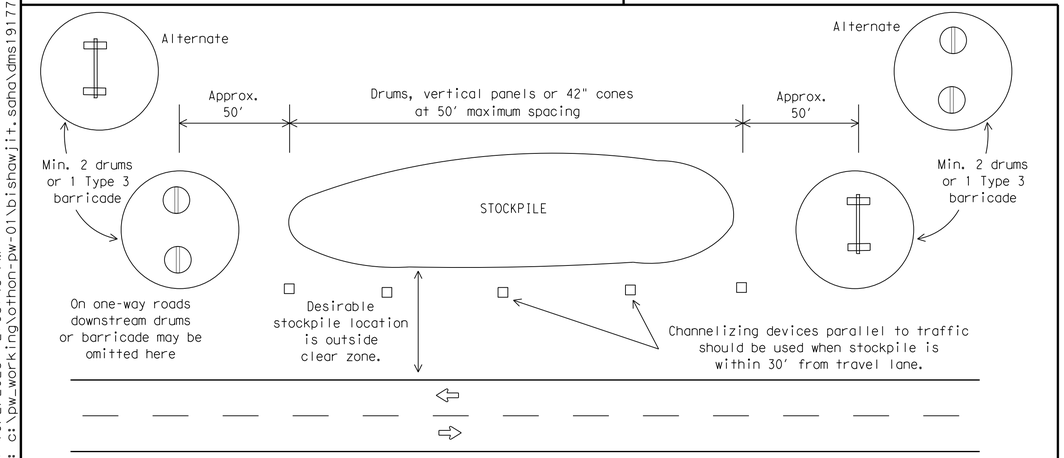
CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



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

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

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



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

SHEET 10 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

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WORK ZONE PAVEMENT MARKINGS

GENERAL

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

RAISED PAVEMENT MARKERS

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

PREFABRICATED PAVEMENT MARKINGS

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

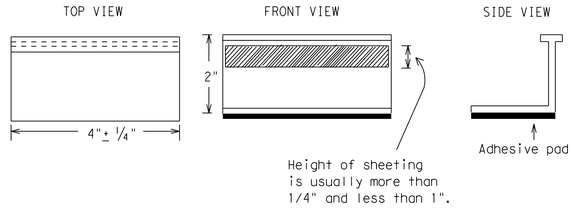
MAINTAINING WORK ZONE PAVEMENT MARKINGS

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

REMOVAL OF PAVEMENT MARKINGS

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

Temporary Flexible-Reflective Roadway Marker Tabs



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

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

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

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

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

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

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
2-98 9-07 5-21	DIST	COUNTY		SHEET NO.
1-02 7-13	DAL	DALLAS		2.26
11-02 8-14				

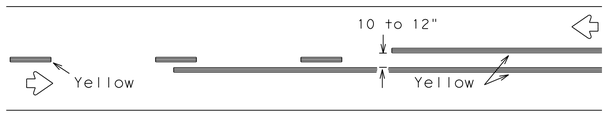
105

DATE: 10/2/2025 2:03:48 PM
FILE: c:\pw_working\othon-pw-01\bishawjit.saha\dms19177\bc-21.dgn

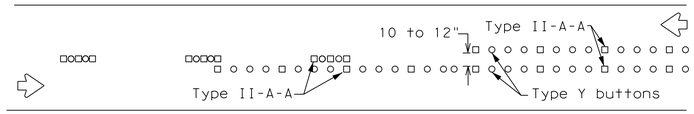
DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: 10/2/2025 2:03:49 PM
FILE: c:\pw_working\txdot_pw-01\bishawjit.saha\dms19177\bc-21.dgn

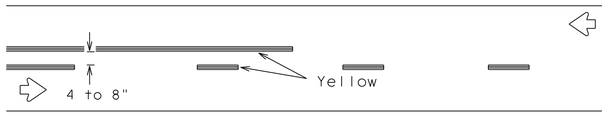
PAVEMENT MARKING PATTERNS



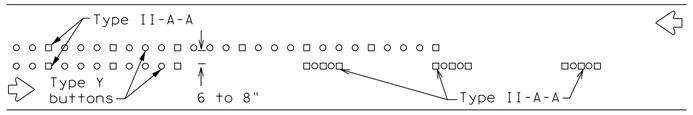
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



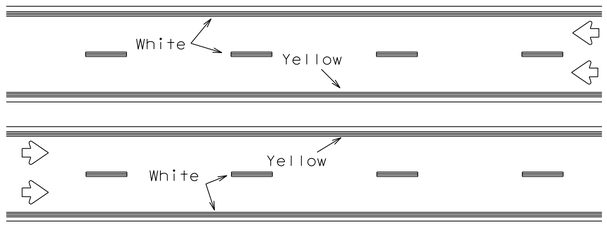
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



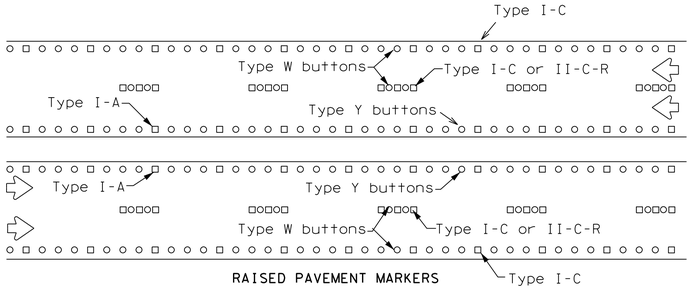
RAISED PAVEMENT MARKERS - PATTERN B

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

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



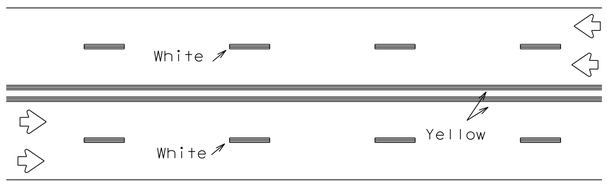
REFLECTORIZED PAVEMENT MARKINGS



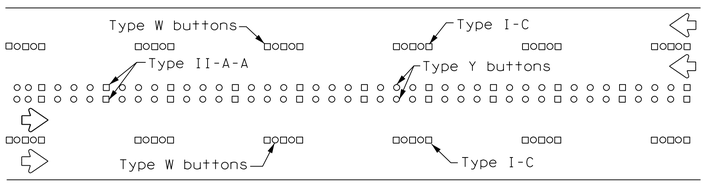
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



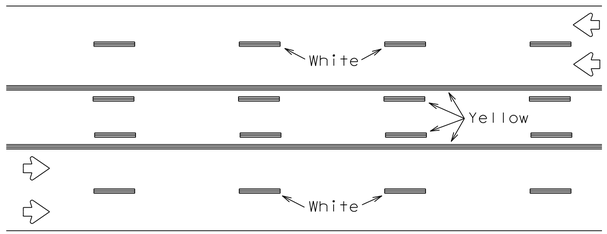
REFLECTORIZED PAVEMENT MARKINGS



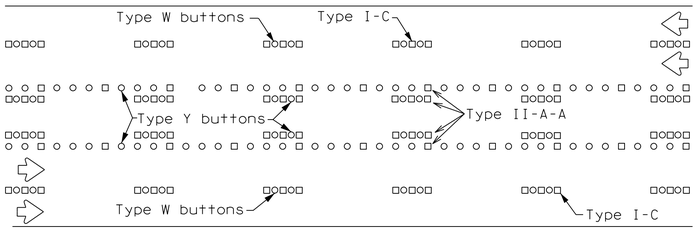
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

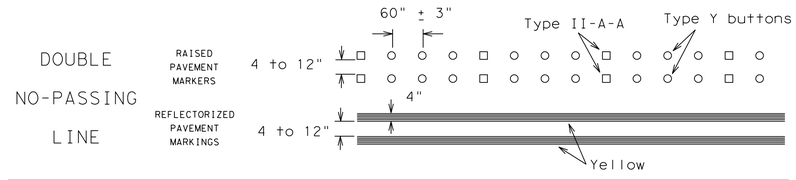
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

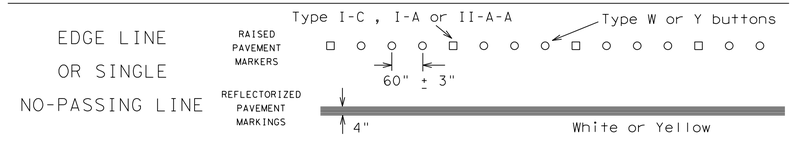
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

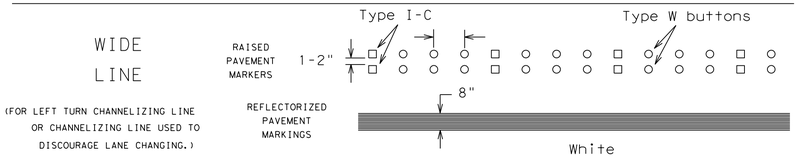


EDGE LINE OR SINGLE NO-PASSING LINE



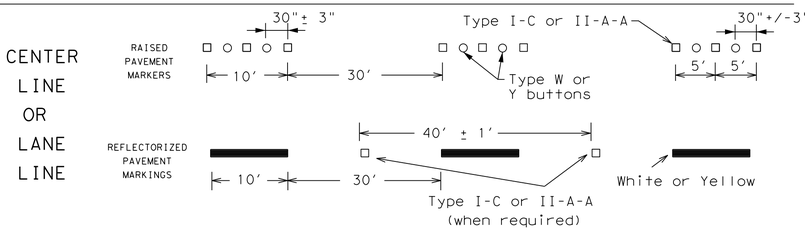
WIDE LINE

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

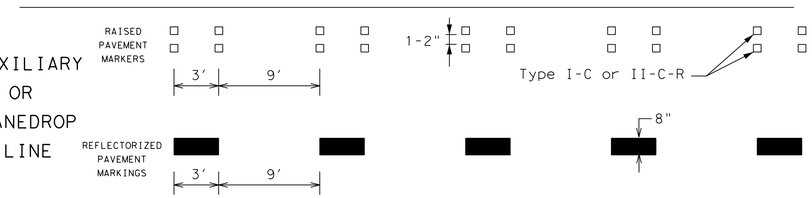


BROKEN LINES

CENTER LINE OR LANE LINE

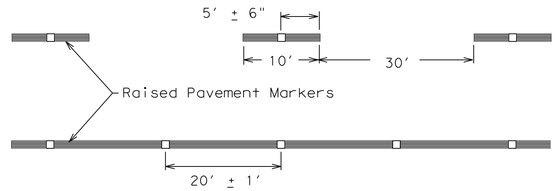


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

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



Centerline only - not to be used on edge lines

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

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 1-97 9-07 5-21 2-98 7-13 11-02 8-14	0918	47	473	VA
	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		2.27

DWG NO. BUCK-G-2

SHEET NO.	SHEET NO.	REVISION NO.	DESCRIPTION
1	BUCK-G-1	0	COVER SHEET
2	BUCK-G-2	2	INDEX
3	BUCK-WC-1	1	TRACK AND CABLE PLAN
4	BUCK-SP-1	1	SITE PLAN
5	BUCK-TM-1	0	TIME MATRIX
6	BUCK-A-1	0	ASPECT CHART
7	BUCK-I-1	0	PF & AUDIO FREQ. TRACK CIRCUITS TRACK #1
8	BUCK-I-2	0	PF & AUDIO FREQ. TRACK CIRCUITS TRACK #2
9	BUCK-I-3	0	LIGHTING CKTS (TRACKS 1-2)
10	BUCK-I-4	0	MICROLOK II CARDFILE ARRANGEMENT
11	BUCK-I-5	0	CPU BOARD JUMPER AND DIP SWITCH POSITION CHECK
12	BUCK-I-6	1	MICROLOK II POWER DISTRIBUTION AND VITAL COMMUNICATION CKTS
13	BUCK-I-7	0	MICROLOK II VITAL I/O ASSIGNMENT CHARTS
14	BUCK-I-8	0	MICROLOK II VITAL OUTPUTS SLOT 5
15	BUCK-I-9	0	MICROLOK II VITAL OUTPUTS SLOT 6
16	BUCK-I-10	1	MICROLOK II VITAL INPUTS SLOT 9
17	BUCK-I-11	0	MICROLOK II VITAL INPUTS SLOT 10
18	BUCK-I-12	1	SOLID STATE XING CONTROLLER
18A	BUCK-I-12A	0	SOLID STATE XING CONTROLLER
19	BUCK-I-13	1	GATE MECH. AND LIGHTING CIRCUITS
19A	BUCK-I-13A	0	GATE MECH. AND LIGHTING CIRCUITS
20	BUCK-P-1	1	POWER CALCULATIONS
21	BUCK-P-2	1	POWER DISTRIBUTION CIRCUITS
22	BUCK-P-3	0	480/120 POWER DISTRIBUTION CIRCUITS
23	BUCK-HSE-W1	1	FLOOR PLAN
24	BUCK-HSE-W2	0	HOUSE POWER TIE-UP AND GROUNDING
25	BUCK-MTB-W1	1	MTB LAYOUT
26	BUCK-MTB-W2	1	MTB CABLE LAYOUT
27	BUCK-R1-W1	0	RACK 1 LAYOUT
28	BUCK-R1-W2	0	RACK 1 POWER LOOPS
29	BUCK-R1-W3	0	RACK 1 POWER LOOPS
30	BUCK-R2-W1	1	RACK 2 LAYOUT
31	BUCK-R2-W2	0	RACK 2 POWER LOOPS
32	BUCK-R2-W3	1	RACK 2 POWER LOOPS
33	BUCK-R2-W4	1	RACK 2 POWER LOOPS
34	BUCK-R3-W1	1	RACK 3 LAYOUT
35	BUCK-R3-W2	1	RACK 3 POWER LOOPS
36	BUCK-WALL-W1	1	WALL LAYOUT
37	BUCK-WALL-W2	0	WALL POWER LOOPS
38	BUCK-WALL-W3	0	WALL POWER LOOPS
39	BUCK-PWAL-W1	0	POWER WALL LAYOUT

-○-○-○- = IN

PRIOR TO BEING PLACED IN REGULAR SERVICE, THE OPERATION OF ANY CIRCUITS AND EQUIPMENT PRESENTED HEREIN MUST BE CHECKED BY CIRCUIT SELECTION (BREAKDOWN) AND SERVICE (OPERATION) TESTS OF THE COMPLETE SYSTEM OR SECTION OF SUCH A SYSTEM INTO WHICH THEY ARE CONNECTED. THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREON CANNOT BE FINALLY CHECKED UNTIL CONNECTED.

EXISTING CONDITIONS SHOWN ON THESE PLANS ARE BASED ON INFORMATION PROVIDED BY DART FROM THE BUCKINGHAM RD HIGHWAY CROSSING AS-BUILT DRAWING SET. THE ACCURACY OF THIS INFORMATION IS ASSUMED BUT NOT GUARANTEED. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK.

CONTRACT SHEET NO. 2 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	03/28/03	REVISED PER FIELD CHANGES	DEB	RC	JWC	JWC
2	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

ORIGINAL "AS-BUILT" CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 1: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 03/28/03

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 1: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 03/28/03

SCALE: NONE DATE: 7-26-99
DRAWN: D. BOZYM, DESIGNED: R.D. ZATEZALO
CHECKED: J. COLLIER, IN CHARGE: J. COLLIER

STATE OF TEXAS
MICHAEL KALB
121458
LICENSED
PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 2 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM # F-6324

DART PROJECT

DART

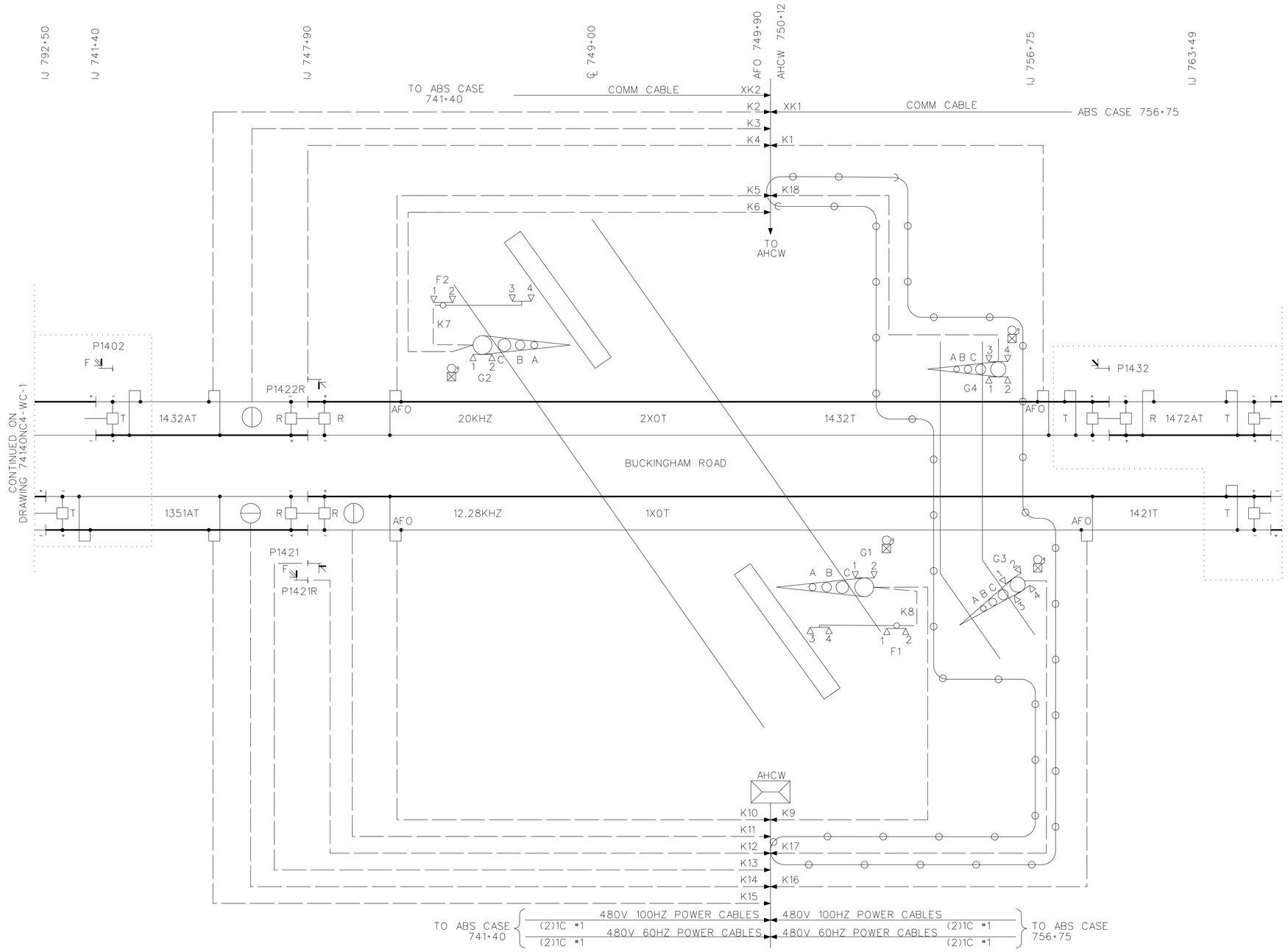
SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM

BUCKINGHAM RD
HIGHWAY CROSSING
INDEX

CONTRACT	DWG NO.	REV
	BUCK-G-2	2

DWG NO. BUCK-WC-1



LEGEND

	CABLE NAME	DESTINATION	TYPE OF CABLE
	K1	2XOT RECEIVER	2C #6 TW
	K2	1432AT RELAY	2C #6 TW
	K3	P1422R TRAIN STOP	2C #9
	K4	SIG P1422R	5C #14
	K5	2XOT TRANSMITTER & 1432T RELAY	2C #6 TW
	K6	GATE #2	17C(2C #6,8C #9,7C #14)
×	K7	CANTILEVER #2	5C #14
×	K8	CANTILEVER #1	5C #14
	K9	GATE #1	17C(2C #6,8C #9,7C #14)
	K10	1XOT TRANSMITTER & 1421T RELAY	2C #6 TW
	K11	P1421R TRAIN STOP	2C #9
	K12	SIG P1421R	5C #14
	K13	SIG P1421	5C #14
	K14	P1421 TRAIN STOP	2C #9
	K15	1351AT RELAY	2C #6 TW
	K16	1XOT RECEIVER	2C #6 TW
	K17	GATE 3	17C(2C #6, 8C #9, 7C #14)
	K18	GATE 4	17C(2C #6, 8C #9, 7C #14)
	XK1	ABS CASE 756+75	5 TWPR #19
	XK2	ABS CASE 741+40	5 TWPR #19

NOTE:

EQUIPMENT CONTAINED IN NOT CONTROLLED OUT OF THIS CASE

× INDICATES CABLE IS NOT CONNECTED TO AHCW MTB

480V POWER CABLES NOT CONNECTED TO MTB. WIRES ARE SPLICED INSIDE WIREWAY

= IN

PRIOR TO BEING PLACED IN REGULAR SERVICE, THE OPERATION OF ANY CIRCUITS AND EQUIPMENT PRESENTED HEREIN MUST BE CHECKED BY CIRCUIT SELECTION (BREAKDOWN) AND SERVICE (OPERATION) TESTS OF THE COMPLETE SYSTEM OR SECTION OF SUCH A SYSTEM INTO WHICH THEY ARE CONNECTED. THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREON CANNOT BE FINALLY CHECKED UNTIL CONNECTED.

EXISTING CONDITIONS SHOWN ON THESE PLANS ARE BASED ON INFORMATION PROVIDED BY DART FROM THE BUCKINGHAM RD HIGHWAY CROSSING AS-BUILT DRAWING SET. THE ACCURACY OF THIS INFORMATION IS ASSUMED BUT NOT GUARANTEED. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK.

CONTRACT SHEET NO. 3 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

ORIGINAL "AS-BUILT" CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 01/07/03

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 01/07/03

SCALE: NONE DATE: 7-26-99
DRAWN: J. CIDER, DESIGNED: J.C. WOLSKI
CHECKED: J. COLLIER, IN CHARGE: J. COLLIER

STATE OF TEXAS · MICHAEL KALB · 121458 · LICENSED PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 1 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM # F-6324

DART PROJECT

DART

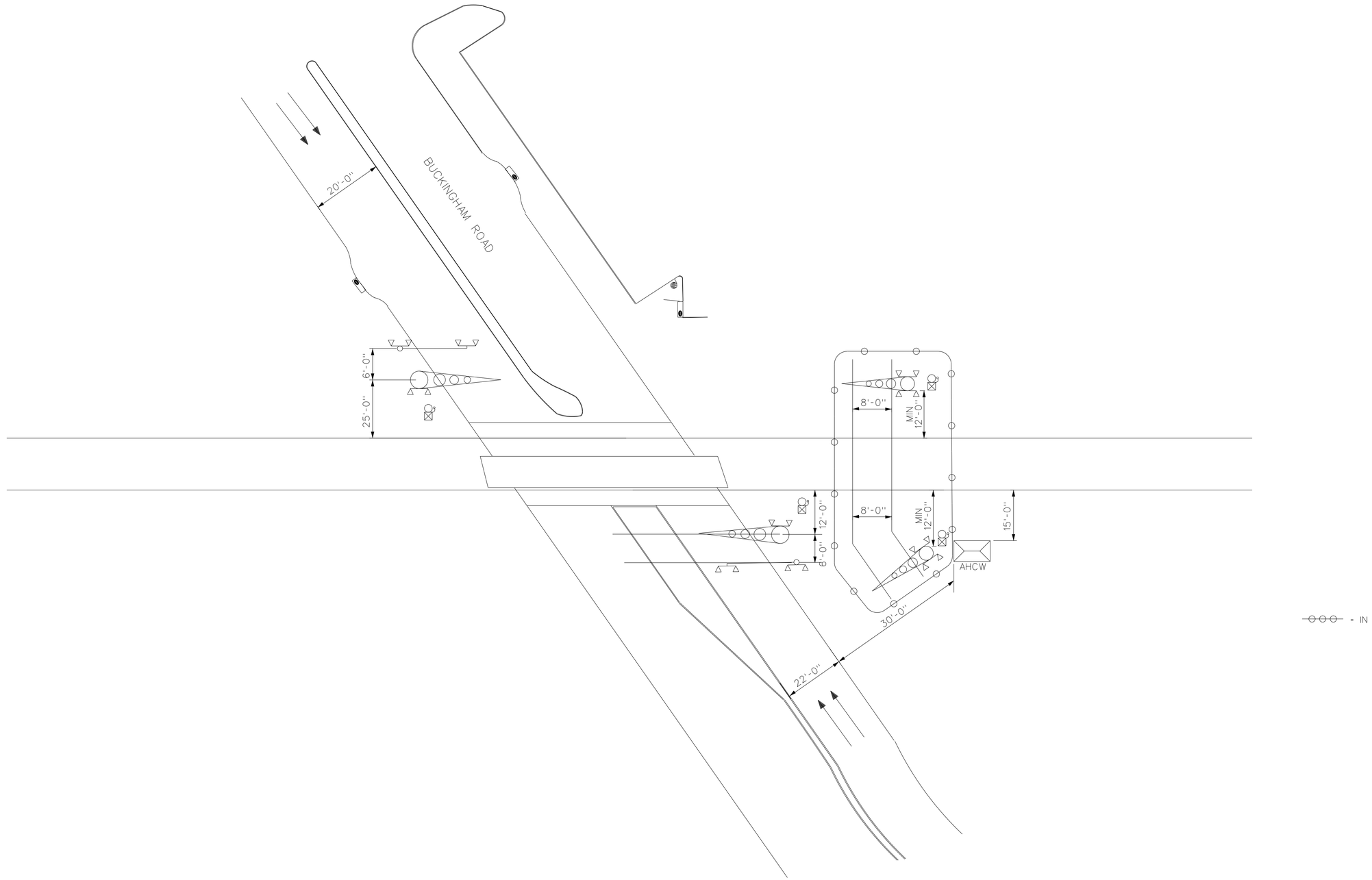
SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM

BUCKINGHAM RD HIGHWAY CROSSING TRACK AND CABLE PLAN

CONTRACT | DWG NO. BUCK-WC-1 | REV 1

DWG NO.
BUCK-SP-1



= IN

PRIOR TO BEING PLACED IN REGULAR SERVICE, THE OPERATION OF ANY CIRCUITS AND EQUIPMENT PRESENTED HEREIN MUST BE CHECKED BY CIRCUIT SELECTION (BREAKDOWN) AND SERVICE (OPERATION) TESTS OF THE COMPLETE SYSTEM OR SECTION OF SUCH A SYSTEM INTO WHICH THEY ARE CONNECTED. THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREON CANNOT BE FINALLY CHECKED UNTIL CONNECTED.

EXISTING CONDITIONS SHOWN ON THESE PLANS ARE BASED ON INFORMATION PROVIDED BY DART FROM THE BUCKINGHAM RD HIGHWAY CROSSING AS-BUILT DRAWING SET. THE ACCURACY OF THIS INFORMATION IS ASSUMED BUT NOT GUARANTEED. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK.

CONTRACT SHEET NO. 4 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

ORIGINAL "AS-BUILT" CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 01/07/03

SCALE: NONE DATE: 7-26-99
DRAWN: D. BOZYM, DESIGNED: J.C. WOLSKI
CHECKED: J. COLLIER, IN CHARGE: J. COLLIER

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 01/07/03

STATE OF TEXAS
MICHAEL KALB
121458
LICENSED
PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 1 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM # F-6324

DART PROJECT

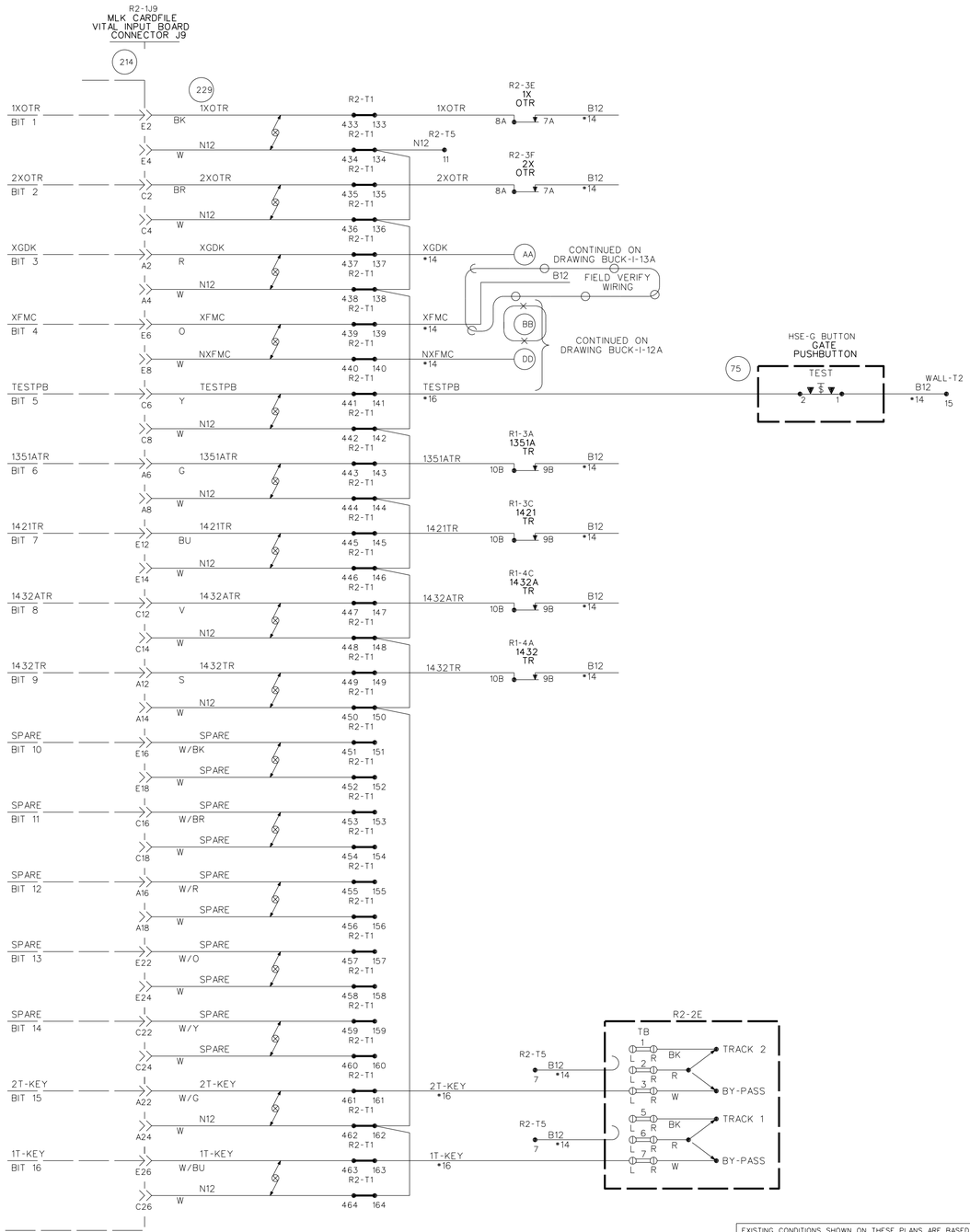
DART

SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM
BUCKINGHAM RD HIGHWAY CROSSING SITE PLAN

CONTRACT	DWG NO.	REV
	BUCK-SP-1	1

DWG NO. BUCK-I-10



NOTES:
1. ALL WIRING •20 UNLESS NOTED.
2. _____) = FOLD BACK AND TAPE.

PRIOR TO BEING PLACED IN REGULAR SERVICE, THE OPERATION OF ANY CIRCUITS AND EQUIPMENT PRESENTED HEREIN MUST BE CHECKED BY CIRCUIT SELECTION (BREAKDOWN) AND SERVICE (OPERATION) TESTS OF THE COMPLETE SYSTEM OR SECTION OF SUCH A SYSTEM INTO WHICH THEY ARE CONNECTED. THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREON CANNOT BE FINALLY CHECKED UNTIL CONNECTED.

EXISTING CONDITIONS SHOWN ON THESE PLANS ARE BASED ON INFORMATION PROVIDED BY DART FROM THE BUCKINGHAM RD HIGHWAY CROSSING AS-BUILT DRAWING SET. THE ACCURACY OF THIS INFORMATION IS ASSUMED BUT NOT GUARANTEED. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK.

CONTRACT SHEET NO. 16 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

ORIGINAL •AS-BUILT• CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 01/07/03

SCALE: NONE DATE: 7-26-99
DRAWN: D. BOZYM, DESIGNED: J.C. WOLSKI
CHECKED: J. COLLIER, IN CHARGE: J. COLLIER

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 01/07/03

STATE OF TEXAS
MICHAEL KALB
121458
LICENSED
PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 1 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM • F-6324

DART PROJECT

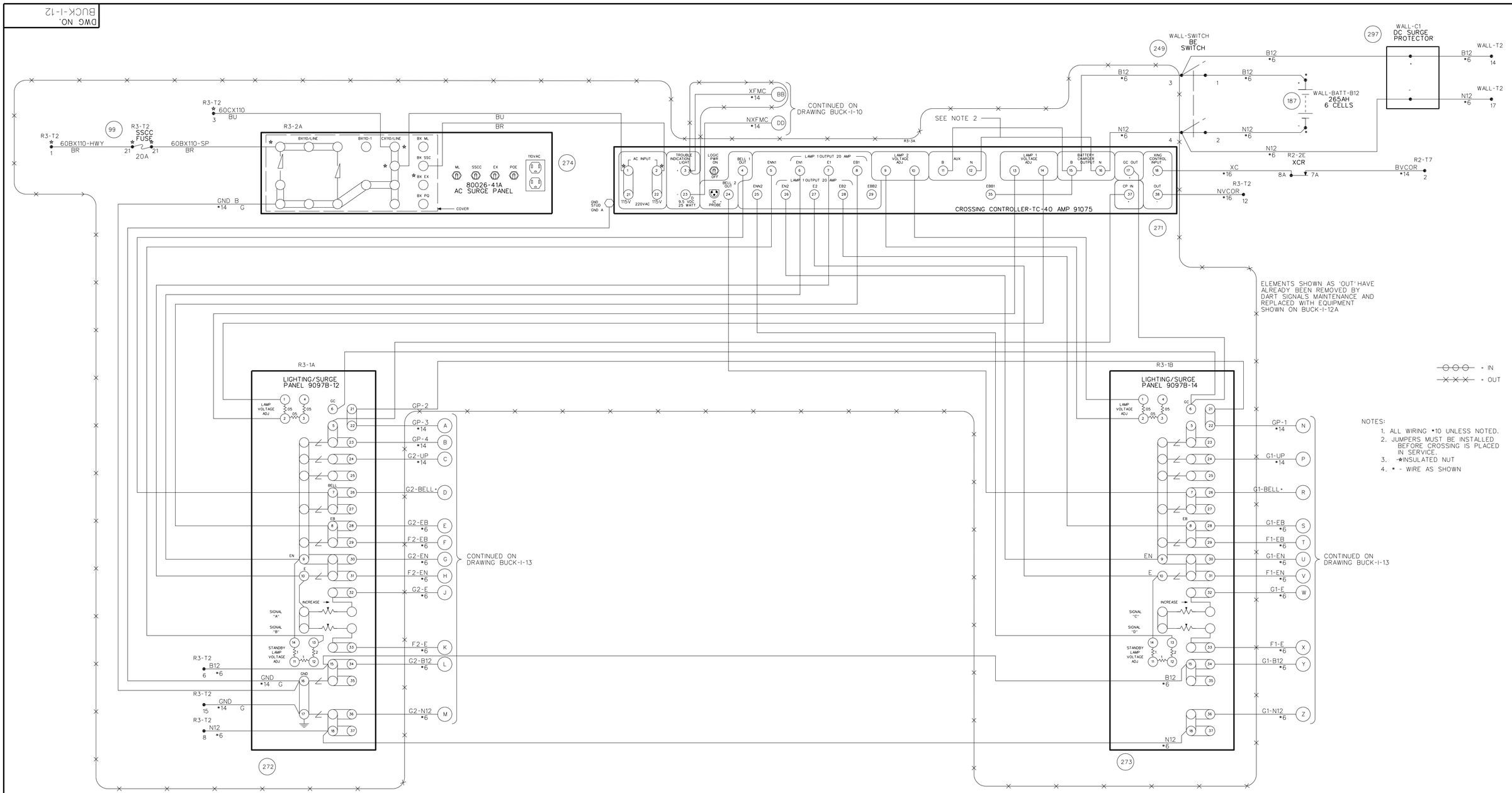
DART

SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM
BUCKINGHAM RD
HIGHWAY CROSSING
MICROLOK II VITAL INPUTS
SLOT 9

CONTRACT | DWG NO. BUCK-I-10 | REV 1

DWG NO. BUCK-I-12



NOTES:
1. ALL WIRING •10 UNLESS NOTED.
2. JUMPERS MUST BE INSTALLED BEFORE CROSSING IS PLACED IN SERVICE.
3. ⊣⊢ INSULATED NUT
4. • - WIRE AS SHOWN

PRIOR TO BEING PLACED IN REGULAR SERVICE, THE OPERATION OF ANY CIRCUITS AND EQUIPMENT PRESENTED HEREIN MUST BE CHECKED BY CIRCUIT SELECTION (BREAKDOWN) AND SERVICE (OPERATION) TESTS OF THE COMPLETE SYSTEM OR SECTION OF SUCH A SYSTEM INTO WHICH THEY ARE CONNECTED. THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREON CANNOT BE FINALLY CHECKED UNTIL CONNECTED.

EXISTING CONDITIONS SHOWN ON THESE PLANS ARE BASED ON INFORMATION PROVIDED BY DART FROM THE BUCKINGHAM RD HIGHWAY CROSSING AS-BUILT DRAWING SET. THE ACCURACY OF THIS INFORMATION IS ASSUMED BUT NOT GUARANTEED. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK.

CONTRACT SHEET NO. 18 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

ORIGINAL •AS-BUILT• CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 01/07/03

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 01/07/03

SCALE: NONE DATE: 7-26-99
DRAWN: D. BOZYM, DESIGNED: J.C. WOLSKI
CHECKED: J. COLLIER, IN CHARGE: J. COLLIER

STATE OF TEXAS
MICHAEL KALB
121458
LICENSED
PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 1 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM • F-6324

DART PROJECT

DART

SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM
BUCKINGHAM RD HIGHWAY CROSSING
SOLID STATE XING CONTROLLER

CONTRACT | DWG NO. BUCK-I-12 | REV 1

DWG NO. BUCK-I-12A

B-1 •10
B-2 •10
N-1 •10
N-2 •10
1GC- •10
1GC+ •10
1BELL •10
1L1 •10
1L2 •10

CONTINUED ON DRAWING BUCK-1-10 (DD)

R3-T2 2 — B12 •6
R3-T2 6 — N12 •6

R1-2A LIGHTING SURGE PANEL MODEL 91170-01 (453)

B-1 B-2 B-BATT B-EQPT N-BATT N-EQPT N-1 N-2 1GC 1BELL GP SSCCIV LIGHTING SURGE PANEL 1L1 A B 1L2 A B

PW-PGG 10 •6 G

GP1-B

B-A B-B N-A N-B 1GC-A 1GC-B 1BELL-A 1BELL-B GP GP1-A 1L1 1L2 EN EN 1L1 1L2

INCREASE INCREASE 1L1 ADJ 1L2 ADJ

FAR GATE NEAR GATE NEAR GATE

G1-B12 •6 (Y) G1-N12 •6 (Z) — CONTINUED ON DRAWING BUCK-1-13 GATE 1

G4-B12 •6 (L1) G4-N12 •6 (M1) — CONTINUED ON DRAWING BUCK-1-13A GATE 3

G1-UP (P) G1-BELL (R) — CONTINUED ON DRAWING BUCK-1-13 GATE 1

G3-UP (P1) G3-BELL• (R1) — CONTINUED ON DRAWING BUCK-1-13A GATE 3

G4-EB G4-EN G4-E — (E1) (G1) (J1) CONTINUED ON DRAWING BUCK-1-13A GATE 4

F2-EB •6 (F) F2-EN •6 (H) F2-E •6 (K) — CONTINUED ON DRAWING BUCK-1-13 CANTILEVER 2

G2-E •6 (J) G2-EB •6 (E) G2-EN (G) — CONTINUED ON DRAWING BUCK-1-13 GATE 2

R3-T2 8
R3-T2 7 N12 •10
R3-T2 4 B12 •10
R3-T2 3

TBC — B12 •10 — N12-X •10 — NXFMC

J1: + 1GC − 1BELL 1L1 1L2 — OUTPUT A
J2: B N NON-VITAL — I/O1 (FLASH SINC) OUT (MAIN CALL)

40A SSCC 1V CROSSING CONTROLLER MODEL A91210

OUTPUT A
J6: + 2GC − 2BELL 2L1 2L2

J4: LAN 1 2 — CROSSING CONTROL INPUT 3 4 5 6 7 GP

FIELD TO PROVIDE N12

CONTINUED ON DRAWING BUCK-1-13 GATE-1 (B) GP

XC •16 — XCR 8A 7A — BVCOR •14 — R2-T7 2

NVCOR •16 — R3-T2 12

2L2 •10
2L1 •10
2BELL •10
2GC- •10
2GC+ •10

(452)

B-1 B-2 N-1 N-2 2GC 2BELL SSCCIV LIGHTING SURGE PANEL 2L1 A B 2L2 A B

GP1-CC GP1-D

B-C B-D N-C N-D 2GC-C 2-GC-D 2BELL-C 2BELL-D GP1-BB GP1-C 2L1 2L2 EN EN 2L1 2L2

INCREASE INCREASE 2L1 ADJ 2L2 ADJ

FAR GATE NEAR GATE NEAR GATE

R1-3A LIGHTING SURGE PANEL MODEL 91170-02

G1-B12 •6 (Y) G1-N12 •6 (Z) — CONTINUED ON DRAWING BUCK-1-13 GATE 1

G3-B12 •6 (Y1) G3-N12 •6 (Z1) — CONTINUED ON DRAWING BUCK-1-13A GATE 3

G2-UP (C) G2-BELL (D) — CONTINUED ON DRAWING BUCK-1-13 GATE 2

G4-UP (C1) G4-BELL• (D1) — CONTINUED ON DRAWING BUCK-1-13A GATE 4

G3-EB G3-EN G3-E — (S1) (U1) (W1) CONTINUED ON DRAWING BUCK-1-13A GATE 3

F1-EB •6 (T) F1-EN •6 (V) F1-E •6 (X) — CONTINUED ON DRAWING BUCK-1-13 CANTILEVER 1

G1-E •6 (W) G1-EB •6 (S) G1-EN (U) — CONTINUED ON DRAWING BUCK-1-13 GATE 1

NOTE:
1. ALL WIRING •14 UNLESS OTHERWISE NOTED.
2. THE FOLLOWING SURGE PANEL SYMBOLS ARE USED.

E =022700-1X EQUALIZER H.D.
/ =022485-28X ARRESTOR CLEARVIEW.
IL =INSULATED TEST LINK.

NEW SHEET

○○○ = IN

ALL ELSE ON THIS SHEET IS EXISTING AND WAS INSTALLED BY DART SIGNALS MAINTENANCE

PRIOR TO BEING PLACED IN REGULAR SERVICE, THE OPERATION OF ANY CIRCUITS AND EQUIPMENT PRESENTED HEREIN MUST BE CHECKED BY CIRCUIT SELECTION (BREAKDOWN) AND SERVICE (OPERATION) TESTS OF THE COMPLETE SYSTEM OR SECTION OF SUCH A SYSTEM INTO WHICH THEY ARE CONNECTED. THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREON CANNOT BE FINALLY CHECKED UNTIL CONNECTED.

CONTRACT SHEET NO. 18A OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

STATE OF TEXAS — MICHAEL KALB 121456 — LICENSED PROFESSIONAL ENGINEER

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM # F-6324

DART PROJECT

DART

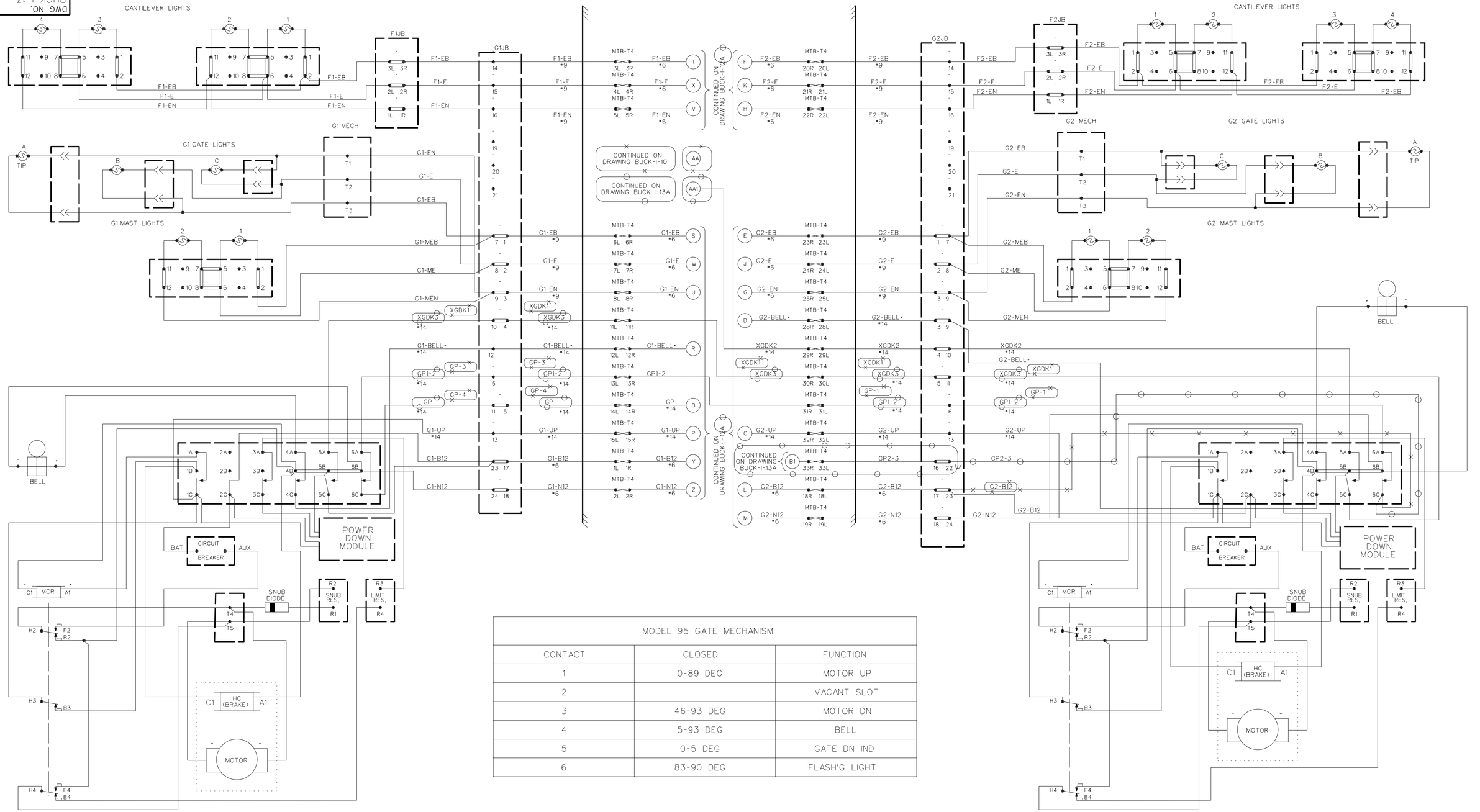
SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM

BUCKINGHAM RD. HIGHWAY CROSSING
SOLID STATE
XING CONTROLLER

CONTRACT | DWG NO. BUCK-I-12A | REV 0

DWG NO. BUCK-I-13



MODEL 95 GATE MECHANISM		
CONTACT	CLOSED	FUNCTION
1	0-89 DEG	MOTOR UP
2		VACANT SLOT
3	46-93 DEG	MOTOR DN
4	5-93 DEG	BELL
5	0-5 DEG	GATE DN IND
6	83-90 DEG	FLASH'G LIGHT

○○○ = IN
×××× = OUT

NOTES:
1. ALL WIRING •10 UNLESS NOTED.

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CONTRACT SHEET NO. 19 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

ORIGINAL •AS-BUILT• CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 01/07/03

SCALE: NONE DATE: 7-26-99
DRAWN: D. BOZYM, DESIGNED: J.C. WOLSKI
CHECKED: J. COLLIER, IN CHARGE: J. COLLIER

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 01/07/03

STATE OF TEXAS
MICHAEL KALB
121458
LICENSED
PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 1 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM • F-6324

DART PROJECT

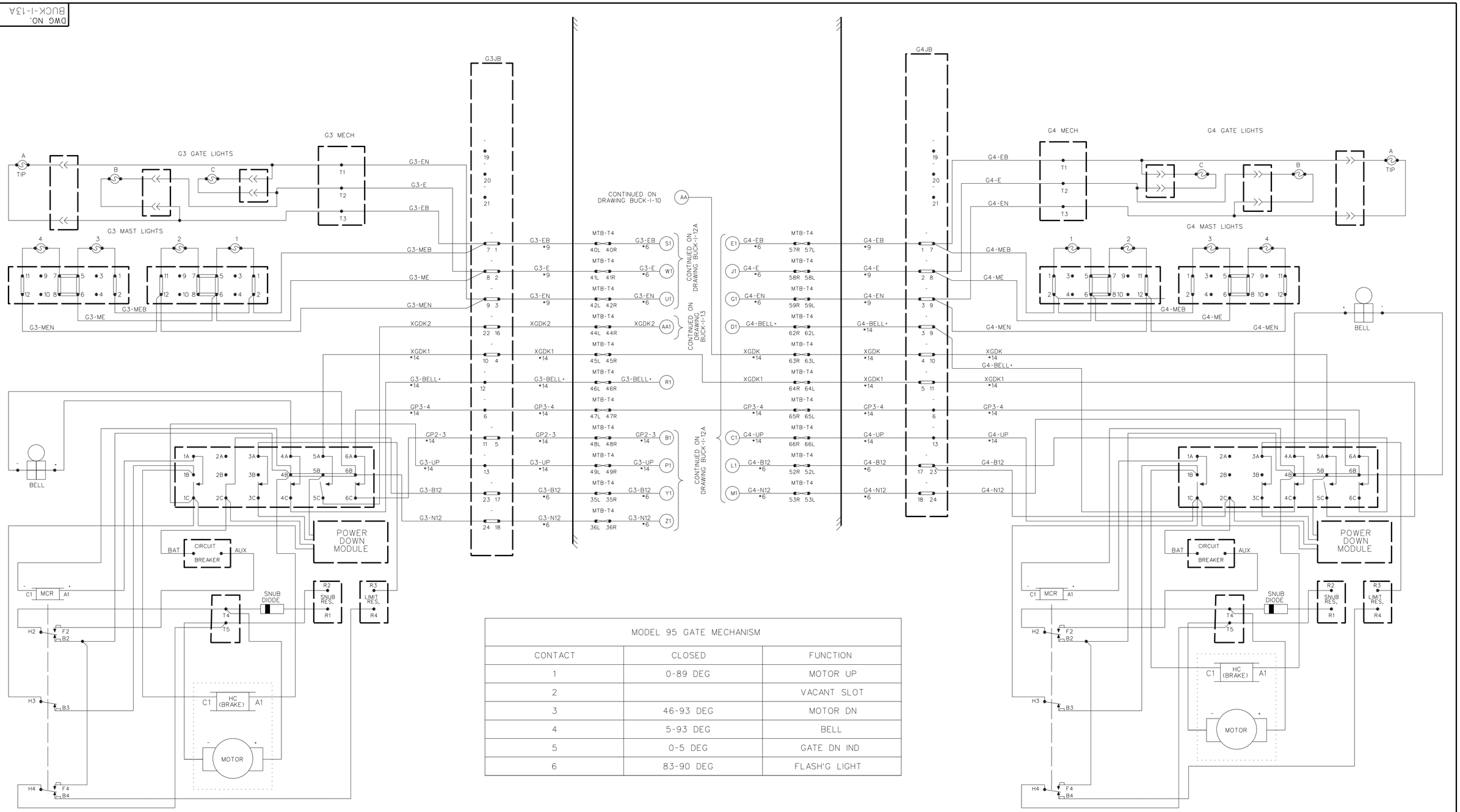
DART

SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM
BUCKINGHAM RD HIGHWAY CROSSING GATE MECH. AND LIGHTING CKTS.

CONTRACT | DWG NO. BUCK-I-13 | REV 1

DWG NO.
BUCK-I-13A



MODEL 95 GATE MECHANISM		
CONTACT	CLOSED	FUNCTION
1	0-89 DEG	MOTOR UP
2		VACANT SLOT
3	46-93 DEG	MOTOR DN
4	5-93 DEG	BELL
5	0-5 DEG	GATE DN IND
6	83-90 DEG	FLASH'G LIGHT

NOTES:
1. ALL WIRING •10 UNLESS NOTED.

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CONTRACT SHEET NO. 19A OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

STATE OF TEXAS
MICHAEL KALB
121458
LICENSED PROFESSIONAL ENGINEER

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM # F-6324

DART PROJECT

DART

SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM

BUCKINGHAM RD HIGHWAY CROSSING GATE MECH. AND LIGHTING CKTS.

CONTRACT | DWG NO. BUCK-I-13A | REV 0

DWG NO. BUCK-P-1

12V DC POWER CALCULATIONS

DESCRIPTION	QTY.ON	CURRENT DRAW EA.	TOTAL
PN-150B RELAY	3	0.02A	.06A
ATT-20	2	.6A	1.2A
BELL	2	.6A	1.2A
PED GATE BELL	2	.6A	1.2A
GATE MECHANISM	2	10A	20A
PED GATE MECHANISM	2	10A	20A
MICROLOK II CPU	1	2A	2A
MICROLOK II INPUT	15	.01A	.21A
MICROLOK II OUTPUT	7	.03A	.12A
TRAIN STOP	2	4.1A	8.2A
BUCKINGHAM RD. 12" FLASHERS LIT AT ONE TIME	6	1.0A	6A
BUCKINGHAM RD. ARM FLASHER LIT AT ONE TIME	4	0.3A	1.2A
RED WALKWAY 12" FLASHER LIT AT ONE TIME	4	1.0A	4A
BUCKINGHAM RD. 12" FLASHERS LIT AT ONE TIME	4	0.3A	1.2A
SSCC IV (CROSSING NOT ACTIVATED)	1	0.85A	0.85A
		TOTAL	67.44A

51.99A

FLASHER LAMPS- MAXIMUM NUMBER LIT AT ONE TIME	0	1.9A	19 A

PEAK LOAD	67.44A	X	1.25	=	84.30A

64.99A

51.99A

110V/100HZ AC POWER CALCULATION

TRACK RELAYS PV-250

QUANTITY		CURRENT DRAW EA.		VOLTAGE		TRANSFORMER INEFFICIENCY		VOLTAGE		TOTAL
4	X	.77A	X	110V	X	1.2	/	110V	=	3.7 A

—○○○— = IN
—×××— = OUT

* PREVIOUSLY REMOVED BY DART SIGNALS MAINTENANCE

** EXISTING - PREVIOUSLY INSTALLED BY DART SIGNALS MAINTENANCE

110V/60HZ AC POWER CALCULATION

	QUANTITY		CURRENT DRAW EA.		VOLTAGE		TRANSFORMER INEFFICIENCY		VOLTAGE		POWER FACTOR		TOTAL
AC SERVICE LIGHTS WITH RECEPTACLES	* 8	X	40W	/	110V					•		=	2.91A
AIR CONDITIONING UNIT	* 1	X	12.2A					/				=	12.2A
EXHAUST FANS	* 1	X	1.37A									=	1.37A
TWC			.03A	X	110V	X	1.2	/	110V				A
SOLID STATE CROSSING CONTROLLER 40A •	1	X	18.1A									=	18.1A
RECPTACLE	1	X	20A									=	20A
CRAGG 60 DTC-12V ••	1	X	18.0A									=	18.0A
													A

TOTAL	54.48A

PEAK LOAD	54.48A	X	1.25	=	68.22 A

TOTAL=	68.22 A

PRIOR TO BEING PLACED IN REGULAR SERVICE, THE OPERATION OF ANY CIRCUITS AND EQUIPMENT PRESENTED HEREIN MUST BE CHECKED BY CIRCUIT SELECTION (BREAKDOWN) AND SERVICE (OPERATION) TESTS OF THE COMPLETE SYSTEM OR SECTION OF SUCH A SYSTEM INTO WHICH THEY ARE CONNECTED. THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREON CANNOT BE FINALLY CHECKED UNTIL CONNECTED.

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CONTRACT SHEET NO. 20 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

ORIGINAL "AS-BUILT" CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 01/07/03

SCALE: NONE DATE: 7-26-99
DRAWN: D. BOZYM, DESIGNED: R.D. ZATEZALO
CHECKED: J. COLLIER, IN CHARGE: J. COLLIER

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 01/07/03

STATE OF TEXAS · MICHAEL KALB · 121458 · LICENSED PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 1 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM # F-6324

DART PROJECT

DART

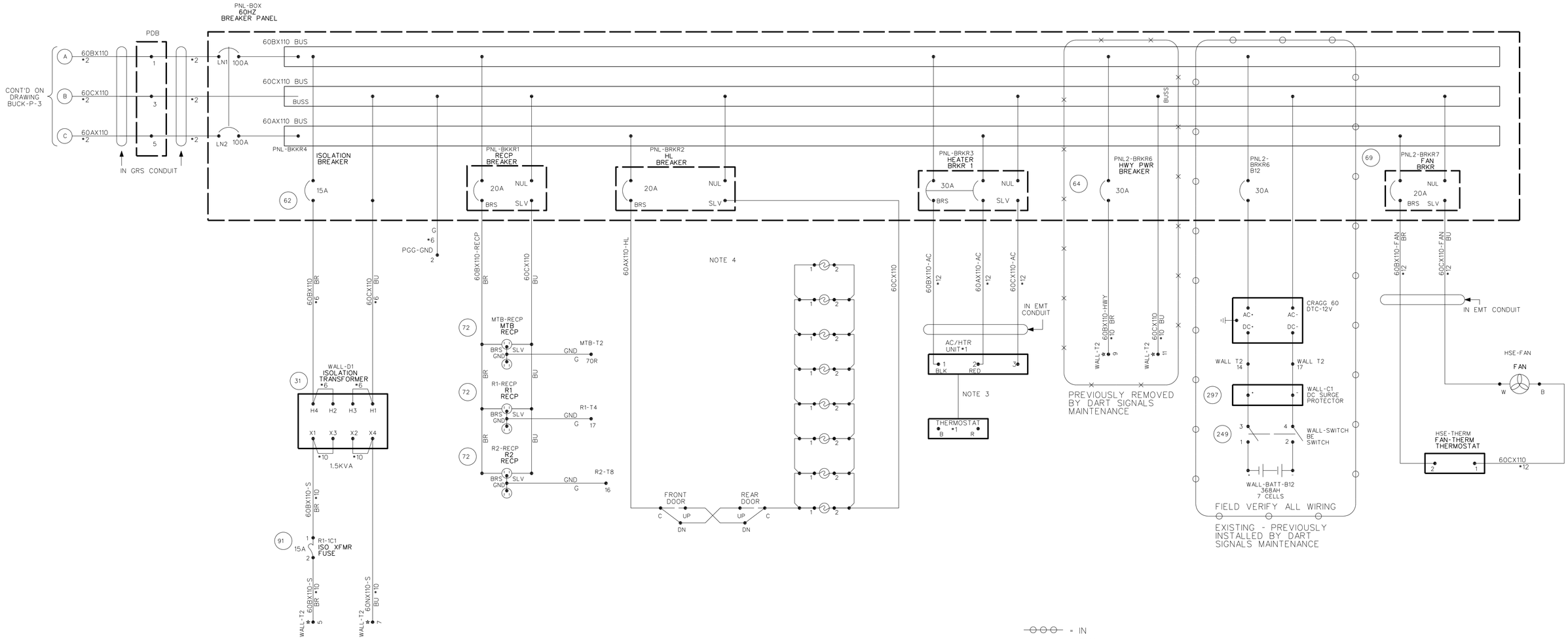
SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM

BUCKINGHAM RD HIGHWAY CROSSING POWER CALCULATIONS

CONTRACT	DWG NO.	REV
C-98000042	BUCK-P-1	1

DWG NO. BUCK-P-2



NOTES:
1. ALL WIRING •14 UNLESS OTHERWISE NOTED.
2. •* INSULATED NUT.
3. 5C CABLE.
4. LIGHTING WIRING RUN IN EMT CONDUIT.

PRIOR TO BEING PLACED IN REGULAR SERVICE, THE OPERATION OF ANY CIRCUITS AND EQUIPMENT PRESENTED HEREIN MUST BE CHECKED BY CIRCUIT SELECTION (BREAKDOWN) AND SERVICE (OPERATION) TESTS OF THE COMPLETE SYSTEM OR SECTION OF SUCH A SYSTEM INTO WHICH THEY ARE CONNECTED. THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREON CANNOT BE FINALLY CHECKED UNTIL CONNECTED.

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CONTRACT SHEET NO. 21 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
2	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

ORIGINAL "AS-BUILT" CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 01/07/03

SCALE: NONE DATE: 7-9-99
DRAWN: D. BOZYM, DESIGNED: J.C. WOLSKI
CHECKED: J. COLLIER, IN CHARGE: J. COLLIER

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 01/07/03

STATE OF TEXAS
MICHAEL KALB
121458
LICENSED
PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 1 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM # F-6324

DART PROJECT

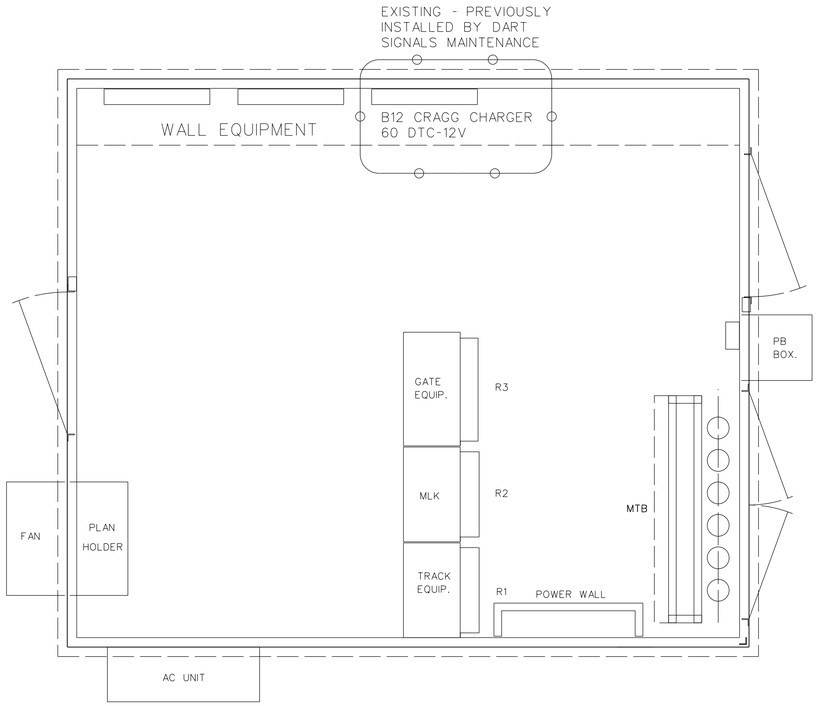
DART

SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM
BUCKINGHAM RD
HIGHWAY CROSSING
POWER DISTRIBUTION CIRCUITS

CONTRACT C98000042 | DWG NO. BUCK-P-2 | REV 1

DWG NO.
BUCK-HSE-W1



= IN

PRIOR TO BEING PLACED IN REGULAR SERVICE, THE OPERATION OF ANY CIRCUITS AND EQUIPMENT PRESENTED HEREIN MUST BE CHECKED BY CIRCUIT SELECTION (BREAKDOWN) AND SERVICE (OPERATION) TESTS OF THE COMPLETE SYSTEM OR SECTION OF SUCH A SYSTEM INTO WHICH THEY ARE CONNECTED. THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREON CANNOT BE FINALLY CHECKED UNTIL CONNECTED.

EXISTING CONDITIONS SHOWN ON THESE PLANS ARE BASED ON INFORMATION PROVIDED BY DART FROM THE BUCKINGHAM RD HIGHWAY CROSSING AS-BUILT DRAWING SET. THE ACCURACY OF THIS INFORMATION IS ASSUMED BUT NOT GUARANTEED. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK.

CONTRACT SHEET NO. 23 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

ORIGINAL "AS-BUILT" CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 01/07/03

SCALE: NONE DATE: 7-27-00
DRAWN: M. CROYLE, DESIGNED: S. CARVER
CHECKED: C. IOVINO, IN CHARGE: J. COLLIER

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 01/07/03

STATE OF TEXAS
MICHAEL KALB
121458
LICENSED
PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 1 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM # F-6324

DART PROJECT

DART

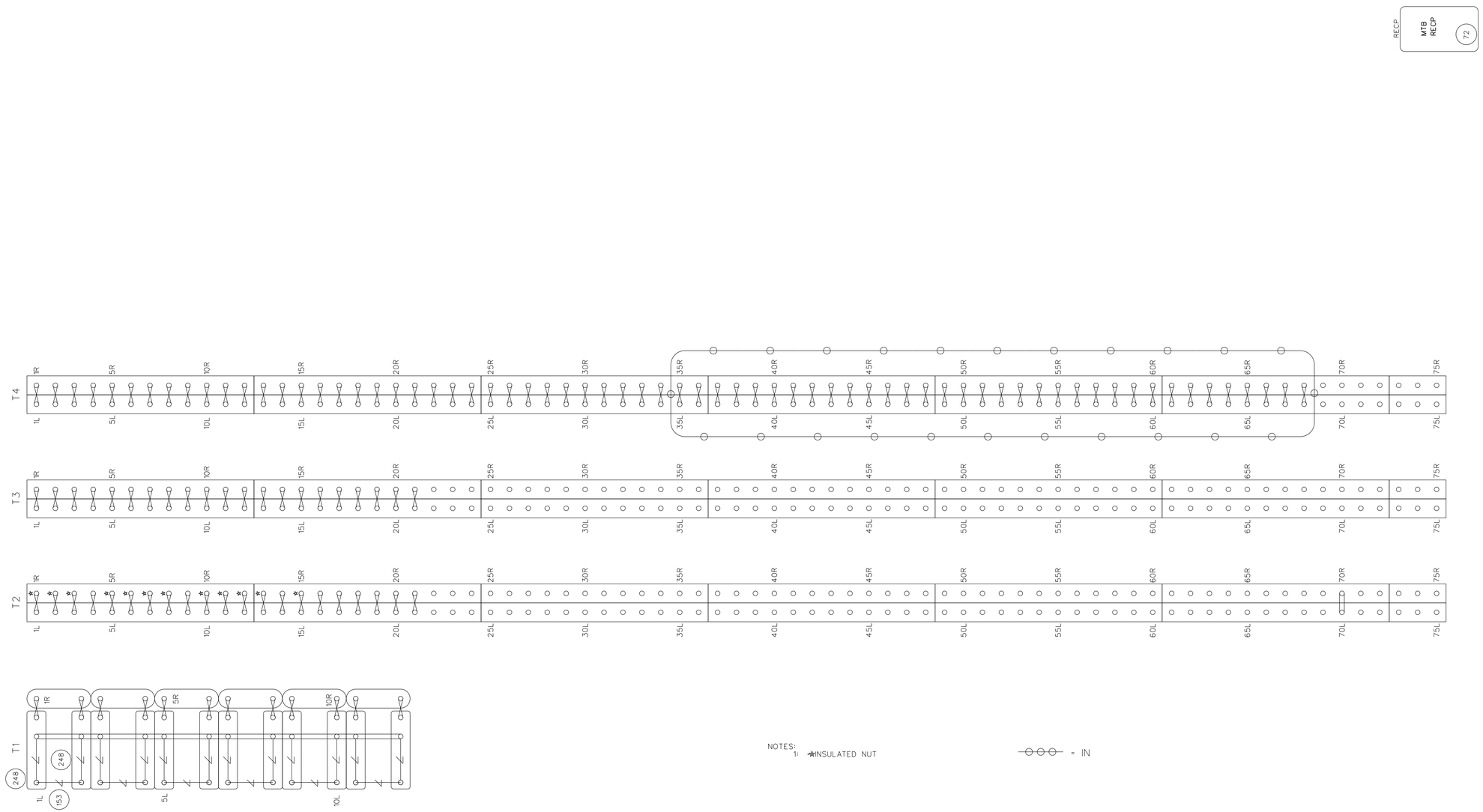
SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM

BUCKINGHAM RD
HIGHWAY CROSSING
FLOOR PLAN

CONTRACT	DWG NO.	REV
	BUCK-HSE-W1	1

DWG NO.
BUCK-MTB-W1



NOTES:
1: ✱INSULATED NUT

⊖⊖⊖ = IN

PRIOR TO BEING PLACED IN REGULAR SERVICE, THE OPERATION OF ANY CIRCUITS AND EQUIPMENT PRESENTED HEREIN MUST BE CHECKED BY CIRCUIT SELECTION (BREAKDOWN) AND SERVICE (OPERATION) TESTS OF THE COMPLETE SYSTEM OR SECTION OF SUCH A SYSTEM INTO WHICH THEY ARE CONNECTED. THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREON CANNOT BE FINALLY CHECKED UNTIL CONNECTED.

EXISTING CONDITIONS SHOWN ON THESE PLANS ARE BASED ON INFORMATION PROVIDED BY DART FROM THE BUCKINGHAM RD HIGHWAY CROSSING AS-BUILT DRAWING SET. THE ACCURACY OF THIS INFORMATION IS ASSUMED BUT NOT GUARANTEED. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK.

CONTRACT SHEET NO. 25 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

ORIGINAL "AS-BUILT" CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 01/07/03

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 01/07/03

SCALE: NONE DATE: 7-25-00
DRAWN: M. CROYLE, DESIGNED: S. CARVER
CHECKED: C. IOVINO, IN CHARGE: J. COLLIER

STATE OF TEXAS
MICHAEL KALB
121458
LICENSED
PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 1 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM # F-6324

DART PROJECT

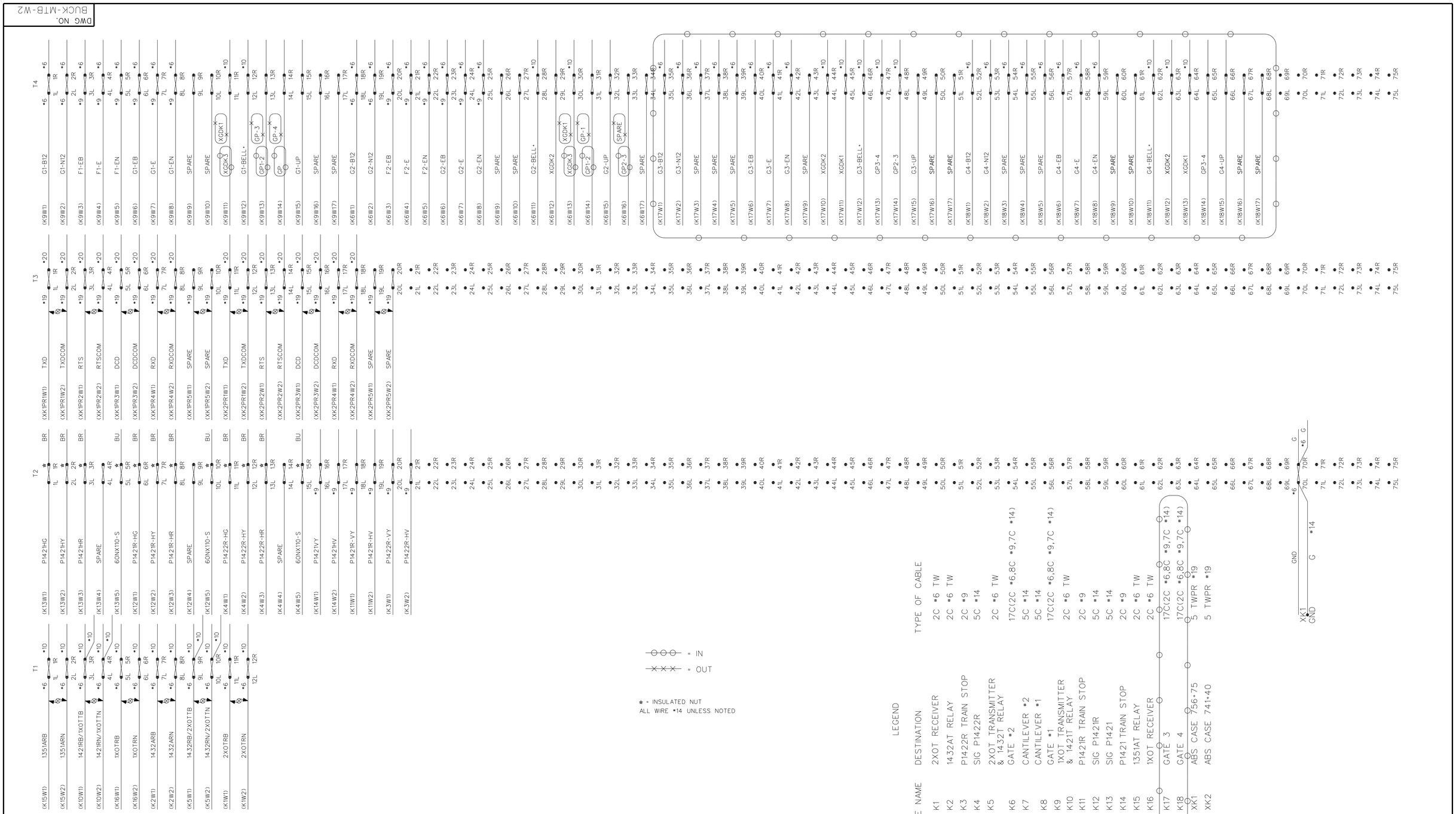
DART

SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM
BUCKINGHAM ROAD HIGHWAY CROSSING MTB LAYOUT

CONTRACT	DWG NO.	REV
	BUCK-MTB-W1	1

DWG NO. BUCK-MTB-W2



PRIOR TO BEING PLACED IN REGULAR SERVICE, THE OPERATION OF ANY CIRCUITS AND EQUIPMENT PRESENTED HEREIN MUST BE CHECKED BY CIRCUIT SELECTION (BREAKDOWN) AND SERVICE (OPERATION) TESTS OF THE COMPLETE SYSTEM OR SECTION OF SUCH A SYSTEM INTO WHICH THEY ARE CONNECTED. THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREON CANNOT BE FINALLY CHECKED UNTIL CONNECTED.

EXISTING CONDITIONS SHOWN ON THESE PLANS ARE BASED ON INFORMATION PROVIDED BY DART FROM THE BUCKINGHAM RD HIGHWAY CROSSING AS-BUILT DRAWING SET. THE ACCURACY OF THIS INFORMATION IS ASSUMED BUT NOT GUARANTEED. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK.

CONTRACT SHEET NO. 26 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

ORIGINAL "AS-BUILT" CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 01/07/03

SCALE: NONE
DRAWN: M. CROYLE,
CHECKED: C. IOVINO,
DATE: 7-26-00
DESIGNED: S. CARVER
IN CHARGE: J. COLLIER

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 01/07/03

STATE OF TEXAS
MICHAEL KALB
121458
LICENSED
PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 1 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM # F-6324

DART PROJECT

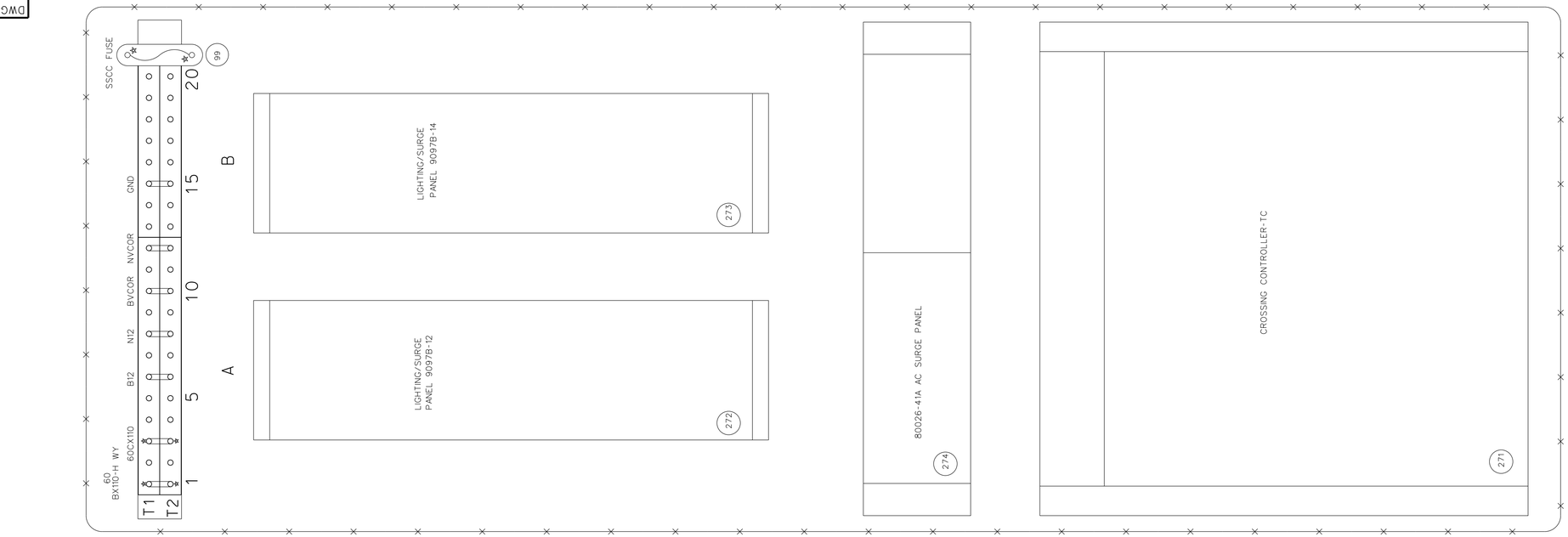
DART

SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM
BUCKINGHAM RD HIGHWAY CROSSING MTB CABLE LAYOUT

CONTRACT | DWG NO. BUCK-MTB-W2 | REV 1

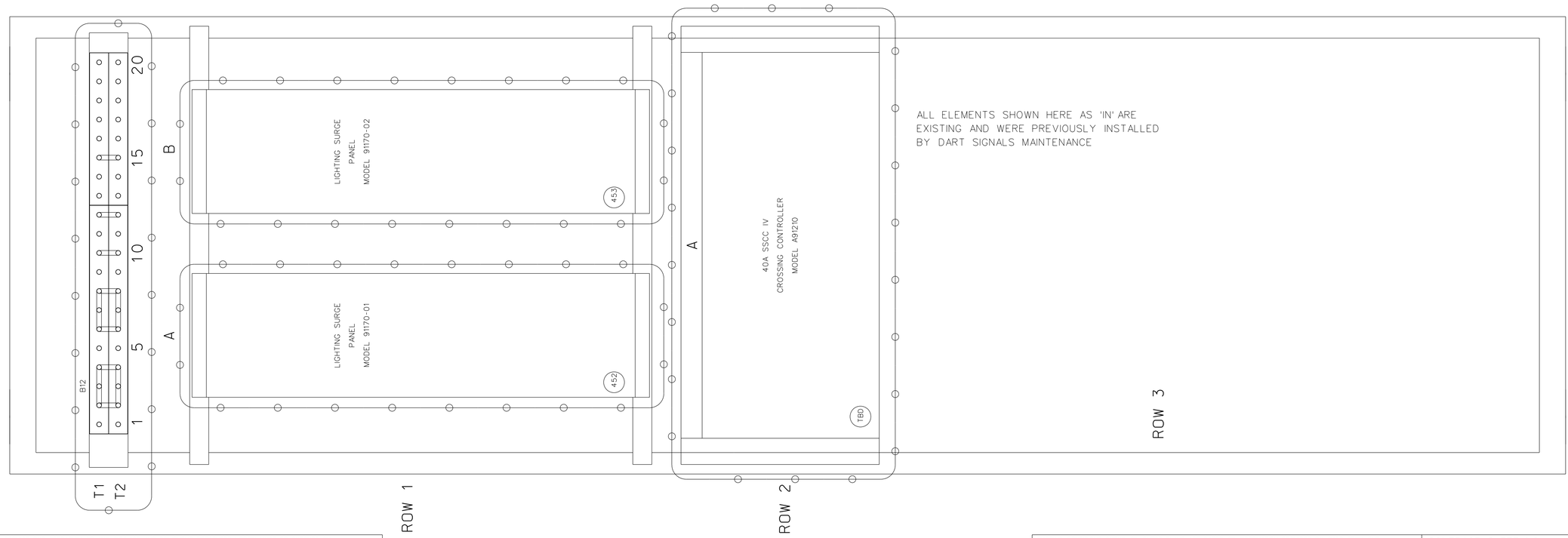
DWG NO.
BUCK-R3-W1



ALL ELEMENTS SHOWN HERE AS 'OUT' HAVE BEEN PREVIOUSLY REMOVED BY DART SIGNALS MAINTENANCE

NOTES:
1: ✱INSULATED NUT

⊸○○○⊸ = IN
⊸×××⊸ = OUT



ALL ELEMENTS SHOWN HERE AS 'IN' ARE EXISTING AND WERE PREVIOUSLY INSTALLED BY DART SIGNALS MAINTENANCE

PRIOR TO BEING PLACED IN REGULAR SERVICE, THE OPERATION OF ANY CIRCUITS AND EQUIPMENT PRESENTED HEREIN MUST BE CHECKED BY CIRCUIT SELECTION (BREAKDOWN) AND SERVICE (OPERATION) TESTS OF THE COMPLETE SYSTEM OR SECTION OF SUCH A SYSTEM INTO WHICH THEY ARE CONNECTED. THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREON CANNOT BE FINALLY CHECKED UNTIL CONNECTED.

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CONTRACT SHEET NO. 34 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

ORIGINAL "AS-BUILT" CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 01/07/03

SCALE: NONE
DRAWN: M. CROYLE,
CHECKED: C. IOVINO,
DATE: 7-25-00
DESIGNED: S. CARVER
IN CHARGE: J. COLLIER

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 01/07/03

STATE OF TEXAS
MICHAEL KALB
121458
LICENSED
PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 1 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM # F-6324

DART PROJECT

DART

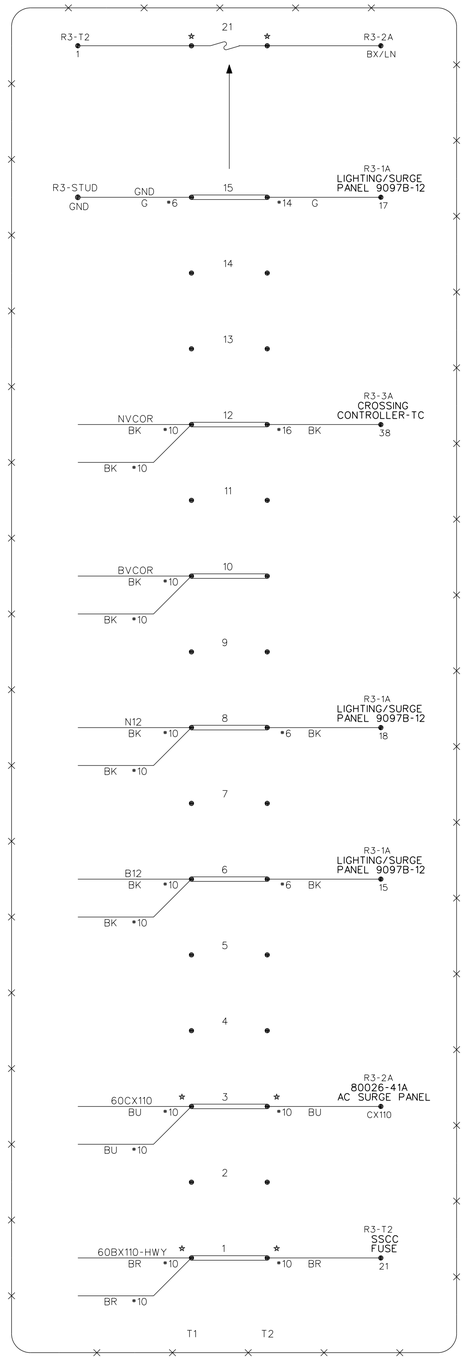
SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM
BUCKINGHAM RD
HIGHWAY CROSSING
RACK 3 LAYOUT

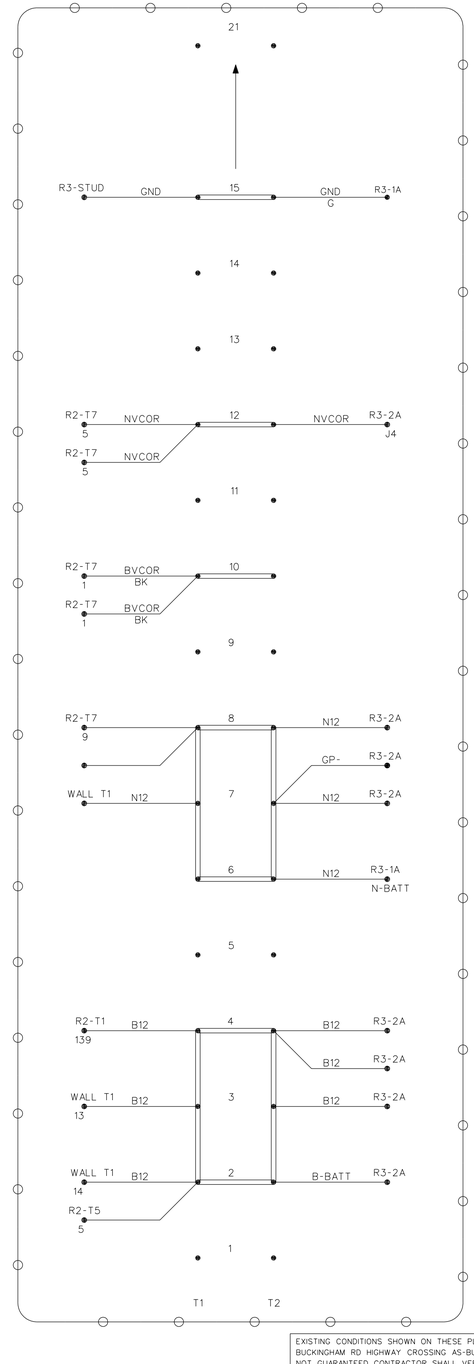
CONTRACT	DWG NO.	REV
	BUCK-R3-W1	1

DWG NO.
BUCK-R3-W2

ALL ELEMENTS SHOWN HERE AS 'OUT' HAVE BEEN PREVIOUSLY REMOVED BY DART SIGNALS MAINTENANCE



ALL ELEMENTS SHOWN HERE AS 'IN' ARE EXISTING AND WERE PREVIOUSLY INSTALLED BY DART SIGNALS MAINTENANCE



○○○ = IN

×××= OUT

NOTES:
1. ⊕INSULATED NUT

PRIOR TO BEING PLACED IN REGULAR SERVICE, THE OPERATION OF ANY CIRCUITS AND EQUIPMENT PRESENTED HEREIN MUST BE CHECKED BY CIRCUIT SELECTION (BREAKDOWN) AND SERVICE (OPERATION) TESTS OF THE COMPLETE SYSTEM OR SECTION OF SUCH A SYSTEM INTO WHICH THEY ARE CONNECTED. THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREON CANNOT BE FINALLY CHECKED UNTIL CONNECTED.

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CONTRACT SHEET NO. 35 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	MK

ORIGINAL "AS-BUILT" CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 01/07/03

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 01/07/03

SCALE: NONE DATE: 7-26-00
DRAWN: M. CROYLE, DESIGNED: S. CARVER
CHECKED: C. IOVINO, IN CHARGE: J. COLLIER

STATE OF TEXAS
MICHAEL KALB
121458
LICENSED
PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 1 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM # F-6324

UNION SWITCH & SIGNAL INC.
PITTSBURGH, PA 15219

DART PROJECT

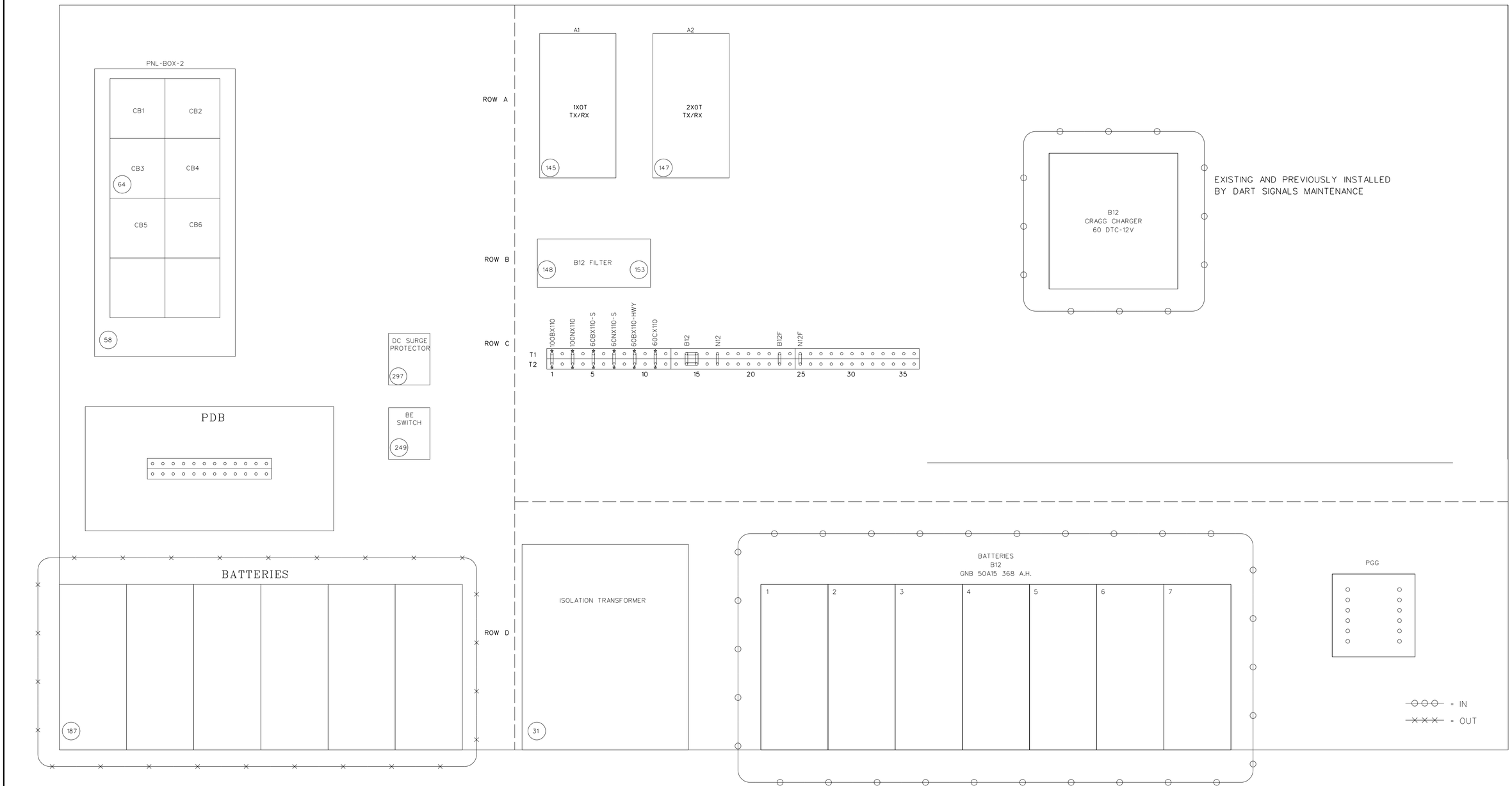
DART

SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM
BUCKINGHAM RD
HIGHWAY CROSSING
RACK 3
POWER LOOPS

CONTRACT | DWG NO. BUCK-R3-W2 | REV 1

DWG NO. BUCK-WALL-W1



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CONTRACT SHEET NO. 36 OF 39

REV	DATE	DESCRIPTION	BY	ENG	CHK	APP
0	01/07/03	AS BUILT	DEB	VM	JWC	JWC
1	10/03/25	CENTRAL TRAIL EXTENSION CSJ 0918-47-473	AP	PL	CB	KS

ORIGINAL "AS-BUILT" CERTIFICATION RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SIGNED BY
JAMES W. COLLIER
PROJECT ENGINEER
UNION SWITCH & SIGNAL INC.
DATED 01/07/03

ORIGINAL SEAL RESIDES IN DART FOR THE FOLLOWING REVISION:

REV 0: SEALED BY
ROBERT PASCOE
P.E. NO. 79901
DATED 01/07/03

SCALE: NONE DATE: 7-25-00
DRAWN: M. CROYLE, DESIGNED: S. CARVER
CHECKED: C. IOVINO, IN CHARGE: J. COLLIER

STATE OF TEXAS
MICHAEL KALB
121458
LICENSED
PROFESSIONAL ENGINEER

THE SEAL OF MICHAEL KALB NO. 121458 SHOWN HEREON APPLIES ONLY TO CHANGE(S) AND/OR MODIFICATION(S) TO THE DESIGN INDICATED FOR REVISION NO. 1 AS SHOWN IN THE 'IN' AND 'OUT' CLOUDED AREA(S).

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM # F-6324

DART PROJECT

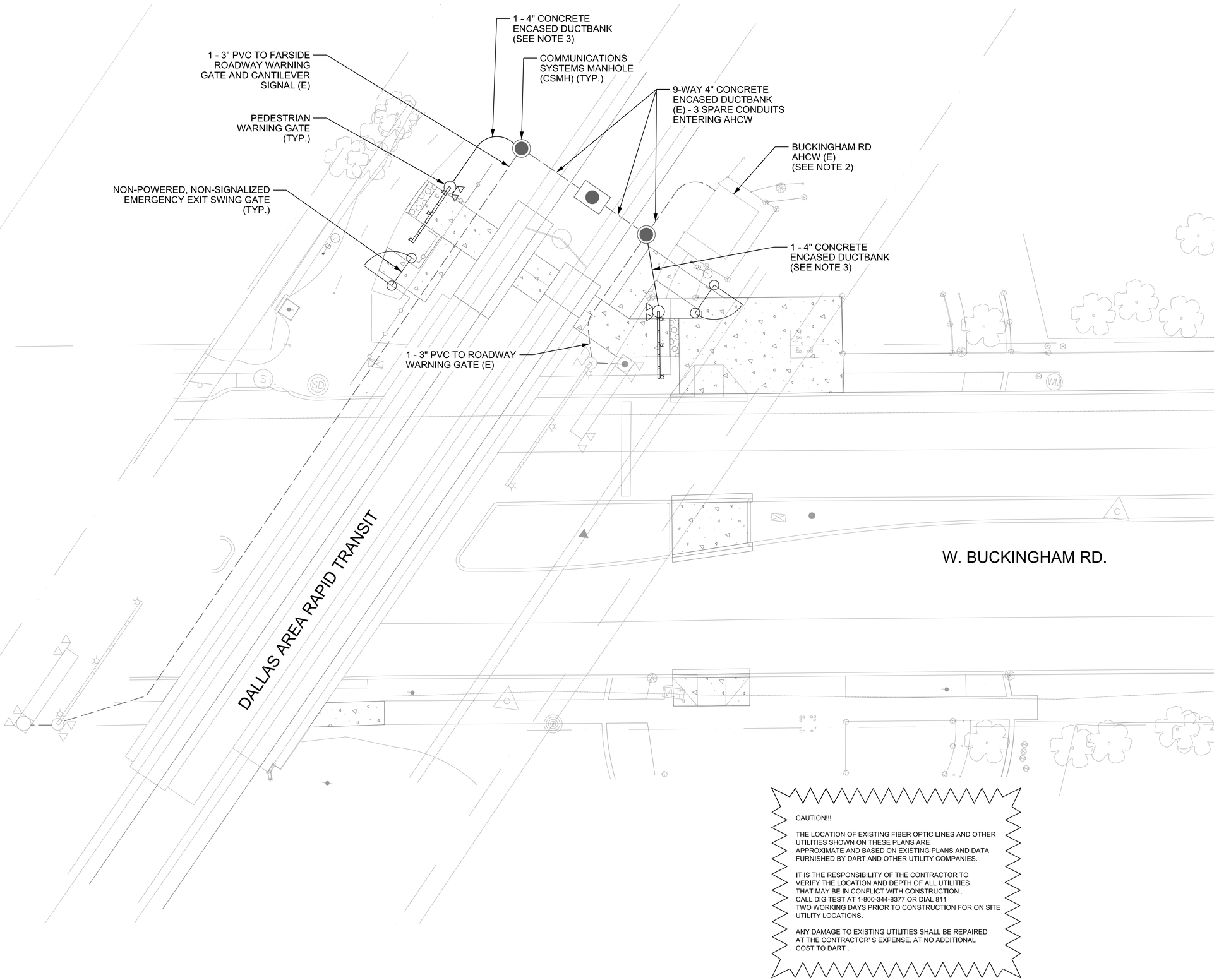
DART

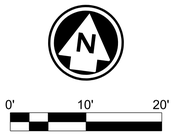
SCALE	NONE
DRAWN	A. PANUCCI
DESIGNED	P. LAHEY
CHECKED	C. BOSSE
IN CHARGE	M. KALB
DATE	10-03-25

LIGHT RAIL TRANSIT SYSTEM
BUCKINGHAM-RD HIGHWAY CROSSING WALL LAYOUT

CONTRACT	DWG NO.	REV
	BUCK-WALL-W1	1

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to KHKN ENGINEERING.





LEGEND

- EXISTING COMMUNICATIONS SYSTEMS MANHOLE (CSMH), NOT TO SCALE
- EXISTING DUCKBANK/CONDUIT
- PROPOSED DUCKBANK/CONDUIT

NOTES:

1. SHADED/DASHED ELEMENTS ARE EXISTING. DARK ELEMENTS ARE PROPOSED.
2. AVOID GROUNDING GRID/MAT IMMEDIATELY SURROUNDING THE AHCW BUNGALOW.
3. ROUTE 17-CONDUCTOR CABLE FOR PROPOSED PEDESTRIAN WARNING GATE THROUGH NEW DUCTBANK TO NEAREST CSMH, THEN ROUTE THROUGH EXISTING SPARE DUCTS AND ENTRANCE STUB UP INTO EXISTING AHCW TO LAND ON MTB. SEAL CONDUITS AFTER ALL CABLE PULLS ARE COMPLETED.
4. THIS DRAWING IS BASED ON LINE SECTION NC-4 CONTRACT NO. 99000012 DRAWING BC6-0008 AS-BUILT.
5. REFER TO DART BS6 STANDARD DRAWING SERIES FOR MANHOLE, HANDHOLE, DUCT, AND STUB UP DETAILS.

CAUTION!!!

THE LOCATION OF EXISTING FIBER OPTIC LINES AND OTHER UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND BASED ON EXISTING PLANS AND DATA FURNISHED BY DART AND OTHER UTILITY COMPANIES.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES THAT MAY BE IN CONFLICT WITH CONSTRUCTION . CALL DIG TEST AT 1-800-344-8377 OR DIAL 811 TWO WORKING DAYS PRIOR TO CONSTRUCTION FOR ON SITE UTILITY LOCATIONS.

ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR' S EXPENSE, AT NO ADDITIONAL COST TO DART .

10/3/2025

Stantec
6080 TENNYSON PARKWAY
SUITE 200
PLANO, TEXAS 75024-6003
PHONE: (214) 473-2400
FIRM • F-6324

Texas Department of Transportation
©2025

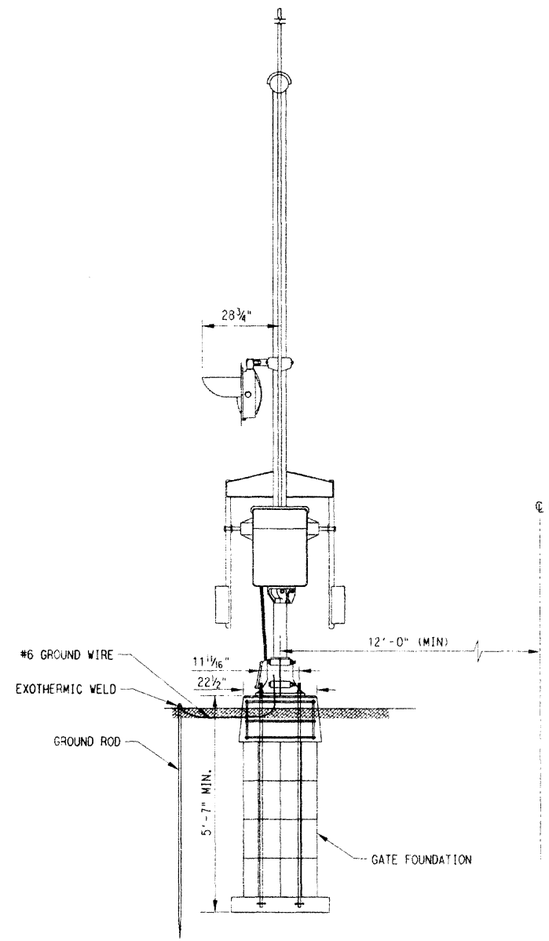
DALLAS COUNTY

CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS

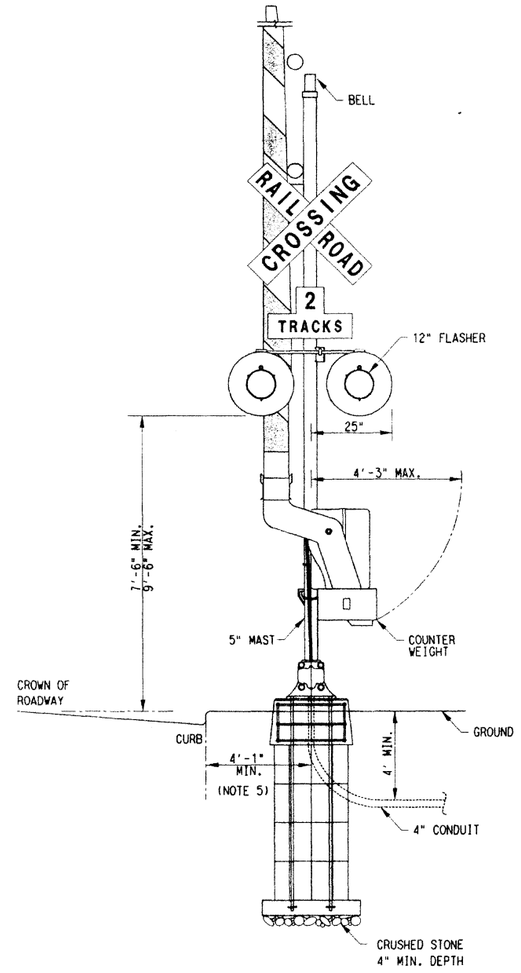
BUCKINGHAM RD DART
CROSSING SYSTEM ELEMENTS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	3.17
CONT.	SECT.	JOB	
0918	47	473	

DWG No. BS3-0016



SIDE VIEW (1)
NO SCALE



FRONT VIEW (2)
NO SCALE

NOTES:

1. THE FLASHING LIGHT WITH GATE SIGNAL BASE SHALL BE SECURELY FASTENED WITHIN THE SPLIT BASE IN A MANNER SUCH THAT THE DISTANCE BETWEEN THE SPLIT HALVES OF THE BASE SHALL BE EQUAL. THE HEADS OF THE BOLTS IN THE BASE ASSEMBLY SHALL BE SQUARED WITH EACH OTHER AND FACING ONCOMING HIGHWAY TRAFFIC.
2. THE BASE SHALL BE SECURELY FASTENED TO THE CONCRETE FOUNDATION WITH THE HARDWARE PROVIDED FOR THAT PURPOSE. THE MAST ASSEMBLY SHALL BE PLUMB WHEN THE BASE ASSEMBLY IS FASTENED TO THE FOUNDATION. SHIMS, SPACERS, OR OTHER FILLER DEVICES SHALL NOT BE USED TO LEVEL AND PLUMB EQUIPMENT.
3. THE FACE OF THE BELL GONG SHALL BE PARALLEL WITH THE ROADWAY.
4. THE GATE MECHANISM SHALL BE LOCATED ON THE POLE IN A POSITION THAT SHALL ALLOW FOR THE GATE ARM, WHEN IN THE DOWN POSITION, TO BE NOT MORE THAN 4'-6", NOR LESS THAN 3'-6", ABOVE CROWN OF ROADWAY.
5. DISTANCE FROM MAST CENTER TO EDGE OF ROADWAY:
   CURB - MIN. 4'-1"
   NO CURB - MIN. 6'
   SIDEWALK - MIN. 7' AND MIN. 2' FROM EDGE OF WALKWAY. FOUNDATION TO BE OUTSIDE OF WALKWAY.
6. LAYOUTS SHOWN TO PRESENT REQUIREMENTS OF INSTALLATIONS, NOT INTENDED TO SHOW SPECIFIC TYPE OF EQUIPMENT OR PARTS LAYOUT. CONTRACTOR TO SUBMIT FINAL INSTALLATION DRAWING FOR APPROVAL.

REV	AMEND	CR	DATE	DESCRIPTION	BY	ENG	CHK	APP

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY KENNETH A. HUANG P.E. 92226 ON 17 MAR 06
STATE OF TEXAS · KENNETH A. HUANG · 92226 · LICENSED PROFESSIONAL ENGINEER · 3/17/06

PARSONS
PARSONS TRANSPORTATION GROUP, INC
1401 PACIFIC AVENUE - DALLAS, TX 75202

DALLAS SYSTEMS CONSULTANTS
A PARSONS / PARAGON JOINT VENTURE
1401 Pacific Avenue
Dallas, Texas 75202

DART PROJECT

DART

SCALE	NO SCALE
DRAWN	D. THREADGILL
DESIGNED	K. HUANG
CHECKED	R. OSWALD
IN CHARGE	F. DeLizzo
DATE	17 MAR 06

CAES

CONTRACT SHEET No. 25 OF 145

SIGNAL STANDARD

INSTALLATION LAYOUT HIGHWAY CROSSING GATE

CONTRACT	DWG No.	REV
C-1002803	BS3-0016	0

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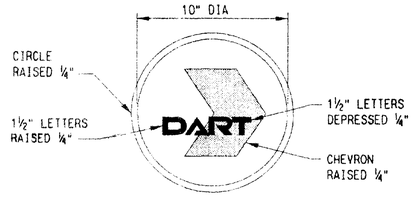
DWG No. BS6-0003

MANHOLE TYPE	QTY	DESCRIPTION
A	1	4'x4'x4' MANHOLE INCLUDES:
	8	FRP BOLT DOWN CHANNEL INSERT 3' LONG, SUMP, GROUND ROD SLEEVES AND SET OF GASKETS. 4 PULLING IRONS, KNOCKOUTS AND TERMINATORS, QTY/LOC AS REQUIRED, LADDER HOOK STEP. ALUMINUM TELESCOPING SAFETY POST WITH STAINLESS STEEL HARDWARE.
B	1	5'x5'x7' MANHOLE INCLUDES:
	8	FRP BOLT DOWN CHANNEL INSERT 5' LONG, SUMP, GROUND ROD SLEEVES AND SET OF GASKETS. 4 PULLING IRONS, KNOCKOUTS AND TERMINATORS, QTY/LOC AS REQUIRED, LADDER HOOK STEPALUMINUM TELESCOPING SAFETY POST WITH STAINLESS STEEL HARDWARE.
C	1	5'x5'x5' MANHOLE INCLUDES:
	8	FRP BOLT DOWN CHANNEL INSERT 4' LONG, SUMP, GROUND ROD SLEEVES AND SET OF GASKETS. 4 PULLING IRONS, KNOCKOUTS AND TERMINATORS, QTY/LOC AS REQUIRED, LADDER HOOK STEP. ALUMINUM TELESCOPING SAFETY POST WITH STAINLESS STEEL HARDWARE.
D	1	5'x5'x10' MANHOLE INCLUDES:
	8	FRP BOLT DOWN CHANNEL INSERT 8' LONG, SUMP, GROUND ROD SLEEVES AND SET OF GASKETS. 4 PULLING IRONS, KNOCKOUTS AND TERMINATORS, QTY/LOC AS REQUIRED, LADDER HOOK STEP. ALUMINUM TELESCOPING SAFETY POST WITH STAINLESS STEEL HARDWARE.
E	1	2'x2'x2' HANDHOLE
	1	2'x2'x4" TOP
	1	6" DIA. SUMP HOLE, GROUND ROD SLEEVE
F	1	5'x5'x14' MANHOLE INCLUDES:
	8	FRP BOLT DOWN CHANNEL INSERT 12' LONG, SUMP, GROUND ROD SLEEVES AND SET OF GASKETS. 4 PULLING IRONS, KNOCKOUTS AND TERMINATORS, QTY/LOC AS REQUIRED, LADDER HOOK STEP. ALUMINUM TELESCOPING SAFETY POST WITH STAINLESS STEEL HARDWARE.
G		NOT USED
H	1	4'x6'x10' MANHOLE INCLUDES:
	8	FRP BOLT DOWN CHANNEL INSERT 8' LONG, SUMP, GROUND ROD SLEEVES AND SET OF GASKETS. 4 PULLING IRONS, KNOCKOUTS AND TERMINATORS, QTY/LOC AS REQUIRED, LADDER HOOK STEP. ALUMINUM TELESCOPING SAFETY POST WITH STAINLESS STEEL HARDWARE.
I	1	4'x4'x7' MANHOLE INCLUDES:
	8	FRP BOLT DOWN CHANNEL INSERT 5' LONG, SUMP, GROUND ROD SLEEVES AND SET OF GASKETS. 4 PULLING IRONS, KNOCKOUTS AND TERMINATORS, QTY/LOC AS REQUIRED, LADDER HOOK STEP. ALUMINUM TELESCOPING SAFETY POST WITH STAINLESS STEEL HARDWARE.
J	1	26"x15"x18" JUNCTION BOX INCLUDES:
	1	PRECAST POLYMER CONCRETE BOX FRAME W/O BASE

COVER TYPE	QTY	DESCRIPTION
1	1/MH	CAST IRON FRAME AND 36" DIA BOLT DOWN COVER W/ ½" DIA SECURITY BOLTS (2). MARKING, DART LOGO AND "ELECTRIC"
2	1/MH	NOT USED
3	1/MH	3'X3' SQUARE TORSION ASSIST FRAME AND COVER W/ ½" DIA SECURITY BOLTS (2). MARKING. DART LOGO AND "ELECTRIC"
4	1/MH	NOT USED
5	1/MH	CAST IRON FRAME AND 18" DIA COVER W/ ½" DIA SECURITY BOLTS (2). MARKING DART LOGO AND "ELECTRIC.
6	1/MH	30½"X17½"X2" PRECAST POLYMER CONCRETE HEAVY7 DUTY COVER W/ ⅜" DIA SECURITY BOLTS (2) WITH WASHERS. MARKING, DART LOGO AND "ELECTRIC".
7	1/MH	36"X66" RECTANGULAR TORSION ASSIST SPLIT FRAME AND COVER W/ ½" DIA SECURITY BOLTS (2). AND LOCKINS MECHANISM MARKING. DART LOGO AND "ELECTRIC"

LADDER SCHEDULE	
QTY	DESCRIPTION
SEE NOTE 6	FIBERGLASS EXTENSION LADDER, TYPE 1A 300 LBS. WORKING LOAD, 20' LONG, HOOP END CAPS AT TOP. REFER TO SPECIFICATION SECTION 02780, PART 2.16.A.



(SEE NOTES 1,2,3 AND 4)

TYPICAL MANHOLE COVER LOGO DETAIL

NO SCALE

NOTES:

1. 10" DIAMETER LOGO TO BE CENTERED IN COVER.
2. LETTERS WITHIN THE "CHEVRON" SHALL BE ¼" LOWER THAN THE "CHEVRON".
3. LETTERS OUTSIDE OF THE "CHEVRON" SHALL BE RAISED ¼" TO MATCH THE TOP OF THE "CHEVRON."
4. EACH MANHOLE AND HANDHOLE SHALL HAVE THE MANHOLE/HANDHOLE NUMBER (AS DESIGNATED ON THE CONTRACT PLANS-EXAMPLE CSMH-107; TPMH-08B, AND UTMH-09C) WELDED ON EACH MANHOLE/HANDHOLE COVER.
5. ALL MANHOLES SHALL HAVE 2'x2' BLANKED-OFF WINDOWS ON WALLS NOT UTILIZED FOR DUCTBANKS. BLANKED-OFF WINDOWS SHALL BE CENTERED BOTH IN THE VERTICAL AND HORIZONTAL PLANE ON THE MANHOLE WALLS.
6. PROVIDE THE QUANTITY OF LADDERS INDICATED ON CONTRACT DRAWING.
7. STANDARD STEP FOR LADDER HOOK SHALL BE ATTACHED TO THE MANHOLE OPENING AND SHALL BE MOUNTED ON AN ANGLE FACING EITHER OF THE FOUR CORNERS. STEP MATERIAL SHALL BE FRP, POLY OR RUBBER MATERIAL.
8. DELIVER ALL FIBERGLASS LADDERS, WHEN REQUIRED, TO THE DART FACILITIES MAINTENANCE BUILDING, 3021 OAK LANE, DALLAS, TX. CONTACT THE SR. MGR. SIGNAL SYSTEMS AT 214-928-6240, UNO.

REV	AMEND	CR	DATE	DESCRIPTION	BY	ENG	CHK	APP

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY VAN R. STEVENS P.E. 56755 ON 17 MAR 06

STATE OF TEXAS · VAN R. STEVENS · 56755 · REGISTERED PROFESSIONAL ENGINEER

paragon
PARAGON PROJECT RESOURCES, INC.
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DALLAS SYSTEMS CONSULTANTS
A PARSONS / PARAGON JOINT VENTURE
1401 Pacific Avenue
Dallas, Texas 75202

DART PROJECT

DART

SCALE	NO SCALE
DRAWN	D. THREADGILL
DESIGNED	Y. KAN
CHECKED	V. STEVENS
IN CHARGE	V. STEVENS
DATE	17 MAR 06

CAES

CONTRACT SHEET No. 40 OF 145

SYSTEMS ELEMENTS STANDARD

MANHOLE, FRAME & COVER, LADDER TYPES AND DESCRIPTIONS

CONTRACT	DWG No.	REV
C-1002803	BS6-0003	0

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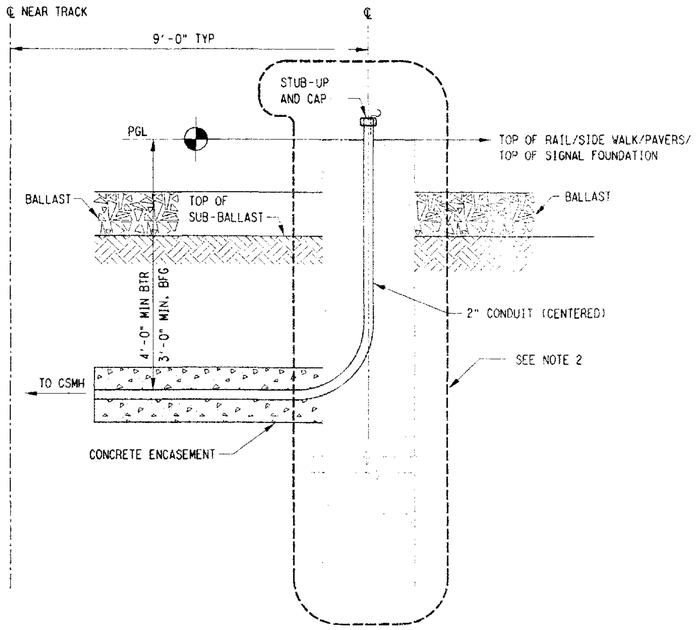
DWG No. BS6-0004



SIGNAL FOUNDATION STUB-UP DETAIL (1)

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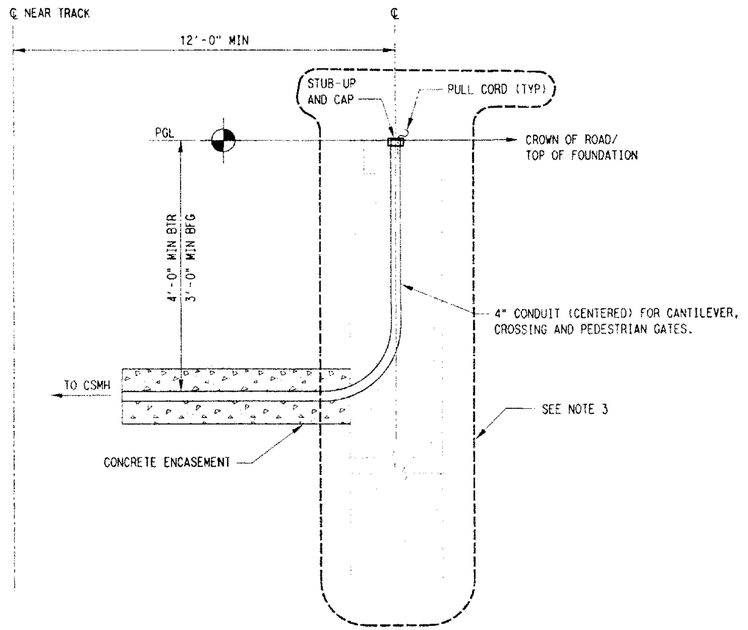

CROSSING GATES, PEDESTRIAN GATES / CANTILEVER FOUNDATION STUB-UP DETAIL (2)

NO SCALE

NOTES:

1. SEE SIGNAL SITE PLAN AND SCHEDULE DRAWINGS FOR DETAILED LOCATIONS OF SIGNAL CROSSING GATES, PEDESTRIAN GATES, CANTILEVER AND ASSOCIATED FOUNDATION TYPES.
2. SEE SIGNAL STANDARD DRAWING BS3-0001 FOR SIGNAL FOUNDATION INSTALLATION DETAILS.
3. SEE SIGNAL STANDARD DRAWING BS3-0016, BS3-0017 FOR CROSSING, GATES / CANTILEVER FOUNDATION INSTALLATION DETAILS.

REV	AMEND	CR	DATE	DESCRIPTION	BY	ENG	CHK	APP

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY VAN R. STEVENS P.E. 56755 ON 17 MAR 06

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Paragon

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1401 Pacific Avenue
Dallas, Texas 75202

DART PROJECT

DART

CAES

SCALE	NO SCALE
DRAWN	D. THREADGILL
DESIGNED	Y. KAN
CHECKED	V. STEVENS
IN CHARGE	V. STEVENS
DATE	17 MAR 06

CONTRACT SHEET No. 41 OF 145

SYSTEMS ELEMENTS STANDARD

SIGNAL, CROSSING GATES, PEDESTRIAN GATES AND CANTILEVER STUB-UP DETAILS

CONTRACT	DWG No.	REV
C-1002803	BS6-0004	0

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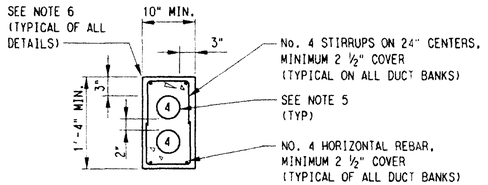
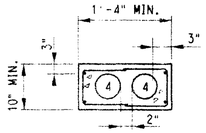
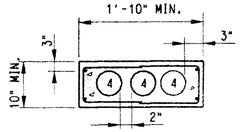


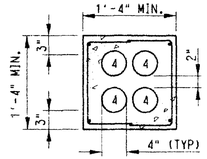
DETAIL
TYPICAL 2-WAY DUCT BANK (1)
NO SCALE



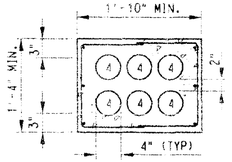
DETAIL
TYPICAL 2-WAY DUCT BANK (2)
NO SCALE



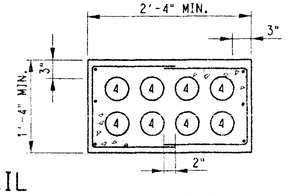
DETAIL
TYPICAL 3-WAY DUCT BANK (3)
NO SCALE



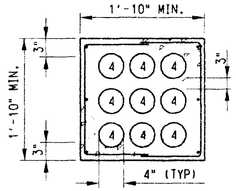
DETAIL
TYPICAL 4-WAY DUCT BANK (4)
NO SCALE



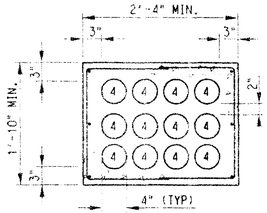
DETAIL
TYPICAL 6-WAY DUCT BANK (5)
NO SCALE



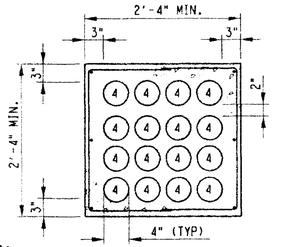
DETAIL
TYPICAL 8-WAY DUCT BANK (6)
NO SCALE



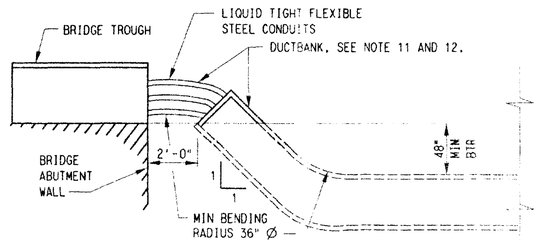
DETAIL
TYPICAL 9-WAY DUCT BANK (7)
NO SCALE



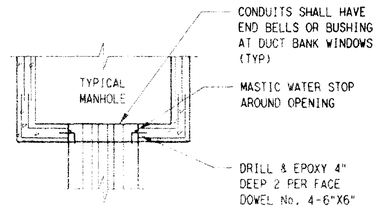
DETAIL
TYPICAL 12-WAY DUCT BANK (8)
NO SCALE



DETAIL
TYPICAL 16-WAY DUCT BANK (9)
NO SCALE



DETAIL
DBBC (DUCTBANK BRIDGE CONNECTION) (10)
NO SCALE



DETAIL
TYPICAL DUCT BANK/
EXISTING MANHOLE CONNECTION (11)
NO SCALE

NOTES:

1. THE CONTRACTOR SHALL USE RED OXIDE DYE IN THE CONCRETE MIX DESIGN FOR ALL CONCRETE OCS, TPSS, NEGATIVE RETURN & 13.2 KV DUCT BANKS.
2. WARNING TAPE SHALL BE INSTALLED A MINIMUM OF 12" ABOVE HORIZONTAL POSITION OF DUCTBANK.
3. CONDUIT SPACING WITHIN THE DUCT BANKS SHALL BE ACCOMPLISHED WITH MANUFACTURED PLASTIC CONDUIT SPACERS.
4. ALL PVC CONDUITS SHALL BE SCHEDULE 40
5. (4) INDICATES INSIDE DIAMETER OF CONDUIT.
6. THE CONTRACTOR SHALL SUBMIT A SHOP DRAWING SHOWING ALL REBAR PLACEMENT FOR DUCT BANK CONSTRUCTION.
7. ALL SELECT BACKFILL AROUND DUCTBANKS SHALL NOT EXCEED A PLASTICITY INDEX OF TWELVE PERCENT. REFER TO SPECIFICATION SECTIONS 02220 AND 02221 FOR BACKFILL REQUIREMENTS.
8. THE ELEVATION OF THE TOP OF THE DUCTBANK WHERE IT INTERSECTS A MANHOLE WILL VARY DUE TO SLOPE OF THE DUCT BANK (1'-0" PER 100' MIN.).
9. ALL REBAR IN DUCTBANK SHALL BE No.4.
10. ALL CONCRETE IN DUCTBANK ENCASEMENT SHALL BE MIX M-1 IN ACCORDANCE WITH SPECIFICATION SECTION 03305.
11. SEE CONTRACT DRAWINGS FOR SIZE OF DUCTBANK.
12. ANGLE OF DUCTBANK MUST MATCH BENDING RADIUS OF CONDUIT.
13. FINAL DUCTBANK DIMENSIONS WILL BE DETERMINED BY CONDUIT WALL THICKNESS USED.

CONTRACT SHEET No. 45 OF 145

REV	AMEND	CR	DATE	DESCRIPTION	BY	ENG	CHK	APP

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY VAN R. STEVENS P.E. 56155 ON 17 MAR 06

STATE OF TEXAS · VAN R. STEVENS · 56155 · REGISTERED PROFESSIONAL ENGINEER · 17 Mar 06

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Dallas, Texas 75202

DART PROJECT

DART

CAES

SCALE	NO SCALE
DRAWN	D. THREADGILL
DESIGNED	Y. KAN
CHECKED	V. STEVENS
IN CHARGE	V. STEVENS
DATE	17 MAR 06

SYSTEMS ELEMENTS STANDARD

DUCTBANK DETAILS
TYPICAL SECTION

CONTRACT	DWG No.	REV
C-1002803	BS6-0008	0

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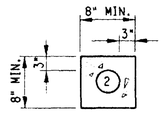
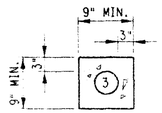
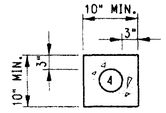


DETAIL
TYPICAL 1-WAY STUB-UP (1)
NO SCALE



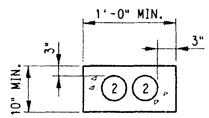
DETAIL
TYPICAL 1-WAY STUB-UP (2)
NO SCALE



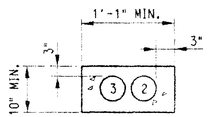
DETAIL
TYPICAL 1-WAY STUB-UP (3)
NO SCALE

NOTES:

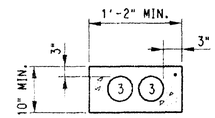
1. WARNING TAPE SHALL BE INSTALLED A MINIMUM OF 12" ABOVE HORIZONTAL PORTION OF CONDUIT STUB-UP.
2. CONDUIT SPACING WITHIN THE STUB-UPS SHALL BE ACCOMPLISHED WITH MANUFACTURED PLASTIC CONDUIT SPACERS.
3. ALL PVC CONDUITS SHALL BE SCHEDULE 40.
4. (4) INDICATES INSIDE DIAMETER OF CONDUIT.
5. ALL SELECT BACKFILL AROUND STUB-UPS SHALL NOT EXCEED A PLASTICITY INDEX OF TWELVE PERCENT. REFER TO SPECIFICATION SECTIONS 02220 AND 02221 FOR BACKFILL REQUIREMENTS.
6. ALL CONCRETE IN STUB-UP ENCASEMENT SHALL BE MIX M-1 IN ACCORDANCE WITH SPECIFICATION SECTION 03305.
7. FINAL STUB-UP DIMENSIONS SHALL BE DETERMINED BY CONDUIT WALL THICKNESS USED.



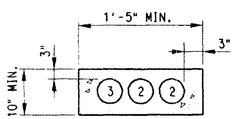
DETAIL
TYPICAL 2-WAY STUB-UP
FOR SIGNALS, TRAIN STOP (4)
NO SCALE



DETAIL
TYPICAL 2-WAY I.J. /
TRAIN STOP STUB-UP (5)
NO SCALE



DETAIL
TYPICAL 2-WAY STUB-UP
FOR I.J. (6)
NO SCALE



DETAIL
TYPICAL 3-WAY STUB-UP
FOR I.J., T/S, SIGNALS (7)
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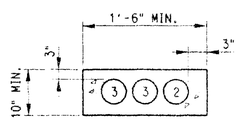

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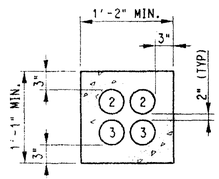
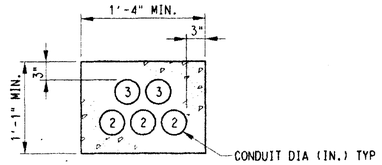
TYPICAL 3-WAY STUB-UP
FOR I.J., T/S (8)
NO SCALE



DETAIL
TYPICAL 4-WAY STUB-UP
FOR I.J., T/S (9)
NO SCALE



DETAIL
TYPICAL 5-WAY STUB-UP
FOR I.J., T/S, SIGNALS (10)
NO SCALE

REV	AMEND	CR	DATE	DESCRIPTION	BY	ENG	CHK	APP

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY VAN R. STEVENS P.E. 56755 ON 17 MAR 06

STATE OF TEXAS · VAN R. STEVENS · 56755 · REGISTERED PROFESSIONAL ENGINEER · 17-Mar-06

paragon
PARAGON PROJECT RESOURCES, INC.
7929 Brookriver Drive, Suite 600
Dallas, Texas 75247-4955

DALLAS SYSTEMS CONSULTANTS
A PARSONS / PARAGON JOINT VENTURE
1401 Pacific Avenue
Dallas, Texas 75202

DART PROJECT

DART

SCALE	NO SCALE
DRAWN	D. THREADGILL
DESIGNED	Y. KAN
CHECKED	V. STEVENS
IN CHARGE	V. STEVENS
DATE	17 MAR 06

CAES

CONTRACT SHEET No. 46 OF 145

SYSTEMS ELEMENTS STANDARD

STUB-UP DETAILS
TYPICAL SECTION CONDUIT

CONTRACT	DWG No.	REV
C-1002803	BS6-0009	0

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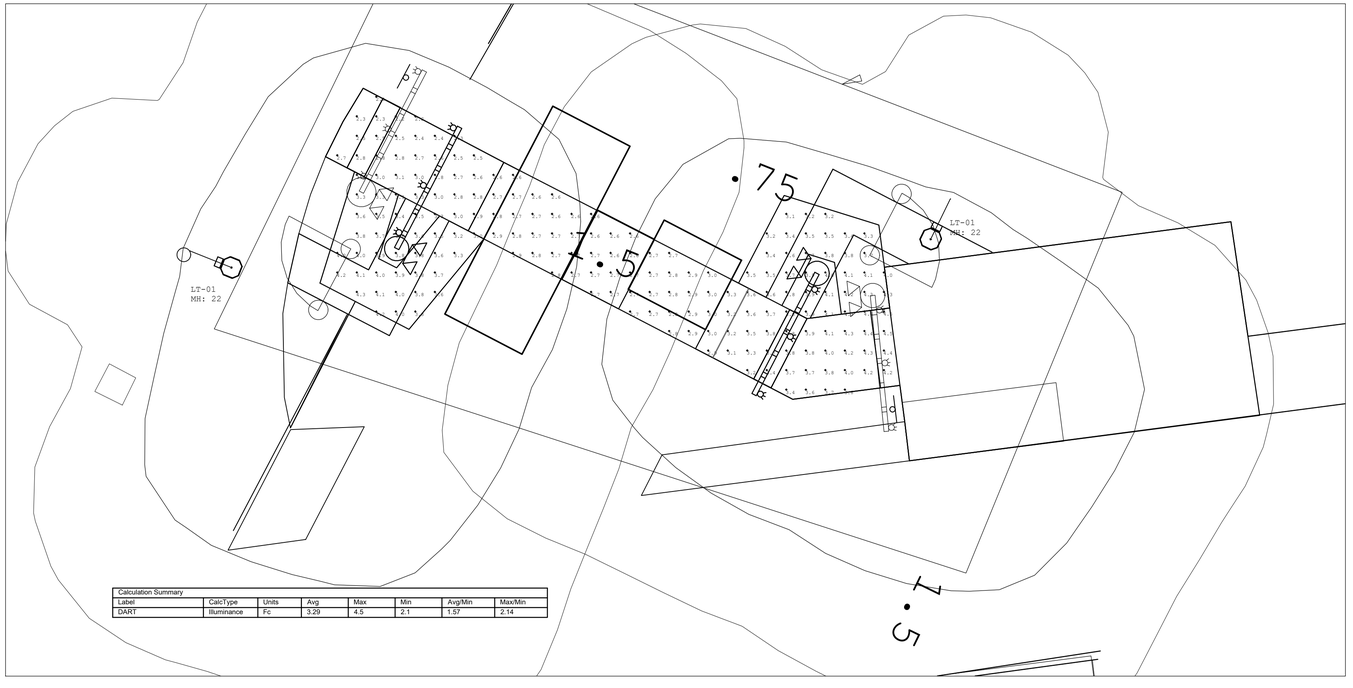
01 LIGHTING PLAN

SCALE: 1/8" = 1'-0"



02 PHOTOMETRIC PLAN

SCALE: N.T.S.

LIGHTING GENERAL NOTES:

1. LIGHTING FOOT CANDLE REQUIREMENT FOR CROSSWALK IS MINIMUM 2 FC.
2. FIXTURE MOUNTING HEIGHT WILL BE 22 FT.
3. MAXIMUM SOLAR POLE LIGHT ASSEMBLY HEIGHT IS 25 FT.
4. PROVIDE POLE COMPLYING TO TXDOT STANDARD.
5. LIGHTING LUMENS REQUIREMENT IS MINIMUM 10,500 LUMENS.

NOTES BY SYMBOL:

(1) PROVIDE GROUND BOX PER TXDOT STANDARD. REFER TO 2/4.01 FOR GROUND BOX DETAILS.

(2) PROVIDE GROUND ELECTRODE PER TXDOT STANDARD. REFER TO 1/4.02 FOR GROUND ROD DETAILS.

(3) AVOID GROUNDING GRID/MAT IMMEDIATELY SURROUNDING THE AHCW BUNGALOW.

STATE OF TEXAS
EMMANUEL M. CASTRO
153474
LICENSED
PROFESSIONAL ENGINEER

10-03-2025

BHENGINEERS
MECHANICAL · ELECTRICAL · PLUMBING · TECHNOLOGY DESIGN
REGISTRATION NO. 9102

Texas Department of Transportation
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DALLAS COUNTY

CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS

LIGHTING PLAN

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6	SEE TITLE SHEET	VA

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	4.01
CONT.	SECT.	JOB	
918	47	473	

Plotted By:Emmanuel Castro October 03, 2025 11:29:41am Z:\Projects\05213 - Kimley-Horn\05213.07 - DART Ped-Bike Xing\08-E\E201.dwg
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Plotted By:Emmanuel Castro October 03, 2025 11:30:05am Z:\Projects\05213 - Kimley-Horn\05213.07 - DART Ped-Bike Xing\08-EVE201.dwg
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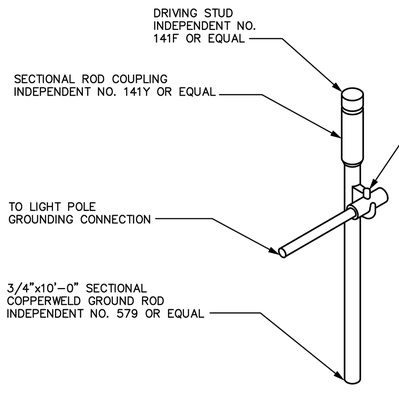
ELECTRICAL SYMBOLS LEGENDS

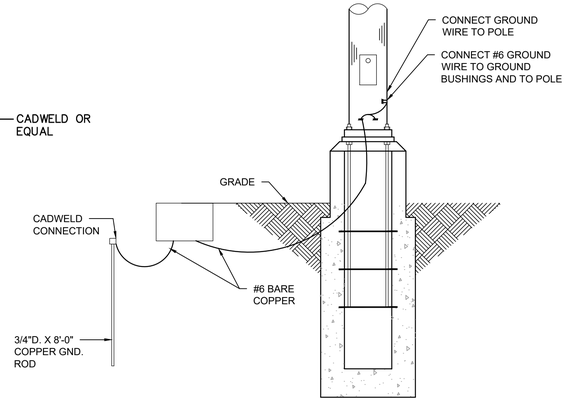
LT-01 - SINGLE HEAD SOLAR POWERED POLE TOP

- LUMEN OUTPUT: 10500 LUMENS MINIMUM.
- 310W POLYCRYSTALLINE SOLAR MODULE WITH STEEL MOUNT - NO SLIP TILT ADJUSTMENT MOUNT GALVANIZED AND POWDER COATED.
- 1200 WH BATTERY CAPACITY NiMH OR NICKEL METAL HYDRIDE
- FIXTURE MOUNTING HEIGHT 22'
- MAX SOLAR POLE LIGHT ASSEMBLY HEIGHT 25'
- PROVIDE POLE COMPLYING TO TXDOT STANDARD.
- COMPLY WITH UL/CSA 1703 OR IEC 61730-1:2019 AND IEC 61215-2:2017.
- MINIMUM IP 68 RATING FOR LED MODULE
- 4000K COLOR TEMPERATURE
- CERTIFIED DARKSKY INTERNATIONAL APPROVAL
- MINIMUM EFFICACY 180+ LUMENS PER WATT
- MINIMUM 25-YEAR POWER OUTPUT WARRANTY FOR SOLAR PANEL
- MINIMUM 8-YEAR FULL WARRANTY FOR LED MODULE

[J] - GROUND BOX TYPE A



01 GROUNDING DETAIL
SCALE: N.T.S.



02 GROUND CONNECTION DETAIL
SCALE: N.T.S.

10-03-2025

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DALLAS COUNTY

CENTRAL TRAIL EXTENSION
DART CROSSING IMPROVEMENTS

LIGHT POLE DETAILS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.		HIGHWAY NO.
6	SEE TITLE SHEET		VA
STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	4.02
CONT.	SECT.	JOB	
918	47	473	

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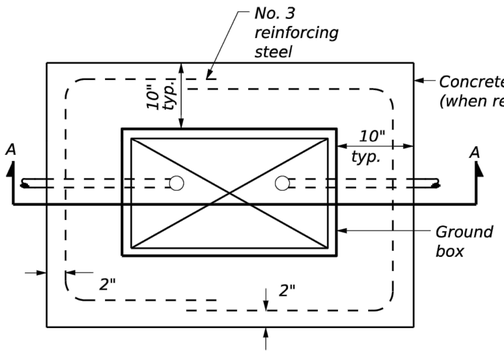
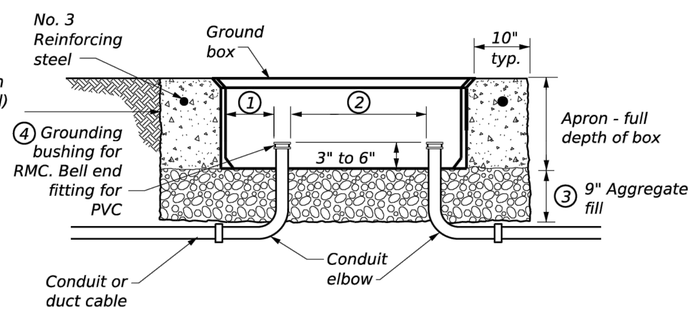
DATE:
FILE:

APRON FOR GROUND BOX

PLAN VIEW



SECTION A - A



SECTION A - A NOTES:

1. *Uniformly space ends of conduits within the ground box. Position ends of conduits so that ground box walls do not interfere with the installation of grounding bushings or bell end fittings.*
2. *Maintain sufficient space between conduits to allow for proper installation of bushing.*
3. *Place aggregate under the box, not in the box. Aggregate should not encroach on the interior volume of the box.*
4. *Install a grounding bushing on the upper end of all RMC terminating in a ground box. Ground RMC elbows when any part of the elbow is less than 18 in. below the bottom of the ground box. Install a PVC bushing or bell end fitting on the upper end of all PVC conduits terminating in a ground box.*

GROUND BOXES	
TYPE	OUTSIDE DIMENSIONS (Width x Length X Depth)
A	12" X 23" X 11"
B	12" X 23" X 22"
C	16" X 29" X 11"
D	16" X 29" X 22"
E	12" X 23" X 17"

NOTES:

A. MATERIALS

1. *Provide polymer concrete ground boxes measuring 16 in. x 30 in. x 24 in. (W x L x D) or smaller in accordance with Departmental Material Specification DMS-11070, "Ground Boxes" and Item 624, "Ground Boxes."*
2. *Provide Type A, B, C, D, and E ground boxes as shown in the plans and as listed on the Material Producers List (MPL) on the Department web site under "Roadway Illumination and Electrical Supplies," Item 624.*
3. *Ensure ground box cover is correctly labeled in accordance with DMS-11070.*
4. *Provide larger ground boxes in accordance with Item 624 and as shown in the plans.*

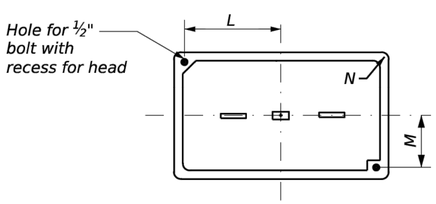
B. CONSTRUCTION METHODS

1. *Before setting ground box and after placing and capping conduits, lay an aggregate bed a minimum of 9 in. deep that extends 10 in. beyond the sides of the ground box. Provide coarse aggregate sized 3/4 in. to 2 in., with no more than 20% material passing through a no. 8 sieve, and as defined by the current ASTM C33/33M standard. Clean aggregate and dirt from conduits according to Item 618.*
2. *Cast ground box aprons in place. Reinforcing steel may be field bent. Ensure the depth of concrete for the apron extends from finished grade to the top of the aggregate bed under the box. Ground box aprons, including concrete and reinforcing steel, are subsidiary to ground boxes when called for by descriptive code.*
3. *Keep bolt holes in the box clear of dirt. Bolt covers down when not working in ground boxes.*
4. *Install all conduits and elbows in a professional and skillful manner. Uniformly space conduits so grounding bushings and bell end fittings can easily be installed.*
5. *Temporarily seal all conduits in the ground box until conductors are installed.*
6. *Permanently seal conduits immediately after the completion of conductor installation. Permanently seal the ends of all conduits with duct seal, expandable foam, or other method as approved. Do not use duct tape as a permanent conduit seal. Do not use silicone caulk as a sealant.*
7. *Bond all equipment grounding conductors in a ground box together with listed connectors.*
8. *When a Type B or D ground box is stacked to meet volume requirements, an appropriately sized hole may be cut for conduit entry in the side wall at least 18 in. below grade.*
9. *If an existing ground box in the contract has a metal cover, bond the cover to the equipment grounding conductor with a 3 ft. long stranded bonding jumper that is the same size as the grounding conductor. The bonding jumper is subsidiary to various bid items. Verify existing ground boxes with metal covers are shown on the plans, with notes fully describing the work required.*
10. *If other ground boxes with metal covers are within the project limits but are not part of the contract, the Engineer may direct the Contractor to bond the metal covers, identifying the specific boxes in writing. This work will be paid for separately.*
11. *Bond metal ground box covers to the grounding conductor with a tank ground type lug.*

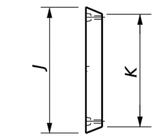
GROUND BOX COVERS								
TYPE	DIMENSIONS							
	H	I	J	K	L	M	N	P
A, B & E	23 ¼"	23"	13 ¾"	13 ½"	9 ⅞"	5 ⅛"	1 ⅜"	2"
C & D	30 ½"	30 ¼"	17 ½"	17 ¼"	13 ¼"	6 ¾"	1 ⅜"	2"

GROUND BOX COVER

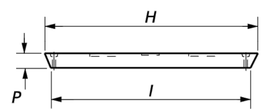
PLAN VIEW



END



SIDE



Texas Department of Transportation

Traffic Safety Division Standard

ELECTRICAL DETAILS GROUND BOXES

ED(4)-25

FILE: ed4-25.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT April 2025	CONT	SECT	JOB	HIGHWAY
REVISIONS	0918	47	473	VA
1-92 3-03 4-25 4-98 5-03 12-00 10-14	DIST	COUNTY		SHEET NO.
	DAL	DALLAS		4.03

71D

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GENERAL NOTES

SECTION 1 - GENERAL INFORMATION AND DESIGN CRITERIA

SECTION 1.1 - DOCUMENTS

1.1.1 Structural Drawings are not stand-alone documents. They are augmented by technical specifications and must be coordinated with Architectural, Civil and Mechanical/Electrical/Plumbing/HVAC documents.

1.1.2 General Notes and Typical Details apply generally throughout the project wherever conditions similar to those depicted exist and are not necessarily referenced specifically in the documents.

1.1.3 Structural documents are protected by U.S.A. Copyright Laws, and shall not be used for any purpose other than construction of the building described in the Architectural documents and at the geographic location shown. The structural design described in these documents is not valid for any other purpose, use or location.

1.1.4 The Geotechnical Report referenced herein is not part of the Structural Documents. However, a copy should be obtained for reference during installation of foundations and subgrade preparation.

COORDINATION

1.1.5 Contractor is responsible for coordinating Structural Documents with other trades and disciplines including architectural, civil, mechanical, electrical, HVAC and fire protection. Some requirements are not known prior to issue and may change as layout and fabrication drawings are developed. Promptly report deviations and interferences with structural components for resolution by the Engineer.

1.1.6 Do not scale plans, details and sections for quantity, length or fit of materials.

SECTION 1.2 - CODES AND STANDARDS

1.2.1 Building Code of jurisdiction : 2021 International Building Code

1.2.2 Structural Concrete Code - American Concrete Institute (ACI) 318

SPECIAL INSPECTIONS

1.2.4 See Statement of Special Inspections for minimum special inspections and testing per the Building Code.

1.2.5 See Technical Specifications for other materials testing and inspection requirements.

SECTION 1.3 - DESIGN CRITERIA

1.3.1 Wind Loads
Base Mean Wind Velocity 112 mph
Wind Exposure Classification C

SECTION 2 - FOUNDATIONS AND RELATED EARTHWORK

GEOTECHNICAL REPORT

2.1 Design of foundations and structural components in contact with soil is based on the recommendations given in the following:

Report by : Alliance Geotechnical Group
Date of Report : May 12, 2025
Report Number : CE-24-047

2.2 Refer to the soil report for subsoil conditions that may be encountered in the installation of foundations, and other information relevant to foundations and site preparation.

2.3 Overpour at tops of piers ("mushrooms") shall be removed to the required pier diameter.

SECTION 3 - STRUCTURAL CONCRETE

SECTION 3.1 - GENERAL

3.1.1 Concrete construction shall conform with Texas Department of Transportation Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges
https://ftp.txdot.gov/pub/txdot-info/des/spec-book-1114.pdf

SECTION 3.2 - STEEL REINFORCING

3.2.1 Bars shall be deformed in accordance with ASTM A615.
Strength of bars shall be Grade 60.

CONCRETE COVER TO REINFORCING

3.2.2 Clearance from face of concrete to face of reinforcing:
Piers 3"

SECTION 3.3 - CONCRETE MIX DESIGNS

3.3.1 Concrete Mix Schedule:
a) "HRC" refers to hardrock concrete having air dry unit weight of approximately 145 PCF.
b) Where w/c ratio is not indicated in the Concrete Mix Schedule, it shall be as necessary to meet strength requirements.
c) Where the w/c ratio is shown, it shall be adhered to regardless of strength requirements.
d) "Strength" is required compressive cylinder strength at an age of 28 days.

Conc Class	Strength psi	Agg Type	Agg Size	Slump Inches	Max w/c	Exposure
A	4,500	HRC	1"	5 1/2 - 7 1/2	0.45	F0,S0,W1,C1

3.3.2 Mix Usage Schedule:

Description of Use	Concrete Class	Air Content
Drilled Piers	A	------

STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS
2021 INTERNATIONAL BUILDING CODE

SCHEDULE OF STRUCTURAL SPECIAL INSPECTION SERVICES TABLE NOTES

1. **Registered Design Professional In Responsible Charge**
   a. This Statement of Special Inspections is submitted in accordance with Section 1704 of the 2021 International Building Code. It includes a *Schedule of Structural Special Inspection Services* applicable to the Project. If applicable, it includes *Requirements for Seismic Resistance* and/or *Requirements for Wind Resistance*.
2. **The Owner**
   a. Shall Employ one or more approved agencies to provide special inspections and test during construction on the types of work specified in Section 1705 and in accordance with the building code.
3. **The Special Inspector(s)**
   a. Shall provide written documentation to the Building Official demonstrating the competence and relevant experience or training of the Special Inspector(s) who will perform the Special Inspections and tests during construction.
   b. Shall keep records of Special Inspections and tests. The Special Inspector(s) shall submit reports of Special inspection and tests to the Building Official and to the Registered Design Professional in Responsible Charge. Reports shall indicate that work inspected or tested was or was not completed in conformance to approved Construction Documents.
   c. Discrepancies shall be brought to the immediate attention of the Contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge prior to completion of that phase of work.
   d. Shall prepare a final report documenting required special inspections and tests, and corrections of any discrepancies noted in the inspections or tests, shall be submitted at a point in time agreed upon prior to the start of work by the Owner or the Owner's authorized agent to the Building Official.
4. **The Contractor(s)**
   a. Shall be solely responsible to ensure tests and inspections are performed. The construction or work for which Special Inspection or testing is required shall remain accessible and exposed for Special Inspection or testing purposes until completion of the required Special Inspections or test.
   b. The Special Inspection program does not relieve the Contractor of responsibility to comply with the Contract Documents. Jobsite safety and means and methods of construction are solely the responsibility of the Contractor.
5. See specifications for additional testing requirements. Where conflicts occur, the most stringent requirement shall control.
6. LEGEND:
   Continuous: Inspections by the special inspector who is present when and where the work to be inspected is being performed.
   Periodic: Inspections by the special inspector who is intermittently present where the work to be inspected has been or is being performed. Periodic Inspections need not interrupt construction activities.
   Perform: Continuous inspections by the special inspector for specific task to be completed prior to acceptance of the designated item, and need be performed at that time on a continuous basis.
   Observe: Periodic inspections by the special inspector conducted on a daily basis as a minimum and need not interrupt construction activities.
   Document: The special inspector shall prepare reports indicating that the work has been performed in accordance with the contract documents.

SCHEDULE OF SPECIAL INSPECTION SERVICES 1705.3: CONCRETE CONSTRUCTION

CHECK IF REQD	VERIFICATION AND INSPECTION	FREQUENCY	REFERENCED STANDARD
☒	1. Inspect reinforcement, including prestressing tendons, and verify placement.	PERIODIC	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3
☐	2. Reinforcing bar welding:		AWS D1.4, ACI 318: 26.6.4
	a. Verify weldability of reinforcing bars other than ASTM A706.	PERIODIC	
	b. Inspect single-pass fillet welds, maximum 5/16" ; and	PERIODIC	
	c. Inspect all other welds.	CONTINUOUS	
☒	3. Inspect anchors and anchor reinforcement cast in concrete	PERIODIC	ACI 318: 17.8.2, 26.13.3.3
☐	4. Inspect anchors post-installed in hardened concrete members.		
	a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.	CONTINUOUS	ACI 318: 17.8.2.4
	b. Mechanical anchors and adhesive anchors not defined in 4.a.	CONTINUOUS	ACI 318: 17.8.2
☒	5. Verifying use of required design mix for intended location.	CONTINUOUS	ACI 318: Ch. 19, 26.4.3, 26.4.4
☒	6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	CONTINUOUS	ACI 318: 26.5, 26.12 ASTM C172, ASTM C31
☒	7. Inspect concrete and shotcrete placement for proper application techniques.	CONTINUOUS	ACI 318: 26.5
☒	8. Verify maintenance of specified curing temperature and techniques.	PERIODIC	ACI 318: 26.5.3, 26.5.5
☐	9. Inspect prestressed concrete for:		ACI 318: 26.10
	a. Application of prestressing forces; and	CONTINUOUS	
	b. Grouting of bonded prestressing tendons.	CONTINUOUS	
☐	10. Inspect erection and connection of precast concrete members.	PERIODIC	ACI 318: 26.9, 26.13.3.3
☐	11. For precast concrete diaphragm connections or reinforcement at joints classified as moderate or high deformability elements (MDE or HDE) in structures assigned to Seismic Design Category C, D, E, or F, inspect such connections and reinforcement in the field for:		ACI 318: 26.13.1.3
	a. Installation of the embedded parts	CONTINUOUS	
	b. Completion of the continuity of reinforcement across joints	CONTINUOUS	ACI 550.5
	c. Completion of connections in the field	CONTINUOUS	
☐	12. Inspect installation tolerances of precast concrete diaphragm connections for compliance with ACI 550.5	PERIODIC	ACI 318: 26.13.1.3
☐	13. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	PERIODIC	ACI 318: 26.11.2
☒	14. Inspect formwork for shape, location, and dimensions of the concrete member being formed.	PERIODIC	ACI 318: 26.11.1.2(b)
☐	15. Placement of reinforcement for special moment frames, boundary elements of special structural walls and coupling beams.	CONTINUOUS	ACI 318: 26.13.3.2
☐	16. Welding of reinforcement for special moment frames, boundary elements of special structural walls, and coupling beams.	CONTINUOUS	ACI 318: 26.13.3.2

SCHEDULE OF SPECIAL INSPECTION SERVICES TABLE 1705.8: CAST-IN-PLACE DEEP FOUNDATIONS

CHECK IF REQD	VERIFICATION AND INSPECTION	FREQUENCY	REFERENCED STANDARD
☒	1. Inspect drilling operations and maintain complete and accurate records for each element.	CONTINUOUS	IBC Table 1705.8
☒	2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable), and adequate end-bearing strata capacity. Record concrete or grout volumes.	CONTINUOUS	IBC Table 1705.8
☒	3. For concrete elements, perform tests and additional Special Inspection in accordance with Concrete Construction.		IBC Table 1705.3

PONCE-FUESS ENGINEERING
Structural Engineers
3333 Lee Parkway, Suite 350 • Dallas, TX 75219
469.310.2850 • ponce-fuess.com
PFE PROJECT NO. 25156 FIRM REG. NO. F-12125

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DALLAS COUNTY
CENTRAL TRAIL EXTENSION
STRUCTURAL GENERAL NOTES

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	5.01
CONT.	SECT.	JOB	

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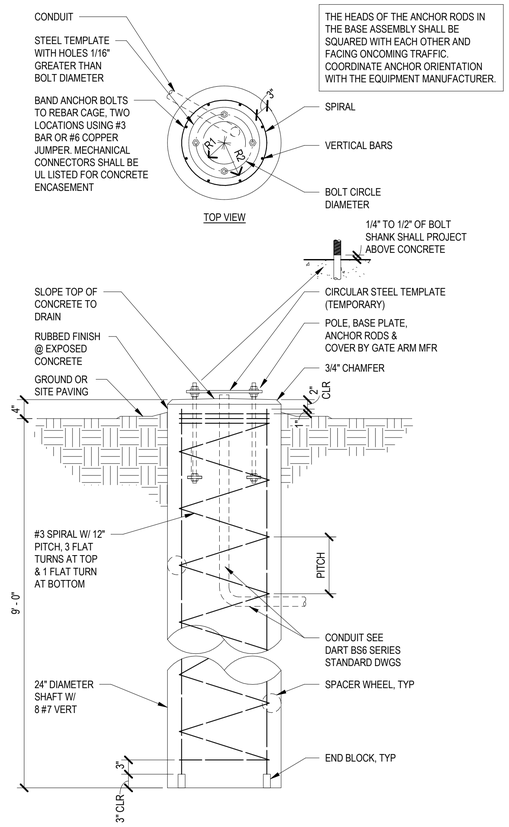
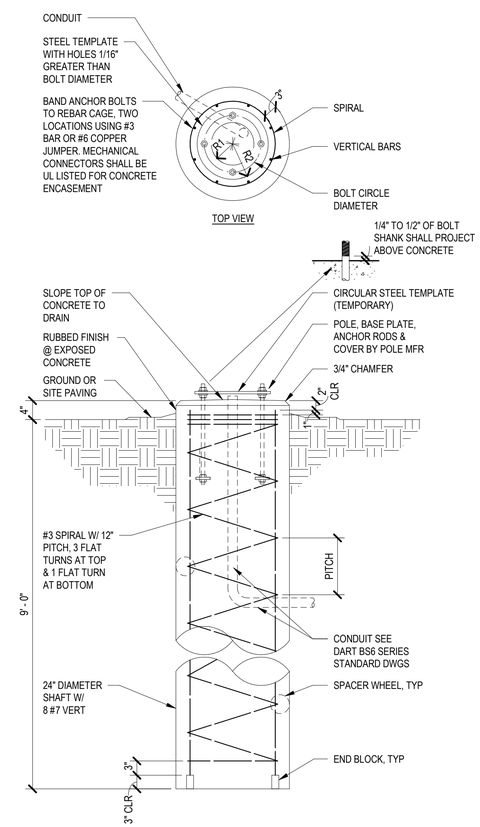


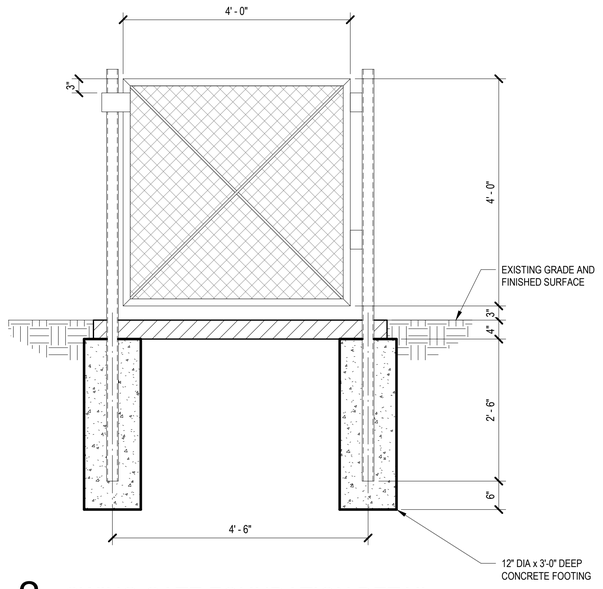
3 PEDESTRIAN GATE ARM FOUNDATION

3/4" = 1'-0"



1 SITE LIGHT POLE FOUNDATION

3/4" = 1'-0"



2 SWING GATE FOUNDATION DETAIL

3/4" = 1'-0"

STATE OF TEXAS
LUCAS G. PONCE
91119
REGISTERED
PROFESSIONAL ENGINEER
10/03/25

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PFE PROJECT NO. 25156 FIRM REG. NO. F-12125

Kimley»Horn F-928

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DALLAS COUNTY CENTRAL TRAIL EXTENSION CONCRETE DETAILS

FED.RD. DIV.NO.	FEDERAL AID PROJECT NO.	HIGHWAY NO.
6		

STATE	DIST.	COUNTY	SHEET NO.
TEXAS	DALLAS	DALLAS	5.02
CONT.	SECT.	JOB	