Texas Department of Transportation

COUNTY: COLLIN
DATE: AUGUST, 2011

DESIGN SCHEMATIC
FOR FM 546 (NEW ALIGNMENT)

ROLL 2 OF 3

TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT

COLLIN COUNTY

DESIGN SCHEMATIC

WILLIAM L. HALE, P.E.
DISTRICT ENGINEER

FM 546 (NEW ALIGNMENT)

CSJ: 1013-01-026

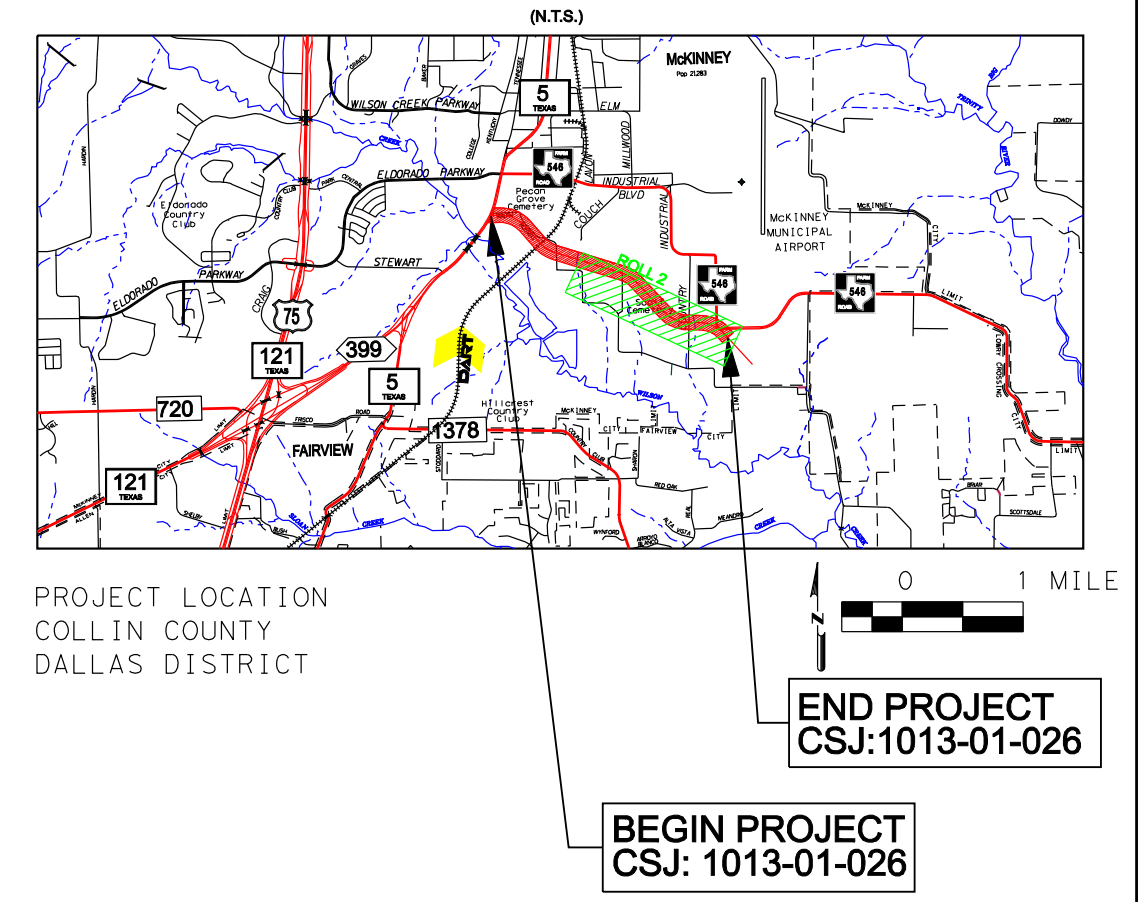
FROM: SH 5
TO: WEST OF CR 317

NET LENGTH OF PROJECT: 1.70 MILES
FUNCTIONAL CLASSIFICATION:

TxDOT - MINOR ARTERIAL
CITY OF McKINNEY - URBAN MAJOR ARTERIAL (M6D)
FM 546: 19,810 ADT (2010) 35,780 ADT (2030)

DESIGN SPEED:
FM 546 = 45 MPH
SH 5 = 60 MPH *
AIRPORT ROAD = 45 MPH
COUCH ROAD = 35 MPH
U-TURN LANE = 15 MPH
* PER TXDOT PLANS DATED NOV. 10, 1955

LOCATION MAP
(N.T.S.)



McKINNEY
5
75
121
399
720
121
1378
FAIRVIEW
0
1 MILE
PROJECT LOCATION
COLLIN COUNTY
DALLAS DISTRICT
END PROJECT
CSJ:1013-01-026
BEGIN PROJECT
CSJ: 1013-01-026

ROLL INDEX

ROLL 1: FM 546 NEW ALIGNMENT
BEGIN PROJECT STA 10+44.90 TO STA 55+00
ROLL 2: FM 546 NEW ALIGNMENT
STA 55+00 TO END PROJECT STA 99+79.77
ROLL 3: SH 5 PROPOSED IMPROVEMENTS PLAN
AND CROSS STREETS PROFILES

PREPARED BY:
CIVIL ASSOCIATES, INC.
TBPE REGISTRATION NO. F-006981

NASER ABUSAAD, P.E., AICP
SERIAL NO. 83200
AUGUST, 2011

BRAD HERNANDEZ, P.E.
SERIAL NO. 100079
AUGUST, 2011

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ROLL 2 OF 3

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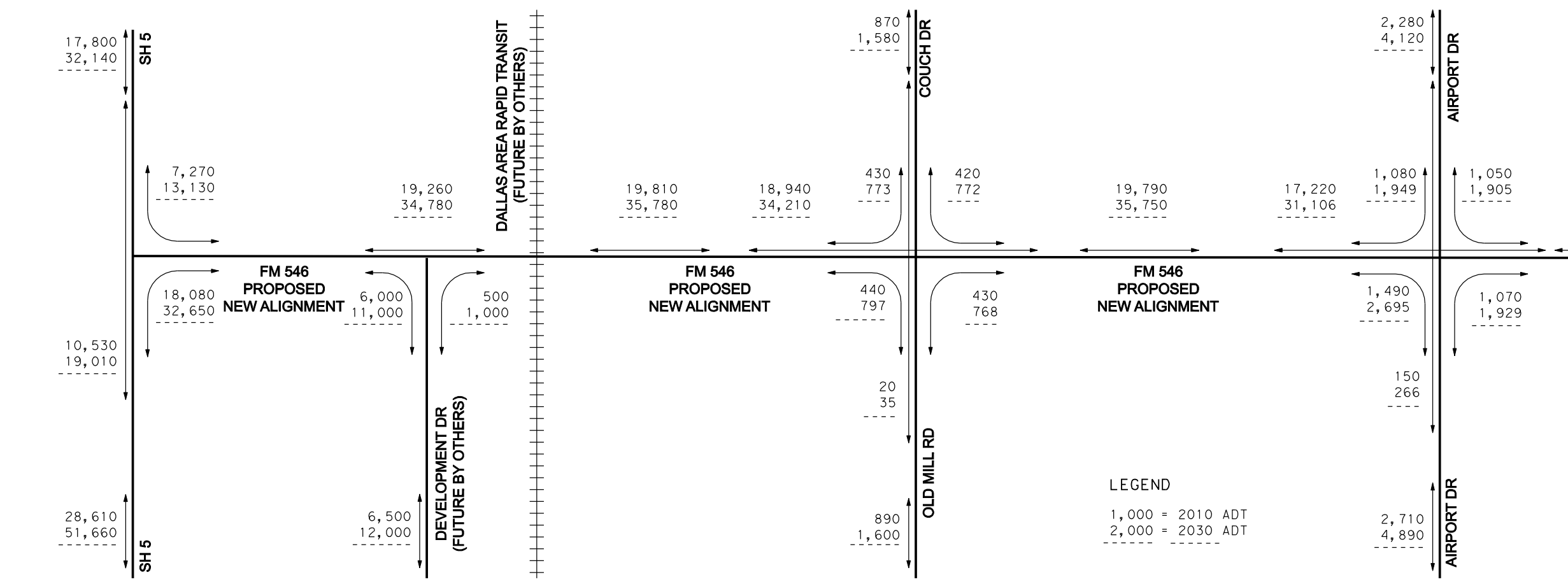
1521 Northwest Highway
Garland, Texas 75041

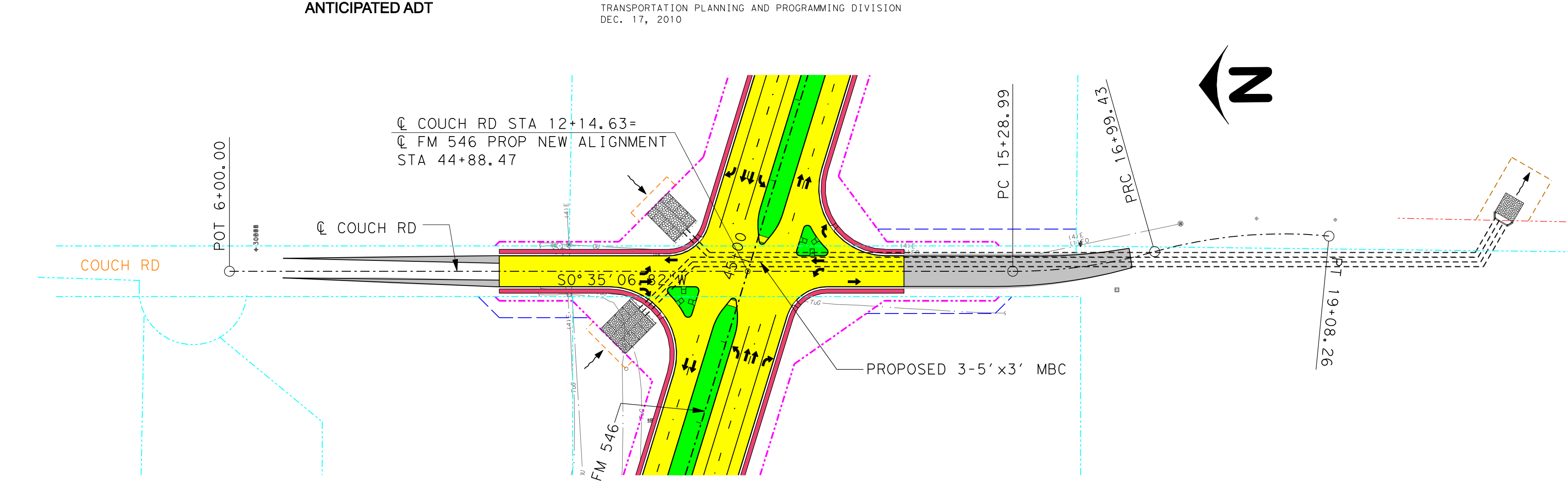
CIVIL ASSOCIATES, INC.



17,800
32,140
SH 5
7,270
13,130
19,260
34,780
DALLAS AREA RAPID TRANSIT (FUTURE BY OTHERS)
18,080
32,650
FM 546 PROPOSED NEW ALIGNMENT
6,000
11,000
500
1,000
10,530
19,010
28,610
51,660
SH 5
6,500
12,000
DEVELOPMENT DR (FUTURE BY OTHERS)
19,810
35,780
18,940
34,210
FM 546 PROPOSED NEW ALIGNMENT
870
1,580
430
773
440
797
COUCH DR
420
772
430
768
20
35
890
1,600
OLD MILL RD
19,790
35,750
FM 546 PROPOSED NEW ALIGNMENT
17,220
31,106
2,280
4,120
1,080
1,949
1,490
2,695
150
266
2,710
4,890
AIRPORT DR
1,050
1,905
19,340
34,940
1,070
1,929
FM 546 (EXISTING)
LEGEND
1,000 = 2010 ADT
2,000 = 2030 ADT

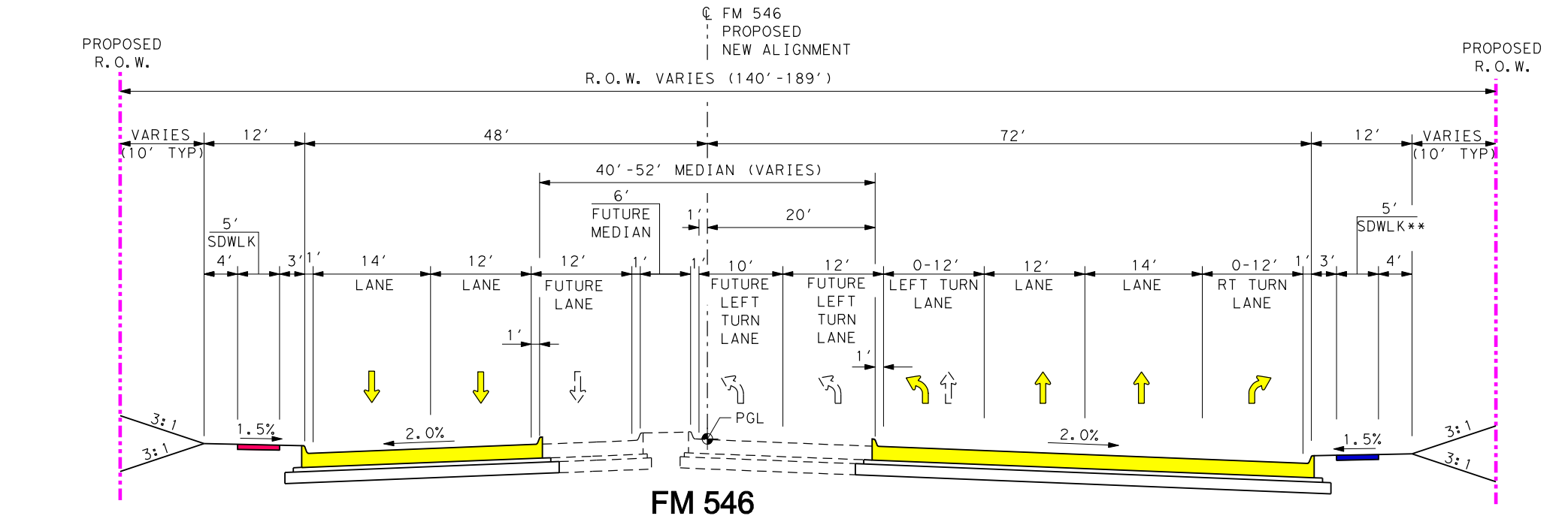
FM 546 NEW ALIGNMENT PROJECT
ANTICIPATED ADT

SOURCE:
TEXAS DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING AND PROGRAMMING DIVISION
DEC. 17, 2010



N
℄ COUCH RD STA 12+14.63=
℄ FM 546 PROP NEW ALIGNMENT
STA 44+88.47
POT 6+00.00
℄ COUCH RD
COUCH RD
S0° 35' 06.82" W
45+00
PC 15+28.99
PRC 16+99.43
PT 19+08.26
PROPOSED 3-5'x3' MBC
℄ FM 546

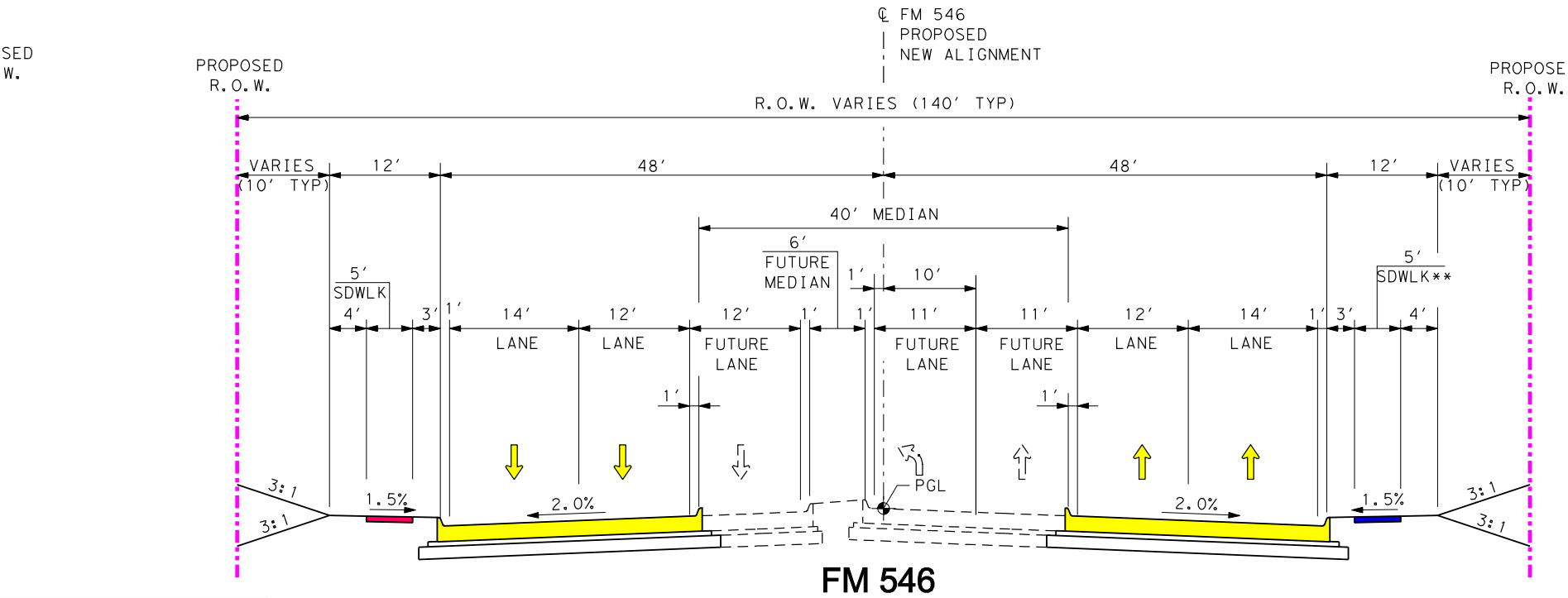
LAYOUT - PROPOSED 3-5'x3' MBC
FM 546 STA 45+03.00
N.T.S.



PROPOSED R.O.W.
℄ FM 546 PROPOSED NEW ALIGNMENT
R.O.W. VARIES (140'-189')
PROPOSED R.O.W.
VARIES (10' TYP)
12'
48'
40'-52' MEDIAN (VARIES)
72'
12'
VARIES (10' TYP)
5' SDWLK
4'
3'
1'
14' LANE
12' LANE
12' FUTURE LANE
6' FUTURE MEDIAN
1'
20'
10' FUTURE LEFT TURN LANE
12' FUTURE LEFT TURN LANE
0-12' LEFT TURN LANE
12' LANE
14' LANE
0-12' RT TURN LANE
1'
3'
4'
5' SDWLK**
PGL
3:1
1.5%
2.0%
2.0%
1.5%
3:1

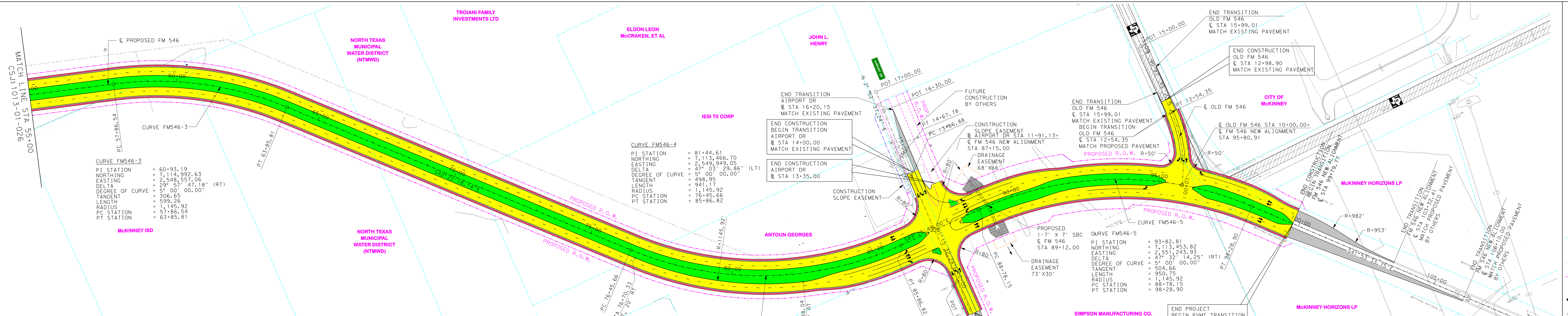
FM 546
PROPOSED TYPICAL SECTION
WITH FUTURE DUAL LEFT TURN LANES
AND RIGHT TURN LANE
STA 76+70.33 TO STA 98+66.31
N.T.S.

** PER CITY OF McKINNEY CODE OF ORDINANCES, SECTION 142-105: CONSTRUCTION OF PROPOSED SIDEWALK SHALL BE THE RESPONSIBILITY OF THE DEVELOPER WHEN DEVELOPMENTS ALONG THE PROPOSED ROADWAY OCCUR BEFORE AND/OR CONCURRENTLY WITH THE ROADWAY CONSTRUCTION. IF NO DEVELOPMENT OCCURS, PROPOSED SIDEWALKS SHALL BE CONSTRUCTED WITH ROADWAY.



PROPOSED R.O.W.
℄ FM 546 PROPOSED NEW ALIGNMENT
R.O.W. VARIES (140' TYP)
PROPOSED R.O.W.
VARIES (10' TYP)
12'
48'
40' MEDIAN
48'
12'
VARIES (10' TYP)
5' SDWLK
4'
3'
1'
14' LANE
12' LANE
12' FUTURE LANE
6' FUTURE MEDIAN
10'
11' FUTURE LANE
11' FUTURE LANE
12' LANE
14' LANE
5' SDWLK**
PGL
3:1
1.5%
2.0%
2.0%
1.5%
3:1

FM 546
PROPOSED TYPICAL SECTION
WITH FUTURE LEFT TURN LANE
STA 35+62.00 TO STA 76+70.33
STA 98+66.31 TO 99+79.77
N.T.S.



MATCH LINE STA 55+00
CSJ:1013-01-026
℄ PROPOSED FM 546
60+00
65+00
70+00
75+00
80+00
85+00
90+00
95+00
100+00
105+00
PC 57+86.54
CURVE FM546-3
PT 63+85.81
CURVE FM546-3
PI STATION = 60+93.19
NORTHING = 7,114,992.63
EASTING = 2,548,557.06
DELTA = 29° 57' 47.18" (RT)
DEGREE OF CURVE = 5° 00' 00.00"
TANGENT = 306.65
LENGTH = 599.26
RADIUS = 1,145.92
PC STATION = 57+86.54
PT STATION = 63+85.81
McKINNEY ISD
TROIANI FAMILY INVESTMENTS LTD
NORTH TEXAS MUNICIPAL WATER DISTRICT (NTMWD)
NORTH TEXAS MUNICIPAL WATER DISTRICT (NTMWD)
ELDON LEON McCRAKEN, ET AL
JOHN L. HENRY
IESI TX CORP
ANTOUN GEORGES
CAROL ANNE MARTHENS
CAROL MARTHENS MOODY
SIMPSON MANUFACTURING CO.
McKINNEY HORIZONS LP
McKINNEY HORIZONS LP
CITY OF McKINNEY
S42° 22' 18.14" E
PROPOSED R.O.W.
PROPOSED R.O.W.
R=1145.92'
CURVE FM546-4
PI STATION = 81+44.61
NORTHING = 7,113,466.70
EASTING = 2,549,949.05
DELTA = 47° 03' 29.86" (LT)
DEGREE OF CURVE = 5° 00' 00.00"
TANGENT = 498.95
LENGTH = 941.17
RADIUS = 1,145.92
PC STATION = 76+45.66
PT STATION = 85+86.82
PC 76+45.66
PC STA 76+70.33 OFFSET, 20' RT
PT STA 82+38.04 OFFSET, 30' RT
CURVE FM546-4
PT 85+86.82
S89° 25' 48.00" E
AIRPORT DR
N 2° 52' 37.24" E
POT 17+00.00
POT 16+30.00
PROP R.O.W.
PT 14+67.78
PC 13+86.88
END TRANSITION
AIRPORT DR
℄ STA 16+20.15
MATCH EXISTING PAVEMENT
END CONSTRUCTION
BEGIN TRANSITION
AIRPORT DR
℄ STA 14+00.00
MATCH EXISTING PAVEMENT
END CONSTRUCTION
AIRPORT DR
℄ STA 13+35.00
CONSTRUCTION SLOPE EASEMENT
FUTURE CONSTRUCTION BY OTHERS
CONSTRUCTION SLOPE EASEMENT
℄ AIRPORT DR STA 11+91.13=
℄ FM 546 NEW ALIGNMENT
STA 87+15.00
DRAINAGE EASEMENT 68'X66'
R=80'
R=80'
R=80'
R=80'
N1° 15' 34.24" E
POT 10+00.00
PC 88+78.15
PROPOSED R.O.W.
PROPOSED 1-7' X 7' SBC
℄ FM 546
STA 89+12.00
DRAINAGE EASEMENT 73'X30'
BEGIN CONSTRUCTION
END TRANSITION
AIRPORT DR
℄ STA 8+80.00
MATCH EXISTING PAVEMENT
BEGIN TRANSITION
AIRPORT DR
℄ STA 6+00.00
MATCH EXISTING PAVEMENT
POT 6+00.00
N1° 34' 44.93" E
CURVE FM546-5
PI STATION = 93+82.81
NORTHING = 7,113,453.82
EASTING = 2,551,243.93
DELTA = 47° 32' 14.25" (RT)
DEGREE OF CURVE = 5° 00' 00.00"
TANGENT = 504.66
LENGTH = 950.75
RADIUS = 1,145.92
PC STATION = 88+78.15
PT STATION = 98+28.90
PT 98+28.90
PROPOSED R.O.W.
END TRANSITION
OLD FM 546
℄ STA 15+99.01
MATCH EXISTING PAVEMENT
POT 15+00.00
END CONSTRUCTION
OLD FM 546
℄ STA 12+98.90
MATCH EXISTING PAVEMENT
END TRANSITION
OLD FM 546
℄ STA 15+99.01
MATCH EXISTING PAVEMENT
BEGIN TRANSITION
OLD FM 546
℄ STA 12+54.35
MATCH PROPOSED PAVEMENT
PT 12+54.35
℄ OLD FM 546
℄ OLD FM 546 STA 10+00.00=
℄ FM 546 NEW ALIGNMENT
STA 95+80.91
PROPOSED R.O.W.
R=50'
R=50'
END CONSTRUCTION
BEGIN TRANSITION
FM 546 NEW ALIGNMENT
℄ STA 99+79.77
R=982'
R=953'
S41° 53' 33.75" E
END TRANSITION
FM 546 NEW ALIGNMENT
℄ STA 103+32.41
MATCH PROPOSED PAVEMENT BY OTHERS
END TRANSITION
FM 546 NEW ALIGNMENT
℄ STA 106+10.00
MATCH PROPOSED PAVEMENT BY OTHERS
END PROJECT
BEGIN PVMT TRANSITION
FM 546 NEW ALIGNMENT
℄ STA 99+79.77
CSJ:1013-01-026
MATCH PROPOSED FM 546
PAVEMENT (BY OTHERS)
CSJ:1013-01-024
POT 108+00.00
546

SUPERELEVATION TABLE									
BASELINE	CURVE NAME	DIRECTION	BEGIN CROSS SLOPE	BEGIN TRANSITION	END TRANSITION AND BEGIN FULL SUPERELEVATION	FULL SUPERELEVATION	END FULL SUPERELEVATION AND BEGIN TRANSITION	END TRANSITION	END CROSS SLOPE
FM546EB	FM546-4	EB	-2.00%	84+71.00	86+16.00	-0.50%	88+22.00	89+57.00	-2.00%
FM546EB	FM546-5	EB	-2.00%	93+65.00	95+00.00	-0.50%	96+30.00	97+65.00	-2.00%
FM546WB	FM546-4	WB	-2.00%	84+71.00	86+16.00	-0.50%	88+22.00	89+57.00	-2.00%
FM546WB	FM546-5	WB	-2.00%	93+65.00	95+00.00	-0.50%	96+30.00	97+65.00	-2.00%

N

50 0 100 200
HORIZONTAL
5 0 10 20
VERTICAL
SCALE IN FEET

LEGEND

🟨	PROPOSED CONCRETE ROADWAY
🟥	PROPOSED SIDEWALK
🟩	PROPOSED DRIVEWAY
🟩	PROPOSED MEDIAN
🟧	PROPOSED TURNAROUND
🟦	PROPOSED STRUCTURE (BRIDGE)
⬜	PROPOSED TRANSITION PAVEMENT
-·-·-	EXISTING R.O.W./PROPERTY LINE "ACCESS BY PERMIT ONLY"
- - -	PROPOSED DRAINAGE EASEMENT
— —	PROPOSED CONSTRUCTION SLOPE EASEMENT
-·-·-	PROPOSED R.O.W.
▬▬	PROPOSED RETAINING WALL
↰↑↱	TRAFFIC FLOW
═	PROPOSED CROSS DRAINAGE STRUCTURE

NOTES:

1. PROPOSED PROFILE GENERALLY FOLLOWS EXISTING.
2. FINAL DRIVEWAY LOCATIONS SHALL BE DETERMINED DURING THE FINAL DESIGN PHASE.
3. ALL DIMENSIONS ARE TO FACE OF CURB, UNLESS OTHERWISE NOTED.
4. CONTROL OF ACCESS WILL BE HANDLED IN ACCORDANCE WITH THE TxDOT ACCESS MANAGEMENT MANUAL.
5. SURVEY NOTES:
   DATE OF SURVEY, AUGUST 17, 2010
   ONLY VISIBLE UTILITIES AS OF AUGUST 17, 2010 WERE LOCATED.
   ALL POINTS WERE LOCATED USING THE WDS VRS NETWORK.
   ALL POINTS WERE CONVERTED TO SURFACE USING THE TXDOT COLLIN COUNTY COMBINED SCALE FACTOR OF 1.000152710.
   CONTROL:
   FM 546 COLLIN COUNTY
   PRIMARY CONTROL
   SAM#:29232-06
   AUGUST 17, 2010
   HORZ. DATUM: NAD-83 (CORS 2002)
   VERT. DATUM: NAVD-88 (CORS 2002)
   COORD. SYSTEM:
   TEXAS STATE PLANE NAD-83 (CORS 2002)
   ZONE: TEXAS NORTH CENTRAL (4202)
   UNITS: U.S. SURVEY FEET
   GEOID: GEOID09
   PROJECT COMBINED SCALE FACTOR:
   1.000152710 (0.99984731332)
   PT, NORTHING, EASTING, ELEV, DESCR.
   ELEVATIONS SHOWN BELOW ARE GPS DERIVED.
   SURFACE COORDINATES

1,7118394.801,2544272.227,592.803,CP 1
2,7118047.423,2547458.336,593.656,CP 2
3,7117948.345,2550643.874,584.232,CP 3
4,7115059.867,2551507.404,584.688,CP 4
5,7111817.974,2551263.071,560.954,CP 5
6,7112390.337,2548233.38,536.095, CP 6
7,7116062.446,2547059.573,582.357,CP 7
8,7114876.011,2542248.738,570.296,CP 8

TEXAS DEPARTMENT OF TRANSPORTATION
DALLAS DISTRICT
COLLIN COUNTY
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WILLIAM L. HALE, P.E.
DISTRICT ENGINEER
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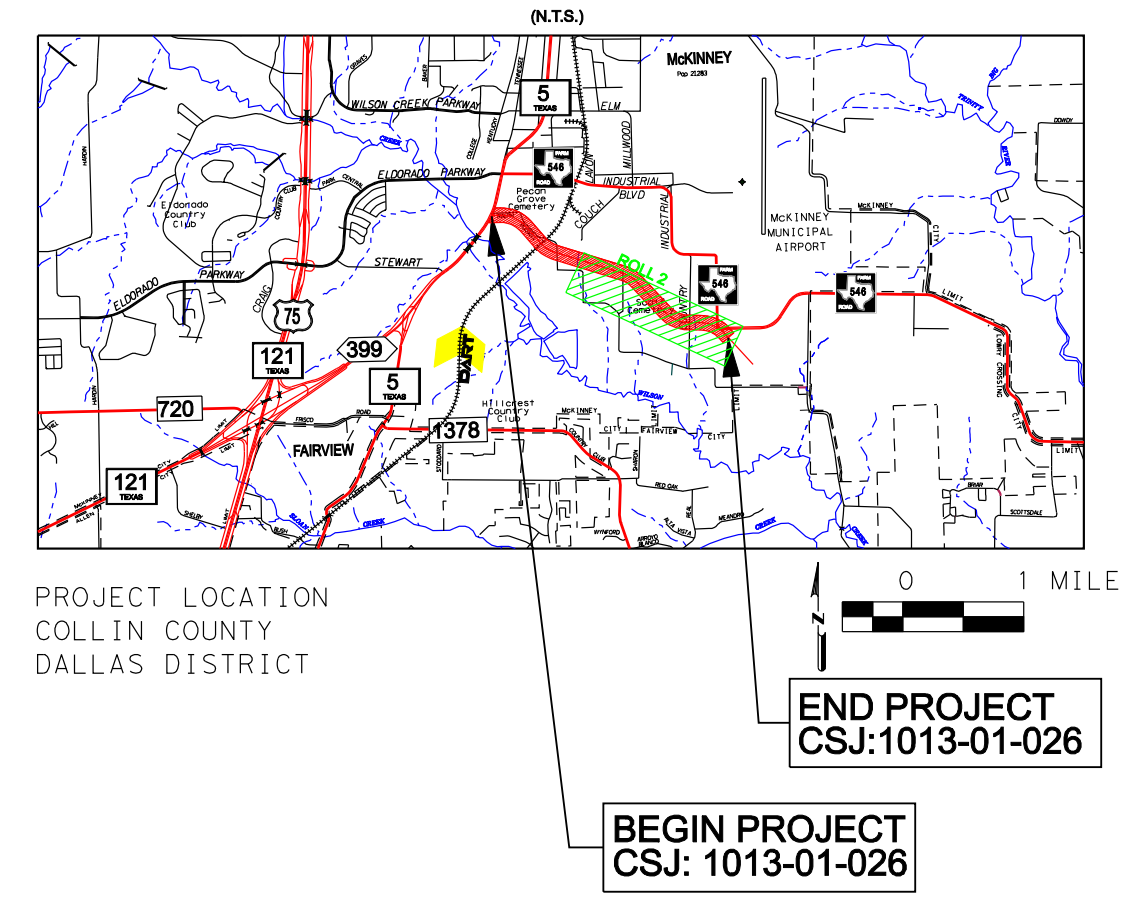

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