TEXAS DEPARTMENT OF TRANSPORTATION – DALLAS DISTRICT

WILLIAM HALE, P.E. – DISTRICT ENGINEER

DESIGN SCHEMATIC

SH 121/DNT INTERCHANGE, COLLIN COUNTY

SH 121: FROM NORTH OF LEGACY DRIVE TO NORTH OF SH 289 (PRESTON ROAD), 2.16 MILES
DNT: FROM SOUTH OF LEGACY DRIVE TO NORTH OF GAYLORD PARKWAY, 1.84 MILES

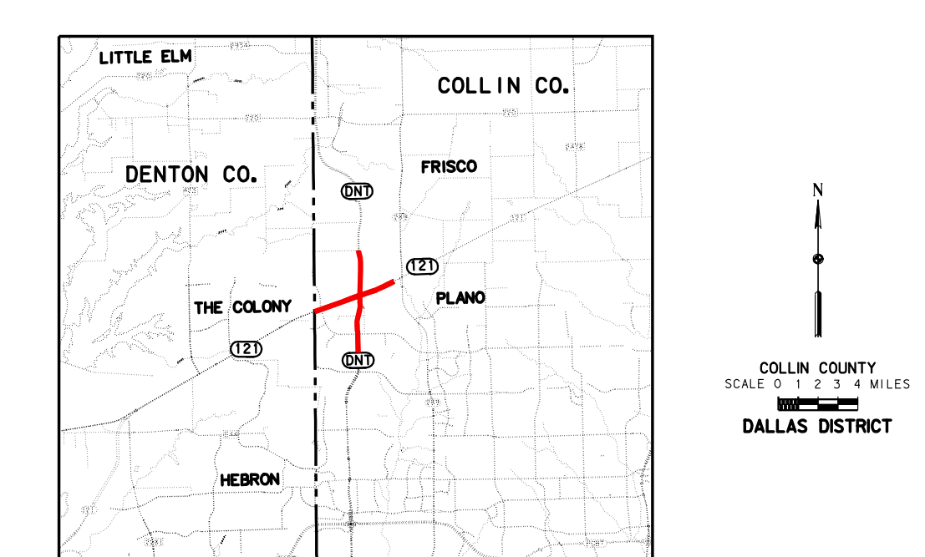
CSJ: 0364-04-047

DESIGN SPEED

MAINLANES – 70 MPH (URBAN FREEWAY)
SLIP RAMPS – 50 MPH (URBAN ARTERIAL)
DIRECT CONNECTORS – 45 MPH
FRONTAGE ROADS – 50 MPH
CROSS STREETS – 45 MPH

HIGHWAY CLASSIFICATION

OTHER URBAN FREEWAY



LITTLE ELM
COLLIN CO.
DENTON CO.
DNT
FRISCO
121
THE COLONY
PLANO
121
DNT
HEBRON
DALLAS CO.
N
COLLIN COUNTY
SCALE 0 1 2 3 4 MILES
DALLAS DISTRICT

DATE APPROVED

DATE SUBMITTED

DATE REVISED

0 100 200
HORIZONTAL
0 10 20
VERTICAL
SCALE IN FEET

PREPARED BY HNTB
UNDER THE SUPERVISION OF:
CHRISTOPHER M. BERGERON, P.E.

SERIAL NO. 72895
DATE: ____________

NOT INTENDED FOR
CONSTRUCTION, BIDDING
OR PERMIT PURPOSES.

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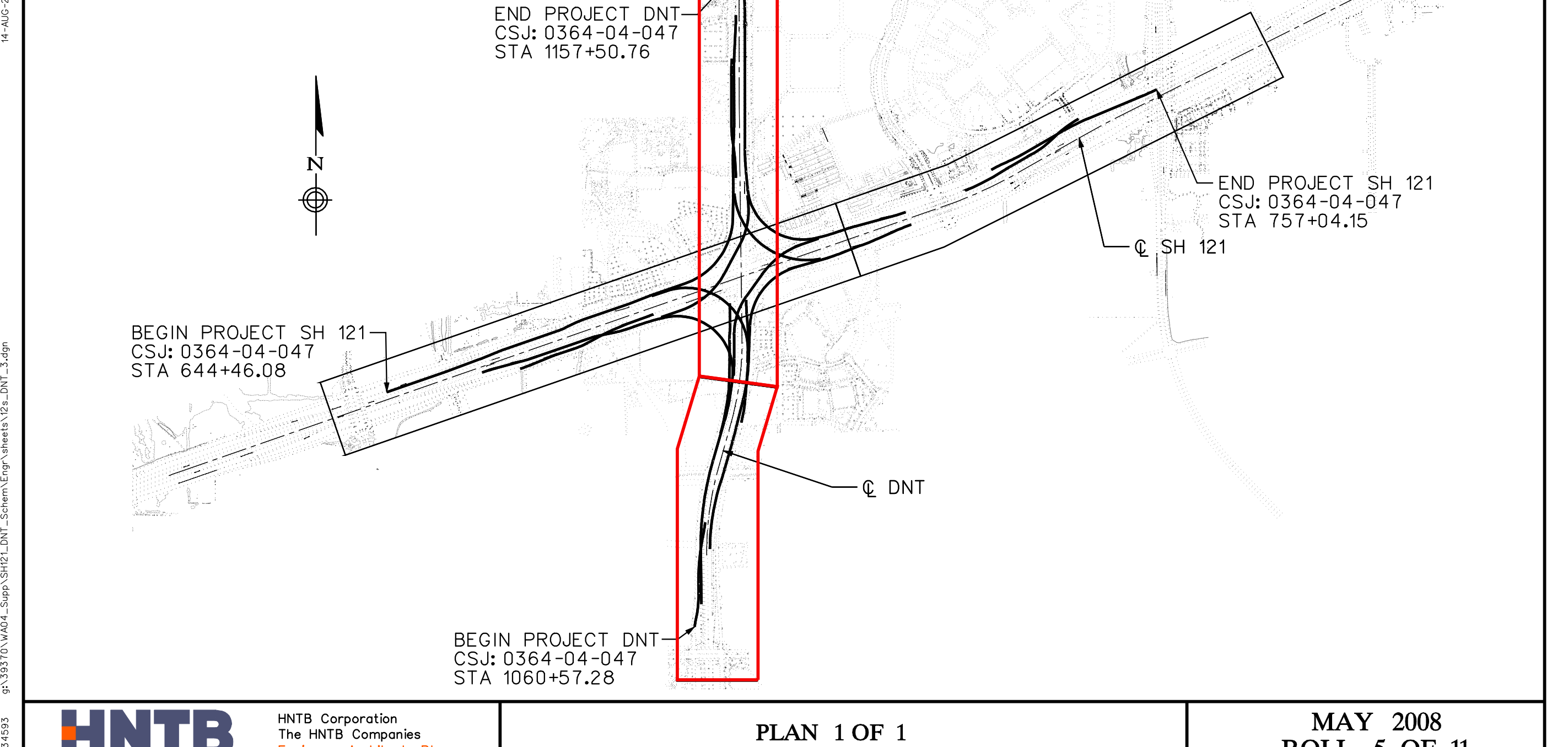


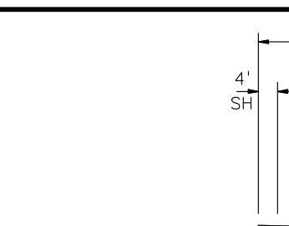
END PROJECT DNT
CSJ: 0364-04-047
STA 1157+50.76
N
END PROJECT SH 121
CSJ: 0364-04-047
STA 757+04.15
℄ SH 121
BEGIN PROJECT SH 121
CSJ: 0364-04-047
STA 644+46.08
℄ DNT
BEGIN PROJECT DNT
CSJ: 0364-04-047
STA 1060+57.28

HNTB Corporation
The HNTB Companies
Engineers Architects Planners

PLAN 1 OF 1

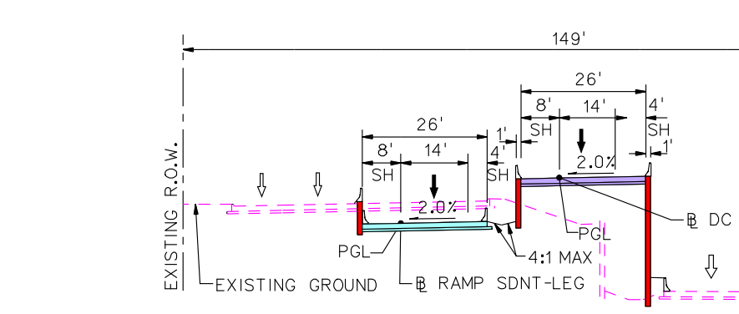
MAY 2008
ROLL 5 OF 11

34593 g:\39370\WA04_Supp\SH121_DNT_Schem\Engr\sheets\12s_DNT_3.dgn 14-AUG-2008



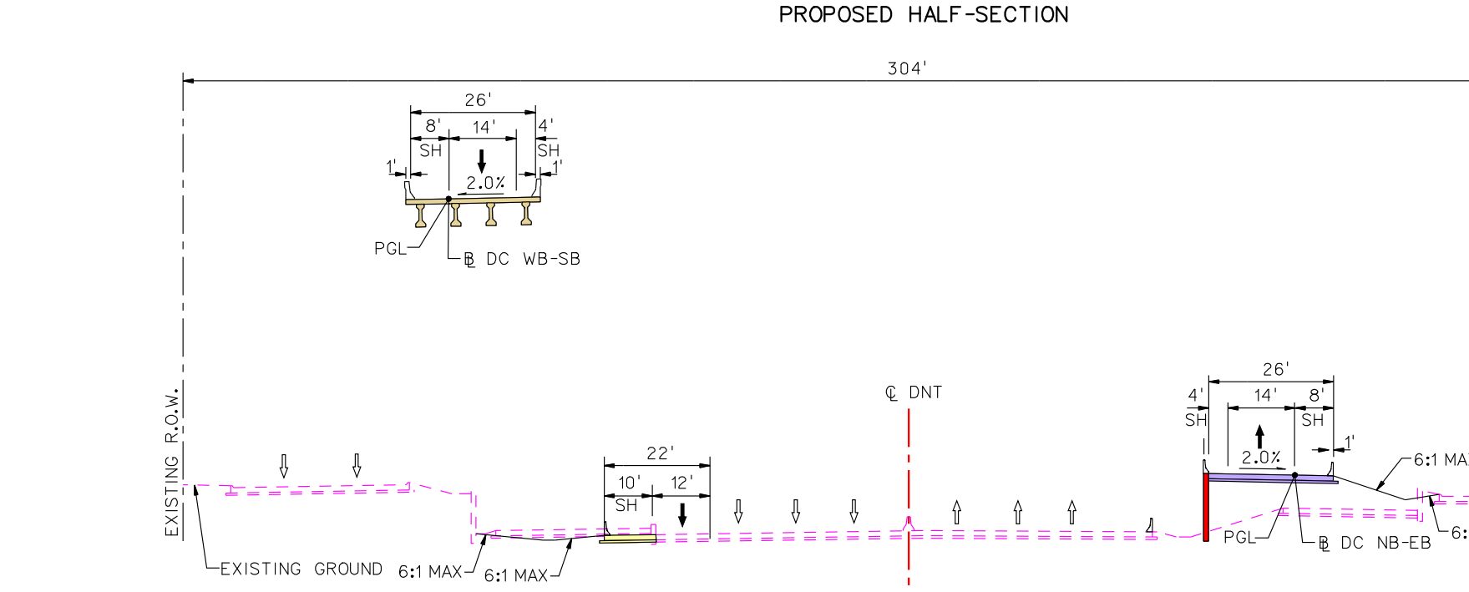
26'
4'
14'
8'
SH
SH
2.0%
PGL

SLIP RAMP PROPOSED TYPICAL SECTION



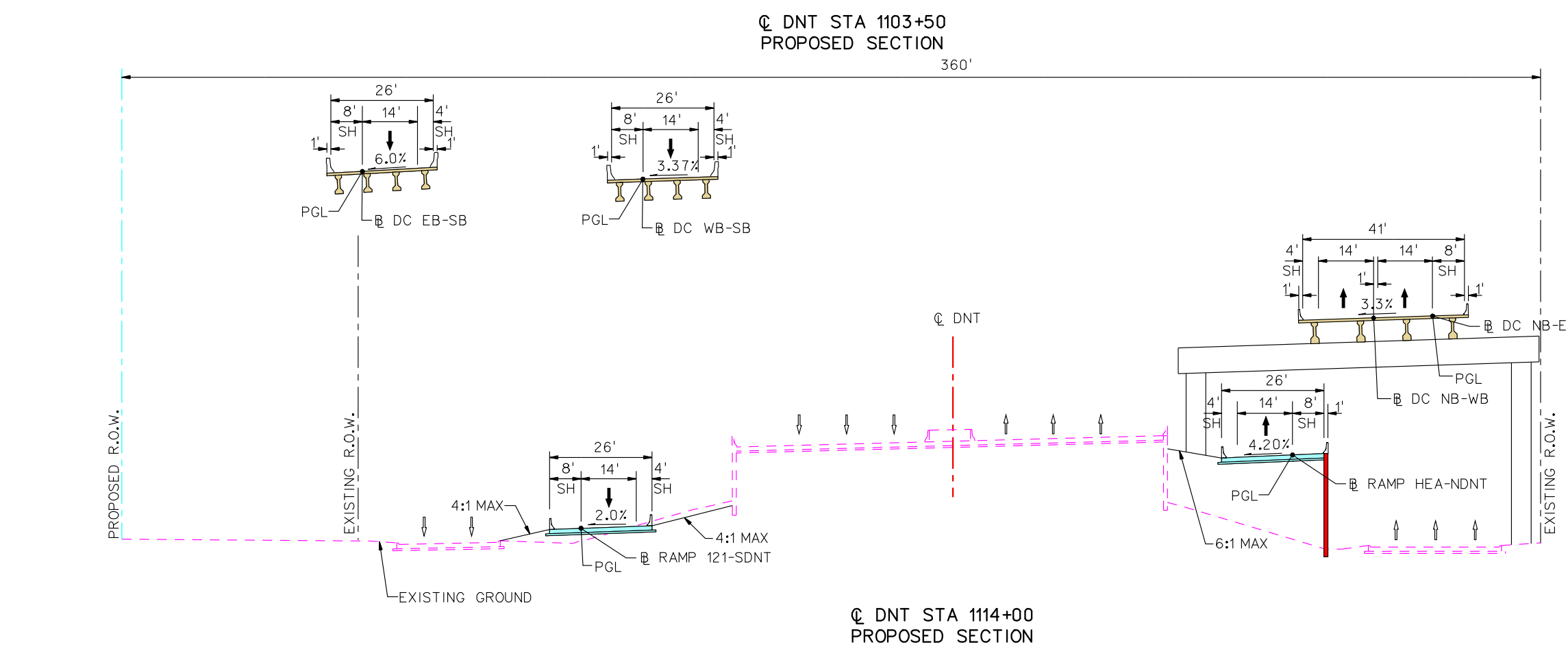
149'
26'
℄ DNT
26'
8' 14' 4'
SH SH
14' 8'
2.0%
2.0%
EXISTING R.O.W.
PGL
4:1 MAX
PGL
℄ DC WB-SB
EXISTING GROUND
℄ RAMP SDNT-LEG

℄ DNT STA 1086+50
PROPOSED HALF-SECTION



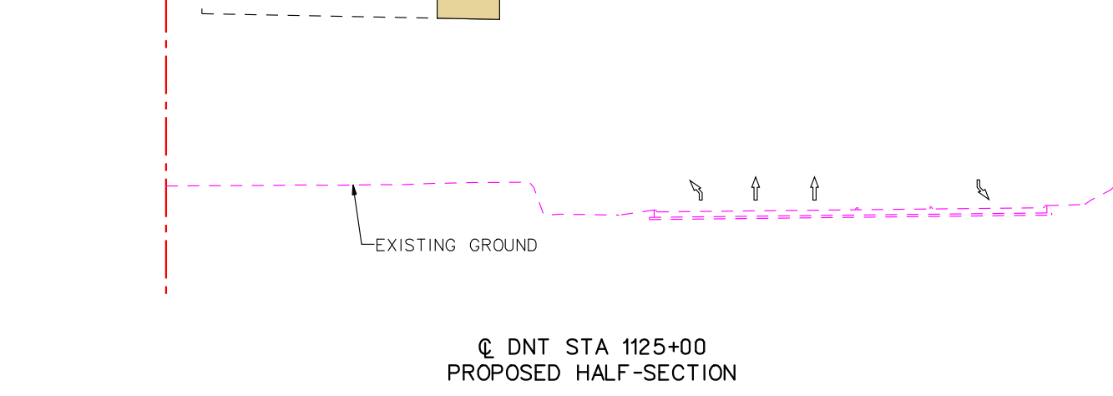
304'
26'
8' 14' 4'
SH SH
2.0%
PGL
℄ DC WB-SB
℄ DNT
26'
4' 14' 8'
SH SH
2.0%
6:1 MAX
22'
10' 12'
SH
EXISTING R.O.W.
EXISTING GROUND 6:1 MAX
6:1 MAX
PGL
℄ DC NB-EB
6:1 MAX
EXISTING R.O.W.

℄ DNT STA 1103+50
PROPOSED SECTION



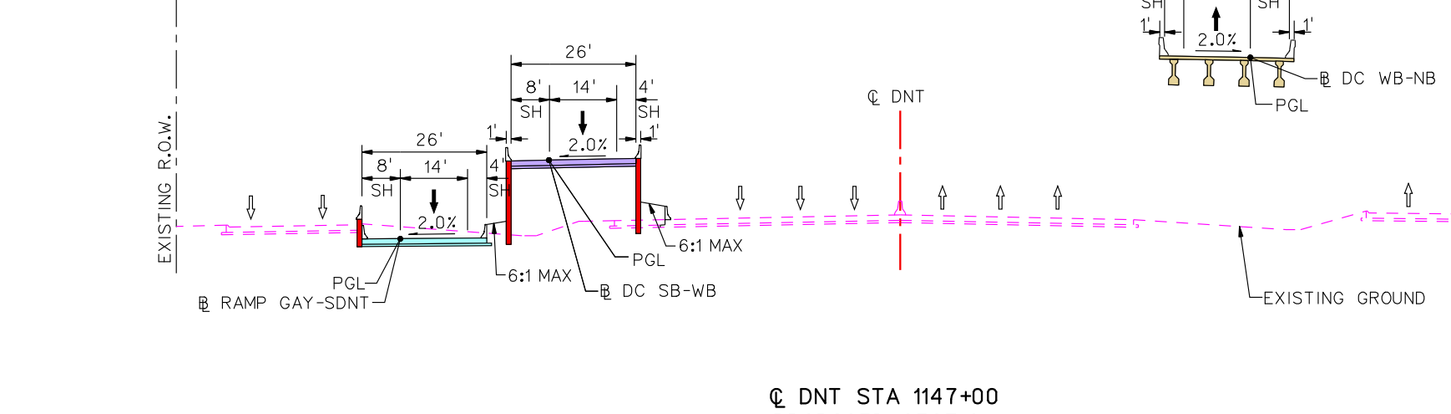
360'
26'
8' 14' 4'
SH SH
6.0%
PGL
℄ DC EB-SB
26'
8' 14' 4'
SH SH
3.37%
PGL
℄ DC WB-SB
℄ DNT
41'
4' 14' 14' 8'
SH SH
3.3%
℄ DC NB-EB
PGL
℄ DC NB-WB
26'
4' 14' 8'
SH SH
4.20%
PGL
℄ RAMP HEA-NDNT
6:1 MAX
26'
8' 14' 4'
SH SH
2.0%
4:1 MAX
4:1 MAX
PGL
℄ RAMP 121-SDNT
PROPOSED R.O.W.
EXISTING R.O.W.
EXISTING GROUND
EXISTING R.O.W.

℄ DNT STA 1114+00
PROPOSED SECTION



℄ DNT
22'
12' 10'
SH
EXISTING GROUND

℄ DNT STA 1125+00
PROPOSED HALF-SECTION

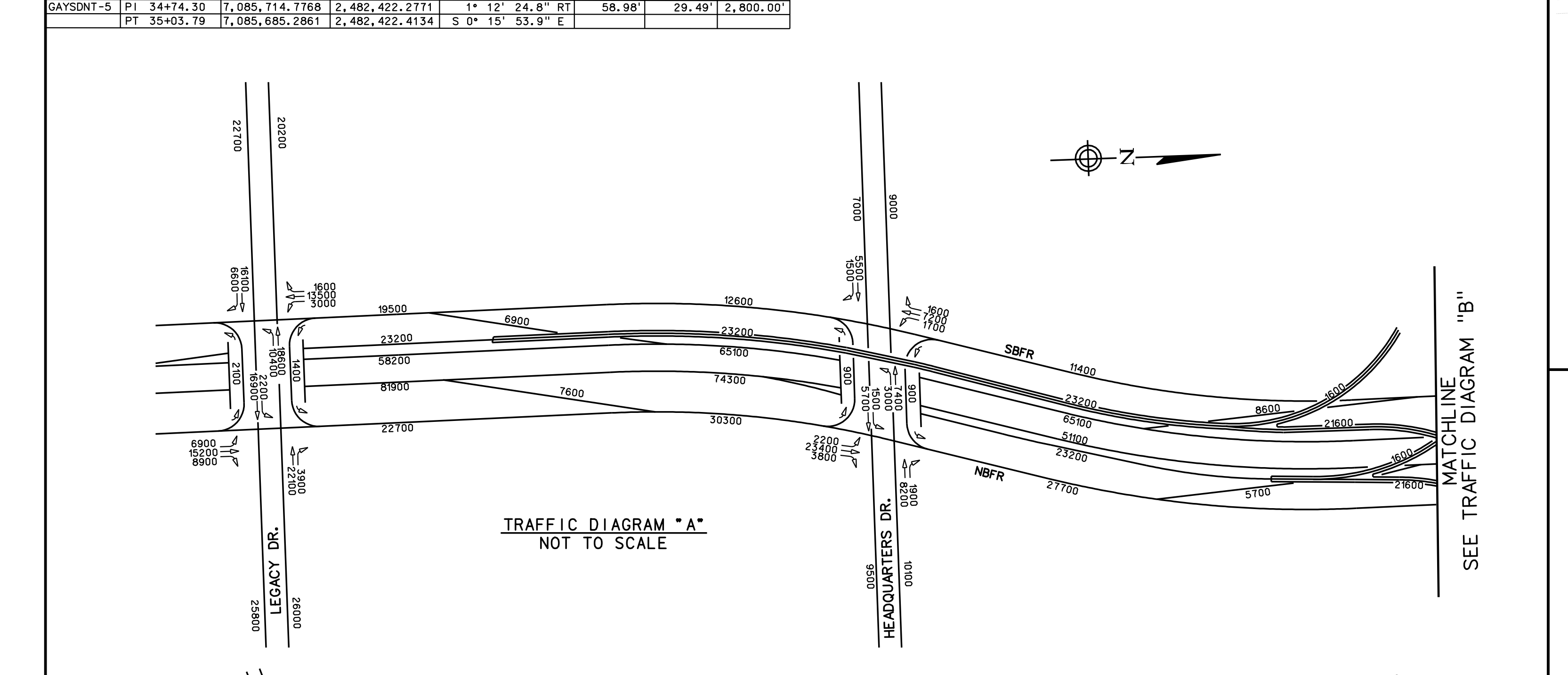


302'
26'
4' 14' 8'
SH SH
2.0%
PGL
℄ DC WB-NB
℄ DNT
26'
8' 14' 4'
SH SH
2.0%
26'
8' 14' 4'
SH SH
2.0%
PGL
6:1 MAX
6:1 MAX
PGL
℄ RAMP GAY-SDNT
℄ DC SB-WB
EXISTING GROUND
EXISTING R.O.W.
EXISTING R.O.W.

℄ DNT STA 1147+00
PROPOSED SECTION

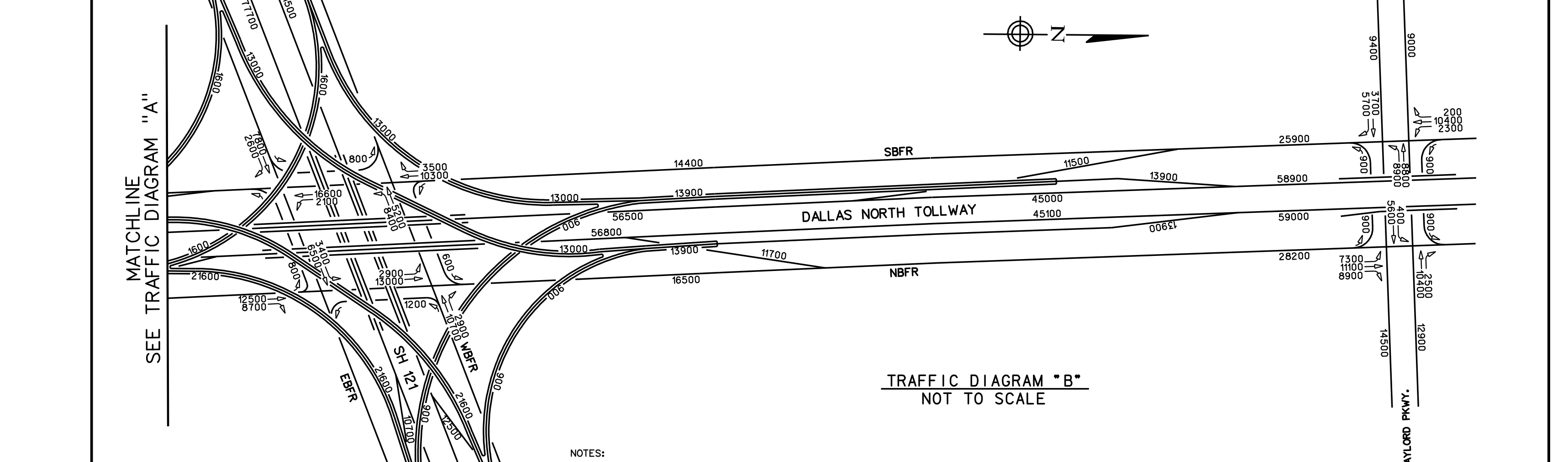
CURVE NO.	STATION	COORDINATE N	COORDINATE E	BEARING/ DELTA	LENGTH (FT)	TANGENT (FT)	RADIUS (FT)
℄ RAMP SDNT-LEG							
	PC 10+00.00	7,082,176.8865	2,482,031.9852	S 8° 31' 53.1" W			
SDNTLEG-1	PI 10+51.18	7,082,126.2680	2,482,024.3919	4° 53' 05.4" RT	102.31'	51.18'	1,200.00'
	PT 11+02.31	7,082,076.4800	2,482,012.5158	S 13° 24' 58.5" W			
	PC 13+11.82	7,081,872.6808	2,481,963.9029	S 13° 24' 58.5" W			
SDNTLEG-2	PI 14+36.59	7,081,751.3171	2,481,934.9536	14° 13' 26.1" LT	248.25'	124.77'	1,000.00'
	PT 15+60.08	7,081,626.5609	2,481,936.7124	S 0° 48' 27.6" E			
	PC 19+43.85	7,081,242.8255	2,481,942.1221	S 0° 48' 27.6" E			
SDNTLEG-3	PI 21+10.00	7,081,076.6919	2,481,944.4642	13° 32' 10.5" RT	330.75'	166.15'	1,400.00'
	PRC 22+74.61	7,080,914.6250	2,481,907.8559	S 12° 43' 42.9" W			
	PRC 22+74.61	7,080,914.6250	2,481,907.8559	S 12° 43' 42.9" W			
SDNTLEG-4	PI 23+23.42	7,080,867.0065	2,481,897.0996	6° 12' 34.7" LT	97.54'	48.82'	900.00'
	PT 23+72.15	7,080,818.5038	2,481,891.5572	S 6° 31' 08.1" W			
℄ RAMP 121-SDNT							
	PC 10+00.00	7,084,565.3722	2,482,364.7635	S 1° 08' 39.6" E			
121SDNT-1	PI 10+67.61	7,084,497.7756	2,482,366.1137	7° 44' 08.8" LT	135.01'	67.61'	1,000.00'
	PRC 11+35.01	7,084,430.9759	2,482,376.5505	S 8° 52' 48.4" E			
	PRC 11+35.01	7,084,430.9759	2,482,376.5505	S 8° 52' 48.4" E			
121SDNT-2	PI 12+78.21	7,084,289.4957	2,482,398.6553	11° 40' 48.7" RT	285.40'	143.20'	1,400.00'
	PT 14+20.42	7,084,146.4700	2,482,391.6600	S 2° 48' 00.3" W			
	PC 18+09.21	7,083,758.1412	2,482,372.6670	S 2° 48' 00.3" W			
121SDNT-3	PI 21+26.06	7,083,441.6701	2,482,357.1885	12° 54' 44.3" RT	631.01'	316.85'	2,800.00'
	PT 24+40.22	7,083,136.6603	2,482,271.3829	S 15° 42' 44.6" W			
℄ RAMP GAY-SDNT							
	PC 10+00.00	7,088,186.1740	2,482,357.4360	S 0° 10' 11.5" E			
GAYSDNT-1	PI 10+53.89	7,088,132.2889	2,482,357.5957	6° 51' 09.8" RT	107.64'	53.89'	900.00'
	PRC 11+07.64	7,088,078.7697	2,482,351.3249	S 6° 40' 58.3" W			
	PRC 11+07.64	7,088,078.7697	2,482,351.3249	S 6° 40' 58.3" W			
GAYSDNT-2	PI 11+61.05	7,088,025.7268	2,482,345.1099	6° 47' 28.8" LT	106.69'	53.41'	900.00'
	PT 12+14.33	7,087,972.3212	2,482,345.2110	S 0° 06' 30.5" E			
	PC 18+41.26	7,087,345.3940	2,482,346.3980	S 0° 06' 30.5" E			
GAYSDNT-3	PI 19+66.16	7,087,220.4916	2,482,346.6345	5° 06' 30.0" LT	249.64'	124.90'	2,800.00'
	PT 20+90.90	7,087,096.1063	2,482,357.9912	S 5° 13' 00.5" E			
	PC 24+40.05	7,086,748.3997	2,482,389.7379	S 5° 13' 00.5" E			
GAYSDNT-4	PI 25+31.59	7,086,657.2400	2,482,398.0610	3° 44' 41.8" RT	183.01'	91.54'	2,800.00'
	PT 26+23.06	7,086,565.7313	2,482,400.4123	S 1° 28' 18.7" E			
	PC 34+44.81	7,085,744.2581	2,482,421.5196	S 1° 28' 18.7" E			
GAYSDNT-5	PI 34+74.30	7,085,714.7768	2,482,422.2771	1° 12' 24.8" RT	58.98'	29.49'	2,800.00'
	PT 35+03.79	7,085,685.2861	2,482,422.4134	S 0° 15' 53.9" E			

CURVE NO.	STATION	COORDINATE N	COORDINATE E	BEARING/ DELTA	LENGTH (FT)	TANGENT (FT)	RADIUS (FT)
℄ RAMP HEA-NDNT							
	PC 10+00.00	7,083,218.9080	2,482,476.8440	N 14° 01' 58.5" E			
HEANDNT-1	PI 11+57.72	7,083,371.9184	2,482,515.0872	9° 29' 25.4" LT	314.71'	157.72'	1,900.00'
	PT 13+14.71	7,083,529.1402	2,482,527.5783	N 4° 32' 33.2" E			
	PC 17+86.92	7,083,999.8663	2,482,564.9769	N 4° 32' 33.2" E			
HEANDNT-2	PI 19+46.97	7,084,159.4129	2,482,577.6528	8° 42' 59.9" LT	319.48'	160.05'	2,100.00'
	PT 21+06.40	7,084,319.0376	2,482,566.0032	N 4° 10' 26.7" W			
	PC 23+79.41	7,084,591.3232	2,482,546.1317	N 4° 10' 26.7" W			
HEANDNT-3	PI 24+65.06	7,084,676.7380	2,482,539.8981	3° 30' 13.9" RT	171.23'	85.64'	2,800.00'
	PT 25+50.64	7,084,762.3742	2,482,538.8963	N 0° 40' 12.8" W			



22700
20200
1600
13500
3000
16100
6600
1400
16800
15400
2100
6900
2200
16900
19500
6900
12600
23200
23200
58200
65100
81900
7600
74300
22700
30300
6900
15200
8900
3900
2200
LEGACY DR.
25800
26000
7000
9000
1500
5100
1600
2400
1700
SBFR
11400
23200
65100
51100
23200
8600
21600
1600
21600
27700
5700
NBFR
2200
23400
3800
900
3000
1400
9000
HEADQUARTERS DR.
9500
10100
MATCHLINE
SEE TRAFFIC DIAGRAM "B"

TRAFFIC DIAGRAM "A"
NOT TO SCALE



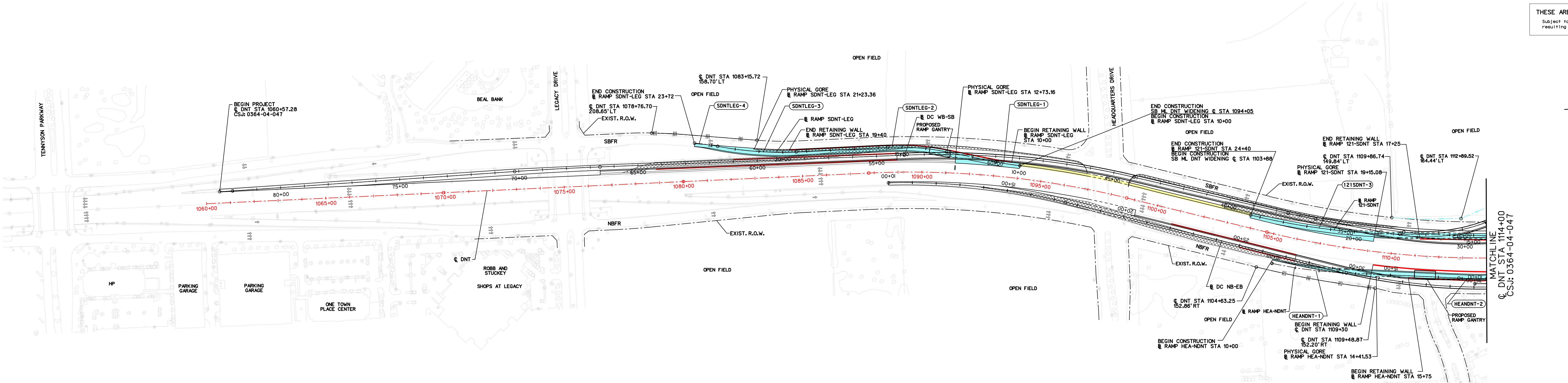
MATCHLINE
SEE TRAFFIC DIAGRAM "A"
77100
81500
13000
6000
9000
2800
1600
2800
1800
16600
2800
13000
3500
10300
14400
13000
13900
56500
56800
13000
13900
11700
1600
21600
12500
8700
2900
13000
1200
SH 121
EBFR
WBFR
16500
1600
2300
SBFR
14400
13900
11500
13900
25900
58900
DALLAS NORTH TOLLWAY
45000
45100
59000
56800
13900
28200
NBFR
16500
11700
9400
9000
3700
5100
200
10400
2300
7300
11100
8900
14500
12800
GAYLORD PKWY.

TRAFFIC DIAGRAM "B"
NOT TO SCALE

NOTES:

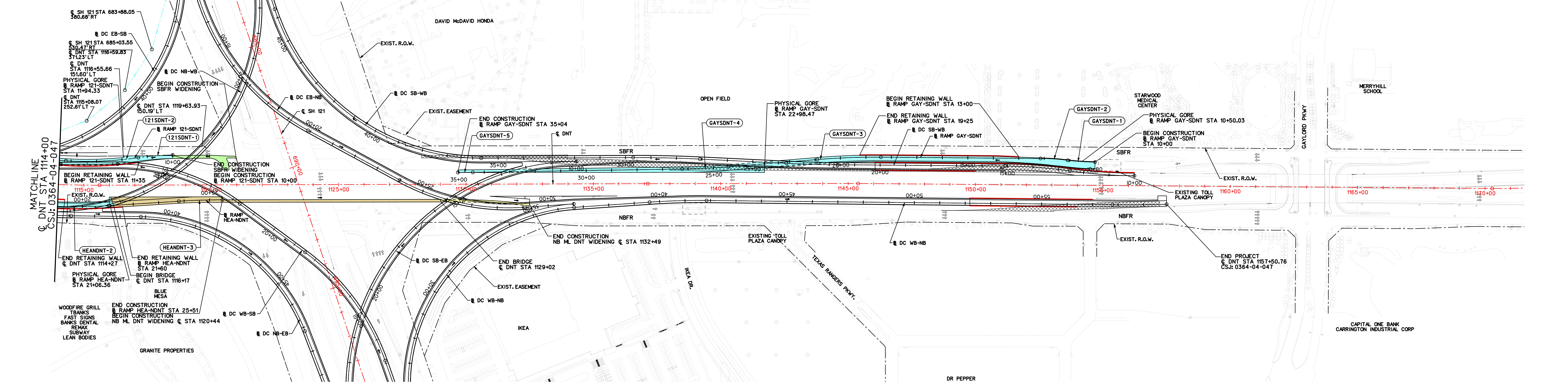
1. YEAR 2030 AVERAGE DAILY TRAFFIC (ADT) IN VEHICLES PER DAY (VPD).

2. SOURCE: TXDOT TRANSPORTATION PLANNING AND PROGRAMMING.



TENNYSON PARKWAY
BEGIN PROJECT
℄ DNT STA 1060+57.28
CSJ: 0364-04-047
BEAL BANK
LEGACY DRIVE
END CONSTRUCTION
℄ RAMP SDNT-LEG STA 23+72
℄ DNT STA 1078+76.70
208.65' LT
EXIST. R.O.W.
OPEN FIELD
℄ DNT STA 1083+15.72
158.70' LT
SDNTLEG-4
PHYSICAL GORE
℄ RAMP SDNT-LEG STA 21+23.36
SDNTLEG-3
℄ RAMP SDNT-LEG
END RETAINING WALL
℄ RAMP SDNT-LEG STA 19+40
SDNTLEG-2
℄ DC WB-SB
PROPOSED RAMP GANTRY
PHYSICAL GORE
℄ RAMP SDNT-LEG STA 12+73.16
SDNTLEG-1
BEGIN RETAINING WALL
℄ RAMP SDNT-LEG
STA 10+00
OPEN FIELD
SBFR
80+00
75+00
70+00
65+00
60+00
55+00
50+00
45+00
40+00
10+00
1060+00
1065+00
1070+00
1075+00
1080+00
1085+00
1090+00
1095+00
1100+00
1105+00
1110+00
NBFR
EXIST. R.O.W.
℄ DNT
ROBB AND STUCKEY
SHOPS AT LEGACY
HP
PARKING GARAGE
PARKING GARAGE
ONE TOWN PLACE CENTER
OPEN FIELD
HEADQUARTERS DRIVE
END CONSTRUCTION
SB ML DNT WIDENING ℄ STA 1094+05
BEGIN CONSTRUCTION
℄ RAMP SDNT-LEG STA 10+00
OPEN FIELD
END CONSTRUCTION
℄ RAMP 121-SDNT STA 24+40
BEGIN CONSTRUCTION
SB ML DNT WIDENING ℄ STA 1103+88
END RETAINING WALL
℄ RAMP 121-SDNT STA 17+25
℄ DNT STA 1109+86.74
149.84' LT
PHYSICAL GORE
℄ RAMP 121-SDNT STA 19+15.08
121SDNT-3
℄ RAMP 121-SDNT
EXIST. R.O.W.
℄ DNT STA 1112+89.52
164.44' LT
OPEN FIELD
EXIST. R.O.W.
℄ DC NB-EB
℄ DNT STA 1104+63.25
152.86' RT
℄ RAMP HEA-NDNT
OPEN FIELD
HEANDNT-1
BEGIN RETAINING WALL
℄ DNT STA 1109+30
℄ DNT STA 1109+48.87
152.20' RT
PHYSICAL GORE
℄ RAMP HEA-NDNT STA 14+41.53
BEGIN CONSTRUCTION
℄ RAMP HEA-NDNT STA 10+00
BEGIN RETAINING WALL
℄ RAMP HEA-NDNT STA 15+75
HEANDNT-2
PROPOSED RAMP GANTRY
MATCHLINE
℄ DNT STA 1114+00
CSJ: 0364-04-047

THESE ARE PRELIMINARY DESIGN CONCEPTS
Subject to change based on further developments resulting from public input and technical review.



℄ SH 121 682+01.45
250.86' RT
℄ SH 121 STA 683+88.05
380.68' RT
℄ DC EB-SB
℄ SH 121 STA 685+03.55
530.47' RT
℄ DNT STA 1116+59.83
371.23' LT
℄ DNT
STA 1116+55.66
151.60' LT
PHYSICAL GORE
℄ RAMP 121-SDNT
STA 11+94.33
℄ DNT
STA 1115+08.07
252.61' LT
℄ DC NB-WB
BEGIN CONSTRUCTION
SBFR WIDENING
℄ DNT STA 1119+63.93
150.19' LT
121SDNT-2
℄ RAMP 121-SDNT
121SDNT-1
END CONSTRUCTION
SBFR WIDENING
BEGIN CONSTRUCTION
℄ RAMP 121-SDNT STA 10+00
BEGIN RETAINING WALL
℄ RAMP 121-SDNT STA 11+35
EXIST. R.O.W.
MATCHLINE
℄ DNT STA 1114+00
CSJ: 0364-04-047
1115+00
1120+00
1125+00
1130+00
1135+00
1140+00
1145+00
1150+00
1155+00
1160+00
1165+00
1170+00
℄ RAMP HEA-NDNT
HEANDNT-2
HEANDNT-3
END RETAINING WALL
℄ DNT STA 1114+27
END RETAINING WALL
℄ RAMP HEA-NDNT
STA 21+60
PHYSICAL GORE
℄ RAMP HEA-NDNT
STA 21+06.36
BEGIN BRIDGE
℄ DNT STA 1116+17
BLUE MESA
END CONSTRUCTION
℄ RAMP HEA-NDNT STA 25+51
BEGIN CONSTRUCTION
NB ML DNT WIDENING ℄ STA 1120+44
WOODFIRE GRILL
TBANKS
FAST SIGNS
BANKS DENTAL
REMAX
SUBWAY
LEAN BODIES
℄ DC WB-SB
℄ DC NB-EB
GRANITE PROPERTIES
℄ DC EB-NB
℄ SH 121
℄ DC SB-WB
EXIST. EASEMENT
RESIDENTIAL
DAVID McDAVID HONDA
EXIST. R.O.W.
END CONSTRUCTION
℄ RAMP GAY-SDNT STA 35+04
GAYSDNT-5
℄ DNT
GAYSDNT-4
GAYSDNT-3
OPEN FIELD
PHYSICAL GORE
℄ RAMP GAY-SDNT
STA 22+98.47
BEGIN RETAINING WALL
℄ RAMP GAY-SDNT STA 13+00
END RETAINING WALL
℄ RAMP GAY-SDNT STA 19+25
℄ DC SB-WB
℄ RAMP GAY-SDNT
GAYSDNT-2
GAYSDNT-1
PHYSICAL GORE
℄ RAMP GAY-SDNT STA 10+50.03
BEGIN CONSTRUCTION
℄ RAMP GAY-SDNT
STA 10+00
STARWOOD MEDICAL CENTER
HALL OFFICE PARK
MERRYHILL SCHOOL
SBFR
NBFR
EXIST. R.O.W.
EXISTING TOLL PLAZA CANOPY
EXIST. R.O.W.
END CONSTRUCTION
NB ML DNT WIDENING ℄ STA 1132+49
END BRIDGE
℄ DNT STA 1129+02
EXIST. EASEMENT
℄ DC SB-EB
℄ DC WB-NB
IKEA DR.
IKEA
TEXAS RANGERS PKWY.
EXISTING TOLL PLAZA CANOPY
℄ DC WB-NB
GAYLORD PKWY
END PROJECT
℄ DNT STA 1157+50.76
CSJ: 0364-04-047
CAPITAL ONE BANK
CARRINGTON INDUSTRIAL CORP
DR PEPPER
DR PEPPER

NOTES:

1. IN COLLIN COUNTY, DESIGN BASED ON NAD 83 SURFACE COORDINATES WITH A SCALE FACTOR OF 1.000152710.

2. FACILITY WILL BE CONTINUOUSLY LIGHTED.

3. FOR DETAILED DIRECT CONNECTOR HORIZONTAL GEOMETRY DATA, SEE ROLLS 3 AND 4.

LEGEND

🟨	Main Lane
🟪	Direct Connector
🟩	Frontage Road/Cross Street
🟦	Ramp
🟫	Bridge Structure
— · —	Existing ROW
— · —	Proposed ROW
— · —	Existing Centerline
— · —	Proposed Baseline
▨	Pavement Removal
—‖—	Control of Access
—	Proposed Retaining Wall
—	Column / Bent

TEXAS DEPARTMENT OF TRANSPORTATION – DALLAS DISTRICT

WILLIAM HALE, P.E. – DISTRICT ENGINEER

DESIGN SCHEMATIC

SH 121/DNT INTERCHANGE, COLLIN COUNTY

SH 121: FROM NORTH OF LEGACY DRIVE TO NORTH OF SH 289 (PRESTON ROAD), 2.16 MILES
DNT: FROM SOUTH OF LEGACY DRIVE TO NORTH OF GAYLORD PARKWAY, 1.84 MILES

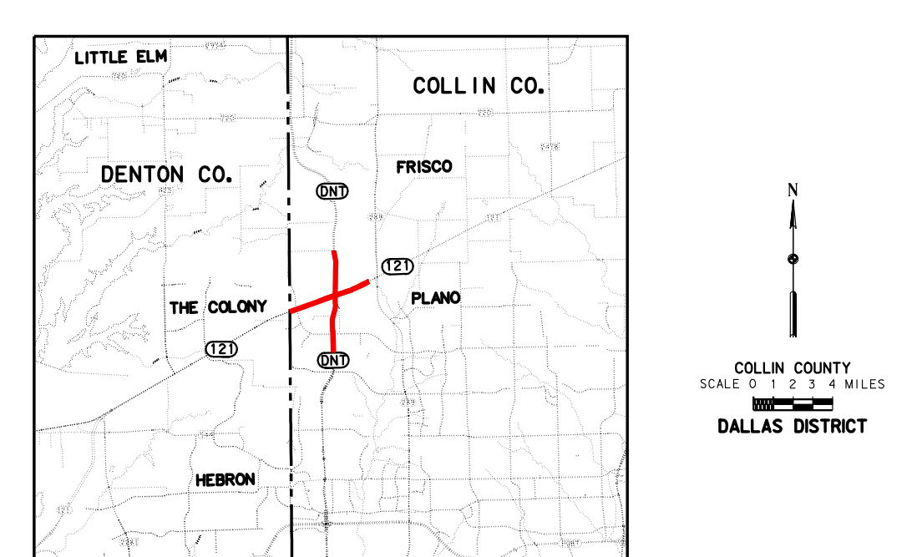
CSJ: 0364-04-047

DESIGN SPEED

MAINLANES – 70 MPH (URBAN FREEWAY)
SLIP RAMPS – 50 MPH (URBAN ARTERIAL)
DIRECT CONNECTORS – 45 MPH
FRONTAGE ROADS – 50 MPH
CROSS STREETS – 45 MPH

HIGHWAY CLASSIFICATION

OTHER URBAN FREEWAY



LITTLE ELM
COLLIN CO.
DENTON CO.
DNT
FRISCO
121
THE COLONY
PLANO
121
DNT
HEBRON
DALLAS CO.
N
COLLIN COUNTY
SCALE 0 1 2 3 4 MILES
DALLAS DISTRICT

DATE APPROVED

DATE SUBMITTED

DATE REVISED

0 100 200
HORIZONTAL
0 10 20
VERTICAL
SCALE IN FEET

PREPARED BY HNTB
UNDER THE SUPERVISION OF:
CHRISTOPHER M. BERGERON, P.E.

SERIAL NO. 72895
DATE: ____________

NOT INTENDED FOR
CONSTRUCTION, BIDDING
OR PERMIT PURPOSES.

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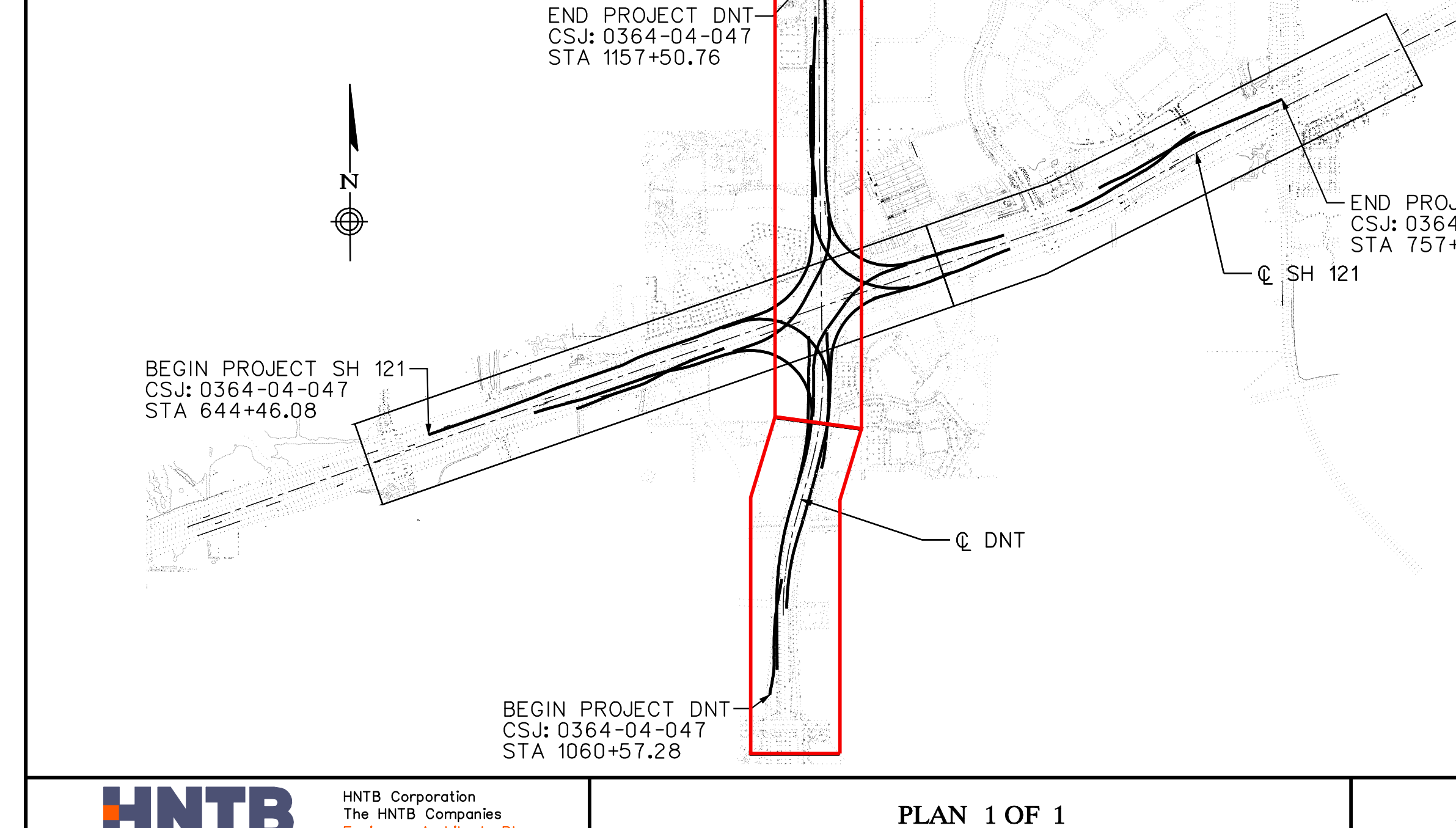

END PROJECT DNT
CSJ: 0364-04-047
STA 1157+50.76
N
END PROJECT SH 121
CSJ: 0364-04-047
STA 757+04.15
℄ SH 121
BEGIN PROJECT SH 121
CSJ: 0364-04-047
STA 644+46.08
℄ DNT
BEGIN PROJECT DNT
CSJ: 0364-04-047
STA 1060+57.28

HNTB Corporation
The HNTB Companies
Engineers Architects Planners

PLAN 1 OF 1

MAY 2008
ROLL 5 OF 11