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Texas Department
of Transportation

DALLAS DISTRICT
DESIGN SCHEMATIC

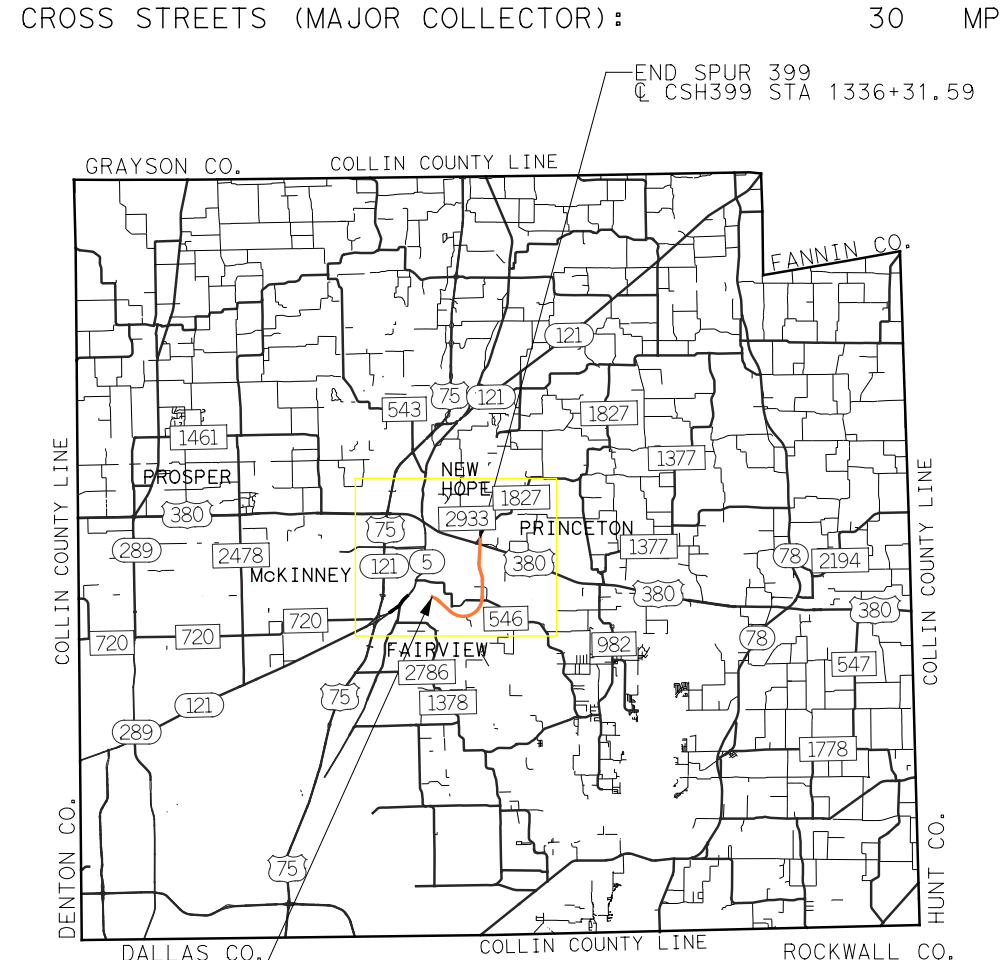
CEASON CLEMENS, P.E.
DALLAS DISTRICT ENGINEER

90% DESIGN SCHEMATIC
SPUR 399 EXTENSION

CSJ: 0364-04-051, 0047-05-058 & 0047-10-002
FROM: US 75
TO: US 380
COLLIN COUNTY
FUNCTIONAL CLASS: URBAN FREEWAY
ORANGE ALTERNATIVE LENGTH: 7.0 MILES

DESIGN SPEEDS

MAINLANES (FREEWAY):	70 MPH
GENERAL RAMPS (PRINCIPAL ARTERIAL):	40-50 MPH
FRONTAGE ROADS (COLLECTOR):	35-45 MPH
CROSS STREETS (MAJOR COLLECTOR):	30 MPH



END SPUR 399
℄ CSH399 STA 1336+31.59
GRAYSON CO.
COLLIN COUNTY LINE
FANNIN CO.
PROSPER
NEW HOPE
PRINCETON
McKINNEY
FAIRVIEW
COLLIN COUNTY LINE
DENTON CO.
HUNT CO.
DALLAS CO.
COLLIN COUNTY LINE
ROCKWALL CO.
N
BEGIN SPUR 399
℄ CSH399 STA 993+48.33

LOCATION MAP
NOT TO SCALE

SCALE: HORIZONTAL 1"=100'
SCALE: VERTICAL 1"=10'

0 100 200 300 400
HORIZ. SCALE IN FEET
0 10 20 30 40
VERT. SCALE IN FEET

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NOVEMBER 2022

PRELIMINARY
SUBJECT TO REVISIONS

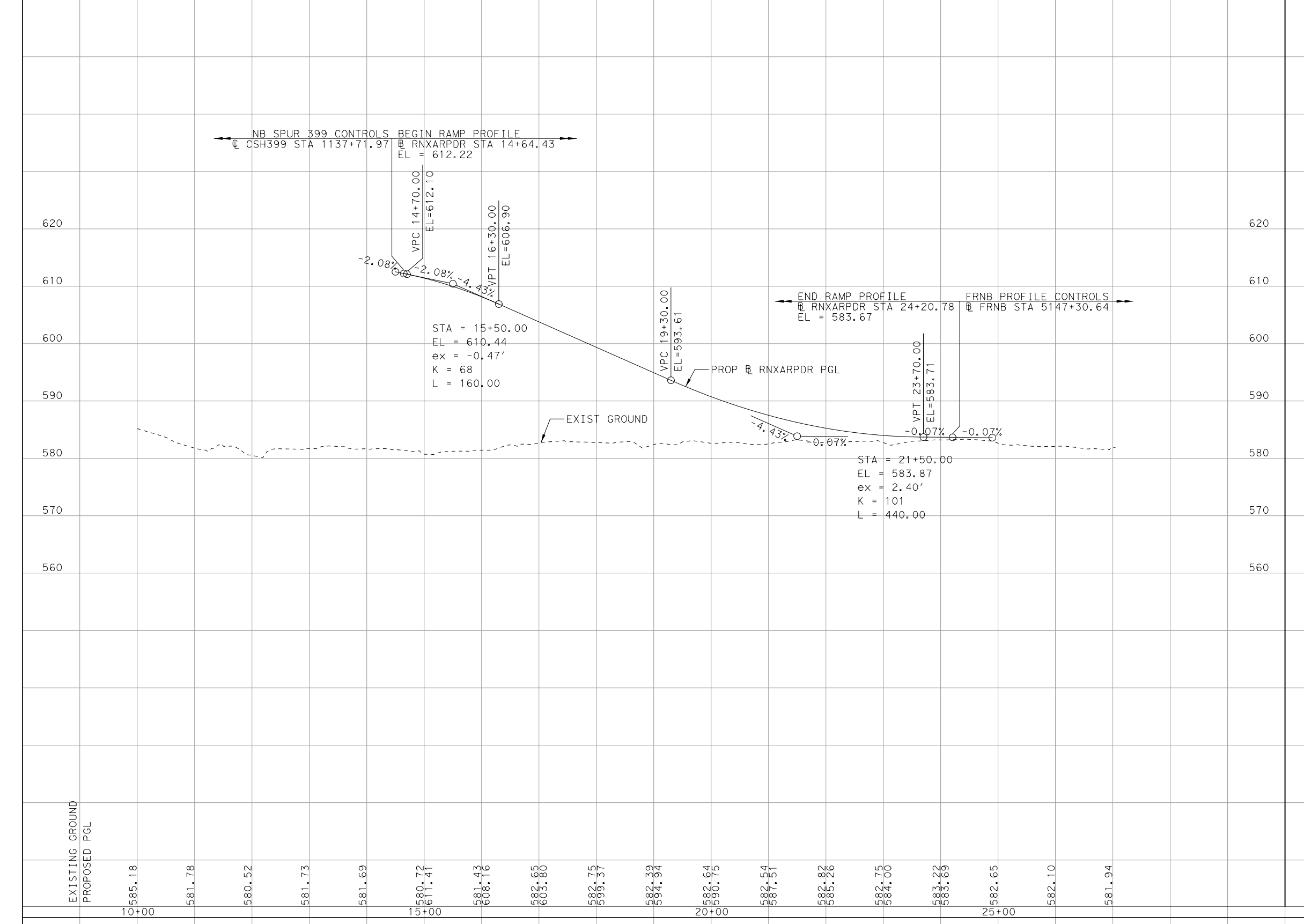
SCHEMATIC PREPARED BY:
DAVID SUTTON 120142
NAME P.E. NUMBER
NOVEMBER 2022
DATE

NOT INTENDED FOR CONSTRUCTION,
BIDDING, OR PERMIT PURPOSES

ROLL 7 OF 8

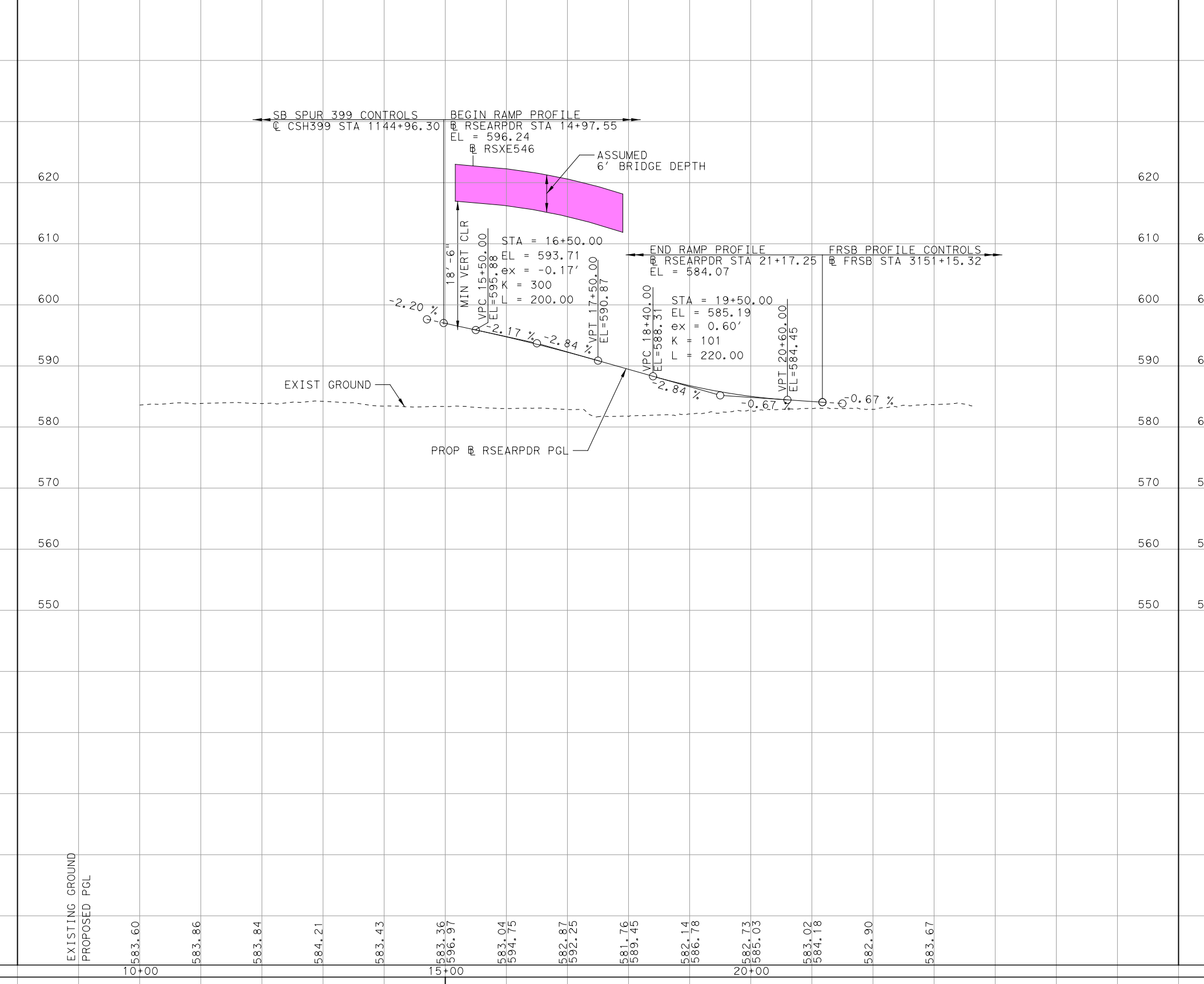
HDR
Firm Registration No. F-754
17111 Preston Road, Suite 300
Dallas, Texas 75248-1229
972.960.4400

RNXARPDR
PROPOSED NORTHBOUND EXIT RAMP TO AIRPORT DR (45 MPH)



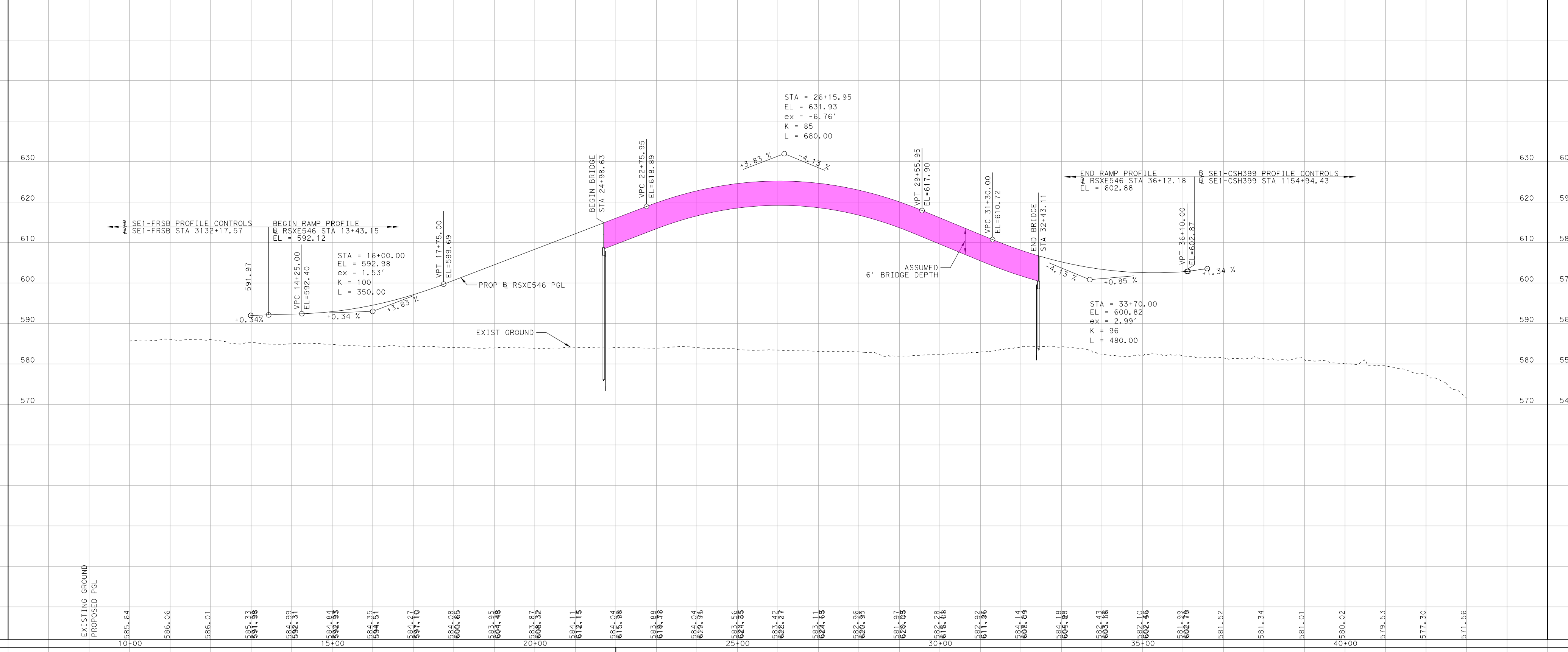
NB SPUR 399 CONTROLS
℄ CSH399 STA 1137+71.97
BEGIN RAMP PROFILE
℄ RNXARPDR STA 14+64.43
EL = 612.22
VPC 14+70.00
EL=612.10
VPT 16+30.00
EL=606.90
-2.08%
-2.08%
-6.43%
STA = 15+50.00
EL = 610.44
ex = -0.47'
K = 68
L = 160.00
VPC 19+30.00
EL=593.61
PROP ℄ RNXARPDR PGL
END RAMP PROFILE
℄ RNXARPDR STA 24+20.78
EL = 583.67
FRNB PROFILE CONTROLS
℄ FRNB STA 5147+30.64
VPT 23+70.00
EL=583.71
-6.43%
-0.07%
-0.07%
-0.07%
STA = 21+50.00
EL = 583.87
ex = 2.40'
K = 101
L = 440.00
EXIST GROUND
EXISTING GROUND
PROPOSED PGL
620
610
600
590
580
570
560
10+00
15+00
20+00
25+00

RSEARPDR
PROPOSED SOUTHBOUND ENTRANCE RAMP FROM AIRPORT DR (50 MPH)



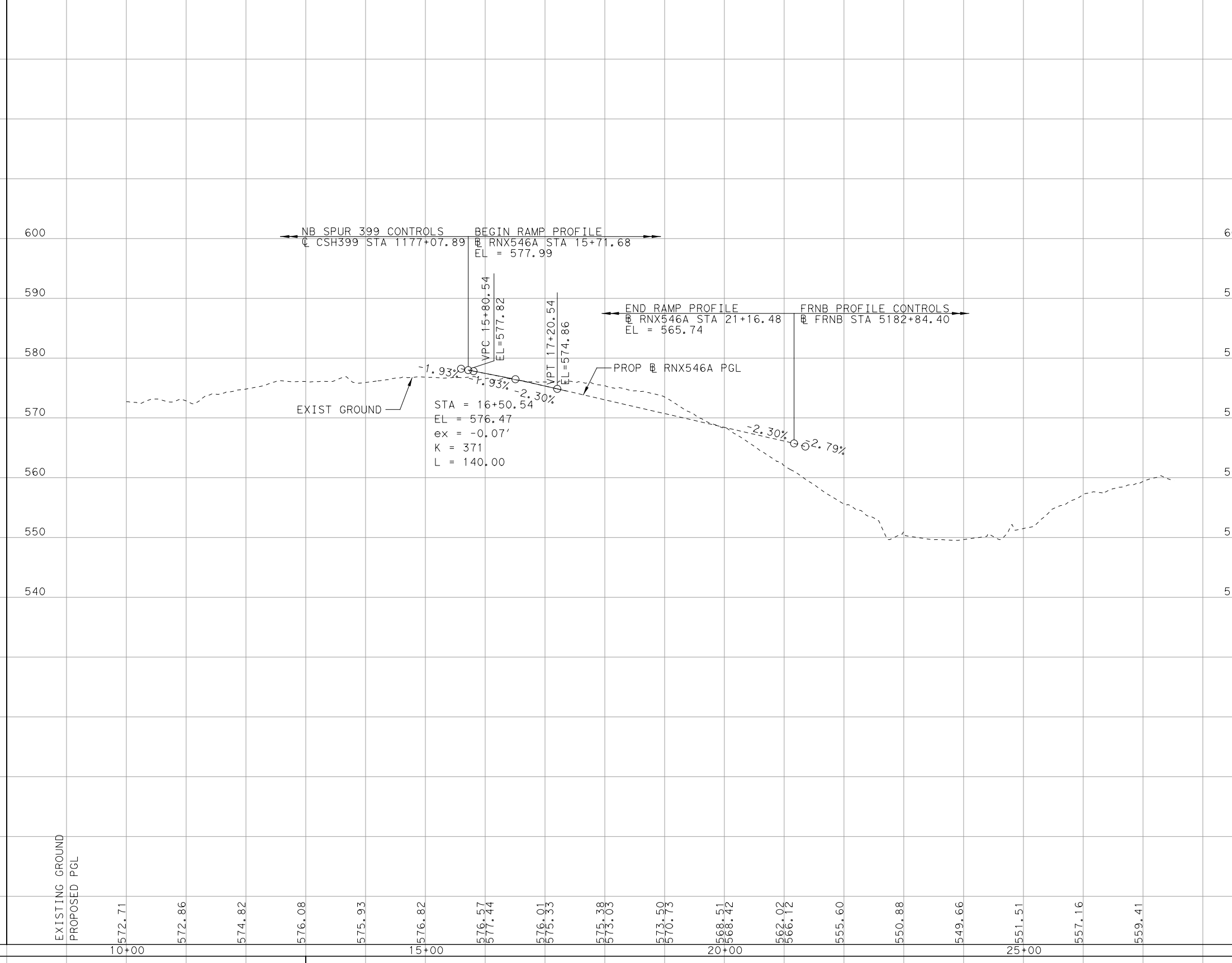
SB SPUR 399 CONTROLS
℄ CSH399 STA 1144+96.30
BEGIN RAMP PROFILE
℄ RSEARPDR STA 14+97.55
EL = 596.24
℄ RSXE546
ASSUMED
6' BRIDGE DEPTH
18'-6"
MIN VERT CLR
VPC 15+50.00
EL=595.09
STA = 16+50.00
EL = 593.71
ex = -0.17'
K = 300
L = 200.00
VPT 17+50.00
EL=590.87
-2.20%
-2.17%
-2.84%
END RAMP PROFILE
℄ RSEARPDR STA 21+17.25
EL = 584.07
FRSB PROFILE CONTROLS
℄ FRSB STA 3151+15.32
VPC 18+40.00
EL=588.31
STA = 19+50.00
EL = 585.19
ex = 0.60'
K = 101
L = 220.00
VPT 20+60.00
EL=584.45
-2.84%
-0.67%
-0.67%
EXIST GROUND
PROP ℄ RSEARPDR PGL
EXISTING GROUND
PROPOSED PGL
620
610
600
590
580
570
560
550
10+00
15+00
20+00

RSXE546
PROPOSED NORTHBOUND EXIT RAMP TO EXISTING FM 546 (50 MPH)



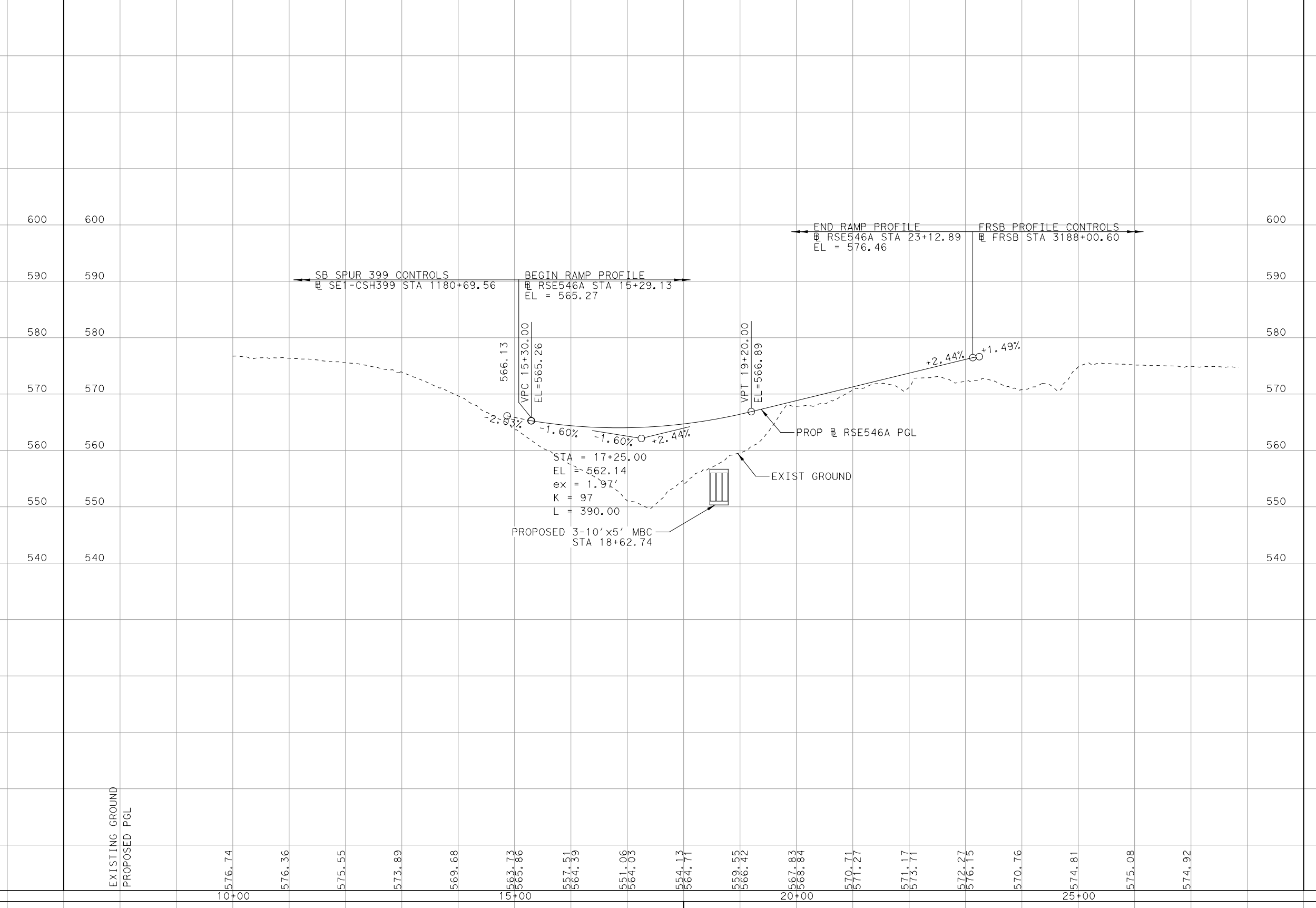
℄ SE1-FRSB PROFILE CONTROLS
℄ SE1-FRSB STA 3132+17.57
BEGIN RAMP PROFILE
℄ RSXE546 STA 13+43.15
EL = 592.12
591.97
VPC 14+25.00
EL=592.40
STA = 16+00.00
EL = 592.98
ex = 1.53'
K = 100
L = 350.00
VPT 17+75.00
EL=599.69
+0.34%
+0.34%
+3.83%
PROP ℄ RSXE546 PGL
BEGIN BRIDGE
STA 24+36.43
VPC 22+75.95
EL=618.89
STA = 26+15.95
EL = 631.93
ex = -6.76'
K = 85
L = 680.00
+3.83%
-4.13%
VPT 29+55.95
EL=617.90
VPC 31+30.00
EL=610.72
ASSUMED
6' BRIDGE DEPTH
END BRIDGE
STA 32+43.11
-4.13%
+0.85%
STA = 33+70.00
EL = 600.82
ex = 2.99'
K = 96
L = 480.00
END RAMP PROFILE
℄ RSXE546 STA 36+12.18
EL = 602.88
℄ SE1-CSH399 PROFILE CONTROLS
℄ SE1-CSH399 STA 1154+94.43
VPT 36+10.00
EL=602.87
+0.34%
EXIST GROUND
EXISTING GROUND
PROPOSED PGL
630
620
610
600
590
580
570
15+00
20+00
25+00
30+00
35+00
40+00

RNX546A
PROPOSED NORTHBOUND EXIT RAMP TO FM 546 (SECTION A) (50 MPH)



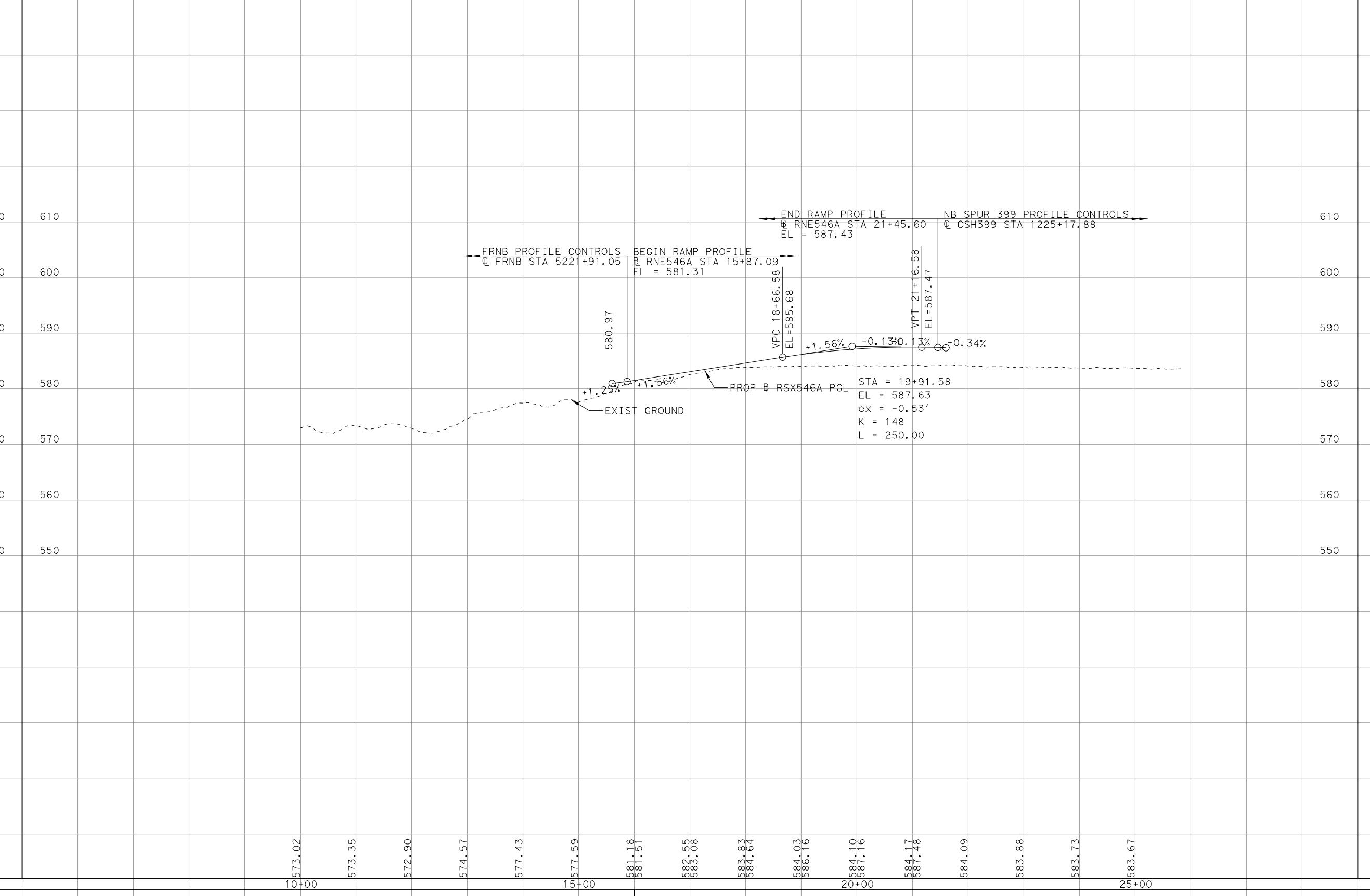
NB SPUR 399 CONTROLS
℄ CSH399 STA 1177+07.89
BEGIN RAMP PROFILE
℄ RNX546A STA 15+71.68
EL = 577.99
VPC 15+80.54
EL=577.82
VPT 17+20.54
EL=574.86
-1.93%
-1.93%
-2.30%
STA = 16+50.54
EL = 576.47
ex = -0.07'
K = 371
L = 140.00
PROP ℄ RNX546A PGL
END RAMP PROFILE
℄ RNX546A STA 21+16.48
EL = 565.74
FRNB PROFILE CONTROLS
℄ FRNB STA 5182+84.40
-2.30%
-2.79%
EXIST GROUND
EXISTING GROUND
PROPOSED PGL
600
590
580
570
560
550
540
10+00
15+00
20+00
25+00

RSE546A
PROPOSED SOUTHBOUND ENTRANCE RAMP FROM FM 546 (SECTION A) (50 MPH)



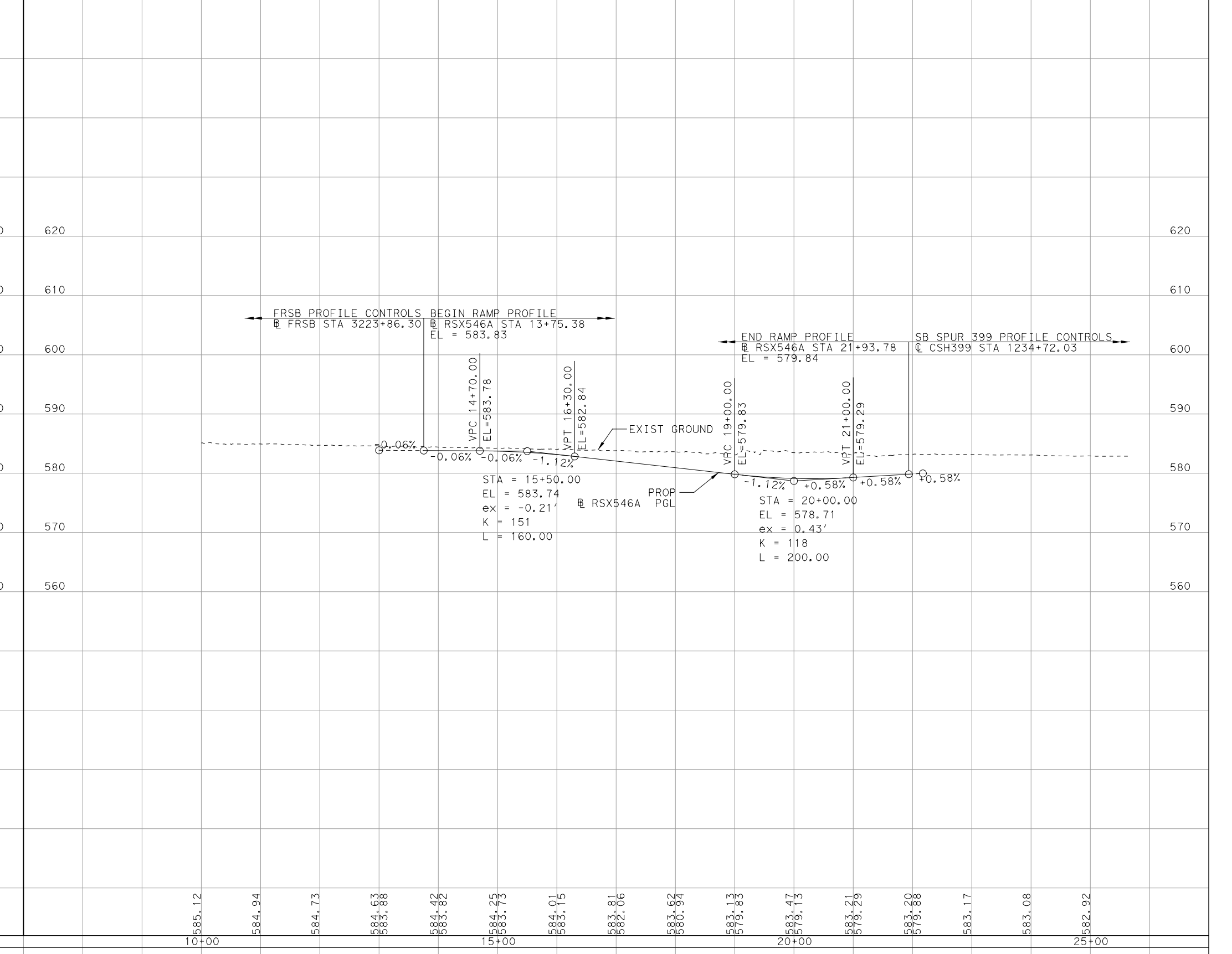
SB SPUR 399 CONTROLS
℄ SE1-CSH399 STA 1180+69.56
BEGIN RAMP PROFILE
℄ RSE546A STA 15+29.13
EL = 565.27
566.13
VPC 15+30.00
EL=565.26
-2.03%
-1.60%
-1.60%
+2.44%
STA = 17+25.00
EL = 562.14
ex = 1.91'
K = 97
L = 390.00
PROPOSED 3-10'x5' MBC
STA 18+62.74
VPT 19+20.00
EL=566.89
PROP ℄ RSE546A PGL
EXIST GROUND
END RAMP PROFILE
℄ RSE546A STA 23+12.89
EL = 576.46
FRSB PROFILE CONTROLS
℄ FRSB STA 3188+00.60
+2.44%
+1.49%
EXISTING GROUND
PROPOSED PGL
600
590
580
570
560
550
540
10+00
15+00
20+00
25+00

RNE546A
PROPOSED NORTHBOUND ENTRANCE RAMP FROM FM 546 (SECTION A) (50 MPH)



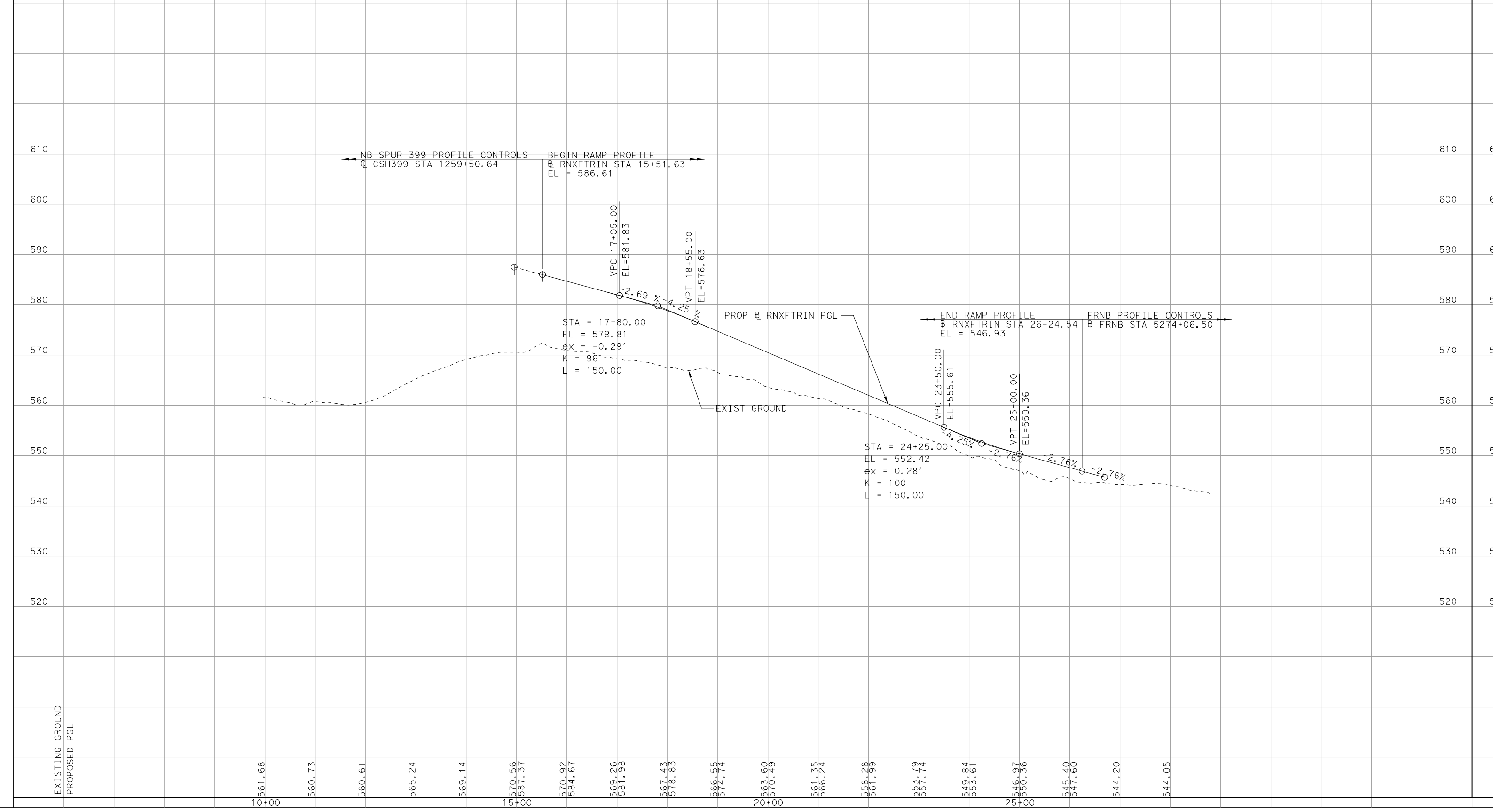
FRNB PROFILE CONTROLS
℄ FRNB STA 5221+91.05
BEGIN RAMP PROFILE
℄ RNE546A STA 15+87.09
EL = 581.31
580.97
+1.25%
+1.56%
VPC 18+66.58
EL=585.68
+1.56%
-0.13%
VPT 21+16.58
EL=587.47
-0.13%
-0.34%
END RAMP PROFILE
℄ RNE546A STA 21+45.60
EL = 587.43
NB SPUR 399 PROFILE CONTROLS
℄ CSH399 STA 1225+17.88
STA = 19+91.58
EL = 587.63
ex = -0.53'
K = 148
L = 250.00
PROP ℄ RSX546A PGL
EXIST GROUND
610
600
590
580
570
560
550
10+00
15+00
20+00
25+00

RSX546A
PROPOSED SOUTHBOUND EXIT RAMP TO FM 546 (SECTION A) (50 MPH)



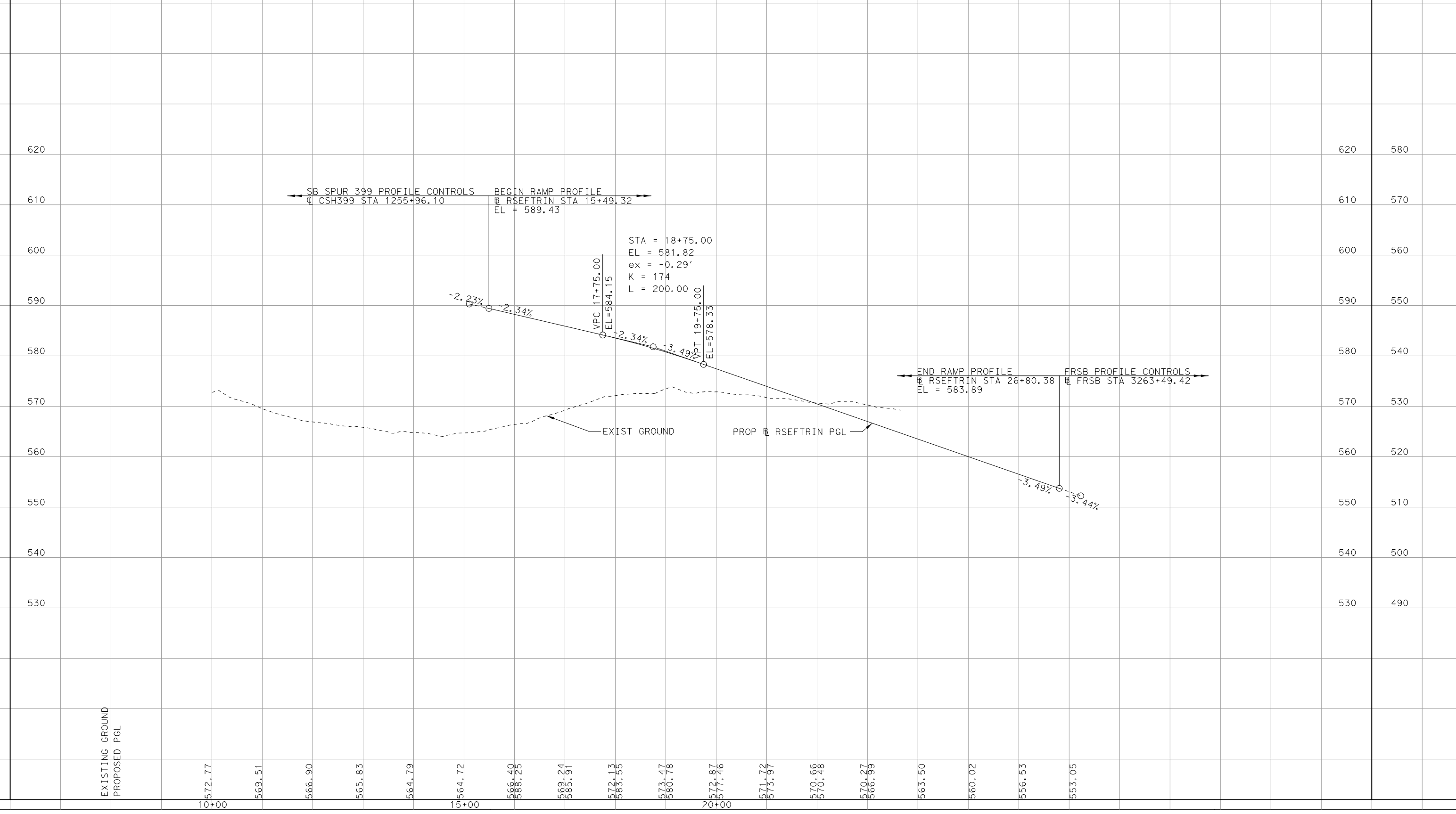
FRSB PROFILE CONTROLS
℄ FRSB STA 3223+86.30
BEGIN RAMP PROFILE
℄ RSX546A STA 13+75.38
EL = 583.83
VPC 14+70.00
EL=583.78
VPT 16+30.00
EL=582.84
-0.06%
-0.06%
-0.06%
-1.12%
STA = 15+50.00
EL = 583.74
ex = -0.21'
K = 151
L = 160.00
EXIST GROUND
PROP ℄ RSX546A PGL
VPC 19+00.00
EL=579.83
VPT 21+00.00
EL=579.29
-1.12%
+0.58%
+0.58%
+0.58%
STA = 20+00.00
EL = 578.71
ex = 0.43'
K = 118
L = 200.00
END RAMP PROFILE
℄ RSX546A STA 21+93.78
EL = 579.84
SB SPUR 399 PROFILE CONTROLS
℄ CSH399 STA 1234+72.03
620
610
600
590
580
570
560
10+00
15+00
20+00
25+00

RNXFTRIN
PROPOSED NORTHBOUND EXIT RAMP TO NEW INTERCHANGE (50 MPH)



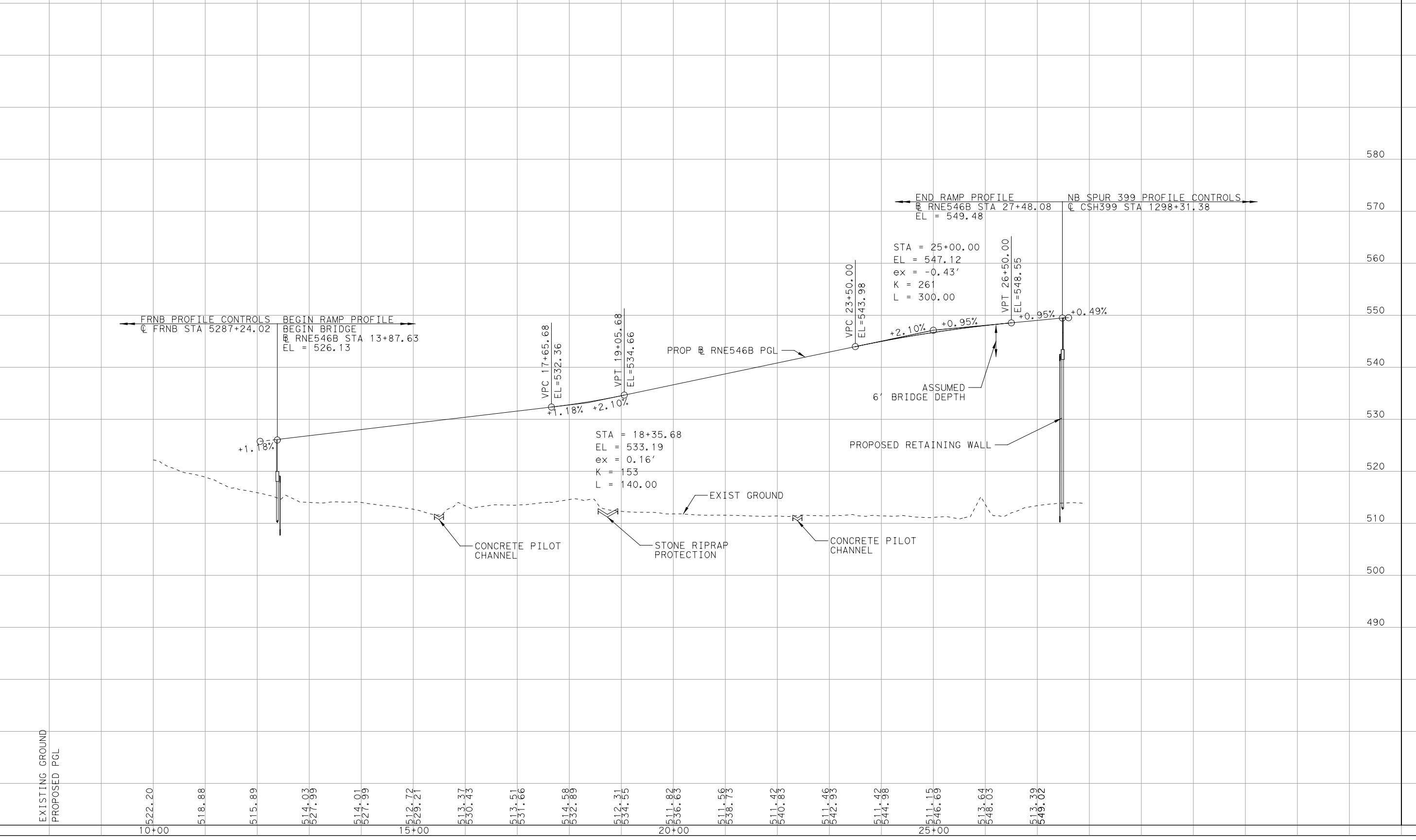
NB SPUR 399 PROFILE CONTROLS
℄ CSH399 STA 1259+50.64
BEGIN RAMP PROFILE
℄ RNXFTRIN STA 15+51.63
EL = 586.61
VPC 17+05.00
EL=581.83
VPT 18+55.00
EL=576.63
-2.69%
-4.25%
STA = 17+80.00
EL = 579.81
ex = -0.29'
K = 96
L = 150.00
PROP ℄ RNXFTRIN PGL
EXIST GROUND
END RAMP PROFILE
℄ RNXFTRIN STA 26+24.54
EL = 546.93
FRNB PROFILE CONTROLS
℄ FRNB STA 5274+06.50
VPC 23+50.00
EL=555.61
VPT 25+00.00
EL=550.56
-4.25%
-2.76%
-2.76%
-2.76%
STA = 24+25.00
EL = 552.42
ex = 0.28'
K = 100
L = 150.00
EXISTING GROUND
PROPOSED PGL
610
600
590
580
570
560
550
540
530
520
10+00
15+00
20+00
25+00

RSEFTRIN
PROPOSED SOUTHBOUND ENTRANCE RAMP TO NEW INTERCHANGE (50 MPH)



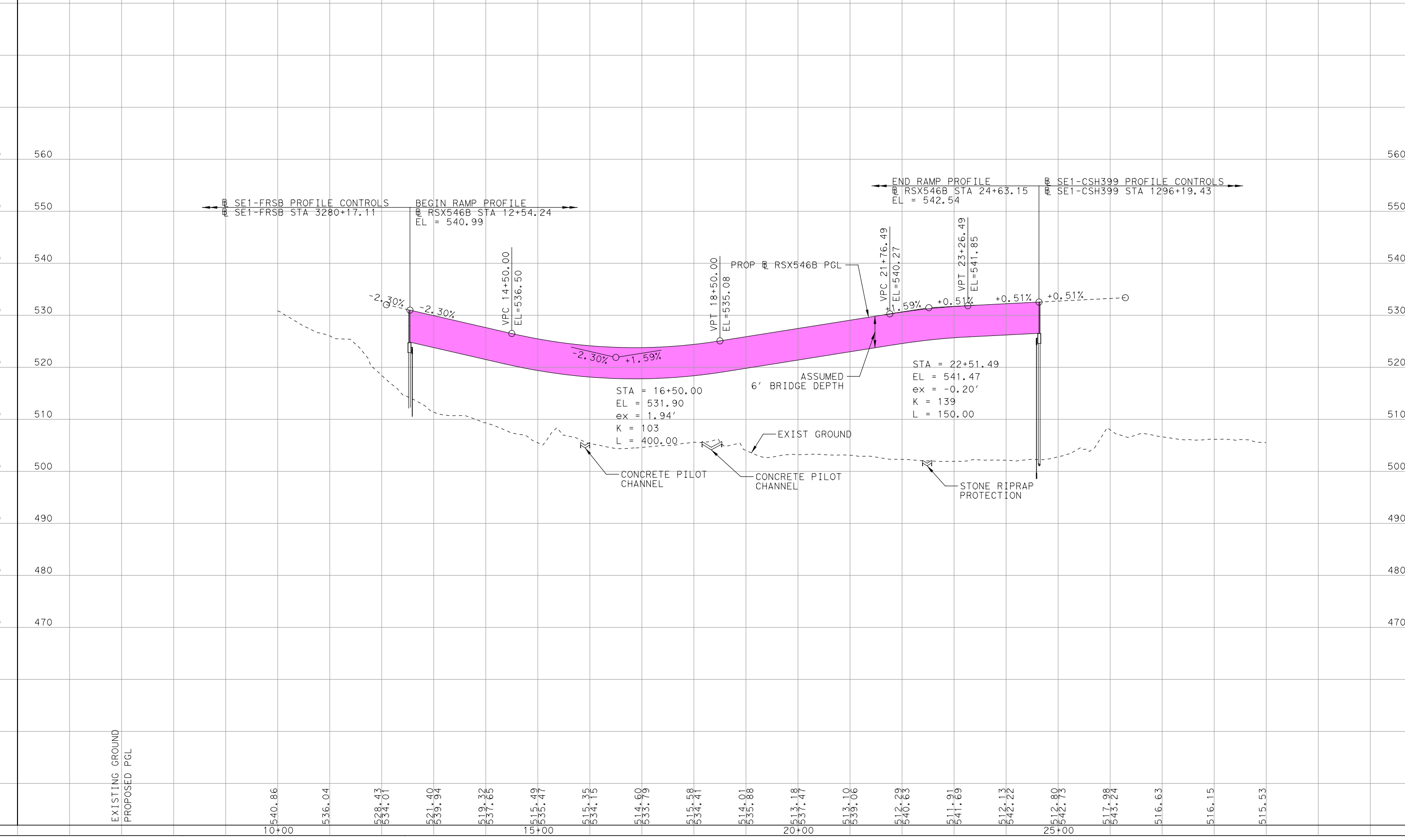
SB SPUR 399 PROFILE CONTROLS
℄ CSH399 STA 1295+96.10
BEGIN RAMP PROFILE
℄ RSEFTRIN STA 15+49.32
EL = 589.43
STA = 18+75.00
EL = 581.82
ex = -0.29'
K = 174
L = 200.00
-2.23%
-2.34%
VPC 17+75.00
EL=584.15
VPT 19+75.00
EL=578.33
-2.34%
-3.49%
EXIST GROUND
PROP ℄ RSEFTRIN PGL
END RAMP PROFILE
℄ RSEFTRIN STA 26+80.38
EL = 583.89
FRSB PROFILE CONTROLS
℄ FRSB STA 3263+49.42
-3.49%
-3.44%
EXISTING GROUND
PROPOSED PGL
620
610
600
590
580
570
560
550
540
530
10+00
15+00
20+00

RNE546B
PROPOSED NORTHBOUND ENTRANCE RAMP FROM FM 546 (SECTION B) (50 MPH)



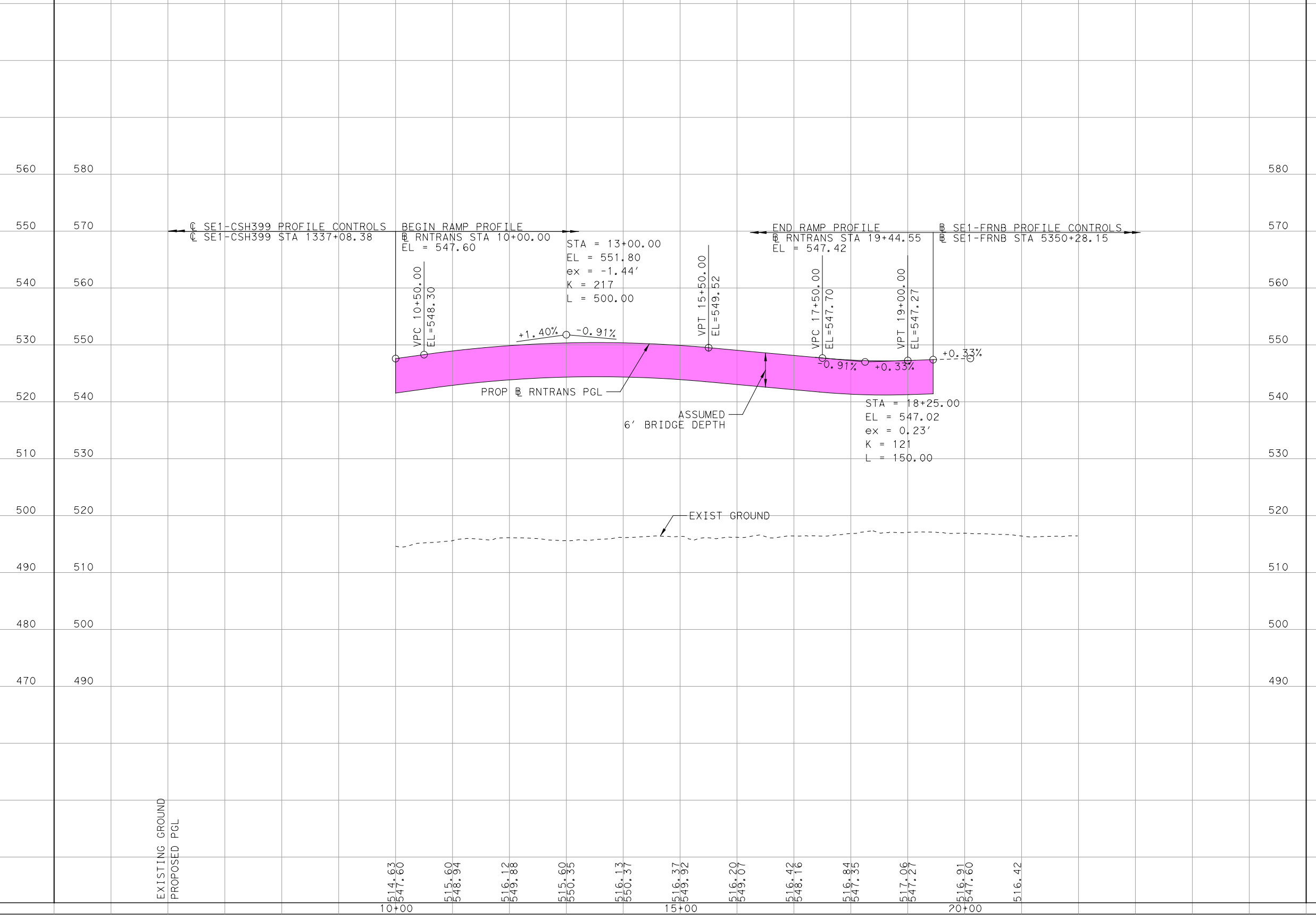
END RAMP PROFILE
℄ RSEFTRIN STA 26+80.38
EL = 583.89
FRSB PROFILE CONTROLS
℄ FRSB STA 3263+49.42
FRNB PROFILE CONTROLS
℄ FRNB STA 5287+24.02
BEGIN RAMP PROFILE
BEGIN BRIDGE
℄ RNE546B STA 13+87.63
EL = 526.13
+1.18%
VPC 17+65.68
EL=532.36
VPT 19+05.68
EL=534.66
+1.18%
+2.10%
STA = 18+35.68
EL = 533.19
ex = 0.16'
K = 153
L = 140.00
PROP ℄ RNE546B PGL
VPC 23+50.00
EL=543.98
STA = 25+00.00
EL = 547.12
ex = -0.43'
K = 261
L = 300.00
+2.10%
+0.95%
VPT 26+50.00
EL=548.50
+0.95%
+0.49%
END RAMP PROFILE
℄ RNE546B STA 27+48.08
EL = 549.48
NB SPUR 399 PROFILE CONTROLS
℄ CSH399 STA 1298+31.38
ASSUMED
6' BRIDGE DEPTH
PROPOSED RETAINING WALL
EXIST GROUND
CONCRETE PILOT
CHANNEL
STONE RIPRAP
PROTECTION
CONCRETE PILOT
CHANNEL
EXISTING GROUND
PROPOSED PGL
580
570
560
550
540
530
520
510
500
490
10+00
15+00
20+00
25+00

RSX546B
PROPOSED SOUTHBOUND EXIT RAMP TO FM 546 (SECTION B) (50 MPH)



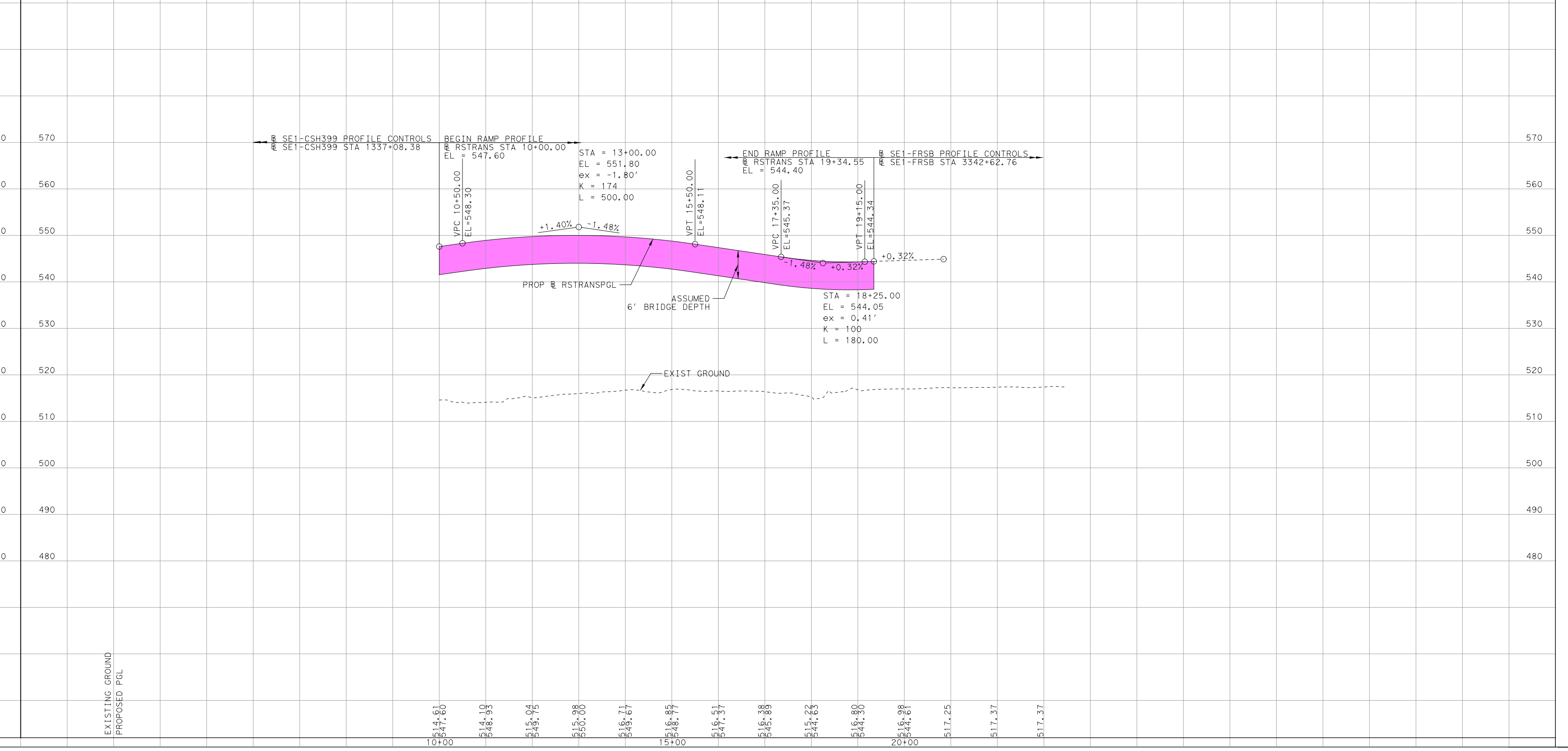
℄ SE1-FRSB PROFILE CONTROLS
℄ SE1-FRSB STA 3280+17.11
BEGIN RAMP PROFILE
℄ RSX546B STA 12+54.24
EL = 540.99
-2.30%
-2.30%
VPC 14+50.00
EL=536.50
STA = 16+50.00
EL = 531.90
ex = 1.94'
K = 103
L = 400.00
-2.30%
+1.59%
VPT 18+50.00
EL=535.08
PROP ℄ RSX546B PGL
ASSUMED
6' BRIDGE DEPTH
VPC 21+76.49
EL=540.27
VPT 23+26.49
EL=541.85
+1.59%
+0.51%
+0.51%
+0.51%
STA = 22+51.49
EL = 541.47
ex = -0.20'
K = 139
L = 150.00
END RAMP PROFILE
℄ RSX546B STA 24+63.15
EL = 542.54
℄ SE1-CSH399 PROFILE CONTROLS
℄ SE1-CSH399 STA 1296+19.43
EXIST GROUND
CONCRETE PILOT
CHANNEL
CONCRETE PILOT
CHANNEL
STONE RIPRAP
PROTECTION
EXISTING GROUND
PROPOSED PGL
560
550
540
530
520
510
500
490
480
470
10+00
15+00
20+00
25+00

RNTRANS
PROPOSED NORTHBOUND TRANSITION RAMP (50 MPH)



℄ SE1-CSH399 PROFILE CONTROLS
℄ SE1-CSH399 STA 1337+08.38
BEGIN RAMP PROFILE
℄ RNTRANS STA 10+00.00
EL = 547.60
VPC 10+50.00
EL=548.30
STA = 13+00.00
EL = 551.80
ex = -1.44'
K = 217
L = 500.00
+1.40%
-0.91%
VPT 15+50.00
EL=549.52
PROP ℄ RNTRANS PGL
ASSUMED
6' BRIDGE DEPTH
END RAMP PROFILE
℄ RNTRANS STA 19+44.55
EL = 547.42
℄ SE1-FRNB PROFILE CONTROLS
℄ SE1-FRNB STA 5350+28.15
VPC 17+50.00
EL=547.70
VPT 19+00.00
EL=547.27
-0.91%
+0.33%
+0.33%
STA = 18+25.00
EL = 547.02
ex = 0.23'
K = 121
L = 150.00
EXIST GROUND
EXISTING GROUND
PROPOSED PGL
580
570
560
550
540
530
520
510
500
490
10+00
15+00
20+00

RSTRANS
PROPOSED SOUTHBOUND TRANSITION RAMP (50 MPH)



℄ SE1-CSH399 PROFILE CONTROLS
℄ SE1-CSH399 STA 1337+08.38
BEGIN RAMP PROFILE
℄ RSTRANS STA 10+00.00
EL = 547.60
VPC 10+50.00
EL=548.30
STA = 13+00.00
EL = 551.80
ex = -1.80'
K = 174
L = 500.00
+1.40%
-1.48%
VPT 15+50.00
EL=548.11
PROP ℄ RSTRANSPGL
ASSUMED
6' BRIDGE DEPTH
END RAMP PROFILE
℄ RSTRANS STA 19+34.55
EL = 544.40
℄ SE1-FRSB PROFILE CONTROLS
℄ SE1-FRSB STA 3342+62.76
VPC 17+35.00
EL=545.37
VPT 19+15.00
EL=544.24
-1.48%
+0.32%
+0.32%
STA = 18+25.00
EL = 544.05
ex = 0.41'
K = 100
L = 180.00
EXIST GROUND
EXISTING GROUND
PROPOSED PGL
570
560
550
540
530
520
510
500
490
480
10+00
15+00
20+00

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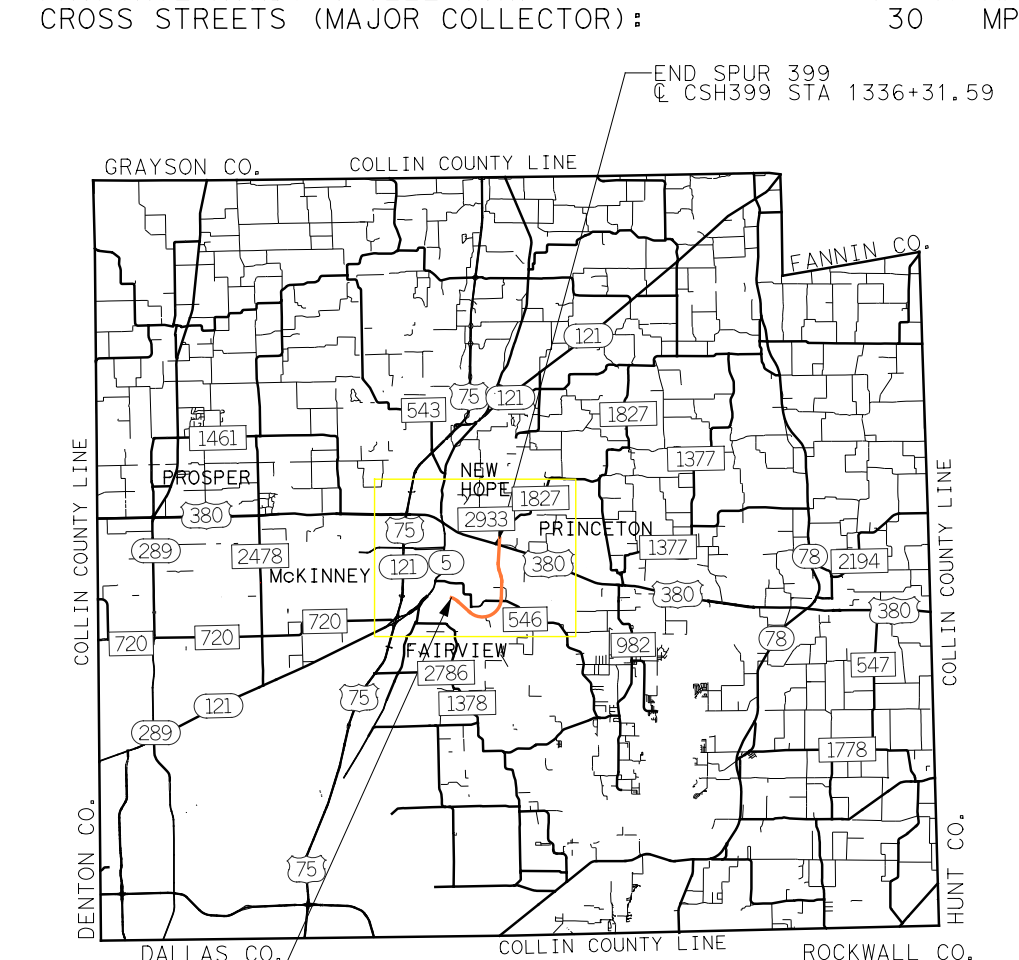
DALLAS DISTRICT
DESIGN SCHEMATIC

CEASON CLEMENS, P.E.
DALLAS DISTRICT ENGINEER

90% DESIGN SCHEMATIC
SPUR 399 EXTENSION

CSJ: 0364-04-051, 0047-05-058 & 0047-10-002
FROM: US 75
TO: US 380
COLLIN COUNTY
FUNCTIONAL CLASS: URBAN FREEWAY
ORANGE ALTERNATIVE LENGTH: 7.0 MILES

DESIGN SPEEDS
MAINLANES (FREEWAY): 70 MPH
GENERAL RAMPS (PRINCIPAL ARTERIAL): 40-50 MPH
FRONTAGE ROADS (COLLECTOR): 35-45 MPH
CROSS STREETS (MAJOR COLLECTOR): 30 MPH



END SPUR 399
℄ CSH399 STA 1336+31.59
GRAYSON CO.
COLLIN COUNTY LINE
FANNIN CO.
PROSPER
NEW HOPE
PRINCETON
McKINNEY
FAIRVIEW
DENTON CO.
HUNT CO.
DALLAS CO.
ROCKWALL CO.
N
BEGIN SPUR 399
℄ CSH399 STA 993+48.33

LOCATION MAP
NOT TO SCALE

SCALE: HORIZONTAL 1"=100'
SCALE: VERTICAL 1"=10'
0 100 200 300 400
HORIZ. SCALE IN FEET
0 10 20 30 40
VERT. SCALE IN FEET

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NOVEMBER 2022

PRELIMINARY
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SCHEMATIC PREPARED BY:
DAVID SUTTON 120142
NAME P.E. NUMBER
NOVEMBER 2022
DATE

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Dallas, Texas 75248-1229
972.960.4400