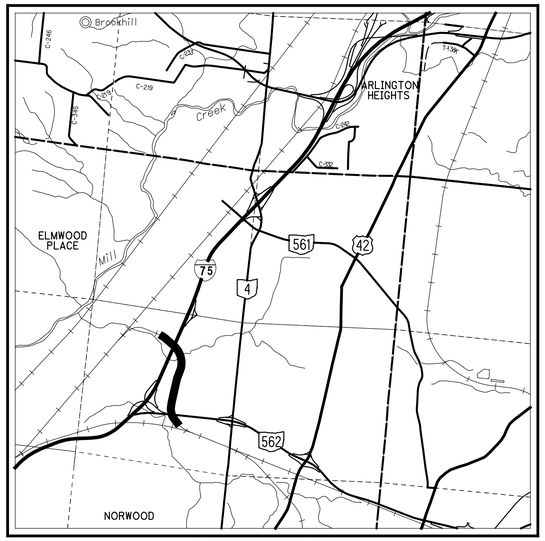

LOCATION MAP

LATITUDE: N39°11'20" LONGITUDE: W84°28'50"

SCALE IN MILES

0 1/2 1

N

PORTION TO BE IMPROVED

INTERSTATE HIGHWAY

FEDERAL ROUTES

STATE ROUTES

COUNTY & TOWNSHIP ROADS

OTHER ROADS

DESIGN DESIGNATION - I.R. 75, S.R. 562

	I.R. 75	S.R. 562
CURRENT ADT (2010)	173,800	70,700
DESIGN YEAR ADT (2030)	203,000	78,000
DESIGN HOURLY VOLUME (2030)	17,050	7,410
DIRECTION DISTRIBUTION	53%	53%
TRUCKS (24 HOUR B&C)	14%	11%
DESIGN SPEED	60	60
LEGAL SPEED	55	55
DESIGN FUNCTIONAL CLASSIFICATION	01 URBAN INTERSTATE	02 URBAN FREEWAY AND EXPRESSWAY
NHS PROJECT	YES	YES

DESIGN EXCEPTIONS

NONE REQUIRED

ADA DESIGN WAIVERS

NONE REQUIRED

UNDERGROUND UTILITIES

Contact Two Working Days Before You Dig

OHIO811.org Before You Dig

OHIO811. 8-1-1. or 1-800-362-2764
(Non-members must be called directly)

PLAN PREPARED BY:

EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Fax: 614.775.4800

M C M X X V I

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

HAM-75-7.85

CITY OF CINCINNATI

HAMILTON COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF REMOVAL AND REPLACEMENT OF 3 RAIL ROAD BRIDGES AND 0.75 MILES OF RAIL ROAD RECONSTRUCTION.

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2023 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

ENGINEERS SEAL:	ENGINEERS SEAL:
FOR ROADWAY SHEETS 1-7	FOR RAIL PLANS, BRIDGES: HAM-562-0026, HAM-75-0834, HAM-PROSR-00.000
STATE OF OHIO HEATH R. BRENDLINGER E-77786 REGISTERED PROFESSIONAL ENGINEER	STATE OF OHIO ERIC F. DUES E-75309 REGISTERED PROFESSIONAL ENGINEER
Digitally signed by Heath R Brendlinger Date: 2024.05.10 09:45:18 -04'00'	Digitally signed by Eric Dues, PE, SE Contact Info: edues@gfnet.com Date: 2024.05.09 22:27:21-04'00'

Tammy K. Campbell

Tammy K. Campbell, P.E.
District 08 Deputy Director

Jack Marchbanks

Jack Marchbanks, PhD
Director, Department of Transportation

STANDARD CONSTRUCTION DRAWINGS	SPECIAL PROVISIONS
	NORFOLK SOUTHERN STANDARD SPECIFICATIONS FOR MATERIAL AND CONSTRUCTION (JANUARY 2019)

FEDERAL PROJECT NO. EO41(146)

PID NO. 77889

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT NORFOLK SOUTHERN

HAM-75-7.85

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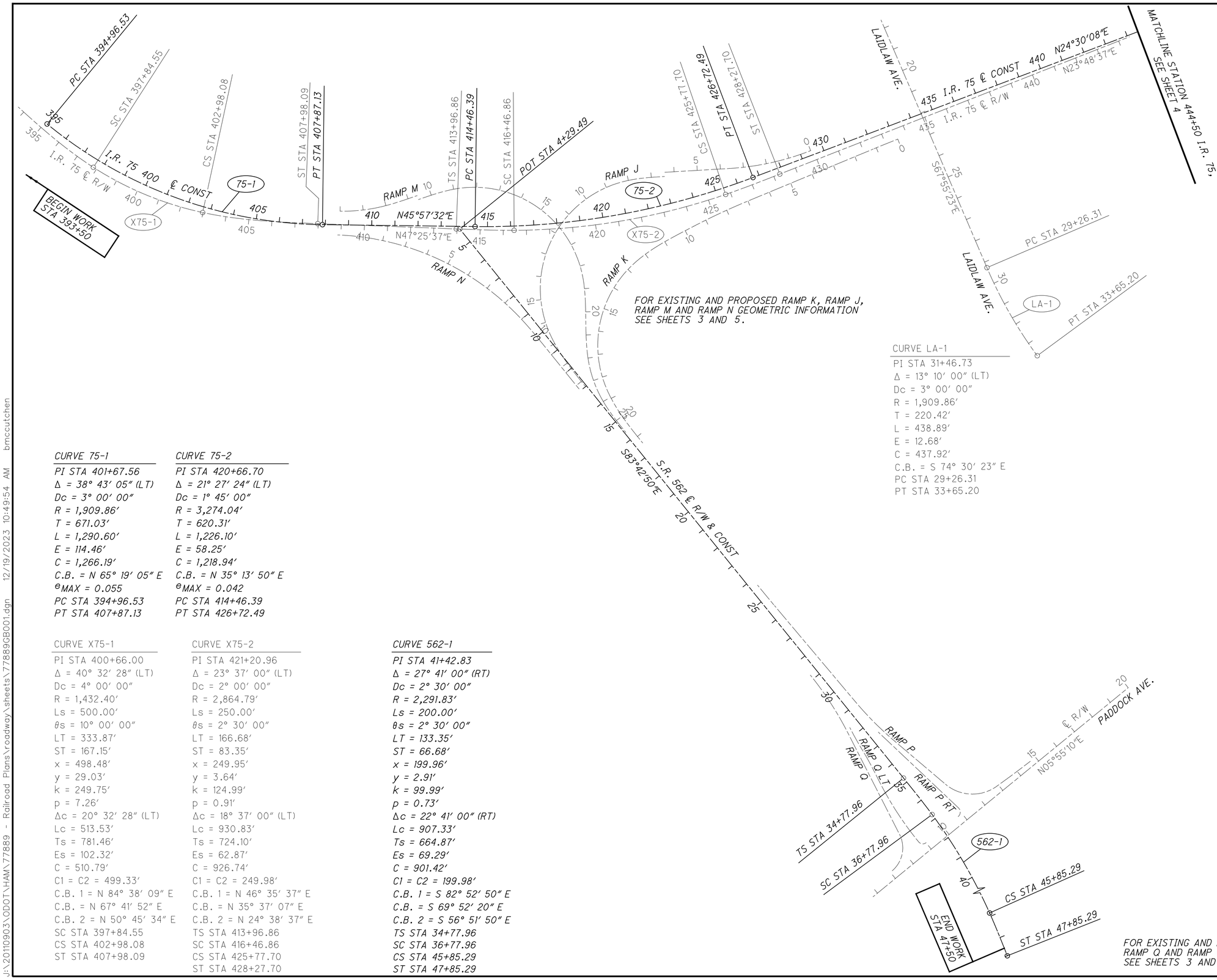

CURVE 75-1

PI STA 401+67.56
Δ = 38° 43′ 05″ (LT)
Dc = 3° 00′ 00″
R = 1,909.86′
T = 671.03′
L = 1,290.60′
E = 114.46′
C = 1,266.19′
C.B. = N 65° 19′ 05″ E
e^{MAX} = 0.055
PC STA 394+96.53
PT STA 407+87.13

CURVE 75-2

PI STA 420+66.70
Δ = 21° 27′ 24″ (LT)
Dc = 1° 45′ 00″
R = 3,274.04′
T = 620.31′
L = 1,226.10′
E = 58.25′
C = 1,218.94′
C.B. = N 35° 13′ 50″ E
e^{MAX} = 0.042
PC STA 414+46.39
PT STA 426+72.49

CURVE LA-1

PI STA 31+46.73
Δ = 13° 10′ 00″ (LT)
Dc = 3° 00′ 00″
R = 1,909.86′
T = 220.42′
L = 438.89′
E = 12.68′
C = 437.92′
C.B. = S 74° 30′ 23″ E
PC STA 29+26.31
PT STA 33+65.20

CURVE X75-1

PI STA 400+66.00
Δ = 40° 32′ 28″ (LT)
Dc = 4° 00′ 00″
R = 1,432.40′
Ls = 500.00′
θs = 10° 00′ 00″
LT = 333.87′
ST = 167.15′
x = 498.48′
y = 29.03′
k = 249.75′
p = 7.26′
Δc = 20° 32′ 28″ (LT)
Lc = 513.53′
Ts = 781.46′
Es = 102.32′
C = 510.79′
C1 = C2 = 499.33′
C.B. 1 = N 84° 38′ 09″ E
C.B. = N 67° 41′ 52″ E
C.B. 2 = N 50° 45′ 34″ E
SC STA 397+84.55
CS STA 402+98.08
ST STA 407+98.09

CURVE X75-2

PI STA 421+20.96
Δ = 23° 37′ 00″ (LT)
Dc = 2° 00′ 00″
R = 2,864.79′
Ls = 250.00′
θs = 2° 30′ 00″
LT = 166.68′
ST = 83.35′
x = 249.95′
y = 3.64′
k = 124.99′
p = 0.91′
Δc = 18° 37′ 00″ (LT)
Lc = 930.83′
Ts = 724.10′
Es = 62.87′
C = 926.74′
C1 = C2 = 249.98′
C.B. 1 = N 46° 35′ 37″ E
C.B. = N 35° 37′ 07″ E
C.B. 2 = N 24° 38′ 37″ E
TS STA 413+96.86
SC STA 416+46.86
CS STA 425+77.70
ST STA 428+27.70

CURVE 562-1

PI STA 41+42.83
Δ = 27° 41′ 00″ (RT)
Dc = 2° 30′ 00″
R = 2,291.83′
Ls = 200.00′
θs = 2° 30′ 00″
LT = 133.35′
ST = 66.68′
x = 199.96′
y = 2.91′
k = 99.99′
p = 0.73′
Δc = 22° 41′ 00″ (RT)
Lc = 907.33′
Ts = 664.87′
Es = 69.29′
C = 901.42′
C1 = C2 = 199.98′
C.B. 1 = S 82° 52′ 50″ E
C.B. = S 69° 52′ 20″ E
C.B. 2 = S 56° 51′ 50″ E
TS STA 34+77.96
SC STA 36+77.96
CS STA 45+85.29
ST STA 47+85.29

HORIZONTAL SCALE IN FEET
0 100 200 400

GEOMETRIC PLAN
MAINLINE I.R. 75 AND S.R. 562 DATA

HAM-75-7.85

2
286

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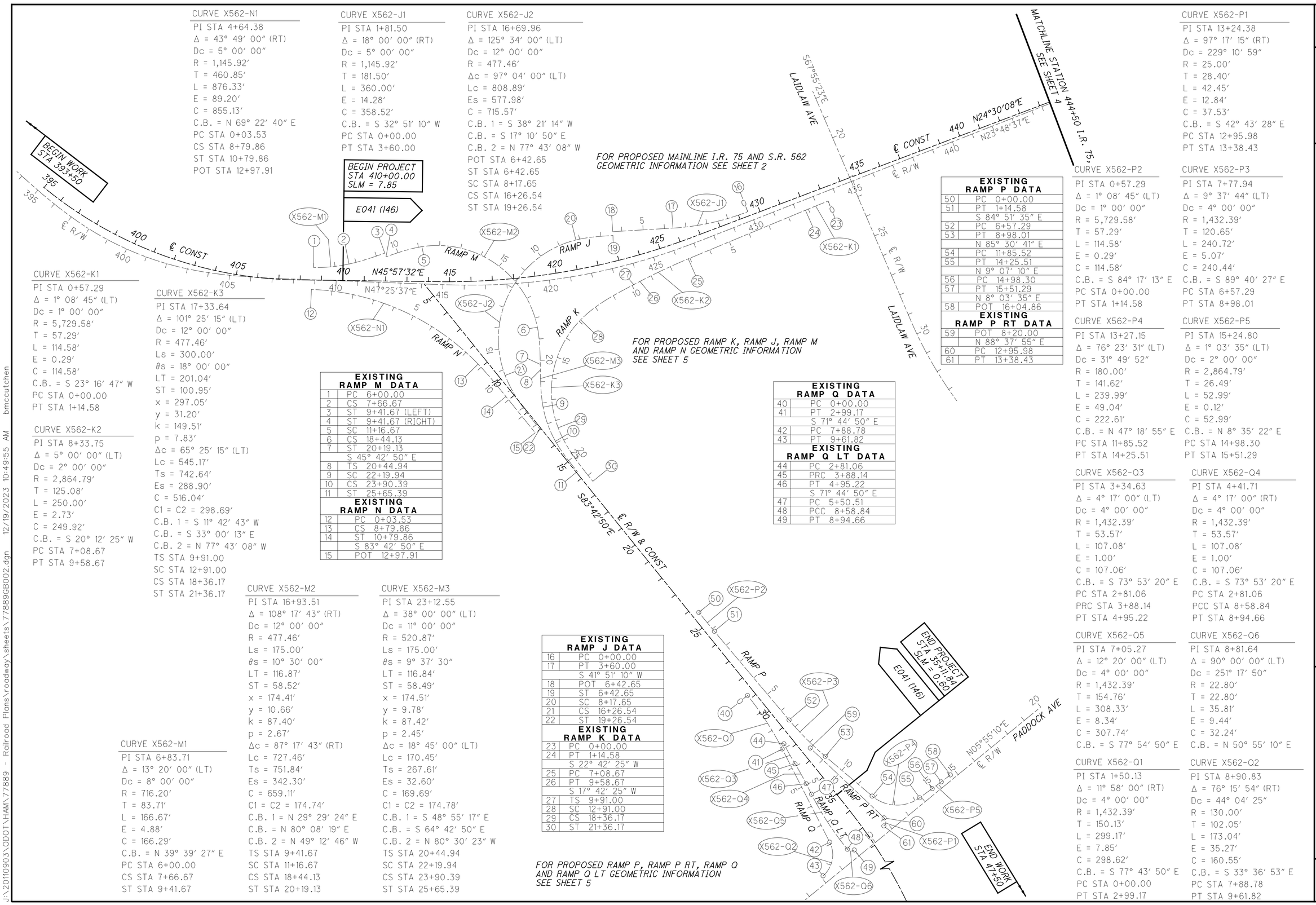

CURVE X562-N1
PI STA 4+64.38
Δ = 43° 49′ 00″ (RT)
Dc = 5° 00′ 00″
R = 1,145.92′
T = 460.85′
L = 876.33′
E = 89.20′
C = 855.13′
C.B. = N 69° 22′ 40″ E
PC STA 0+03.53
CS STA 8+79.86
ST STA 10+79.86
POT STA 12+97.91

CURVE X562-J1
PI STA 1+81.50
Δ = 18° 00′ 00″ (RT)
Dc = 5° 00′ 00″
R = 1,145.92′
T = 181.50′
L = 360.00′
E = 14.28′
C = 358.52′
C.B. = S 32° 51′ 10″ W
PC STA 0+00.00
PT STA 3+60.00

CURVE X562-J2
PI STA 16+69.96
Δ = 125° 34′ 00″ (LT)
Dc = 12° 00′ 00″
R = 477.46′
Δc = 97° 04′ 00″ (LT)
Lc = 808.89′
Es = 577.98′
C = 715.57′
C.B. 1 = S 38° 21′ 14″ W
C.B. = S 17° 10′ 50″ E
C.B. 2 = N 77° 43′ 08″ W
POT STA 6+42.65
ST STA 6+42.65
SC STA 8+17.65
CS STA 16+26.54
ST STA 19+26.54

CURVE X562-P1
PI STA 13+24.38
Δ = 97° 17′ 15″ (RT)
Dc = 229° 10′ 59″
R = 25.00′
T = 28.40′
L = 42.45′
E = 12.84′
C = 37.53′
C.B. = S 42° 43′ 28″ E
PC STA 12+95.98
PT STA 13+38.43

CURVE X562-P2
PI STA 0+57.29
Δ = 1° 08′ 45″ (LT)
Dc = 1° 00′ 00″
R = 5,729.58′
T = 57.29′
L = 114.58′
E = 0.29′
C = 114.58′
C.B. = S 84° 17′ 13″ E
PC STA 0+00.00
PT STA 1+14.58

CURVE X562-P3
PI STA 7+77.94
Δ = 9° 37′ 44″ (LT)
Dc = 4° 00′ 00″
R = 1,432.39′
T = 120.65′
L = 240.72′
E = 5.07′
C = 240.44′
C.B. = S 89° 40′ 27″ E
PC STA 6+57.29
PT STA 8+98.01

CURVE X562-P4
PI STA 13+27.15
Δ = 76° 23′ 31″ (LT)
Dc = 31° 49′ 52″
R = 180.00′
T = 141.62′
L = 239.99′
E = 49.04′
C = 222.61′
C.B. = N 47° 18′ 55″ E
PC STA 11+85.52
PT STA 14+25.51

CURVE X562-P5
PI STA 15+24.80
Δ = 1° 03′ 35″ (LT)
Dc = 2° 00′ 00″
R = 2,864.79′
T = 26.49′
L = 52.99′
E = 0.12′
C = 52.99′
C.B. = N 8° 35′ 22″ E
PC STA 14+98.30
PT STA 15+51.29

CURVE X562-Q1
PI STA 1+50.13
Δ = 11° 58′ 00″ (RT)
Dc = 4° 00′ 00″
R = 1,432.39′
T = 150.13′
L = 299.17′
E = 7.85′
C = 298.62′
C.B. = S 77° 43′ 50″ E
PC STA 0+00.00
PT STA 2+99.17

CURVE X562-Q2
PI STA 8+90.83
Δ = 76° 15′ 54″ (RT)
Dc = 44° 04′ 25″
R = 130.00′
T = 102.05′
L = 173.04′
E = 35.27′
C = 160.55′
C.B. = S 33° 36′ 53″ E
PC STA 7+88.78
PT STA 9+61.82

CURVE X562-Q3
PI STA 3+34.63
Δ = 4° 17′ 00″ (LT)
Dc = 4° 00′ 00″
R = 1,432.39′
T = 53.57′
L = 107.08′
E = 1.00′
C = 107.06′
C.B. = S 73° 53′ 20″ E
PC STA 2+81.06
PRC STA 3+88.14
PT STA 4+95.22

CURVE X562-Q4
PI STA 4+41.71
Δ = 4° 17′ 00″ (RT)
Dc = 4° 00′ 00″
R = 1,432.39′
T = 53.57′
L = 107.08′
E = 1.00′
C = 107.06′
C.B. = S 73° 53′ 20″ E
PC STA 2+81.06
PCC STA 8+58.84
PT STA 8+94.66

CURVE X562-Q5
PI STA 7+05.27
Δ = 12° 20′ 00″ (LT)
Dc = 4° 00′ 00″
R = 1,432.39′
T = 154.76′
L = 308.33′
E = 8.34′
C = 307.74′
C.B. = S 77° 54′ 50″ E

CURVE X562-Q6
PI STA 8+81.64
Δ = 90° 00′ 00″ (LT)
Dc = 251° 17′ 50″
R = 22.80′
T = 22.80′
L = 35.81′
E = 9.44′
C = 32.24′
C.B. = N 50° 55′ 10″ E

CURVE X562-K1
PI STA 0+57.29
Δ = 1° 08′ 45″ (LT)
Dc = 1° 00′ 00″
R = 5,729.58′
T = 57.29′
L = 114.58′
E = 0.29′
C = 114.58′
C.B. = S 23° 16′ 47″ W
PC STA 0+00.00
PT STA 1+14.58

CURVE X562-K2
PI STA 8+33.75
Δ = 5° 00′ 00″ (LT)
Dc = 2° 00′ 00″
R = 2,864.79′
T = 125.08′
L = 250.00′
E = 2.73′
C = 249.92′
C.B. = S 20° 12′ 25″ W
PC STA 7+08.67
PT STA 9+58.67

CURVE X562-K3
PI STA 17+33.64
Δ = 101° 25′ 15″ (LT)
Dc = 12° 00′ 00″
R = 477.46′
Ls = 300.00′
θs = 18° 00′ 00″
LT = 201.04′
ST = 100.95′
x = 297.05′
y = 31.20′
k = 149.51′
p = 7.83′
Δc = 65° 25′ 15″ (LT)
Lc = 545.17′
Ts = 742.64′
Es = 288.90′
C = 516.04′
C1 = C2 = 298.69′
C.B. 1 = S 11° 42′ 43″ W
C.B. = S 33° 00′ 13″ E
C.B. 2 = N 77° 43′ 08″ W
TS STA 9+91.00
SC STA 12+91.00
CS STA 18+36.17
ST STA 21+36.17

CURVE X562-M1
PI STA 6+83.71
Δ = 13° 20′ 00″ (LT)
Dc = 8° 00′ 00″
R = 716.20′
T = 83.71′
L = 166.67′
E = 4.88′
C = 166.29′
C.B. = N 39° 39′ 27″ E
PC STA 6+00.00
CS STA 7+66.67
ST STA 9+41.67

CURVE X562-M2
PI STA 16+93.51
Δ = 108° 17′ 43″ (RT)
Dc = 12° 00′ 00″
R = 477.46′
Ls = 175.00′
θs = 10° 30′ 00″
LT = 116.87′
ST = 58.52′
x = 174.41′
y = 10.66′
k = 87.40′
p = 2.67′
Δc = 87° 17′ 43″ (RT)
Lc = 727.46′
Ts = 751.84′
Es = 342.30′
C = 659.11′
C1 = C2 = 174.74′
C.B. 1 = N 29° 29′ 24″ E
C.B. = N 80° 08′ 19″ E
C.B. 2 = N 49° 12′ 46″ W
TS STA 9+41.67
SC STA 11+16.67
CS STA 18+44.13
ST STA 20+19.13

CURVE X562-M3
PI STA 23+12.55
Δ = 38° 00′ 00″ (LT)
Dc = 11° 00′ 00″
R = 520.87′
Ls = 175.00′
θs = 9° 37′ 30″
LT = 116.84′
ST = 58.49′
x = 174.51′
y = 9.78′
k = 87.42′
p = 2.45′
Δc = 18° 45′ 00″ (LT)
Lc = 170.45′
Ts = 267.61′
Es = 32.60′
C = 169.69′
C1 = C2 = 174.78′
C.B. 1 = S 48° 55′ 17″ E
C.B. = S 64° 42′ 50″ E
C.B. 2 = N 80° 30′ 23″ W
TS STA 20+44.94
SC STA 22+19.94
CS STA 23+90.39
ST STA 25+65.39

EXISTING RAMP M DATA

1	PC 6+00.00
2	CS 7+66.67
3	ST 9+41.67 (LEFT)
4	ST 9+41.67 (RIGHT)
5	SC 11+16.67
6	CS 18+44.13
7	ST 20+19.13
	S 45° 42′ 50″ E
8	TS 20+44.94
9	SC 22+19.94
10	CS 23+90.39
11	ST 25+65.39

EXISTING RAMP N DATA

12	PC 0+03.53
13	CS 8+79.86
14	ST 10+79.86
	S 83° 42′ 50″ E
15	POT 12+97.91

EXISTING RAMP J DATA

16	PC 0+00.00
17	PT 3+60.00
	S 41° 51′ 10″ W
18	POT 6+42.65
19	ST 6+42.65
20	SC 8+17.65
21	CS 16+26.54
22	ST 19+26.54

EXISTING RAMP K DATA

23	PC 0+00.00
24	PT 1+14.58
	S 22° 42′ 25″ W
25	PC 7+08.67
26	PT 9+58.67
	S 17° 42′ 25″ W
27	TS 9+91.00
28	SC 12+91.00
29	CS 18+36.17
30	ST 21+36.17

EXISTING RAMP P DATA

50	PC 0+00.00
51	PT 1+14.58
	S 84° 51′ 35″ E
52	PC 6+57.29
53	PT 8+98.01
	N 85° 30′ 41″ E
54	PC 11+85.52
55	PT 14+25.51
	N 9° 07′ 10″ E
56	PC 14+98.30
57	PT 15+51.29
	N 8° 03′ 35″ E
58	POT 16+04.86

EXISTING RAMP P RT DATA

59	POT 8+20.00
	N 88° 37′ 55″ E
60	PC 12+95.98
61	PT 13+38.43

EXISTING RAMP Q DATA

40	PC 0+00.00
41	PT 2+99.17
	S 71° 44′ 50″ E
42	PC 7+88.78
43	PT 9+61.82

EXISTING RAMP Q LT DATA

44	PC 2+81.06
45	PRC 3+88.14
46	PT 4+95.22
	S 71° 44′ 50″ E
47	PC 5+50.51
48	PCC 8+58.84
49	PT 8+94.66

HORIZONTAL SCALE IN FEET
0 100 200 400

GEOMETRIC PLAN
EXISTING RAMP BASELINE DATA

HAM-75-7.85

3
286

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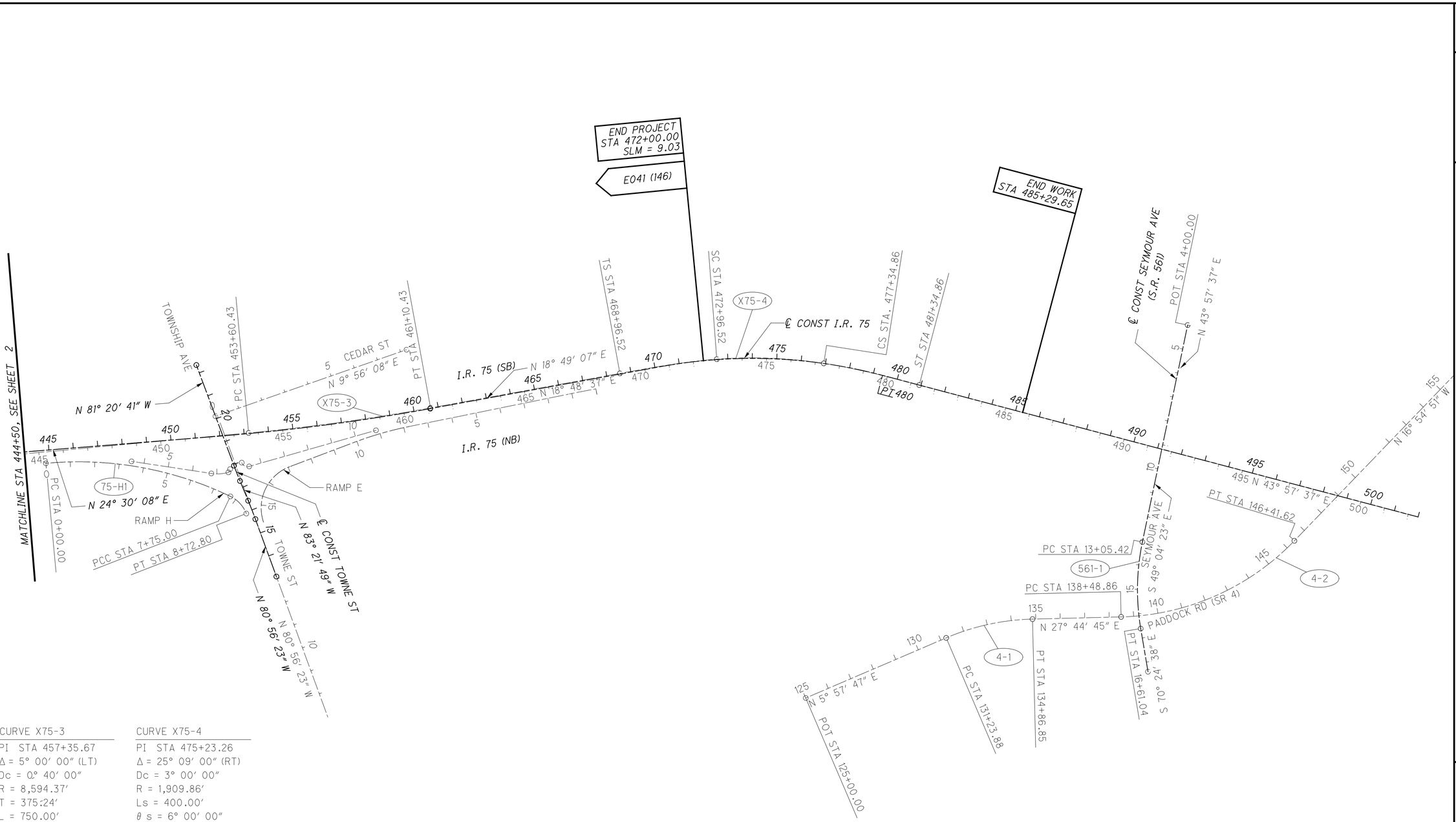

CURVE X75-3
PI STA 457+35.67
Δ = 5° 00′ 00″ (LT)
Dc = 0° 40′ 00″
R = 8,594.37′
T = 375.24′
L = 750.00′
E = 8.19′
e_{max} = 0.019
PC STA. 453+60.43
PT STA. 461+10.43

CURVE X75-4
PI STA 475+23.26
Δ = 25° 09′ 00″ (RT)
Dc = 3° 00′ 00″
R = 1,909.86′
Ls = 400.00′
θ s = 6° 00′ 00″
LT = 266.82′
ST = 133.47′
x = 399.56′
y = 13.95′
k = 199.93′
p = 3.49′
D c = 13° 09′ 00″ (RT)
Lc = 438.34′
Ts = 626.73′
Es = 50.52′
e_{max} = 0.055
TS STA. 468+96.52
SC STA. 472+96.52
CS STA. 477+34.86
ST STA. 481+34.86

CURVE 4-1
PI STA 133+07.58
Δ = 21° 46′ 58″ (RT)
Dc = 6° 00′ 05″
R = 954.72′
T = 183.70′
L = 362.97′
E = 17.51′
C = 360.79′
C.B. = N 16° 51′ 16″ E
e_{max} = NC
PC STA. 131+23.88
PT STA. 134+86.85

CURVE 4-2
PI STA 142+66.61
Δ = 44° 39′ 36″ (LT)
Dc = 5° 38′ 01″
R = 1,017.06′
T = 417.75′
L = 792.76′
E = 82.45′
C = 772.84′
C.B. = N 5° 24′ 57″ E
e_{max} = NC
PC STA. 138+48.86
PT STA. 146+41.62

CURVE 561-1
PI STA 14+85.32
Δ = 21° 20′ 15″ (LT)
Dc = 6° 00′ 00″
R = 954.93′
T = 179.90′
L = 355.62′
E = 16.80′
C = 353.57′
C.B. = S 59° 44′ 30″ E
e_{max} = NC
PC STA. 13+05.42
PT STA. 16+61.04

CURVE 75-H1

PI STA 3+97.24	*PI STA 8+26.34*
D = 31° 00′ 00″ (RT)	*D = 43° 06′ 15″ (RT)*
Dc = 4° 00′ 00″	*Dc = 44° 04′ 25″*
R = 1,432.39′	*R = 130.00′*
T = 397.24′	*T = 51.34′*
L = 775.00′	*L = 97.80′*
E = 54.06′	*E = 9.77′*
C = 765.58′	*C = 95.51′*
C.B. = N 39° 18′ 37″ E	*C.B. = N 76° 21′ 45″ E*
e_{max} =	e_{max} =
PC Sta. 0+00.00	*PCC Sta. 7+75.00*
PT Sta. 7+75.00	*PT Sta. 8+72.80*

HORIZONTAL SCALE IN FEET
0 100 200 400

GEOMETRIC I.R. 75 PLAN
EXISTING MAINLINE I.R. 75 AND RAMP DATA

HAM-75-7.85

FOR EXISTING RAMP K, RAMP J, RAMP M AND RAMP N GEOMETRIC INFORMATION SEE SHEET 3

FOR EXISTING RAMP P, RAMP P RT, RAMP Q AND RAMP Q LT GEOMETRIC INFORMATION SEE SHEET 3

FOR EXISTING AND PROPOSED MAINLINE I.R. 75 AND S.R. 562 GEOMETRIC INFORMATION SEE SHEET 2

MATCHLINE STATION 444+50 I.R. 75, SEE SHEET 6

BEGIN WORK STA 393+50

BEGIN PROJECT STA 410+00.00 SLM = 7.85

E041 (146)

END PROJECT STA 35+11.84 SLM = 0.60

END WORK STA 47+50

I.R. 75 ℄ CONST

I.R. 75 ℄ R/W

LAIDLAW AVE

S67°55'23"E

N24°30'08"E

N23°48'37"E

N45°57'32"E

N47°25'37"E

RAMP J

RAMP K

RAMP M

RAMP N

RAMP P

RAMP Q

℄ R/W & CONST S.R. 562

N05°55'10"E

℄ R/W PADDOCK AVE (SR 4)

562-J1 562-J2 562-K1 562-K2 562-K3 562-M1 562-M2 562-N1 562-P1 562-P2 562-P3 562-Q1 562-Q2

PROPOSED RAMP N DATA

97	PC 413+03.58
98	PT 416+85.90
	S 84° 51' 35" E
99	POT 428+52.11

CURVE 562-N1
PI STA 414+98.04
Δ = 25° 49' 54" (RT)
Dc = 6° 45' 24"
R = 848.00'
T = 194.46'
L = 382.32'
E = 22.01'
C = 379.09'
C.B. = N 82° 13' 28" E
e MAX = 0.060
PC STA 413+03.58
PT STA 416+85.90

PROPOSED RAMP J DATA

70	POT 403+79.32
	N 83° 42' 50" W
71	TS 409+84.33
72	SC 412+84.33
73	CS 421+40.56
74	ST 423+65.55
	N 30° 57' 19" E
75	POT 426+57.83 (RT)
76	POT 426+57.83 (LT)
	N 30° 57' 19" E
77	PC 430+95.95
78	PT 440+63.91

CURVE 562-J2
PI STA 435+80.44
Δ = 6° 27' 11" (LT)
Dc = 0° 40' 00"
R = 8,594.37'
T = 484.49'
L = 967.96'
E = 13.65'
C = 967.45'
C.B. = N 27° 43' 44" E
e MAX = NC
PC STA 430+95.95
PT STA 440+63.91

CURVE 562-J1
PI STA 420+13.05
Δ = 114° 40' 09" (RT)
Dc = 10° 15' 00"
R = 558.98'
Ls_1 = 300.00'
θs_1 = 15° 22' 30"
LT_1 = 200.76'
ST_1 = 100.69'
x_1 = 297.85'
y_1 = 26.70'
K_1 = 149.64'
p_1 = 6.69'
T_1 = 1028.72'
Ls_2 = 224.99'
θs_2 = 11° 31' 51"
LT_2 = 150.31'
ST_2 = 75.29'
x_2 = 224.08'
y_2 = 15.05'
K_2 = 112.34'
p_2 = 3.77'
T_2 = 933.30'
Lc = 856.23'
Es = 486.38'
C_1 = 299.04'
C = 774.94'
C_2 = 224.59'
$C.B._1$ = N 78° 35' 31" W
C.B. = N 24° 27' 26" W
$C.B._2$ = N 27° 06' 47" E
e MAX = 0.059
TS STA 409+84.33
SC STA 412+84.33
CS STA 421+40.56
ST STA 423+65.55

PROPOSED RAMP K DATA

79	PC 408+34.32
80	PT 412+13.84
	N 81° 04' 33" W
81	TS 412+42.98
82	SC 414+67.98
83	CS 421+05.87
84	SC 423+05.87
85	PT 427+20.98
	N 23° 21' 23" E
86	POT 431+71.07

CURVE 562-K1
PI STA 410+24.11
Δ = 2° 28' 59" (RT)
Dc = 0° 39' 15"
R = 8,757.22'
T = 189.79'
L = 379.52'
E = 2.06'
C = 379.49'
C.B. = N 82° 28' 20" W
e MAX = NC
PC STA 408+34.32
PT STA 412+13.84

CURVE 562-K3
PI STA 425+13.52
Δ = 4° 09' 04" (RT)
Dc = 1° 00' 00"
R = 5,729.58'
T = 207.65'
L = 415.11'
E = 3.76'
C = 415.02'
C.B. = N 21° 55' 15" E
e MAX = NC
SC STA 423+05.87
PT STA 427+20.98

CURVE 562-K2
PI STA 419+50.81
Δ = 74° 57' 08" (RT)
Dc = 11° 45' 00"
R = 487.62'
Ls_1 = 225.00'
θs_1 = 13° 13' 08"
LT_1 = 150.42'
ST_1 = 75.38'
x_1 = 223.81'
y_1 = 17.24'
k_1 = 112.30'
p_1 = 4.32'
T_1 = 707.83'
Ls_2 = 200.00'
θs_2 = 12° 45' 00"
LT_2 = 128.48'
ST_2 = 72.24'
x_2 = 198.93'
y_2 = 15.94'
k_2 = 99.84'
p_2 = 3.12'
T_2 = 687.17'
Lc = 637.89'
Es = 126.82'
C_1 = 224.47'
C = 593.37'
C_2 = 199.57'
$C.B._1$ = N 76° 40' 17" W
C.B. = N 30° 22' 51" W
$C.B._2$ = N 15° 15' 48" E
e MAX = 0.057
TS STA 412+42.98
SC STA 414+67.98
CS STA 421+05.87
SC STA 423+05.87

PROPOSED RAMP M DATA

87	POT 412+00.00
	N 36° 59' 00" E
88	TS 412+39.90
89	SC 414+14.90
90	CS 420+32.40
91	ST 422+07.38
	S 49° 56' 13" E
92	TS 422+54.25
93	SC 424+29.25
94	CS 425+92.03
95	ST 427+67.01
	S 83° 42' 50" E
96	POT 432+13.01

CURVE 562-M1
PI STA 418+44.84
Δ = 93° 04' 47" (RT)
Dc = 11° 44' 43"
R = 487.82'
Ls_1 = 175.00'
θs_1 = 10° 16' 37"
LT_1 = 116.86'
ST_1 = 58.51'
x_1 = 174.44'
y_1 = 10.44'
k_1 = 87.41'
p_1 = 2.61'
T_1 = 604.94'
Ls_2 = 174.98'
θs_2 = 10° 16' 33"
LT_2 = 116.85'
ST_2 = 58.51'
x_2 = 174.42'
y_2 = 10.44'
k_2 = 87.40'
p_2 = 2.61'
T_2 = 604.93'
Lc = 617.50'
Es = 225.18'
C_1 = 174.75'
C = 577.09'
C_2 = 174.73'
$C.B._1$ = N 40° 24' 29" E
C.B. = N 83° 31' 25" E
$C.B._2$ = S 53° 21' 41" E
e MAX = 0.056
TS STA 412+39.90
SC STA 414+14.90
CS STA 420+32.40
ST STA 422+07.38

CURVE 562-M2
PI STA 425+16.31
Δ = 33°46'37" (LT)
Dc = 10°00'00"
R = 572.96'
Ls_1 = 175.00'
θs_1 = 8°45'00"
LT_1 = 116.81'
ST_1 = 58.46'
x_1 = 174.59'
y_1 = 8.89'
K_1 = 87.43'
p_1 = 2.23'
T_1 = 262.06'
Ls_2 = 174.98'
θs_2 = 8°44'56"
LT_2 = 116.80'
ST_2 = 58.46'
x_2 = 174.57'
y_2 = 8.89'
K_2 = 87.42'
p_2 = 2.22'
T_2 = 262.05'
Lc = 162.78'
Es = 28.15'
C_1 = 174.82'
C = 162.23'
C_2 = 174.80'
$C.B._1$ = S 52° 51' 11" E
C.B. = S 66° 49' 33" E
$C.B._2$ = S 80° 47' 53" E
e MAX = 0.059
TS STA 422+54.25
SC STA 424+29.25
CS STA 425+92.03
ST STA 427+67.01

PROPOSED RAMP P DATA

100	POT 20+00.00
	S 84° 51' 35" E
101	PC 30+13.47
102	PT 35+00.83
	N 85° 30' 41" E
103	PC 36+17.99
104	PT 38+57.98
	N 9° 07' 10" E
105	PC 39+30.77
106	PT 39+83.76
	N 8° 03' 35" E
107	POT 40+37.33

CURVE 562-Q1
PI STA 30+76.85
Δ = 11° 58' 00" (RT)
Dc = 2° 14' 49"
R = 2,550.00'
T = 267.27'
L = 532.59'
E = 13.97'
C = 531.62'
C.B. = S 77° 43' 50" E
e MAX = 0.035
PC STA 28+09.58
PT STA 33+42.17

CURVE 562-Q2
PI STA 37+68.47
Δ = 76° 15' 54" (RT)
Dc = 44° 04' 25"
R = 130.00'
T = 102.05'
L = 173.04'
E = 35.27'
C = 160.55'
C.B. = S 33° 36' 53" E
PC STA 36+66.42
PT STA 38+39.46

CURVE 562-P1
PI STA 32+57.73
Δ = 9° 37' 44" (LT)
Dc = 1° 58' 33"
R = 2,900.00'
T = 244.26'
L = 487.36'
E = 10.27'
C = 486.79'
C.B. = S 89° 40' 27" E
e MAX = 0.035
PC STA 30+13.47
PT STA 35+00.83

CURVE 562-P2
PI STA 37+59.61
Δ = 76° 23' 31" (LT)
Dc = 31° 49' 52"
R = 180.00'
T = 141.62'
L = 239.99'
E = 49.04'
C = 222.61'
C.B. = N 47° 18' 55" E
PC STA 36+19.77
PT STA 38+57.98

CURVE 562-P3
PI STA 39+57.26
Δ = 1° 03' 35" (LT)
Dc = 2° 00' 00"
R = 2,864.79'
T = 26.49'
L = 52.99'
E = 0.12'
C = 52.99'
C.B. = N 8° 35' 22" E
PC STA 39+30.77
PT STA 39+83.76

HORIZONTAL SCALE IN FEET
0 100 200 400

GEOMETRIC PLAN
PROPOSED RAMP BASELINE DATA

HAM-75-7.85

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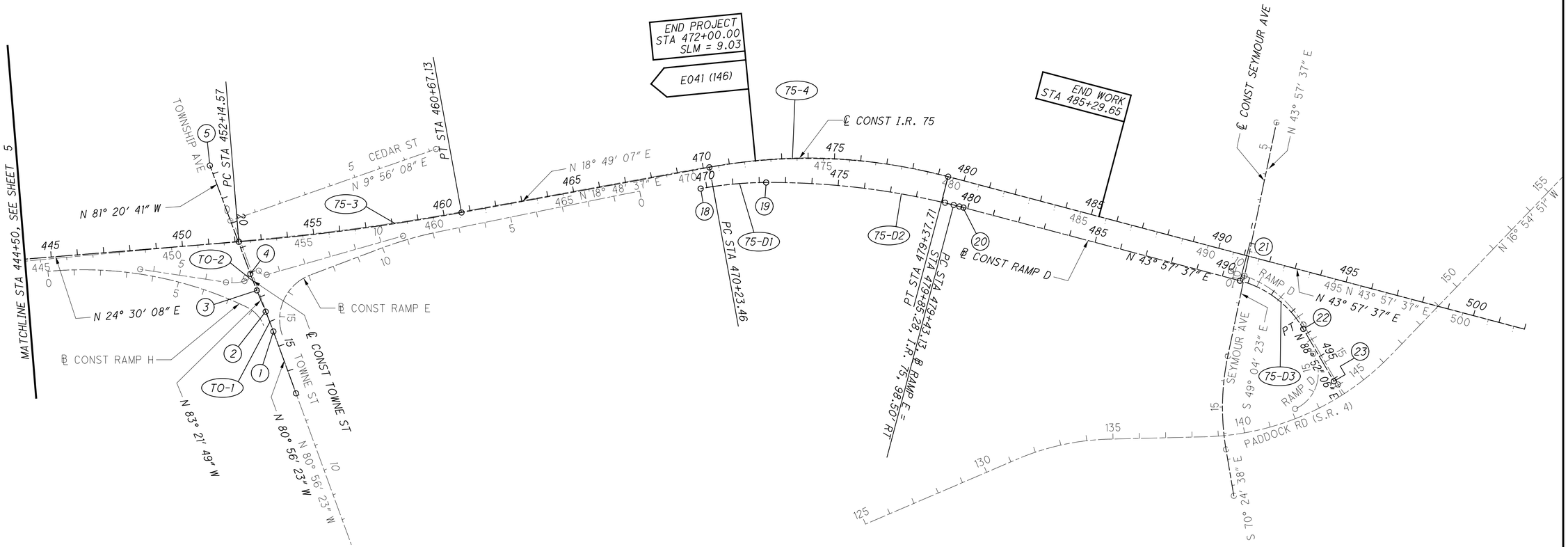
CL CONST TOWNE ST DATA	
1	PC 15+59.60
2	PT 16+40.40
	N 83°21'49" W 87.30'
3	PC 17+27.70
4	PC 17+95.00
	N 81°20'41" W 483.74'
5	POT 22+33.74

CURVE TO-1
PI STA 16+00.01
Δ = 2° 25' 26" (LT)
Dc = 2° 59' 59"
R = 1,910.00'
T = 40.41'
L = 80.80'
E = 0.43'
C = 80.80'
C.B. = N 82° 09' 06" W
e_{max} = NC
PC STA 15+59.60
PT STA 16+40.40

CURVE TO-2
PI STA 17+61.35
Δ = 2° 01' 08" (RT)
Dc = 2° 59' 59"
R = 1,910.00'
T = 33.65'
L = 67.30'
E = 0.30'
C = 67.30'
C.B. = N 82° 21' 15" W
e_{max} = NC
PC STA 17+27.70
PT STA 17+95.00

CURVE 75-3
PI STA 456+41.20
Δ = 5° 41' 01" (LT)
Dc = 0° 40' 00"
R = 8,594.37'
T = 426.63'
L = 852.56'
E = 10.58'
C = 852.21'
C.B. = N 21° 39' 37" E
e_{max} = 0.019
PC STA 452+14.57
PT STA 460+67.13

CURVE 75-4
PI STA 474+88.06
Δ = 25° 08' 30" (RT)
Dc = 2° 45' 00"
R = 2,083.48'
T = 464.60'
L = 914.25'
E = 51.17'
C = 906.93'
C.B. = N 31° 23' 22" E
e_{max} = 0.053
PC STA 470+23.46
PT STA 479+37.71



REMAINING PORTION OF RAMP D TO BE CONSTRUCTED WITH PID 117525

PROPOSED RAMP D DATA	
18	PC 469+76.37
19	PCC 472+26.37
20	PT 479+83.46
	N 43°57'37" E 1085.57'
21	PC 490+69.03
22	PT 493+78.68
	N 88°52'06" E 230.01'
23	POT 496+08.69

CURVE 75-D1
PI STA 472+01.69
D = 10° 00' 00" (RT)
Dc = 4° 00' 00"
R = 1,432.40'
T = 125.32'
L = 250.00'
E = 5.47'
C = 249.68'
C.B. = N 23° 49' 07" E
e_{max} = 0.053
PC STA 469+76.37
PT STA 472+26.37

CURVE 75-D2
PI STA 476+07.13
D = 15° 08' 30" (RT)
Dc = 2° 00' 00"
R = 2,864.79'
T = 380.76'
L = 757.09'
E = 25.19'
C = 754.89'
C.B. = N 36° 23' 22" E
e_{max} = 0.030
PCC STA 472+26.37
PT STA 479+83.46

CURVE 75-D3
PI STA 492+32.30
D = 44° 54' 29" (RT)
Dc = 14° 30' 09"
R = 395.07'
T = 163.27'
L = 309.65'
E = 32.41'
C = 301.79'
C.B. = N 66° 24' 52" E
e_{max} = 0.053
PC STA 490+69.03
PT STA 493+78.68

HORIZONTAL SCALE IN FEET
0 100 200 400

GEOMETRIC I.R. 75 PLAN
PROPOSED MAINLINE I.R. 75 AND RAMP DATA

HAM-75-7.85

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VERTICAL CONTROL

BENCHMARK	ELEVATION	DESCRIPTION
SOURCE BENCHMARK NGS MONUMENT X 144	529.74	IN IVORYDALE, AT THE INTERSECTION OF MURRAY ROAD AND THE CONRAIL RAILROAD, SET VERTICALLY IN THE SOUTH FACE OF THE WEST CONCRETE PIER OF AN ABANDONED OVERPASS, 290.0 M (951.4 FT) NORTH OF THE ROAD CENTER, 12.2 M (40.0 FT) NORTH-WEST OF THE NEAR RAIL, 3.6 M (11.8 FT) WEST OF A SWITCH STAND, 0.8 M (2.6 FT) ABOVE THE GROUND SURFACE, 0.6 M (2.0 FT) WEST OF THE SOUTHEAST CORNER OF THE PIER, AND 0.4 M (1.3 FT) ABOVE THE LEVEL OF THE TRACK.
NGS MONUMENT Y 144	549.88	IN ELMWOOD PLACE, AT THE INTERSECTION OF 69TH STREET AND THE CONRAIL RAIL-ROAD, IN TOP OF AND 1.1 M (3.6 FT) NORTHWEST OF THE SOUTHEAST END OF THE SOUTHWEST CONCRETE ABUTMENT OF THE RAILROAD OVERPASS OF THE STREET, 10.4M (34.1 FT) SOUTHWEST OF THE STREET CENTER, 2.2 M (7.2 FT) SOUTHEAST OF THE NEAR RAIL, AND 0.4 M (1.3 FT) ABOVE THE LEVEL OF THE TRACK.
NGS MONUMENT Z 144	556.75	IN CARTHAGE, AT THE INTERSECTION OF THE CONRAIL RAILROAD AND PADDOCK ROAD, IN TOP OF AND 0.4 M (1.3 FT) NORTHEAST OF THE SOUTHWEST END OF A CONCRETE RETAINING WALL, 19.7 M (64.6 FT) EAST OF THE ROAD CENTER, 9.1 M (29.9 FT) NORTH-EAST OF THE EAST CORNER OF A RAILROAD OVERPASS, 2.1 M (6.9 FT) SOUTHEAST OF THE NEAR RAIL, AND 0.2 M (0.7 FT) ABOVE THE LEVEL OF THE TRACK.
BM #401	519.64	CHISELED BOX ON THE SOUTHEAST CORNER OF A CONCRETE PAD FOR A SIGNAL CONTROL BOX, LOCATED ON THE SOUTHWEST CORNER OF VINE STREET AND RAILROAD AVENUE.
BM #402	534.36	CHISELED BOX ON THE SOUTHEAST CORNER OF A RETAINING WALL, ON TOP, LOCATED ON THE NORTHWEST CORNER OF PADDOCK ROAD AND EAST ROSS AVENUE.
BM #403	585.33	CHISELED "X" ON THE SOUTHEAST BOLT OF A SIGNAL POLE BASE LOCATED ON THE NORTHWEST CORNER OF LAIDLAW AVENUE AND PADDOCK ROAD.
BM #404	523.26	CHISELED "X" ON THE NORTHWEST CORNER OF A CATCH BASIN 250 FEET +/- EAST OF THE INTERSTATE-75 OVERPASS ON THE NORTH CURB LINE OF LAIDLAW AVENUE ACROSS FROM THE INTERSECTION OF NORFOLK SOUTHERN YARD.
BM #405	521.92	CHISELED BOX ON THE NORTHWEST CORNER ON THE TOP OF A CURB ON A CURB AND GUTTER INLET, ON THE SOUTH SIDE OF MURRAY ROAD, 350 FEET +/- WEST OF THE INTERSECTION OF MURRAY ROAD AND PROSSER AVENUE NEXT TO THE ENTRANCE OF EXEL YARD.
BM #406	529.61	CHISELED BOX ON THE SOUTHWEST CORNER OF A CONCRETE PAD FOR A SIGNAL CONTROL BOX, LOCATED ON THE NORTHEAST CORNER OF VINE STREET AND MURRAY ROAD.
BM #407	529.74	CHISELED BOX ON THE SOUTHWEST CORNER OF THE TOP OF CURB TO A CURB AND GUTTER INLET ON THE SOUTH SIDE OF TOWNSHIP AVENUE, 140 FEET +/- EAST OF INTERSECTION TOWNSHIP AVENUE AND VINE STREET 2 FEET +/- EAST OF THE NORTH ENTRANCE TO UNITED DAIRY FARMERS.
BM #408	530.70	CHISELED BOX ON THE SOUTHWEST CORNER OF THE BACK OF CURB ON A CURB AND GUTTER INLET ON THE SOUTH SIDE OF TOWNSHIP AVENUE ON THE SOUTHEAST CORNER OF TOWNSHIP AVENUE AND SILVER STREET.
BM #409	564.07	CHISELED BOX ON THE SOUTHWEST CORNER OF A CONCRETE PAD FOR A WATER METER PIT ON THE SOUTH SIDE OF TOWN STREET 200 FEET +/- EAST OF THE NORTH BOUND EXIT RAMP TO TOWNE STREET ACROSS FROM 1028 TOWN STREET 12 FEET +/- SOUTH OF SIDEWALK.
BM #410	541.01	NORTH RIM OF A MANHOLE LOCATED IN THE SIDEWALK AT THE SOUTHWEST INTER-SECTION OF PADDOCK ROAD AND TOWNE STREET.
BM #411	568.65	CHISELED "X" ON THE NORTH RIM OF A STORM MANHOLE LOCATED IN THE CENTERLINE OF REGINA GRAETER WAY 150 FEET +/- WEST FROM THE CENTERLINE INTERSECTION OF PADDOCK DRIVE AND REGINA GRAETER WAY BETWEEN 2 CURB AND GUTTER INLETS.
BM #412	585.83	CHISELED BOX ON THE BACK OF CURB AT THE SOUTHWEST CORNER OF GIVAUDAN PARKING LOT, 25 FEET +/- NORTH OF CENTERLINE FROM REGINA GRAETER WAY AND 75 FEET +/- EAST OF CENTERLINE CUL-DE-SAC OF REGINA GRAETER WAY.
BM #413	569.62	CHISELED "X" ON THE SOUTHWEST BOLT OF A SIGN POLE WITH A MAST ARM 75 FEET +/- NORTH FROM THE CENTERLINE OF EAST SEYMOUR AVENUE 200 FEET +/- EAST FROM THE INTERSECTION OF EAST SEYMOUR AVENUE AND PADDOCK ROAD.
BM #414	564.64	SOUTHWEST CORNER OF A CURB AND GUTTER INLET 60 FEET +/- SOUTH FROM THE CENTERLINE OF WEST SEYMOUR AVENUE 250 FEET +/- WEST FROM THE INTER-SECTION OF PADDOCK ROAD AND WEST SEYMOUR AVENUE.
BM #415	549.37	CHISELED "X" ON THE NORTH RIM OF A WATER MANHOLE, ON THE NORTHWEST CORNER OF WEST SEYMOUR AVENUE AND LONGVIEW, 40 FEET +/- NORTH FROM THE CENTERLINE OF WEST SEYMOUR AVENUE AND 20 FEET +/- WEST FROM THE CENTER-LINE OF LONGVIEW STREET.
BM #416	533.94	CONCRETE MONUMENT WITH A BRASS DISC FOUND ON THE NORTHEAST CORNER OF VINE STREET AND WEST SEYMOUR AVENUE IN A BRICK SIDEWALK, MARKED CITY OF CINCINNATI TOPOGRAPHIC SURVEY 1912, BENCHMARK NO.15.
BM #417	529.06	CHISELED "X" ON THE NORTH RIM OF A WATER MANHOLE AT THE INTERSECTION OF VINE STREET AND 69TH STREET 45 FEET +/- EAST FROM THE CENTERLINE OF VINE STREET, IN THE WEST BOUND LANE OF 69TH STREET 7 FEET +/- SOUTH OF NORTH CURB LINE.
BM #418	524.02	CHISELED "X" ON THE NORTH RIM OF A UNION GAS AND ELECTRIC CO. MANHOLE IN THE ROADWAY ON THE NORTHEAST CORNER OF VINE STREET AND 66TH STREET 30 FEET +/- EAST FROM THE CENTERLINE OF VINE STREET AND 5 FEET +/- SOUTH OF THE NORTH CURB LINE OF 66TH STREET.
BM #419	553.98	CHISELED "X" ON THE NORTH RIM OF A SANITARY MANHOLE AND THE INTERSECTION OF 66TH STREET AND HASLER AVENUE, THE WEST MOST OF 2 SANITARY MANHOLES IN THE INTERSECTION.
BM #420	557.46	CHISELED "X" ON THE NORTH RIM OF A TELEPHONE MANHOLE AT THE NORTHEAST CORNER OF THE INTERSECTION OF SUMMIT ROAD AND THE ENTRANCE TO SUMMIT BEHAVIORAL, 60 FEET +/- EAST OF THE CENTERLINE OF SUMMIT ROAD AND 30 FEET +/- NORTH OF THE CENTERLINE OF THE ENTRANCE ROAD.
BM #421	565.44	CHISELED BOX ON THE WEST SIDE OF A CONCRETE BASE TO A SIGNAL SUPPORT POST, LOCATED IN THE ISLAND AT THE INTERSECTION OF SUMMIT ROAD AND SECTION ROAD.
BM #422	554.98	CHISELED "X" ON THE NORTH RIM OF A TELEPHONE MANHOLE IN THE SIDEWALK AT THE EAST END OF CITY CENTER DRIVE ON THE NORTH SIDE OF THE ROAD, 120 FEET +/- WEST OF THE ENTRANCE TO THE FOOTBRIDGE OVER INTERSTATE-75.
BM #423	546.71	CONCRETE MONUMENT WITH A BRASS DISK FOUND AND STAMPED "CITY OF CINCINNATI TRAVERSE STATION 2069 BENCHMARK SET 1948" ON THE WEST SIDE OF ANTHONY WAYNE AVENUE IN A CONCRETE SIDEWALK OPPOSITE CITY CENTER DRIVE, 25 FEET +/- SOUTH OF ENTRANCE TO HAMILTON COUNTY FAIR.

BENCH MARKS

POINT	TYPE	ELEVATION	NORTHING *	EASTING *
SOURCE BENCHMARK	(NGS MONUMENT X 144	529.74	436899.45	1404236.13
NGS MONUMENT Y 144		549.88	440216.54	1407194.85
NGS MONUMENT Z 144		556.75	441899.76	1408647.98
BM #401		519.64	433397.74	1402542.37
BM #402		534.36	431756.17	1407619.45
BM #403		585.33	435184.27	1408015.62
BM #404		523.26	435638.38	1405916.72
BM #405		521.92	435852.17	1405243.99
BM #406		529.61	436262.48	1403444.45
BM #407		529.74	437598.66	1404495.44
BM #408		530.70	437354.95	1406061.26
BM #409		564.07	437227.21	1406856.18
BM #410		541.01	437010.17	1408206.76
BM #411		568.65	438837.41	1408284.17
BM #412		585.83	439053.13	1407330.44
BM #413		569.62	440239.91	1409025.80
BM #414		564.64	440364.65	1408538.43
BM #415		549.37	440823.27	1408141.26
BM #416		533.94	441274.60	1407592.02
BM #417		529.06	440487.90	1406933.68
BM #418		524.02	439547.32	1406114.74
BM #419		553.98	439117.64	1406753.95
BM #420		557.46	441207.86	1409333.96
BM #421		565.44	442791.64	1410499.46
BM #422		554.98	443097.85	1410219.47
BM #423		546.71	443326.70	1409556.64

HORIZONTAL CONTROL - PRIMARY

POINT	ELEVATION	NORTHING*	EASTING*	REMARK
502	543.04	432931.60	1403155.57	5/8 IPS IN CONC W/ALUM CAP IRSW/CAP
503	559.20	432611.55	1403612.64	5/8 IPS IN CONC W/ALUM CAP IRSW/CAP
507	522.25	435915.06	1405239.17	5/8 IPS IN CONC W/ALUM CAP IRSW/CAP
530	535.56	440928.89	1408675.89	5/8 IPS IN CONC W/ALUM CAP IRSW/CAP
537	534.35	444337.58	1411412.82	5/8 IPS IN CONC W/ALUM CAP IRSW/CAP
538	544.85	444809.07	1412047.99	5/8 IPS IN CONC W/ALUM CAP IRSW/CAP

HORIZONTAL CONTROL - SECONDARY

POINT	ELEVATION	NORTHING*	EASTING*	REMARK
501	534.52	431790.14	1407660.51	IRS W/CAP
504	523.52	433489.85	1402439.33	IRS W/CAP
505	528.48	436241.70	1403290.67	IRS W/CAP
506	521.40	436085.30	1404454.95	IRS W/CAP
508	521.60	435693.66	1405777.03	IRS W/CAP
509	552.81	435319.16	1406580.83	IRS W/CAP
510	551.25	434024.21	1406396.65	MAGS W/SHINER MAGS
511	583.63	435115.23	1408003.01	MAGS W/SHINER MAGS
512	540.61	437035.44	1408277.55	IRS W/CAP
513	565.45	437201.89	1407088.23	IRS W/CAP
514	561.58	437245.60	1406808.10	IRS W/CAP
515	529.65	437421.91	1405951.11	IRS W/CAP
516	527.74	437561.56	1405042.59	IRS W/CAP
517	529.92	437602.09	1404458.49	IRS W/CAP
518	524.89	439509.16	1406086.54	IRS W/CAP
519	537.56	439306.93	1406403.06	IRS W/CAP
520	554.30	439165.95	1406736.13	IRS W/CAP
521	585.96	439000.84	1407311.34	IRS W/CAP
522	574.35	438889.87	1407894.11	IRS W/CAP
523	569.68	438798.67	1408374.64	IRS W/CAP
524	566.68	440283.45	1408951.52	IRS W/CAP
525	567.56	440318.68	1408756.84	IRS W/CAP
526	563.95	440496.42	1408502.65	IRS W/CAP
527	551.46	440775.36	1408167.30	IRS W/CAP
528	534.73	441143.50	1407664.41	IRS W/CAP
529	534.87	441388.53	1407473.46	IRS W/CAP
531	559.39	441341.71	1409403.81	IRS W/CAP
532	557.96	441986.06	1409736.65	IRS W/CAP
533	564.68	442772.93	1410471.90	IRS W/CAP
534	555.99	443065.00	1410247.20	IRS W/CAP
535	544.31	443272.35	1409768.33	IRS W/CAP
536	547.52	443314.45	1409594.27	IRS W/CAP

* ALL NORTHING AND EASTING COORDINATES ARE GROUND COORDINATES.

BASIS OF BEARINGS:

THE BEARINGS SHOWN ON THIS PLAT ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD83 (1995). SAID BEARINGS ORIGINATED FROM A FIELD TRAVERSE WHICH WAS TIED (REFERENCED) TO SAID COORDINATE SYSTEM BY GPS OBSERVATIONS AND OBSERVATIONS OF SELECTED NATIONAL GEODETIC SURVEY MONUMENTS 7008, 7016, 6954, AND 6937. THE PORTION OF THE CENTERLINE OF I.R. 75, HAVING A BEARING OF NORTH 43° 57' 37" EAST, IS DESIGNATED THE "BASIS OF BEARING" FOR THIS SURVEY.

BASIS OF STATIONING:

I.R. 75: THE CENTERLINE STATIONING ESTABLISHED BY WOOLPERT WAS HELD.
SEYMOUR:THE CENTERLINE STATIONING ESTABLISHED BY WOOLPERT WAS HELD.

PADDOCK: THE CENTERLINE STATIONING WAS ESTABLISHED BASED ON OHIO DEPARTMENT TRANSPORTATION RIGHT-OF-WAY PLANS "HAM-S.R. 4 - 4.000" (2000), (METRIC UNITS). HOLDING STATION 4+221.140 AND APPLYING A CONVERSION FACTOR OF 1 U.S. FOOT = (1200/3937) METERS.

SUMMIT: THE CENTERLINE STATIONING WAS ESTABLISHED BASED ON OHIO DEPARTMENT TRANSPORTATION RIGHT-OF-WAY PLANS "S.H. 987 SEC. CINCINNATI (PT) B, ARLINGTON HEIGHTS & LOCKLAND (PT)" (1947). HOLDING STATION 0+04.59 AND ADDING 1000 FEET.

VERTICAL DATUM CONVERSION TO NGVD 1929:

THE ELEVATION ESTABLISHED BY THE NATIONAL GEODETIC SURVEY, AT MONUMENT X144 IS AS FOLLOWS:
NORTH AMERICAN VERTICAL DATUM OF 1988 IS 529.74 FEET IN ELEVATION.
NATIONAL GEODETIC VERTICAL DATUM OF 1929 IS 530.32 FEET IN ELEVATION.
529.74 FEET (NAVD88) + 0.58 FEET = 530.32 FEET (NGVD 29)

PRIMARY CONTROL MONUMENTS:

PRIMARY CONTROL MONUMENTS ARE CONCRETE MONUMENTS WITH ALUMINUM DISKS CONFORMING TO THE SPECIFICATIONS OF A "TYPE A" MONUMENT AS SHOWN IN THE OHIO DEPARTMENT OF TRANSPORTATION SURVEY AND MAPPING SPECIFICATIONS OF THE OFFICE OF AERIAL ENGINEERING, DATED JULY 15, 2011.

CALCULATED JM CHECKED EDK

HORIZONTAL AND VERTICAL CONTROL

HAM-75-7.85

PROJECT NORFOLK SOUTHERN BRIDGE PLANS

THE GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE NOTES & DETAILS ARE APPLICABLE TO THE NSRR BRIDGES CONSTRUCTED WITH ODOT PROJECT IDENTIFICATION 77889.

BRIDGE SPECIFIC DETAIL AND NOTES ARE INCLUDED WITH THE PLANS FOR EACH STRUCTURE. THE STRUCTURES INCLUDED WITH THIS PROJECT ARE AS FOLLOWS:

NORFOLK SOUTHERN RAILROAD OVER STATE ROUTE 562
OHIO, HAMILTON COUNTY, CINCINNATI (BERRY YARD)
ODOT DATA: HAM-562-0026 (ODOT SFN: 3113818)
NSRR DATA: BRIDGE CT-1.41 (NSRR BRIDGE No.: BR0018448)
PAGE 21/286 THROUGH 77/286

NORFOLK SOUTHERN RAILROAD OVER INTERSTATE 75
OHIO, HAMILTON COUNTY, CINCINNATI (BERRY YARD)
ODOT DATA: HAM-75-0834 (ODOT SFN: 3110142)
NSRR DATA: BRIDGE CT-0.95 (NSRR BRIDGE No.: BR0018445)
PAGE 78/286 THROUGH 118/286

NORFOLK SOUTHERN RAILROAD OVER PROSSER AVE
OHIO, HAMILTON COUNTY, CINCINNATI (BERRY YARD)
ODOT DATA: HAM-75-PROSSER (ODOT SFN: TBD)
NSRR DATA: BRIDGE CT-0.89 (NSRR BRIDGE No.: BR0018444)
PAGE 119/286 THROUGH 153/286

CONSTRUCTION SPECIFICATIONS

PROVIDE MATERIALS AND PERFORM WORK IN ACCORDANCE WITH THE FOLLOWING; WHERE DISCREPANCIES EXIST BETWEEN THESE REQUIREMENTS, THE MORE STRINGENT SHALL GOVERN:
- NSRR-PPM: NORFOLK SOUTHERN RAILWAY PUBLIC PROJECTS MANUAL, CURRENT EDITION, INCLUDING APPENDICES
- AREMA: AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION, CURRENT EDITION
- ODOT CMS: STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION & MATERIAL SPECIFICATIONS, JANUARY 1, 2019
- THE SUPPLEMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS FOR THIS PROJECT.

REFER TO THE FOLLOWING ODOT STANDARD BRIDGE DRAWING(S):
-N/A-

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S) (ODOT SSP):
ODOT SSP 1083 - CERTIFICATION OF GRAFFITI PROTECTION COATINGS FOR CONCRETE
ODOT SSP 832 - TEMPORARY SEDIMENT AND EROSION CONTROL

NORFOLK SOUTHERN RAILROAD COORDINATION AND MAINTENANCE-OF-WAY

THE CONSTRUCTION PROGRAM WILL REQUIRE CLOSE COORDINATION AND COOPERATION WITH NORFOLK SOUTHERN PERSONNEL FOR ALL OPERATIONS THAT INVOLVE TRACK WORK AND RAIL SERVICE. THE TIME OF SPECIFIC TRACK CLOSINGS, OPENINGS, SWITCHING AND OTHER REQUIRED RAIL, TIE AND BALLAST WORK IN ALL CASES SHALL BE ALSO SUBJECT TO NORFOLK SOUTHERN APPROVAL.

ALL WORK ON, OVER, UNDER, OR ADJACENT TO NORFOLK SOUTHERN RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE NSRR-PPM APPENDIX E, "NORFOLK SOUTHERN - SPECIAL PROVISIONS FOR THE PROTECTION OF RAILWAY INTERESTS".

ALL PROPOSED SUBMITTALS REQUIRED EITHER BY THE ODOT CMS OR THE NSRR-PPM SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL

ALL BALLAST, RAILS, TIES AND INCIDENTAL TRACK METAL WORK FOR THE TRACKS WILL BE FURNISHED AND PLACED BY NORFOLK SOUTHERN.

RAILROAD TRACK HORIZONTAL ALIGNMENTS

RAILROAD TRACK CURVES ARE CHORD DEFINED.

NORFOLK SOUTHERN RAILROAD COORDINATION AND MAINTENANCE-OF-WAY (CONTINUED)

THE CONTRACTOR SHALL MAINTAIN A CONSTRUCTION CLEARANCE OF 10 FEET HORIZONTALLY (FOR ELEMENTS BELOW THE TOP OF RAIL) FROM THE CENTERLINE OF TRACKS AND 22 FEET VERTICALLY FROM A POINT LEVEL WITH THE TOP OF THE HIGHER RAIL, AT ALL TIMES. CLEARANCE OF 14 FEET HORIZONTALLY SHALL BE PROVIDED TO ANY TEMPORARY WORKS INSTALLED ABOVE THE TOP OF RAIL, EXCEPT AS INDICATED BY THESE PLANS OR APPROVED BY NSRR.

DESIGN SPECIFICATIONS

THE DESIGN WAS COMPLETED IN ACCORDANCE WITH THE FOLLOWING DESIGN STANDARDS:

* AREMA, CHAPTERS 8, 9 & 15
* NSRR-PPM APPENDIX H.2 "UNDERPASS GRADE SEPARATION DESIGN CRITERIA"
* REINFORCED CONCRETE PIER & DECK SLAB DESIGN AS PER AREMA, CHAPTER 8, TABLE 8-2-5, LOAD FACTOR DESIGN.
* ALL OTHER REINFORCED CONCRETE DESIGN AS PER AREMA, CHAPTER 8, TABLE 8-2-4, SERVICE LOAD DESIGN.
* STRUCTURAL STEEL DESIGN AS PER AREMA CHAPTER 15, ALLOWABLE STRESS DESIGN.
* DESIGN LIVE LOAD:
  COOPER E-80 INCLUDING ALTERNATE LIVE LOAD ON 4 AXLES. DESIGN SPEED OF 15 MPH.
* LIVE LOAD DISTRIBUTION:
  TO STEEL SUPERSTRUCTURE MEMBERS PER AREMA 15-1.3.4
  TO CONCRETE DECK PER AREMA 8-2.2.3(c).
* IMPACT LOAD: ROLLING EQUIPMENT WITHOUT HAMMER BLOW STEEL SUPERSTRUCTURE PER AREMA CHAPTER 15-1.3.5 CONCRETE DECK PER AREMA 8-2.2.3(d).
* DEAD LOAD:
  INCLUDES 6" ADDITIONAL BALLAST FOR FUTURE TRACK SURFACING. REMOVABLE DECK FORMS SHALL BE USED.
* FATIGUE ANALYSIS IS BASED ON AREMA 15-1.3.13.
* THE SUPERSTRUCTURE IS ANALYZED AS NON-COMPOSITE FOR STRENGTH REQUIREMENTS AND COMPOSITE FOR LIVE LOAD DEFLECTION REQUIREMENTS.

DESIGN DATA

* CONCRETE
  SUPERSTRUCTURE CONCRETE SHALL OBTAIN A 28 DAY COMPRESSIVE STRENGTH OF 4,500 PSI (MINIMUM) (DECK AND PARAPETS)
  SUBSTRUCTURE CONCRETE SHALL OBTAIN A 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI (MINIMUM) (ABUTMENTS, PIERS, FOOTINGS AND FOUNDATIONS)
* REINFORCING STEEL
  ASTM A615, GRADE 60
  (60,000 PSI MINIMUM YIELD STRENGTH)
  ALL REINFORCING SHALL BE EPOXY COATED PER ASTM A775
  WELDING GRADE 60 REINFORCING BARS IS PROHIBITED
  PROVIDE 2" CLEAR CONCRETE COVER ON REINFORCEMENT BARS EXCEPT AS NOTED.
* STRUCTURAL STEEL
  SUPERSTRUCTURE STEEL SHALL BE ASTM A709, GRADE 50 (50,000 PSI MINIMUM YIELD STRENGTH)
  STEEL BEARING COMPONENTS SHALL BE ASTM A36 (36,000 PSI MINIMUM YIELD STRENGTH)
  STEEL SHEAR CONNECTORS SHALL BE ASTM A108, GRADE 1010 THROUGH 1020 (EITHER SEMI- OR FULLY KILLED)
* STRUCTURAL BOLTS
  UNLESS OTHERWISE NOTED, ALL STRUCTURAL BOLTS SHALL BE ASTM F3125, GRADE A325. ALL BOLTS, NUTS AND WASHERS SHALL BE PAINTED AFTER INSTALLATION. GALVANIZED BOLTS SHALL NOT BE USED.
* BRONZE BEARING COMPONENTS SHALL BE ASTM B22 (ALLOY C91100)
  (CYLINDRICAL EXPANSION BEARINGS)
* FORGED BEARING COMPONENTS SHALL BE ASTM A668, CLASS D (37,500 PSI MINIMUM YIELD STRENGTH)
  (FIXED BEARING PINTLES)
* ANCHOR RODS SHALL BE ASTM F1554 GRADE 105 (105,000 PSI MINIMUM YIELD STRENGTH)
* STEEL PIPES FOR CAST-IN-PLACE CONCRETE PILES ASTM A252, GRADE 2 (35,000 PSI MINIMUM YIELD STRENGTH)

DIMENSIONS AND BOUNDARIES

ALL DIMENSIONS SHOWN ARE HORIZONTAL UNLESS NOTED OTHERWISE. SUPERSTRUCTURE DIMENSIONS SHOWN ARE GIVEN AT A TEMPERATURE OF 65°F.

PROTECTION OF UTILITIES

THE CONTRACTOR IS REMINDED THAT ALL EXISTING COMPONENTS AND SYSTEMS TO REMAIN IN USE DURING AND/OR AFTER THIS PROJECT REQUIRE PROTECTION. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO:
- -WATER MAINS
- -GAS MAINS
- -ELECTRICAL/TELEPHONE CONDUITS AND OVERHEAD LINES
- -SIGNALS
- -SEWER (SANITARY AND STORM)
- -FIBER OPTIC LINES
- -RAILROAD AERIAL LINES
- -ON-TRACK UTILITIES (UNDERGROUND ON RAILROAD PROPERTY)
- -ADVERTISING BOARDS ON RAILROAD PROPERTY

IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING SYSTEMS AND COMPONENTS FOR THE DURATION OF THE CONTRACT AND/OR COORDINATE ON-TRACK UTILITY PROTECTION AND RELOCATION WITH THE RAILROADS. THE OHIO "ONE CALL" SERVICE DOES NOT LOCATED BURIED RAILROAD UTILITIES.

* OVERHEAD POWER LINES:
  THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AND COORDINATION WITH OWNERS AS TO THE LOCATION OF THESE UTILITIES WHEN MOVED MAY BE NECESSARY TO AVOID DAMAGE THERETO DURING CONSTRUCTION AND ERECTION OF STRUCTURES.
* UTILITY LINES:
  THE CONTRACTOR AND UTILITY COMPANIES ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM. THE COST OF THE RELOCATION OF ON-TRACK UTILITIES WILL BE INCLUDED IN THE RAILROAD FORCE ACCOUNT WORK.
* RAILROAD AERIAL LINES:
  RAILROAD AERIAL LINES WILL BE RELOCATED BY THE OWNING RAILROAD (TEMPORARILY OR PERMANENTLY AT THE DISCRETION OF THE RAILROAD). USE ALL PRECAUTIONS NECESSARY TO SEE THAT THE LINES ARE NOT DISTURBED DURING CONSTRUCTION AND COOPERATE WITH THE RAILROAD IN RELOCATION OF THESE LINES. THE COST OF THE RELOCATION WILL BE INCLUDED IN THE RAILROAD FORCE ACCOUNT WORK.
* ON-TRACK UTILITIES (UNDERGROUND ON RAILROAD PROPERTY):
  THE CONTRACTOR SHALL CONTACT THE RAILROAD'S REPRESENTATIVE TWO (2) DAYS IN ADVANCE OF THOSE PLACES WHERE EXCAVATION, PILE DRIVING, OR HEAVY LOADS MAY DAMAGE RAILROAD UNDERGROUND LINES ON RAILROAD PROPERTY. UPON REQUEST FROM THE CONTRACTOR OR AGENCY, RAILROAD SIGNAL FORCES WILL LOCATE AND PAINT MARK OR FLAG RAILROAD UNDERGROUND SIGNAL, COMMUNICATION, AND POWER LINES IN THE AREA TO BE DISTURBED FOR THE CONTRACTOR. THE CONTRACTOR SHALL AVOID EXCAVATION OR OTHER DISTURBANCE OF THESE LINES WHICH ARE CRITICAL TO THE SAFETY OF THE RAILROAD AND THE PUBLIC. IF DISTURBANCE OR EXCAVATION IS REQUIRED NEAR A BURIED RAILROAD SIGNAL, COMMUNICATION, OR POWER LINE, THE LINE SHALL BE POTHOLED MANUALLY WITH CAREFUL HAND EXCAVATION BY THE CONTRACTOR AND PROTECTED OR RELOCATED BY THE CONTRACTOR DURING THE COURSE OF THE DISTURBANCE UNDER THE SUPERVISION AND DIRECTION OF A RAILROAD SIGNAL REPRESENTATIVE.
* ADVERTISING BOARDS ON RAILROAD PROPERTY:
  ADVERTISING BOARDS ON RAILROAD PROPERTY THAT ARE TO BE REMOVED SHALL BE COORDINATED WITH THE NSRR REAL ESTATE DEPARTMENT.
* RAILROAD UTILITY RELOCATION:
  ALL UTILITY INSTALLATIONS OR RELOCATIONS THAT ARE REQUIRED IN CONJUNCTION WITH THIS PROJECT CAN BE INSTALLED OR RELOCATED AS PART OF THE PROJECT PROVIDED THE CONSTRUCTION IS PERFORMED BY THE PROJECT CONTRACTOR OR PROJECT CONTRACTOR'S SUBCONTRACTOR. HOWEVER, THE UTILITY MUST SUBMIT AN APPLICATION FOR THE INSTALLATION OR RELOCATION TO THE RAILROADS REPRESENTATIVE FOR APPROPRIATE HANDLING FOR LICENSE AGREEMENT AND APPLICABLE FEES. A LICENSE AGREEMENT MUST BE EXECUTED PRIOR TO UTILITY BEING INSTALLED OR RELOCATED.

FOR NSRR UTILITY APPLICATIONS GO TO:
WWW.NSCORP.COM -> ABOUT NS REAL ESTSATE -> REAL ESTATE -> LEARN ABOUT OUR SERVICES -> WIRE, PIPELINE, AND FIBER OPTICS PROJECTS
http://www.nscorp.com/content/nscorp/en/real-estate/norfolk-southern-services/wire-pipeline-fiber-optic-projects.html

EXCAVATION

THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF ALL EXCAVATED SLOPES. DIRECT SURFACE RUNOFF AWAY FROM THE EXCAVATION. GROUNDWATER LEVELS MAY FLUCTUATE SEASONALLY AS A FUNCTION OF PRECIPITATION AND OTHER HYDROLOGICAL FACTORS. THEREFORE, THERE MAY BE CONSIDERABLE CHANGE IN THE WATER TABLE OR THE PRESENCE OF WATER WHERE NOT PREVIOUSLY ENCOUNTERED. PERFORM ALL EXCAVATIONS IN ACCORDANCE WITH OSHA REQUIREMENTS AND NORFOLK SOUTHERN SPECIFICATIONS FOR SHORING. EXCAVATION AND SHORING SHOWN IN THESE PLANS ASSUME AN OSHA TYPE B SOIL (TO BE CONFIRMED BY THE CONTRACTOR)

EXCAVATE ACCORDING TO CONSTRUCTION SEQUENCES DRAWINGS AND NOTES. DO NOT OVEREXCAVATE.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH CMS ITEM 503 EXCEPT THAT THE BACKFILL MATERIAL SHALL BE MATERIAL CONFORMING TO CMS 703.17 (CMS 304 MATERIAL) AND MEET THE COMPACTION REQUIREMENTS OF CMS 304.05. IN ADDITION, THE BACKFILL SHALL BE PLACED AND COMPACTED IN 6" LIFTS. THE USE OF SLAG IS PROHIBITED.

ITEM 503 - COFFERDAMS AND EXCAVATION BRACING AS PER PLAN

PLANS AND SHOP DRAWINGS FOR TEMPORARY SHORING THAT SUPPORT RAILROAD EMBANKMENT OR LIVE LOAD SHALL BE APPROVED BY NORFOLK SOUTHERN. THE SHORING DESIGN SHOWN IN THE PLANS MEETS NORFOLK SOUTHERN AND AREMA SPECIFICATIONS FOR SHORED CONSTRUCTION AND HAS BEEN APPROVED BY NORFOLK SOUTHERN. ANY CHANGES TO THIS DESIGN REQUIRES NORFOLK SOUTHERN APPROVAL.

THE CONTRACTOR SHOULD VERIFY THE ADEQUACY OF THE ASSUMED EXCAVATION SLOPES IN THESE PLANS PRIOR TO SHORING INSTALLATION OR EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, REVIEW TIME, SCHEDULE DELAYS, BUDGET IMPACTS AND DAMAGES RESULTING FROM RAILROAD APPROVAL OF CONTRACTOR MODIFICATIONS OF THESE PLANS.

THE DESIGN SHOWN ON THE PLANS FOR TEMPORARY SUPPORT OF EXCAVATION IS ONE REPRESENTATIVE DESIGN THAT MAY BE USED TO CONSTRUCT THE PROJECT. THE CONTRACTOR MAY CONSTRUCT THE DESIGN SHOWN ON THE PLANS OR PREPARE AN ALTERNATE DESIGN TO SUPPORT THE SIDES OF EXCAVATIONS. IF CONSTRUCTING AN ALTERNATE DESIGN FOR TEMPORARY SUPPORT OF EXCAVATION, DUE TO EITHER CONTRACTOR PREFERENCE OR FINDING SOILS NOT CAPABLE OF SUPPORTING THE EXCAVATION SLOPES SHOWN IN THESE PLANS, PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH CMS 501.05 AND THE NSRR-PPM. THE SECTION PROPERTIES LISTED IN THESE PLANS ARE REQUIRED TO MEET SHORING RESISTANCE AND/OR DEFLECTION REQUIREMENTS OF THE RAILROAD.
THE DESIGN INCLUDES TOTAL UNFACTORED LOADS AND INCLUDES ALL APPLICABLE LIVE LOAD SURCHARGES. A SOIL DENSITY OF 125 PCF WITH AN INTERNAL ANGLE OF FRICTION OF 31 DEGREES WAS USED IN THE SHORING DESIGN DETAILED IN THESE PLANS. PER THE NSRR-PPM, NO SHORING SHALL BE CLOSER THAN 10'-0" THE THE CENTERLINE OF TRACK. SHORING LOCATED BETWEEN 10'-0" AND 18'-0" FROM THE CENTERLINE OF TRACK SHALL BE LIMITED TO A MAXIMUM CALCULATED DEFLECTION OF 3/8". SHORING LOCATED GREATER THAN 18'-0" FROM THE CENTERLINE OF TRACK SHALL BE LIMITED TO A MAXIMUM CALCULATED DEFLECTION OF 1/2".

THE DEPARTMENT WILL PAY FOR THE TEMPORARY SUPPORT OF EACH EXCAVATION AT THE INDIVIDUAL CONTRACT LUMP SUM PRICE FOR COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (LOCATION DESCRIPTION). NO ADDITIONAL PAYMENT WILL BE MADE FOR PROVIDING AN ALTERNATE DESIGN. RAILROAD APPROVAL IS REQUIRED FOR ANY EXCAVATION SUPPORT ALTERNATE DESIGNS THAT ARE IN THE RAILROAD RIGHT-OF-WAY, SUPPORTING TRACK, OR WITHIN THE RAILROAD TRACK ZONE OF INFLUENCE (DEFINED BY THE NSRR-PPM AS A 2:1 GRADE DOWN FROM THE EDGE OF THE SUBBALLAST). ANY DELAYS RELATED TO THE ALTERNATE SHORING DESIGN, APPROVAL, AND ACCEPTANCE BY THE RAILROAD IS NON-EXCUSABLE AND THE DEPARTMENT WILL NOT CONSIDER ADDITIONAL COMPENSATION OR CONTRACT EXTENSION.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	JEA	CTV	12-19-23
CHECKED	REVISED	ODOT SFN	3113818, 3110142, PROSSER
CTM			

STANDARD RAILROAD BRIDGE NOTES 1/6
GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE STANDARD NOTES & DETAILS
NSRR BRIDGES CT-1.41 (NORWOOD LATERAL), CT-0.95 (I-75), CT-0.89 (PROSSER AVE)

HAM-75-7.85
PID No. 77889

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8/286

ITEM 507 - CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN

FURNISH ASTM A252, GRADE 2 STEEL PIPES FOR PILES AS FOLLOWS:

12" DIAMETER = 0.50" (½") MINIMUM WALL THICKNESS
14" DIAMETER = 0.50" (½") MINIMUM WALL THICKNESS
16" DIAMETER = 0.50" (½") MINIMUM WALL THICKNESS

SPLICING OF STEEL PIPES SHALL BE PER ODOT CMS 507.09 (FULL PENETRATION BUTT WELDS).

ITEM 507 - CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN, AS PER PLAN

PILE DRIVING CRITERIA SHALL BE PER CMS 507.05

PILES DRIVEN TO TIP ELEVATION FOR PILE/SOIL SETUP

PART OF THE ULTIMATE BEARING VALUE WILL BE ACHIEVED THROUGH PILE/SOIL SETUP, WHICH IS A TIME-DEPENDENT INCREASE IN RESISTANCE THAT OCCURS IN SOME SOILS.

NOTIFY THE ENGINEER AT LEAST 5 DAYS BEFORE DRIVING PILES SO THAT THE ENGINEER CAN NOTIFY THE DISTRICT GEOTECHNICAL ENGINEER, THE OFFICER OF CONSTRUCTION ADMINISTRATION, AND THE OFFICE OF STRUCTURAL ENGINEERING.

DRIVE THE FIRST TWO PILES IN EACH SUBSTRUCTURE TO THE TIP ELEVATION GIVEN IN THE PLANS FOR THE SUBSTRUCTURE. DRIVE THE THIRD AND FOURTH PILES TO 75% AND 85% OF THE LENGTH OF THE FIRST TWO PILES. PERFORM DYNAMIC LOAD TESTING ON ALL FOUR PILES WHILE DRIVING.

AFTER DRIVING THE FOUR PILES, CEASE ALL DRIVING OPERATIONS AT THE SUBSTRUCTURE FOR A MINIMUM OF 7 DAYS. INCLUDE THE WAITING PERIOD AS A SEPARATE ACTIVITY IN THE PROGRESS SCHEDULE.

AFTER THE WAITING PERIOD, PERFORM PILE RESTRIKES ON THE FOUR PILES (TWO RESTRIKE ITEMS). SUBMIT ALL TEST RESULTS AND ESTABLISH DRIVING CRITERIA FOR THE PILING IN THE SUBSTRUCTURE WITH THE ASSISTANCE OF THE DISTRICT GEOTECHNICAL ENGINEER, THE OFFICE OF CONSTRUCTION ADMINISTRATION, THE OFFICE OF STRUCTURAL ENGINEERING, AND NORFOLK SOUTHERN RAILROAD.

IF THE DYNAMIC LOAD TESTING INDICATES A PILE HAS ACHIEVED THE ULTIMATE BEARING VALUE ABOVE THE TIP ELEVATION DURING THE INITIAL DRIVING (BEFORE THE WAITING PERIOD), STOP DRIVING AND NOTIFY THE ENGINEER. IF THE RESTRIKE TEST RESULTS ON THE FOUR PILES INDICATE THAT A PILE DID NOT ACHIEVE THE REQUIRED ULTIMATE BEARING VALUE, DRIVE THE PILE TO THE ESTABLISHED DRIVING CRITERIA. SPLICING OF PILES BEYOND THE ESTIMATED LENGTH PROVIDED IN THESE PLANS WILL BE PAID FOR BY THE DEPARTMENT PER ODOT CMS 109.05 WITH A NEGOTIATED PRICE PER SPLICE.

BRIDGE SPECIFIC MAXIMUM SERVICE REACTION VALUES, ORDER LENGTHS, PILE CUTOFF ELEVATIONS PILE TIP ELEVATIONS, ARE WITH BRIDGE SPECIFIC NOTES AND PLANS.

FOR HAM-562-0026 (NSRR BRIDGE CT-1.41) OVER S.R. 562,

SEE SHEETS 23/286 , 36/286 , 37/286 AND 38/286 .

FOR HAM-75-0834 (NSRR BRIDGE CT-0.95) OVER I.R. 75,

SEE SHEETS 81/286 , 86/286 , 87/286 AND 88/286 .

FOR HAM-75-PROSSER (NSRR BRIDGE CT-0.89) OVER

PROSSER AVE, SEE SHEETS 120/286 , 125/286 AND 126/286 .

PILE DRIVING CONSTRAINTS

PRIOR TO DRIVING PILES AT THE ABUTMENTS, CONSTRUCT THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS UP AT A 1:1 SLOPE FROM THE TOP OF THE HEEL OF THE FOOTING TO THE SUBGRADE ELEVATION AND FOR A MINIMUM DISTANCE OF 250 FEET BEHIND THE ABUTMENTS. DO NOT BEGIN THE INSTALLATION OF THE ABUTMENT PILES UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED. AFTER THE FOOTING AND THE BREASTWALL HAVE BEEN CONSTRUCTED, CONSTRUCT THE EMBANKMENT IMMEDIATELY BEHIND THE ABUTMENTS UP TO THE TOP OF BEARING SEAT ELEVATION AND ON A 1:1 SLOPE UP TO THE SUBGRADE ELEVATION PRIOR TO SETTING THE GIRDERS ON THE ABUTMENTS.

BRIDGE SEAT REINFORCING, SETTING ANCHORS

ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE THE PRE-SETTING OF BEARING ANCHORS.

ITEM 511 - CONCRETE FOR RAILROAD BRIDGES

ALL CONCRETE PAID FOR UNDER ITEM 511 SHALL MEET THE REQUIREMENTS OF ODOT CMS 511, MODIFIED AS NECESSARY TO MEET THE REQUIREMENTS OF NSRR-PPM, APPENDIX H.4.2 - "SPECIFICATIONS FOR CAST-IN-PLACE CONCRETE", AND AREMA CHAPTER 8. IN THE CASE OF A DISCREPANCY, THE MOST STRINGENT SHALL GOVERN.

ALL CONCRETE SHALL HAVE A MINIMUM REQUIRED CEMENT RATIO OF 610 LBS/CY. SLAG AND FLY ASH SHALL NOT BE USED IN CONCRETE FOR RAILROAD BRIDGES.

ALL MIX DESIGNS, AND ANY ADMIXTURES USED, SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL. ANY ADMIXTURES USED SHALL BE IN ADDITION TO, NOT IN LIEU OF, THE MINIMUM REQUIRED CEMENT RATIO.

ALL WATERSTOPS REQUIRED BY THESE PLANS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE CONCRETE.

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN

IMMEDIATELY AFTER REMOVING FORMS, CLEAN, DAMPEN AND FILL WITH MORTAR ALL CAVITIES PRODUCED BY FORM TIES, HONEYCOMB SPOTS, BROKEN CORNERS OR EDGES, AIR ENTRAINMENT OR BUG HOLES, AND OTHER DEFECTS.

AS SOON AS A CONCRETE SAW CAN BE OPERATED WITHOUT DAMAGING THE FRESHLY PLACED CONCRETE, SAWCUT 1¼" DEEP CONTROL JOINTS INTO THE PERIMETER OF THE CONCRETE PARAPET STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. PLACE THE SAWCUTS AT LOCATIONS SHOWN ON THE DECK PLAN SHEET. USE AN EDGE GUIDE, FENCE, OR JIG TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE (A NOMINAL WIDTH OF ¼"). SEAL THE PERIMETER OF THE DEFLECTION CONTROL JOINT TO A MINIMUM DEPTH OF 1 INCH WITH A POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S. LEAVE THE BOTTOM ½" OF THE INSIDE AND OUTSIDE FACE UNSEALED TO ALLOW WATER TO ESCAPE.

ITEM 511 - CONCRETE, MISC.: FACING OF CANTILEVER WALLS

THE WORK SHALL INCLUDE ALL MATERIALS AND LABOR REQUIRED TO INSTALL A PERMANENT CAST-IN-PLACE CONCRETE FACE ON PILE AND LAGGING, AND CAISSON WALLS.

THE UNIT BID PRICE SHALL INCLUDE ANY SUBSURFACE PREPARATION REQUIRED, DRILLING OF DOWEL HOLES INTO CAISSONS (WHERE REQUIRED), FURNISHING AND INSTALLING REQUIRED REINFORCING PER BRIDGE SPECIFIC DETAILS AND NOTES, THE INSTALLATION AND SUBSEQUENT REMOVAL OF ALL REQUIRED FORMWORK, 1" PEJF MATERIAL REQUIRED FOR CONTRACTION JOINTS, AND CONCRETE FURNISHED AND INSTALLED PER THIS NOTE.

CANTILEVER WALL SUBSURFACES SHOULD BE CLEANED OF ALL FOREIGN AND LOOSE MATERIAL AND/OR UNSOUND CONCRETE.

DOWEL HOLES SHALL BE CONSTRUCTED PER CMS 510. DOWELS SHALL BE MADE OF DEFORMED BARS, ASTM A615, GRADE 60, AND SHALL BE SPACED AS SHOWN ON THE PLANS. DOWELS SHALL BE GROUTED IN PLACE WITH AN EPOXY GROUT INTENDED FOR DOWEL BARS, AND SHALL BE APPLIED IN ACCORDANCE WITH ASTM C881 AND THE MANUFACTURERS RECOMMENDATIONS. DOWEL HOLES SHALL BE DRILLED DOWNWARD. ALL FREE WATER SHALL BE REMOVED BY AN AIR JET OR VACUUM PRIOR TO PLACEMENT OF GROUT.

1" PREFORMED EXPANSION JOINT FILLER SHALL BE FURNISHED AND INSTALLED PER CMS 516.

CONCRETE SHALL BE INSTALLED PER CMS 511. THE MAXIMUM NOMINAL SIZE OF COURSE AGGREGATE SHALL BE LIMITED TO ¾" ACCORDING TO ACI 301, SECTION 4. THE MIX DESIGN SHALL ADHERE TO CMS 499 (TYPE QC 2, TABLE 499.03-1).

THE FORMLINER SHALL BE ARCHITECTURAL POLYMERS #9050 AGED ASHLAR STONE OR APPROVED EQUAL.

THE COST OF FORM LINER SHALL BE BID SEPARATELY WITH ITEM 530 - SPECIAL - FORM LINER.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (SQ FT) AT THE CONTRACT BID PRICE FOR EACH STRUCTURE USING NOMINAL DIMENSIONS SHOWN AS SHOWN IN THE PLANS.

ITEM 512 - SPECIAL - WATERPROOFING. MISC.: DAMPPROOFING OF RAILROAD STRUCTURES

A. DAMPPROOFING OF CONCRETE SURFACES BELOW GRADE SHALL BE AS SHOWN ON THE PLANS. UNLESS NOTED OTHERWISE, DAMPPROOFING LIMITS ARE VERTICAL SURFACES OF THE FILL FACE AND EXTEND FROM THE FINISHED GRADE LINE TO THE TOP OF FOOTING ELEVATION.

B. SURFACES TO BE TREATED SHALL BE CLEAN AND DRY.

C. CONCRETE SURFACES SHALL HAVE BEEN CURED A MINIMUM OF 7 DAYS FOR STANDARD CONCRETE AND 3 DAYS FOR HIGH-EARLY STRENGTH CONCRETE, RESPECTIVELY, BEFORE BEING DAMPPROOFED.

D. DAMPPROOFING SHALL CONFORM TO THE FOLLOWING.

1. SURFACES TO BE DAMPPROOFED SHALL BE COVERED WITH A UNIFORM COAT OF HOT PRIMER AT A RATE OF 1 GALLON PER 100 SQUARE FEET.

2. AFTER THE PRIMER HAS BEEN ALLOWED TO CURE, TWO SUCCESSIVE UNIFORM MOP COATS OF HOT ASPHALT OR TAR SHALL BE APPLIED AT A RATE OF 4½ GALLONS PER 100 SQUARE FEET PER EACH COAT. THE FIRST COAT SHALL BE ALLOWED TO CURE BEFORE THE SECOND COAT IS APPLIED.

E. NO DAMPPROOFING OR WATERPROOFING SHALL BE ALLOWED WHEN THE TEMPERATURE IS BELOW 35° F.

F. ASPHALT SHALL BE APPLIED AT A TEMPERATURE BETWEEN 300° F AND 350° F.

G. TAR SHALL BE APPLIED AT A TEMPERATURE BETWEEN 200° F AND 250° F.

H. ALL BITUMEN SHALL BE MOPPED OR BRUSHED ON THE SURFACE EXCEPT THAT SPRAYING SHALL BE PERMITTED FOR PRIME COATS.

I. THE FINAL COAT SHALL BE ALLOWED TO DRY AT LEAST 2 DAYS BEFORE ANY EARTH IS ALLOWED TO CONTACT THE SURFACE.

DAMPPROOFING SHALL BE IN ACCORDANCE WITH AREMA CHAPTER 8, PART 29

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (SQ FT) AT THE CONTRACT BID PRICE FOR EACH STRUCTURE, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

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STANDARD RAILROAD BRIDGE NOTES 2/6
GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE STANDARD NOTES & DETAILS
NSRR BRIDGES CT-1.41 (NORWOOD LATERAL), CT-0.95 (I-75), CT-0.89 (PROSSER AVE)

HAM-75-7.85
PID No. 77889

ITEM 512 - TYPE E WATERPROOFING, AS PER PLAN

SPRAY-APPLIED WATERPROOFING SHALL BE IN ACCORDANCE WITH NSRR-PPM, APPENDIX H.4.3 - "SPECIFICATIONS FOR MEMBRANE WATERPROOFING", AREMA CHAPTER 8, PART 29, AND THE DETAILS HEREIN.

USE THE SPRAY-APPLIED WATERPROOFING ON THE ENTIRE DECK AND APPLICABLE CURB SURFACES.

AN INTIAL LIFT OF BALLAST SHALL BE PLACED ATOP THE COMPELETED WATERPOOFING. PAYMENT FOR THE INITIAL LIFT OF BALAST IS INCLUDED WITH THE TRACK PLANS.

NO DEDUCTIONS IN QUANTITIES ARE MADE FOR HOLES AT DECK DRAINS.

THE BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (SQ YD) AT THE CONTRACT BID PRICE FOR EACH STRUCTURE, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

ITEM 512 - SPECIAL - ASPHALTIC PANEL

TWO LAYERS OF ½" THICK ASPHALTIC PANELS SHALL BE PLACED AS PROTECTIVE COVER PER NSRR-PPM, APPENDIX H.4.3 - "SPECIFICATIONS FOR MEMBRANE WATERPROOFING" AND AREMA CHAPTER 8, SECTIONS 29.14.4.1 AND 29.14.4.4. CUT HOLES IN ASPHALT PANELS AT DECK DRAIN LOCATIONS.

NO DEDUCTIONS IN QUANTITIES ARE MADE FOR HOLES AT DECK DRAINS.

THE COST TO FURNISH AND INSTALL CURB FLASHING AND ARMOR PLATES AT ABUTMENTS, INCLUDING ANCHORAGES, SHALL BE INCLUDED FOR PAYMENT WITH THIS ITEM.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (SQ YD) AT THE CONTRACT BID PRICE FOR EACH STRUCTURE, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

ITEM 512 - SEALING OF CONCRETE SURFACES, AS PER PLAN (PERMANENT GRAFFITI PROTECTION)

APPLY A PERMANENT GRAFFITI COATING QUALIFIED ACCORDING TO ODOT SSP - 1083 THAT IS COMPATIBLE WITH THE CONCRETE STAIN OR EPOXY-URETHANE OVER WHICH IT IS APPLIED. APPLY THE GRAFFITI COATING IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 1, AS PER PLAN

SECONDARY STRUCTURAL STEEL SHALL BE CONSIDERED LEVEL 1 AND SHALL CONFORM TO ODOT CMS 513 EXCEPT AS MODIFIED HEREIN AND BY NSRR-PPM APPENDIX H.4.1 - "SPECIFICATIONS FOR STRUCTURAL STEEL". ALL BOLTS SHALL BE INSTALLED USING THE TURN-OF-THE-NUT METHOD AND PER AREMA 15.3.2.3.

SECONDARY STRUCTURAL STEEL IS DEFINED AS INTERMEDIATE AND END DIAPHRAGMS, STIFFENER BOTTOM FLANGE CONNECTION PLATES, LOWER LATERAL BRACING ELEMENTS, AND LOWER LATERAL BRACING CONNECTION PLATES.

SECONDARY STRUCTURAL STEEL SHALL BE PROVIDED AS PER ASTM SPECIFICATIONS A709, GRADE 50, AND SHALL ALSO COMPLY WITH THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:
A. S5-T2 (NON-FRACTURE CRITICAL - CHARPY TEST ZONE 2)
B. S29 (FINE AUSTENITIC GRAIN SIZE)

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (POUND) AT THE CONTRACT BID PRICE FOR EACH STRUCTURE.

ITEM 513 - STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN

PRIMARY STRUCTURAL STEEL SHALL BE CONSIDERED LEVEL 6 AND SHALL CONFORM TO ODOT CMS 513 EXCEPT AS MODIFIED HEREIN AND BY NSRR-PPM APPENDIX H.4.1 - "SPECIFICATIONS FOR STRUCTURAL STEEL". ALL BOLTS SHALL BE INSTALLED USING THE TURN-OF-THE-NUT METHOD AND PER AREMA 15.3.2.3.

PRIMARY STRUCTURAL STEEL IS DEFINED AS WELDED PLATE GIRDER FLANGES, WEBS AND STIFFENERS. IT SHALL ALSO INCLUDE ANY ITEMS WELDED TO GIRDER FLANGES OR WEBS, AND ANY OTHER STEEL NOT SPECIFICALLY IDENTIFIED AS SECONDARY (LEVEL 1).

PRIMARY STRUCTURAL STEEL SHALL BE PROVIDED AS PER ASTM SPECIFICATIONS A709, GRADE 50, AND SHALL ALSO COMPLY WITH THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:
A. S5-F2 (FRACTURE CRITICAL - CHARPY TEST ZONE 2)
B. S29 (FINE AUSTENITIC GRAIN SIZE)
C. S93 (LIMITATION ON WELD REPAIRS)

DECK SLAB OVERHANG FORMS SHALL BE SUPPORTED FROM THE BOTTOM FLANGE OF THE FASCIA GIRDERS UNLESS THE GIRDER WEB IS ADEQUATELY SUPPORTED TO PREVENT BUCKLING DUE TO LOADS FROM WEB-BEARING FORM SUPPORTS. THE DETAILS OF ALL OVERHANG FORMWORK SUPPORTS AND OPTIONAL USE OF WEB CONNECTIONS SHALL BE APPROVED BY NSRR PRIOR TO USE.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (POUND) AT THE CONTRACT BID PRICE FOR EACH STRUCTURE.

ITEM 514 - SHOP PAINTING AND FIELD TOUCH-UP OF STRUCTURAL STEEL

INTERMEDIATE AND FINISH COATS SHALL BE SHOP APPLIED. SHOP APPLIED PAINTING AND SUBSEQUENT TOUCH-UP SHALL COMPLY WITH THE NSRR-PPM APPENDIX H.4.4 "SPECIFICATIONS FOR PAINTING SHOP FABRICATED BRIDGE STEEL".

FIELD TOUCH-UP SHALL BE APPLIED IN THE APPROPRIATE ROADWAY MAINTENANCE OF TRAFFIC PHASING.

THE TOTAL SURFACE AREA OF GIRDERS, STIFFENERS, DIAPHRAGMS, AND LOWER LATERAL BRACE MEMBERS (WHERE APPLICABLE) IS CALCULATED IN THE PAINTING SURFACE AREA. THE SIDES AND TOPS OF GIRDER TOP FLANGES ARE EXCLUDED FROM THE TOTAL PAINTING AREA.

THE TOTAL SURFACE AREA INCLUDES A 5% ALLOWANCE FOR INCIDENTALS (SUCH AS BOLT HEADS AND GUSSET PLATES).

FINISH COAT SHALL BE FEDERAL COLOR NUMBER 14277 (GREEN).

ITEM 516 - STRUCTURAL STEEL EXPANSION JOINT, AS PER PLAN

CONSTRUCT EXPANSION JOINTS IN ACCORDANCE TO ODOT CMS ITEM 516 AND THE DETAILS HEREIN.

THE EXPANSION JOINT SYSTEM SHALL BE WATER TESTED AFTER INSTALLATION. LEAKS SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

TEAR-WEB WATERSTOP:
FURNISH MATERIAL CONFORMING TO ODOT CMS 705.11. THE SEAL CONFIGURATION SHOULD BE SIMILAR TO THE DETAILS SHOWN HEREIN. INSTALL THE SEAL ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS AND UNDER THE SUPERVISION OF THE MANUFACTURER'S DESIGNATED REPRESENTATIVE.

FURNISH WATERSTOPS IN ONE CONTINUOUS PIECE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

STEEL PLATES:
FURNISH AND INSTALL GALVANIZED SLIDING PLATES (15" WIDE BY ½" THICK) COMPLYING TO ASTM A-36.

FURNISH AND INSTALL GALVANIZED SHEET METAL COVERS (28" WIDE BY 16 GA.) AS SHOWN IN THE PLANS.

GALVANIZE ALL JOINT STEEL PER ODOT CMS 711.02. REPAIR DAMAGED OR FIELD WELDED PLATES PER CMS 711.02.

THE BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM; INCLUDING CUTTING AND GRINDING BOLTS SMOOTH WITH THE METAL PLATE; SUPPLYING, SUPPLYING AND INSTALLING THE SILICONE TREATED PAPER; INSTALLING AND ADHERING THE ⅛" ELASTOMERIC FLASHING; AND SUPPLYING, PREPARING, AND INSTALLING THE RUBBER JOINT COMPOUND.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (FT) AT THE CONTRACT BID PRICE FOR EACH STRUCTURE.

ITEM 518 - STRUCTURE DRAINAGE, MISC.: SUPERSTRUCTURE DRAINAGE SYSTEM

ALL ITEMS REQUIRED TO COMPLETE THE DECK DRAINAGE SYSTEM AND CONVEY THE WATER TO ITS OUTLET SHALL BE INCLUDED FOR PAYMENT WITH THIS ITEM. ALL PIPE SHALL BE DUCTILE IRON. INCLUDE ALL 6" INNER DIAMETER DUCTILE IRON PIPE, DOWNSPOUTS, HORIZONTAL CONDUCTOR PIPES, BRACKETS, PIPE HANGER ASSEMBLIES, TEES, SCUPPERS, WYES, ELBOWS, AND U-BOLTS FOR PAYMENT WITH THIS ITEM (INCLUDING SPECIALS).

ALL DUCTILE IRON SHALL BE CLASS 54.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED DRAINAGE SYSTEM (LUMP) AT THE CONTRACT BID PRICE FOR EACH STRUCTURE.

ITEM 518 - 8" PERFORATED CORRUGATED STEEL PIPE, 707.01, AS PER PLAN
ITEM 518 - 8" NON-PERFORATED CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01, AS PER PLAN

UNLESS SUPERCEDED BY NSRR-PPM APPENDIX H.4.9 - "SPECIFICATION FOR CORRUGATED STEEL PIPE (BITUMINOUS COATED GALVANIZED STEEL)", UNDERDRAIN PIPES SHALL BE PROVIDED AS FOLLOWS:

MATERIALS SHALL BE AS PER ODOT CMS 707.01, AND GALVANIZED AS PER ODOT CMS 711.02, AND BITUMINOUS COATED AS PER ODOT CMS 707.05

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (FT) AT THE CONTRACT BID PRICE WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

ITEM 530 - SPECIAL - FORM LINER

FORM LINERS IN ACCORDANCE WITH CMS 508.03 SHALL BE USED FOR THE ARCHITECTURALLY TREATED ABUTMENTS, CANTILEVER WALLS, AND WINGWALLS. FORM LINERS SHALL BE USED TO PRODUCE THE TEXTURED SURFACES ON THE LIMITS INDICATED IN THE PLANS. THE FORM LINERS USED TO PRODUCE THE ARCHITECTURAL SURFACE TEXTURES SHALL BE APPROVED BY THE DEPARTMENT.

AN ASHLAR STONE PATTERN SHALL BE USED TO MATCH OTHER SURFACES AS PART OF THIS PROJECT (ARCHITECTURAL POLYMERS, 9050). THE MINIMUM FORM LINER RELIEF DEPTH SHALL BE 1". THE MAXIMUM FORM LINER RELIEF DEPTH SHALL BE 2".

ARCHITECTURALLY TREATED ABUTMENT, CANTILEVER WALL, AND WINGWALL FACES SHALL MAINTAIN A MINIMUM 2" OF CLEAR COVER TO THE REINFORCING UNDER THE RELIEF. VERTICAL FRONT FACE REINFORCING MAY BE ADJUSTED TO A MAXIMUM OF 4" CLEAR TO THE FRONT FACE OF THE PLAN DIMENSIONS TO ENSURE MINIMAL COVER.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (SF) AT THE CONTRACT BID PRICE FOR EACH STRUCTURE USING NOMINAL DIMENSIONS SHOWN AS SHOWN IN THE PLANS.

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STANDARD RAILROAD BRIDGE NOTES 3/6
GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE STANDARD NOTES & DETAILS
NSRR BRIDGES CT-1.41 (NORWOOD LATERAL), CT-0.95 (I-75), CT-0.89 (PROSSER AVE)

HAM-75-7.85
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ITEM 524 - DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN

DRILLED SHAFTS FOR CAISSON WALLS SHALL BE PAID FOR PER ODOT CMS 524 AND CONSTRUCTED PER ODOT CMS 524 AND AREMA 8-24.5. SEE INDIVIDUAL BRIDGE PLAN NOTES FOR FURTHER DETAIL.

SHAFT SPIRAL REINFORCING SHALL EXTEND FROM 3" ABOVE THE SHAFT TIP TO THE LOWEST LEVEL OF HORIZONTAL REINFORCING IN THE SUPPORTED MEMBER ABOVE. VERTICAL REINFORCING BARS SHALL EXTEND A MINIMUM OF 18" ABOVE THE SHAFT TOP AND A MAXIMUM OF 24" INTO THE SHAFT CAP.

CYLINDRICAL CONSTRUCTION FROM SHAFT TIP TO SHAFT TOP IS ASSUMED FOR PAYMENT. THE CONTRACTOR MAY ELECT TO PLACE A CONSTRUCTION JOINT AT THE EXISTING GROUND LINe OF EACH SHAFT. THE CONTRACTOR MAY ELECT TO CONSTRUCT A RECTANGULAR WALL ABOVE THE OPTIONAL SHAFT CONSTRUCTION JOINT TO THE TOP OF SHAFT ELEVATION. ANY ADDITIONAL TIME OR MATERIALS DUE TO RECTANGULAR CONSTRUCTION ABOVE THE OPTIONAL CONSTRUCTION JOINT ARE AT THE EXPENSE OF THE CONTRACTOR. THE CIRCULAR REINFORCING PATTERN SHALL BE PROVIDED AS SHOWN IN THESE PLANS. IF RECTANGULAR CONSTRUCTION IS USED ABOVE THE OPTIONAL CONSTRUCTION JOINT, REVISED FORMING AND SHORING DETAILS SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL.

DRILLED SHAFT HOLES CONSTRUCTED AS CAISSON WALL TEMPORARY SHORING SHALL BE CASED TEMPORARILY PER NSRR REQUIREMENTS. TEMPORARY CASING SHALL BE SIZED TO RESIST THE FULL RAILROAD SURCHARGE USING THE BOUSSINESQ EQUATION FOR STRIP LOADS AS DETAILED IN AREMA 8-20.3.2.2. CONCRETE SHALL BE PLACED IN THE SHAFTS IN ACCORDANCE WITH AREMA CHAPTER 8 (SECTIONS 1 AND 24) IN ADDITION TO THE ODOT SPECIFICATIONS.

PAYMENT IS FULL COMPENSATION FOR DRILLING THE HOLES, PROVIDING AND PLACING REINFORCING, AND CONSTRUCTING THE DRILLED SHAFTS TO THE TOP ELEVATION. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (FT) AT THE CONTRACT BID PRICE.

ITEM 524 - DRILLED SHAFTS, MISC.: CSL TESTING

PART 1: DESCRIPTION

THIS WORK CONSISTS OF EVALUATING THE STRUCTURAL INTEGRITY OF DRILLED SHAFTS USING THE CROSSHOLE SONIC LOGGING (CSL) TEST METHOD. THE WORK ALSO CONSISTS OF FURNISHING AND INSTALLING ACCESS TUBES REQUIRED TO CONDUCT THE TESTING, CORE DRILLING OF CONCRETE TO CONFIRM POSSIBLE DEFECTS, AND REPORTING OF RESULTS TO THE APPLICABLE PARTIES.

CSL TESTING MEASURES THE TIME IT TAKES FOR AN ULTRASONIC PULSE TO TRAVEL FROM A SIGNAL SOURCE IN ONE ACCESS TUBE TO A RECEIVER IN ANOTHER ACCESS TUBE. IN UNIFORM, GOOD QUALITY CONCRETE, THE TRAVEL TIME BETWEEN PARALLEL TUBES WILL BE RELATIVELY CONSTANT AND CORRESPOND TO A REASONABLE SIGNAL VELOCITY FROM THE BOTTOM TO THE TOP OF THE DRILLED SHAFT. IN UNIFORM, GOOD QUALITY CONCRETE, CSL TESTING WILL ALSO MEASURE STRONG SIGNAL AMPLITUDE AND ENERGY READINGS. LONG TRAVEL TIMES, LOW SIGNAL AMPLITUDE, OR LOW ENERGY READINGS INDICATE THE PRESENCE OF ANOMALIES THAT MAY CONSIST OF POOR QUALITY CONCRETE, VOIDS, HONEYCOMBS OR SOIL INTRUSIONS. THE SIGNAL MAY BE COMPLETELY LOST BY THE RECEIVER AND CSL RECORDING SYSTEM FOR SEVERE DEFECTS SUCH AS VOIDS AND SOIL INTRUSIONS.

THROUGHOUT THIS NOTE, THE TERM "AUTHORITIES" IS DEFINED AS THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION (THE DEPARTMENT) AND THE CORRESPONDING NSRR REPRESENTATIVE/ENGINEER.

CSL TESTING (CONTINUED)

PART 2: MATERIALS

FURNISH MATERIALS CONFORMING TO:
PORTLAND CEMENT:.....ODOT CMS 701.02
CHEMICAL ADMIXTURE:.....ODOT CMS 705.12

CEMENT GROUT CONSISTS OF A MIXTURE OF CEMENT AND WATER THAT PROVIDES A MINIMUM 28-DAY COMPRESSIVE STRENGTH EQUAL TO, OR GREATER THAN, THE DRILLED SHAFT CONCRETE. DETERMINE THE COMPRESSIVE STRENGTH OF THE CEMENT GROUT ACCORDING TO ASTM C-39 OR ASTM C-942. ADMIXTURES WHICH CONTROL BLEED, IMPROVE FLOWABILITY, REDUCE WATER CONTENT, AND RETARD SET MAY BE USED IN THE GROUT IF ACCEPTED BY THE AUTHORITIES. FOR GROUT, USE WATER FREE FROM SEWAGE, OIL, ACID, STRONG ALKALIS, VEGETABLE MATTER, CLAY, AND LOAM.
POTABLE WATER IS SATISFACTORY FOR USE IN GROUT.

FURNISH ACCESS TUBES CONSISTING OF SCHEDULE 40 STEEL PIPE WITH AN INSIDE DIAMETER BETWEEN 1.5 AND 2.0 INCHES. ACCESS TUBES SHALL HAVE ROUND, REGULAR INSIDE SURFACES FREE FROM DEFECTS AND OBSTRUCTIONS, INCLUDING ALL PIPE JOINTS, IN ORDER TO PERMIT THE FREE, UNOBSTRUCTED PASSAGE OF THE PROBES. ACCESS TUBES SHALL BE FREE FROM CONTAMINANTS TO ENSURE A GOOD BOND TO THE CONCRETE.

SUBMIT THE GROUT MIX AND THE SELECTED PIPE FOR THE ACCESS TUBES WITH THE DRILLED SHAFT INSTALLATION PLAN FOR THE AUTHORITIES ACCEPTANCE. ALSO INCLUDE FOR THE AUTHORITIES ACCEPTANCE THE PROPOSED METHOD FOR JOINING THE PIPE AND FOR ATTACHING THE PIPE TO THE REINFORCING STEEL CAGE.

PART 3: NDT CONSULTANT

RETAIN AN EXPERIENCED NONDESTRUCTIVE TESTING (NDT) CONSULTANT TO PERFORM OR SUPERVISE THE CSL TESTING. THE NDT CONSULTANT SHALL HAVE AT LEAST TWO YEARS EXPERIENCE IN CSL TESTING. SUBMIT TO THE AUTHORITIES FOR APPROVAL A RESUME OF THE CREDENTIALS OF THE PROPOSED NDT CONSULTANT AT LEAST 14 CALENDAR DAYS BEFORE CONSTRUCTING THE DRILLED SHAFTS.

PART 4: INSTALLATION OF ACCESS TUBES

INSTALL ACCESS TUBES IN ALL CONTRACT DRILLED SHAFTS TO PERMIT ACCESS FOR THE CSL TEST EQUIPMENT. USE TABLE 4-1 TO DETERMINE THE NUMBER OF ACCESS TUBES PER SHAFT AND THE TUBE SPACING. IF THE SHAFT DIAMETER VARIES ALONG THE LENGTH OF THE SHAFT, USE THE LARGEST DIAMETER TO DETERMINE THE NUMBER OF ACCESS TUBES.

TABLE 4-1

SHAFT DIAMETER (FEET)	NUMBER OF TUBES	TUBE SPACING (DEGREES)
3.0 TO 5.0	4	90
5.5 TO 7.5	6	60
8.0 TO 9.5	8	45
10.0 TO 12.0	10	36

PROVIDE WATERTIGHT JOINTS, A WATERTIGHT CAP ON THE BOTTOM, AND A REMOVABLE CAP AT THE TOP OF THE ACCESS TUBES. USE THREADED JOINTS OR MECHANICAL COUPLINGS. IF MECHANICAL COUPLINGS ARE USED, RECORD THE LOCATION OF EACH COUPLER. DO NOT WELD JOINTS. DO NOT COVER JOINTS WITH TAPE OR OTHER WRAPPING MATERIAL. ATTACH THE TUBES TO THE INTERIOR OF THE REINFORCING STEEL CAGE SO THAT THE TUBES ARE PARALLEL AND EVENLY SPACED AROUND THE PERIMETER OF THE REINFORCING STEEL CAGE. PROVIDE A MINIMUM CONCRETE COVER OF 3 INCHES. INSTALL THE ACCESS TUBES SO THAT THE BOTTOM OF THE TUBE IS 6 INCHES OR LESS FROM THE BOTTOM OF THE DRILLED SHAFT BUT DOES NOT TOUCH THE BOTTOM OF THE SHAFT. WIRE-TIE OR SECURE THE ACCESS TUBES TO THE REINFORCING STEEL CAGE EVERY 3 FEET. EXTEND THE TOP OF THE ACCESS TUBES AT LEAST 3 FEET ABOVE THE TOP OF THE DRILLED SHAFT. IF THE TOP OF THE DRILLED SHAFT IS BELOW THE SURFACE, EXTEND THE TOP OF THE ACCESS TUBES AT LEAST 2 FEET ABOVE THE GROUND SURFACE. ENSURE THAT THE ACCESS TUBES DO NOT MOVE DURING PLACEMENT OF THE CAGE AND CONCRETE.

CSL TESTING (CONTINUED)

PART 4: (CONTINUED)

WITHIN 4 HOURS OF PLACING THE REINFORCING STEEL CAGE BUT BEFORE PLACING THE CONCRETE, FILL THE ACCESS TUBES WITH CLEAN WATER AND RECAP THE TUBES. AFTER PLACING THE CONCRETE, EXERCISE CARE WHEN REMOVING THE CAPS FROM THE ACCESS TUBES SO AS NOT TO APPLY EXCESS TORQUE, HAMMERING, OR OTHER STRESSES WHICH COULD BREAK THE BOND BETWEEN THE TUBES AND THE CONCRETE. LABEL EACH ACCESS TUBE WITH A UNIQUE IDENTIFIER AT THE TOP OF THE TUBE.

PART 5: TEST PROCEDURE

CSL TESTING SHALL BE PERFORMED ON DRILLED SHAFTS INDICATED ON FOUNDATION PLANS. IF DEFECTS ARE FOUND, THE SHAFTS ON BOTH SIDES OF THE DEFECTED SHAFT SHALL BE TESTED.

BEFORE CSL TESTING, SUPPLY THE AUTHORITIES AND NDT CONSULTANT WITH A RECORD OF THE LENGTH, TOP ELEVATION, BOTTOM ELEVATION, AND DATE OF CONCRETE PLACEMENT FOR ALL DRILLED SHAFTS. PERFORM CSL TESTS IN ACCORDANCE WITH ASTM D-6760 EXCEPT AS MODIFIED BY THESE PLAN SPECIFICATIONS.

PERFORM THE CSL TEST AT LEAST 72 HOURS AFTER CONCRETE PLACEMENT IN A SHAFT, BUT NO MORE THAN 30 CALENDAR DAYS AFTER CONCRETE PLACEMENT. THE AUTHORITIES MAY DIRECT A LONGER MINIMUM TIME IF THE DRILLED SHAFT CONCRETE CONTAINS A RETARDING ADMIXTURE OR USES A MIX DESIGN THAT RESULTS IN A LONGER SETTING TIME FOR THE DRILLED SHAFT CONCRETE.

FOR SHAFTS WITH 4 OR 6 ACCESS TUBES, OBTAIN READINGS BETWEEN ALL PAIRS OF TUBES. FOR SHAFTS WITH 8 OR 10 ACCESS TUBES, OBTAIN READINGS BETWEEN ADJACENT PAIRS OF ACCESS TUBE AROUND THE PERIMETER, BETWEEN PAIRS OF ACCESS TUBES ACROSS THE DIAMETER OF THE SHAFT, AND BETWEEN PAIRS OF ACCESS TUBES THAT ARE SPACED AT TWO TIMES THE SPACING SHOWN IN TABLE 4-1 (SEE FIGURE 5-1 FOR A DIAGRAM). OBTAIN READINGS AT DEPTH INTERVALS OF 0.2 FEET OR LESS. IF POSSIBLE DEFECTS ARE DETECTED, OBTAIN ADDITIONAL READINGS TO CONFIRM THE INITIAL READINGS AT NO ADDITIONAL COST TO THE DEPARTMENT. NOTIFY THE AUTHORITIES OF POSSIBLE DEFECTS WITHIN 24 HOURS OF TESTING.

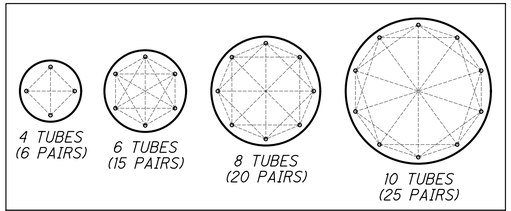

FIGURE 5-1

PART 6: TEST REPORT

PRESENT THE CSL TEST RESULTS IN A WRITTEN REPORT. SUPPLY THE AUTHORITIES WITH TWO COPIES OF THE REPORT (PER AUTHORITY) WITHIN SEVEN CALENDAR DAYS AFTER COMPLETION OF THE CSL TESTING. THE AUTHORITIES MAY REQUIRE SEPARATE REPORTS FOR EACH SUBSTRUCTURE DEPENDING ON THE NUMBER OF DRILLED SHAFTS OR THE LENGTH OF THE DRILLED SHAFT CONSTRUCTION SCHEDULE. IF SEPARATE REPORTS FOR EACH SUBSTRUCTURE ARE REQUIRED BY THE AUTHORITIES, SUPPLY THE REPORT WITHIN SEVEN CALENDAR DAYS AFTER COMPLETION OF TESTING AT THAT GIVEN SUBSTRUCTURE.

IN ADDITION TO THE REPORT REQUIREMENTS IN ASTM D-6760, INDICATE ALL POSSIBLE DEFECTS ON THE CSL LOGS AND INCLUDE A SUMMARY OF ALL POSSIBLE DEFECTS DETECTED DURING THE CSL TESTING. THE SUMMARY SHALL INDICATE FOR EACH POSSIBLE DEFECT:

A. THE DRILLED SHAFT IDENTIFICATION
B. TEST DATE
C. NUMBER OF DAYS BETWEEN CONCRETE PLACEMENT AND CSL TESTING
D. ACCESS TUBE PAIRS TESTED
E. DEPTH BELOW TOP OF SHAFT
F. PERCENT WAVE SPEED REDUCTION
G. AN EVALUATION OF THE DEFECT

CSL TESTING (CONTINUED)

PART 7: EVALUATION OF TEST RESULTS

THE AUTHORITIES WILL EVALUATE THE CSL TEST RESULTS AND DETERMINE IF THE DRILLED SHAFT CONSTRUCTION IS ACCEPTABLE. IF THE CSL TEST RESULTS INDICATE POSSIBLE DEFECTS IN THE DRILLED SHAFT, THE AUTHORITIES MAY REQUIRE CORING OF THE DRILLED SHAFT TO OBTAIN SAMPLES IN THE AREA OF THE POSSIBLE DEFECT, OR EXCAVATION OF THE DRILLED SHAFT TO EXAMINE THE CONDITION OF THE CONCRETE. THE AUTHORITIES MAY REQUIRE TESTING OF THE CORE SAMPLES. THE AUTHORITIES WILL CONSIDER THE CSL TEST RESULTS, THE CONDITION OF THE CONCRETE AS SHOWN BY CORE SAMPLES, RESULTS OF TESTING ON THE CORE SAMPLES, AND OTHER INFORMATION WHEN DETERMINING THE ACCEPTABILITY OF THE DRILLED SHAFT. DO NOT PROCEED WITH CONSTRUCTION OF SUBSTRUCTURES OR STRUCTURES ABOVE A DRILLED SHAFT UNTIL THE AUTHORITIES HAVE ACCEPTED THE DRILLED SHAFT.

IF EXAMINATION OF THE DRILLED SHAFT CONCRETE CONFIRMS THE PRESENCE OF A DEFECT IN THE DRILLED SHAFT, THEN THE DEPARTMENT WILL NOT PAY FOR CORING, TESTING ON THE CORE SAMPLES, OR EXCAVATION COSTS, EVEN IF THE DRILLED SHAFT IS ACCEPTED BY THE AUTHORITIES. IF A DEFECT CANNOT BE CONFIRMED BY CORING, THEN THE DEPARTMENT WILL PAY FOR CORING, TESTING ON THE CORE SAMPLES, AND EXCAVATION COSTS AS EXTRA WORK ACCORDING TO 109.05.

IF THE AUTHORITIES DETERMINE A DRILLED SHAFT IS NOT ACCEPTABLE, THE CONTRACTOR SHALL SUBMIT A PLAN FOR REMEDIAL ACTION TO THE AUTHORITIES FOR ACCEPTANCE. HAVE AN OHIO REGISTERED ENGINEER PREPARE, SIGN, SEAL, AND DATE CALCULATIONS AND WORKING DRAWINGS FOR ALL FOUNDATION ELEMENTS AFFECTED BY THE REMEDIAL ACTION PLAN. HAVE A SECOND OHIO REGISTERED ENGINEER CHECK, SIGN, SEAL AND DATE THE CALCULATIONS AND WORKING DRAWINGS. THE PREPARER AND CHECKER SHALL BE TWO DIFFERENT ENGINEERS.

PART 8: CORING OF DRILLED SHAFT CONCRETE

IF THE CSL TEST RESULTS INDICATE POSSIBLE DEFECTS IN THE DRILLED SHAFT, THE AUTHORITIES MAY REQUIRE CORING OF THE DRILLED SHAFT CONCRETE TO OBTAIN SAMPLES IN THE AREA OF THE POSSIBLE DEFECT. IF DIRECTED BY THE AUTHORITIES, OBTAIN CORE SAMPLES IN ACCORDANCE WITH ASTM D-2113 FOR THE FULL LENGTH OF THE POSSIBLE DEFECT PLUS 3 FEET ABOVE AND BELOW THE POSSIBLE DEFECT, OR AS DIRECTED BY THE AUTHORITIES. OBTAIN CORE SAMPLES WITH A MINIMUM DIAMETER OF 3.0 INCHES.

USE EITHER A CONVENTIONAL DOUBLE-TUBE, SWIVEL-TYPE CORE BARREL WITH SPLIT LINERS OR A WIRELINE CORE BARREL WITH SPLIT INNER LINERS. USE A NEW DIAMOND CORING BIT. REPLACE THE CORING BIT AND CORE BARREL AS NECESSARY TO ACHIEVE A HIGH PERCENTAGE OF CORE RECOVERY.

RECORD AN ACCURATE LOG OF THE CORING. PLACE THE CORE SAMPLES IN A PARTITIONED CORE BOX WITH A COVER AND FASTENERS TO PREVENT ACCIDENTAL OPENING DURING HANDLING. IDENTIFY THE BOXES OF CORES BY PROJECT NAME, SHAFT NUMBER, DEPTHS SAMPLED, BOX NUMBER, AND TOTAL NUMBER OF BOXES PER SHAFT. CLEARLY AND PERMANENTLY MARK THE TOP AND BOTTOM DEPTHS BELOW THE TOP OF THE DRILLED SHAFT OF EACH CORE SAMPLE. SECURELY BLOCK THE SAMPLES IN A PARTIALLY FILLED COMPARTMENT TO PREVENT SHIFTING AND DISLOCATION. PROTECT THE SAMPLES DURING TRANSPORT AND STORAGE UNTIL TESTING CAN BE ACCOMPLISHED. SUBMIT THE CORE SAMPLES AND TWO COPIES OF THE CORING LOGS TO THE AUTHORITIES.

PART 9: GROUTING TUBES AND HOLES

AFTER CSL TESTING AND CORING OF THE DRILLED SHAFT CONCRETE IS COMPLETE, REMOVE ALL WATER FROM THE ACCESS TUBES AND ANY CORED HOLES. IF THE TUBES EXTEND ABOVE THE TOP OF THE DRILLED SHAFT REINFORCING, CUTOFF THE TUBES BELOW THE TOP OF THE DRILLED SHAFT REINFORCING. FILL THE TUBES AND CORE HOLES WITH GROUT.

PART 10: METHOD OF MEASUREMENT

THE DEPARTMENT WILL MEASURE CSL TESTING BY THE NUMBER OF DRILLED SHAFTS ON WHICH CSL TESTING IS PERFORMED PER THESE PLANS.

PART 11: BASIS OF PAYMENT

THE DEPARTMENT WILL PAY FOR CROSSHOLE SONIC LOGGING (CSL) TESTING AT THE CONTRACT BID PRICE (EACH) AFTER BEING PROVIDED THE WRITTEN TEST REPORT.

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DESIGNED	DRAWN	REVIEWED	DATE
EFD	JEA	CTV	12-19-23
CHECKED	REVISED	ODOT SFN	3113818, 3110142, PROSSER
CTM			

STANDARD RAILROAD BRIDGE NOTES 4/6
GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE STANDARD NOTES & DETAILS
NSRR BRIDGES CT-1.41 (NORWOOD LATERAL), CT-0.95 (I-75), CT-0.89 (PROSSER AVE)

HAM-75-7.85
PID No. 77889

ITEM 530 - SPECIAL - STRUCTURES: SURVEY AND MONITORING OF TRACK AND TEMPORARY SHORING

PART 1: QUALIFICATIONS OF PERSONNEL

PROVIDE QUALIFIED PERSONNEL UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL LAND SURVEY OR LICENSED IN THE STATE OF OHIO WITH A MINIMUM OF TWO YEARS EXPERIENCE IN DEFORMATION MONITORING FOR STRUCTURES. PROVIDE THE NECESSARY EQUIPMENT AND MATERIALS TO OBTAIN, RECORD, COMPILE AND ANALYZE THE INSTRUMENTATION DATA AS SPECIFIED AND AS DIRECTED BY THE ENGINEER. SUBMIT THE NAMES, DUTIES, AND QUALIFICATIONS OF THE PERSONNEL AT LEAST FOUR WEEKS PRIOR TO COMMENCEMENT OF MONITORING. INCLUDE THE EQUIPMENT TO BE USED, INCLUDING INSTRUMENT CALIBRATION, AND THE FORM IN WHICH INFORMATION WILL BE PRESENTED TO THE ENGINEER. INCLUDE THE LOCATIONS AND METHODS THAT WILL BE USED TO MAINTAIN PERMANENT REFERENCE POINTS. THE ENGINEER MAY REQUEST A MEETING WITH THE MONITORING PERSONNEL WHEN EVALUATING THEIR QUALIFICATIONS. OBTAIN WRITTEN APPROVAL FROM THE ENGINEER PRIOR TO COMMENCEMENT OF MONITORING.

PART 2: MONITORING MOVEMENT OF TRACK

1) DESCRIPTION
THIS WORK IS THE MONITORING OF VERTICAL AND HORIZONTAL MOVEMENT OF EXISTING, TEMPORARY AND PERMANENT TRACKS DURING THE TIME PERIOD OVER WHICH THE TRACKS ARE SUPPORTED BY TEMPORARY SHORING. COORDINATE INSTRUMENTATION MONITORING WITH THE PROVISIONS FOR MONITORING MOVEMENT OF TEMPORARY SHORING.

2) CONSTRUCTION
A) MONITORING
SURVEY THE TOP OF RAILS OF ANY TRACKS ALONG THE LENGTH OF TRACK THAT WILL BE SUPPORTED BY THE TEMPORARY SHORING PLUS AN ADDITIONAL 100 FEET IN BOTH DIRECTIONS BEYOND THE ENDS OF THE TEMPORARY SHORING. WHERE MORE THAN ONE TRACK MAY BE AFFECTED, ESTABLISH MONITORING POINTS ON EACH TRACK. COMPLETE THIS SURVEY BEFORE ANY WORK FOR THE TEMPORARY SHORING (EXCAVATION OR PLACEMENT OF SHORING) HAS BEGUN. PROVIDE THE SURVEY INFORMATION TO THE DEPARTMENT TO USE AS A REFERENCE FOR FUTURE SURVEYS TO ESTABLISH WHETHER MOVEMENT HAS OCCURRED. SURVEY EACH TOP OF RAIL AT A MAXIMUM SPACING OF TWENTY (20) FEET BETWEEN MONITORING POINTS. PROVIDE A SECOND SET OF BASELINE READINGS TO CONFIRM REPEATABILITY OF THE BASELINE READINGS WITHIN TWENTY FOUR (24) HOURS AFTER THE INITIAL BASELINE SURVEY AT THE SAME MONITORING POINTS. PROVIDE ADDITIONAL MONITORING SURVEY(S) IMMEDIATELY PRIOR TO AND AFTER SHORING INSTALLATION. FIELD-MARK AND LOCATE VERTICAL MONITORING POINTS WITH PAINT OR CRAYON ON THE FIELD SIDE OF THE RAIL AND A POINT ON THE TIE FOR HORIZONTAL MEASUREMENT TO ASSURE THAT SUCCESSIVE READINGS ARE MEASURED AT THE SAME LOCATION(S).

B) MONITORING FREQUENCY
AS SOON AS ANY TRACK IS PARTIALLY SUPPORTED BY TEMPORARY SHORING, BEGIN THE MONITORING SURVEYS.

DURING THE FIRST THREE (3) DAYS THAT THE TRACK IS SUPPORTED BY THE TEMPORARY SHORING, SURVEY THE TOP OF RAIL LOCATIONS A MINIMUM OF THREE (3) TIMES PER DAY WITH EACH SURVEY BEING APPROXIMATELY EIGHT (8) HOURS APART. SURVEY THE TRACKS AT THE SAME LOCATIONS AS THE INITIAL SURVEY.

THE AMOUNT, FREQUENCY, AND DURATION OF MONITORING MAY BE CHANGED AT THE DISCRETION OF NSRR.

PART 2: (CONTINUED)

IF IT IS ESTABLISHED BY THE ENGINEER THAT NO MOVEMENT OF THE TRACKS IS OCCURRING, REDUCE THE FREQUENCY OF THE SURVEYS TO ONCE A DAY FOR THE NEXT FOUR (4) CALENDAR DAYS. IF, AFTER THIS PERIOD OF TIME, NO MOVEMENT OF THE TRACKS HAS OCCURRED, REDUCE THE FREQUENCY OF THE MONITORING SURVEY TO ONCE A WEEK. CONTINUE TO SURVEY THE TRACKS ONCE A WEEK UNTIL THE SHORING IS REMOVED OR AS DIRECTED BY THE ENGINEER.

IF VERTICAL OR HORIZONTAL MOVEMENT OF THE TRACK IS EQUAL TO OR GREATER THAN 0. 25 INCHES, IMMEDIATELY MAKE DIRECT CONTACT AND NOTIFY THE REPRESENTATIVE OF NORFOLK SOUTHERN CORPORATION. IF DEFLECTION CONTINUES TO INCREASE, DO NOT RESUME WORK UNTIL NORFOLK SOUTHERN CORPORATION HAS INSPECTED THE SITE AND APPROVED.

PART 3: MONITORING MOVEMENT OF TEMPORARY SHORING

1) DESCRIPTION
THIS WORK IS THE MONITORING OF BOTH VERTICAL AND HORIZONTAL MOVEMENTS OF TEMPORARY SHORING DURING CONSTRUCTION. COORDINATE INSTRUMENTATION MONITORING WITH THE PROVISIONS FOR MONITORING MOVEMENT OF TRACK AND ITEM 503, COFFERDAMS AND EXCAVATION BRACING.

2) CONSTRUCTION
A) MONITORING
FOR TEMPORARY SHORING SUPPORTING NORFOLK SOUTHERN CORPORATION TRACKS, SURVEY THE TOP OF SHORING AT MONITORING POINTS THAT ARE SPACED AT MAXIMUM INTERVALS OF TEN (10) FEET. ESTABLISH REFERENCE POINTS BY CENTER PUNCHING THE TOP OF SHORING AT A MINIMUM OF THREE (3) LOCATIONS, WHICH INCLUDE BOTH ENDS AND A THIRD POINT NEAR MID-LENGTH, ALONG EACH SHORING LINE. LOCATE THESE REFERENCE POINTS RELATIVE TO THE SUPPORTED TRACK. PROVIDE A DIRECT LINE OF SIGHT ALONG THE TOP OF THE SHORING BETWEEN THESE REFERENCE POINTS AND MEASURE THE PILE DEFLECTION AT EACH MONITORING POINT RELATIVE TO THIS REFERENCE LINE. MEASURE THE PLUMBNESS OF THE WALL AT EACH OF THESE MONITORING LOCATIONS. COMPLETE THIS SURVEY BEFORE ANY EXCAVATION IN FRONT OF THE SHORING HAS BEGUN. PROVIDE THE SURVEY INFORMATION TO THE ENGINEER TO USE AS A REFERENCE FOR FUTURE SURVEYS TO ESTABLISH WHETHER MOVEMENT HAS OCCURRED.

B) MONITORING FREQUENCY
AS SOON ANY TRACKS ARE PARTIALLY SUPPORTED BY THE TEMPORARY SHORING, BEGIN THE MONITORING SURVEYS.

DURING THE FIRST THREE (3) DAYS THAT THE TRACKS ARE SUPPORTED BY THE TEMPORARY SHORING, SURVEY THE TOP OF SHORING LOCATIONS A MINIMUM OF THREE (3) TIMES PER DAY WITH EACH SURVEY BEING APPROXIMATELY EIGHT (8) HOURS APART. SURVEY THE TOP OF SHORING AT THE SAME LOCATIONS AS THE INITIAL SURVEY.

IF IT IS ESTABLISHED THAT NO EXCESSIVE MOVEMENT OF THE SHORING IS OCCURRING, REDUCE THE FREQUENCY OF THE SURVEYS TO ONCE A DAY FOR THE NEXT FOUR (4) CALENDAR DAYS. IF, AFTER THIS PERIOD OF TIME, NO MOVEMENT OF THE SHORING HAS OCCURRED, REDUCE THE FREQUENCY OF THE SURVEYING TO ONCE A WEEK. CONTINUE TO SURVEY THE SHORING ONCE A WEEK UNTIL THE COMPLETION OF THAT PHASE OF CONSTRUCTION.

IF LATERAL MOVEMENT OF THE SHORING SYSTEM IS EQUAL TO OR GREATER THAN 0.375 INCHES, IMMEDIATELY MAKE DIRECT CONTACT AND NOTIFY THE REPRESENTATIVE OF NORFOLK SOUTHERN CORPORATION. IF DEFLECTION CONTINUES TO INCREASE, DO NOT RESUME WORK UNTIL NORFOLK SOUTHERN CORPORATION HAS INSPECTED THE SITE AND APPROVED.

THE AMOUNT, FREQUENCY, AND DURATION OF MONITORING MAY BE CHANGED AT THE DISCRETION OF NSRR.

PART 4: REPORTING AND INTERPRETATION OF RESULTS

1) MONITORING REPORT
RECORD AND STORE RAW INSTRUMENTATION DATA IN STANDARD UNITS OF MEASURE. REDUCE AND PRESENT INSTRUMENTATION DATA IN A CONSISTENT SPREADSHEET FORMAT. FURNISH A SUMMARY REPORT TO THE ENGINEER WITHIN 24 HOURS AFTER COLLECTION, WITH TABULATED RAW DATA, REDUCED RESULTS AND SUMMARY PLOTS. PROVIDE DATA IN A CHRONOLOGICAL FORMAT REPORTING ALL PREVIOUSLY REPORTED VALUES. PROVIDE THE REPORT IN BOTH HARD COPY AND DIGITAL FORMAT. HIGHLIGHT ANY SIGNIFICANT CHANGES IN MEASURED VALUES AND NOTE WHAT CONSTRUCTION OR ENVIRONMENTAL CHANGES OCCURRED THAT COULD HAVE PRODUCED THE CHANGES IN VALUES.

2) INTERPRETATION OF RESULTS
THE ENGINEER WILL INTERPRET THE INSTRUMENTATION RESULTS AND WILL MAKE SUCH INTERPRETATIONS AVAILABLE TO THE CONTRACTOR. DO NOT DISCLOSE MONITORING DATA TO THIRD PARTIES WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER.

PART 5: MEASUREMENT AND PAYMENT

THE COST SHALL INCLUDE BASELINE READINGS AND SPECIFIED INSTRUMENT READING SETS FOR ALL SUPPORTED TRACKS AND ASSOCIATED SHORING. NO SEPARATE MEASUREMENT OR PAYMENT FOR ADDITIONAL READING SETS THAT ARE NOT AUTHORIZED BY THE ENGINEER. ADEQUATE MATERIAL AND EQUIPMENT REQUIRED SHALL BE FURNISHED AND INCLUDED IN THE COST.

FURNISHING AND INSTALLATION OF TEMPORARY EXCAVATION WILL BE MEASURED AND PAID FOR SEPARATELY.

THE DEPARTMENT WILL PAY FOR THE ACCEPTABLE MONITORING (LUMP) AT THE CONTRACT BID PRICE FOR EACH BRIDGE.

ITEM SPECIAL - STRUCTURES: PRECONSTRUCTION CONDITION SURVEY

BEFORE PILE DRIVING BEGINS, CONDUCT A CODITION SURVEY OF ANY EXISTING BUILDINGS, STRUCTURES, OR UTILITIES WITHIN 400 FEET OF THE PILE DRIVING WORK. EXISTING BRIDGE STRUCTURES FOUNDED ON PILES ARE EXCLUDED (HAM-562-0026 AND HAM-075-0834). THE HAM-075-PROSSER BRIDGE SHALL BE INCLUDED IN THE CONDITION SURVEY AND MONITORING UNLESS THE CONTRACTOR CAN VERIFY THAT IT IS FOUNDED ON PILES. THE PURPOSE OF THE SURVEY IS TO DOCUMENT THE CONDITION OF THE BUILDINGS, STRUCTURES, OR UTILITIES PRIOR TO PILE DRIVING, SO THAT ANY CLAIMS OF DAMAGE CAUSED BY THE PILE DRIVING CAN BE VERIFIED.

RETAIN AN EXPERIENCED VIBRATION SPECIALIST TO PERFORM OR SUPERVISE THE CONDITION SURVEY. USE A VIBRATION SPECIALIST THAT MEETS THE QUALIFICATION REQUIREMENTS LISTED BELOW FOR VIBRATION MONITORING.

RECORD THE CONDITION OF EXISTING STRUCTURES AND BUILDING MATERIALS, USING WRITTEN TEXT, PHOTOGRAPHS, AND VIDEO RECORDINGS. INSPECT INTERIOR WALLS, CEILINGS, AND FLOORS THAT ARE ACCESSIBLE. INSPECT THE EXTERIOR OF THE BUILDING THAT IS VISIBLE FROM GROUND LEVEL. ALSO RECORD THE LOCATION, SIZE, AND TYPE OF ALL CRACKS AND OTHER STRUCTURAL DEFICIENCIES.

IF OWNERS OR OCCUPANTS FAIL TO ALLOW ACCESS TO THE PROPERTY FOR THE PRECONDITION SURVEY, SEND A CERTIFIED LETTER TO THE OWNER OR OCCUPANT. DOCUMENT THE NOTIFICATION EFFORT AND THE CERTIFIED LETTER IN THE REPORT.

SUBMIT A REPORT TO ODOT THAT SUMMARIZES THE PRECONSTRUCTION CONDITION OF THE BUILDINGS, STRUCTURES, AND UTILITIES, AND THAT IDENTIFIES AREAS OF CONCERN. SUBMIT THREE COPIES OF THE REPORT.

THE DEPARTMENT WILL PAY FOR THIS ITEM AT THE CONTRACT LUMP SUM PRICE FOR ITEM SPECIAL - STRUCTURES: PRECONSTRUCTION CONDITION SURVEY FOR EACH BRIDGE.

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DESIGNED	DRAWN	REVIEWED	DATE
EFD	JEA	CTV	12-19-23
CHECKED	REVISED	ODOT SFN	3113818, 3110142, PROSSER
CTM			

STANDARD RAILROAD BRIDGE NOTES 5/6
GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE STANDARD NOTES & DETAILS
NSRR BRIDGES CT-1.41 (NORWOOD LATERAL), CT-0.95 (I-75), CT-0.89 (PROSSER AVE)

HAM-75-7.85
PID No. 77889

ITEM SPECIAL - STRUCTURAL SURVEY AND MONITORING OF VIBRATION

MONITOR GROUND VIBRATIONS CAUSED BY PILE DRIVING SO THAT THE PILE DRIVING WORK CAN BE CONTROLLED IN ORDER TO MINIMIZE THE POTENTIAL DAMAGE TO EXISTING STRUCTURES, SPECIFICALLY THE STRUCTURES COVERED BY A PRECONSTRUCTION CONDITION SURVEY.

RETAIN AN EXPERIENCED VIBRATION SPECIALIST TO ESTABLISH THE ACCEPTABLE VIBRATION LIMITS AND TO PERFORM THE VIBRATION MONITORING. USE A VIBRATION SPECIALIST THAT IS AN EXPERT IN THE INTERPRETATION OF VIBRATION DATA AND WHO MEETS ONE OF THE FOLLOWING CRITERIA: 1) IS A REGISTERED ENGINEER WITH AT LEAST TWO YEARS OF PROVEN EXPERIENCE IN MONITORING VIBRATIONS ON SIMILAR CONSTRUCTION PROJECTS, OR 2) HAS AT LEAST FIVE YEARS OF PROVEN EXPERIENCE IN MONITORING VIBRATIONS ON SIMILAR CONSTRUCTION PROJECTS. DO NOT USE A VIBRATION SPECIALIST THAT IS AN EMPLOYEE OF THE CONTRACTOR.

SUBMIT A RESUME OF THE CREDENTIALS OF THE PROPOSED VIBRATION SPECIALIST AT OR BEFORE THE PRECONSTRUCTION CONFERENCE. INCLUDE IN THE RESUME A LIST OF CONSTRUCTION PROJECTS ON WHICH THE VIBRATION SPECIALIST WAS RESPONSIBLY IN CHARGE OF MONITORING THE VIBRATIONS. LIST A DESCRIPTION OF THE PROJECTS, WITH DETAILS OF THE VIBRATION INTERPRETATIONS MADE ON THE PROJECT. LIST THE NAMES AND TELEPHONE NUMBERS OF PROJECT OWNERS WITH SUFFICIENT KNOWLEDGE OF THE PROJECTS TO VERIFY THE SUBMITTED INFORMATION. OBTAIN APPROVAL OF THE VIBRATION SPECIALIST BEFORE BEGINNING ANY PILE DRIVING WORK. ALLOW 30 DAYS FOR THE REVIEW OF THIS DOCUMENTATION.

USE SEISMOGRAPHS CAPABLE OF CONTINUOUSLY RECORDING THE PEAK PARTICLE VELOCITY FOR THREE MUTUALLY PERPENDICULAR COMPONENTS OF VIBRATION, AND PROVIDING A PERMANENT RECORD OF THE ENTIRE VIBRATION EVENT. USE A SUFFICIENT NUMBER OF SEISMOGRAPHS TO PROVIDE REDUNDANCY IN CASE ONE DEVICE SHOULD FAIL. SUBMIT A PLAN OF THE PROPOSED SEISMOGRAPH LOCATIONS TO THE ENGINEER FOR REVIEW.

THE VIBRATION SPECIALIST SHALL PERFORM THE FOLLOWING:

1. MEASURE THE AMBIENT GROUND VIBRATIONS NEAR EXISTING STRUCTURES BEFORE PILE DRIVING BEGINS.
2. ESTABLISH VIBRATION LIMITS TO MINIMIZE POTENTIAL DAMAGE TO EXISTING STRUCTURES AND EXPLAIN WHY THEY ARE BEING USED TO THE ENGINEER BEFORE DRIVING PILES NEAR EXISTING STRUCTURES.
3. MONITOR GROUND VIBRATIONS DURING PILE DRIVING.
4. IMMEDIATELY INFORM THE CONTRACTOR AND ENGINEER IF THE VIBRATION LIMITS ARE REACHED OR EXCEEDED.
5. FURNISH THE DATA RECORDED AND INCLUDE THE FOLLOWING:
   - A. IDENTIFICATION OF SEISMOGRAPH
   - B. DISTANCE AND DIRECTION OF SEISMOGRAPH FROM PILE DRIVING.
   - C. START TIME AND DURATION OF PILE DRIVING.
   - D. LIST OF PILES DRIVEN DURING EACH MONITORING INTERVAL.

THE CONTRACTOR SHALL IMMEDIATELY SUSPEND ALL PILE DRIVING IF THE VIBRATION LIMITS ARE REACHED OR EXCEEDED. EVALUATE ALTERNATIVE CONSTRUCTION PROCEDURES, SUCH AS PREBORED HOLES, TO REDUCE VIBRATIONS.

SUBMIT A FINAL REPORT WHICH CONTAINS ALL MEASUREMENTS, INTERPRETATIONS, AND RECOMMENDATIONS TO THE ENGINEER. SUBMIT THREE COPIES OF THE REPORT.

THE DEPARTMENT WILL PAY FOR THIS ITEM AT THE CONTRACT LUMP SUM PRICE FOR ITEM SPECIAL - STRUCTURAL SURVEY AND MONITORING OF VIBRATION FOR EACH BRIDGE. THE DEPARTMENT WILL PAY THE FINAL TWENTY PERCENT AFTER THE ENGINEER RECIEVES THE FINAL REPORT.

THE PRECONSTRUCTION CONDITION SURVEY IS PAID FOR AS A SEPARATE PAY ITEM.

THE DEPARTMENT WILL PAY ACCORDING TO CMS 109.05 FOR ALTERNATIVE CONSTRUCTION PROCEDURES THAT THE ENGINEER DETERMINES ARE NECESSARY TO REDUCE VIBRATIONS.

STANDARD PLAN ABBREVIATIONS AND SYMBOLS

AVE = AVENUE
BM = BENCHMARK
BOT = BOTTOM
BRG = BEARING
BTWN = BETWEEN
C.B. = CHORD BEARING
C/C = CENTER TO CENTER
CB = CATCH BASIN
CCTV = CLOSED CIRCUIT TELEVISION
CIP = CAST IN PLACE
CJ = CONSTRUCTION JOINT
CLR = CLEAR
CMS = CONSTRUCTION MATERIAL SPECIFICATIONS
CONST = CONSTRUCTION
CSP/N = CORRUGATED STEEL PIPE (NON-PERFORATED)
CSP/P = PERFORATED CORRUGATED STEEL PIPE
DBT = DESIGN BUILD TEAM
DIA = DIAMETER
DND = DO NOT DISTURB
DPRM = DIAPHRAGM
E/P = EDGE OF PAVEMENT
E/S = EDGE OF SHOULDER
EB = EASTBOUND
EF = EACH FACE
ELEC = ELECTRIC
ELEV = ELEVATION
EX = EXISTING
EXP = EXPANSION
F/F = FACE TO FACE
FA = FORWARD ABUTMENT
FF = FAR FACE/FILL FACE
FO = FIBER OPTIC
FTG = FOOTING
⟨G#⟩ = GIRDER NUMBER
GR = GUARDRAIL
I/I = INSIDE TO INSIDE
I.R. 75 = INTERSTATE ROUTE 75
LLB = LOWER LATERAL BRACING
LT = LEFT
MAX = MAXIMUM
MH = MANHOLE
MHC = MINIMUM HORIZONTAL CLEARANCE
MIN = MINIMUM
MISC = MISCELLANEOUS
ML = MAIN LINE
MSE = MECHANICALLY STABILIZED EARTH
MVC = MINIMUM VERTICAL CLEARANCE
NB = NORTHBOUND
NE = NORTHEAST
NF = NEAR FACE
NO = NUMBER
NSRR = NORFOLK SOUTHERN RAILROAD
NW = NORTHWEST
O/O = OUT TO OUT
OD = OUTSIDE DIAMETER
OVHD = OVERHEAD
ODOT = OHIO DEPARTMENT OF TRANSPORTATION
P.V.I. = POINT OF VERTICAL INTERSECTION
PC = POINT OF CURVE
PEJF = PREFORMED EXPANSION JOINT FILLER
PG = PROFILE GRADE
PI = POINT OF INTERSECTION
PMVC = POINT OF MINIMUM VERTICAL CLEARANCE
POT = POINT ON TANGENT
PROP = PROPOSED
PT = POINT OF TANGENT
PVMT = PAVEMENT
RA = REAR ABUTMENT
RCP = REINFORCED CONCRETE PIPE
RD = ROAD
REQ'D = REQUIRED
RR = RAILROAD
RT = RIGHT
S/O = SERIES OF
S.R. = STATE ROUTE
SB = SOUTHBOUND
SCD = STANDARD CONSTRUCTION DRAWING
SE = SOUTHEAST
SER = SERIES
SHLD = SHOULDER
SPA = SPACES
ST = STREET
STA = STATION
STD = STANDARD
STM = STORM
STT = SPIRAL TO TANGENT
SW = SOUTHWEST
T/B = TOP AND BOTTOM
T/T = TOE TO TOE
TBR = TO BE REMOVED
TEMP = TEMPORARY
TYP = TYPICAL
U.N.O. = UNLESS NOTED OTHERWISE
VC = VERTICAL CURVE
VERT = VERTICAL

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DESIGNED EFD | DRAWN JEA | REVIEWED CTV | DATE 12-19-23
CHECKED CTM | REVISED | ODOT SFN 3113818, 3110142, PROSSER

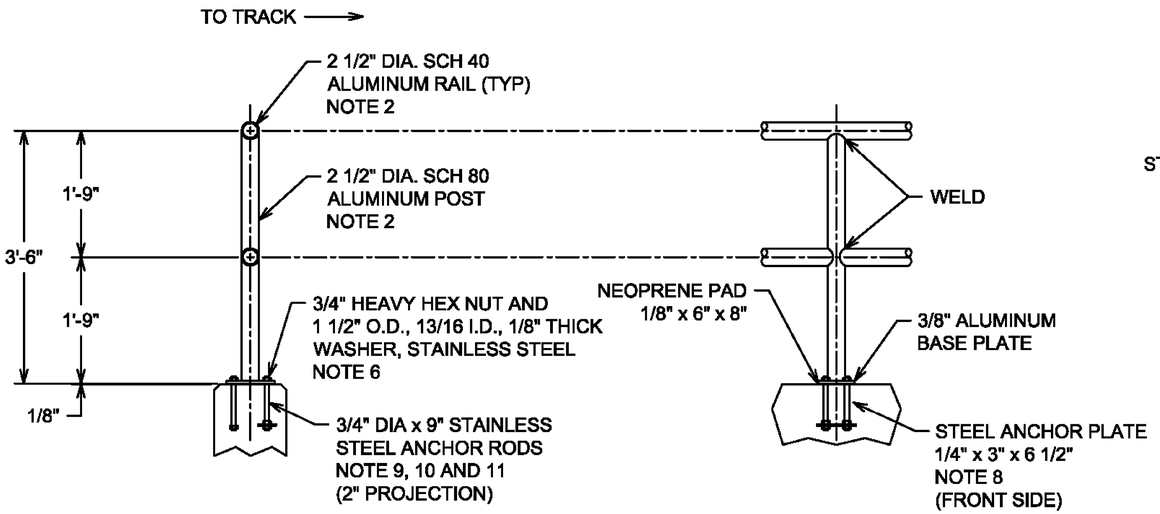
STANDARD RAILROAD BRIDGE NOTES 6/6

GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE STANDARD NOTES & DETAILS
NSRR BRIDGES CT-1.41 (NORWOOD LATERAL), CT-0.95 (I-75), CT-0.89 (PROSSER AVE)

HAM-75-7.85
PID No. 77889

NOTES:

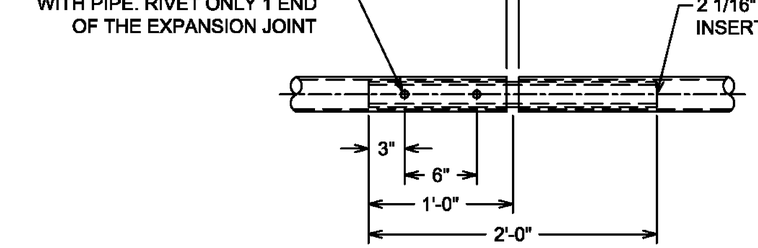
1. JOINTS IN RAILING (SPLICE GAP) SHALL BE LOCATED IN POST SPACING PLAN.
2. ALUMINUM PIPE TO BE ASTM B429, ALLOY 6061-T6 AND BASE PLATE TO BE ASTM B209, ALLOY 6061-T6.
3. STAINLESS STEEL BOLTS, CAP SCREWS AND NUTS TO BE ASTM A276, TYPE 304, STAINLESS STEEL WASHERS TO BE ASTM A276, TYPE 302.
4. POST TO BE SET PERPENDICULAR TO TOP OF CURB AND RAILS SHALL BE PLACED PARALLEL TO THE GRADE OF THE BRIDGE.
5. CERTIFIED MILL REPORTS ARE REQUIRED FOR RAIL AND POST. SHOP INSPECTIONS ARE NOT REQUIRED.
6. AFTER ANCHOR BOLT NUTS HAVE BEEN TIGHTENED, THREAD SHALL BE NICKED TO LOCK NUTS.
7. CURVED RAIL USAGE: WHERE RAILS ARE TO BE USED ON BRIDGES ON HORIZONTAL AND/OR VERTICAL CURVATURE, THE CONTRACTOR MAY AT HIS OPTION HAVE THE REQUIRED CURVATURE IN THE RAIL FORMED IN THE SHOP OR IN THE FIELD. IN EITHER EVENT, THE RAIL SHALL CONFORM WITHOUT BUCKLING OR KINKING TO THE REQUIRED CURVATURE IN A UNIFORM MANNER ACCEPTABLE TO THE ENGINEER.
8. ANCHOR PLATES SHALL BE STEEL CONFORMING TO ASTM A36.
9. ANCHOR RODS SHALL CONFORM TO ASTM A276, TYPE 302 OR 304 STAINLESS STEEL AND THREADS SHALL BE ROLLED, NOT CUT.
10. UPPER ANCHOR ROD NUTS SHALL BE HEAVY HEX NUTS, PER ASTM A276 TYPE 302 OR 304 STAINLESS STEEL.
11. LOWER ANCHOR ROD NUTS SHALL BE HEAVY STEEL HEX NUTS, PER ASTM A563.
12. THE CENTERLINE OF ANY SPLICE AND/OR EXPANSION JOINT IS TO BE LOCATED AT LEAST 2'-0" AWAY FROM CENTERLINE OF POST. EXPANSION AND/OR SPLICE JOINTS FOR EACH RAIL OF TWO RAILINGS ARE TO BE PLACED IN THE SAME LOCATION AND IN THE SAME PANEL.
13. WELDING SHALL BE IN ACCORDANCE WITH THE CURRENT AWS STRUCTURAL WELDING CODE FOR ALUMINUM.



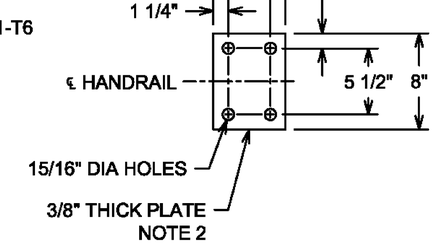
SECTION
NTS

FRONT VIEW
NTS

END POST DETAIL
NTS



EXPANSION JOINT DETAIL
NTS



BASE PLATE DETAIL
NTS

REVISIONS		
DATE	LTR.	DESCRIPTION
9/23/2013	1	REVISED NOTE 3 PUNCTUATION

NORFOLK SOUTHERN

PUBLIC PROJECTS MANUAL
TYPICAL DRAWINGS

UNDERPASS BRIDGE DETAILS
HANDRAIL

REF. NO.: SEC 2 - UP - 4 - SHT 7
DATE: JULY 1, 2013 | DRAWING NO.: 13

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
NSRR	JEA	CTV	12-19-23
CHECKED	REVISED	ODOT SFN	3113818, 3110142, PROSSER
CTM			

NSRR HANDRAIL DETAILS
GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE DETAILS
NSRR BRIDGES CT-1.41 (NORWOOD LATERAL), CT-0.95 (I-75), CT-0.89 (PROSSER AVE)

HAM-75-7.85
PID No. 77889

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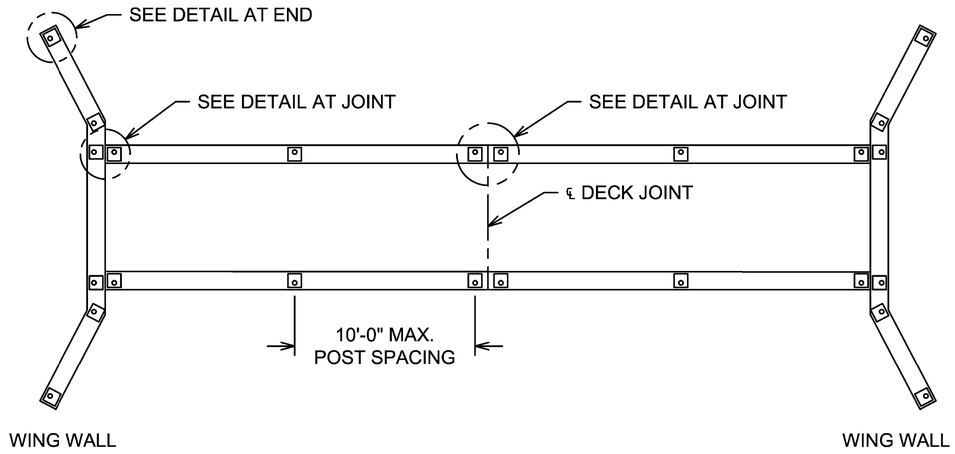
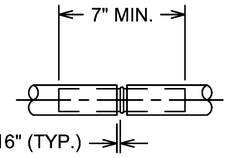
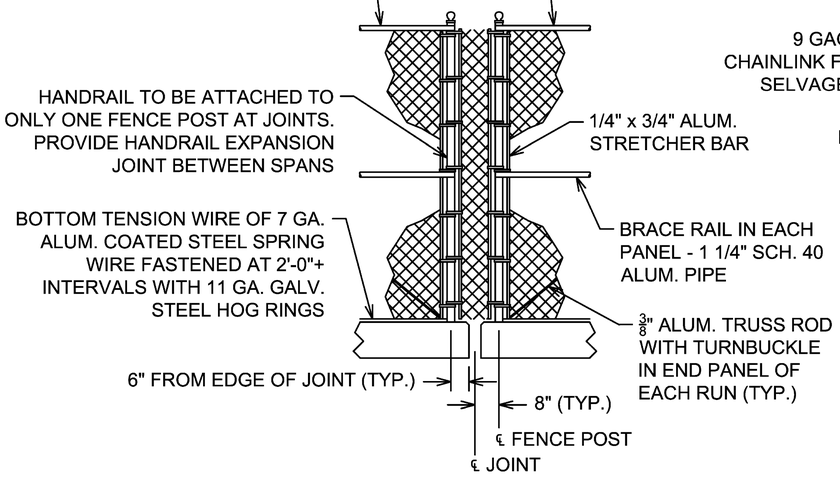


FENCE AND HANDRAIL POST SPACING

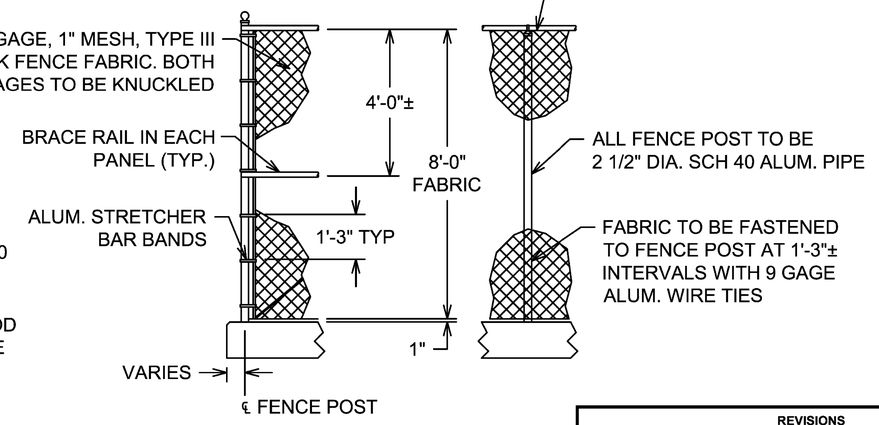
NTS



TOP RAIL SLEEVE DETAIL



DETAIL AT JOINT



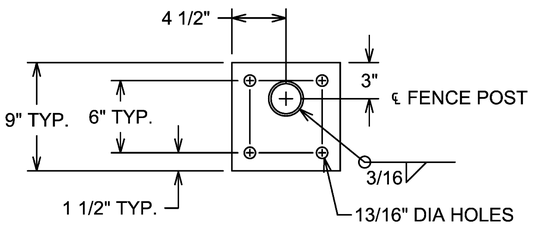
DETAIL AT END

DETAILS FOR CHAIN LINK FENCE

NTS

NOTES:

1. ALUMINUM PIPE TO BE ASTM B24I, ALLOY 6061-T6, ALUMINUM BASE PLATE TO BE ASTM B-209, ALLOY 6061-T6.
2. FENCE FABRIC TO BE TYPE III ALUMINUM ALLOY WIRE ASTM B-211, ALLOY 6061-T89 OR T94.
3. BRACE RAIL AND BRACE ENDS, POST TOPS, TURNBUCKLES, TRUSS RODS, STRETCHER BARS, AND BAR BANDS TO BE IN ACCORDANCE WITH AASHTO M181.
4. STAINLESS STEEL BOLTS, NUTS AND ANCHOR RODS TO BE ASTM A-276, TYPE 304. STAINLESS STEEL WASHERS TO BE ASTM A-276, TYPE 302.
5. POST TO BE SET PERPENDICULAR TO TOP OF CURB AND RAILS SHALL BE PLACED PARALLEL TO THE GRADE OF THE BRIDGE.
6. BOTTOM OF BASE PLATE SHALL BE THOROUGHLY COATED WITH ALUMINUM IMPREGNATED CAULKING COMPOUND OR APPROVED QUALITY.
7. CERTIFIED MILL REPORTS ARE REQUIRED FOR POST, RAIL, AND FENCE FABRIC. SHOP INSPECTION IS NOT REQUIRED.
8. WELDING SHALL BE IN ACCORDANCE WITH THE CURRENT AWS STRUCTURAL WELDING CODE - ALUMINUM.
9. SEE NS TYPICAL DRAWING NO. 15 FOR ADDITIONAL HANDRAIL DETAILS.



BASE PLATE DETAIL

NTS

REVISIONS		
DATE	LTR.	DESCRIPTION

NORFOLK SOUTHERN

PUBLIC PROJECTS MANUAL
TYPICAL DRAWINGS

UNDERPASS BRIDGE DETAILS
VANDAL FENCING WITH HANDRAIL I

REF. NO.: N/A

DATE: JULY 1, 2013 | DRAWING NO.: 14

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
NSRR	JEA	CTV	12-19-23
CHECKED	REVISED	ODOT SFN	3113818, 3110142, PROSSER
CTM			

NSRR VANDAL PROTECTION FENCE DETAILS
GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE STANDARD NOTES & DETAILS
NSRR BRIDGES CT-1.41 (NORWOOD LATERAL), CT-0.95 (I-75), CT-0.89 (PROSSER AVE)

HAM-75-7.85
PID No. 77889

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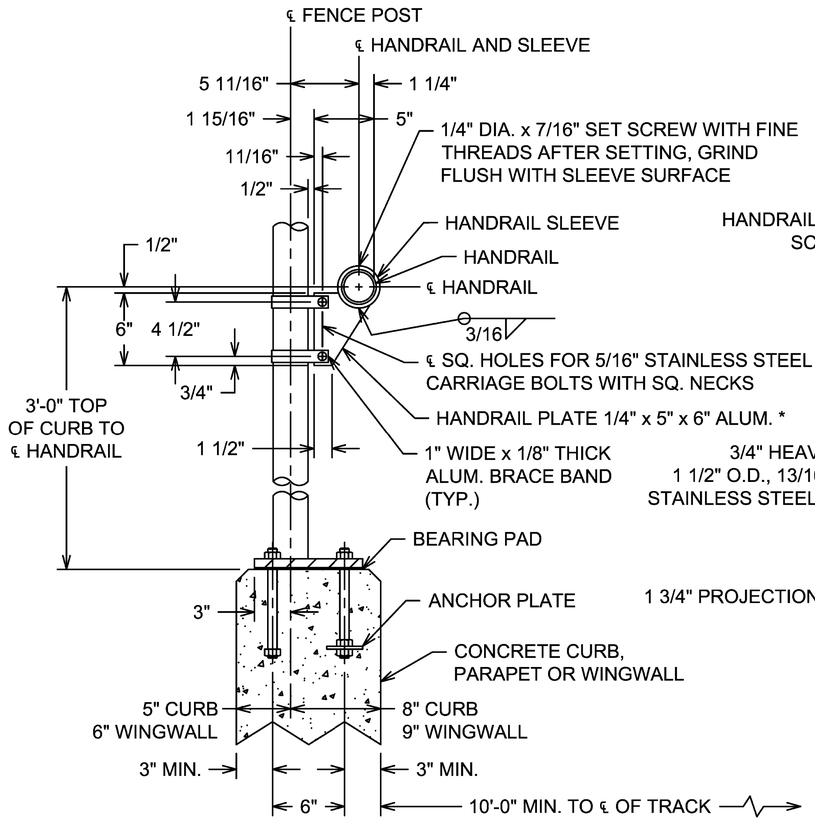
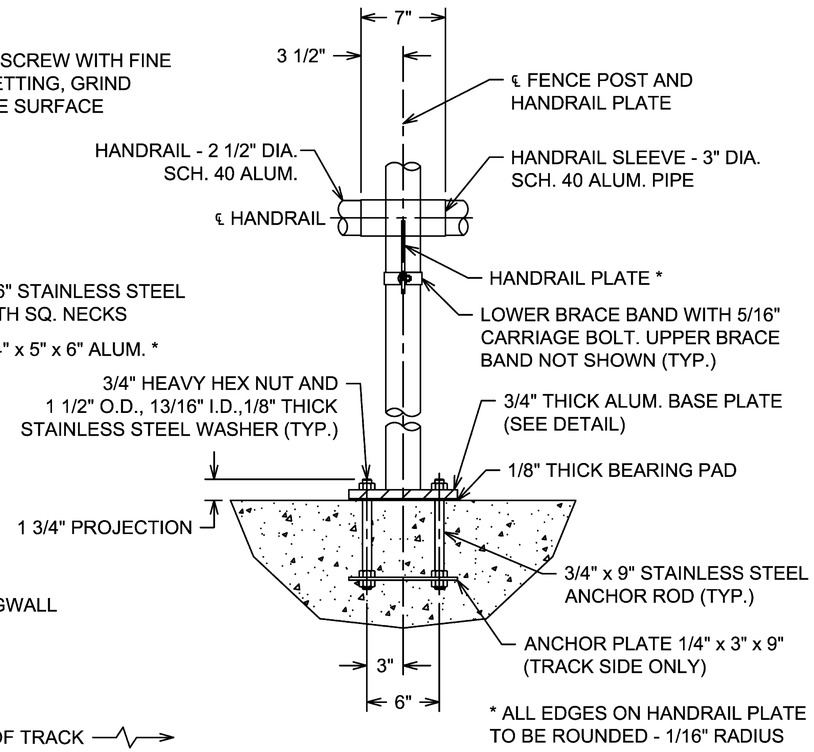


SECTION



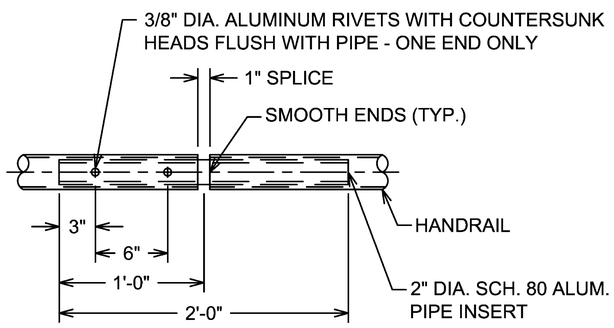
FRONT VIEW

NOTES:

1. JOINT IN HANDRAILING SHALL BE LOCATED IN POST SPACING PLAN.
2. ALL HANDRAIL PIPE, SLEEVES AND EXPANSION JOINTS TO BE SMOOTH AND FREE OF ALL SHARP EDGES.
3. ALUMINUM PIPE TO BE ASTM B241, ALLOY 6061-T6, ALUMINUM CLOSURE PLATE, AND HANDRAIL PLATE TO BE ASTM B-209, ALLOY 6061-T6.
4. STAINLESS STEEL BOLTS, NUTS AND ANCHOR RODS TO BE ASTM A-276, TYPE 304. STAINLESS STEEL WASHERS TO BE ASTM A-276, TYPE 302. ANCHOR ROD THREADS SHALL BE ROLLED, NOT CUT.
5. POST TO BE SET PERPENDICULAR TO TOP OF CURB AND RAILS SHALL BE PLACED PARALLEL TO THE GRADE OF THE BRIDGE.
6. BOTTOM OF BASEPLATE SHALL BE THOROUGHLY COATED WITH ALUMINUM IMPREGNATED CAULKING COMPOUND OR APPROVED QUALITY.
7. CERTIFIED MILL REPORTS ARE REQUIRED FOR POST AND RAIL. SHOP INSPECTION IS NOT REQUIRED.
8. AFTER ANCHOR BOLT AND OTHER BOLT NUTS HAVE BEEN TIGHTENED, THREADS SHALL BE NICKED TO LOCK NUTS.
9. THE ALUMINUM BRACE BANDS USED TO SECURE HANDRAIL SLEEVE SHALL BE OF SUCH SIZE NECESSARY TO CLAMP TIGHTLY TO FENCE POST.
10. WELDING SHALL BE IN ACCORDANCE WITH THE CURRENT AWS STRUCTURAL WELDING CODE - ALUMINUM.
11. ANCHOR PLATE SHALL BE STEEL CONFORMING TO ASTM SPECIFICATION A36.
12. UPPER ANCHOR ROD NUTS SHALL BE HEAVY HEX NUTS, PER ASTM A276 TYPE 302 OR 304 STAINLESS STEEL.
13. LOWER ANCHOR ROD NUTS SHALL BE HEAVY HEX NUTS, PER ASTM A307.

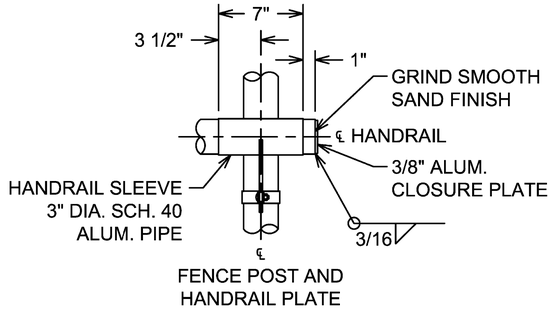
DETAILS FOR PIPE RAILING

NTS



HANDRAIL JOINT DETAIL

NTS



END CLOSURE DETAIL

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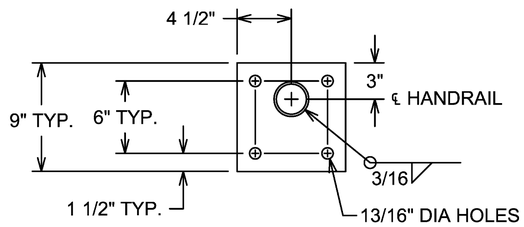

BASE PLATE DETAIL

NTS

REVISIONS		
DATE	LTR.	DESCRIPTION

NORFOLK SOUTHERN

PUBLIC PROJECTS MANUAL
TYPICAL DRAWINGS

UNDERPASS BRIDGE DETAILS
VANDAL FENCING WITH HANDRAIL II

REF. NO.: N/A

DATE: JULY 1, 2013 | DRAWING NO.: 15

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	CHECKED	DATE	ODOT SFN
NSRR	CTM	12-19-23	3113818, 3110142, PROSSER
DRAWN	REVISED	REVIEWED	
JEA		CTV	

NSRR HANDRAIL WITH VANDAL PROTECTION FENCE DETAILS
GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE STANDARD NOTES & DETAILS
NSRR BRIDGES CT-1.41 (NORWOOD LATERAL), CT-0.95 (I-75), CT-0.89 (PROSSER AVE)

HAM-75-7.85
PID No. 77889

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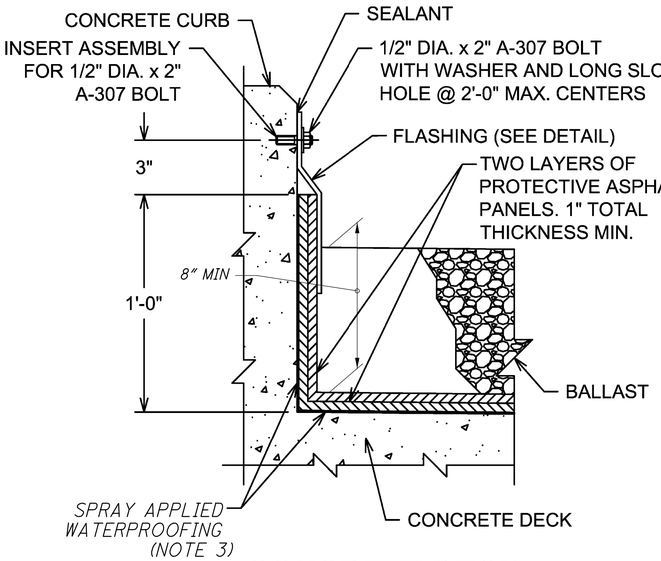
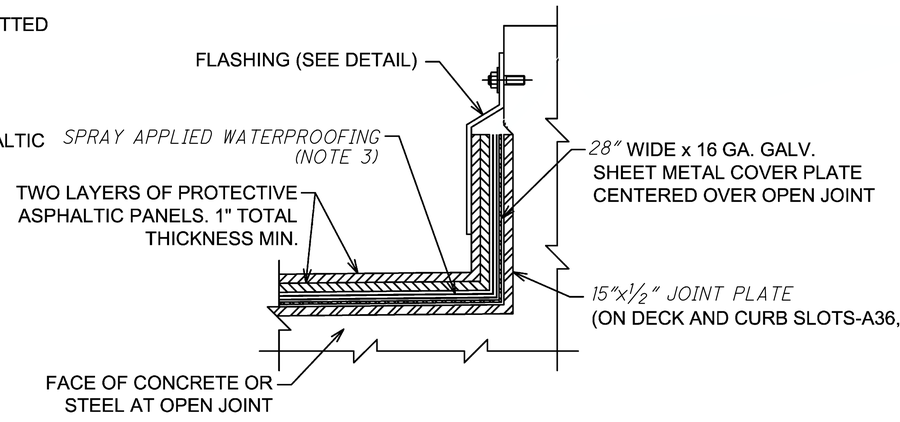
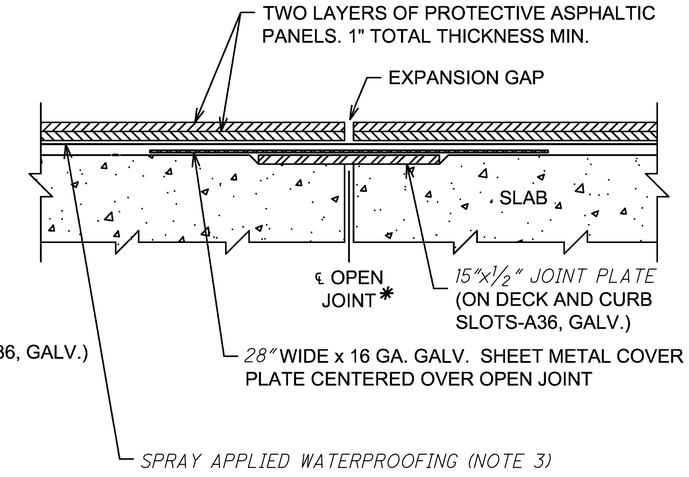


CONCRETE DECK

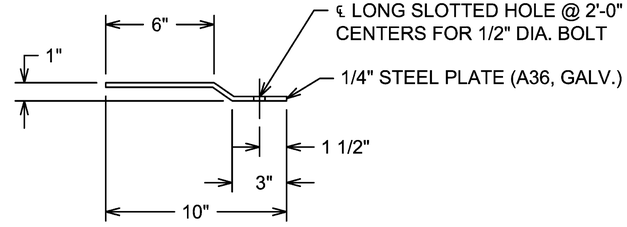


TYPICAL TRANSVERSE SECTION AT OPEN JOINT*

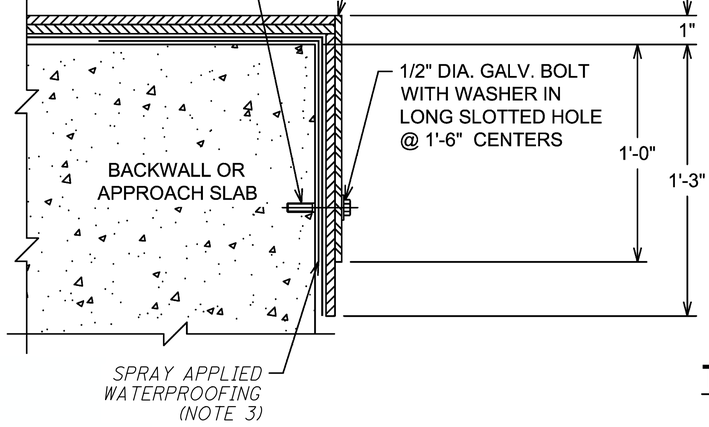


* SEE SHEET 13 / 13 FOR EXPANSION JOINT DETAILS

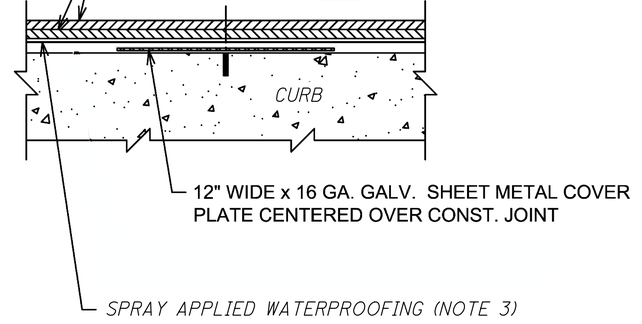
TYPICAL LONGITUDINAL SECTION AT BENTS AND BACKWALL*



CURB FLASHING DETAIL



TYPICAL LONGITUDINAL SECTION AT END OF BACKWALL / APPROACH SLABS



TYPICAL LONGITUDINAL SECTION AT CONTROLLED JOINTS

NOTES:

1. ALL STRUCTURAL STEEL PLATES, BOLTS AND WASHERS SHALL BE GALVANIZED.
2. DISCONTINUE FLASHING OVER PIERS AND ABUTMENTS.
3. *SEE APPENDIX H.4.3 SECTION 6 OF THE NSRR PUBLIC PROJECTS MANUAL FOR WATERPROOFING SPECIFICATIONS.*
4. ALL DETAILS ARE DRAWN NOT TO SCALE.

REVISIONS		
DATE	LTR.	DESCRIPTION

NORFOLK SOUTHERN®

PUBLIC PROJECTS MANUAL
TYPICAL DRAWINGS

UNDERPASS BRIDGE DETAILS
WATERPROOFING

REF. NO.: N/A

DATE: JULY 1, 2013 | DRAWING NO.: 18

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
NSRR	JEA	CTV	12-19-23
CHECKED	REVISED	ODOT SFN	3113818, 3110142, PROSSER
CTM			

NSRR WATERPROOFING DETAILS
GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE STANDARD NOTES & DETAILS
NSRR BRIDGES CT-1.41 (NORWOOD LATERAL), CT-0.95 (I-75), CT-0.89 (PROSSER AVE)

HAM-75-7.85
PID No. 77889

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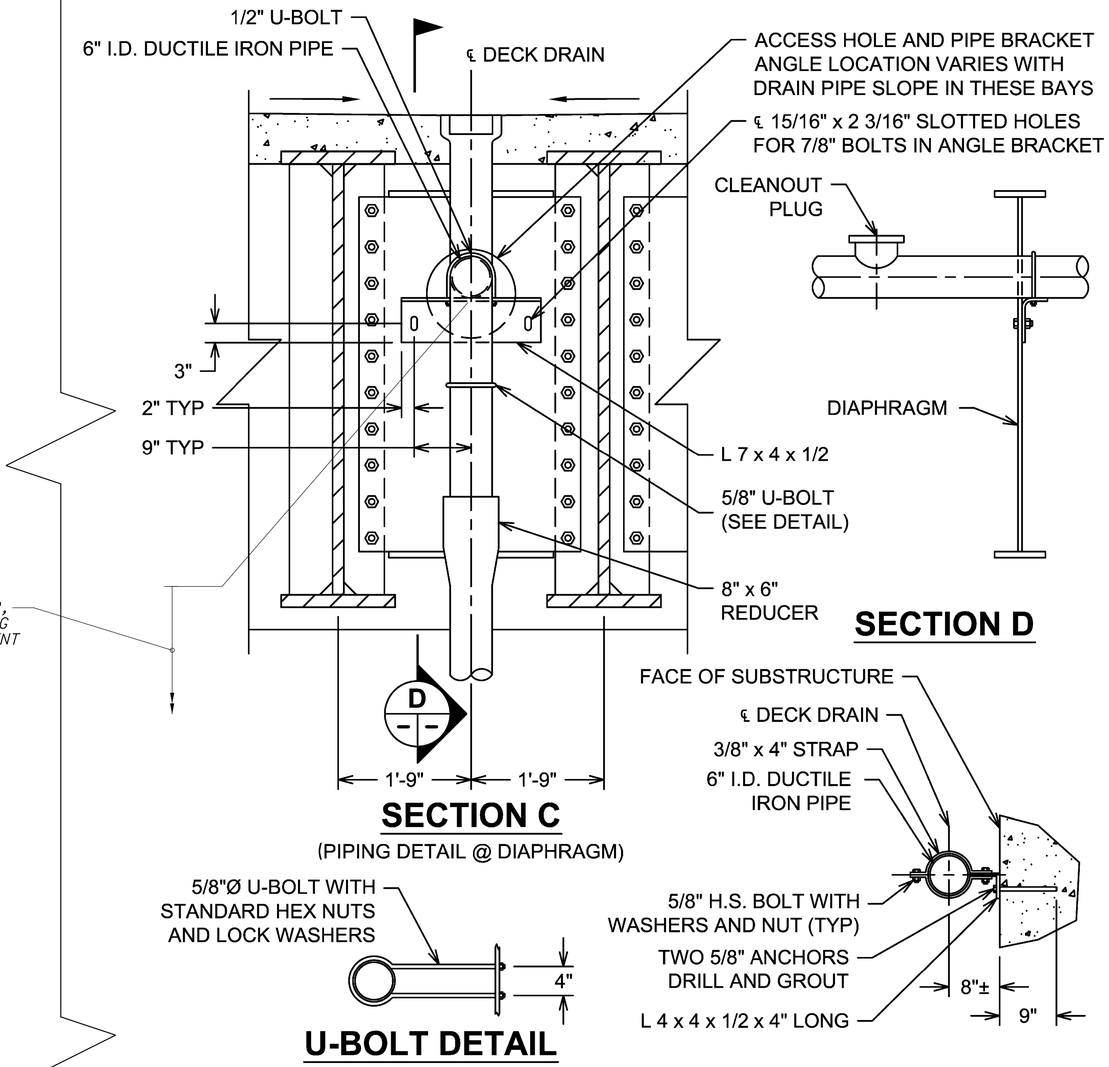

SECTION D

SECTION C

(PIPING DETAIL @ DIAPHRAGM)

U-BOLT DETAIL

WALL BRACKET DETAIL

DECK DRAIN DETAIL

NOTES:

1. ALL PIPES, TEES, BELLS AND BENDS SHALL BE CLASS 54 DUCTILE IRON.
2. USE MINIMUM 1% FALL ON DRAIN PIPES.

BRIDGE SPECIFIC REFERENCES

CT-1.41 (OVER S.R. 562) 73/286 AND 74/286

CT-0.95 (OVER I.R. 75) 114/286 AND 115/286

CT-0.89 (OVER PROSSER AVE) 150/286

REVISIONS		
DATE	LTR.	DESCRIPTION

NORFOLK SOUTHERN

PUBLIC PROJECTS MANUAL
TYPICAL DRAWINGS

UNDERPASS BRIDGE DETAILS
DECK DRAIN II

REF. NO.: N/A

DATE: JULY 1, 2013 | DRAWING NO.: 17

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
NSRR	JEA	CTV	12-19-23
CHECKED	REVISED	ODOT SFN	3113818, 3110142, PROSSER
CTM			

NSRR MISCELLANEOUS DRAINAGE DETAILS
GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE STANDARD NOTES & DETAILS
NSRR BRIDGES CT-1.41 (NORWOOD LATERAL), CT-0.95 (I-75), CT-0.89 (PROSSER AVE)

HAM-75-7.85
PID No. 77889

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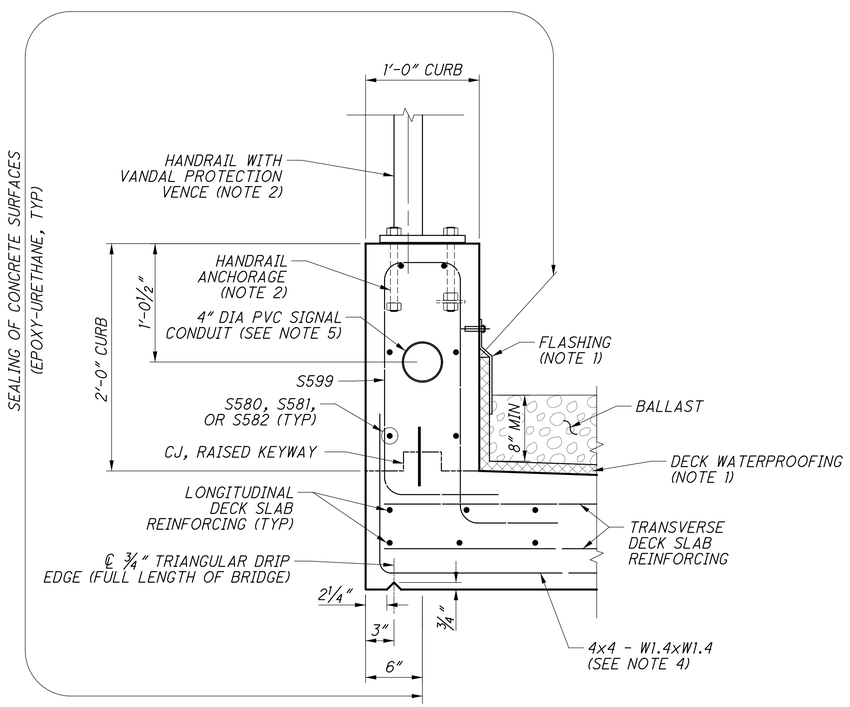
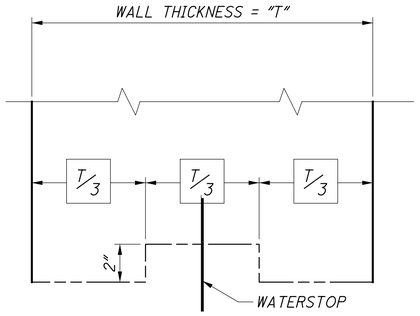
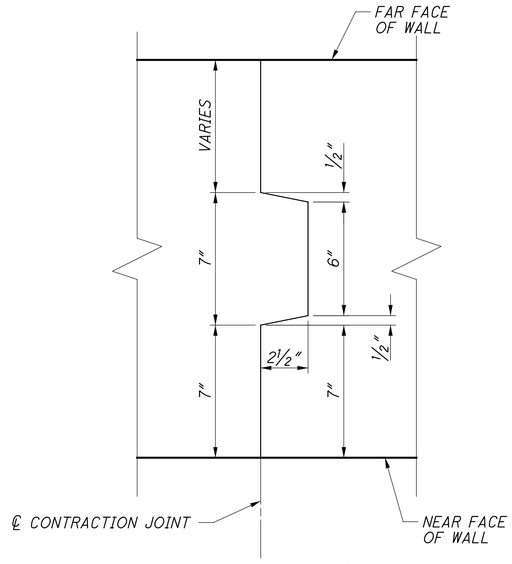
18
286



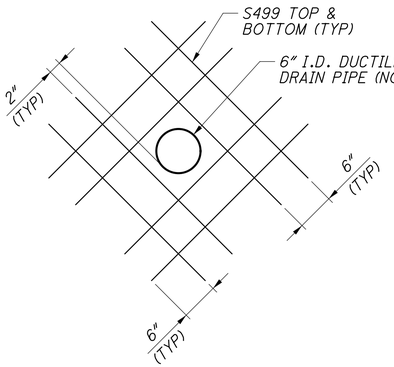
(9) CURB DETAIL



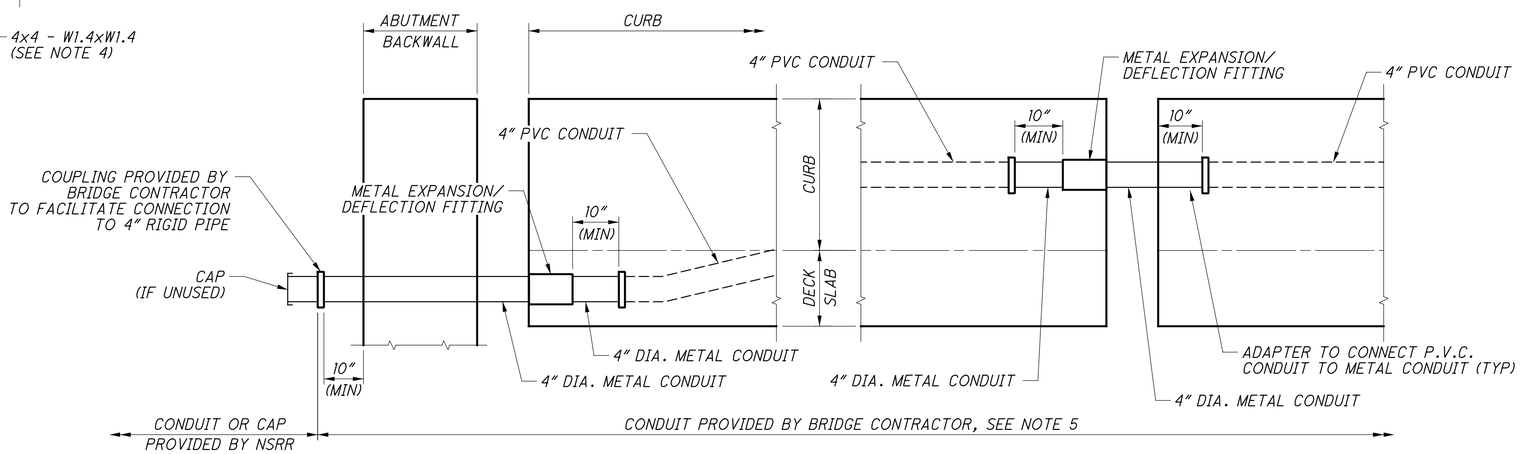
RAISED KEYWAY
CONSTRUCTION JOINT



CONTRACTION JOINT
VERTICAL KEYWAY

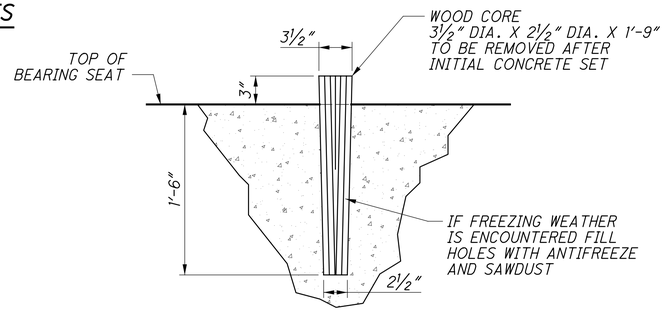


REINFORCING AT DECK DRAIN PIPES



CONDUIT ELEVATION AT ABUTMENT
TRANSITION THE CONDUIT FROM THE PARAPET DOWN TO THE DECK SLAB WITHIN A HORIZONTAL DISTANCE OF 10'-0" (SEE NOTE 5)

CONDUIT ELEVATION AT PIER
(SEE NOTE 5)



ANCHOR BLOCK OUT DETAIL

NOTES:

1. FOR WATERPROOFING DETAILS, SEE SHEET 10 | 13.
2. FOR HANDRAIL WITH VANDAL PROTECTION FENCE, SEE SHEETS 8 | 13 THROUGH 9 | 13.
3. FOR DECK DRAIN DETAILS, INCLUDING GRATE, SEE SHEET 11 | 13.
4. 4x4 - W1.4xW1.4 GALVANIZED WELDED WIRE FABRIC PER ODOT CMS 709.08 PROVIDED ACROSS OVERHANGS. MESH SHALL EXTEND FROM 1" CLEAR OF EXTERIOR GIRDER TOP FLANGE, 1" ABOVE THE TOP OF THE DRIP EDGE, AND 6" ABOVE THE TOP OF THE CURB CONSTRUCTION JOINT. WWF TO BE TURNED UP INTO THE CAGE AT THE FLANGE LOCATION. FURNISHING AND INSTALLING THE WWF SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE DECK REINFORCING STEEL.
5. CONDUIT SHALL BE PAID FOR WITH ITEM 625, CONDUIT, 4", 725.051, AS PER PLAN AND SHALL INCLUDE ALL REQUIRED FITINGS, ADAPTERS, METAL CONDUIT, AND OTHER SPECIAL ITEMS REQUIRED TO CONSTRUCT THE JOINTS SHOWN.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	EFD	CTV	12-19-23
CHECKED	REVISED	ODOT SFN	3113818, 3110142, PROSSER
CTM			

TYPICAL STRUCTURAL DETAILS
GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE STANDARD NOTES & DETAILS
NSRR BRIDGES CT-1.41 (NORWOOD LATERAL), CT-0.95 (I-75), CT-0.89 (PROSSER AVE)

HAM-75-7.85
PID No. 77889

12 | 13

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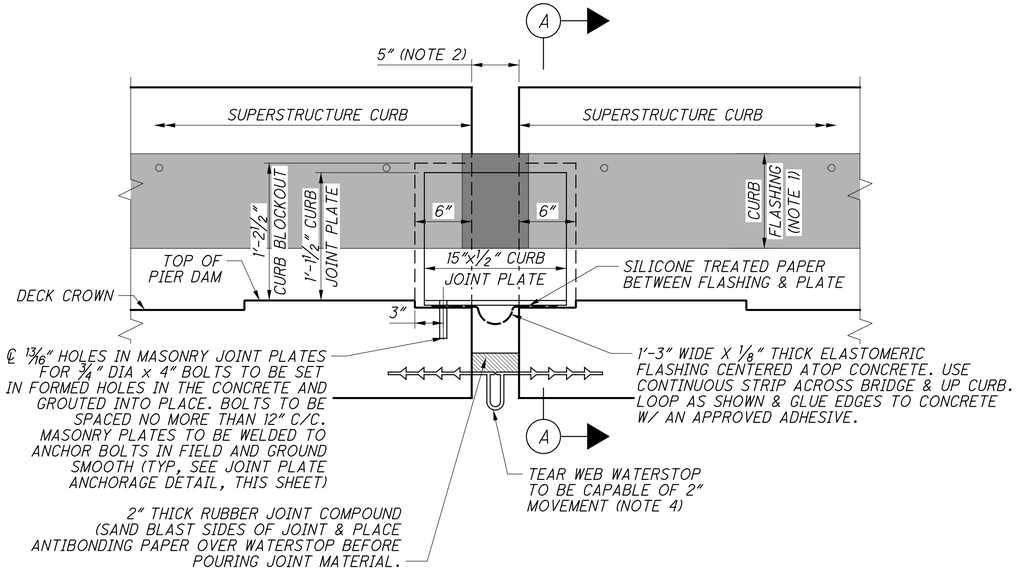
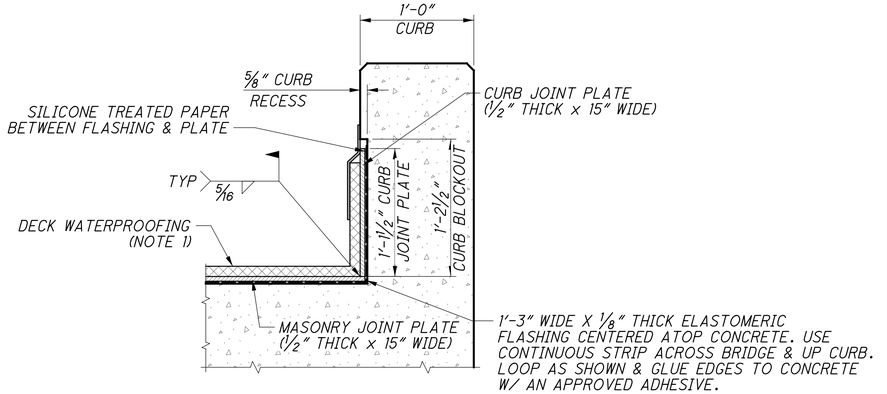
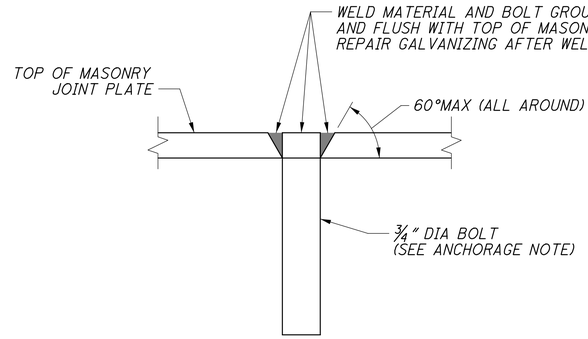
286



Y SECTION
DECK JOINT AT PIER

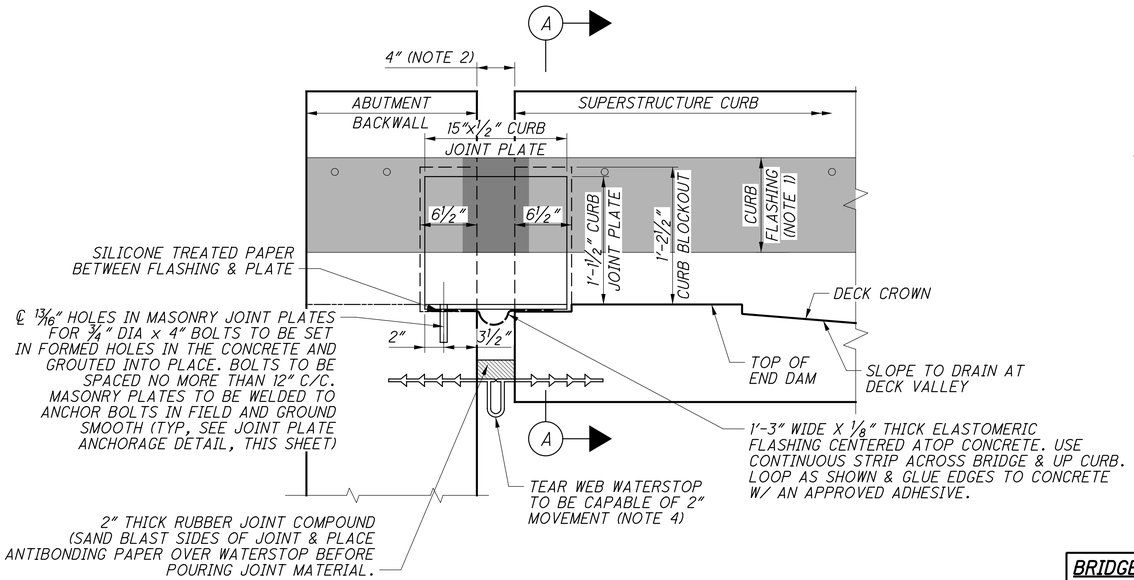


A SECTION
DECK CURB SHOWN
ABUTMENT BACKWALL SIMILAR



JOINT PLATE ANCHORAGE DETAIL

ANCHORAGE NOTE:
AT THE CONTRACTORS OPTION, THREADED INSERTS IN THE CONCRETE WITH COUNTERSUNK ¾" SCREWS MAY BE USED. IF USED, THE METHODS AND MATERIALS SHALL BE SUBMITTED TO NSRR AND APPROVED BY NSRR.



Z SECTION
DECK JOINT AT ABUTMENT

BRIDGE SPECIFIC REFERENCES

CT-1.41 (OVER S.R. 562)	69 / 286
CT-0.95 (OVER I.R. 75)	112 / 286
CT-0.89 (OVER PROSSER AVE)	148 / 286

NOTES:

1. FOR WATERPROOFING DETAILS, INCLUDING CURB FLASHING, SEE SHEET 10 | 13.
2. BASIC JOINT OPENINGS GIVEN ARE AT THERMAL NEUTRAL TEMPERATURES. FOR OPENING WIDTHS AT VARIABLE TEMPERATURES, SEE BRIDGE SPECIFIC REFERENCES.
3. JOINT PLATES SHALL BE GALVANIZED. FOR LENGTH OF SKEWED DECK JOINT PLATE, SEE BRIDGE SPECIFIC REFERENCES.
4. CAST THE TEAR-WEB WATERSTOPS 2" MIN. FROM THE BOTTOM OF THE DECK. EXTEND THE WATERSTOPS UP THE CURB. A BULB-TYPE WATERSTOP WITH A 2" DIAMETER BULB MAY BE SUBSTITUTED AT THE CONTRACTORS OPTION AND WITH THE APPROVAL OF NSRR.
5. PRIOR TO INSTALLING THE FLASHING AND EXPANSION JOINT PLATE COVER THE CONTRACTOR SHALL TEST THE JOINT FOR LEAKS AND MADE WATERTIGHT TO THE SATISFACTION OF NSRR.

DESIGN AGENCY
Gannett Fleming
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COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	EFD	CTV	12-19-23
CHECKED	REVISED	ODOT SFN	3113818, 3110142, PROSSER
CTM			

DECK EXPANSION JOINT DETAILS

GENERAL NORFOLK SOUTHERN RAILROAD (NSRR) BRIDGE STANDARD NOTES & DETAILS
NSRR BRIDGES CT-1.41 (NORWOOD LATERAL), CT-0.95 (I-75), CT-0.89 (PROSSER AVE)

HAM-75-7.85
PID No. 77889

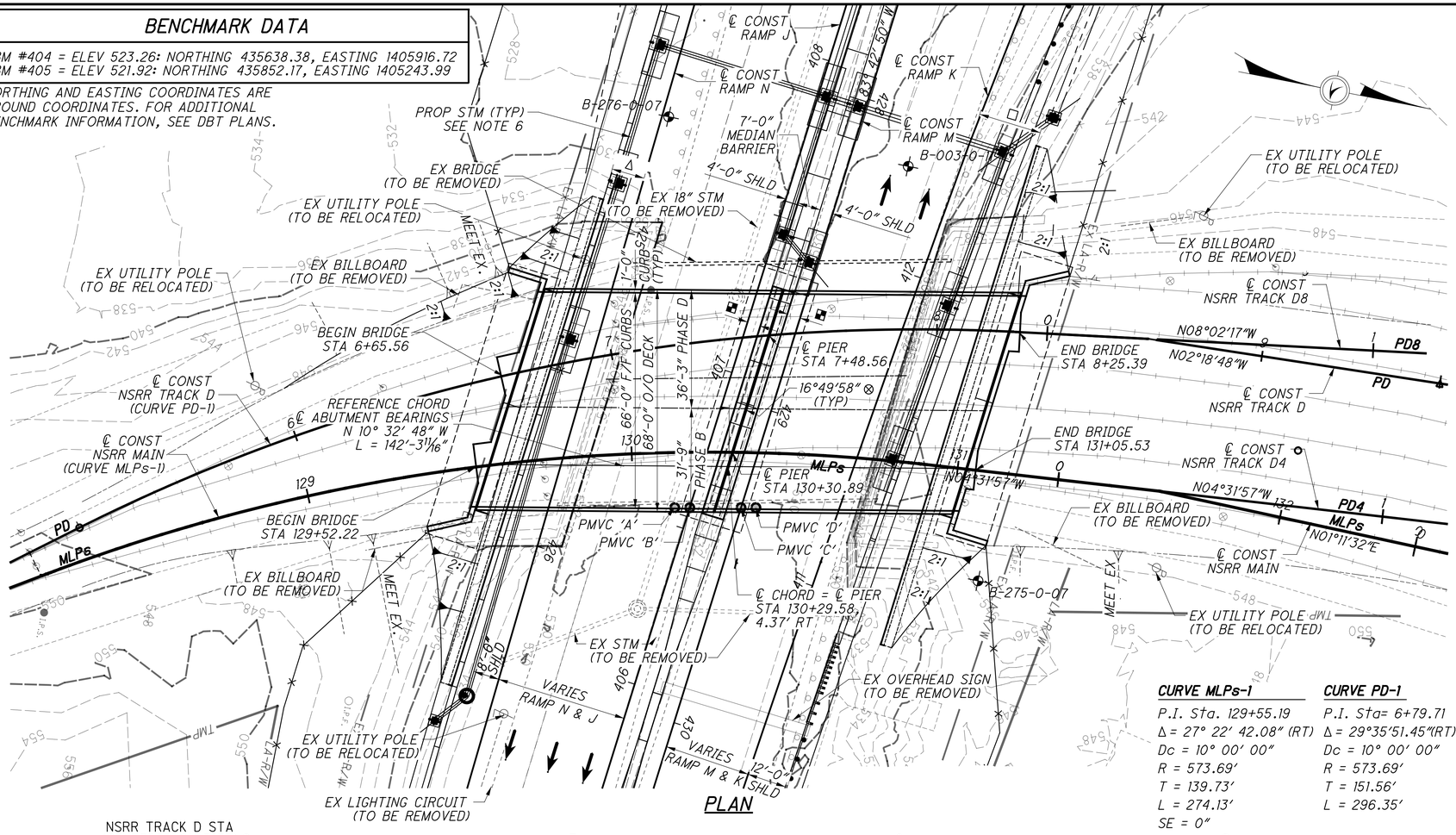
13 / 13

20 / 286

BENCHMARK DATA

BM #404 = ELEV 523.26: NORTHING 435638.38, EASTING 1405916.72
BM #405 = ELEV 521.92: NORTHING 435852.17, EASTING 1405243.99

NORTHING AND EASTING COORDINATES ARE GROUND COORDINATES. FOR ADDITIONAL BENCHMARK INFORMATION, SEE DBT PLANS.



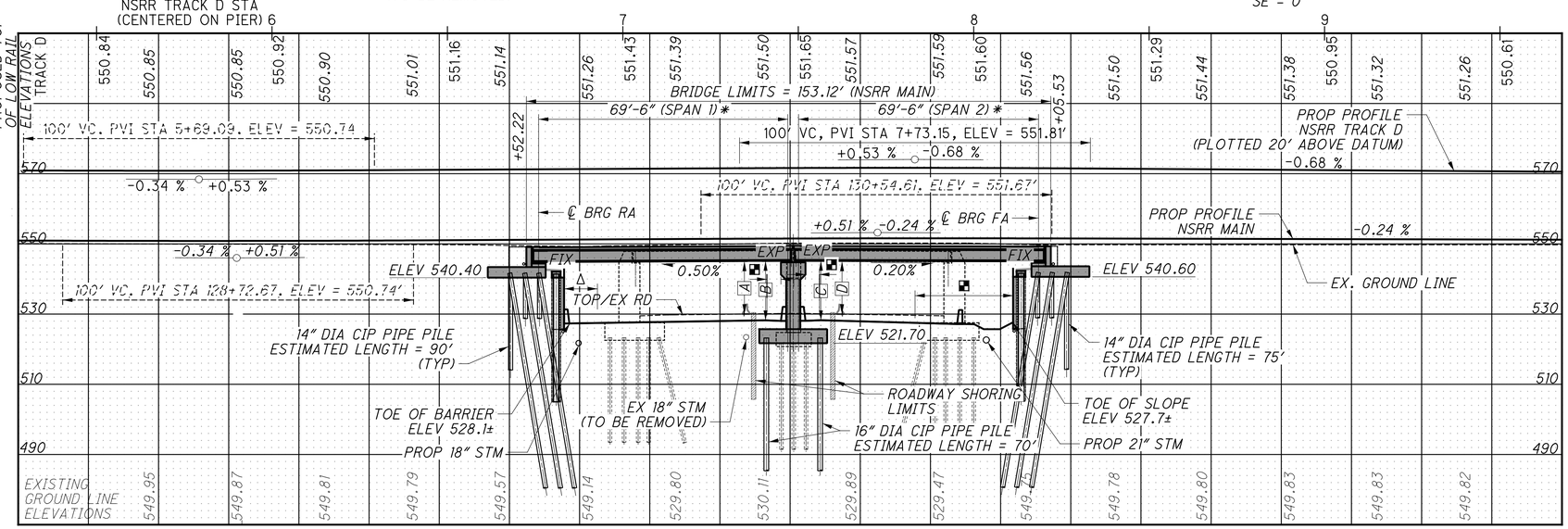
PLAN

CURVE MLPs-1

P.I. Sta. 129+55.19
Δ = 27° 22' 42.08" (RT)
Dc = 10° 00' 00"
R = 573.69'
T = 139.73'
L = 274.13'
SE = 0"

CURVE PD-1

P.I. Sta= 6+79.71
Δ = 29°35'51.45"(RT)
Dc = 10° 00' 00"
R = 573.69'
T = 151.56'
L = 296.35'



PROFILE ALONG ℄ CONST PROPOSED NS RAILROAD MAIN

* MEASURED ALONG REFERENCE CHORD

NOTES

1. EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
2. FOR SHORING & STAGING INFORMATION, SEE SHEETS 5 57 - 15 57.
3. FOR ADDITIONAL ROADWAY INFORMATION, SEE DBT PLANS.
4. FOR ADDITIONAL RAIL DETAILS, SEE TRACK PLANS, SHEET 154/286.
5. FOR ADDITIONAL LAYOUT DETAILS, SEE GENERAL PLAN, SHEET 2 57.
6. FOR ADDITIONAL DRAINAGE INFORMATION, SEE DBT PLANS.

MILEPOST NOTE:

1. THE CENTER OF BRIDGE ALONG ℄ SURVEY AND CONSTRUCTION OF NS RAILROAD IS STA 130+30.89 (℄ PIER). THE DISTANCE TO NS RAILROAD MILEPOST CT-1.0 IS 2,165 FT. (0.41 MILES) WEST.

S.R. 562 TRAFFIC DATA

2010 ADT = 173,800 2010 ADTT = 24,332
2030 ADT = 203,000 2030 ADTT = 28,520
DIRECTIONAL DISTRIBUTION = 53%

NORFOLK SOUTHERN RAIL TRAFFIC DATA

5 FREIGHT TRAINS PER DAY
0 PASSENGER TRAINS PER DAY
10 MPH OPERATING SPEED
SOURCE: NORFOLK SOUTHERN RAILROAD

LEGEND

SEE SHEET 12/286 FOR PROJECT ABBREVIATIONS

- ⊕ - SOIL BORING LOCATION
- ⊗ - POINT OF MINIMUM VERTICAL CLEARANCE
  - A = 14'-11½" (SPAN 1 OVER PROPOSED MOT), 14'-6" REQUIRED
  - B = 16'-10¾" (SPAN 1 OVER PROPOSED ROADWAY), 15'-6" REQUIRED
  - C = 16'-10¾" (SPAN 2 OVER PROPOSED ROADWAY), 15'-6" REQUIRED
  - D = 15'-0" (SPAN 2 OVER PROPOSED MOT), 14'-6" REQUIRED
- ⊗ = MEASURED TO REFERENCE CHORD
- ■ = 4'-0" (MINIMUM HORIZONTAL CLEARANCE)
- △ = 10'-2" (MINIMUM HORIZONTAL CLEARANCE)
- □ = 19'-3⅝" (MINIMUM HORIZONTAL CLEARANCE)

SOIL BORING DATA

BORING	STATION	OFFSET
B-275-0-07	406+61.52	91.0' RT
B-276-0-07	407+69.02	41.8' LT
B-003-0-11	407+76.37	32.8' RT

BORING DATA REFERENCED FROM ℄ RAMP J

EXISTING STRUCTURE

TYPE: TWO SIMPLE-SPAN STEEL DECK GIRDERS (33 KSI) WITH STEEL DECK ON CONCRETE ABUTMENTS AND PIER
SPANS: 44'-6"±, 44'-6"± C/C BEARINGS
WIDTH: 74'-0"± O/O DECK
ORIGINAL DESIGN LOADING: COOPER E-72
ALIGNMENT: TANGENT
SKEW: 18°± LF
YEAR BUILT: 1960
STRUCTURE FILE NUMBER: 3113817
DISPOSITION: TO BE REPLACED

PROPOSED STRUCTURE

TYPE: TWO SIMPLE-SPAN STEEL DECK GIRDERS (ASTM A709, GR. 50) WITH BALLASTED, COMPOSITE REINFORCED DECK ON CONCRETE STUB ABUTMENTS & WALL-TYPE PIER
SPAN: 69'-6", 69'-6" C/C BRGS (MEASURED ALONG REFERENCE CHORD)
WIDTH: 66'-0" F/F CURBS (68'-0" O/O DECK)
LOADING: COOPER E-80 WITH DIESEL IMPACT & ALTERNATE LOAD
ALIGNMENT: 10°00'00" RIGHT CURVE (CHORD DEFINITION)
SKEW: 16° 49' 58" LF (MEASURED TO REFERENCE CHORD)
COORDINATES: LATITUDE N 39° 10' 27"
LONGITUDE W 84° 29' 08"
STRUCTURE FILE NUMBER: 3113818

DESIGN AGENCY
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DESIGNED EFD | DRAWN SNH | REVIEWED CTV | DATE 12-19-23
CHECKED CTM | REVISED | ODOT SFN: 3113818 | NSRR BR#: BR0018448

HAMILTON COUNTY
STA 129+52.22
TO STA 131+05.34

SITE PLAN
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

1 / 57

21/286

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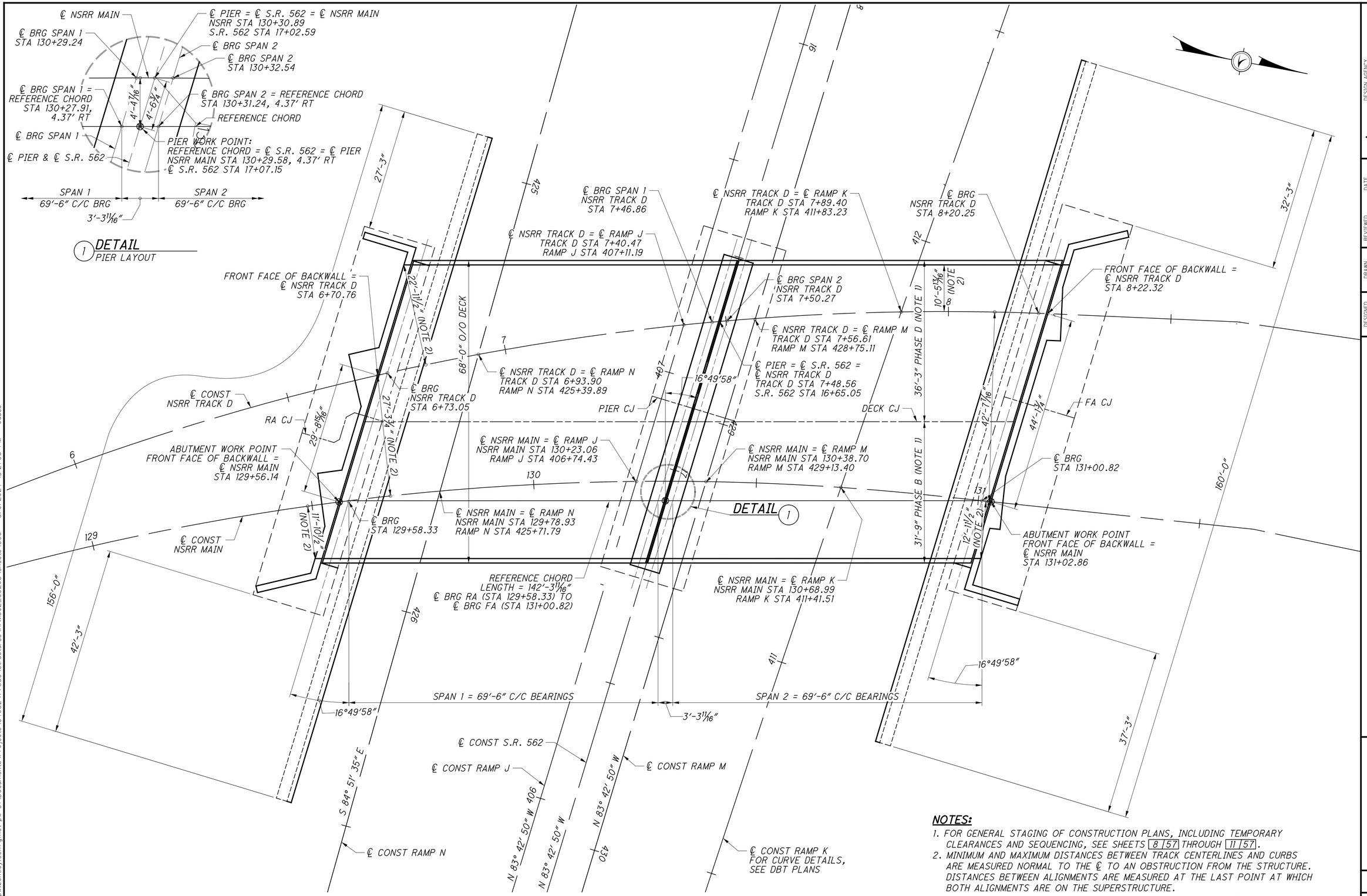
1 **DETAIL**
PIER LAYOUT



GENERAL PLAN VIEW

NOTES:

1. FOR GENERAL STAGING OF CONSTRUCTION PLANS, INCLUDING TEMPORARY CLEARANCES AND SEQUENCING, SEE SHEETS 8 57 THROUGH 11 57.
2. MINIMUM AND MAXIMUM DISTANCES BETWEEN TRACK CENTERLINES AND CURBS ARE MEASURED NORMAL TO THE ℄ TO AN OBSTRUCTION FROM THE STRUCTURE. DISTANCES BETWEEN ALIGNMENTS ARE MEASURED AT THE LAST POINT AT WHICH BOTH ALIGNMENTS ARE ON THE SUPERSTRUCTURE.
3. FOR ADDITIONAL RAIL DETAILS, SEE TRACK PLANS, SHEET 154/286.

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
EFD	SNH	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

GENERAL PLAN
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

2 / 57

22 / 286

HAM-562-0026 SPECIFIC NOTES

STANDARD RAILROAD BRIDGE NOTES AND DETAILS

THE NOTES ON THIS SHEET ARE SPECIFIC TO THE SUBJECT BRIDGE STRUCTURE. FOR STANDARD NOTES AND DETAILS APPLICABLE TO ALL RAILROAD BRIDGE STRUCTURES ON THIS PROJECT, INCLUDING THIS STRUCTURE, SEE THE FOLLOWING SHEETS: 8/286 THROUGH 20/286

ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

THIS ITEM SHALL INCLUDE THE PHASED REMOVAL OF THE EXISTING IN-SERVICE BRIDGE CARRYING NSRR OVER S.R. 562.

THE REMOVAL OF THE EXISTING IN-SERVICE BRIDGE INCLUDES THE REMOVAL OF ALL SUPERSTRUCTURE ELEMENTS AND ALL SUBSTRUCTURE ELEMENTS TO A DISTANCE OF 3'-6" BELOW PROPOSED FINAL GRADE.

THE CONTRACTOR MUST REVIEW THE EXISTING STRUCTURE WHEN PREPARING THEIR BID. EXISTING PLANS ARE AVAILABLE FOR THE SUBJECT BRIDGE.

PHASE A SUBSTRUCTURE CONCRETE REMOVAL

SAW-CUT BOUNDARIES OF PROPOSED PHASE A CONCRETE REMOVALS, THEN REMOVE THE CONCRETE TO THE SAW-CUT LINE. CUTOFF THE EXISTING REINFORCING STEEL FLUSH WITH THE SAW-CUT LINE. CLEAN THE CONCRETE SURFACE AND EXPOSED REINFORCEMENT.

PHASE A CONCRETE SHALL BE REMOVED BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. FOR REMOVAL WITHIN 18 INCHES OF PORTIONS OF CONCRETE TO REMAIN, THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS. OUTSIDE THE 18-INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL IN THE PIER CAP.

ITEM 507 - CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN, AS PER PLAN

FOR STANDARD NOTES FOR THIS ITEM, SEE SHEET: 9/286

FOR FURNISHED PILE NOTES, SEE SHEET: 9/286

THE SERVICE REACTIONS LISTED BELOW ARE THE MAXIMUM SERVICE REACTION OF ALL LOAD GROUPS, AFTER THE REDUCTION OF ANY ALLOWABLE OVERSTRESS. LOAD GROUPS AND ALLOWABLE OVERSTRESS ARE PER AREMA TABLE 8-2-4.

PRIOR TO DRIVING, THE CONTRACTOR SHALL VERIFY THAT THE LAYOUT OF BATTERED PILES WILL NOT INTERFERE WITH THE LAYOUT OF SOLDIER PILE SHAFTS.

REAR AND FORWARD ABUTMENTS: 165 KIPS

PIER: 165 KIPS

SEE FOUNDATION PLAN SHEETS 16/57 THROUGH 18/57 FOR ORDER LENGTHS, TIP ELEVATION, AND CUTOFF ELEVATION DETAILS FOR SPECIFIC PILES.

PILE DESIGN LOADS (ULTIMATE BEARING VALUE):
THE ULTIMATE BEARING VALUE IS 330 KIPS PER PILE FOR THE REAR AND FORWARD ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 330 KIPS FOR THE PIER PILES.

ABUTMENT PILES:
65 PILES 95 FEET LONG, ORDER LENGTH (REAR)
68 PILES 80 FEET LONG, ORDER LENGTH (FORWARD)
4 DYNAMIC LOAD TESTING ITEMS (2 PER ABUTMENT)

PIER PILES:
40 PILES 75 FEET LONG, ORDER LENGTH
2 DYNAMIC LOAD TESTING ITEMS

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (FT) AT THE CONTRACT BID PRICE.

ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES

THE WORK SHALL CONSISTS OF FURNISHING AND PLACING STEEL SOLDIER PILES INTO DRILLED HOLES AS WELL AS MONITORING PLUMBNESS. FURNISH SOLDIER PILES CONSISTING OF STRUCTURAL STEEL MEMBERS THAT MEET THE PLAN REQUIREMENTS AND CONFORM TO ASTM A709, GRADE 50. DO NOT FIELD WELD OR SPLICE STEEL SOLDIER PILES.

ALIGN THE SOLDIER PILE VERTICALLY WITHIN THE HOLE. PLACE THE SOLIDER PILE SO THAT THE FLANGES ARE PARALLEL TO THE CENTERLINE OF PREBORED HOLES AND THE TOP IS AT THE PLAN ELEVATION. SUPPORT THE SOLDIER PILE SO THAT IT DOES NOT MOVE DURING CONCRETE PLACEMENT. DO NOT ALLOW THE VERTICAL ALIGNMENT OF THE SOLDIER PILE TO VARY BY MORE THAN 1/4" PER FOOT OF DEPTH. DO NOT ALLOW THE ORIENTATION OF THE FLANGES TO VARY BY MORE THAN 10 DEGREES.

CHECK THE POSITION, THE VERTICAL ALIGNMENT, AND ORIENTATION OF THE SOLDIER PILE IMMEDIATELY AFTER CONCRETE PLACEMENT. MAKE CORRECTIONS AS NECESSARY TO MEET THE ABOVE TOLERANCES.

MEASUREMENT FOR PAYMENT WILL BE THE DISTANCE BETWEEN THE TOP AND BOTTOM OF THE SOLDIER PILE. PAYMENT IS FULL COMPENSATION FOR FURNISHING AND PLACING THE SOLDIER PILES AND MONITORING THEIR PLUMBNESS UNTIL THE PLACEMENT OF THE CONCRETE FACING HAS BEGUN. THE DEPARTMENT WILL PAY FOR SOLDIER PILES AT THE CONTRACT UNIT BID PRICE OF ITEM 507 - STEEL PILES, MISC.: SOLDIER PILES (FT).

ITEM 512 - SPECIAL - BUTYL RUBBER MEMBRANE WATERPROOFING

BUTYL RUBBER MEMBRANE WATERPROOFING SHALL BE IN ACCORDANCE WITH NSRR-PPM, APPENDIX H.4.3 - "SPECIFICATIONS FOR MEMBRANE WATERPROOFING", AREMA CHAPTER 8, PART 29, AND THE DETAILS HEREIN.

USE 3/32" THICK BUTYL RUBBER MEMBRANE WATERPROOFING ACROSS THE LONGITUDINAL DECK PHASE CJ FOR THE FULL LENGTH OF THE BRIDGE DECK.

THE BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (SQ YD) AT THE CONTRACT BID PRICE FOR THIS STRUCTURE, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

ITEM 524 - DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN

THIS WORK CONSISTS OF FURNISHING AND INSTALLING DRILLED SHAFTS FOR SOLIDER PILE AND LAGGING WALLS. THE DRILLED SHAFTS ARE REINFORCED WITH SOLDIER PILES IN LIEU OF REINFORCING STEEL CAGES. THE SOLDIER PILES EXTEND ABOVE THE TOP OF THE DRILLED SHAFT. FURNISH AND INSTALL THE DRILLED SHAFTS IN ACCORDANCE WITH CMS 524 EXCEPT AS MODIFIED AND SUPPLEMENTED BELOW.

EACH PHASE OF PREBORED HOLES SHALL BE 30 INCHES DIAMETER AND INSTALLED ONLY AFTER THE ABUTMENT PILES ARE INSTALLED FOR THAT PHASE (INCLUDING AFTER ALL PLANNED RESTRIKES). PRIOR TO DRILLING THE CONTRACTOR SHALL VERIFY THAT THE LAYOUT OF SOLDIER PILE SHAFTS WILL NOT INTERFERE WITH THE BATTERED PILES.

PREBORED HOLES DO NOT REQUIRE CASING FOR RAILROAD SURCHARGE IF SHORING IS INSTALLED PER THESE PLANS.

FILL THE HOLE BELOW THE BOTTOM OF LAGGING ELEVATION WITH CONCRETE. USE CLASS QC1 CONCRETE ACCORDING TO CMS 511. THE CONTRACTOR MAY PLACE CONCRETE USING THE FREE FALL METHOD PROVIDED THE DEPTH OF WATER IS LESS THAN 6 INCHES AND THE CONCRETE FALLS WITHOUT STRIKING THE SIDES OF THE HOLE. POURING CONCRETE ON THE WEB OF THE SOLDIER PILE IS ACCEPTABLE. THE MAXIMUM FREE FALL OF CONCRETE SHALL NOT EXCEED 4 FEET.

FILL THE HOLE ABOVE THE BOTTOM OF LAGGING ELEVATION WITH LOW STRENGTH MORTAR BACKFILL (LSM) PER ITEM 613. REMOVE CONCRETE AND LSM EVEN WITH THE FRONT FACE OF THE SOLDIER PILE IN ORDER TO PLACE THE LAGGING.

ITEM 524 - DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN (CONTINUED)

MEASUREMENT FOR PAYMENT FOR DRILLED SHAFTS ABOVE BEDROCK, AS PER PLAN WILL BE LIMITED TO THE ACTUAL DRILLED DISTANCE BETWEEN THE GROUND SURFACE AND THE MINIMUM TIP ELEVATION, AS DETERMINED BY THE ENGINEER. PAYMENT IS FULL COMPENSATION FOR DRILLING THE HOLES, CONSTRUCTING THE DRILLED SHAFTS, SUPPORTING THE SOLDIER PILES, FURNISHING AND PLACING CONCRETE AND LSM, AND REMOVAL OF CONCRETE OR LSM AROUND THE SOLDIER PILE AS NECESSARY TO PLACE LAGGING. THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT UNIT BID PRICE PER FOOT FOR ITEM 524 - DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN.

ITEM 530 - SPECIAL - RETAINING WALL, TIMBER LAGGING

THIS ITEM CONSISTS OF FURNISHING AND INSTALLING UNTREATED HARDWOOD LAGGING TO SERVE AS TEMPORARY LAGGING FOR THE SOLIDER PILE WALL. THE LAGGING SHALL CONSIST OF HARDWOOD TIMBER WITH NOMINAL 4"x8" DIMENSIONS. THE CONTRACTOR SHALL SUBMIT THE PROPOSED LAGGING TYPE TO NSRR FOR REVIEW AND APPROVAL. LAGGING SHOULD BE PLACED IN A TOP DOWN MANNER AS EXCAVATION PROCEEDS DOWNWARD. AT NO TIME SHOULD MORE THAN 24 INCHES OF UNSUPPORTED EXCAVATION BE PERMITTED. REDUCE THE UNSUPPORTED HEIGHT AS NECESSARY TO PREVENT CAVING AND SLOUGHING OF THE SOILS BETWEEN THE SOLDIER PILES. PROVIDE 1/4" TO 1/8" HORIZONTAL JOINT SPACING BETWEEN THE LAGGING BOARDS TO PERMIT DRAINAGE. THE TIMBER EXTREME FIBER ALLOWABLE STRESS IN BENDING SHALL BE GREATER THAN OR EQUAL TO 1050 PSI AND GREATER THAN OR EQUAL TO 150 PSI IN SHEAR.

CONNECT LAGGING TO SOLDIER PILES USING THREADED STUD SHEAR CONNECTORS, LAGGING WASHERS, AND NUTS PROVIDED AND INSTALLED PER CMS 513. LAGGING PLATES AND NUTS SHALL BE ASTM A709 GRADE 36, YIELD STRENGTH 36,000 PSI OR GREATER.

THE DEPARTMENT WILL MEASURE THE TEMPORARY TIMBER LAGGING BY THE NUMBER OF SQUARE FEET AND WILL DETERMINE THE AREA FROM PLAN DIMENSIONS USING A LENGTH MEASURED ALONG A HORIZONTAL LINE ALONG THE CENTERLINE OF THE SOLDIER PILES AND A HEIGHT FROM THE BOTTOM OF THE LAGGING TO THE TOP. PAYMENT IS FULL COMPENSATION FOR FURNISHING AND PLACING ALL MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK, INCLUDING WELDED THREADED STUDS. THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT UNIT PRICE BID PER SQUARE FOOT FOR ITEM SPECIAL - RETAINING WALL, TIMBER LAGGING.

DESIGN AGENCY
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COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	EFD	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

BRIDGE SPECIFIC NOTES
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

ESTIMATED BRIDGE QUANTITIES

CALCULATED: VDT DATE: 6/11/15
CHECKED: SNH DATE: 6/12/15

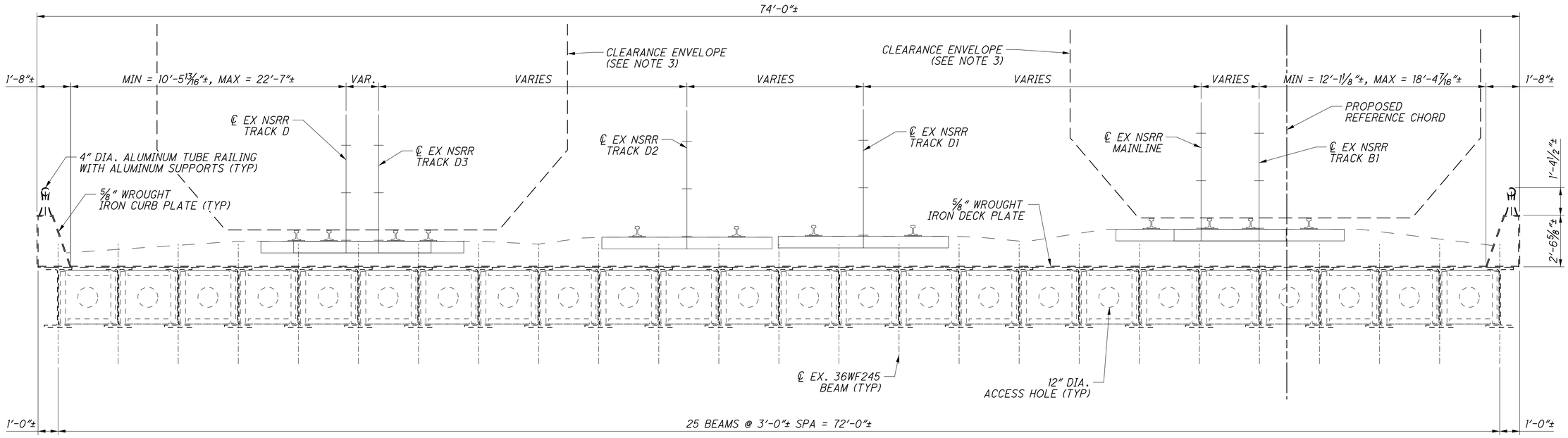
ITEM	ITEM EXT.	TOTAL QUANTITY (05/NHS/10)	UNIT	DESCRIPTION	PHASE A & B				PHASE C & D				GENERAL	APP SHEET NO.
					REAR	PIER	FWD	SUPER	REAR	PIER	FWD	SUPER		
202	11003	LUMP	LS	STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN									LUMP	3/57
503	11101	LUMP	LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (PHASE A, REAR ABUTMENT)									LUMP	8/286
503	11101	LUMP	LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (PHASE A, PIER)									LUMP	8/286
503	11101	LUMP	LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (PHASE A, FORWARD ABUTMENT)									LUMP	8/286
503	11101	LUMP	LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (PHASE C, REAR ABUTMENT)									LUMP	8/286
503	11101	LUMP	LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (PHASE C, PIER)									LUMP	8/286
503	11101	LUMP	LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (PHASE C, FORWARD ABUTMENT)									LUMP	8/286
503	21301	LUMP	LS	UNCLASSIFIED EXCAVATION, AS PER PLAN									LUMP	8/286
505	11100	LUMP	LS	PILE DRIVING EQUIPMENT MOBILIZATION									LUMP	
507	00400	1,500	FT	STEEL PILES, MISC.: SOLDIER PILES	450		376		297		377			3/57
507	00601	10,950	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN, AS PER PLAN	2,880		2,550		2,970		2,550			9/286
507	00651	11,615	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN	3,040		2,720		3,135		2,720			9/286
507	00701	2,800	FT	16" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN, AS PER PLAN		1,400				1,400				9/286
507	00751	3,000	FT	16" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN		1,500				1,500				9/286
509	10000	158,802	LB	EPOXY COATED REINFORCING STEEL	11,105	19,716	11,351	36,706	10,827	19,107	10,863	39,127		
511	34447	345	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN				161				184		9/286
511	34451	22	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN				11				11		9/286
511	40513	233	CY	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS, AS PER PLAN		115				118				9/286
511	44113	94	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT, NOT INCLUDING FOOTING, AS PER PLAN	24		23		26		21			9/286
511	46013	21	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL NOT INCLUDING FOOTING, AS PER PLAN	6		4		7		4			9/286
511	46511	643	CY	CLASS QC1 CONCRETE, FOOTING, AS PER PLAN	95	115	104		107	115	107			9/286
511	71200	4,144	SF	CONCRETE, MISC.: FACING OF CANTILEVER WALLS	1,192		1,023		839		1090			9/286
512	10001	1,237	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN	245	169	226		194	173	230			10/286
512	10100	1,411	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	245	169	226	87	194	173	230	87		
512	44451	1,086	SY	TYPE E WATERPROOFING, AS PER PLAN				500				586		10/286
SPECIAL	51256100	97	SY	SPECIAL - BUTYL RUBBER MEMBRANE WATERPROOFING				97						3/57
SPECIAL	51256202	1,086	SY	SPECIAL - ASPHALTIC PANEL				500				586		10/286
SPECIAL	51267400	1,241	SF	SPECIAL - WATERPROOFING, MISC.: DAMPPROOFING OF RAILROAD STRUCTURES	312		321		312		296			9/286
513	10221	59,300	LB	STRUCTURAL STEEL MEMBERS, LEVEL 1, AS PER PLAN				27,420				31,880		10/286
513	10321	1,441,405	LB	STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN				682,735				758,670		10/286
513	20000	11,248	EACH	WELDED STUD SHEAR CONNECTORS				5,328				5,920		
514	80020	39,225	SF	SHOP PAINTING AND FIELD TOUCH-UP OF STRUCTURAL STEEL				18,395				20,830		10/286
516	12201	208	FT	STRUCTURAL STEEL EXPANSION JOINT, AS PER PLAN				96				112		10/286
516	13600	48	SF	1" PREFORMED EXPANSION JOINT FILLER			12		18		18			
516	43201	38	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (14"x20"x2.948" BEARING WITH LOAD PLATE), AS PER PLAN				18				20		47/57
516	43301	38	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (16"x18"x3.772" BEARING WITH LOAD PLATE), AS PER PLAN				18				20		47/57
517	73101	356	FT	TEMPORARY BRIDGE RAILING, AS PER PLAN				356						5/57
517	75001	70	FT	RAILING, ALUMINUM, AS PER PLAN	18		19		15		18			14/286
517	76300	292	FT	RAILING, MISC.: NSRR ALUMINUM HANDRAIL WITH VANDAL PROTECTION FENCE				146				146		15/286
518	20000	463	SY	PREFABRICATED GEOCOMPOSITE DRAIN	133		114		94		122			
518	21200	93	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	23		24		24		22			
518	40012	375	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE	110		95		75		95			
518	42201	245	FT	8" PERFORATED CORRUGATED STEEL PIPE, 707.01, AS PER PLAN	55		60		70		60			10/286
518	42301	210	FT	8" NON-PERFORATED CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01, AS PER PLAN	70		40		45		55			10/286
518	63300	LUMP	LS	STRUCTURE DRAINAGE, MISC.: SUPERSTRUCTURE DRAINAGE SYSTEM				LUMP				LUMP		10/286
523	20000	12	EACH	DYNAMIC LOAD TESTING	2	2	2		2	2	2			
523	20500	12	EACH	RESTRIKE	2	2	2		2	2	2			
524	94603	1,460	FT	DRILLED SHAFTS, 30" DIAMETER, ABOVE BEDROCK, AS PER PLAN	438		366		289		367			3/57
SPECIAL	53000200	LUMP	LS	SPECIAL - STRUCTURES: SURVEY AND MONITORING OF TRACK AND TEMPORARY SHORING									LUMP	12/286
SPECIAL	53000200	LUMP	LS	SPECIAL - STRUCTURES: PRECONSTRUCTION CONDITION SURVEY									LUMP	12/286
SPECIAL	53013000	3,325	SF	SPECIAL - FORM LINER	671		1,023		541		1,090			10/286
SPECIAL	53014000	LUMP	LS	SPECIAL - STRUCTURAL SURVEY AND MONITORING OF VIBRATION									LUMP	13/286
SPECIAL	53051020	4,144	SF	SPECIAL - RETAINING WALL, TIMBER LAGGING	1,192		1,023		839		1,090			3/57
625	25605	308	FT	CONDUIT, 4", 725.051, AS PER PLAN				154				154		19/286

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED VDT | DRAWN VDT | REVIEWED CTV | DATE 12-19-23
CHECKED SNH | REVISED | ODOT SFN: 3113818 | NSRR BR#: BR0018448

ESTIMATED BRIDGE QUANTITIES
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889



TRANSVERSE SECTION - EXISTING BRIDGE

LOOKING UPSTATION, SEE NOTE 1

SUGGESTED CONSTRUCTION SEQUENCE

ALL WORK TO BE COORDINATED WITH MAINTENANCE OF TRAFFIC PLANS COMPLETED BY THE DESIGN BUILD TEAM

PHASE A - EAST REMOVAL & SHORING

1. FORCE ACCOUNT: REMOVE TRACKS D2, D1, MAIN LINE, B, AND B1 FROM SERVICE.
2. INSTALL TEMPORARY SHORING AT ABUTMENTS, INCLUDING PILES R33 & R34.
3. INSTALL TEMPORARY HANDRAIL ATOP PROPOSED SHORING AND EXISTING SUPERSTRUCTURE.
4. PARTIALLY REMOVE EXISTING SUPERSTRUCTURE.
5. INSTALL TEMPORARY PIER SHORING.
6. EXCAVATE AREAS FOR PROPOSED ABUTMENTS, INSTALLING WHALERS AND RAKERS AT REQUIRED LOCATIONS.
7. EXCAVATE AND PARTIALLY REMOVE EXISTING PIER ELEMENTS.
8. REMOVE EXISTING ABUTMENT BACKWALL AND WINGWALL ELEMENTS AS INDICATED.

PHASE B - EAST CONSTRUCTION

1. DRIVE ABUTMENT AND PIER PILES.
2. CONSTRUCT RETAINING WALL SHAFTS, SETTING STEEL POSTS IN CONCRETE AND LOW-STRENGTH MORTAR AS INDICATED.
3. CONSTRUCT ABUTMENT ELEMENTS.
4. CONSTRUCT PIER ELEMENTS.
5. INSTALL CLOSURE SHEETING, BACKFILL BEHIND PROPOSED ABUTMENTS, AND REMOVE UNNECCESARY SHEETING TO BE ABLE TO ERECT GIRDERS.
6. ERECT GIRDERS
7. POUR THE DECK, INSTALL JOINTS AND WATERPROOFING, INSTALL TEMPORARY HANDRAIL.
8. INSTALL REQUIRED CLOSURE SHORING AND TEMPORARY HANDRAIL BEHIND PROPOSED ABUTMENTS.
9. FORCE ACCOUNT: INSTALL BALLAST AND TEMPORARY MAINLINE TRACK.

PHASE C - WEST REMOVAL & SHORING

1. FORCE ACCOUNT: MAKE PROPOSED TEMPORARY MAINLINE ACTIVE, PROVIDING ACCESS TO TRACKS D4, D3, D2, D1, MAINLINE, B, B1, AND BRICK YARD.
2. FORCE ACCOUNT: REMOVE TRACKS D, D3 AND D4 FROM SERVICE.
3. INSTALL REMAINING TEMPORARY SHORING AND HANDRAIL AT ABUTMENTS.
4. REMOVE REMAINING EXISTING SUPERSTRUCTURE.
5. INSTALL REMAINING TEMPORARY PIER SHORING, MODIFYING CLOSURE SHORING AS REQUIRED.
6. EXCAVATE AREAS FOR PROPOSED ABUTMENTS.
7. EXCAVATE AND REMOVE REMAINING EXISTING PIER ELEMENTS.
8. REMOVE EXISTING WINGWALL ELEMENTS AS INDICATED.

PHASE D - WEST CONSTRUCTION

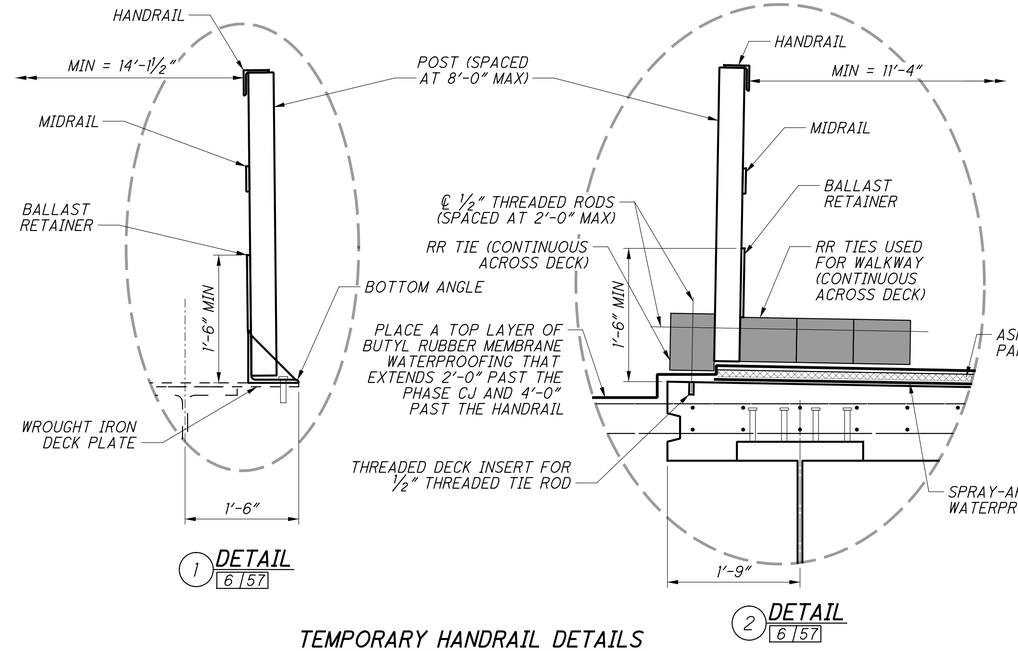
1. DRIVE ABUTMENT AND PIER PILES.
2. CONSTRUCT RETAINING WALL SHAFTS, SETTING STEEL POSTS IN CONCRETE AND LOW-STRENGTH MORTAR AS INDICATED.
3. PERFORM TOP-DOWN EXCAVATION IN FRONT OF RETAINING WALL.
4. REMOVE ABUTMENT STEMS AND FOOTINGS AS INDICATED.
5. CONSTRUCT REMAINING ABUTMENT ELEMENTS.
6. CONSTRUCT REMAINING PIER ELEMENTS.

(NIGHT & WEEKEND CLOSURES FOR ERECTION AND DECK FORMING)

7. ERECT REMAINING GIRDERS
8. POUR THE DECK, REMOVE TEMPORARY HANDRAIL, INSTALL JOINTS AND WATERPROOFING.
9. FORCE ACCOUNT: INSTALL BALLAST AND PROPOSED TRACK D.

PHASE E - FINALIZATION

1. REMOVE TIMBER-TIE WALKWAY.
2. FORCE ACCOUNT: REGRADE AND REALIGN TEMPORARY MAINLINE INTO FINAL MAINLINE GEOMETRY.
3. CAST RETAINING WALL FACING.



TEMPORARY HANDRAIL DETAILS

NOTES:

1. FOR PHASED CONSTRUCTION SECTIONS, SEE SHEETS 6 57 AND 7 57.
2. FOR PHASED CONSTRUCTION PLANS, SEE SHEETS 8 57 THROUGH 11 57.
3. FOR PROPOSED TRANSVERSE SECTION DETAILS AND DESCRIPTION OF THE CLEARANCE ENVELOPE, SEE SHEET 42 57.
4. SUBMIT DETAILS OF TEMPORARY HAND RAILING SIGNED AND SEALED BY A PROFESSIONAL ENGINEER IN THE STATE OF OHIO TO THE ENGINEER AND NSRR FOR APPROVAL. HAND RAILING SHALL BE IN ACCORDANCE WITH AREMA 15-8.5, NSRR & OSHA. THE MOST STRINGENT OF THE REQUIREMENTS SHALL GOVERN.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	SNH	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

PHASED CONSTRUCTION SECTIONS: EXISTING SECTION & NOTES
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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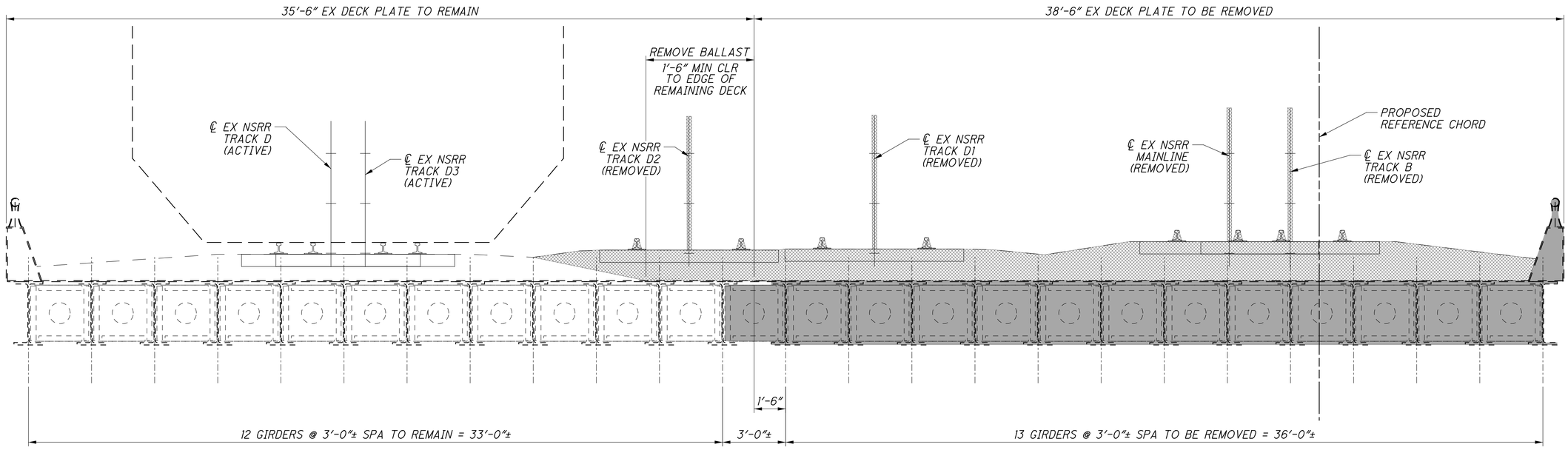
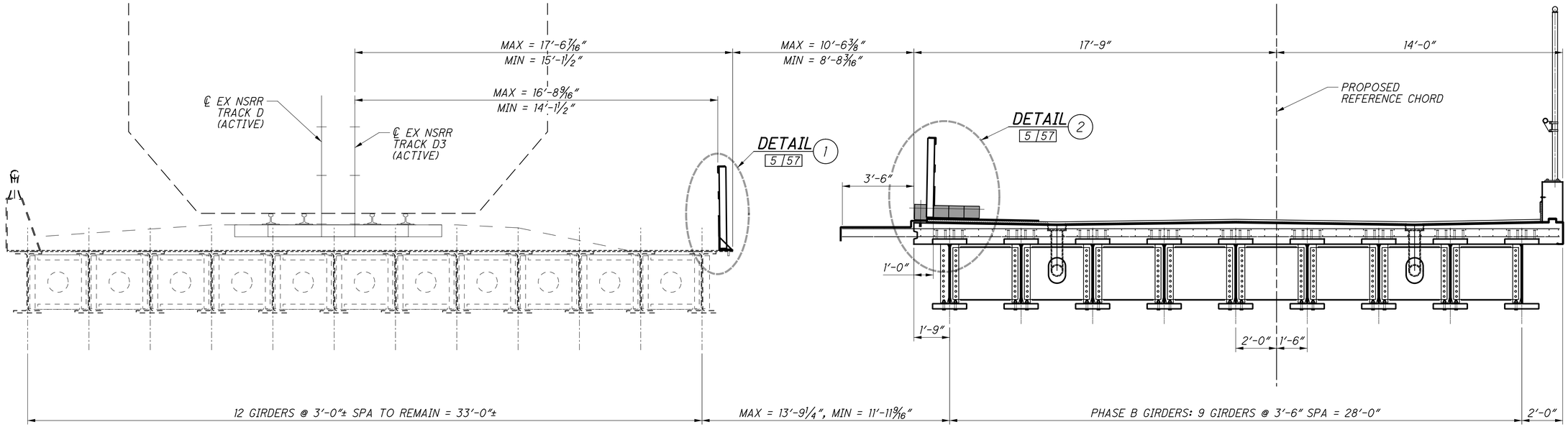


PHASE A (EAST REMOVAL)

NOTE 1 AND 3



PHASE B (EAST CONSTRUCTION)

NOTE 2 AND 3

NOTES:

1. FOR PHASE A REMOVAL PLAN, SEE SHEET 8 57.
2. FOR PHASE B CONSTRUCTION PLAN, SEE SHEET 9 57.
3. FOR SUGGESTED PHASING NOTES, SEE SHEET 5 57.
4. FOR FINAL SECTION DETAILS SEE SHEET 42 57.

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PHASED CONSTRUCTION SECTIONS: PHASES A & B
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

6 / 57

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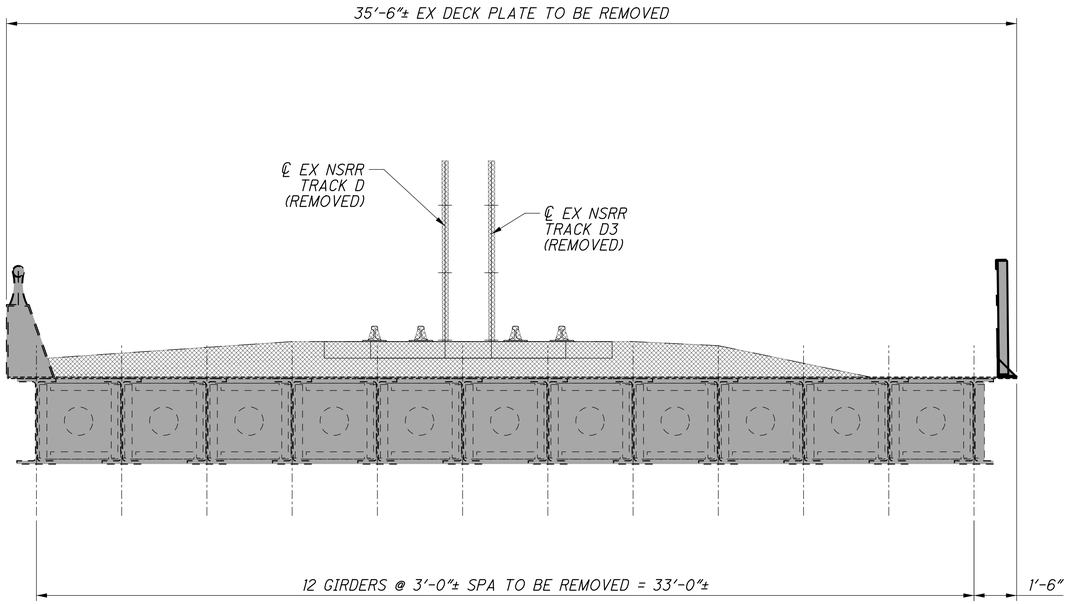
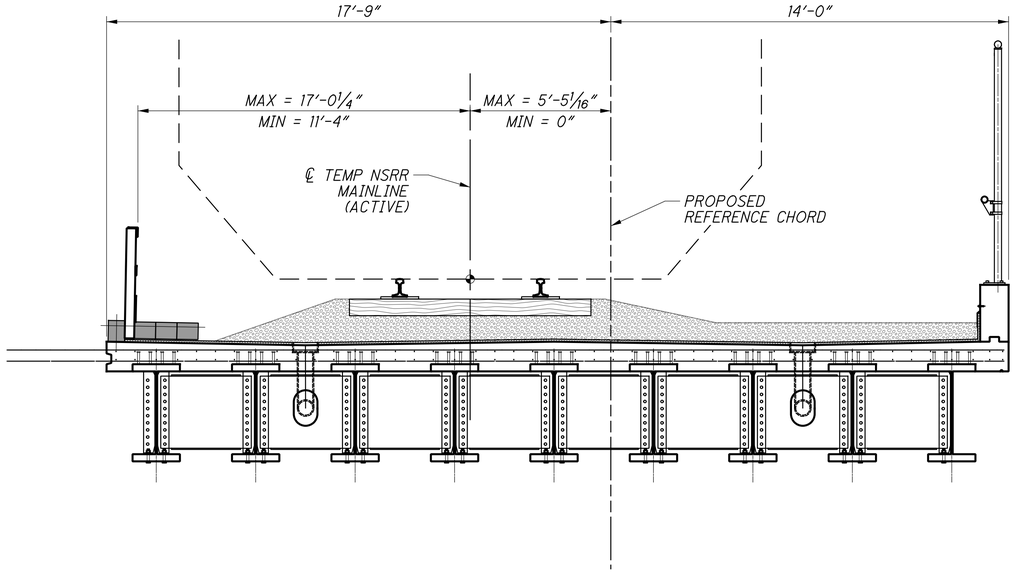
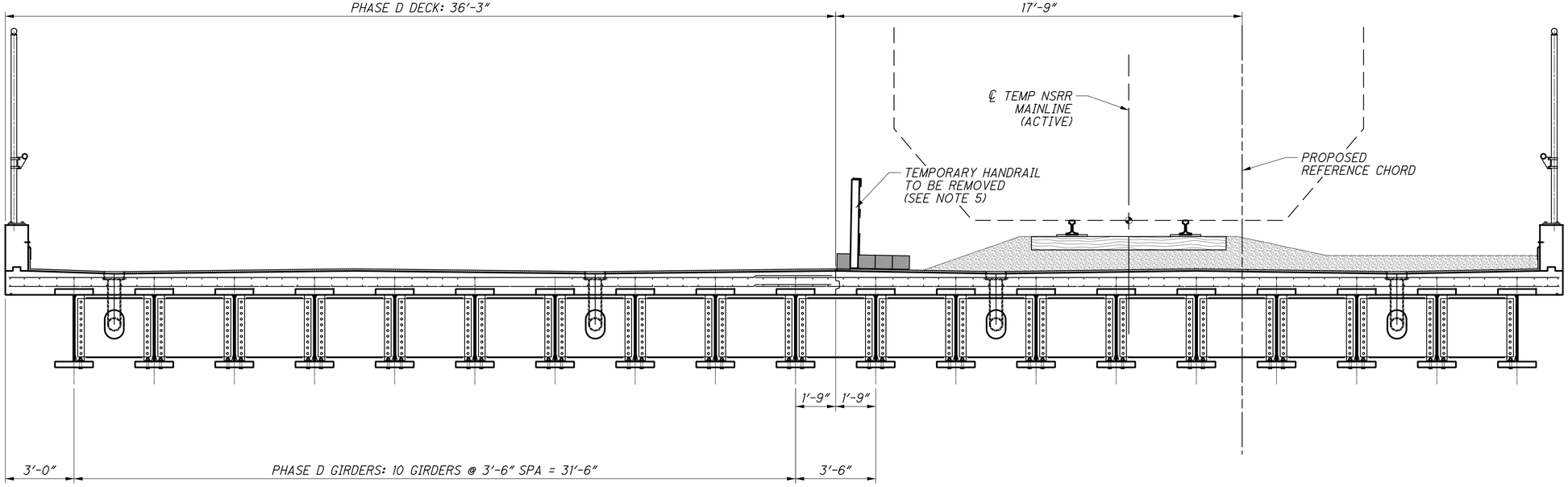




PHASE C (WEST REMOVAL)

NOTE 1 AND 3



PHASE D (WEST CONSTRUCTION)

NOTE 2 AND 3

NOTES:

1. FOR PHASE C REMOVAL PLAN, SEE SHEET 10/57.
2. FOR PHASE D CONSTRUCTION PLAN, SEE SHEET 11/57.
3. FOR SUGGESTED PHASING NOTES, SEE SHEET 5/57.
4. FOR FINAL TRANSVERSE SECTION DETAILS, INCLUDING DIAPHRAGM ASSEMBLY UNITS, SEE SHEET 42/57.
5. TEMPORARY RAIL AND WALKWAY MAY BE REMOVED AFTER PHASE D DECK IS PLACED. TEMPORARY TIMBER BALLAST RETAINER SHALL REMAIN IN PLACE UNTIL DECK WATERPROOFING AT CONSTRUCTION JOINT IS COMPLETED.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

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EFD	SNH	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

PHASED CONSTRUCTION SECTIONS: PHASES C & D
BRIDGE NO. HAM-562-0026 (INSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

7 / 57

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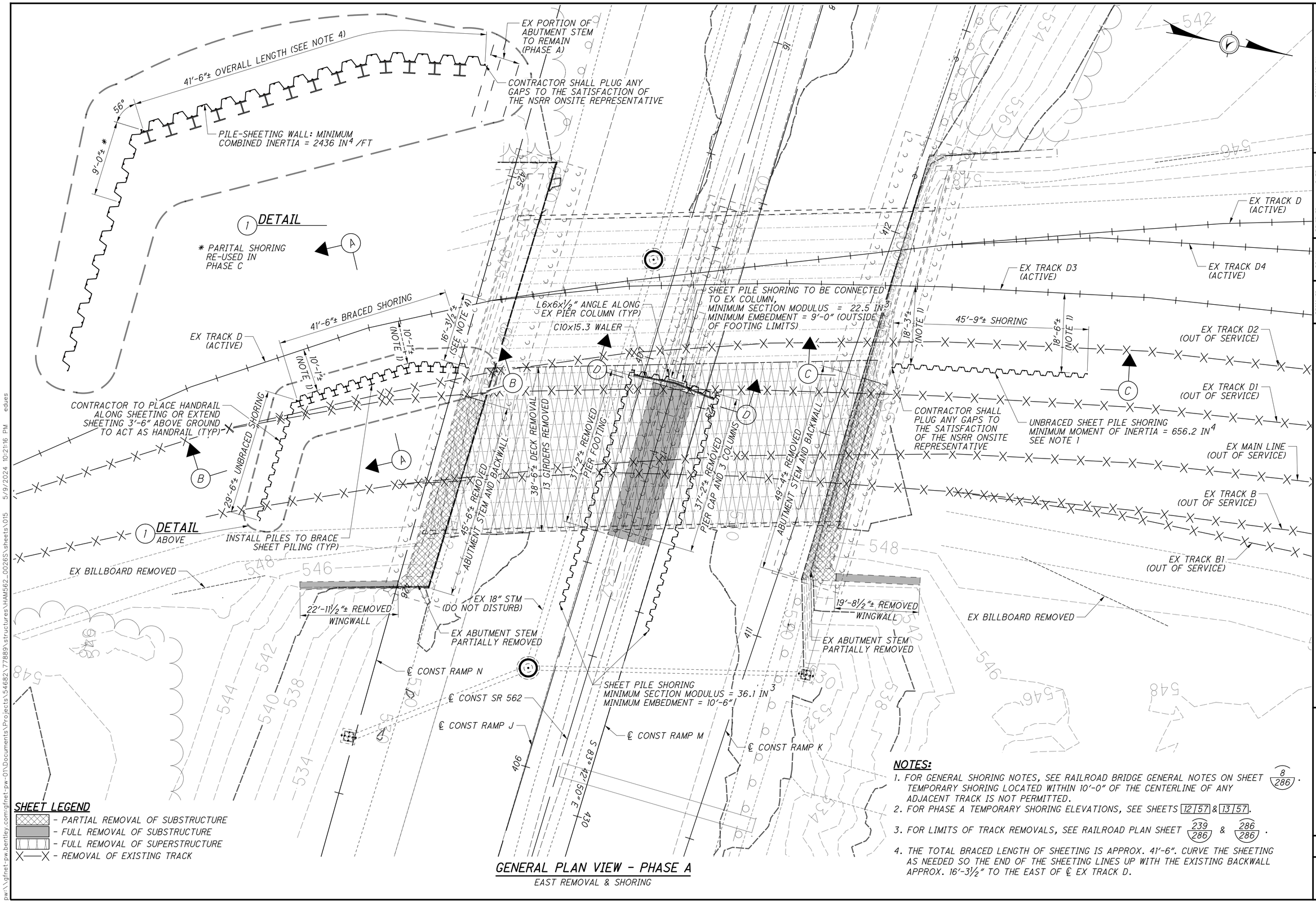

GENERAL PLAN VIEW - PHASE A

EAST REMOVAL & SHORING

NOTES:

1. FOR GENERAL SHORING NOTES, SEE RAILROAD BRIDGE GENERAL NOTES ON SHEET 8/286. TEMPORARY SHORING LOCATED WITHIN 10'-0" OF THE CENTERLINE OF ANY ADJACENT TRACK IS NOT PERMITTED.
2. FOR PHASE A TEMPORARY SHORING ELEVATIONS, SEE SHEETS 12/57 & 13/57.
3. FOR LIMITS OF TRACK REMOVALS, SEE RAILROAD PLAN SHEET 239/286 & 286/286.
4. THE TOTAL BRACED LENGTH OF SHEETING IS APPROX. 41'-6". CURVE THE SHEETING AS NEEDED SO THE END OF THE SHEETING LINES UP WITH THE EXISTING BACKWALL APPROX. 16'-3½" TO THE EAST OF ℄ EX TRACK D.

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
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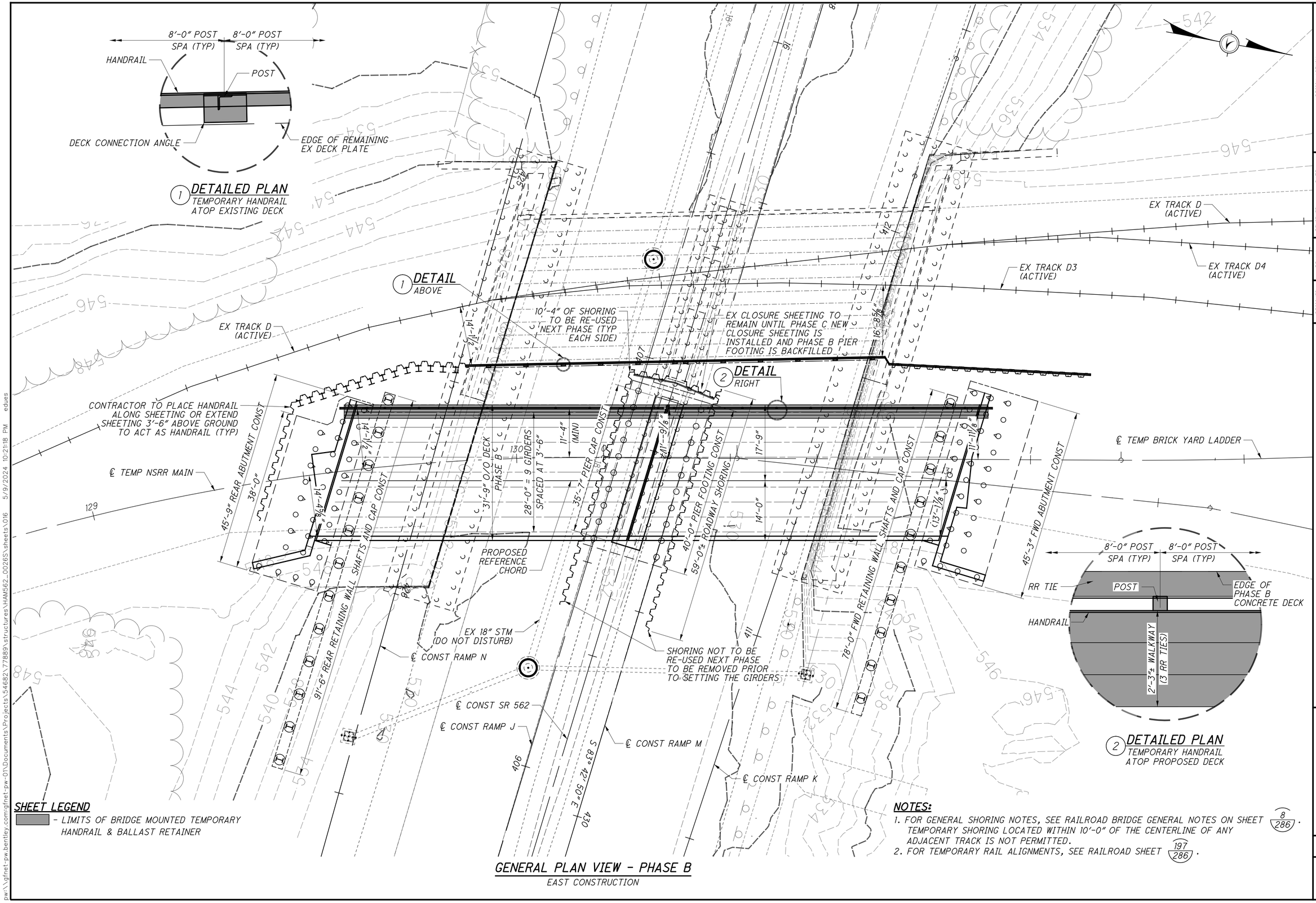
EFD	SNH	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

PHASE A PLAN VIEW
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

8 / 57

28/286



SHEET LEGEND

▭ – LIMITS OF BRIDGE MOUNTED TEMPORARY HANDRAIL & BALLAST RETAINER

NOTES:

1. FOR GENERAL SHORING NOTES, SEE RAILROAD BRIDGE GENERAL NOTES ON SHEET 8/286. TEMPORARY SHORING LOCATED WITHIN 10'-0" OF THE CENTERLINE OF ANY ADJACENT TRACK IS NOT PERMITTED.
2. FOR TEMPORARY RAIL ALIGNMENTS, SEE RAILROAD SHEET 197/286.

GENERAL PLAN VIEW – PHASE B

EAST CONSTRUCTION

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	SNH	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

PHASE B PLAN VIEW
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41) CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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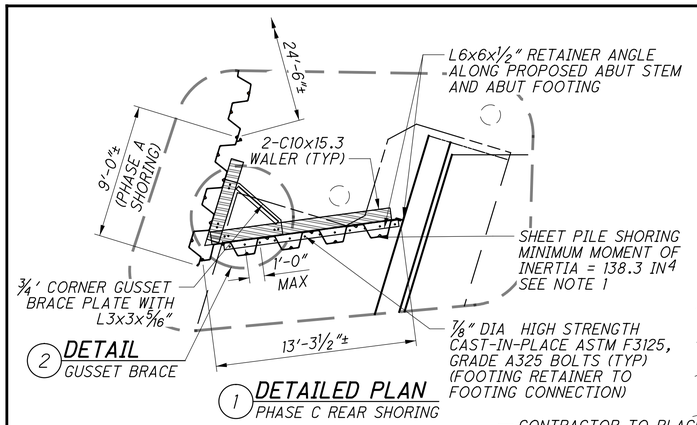
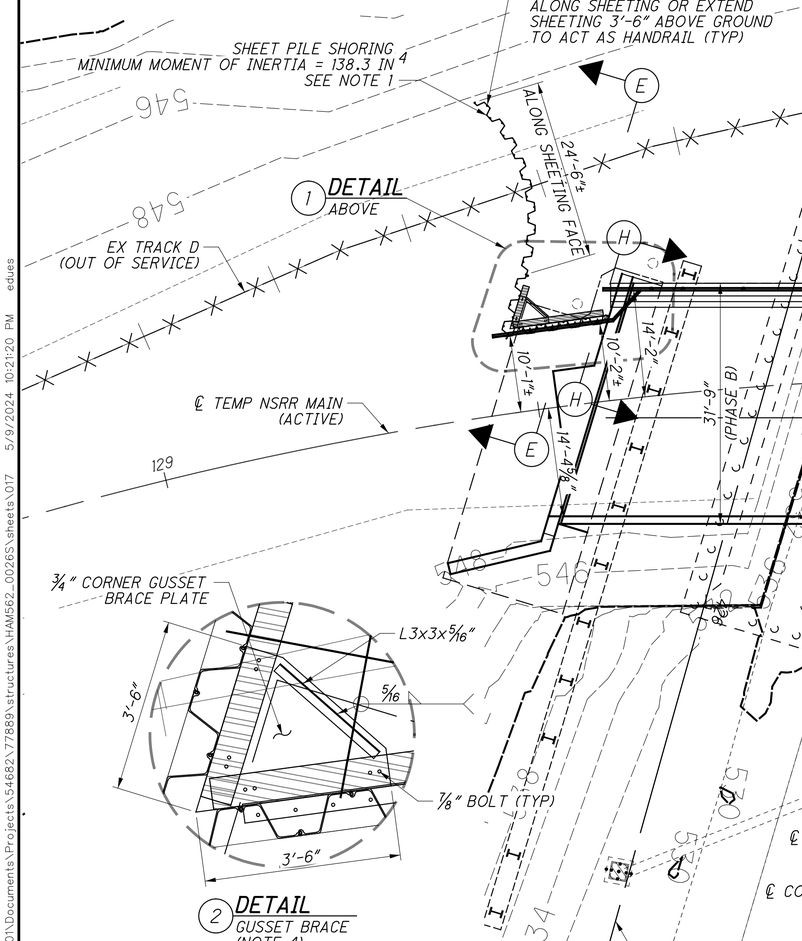
29/286

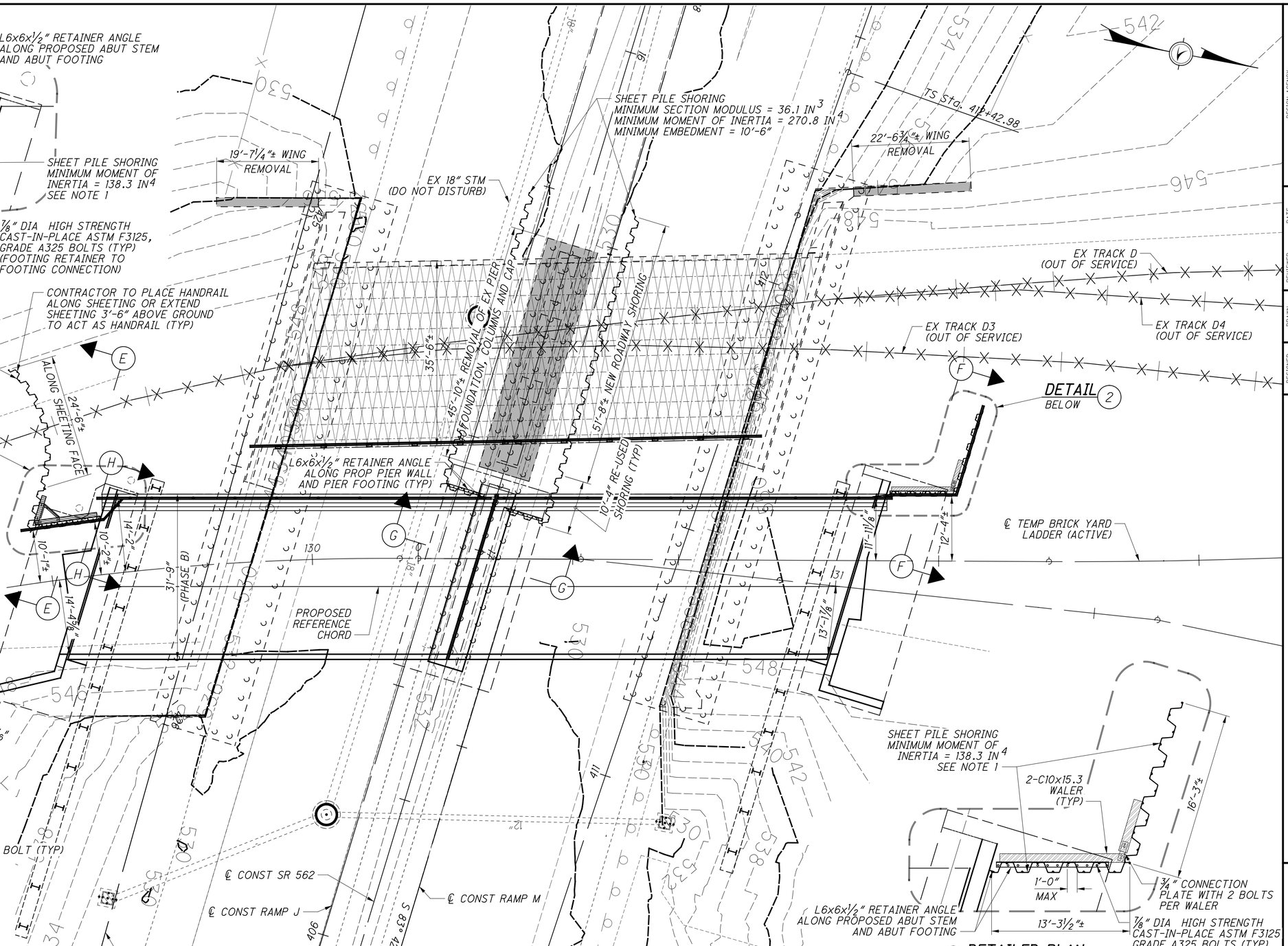


2 **DETAIL**
GUSSET BRACE

1 **DETAILED PLAN**
PHASE C REAR SHORING



2 **DETAIL**
GUSSET BRACE
(NOTE 4)



2 **DETAILED PLAN**
PHASE C FORWARD SHORING

SHEET LEGEND
- ▭ - FULL REMOVAL OF SUPERSTRUCTURE
- ▬ - FULL REMOVAL OF SUBSTRUCTURE
- X—X - REMOVAL OF EXISTING TRACK

GENERAL PLAN VIEW - PHASE C
WEST REMOVAL & SHORING

NOTES:
1. FOR GENERAL SHORING NOTES, SEE RAILROAD BRIDGE GENERAL NOTES ON SHEET 8/286. TEMPORARY SHORING LOCATED WITHIN 10'-0" OF THE CENTERLINE OF ANY ADJACENT TRACK IS NOT PERMITTED.
2. FOR PHASE C TEMPORARY SHORING ELEVATIONS, SEE SHEET 14|57.
3. FOR LIMITS OF TRACK REMOVALS, SEE RAILROAD PLAN SHEET 239/286 & 286/286.
4. FIELD WELD WALERS TO SHEET PILE WITH 5/16" WELD, TOP AND BOTTOM, SHIM AS NEEDED.

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
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COLUMBUS, OHIO 43231

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EFD	SNH	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

PHASE C PLAN VIEW
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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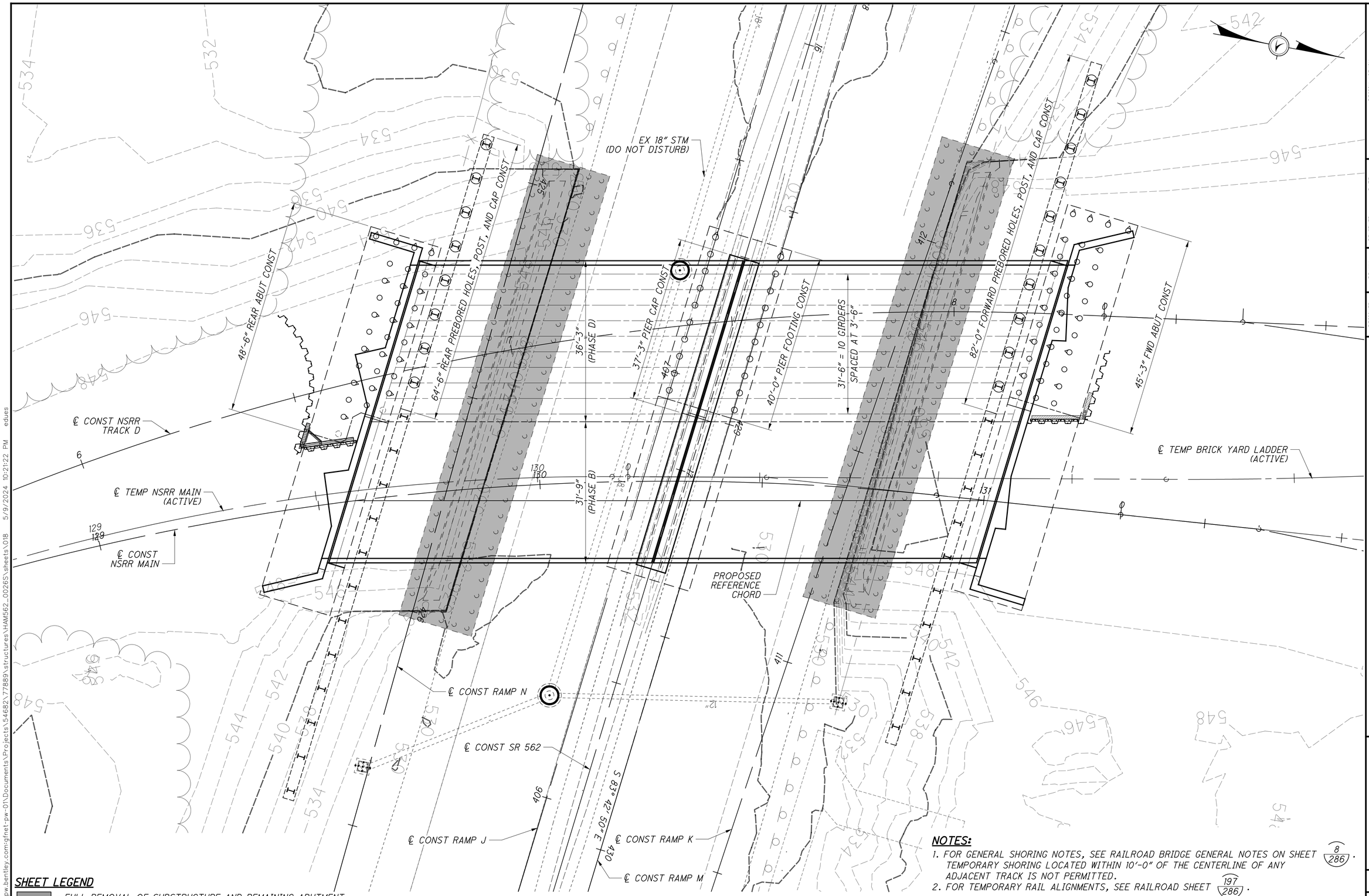

GENERAL PLAN VIEW - PHASE D

WEST CONSTRUCTION

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	SNH	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

PHASE D PLAN VIEW
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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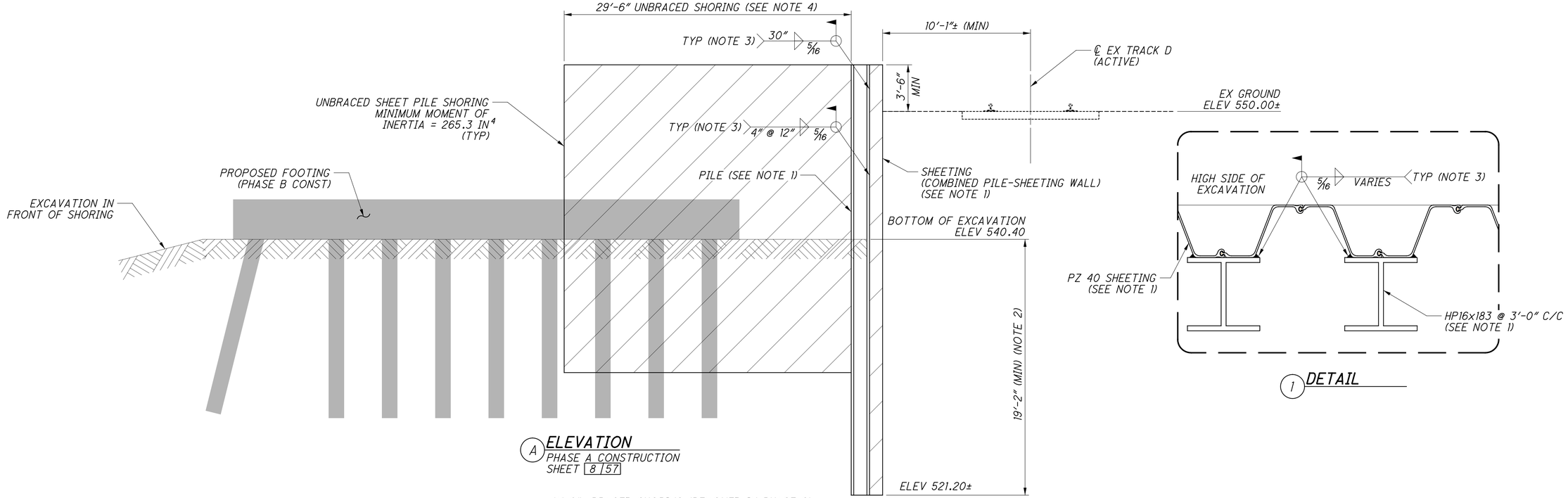

NOTES:

1. THIS IS JUST ONE SHORING SOLUTION. THE COMBINED PILE-SHEETING WALL MUST HAVE A COMBINED MOMENT OF INERTIA OF 2436 IN^4/FT IF ANOTHER VALUE ENGINEERED METHOD IS PROPOSED. A PILE MUST BE INSTALLED AT EVERY AVAILABLE FLAT PANEL IN THE SHEETING (SPACING NOT TO BE LESS THAN 3 TIMES THE WIDTH OF THE PILE) AS SHOWN IN DETAIL 1, THIS SHEET.
2. TO ENSURE THE SHEETING NEAR THE EXISTING ABUTMENT (WITHIN 7' FROM BACKWALL FACE) DOES NOT INTERFERE WITH THE EXISTING FOOTING, STOP END SHEETING AND PILES AT APPROX ELEV 528.00±. CONTRACTOR TO PROBE FOOTING TO ENSURE SHEETING IS NOT DRIVEN TO REFUSAL.
3. PILE TO BE WELDED TO SHEETING FOR THE TOP 30" PRIOR TO EXCAVATION. FOR THE REMAINING LENGTH OF PILE, STICH WELD 4" INCREMENTS EVERY 12". DO NOT EXCAVATE MORE THAN 4'-0" BELOW FURTHEST WELD EDGE. USE SHIM PLATES AS NEEDED BETWEEN THE HP PILES AND THE SHEETING.
4. THE UNBRACED TEMPORARY SHORING SHALL BE LEFT IN PLACE AND CUT OFF 3'-0" BELOW FINAL GRADE.

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
CTM	CTM	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
VDT		NSRR BR#: BR0018448	

TEMPORARY SHORING - PHASE A REAR ABUTMENT
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

12 / 57

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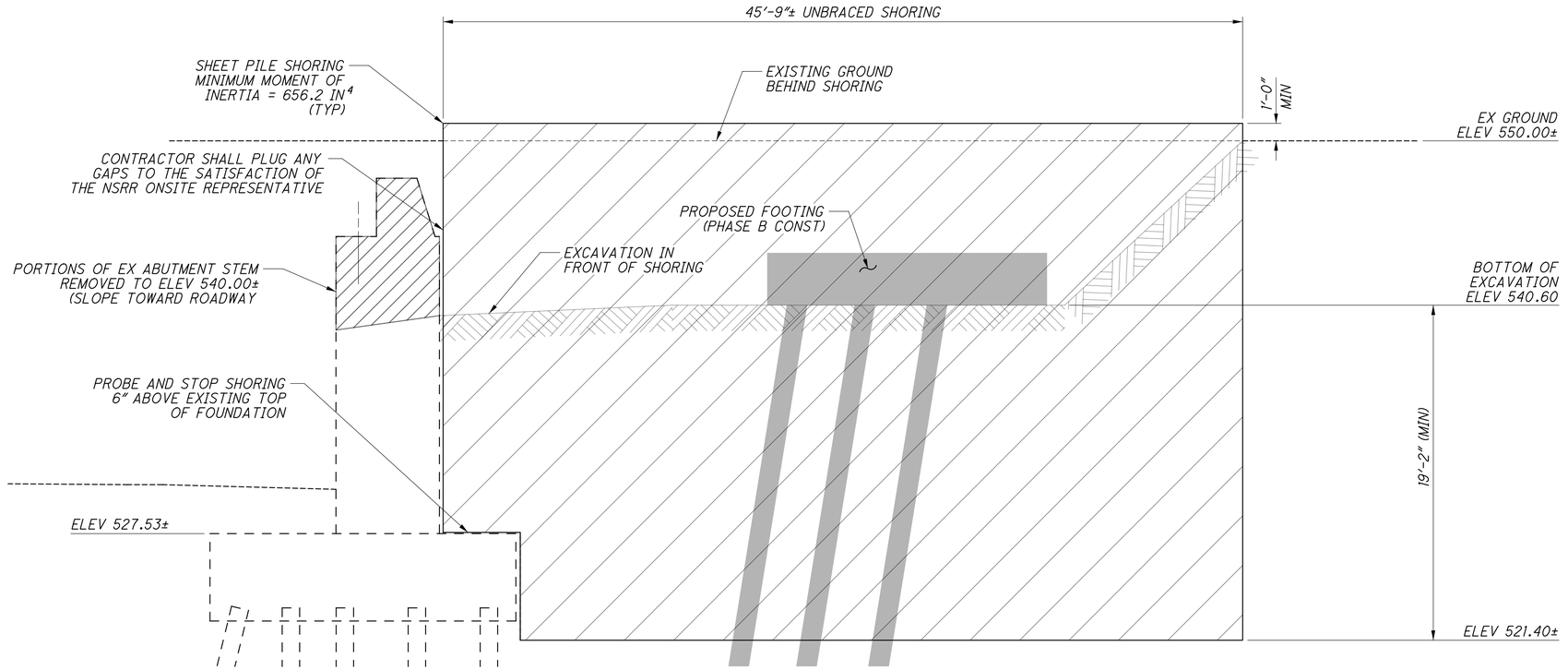
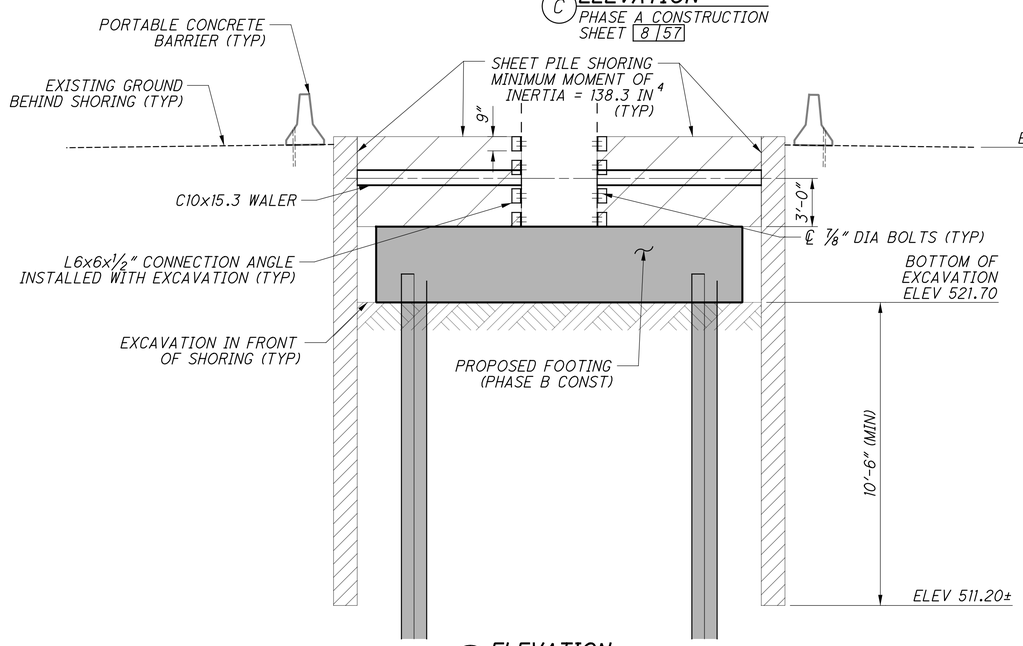


Ⓒ **ELEVATION**
PHASE A CONSTRUCTION
SHEET 8 | 57



Ⓓ **ELEVATION**
PHASE A CONSTRUCTION
SHEET 8 | 57

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
CTM	CTM	CTV	12-19-23
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VDT		NSRR BR#: BR0018448	

TEMPORARY SHORING - PHASE A FORWARD ABUTMENT
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

13 | 57

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286

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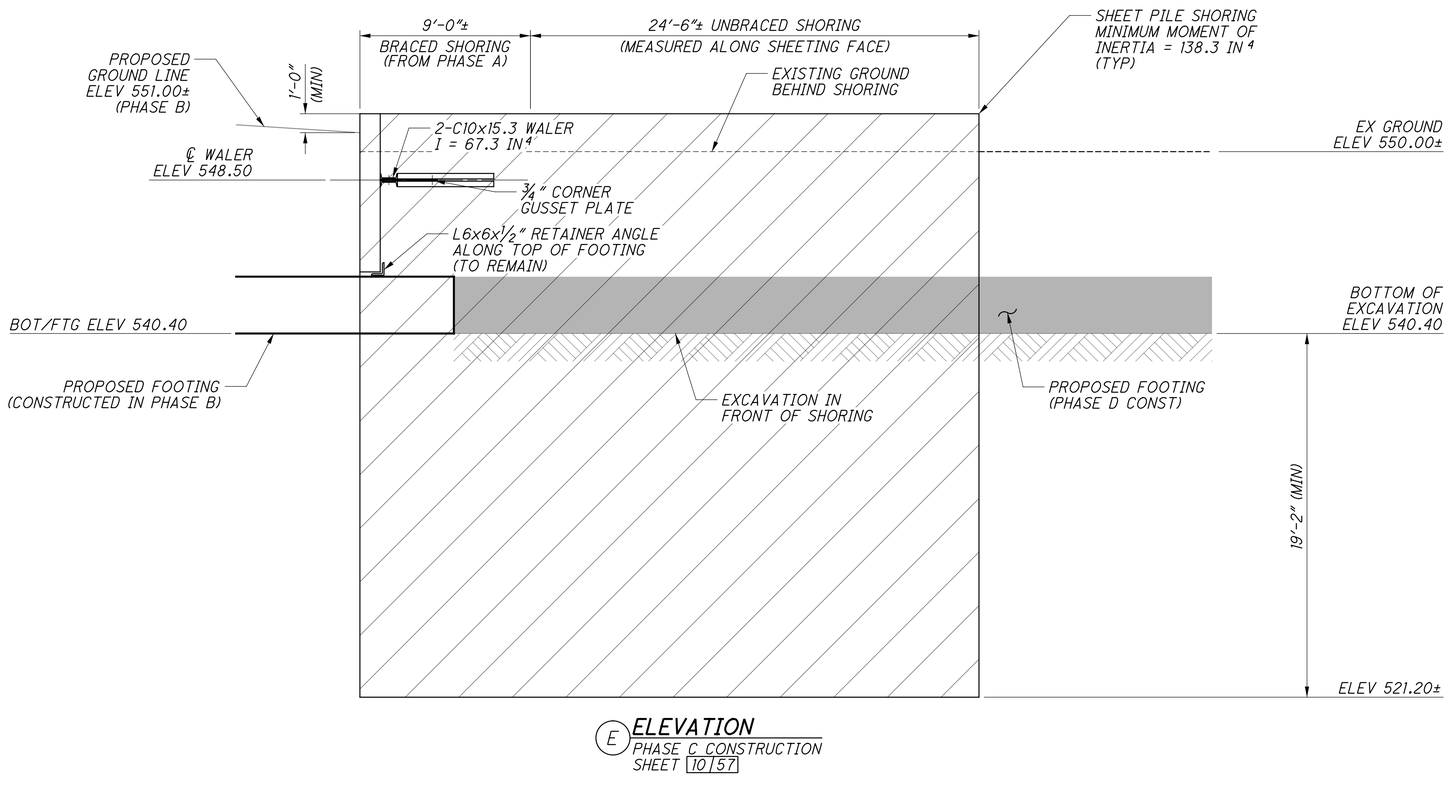
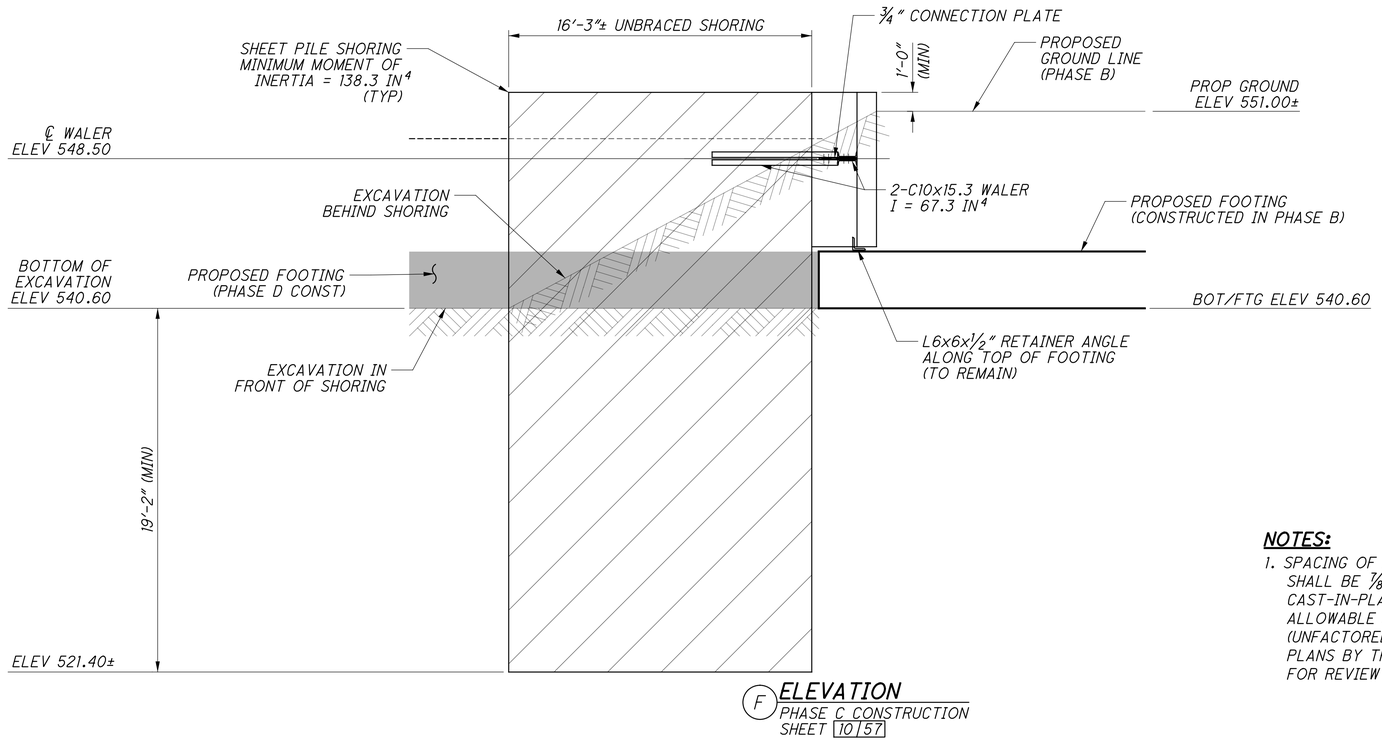


E **ELEVATION**
PHASE C CONSTRUCTION
SHEET 10/57



F **ELEVATION**
PHASE C CONSTRUCTION
SHEET 10/57

NOTES:

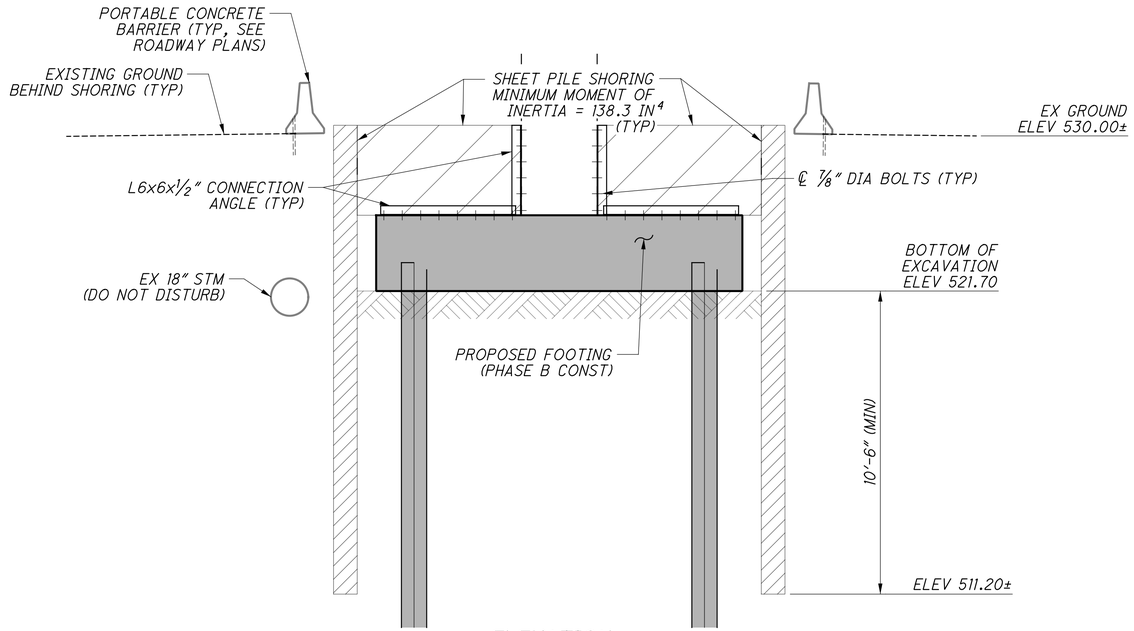
1. SPACING OF ANCHORAGE TO CONCRETE SHALL NOT EXCEED 12". BOLTS SHALL BE ⅞" DIA HIGH STRENGTH ASTM F3125, GRADE A325 BOLTS, CAST-IN-PLACE. ANCHORAGE INSTALLATION SHALL HAVE A PUBLISHED ALLOWABLE SHEAR RESISTANCE GREATER THAN OR EQUAL TO 7 KIPS (UNFACTORED LOADS) IN 4 KSI UNCRACKED CONCRETE. CONNECTION PLANS BY THE CONTRACTOR SHALL BE SUBMITTED TO NSRR AND ODOT FOR REVIEW AND APPROVAL.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

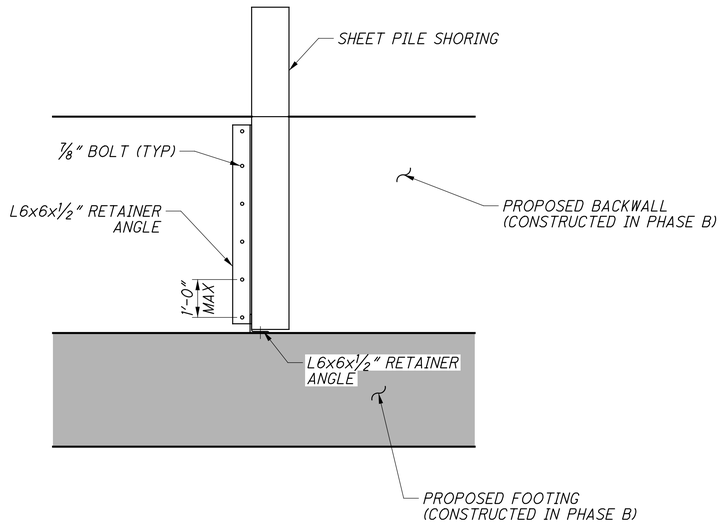
DESIGNED CTM | DRAWN CTM | REVIEWED CTV | DATE 12-19-23
CHECKED VDT | REVISED | ODOT SFN: 3113818 | NSRR BR#: BR0018448

TEMPORARY SHORING - PHASE C
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889



G ELEVATION
PHASE C CONSTRUCTION
SHEET 10|57



H ELEVATION
PHASE C CONSTRUCTION
SHEET 10|57

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
CTM	CTM	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
VDT		NSRR BR#: BR0018448	

TEMPORARY SHORING - PHASE C PIER
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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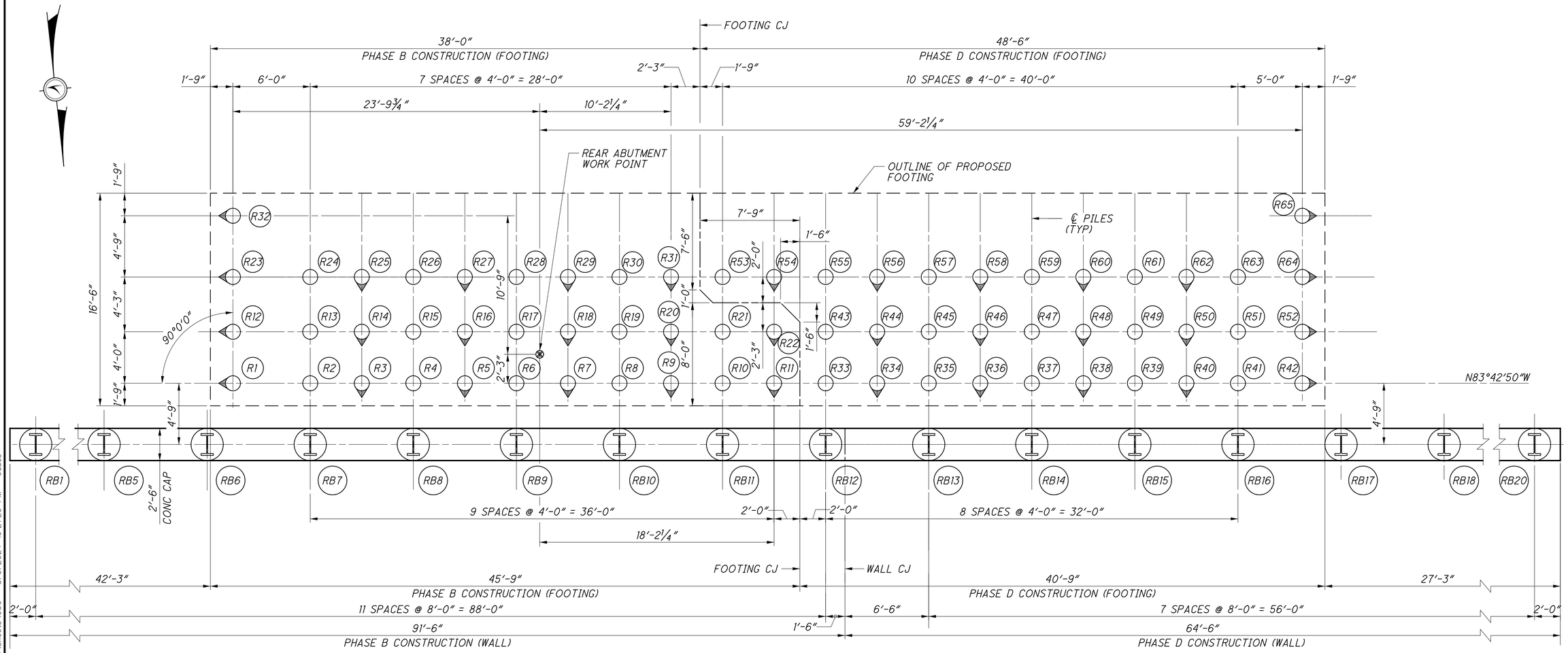
286



FOUNDATION PLAN - REAR ABUTMENT

DRILLED SHAFT AND SOLDIER PILE DATA					
PILE NUMBER	SOLDIER PILE CUTOFF ELEVATION	MINIMUM TIP ELEVATION	ORDER PILE LENGTH (EACH)	TOP DRILLED SHAFT ELEVATION	DRILLED SHAFT LENGTH (EACH)
RB1	531.10	502.00	30'	530.10	29'
RB2	533.20	502.00	32'	532.20	31'
RB3	535.40	502.00	34'	534.40	33'
RB4	537.60	502.00	36'	536.60	35'
RB5	539.80	502.00	38'	538.80	37'
RB6-RB17	541.40	502.00	40'	540.40	39'
RB18	538.20	502.00	37'	537.20	36'
RB19	533.90	502.00	32'	532.90	31'
RB20	529.60	502.00	28'	528.60	27'

PILE DATA				
PHASE	PILE NUMBER	PILE CUTOFF ELEVATION	MINIMUM TIP ELEVATION	ORDER PILE LENGTH (EACH)
B	R1 - R32	541.65	454.40	95'
D	R33 - R65	541.65	454.40	95'

LEGEND:

- (R#) INDICATES PILE NUMBER AT REAR ABUTMENT
- INDICATES 14" DIA CIP CONCRETE PILE BATTERED 1:6 IN THE DIRECTION SHOWN (NOTE 1)
- INDICATES 14" DIA CIP CONCRETE PILE
- (RB#) INDICATES LAGGING WALL DRILLED SHAFT NUMBER AT REAR ABUTMENT
- INDICATES LAGGING WALL DRILLED SHAFT WITH W18x143

NOTES:

1. PILE SPACING IS MEASURED ALONG THE BOTTOM OF FOOTING.
2. FOR PIER PILE LAYOUT PLAN, SEE SHEET 17/57 .
3. FOR FORWARD ABUTMENT PILE LAYOUT PLAN, SEE SHEET 18/57 .
4. FOR REFERENCE CHORD AND OVERALL BRIDGE GEOMETRY, SEE SHEET 2/57 .
5. FOR WORK POINT DEFINITION, SEE SHEET 21/57 .

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

REAR ABUTMENT PILE LAYOUT
BRIDGE NO. HAM-562-0026 (INSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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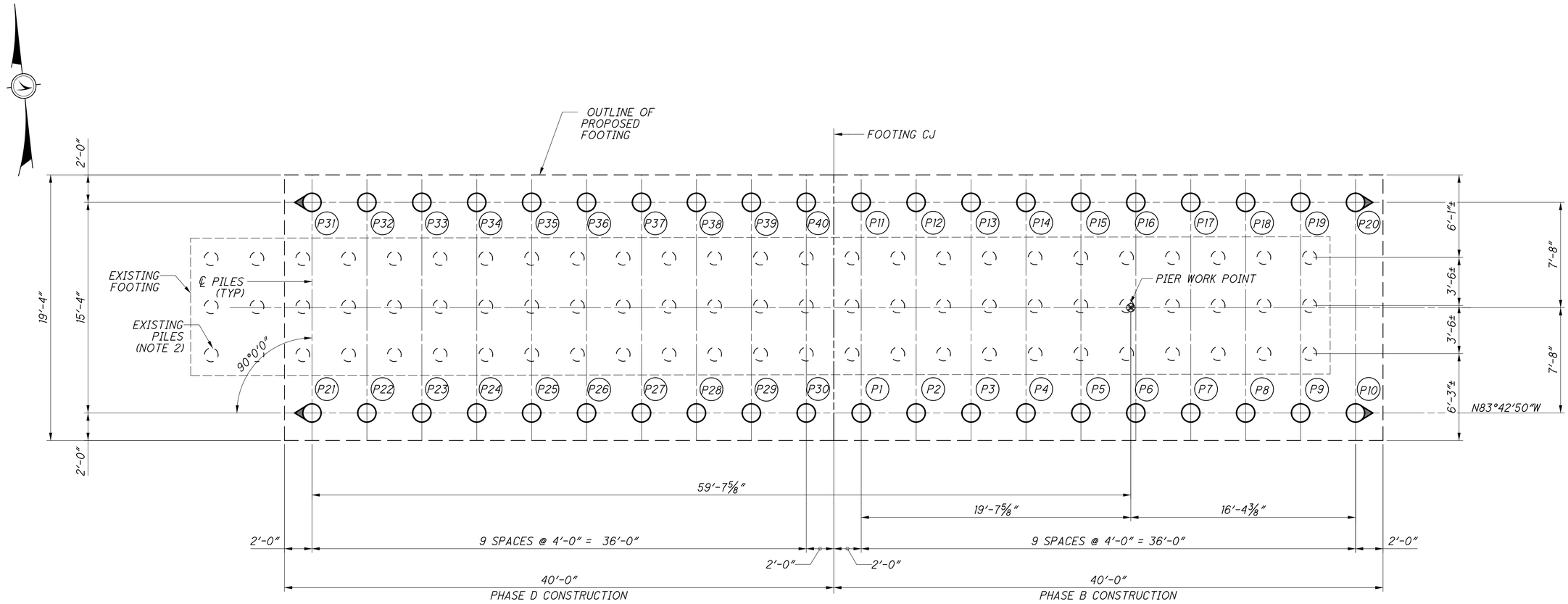
286



FOUNDATION PLAN - PIER

PILE DATA				
PHASE	PILE NUMBER	PILE CUTOFF ELEVATION	MINIMUM TIP ELEVATION	ORDER PILE LENGTH (EACH)
B	P1 - P20	523.20	455.70	75'
D	P21 - P40	523.20	455.70	75'

LEGEND:

- (P#) INDICATES PIER PILE NUMBER
- INDICATES 16" DIA CIP CONCRETE PILE BATTERED 1:4 IN THE DIRECTION SHOWN (NOTE 1)
- INDICATES 16" DIA CIP CONCRETE PILE
- INDICATES EXISTING 12" DIA CONCRETE PILES TO BE CUTOFF AT PROPOSED BOTTOM OF FOOTING (NOTE 2)

NOTES:

1. PILE SPACING IS MEASURED ALONG THE BOTTOM OF FOOTING.
2. EXISTING PILES ARE TO REMAIN BELOW ELEVATION 521.80 (MIN 1.5" BELOW PROPOSED FOOTING REINFORCING). PROPOSED FOUNDATION AND FOOTING HAS BEEN DESIGNED TO SUPPORT THE FULL PIER REACTION WITHOUT CONSIDERATION OF THE EXISTING PILES.
3. FOR REAR ABUTMENT PILE LAYOUT PLAN, SEE SHEET 16/57.
4. FOR FORWARD ABUTMENT PILE LAYOUT PLAN, SEE SHEET 18/57.
5. FOR REFERENCE CHORD AND OVERALL BRIDGE GEOMETRY, SEE SHEET 2/57.
6. FOR WORK POINT DEFINITION, SEE SHEET 37/57.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

PIER PILE LAYOUT
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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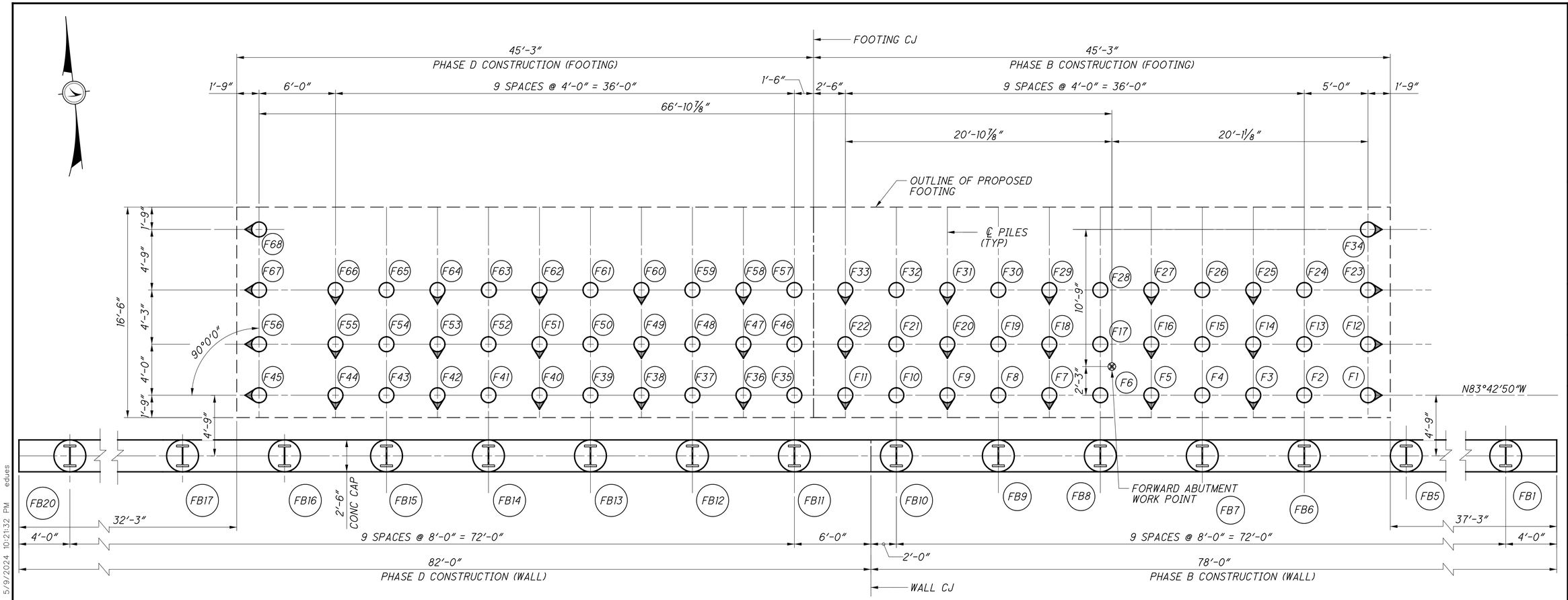

FOUNDATION PLAN - FORWARD ABUTMENT

DRILLED SHAFT AND SOLDIER PILE DATA					
PILE NUMBER	SOLDIER PILE CUTOFF ELEVATION	MINIMUM TIP ELEVATION	ORDER PILE LENGTH (EACH)	TOP DRILLED SHAFT ELEVATION	DRILLED SHAFT LENGTH (EACH)
FB1	531.80	502.00	30'	530.80	29'
FB2	534.30	502.00	33'	533.30	32'
FB3	536.90	502.00	35'	535.90	34'
FB4	539.40	502.00	38'	538.40	37'
FB5-FB16	541.60	502.00	40'	540.60	39'
FB17	540.80	502.00	39'	539.80	38'
FB18	537.40	502.00	36'	536.40	35'
FB19	534.10	502.00	33'	533.10	32'
FB20	530.70	502.00	29'	529.70	28'

PILE DATA				
PHASE	PILE NUMBER	PILE CUTOFF ELEVATION	MINIMUM TIP ELEVATION	ORDER PILE LENGTH (EACH)
B	F1 - F34	541.85	467.60	80'
D	F35 - F68	541.85	467.60	80'

LEGEND:

- (F#) INDICATES PILE NUMBER AT FORWARD ABUTMENT
- INDICATES 14" DIA CIP CONCRETE PILE BATTERED 1:6 IN THE DIRECTION SHOWN (NOTE 1)
- INDICATES 14" DIA CIP CONCRETE PILE
- (FB#) INDICATES LAGGING WALL DRILLED SHAFT NUMBER AT FORWARD ABUTMENT
- INDICATES LAGGING WALL DRILLED SHAFT WITH W18x143

NOTES:

1. PILE SPACING IS MEASURED ALONG THE BOTTOM OF FOOTING.
2. FOR REAR ABUTMENT PILE LAYOUT PLAN, SEE SHEET 16/57.
3. FOR PIER PILE LAYOUT PLAN, SEE SHEET 17/57.
4. FOR REFERENCE CHORD AND OVERALL BRIDGE GEOMETRY, SEE SHEET 2/57.
5. FOR WORK POINT DEFINITION, SEE SHEET 28/57.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

FORWARD ABUTMENT PILE LAYOUT

BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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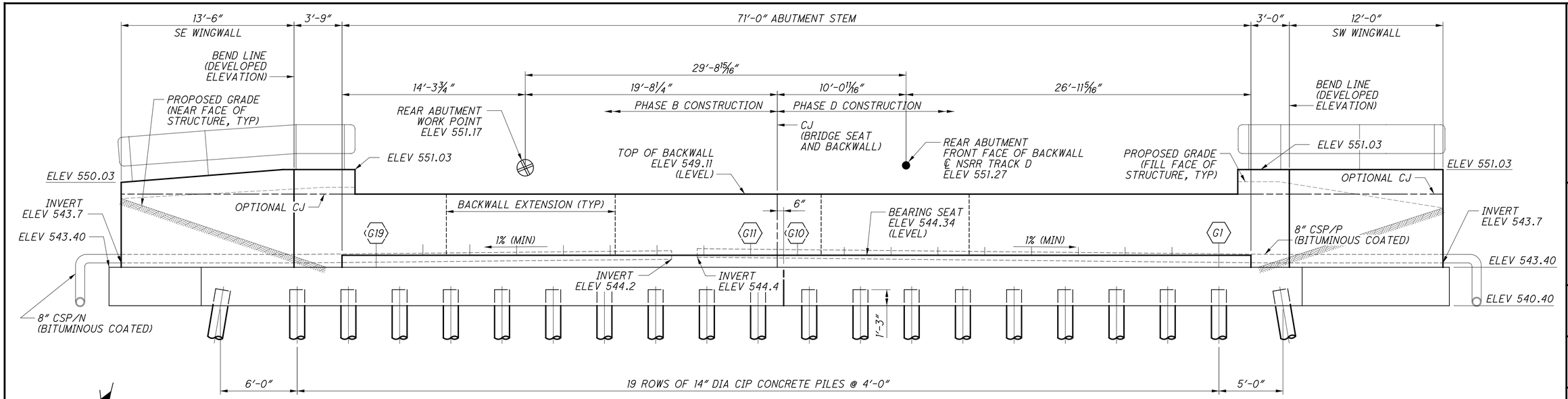
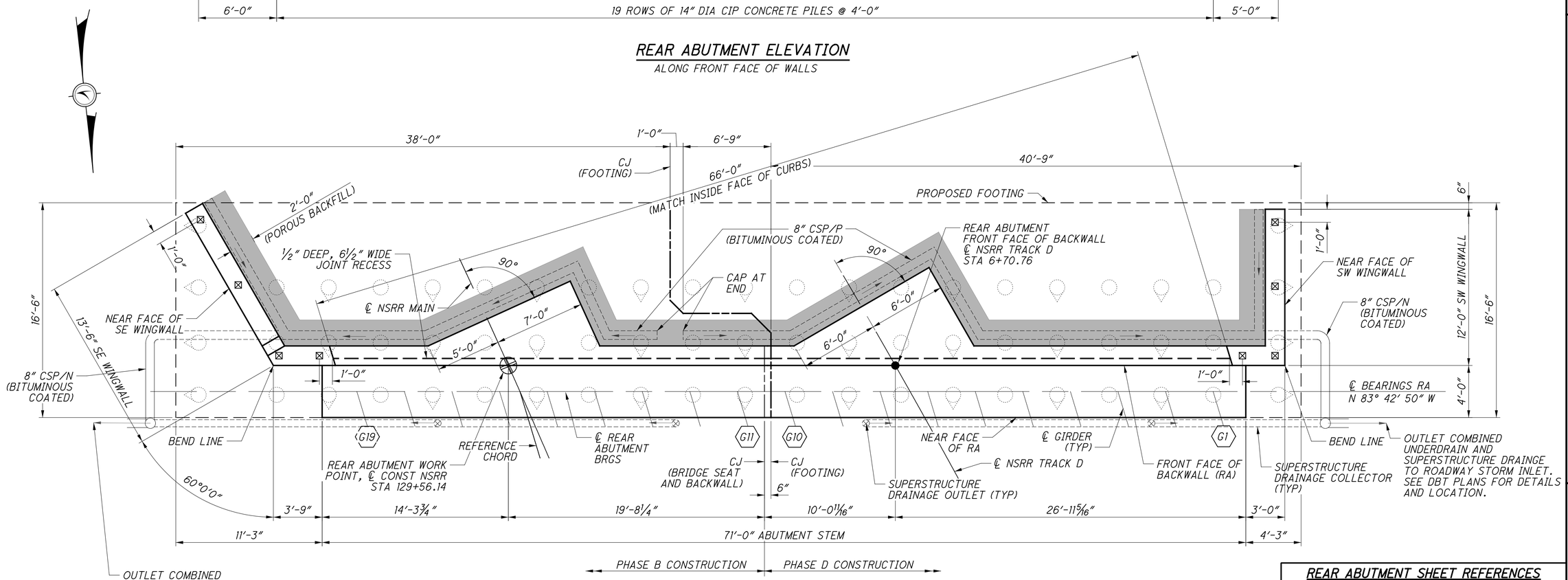


REAR ABUTMENT ELEVATION

ALONG FRONT FACE OF WALLS



REAR ABUTMENT PLAN

NOTES:

1. FOR HANDRAIL DETAILS, SEE SHEET 14/286 . POST LOCATIONS SHOWN ARE SCHEMATIC, FINAL LAYOUT OF POSTS AND HANDRAIL JOINTS SHALL BE SUBMITTED BY THE CONRTACTOR FOR NSRR REVIEW AND APPROVAL.

REAR ABUTMENT SHEET REFERENCES

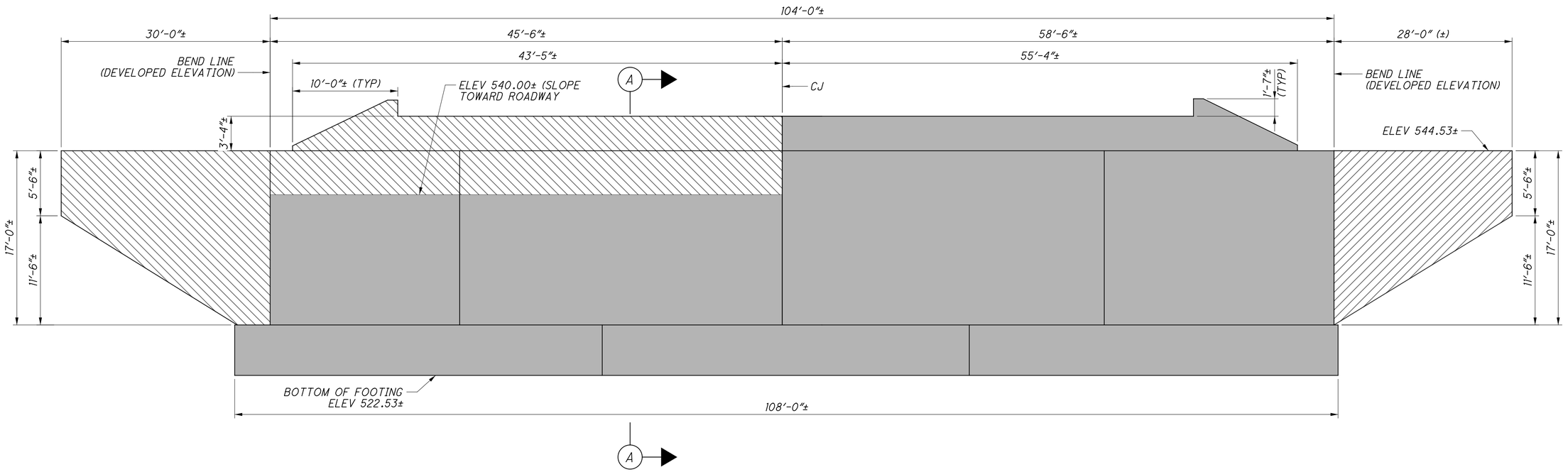
DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

REAR ABUTMENT: PLAN AND ELEVATION

BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

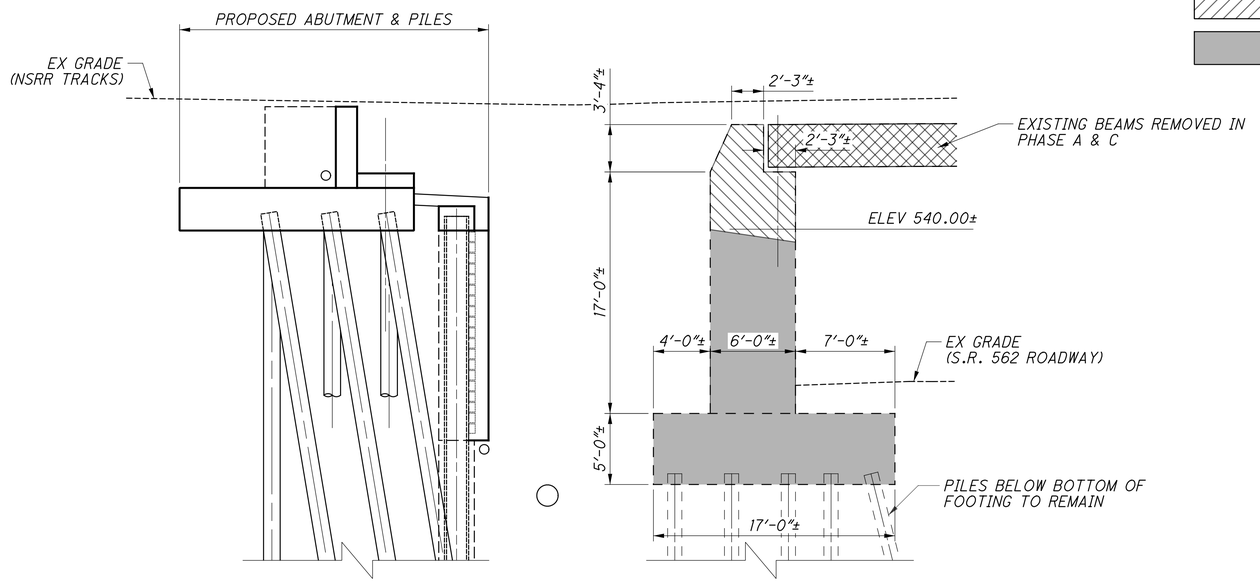


ELEVATION - REAR ABUTMENT PHASE REMOVAL

NOT TO SCALE

LEGEND:

- PHASE A REMOVAL
- PHASE C REMOVAL
- PHASE D REMOVAL



A SECTION

NOTES:

1. FOR COMPLETE PHASED CONSTRUCTION DETAILS, SEE SHEETS 5/57 THROUGH 11/57.

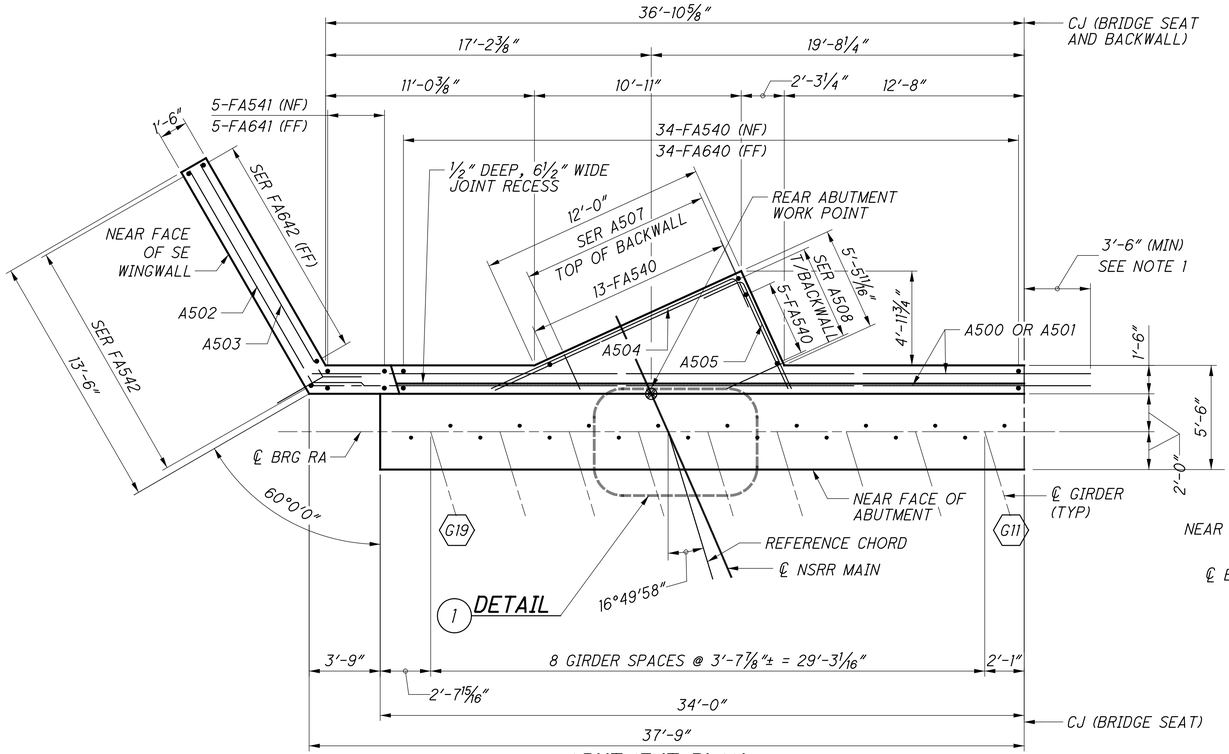
REAR ABUTMENT SHEET REFERENCES

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

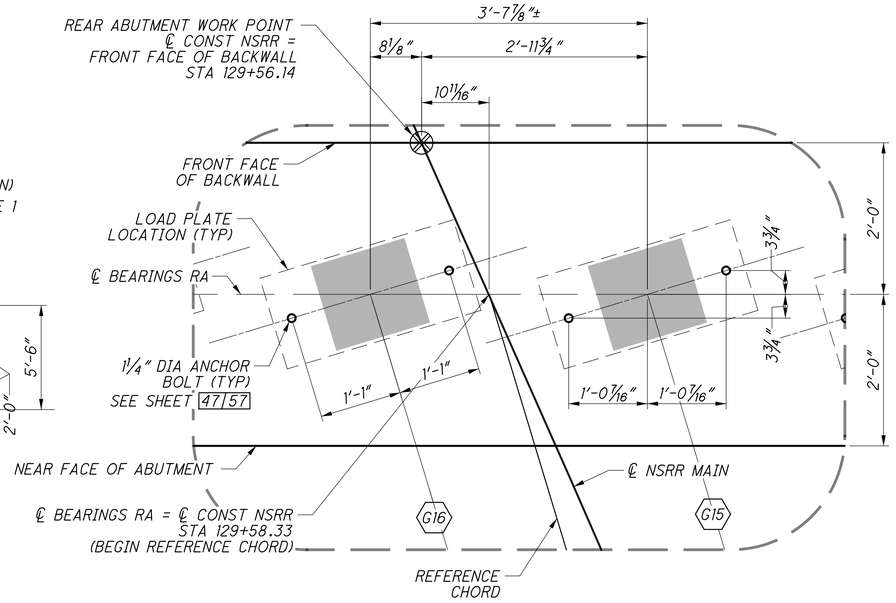
DESIGNED	DRAWN	REVIEWED	DATE
EFD	DKU	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

REAR ABUTMENT: REMOVAL STAGES AND DETAILS
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

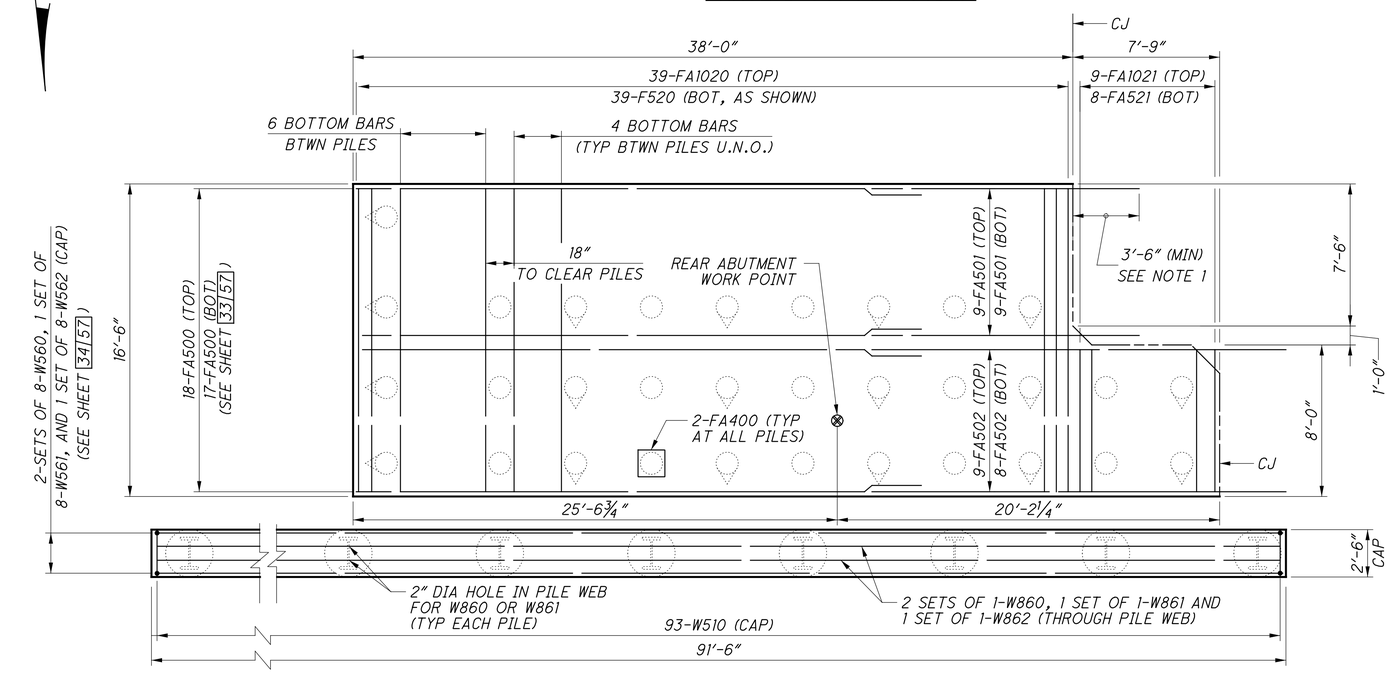
HAM-75-7.85
PID No. 77889



ABUTMENT PLAN
PHASE B CONSTRUCTION



1 **WORK POINT DEFINITION**
INCLUDING ANCHOR BOLT LAYOUT



FOOTING PLAN
PHASE B CONSTRUCTION

NOTES:

1. MECHANICALLY SPLICE REINFORCEMENT THAT CAN NOT ACHEIVE ADEQUATE SPLICE LENGTH DUE TO INTERFERENCE WITH SHORING. COST OF MECHANICAL SPLICING SHALL BE INCIDENTAL TO THE COST OF THE REINFORCING. MECHANICAL SPLICES SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL. 10 MECHANICAL SPLICES SHALL BE ASSUMED IN THE CONSTRUCTION COST AT THIS LOCATION (FOR BIDDING PURPOSES ONLY).
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55/57.

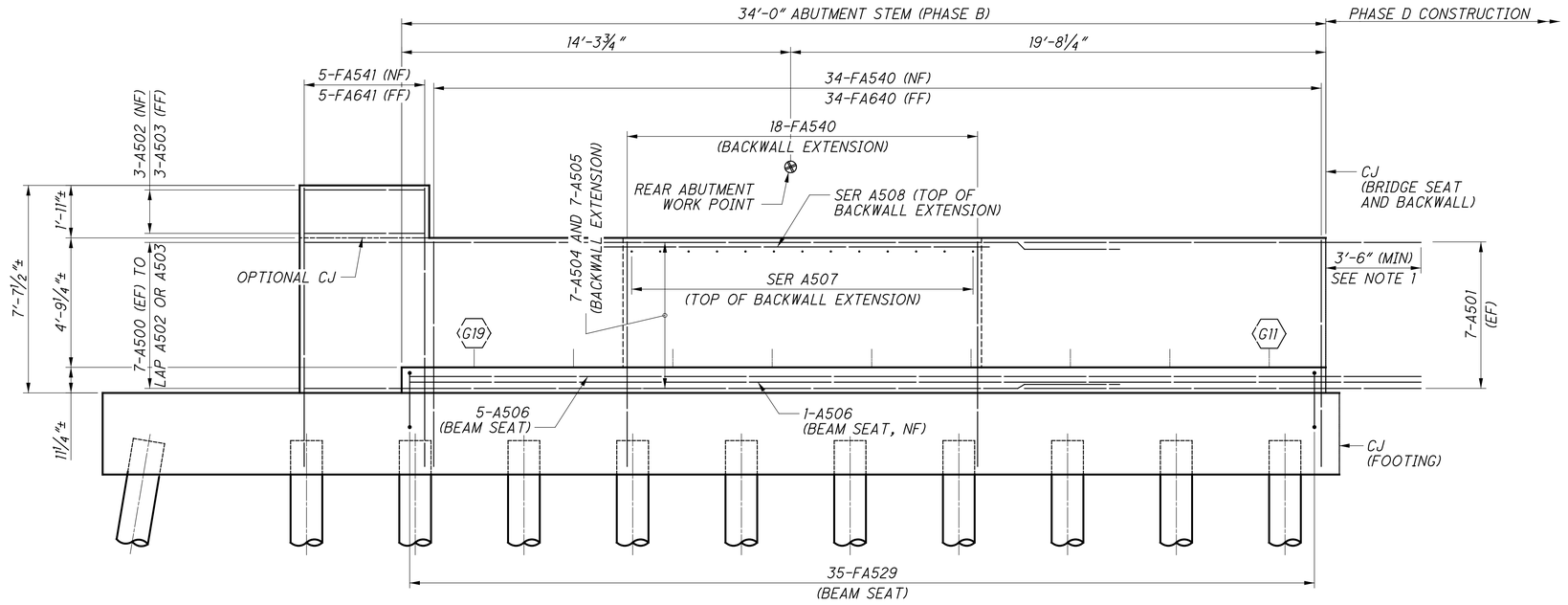
REAR ABUTMENT SHEET REFERENCES

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

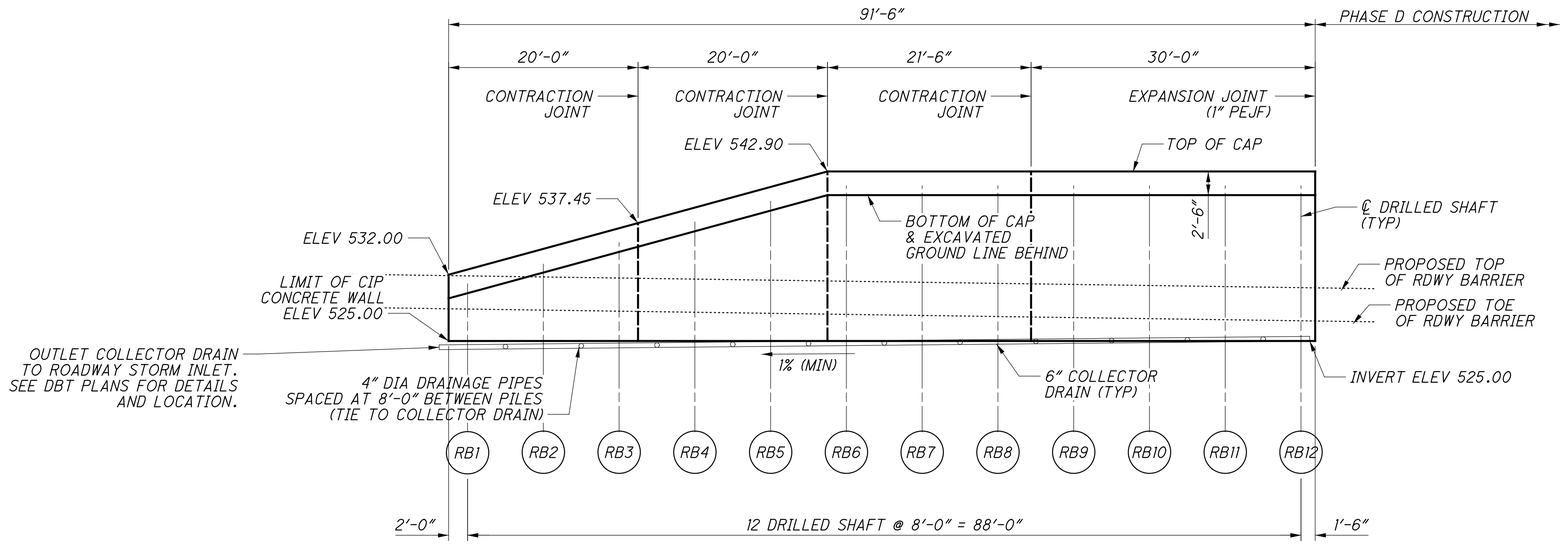
DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

REAR ABUTMENT PLAN AND FOOTING PLAN - PHASE B
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889



REAR ABUTMENT ELEVATION
PHASE B CONSTRUCTION



REAR ABUTMENT
SOLDIER PILE AND LAGGING WALL
PHASE B CONSTRUCTION

LEGEND:

(RB#) INDICATES LAGGING WALL PREBORED W18 PILE NUMBER

NOTES:

1. MECHANICALLY SPLICE REINFORCING THAT CAN NOT ACHIEVE ADEQUATE SPLICE LENGTH DUE TO INTERFERENCE WITH SHORING. COST OF MECHANICAL SPLICING SHALL BE INCIDENTAL TO THE COST OF THE REINFORCING. MECHANICAL SPLICES SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL. 10 MECHANICAL SPLICES SHALL BE ASSUMED IN THE CONSTRUCTION COST (FOR BIDDING PURPOSES ONLY).
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55/57.

REAR ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	16/57
GENERAL PLAN & ELEV:	19/57
EXISTING ABUTMENT REMOVAL:	20/57
ABUTMENT PLANS (PHASE B):	21/57
ABUTMENT ELEVATION (PHASE B):	22/57
ABUTMENT PLANS (PHASE D):	23/57
ABUTMENT ELEVATION (PHASE D):	24/57
WINGWALL ELEVATIONS:	25/57
TYPICAL DETAILS:	33/57 - 34/57
FIXED BEARING:	47/57 - 48/57
REINFORCING LIST:	55/57 - 56/57

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

REAR ABUTMENT ELEVATION - PHASE B
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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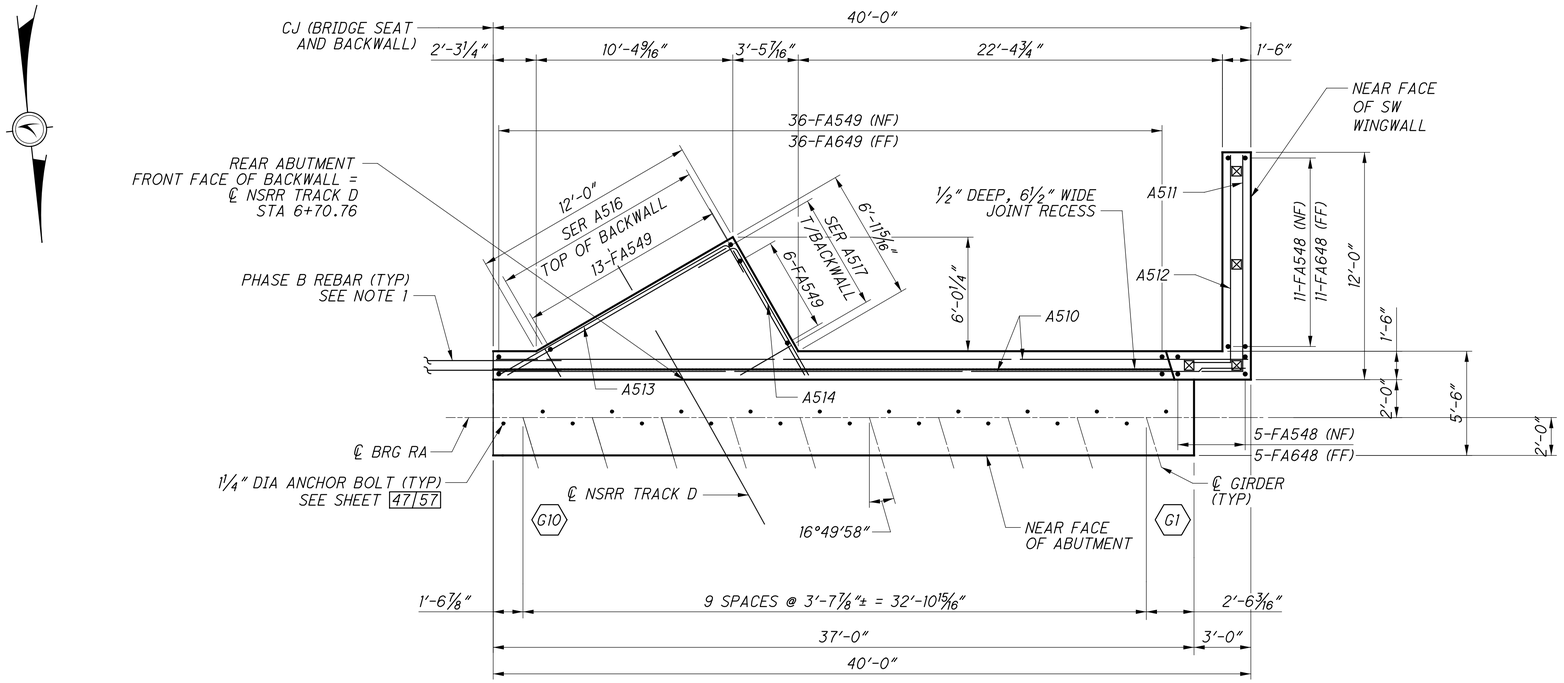
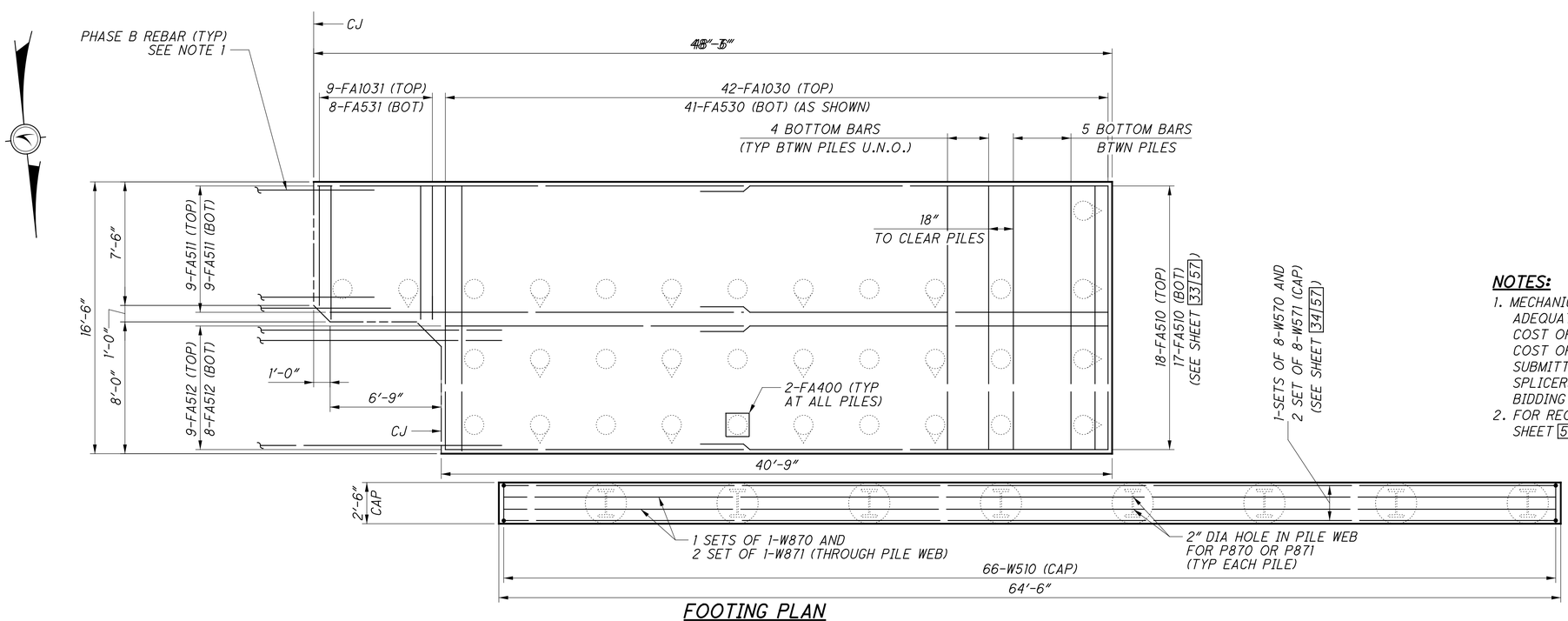


ABUTMENT PLAN
PHASE D CONSTRUCTION



FOOTING PLAN
PHASE D CONSTRUCTION

NOTES:

1. MECHANICALLY SPLICE REINFORCEMENT THAT CAN NOT ACHEIVE ADEQUATE SPLICE LENGTH DUE TO INTERFERENCE WITH SHORING. COST OF MECHANICAL SPLICING SHALL BE INCIDENTAL TO THE COST OF THE REINFORCING. MECHANICAL SPLICERS SHALL BE SUBMITTED TO NSRR FOR REVEIW AND APPROVAL. 10 MECHANICAL SPLICERS SHALL BE ASSUMED IN THE CONSTRUCTION COST (FOR BIDDING PURPOSES ONLY).
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55 57 .

REAR ABUTMENT SHEET REFERENCES

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

REAR ABUTMENT PLAN AND FOOTING PLAN - PHASE D
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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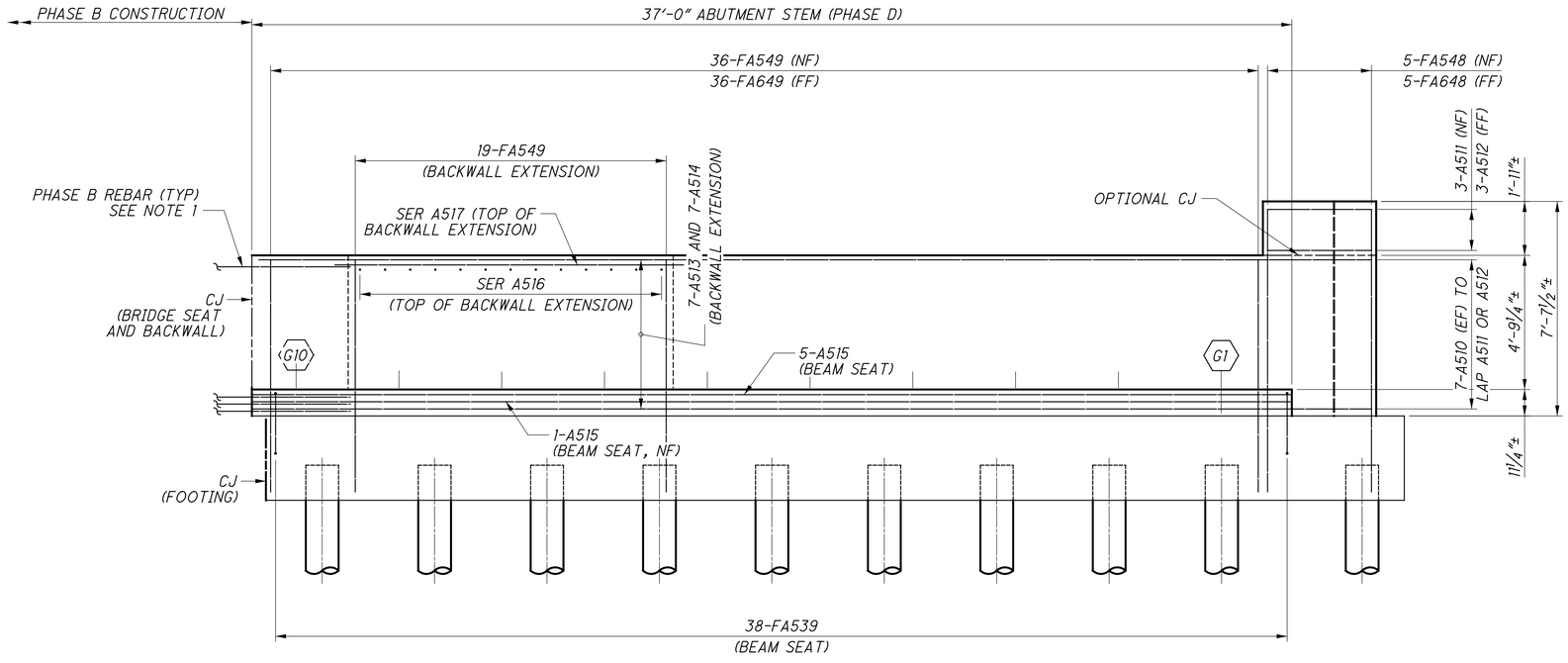
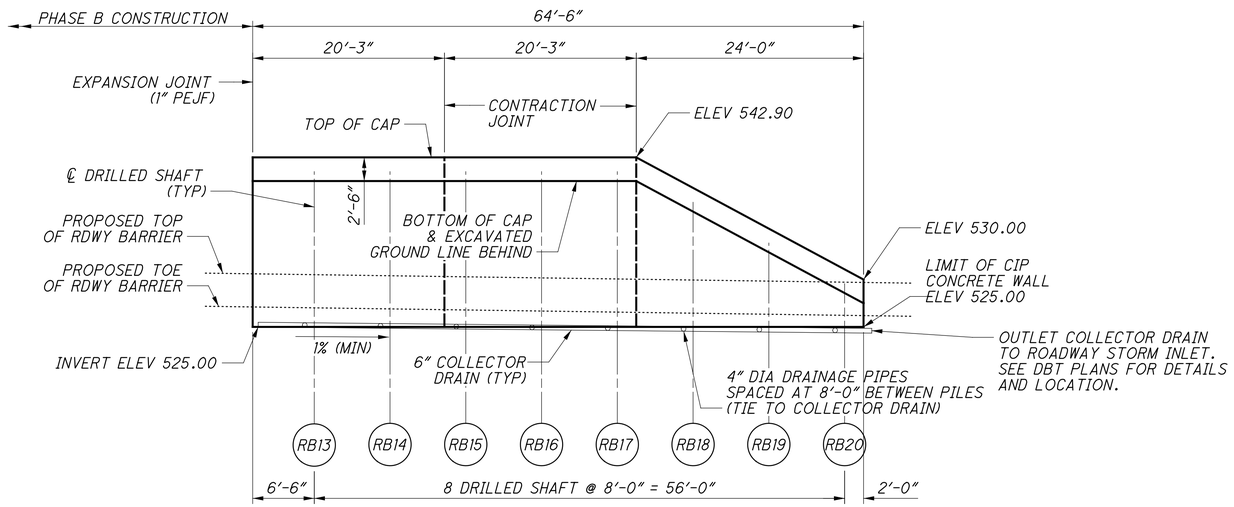


REAR ABUTMENT ELEVATION
PHASE D CONSTRUCTION



REAR ABUTMENT
SOLDIER PILE AND LAGGING WALL
PHASE D CONSTRUCTION

LEGEND:

(RB#) INDICATES LAGGING WALL PREBORED W18 PILE NUMBER

NOTES:

1. MECHANICALLY SPLICE REINFORCEMENT THAT CAN NOT ACHEIVE ADEQUATE SPLICE LENGTH DUE TO INTERFERENCE WITH SHORING. COST OF MECHANICAL SPLICING SHALL BE INCIDENTAL TO THE COST OF THE REINFORCING. MECHANICAL SPLICES SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL. 10 MECHANICAL SPLICES SHALL BE ASSUMED IN THE CONSTRUCTION COST AT THIS LOCATION (FOR BIDDING PURPOSES ONLY).
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55 57 .

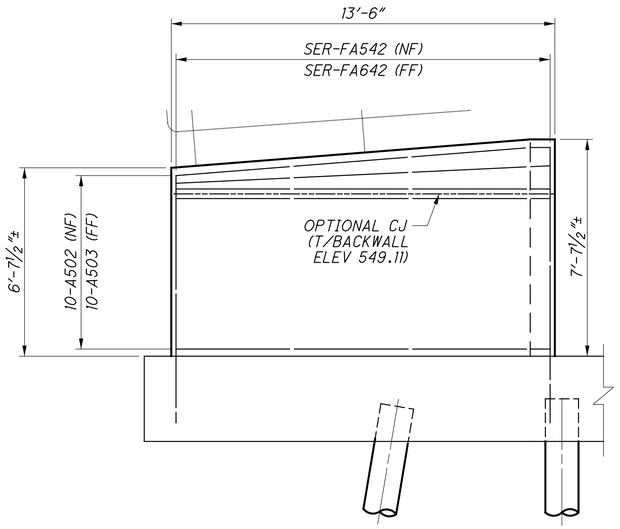
REAR ABUTMENT SHEET REFERENCES

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

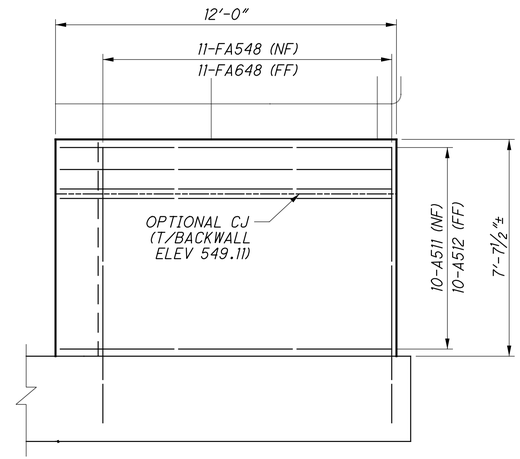
REAR ABUTMENT ELEVATION - PHASE D
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889



SOUTHEAST WINGWALL ELEVATION

PHASE B



SOUTHWEST WINGWALL ELEVATION

PHASE D

NOTES:

1. VERTICALLY/HORIZONTALLY ADJUST THE BARS AS REQUIRED TO CLEAR THE PILES.
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55|57.

REAR ABUTMENT SHEET REFERENCES

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

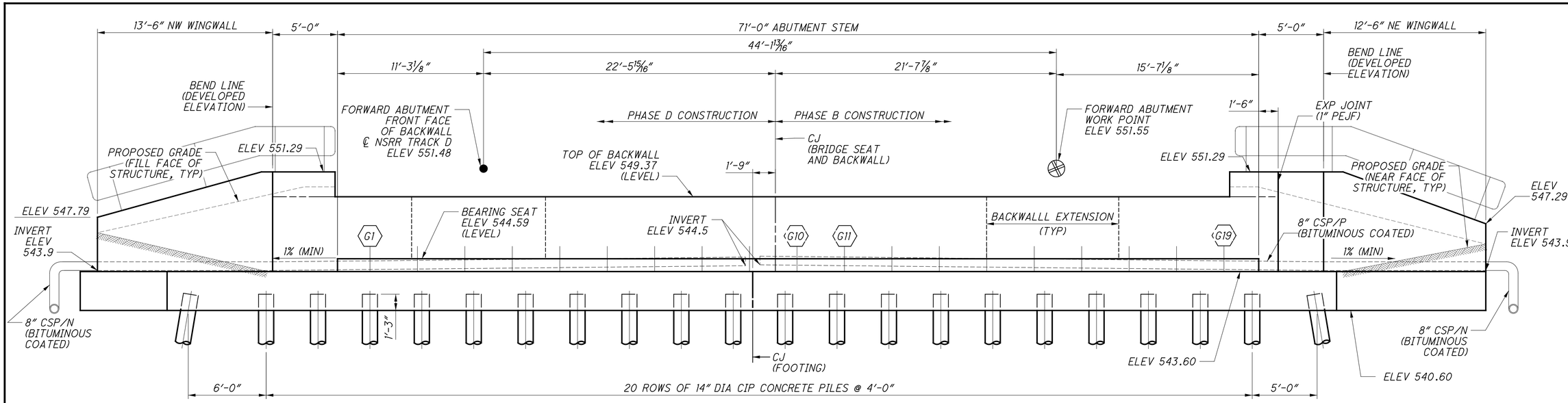
REAR ABUTMENT WINGWALL ELEVATIONS

BRIDGE NO. HAM-562-0026 (INSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

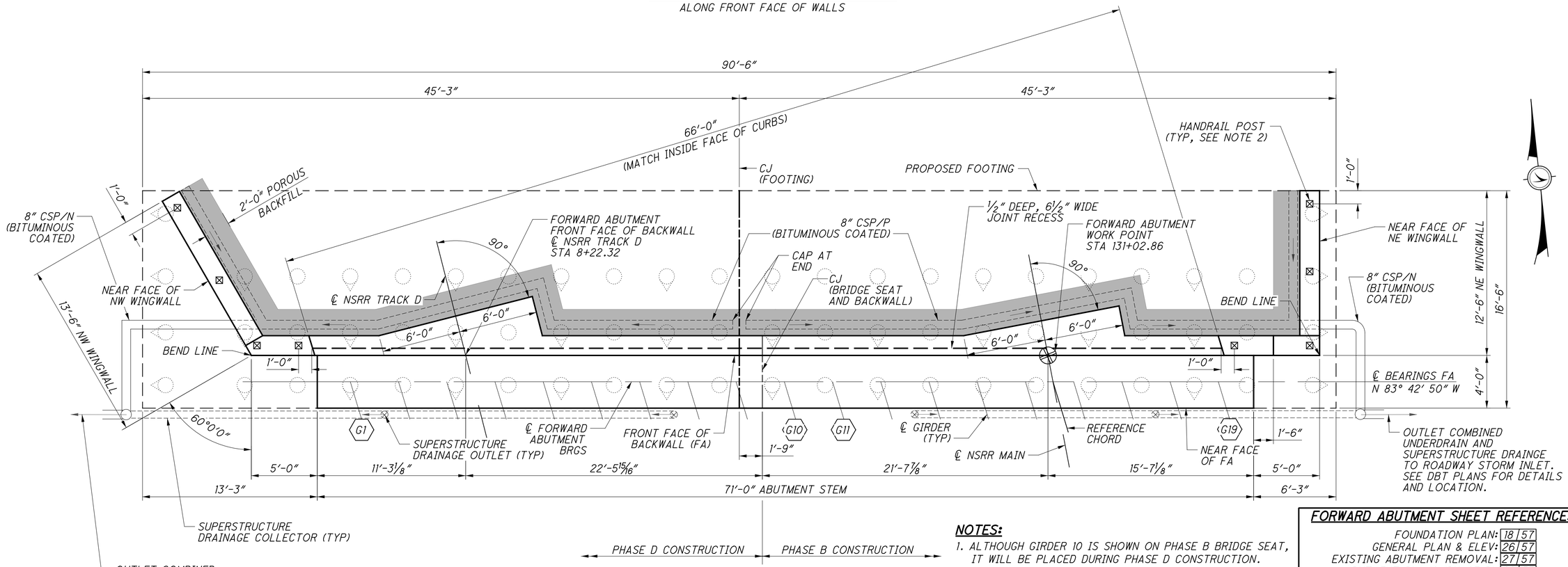
25 / 57

45
286



FORWARD ABUTMENT ELEVATION

ALONG FRONT FACE OF WALLS



FORWARD ABUTMENT PLAN

NOTES:

1. ALTHOUGH GIRDER 10 IS SHOWN ON PHASE B BRIDGE SEAT, IT WILL BE PLACED DURING PHASE D CONSTRUCTION.
2. FOR HANDRAIL DETAILS, SEE SHEET 14 (286) . POST LOCATIONS SHOWN ARE SCHEMATIC, FINAL LAYOUT OF POSTS AND HANDRAIL JOINTS SHALL BE SUBMITTED BY THE CONTRACTOR FOR NSRR REVIEW AND APPROVAL.

FORWARD ABUTMENT SHEET REFERENCES

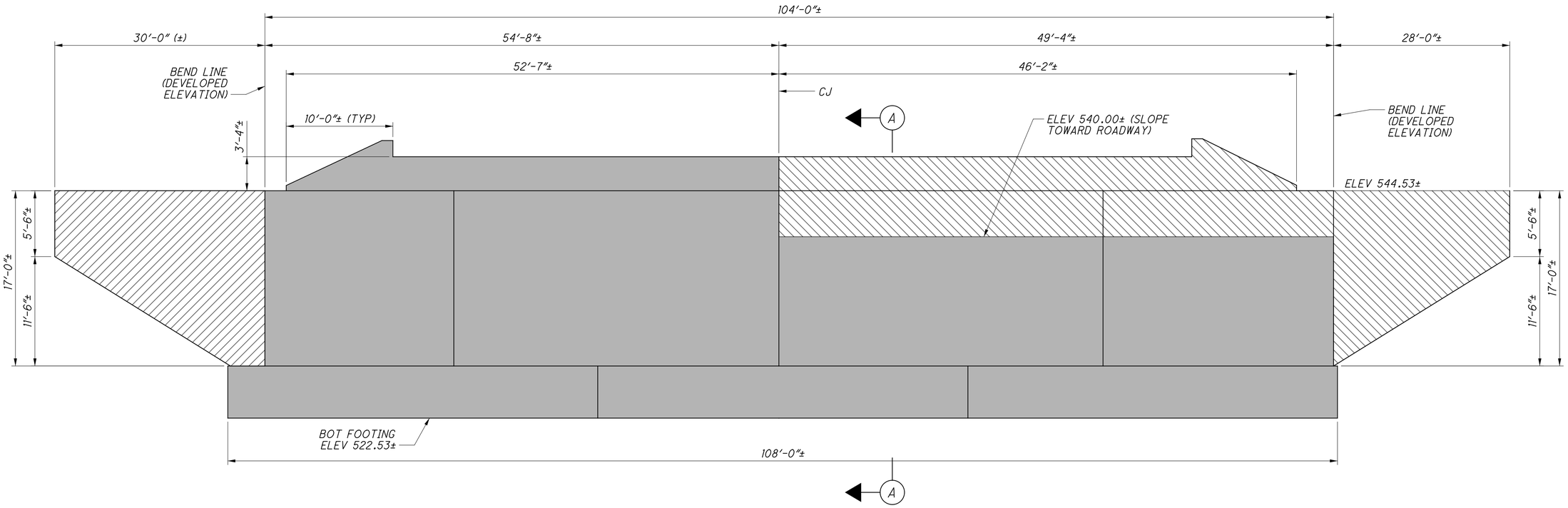
DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

FORWARD ABUTMENT: PLAN AND ELEVATION

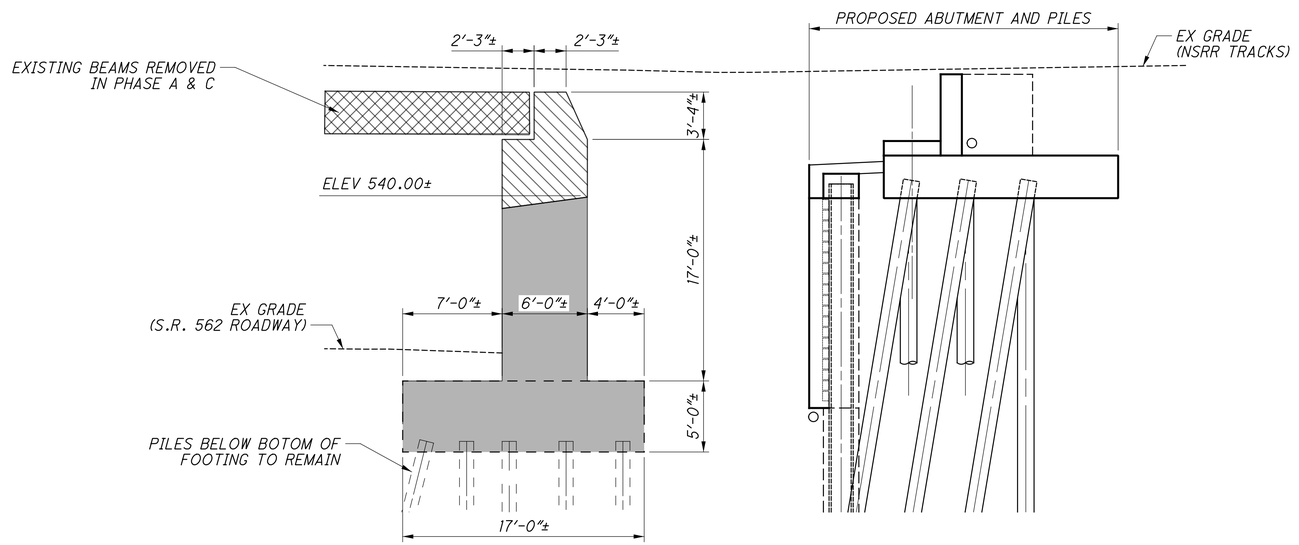
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889



ELEVATION - FORWARD ABUTMENT PHASE REMOVAL

NOT TO SCALE



A SECTION

LEGEND:

- PHASE A REMOVAL
- PHASE C REMOVAL
- PHASE D REMOVAL

NOTES:

1. FOR COMPLETE PHASED CONSTRUCTION DETAILS, SEE SHEETS 5|57 THROUGH 11|57.

FORWARD ABUTMENT SHEET REFERENCES

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	DKU	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

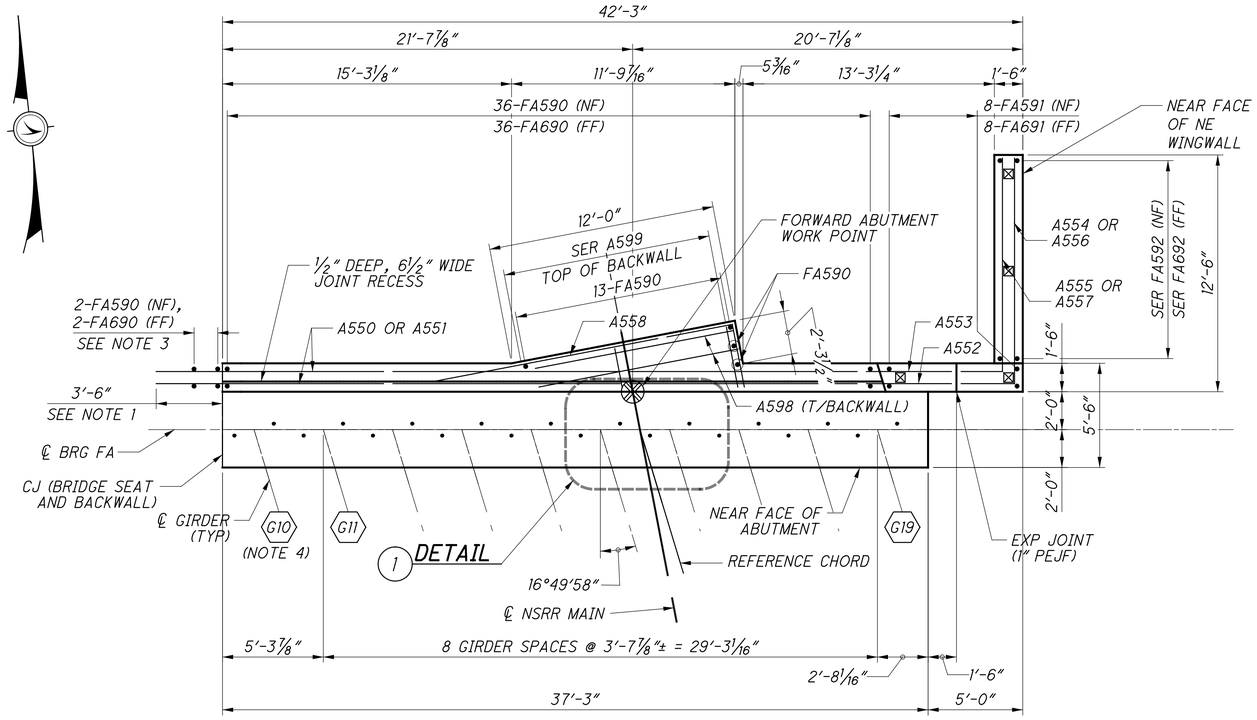
FORWARD ABUTMENT: REMOVAL STAGES AND DETAILS

BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

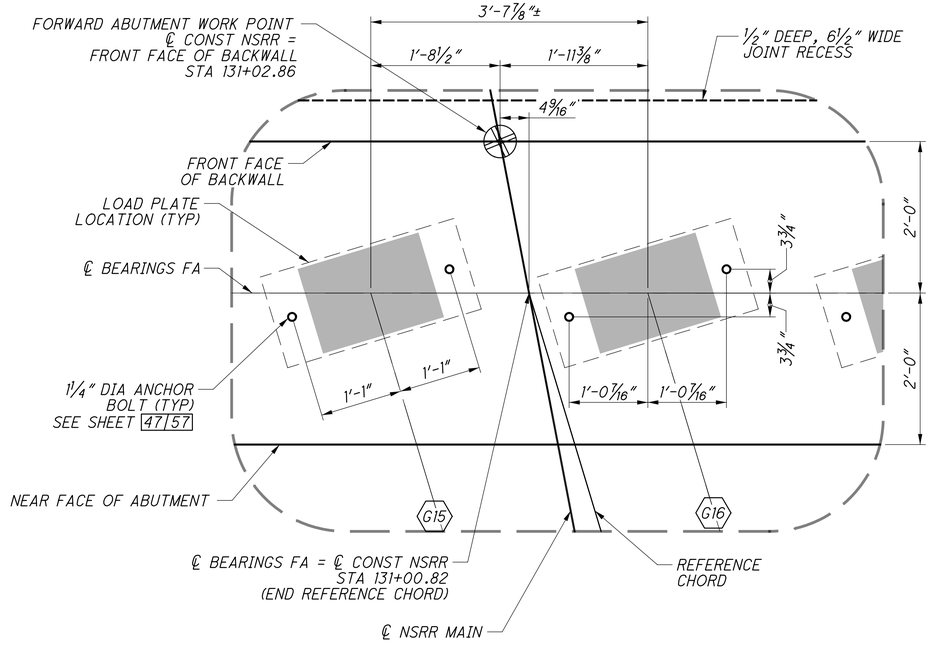
HAM-75-7.85
PID No. 77889

27 / 57

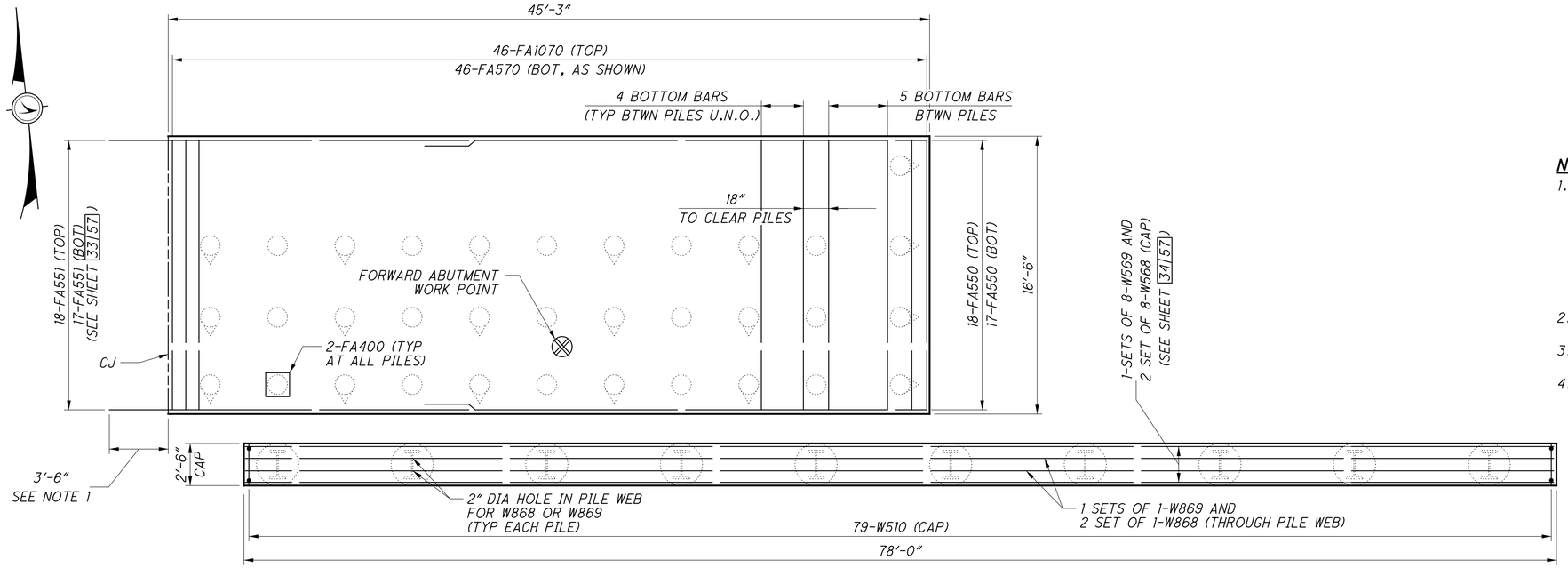
47
286



ABUTMENT PLAN
PHASE B CONSTRUCTION



1 WORK POINT DEFINITION
INCLUDING ANCHOR BOLT LAYOUT



FOOTING PLAN
PHASE B CONSTRUCTION

NOTES:

1. MECHANICALLY SPLICE REINFORCEMENT THAT CAN NOT ACHEIVE ADEQUATE SPLICE LENGTH DUE TO INTERFERENCE WITH SHORING. COST OF MECHANICAL SPLICING SHALL BE INCIDENTAL TO THE COST OF THE REINFORCING. MECHANICAL SPLICERS SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL. 10 MECHANICAL SPLICES SHALL BE ASSUMED IN THE CONSTRUCTION COST AT THIS LOCATION (FOR BIDDING PURPOSES ONLY).
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55|57.
3. PLACE ALL BACKWALL REINFORCEMENT WITH PHASE B ABUTMENT POUR.
4. ALTHOUGH GIRDER 10 IS INSTALLED IN PHASE D, THE ANCHOR BOLTS MUST BE INSTALLED IN PHASE B WHEN BRIDGE SEAT WILL BE POURED.

FORWARD ABUTMENT SHEET REFERENCES

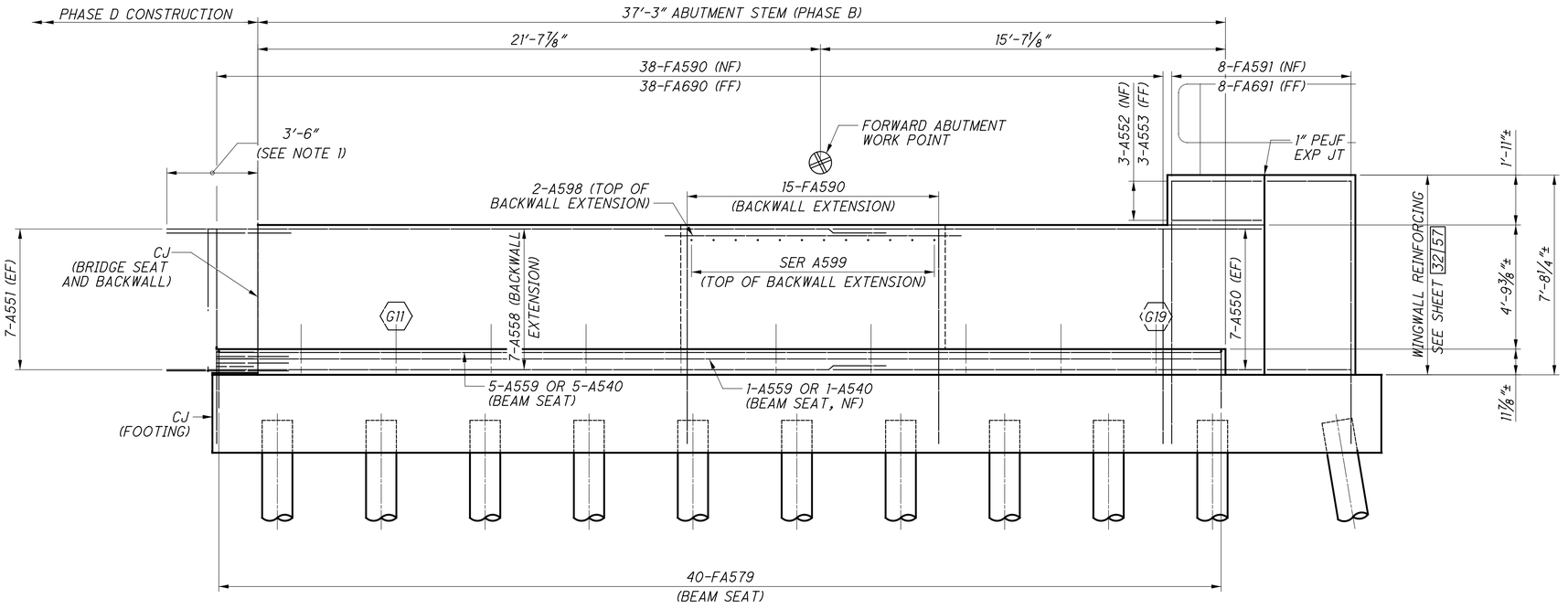
DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

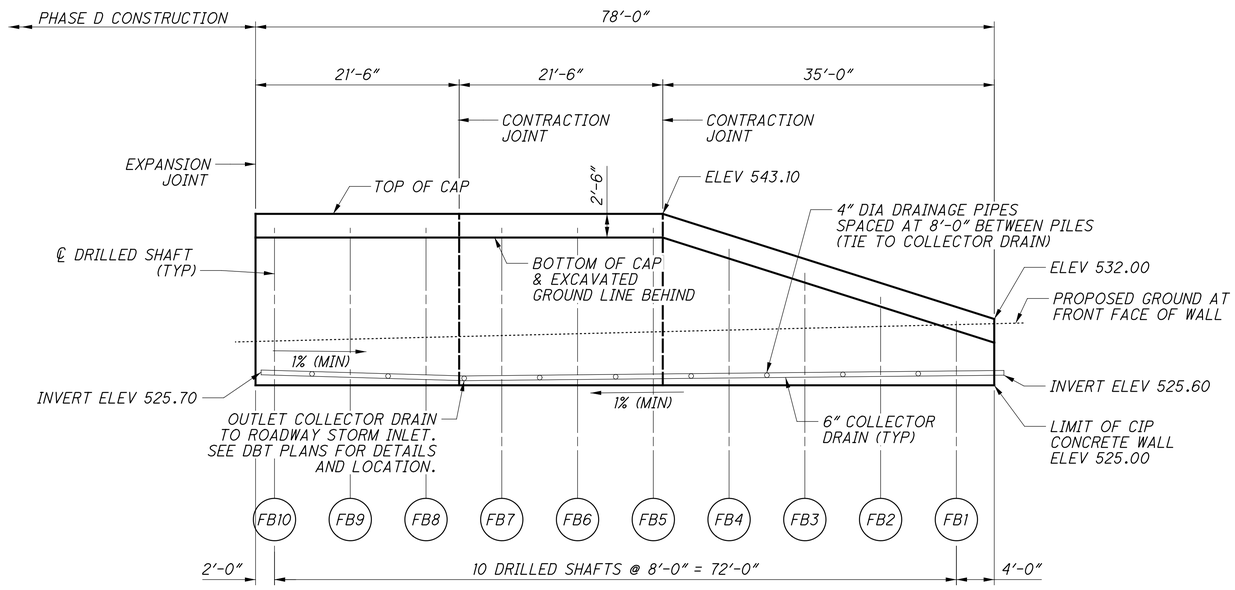
FORWARD ABUTMENT PLAN AND FOOTING PLAN - PHASE B

BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889



FORWARD ABUTMENT ELEVATION
PHASE B CONSTRUCTION



FORWARD ABUTMENT
SOLDIER PILE AND LAGGING WALL
PHASE B CONSTRUCTION

LEGEND:

(FB#) INDICATES LAGGING WALL PREBORED W18 PILE NUMBER

NOTES:

1. MECHANICALLY SPLICE REINFORCEMENT THAT CAN NOT ACHEIVE ADEQUATE SPLICE LENGTH DUE TO INTERFERENCE WITH SHORING. COST OF MECHANICAL SPLICING SHALL BE INCIDENTAL TO THE COST OF THE REINFORCING. MECHANICAL SPLICERS SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL. 10 MECHANICAL SPLICES SHALL BE ASSUMED IN THE CONSTRUCTION COST AT THIS LOCATION (FOR BIDDING PURPOSES ONLY).
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55/57.

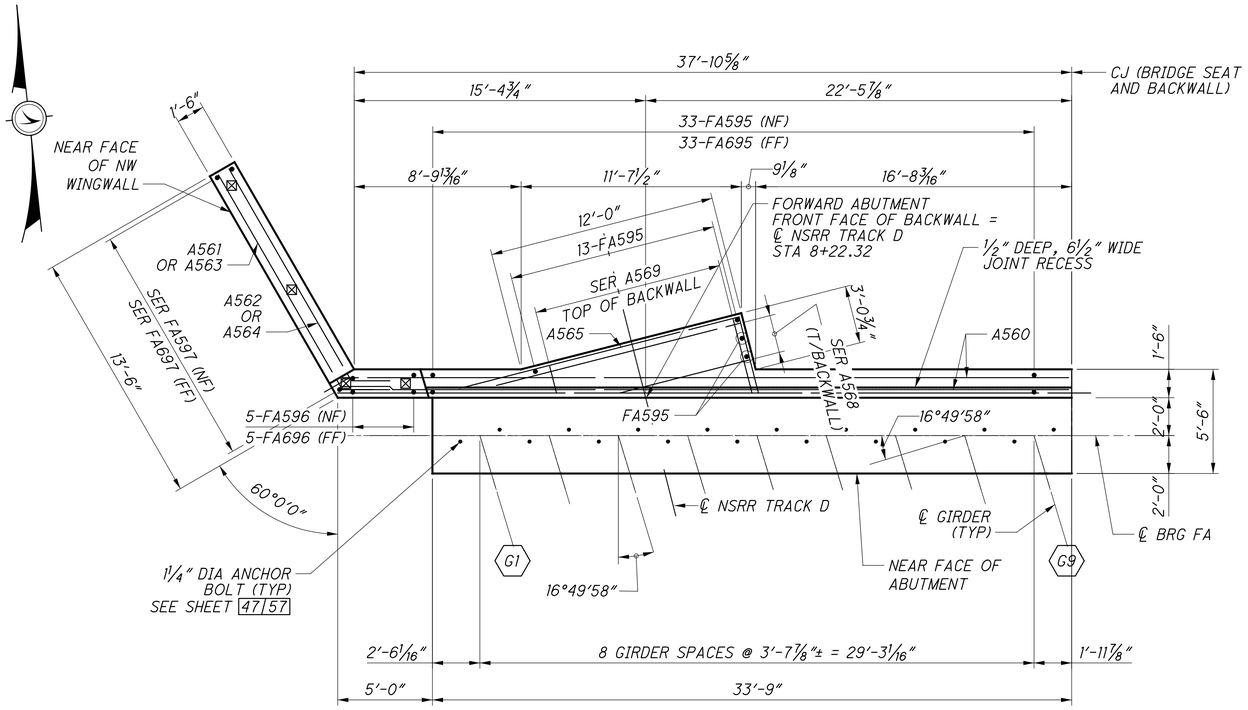
FORWARD ABUTMENT SHEET REFERENCES

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

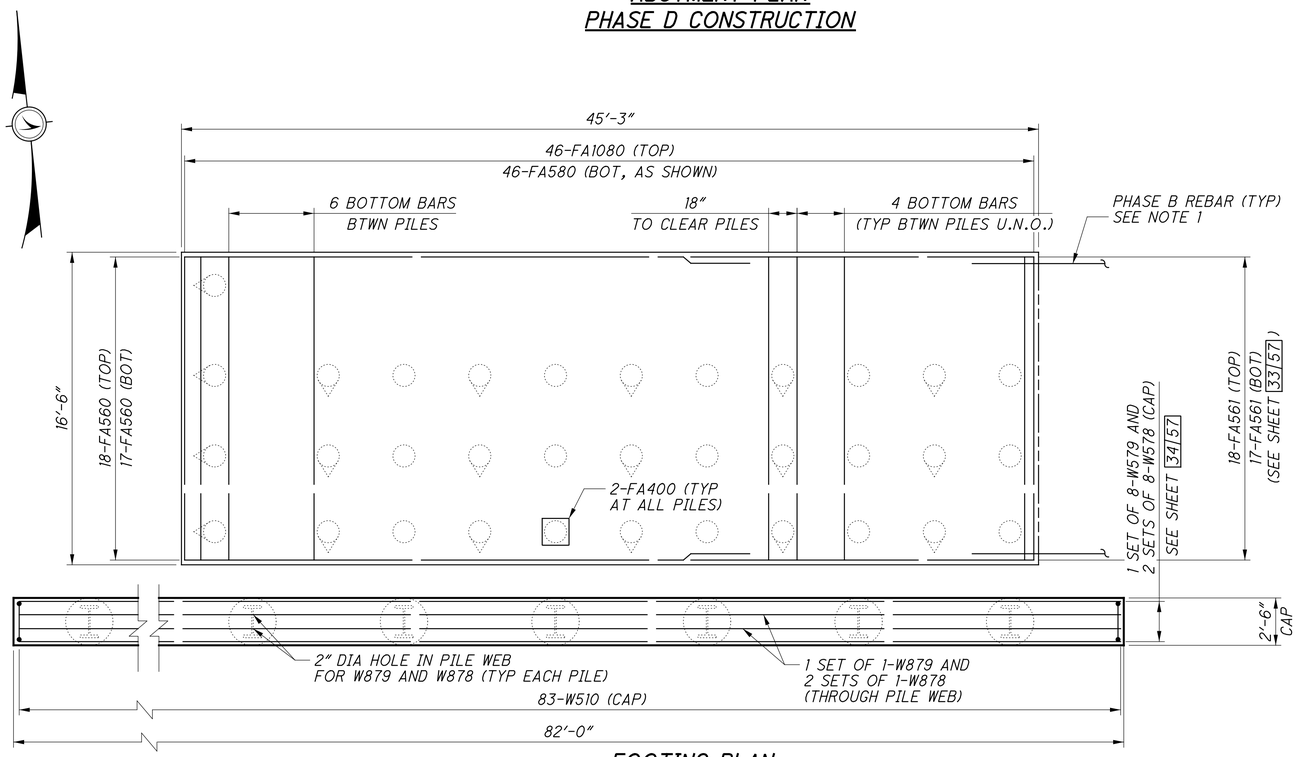
DESIGNED EFD | DRAWN CAN | REVIEWED CTV | DATE 12-19-23
CHECKED CTM | REVISED | ODOT SFN: 3113818 | NSRR BR#: BR0018448

FORWARD ABUTMENT ELEVATION - PHASE B
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889



ABUTMENT PLAN
PHASE D CONSTRUCTION



FOOTING PLAN
PHASE D CONSTRUCTION

NOTES:

1. MECHANICALLY SPLICE REINFORCEMENT THAT CAN NOT ACHEIVE ADEQUATE SPLICE LENGTH DUE TO INTERFERENCE WITH SHORING. COST OF MECHANICAL SPLICING SHALL BE INCIDENTAL TO THE COST OF THE REINFORCING. MECHANICAL SPLICERS SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL. 10 MECHANICAL SPLICES SHALL BE ASSUMED IN THE CONSTRUCTION COST AT THIS LOCATION (FOR BIDDING PURPOSES ONLY).
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55|57 .

FORWARD ABUTMENT SHEET REFERENCES

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

FORWARD ABUTMENT PLAN AND FOOTING PLAN - PHASE D

BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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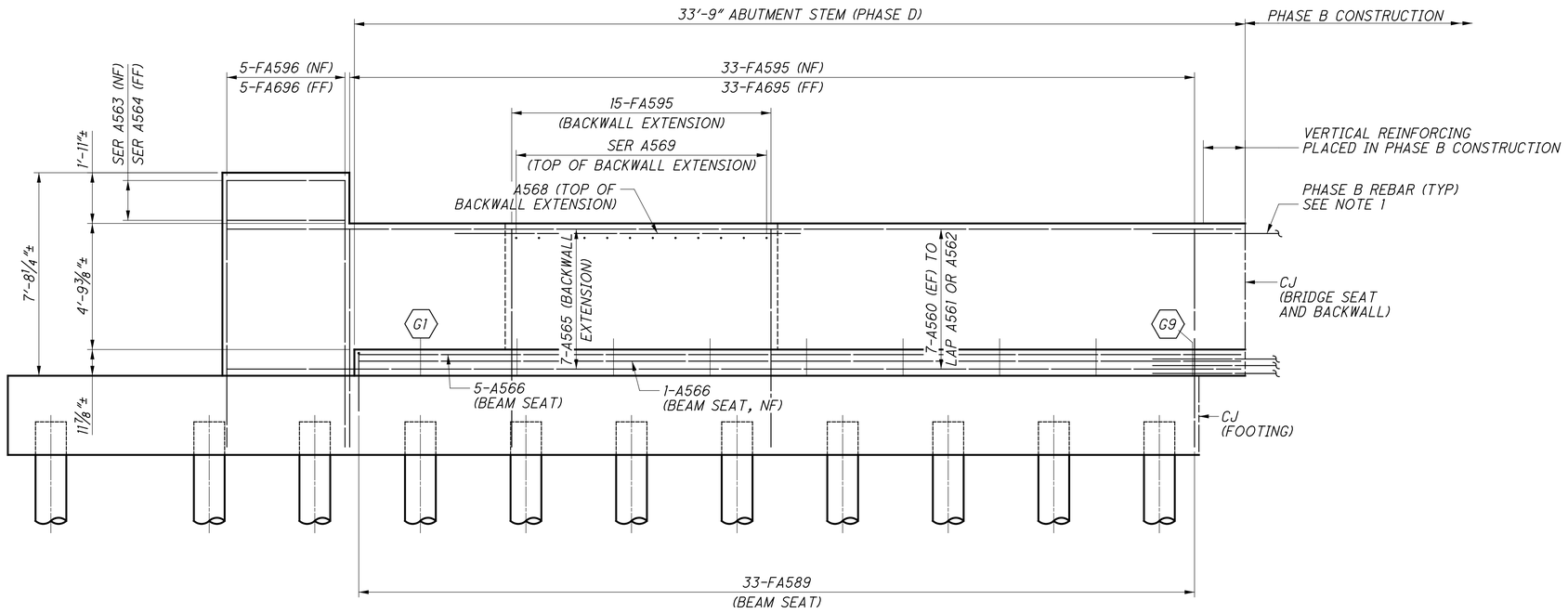
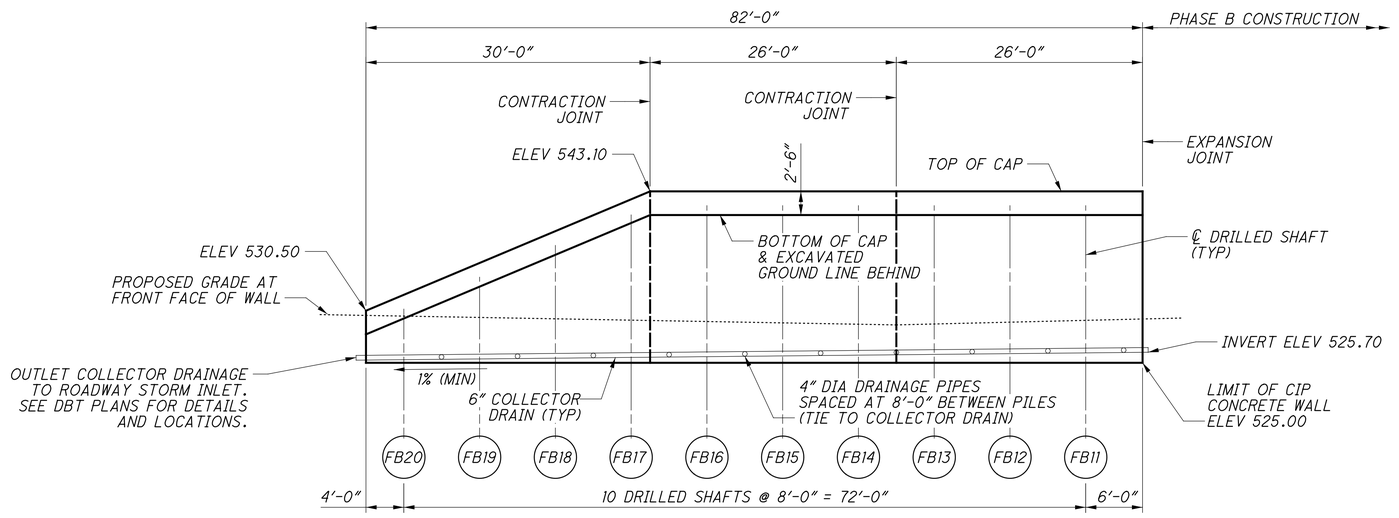


FORWARD ABUTMENT ELEVATION
PHASE D CONSTRUCTION



FORWARD ABUTMENT
SOLDIER PILE AND LAGGING WALL
PHASE D CONSTRUCTION

LEGEND:

(FB#) INDICATES LAGGING WALL PREBORED W18 PILE NUMBER

NOTES:

1. MECHANICALLY SPLICE REINFORCEMENT THAT CAN NOT ACHEIVE ADEQUATE SPLICE LENGTH DUE TO INTERFERENCE WITH SHORING. COST OF MECHANICAL SPLICING SHALL BE INCIDENTAL TO THE COST OF THE REINFORCING. MECHANICAL SPLICERS SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL. 10 MECHANICAL SPLICES SHALL BE ASSUMED IN THE CONSTRUCTION COST AT THIS LOCATION (FOR BIDDING PURPOSES ONLY).
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55/57.

FORWARD ABUTMENT SHEET REFERENCES

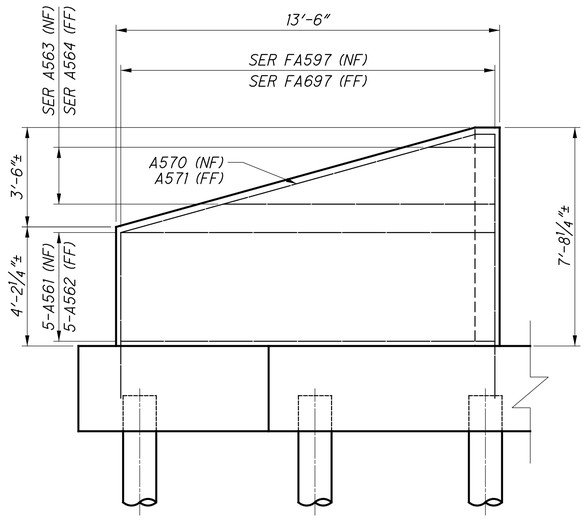
FOUNDATION PLAN:	18/57	
GENERAL PLAN & ELEV:	26/57	
EXISTING ABUTMENT REMOVAL:	27/57	
ABUTMENT PLANS (PHASE B):	28/57	
ABUTMENT ELEVATION (PHASE B):	29/57	
ABUTMENT PLANS (PHASE D):	30/57	
ABUTMENT ELEVATION (PHASE D):	31/57	
WINGWALL ELEVATIONS:	32/57	
TYPICAL DETAILS:	33/57	- 34/57
FIXED BEARING:	47/57	- 48/57
REINFORCING LIST:	55/57	- 56/57

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

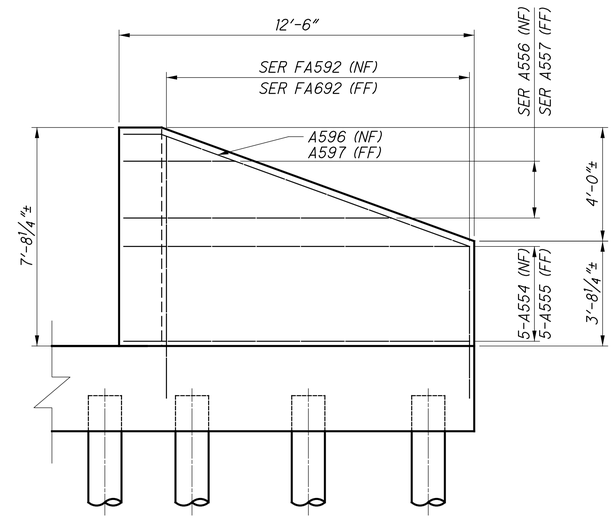
FORWARD ABUTMENT ELEVATION - PHASE D
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889



NORTHWEST WINGWALL ELEVATION

PHASE D



NORTHEAST WINGWALL ELEVATION

PHASE B

NOTES:

1. VERTICALLY/HORIZONTALLY ADJUST THE BARS AS REQUIRED TO CLEAR THE PILES.
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55/57 .
3. WINGWALL PILES SHOWN ARE APPROXIMATE LOCATIONS DUE TO THE SKEW ANGLE.

FORWARD ABUTMENT SHEET REFERENCES

FORWARD ABUTMENT WINGWALL ELEVATIONS

BRIDGE NO. HAM-562-0026 (INSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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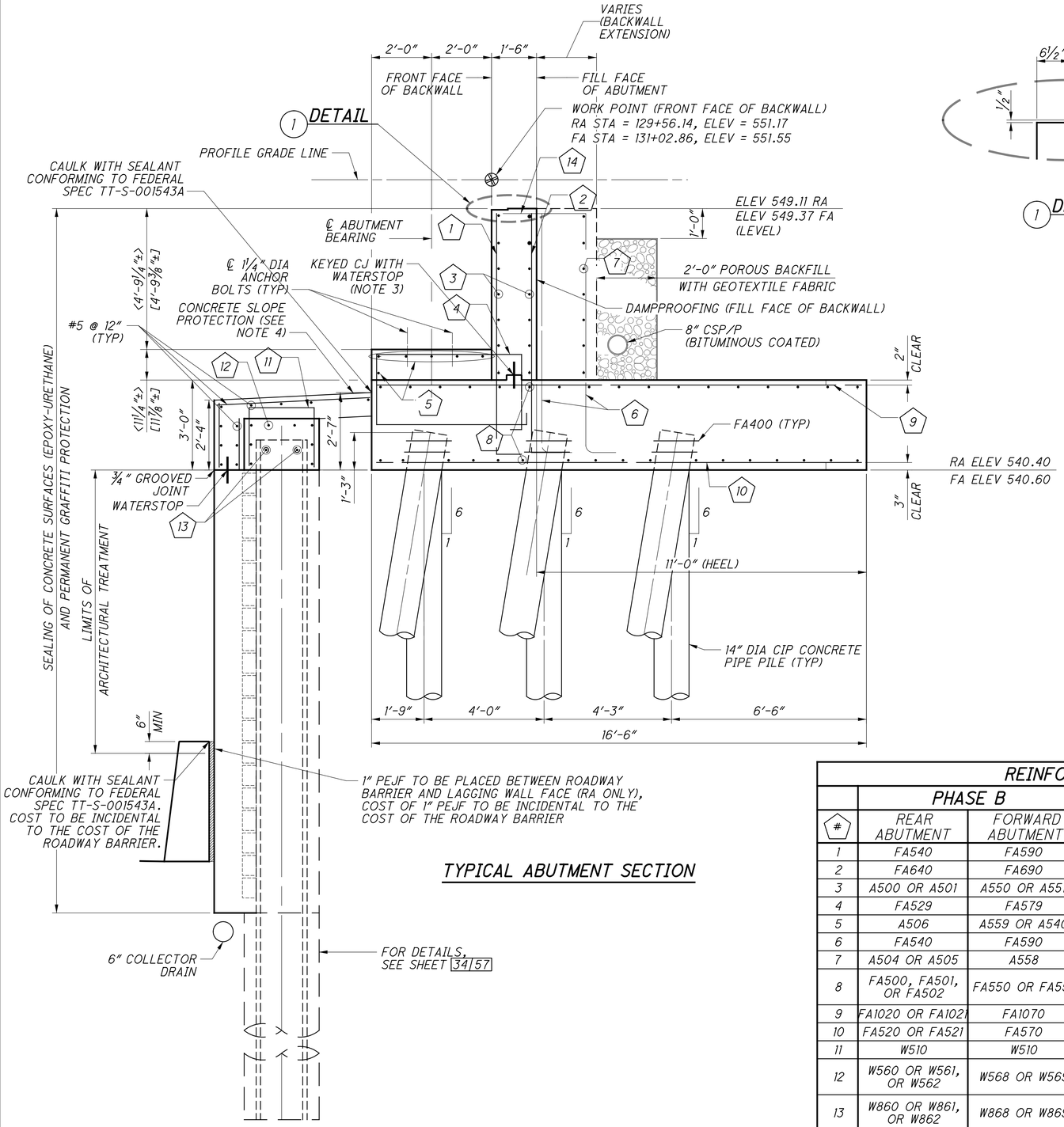
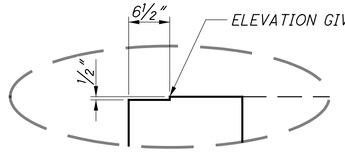
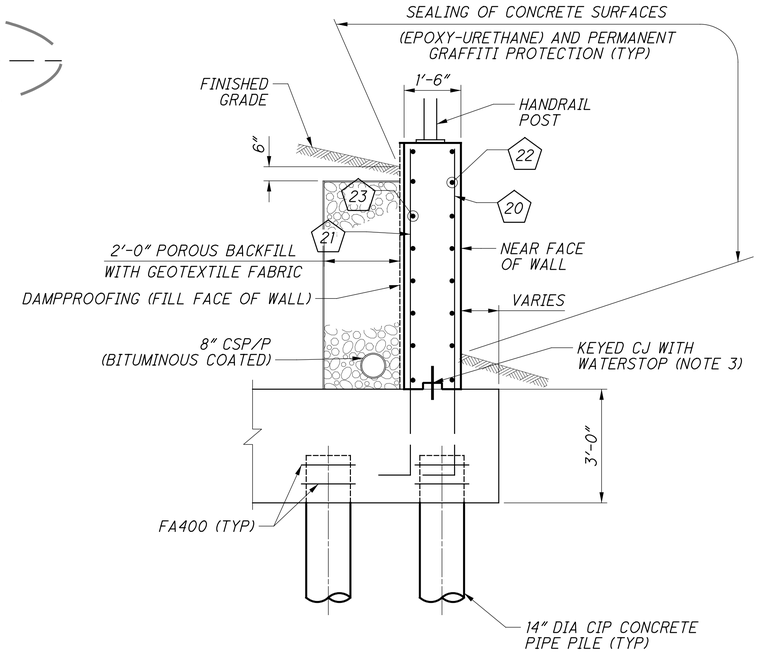
DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231



TYPICAL ABUTMENT SECTION





TYPICAL WINGWALL SECTION

FOR FOOTING REINFORCEMENT,
SEE ABUTMENT SHEETS 21/57, 23/57, 28/57 & 30/57.

SOLDIER PILE WALL

REINFORCING				
	PHASE B		PHASE D	
⬠ #	REAR ABUTMENT	FORWARD ABUTMENT	REAR ABUTMENT	FORWARD ABUTMENT
1	FA540	FA590	FA549	FA595
2	FA640	FA690	FA649	FA695
3	A500 OR A501	A550 OR A551	A510	A560
4	FA529	FA579	FA539	FA589
5	A506	A559 OR A540	A515	A566
6	FA540	FA590	FA549	FA595
7	A504 OR A505	A558	A513 OR A514	A565
8	FA500, FA501, OR FA502	FA550 OR FA551	FA510, FA511, OR FA512	FA560 OR FA561
9	FA1020 OR FA1021	FA1070	FA1030 OR FA1031	FA1080
10	FA520 OR FA521	FA570	FA530 OR FA531	FA580
11	W510	W510	W510	W510
12	W560 OR W561, OR W562	W568 OR W569	W570 OR W571	W579
13	W860 OR W861, OR W862	W868 OR W869	W870 OR W871	W879
14	A507 OR A508	A598 OR A599	A516 OR A517	A568 OR A569
20	FA542	FA592	FA548	FA597
21	FA642	FA692	FA648	FA697
22	A502	A554, A556, OR A596	A511	A561, A563, OR A570
23	A503	A555, A557, OR A597	A512	A562, A564, OR A571

NOTES:

1. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55/57 .
2. DIMENSIONS IN <DIM> REFER TO THE REAR ABUTMENT. DIMENSIONS IN [DIM] REFER TO THE FORWARD ABUTMENT.
3. WATERSTOPS SHALL BE 6"x⅜" PVC AND SHALL BE CONTINUOUS ACROSS JOINT. FOR RAISED KEYWAY DETAIL, SEE TYPICAL STRUCTURAL DETAILS SHEET 19/286 .
4. THE SLOPE PROTECTION CONCRETE HAS BEEN QUANTIFIED AND INCLUDED IN THE QUANTITY OF THE CONCRETE CAP, PAID FOR WITH CLASS QC1 CONCRETE, FOOTING, AS PER PLAN. REINFORCING SHOWN IS THE MINIMUM REQUIRED AND TO BE INCLUDED WITH THE PAYMENT FOR CONCRETE. SLOPE PROTECTION SHALL BE PLACED ATOP THE HORIZONTAL AREAS OF THE CONCRETE CAP AND END WHEN THE WALL BEGINS TO DECREASE IN HEIGHT, SPECIFICALLY: REAR ABUTMENT FROM SR 562 STA. 16+66 TO 17+56, FORWARD ABUTMENT FROM SR 562 STA. 16+15 TO 17+11.

ABUTMENT SHEET REFERENCES

FOUNDATION PLANS: 16/57 & 18/57
REAR ABUTMENT PLANS: 19/57 - 25/57
FORWARD ABUTMENT PLANS: 26/57 - 32/57
REINFORCING LIST: 55/57 - 56/57

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

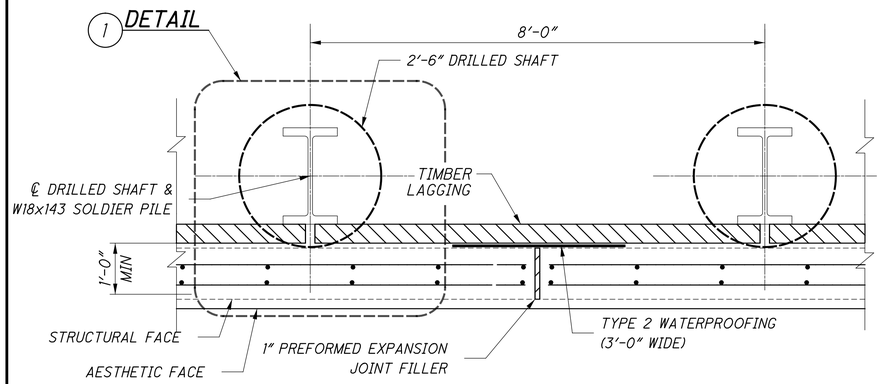
DESIGNED EFD | DRAWN CAN | REVIEWED CTV | DATE 12-19-23
CHECKED CTM | REVISED | ODOT SFN: 3113818 | NSRR BR#: BR0018448

TYPICAL ABUTMENT SECTIONS
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

33 / 57

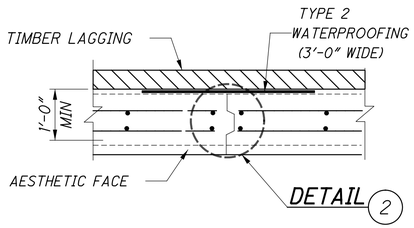
53
286



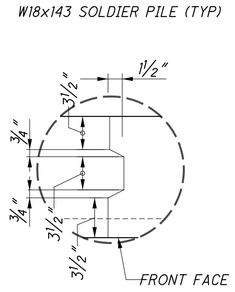
1 DETAIL

EXPANSION JOINT DETAIL

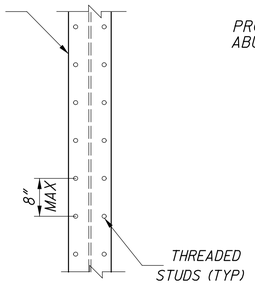
LOCATED BETWEEN CONSTRUCTION PHASES



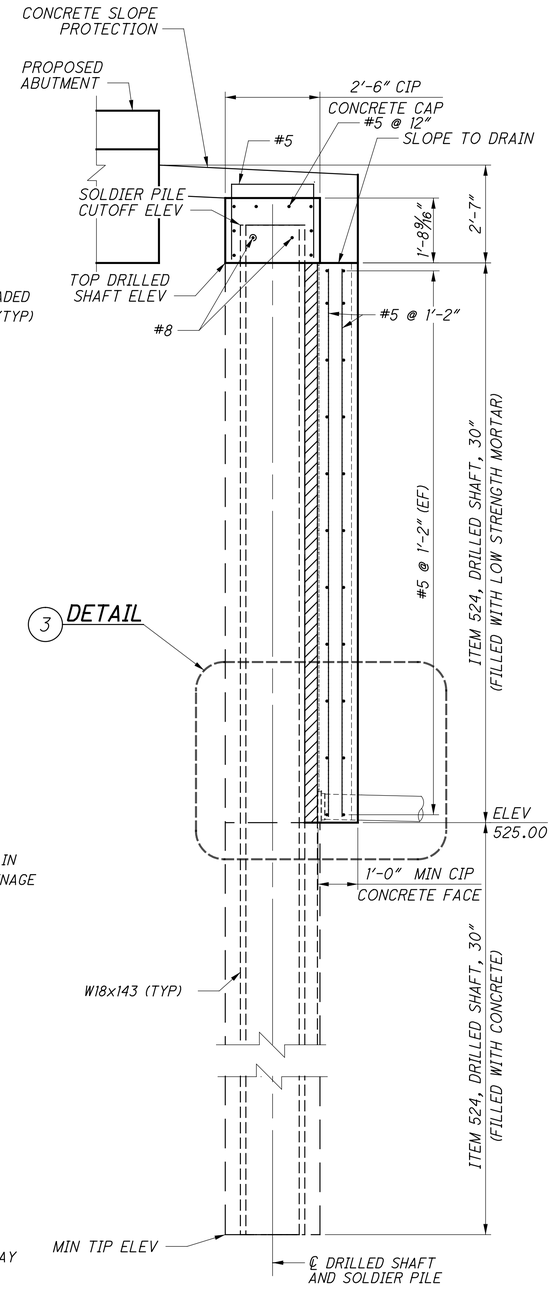
CONTRACTION JOINT DETAIL



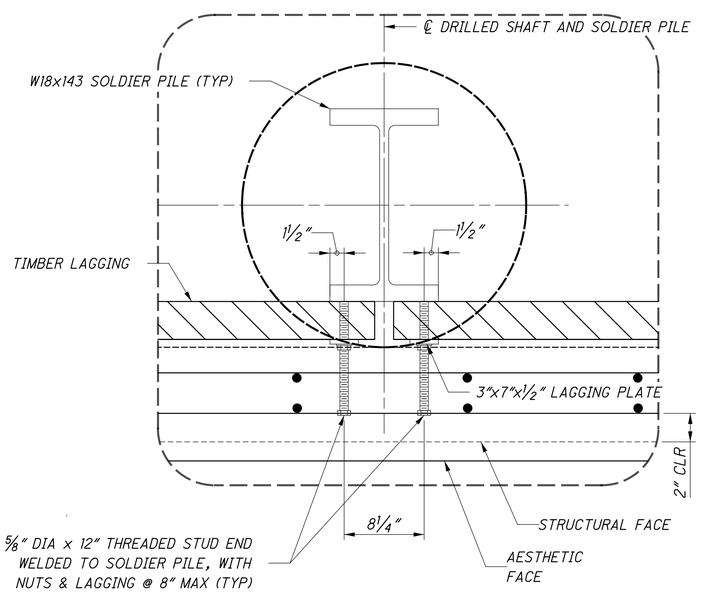
2 DETAIL



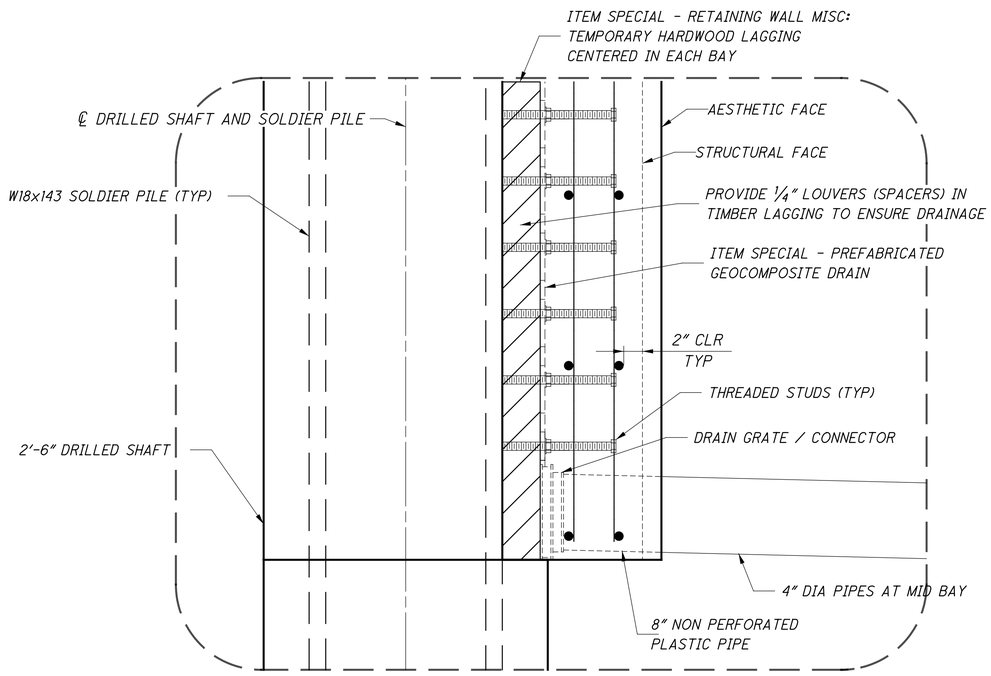
SOLDIER PILE ELEVATION



TYPICAL RETAINING WALL



1 DETAIL



3 DETAIL

NOTES:

1. THE HORIZONTAL AND VERTICAL REINFORCING STEEL SHALL NOT EXCEED 14" AND SHALL CONTAIN 0.25 SQUARE INCHES OF STEEL PER FOOT IN EACH DIRECTION (AREMA CHAPTER 8-2.12). REINFORCING STEEL MAY CONSIST OF REINFORCING BARS OR WELDED WIRE FABRIC. PERIMETER BARS SHALL BE #5. FOR MORE NOTES, INCLUDING BASIS OF PAYMENT, SEE SHEET 9/286 .

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

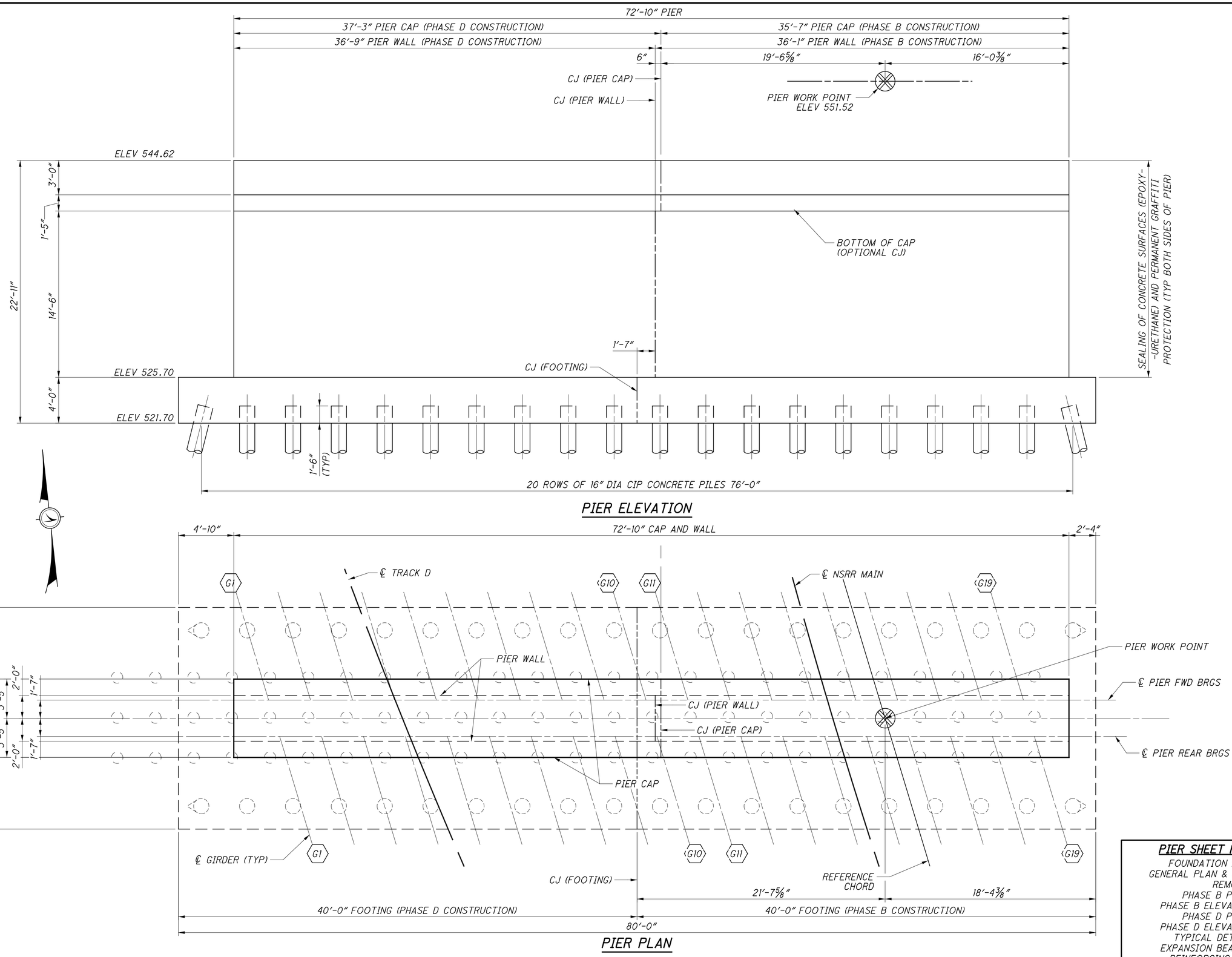
DESIGNED	DRAWN	REVIEWED	DATE
EFD	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

PILE AND LAGGING WALL DETAILS
BRIDGE NO. HAM-562-0026 (INSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

34 / 57

54 / 286



PIER SHEET REFERENCES

FOUNDATION PLAN:	17 / 57
GENERAL PLAN & ELEV:	35 / 57
REMOVAL:	36 / 57
PHASE B PLANS:	37 / 57
PHASE B ELEVATION:	38 / 57
PHASE D PLANS:	39 / 57
PHASE D ELEVATION:	40 / 57
TYPICAL DETAILS:	41 / 57
EXPANSION BEARING:	47 / 57 - 48 / 57
REINFORCING LIST:	55 / 57 - 56 / 57

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PIER - PLAN & ELEVATION
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

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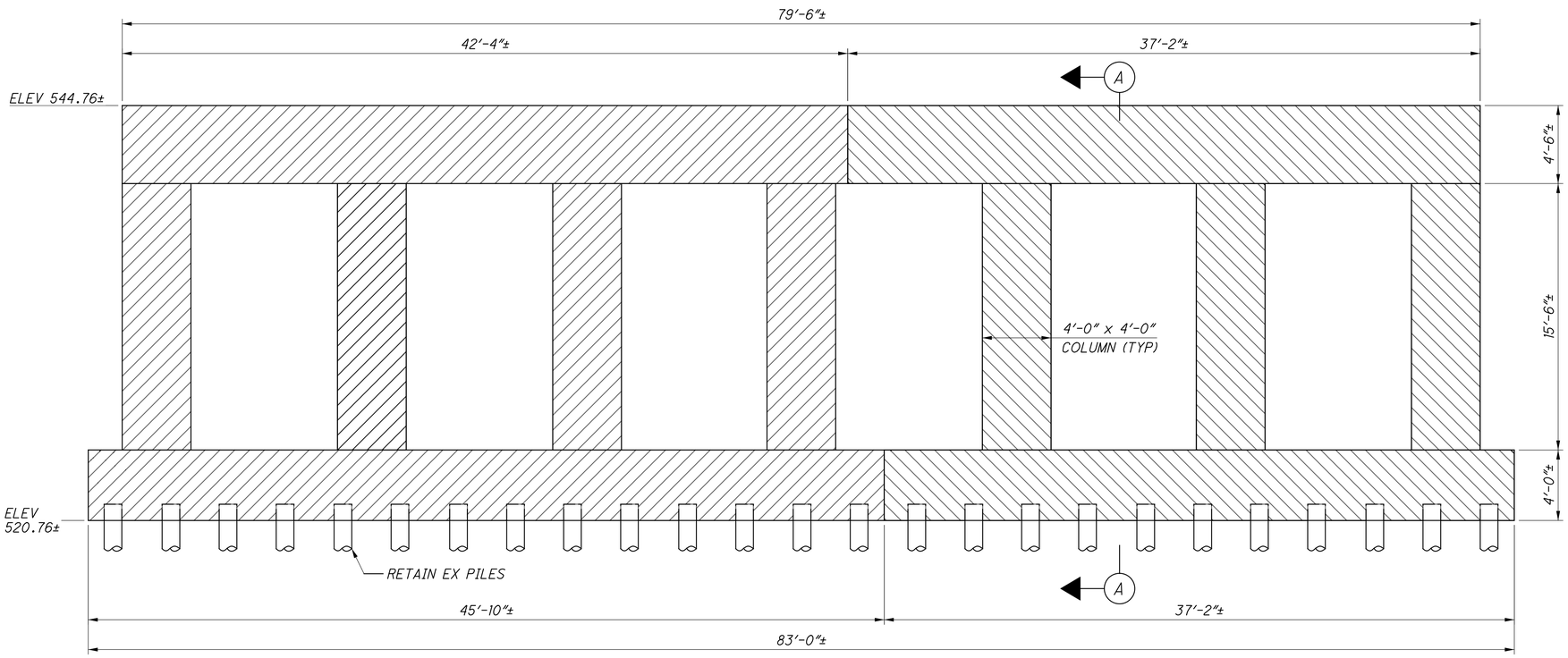
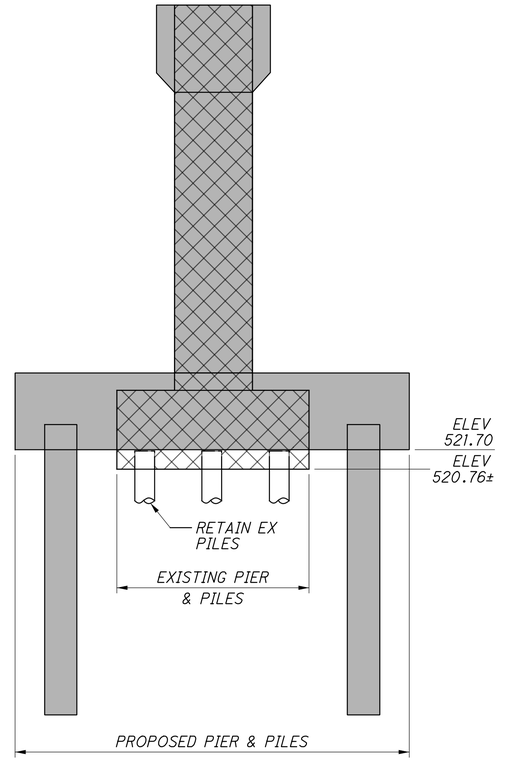


ELEVATION - EXISTING PIER PHASE REMOVAL

LOOKING UPSTATION



A SECTION

LEGEND:

- PHASE A REMOVAL
- PHASE C REMOVAL
- PHASE A OR PHASE C REMOVAL
- PHASE B OR PHASE D CONSTRUCTION

NOTES:

1. EXISTING PILE TOPS THAT EXTEND ABOVE ELEVATION 521.70 SHALL BE CUTOFF TO ELEVATION 521.70. EXISTING PILES MAY ENGAGE PROPOSED PIER FOOTING CONCRETE (BELOW THE PROPOSED REINFORCING) BUT ARE NOT INCLUDED IN THE DESIGN STRENGTH OF THE PROPOSED PIER FOOTING. ANY FOOTING CONCRETE PLACED BELOW ELEVATION 521.70 DUE TO CONTRACTOR ADHERANCE TO THIS SHALL BE CONSIDERED INCIDENTAL TO THE PROPOSED FOOTING CONCRETE.

PIER SHEET REFERENCES

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PIER: REMOVAL STAGES AND DETAILS

BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
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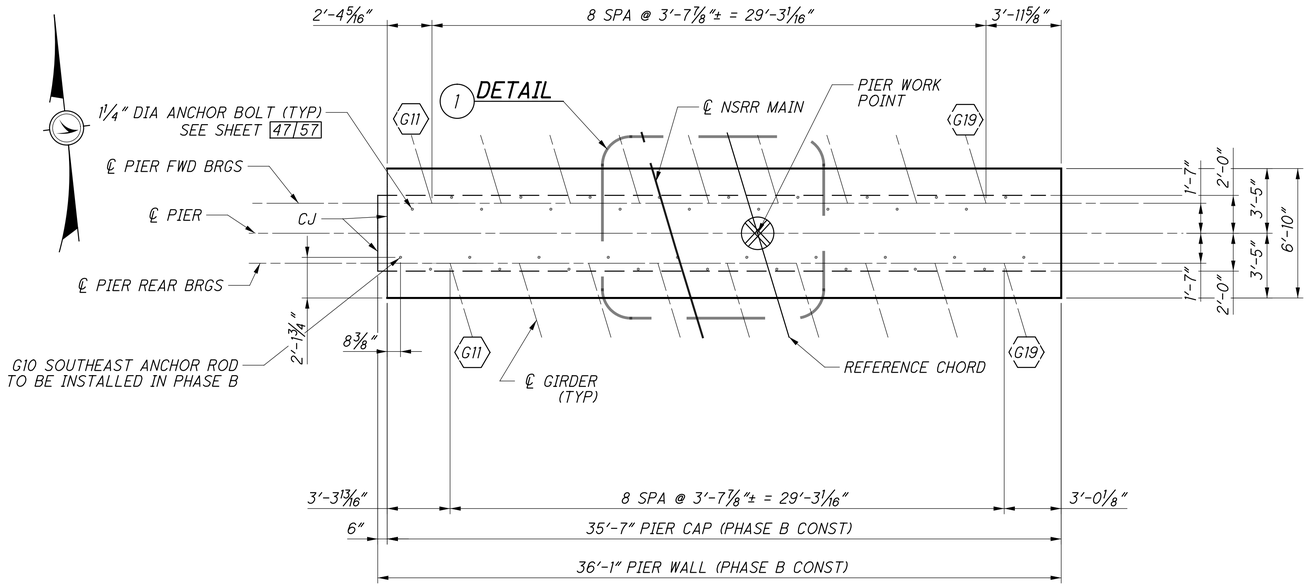
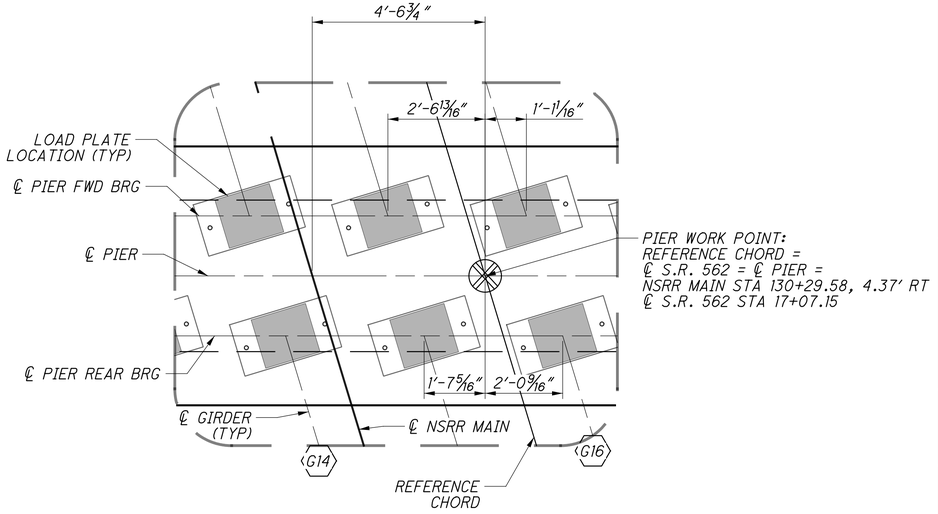
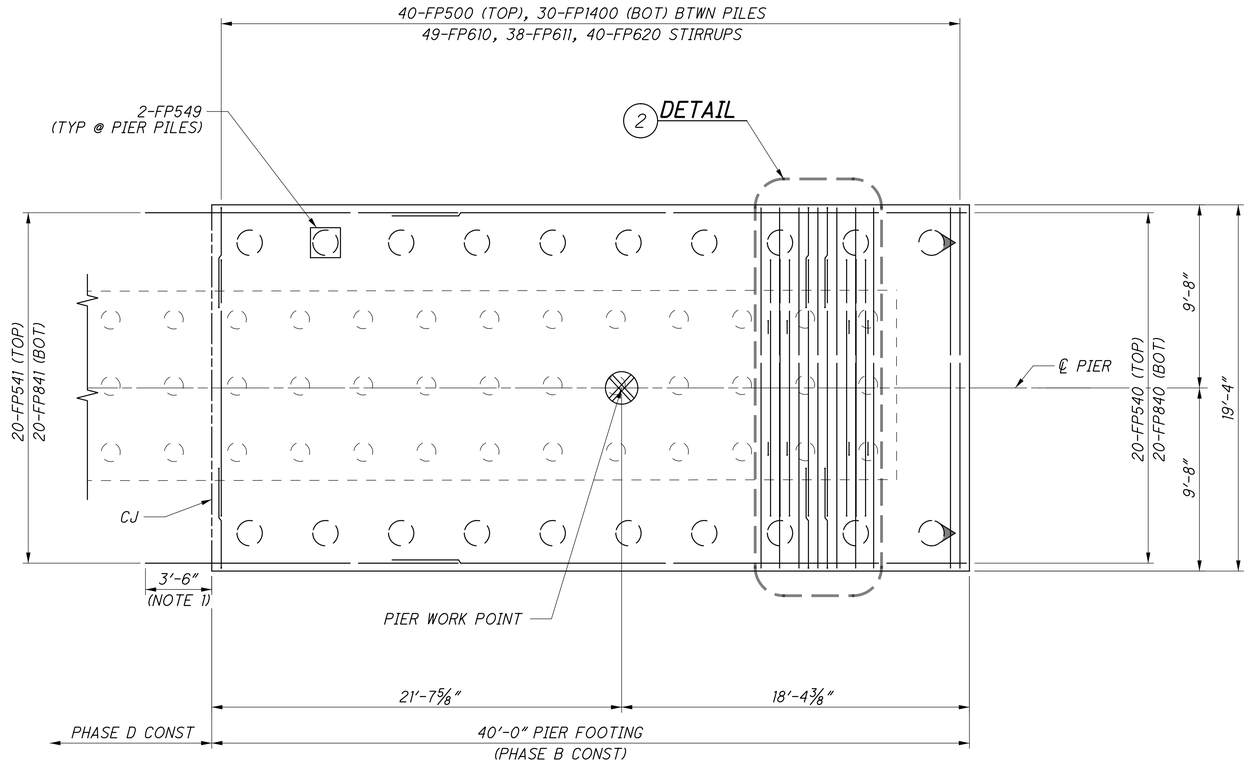


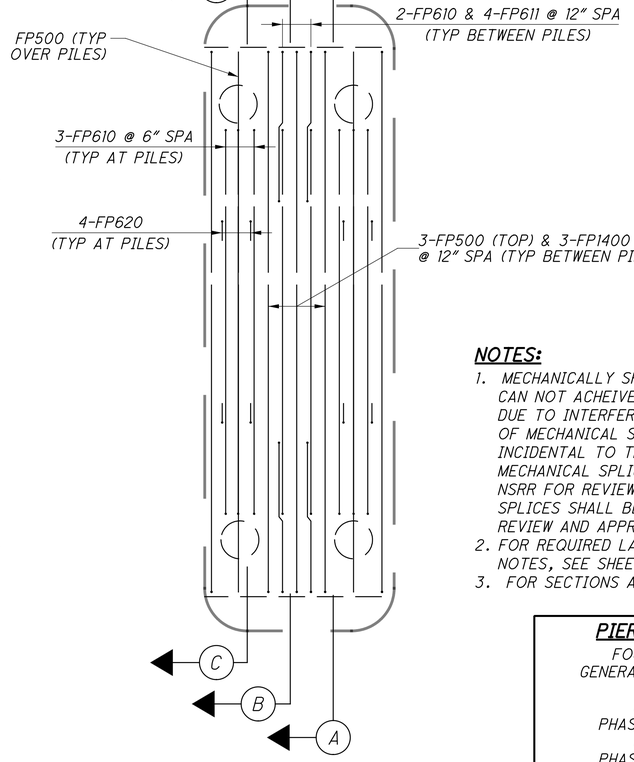
PIER PLAN
PHASE B CONSTRUCTION



1 WORK POINT DEFINITION
INCLUDING BEARING LAYOUT



PIER FOOTING PLAN
PHASE B CONSTRUCTION



2 TYPICAL FOOTING STIRRUP DETAIL
TRANSVERSE REINFORCEMENT

NOTES:
1. MECHANICALLY SPLICE REINFORCEMENT THAT CAN NOT ACHEIVE ADEQUATE SPLICE LENGTH DUE TO INTERFERENCE WITH SHORING. COST OF MECHANICAL SPLICING SHALL BE INCIDENTAL TO THE COST OF THE REINFORCING. MECHANICAL SPLICERS SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL. 10 MECHANICAL SPLICES SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL.
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55 57 .
3. FOR SECTIONS A, B & C, SEE SHEET 41 57 .

PIER SHEET REFERENCES

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Gannett Fleming
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2500 CORPORATE EXCHANGE DRIVE, SUITE 230
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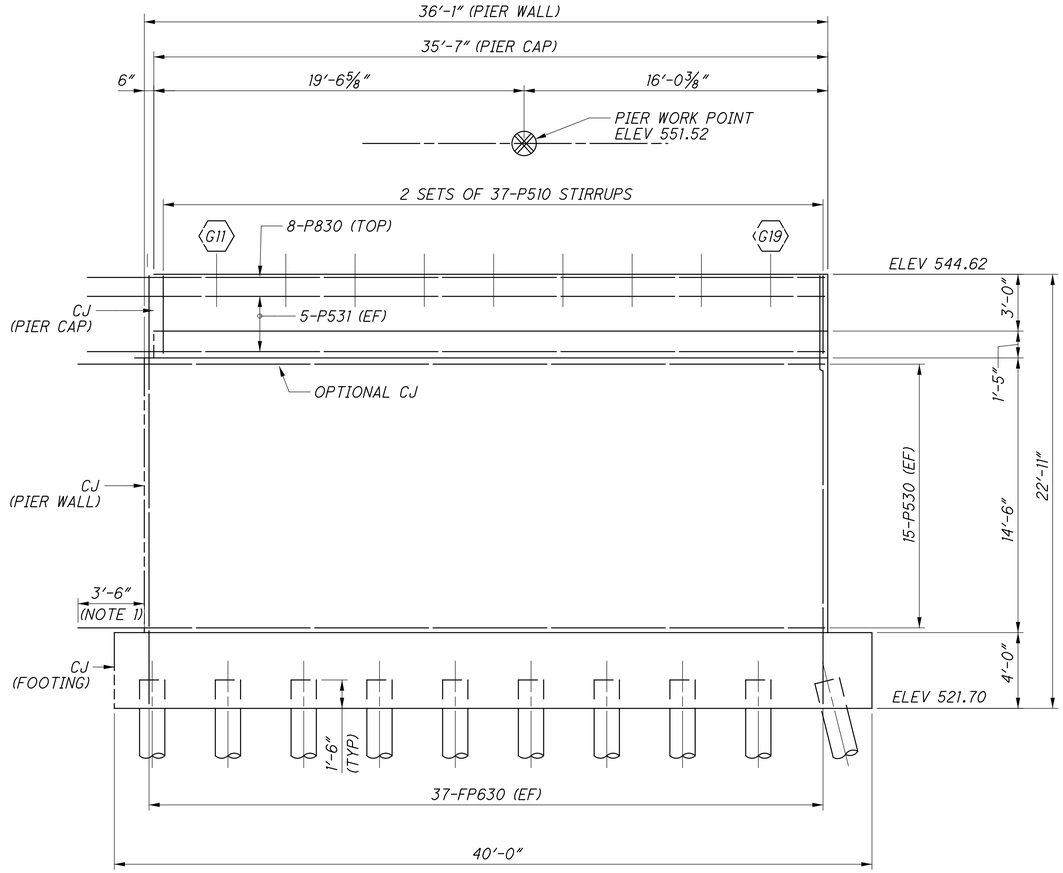
CTM		NSRR BR#: BR0018448	

PIER PLAN AND FOOTING PLAN – PHASE B
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889



PIER ELEVATION

PHASE B

NOTES:

1. MECHANICALLY SPLICE REINFORCEMENT THAT CAN NOT ACHEIVE ADEQUATE SPLICE LENGTH DUE TO INTERFERENCE WITH SHORING. COST OF MECHANICAL SPLICING SHALL BE INCIDENTAL TO THE COST OF THE REINFORCING. MECHANICAL SPLICERS SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL. 10 MECHANICAL SPLICES SHALL BE ASSUMED IN THE CONSTRUCTION COST AT THIS LOCATION (FOR BIDDING PURPOSES ONLY).
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55/57 .
3. VERTICALLY/HORIZONTALLY ADJUST AND FIELD CUT VERTICAL REINFORCEMENT AS REQUIRED TO CLEAR PILES.

PIER SHEET REFERENCES

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COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
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CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

PIER ELEVATION - PHASE B

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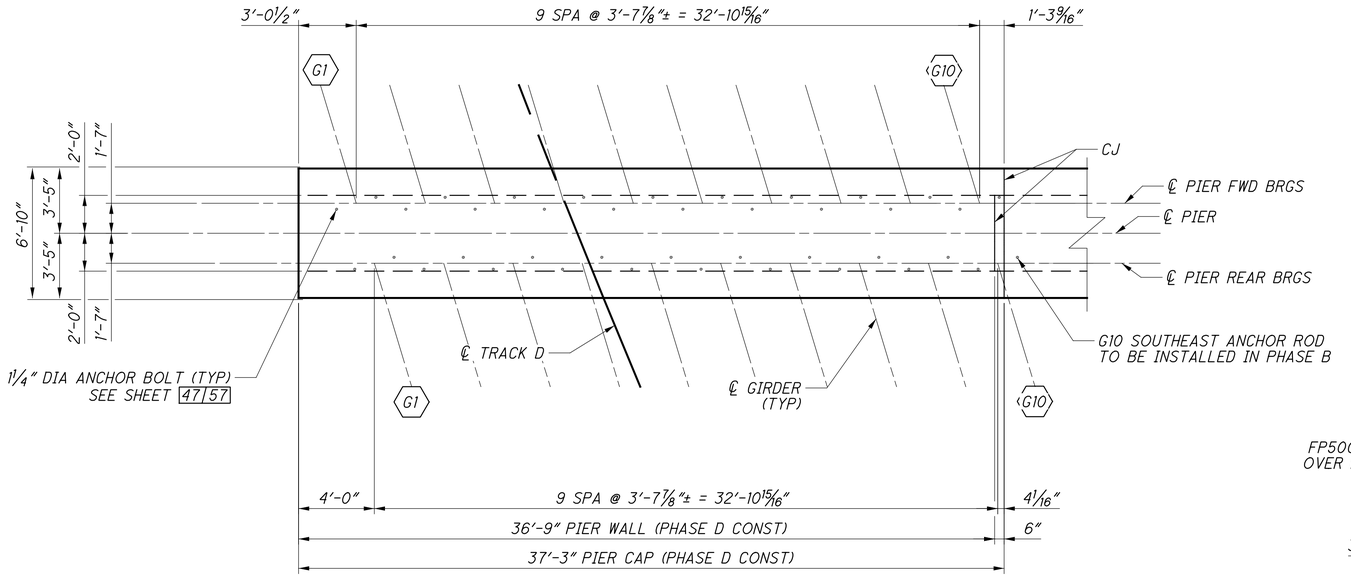
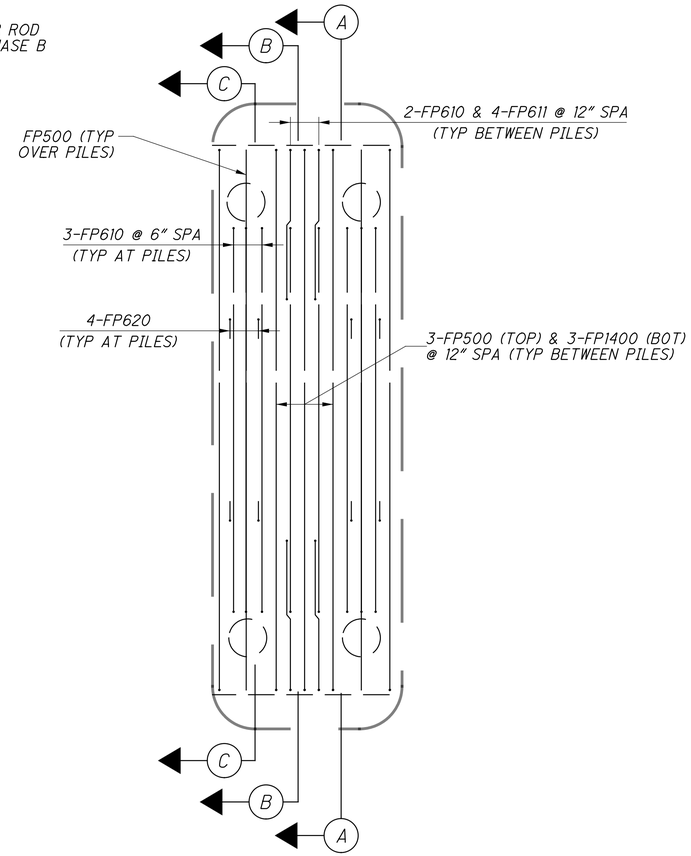
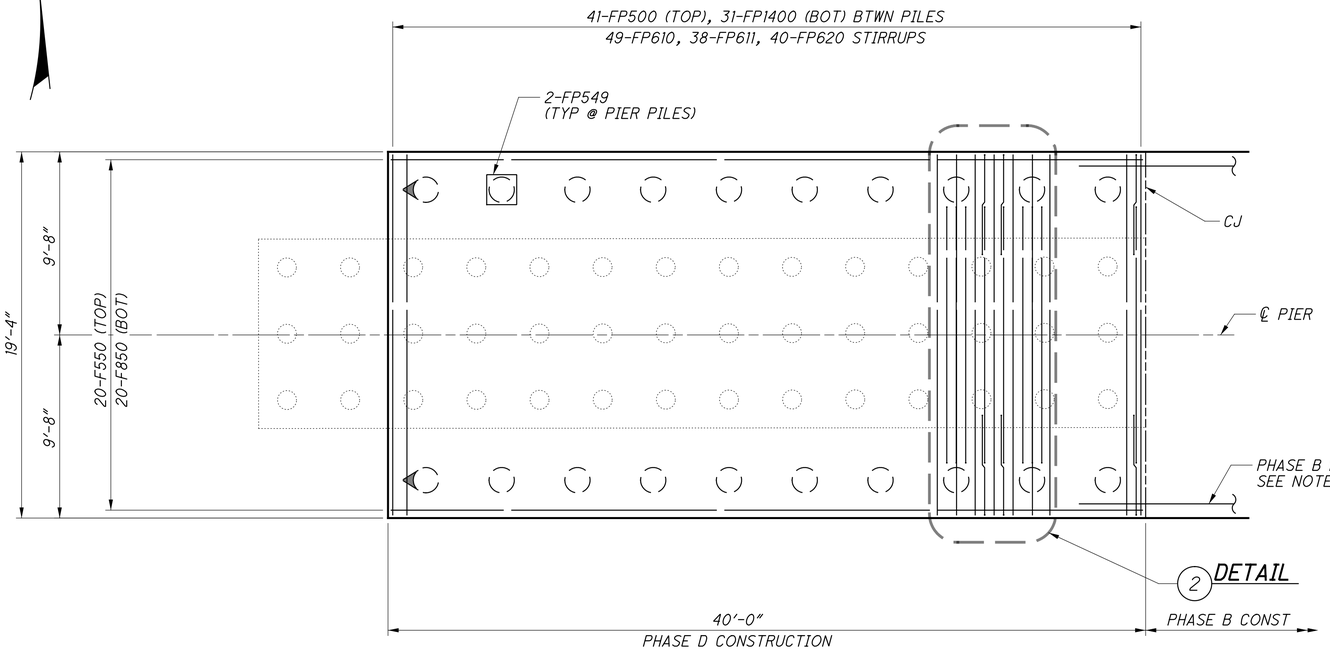
HAM-75-7.85
PID No. 77889



PIER PLAN
PHASE D CONSTRUCTION



② TYPICAL FOOTING STIRRUP DETAIL
TRANSVERSE REINFORCEMENT



PIER FOOTING PLAN
PHASE D CONSTRUCTION

NOTES:

1. MECHANICALLY SPLICE REINFORCEMENT THAT CAN NOT ACHEIVE ADEQUATE SPLICE LENGTH DUE TO INTERFERENCE WITH SHORING. COST OF MECHANICAL SPLICING SHALL BE INCIDENTAL TO THE COST OF THE REINFORCING. MECHANICAL SPLICERS SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL. 10 MECHANICAL SPLICES SHALL BE ASSUMED IN THE CONSTRUCTION COST AT THIS LOCATION (FOR BIDDING PURPOSES ONLY).
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55|57 .

PIER SHEET REFERENCES

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PHASE B ELEVATION:	38|57
PHASE D PLANS:	39|57
PHASE D ELEVATION:	40|57
TYPICAL DETAILS:	41|57
EXPANSION BEARING:	47|57 - 48|57
REINFORCING LIST:	55|57 - 56|57

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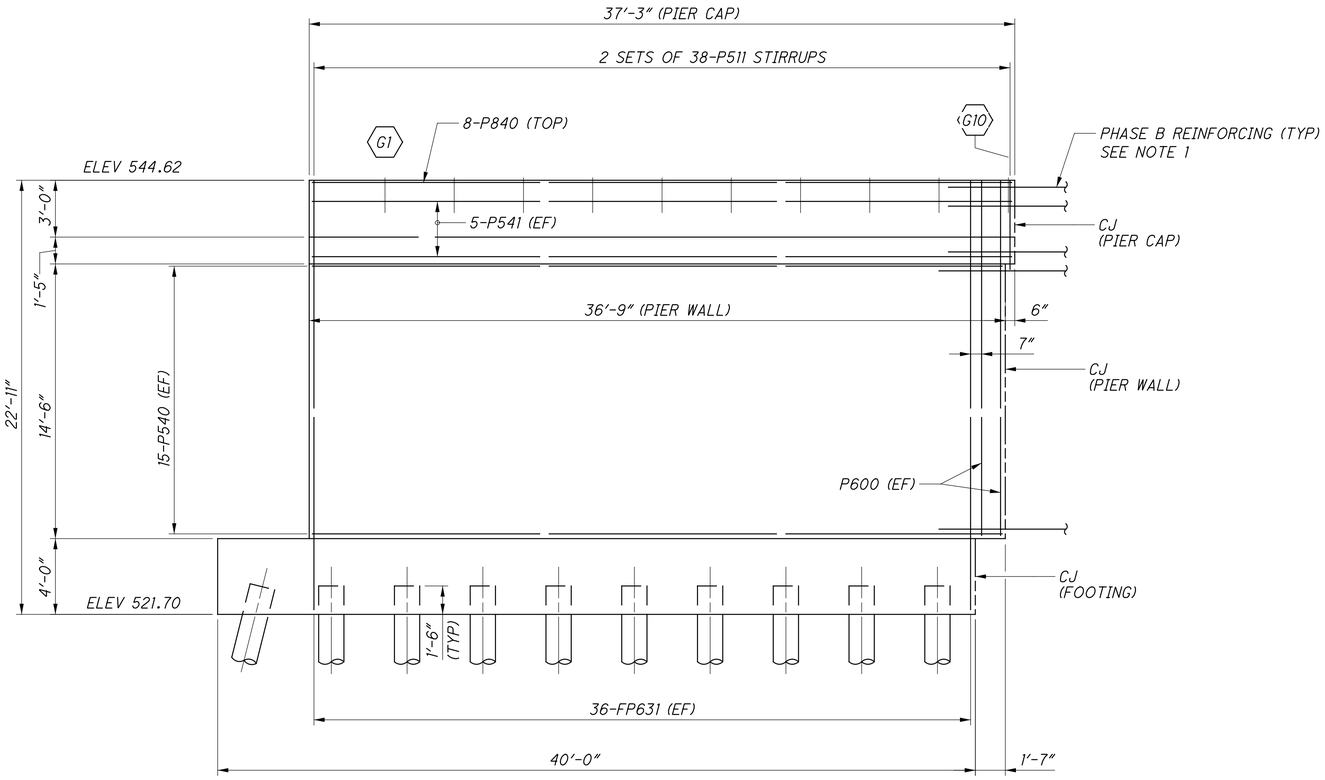
PIER PLAN AND FOOTING PLAN – PHASE D
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

39 / 57

59
286



PIER ELEVATION
PHASE D

NOTES:

1. MECHANICALLY SPLICE REINFORCEMENT THAT CAN NOT ACHEIVE ADEQUATE SPLICE LENGTH DUE TO INTERFERENCE WITH SHORING. COST OF MECHANICAL SPLICING SHALL BE INCIDENTAL TO THE COST OF THE REINFORCING. MECHANICAL SPLICERS SHALL BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL. 10 MECHANICAL SPLICES SHALL BE ASSUMED IN THE CONSTRUCTION COST AT THIS LOCATION (FOR BIDDING PURPOSES ONLY).
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55/57.
3. VERTICALLY/HORIZONTALLY ADJUST AND FIELD CUT VERTICAL REINFORCEMENT AS REQUIRED TO CLEAR PILES.

PIER SHEET REFERENCES

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

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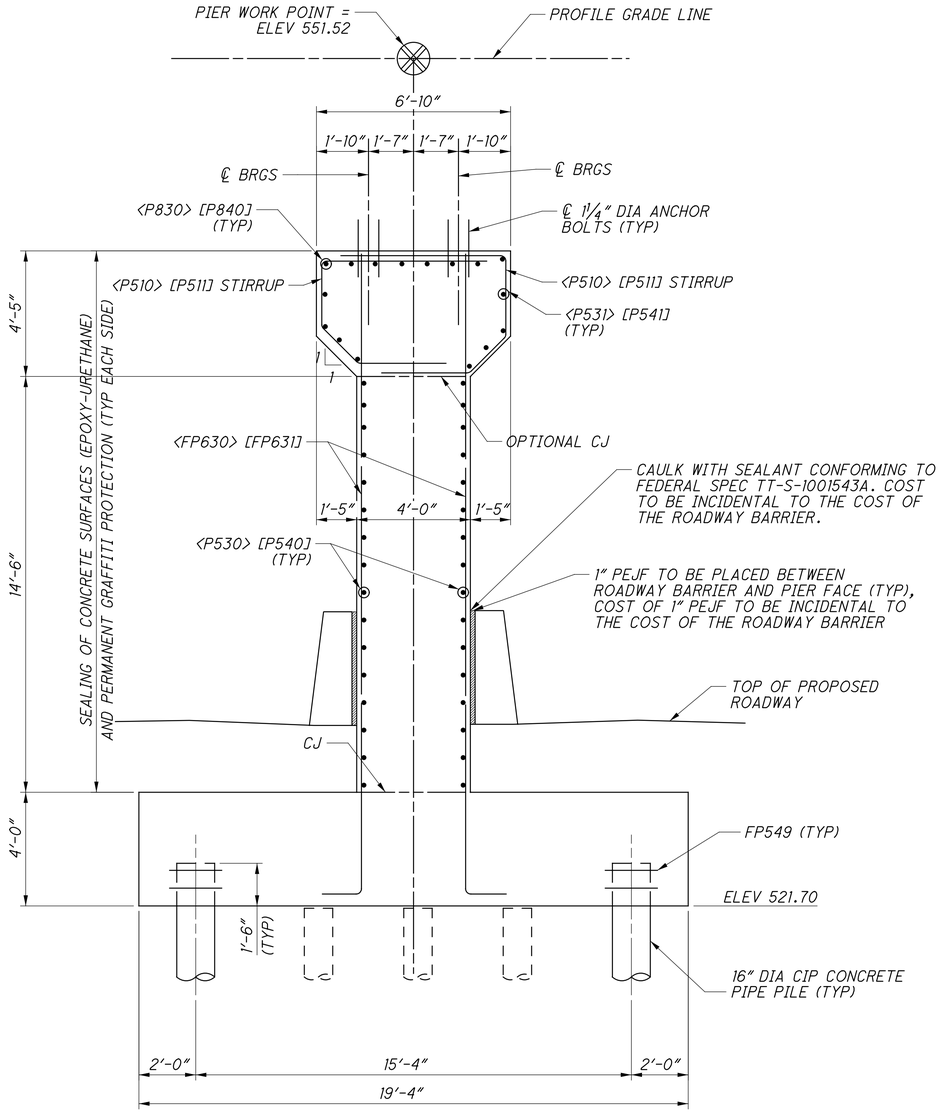
EFD	CJG	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

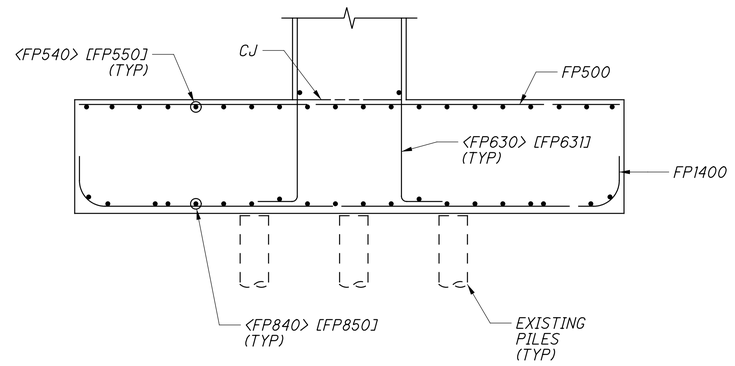
PIER ELEVATION - PHASE D
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

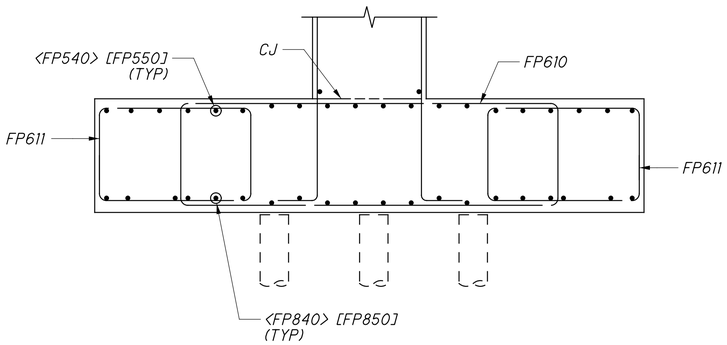


TYPICAL PIER SECTION

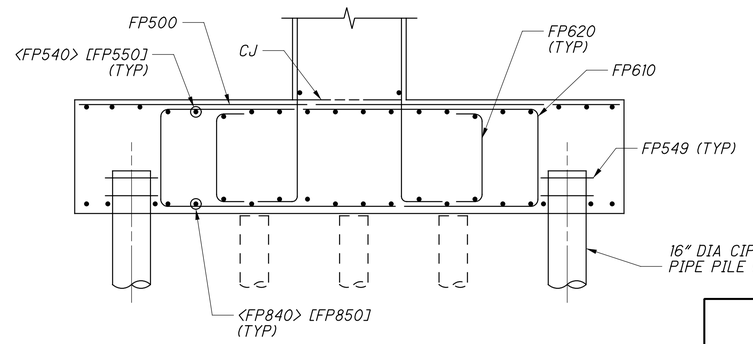
FOOTING REINFORCEMENT SHOWN IN SECTIONS A, B & C



A SECTION 37|57



B SECTION 37|57



C SECTION 37|57

NOTES:

1. DIMENSIONS AND CALLOUTS IN <DIM> REFERENCE PHASE B CONSTRUCTION.
   DIMENSIONS AND CALLOUTS IN [DIM] REFERENCE PHASE D CONSTRUCTION.
   DIMENSIONS AND CALLOUTS NOT IN BRACKETS ARE APPLICABLE TO BOTH ABUTMENTS.
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55|57 .

PIER SHEET REFERENCES

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DESIGNED EFD | DRAWN CJG | REVIEWED CTV | DATE 12-19-23
CHECKED CTM | REVISED | ODOT SFN: 3113818 | NSRR BR#: BR0018448

TYPICAL PIER SECTIONS

BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

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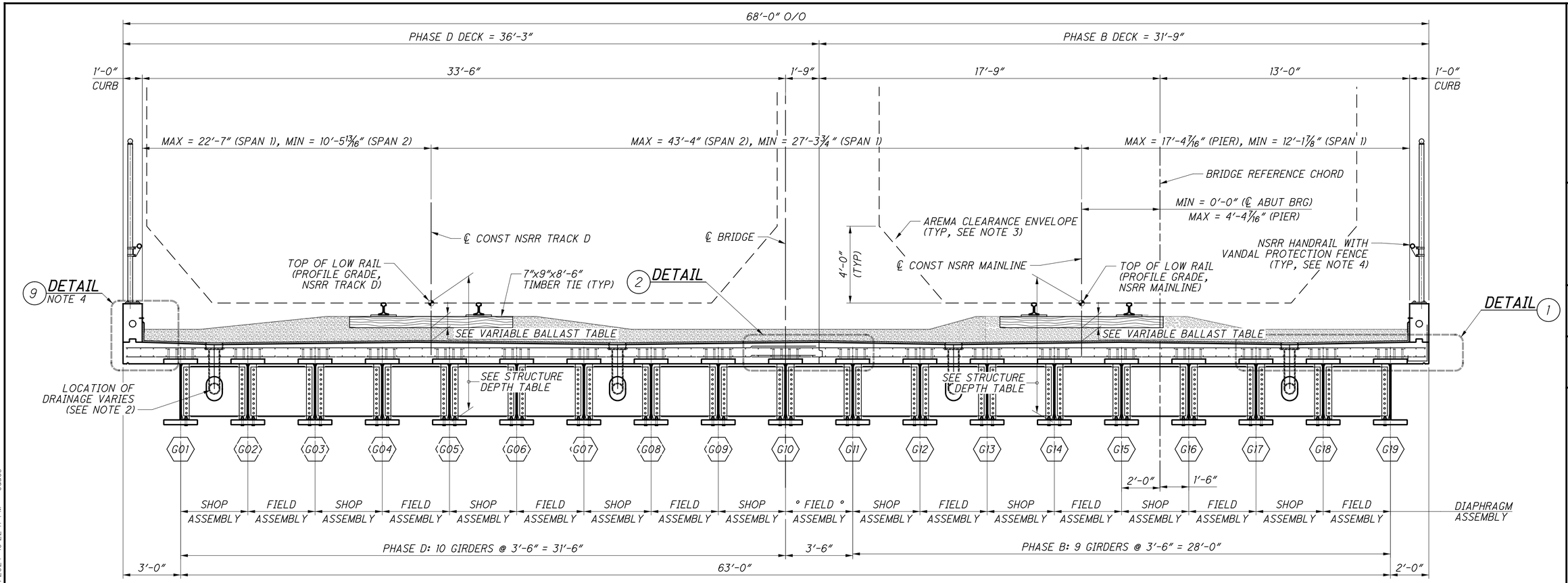
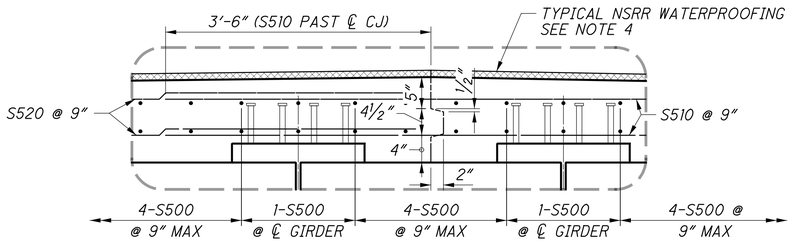
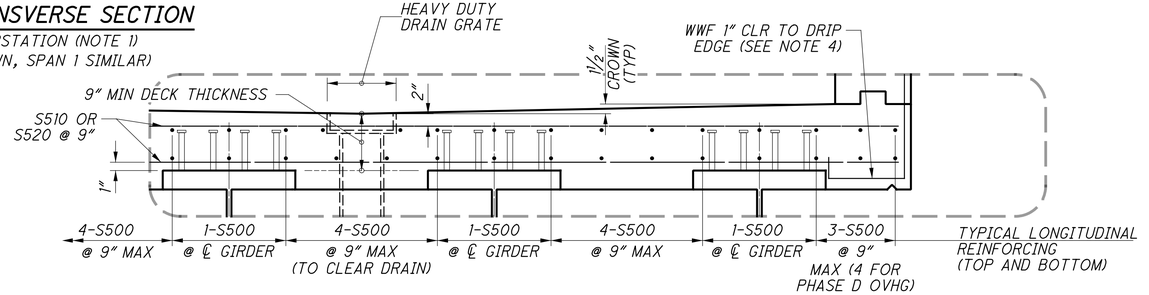




TYPICAL TRANSVERSE SECTION

LOOKING UPSTATION (NOTE 1)
(SPAN 2 SHOWN, SPAN 1 SIMILAR)



2 DETAIL
CONSTRUCTION JOINT

STRUCTURE DEPTH TABLE	
ELEMENT	DEPTH
141 RE RAIL	7 7/16"
TIE PLATE	1"
TIE	7"
WATERPROOFING	1/8"
CROWN HEIGHT	1 1/2"
MIN CONCRETE DECK	9"
GIRDER	41"
BOLT HEAD THICKNESS	5/8"
ELEMENT DEPTH FROM PGL (EXCLUDING BALLAST)	68 11/16"

VARIABLE BALLAST THICKNESS				
LOCATION	NSRR MAIN		NSRR TRACK D	
	Δ VAR BALLAST	*TOTAL DEPTH	Δ VAR BALLAST	*TOTAL DEPTH
SPAN 1: ℄ RA BRG	9.11"	77.80"	10.39"	79.08"
SPAN 1: MIDSPAN	9.19"	77.88"	10.66"	79.35"
SPAN 1: ℄ REAR PIER BRG	9.00"	77.69"	10.46"	79.15"
SPAN 2: ℄ FWD PIER BRG	9.00"	77.69"	10.42"	79.11"
SPAN 2: MIDSPAN	10.33"	79.01"	10.99"	79.68"
SPAN 2: ℄ BEARING FA	10.60"	79.29"	9.80"	78.49"

Δ VARIABLE BALLAST IS CALCULATED TO CONSIDER BOTH THE EFFECTS OF DECK CROWN AND HORIZONTAL CURVATURE, COMBINED WITH THE VARIATIONS DUE TO VERTICAL PROFILE.

* TOTAL DEPTH INDICATES THE TOTAL DEPTH FROM PGL TO BOTTOM OF STEEL (INCLUDING BOLT HEAD THICKNESS). IT IS THE SUMMATION OF THE ELEMENT DEPTH AND VARIABLE BALLAST THICKNESS AT EACH LOCATION.

✣ BAY 10 DIAPHRAGMS SHALL BE FULLY FASTENED AFTER COMPLETION OF THE DECK POUR AND PRIOR TO PLACEMENT OF PHASE D BALLAST

1 TYPICAL SLAB REINFORCING DETAIL
MISC. DETAILS NOT SHOWN FOR CLARITY

NOTES:

1. THE TYPICAL TRANSVERSE SECTION IS DRAWN AND DIMENSIONED NORMAL TO THE CHORD UNLESS NOTED OTHERWISE. THE TYPICAL SECTION SHOWN IS SCHEMATIC, BOTTOM OF BEAM ELEVATIONS AND DECK LOW POINT ELEVATIONS ARE EQUAL ALONG THE SKEW. SCREED, FINAL TOP OF DECK, AND MISCELLANEOUS STEEL DETAILS ACCOUNT FOR VARIATIONS IN BOTTOM OF BEAM ELEVATIONS NORMAL TO THE REFERENCE CHORD. EACH BOTTOM OF BEAM ELEVATION WILL INCREASE BY APPROXIMATELY 1/16" IN SPAN 1 AND DECREASE BY 1/32" IN SPAN 2 (MOVING LEFT TO RIGHT ACROSS THE SECTION).
   SEE SHEETS 5 57 THROUGH 11 57 FOR STAGED SECTIONS.
2. FOR DECK DRAINAGE LOCATIONS, SEE SHEET 53 57.
3. THE AREMA CLEARANCE ENVELOPE SHOWN IS THE STANDARD CLEARANCE ENVELOPE WIDENED BY 15" IN EACH DIRECTION TO ACCOUNT FOR A MAXIMUM 10 DEGREE HORIZONTAL CURVATURE. THE OUTER LIMITS OF EACH CLEARANCE DIAGRAM ARE EXTENDED TO THEIR EXTREME LOCATIONS TO DISPLAY THE TOTAL ENVELOPE OF THE ALIGNMENT ACROSS THE STRUCTURE.
4. FOR TYPICAL CURB, OVERHANG, KEYWAY, DRIP EDGE, WATERPROOFING, HANDRAIL AND VANDAL PROTECTION FENCE DETAILS, SEE RAILROAD TYPICAL DETAILS ON SHEETS 15/286 THROUGH 19/286.

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TRANSVERSE SECTION
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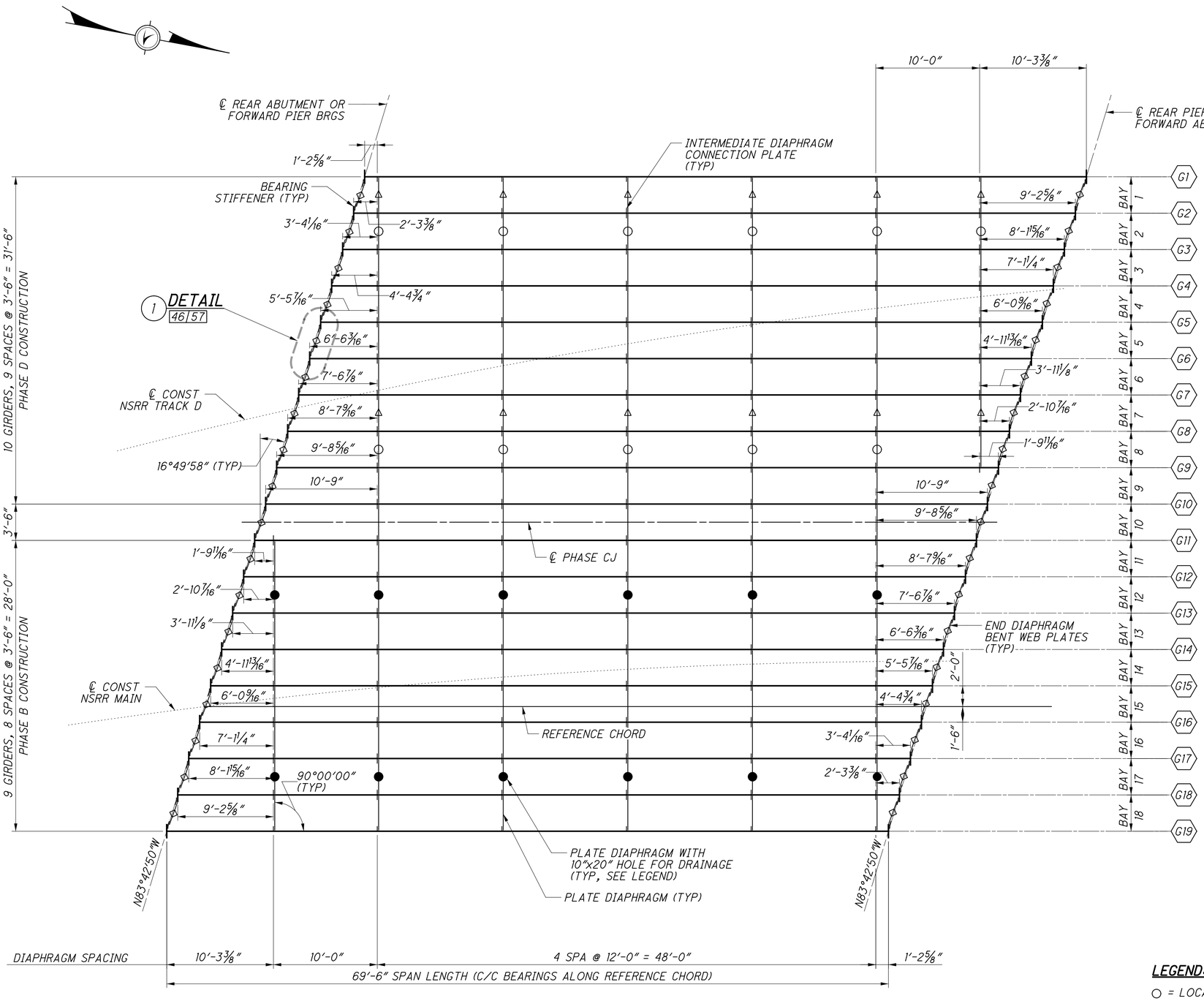

FRAMING PLAN

(SPAN 1 SHOWN, SPAN 2 SIMILAR)

UPSTATION ►

LEGEND:

○ = LOCATION OF DIAPHRAGM HOLE FOR DRAINAGE IN SPAN 1

△ = LOCATION OF DIAPHRAGM HOLE FOR DRAINAGE IN SPAN 2

● = LOCATION OF DIAPHRAGM HOLE FOR DRAINAGE IN BOTH SPANS

◇ = LOCATION OF END DIAPHRAGMS WITH BENT WEB PLATES

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FRAMING PLAN

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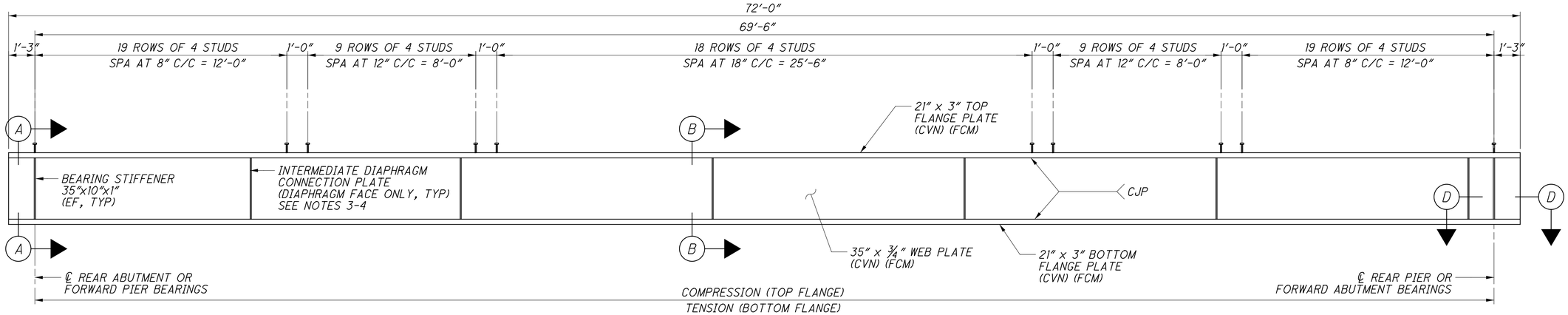
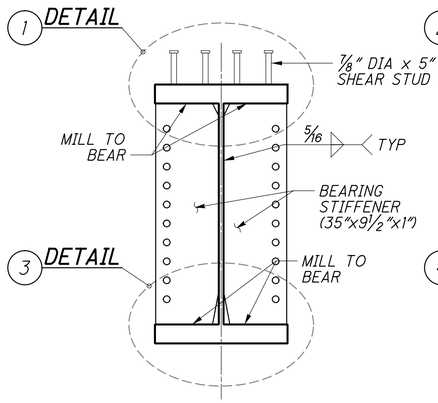
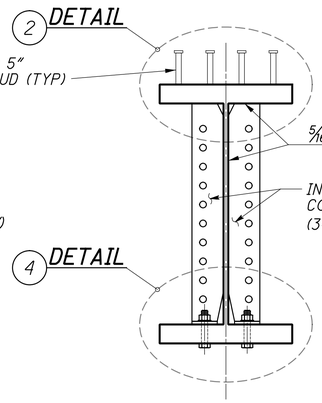


GIRDER ELEVATION

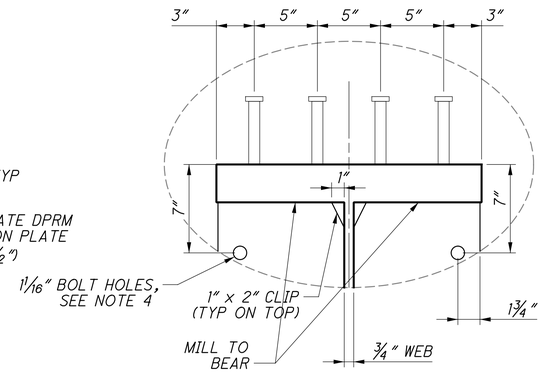
SPAN 1 SHOWN, SPAN 2 SIMILAR
UPSTATION ►



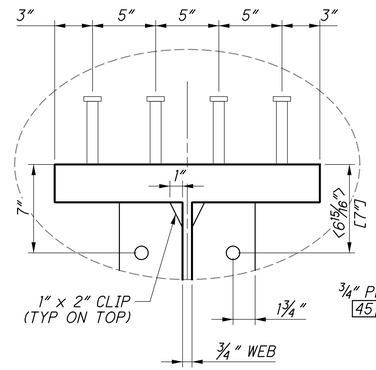
A SECTION
BEARING STIFFENER



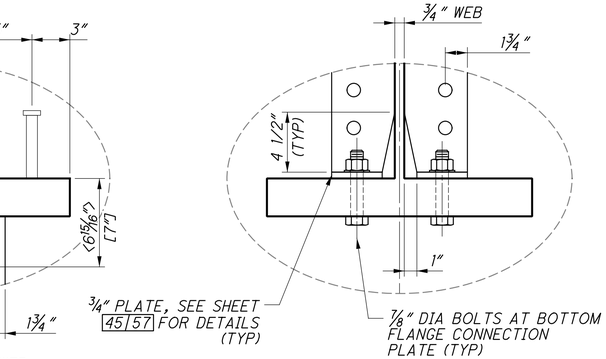
B SECTION
INTERMEDIATE DIAPHRAGM CONNECTION PLATE



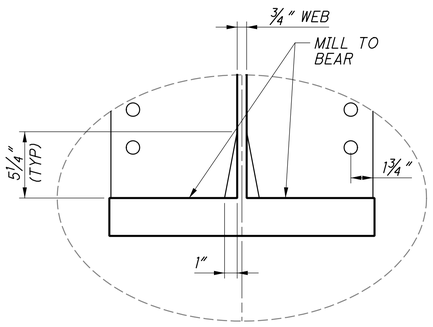
1 DETAIL
BEARING STIFFENER



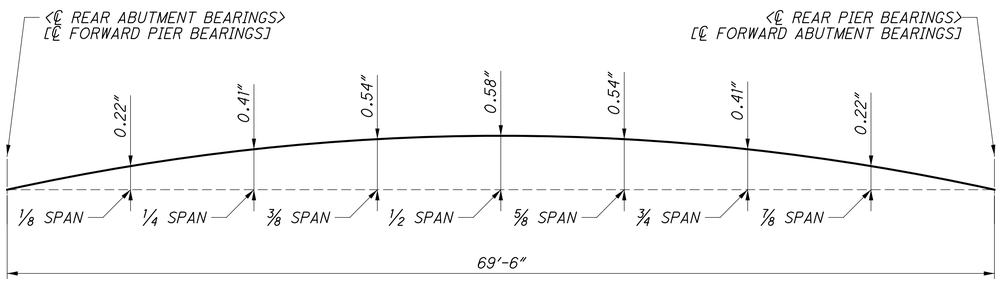
2 DETAIL
INTERMEDIATE DIAPHRAGM CONNECTION PLATE



4 DETAIL
INTERMEDIATE DIAPHRAGM CONNECTION PLATE



3 DETAIL
BEARING STIFFENER



GIRDER CAMBER DETAILS

SPANS 1 AND 2 (SEE NOTE 5)

NOTES:

1. HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER ASTM F3125, GRADE A325, UNLESS OTHERWISE NOTED.
2. (CVN) DENOTES A CHARPY V-NOTCH TEST IS REQUIRED. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.

   (FCM) DENOTES FRACTURE CRITICAL MEMBER. ALL FCM STEEL SHALL BE PROVIDED PER NORFOLK SOUTHERN SPECIFICATIONS FOR STRUCTURAL STEEL AND THE GENERAL NOTES ON SHEET: 10/286.
3. FOR DIAPHRAGM SPACING, SEE FRAMING PLAN SHEET 43/57.
4. FOR DIAPHRAGM CONNECTION DETAILS, SEE SHEET 45/57 AND 46/57.
5. CALLOUTS INSIDE OF <BRACKET> REFER TO SPAN 1 & INSIDE OF [BRACKET] REFER TO SPAN 2. CALLOUTS WITHOUT BRACKETS REFER TO BOTH SPANS. CAMBER CALCULATIONS INCLUDE NON-COMPOSITE DEFLECTIONS DUE TO THE GIRDER SELF-WEIGHT AND CONCRETE DECK PLACEMENT. ALL OTHER DEAD LOAD DEFLECTIONS, INCLUDING SECONDARY CONCRETE POURS AND BALLAST, ARE CALCULATED ASSUMING COMPOSITE SECTION PROPERTIES.
6. FOR SECTION D, SEE SHEET 46/57.

DESIGN AGENCY
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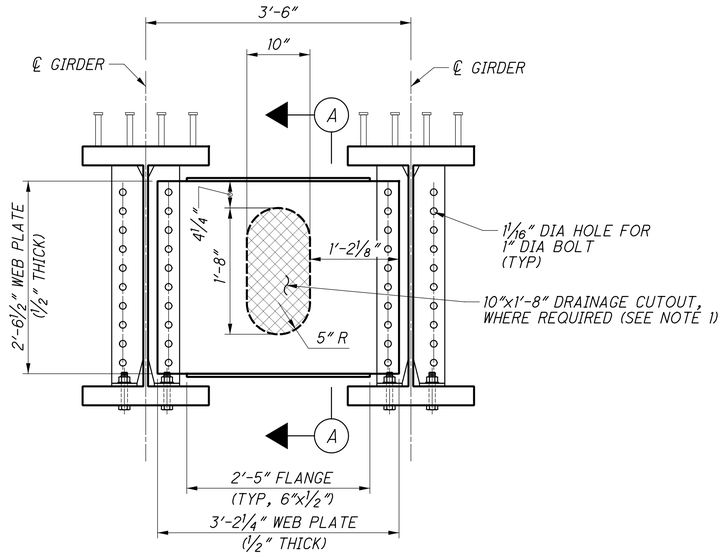
COLUMBUS, OHIO 43231

DESIGNED EFD | DRAWN CJG | REVIEWED CTV | DATE 12-19-23
CHECKED CTM | REVISED | ODOT SFN: 3113818 | NSRR BR#: BR0018448

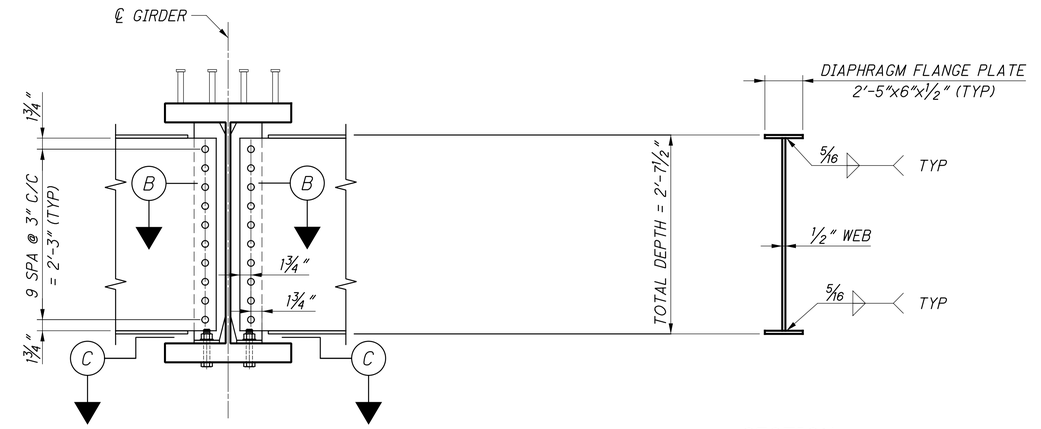
GIRDER ELEVATION, GIRDER SECTIONS AND CAMBER TABLE
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

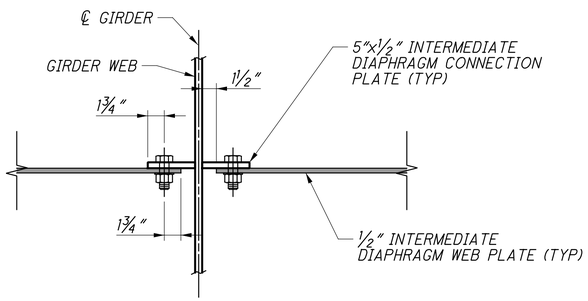


INTERMEDIATE DIAPHRAGM DETAILS

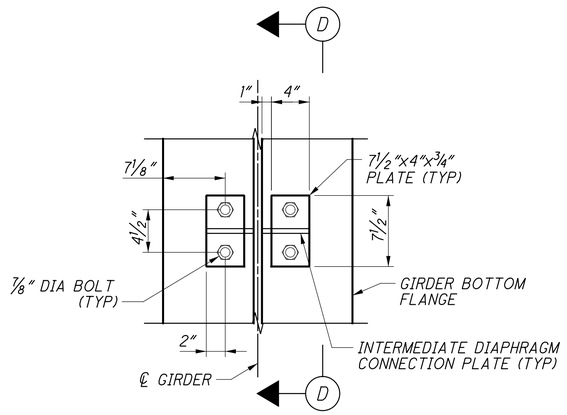
(NORMAL TO REFERENCE CHORD)



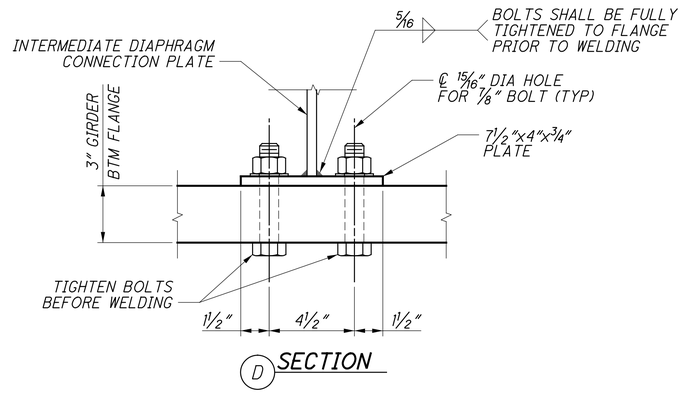
INTERMEDIATE DIAPHRAGM CONNECTION DETAILS



B SECTION



C SECTION



NOTES:

1. FOR LOCATIONS OF PLATE DIAPHRAGM DRAINAGE HOLES, SEE FRAMING PLAN SHEET 43/57.

DESIGN AGENCY
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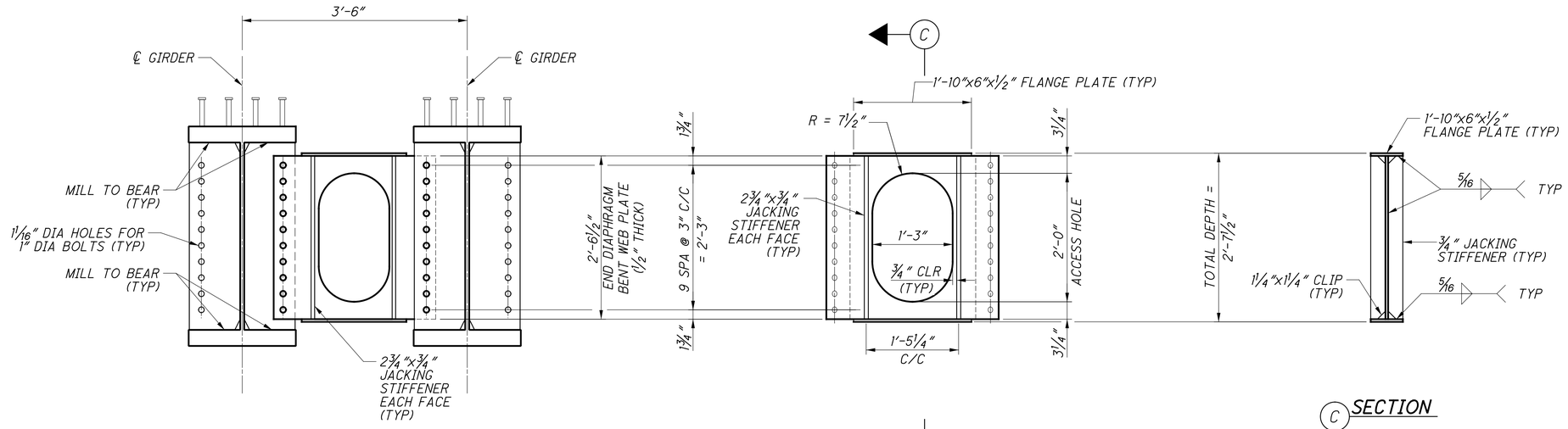
EFD	CJG	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

GIRDER-DIAPHRAGM CONNECTION DETAILS
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

45 / 57

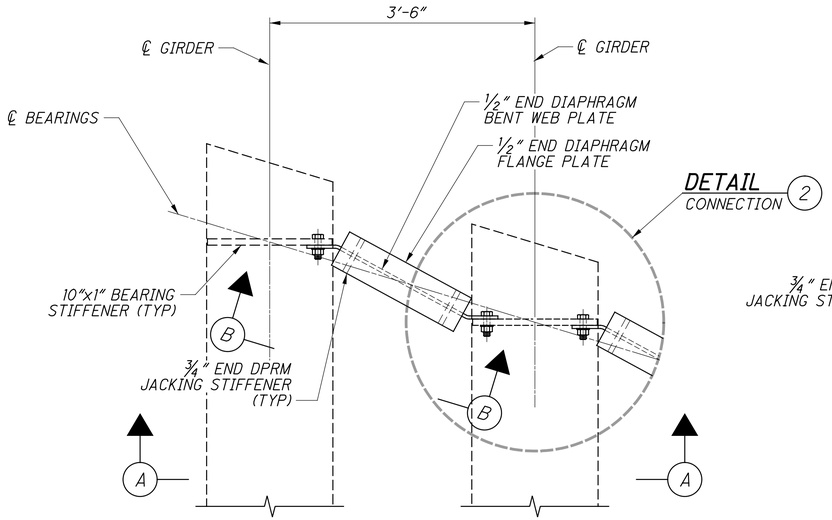
65
286



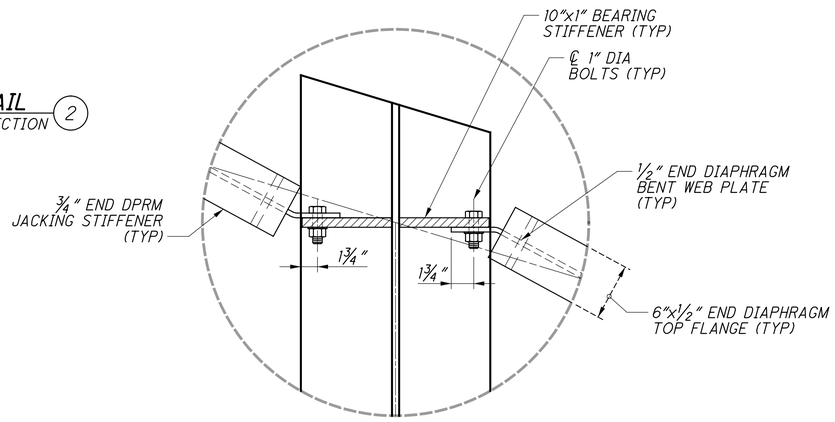
A GIRDER FRAMING SECTION
NORMAL TO GIRDER

B END DIAPHRAGM ELEVATION
PARALLEL TO DIAPHRAGM

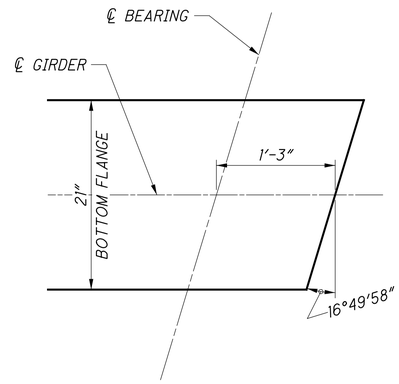
C SECTION



1 TYPICAL END DIAPHRAGM DETAIL
SEE SHEET 43/57



2 CONNECTION DETAIL
BEARING STIFFENER AND END DIAPHRAGM BENT WEB PLATE



D END BEVEL
SEE SHEET 44/57

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
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DESIGNED	DRAWN	REVIEWED	DATE
EFD	CJG	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

END DIAPHRAGM DETAILS
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

46 / 57

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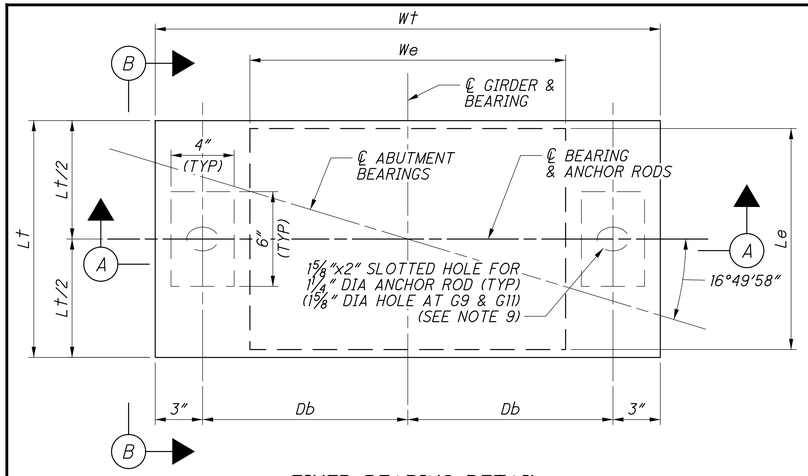
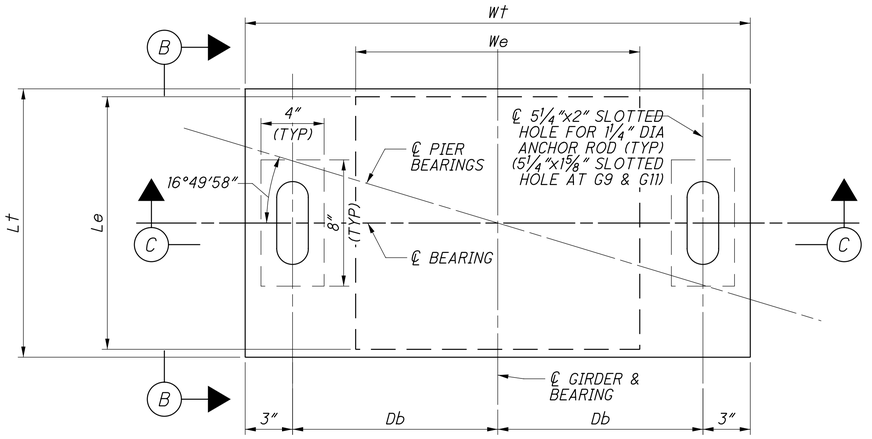


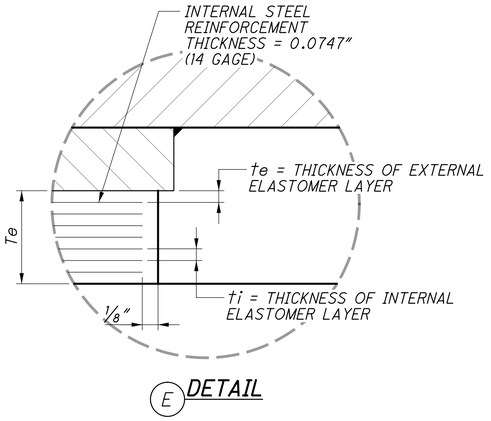
FIXED BEARING DETAIL

TYPICAL ABUTMENT BEARING

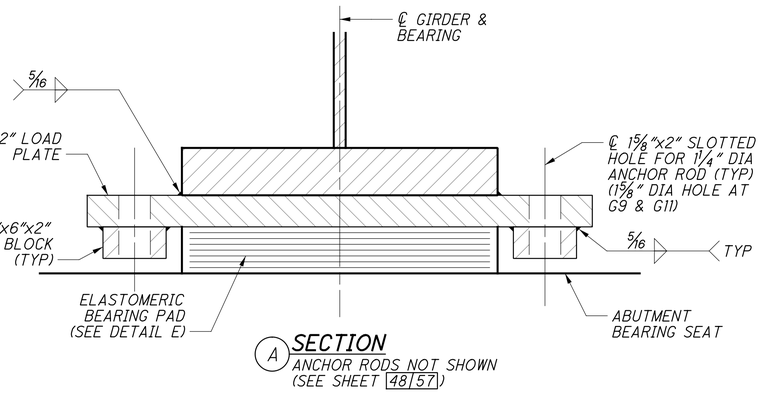


EXPANSION BEARING DETAIL

TYPICAL PIER BEARING

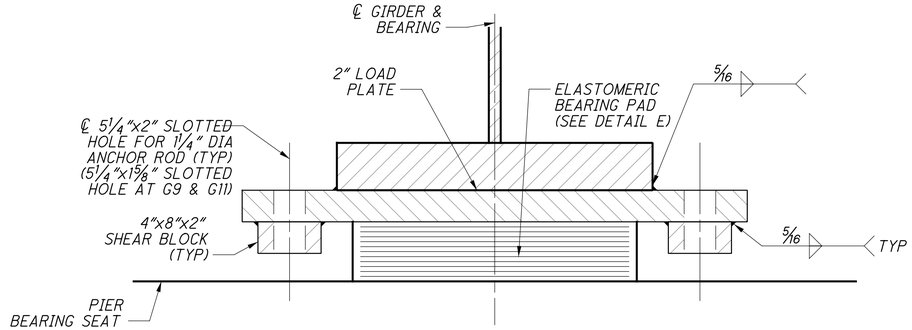


E DETAIL



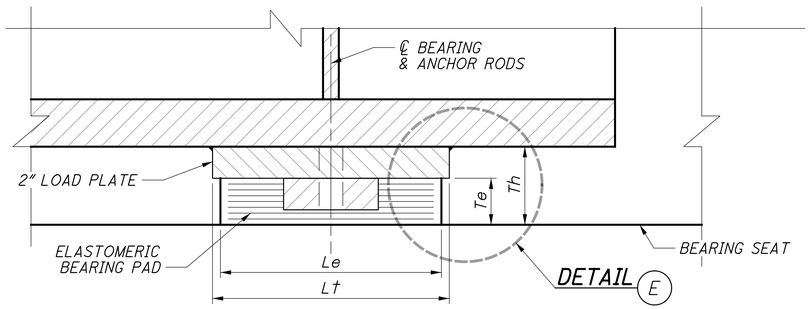
A SECTION

ANCHOR RODS NOT SHOWN (SEE SHEET 48/57)



C SECTION

ANCHOR RODS NOT SHOWN (SEE SHEET 48/57)



B ELEVATION

ANCHOR RODS NOT SHOWN (SEE SHEET 48/57)

LOCATION	TYPE	NO. REQ'D.	DL (KIP)	LL (KIP)	IMPACT (KIP)	TOTAL LOAD (DL+LL+I)	Le (IN.)	We (IN.)	ti (IN.)	te (IN.)	NO. OF ti'S	NO. OF te'S	NO. INTERNAL LAMINATES	Te (IN.)	Wt (IN.)	Lt (IN.)	Th (IN.)	Db (IN.)
ABUTMENT	FIX	38	67.7	131.8	53.4	252.9	14.0	20.0	0.39	0.25	5	2	6	2.898	32	15.0	4.898	13.0
PIER (GIRDERS 9 & 12)	EXP	4	67.7	131.8	53.4	252.9	16.0	18.0	0.34	0.15	8	2	9	3.692	32	17.0	5.692	13.0
PIER (GIRDERS 2 & 18)	EXP	4	67.7	131.8	53.4	252.9	16.0	18.0	0.34	0.15	8	2	9	3.692	32	17.0	5.692	13.0
PIER (GIRDERS 1, 3 THRU 8, 10, 11, 13 THRU 17, 19)	EXP	30	67.7	131.8	53.4	252.9	16.0	18.0	0.34	0.15	8	2	9	3.692	32	17.0	5.692	13.0

NOTES:

1. THE ANCHOR RODS AND NUTS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153. HEAVY HEX NUTS SHALL BE ASTM F563. ANCHOR RODS SHALL BE ASTM F1554, GRADE 105. ANCHOR RODS SHALL BE INSTALLED IN PREFORMED HOLES. DRILLED HOLES SHALL NOT BE USED.

   FOR TYPICAL ANCHOR BLOCK OUT DETAIL, SEE SHEET 19/286.

   PREFORMED HOLES SHALL BE FILLED WITH NON-SHRINK, NON-METALLIC GROUT AND IS INCIDENTAL TO THE COST OF THE BEARINGS.
2. DO NOT PAINT STEEL SURFACES IN CONTACT WITH ELASTOMERIC PAD.
3. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UPSTATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED. STEEL LOAD PLATES SHALLBE ASTM A36 AND SHALL BE SHOP PAINTED WITH INORGANIC ZINC PRIMER AS SPECIFIED IN CMS 513.27. APPLY SHOP PAINT TO EXPOSED SURFACES AFTER WELDING TO THE STRUCTURAL STEEL, COLOR SHALL MATCH STRUCTURAL STEEL.
4. THE STEEL REINFORCEMENT FOR REINFORCED ELASTOMERIC BEARINGS SHALL BE ASTM A1011 GRADE 36, OR ASTM A1008 GRADE D, UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
5. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER CHAPTER 15 OF AREMA.
6. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS. CONTROL WELDING OF LOAD PLATE TO THE SUPERSTRUCTURE SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY THE USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
7. BEARING REPOSITONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS ⅛ OF THE BEARING HEIGHT AT 60°F±10°F, RAISE THE GIRDERS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F±10°F.
8. BASIS OF PAYMENT - THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS LABOR, TESTING, PAINTING AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS, LOAD PLATES, ANCHOR RODS, AND BEARING BRACKETS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516, EACH, ELASTOMERIC BEARINGS WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.
9. THE SLOTTED DIRECTION OF HOLES AT FIXED BEARINGS ARE NORMAL TO THE CENTERLINE OF GIRDER TO ALLOW LATERAL THERMAL EXPANSION OF THE STRUCTURE. NOTE THAT THE FIXED BEARINGS OF GIRDERS 9 & 11 DO NOT HAVE SLOTTED HOLES.

DESIGN AGENCY
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COLUMBUS, OHIO 43231

DESIGNED EFD | DRAWN DKU | REVIEWED CTV | DATE 12-19-23
CHECKED CTM | REVISED | ODOT SFN: 3113818 | NSRR BR#: BR0018448

ELASTOMERIC BEARING DETAILS

BRIDGE NO. HAM-562-0026 (INSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

47 / 57

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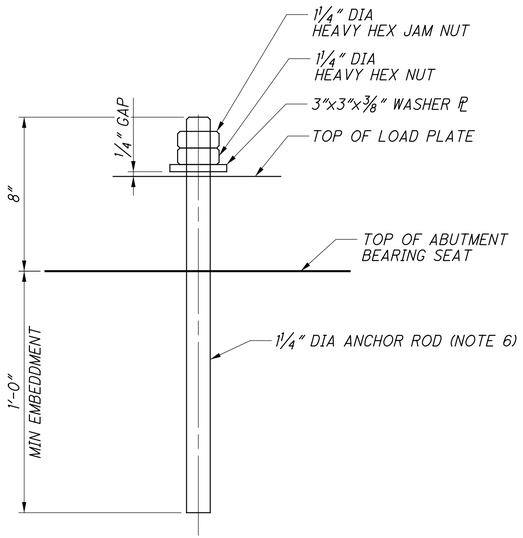
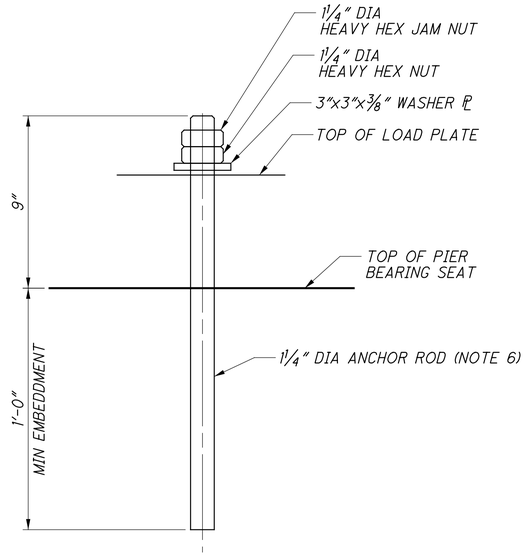
286



FIXED BEARING ANCHOR ROD DETAIL



EXPANSION BEARING ANCHOR ROD DETAIL

NOTES:

1. FOR REAR ABUTMENT BEARING LAYOUT, SEE SHEETS 21/57 AND 23/57.
2. FOR FORWARD ABUTMENT BEARING LAYOUT, SEE SHEETS 28/57 AND 30/57.
3. FOR PIER BEARING LAYOUT, SEE SHEETS 37/57 AND 39/57.
4. FOR ADDITIONAL BEARING NOTES AND DETAILS, SEE SHEET 47/57.
5. ANCHOR RODS SHALL BE IN COMPLIANCE WITH AREMA 15-5.3.7.d AND INSTALLED IN PREFORMED HOLES. DRILLED HOLES SHALL NOT BE USED.
   FOR TYPICAL ANCHOR BLOCK OUT DETAIL, SEE SHEET 19/286.
   PREFORMED HOLES SHALL BE FILLED WITH NON-SHRINK, NON-METALLIC GROUT AND IS INCIDENTAL TO THE COST OF THE BEARINGS. ANCHOR BOLTS ARE TO BE SET IN THE PREFORMED HOLES PRIOR TO PLACING BEARINGS AND GIRDERS.
6. AT A MINIMUM, THE ANCHOR RODS SHALL BE SWEDGED OR THREADED, THE ENTIRE LENGTH OF EMBEDMENT.

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COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	CTM	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

BEARING DETAILS
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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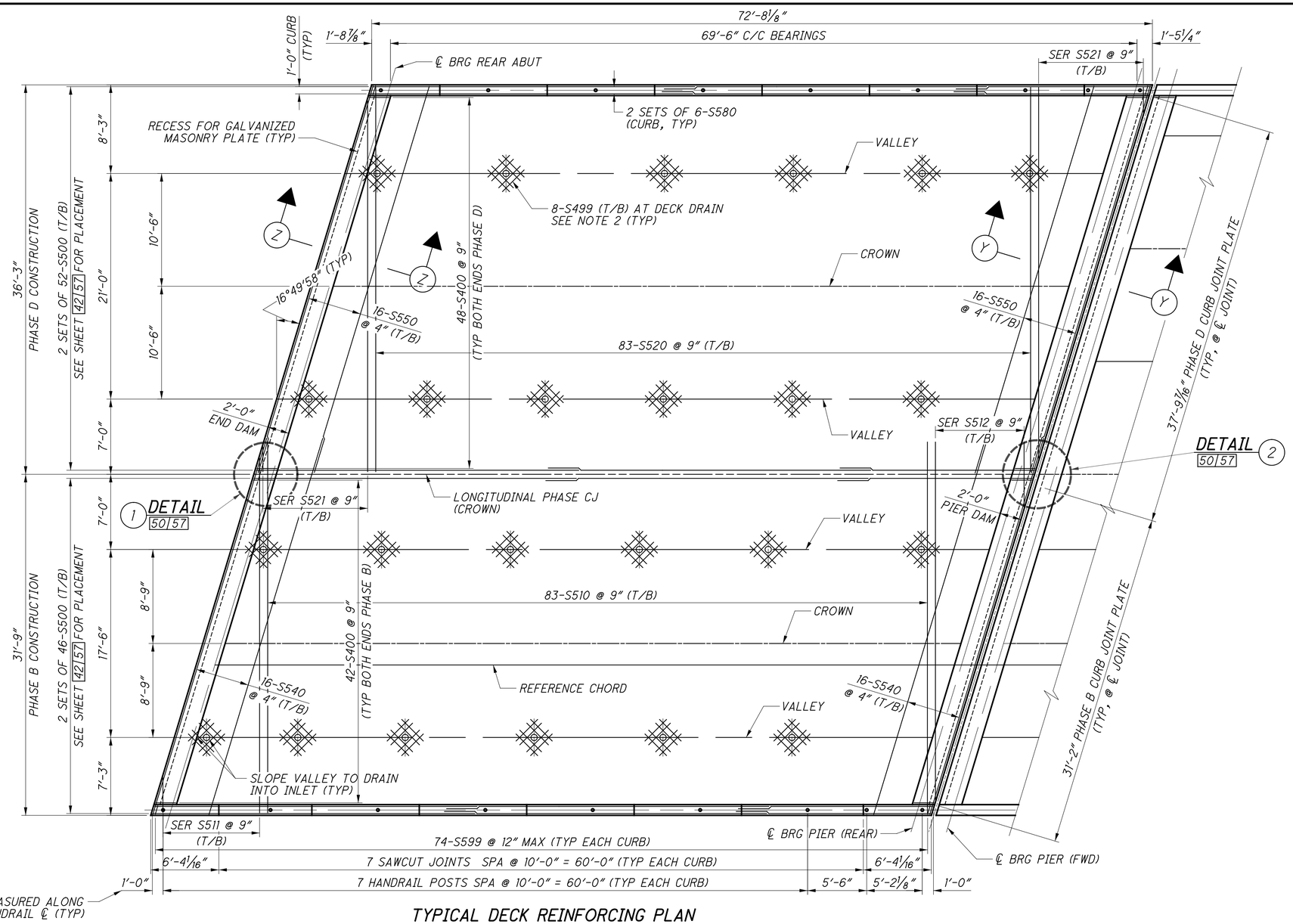
NOTES:

1. FOR DECK JOINT DETAILS, SEE GENERAL RAILROAD DETAILS, SHEET 20/286 .
2. FOR CURB REINFORCING DETAILS AND REINFORCING AT DECK DRAINS, SEE GENERAL RAILROAD DETAILS, SHEET 19/286 .

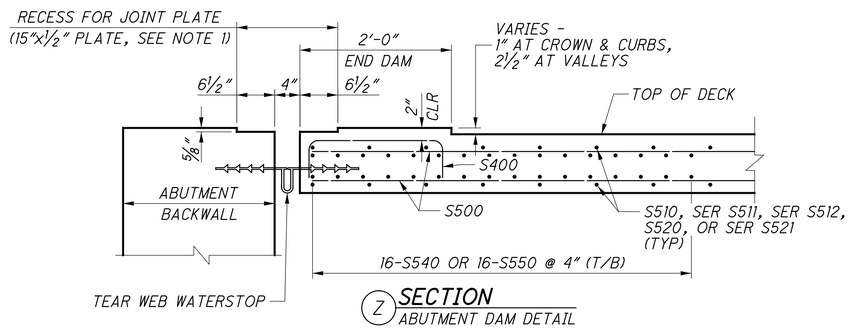
   FOR DRAIN LOCATION AND DETAILS, SEE SHEET 53/57 .
3. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 55/57 .



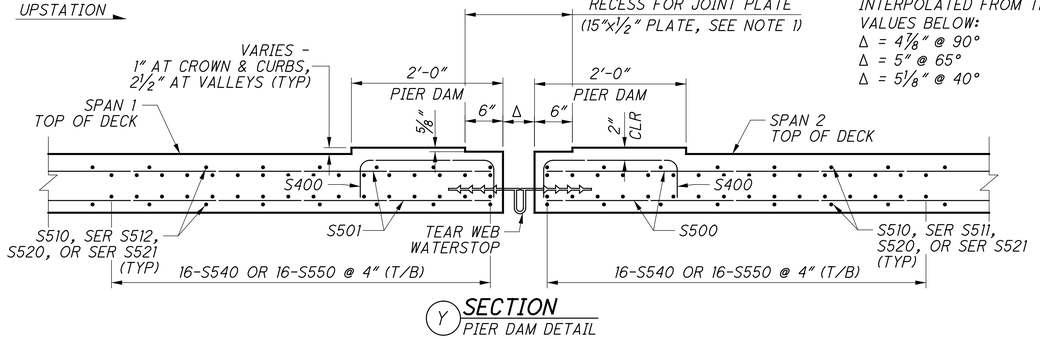
TYPICAL DECK REINFORCING PLAN

(SPAN 1 SHOWN, SPAN 2 SIMILAR)

UPSTATION ►



Z SECTION ABUTMENT DAM DETAIL



Y SECTION PIER DAM DETAIL

Δ VALUE SHALL BE LINEARLY INTERPOLATED FROM THE VALUES BELOW:
Δ = 4 1/8" @ 90°
Δ = 5" @ 65°
Δ = 5 1/8" @ 40°

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EFD	DKU	CTV	12-19-23
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CTM		NSRR BR#: BR0018448	

DECK PLAN - TYPICAL

BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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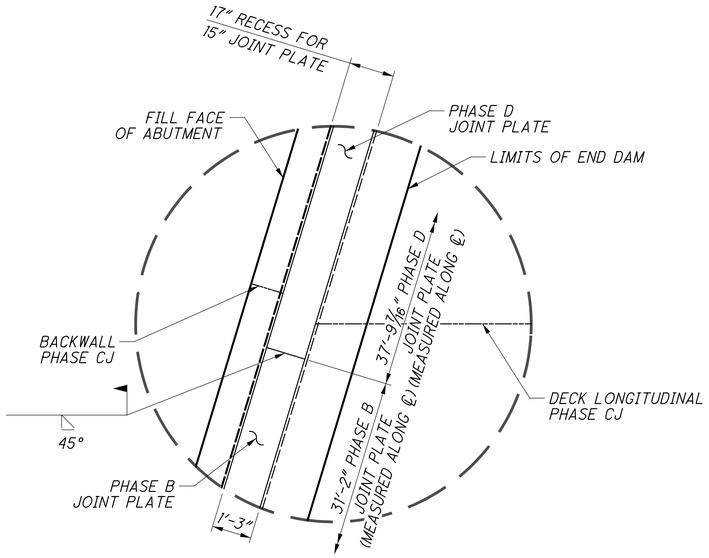
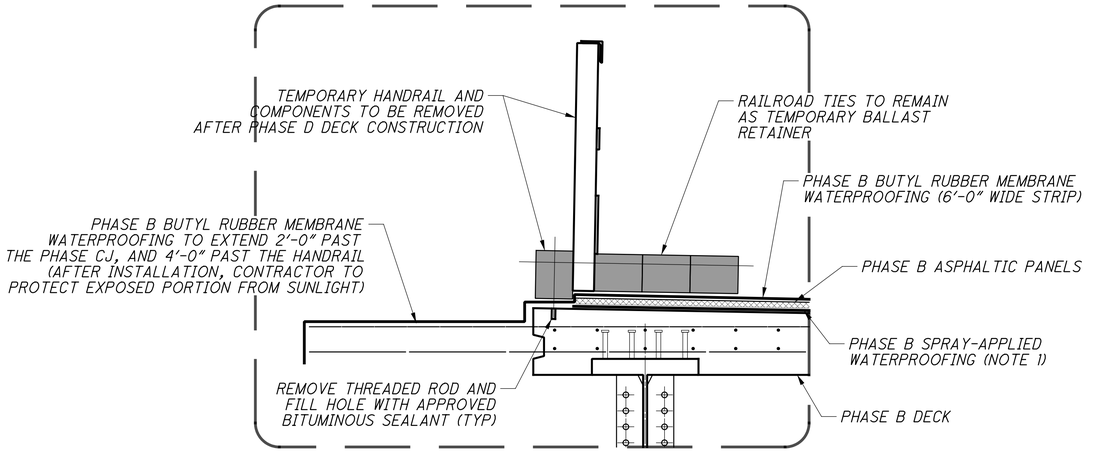
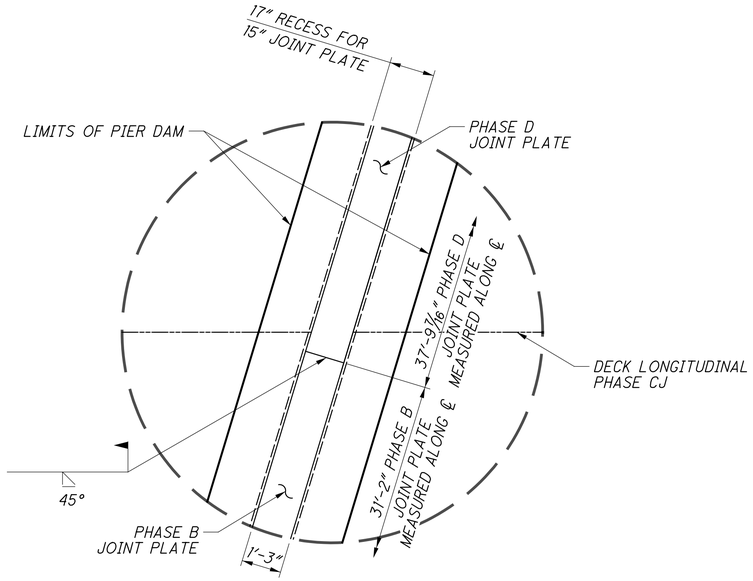


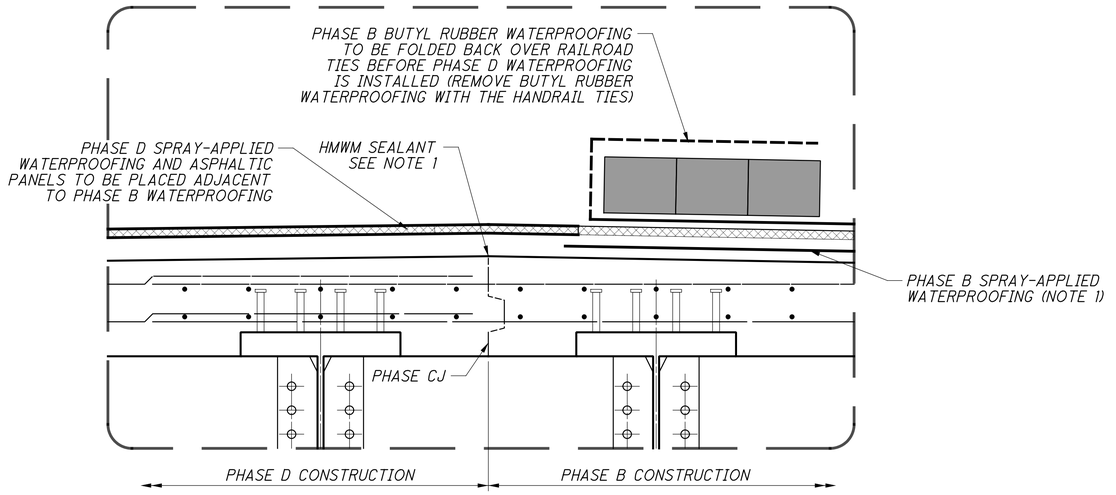
1 **DETAIL**
END DAM JOINT PLATE
49|57



PHASE CJ WATERPROOFING DETAIL
STEP 1 (LOOKING UPSTATION)



2 **DETAIL**
PIER EXPANSION JOINT PLATE
49|57



PHASE CJ WATERPROOFING DETAIL
STEP 2 (NOT TO SCALE)
(LOOKING UPSTATION)

NOTES:

1. STOP PHASE B SPRAY-APPLIED WATERPROOFING 9" BEFORE THE PHASE CJ. SEAL LONGITUDINAL PHASE CJ FOR THE LENGTH OF THE JOINT A MINIMUM OF 9" ON EITHER SIDE OF THE JOINT. SEALANT SHALL BE HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM), 705.15. OVERLAP BOTH WITH PHASE D SPRAY-APPLIED WATERPROOFING.

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VDT	VDT	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

DECK DETAILS
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
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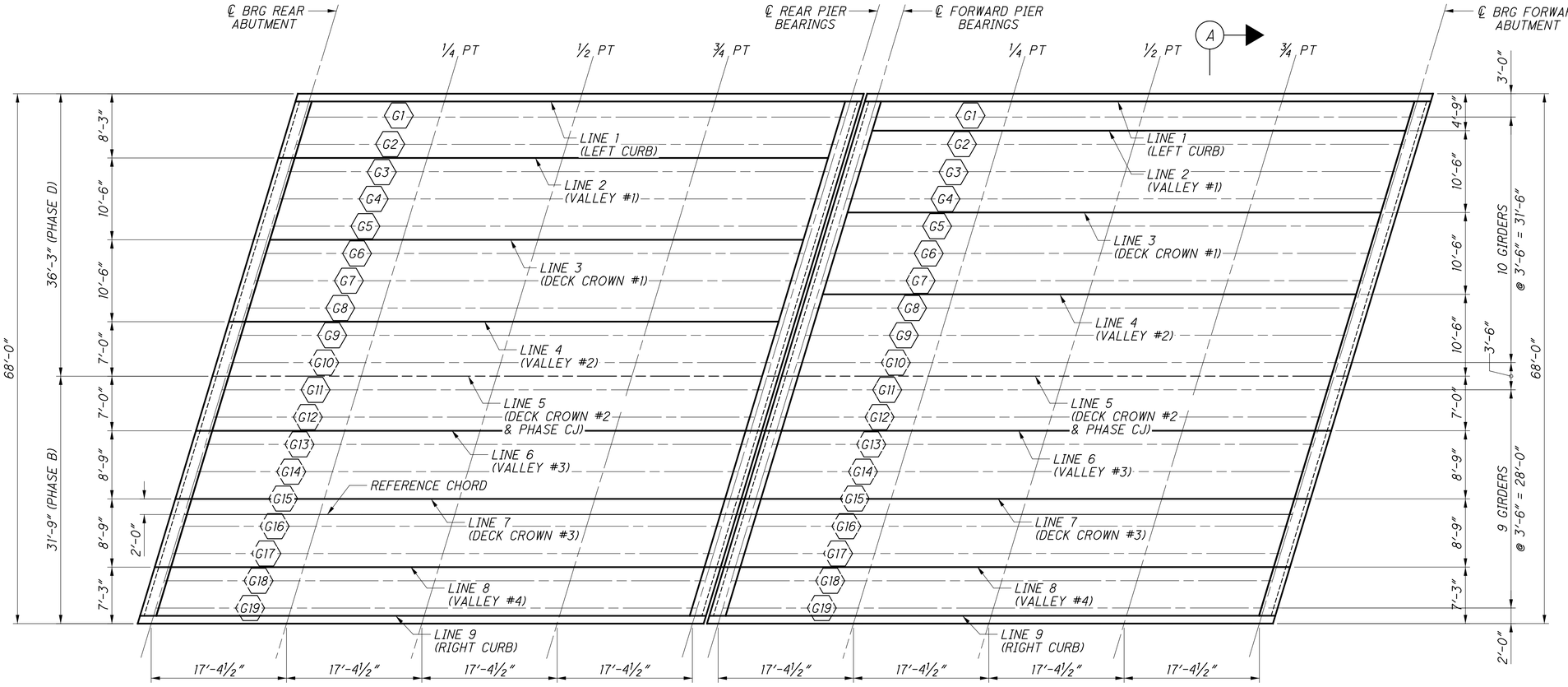
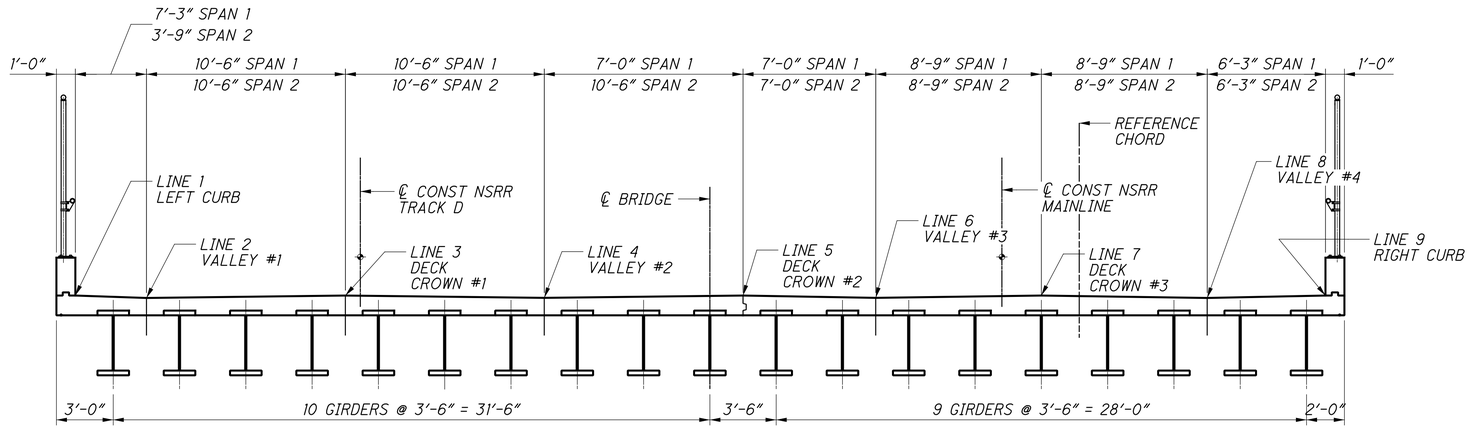


SCREED AND ELEVATION LOCATION DIAGRAM

UPSTATION



A TRANSVERSE SECTION

SCREED AND FINAL DECK ELEVATION LINES
(SPAN 2 SHOWN, SPAN 1 SIMILAR)

DESIGN AGENCY
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2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	DKU	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

FINAL DECK/SCREED LOCATIONS
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

FINAL DECK ELEVATION TABLE - SPAN 1

LINE NO.	LOCATION	℄ BRG REAR ABUT	1/4 PT	1/2 PT	3/4 PT	℄ BRG PIER
LINE 1	LEFT CURB LINE	549.04	549.13	549.21	549.30	549.39
LINE 2	VALLEY #1	548.91	549.00	549.09	549.18	549.26
LINE 3	DECK CROWN #1	549.04	549.13	549.21	549.30	549.39
LINE 4	VALLEY #2	548.91	549.00	549.09	549.18	549.26
LINE 5	DECK CROWN #2	549.04	549.13	549.21	549.30	549.39
LINE 6	VALLEY #3	548.91	549.00	549.09	549.18	549.26
LINE 7	DECK CROWN #3	549.04	549.13	549.21	549.30	549.39
LINE 8	VALLEY #4	548.91	549.00	549.09	549.18	549.26
LINE 9	RIGHT CURB LINE	549.04	549.13	549.21	549.30	549.39

FINAL DECK ELEVATION TABLE - SPAN 2

LINE NO.	LOCATION	℄ BRG PIER	1/4 PT	1/2 PT	3/4 PT	℄ BRG FORWARD ABUT
LINE 1	LEFT CURB LINE	549.40	549.37	549.35	549.32	549.29
LINE 2	VALLEY #1	549.27	549.25	549.22	549.19	549.17
LINE 3	DECK CROWN #1	549.40	549.37	549.35	549.32	549.29
LINE 4	VALLEY #2	549.27	549.25	549.22	549.19	549.17
LINE 5	DECK CROWN #2	549.40	549.37	549.35	549.32	549.29
LINE 6	VALLEY #3	549.27	549.25	549.22	549.19	549.17
LINE 7	DECK CROWN #3	549.40	549.37	549.35	549.32	549.29
LINE 8	VALLEY #4	549.27	549.25	549.22	549.19	549.17
LINE 9	RIGHT CURB LINE	549.40	549.37	549.35	549.32	549.29

SCREED ELEVATION TABLE - SPAN 1

LINE NO.	LOCATION	℄ BRG REAR ABUT	1/4 PT	1/2 PT	3/4 PT	℄ BRG PIER
LINE 1	LEFT CURB LINE	549.04	549.15	549.24	549.32	549.39
LINE 2	VALLEY #1	548.91	549.02	549.12	549.20	549.26
LINE 3	DECK CROWN #1	549.04	549.15	549.24	549.32	549.39
LINE 4	VALLEY #2	548.91	549.02	549.12	549.20	549.26
LINE 5	DECK CROWN #2	549.04	549.15	549.24	549.32	549.39
LINE 6	VALLEY #3	548.91	549.02	549.12	549.20	549.26
LINE 7	DECK CROWN #3	549.04	549.15	549.24	549.32	549.39
LINE 8	VALLEY #4	548.91	549.02	549.12	549.20	549.26
LINE 9	RIGHT CURB LINE	549.04	549.15	549.24	549.32	549.39

SCREED ELEVATION TABLE - SPAN 2

LINE NO.	LOCATION	℄ BRG PIER	1/4 PT	1/2 PT	3/4 PT	℄ BRG FORWARD ABUT
LINE 1	LEFT CURB LINE	549.40	549.39	549.38	549.34	549.29
LINE 2	VALLEY #1	549.27	549.27	549.25	549.22	549.17
LINE 3	DECK CROWN #1	549.40	549.39	549.38	549.34	549.29
LINE 4	VALLEY #2	549.27	549.27	549.25	549.22	549.17
LINE 5	DECK CROWN #2	549.40	549.39	549.38	549.34	549.29
LINE 6	VALLEY #3	549.27	549.27	549.25	549.22	549.17
LINE 7	DECK CROWN #3	549.40	549.39	549.38	549.34	549.29
LINE 8	VALLEY #4	549.27	549.27	549.25	549.22	549.17
LINE 9	RIGHT CURB LINE	549.40	549.39	549.38	549.34	549.29

NOTES:

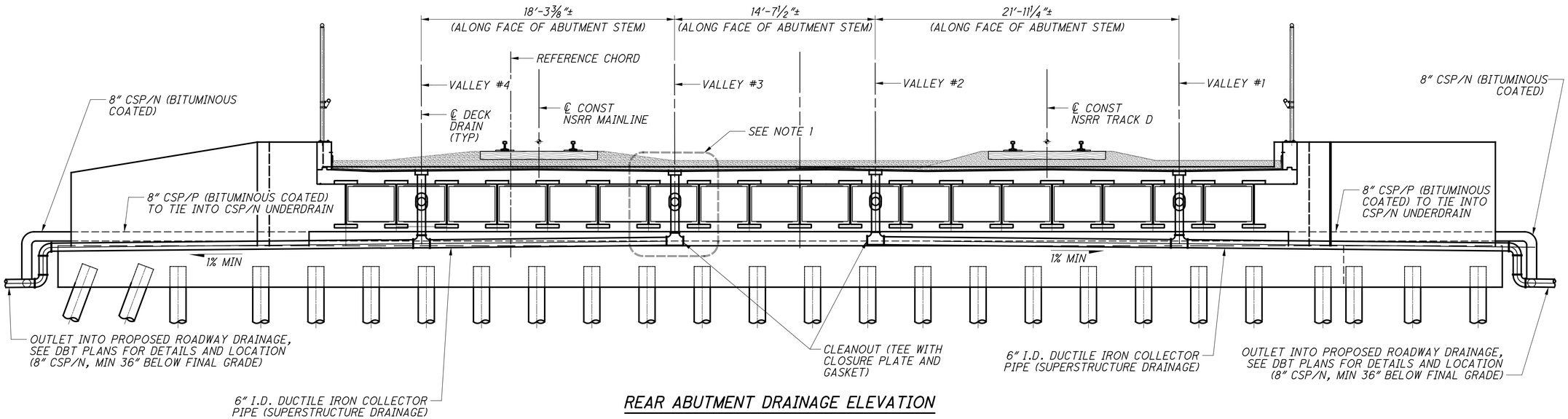
1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS. OTHER ANTICIPATED DEAD LOADS INCLUDE CURB CONCRETE, BALLAST, AND TRACKWORK BUT DOES NOT INCLUDE THE EFFECTS OF A FUTURE BALLAST.
2. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURED (DOES NOT INCLUDE FUTURE BALLAST).

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	DKU	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

FINAL DECK/SCREED ELEVATIONS
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

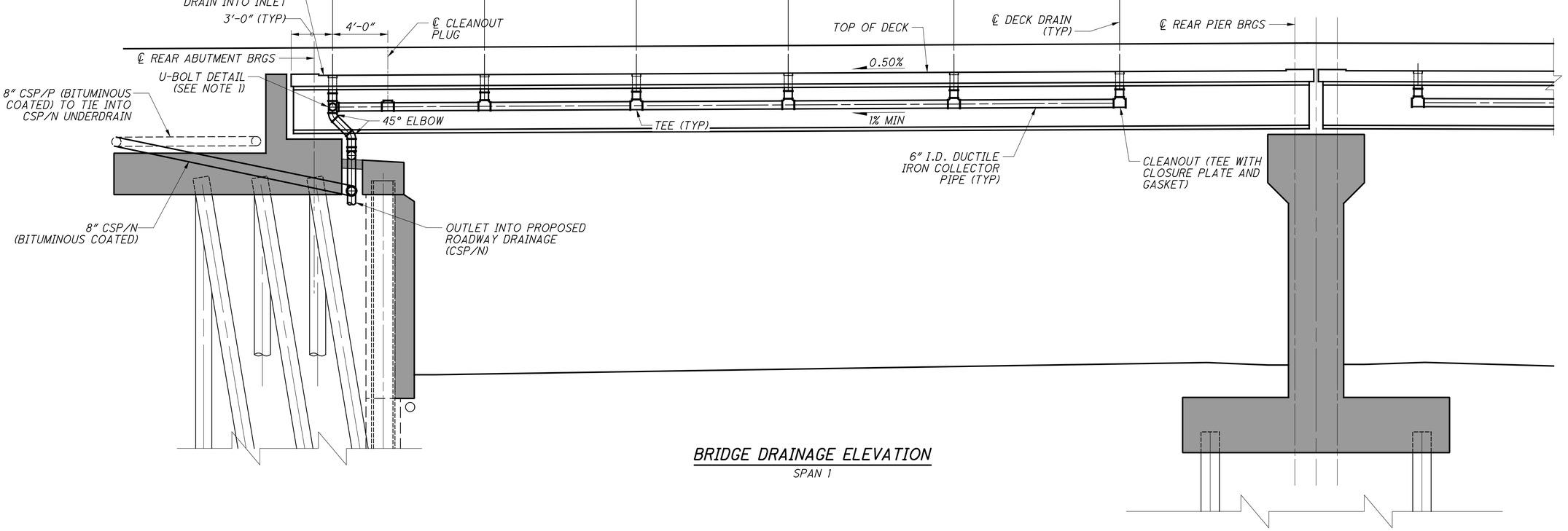


REAR ABUTMENT DRAINAGE ELEVATION

VALLEY #1	12′-0″	14′-9″	12′-0″	12′-0″	10′-0″
VALLEY #2	11′-0″	11′-0″	11′-0″	12′-0″	12′-0″
VALLEY #3	11′-0″	12′-0″	12′-0″	12′-0″	14′-3″
VALLEY #4	8′-6″	10′-0″	12′-0″	12′-0″	12′-0″

NOTES:

1. FOR TYPICAL NORFOLK SOUTHERN AND PROJECT DRAINAGE DETAILS, SEE SHEET 18/286 .



BRIDGE DRAINAGE ELEVATION

SPAN 1

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

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BRIDGE DRAINAGE – SPAN 1

BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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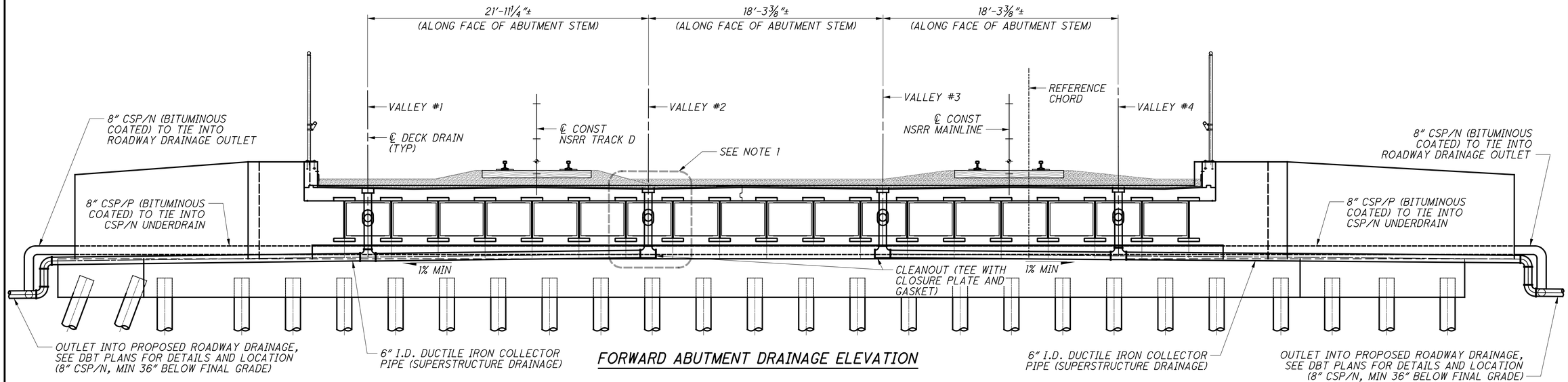
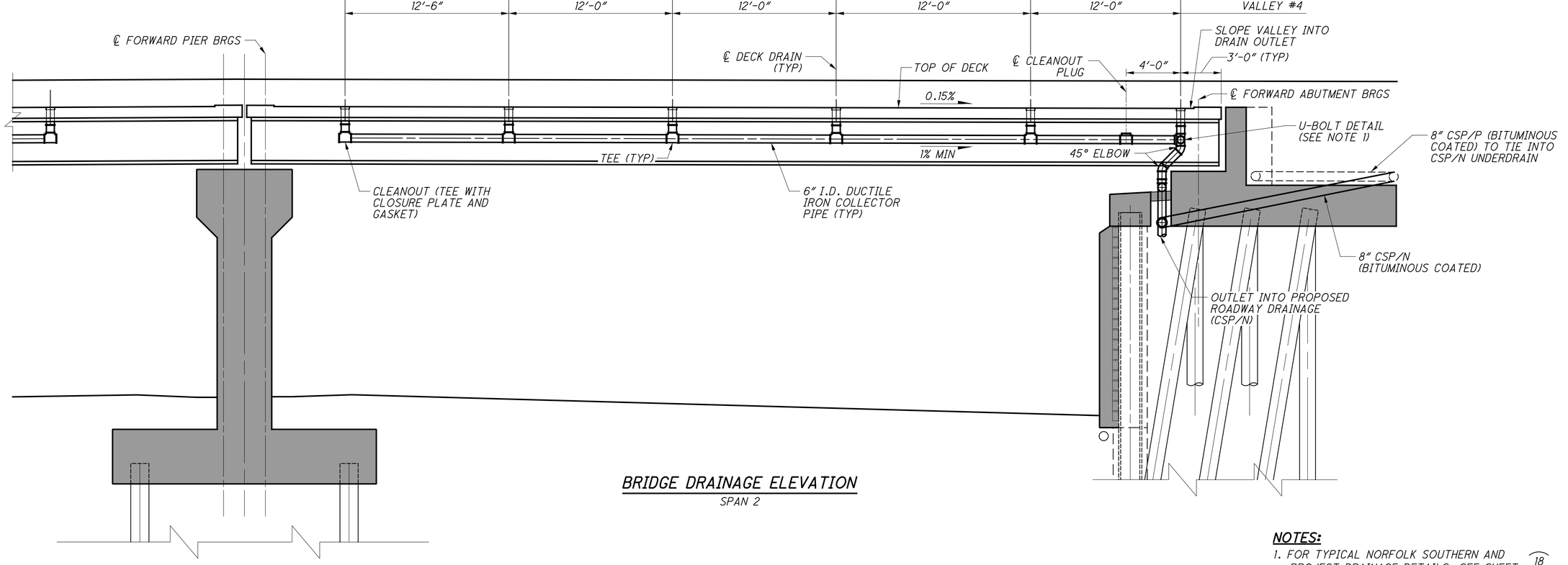


FORWARD ABUTMENT DRAINAGE ELEVATION



BRIDGE DRAINAGE ELEVATION

SPAN 2

NOTES:

1. FOR TYPICAL NORFOLK SOUTHERN AND PROJECT DRAINAGE DETAILS, SEE SHEET 18/286 .

DESIGN AGENCY
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2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	DKU	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
CTM		NSRR BR#: BR0018448	

BRIDGE DRAINAGE – SPAN 2

BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

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74 / 286

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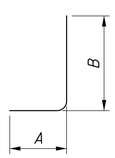

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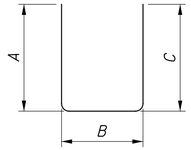

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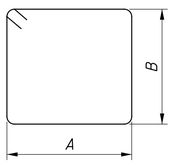

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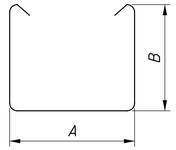

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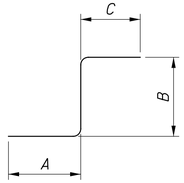

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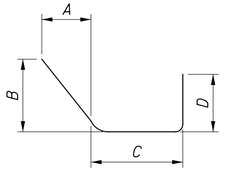

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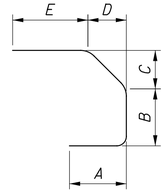

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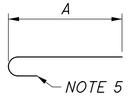

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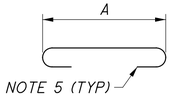

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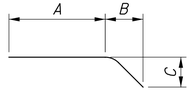

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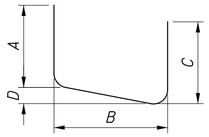

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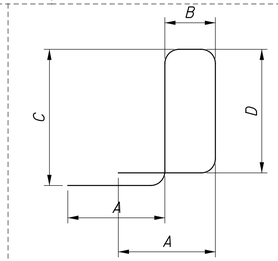

TYPE-34

AREMA CLASS C LAP SPLICE LENGTHS (NOTE 6):

#4 BAR (Ld=1′-6″): ALL = 2′-7″
#5 BAR (Ld=1′-11″): DECK = 3′-3″, OTHERS = 3′-8″
#6 BAR (Ld=2′-3″): DECK = 3′-10″, OTHERS = 4′-5″
#7 BAR (Ld=2′-11″): ALL = 5′-6″
#8 BAR (Ld=3′-9″): TOP/ FOOTING = 7′-3″, OTHERS = 6′-6″
#9 BAR (Ld=4′-9″): TOP/ FOOTING = 9′-2″, OTHERS = 8′-1″
#10 BAR (Ld=6′-1″): TOP/ FOOTING = 11′-8″, OTHERS = 10′-3″
#11 BAR (Ld=7′-5″): TOP/ FOOTING = 14′-4″, OTHERS = 12′-7″
#14 BAR: MECHANICALLY SPLICE

REINFORCING BEND DIAGRAMS AND LAP SPLICE LENGTHS

MARK	NUMBER PHASE B REAR	NUMBER PHASE B FWD	NUMBER PHASE D REAR	NUMBER PHASE D FWD	TOTAL	LENGTH	WEIGHT PH. B	WEIGHT PH. D	WEIGHT TOTAL	TYPE	DIMENSIONS A	B	C	INC
ABUTMENT & WINGWALLS														
A500	14				14	30′-0″	438		438	STR.				
A501	14				14	14′-3″	208		208	STR.				
A502	10				10	17′-4″	181		181	19	13′-2″	2′-0″	3′-8″	
A503	10				10	16′-0″	167		167	19	12′-8″	1′-8″	2′-11″	
A504	7				7	15′-3″	111		111	1	1′-0″	14′-3″		
A505	7				7	7′-5″	54		54	1	1′-0″	6′-6″		
A506	6				6	37′-8″	236		236	STR.				
	1				1	2′-0″								
A507	SER OF				SER OF	†o	49		49	STR.				5 1/2″
	11				11	6′-7″								
	1				1	3′-1″								
A508	SER OF				SER OF	†o	55		55	STR.				2′-3 1/4″
	6				6	14′-6″								
A510			14		14	39′-8″		579	579	STR.				
A511			10		10	15′-4″		160	160	1	3′-9″	11′-8″		
A512			10		10	13′-4″		139	139	1	2′-11″	10′-6″		
A513			7		7	15′-1″		110	110	1	1′-0″	14′-2″		
A514			7		7	9′-0″		66	66	1	1′-0″	8′-0″		
A515			6		6	36′-8″		229	229	STR.				
			1		1	1′-8″								
A516			SER OF		SER OF	†o		61	61	STR.				7″
			12		12	8′-2″								
			1		1	3′-3″								
A517			SER OF		SER OF	†o		64	64	STR.				1′-10″
			7		7	14′-3″								
A540		6			6	14′-5″	90		90	STR.				
A550		14			14	30′-0″	438		438	STR.				
A551		14			14	16′-1″	235		235	STR.				
A552		3			3	3′-4″	10		10	STR.				
A553		3			3	3′-9″	12		12	STR.				
A554		5			5	14′-11″	78		78	1	3′-0″	12′-0″		
A555		5			5	13′-1″	68		68	1	2′-0″	11′-2″		
		1			1	7′-0″						3′-11″		
A556		SER OF			SER OF	†o	31		31	1	3′-2″	†o		2′-9″
		3			3	12′-6″						9′-5″		
		1			1	4′-8″						2′-9″		
A557		SER OF			SER OF	†o	23		23	1	2′-0″	†o		2′-8 3/4″
		3			3	10′-2″						8′-3″		
A558		7			7	18′-11″	138		138	1	3′-3″	15′-8″		
A559		6			6	30′-0″	188		188	STR.				
A560				14	14	38′-0″		555	555	STR.				
A561				5	5	17′-7″		92	92	19	13′-2″	2′-3″	3′-9″	
A562				5	5	16′-0″		83	83	19	12′-6″	1′-9″	3′-0″	
				1	1	6′-8″					2′-3″			
A563				SER OF	SER OF	†o		32	32	19	†o	2′-3″	3′-9″	3′-7″
				3	3	13′-10″					9′-5″			
				1	1	5′-4″					1′-9″			
A564				SER OF	SER OF	†o		28	28	19	†o	1′-9″	3′-0″	3′-7 1/4″
				3	3	12′-7″					9′-0″			
A565				7	7	18′-9″		137	137	1	3′-5″	15′-5″		
A566				6	6	33′-5″		209	209	STR.				
				1	1	7′-1″								
A568				SER OF	SER OF	†o		35	35	STR.				4′-2 1/4″
				3	3	15′-6″								
				1	1	2′-0″								
A569				SER OF	SER OF	†o		35	35	STR.				2 1/2″
				11	11	4′-1″								
A570				1	1	18′-1″		19	19	19	13′-8″	2′-3″	3′-9″	
A571				1	1	16′-6″		17	17	19	13′-0″	1′-9″	3′-0″	
A596		1			1	15′-11″	17		17	1	12′-9″	3′-2″		
A597		1			1	13′-6″	14		14	1	11′-6″	2′-0″		
A598		2			2	10′-8″	22		22	STR.				
		1			1	2′-0″								
A599		SER OF			SER OF	†o	19		19	STR.				2 1/2″
		7			7	3′-3″								
ABUTMENT & WINGWALL SUB-TOTAL							2,882	2,650	5,532					

REINFORCING NOTES

1. ALL REINFORCING BARS SHALL BE EPOXY COATED. PAYMENT FOR REINFORCING, INCLUDING MECHANICAL CONNECTORS, SHALL BE MADE WITH ITEM 509 - EPOXY COATED REINFORCING STEEL
2. MAX REINFORCING SPACING IS 12″ UNLESS NOTED OTHERWISE. REINFORCING SPACINGS GIVEN ARE CONSIDERED "MAX" UNLESS NOTED OTHERWISE.
3. "STR." IN THE TYPE COLUMN INDICATES STRAIGHT BARS.
4. "SER OF" DENOTES SERIES OF BARS, E.G "X" SER OF "Y" = "X" SERIES OF "Y" BARS PER SERIES.
5. REFER TO C.M.S SECTION 509.05 FOR STANDARD BEND DIMENSIONS.
6. TWO BARS OF EQUAL SIZE SHALL BE LAPPED THE DISTANCE OF THE APPLICABLE AREMA CLASS C LAP SPLICE LENGTH. WHEN BARS OF UNEQUAL SIZE ARE LAPPED, THE PROVIDED LAP SHALL BE THE MAXIMUM OF EITHER THE "Ld" VALUE OF THE LARGER BAR OR THE APPLICABLE AREMA CLASS C LAP SPLICE LENGTH OF THE SMALLER BAR.
7. MECHANICAL CONNECTORS: AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED IN ACCORDANCE WITH C.M.S. SECTION 509.07. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER RECOMMENDED PROCEDURES.

   MECHANICAL CONNECTORS AND DOWEL BARS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED. COATING FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS THAT HAVE BEEN DAMAGED OR THAT OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY AND UNIFORMITY, MAY BE REPAIRED AS DIRECTED BY THE ENGINEER, OR THEY SHALL BE REPLACED WITH MATERIAL THAT MEETS THE SPECIFICATIONS. FOR BARS UTILIZING A PLANNED MECHANICAL CONNECTOR, THE BAR LENGTH FOR PAYMENT IS MEASURED TO THE CENTER OF THE PLANNED MECHANICAL CONNECTION. EXTRA BAR LENGTH AND/OR BAR END PREPARATION MAY BE NECESSARY DEPENDING UPON THE TYPE OF MECHANICAL CONNECTOR FURNISHED AND THOSE COSTS SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 509. CONNECTORS AND DOWEL BAR EXTENSIONS SHALL CONFORM TO AND BE INCLUDED IN THE BID PRICE FOR ITEM 509.

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED VDT | DRAWN EFD | CHECKED SNH | REVIEWED CTV | DATE 12-19-23 | REVISED
ODOT SFN: 3113818
NSRR BR#: BR0018448

REINFORCING STEEL LIST 1 OF 3
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

55 / 57

75
286

MARK	NUMBER				WEIGHT			TYPE	DIMENSIONS					
	PHASE B	PHASE D	TOTAL	LENGTH	PH. B	PH. D	TOTAL		A	B	C	D	E	INC
PIER														
P510	74		74	13'-2"	1,017		1,017	14	5'-0"	2'-9"	1'-3"	1'-3"	3'-9"	
P511		76	76	13'-2"		1,044	1,044	14	5'-0"	2'-9"	1'-3"	1'-3"	3'-9"	
P530	30		30	39'-4"	1,231		1,231	STR.						
P531	10		10	38'-10"	405		405	STR.						
P540		30	30	36'-5"		1,139	1,139	STR.						
P541		10	10	36'-11"		385	385	STR.						
P600		4	4	18'-8"		112	112	STR.						
P830	8		8	38'-10"	829		829	STR.						
P840		8	8	36'-11"		789	789	STR.						
PIER SUB-TOTAL					3,482	3,469	6,951							
SUPERSTRUCTURE														
S400	168	192	360	2'-5"	271	310	581	2	5"	1'-8"	5"			
S499	384	384	768	3'-0"	770	770	1,540	STR.						
S500	368	416	784	38'-0"	14,585	16,488	31,073	STR.						
S510	332		332	35'-3"	12,206		12,206	STR.						
	4		4	3'-5"										
S511	SER OF		SER OF	To	1,006		1,006	STR.						2'-6 1/4"
	13		13	33'-9"										
	4		4	6'-7"										
S512	SER OF		SER OF	To	1,018		1,018	STR.						2'-6"
	12		12	34'-1"										
S520		332	332	35'-11"		12,437	12,437	STR.						
		8	8	2'-3"										
S521		SER OF	SER OF	To		2,161	2,161	STR.						2'-6"
		14	14	34'-9"										
S540	128		128	36'-8"	4,895		4,895	STR.						
S550		128	128	37'-6"		5,006	5,006	STR.						
S580	24	24	48	38'-0"	951	951	1,902	STR.						
S599	148	148	296	6'-6"	1,004	1,004	2,008	34	1'-0"	2'-0"	8"	2'-3"	1'-0"	
SUPERSTRUCTURE SUB-TOTAL					36,706	39,127	75,833							

MARK	NUMBER					LENGTH	WEIGHT			TYPE	DIMENSIONS					
	PHASE B		PHASE D		TOTAL		PH. B	PH. D	TOTAL		A	B	C	D	E	INC
	REAR	FWD	REAR	FWD												
PILE AND LAGGING WALL																
W510	93	79	66	83	321	6'-2"	1,106	959	2,065	29	2'-0"	2'-2"	2'-2"	2"		
W560	16				16	20'-4"	339		339	STR.						
W561	8				8	21'-2"	177		177	STR.						
W562	8				8	29'-8"	248		248	STR.						
W568		16			16	21'-2"	353		353	STR.						
W569		8			8	36'-4"	303		303	STR.						
W570			8		8	26'-11"		225	225	STR.						
W571			16		16	19'-11"		332	332	STR.						
W578				16	16	25'-8"		428	428	STR.						
W579				8	8	32'-2"		268	268	STR.						
W860	4				4	20'-4"	217		217	STR.						
W861	2				2	21'-2"	113		113	STR.						
W862	2				2	29'-8"	158		158	STR.						
W868		4			4	21'-2"	226		226	STR.						
W869		2			2	36'-4"	194		194	STR.						
W870			2		2	26'-11"		144	144	STR.						
W871			4		4	19'-11"		213	213	STR.						
W878				4	4	25'-8"		274	274	STR.						
W879				2	2	32'-2"		172	172	STR.						
PILE AND LAGGING WALL SUB-TOTAL							3,434	3,015	6,449							

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDT	EFD	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
SNH		NSRR BR#: BR0018448	

REINFORCING STEEL LIST 2 OF 3

BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

56 / 57

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286

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MARK	NUMBER					LENGTH	WEIGHT			TYPE	DIMENSIONS			
	PHASE B		PHASE D		TOTAL		PH. B	PH. D	TOTAL		A	B	C	INC
	REAR	FWD	REAR	FWD										
ABUTMENT FOOTING														
FA400	64	68	66	68	266	6′-6″	573	582	1,155	3	1′-6″	1′-6″		
FA500	35				35	30′-0″	1,095		1,095	STR.				
FA501	18				18	15′-2″	285		285	STR.				
FA502	17				17	22′-11″	406		406	STR.				
FA510			35		35	30′-0″		1,095	1,095	STR.				
FA511			18		18	21′-10″		410	410	STR.				
FA512			17		17	14′-1″		250	250	STR.				
FA520	39				39	16′-2″	658		658	STR.				
FA521	8				8	7′-8″	64		64	STR.				
FA529	35				35	14′-7″	532		532	3	4′-9″	2′-3″		
FA530			41		41	16′-2″		691	691	STR.				
FA531			8		8	8′-2″		68	68	STR.				
FA539			38		38	14′-7″		578	578	3	4′-9″	2′-3″		
FA540	52				52	9′-1″	493		493	1	1′-0″	8′-2″		
FA541	5				5	11′-1″	58		58	1	1′-0″	10′-2″		
	1				1	10′-1″						9′-2″		
FA542	SER OF				SER OF	to	167		167	1	1′-0″	to		1″
	15				15	11′-3″						10′-2″		
FA548			16		16	11′-1″		185	185	1	1′-0″	10′-2″		
FA549			55		55	9′-1″		521	521	1	1′-0″	8′-2″		
FA550		35			35	30′-0″	1,095		1,095	STR.				
FA551		35			35	22′-5″	818		818	STR.				
FA560				35	35	30′-0″		1,095	1,095	STR.				
FA561				35	35	18′-9″		684	684	STR.				
FA570		46			46	16′-2″	776		776	STR.				
FA579		40			40	14′-7″	608		608	3	4′-9″	2′-3″		
FA580				46	46	16′-2″		776	776	STR.				
FA589				33	33	14′-7″		502	502	3	4′-9″	2′-3″		
FA590		53			53	9′-2″	507		507	1	1′-0″	8′-3″		
FA591		8			8	11′-2″	93		93	1	1′-0″	10′-3″		
		1			1	7′-2″						6′-3″		
FA592		SER OF			SER OF	to	116		116	1	1′-0″	to		4 1/2″
		12			12	11′-4″						10′-3″		
FA595				48	48	9′-2″		459	459	1	1′-0″	8′-3″		
FA596				5	5	11′-2″		58	58	1	1′-0″	10′-3″		
				1	1	7′-8″						6′-9″		
FA597				SER OF	SER OF	to		147	147	1	1′-0″	to		3″
				15	15	11′-2″						10′-3″		
FA640	34				34	9′-1″	464		464	1	1′-0″	8′-2″		
FA641	5				5	11′-1″	83		83	1	1′-0″	10′-2″		
	1				1	10′-1″						9′-2″		
FA642	SER OF				SER OF	to	223		223	1	1′-0″	to		1″
	14				14	11′-2″						10′-2″		
FA648			16		16	11′-1″		266	266	1	1′-0″	10′-2″		
FA649			36		36	9′-1″		491	491	1	1′-0″	8′-2″		
FA690		38			38	9′-1″	518		518	1	1′-0″	8′-3″		
FA691		8			8	11′-1″	133		133	1	1′-0″	10′-3″		
		1			1	7′-1″						6′-3″		
FA692		SER OF			SER OF	to	165		165	1	1′-0″	to		4 1/2″
		12			12	11′-3″						10′-3″		
FA695				33	33	9′-1″		450	450	1	1′-0″	8′-3″		
FA696				5	5	11′-1″		83	83	1	1′-0″	10′-3″		
				1	1	7′-7″						6′-9″		
FA697				SER OF	SER OF	to		196	196	1	1′-0″	to		3 1/4″
				14	14	11′-2″						10′-3″		
FA1020	39				39	16′-2″	2,713		2,713	STR.				
FA1021	9				9	7′-8″	297		297	STR.				
FA1030			42		42	16′-2″		2,922	2,922	STR.				
FA1031			9		9	8′-2″		316	316	STR.				
FA1070		46			46	16′-2″	3,200		3,200	STR.				
FA1080				46	46	16′-2″		3,200	3,200	STR.				
ABUTMENT FOOTING SUB-TOTAL							16,140	16,025	32,165					

MARK	NUMBER					LENGTH	WEIGHT			TYPE	DIMENSIONS			
	PHASE B		PHASE D		TOTAL		PH. B	PH. D	TOTAL		A	B	C	INC
	REAR	FWD	REAR	FWD										
PIER FOOTING														
FP500		40		41	81	19′-0″	793	812	1,605	STR.				
FP540		20			20	30′-0″	626		626	STR.				
FP541		20			20	17′-2″	358		358	STR.				
FP549		40		40	80	7′-3″	302	302	604	3	1′-8″	1′-8″		
FP550				20	20	39′-8″		827	827	STR.				
FP610		49		49	98	35′-0″	2,576	2,576	5,152	3	13′-8″	3′-6″		
FP611		38		38	76	18′-6″	1,056	1,056	2,112	3	5′-5″	3′-6″		
FP620		40		40	80	5′-3″	316	316	632	2	1′-0″	3′-6″	1′-0″	
FP630		74			74	23′-5″	2,603		2,603	1	1′-0″	22′-6″		
FP631				72	72	23′-5″		2,532	2,532	1	1′-0″	22′-6″		
FP840		20			20	30′-0″	1,602		1,602	STR.				
FP841		20			20	20′-0″	1,068		1,068	STR.				
FP850				20	20	39′-8″		2,118	2,118	STR.				
FP1400		30		31	61	21′-6″	4,934	5,099	10,033	2	1′-9″	19′-0″	1′-9″	
PIER FOOTING SUB-TOTAL							16,234	15,638	31,872					
TOTAL ALL REINFORCING							78,878	79,924	158,802					

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

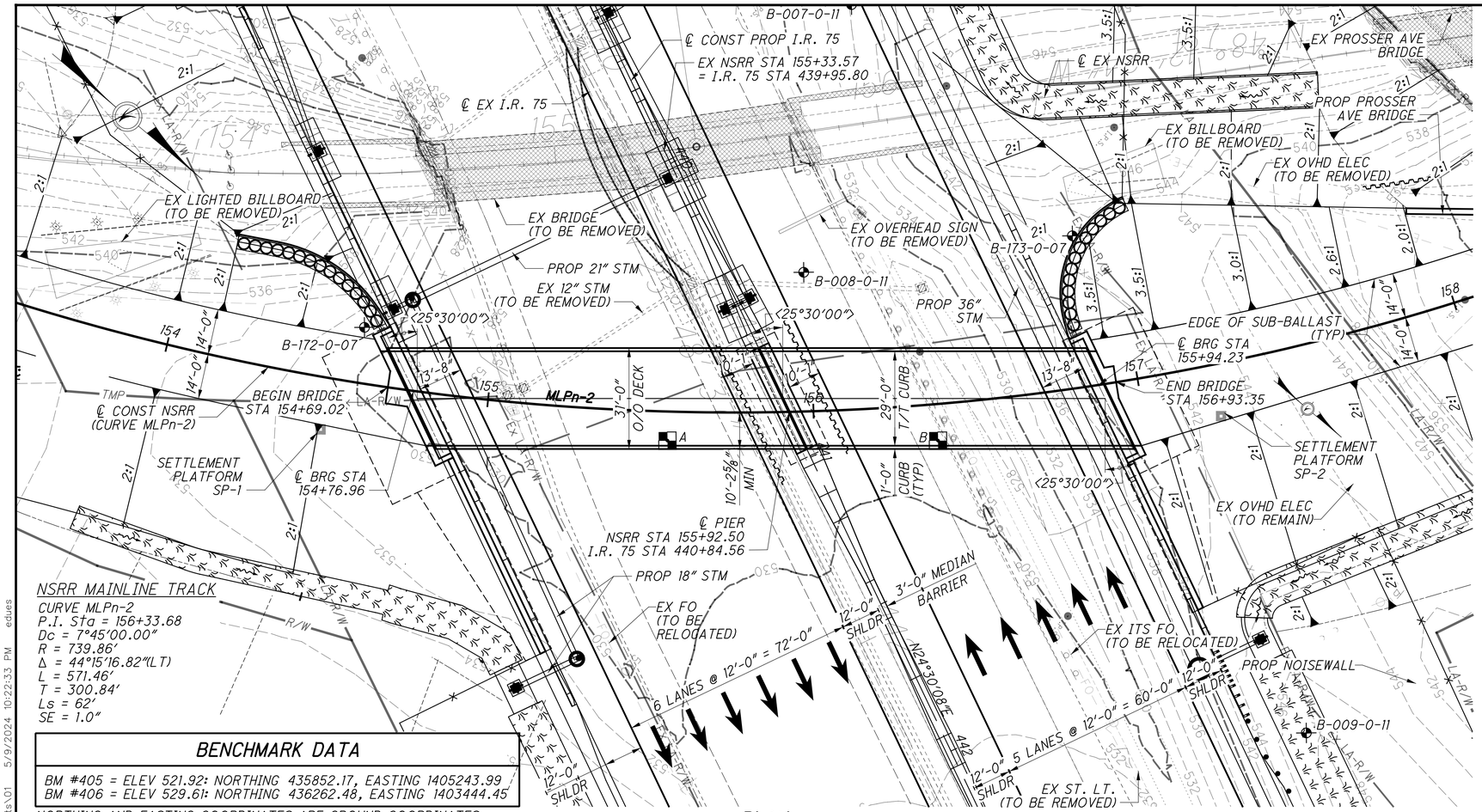
DESIGNED	DRAWN	REVIEWED	DATE
VDT	EFD	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3113818	
SNH		NSRR BR#: BR0018448	

REINFORCING STEEL LIST 3 OF 3
BRIDGE NO. HAM-562-0026 (NSRR BRIDGE CT-1.41: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER S.R. 562

HAM-75-7.85
PID No. 77889

57 / 57

77
286



PLAN

DIMENSIONS IN <#> ARE MEASURED TO THE REFERENCE CHORD

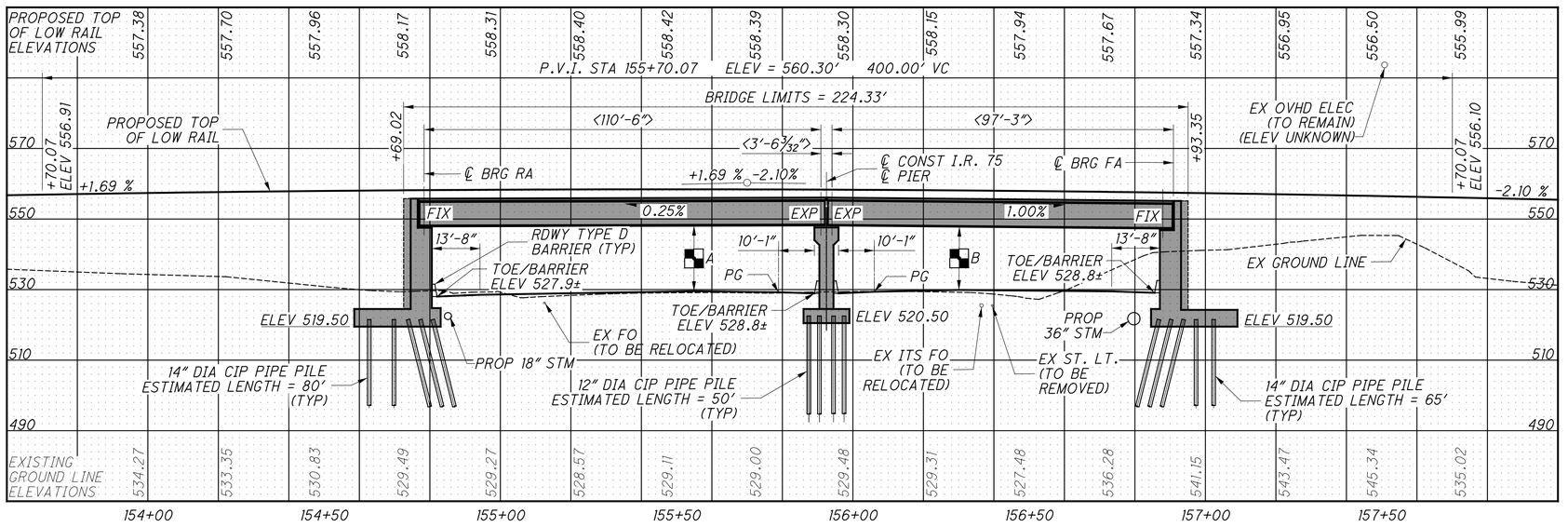
NSRR MAINLINE TRACK

CURVE MLPn-2
P.I. Sta = 156+33.68
Dc = 7°45'00.00"
R = 739.86'
Δ = 44°15'16.82"(LT)
L = 571.46'
T = 300.84'
Ls = 62'
SE = 1.0"

BENCHMARK DATA

BM #405 = ELEV 521.92: NORTHING 435852.17, EASTING 1405243.99
BM #406 = ELEV 529.61: NORTHING 436262.48, EASTING 1403444.45

NORTHING AND EASTING COORDINATES ARE GROUND COORDINATES.
FOR ADDITIONAL BENCHMARK INFORMATION, SEE DBT PLANS.



PROFILE ALONG ℄ CONST PROPOSED NS RAILROAD MAIN

NOTES

1. FOR ADDITIONAL LAYOUT DETAILS, SEE GENERAL PLANS, SHEETS 2 | 41 AND 3 | 41.
2. EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
3. FOR ADDITIONAL ROADWAY INFORMATION, SEE DBT PLANS.
4. FOR ADDITIONAL RAIL INFORMATION, SEE TRACK PLANS, SHEET 154 (286).

MILEPOST NOTE:

1. THE CENTER OF BRIDGE ALONG ℄ SURVEY AND CONSTRUCTION OF NS RAILROAD IS STA 155+92.50. THE DISTANCE TO NS RAILROAD MILEPOST CT-1.0 IS 264 FT. (0.05 MILES) EAST.

I.R. 75 TRAFFIC DATA

2010 ADT = 173,800 2010 ADTT = 24,332
2035 ADT = 203,000 2030 ADTT = 28,520
DIRECTIONAL DISTRIBUTION = 53%

NORFOLK SOUTHERN RAIL TRAFFIC DATA

5 FREIGHT TRAINS PER DAY
0 PASSENGER TRAINS PER DAY
10 MPH OPERATING SPEED
SOURCE: NORFOLK SOUTHERN RAILROAD

LEGEND

- SOIL BORING LOCATION
- POINT OF MINIMUM VERTICAL CLEARANCE - 16'-6" REQUIRED
  A = 18'-6¼" (SPAN 1 OVER NB I.R. 75)
  B = 17'-10⅜" (SPAN 2 OVER SB I.R. 75)
- APPROX. LIMITS OF TEMPORARY SHORING AT PROPOSED PIER. MINIMUM SECTION MODULUS = 36.1 IN³
- EXISTING BRIDGE REMOVAL

SEE SHEET 12 (286) FOR PROJECT ABBREVIATIONS

SOIL BORING DATA

BORING	STATION	OFFSET
B-172-0-07	440+05.00	106.5' RT
B-173-0-07	440+73.20	101.8' LT
B-008-0-11	440+47.80	22.51' LT
B-009-0-11	442+41.96	100.90' LT

BORING DATA REFERENCED FROM ℄ CONST PROP I.R. 75

EXISTING STRUCTURE

TYPE: TWO SIMPLE-SPAN STEEL THRU-GIRDERS (33 KSI) WITH CONCRETE DECK ON CONCRETE ABUTMENTS AND PIER
SPANS: 59'-3"±, 58'-0"± C/C BRGS (MEASURED ALONG REF CHORDS)
WIDTH: 12'-2"± (SPAN 1) & 12'-6"± (SPAN 2) C/C GIRDERS WITH 3'-9"± WALKWAY OVERHANGS (EACH SIDE)
ORIGINAL DESIGN LOADING: COOPER E-72
ALIGNMENT: 7°00' LEFT CURVE (CHORD DEFINITION)
SKEW: 21°55'± RF (SPAN 1) & 17°58'± RF (SPAN 2) (MEASURED TO SPAN REFERENCE CHORDS)
YEAR BUILT: 1958
STRUCTURE FILE NUMBER: 3110141
DISPOSITION: TO BE REPLACED

PROPOSED STRUCTURE

TYPE: TWO SIMPLE-SPAN STEEL DECK GIRDERS (ASTM A709, GR. 50) WITH A BALLASTED, COMPOSITE REINFORCED CONCRETE DECK ON FULL-HEIGHT, CONCRETE WALL ABUTMENTS & WALL-TYPE PIER
SPAN: 110'-6", 97'-3" C/C BRGS (MEASURED ALONG REF CHORD)
WIDTH: 29'-0" F/F CURBS (31'-0" O/O CURBS)
LOADING: COOPER E-80 WITH DIESEL IMPACT & ALTERNATE LOAD
ALIGNMENT: 7°45'00" LEFT CURVE (CHORD DEFINITION)
SKEW: 25°30'00" RF (MEASURED TO SPAN REFERENCE CHORDS)
COORDINATES: LATITUDE N 39° 10' 51" LONGITUDE W 84° 29' 07"
STRUCTURE FILE NUMBER: 3110142

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

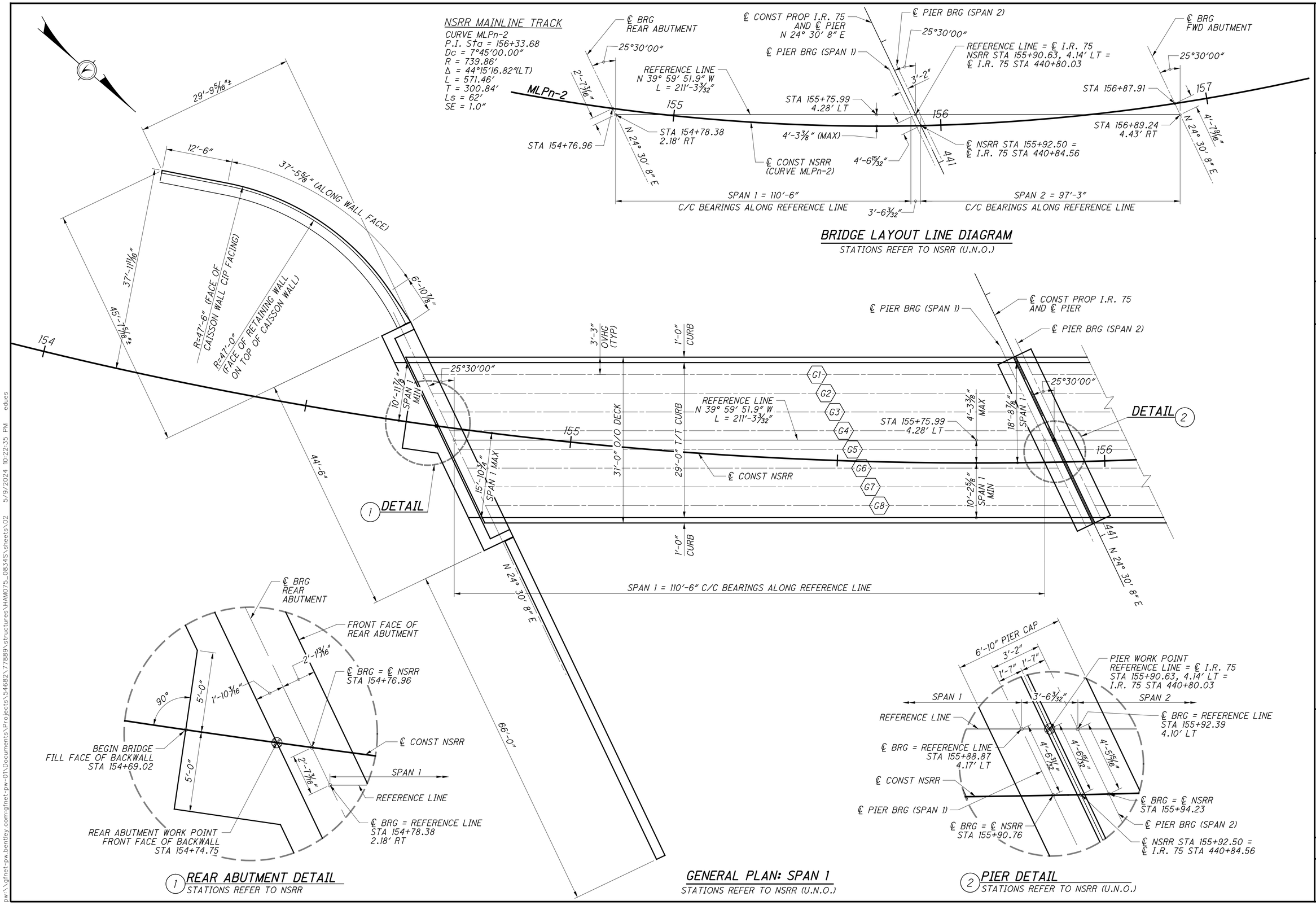
DESIGNED EFD | DRAWN SNH | REVIEWED CTV | DATE 12-19-23
CHECKED CTM | REVISED | ODOT SFN: 3110142 | NSRR BR#: BR0018445

HAMILTON COUNTY
STA. 154+69.02
TO STA. 156+93.35

SITE PLAN
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

1 / 41
78 / 286



DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	SNH	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3110142	
CTM		NSRR BR#: BR0018445	

GENERAL PLAN VIEW: SPAN 1
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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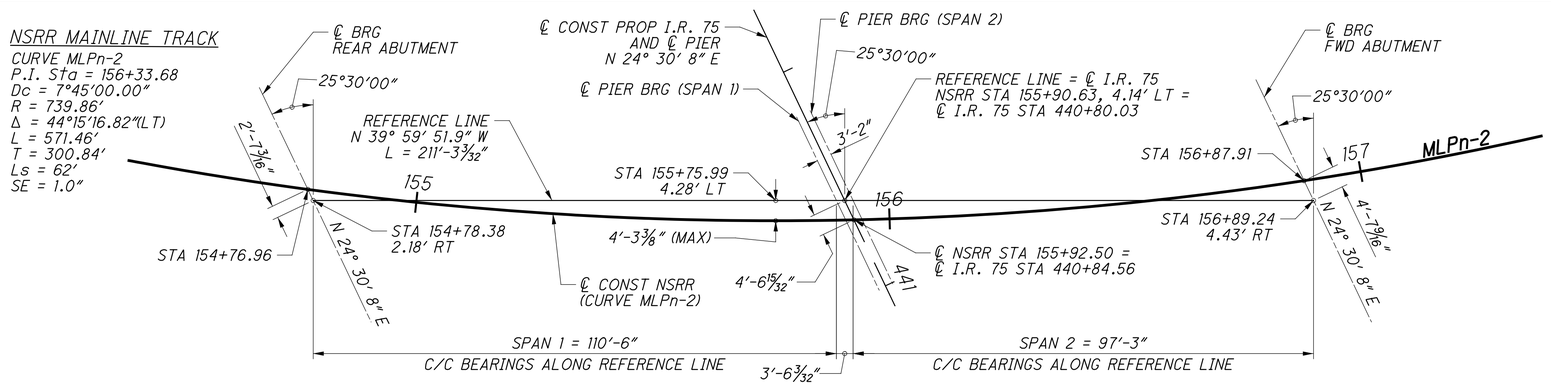
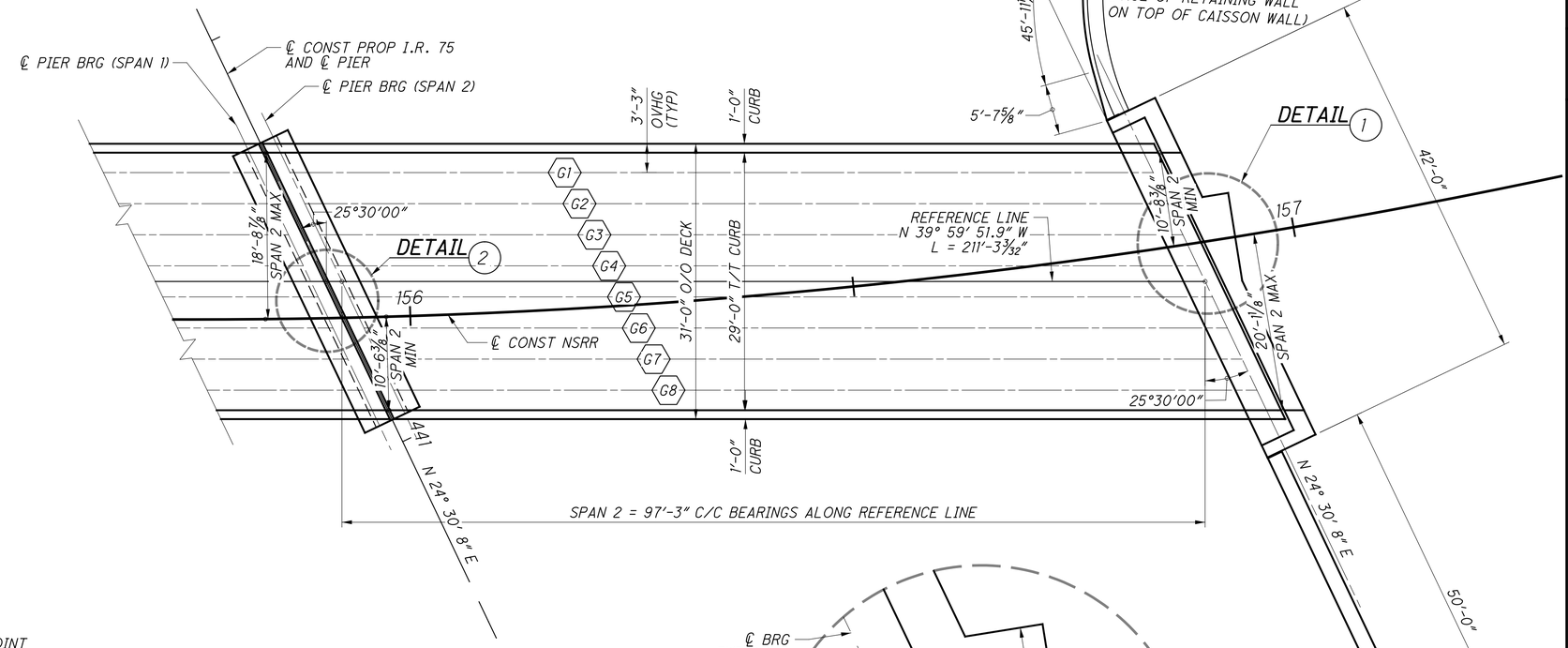


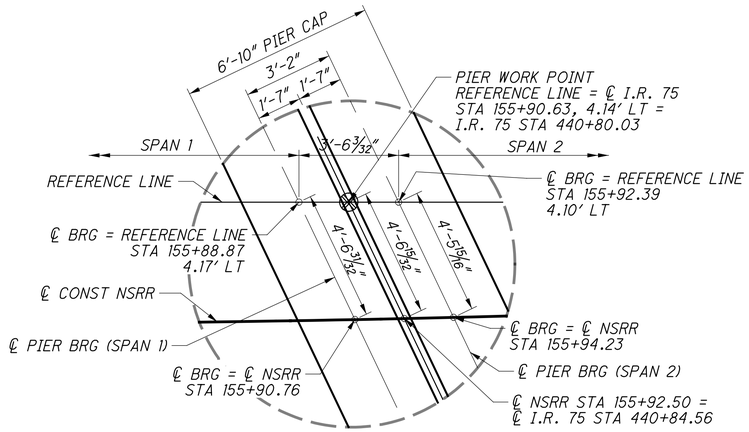
BRIDGE LAYOUT LINE DIAGRAM

STATIONS REFER TO NSRR (U.N.O.)



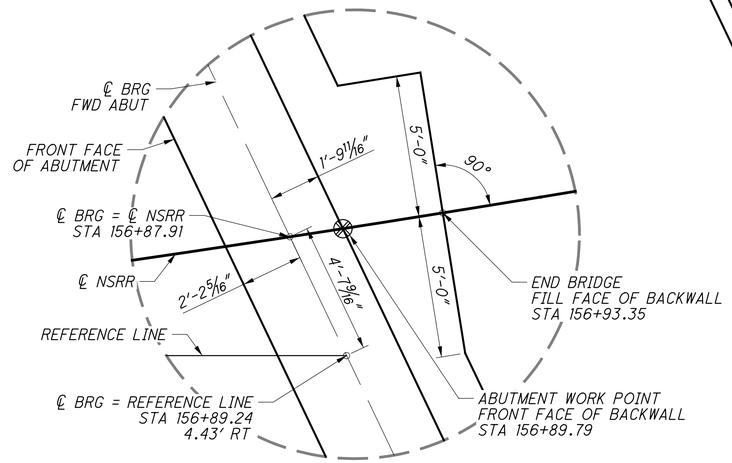
GENERAL PLAN: SPAN 2

STATIONS REFER TO NSRR (U.N.O.)



2 PIER DETAIL

STATIONS REFER TO NSRR (U.N.O.)



1 FORWARD ABUTMENT DETAIL

STATIONS REFER TO NSRR

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	SNH	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3110142	
CTM		NSRR BR#: BR0018445	

GENERAL PLAN VIEW: SPAN 2
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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HAM-075-0834 SPECIFIC NOTES

STANDARD RAILROAD BRIDGE NOTES AND DETAILS

THE NOTES ON THIS SHEET ARE SPECIFIC TO THE SUBJECT BRIDGE STRUCTURE. FOR STANDARD NOTES AND DETAILS APPLICABLE TO ALL RAILROAD BRIDGE STRUCTURES ON THIS PROJECT, INCLUDING THIS STRUCTURE, SEE THE FOLLOWING SHEETS: 8/286 THROUGH 20/286

ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE EXISTING IN-SERVICE BRIDGE CARRYING NSRR OVER I.R. 75.

THE REMOVAL OF THE EXISTING IN-SERVICE BRIDGE INCLUDES THE REMOVAL OF ALL SUPERSTRUCTURE ELEMENTS AND ALL SUBSTRUCTURE ELEMENTS TO THE TOP OF EXISTING MEDIAN BARRIER.

THE CONTRACTOR MUST REVIEW THE EXISTING STRUCTURE WHEN PREPARING THEIR BID. EXISTING PLANS ARE AVAILABLE FOR THE SUBJECT BRIDGE.

SEE SHEET 5|41 FOR PLAN LIMITS OF ITEM 202.

PROPOSED SEQUENCE OF CONSTRUCTION

FOR ROADWAY MAINTENANCE OF TRAFFIC DETAILS,

SEE DBT PLANS.

PROPOSED SEQUENCE OF CONSTRUCTION:

THE FOLLOWING MAY BE COMPLETED PRIOR TO ROADWAY MAINTENANCE TRAFFIC
1) INSTALL PRELOAD EMBANKMENT
2) INSTALL SOUTHEAST & SOUTHWEST CAISSON WALLS

THE FOLLOWING IS LIKELY TO BE COMPLETED DURING INITIAL ROADWAY MAINTENANCE OF TRAFFIC PHASES (DESIGN BUILD TEAM TO DETAIL)
3) INSTALL TEMPORARY ROADWAY SHORING AS REQUIRED TO EXCAVATE ABUTMENT AND PIER FOUNDATIONS
4) INSTALL ABUTMENT AND PIER PILES
5) CONSTRUCT PROPOSED SUBSTRUCTURES
6) REMOVE TEMPORARY SHEET PILE SHORING
7) ERECT AND CONSTRUCT SUPERSTRUCTURE
8) SHIFT NSRR ONTO PROPOSED ALIGNMENT
9) REMOVE EXISTING SUPERSTRUCTURE
10) REMOVE EXISTING FORWARD (WEST) ABUTMENT AND WINGWALLS
11) CONSTRUCT FACING OF SOUTHWEST CAISSON WALL
12) GRADE WEST EMBANKMENT TO PROPOSED ELEVATIONS
13) REMOVE EXISTING PIER

THE FOLLOWING MAY BE COMPLETED AFTER ROADWAY MAINTENANCE TRAFFIC (DESIGN BUILD TEAM TO DETAIL)
14) REMOVE EXISTING REAR (EAST) ABUTMENT AND WINGWALLS
15) CONSTRUCT FACING OF SOUTHEAST CAISSON WALL
16) GRADE EAST EMBANKMENT TO PROPOSED ELEVATIONS

ITEM 203 - EMBANKMENT, AS PER PLAN

PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT FROM STATION 154+00 TO STATION 157+50. THE APPROACH EMBANKMENT SHALL BE FURNISHED AND PAID FOR AS PART OF THIS ITEM.

THE EMBANKMENT SHALL BE PLACED FOR THE PURPOSES OF PRE-LOADING THE BRIDGE SITE PRIOR TO SHORING, FOUNDATION AND SUBSTRUCTURE CONSTRUCTION. THE EMBANKMENT SHALL BE PLACED IN COORDINATION WITH THE SETTLEMENT PLATFORMS AND PROJECT PILE DRIVING CONSTRAINTS.

THE EMBANKMENT SHALL BE PLACED TO ITS REQUIRED FINAL ELEVATION AND SLOPED DOWN (1:1 MAX SLOPE) TO THE EXISTING IR-75 EDGE OF PAVEMENT. FILL SHOULD HAVE A MAXIMUM DRY DENSITY OF AT LEAST 110 PCF.

AFTER CONSTRUCTION OF THE APPROACH EMBANKMENT, A MINIMUM WAITING TIME OF 30 DAYS IS REQUIRED PRIOR TO BEGINNING DRILLED SHAFT OR FOUNDATION EXCAVATION AND CONSTRUCTION. THE WAIT TIME SHALL EXTEND UNTIL THE REQUIREMENTS OF THE SETTLEMENT PLATFORMS HAVE BEEN MEET.

SEE SHEET 5|41 FOR SCHEMATIC LIMITS OF EMBANKMENT AND EXCAVATION QUANTITIES.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (CY) AT THE CONTRACT BID PRICE.

ITEM 507 - CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN, AS PER PLAN

FOR STANDARD NOTES FOR THIS ITEM, SEE SHEET: 9/286

FOR FURNISHED PILE NOTES, SEE SHEET: 9/286

PILE DESIGN LOADS (ULTIMATE BEARING VALUE): THE ULTIMATE BEARING VALUE IS 406 KIPS PER PILE FOR THE REAR ABUTMENT PILES AND 372 KIPS PER PILE FOR THE FORWARD ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 288 KIPS PER PILE FOR THE REAR WINGWALL PILES AND 284 KIPS PER PILE FOR THE FORWARD WINGWALL PILES. THE ULTIMATE BEARING VALUE IS 224 TONS PER PILE FOR THE PIER PILES.

ABUTMENT PILES:
14" CIP REAR ABUTMENT PILES 85 FEET LONG, ORDER LENGTH
14" CIP FORWARD ABUTMENT PILES 70 FEET LONG, ORDER LENGTH
4 DYNAMIC LOAD TESTING ITEMS (2 PER ABUTMENT)

WINGWALL PILES:
12" CIP REAR ABUTMENT WINGWALL PILES 85 FEET LONG, ORDER LENGTH
12" CIP FORWARD ABUTMENT WINGWALL PILES 70 FEET LONG, ORDER LENGTH
4 DYNAMIC LOAD TESTING ITEMS (2 PER WALL)

PIER PILES:
12" CIP PILES 55 FEET LONG, ORDER LENGTH
2 DYNAMIC LOAD TESTING ITEMS

SEE FOUNDATION PLAN SHEETS 9|35 THROUGH 11|35 FOR ORDER LENGTHS, TIP ELEVATION, AND CUTOFF ELEVATION DETAILS FOR SPECIFIC PILES.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (FT) AT THE CONTRACT BID PRICE.

ITEM 524 - DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN

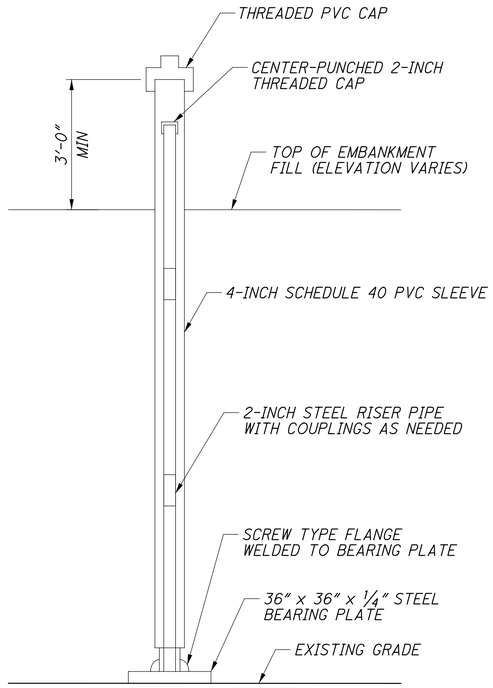
FOR STANDARD NOTES FOR THIS ITEM, SEE SHEET: 11/286

ALTERNATING SHAFT CONSTRUCTION SHALL BE USED PER ODOT GEOTECHNICAL BULLETIN GB-7. THE IN-BETWEEN SHAFTS MAY BE SHIFTED UP TO 3" FROM THEIR PLAN LOCATION TO ALLOW FOR PROPER FITUP. IF SHAFT FITUP REQUIRES AN IN-BETWEEN SHAFT TO BE SHIFTED GREATER THAN 3" THE CAP SHALL BE WIDENED TO ACCOMODATE. ANY RESULTING EXTRA CONCRETE FOR THE CAP SHALL NOT BE REIMBURSED BY THE DEPARTMENT. IF, AFTER EXCAVATION, IT IS DEEMEED BY ODOT OR NSRR THAT THE GAP BETWEEN SHAFTS ALLOWS EXCESSIVE SOIL LOSS, THE GAP BETWEEN SHAFTS SHALL BE GROUTED TO ELIMINATE THE SOIL LOSS. THE GROUTING SHALL BE TO THE SATISFACTION OF NSRR AND SHALL BE AT NO ADDITIONAL COST THE DEPARTMENT.

ITEM SPECIAL - SETTLEMENT PLATFORMS

DESCRIPTION: THIS WORK SHALL CONSIST OF THE FABRICATION, INSTALLATION, PROTECTION, AND MAINTENANCE OF SETTLEMENT PLATFORMS AND OBTAINING SETTLEMENT READINGS IN ACCORDANCE WITH THESE PLANS AND AS DIRECTED BY THE ENGINEER. AT THE OPTION AND EXPENSE OF THE CONTRACTOR, ADDITIONAL SETTLEMENT PLATFORMS MAY BE INSTALLED AT LOCATIONS APPROVED BY THE ENGINEER. THE SETTLEMENT PLATFORM SHALL BE INSTALLED PRIOR TO BACKFILLING BEHIND THE PROPOSED ABUTMENTS.

MATERIALS: THE SETTLEMENT PLATFORM SHALL BE CONSTRUCTED OF A STEEL BEARING PLATE, STEEL RISER PIPE, PVC SLEEVE, FITTINGS AND ANY INCIDENTALS MEETING THE APPROVAL OF THE ENGINEER, AND SHALL BE SECURELY FASTENED TOGETHER AS DETAILED IN THE PLANS. ALL STEEL PIPE AND FITTINGS SHALL BE GALVANIZED AND FABRICATED FROM STANDARD WEIGHT STOCK OF THE SIZE SHOWN IN THE PLANS. MATERIALS WILL BE ACCEPTED ON THE BASIS OF CERTIFICATION AND A VISUAL INSPECTION.



SETTLEMENT PLATFORM (TYPICAL)

NOT TO SCALE

INSTALLATION: THE SETTLEMENT PLATFORMS SHALL BE INSTALLED BEFORE ANY FILL MATERIAL IS PLACED AT THE LOCATIONS SPECIFIED IN THE PLANS. THE BEARING PLATE SHALL BE PLACED ON COMPACTED EXISTING GROUND AND THE PLATE SHALL BE PLACED LEVEL. THE BEARING PLATE WITH ATTACHED RISER PIPE SHALL BE PLACED ON THE PREPARED SUBGRADE AND THE FIRST SECTION OF THE SLEEVE SHALL BE SLIPPED OVER THE RISER PIPE AND CENTERED ABOUT IT.

BEFORE CONSTRUCTION OF THE EMBANKMENT, THE INITIAL ELEVATION OF THE TOP OF THE BEARING PLATE SHALL BE DETERMINED AND RECORDED BY THE CONTRACTOR. WITH THE RISER PIPE CENTERED IN THE PVC SLEEVE AND MAINTAINED IN A VERTICAL POSITION, THE EMBANKMENT MATERIAL SHALL BE PLACED IN LAYERS AND THOROUGHLY COMPACTED.

COMPACTION OF EMBANKMENT MATERIAL AROUND THE SETTLEMENT PLATES SHALL CONFORM TO OTHER EARTHWORK SPECIFICATIONS; HOWEVER, THE EMBANKMENT MATERIAL SHALL BE PLACED BY HAND USING LIGHT-WEIGHT WALK BEHIND COMPACTION EQUIPMENT IN ORDER NOT TO DISTURB SETTLEMENT PLATES AND SLEEVES. WHEN THE INSTALLATION DESCRIBED ABOVE IS COMPLETE. THE CONTRACTOR SHALL DETERMINE THE ELEVATION OF THE TOP OF THE RISER PIPE AT THIS TIME. NO ADDITIONAL EMBANKMENT SHALL BE PLACED UNTIL THIS ELEVATION HAS BEEN DETERMINED.

WHEN THE ELEVATION OF THE TOP SURFACE OF THE EMBANKMENT FILL REACHES A LEVEL APPROXIMATELY 3 FEET BELOW THE TOP OF THE SLEEVE, THE CONTRACTOR SHALL INSTALL THE NEXT SECTION OF THE SLEEVE AND RISER PIPE. ADDED SECTIONS SHOULD NOT BE GREATER THAN 5 FEET IN LENGTH. AS EACH ADDITIONAL LENGTH OF PIPE IS ADDED, THE PIPE CAP ON THE SLEEVE SHALL BE IMMEDIATELY TRANSFERRED TO THE NEW SECTION, AND THE NEW SECTION WRENCH TIGHTENED SO AS TO PREVENT FILL MATERIAL FROM ENTERING THE SLEEVE. AT OTHER TIMES, THE CAP SHALL ONLY BE REMOVED TO CHECK SETTLEMENT. AS THE HEIGHT OF THE EMBANKMENT FILL INCREASES, THE PROCEDURE SHALL BE REPEATED UNTIL THE EMBANKMENT FILL IS COMPLETED.

THE CONTRACTOR SHALL TAKE ALL SETTLEMENT PLATE READINGS. ALL SETTLEMENT PLATE READINGS SHALL BE OBTAINED TO AN ACCURACY OF 0.01 FEET AND BE PART OF A CLOSED CIRCUIT LEVEL RUN. THE CONTRACTOR SHALL TAKE ELEVATION READINGS OF THE BEARING PLATES AND EXTENSIONS AS FOLLOWS:

- UPON INSTALLATION OF THE SETTLEMENT PLATE, THE TOP OF THE BASE PLATE AND THE TOP OF THE FIRST PIPE EXTENSION.
- AS EACH EXTENSION IS ADDED. THE TOP OF THE PREVIOUS EXTENSION AND THE TOP OF THE NEW EXTENSION.
- DAILY READINGS DURING THE PLACEMENT OF THE FILL, INCLUDING THE HEIGHT OF THE FILL.
- DURING THE ENTIRE TIME OF CONSTRUCTION UP TO THE END OF THE WAITING PERIOD, AT INTERVALS NOT TO EXCEED 7 DAYS.

WAITING PERIOD: THE WAITING PERIOD SHALL BE NO LESS THAN 30 DAYS, WITH THE TOTAL DURATION ANTICIPATED TO BE BETWEEN 30 AND 60 DAYS. THE WAITING PERIOD SHALL BE CONSIDERED COMPLETE WHEN THE SETTLEMENT IS MEASURED AT LESS THAN 0.12" EVERY 7 DAYS FOR TWO CONSECTUTIVE READINGS.

REPORTING: THE READINGS SHALL BE PLOTTED ON GRAPH PAPER PRESENTING DEFORMATION (ON THE NEGATIVE Y-AXIS) AND FILL HEIGHT (ON THE POSITIVE Y-AXIS) VERSUS TIME (ON THE X-AXIS). IN ORDER TO CREATE THE GRAPH, USE THE SETTLEMENT PLATFORM SPREADSHEET LOCATED AT http://www.dot.state.oh.us/Divisions/Engineering/Geotechnical/Geotechnical_Documents/Blank_Settlement_Reading_Plots-English.xls
A COPY OF EACH CUMULATIVE PLOT SHALL BE SENT TO THE OFFICE OF GEOTECHNICAL ENGINEERING (ATTENTION: GEOTECHNICAL DESIGN COORDINATOR) AND NSRR, AFTER EACH SETTLEMENT READING IS RECORDED.

BASED UPON INTERPRETATION OF SETTLEMENT MONITORING DATA, THE ENGINEER AND NSRR WILL PROVIDE APPROVAL FOR THE ACTUAL DURATION OF THE WAITING PERIOD. UPON COMPLETION OF THE WAITING PERIOD, THE CONTRACTOR SHALL REMOVE OR CUT OFF THE PIPE EXTENSIONS TO A DEPTH TWO FEET BELOW THE FINISHED SUBGRADE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SETTLEMENT OF PLATFORMS IN WORKING ORDER DURING THE PERIOD OF HIS CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL OPERATE HIS EQUIPMENT IN A MANNER TO ENSURE THAT THE SETTLEMENT PLATFORMS ARE NOT DAMAGED OR DISPLACED LATERALLY. EACH ASSEMBLY SHALL BE CLEARLY MARKED AND FLAGGED WITH GUARD STAKES AND PROTECTIVE BARRICADES. ALL SETTLEMENT PLATFORMS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR WITHIN SEVEN 171 DAYS AFTER BEING DAMAGED. NO ADDITIONAL FILL SHALL BE PLACED IN THE AREA UNTIL THE PLATFORMS ARE REPAIRED.

MEASUREMENT AND PAYMENT: EACH SETTLEMENT PLATFORM ASSEMBLY ACCEPTABLY INSTALLED AND MAINTAINED IN A SATISFACTORY OPERATING CONDITION UNTIL THE AREA IS RELEASED FOR FURTHER CONSTRUCTION, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR "ITEM SPECIAL - SETTLEMENT PLATFORM." PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT FOR PROPER INSTALLATION OF THE SETTLEMENT PLATFORM, FOR PROTECTING SETTLEMENT PLATFORMS, FOR REPAIR AND REPLACING DAMAGED SETTLEMENT PLATFORMS, FOR MONITORING SETTLEMENT PLATFORMS, AND FOR ALL OTHER WORK AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED HEREIN, SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
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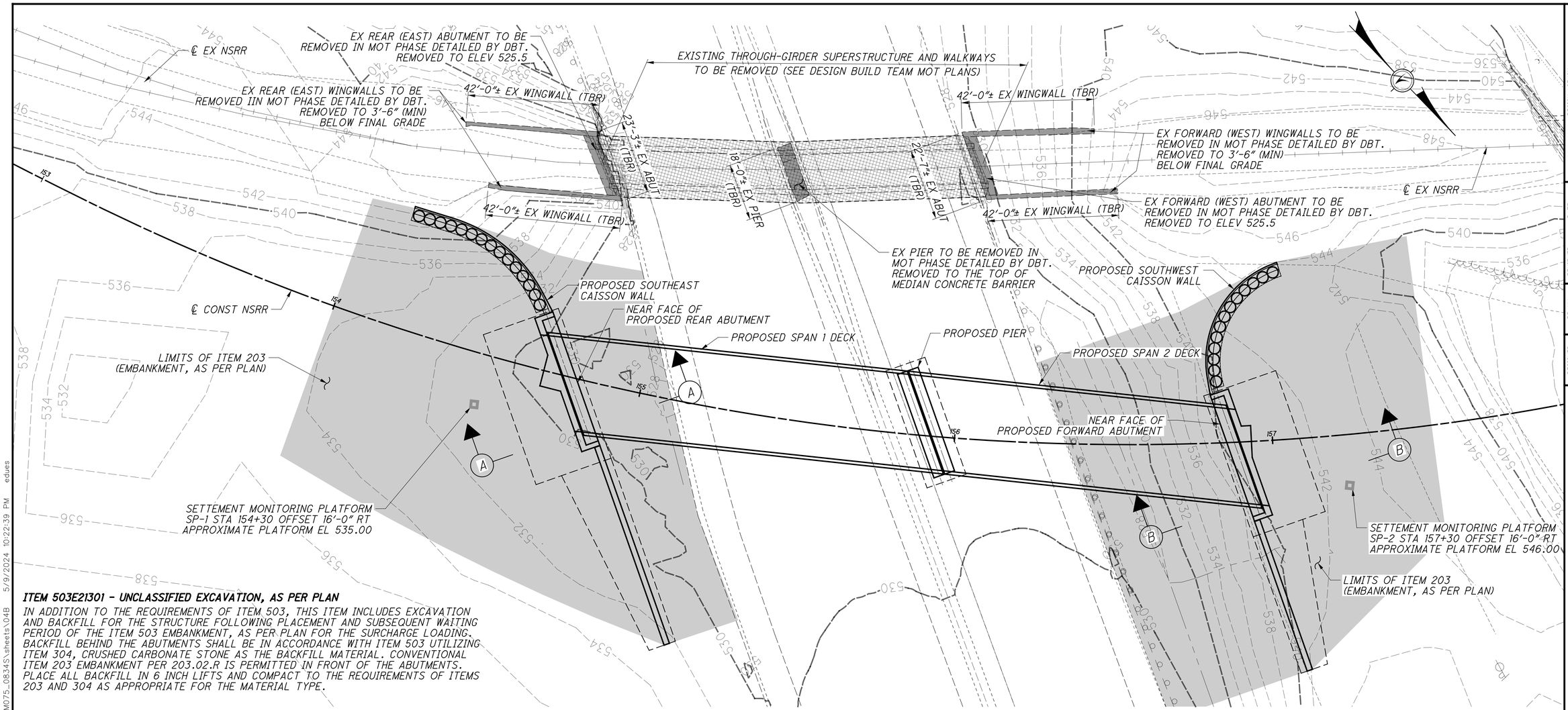
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	EFD/SNH	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3110142	
CTM		NSRR B#: BR0018445	

BRIDGE SPECIFIC NOTES
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

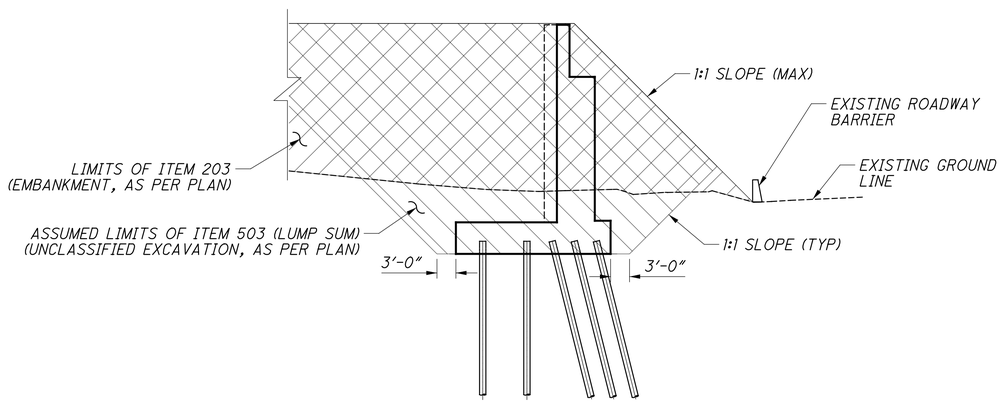
HAM-75-7.85
PID No. 77889



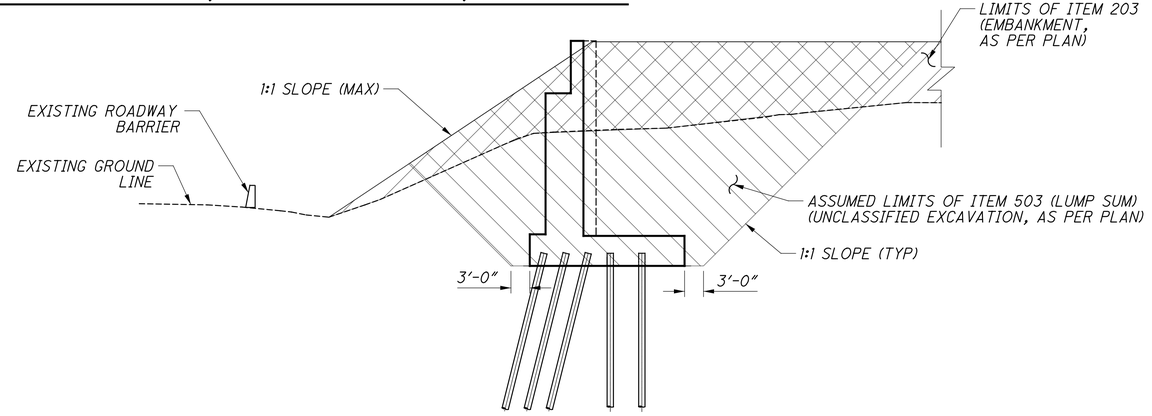
ITEM 503E21301 - UNCLASSIFIED EXCAVATION, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 503, THIS ITEM INCLUDES EXCAVATION AND BACKFILL FOR THE STRUCTURE FOLLOWING PLACEMENT AND SUBSEQUENT WAITING PERIOD OF THE ITEM 503 EMBANKMENT, AS PER PLAN FOR THE SURCHARGE LOADING. BACKFILL BEHIND THE ABUTMENTS SHALL BE IN ACCORDANCE WITH ITEM 503 UTILIZING ITEM 304, CRUSHED CARBONATE STONE AS THE BACKFILL MATERIAL. CONVENTIONAL ITEM 203 EMBANKMENT PER 203.02.R IS PERMITTED IN FRONT OF THE ABUTMENTS. PLACE ALL BACKFILL IN 6 INCH LIFTS AND COMPACT TO THE REQUIREMENTS OF ITEMS 203 AND 304 AS APPROPRIATE FOR THE MATERIAL TYPE.

PLAN LIMITS OF ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN



A SECTION
REAR ABUTMENT EMBANKMENT DETAILS



B SECTION
FORWARD ABUTMENT EMBANKMENT DETAILS

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
EFD	EFD	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3110142	
CTM		NSRR BR#: BR0018445	

BRIDGE SPECIFIC NOTES
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

ESTIMATED BRIDGE QUANTITIES

CALCULATED: VDT DATE: 6/11/15
CHECKED: SNH DATE: 6/12/15

ITEM	ITEM EXT.	TOTAL QUANTITY (03/IMS/10)	UNIT	DESCRIPTION	REAR	PIER	FWD	SUPER	GENERAL	APP SHEET NO.
202	11003	LUMP	LS	STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					LUMP	4/41
203	20001	6,074	CY	EMBANKMENT, AS PER PLAN	4,010		2,064			225/286
SPECIAL	20365000	2	EACH	SPECIAL - SETTLEMENT PLATFORM					2	4/41
503	11101	LUMP	LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (PIER)					LUMP	8/286
503	21301	LUMP	LS	UNCLASSIFIED EXCAVATION, AS PER PLAN					LUMP	8/286
505	11100	LUMP	LS	PILE DRIVING EQUIPMENT MOBILIZATION					LUMP	
507	00501	7,975	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN, AS PER PLAN	3,360	2,600	2,015			4/41
507	00551	8,600	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN	3,570	2,860	2,170			9/286
507	00601	8,085	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN, AS PER PLAN	4,640		3,445			4/41
507	00651	8,640	FT	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN	4,930		3,710			9/286
509	10000	204,278	LB	EPOXY COATED REINFORCING STEEL	72,086	6,891	59,649	65,652		
511	34447	264	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN				264		9/286
511	34451	32	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN				32		9/286
511	40513	132	CY	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS, AS PER PLAN		132				9/286
511	44113	85	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT, NOT INCLUDING FOOTING, AS PER PLAN	47		38			9/286
511	45603	480	CY	CLASS QC4 MASS CONCRETE, SUBSTRUCTURE WITH QC/QA, AS PER PLAN	257		223			9/286
511	46013	224	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL NOT INCLUDING FOOTING, AS PER PLAN	123		101			9/286
511	46513	312	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING, AS PER PLAN	137	75	100			9/286
511	53016	433	CY	CLASS QC4 CONCRETE, MISC.: FOOTING MASS CONCRETE WITH QC/QA	233		200			9/286
511	71200	822	SF	CONCRETE, MISC.: FACING OF CANTILEVER WALLS	437		385			9/286
512	10001	821	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN	371	138	312			10/286
512	10100	1,089	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	371	138	312	268		
512	44451	738	SY	TYPE E WATERPROOFING, AS PER PLAN				738		10/286
SPECIAL	51256202	738	SY	SPECIAL - ASPHALTIC PANEL				738		10/286
SPECIAL	51267400	5,373	SF	SPECIAL - WATERPROOFING, MISC.: DAMPPROOFING OF RAILROAD STRUCTURES	2,925		2,448			9/286
513	10221	94,050	LB	STRUCTURAL STEEL MEMBERS, LEVEL 1, AS PER PLAN				94,050		10/286
513	10321	1,001,135	LB	STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN				1,001,135		10/286
513	20000	4,824	EACH	WELDED STUD SHEAR CONNECTORS				4,824		
514	80020	40,550	SF	SPECIAL - SHOP PAINTING AND FIELD TOUCH-UP OF STRUCTURAL STEEL				40,550		10/286
516	12201	99	FT	STRUCTURAL STEEL EXPANSION JOINT, AS PER PLAN				99		10/286
516	13600	294	SF	1" PREFORMED EXPANSION JOINT FILLER	148		146			
516	46201	16	EACH	BEARING DEVICE, ROCKER, AS PER PLAN				16		34/41
516	46900	16	EACH	BEARING DEVICE, MISC.: SELF-LUBRICATING CYLINDRICAL BEARING (EXP)				16		33/41
517	75001	260	FT	RAILING, ALUMINUM, AS PER PLAN	143		117			14/286
517	76300	429	FT	RAILING, MISC.: NSRR ALUMINUM HANDRAIL WITH VANDAL PROTECTION FENCE				429		15/286
518	21200	549	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	296		253			
518	42201	320	FT	8" PERFORATED CORRUGATED STEEL PIPE, 707.01, AS PER PLAN	175		145			10/286
518	42301	35	FT	8" NON-PERFORATED CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01, AS PER PLAN	15		20			10/286
518	63300	LUMP	LS	STRUCTURE DRAINAGE, MISC.: SUPERSTRUCTURE DRAINAGE SYSTEM					LUMP	10/286
523	20000	6	EACH	DYNAMIC LOAD TESTING	2	2	2			
523	20500	6	EACH	RESTRIKE	2	2	2			
524	94803	1,092	FT	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN	585		507			11/286
524	95100	15	EACH	DRILLED SHAFTS, MISC.: CSL TESTING	8		7			11/286
SPECIAL	53000200	LUMP	LS	SPECIAL - STRUCTURES: SURVEY AND MONITORING OF TRACK AND TEMPORARY SHORING					LUMP	12/286
SPECIAL	53000200	LUMP	LS	SPECIAL - STRUCTURES: PRECONSTRUCTION CONDITION SURVEY					LUMP	12/286
SPECIAL	53013000	4,824	SF	SPECIAL - FORM LINER	2,621		2,203			10/286
SPECIAL	53014000	LUMP	LS	SPECIAL - STRUCTURAL SURVEY AND MONITORING OF VIBRATION					LUMP	13/286
625	25604	443	FT	CONDUIT, 4", 725.051				443		

DESIGN AGENCY
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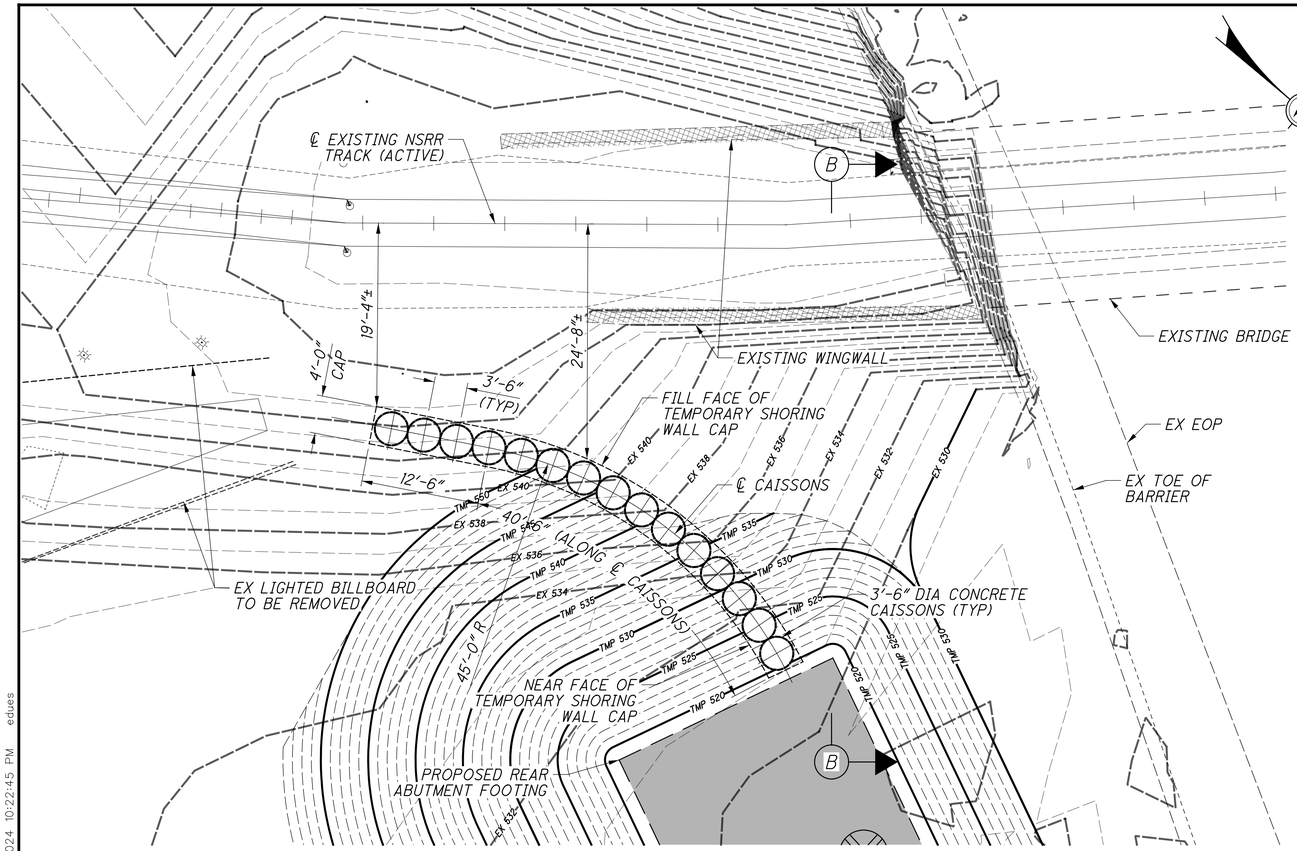
DESIGNED	DRAWN	REVIEWED	DATE
VDT	VDT	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3110142	
SNH		NSRR BR#: BR0018445	

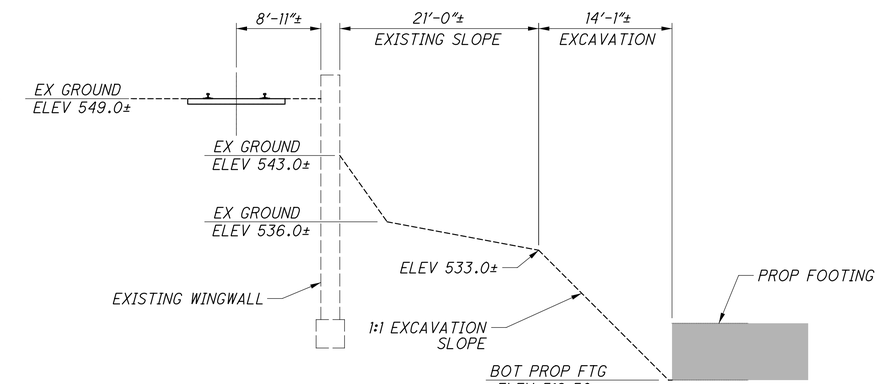
BRIDGE ESTIMATED QUANTITIES
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

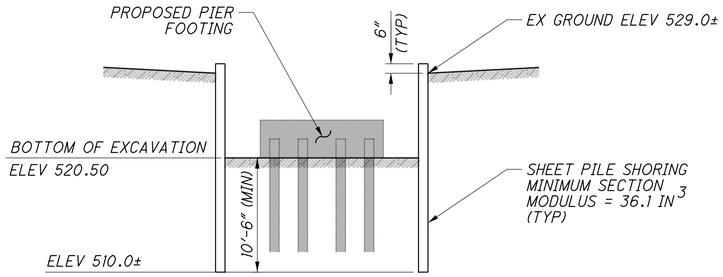


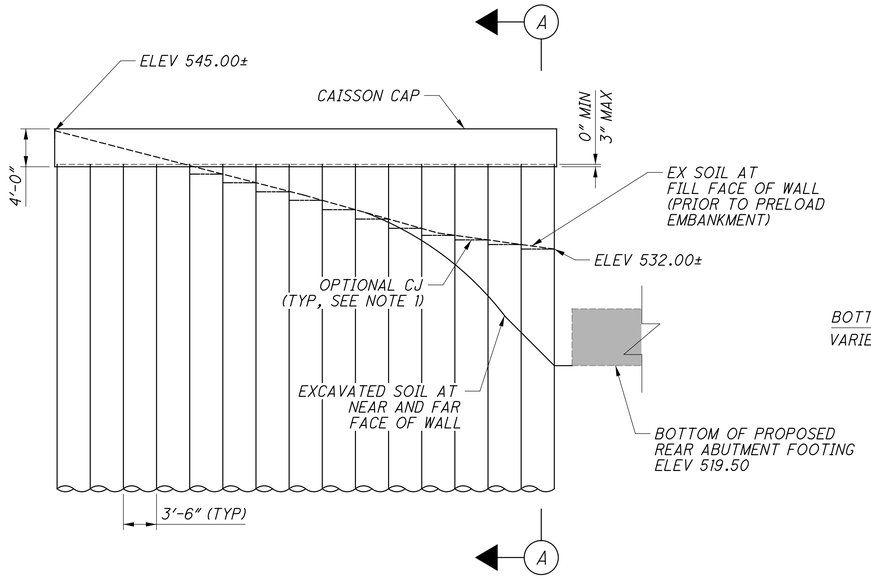
CAISSON WALL PLAN (TEMPORARY CONDITION)

SOUTHEAST WALL (NOTE 2)



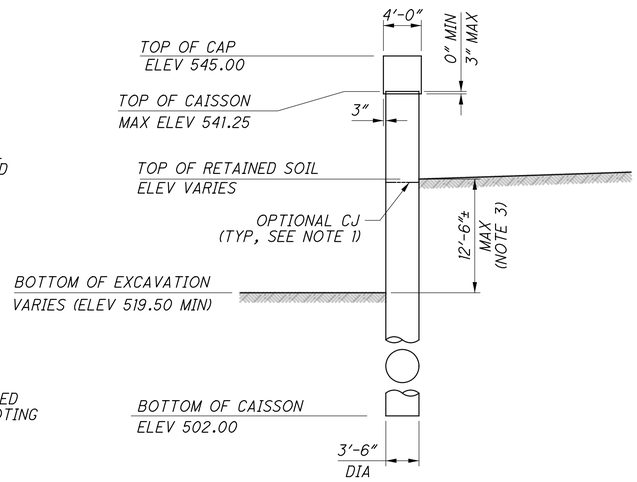
B SECTION
EXISTING WINGWALL





CAISSON WALL ELEVATION (TEMPORARY CONDITION)

SOUTHEAST WALL



A SECTION
DESIGN CASE

TEMPORARY SHEET PILE SECTION

AT PIER FOOTING EXCAVATION

NOTES:

1. OPTIONAL CONSTRUCTION JOINT AT EXISTING GROUNDLINE OF EACH CAISSON. AREA ABOVE CONSTRUCTION JOINT MAY BE OPTIONALLY CONSTRUCTED OF A RECTANGULAR (WALL-TYPE) POUR AT NO ADDITIONAL COST TO THE STATE. THE CAISSON REINFORCING CAGE SHALL BE CONTINUOUS INTO THE CAP. FOR FURTHER DETAILS, INCLUDING REINFORCING, SEE SHEET 23 | 41 .
2. AFTER INSTALLATION OF CAISSON WALL (AND ASSOCIATED EXCAVATION), THESE PLANS ASSUME A 1:1 EXCAVATION TO THE BOTTOM OF FOOTING. CONTRACTOR SHALL VERIFY THE ADEQUACY OF 1:1 SLOPE AND, IF WARRANTED, SUBMIT REVISIONS TO NSRR AND ODOT. ANTICIPATED TEMPORARY EXCAVATION GRADING IS SHOWN IN THE CAISSON WALL PLAN ON THIS SHEET. THE EXISTING WINGWALL IS ASSUMED TO SHEILD THE EXCAVATION FROM RAILROAD LOADING. SEE SECTION B FOR DETAILS.
3. MAX HEIGHT OF RETAINED SOIL NORMAL TO THE WALL IS DUE TO A MAXIMUM ½" ALLOWABLE DEFLECTION LIMIT.
4. CAISSON WALL TEMPORARY SHORING SHALL BE CASED TEMPORARILY. SEE STANDARD RAILROAD BRIDGE PLAN NOTES FOR MORE INFORMATION.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

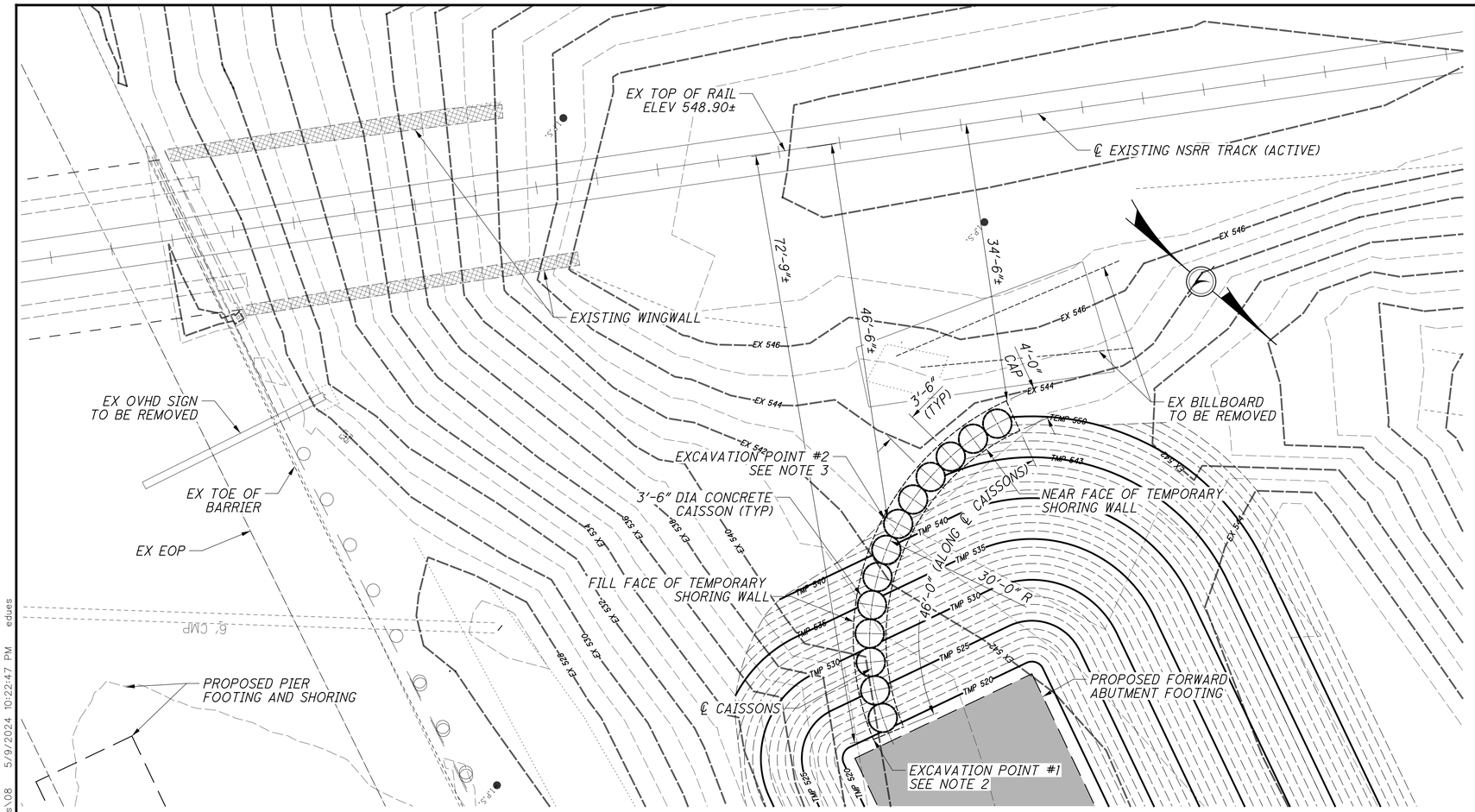
DESIGNED	DRAWN	REVIEWED	DATE
VDK	VDT	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3110142	
CTM		NSRR BR#: BR0018445	

SOUTHEAST TEMPORARY SHORING PLAN AND ELEVATION
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

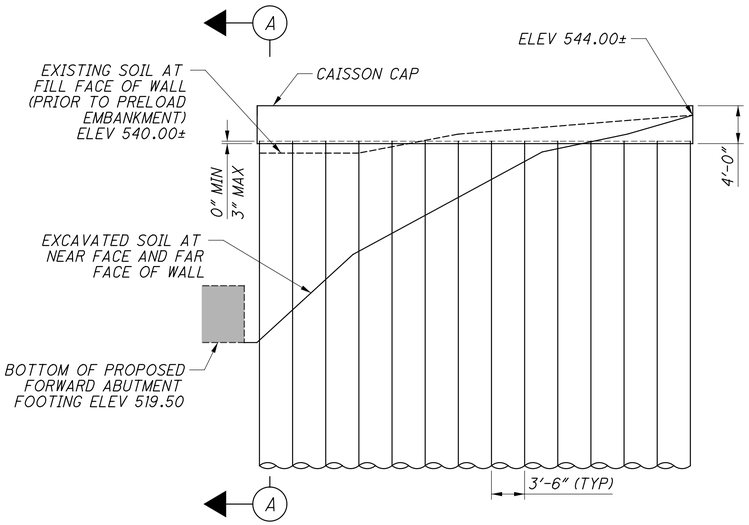
7 / 41

84 / 286



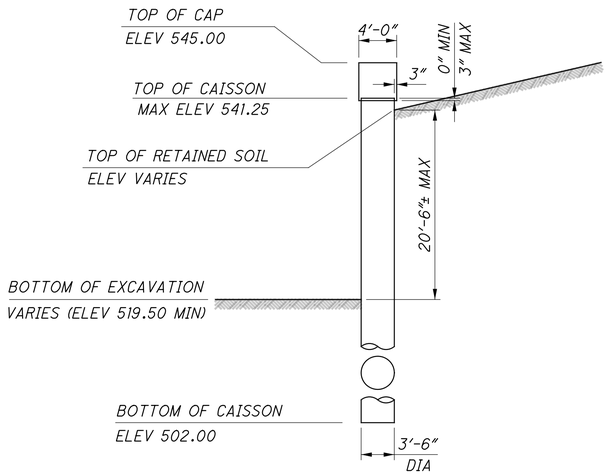
CAISSON WALL (TEMPORARY CONDITION)

SOUTHWEST WALL (NOTE 1)



CAISSON WALL ELEVATION (TEMPORARY CONDITION)

SOUTHWEST WALL



A SECTION
DESIGN CASE

NOTES:

1. AFTER INSTALLATION OF CAISSON WALL (AND ASSOCIATED EXCAVATION), THESE PLANS ASSUME A 1:1 EXCAVATION TO THE BOTTOM OF FOOTING. ANTICIPATED TEMPORARY EXCAVATION GRADING IS SHOWN IN THE CAISSON WALL PLAN ON THIS SHEET. CONTRACTOR SHALL VERIFY THE ADEQUACY OF 1:1 SLOPE AND, IF WARRANTED, SUBMIT REVISIONS TO NSRR AND ODOT. NUMERICAL VERIFICATION BELOW CORRESPONDS TO NOMENCLATURE ON NSRR-PPM DRAWING 4, "SHORING DESIGN GUIDE"
2. EXCAVATION POINT #1 IS THE BOTTOM OF FOOTING EXCAVATION LINE.
   IT IS OUTSIDE OF NORFOLK SOUTHERN EXCAVATION ZONE 1
   EXCAVATION ELEVATION = 519.50
   TOP OF RAIL NORMAL TO ELEVATION = 548.90 (ASSUME 549.0)
   ELEVATION ABOVE WHICH IS CONSIDERED OUTSIDE OF EXCAVATION ZONE 1
   (I.E. NO SHORING REQUIRED OR SURCHARGE CONSIDERED)
   [549.0] - [3.6' TO SHOULDER] - [(72.75 - 14)/2] = 516.0 < 519.50 = OK
3. EXCAVATION POINT #2 IS THE TOP OF 1:1 FOOTING EXCAVATION.
   IT IS OUTSIDE OF NORFOLK SOUTHERN EXCAVATION ZONE 1
   EXCAVATION ELEVATION = 543.00
   TOP OF RAIL NORMAL TO ELEVATION = 548.90 (ASSUME 549.0)
   ELEVATION ABOVE WHICH IS CONSIDERED OUTSIDE OF EXCAVATION ZONE 1
   (I.E. NO SHORING REQUIRED OR SURCHARGE CONSIDERED)
   [549.0] - [3.6' TO SHOULDER] - [(46.5 - 14)/2] = 529.2 < 543.0 = OK
4. CAISSON WALL TEMPORARY SHORING SHALL BE CASED TEMPORARILY. SEE STANDARD RAILROAD BRIDGE PLAN NOTES FOR MORE INFORMATION.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

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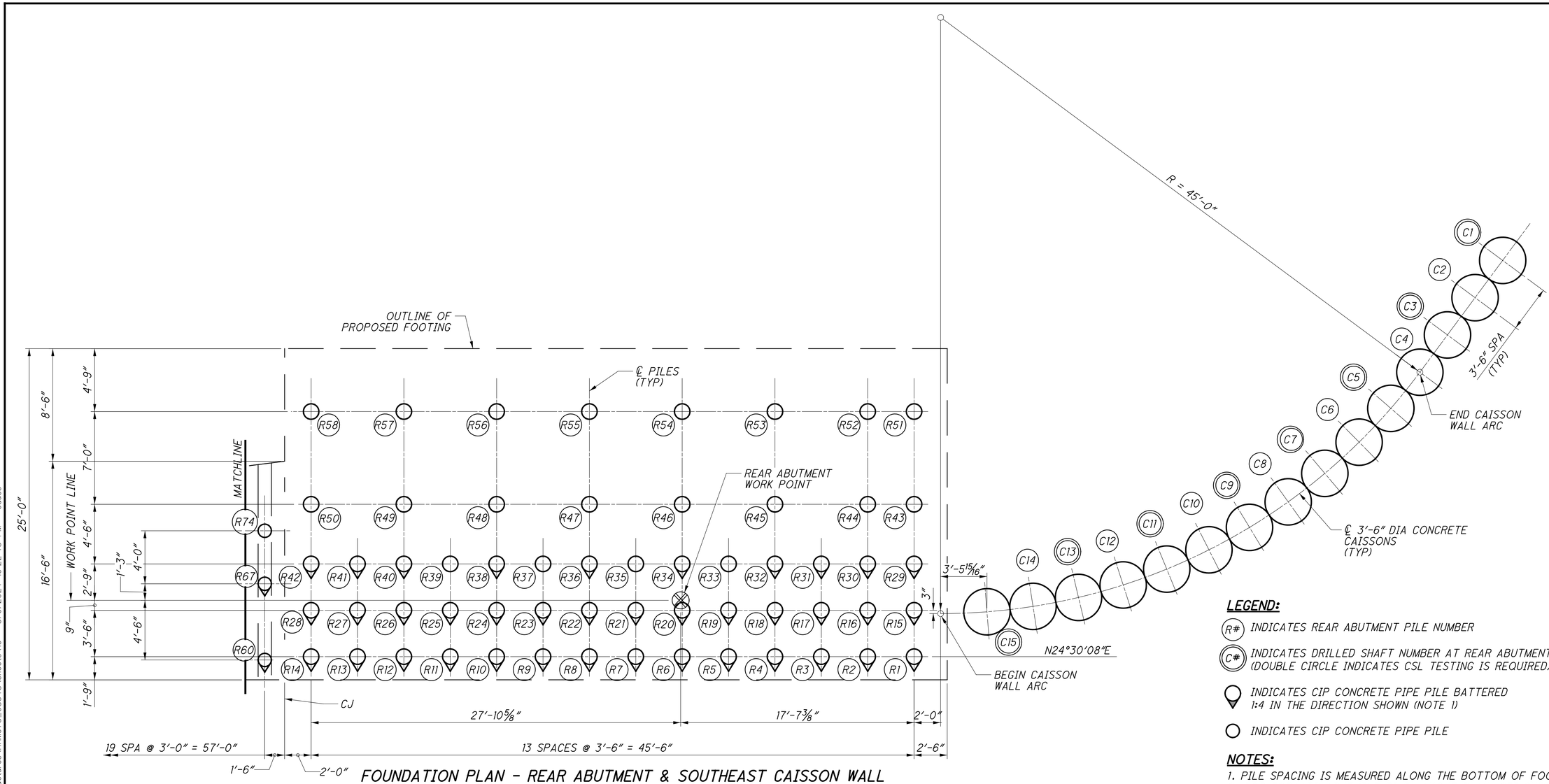
VDK	VDT	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3110142	
CTM		NSRR BR#: BR0018445	

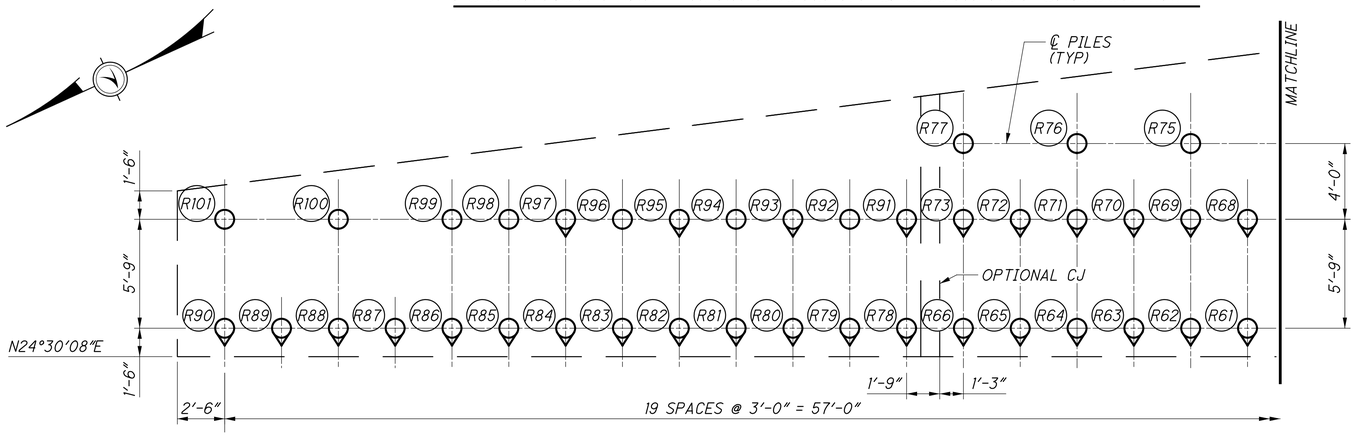
SOUTHWEST TEMPORARY SHORING PLAN AND ELEVATION

BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889



FOUNDATION PLAN - REAR ABUTMENT & SOUTHEAST CAISSON WALL



FOUNDATION PLAN - NORTHEAST WINGWALL

LEGEND:

- (R#) INDICATES REAR ABUTMENT PILE NUMBER
- (C#) INDICATES DRILLED SHAFT NUMBER AT REAR ABUTMENT (DOUBLE CIRCLE INDICATES CSL TESTING IS REQUIRED)
- INDICATES CIP CONCRETE PIPE PILE BATTERED 1:4 IN THE DIRECTION SHOWN (NOTE 1)
- INDICATES CIP CONCRETE PIPE PILE

NOTES:

1. PILE SPACING IS MEASURED ALONG THE BOTTOM OF FOOTING.
2. FOR FORWARD ABUTMENT PILE LAYOUT PLAN, SEE SHEET 11 | 41.
3. FOR PIER PILE LAYOUT PLAN, SEE SHEET 10 | 41.

PILE DATA

PILE NUMBER	PIPE PILE DIAMETER	PILE CUTOFF ELEVATION	MINIMUM TIP ELEVATION	ORDER PILE LENGTH (EACH)
R1 - R58	14"	521.50	446.5	85'
R60 - R77	12"	521.75	446.5	85'
R78 - R101	12"	522.75	446.5	85'

* PILE NUMBER R59 IS NOT USED.

CAISSON DATA

CAISSON NUMBER	TOP OF CAISSON ELEV	TOP OF VERTICAL REINF. ELEV	TIP ELEV	SPIRAL LENGTH	SHAFT PAY LENGTH (EA)	VERTICAL REINF. LENGTH
C1 - C15	541.00**	543.00	502.00	38'-6"	39'-0"	41'-0"

** PAY ELEVATION. CONTRACTOR HAS OPTION TO CONSTRUCT TOP OF CAISSON TO ELEV 541.25 AT NO ADDITIONAL COST TO THE STATE.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

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VDT	VDK	CTV	12-19-23
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CTM		NSRR BR#: BR0018445	

REAR ABUTMENT PILE LAYOUT
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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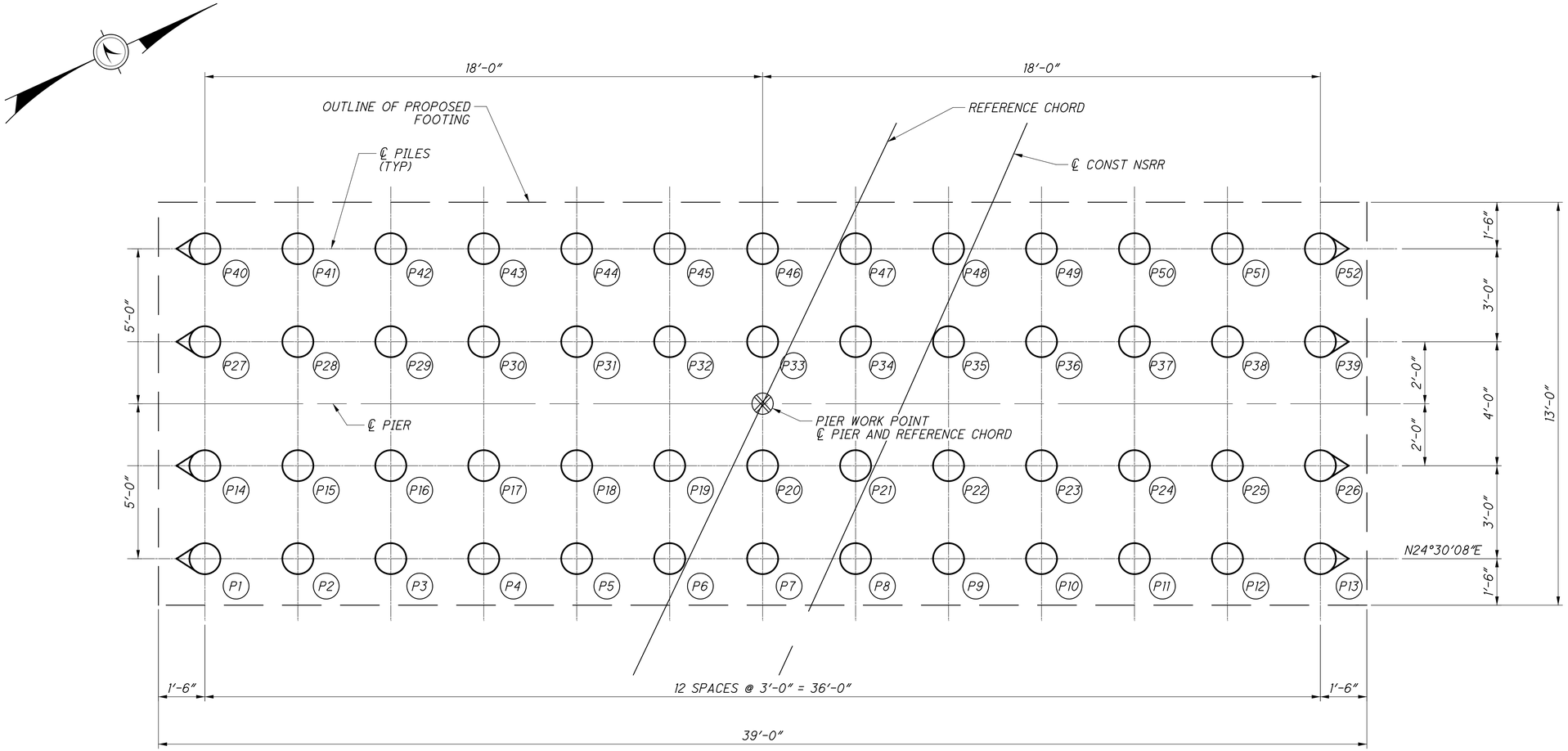
286



FOUNDATION PLAN - PIER

LEGEND:

(P#) INDICATES PIER PILE NUMBER

INDICATES 12" DIA CIP CONCRETE PIPE PILE BATTERED 1:4 IN THE DIRECTION SHOWN (NOTE 1)

INDICATES 12" DIA CIP CONCRETE PIPE PILE

NOTES:

1. PILE SPACING IS MEASURED ALONG THE BOTTOM OF FOOTING.
2. FOR REAR ABUTMENT PILE LAYOUT PLAN, SEE SHEET 9 | 41.
3. FOR FORWARD ABUTMENT PILE LAYOUT PLAN, SEE SHEET 11 | 41 .

PILE DATA			
PILE NUMBER	PILE CUTOFF ELEVATION	MINIMUM TIP ELEVATION	ORDER PILE LENGTH (EACH)
P1 - P52	522.50	472.50	55'

DESIGN AGENCY
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COLUMBUS, OHIO 43231

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CTM		NSRR BR#: BR0018445	

PIER PILE LAYOUT
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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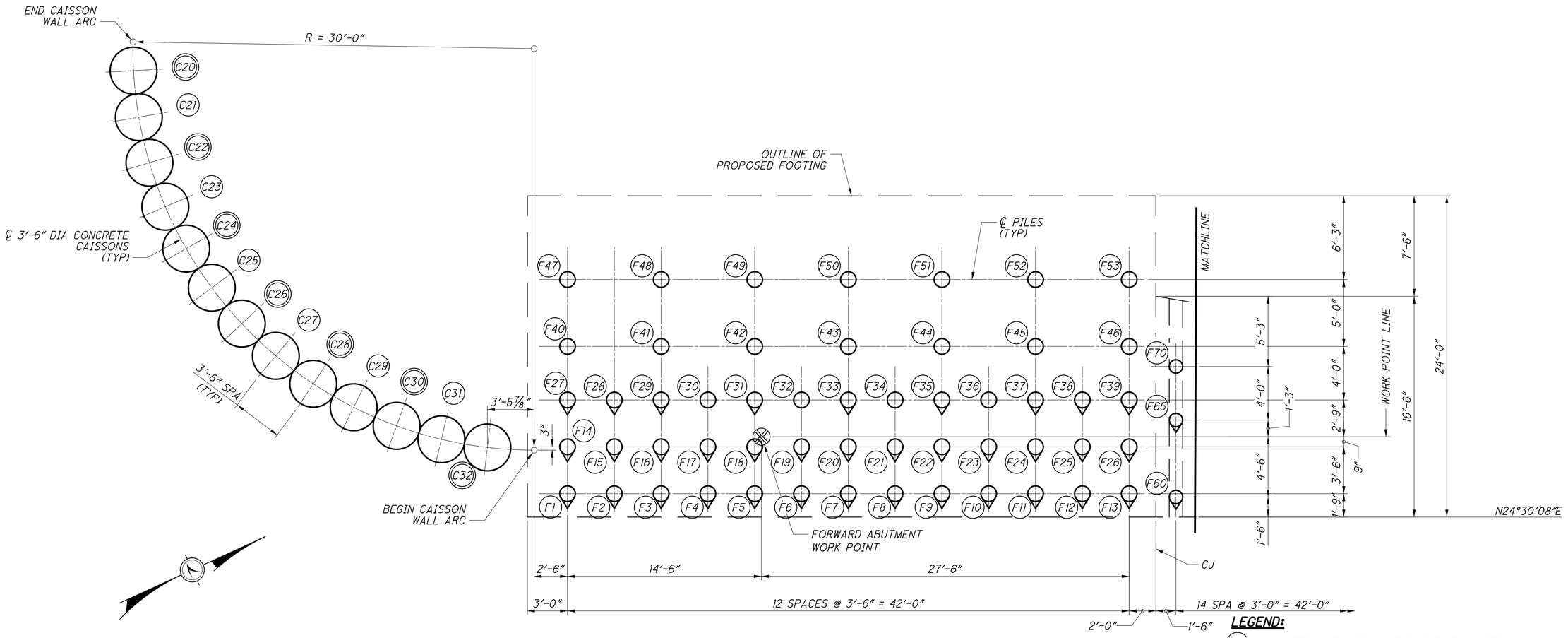
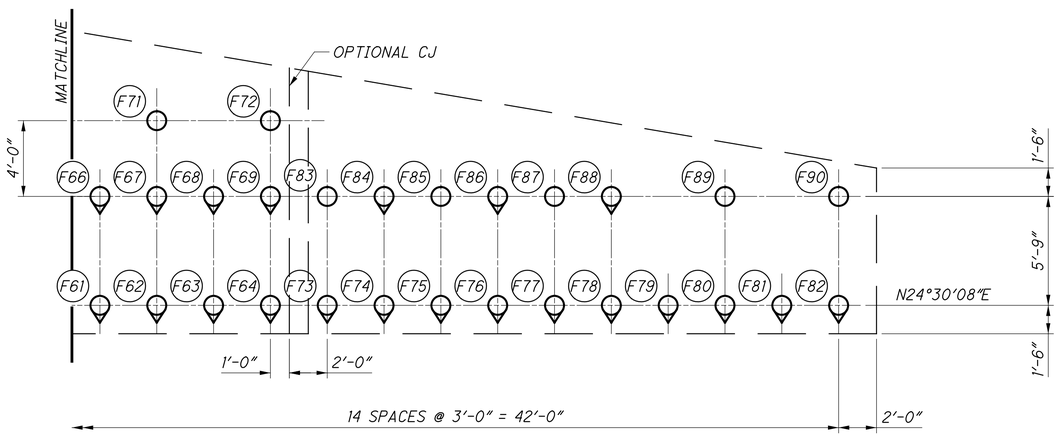
286



FOUNDATION PLAN - FORWARD ABUTMENT & SOUTHWEST WINGWALL



FOUNDATION PLAN - NORTHWEST WINGWALL

LEGEND:

- (F#) INDICATES FORWARD ABUTMENT PILE NUMBER
- (C#) INDICATES DRILLED SHAFT NUMBER AT FORWARD ABUTMENT (DOUBLE CIRCLE INDICATES CSL TESTING IS REQUIRED)
- INDICATES CIP CONCRETE PIPE PILE BATTERED 1:4 IN THE DIRECTION SHOWN (NOTE 1)
- INDICATES CIP CONCRETE PIPE PILE

NOTES:

1. PILE SPACING IS MEASURED ALONG THE BOTTOM OF FOOTING.
2. FOR REAR ABUTMENT PILE LAYOUT PLAN, SEE SHEET 9 | 41.
3. FOR PIER PILE LAYOUT PLAN, SEE SHEET 10 | 41.

PILE DATA

PILE NUMBER	PIPE PILE DIAMETER	PILE CUTOFF ELEVATION	MINIMUM TIP ELEVATION	ORDER PILE LENGTH (EACH)
F1 - F53	14"	521.50	459.50	70'
F60 - F72	12"	521.75	459.50	70'
F73 - F90	12"	522.75	459.50	70'

* PILE NUMBERS F54-F59 AND CAISSON NUMBERS C16-C19 ARE NOT USED

CAISSON DATA

CAISSON NUMBER	TOP OF CAISSON ELEV	TOP OF VERTICAL REINF. ELEV	TIP ELEV	SPIRAL LENGTH	SHAFT PAY LENGTH (EA)	VERTICAL REINF. LENGTH
C20 - C32	541.00**	543.00	502.00	38'-6"	39'-0"	41'-0"

** PAY ELEVATION. CONTRACTOR HAS OPTION TO CONSTRUCT TOP OF CAISSON TO ELEV 541.25 AT NO ADDITIONAL COST TO THE STATE.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

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CTM		NSRR BR#: BR0018445	

FORWARD ABUTMENT PILE LAYOUT
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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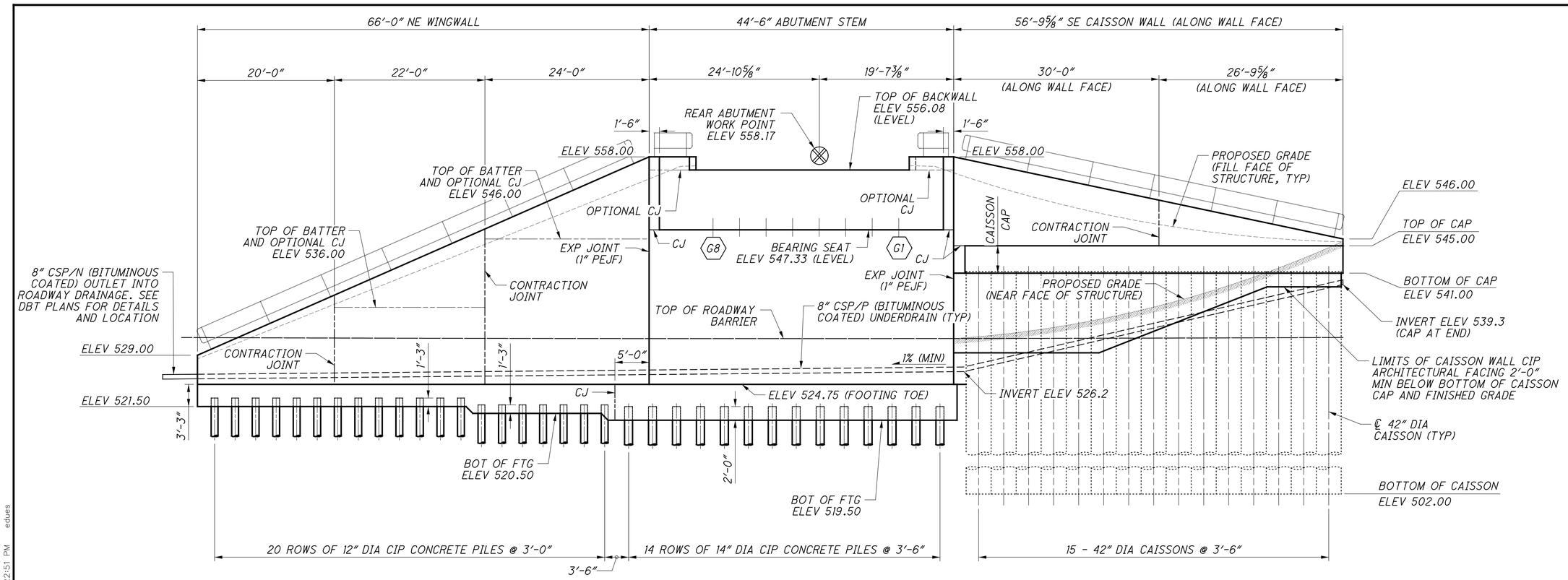
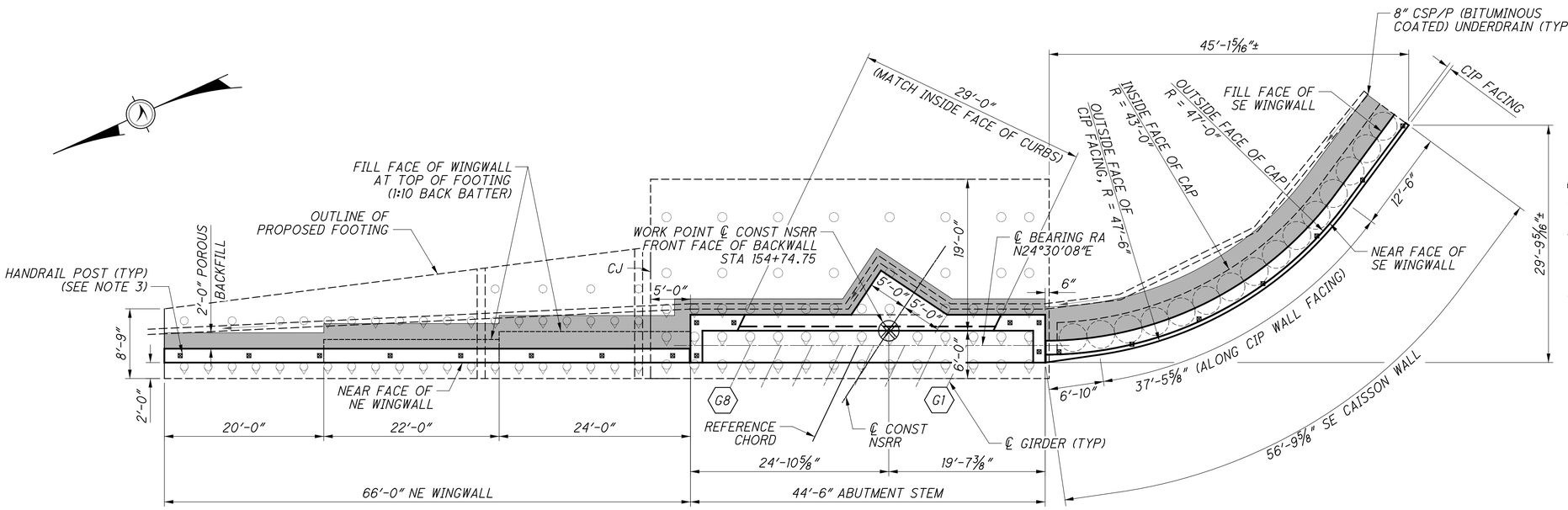
286



REAR ABUTMENT ELEVATION

ALONG FRONT FACE OF WALLS



REAR ABUTMENT PLAN

NOTES:

1. THE EXPANSION JOINT IS A FULL-DEPTH JOINT WITH 1" PEJF PLACED BETWEEN POURS.
2. FOR CONTRACTION JOINT DETAILS, SEE SHEET (19/286).
3. FOR HANDRAIL DETAILS, SEE SHEET (14/286) POST LOCATIONS SHOWN ARE SCHEMATIC. FINAL LAYOUT OF POSTS AND HANDRAIL JOINTS SHALL BE SUBMITTED BY THE CONTRACTOR FOR NSRR REVIEW AND APPROVAL.

REAR ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	9 | 41
GENERAL PLAN & ELEV:	12 | 41
ABUTMENT PLANS:	13 | 41
ABUTMENT ELEVATION:	14 | 41
WINGWALL PLANS:	15 | 41
WINGWALL ELEVATIONS:	16 | 41
TYPICAL DETAILS:	22 | 41 - 23 | 41
FIXED BEARING:	34 | 41
REINFORCING LIST:	39 | 41 - 40 | 41

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDT	VDK	CTV	12-19-23
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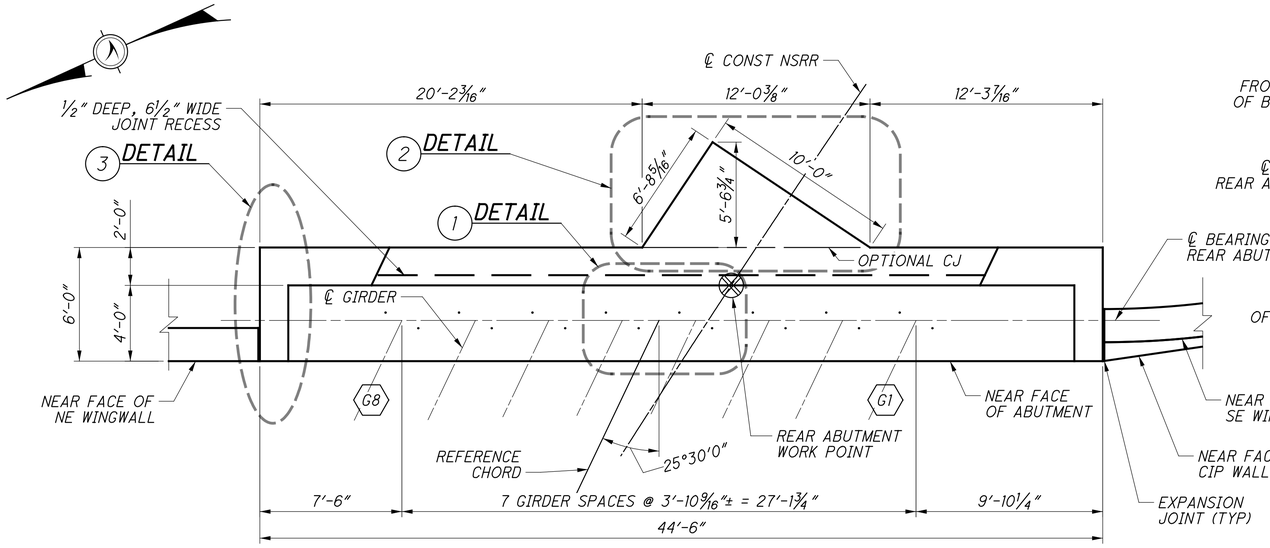
CTM		NSRR BR#: BR0018445	

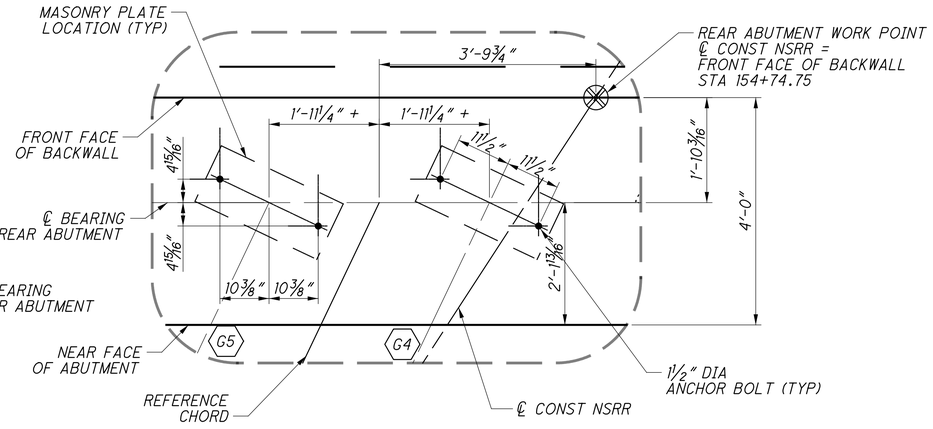
REAR ABUTMENT: PLAN AND ELEVATION

BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

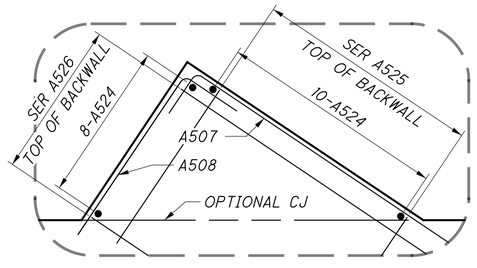
HAM-75-7.85
PID No. 77889



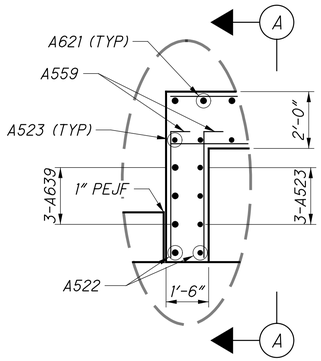
ABUTMENT PLAN



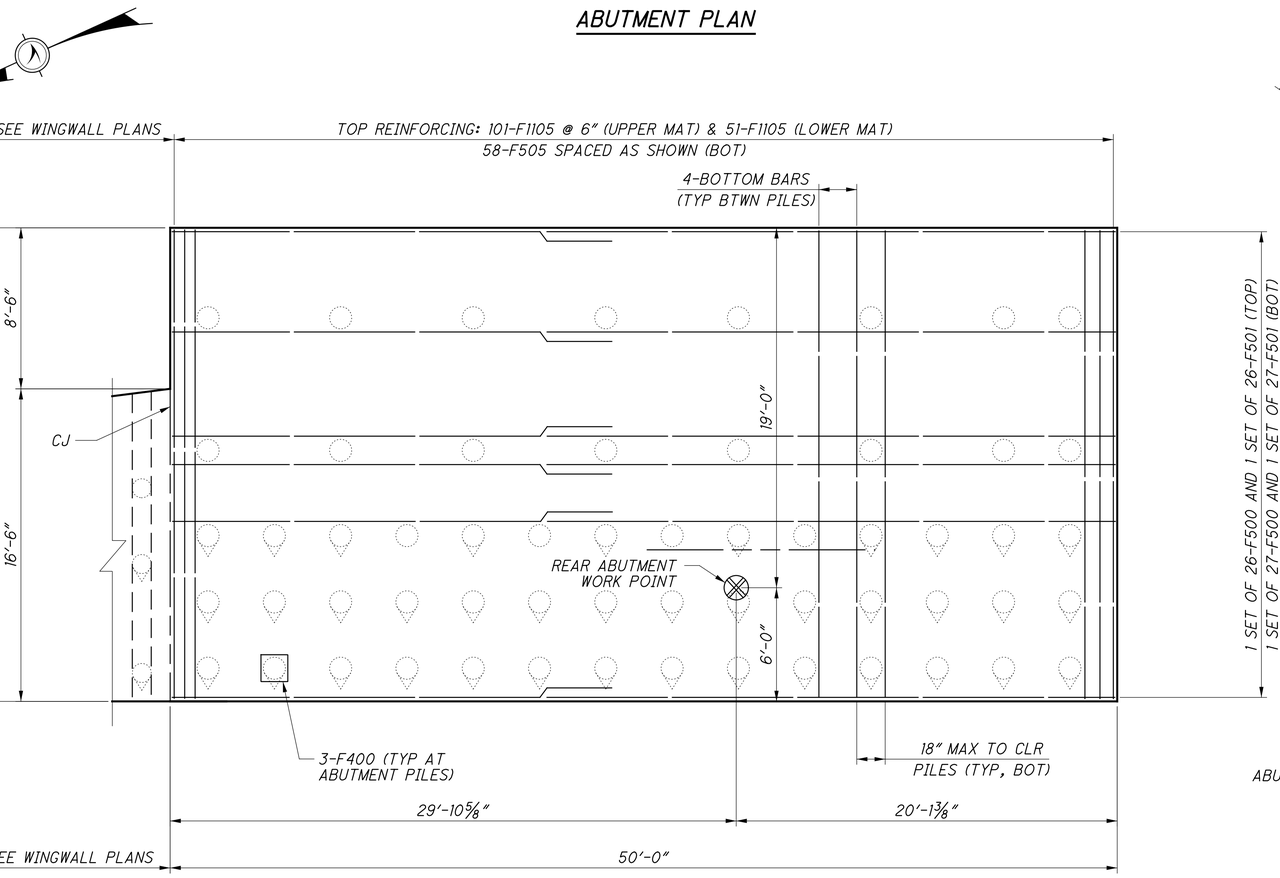
1 WORK POINT DEFINITION
INCLUDING ANCHOR BOLT LAYOUT



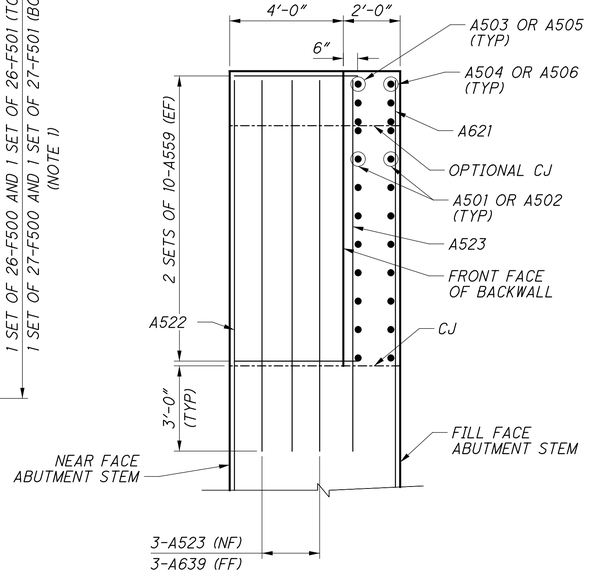
2 ABUTMENT DETAIL
BACKWALL EXTENSION REINFORCEMENT



3 CHEEKWALL DETAIL
PLAN VIEW OF CHEEKWALL REINFORCEMENT



FOOTING PLAN



A ELEVATION

NOTES:

1. FOR SPACING OF LONGITUDINAL BARS AROUND PILES SEE ABUTMENT TYPICAL SECTION, SHEET 14 | 41 .
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 39 | 41 .

REAR ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	9 | 41
GENERAL PLAN & ELEV:	12 | 41
ABUTMENT PLANS:	13 | 41
ABUTMENT ELEVATION:	14 | 41
WINGWALL PLANS:	15 | 41
WINGWALL ELEVATIONS:	16 | 41
TYPICAL DETAILS:	22 | 41 - 23 | 41
FIXED BEARING:	34 | 41
REINFORCING LIST:	39 | 41 - 40 | 41

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

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REAR ABUTMENT PLAN AND FOOTING PLAN
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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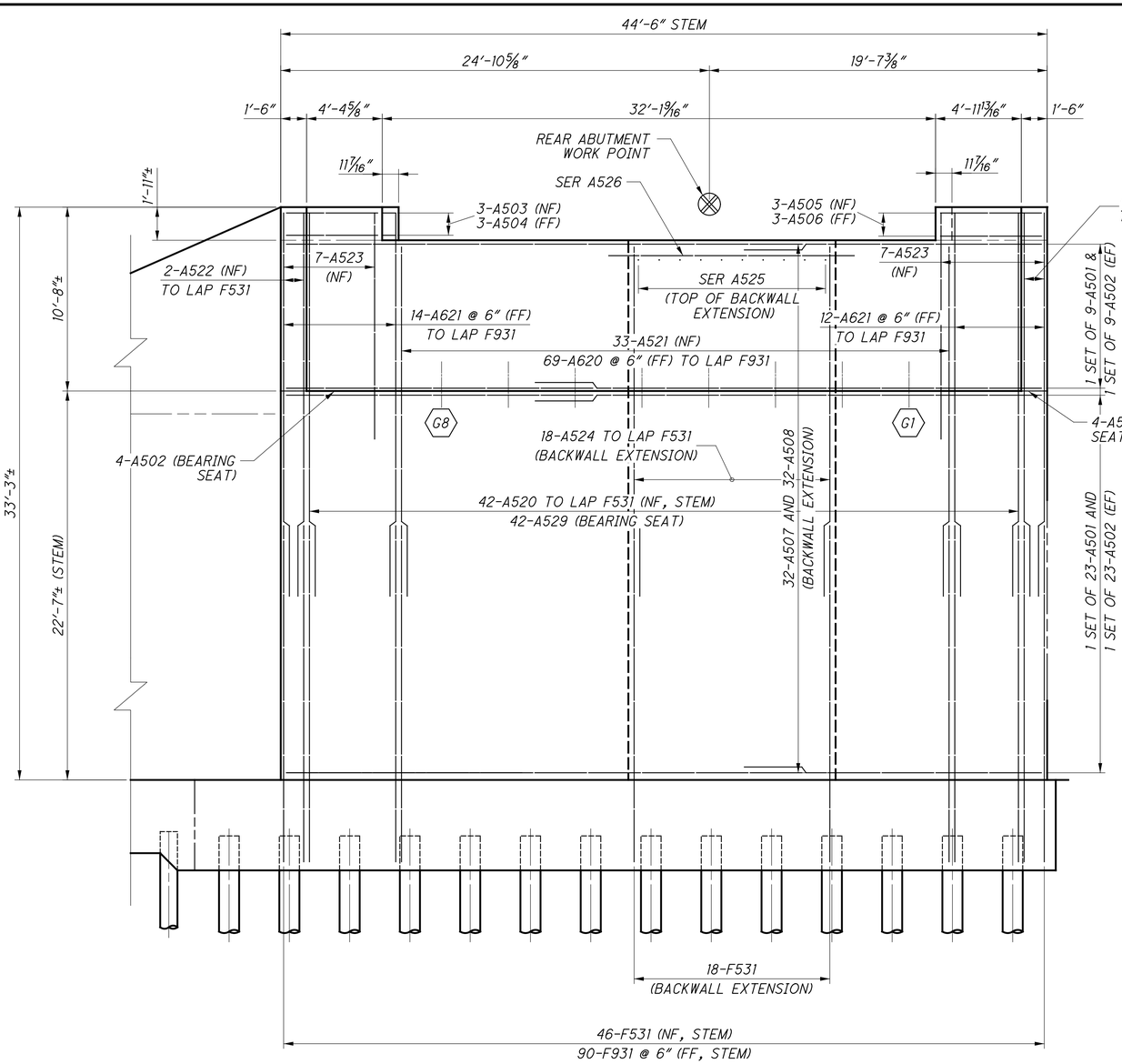
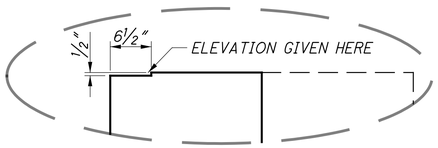
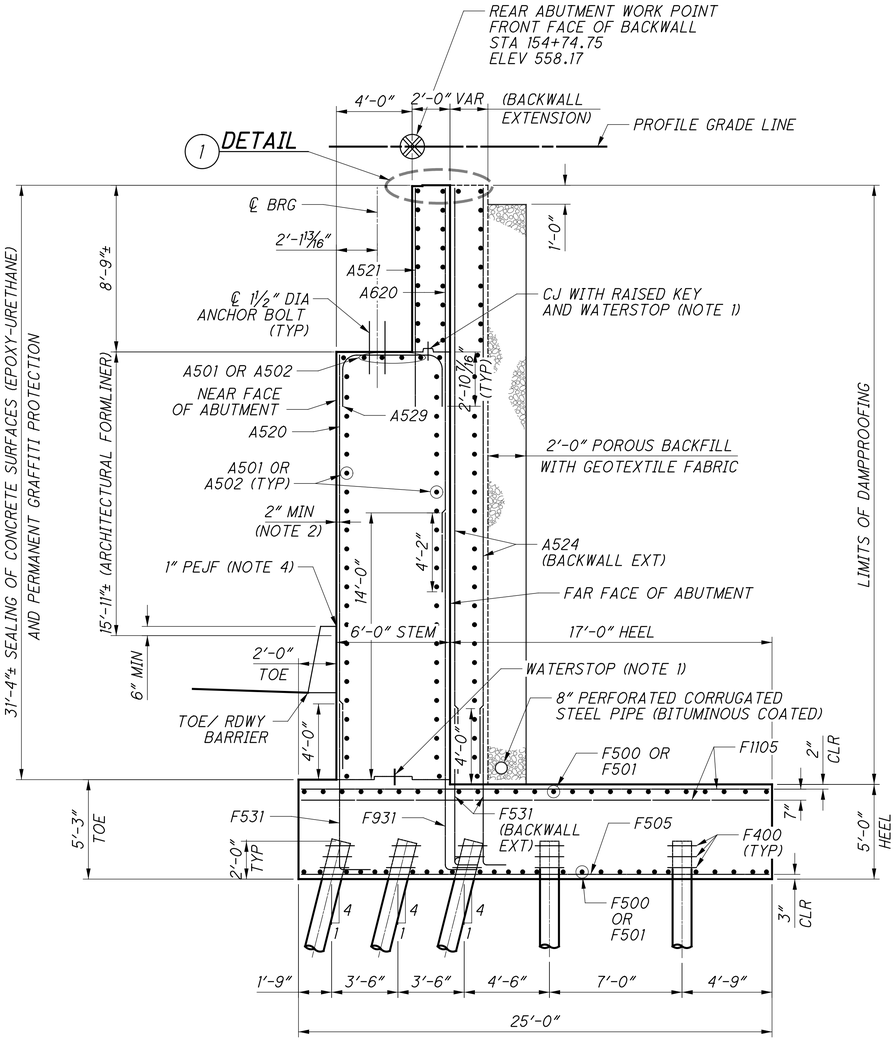


REAR ABUTMENT ELEVATION

SEE NOTE 3



1 DETAIL



REAR ABUTMENT TYPICAL SECTION

NOTES:

1. WATERSTOPS SHALL BE 6"x⅜" PVC AND SHALL BE CONTINUOUS ACROSS JOINT. FOR RAISED KEYWAY DETAIL, SEE TYPICAL STRUCTURAL DETAILS SHEET (19/286).
2. ADJUST CLEAR DISTANCE TO PLAN DIMENSION TO ACCOUNT FOR FORMLINER RELIEF AS PER FORMLINER GENERAL NOTE.
3. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET [39|41].
4. 1" PEJF TO BE PLACED BETWEEN ROADWAY BARRIER AND ABUTMENT FACE (TYP). COST OF 1" PEJF TO BE CONSIDERED INCIDENTAL TO THE COST OF THE ROADWAY BARRIER.

REAR ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	[9|41]
GENERAL PLAN & ELEV:	[12|41]
ABUTMENT PLANS:	[13|41]
ABUTMENT ELEVATION:	[14|41]
WINGWALL PLANS:	[15|41]
WINGWALL ELEVATIONS:	[16|41]
TYPICAL DETAILS:	[22|41] - [23|41]
FIXED BEARING:	[34|41]
REINFORCING LIST:	[39|41] - [40|41]

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
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REAR ABUTMENT ELEVATION DETAILS

BRIDGE NO. HAM-75-0834 (INSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
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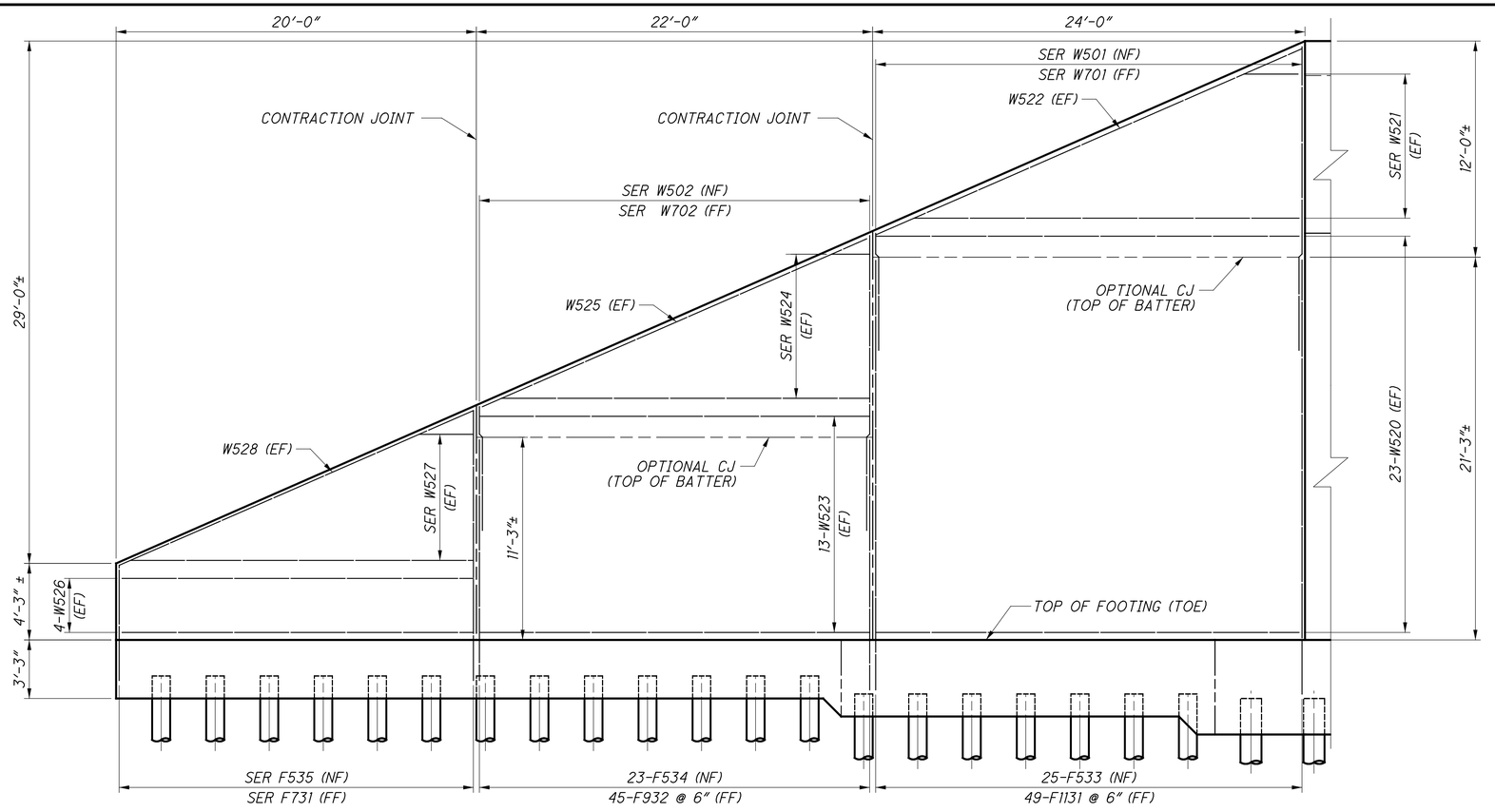
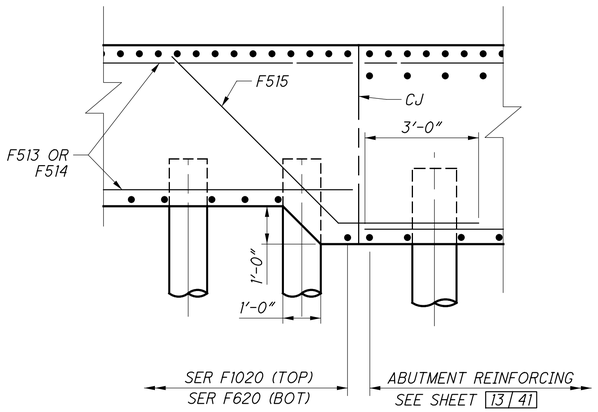
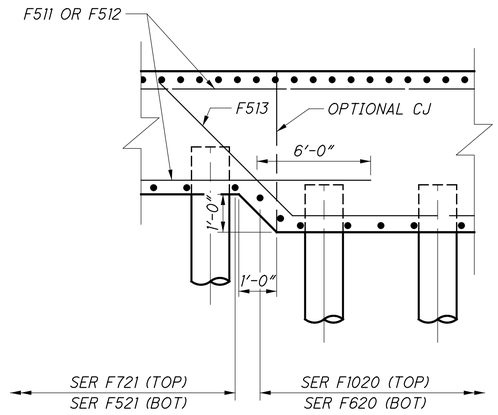


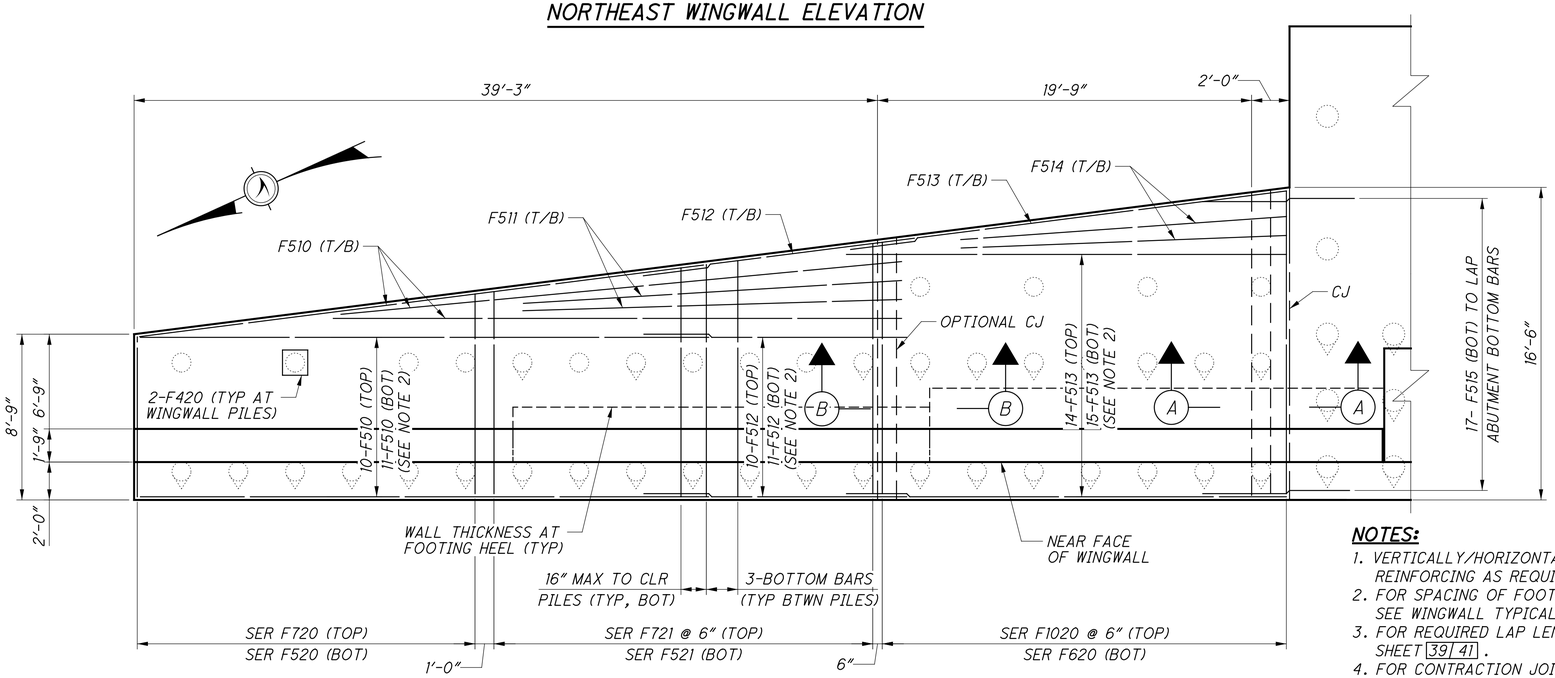
NORTHEAST WINGWALL ELEVATION



A SECTION
STEP DETAILS



B SECTION
STEP DETAILS



NORTHEAST WINGWALL PLAN

FOOTING REINFORCING SHOWN

NOTES:

1. VERTICALLY/HORIZONTALLY ADJUST AND FIELD CUT VERTICAL REINFORCING AS REQUIRED TO CLEAR PILES.
2. FOR SPACING OF FOOTING BOTTOM LONGITUDINAL BARS AROUND PILES SEE WINGWALL TYPICAL SECTION, SHEET 23 41 .
3. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 39 41 .
4. FOR CONTRACTION JOINT DETAILS, SEE SHEET 19 / 286 .

REAR ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	9 41
GENERAL PLAN & ELEV:	12 41
ABUTMENT PLANS:	13 41
ABUTMENT ELEVATION:	14 41
WINGWALL PLANS:	15 41
WINGWALL ELEVATIONS:	16 41
TYPICAL DETAILS:	22 41 - 23 41
FIXED BEARING:	34 41
REINFORCING LIST:	39 41 - 40 41

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

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NORTHEAST WINGWALL PLAN & ELEVATION
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NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

15 / 41

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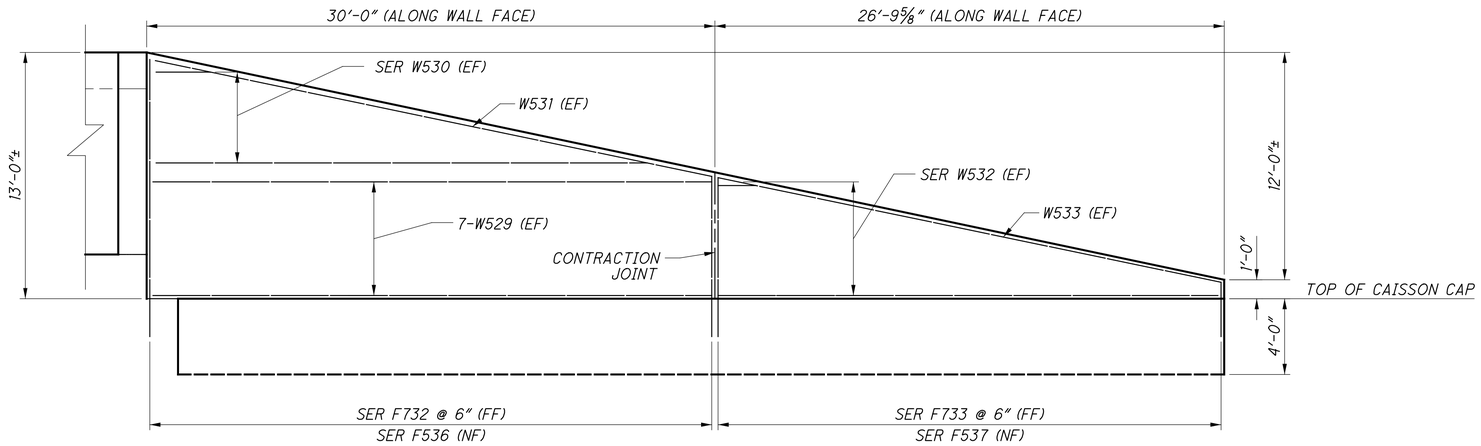
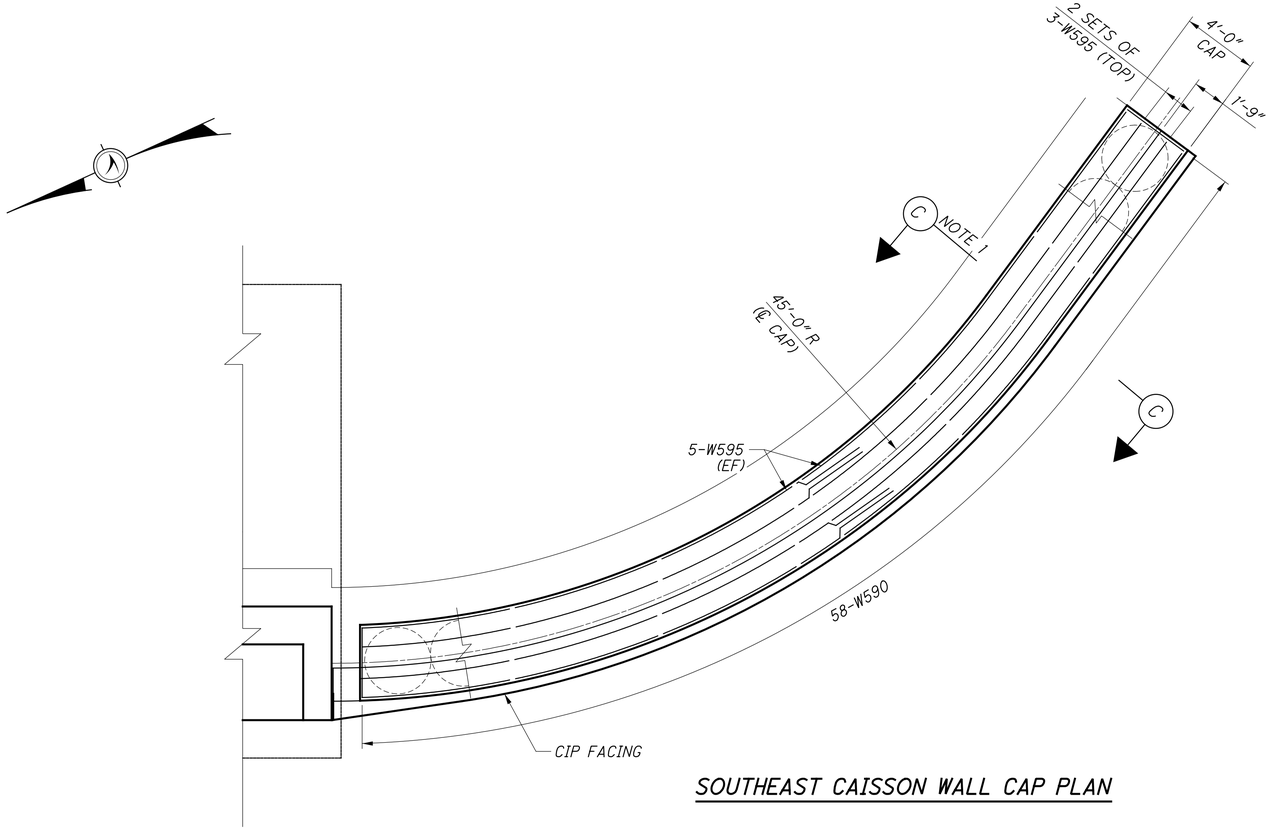
286



SOUTHEAST WINGWALL ELEVATION

CAISSONS NOT SHOWN FOR CLARITY



SOUTHEAST CAISSON WALL CAP PLAN

NOTES:

1. FOR SECTION C, SEE SHEET 23 | 41 .
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 39 | 41 .
3. FOR CONTRACTION JOINT DETAILS, SEE SHEET 19 (286) .

REAR ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	9 | 41
GENERAL PLAN & ELEV:	12 | 41
ABUTMENT PLANS:	13 | 41
ABUTMENT ELEVATION:	14 | 41
WINGWALL PLANS:	15 | 41
WINGWALL ELEVATIONS:	16 | 41
TYPICAL DETAILS:	22 | 41 - 23 | 41
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DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

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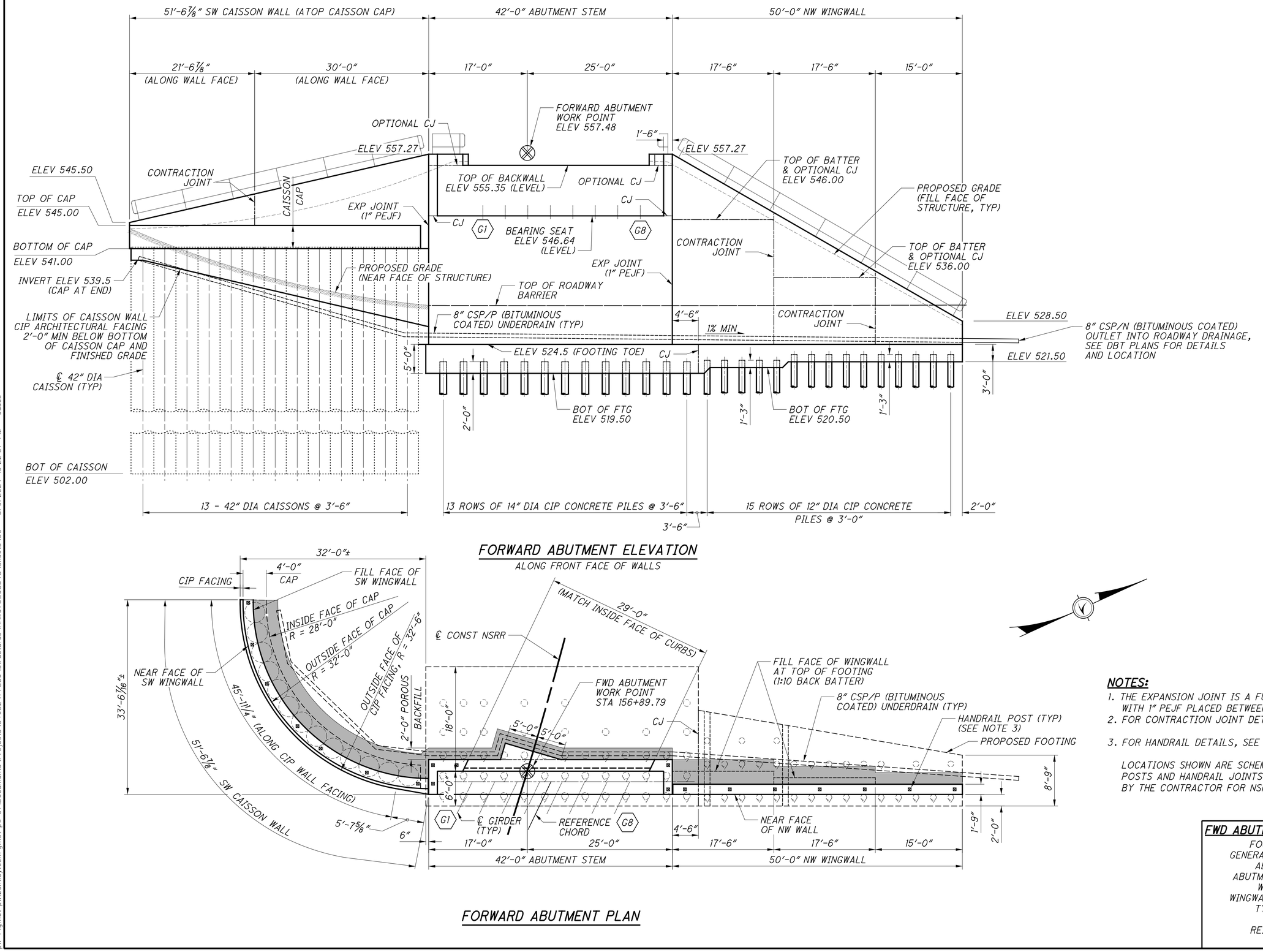
CTM		NSRR BR#: BR0018445	

SOUTHEAST WINGWALL PLAN & ELEVATION
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

16 / 41

93 (286)



FORWARD ABUTMENT ELEVATION

ALONG FRONT FACE OF WALLS

FORWARD ABUTMENT PLAN

NOTES:

1. THE EXPANSION JOINT IS A FULL-DEPTH JOINT WITH 1" PEJF PLACED BETWEEN POURS.
2. FOR CONTRACTION JOINT DETAILS, SEE SHEET (19 / 286).
3. FOR HANDRAIL DETAILS, SEE SHEET (14 / 286). POST LOCATIONS SHOWN ARE SCHEMATIC. FINAL LAYOUT OF POSTS AND HANDRAIL JOINTS SHALL BE SUBMITTED BY THE CONTRACTOR FOR NSRR REVIEW AND APPROVAL.

FWD ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	11 | 41	
GENERAL PLAN & ELEV:	17 | 41	
ABUTMENT PLANS:	18 | 41	
ABUTMENT ELEVATION:	19 | 41	
WINGWALL PLANS:	20 | 41	
WINGWALL ELEVATIONS:	21 | 41	
TYPICAL DETAILS:	22 | 41	- 23 | 41
FIXED BEARING:	34 | 41	
REINFORCING LIST:	39 | 41	- 40 | 41

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDT	VDK	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3110142	
CTM		NSRR BR#: BR0018445	

FORWARD ABUTMENT: PLAN AND ELEVATION
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

17 / 41

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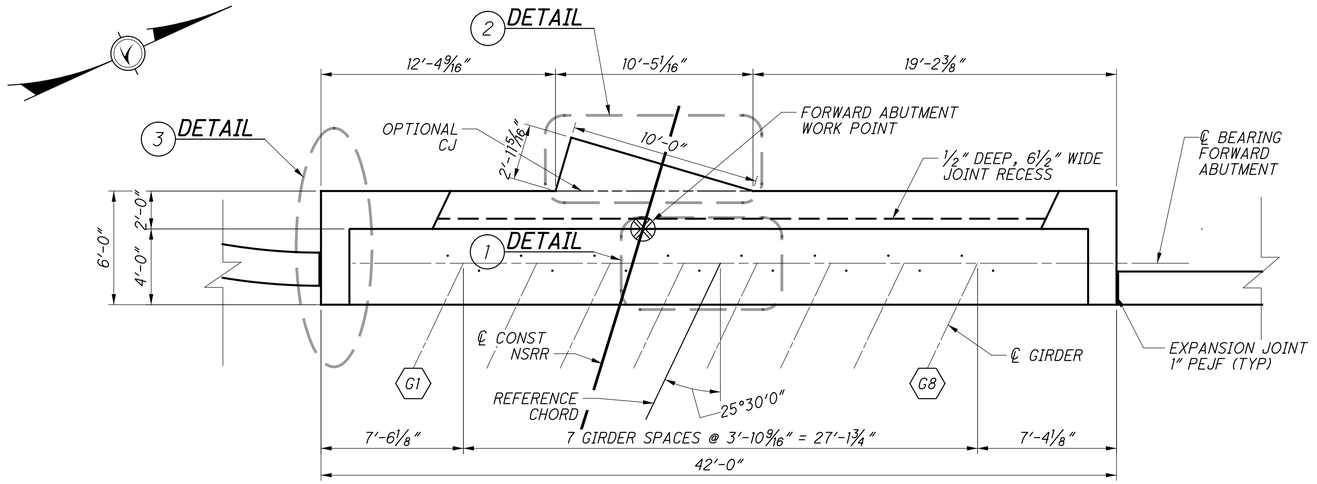
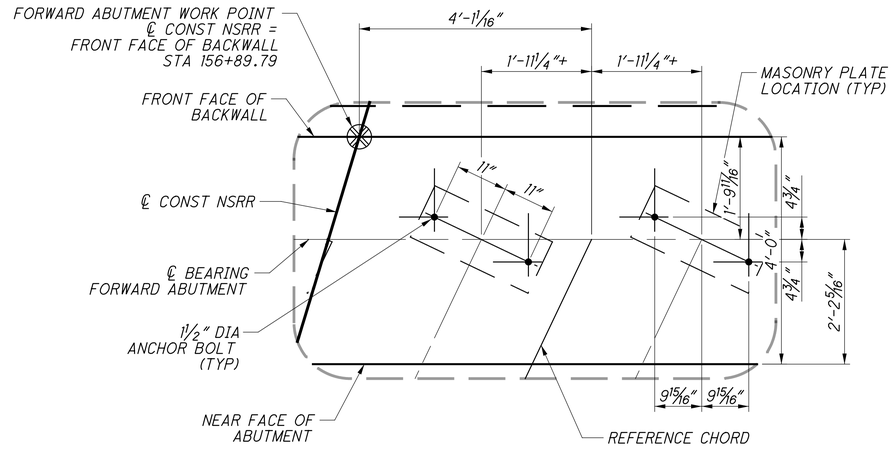
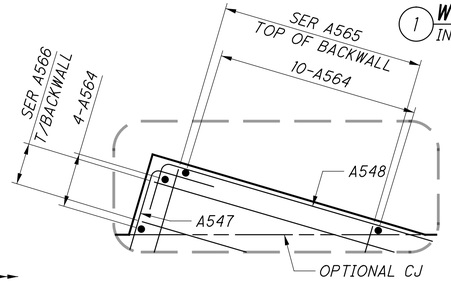


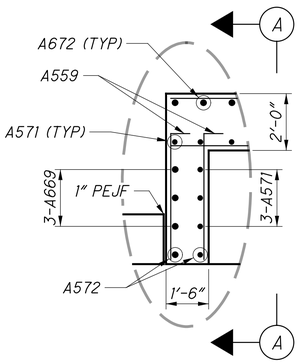
ABUTMENT PLAN



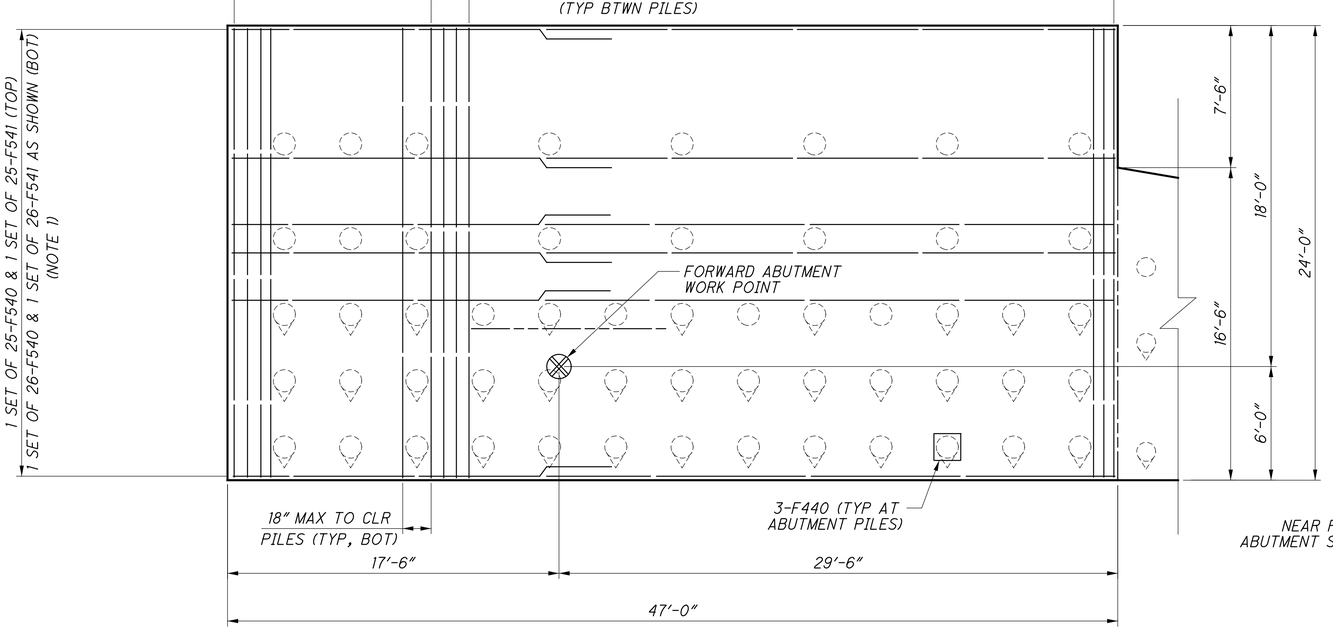
1 WORK POINT DEFINITION
INCLUDING ANCHOR BOLT LAYOUT



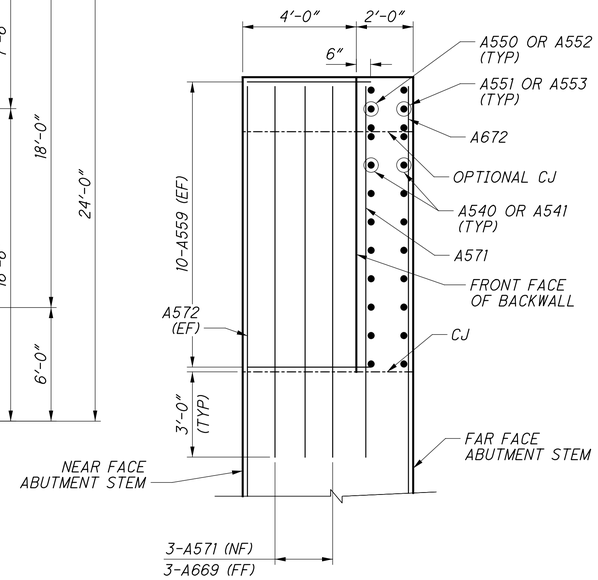
2 ABUTMENT DETAIL
BACKWALL EXTENSION REINFORCEMENT



3 CHEEKWALL DETAIL
PLAN VIEW OF CHEEKWALL REINFORCEMENT



FOOTING PLAN



A ELEVATION

NOTES:

1. FOR SPACING OF BOTTOM LONGITUDINAL BARS AROUND PILES SEE ABUTMENT TYPICAL SECTION, SHEET 19 | 41 .
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 39 | 41 .

FWD ABUTMENT SHEET REFERENCES

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
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FORWARD ABUTMENT PLAN AND FOOTING PLAN

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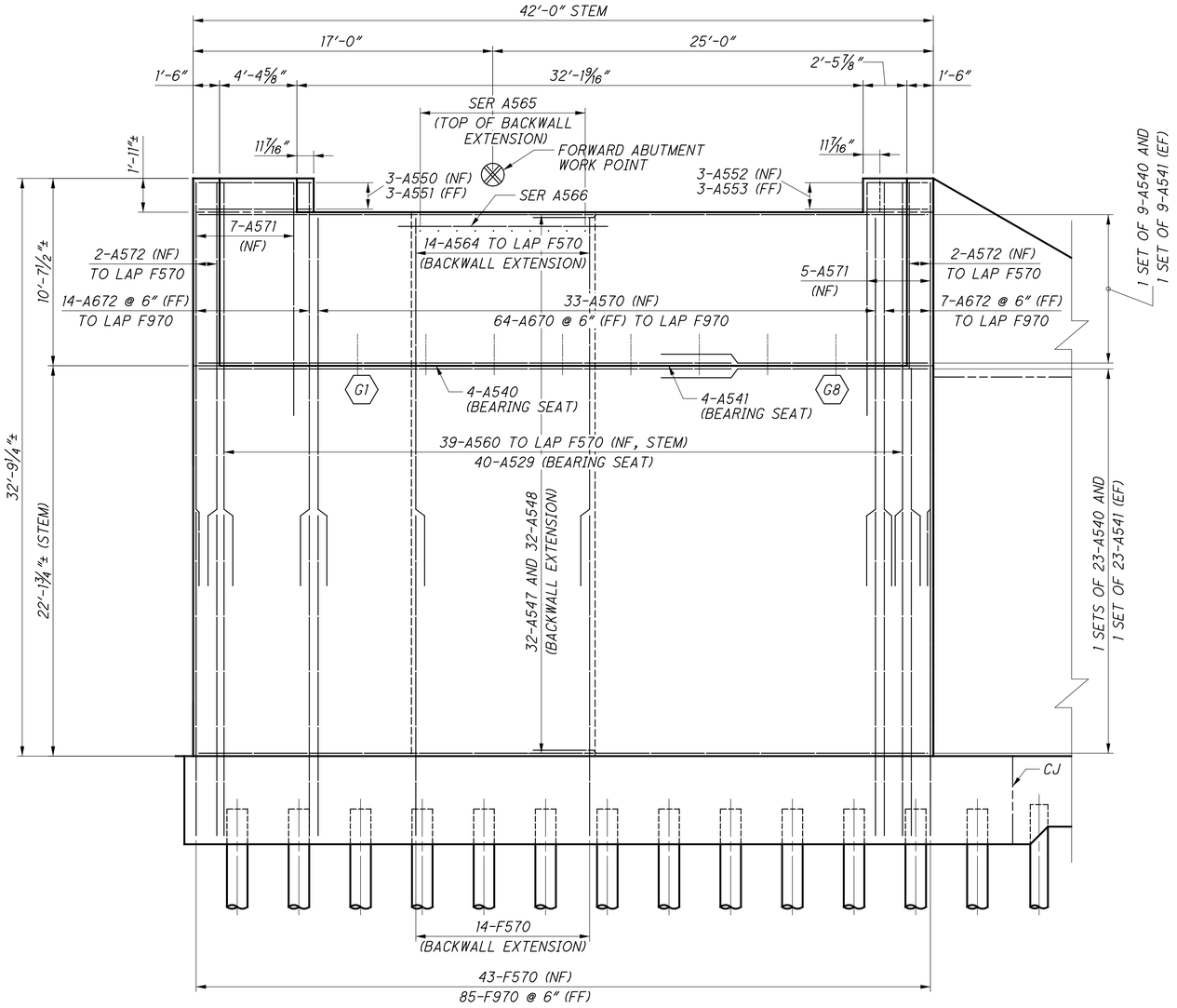
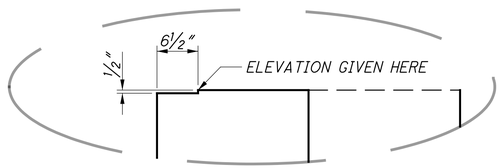
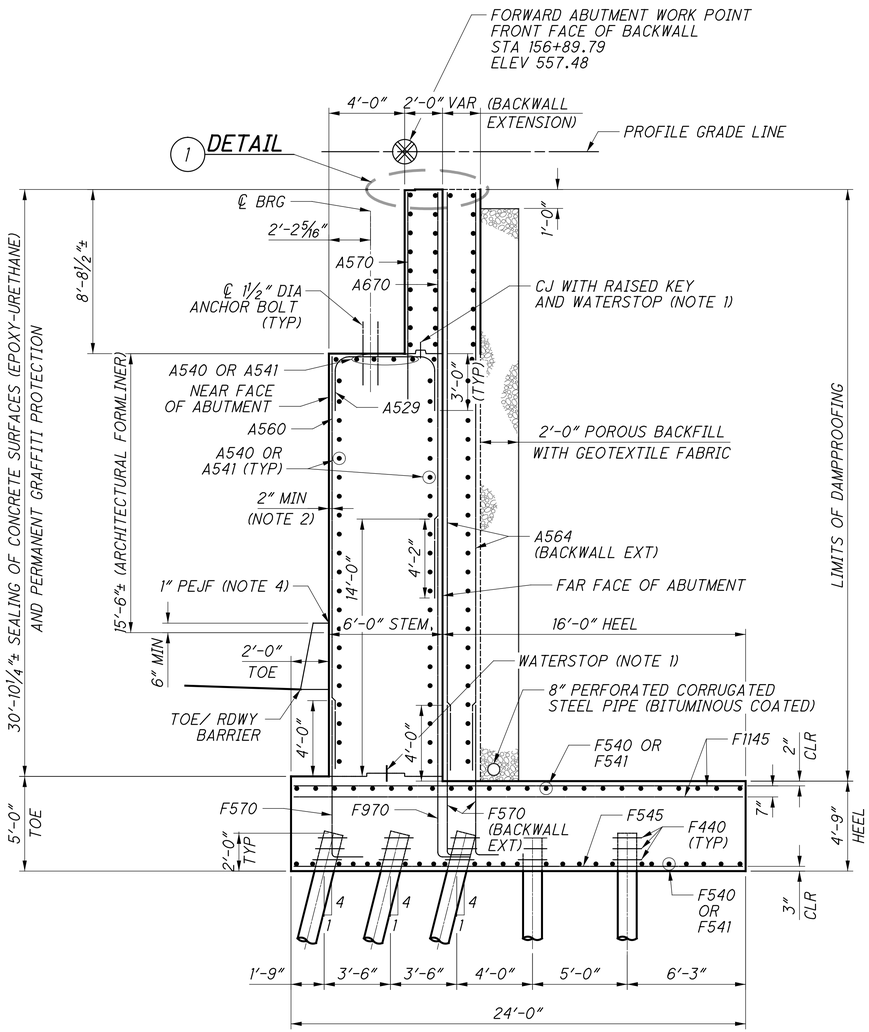


FORWARD ABUTMENT ELEVATION

SEE NOTE 3



① DETAIL



FORWARD ABUTMENT TYPICAL SECTION

NOTES:

1. WATERSTOPS SHALL BE 6"x⅜" PVC AND SHALL BE CONTINUOUS ACROSS JOINT. FOR RAISED KEYWAY DETAIL, SEE TYPICAL STRUCTURAL DETAILS SHEET 19/286.
2. ADJUST CLEAR DISTANCE TO PLAN DIMENSION TO ACCOUNT FOR FORMLINER RELIEF AS PER FORMLINER GENERAL NOTE.
3. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 39 | 41 .
4. 1" PEJF TO BE PLACED BETWEEN ROADWAY BARRIER AND ABUTMENT FACE (TYP). COST OF 1" PEJF TO BE CONSIDERED INCIDENTAL TO THE COST OF THE ROADWAY BARRIER.

FWD ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	11 | 41	
GENERAL PLAN & ELEV:	17 | 41	
ABUTMENT PLANS:	18 | 41	
ABUTMENT ELEVATION:	19 | 41	
WINGWALL PLANS:	20 | 41	
WINGWALL ELEVATIONS:	21 | 41	
TYPICAL DETAILS:	22 | 41	- 23 | 41
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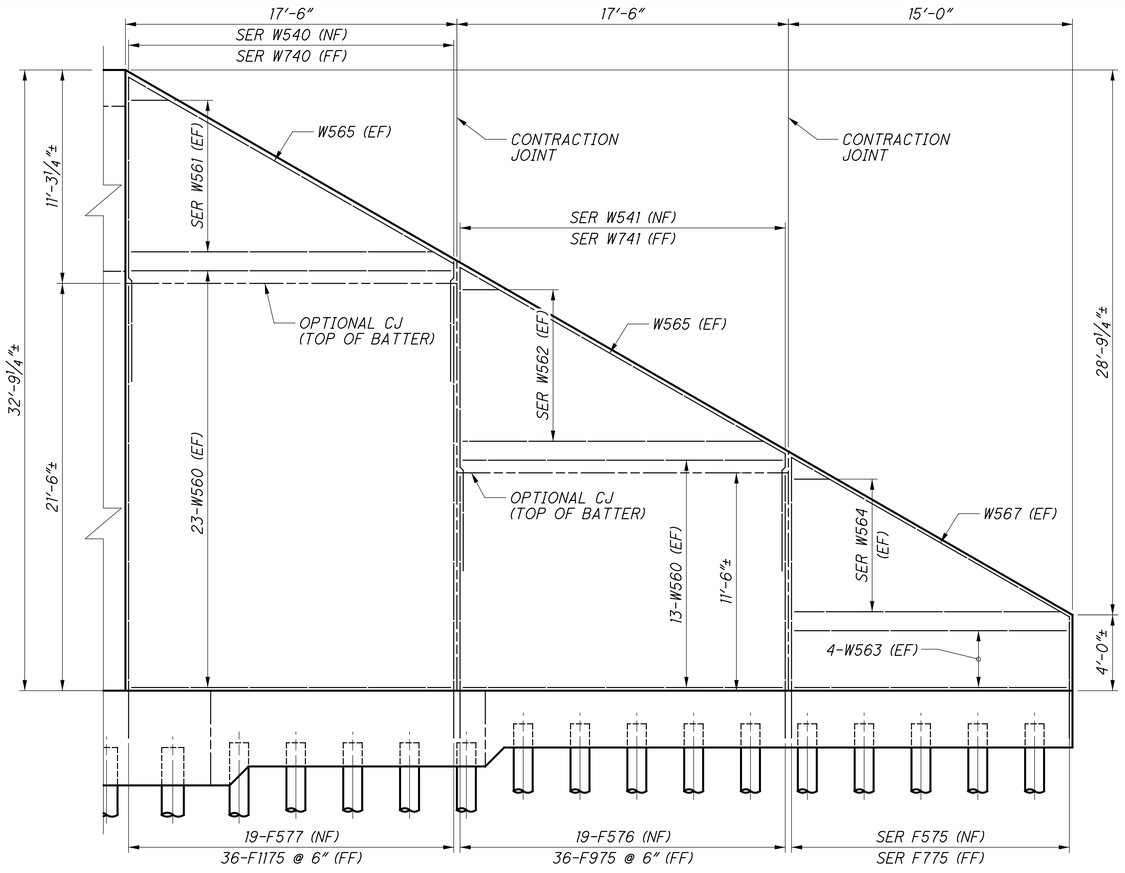
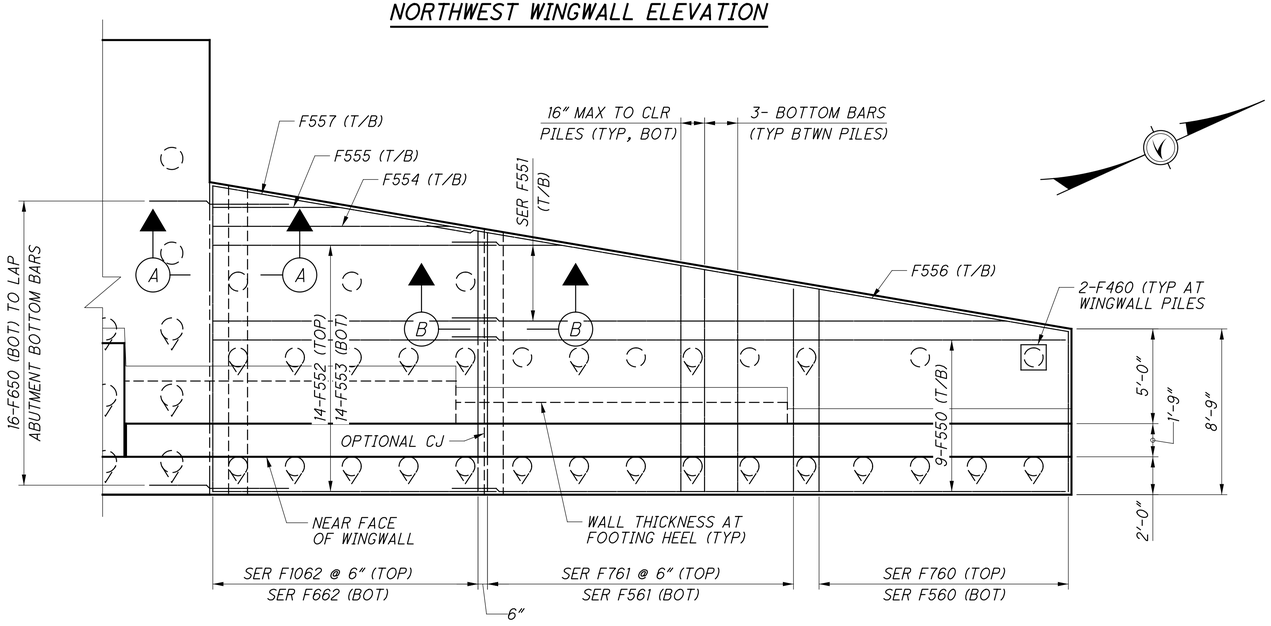
FORWARD ABUTMENT ELEVATION DETAILS

BRIDGE NO. HAM-75-0834 (INSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

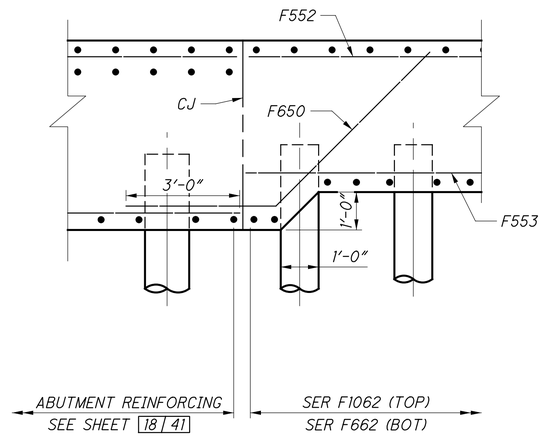
HAM-75-7.85
PID No. 77889



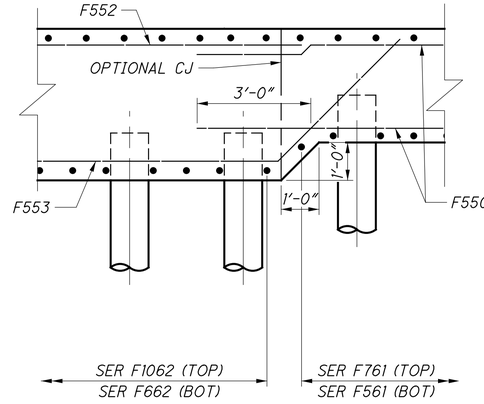
NORTHWEST WINGWALL ELEVATION



NORTHWEST WINGWALL PLAN



A SECTION
STEP DETAILS



B SECTION
STEP DETAILS

NOTES:

1. VERTICALLY/HORIZONTALLY ADJUST AND FIELD CUT VERTICAL REINFORCING AS REQUIRED TO CLEAR PILES.
2. FOR SPACING OF FOOTING BOTTOM LONGITUDINAL BARS AROUND PILES SEE WINGWALL TYPICAL SECTION, SHEET 23 41 .
3. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 39 41 .
4. FOR CONTRACTION JOINT DETAILS, SEE SHEET 19 / 286 .

FWD ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	11 41
GENERAL PLAN & ELEV:	17 41
ABUTMENT PLANS:	18 41
ABUTMENT ELEVATION:	19 41
WINGWALL PLANS:	20 41
WINGWALL ELEVATIONS:	21 41
TYPICAL DETAILS:	22 41 - 23 41
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REINFORCING LIST:	39 41 - 40 41

DESIGN AGENCY
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NORTHWEST WINGWALL PLAN & ELEVATION
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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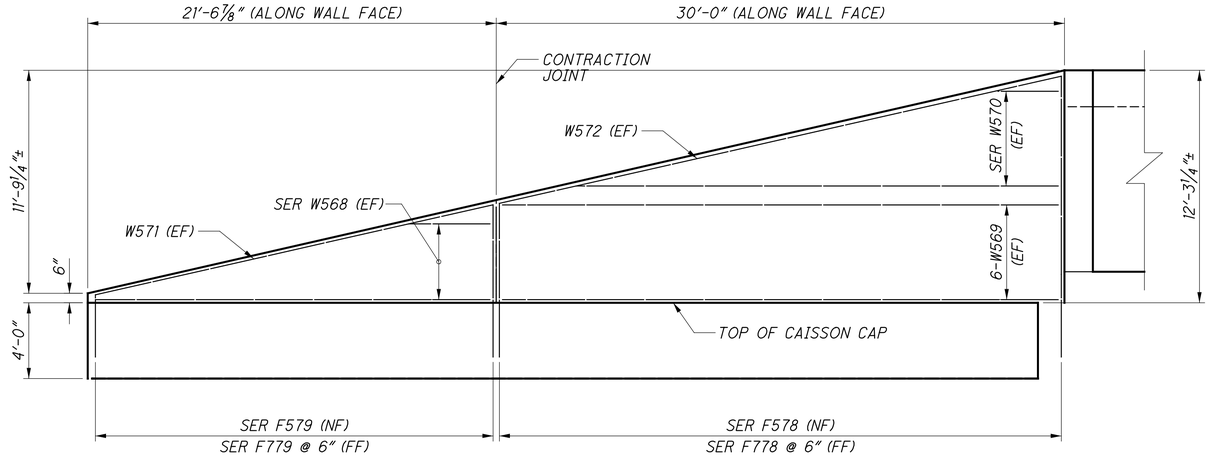
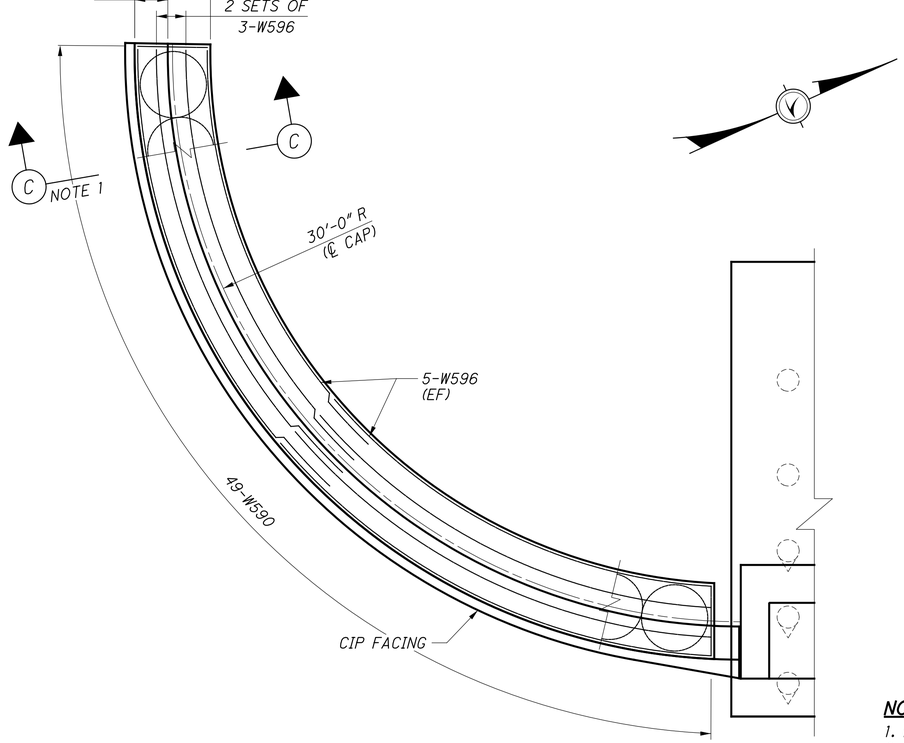


SOUTHWEST WINGWALL ELEVATION

CAISSONS NOT SHOWN FOR CLARITY



SOUTHWEST WALL CAISSON CAP PLAN

NOTES:

1. FOR SECTION C, SEE SHEET 23 41.
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 39 41 .
3. FOR CONTRACTION JOINT DETAILS, SEE SHEET 19/286 .

FWD ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	11 41	
GENERAL PLAN & ELEV:	17 41	
ABUTMENT PLANS:	18 41	
ABUTMENT ELEVATION:	19 41	
WINGWALL PLANS:	20 41	
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TYPICAL DETAILS:	22 41	- 23 41
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SOUTHWEST WINGWALL PLAN & ELEVATION
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NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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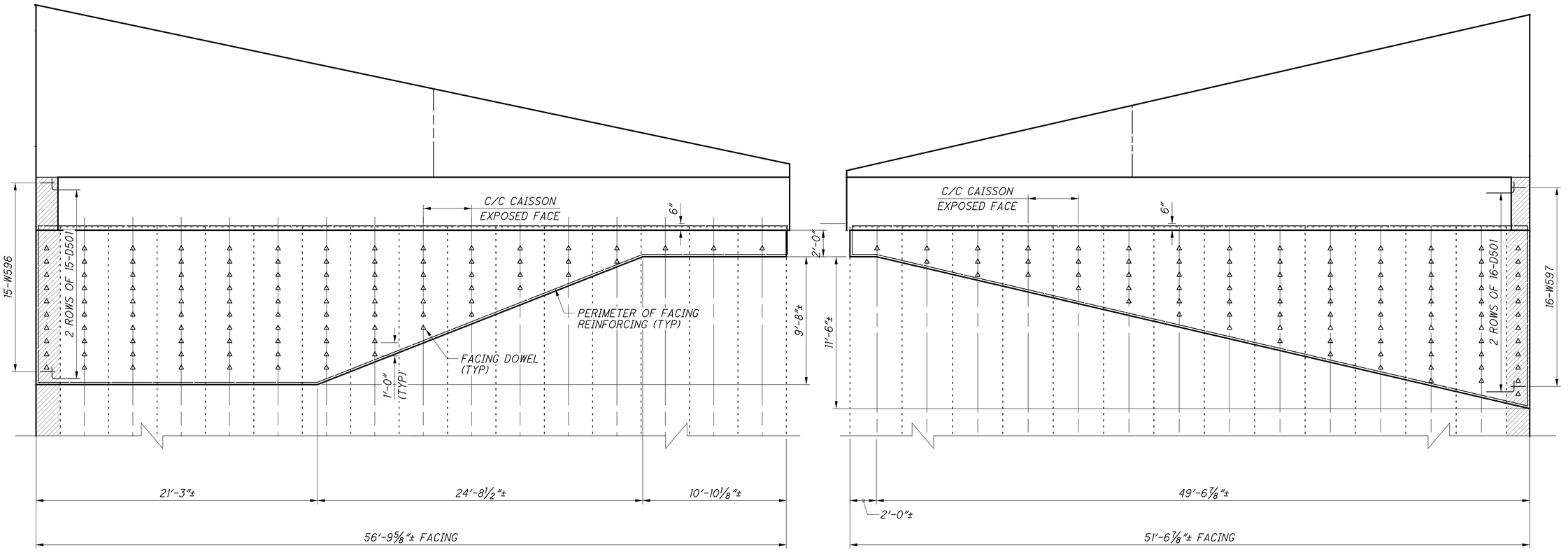
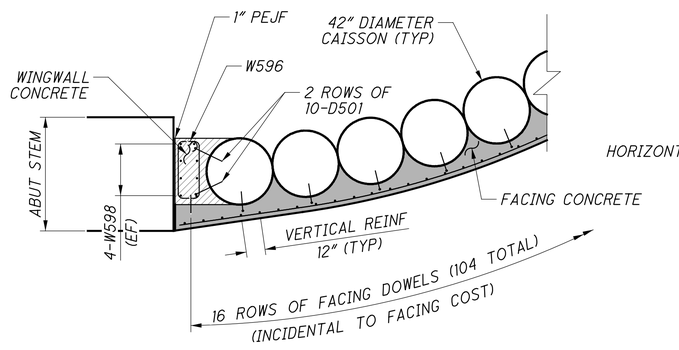


SOUTHEAST CAISSON WALL (REAR)

CIP FACING DETAILS SHOWN

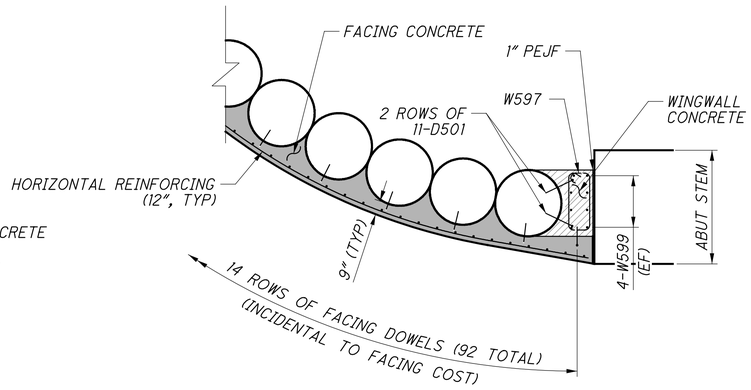
SOUTHWEST CAISSON WALL (FWD)

CIP FACING DETAILS SHOWN



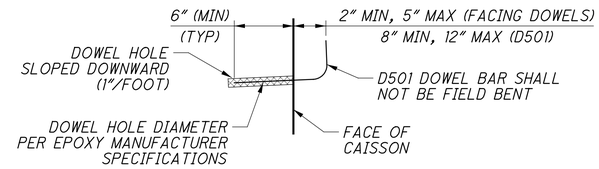
REAR CAISSON PLAN (SE)

CIP FACING DETAILS



FORWARD CAISSON PLAN (SW)

CIP FACING DETAILS



DOWEL DETAIL

ITEM 511 - CONCRETE, MISC.: FACING OF CANTILEVER WALLS

THE APPROXIMATE VOLUME OF CONCRETE TO FACE THE SOUTHEAST CAISSON WALL IS 17.3 CUBIC YARDS. FOR THE SOUTHWEST CAISSON WALL, APPROXIMATE VALUE IS 15.3 CUBIC YARDS. THIS VALUE IS GIVEN ONLY FOR ESTIMATING PURPOSES AND INCLUDES ANNULAR SPACES BETWEEN CAISSONS. THE CONTRACTOR SHALL PROVIDE ACTUAL QUANTITIES REQUIRED TO FACE THE WALL PER THESE PLANS.

THE HORIZONTAL AND VERTICAL REINFORCING STEEL SPACING SHALL NOT EXCEED 12" AND SHALL CONTAIN 0.25 SQUARE INCHES OF STEEL PER FOOT IN EACH DIRECTION (AREMA CHAPTER 8-2.12). REINFORCING STEEL MAY CONSIST OF REINFORCING BARS OR WELDED WIRE FABRIC. PERIMETER BARS SHALL BE #5.

FOR MORE NOTES, INCLUDING BASIS OF PAYMENT, SEE SHEET 9/286 .

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
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COLUMBUS, OHIO 43231

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CTM		NSRR BR#: BR0018445	

CAISSON CIP FACING DETAILS
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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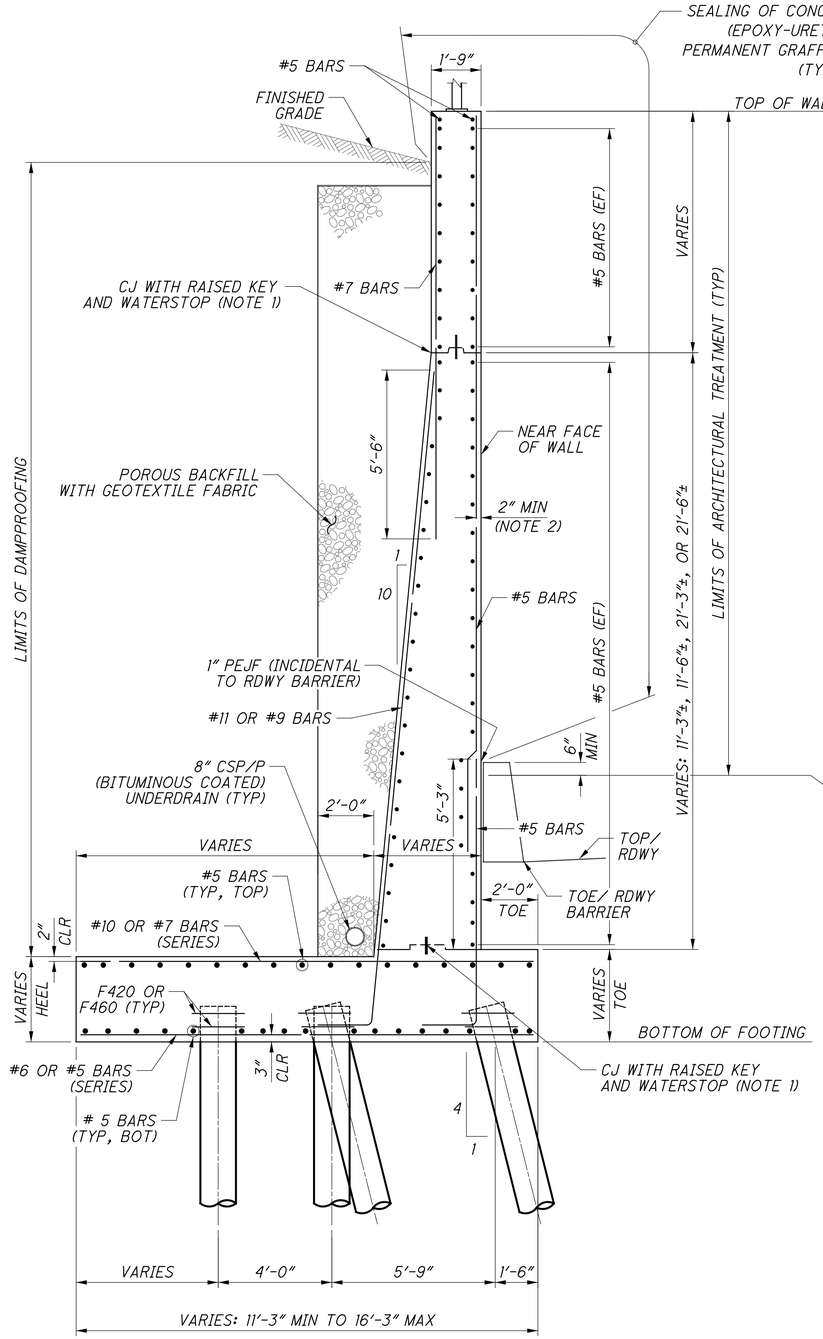
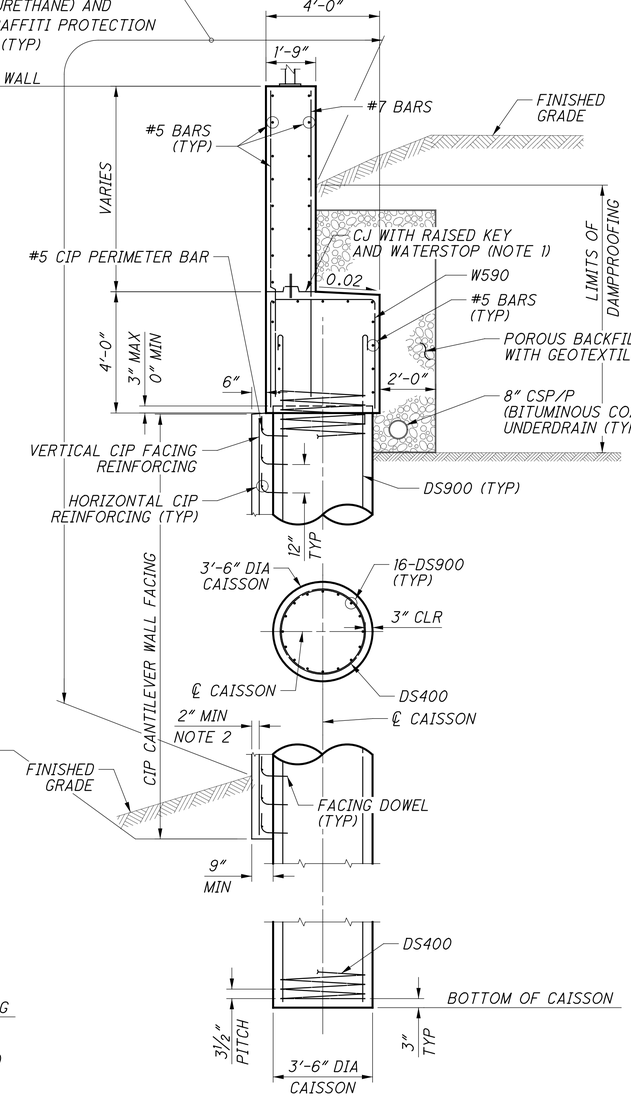


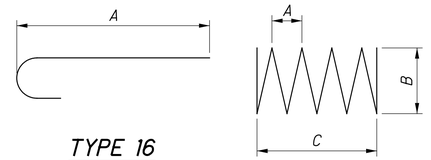
TYPICAL BATTERED WINGWALL

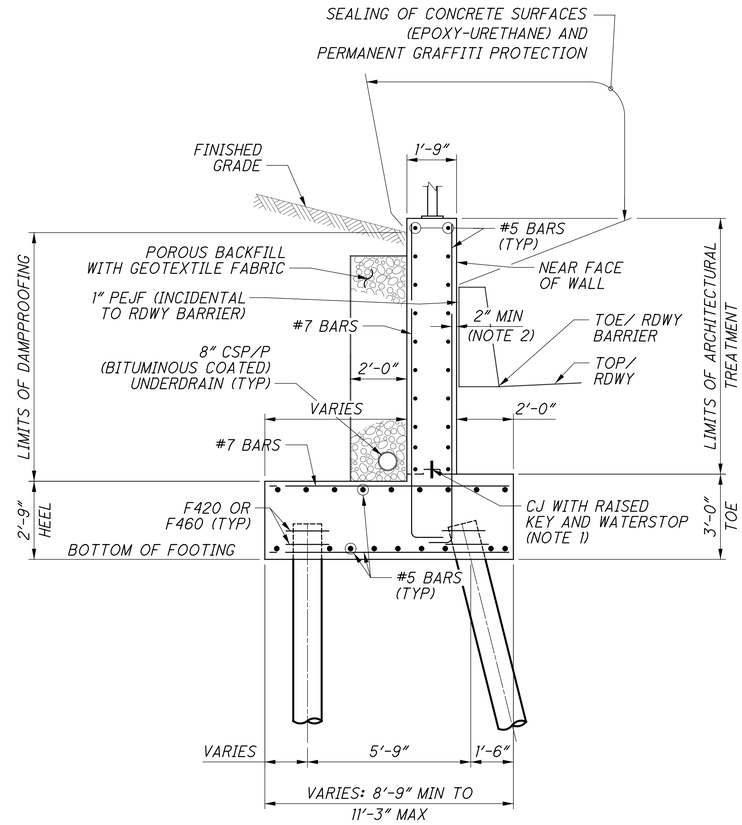


SECTION C-C
TYPICAL CAISSON WINGWALL

MARK	NUMBER PER SHAFT	NUMBER # OF SHAFTS	NUMBER TOTAL	LENGTH	TYPE	DIMENSIONS A	B	C	INC
REAR CAISSONS									
DS900*	16	15	240	41'-7"	16	41'-0"			
DS400	1	68	68	38'-6"	27	3½"	3'-0"	38'-6"	
FORWARD CAISSONS									
DS900*	16	15	240	41'-7"	16	41'-0"			
DS400	1	68	68	38'-6"	27	3½"	3'-0"	38'-6"	

* VERTICAL BARS SHOWN AS ONE BAR FOR FULL LENGTH. CONTRACTOR TO DETERMINE MEANS AND METHODS FOR SPLICING BARS AS NEEDED.





TYPICAL UNBATTERED WINGWALL

NOTES:

1. WATERSTOPS SHALL BE 6"x⅜" PVC AND SHALL BE CONTINUOUS ACROSS JOINT. FOR RAISED KEYWAY DETAIL, SEE TYPICAL STRUCTURAL DETAILS SHEET 19/286.
2. ADJUST CLEAR DISTANCE TO PLAN DIMENSION TO ACCOUNT FOR FORMLINER RELIEF AS PER FORMLINER GENERAL NOTE.

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WINGWALL TYPICAL SECTION
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NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
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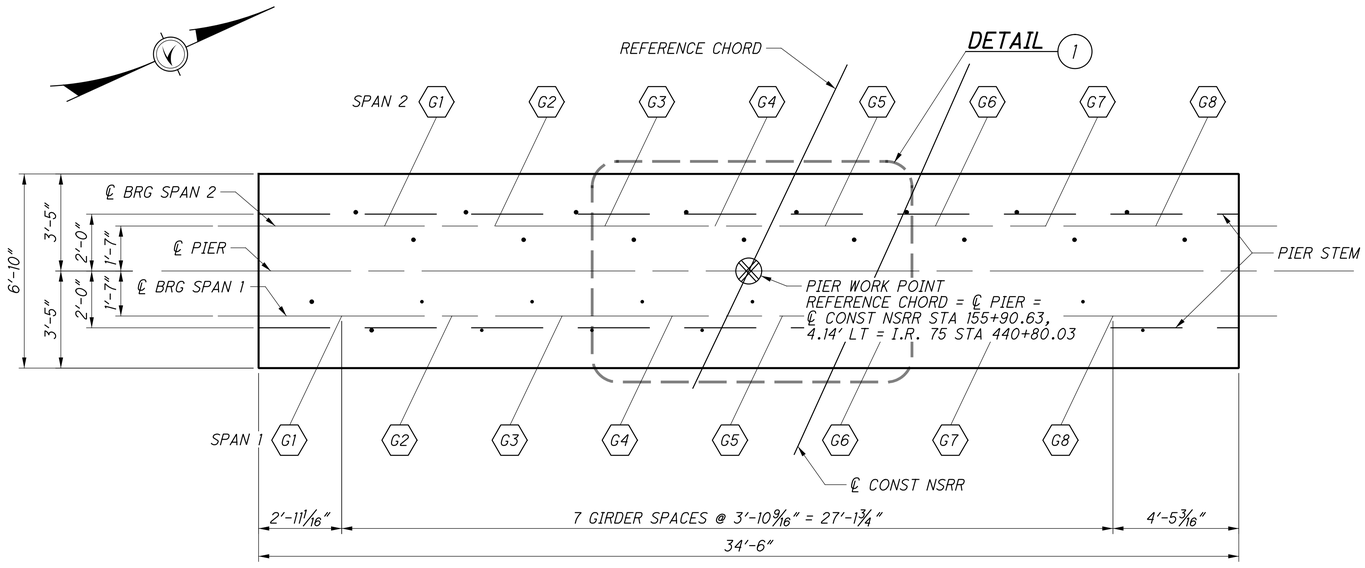
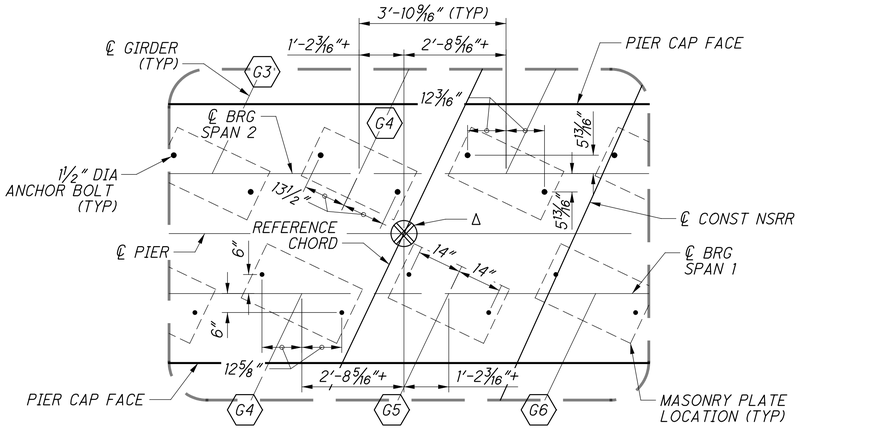
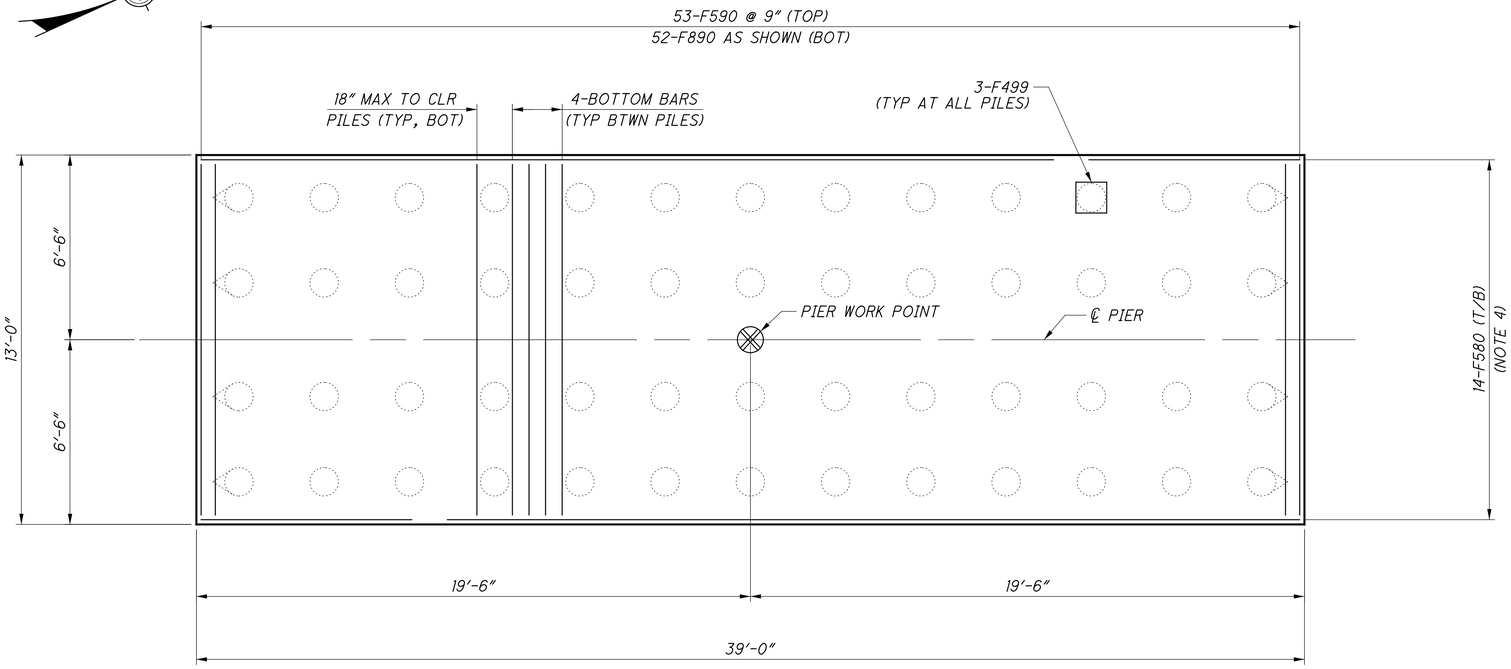


PIER CAP PLAN



Δ = PIER WORK POINT
REFERENCE CHORD = ℄ PIER =
NSRR MAIN STA 155+90.63, 4.14' LT
= I.R. 75 STA 440+80.03

1 WORK POINT DEFINITION
INCLUDING ANCHOR BOLT LAYOUT



PIER FOOTING PLAN

NOTES:

1. FOR PILE LAYOUT PLAN, SEE SHEET 10 | 41 .
2. FOR PIER ELEVATION, SEE SHEET 25 | 41 .
3. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 39 | 41 .
4. FOR SPACING OF BOTTOM LONGITUDINAL BARS AROUND PILES SEE PIER TYPICAL SECTION, SHEET 25 | 41 .

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PIER CAP PLAN AND FOOTING PLAN
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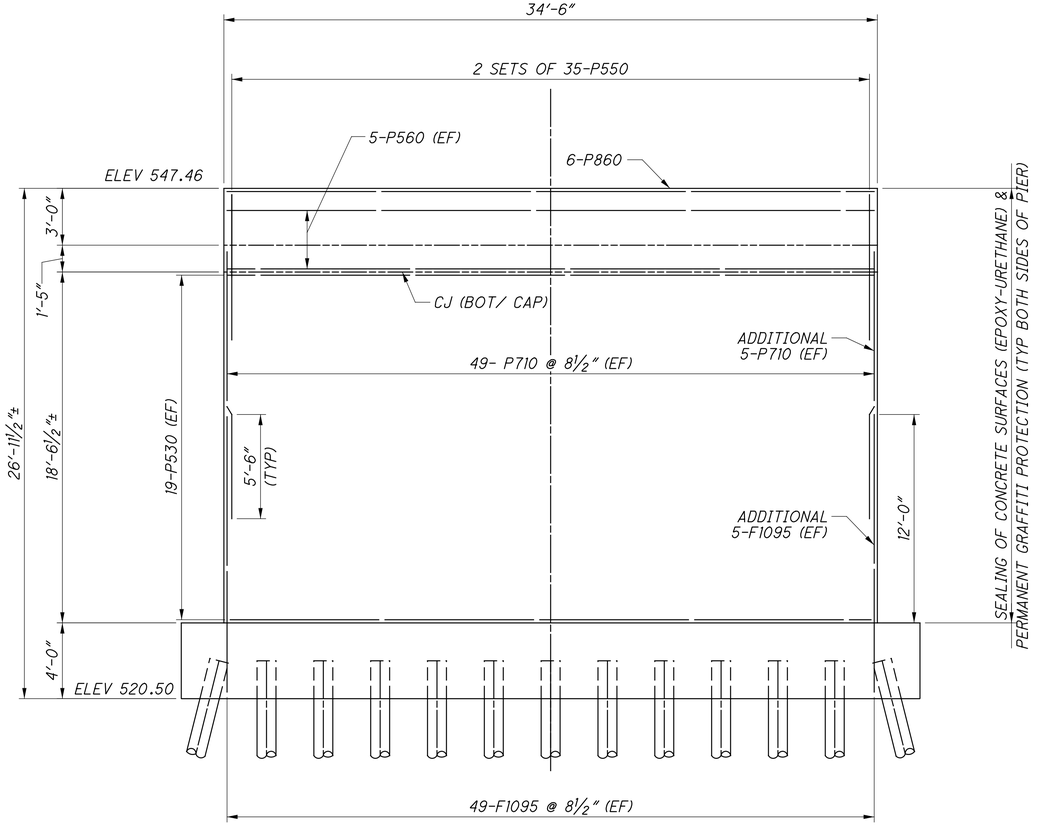
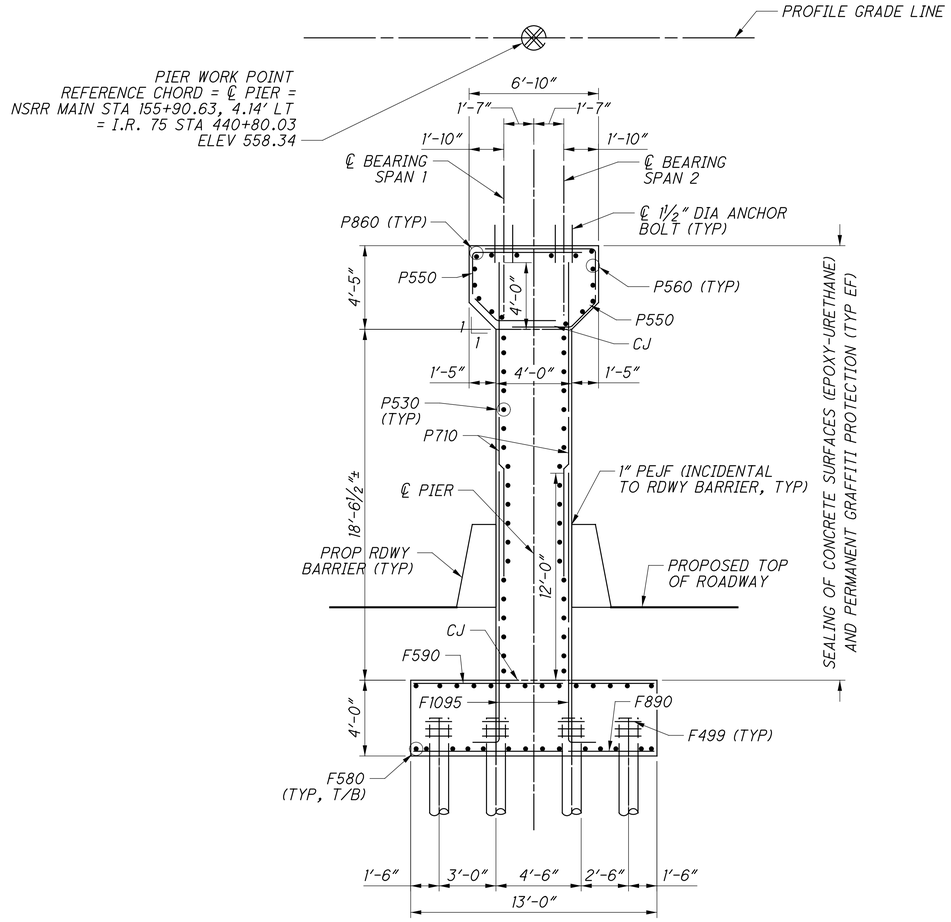


PIER ELEVATION
LOOKING UPSTATION



PIER TYPICAL SECTION

NOTES:
1. FOR PIER PILE LAYOUT, SEE SHEET 10 | 41 .
2. FOR PIER PLAN AND FOOTING PLAN, SEE SHEET 24 | 41 .
3. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 39 | 41 .

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PIER ELEVATION AND SECTION
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HAM-75-7.85
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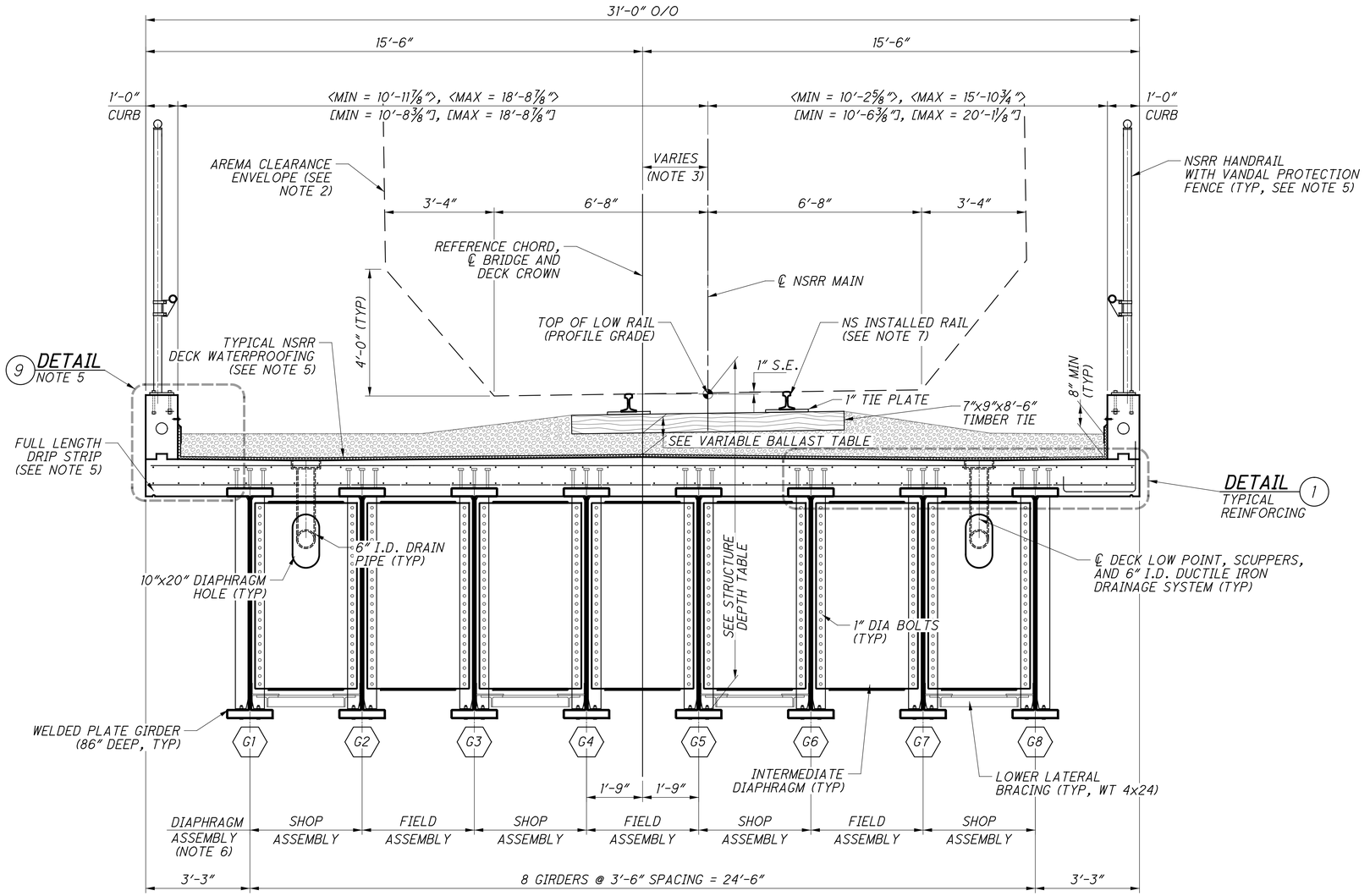
STRUCTURE DEPTH TABLE	
ELEMENT	DEPTH
141 RE RAIL (NOTE 7)	7 1/16"
TIE PLATE	1"
TIE	7"
WATERPROOFING	1 1/8"
CROWN HEIGHT	1 1/2"
MIN CONCRETE DECK	10 1/2"
GIRDER	86"
BOLT HEAD THICKNESS	5/8"
ELEMENT DEPTH FROM PGL (EXCLUDING BALLAST)	115 3/16"

VARIABLE BALLAST THICKNESS		
LOCATION	Δ VAR. BALLAST	*TOTAL DEPTH
SPAN 1: ℄ RA BRG	9.77"	124.95"
SPAN 1: MIDSPAN	10.77"	125.96"
SPAN 1: ℄ REAR PIER BRG	8.30"	123.49"
SPAN 2: ℄ FWD PIER BRG	8.30"	123.50"
SPAN 2: MIDSPAN	10.39"	125.57"
SPAN 2: ℄ FA BRG	9.80	124.98"

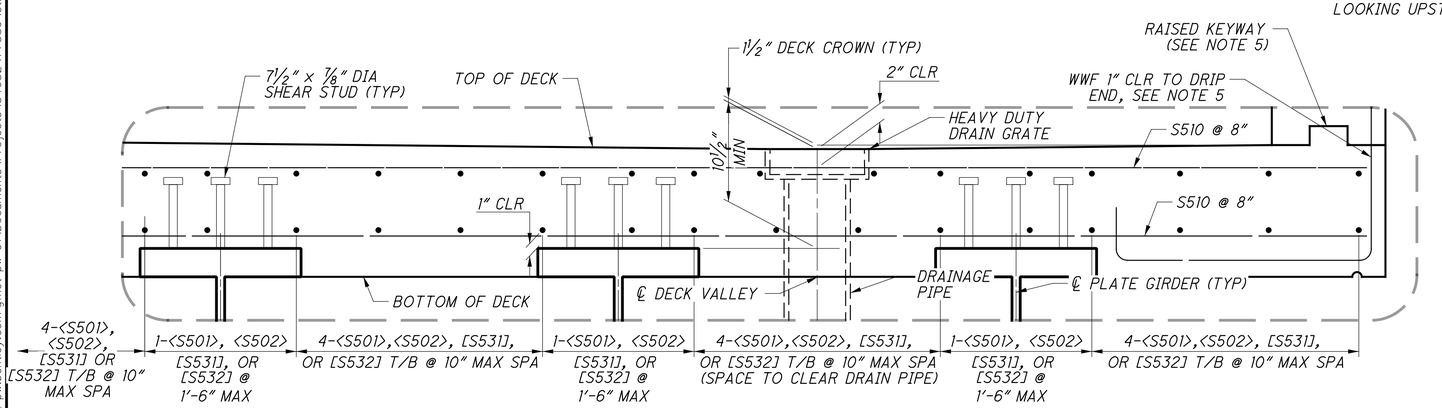
Δ VARIABLE BALLAST IS CALCULATED TO CONSIDER BOTH THE EFFECTS OF SUPERELEVATION, DECK SLOPE, AND HORIZONTAL CURVATURE, COMBINED WITH THE VARIATIONS DUE TO VERTICAL PROFILE.

* TOTAL DEPTH INDICATES THE TOTAL DEPTH FROM PGL TO BOTTOM OF STEEL (INCLUDING BOLT HEAD THICKNESS). IT IS THE SUMMATION OF THE ELEMENT DEPTH AND VARIABLE BALLAST THICKNESS AT EACH LOCATION.



TYPICAL TRANSVERSE SECTION

LOOKING UPSTATION (NOTE 1)



1 TYPICAL SLAB REINFORCING DETAIL

MISC. DETAILS NOT SHOWN FOR CLARITY

NOTES:

1. THE TYPICAL TRANSVERSE SECTION IS DRAWN AND DIMENSIONED NORMAL TO THE CHORD. THE TYPICAL SECTION SHOWN IS SCHEMATIC. BOTTOM OF BEAM ELEVATIONS AND DECK LOW POINT ELEVATIONS ARE EQUAL ALONG THE SKEW. SCREED, FINAL TOP OF DECK, AND MISCELLANEOUS STEEL DETAILS ACCOUNT FOR VARIATIONS IN BOTTOM OF BEAM ELEVATIONS NORMAL TO THE REFERENCE CHORD. MOVING LEFT TO RIGHT ACROSS A TRUE SECTION NORMAL TO THE REFERENCE CHORD, EACH BOTTOM OF BEAM ELEVATION WILL DECREASE BY APPROXIMATELY 1/32" IN SPAN 1 AND INCREASE BY APPROXIMATELY 3/16" IN SPAN 2.
2. THE AREMA CLEARANCE ENVELOPE SHOWN IS THE STANDARD CLEARANCE ENVELOPE WIDENED BY 12" IN EACH DIRECTION TO ACCOUNT FOR A MAXIMUM 8 DEGREE HORIZONTAL CURVATURE.
3. SEE GENERAL PLANS SHEET 2 | 41 AND 3 | 41 FOR CONTROLLING GEOMETRIC DETAILS.
4. DIMENSIONS AND CALLOUTS WITHOUT BRACKETS CORRESPOND TO BOTH SPANS. DIMENSIONS AND CALLOUTS WITH <BRACKET> CORRESPOND TO SPAN 1. DIMENSIONS AND CALLOUTS WITH [BRACKET] CORRESPOND TO SPAN 2.
5. FOR TYPICAL CURB, OVERHANG, KEYWAY, DRIP EDGE, WATERPROOFING,HANDRAIL AND VANDAL PROTECTION FENCE DETAILS, SEE RAILROAD TYPICAL DETAILS ON SHEETS 15/286 THROUGH 19/286.
6. THE CONTRACTOR MAY ELECT TO FIELD ASSEMBLE AT NO ADDITIONAL COST TO THE STATE PENDING APPROVAL BY NSRR AND ODOT.
7. RAIL TO BE EITHER 136 OR 141 RE RAIL, PER NS DIRECTION. THE VERTICAL AND BALLAST CLEARANCES ARE CALCULATED USING THE TALLER 141 RE RAIL PER NS DIRECTION.

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EFD	VDT/EFD	CTV	12-19-23
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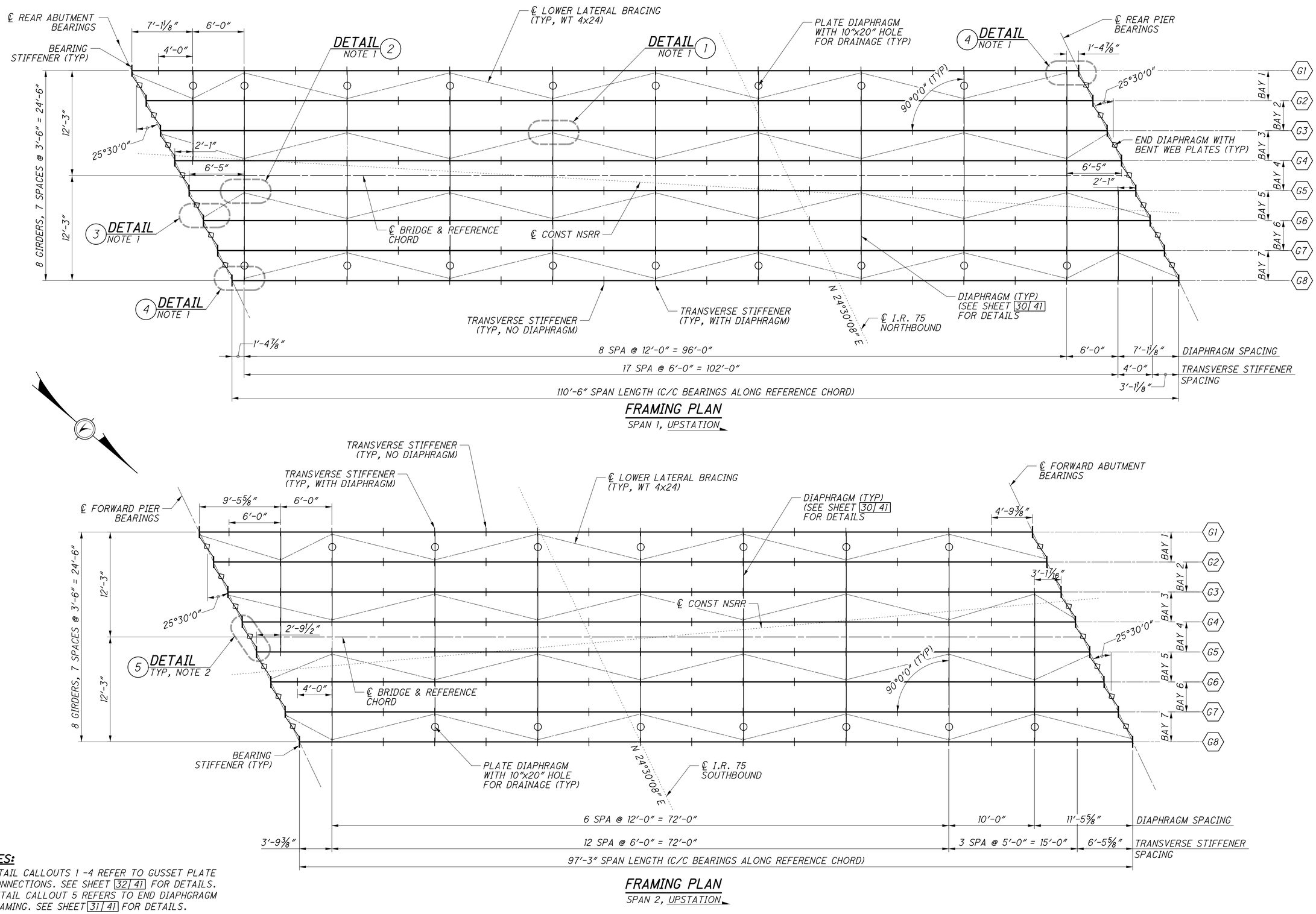
CTM		NSRR BR#: BR0018445	

TRANSVERSE SECTION

BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889



FRAMING PLAN
SPAN 1, UPSTATION

FRAMING PLAN
SPAN 2, UPSTATION

NOTES:

1. DETAIL CALLOUTS 1 -4 REFER TO GUSSET PLATE CONNECTIONS. SEE SHEET 32 41 FOR DETAILS.
2. DETAIL CALLOUT 5 REFERS TO END DIAPHGRAGM FRAMING. SEE SHEET 31 41 FOR DETAILS.

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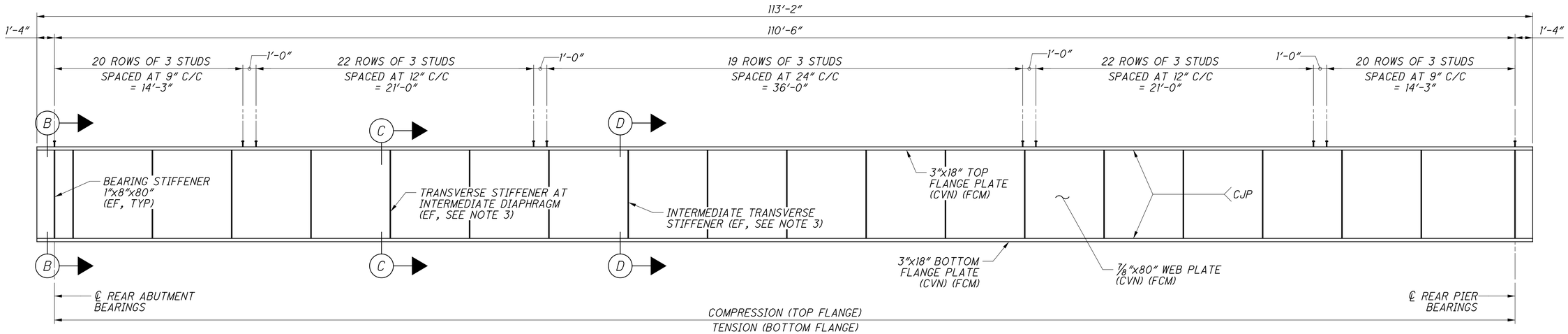
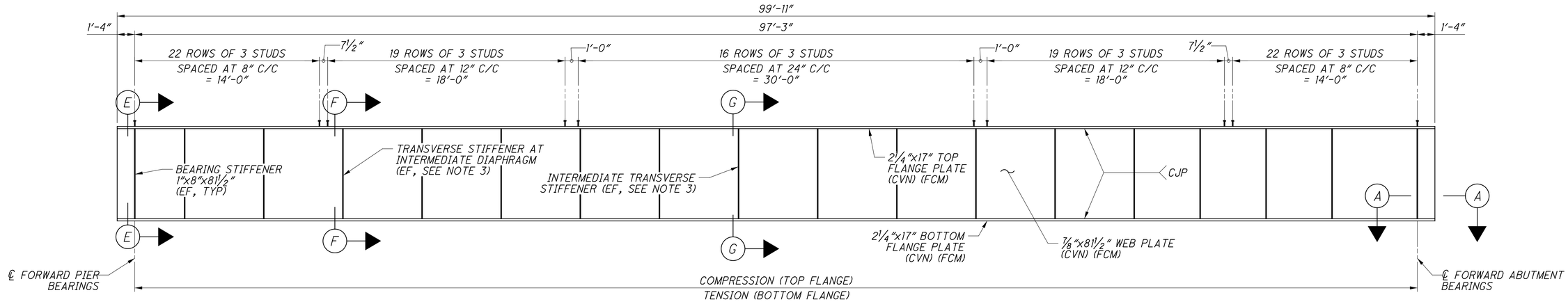
FRAMING PLAN, SPANS 1 AND 2
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95; CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889



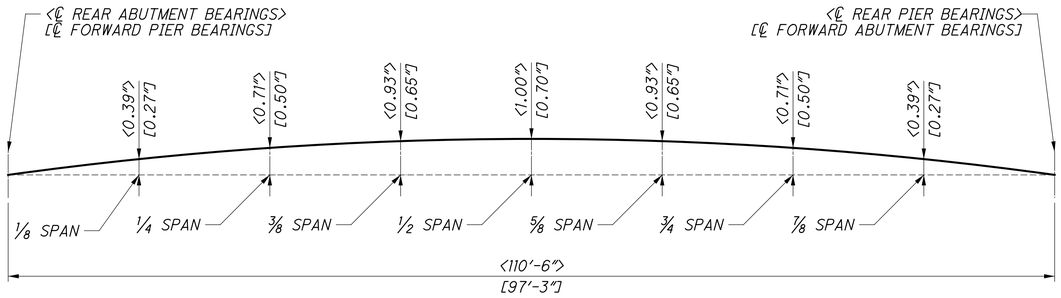
GIRDER ELEVATION

SPAN 1, UPSTATION



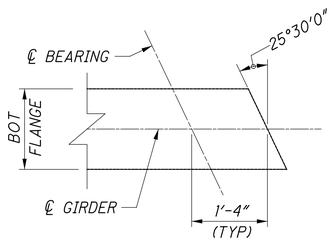
GIRDER ELEVATION

SPAN 2, UPSTATION



GIRDER CAMBER DETAILS

SPANS 1 AND 2 (SEE NOTE 5)



A END BEVEL

NOTES:

1. (CVN) DENOTES CHARPY V-NOTCH TEST IS REQUIRED. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN ODOT 711.01.
2. (FCM) DENOTES FRACTURE CRITICAL MEMBER. ALL FCM STEEL SHALL BE PROVIDED PER THE NORFOLK SOUTHERN SPECIFICATIONS FOR STRUCTURAL STEEL AND THE GENERAL NOTES ON SHEET: 8/286
3. FOR TRANSVERSE STIFFENER AND DIAPHRAGM SPACING, SEE FRAMING PLAN SHEET 27 | 41 .
4. FOR SECTIONS "B" THROUGH "G", SEE SHEET 29 | 41 .
5. CALLOUTS INSIDE OF <BRACKET> REFER TO SPAN 1 & INSIDE OF [BRACKET] REFER TO SPAN 2. CAMBER CALCULATIONS INCLUDE NON-COMPOSITE DEFLECTIONS DUE THE GIRDER SELF-WEIGHT AND CONCRETE DECK PLACEMENT. ALL OTHER DEAD LOAD DEFLECTIONS, INCLUDING SECONDARY CONCRETE POURS AND BALLAST, ARE CALCULATED ASSUMING COMPOSITE SECTION PROPERTIES.

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GIRDER ELEVATION AND CAMBER TABLE
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95; CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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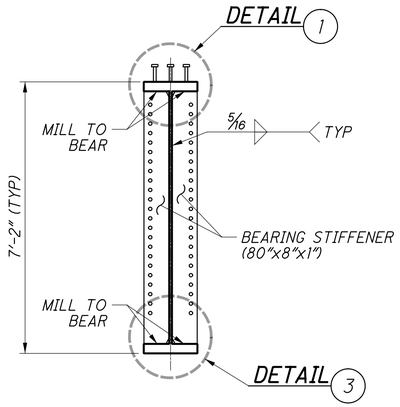
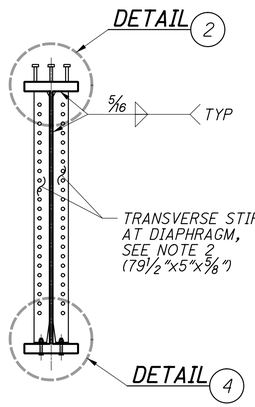
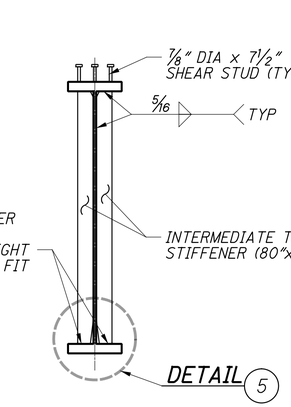
286



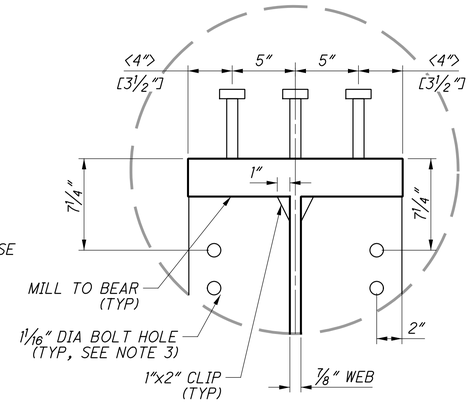
B SECTION
SPAN 1



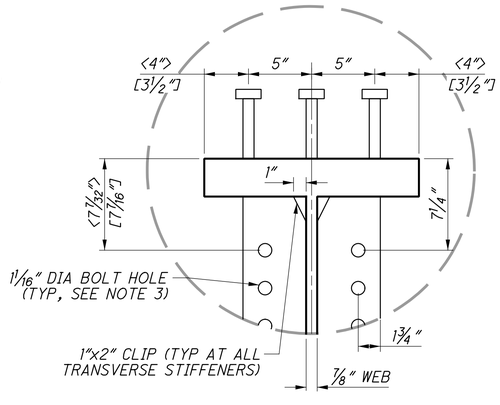
C SECTION
SPAN 1



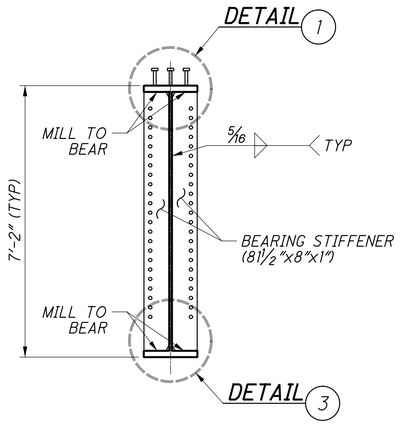
D SECTION
SPAN 1



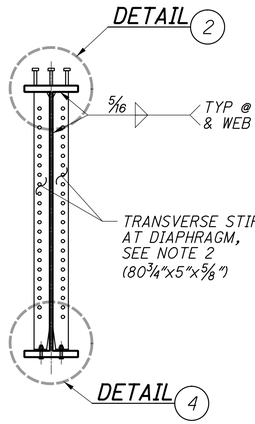
1 DETAIL, BOTH SPANS
BEARING STIFFENER



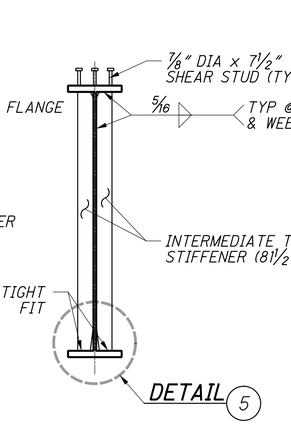
2 DETAIL, BOTH SPANS
TRANSVERSE STIFFENER AT DIAPHRAGM (NOTE 2)



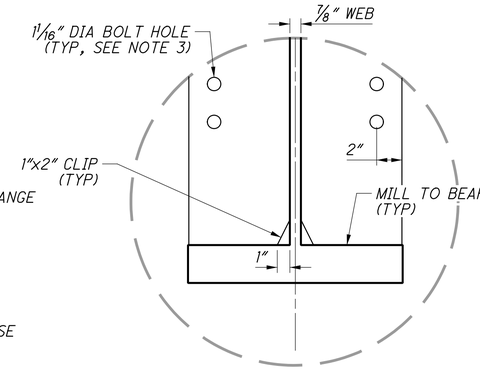
E SECTION
SPAN 2



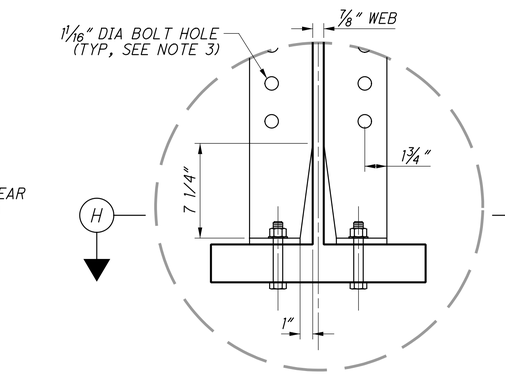
F SECTION
SPAN 2



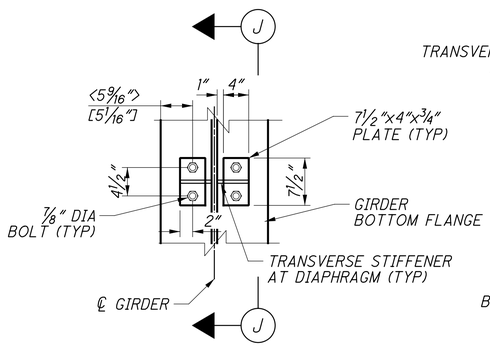
G SECTION
SPAN 2



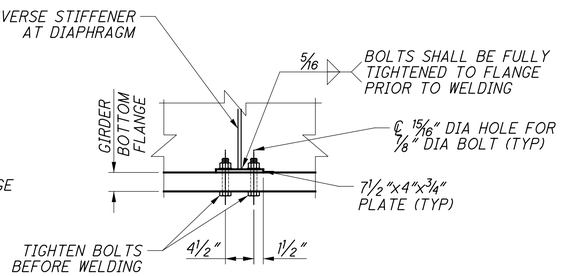
3 DETAIL, BOTH SPANS
BEARING STIFFENER



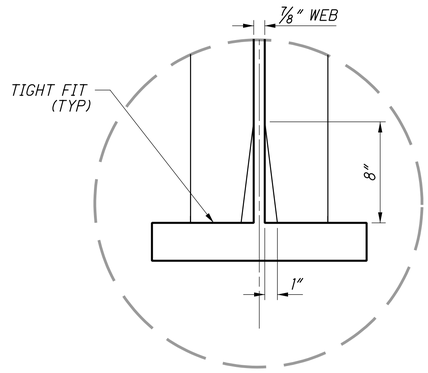
4 DETAIL, BOTH SPANS
TRANSVERSE STIFFENER AT DIAPHRAGM (NOTE 2)



H SECTION
NOTE 2



J SECTION
NOTE 2



5 DETAIL, BOTH SPANS
INTERMEDIATE TRANSVERSE STIFFENER

NOTES:

1. DIMENSIONS WITHOUT BRACKETS APPLY TO BOTH SPANS. DIMENSIONS INSIDE OF A <BRACKET> CORRESPOND TO SPAN 1. DIMENSIONS INSIDE OF A [BRACKET] CORRESPOND TO SPAN 2.
2. TRANSVERSE STIFFENERS AT DIAPHRAGM LOCATIONS SHALL BE FASTENED TO THE BOTTOM FLANGE ON BOTH SIDES OF THE WEB, INCLUDING IN CASES WHEN ONLY ONE STIFFENER CONNECTS TO A DIAPHRAGM. WHEN A STIFFENER IN THE PAIR DOES NOT CONNECT TO A DIAPHRAGM (SUCH AS ON FASCIA GIRDERS), THE BOLT HOLES IN THE STIFFENERS SHALL BE OMITTED.
3. FOR STIFFENER BOLT SPACING AND DIAPHRAGM CONNECTION DETAILS, SEE SHEET 30 41 AND 31 41 .
4. HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER ASTM F3125, GRADE A325, U.N.O.
5. FOR SECTIONS "B" THROUGH "G" CALLOUTS SEE SHEET 28 41 .

DESIGN AGENCY
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CHECKED CTM | REVISED | ODOT SFN: 3110142 | NSRR BR#: BR0018445

MISCELLANEOUS GIRDER DETAILS/SECTIONS/WELDS
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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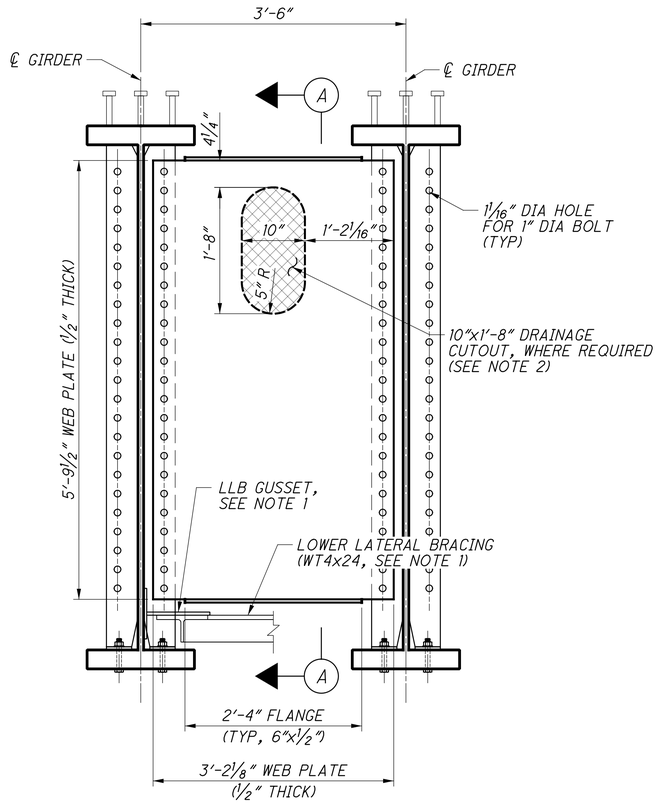
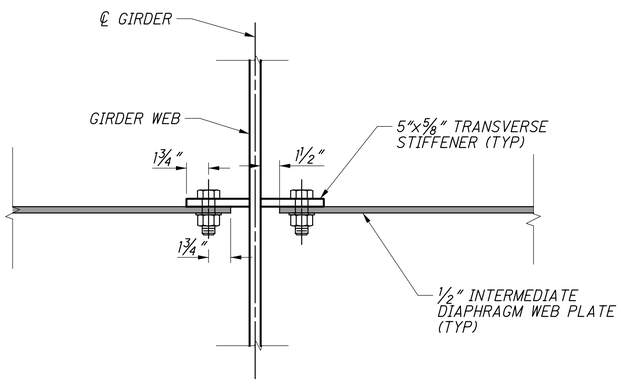
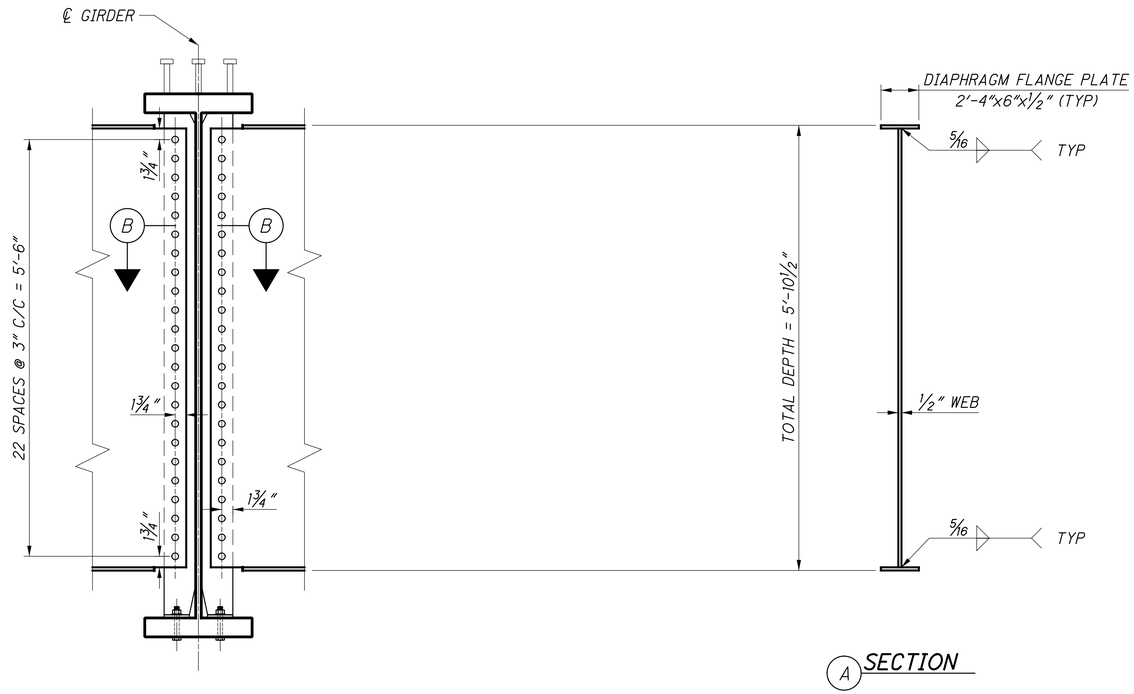


INTERMEDIATE DIAPHRAGM DETAILS



B SECTION



A SECTION

INTERMEDIATE DIAPHRAGM CONNECTION DETAILS

NOTES:

1. FOR LOWER LATERAL BRACING AND HORIZONTAL GUSSET PLATE DETAILS, SEE SHEET 32/41.
2. DRAINAGE HOLES ARE ONLY REQUIRED IN DIAPHRAGMS IN BAYS 1 AND 7. SEE FRAMING PLAN, SHEET 27/41.

DESIGN AGENCY
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CTM		NSRR BR#: BR0018445	

GIRDER DIAPHRAGM DETAILS 1/2
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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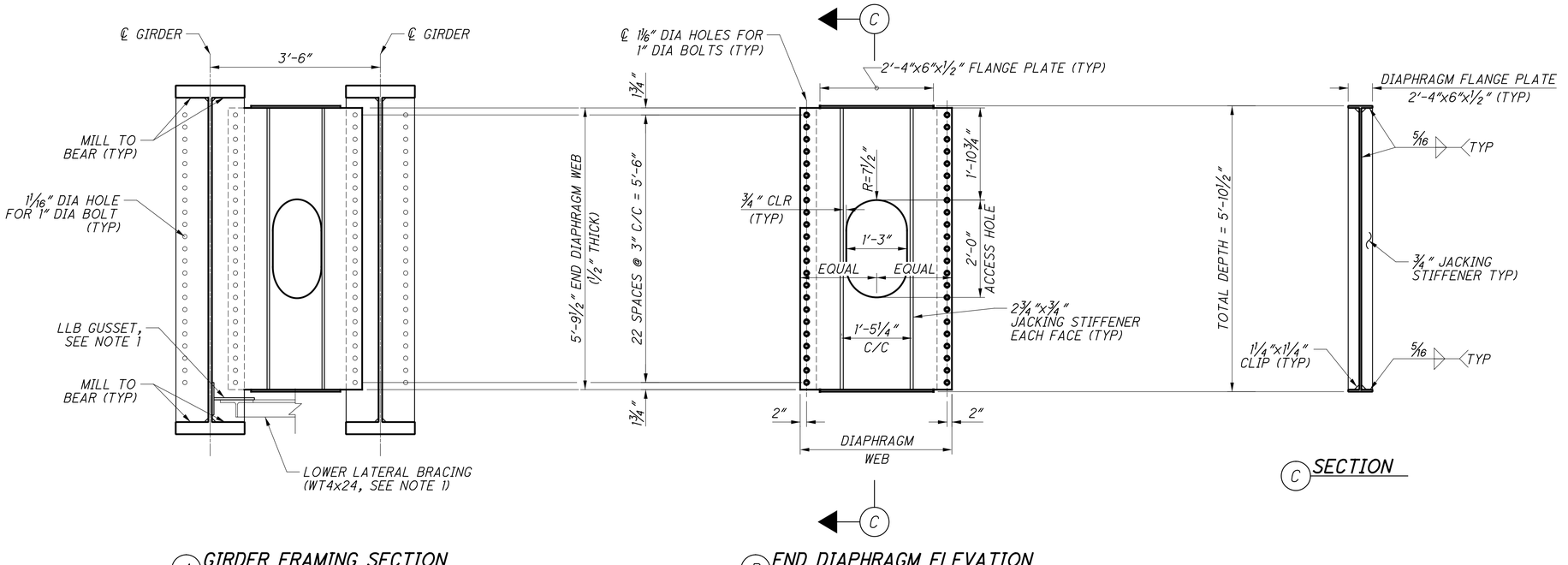
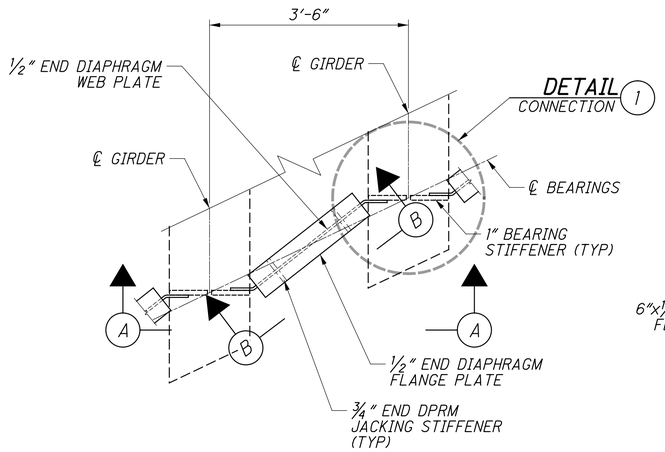


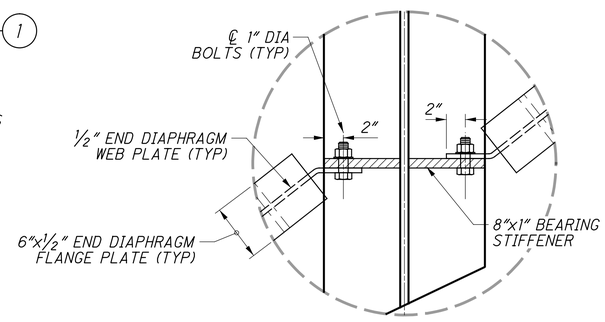
A **GIRDER FRAMING SECTION**
NORMAL TO GIRDER

B **END DIAPHRAGM ELEVATION**
PARALLEL TO DIAPHRAGM

C **SECTION**



5 **TYPICAL END DIAPHRAGM DETAIL**
SEE SHEET 27 41



1 **CONNECTION DETAIL**
BEARING STIFFENER AND END DIAPHRAGM WITH BENT WEB

NOTES:

1. FOR LOWER LATERAL BRACING AND HORIZONTAL GUSSET PLATE DETAILS, SEE SHEET 32 41 .

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CTM		NSRR BR#: BR0018445	

GIRDER DIAPHRAGM DETAILS 2/2
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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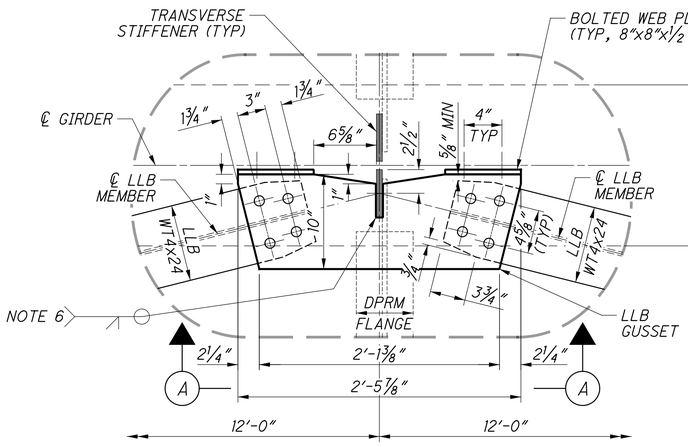
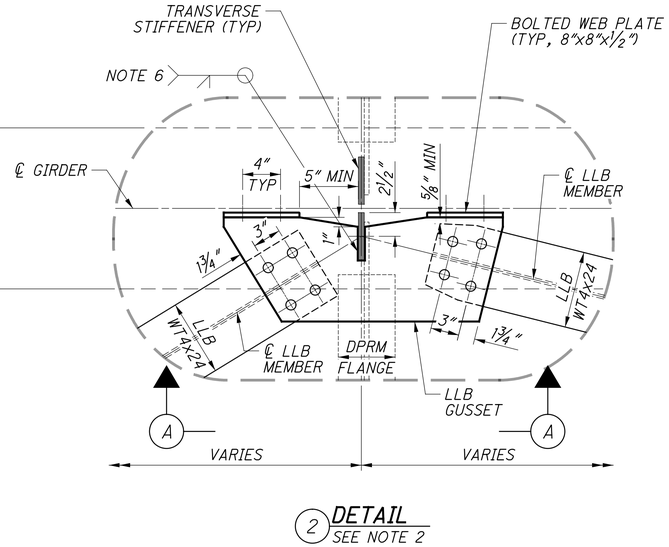
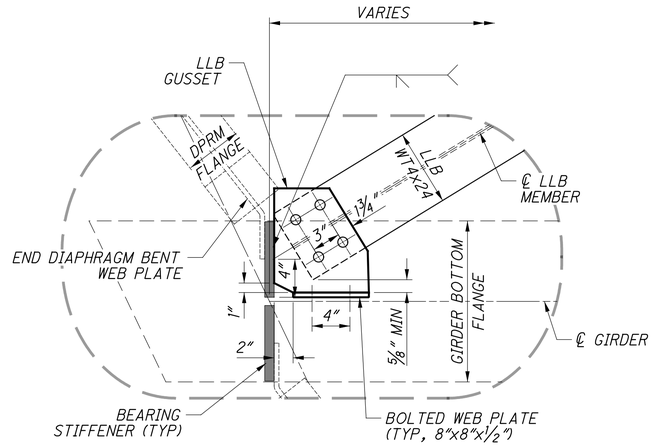


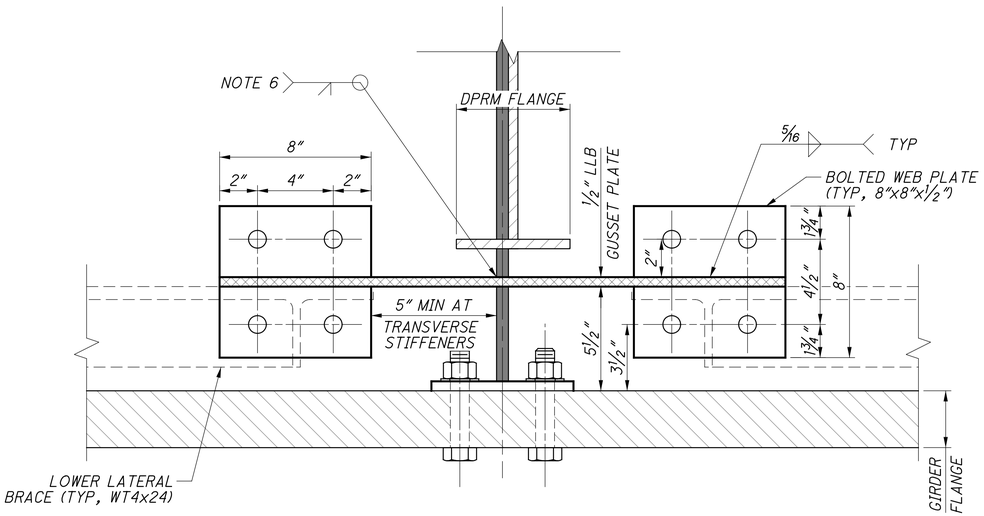
1 **DETAIL**
TYPICAL LLB CONNECTION AT INTERMEDIATE DIAPHRAGMS



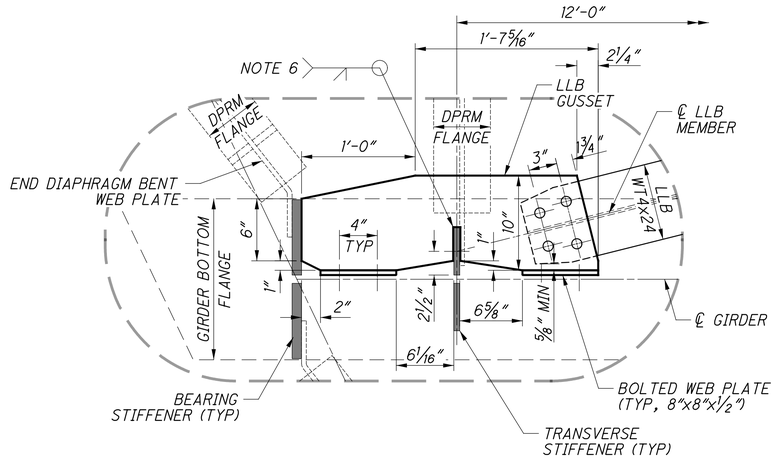
2 **DETAIL**
SEE NOTE 2



3 **DETAIL**
SEE NOTE 3



A **TYPICAL ELEVATION**
SEE NOTE 5



4 **DETAIL**
SEE NOTE 4

NOTES:

1. TYPICAL GUSSET PLATES AND DETAILS SHOWN. FINAL DETAILS TO BE INCLUDED WITH MANUFACTURER SHOP DRAWINGS AND SHALL COMPLY WITH THE REQUIREMENTS OF AREMA CHAPTER 15 AND THESE PLANS. ALL 1" DIAMETER BOLTS SHALL MAINTAIN A MINIMUM DISTANCE OF 1¾" TO ANY FREE EDGE. FOR LOWER LATERAL BRACING LOCATIONS, SEE FRAMING PLAN ON SHEET 27 41.
2. DETAIL 2 IS TYPICAL OF CONNECTIONS THAT CONNECT TWO LOWER LATERAL BRACE MEMBERS OF VARIABLE SPACING AT AN INTERMEDIATE DIAPHRAGM LOCATION.
3. DETAIL 3 IS TYPICAL OF CONNECTIONS THAT CONNECT THE LOWER LATERAL BRACE MEMBERS AT BEARING STIFFENER LOCATIONS (EXCEPT AS NOTED BY NOTE 4).
4. DETAIL 4 IS APPLICABLE ONLY IN SPAN 1, SPECIFICALLY GIRDER 8 AT THE REAR ABUTMENT, AND GIRDER 1 AT THE PIER.
5. ELEVATION IS TYPICAL AT TRANSVERSE STIFFENERS, EXCEPT THOSE SPECIFIED IN NOTE 4.
6. SLOT MADE TO FIT AROUND ⅝" STIFFENER ℄, GAP BETWEEN GUSSET PLATE AND STIFFENER SHALL NOT EXCEED ⅛". GUSSET PLATE TO STIFFENER WELD SHALL BE PERFORMED AFTER STIFFENER IS WELDED TO THE BOTTOM FLANGE CONNECTION PLATE.

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LOWER LATERAL BRACING GUSSET PLATE DETAILS
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95; CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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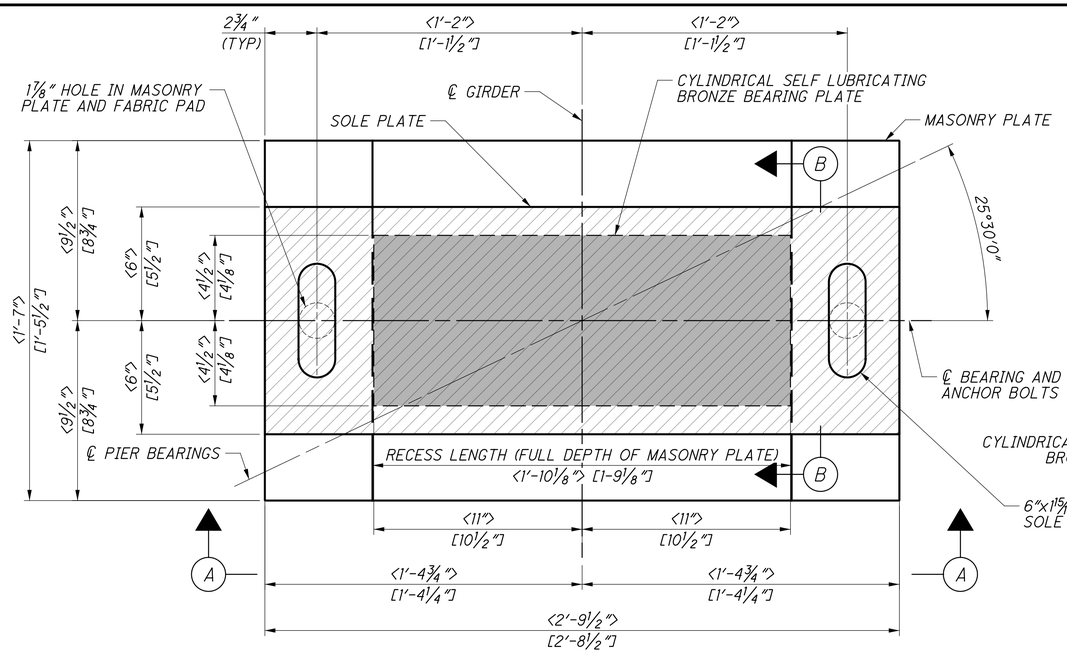
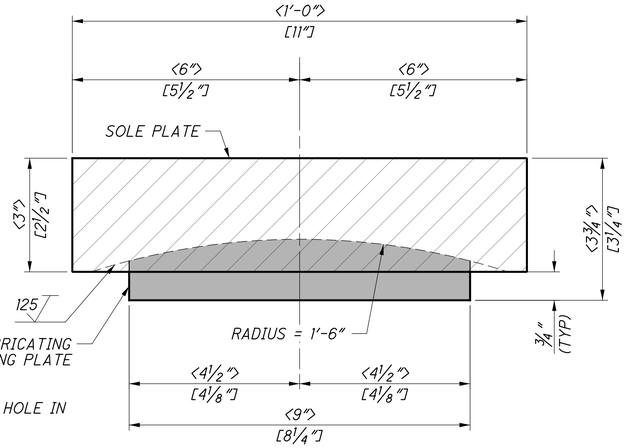
286

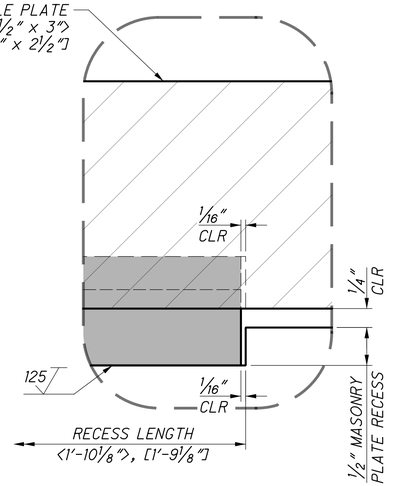


TYPICAL EXPANSION BEARING

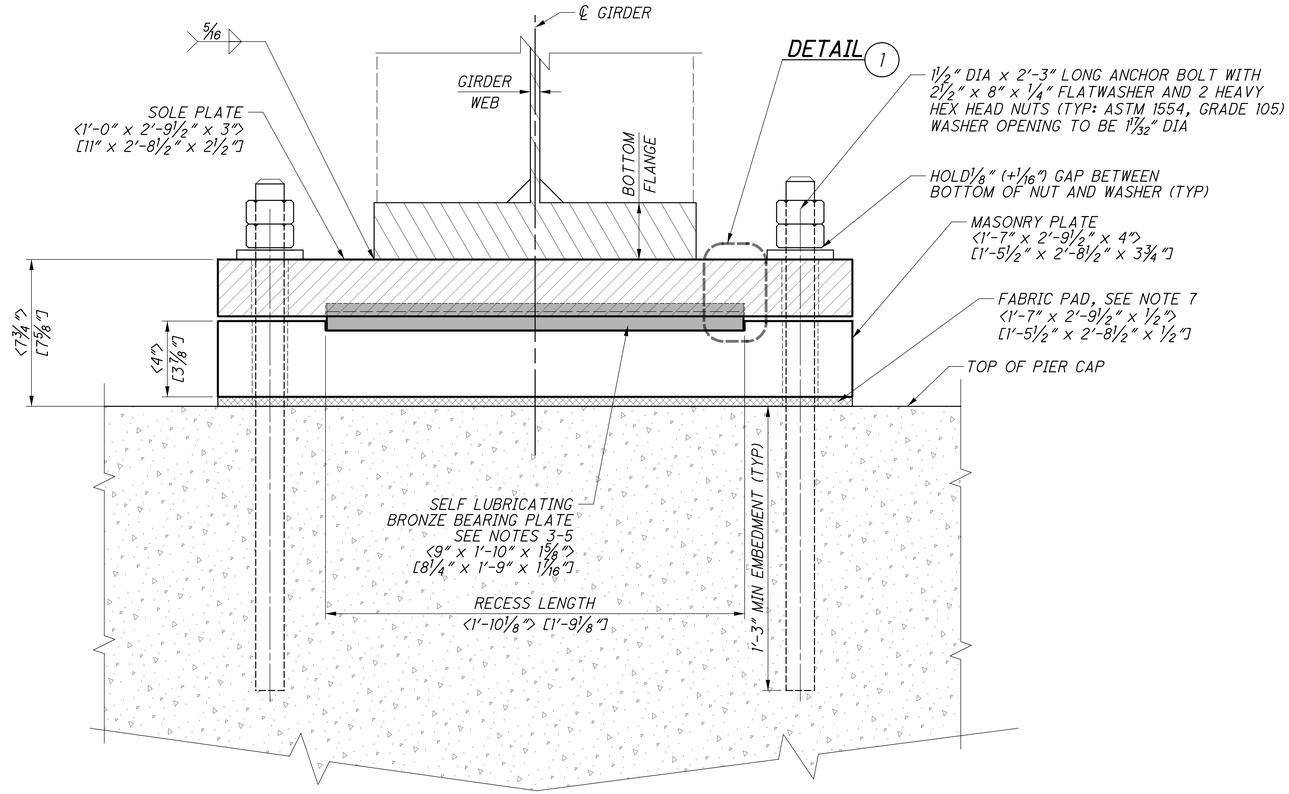
16 REQUIRED (8 SPAN 1, 8 SPAN 2)
(ANCHOR BOLTS NOT SHOWN)



B SECTION
CYLINDRICAL BEARING ASSEMBLY



1 DETAIL
RECESS DETAILS



A ELEVATION

LOAD TABLE		
	SPAN 1	SPAN 2
DEAD LOAD (KIPS)	126.4	104.9
LIVE LOAD + IMPACT (KIPS)	257.6	234.6
SERVICE VERTICAL LOADS (KIPS)	384.0	339.5

NOTES:

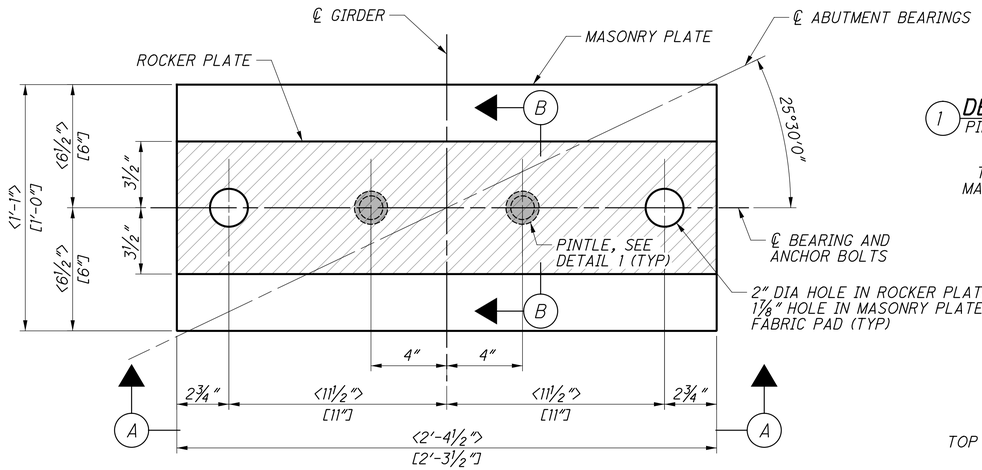
1. EXPANSION BEARINGS FOR BOTH SPANS ARE SHOWN ON THIS SHEET. DIMENSIONS NOT IN BRACKETS REFER TO BOTH SPANS DIMENSIONS IN <BRACKET> REFER TO SPAN 1 BEARINGS. DIMENSIONS IN [BRACKET] REFER TO SPAN 2 BEARINGS.
2. BEARINGS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF AREMA CHAPTER 15 AND THE NORFOLK SOUTHERN PUBLIC PROJECTS MANUAL.
3. BRONZE BEARING PLATES SHALL CONFORM TO THE STANDARD SPECIFICATION FOR BRONZE CASTINGS FOR BRIDGES AND TURNTABLES, ASTM B-22. ALLOY C91100 SHALL BE FURNISHED.
4. SOLID LUBRICANT SHALL CONSIST OF A COMBINATION OF SOLIDS HAVING NON-DETERIORATING CHARACTERISTICS, AS WELL AS LUBRICATING QUALITIES AND SHALL BE CAPABLE OF WITHSTANDING LONG TERM ATMOSPHERIC EXPOSURE, DE-ICING MATERIALS, AND WATER. MOLYBDENUM DISULFIDE AND OTHER INGREDIENTS WHICH MAY PROMOTE ELECTROLYTIC OR CHEMICAL ACTION BETWEEN THE BEARING ELEMENTS SHALL NOT BE USED. SHELLAC, TARS AND ASPHALTS, AND PETROLEUM PRODUCTS SHALL NOT BE USED AS BINDERS.
5. EXPANSION BEARINGS SHALL HAVE MARKINGS MATCHED IN THE ENDS OF THE SOLE PLATES AND BRONZE PLATES TO FACILITATE THEIR POSITIONING FOR THE PROPER TEMPERATURE CORRECTION.
6. EXPOSED SURFACES SHALL BE PAINTED IN ACCORDANCE WITH STRUCTURAL STEEL PAINT SYSTEM, SEE GENERAL NOTES.
7. FABRIC PADS SHALL BE PREFORMED FABRIC BEARING PADS, ½" THICK, AND SHALL BE EITHER:
   - SHOCK PAD STYLE 15175, AS MANUFACTURED BY THE ALERT MANUFACTURING AND SUPPLY COMPANY, CHICAGO, IL; OR
   - FABREEKA PADS, AS MANUFACTURED BY THE FABREEKA PRODUCTS COMPANY, BOSTON, MA; OR
   - SORBTEX PADS AS MANUFACTURED BY VOSS ENGINEERING, INC., CHICAGO, ILLINOIS; OR
   - AN APPROVED EQUAL.
8. ANCHOR RODS SHALL BE IN COMPLIANCE WITH AREMA 15-5.3.7.d AND INSTALLED IN PREFORMED HOLES. AT A MINIMUM, THE ANCHOR RODS SHALL BE SWEDGED OR THREADED THE ENTIRE LENGTH OF EMBEDDMENT. DRILLED HOLES SHALL NOT BE USED. PREFORMED HOLES SHALL BE FILLED WITH NON-SHRINK, NON-METALLIC GROUT AND IS INCIDENTAL TO THE COST OF THE BEARINGS. FOR TYPICAL ANCHOR BLOCK OUT DETAIL, SEE SHEET 19 (286). ANCHOR BOLTS ARE TO BE SET IN THE PREFORMED HOLES PRIOR TO PLACING BEARINGS AND GIRDERS. CARE SHALL BE TAKEN TO NOT ALLOW GROUT TO ENCROACH INTO THE SLOTTED HOLES OF THE SOLE PLATE.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDK	VDT	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3110142	
CTM		NSRR BR#: BR0018445	

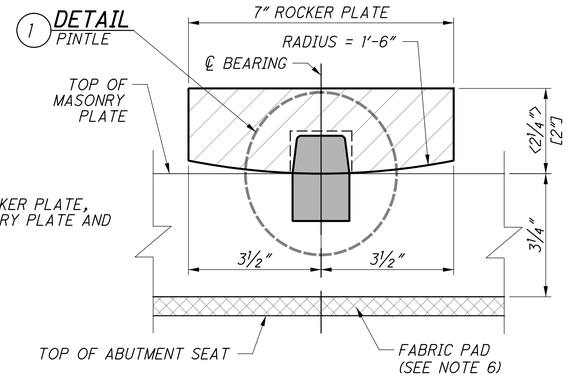
EXPANSION BEARINGS
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95; CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

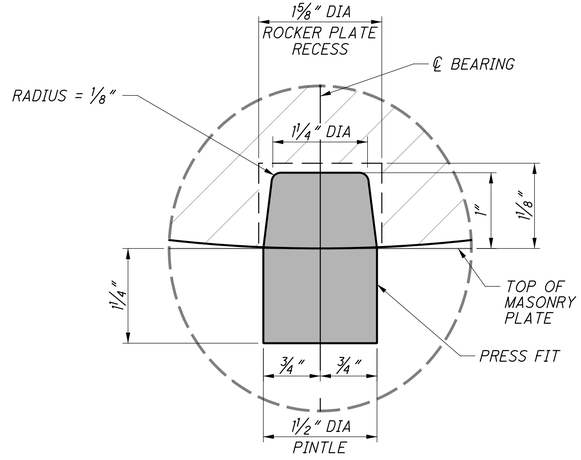


TYPICAL FIXED BEARING

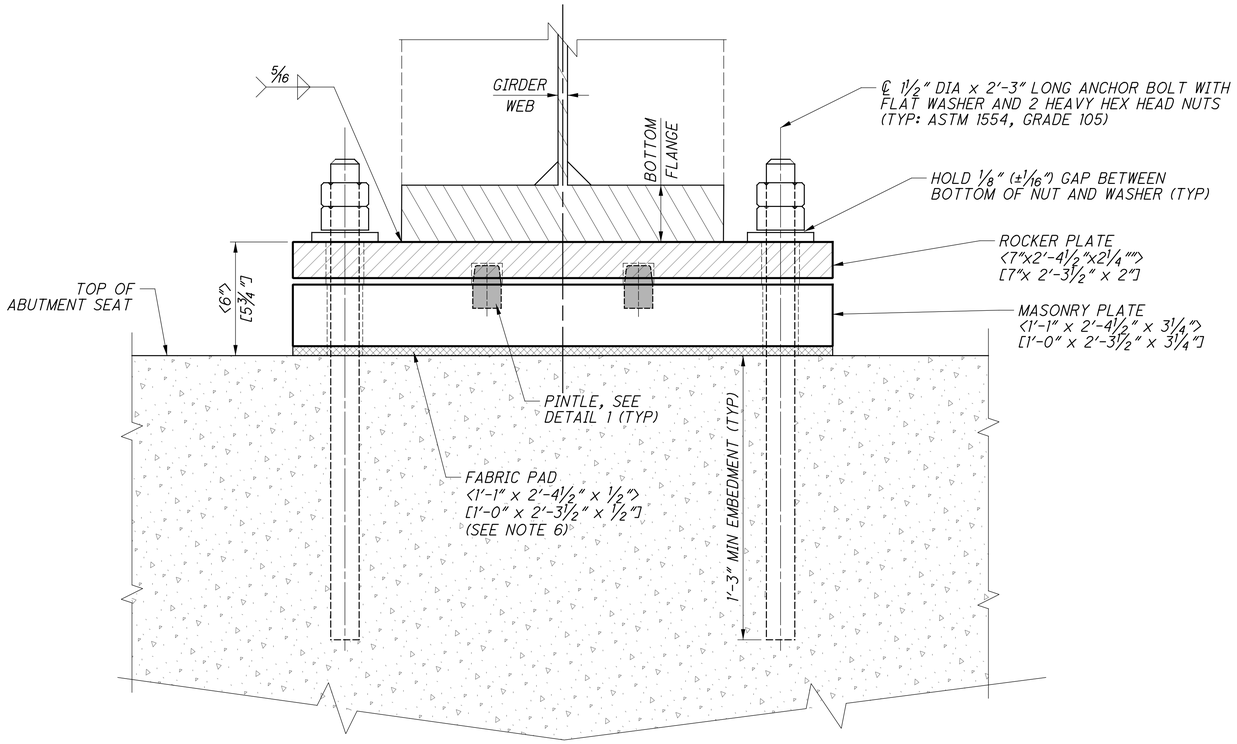
16 REQUIRED (8 SPAN 1, 8 SPAN 2)
(ANCHOR BOLTS NOT SHOWN)



B SECTION
ROCKER PLATE DETAILS



1 PINTLE DETAIL
SEE NOTES 3 AND 4



A ELEVATION

LOAD TABLE		
	SPAN 1	SPAN 2
DEAD LOAD (KIPS)	126.4	104.9
LIVE LOAD + IMPACT (KIPS)	257.6	234.6
SERVICE VERTICAL LOADS (KIPS)	384.0	339.5

NOTES:

1. FIXED BEARINGS FOR BOTH SPANS ARE SHOWN ON THIS SHEET.
   DIMENSIONS NOT IN BRACKETS REFER TO BOTH SPANS
   DIMENSIONS IN <BRACKET> REFER TO SPAN 1 BEARINGS.
   DIMENSIONS IN [BRACKET] REFER TO SPAN 2 BEARINGS.
2. BEARINGS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF AREMA CHAPTER 15 AND THE NORFOLK SOUTHERN PUBLIC PROJECTS MANUAL.
3. BEARINGS SHALL BE ASSEMBLED COMPLETE IN THE SHOP, CHECKED FOR FIT AND BEARING OF ALL CONTACT SURFACES MARKED FOR ASSEMBLY IN THE FIELD.
4. PROVIDE CARBON STEEL PINTLE STEEL CONFORMING TO THE REQUIREMENTS OF ASTM SPECIFICATION A668, CLASS D.
5. EXPOSED SURFACES SHALL BE PAINTED IN ACCORDANCE WITH STRUCTURAL STEEL PAINT SYSTEM, SEE GENERAL NOTES.
6. FABRIC PADS SHALL BE PROVIDED AS PER NOTE 7 ON SHEET 33/41.
7. ANCHOR RODS SHALL BE IN COMPLIANCE WITH AREMA 15-5.3.7.d AND INSTALLED IN PREFORMED HOLES. AT A MINIMUM, THE ANCHOR RODS SHALL BE SWEDGED OR THREADED THE ENTIRE LENGTH OF EMBEDDMENT. DRILLED HOLES SHALL NOT BE USED.
   FOR TYPICAL ANCHOR BLOCK OUT DETAIL, SEE SHEET 19/286.

   PREFORMED HOLES SHALL BE FILLED WITH NON-SHRINK, NON-METALLIC GROUT AND IS INCIDENTAL TO THE COST OF THE BEARINGS. ANCHOR BOLTS ARE TO BE SET IN THE PREFORMED HOLES PRIOR TO PLACING BEARINGS AND GIRDERS.

DESIGN AGENCY
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VDK	VDT	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3110142	
CTM		NSRR BR#: BR0018445	

FIXED BEARINGS
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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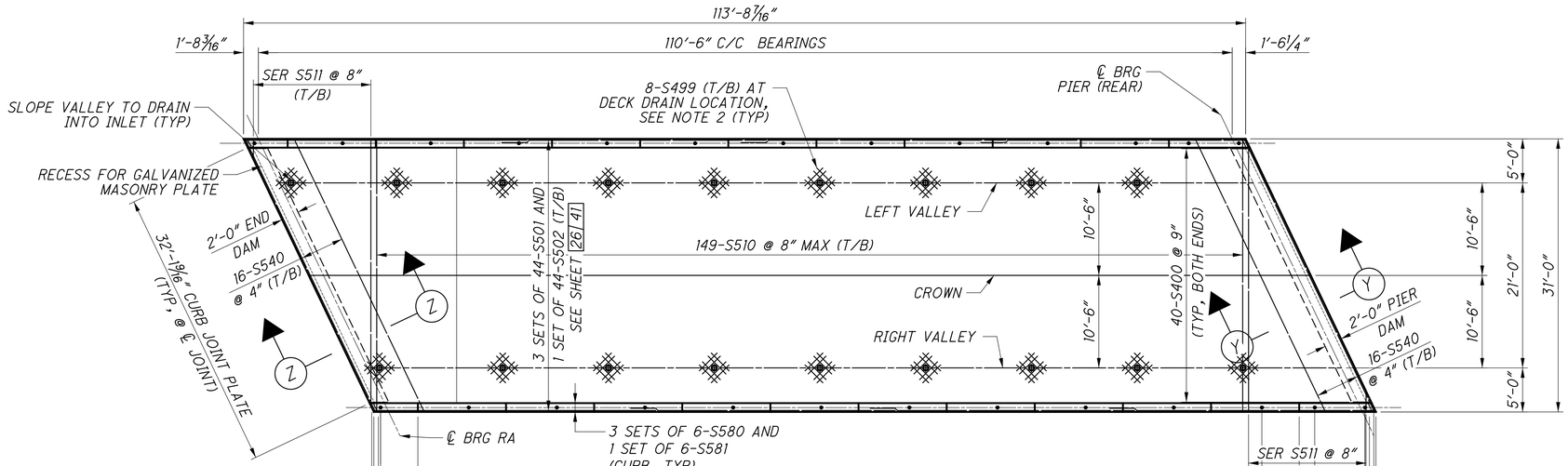
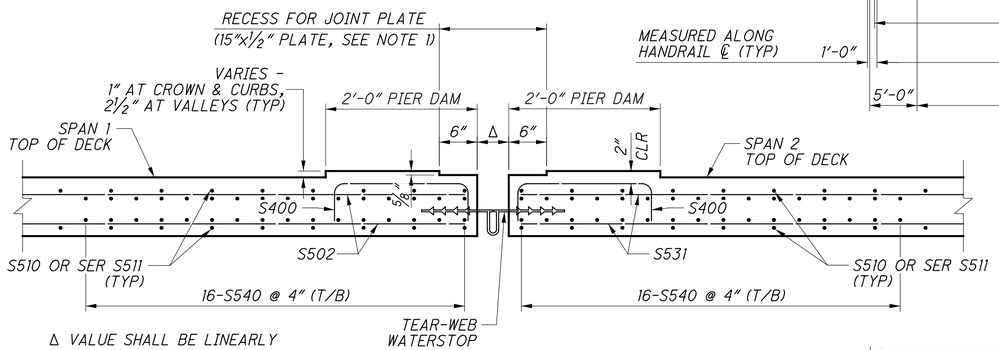
286



DECK REINFORCING PLAN

SPAN 1, UPSTATION

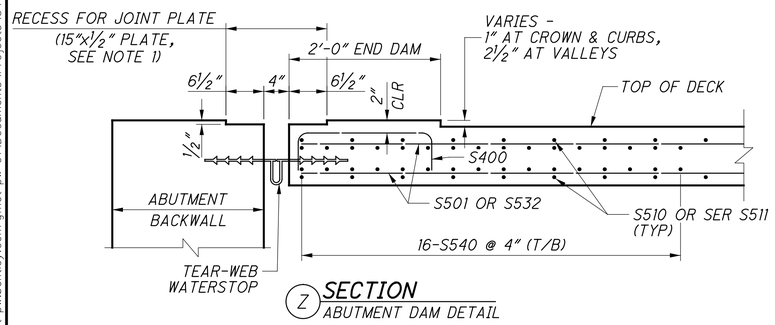


Δ VALUE SHALL BE LINEARLY INTERPOLATED FROM THE VALUES BELOW:
Δ = 4 5/8" @ 88°
Δ = 5" @ 65° (THERMAL NEUTRAL)
Δ = 5 3/8" @ 42°

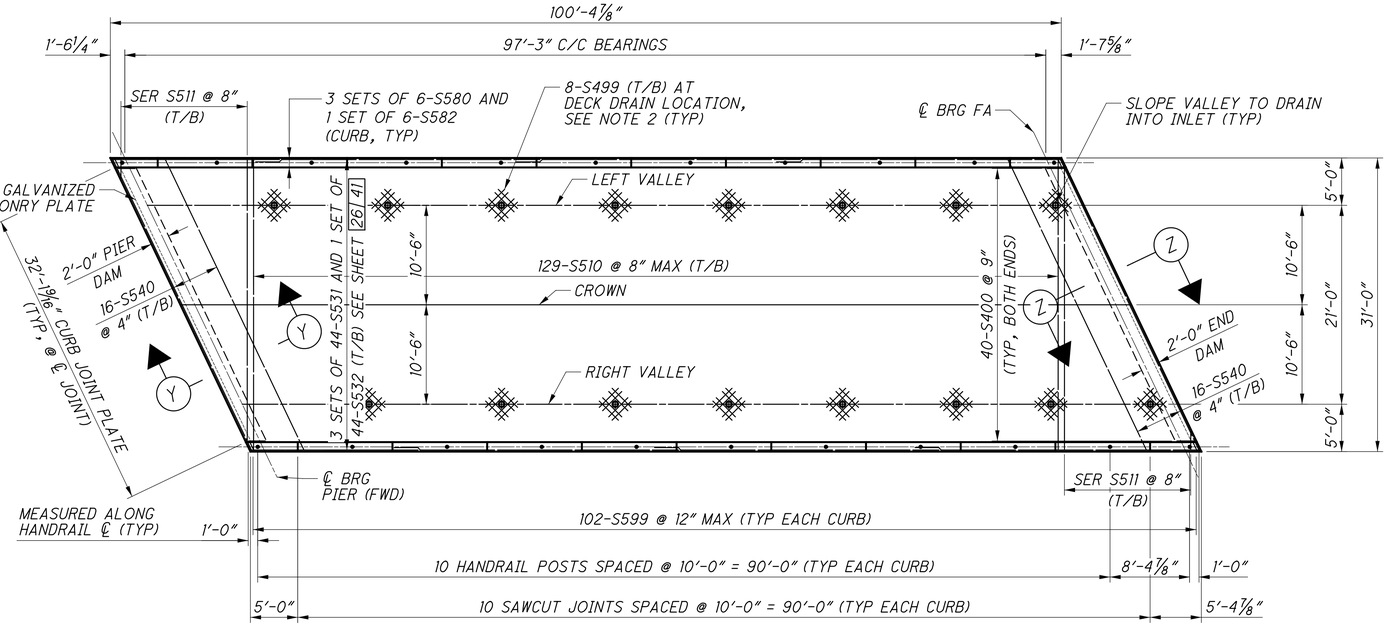
Y SECTION
PIER DAM DETAIL

NOTES:

1. FOR DECK JOINT DETAILS, SEE GENERAL RAILROAD DETAILS, SHEET 20/286 .
2. FOR CURB REINFORCING DETAILS AND REINFORCING AT DECK DRAINS, SEE GENERAL RAILROAD DETAILS, SHEET 19/286 . FOR DRAIN LOCATION AND DETAILS, SEE SHEETS 37 41 AND 38 41 .
3. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 39 41 .



Z SECTION
ABUTMENT DAM DETAIL



DECK REINFORCING PLAN

SPAN 2, UPSTATION

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

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VDT	VDT	CTV	12-19-23
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CTM		NSRR BR#: BR0018445	

DECK PLAN
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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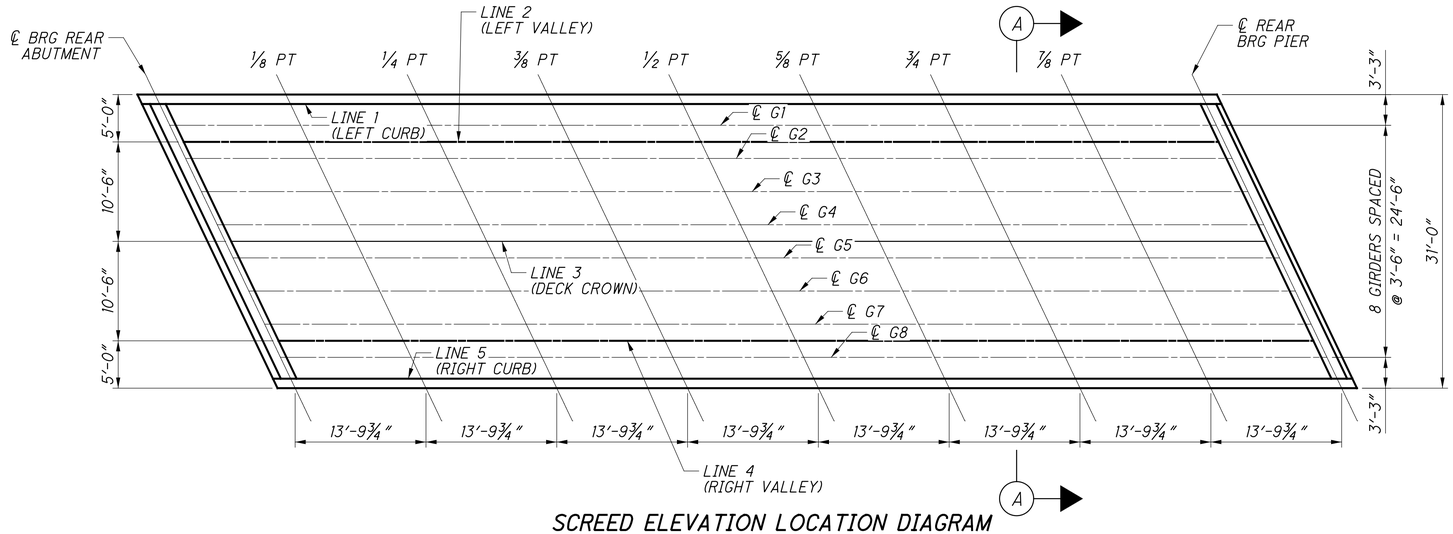
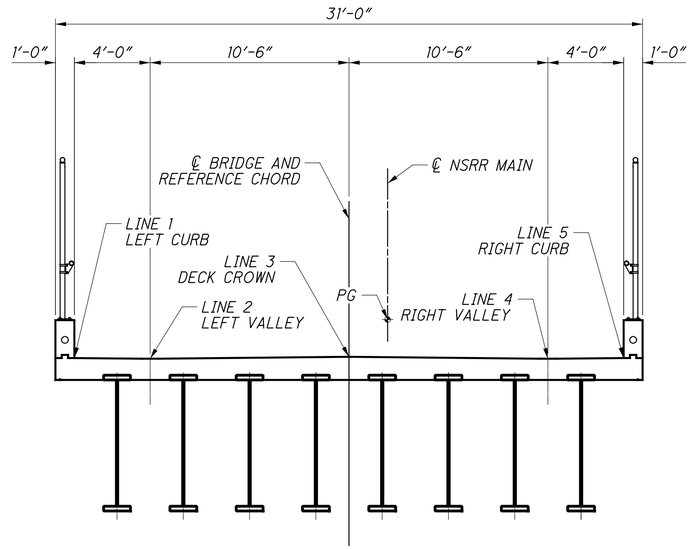


SCREED ELEVATION LOCATION DIAGRAM

SPAN 1, UPSTATION



A TYPICAL TRANSVERSE SECTION

SCREED AND FINAL DECK LINES
(LOOKING UPSTATION)

SCREED ELEVATION LOCATION DIAGRAM

SPAN 2, UPSTATION

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS. OTHER ANTICIPATED DEAD LOADS INCLUDE CURB CONCRETE, BALLAST, AND TRACKWORK BUT DOES NOT INCLUDE THE EFFECTS OF A FUTURE BALLAST.
2. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURED. (DOES NOT INCLUDE FUTURE BALLAST)

SCREED ELEVATION TABLE - SPAN 1

LINE NO.	LOCATION	℄ BRG RA	⅛ PT	¼ PT	⅜ PT	½ PT	⅝ PT	¾ PT	⅞ PT	℄ BRG PIER
LINE 1	LEFT CURB LINE	556.00	556.05	556.11	556.15	556.19	556.22	556.24	556.26	556.28
LINE 2	LEFT VALLEY	555.88	555.93	555.98	556.03	556.06	556.09	556.12	556.14	556.15
LINE 3	DECK CROWN	556.00	556.05	556.11	556.15	556.19	556.22	556.24	556.26	556.28
LINE 4	RIGHT VALLEY	555.88	555.93	555.98	556.03	556.06	556.09	556.12	556.14	556.15
LINE 5	RIGHT CURB LINE	556.00	556.05	556.11	556.15	556.19	556.22	556.24	556.26	556.28

SCREED ELEVATION TABLE - SPAN 2

LINE NO.	LOCATION	℄ BRG PIER	⅛ PT	¼ PT	⅜ PT	½ PT	⅝ PT	¾ PT	⅞ PT	℄ BRG FA
LINE 1	LEFT CURB LINE	556.26	556.16	556.05	555.93	555.81	555.69	555.56	555.43	555.29
LINE 2	LEFT VALLEY	556.14	556.03	555.92	555.81	555.69	555.56	555.43	555.30	555.17
LINE 3	DECK CROWN	556.26	556.16	556.05	555.93	555.81	555.69	555.56	555.43	555.29
LINE 4	RIGHT VALLEY	556.14	556.03	555.92	555.81	555.69	555.56	555.43	555.30	555.17
LINE 5	RIGHT CURB LINE	556.26	556.16	556.05	555.93	555.81	555.69	555.56	555.43	555.29

FINAL DECK ELEVATION TABLE - SPAN 1

LINE NO.	LOCATION	℄ BRG RA	⅛ PT	¼ PT	⅜ PT	½ PT	⅝ PT	¾ PT	⅞ PT	℄ BRG PIER
LINE 1	LEFT CURB LINE	556.00	556.04	556.07	556.10	556.14	556.17	556.21	556.24	556.28
LINE 2	LEFT VALLEY	555.88	555.91	555.95	555.98	556.01	556.05	556.08	556.12	556.15
LINE 3	DECK CROWN	556.00	556.04	556.07	556.10	556.14	556.17	556.21	556.24	556.28
LINE 4	RIGHT VALLEY	555.88	555.91	555.95	555.98	556.01	556.05	556.08	556.12	556.15
LINE 5	RIGHT CURB LINE	556.00	556.04	556.07	556.10	556.14	556.17	556.21	556.24	556.28

FINAL DECK ELEVATION TABLE - SPAN 2

LINE NO.	LOCATION	℄ BRG PIER	⅛ PT	¼ PT	⅜ PT	½ PT	⅝ PT	¾ PT	⅞ PT	℄ BRG FA
LINE 1	LEFT CURB LINE	556.26	556.14	556.02	555.90	555.78	555.65	555.53	555.41	555.29
LINE 2	LEFT VALLEY	556.14	556.02	555.89	555.77	555.65	555.53	555.41	555.29	555.17
LINE 3	DECK CROWN	556.26	556.14	556.02	555.90	555.78	555.65	555.53	555.41	555.29
LINE 4	RIGHT VALLEY	556.14	556.02	555.89	555.77	555.65	555.53	555.41	555.29	555.17
LINE 5	RIGHT CURB LINE	556.26	556.14	556.02	555.90	555.78	555.65	555.53	555.41	555.29

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
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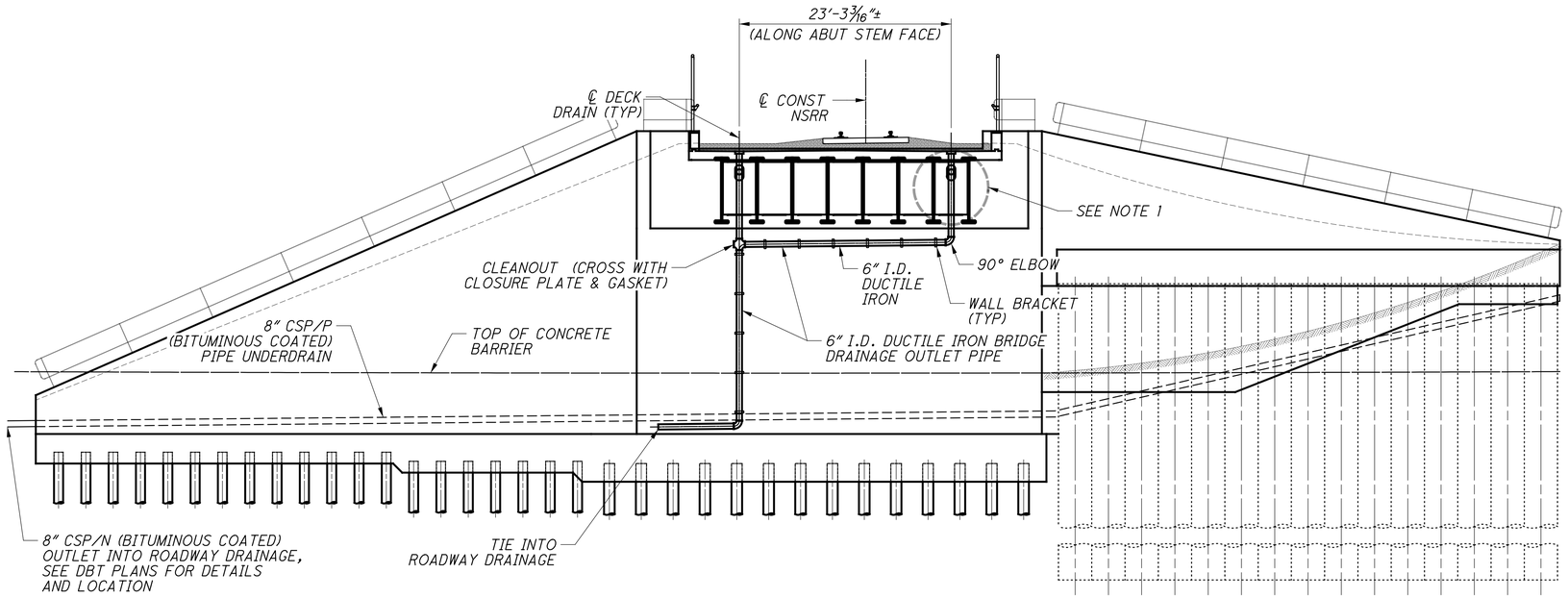
FINAL DECK/SCREED ELEVATIONS

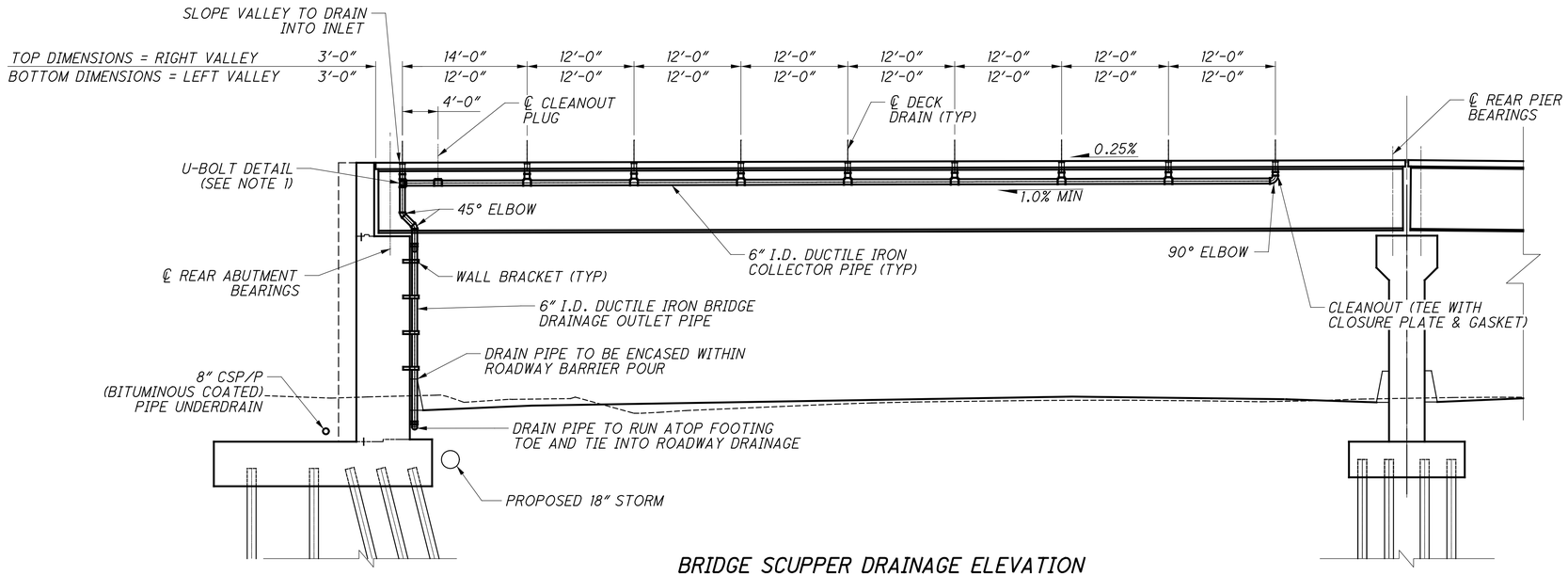
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95; CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889



REAR ABUTMENT SCUPPER DRAINAGE SECTION

SPAN 1



BRIDGE SCUPPER DRAINAGE ELEVATION

SPAN 1

NOTES:

1. FOR TYPICAL NORFOLK SOUTHERN AND PROJECT DRAINAGE DETAILS, SEE SHEET 18/286.

DESIGN AGENCY
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2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

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CTM		NSRR BR#: BR0018445	

SPAN 1 DRAINAGE DETAILS

BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95; CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

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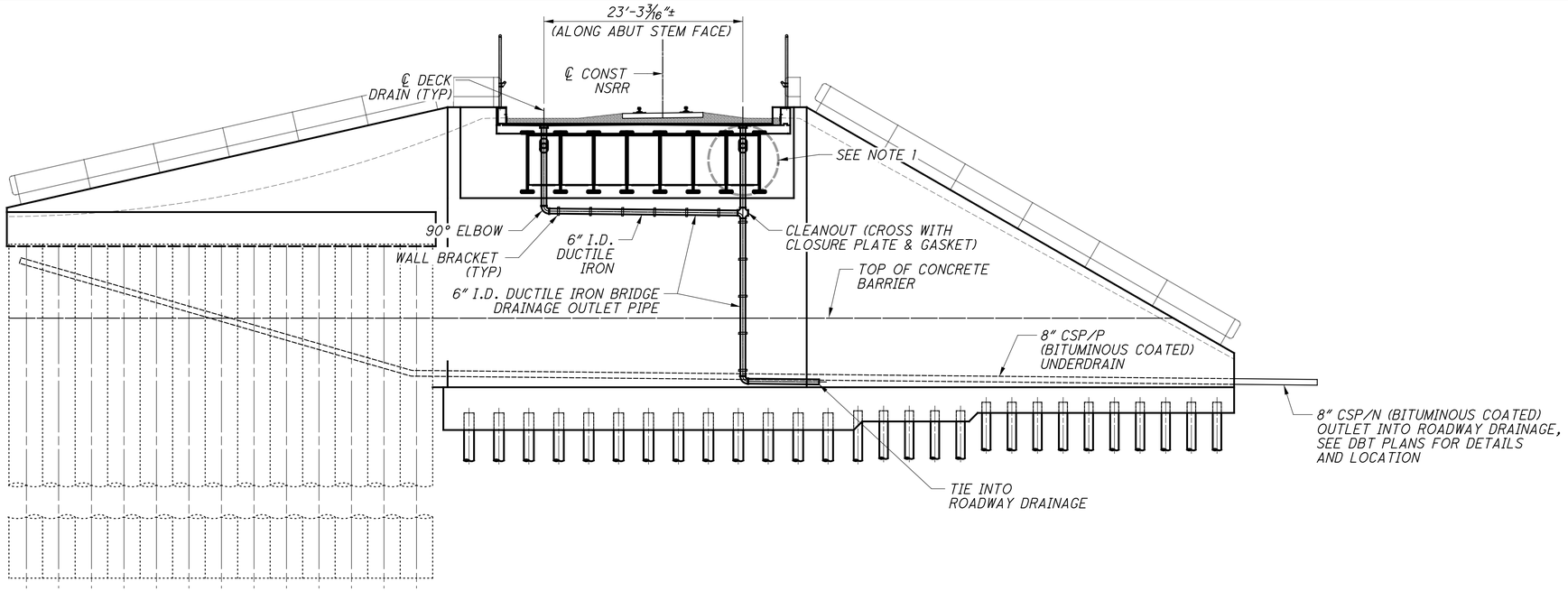
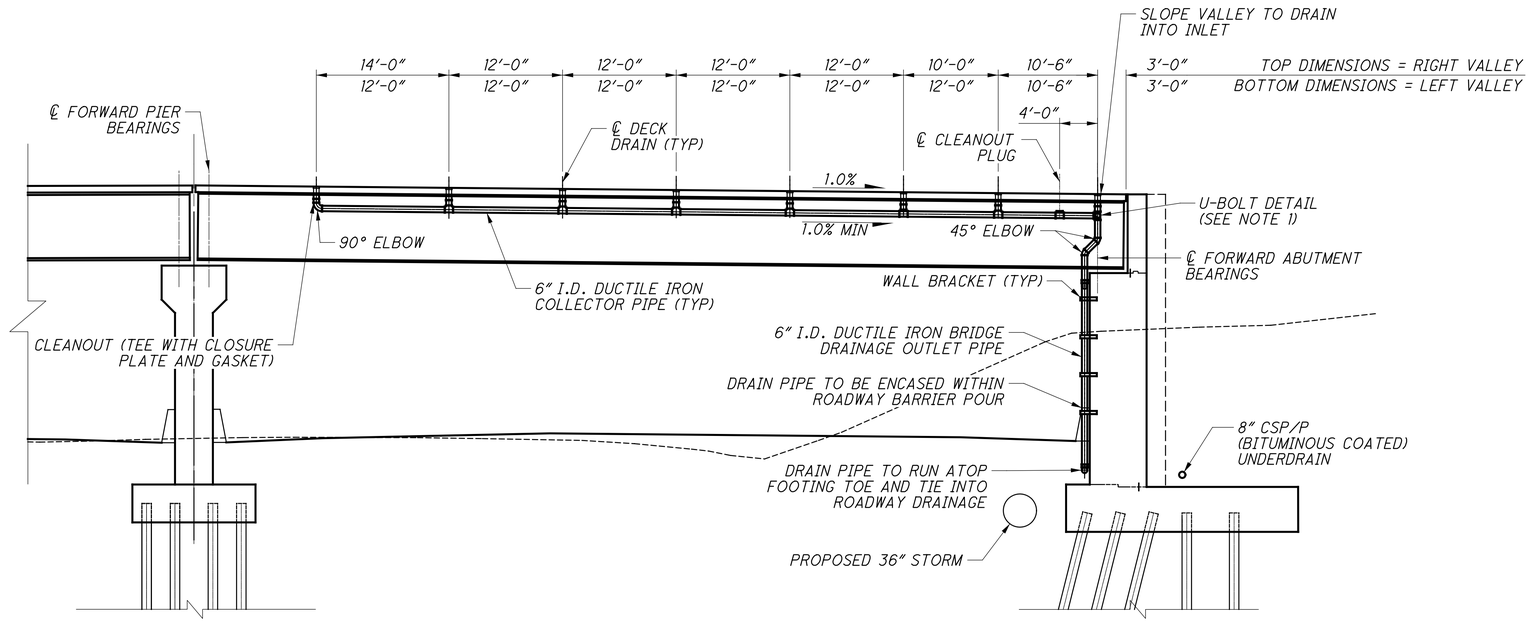
286



FORWARD ABUTMENT SCUPPER DRAINAGE SECTION

SPAN 2



BRIDGE SCUPPER DRAINAGE ELEVATION

SPAN 2

NOTES:

1. FOR TYPICAL NORFOLK SOUTHERN AND PROJECT DRAINAGE DETAILS, SEE SHEET 18/286.

DESIGN AGENCY
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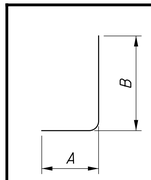
CTM		NSRR BR#: BR0018445	

SPAN 2 DRAINAGE DETAILS
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95; CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

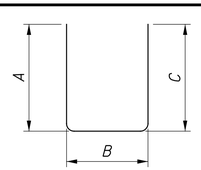
HAM-75-7.85
PID No. 77889

38 / 41

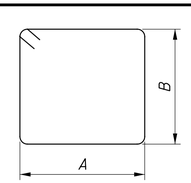
115/286



TYPE-1



TYPE-2



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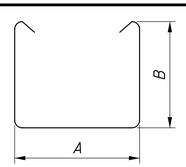

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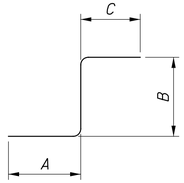

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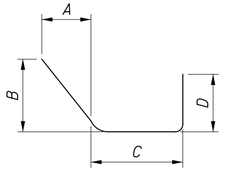

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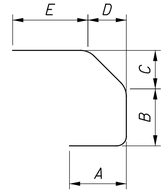

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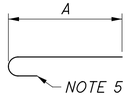

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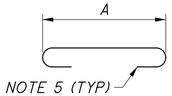

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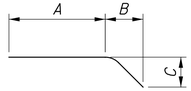

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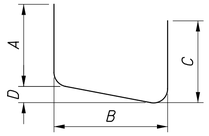
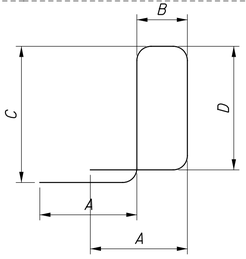


TYPE-29



TYPE-34

AREMA CLASS C LAP SPLICE LENGTHS (NOTE 6):

#4 BAR (Ld=1'-6"): ALL = 2'-7"
#5 BAR (Ld=1'-11"): DECK = 3'-3", OTHERS = 3'-8"
#6 BAR (Ld=2'-3"): DECK = 3'-10", OTHERS = 4'-5"
#7 BAR (Ld=2'-11"): ALL = 5'-6"
#8 BAR (Ld=3'-9"): TOP/ FOOTING = 7'-3", OTHERS = 6'-6"
#9 BAR (Ld=4'-9"): TOP/ FOOTING = 9'-2", OTHERS = 8'-1"
#10 BAR (Ld=6'-1"): TOP/ FOOTING = 11'-8", OTHERS = 10'-3"
#11 BAR (Ld=7'-5"): TOP/ FOOTING = 14'-4", OTHERS = 12'-7"
#14 BAR: MECHANICALLY SPLICE

REINFORCING BEND DIAGRAMS AND LAP SPLICE LENGTHS

REINFORCING NOTES

1. ALL REINFORCING BARS SHALL BE EPOXY COATED. PAYMENT FOR REINFORCING, INCLUDING MECHANICAL CONNECTORS, SHALL BE MADE WITH ITEM 509 - EPOXY COATED REINFORCING STEEL
2. MAX REINFORCING SPACING IS 12" UNLESS NOTED OTHERWISE. REINFORCING SPACINGS GIVEN ARE CONSIDERED "MAX" UNLESS NOTED OTHERWISE.
3. "STR." IN THE TYPE COLUMN INDICATES STRAIGHT BARS.
4. "SER OF" DENOTES SERIES OF BARS, E.G "X" SER OF "Y" = "X" SERIES OF "Y" BARS PER SERIES.
5. REFER TO C.M.S SECTION 509.05 FOR STANDARD BEND DIMENSIONS.
6. TWO BARS OF EQUAL SIZE SHALL BE LAPPED THE DISTANCE OF THE APPLICABLE AREMA CLASS C LAP SPLICE LENGTH. WHEN BARS OF UNEQUAL SIZE ARE LAPPED, THE PROVIDED LAP SHALL BE THE MAXIMUM OF EITHER THE "Ld" VALUE OF THE LARGER BAR OR THE APPLICABLE AREMA CLASS C LAP SPLICE LENGTH OF THE SMALLER BAR.

MARK	NUMBER			LENGTH	WEIGHT			TYPE	DIMENSIONS			
	REAR ABUT	FWD ABUT	TOTAL		RA	FA	TOTAL		A	B	C	INC
ABUTMENT												
A501	68		68	30'-0"	2,128		2,128	STR.				
A502	68		68	17'-10"	1,265		1,265	STR.				
A503	3		3	5'-6"	17		17	STR.				
A504	3		3	6'-6"	20		20	STR.				
A505	3		3	6'-1"	19		19	STR.				
A506	3		3	5'-2"	16		16	STR.				
A507	32		32	12'-8"	423		423	1	1'-0"	11'-9"		
A508	32		32	8'-1"	270		270	1	1'-0"	7'-2"		
A520	42		42	22'-3"	975		975	STR.				
A521	33		33	11'-5"	393		393	STR.				
A522	4		4	32'-11"	137		137	STR.				
A523	20		20	13'-4"	278		278	STR.				
A524	18		18	31'-11"	599		599	1	1'-0"	31'-0"		
	1		1	2'-0"								
A525	SER OF		SER OF	to	52		52	STR.				8"
	10		10	8'-0"								
	1		1	2'-6"								
A526	SER OF		SER OF	to	60		60	STR.				1'-4"
	8		8	11'-9"								
A529	42	40	82	11'-6"	504	480	984	2	3'-0"	5'-8"	3'-0"	
A540		68	68	30'-0"		2,128	2,128	STR.				
A541		68	68	15'-4"		1,087	1,087	STR.				
A547		32	32	4'-9"		159	159	1	1'-0"	3'-10"		
A548		32	32	11'-9"		392	392	1	1'-0"	10'-10"		
A550		3	3	5'-6"		17	17	STR.				
A551		3	3	6'-6"		20	20	STR.				
A552		3	3	3'-8"		11	11	STR.				
A553		3	3	2'-8"		8	8	STR.				
A559	40	40	80	4'-11"	205	205	410	1	1'-0"	4'-0"		
A560		39	39	21'-9"		885	885	STR.				
A564		14	14	30'-6"		445	445	STR.				
		1	1	2'-0"								
A565		SER OF	SER OF	to		27	27	STR.				2 3/4"
		9	9	3'-10"								
		1	1	5'-0"								
A566		SER OF	SER OF	to		33	33	STR.				1'-11 1/2"
		4	4	10'-10"								
A570		33	33	11'-3"		387	387	STR.				
A571		18	18	13'-4"		250	250	STR.				
A572		4	4	32'-4"		135	135	STR.				
A620	69		69	21'-4"	2,211		2,211	STR.				
A621	26		26	23'-3"	908		908	STR.				
A639	6		6	13'-4"	120		120	STR.				
A669		6	6	13'-4"		120	120	STR.				
A670		64	64	20'-10"		2,003	2,003	STR.				
A672		21	21	22'-9"		718	718	STR.				
ABUTMENT SUB-TOTAL					10,600	9,510	20,110					

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED SNH | DRAWN EFD | REVIEWED CTV | DATE 12-19-23
CHECKED VDT | REVISED | ODOT SFN: 3110142 | NSRR BR#: BR0018445

REINFORCING STEEL LIST 1 OF 3
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

39 / 41

116
286

MARK	NUMBER REAR ABUT	NUMBER FWD ABUT	NUMBER TOTAL	LENGTH	WEIGHT RA	WEIGHT FA	WEIGHT TOTAL	TYPE	DIMENSIONS A	B	C	INC
WINGWALL												
	1		1	21'-3"								
W501	SER OF		SER OF	to	704		704	STR.				5 3/4"
	25		25	32'-5"								
	1		1	11'-7"								
W502	SER OF		SER OF	to	399		399	STR.				5 1/2"
	23		23	21'-3"								
W520	46		46	23'-8"	1,135		1,135	STR.				
	2		2	3'-7"								
W521	SER OF		SER OF	to	239		239	STR.				2'-3 1/2"
	9		9	21'-9"								
W522	2		2	25'-10"	54		54	STR.				
W523	26		26	21'-8"	588		588	STR.				
	2		2	2'-4"								
W524	SER OF		SER OF	to	216		216	STR.				2'-3 1/2"
	9		9	20'-6"								
W525	2		2	23'-8"	49		49	STR.				
W526	8		8	19'-8"	164		164	STR.				
	2		2	3'-0"								
W527	SER OF		SER OF	to	184		184	STR.				2'-3 1/2"
	8		8	19'-0"								
W528	2		2	21'-6"	45		45	STR.				
W529	14		14	29'-8"	433		433	STR.				
	2		2	3'-0"								
W530	SER OF		SER OF	to	186		186	STR.				4'-9"
	6		6	26'-8"								
W531	2		2	30'-4"	63		63	STR.				
	2		2	2'-0"								
W532	SER OF		SER OF	to	208		208	STR.				4'-1"
	7		7	26'-5"								
W533	2		2	27'-0"	56		56	STR.				
		1	1	21'-3"								
W540		SER OF	SER OF	to		521	521	STR.				6 3/4"
		19	19	31'-3"								
		1	1	11'-2"								
W541		SER OF	SER OF	to		322	322	STR.				6 3/4"
		19	19	21'-3"								
W560		72	72	17'-2"		1,289	1,289	STR.				
		2	2	2'-5"								
W561		SER OF	SER OF	to		177	177	STR.				1'-9"
		9	9	16'-4"								
		2	2	2'-4"								
W562		SER OF	SER OF	to		175	175	STR.				1'-9"
		9	9	16'-2"								
W563		8	8	14'-8"		122	122	STR.				
		2	2	2'-2"								
W564		SER OF	SER OF	to		138	138	STR.				1'-9"
		8	8	14'-4"								
W565		4	4	19'-10"		83	83	STR.				
W567		2	2	16'-11"		35	35	STR.				
		2	2	4'-3"								
W568		SER OF	SER OF	to		133	133	STR.				4'-3"
		5	5	21'-2"								
W569		12	12	29'-8"		371	371	STR.				
TABLE SUB-TOTAL					4,723	3,366	8,089					

MARK	NUMBER REAR ABUT	NUMBER FWD ABUT	NUMBER TOTAL	LENGTH	WEIGHT RA	WEIGHT FA	WEIGHT TOTAL	TYPE	DIMENSIONS A	B	C	INC
WINGWALL (CONTINUED)												
		2	2	3'-11"								
W570		SER OF	SER OF	to		187	187	STR.				4'-4 3/4"
		6	6	25'-10"								
W571		2	2	21'-8"		45	45	STR.				
W572		2	2	30'-5"		63	63	STR.				
W590	58	49	107	10'-9"	650	550	1,200	2	3'-8"	3'-8"	3'-8"	
W595	26		26	30'-1"	816		816	STR.				
W596		26	26	27'-6"		746	746	STR.				
	1		1	6'-10"								
W701	SER OF		SER OF	to	617		617	STR.				5 1/4"
	25		25	17'-4"								
	1		1	7'-2"								
W702	SER OF		SER OF	to	574		574	STR.				5 1/2"
	23		23	16'-10"								
	1		1	6'-7"								
W740	SER OF		SER OF	to	452		452	STR.				6 3/4"
	19		19	16'-8"								
	1		1	6'-6"								
W741	SER OF		SER OF	to	449		449	STR.				6 3/4"
	19		19	16'-7"								
TABLE SUB-TOTAL					3,558	1,591	5,149					
WINGWALL SUB-TOTAL					8,281	4,957	13,238					

MARK	NUMBER GEN/ PIER	LENGTH	GEN		A	B	C	D	E	R	INC
					PIER						
P530	38	34'-2"	1,354	STR.							
P550	70	13'-7"	992	14	5'-3"	2'-8"	1'-5"	1'-5"	3'-10"		
P560	10	34'-2"	356	STR.							
P710	108	16'-6"	3,642	STR.							
P860	6	34'-2"	547	STR.							
PIER SUB-TOTAL			6,891								
SUPERSTRUCTURE											
S400	160	2'-5"	258	2	5"	1'-8"	5"				
S499	544	3'-0"	1,090	STR.							
S501	264	30'-0"	8,261	STR.							
S502	88	33'-6"	3,075	STR.							
S510	556	30'-8"	17,784	STR.							
	8	2'-0"									
S511	SER OF	to	2,833	STR.							1'-5"
	21	29'-11"									
S531	264	30'-0"	8,261	STR.							
S532	88	20'-2"	1,851	STR.							
S540	128	34'-0"	4,539	STR.							
S580	72	30'-0"	2,253	STR.							
S581	12	33'-6"	419	STR.							
S582	12	20'-2"	252	STR.							
S599	434	6'-6"	2,942	34	1'-0"	2'-0"	8"	2'-3"	1'-0"		
SUPERSTR. SUB-TOTAL			53,818								

DESIGN AGENCY
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2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED SNH | DRAWN EFD | REVIEWED CTV | DATE 12-19-23
CHECKED VDT | REVISED | ODOT SFN: 3110142 | NSRR BR#: BR0018445

REINFORCING STEEL LIST 2 OF 3
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95; CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

MARK	NUMBER				LENGTH	WEIGHT				TYPE	DIMENSIONS			
	REAR ABUT	FWD ABUT	GEN/ PIER	TOTAL		RA	FA	GEN	TOTAL		A	B	C	INC
FOOTING														
F400	174			174	6'-6"	756			756	3	1'-6"	1'-6"		
F420	84			84	5'-11"	332			332	3	1'-4"	1'-4"		
F440		165		165	6'-6"		716		716	3	1'-6"	1'-6"		
F460		62		62	5'-11"		245		245	3	1'-4"	1'-4"		
F499			156	156	5'-11"			617	617	3	1'-4"	1'-4"		
F500	53			53	30'-0"	1,658			1,658	STR.				
F501	53			53	23'-4"	1,290			1,290	STR.				
F505	58			58	24'-8"	1,492			1,492	STR.				
F510	27			27	30'-0"	845			845	STR.				
F511	4			4	26'-0"	108			108	STR.				
F512	23			23	19'-9"	474			474	STR.				
F513	31			31	25'-3"	816			816	19	20'-3"	3'-6"	3'-6"	
F514	4			4	17'-3"	72			72	STR.				
F515	17			17	10'-1"	179			179	19	3'-10"	4'-6"	4'-6"	
	1			1	8'-5"									
F520	SER OF			SER OF	to	200			200	STR.				1 1/2"
	20			20	10'-8"									
	1			1	10'-10"									
F521	SER OF			SER OF	to	265			265	STR.				1 1/2"
	21			21	13'-4"									
F531	64			64	9'-11"	662			662	1	1'-0"	9'-0"		
F533	25			25	10'-2"	265			265	1	1'-0"	9'-3"		
F534	23			23	9'-2"	220			220	1	1'-0"	8'-3"		
	1			1	8'-0"							7'-1"		
F535	SER OF			SER OF	to	271			271	1	1'-0"	to		5 1/4"
	21			21	16'-9"							15'-10"		
	1			1	10'-4"									
F536	SER OF			SER OF	to	445			445	STR.				2 3/4"
	31			31	16'-8"									
	1			1	4'-8"									
F537	SER OF			SER OF	to	218			218	STR.				2 1/2"
	28			28	10'-3"									
F540		51		51	30'-0"		1,596		1,596	STR.				
F541		51		51	20'-4"		1,082		1,082	STR.				
F545		55		55	23'-8"		1,358		1,358	STR.				
F550		18		18	33'-0"		620		620	STR.				
		2		2	6'-3"									
F551		SER OF		SER OF	to		188		188	STR.				5'-10 1/2"
		5		5	29'-9"									
F552		14		14	15'-2"		221		221	STR.				
F553		14		14	18'-8"		273		273	19	14'-1"	3'-3"	3'-3"	
F554		2		2	12'-6"		26		26	STR.				
F555		2		2	6'-8"		14		14	STR.				
F556		2		2	33'-0"		69		69	STR.				
F557		2		2	14'-6"		30		30	STR.				
		1		1	8'-5"									
F560		SER OF		SER OF	to		150		150	STR.				2"
		15		15	10'-8"									
		1		1	10'-11"									
F561		SER OF		SER OF	to		232		232	STR.				2"
		18		18	13'-8"									
F570		57		57	9'-8"		575		575	1	1'-0"	8'-9"		
		1		1	7'-6"							6'-7"		
F575		SER OF		SER OF	to		198		198	1	1'-0"	to		7"
		16		16	16'-3"							15'-2"		
F576		19		19	8'-11"		177		177	1	1'-0"	8'-0"		
F577		19		19	9'-11"		197		197	1	1'-0"	9'-0"		
		1		1	9'-0"									
F578		SER OF		SER OF	to		402		402	STR.				2 3/4"
		31		31	15'-10"									
		1		1	4'-1"									
F579		SER OF		SER OF	to		158		158	STR.				2 3/4"
		23		23	8'-11"									
TABLE SUB-TOTAL						10,568	8,527	617	19,712					

MARK	NUMBER				LENGTH	WEIGHT				TYPE	DIMENSIONS			
	REAR ABUT	FWD ABUT	GEN/ PIER	TOTAL		RA	FA	GEN	TOTAL		A	B	C	INC
FOOTING (CONTINUED)														
F580			28	28	38'-8"			1,129	1,129	STR.				
F590			53	53	12'-8"			700	700	STR.				
	1			1	13'-5"									
F620	SER OF			SER OF	to	511			511	STR.				1 1/2"
	23			23	16'-2"									
F650		16		16	10'-0"		240		240	19	4'-0"	4'-3"	4'-3"	
		1		1	13'-9"									
F662		SER OF		SER OF	to		360		360	STR.				2"
		16		16	16'-1"									
	1			1	8'-5"									
F720	SER OF			SER OF	to	393			393	STR.				1 1/2"
	20			20	10'-8"									
	1			1	10'-10"									
F721	SER OF			SER OF	to	1,013			1,013	STR.				3/4"
	41			41	13'-4"									
	1			1	7'-11"							7'-1"		
F731	SER OF			SER OF	to	528			528	1	1'-0"	to		5 1/4"
	21			21	16'-8"							15'-10"		
	1			1	10'-4"									
F732	SER OF			SER OF	to	1,756			1,756	STR.				1 1/2"
	61			61	16'-8"									
	1			1	4'-8"									
F733	SER OF			SER OF	to	841			841	STR.				1 1/4"
	55			55	10'-3"									
		1		1	8'-5"									
F760		SER OF		SER OF	to		294		294	STR.				2"
		15		15	10'-8"									
		1		1	10'-11"									
F761		SER OF		SER OF	to		854		854	STR.				1"
		34		34	13'-8"									
		1		1	7'-5"							6'-7"		
F775		SER OF		SER OF	to		386		386	1	1'-0"	to		7"
		16		16	16'-2"							15'-2"		
		1		1	9'-0"									
F778		SER OF		SER OF	to		1,590		1,590	STR.				1 1/2"
		61		61	15'-10"									
		1		1	4'-1"									
F779		SER OF		SER OF	to		590		590	STR.				1 1/2"
		43		43	8'-11"									
F890			52	52	12'-8"			1,759	1,759	STR.				
F931	90			90	19'-9"	6,044			6,044	1	1'-0"	19'-0"		
F932	45			45	15'-0"	2,295			2,295	1	1'-0"	14'-3"		
F970		85		85	19'-6"		5,636		5,636	1	1'-0"	18'-9"		
F975		36		36	15'-0"		1,836		1,836	1	1'-0"	14'-3"		
	1			1	13'-5"									
F1020	SER OF			SER OF	to	2,589			2,589	STR.				1"
	40			40	16'-2"									
		1		1	13'-9"									
F1062		SER OF		SER OF	to		1,931		1,931	STR.				1"
		30		30	16'-1"									
F1095			108	108	16'-5"			7,629	7,629	1	1'-0"	15'-9"		
F1105	152			152	24'-8"	19,920			19,920	STR.				
F1131	49			49	25'-11"	6,747			6,747	1	1'-0"	25'-3"		
F1145		143		143	23'-8"		17,981		17,981	STR.				
F1175		36		36	25'-11"		4,957		4,957	1	1'-0"	25'-3"		
TABLE SUB-TOTAL						42,637	36,655	11,217	90,509					
FOOTING SUB-TOTAL						53,205	45,182	11,834	110,221					
TOTAL ALL REINFORCING						72,086	59,649	72,543	204,278					

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

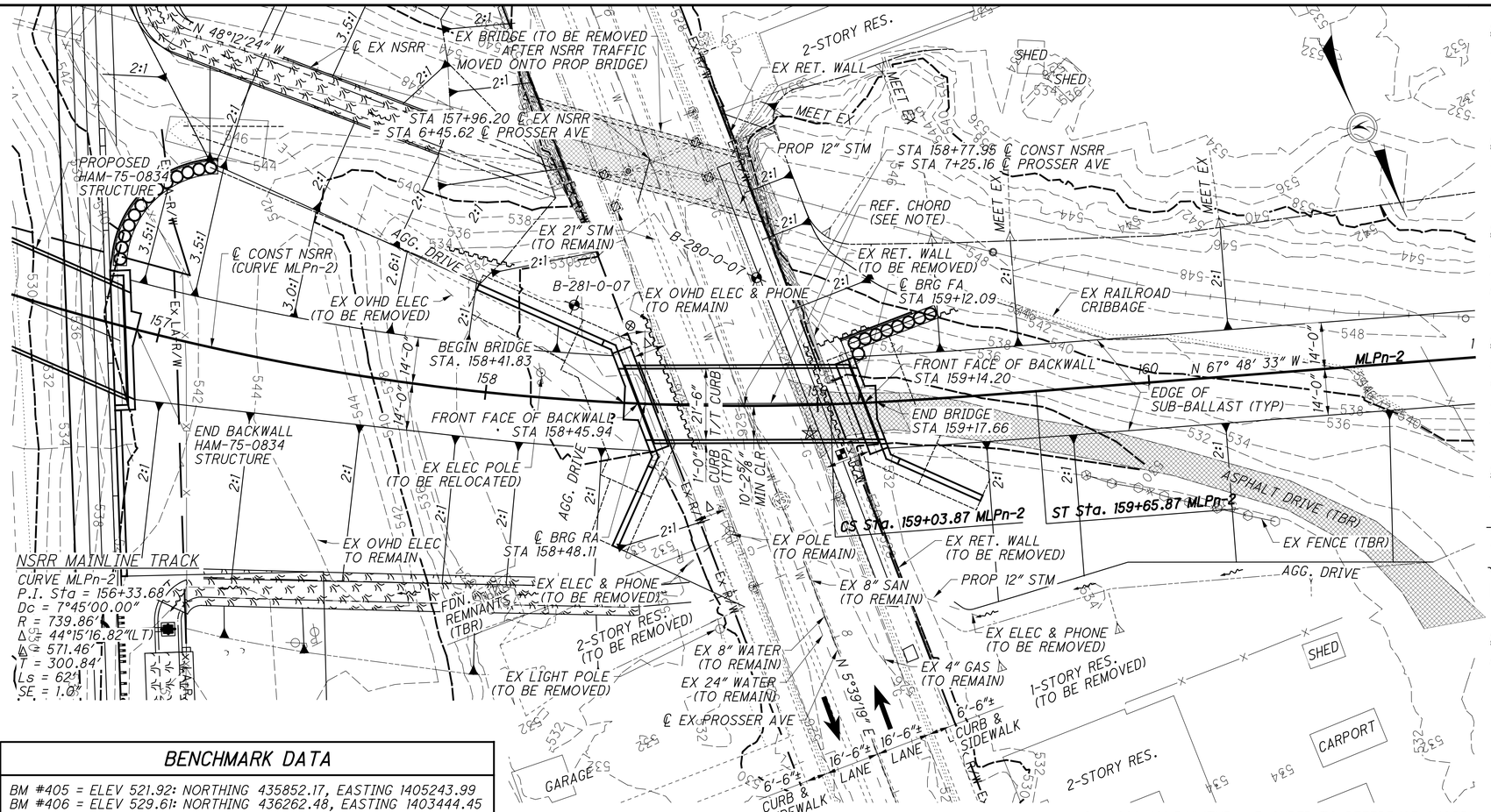
DESIGNED	DRAWN	REVIEWED	DATE
SNH	EFD	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3110142	
VDT		NSRR BR#: BR0018445	

REINFORCING STEEL LIST 3 OF 3
BRIDGE NO. HAM-75-0834 (NSRR BRIDGE CT-0.95: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER I.R. 75

HAM-75-7.85
PID No. 77889

41 / 41

118
286



NOTES

1. EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
2. FOR ADDITIONAL RAIL INFORMATION, SEE TRACK PLANS, SHEET 154 (286).

MILEPOST NOTE:

1. THE CENTER OF BRIDGE ALONG ℄ SURVEY AND CONSTRUCTION OF NS RAILROAD IS STA 158+77.95. THE DISTANCE TO NS RAILROAD MILEPOST CT-1.0 IS 581 FT. (0.11 MILES) EAST.

PROSSER AVE TRAFFIC DATA

2010 ADT = 2000 2010 ADTT = 2000
2035 ADT = 2000 2030 ADTT = 2000
DIRECTIONAL DISTRIBUTION = N/A

NORFOLK SOUTHERN RAIL TRAFFIC DATA

5 FREIGHT TRAINS PER DAY
0 PASSENGER TRAINS PER DAY
10 MPH OPERATING SPEED
SOURCE: NORFOLK SOUTHERN RAILROAD

LEGEND

SEE SHEET 12 (286) FOR PROJECT ABBREVIATIONS

- ⊕ - SOIL BORING LOCATION
- ☆ - POINT OF MINIMUM VERTICAL CLEARANCE = 20'-9¾"
- ~~~ - APPROX. LIMITS OF TEMPORARY SHORING
- ▨ - EXISTING BRIDGE REMOVAL

REFERENCE CHORD: ℄ TO ℄ ABUTMENT BEARINGS

REFERENCE CHORD BEARING IS N 63° 34' 07" W, LENGTH = 64'-0"

SOIL BORING DATA

BORING	STATION	OFFSET
B-280-0-07	6+90.45	17.19' LT
B-281-0-07	6+78.52	36.96' RT

BORING DATA REFERENCED FROM ℄ PROSSER AVENUE

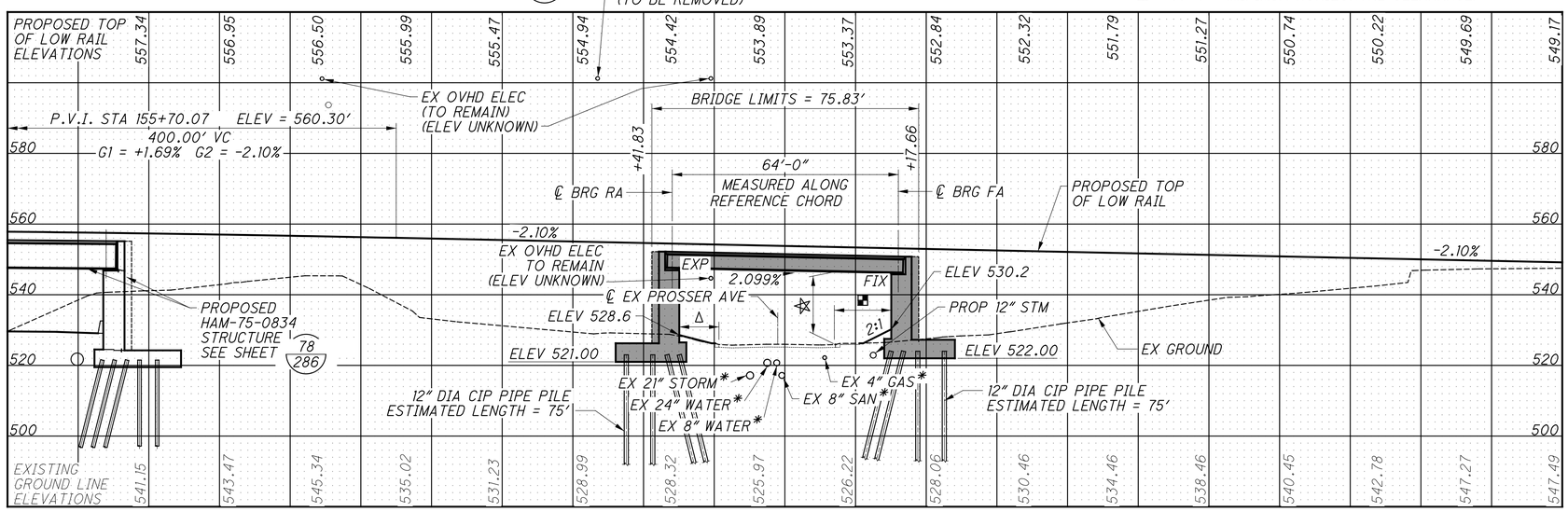
BENCHMARK DATA

BM #405 = ELEV 521.92: NORTHING 435852.17, EASTING 1405243.99
BM #406 = ELEV 529.61: NORTHING 436262.48, EASTING 1403444.45

NORTHING AND EASTING COORDINATES ARE GROUND COORDINATES.
FOR ADDITIONAL BENCHMARK INFORMATION, SEE ROADWAY PLAN SHEETS 7 (286).

⊗ = 20° 46' 34" (TYP, MEASURED TO REFERENCE CHORD)
Δ = 10'-0"± (MINIMUM HORIZONTAL CLEARANCE)
▪ = 14'-7"± (MINIMUM HORIZONTAL CLEARANCE)

PLAN



PROFILE ALONG ℄ CONST PROPOSED NS RAILROAD MAIN

* EXISTING UTILITIES TO REMAIN

EXISTING STRUCTURE

TYPE: SIMPLE-SPAN STEEL THRU GIRDER (UNKNOWN STEEL) WITH OPEN DECK ON CONCRETE AND MASONRY ABUTMENTS
SPAN: 69'-6"± C/C BEARINGS
WIDTH: 16'-6"± C/C GIRDERS
ORIGINAL DESIGN LOADING: COOPER E-65
ALIGNMENT: TANGENT
SKEW: 36° 08'± RF
YEAR BUILT: 1924 ORIGINAL CONST, REHABILITATED 1939 & 1948
STRUCTURE FILE NUMBER: NONE
DISPOSITION: TO BE REPLACED

PROPOSED STRUCTURE

TYPE: SIMPLE-SPAN STEEL DECK GIRDERS (ASTM A709, GR. 50) WITH A BALLASTED, COMPOSITE REINFORCED CONCRETE DECK ON FULL-HEIGHT CONCRETE WALL-TYPE ABUTMENTS
SPAN: 64'-0" C/C BEARINGS (MEASURED ALONG REFERENCE CHORD)
WIDTH: 21'-6" F/F CURBS (23'-6" O/O CUBRS)
LOADING: COOPER E-80 WITH DIESEL IMPACT & ALTERNATE LOAD
ALIGNMENT: 7°45'00" LEFT CURVE (CHORD DEFINITION) WITH 62'-0" LONG SPIRAL
SKEW: 20°46'34" RF (MEASURED TO REFERENCE CHORD)
COORDINATES: LATITUDE N 39° 10' 53" LONGITUDE W 84° 29' 09"
STRUCTURE FILE NUMBER: TO BE ASSIGNED AFTER NSRR & ODOT CONSTRUCTION AGREEMENT

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	SNH	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
CTM		NSRR BR#: BR0018444	

HAMILTON COUNTY
STA. 158+41.83
TO STA. 159+17.66

SITE PLAN
BRIDGE NO. HAM-75-PROSSER (NSRR BRIDGE CT-0.89)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

1 / 35

119 (286)

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HAM-075-PROSSER SPECIFIC NOTES

STANDARD RAILROAD BRIDGE NOTES AND DETAILS

THE NOTES ON THIS SHEET ARE SPECIFIC TO THE SUBJECT BRIDGE STRUCTURE. FOR STANDARD NOTES AND DETAILS APPLICABLE TO ALL RAILROAD BRIDGE STRUCTURES ON THIS PROJECT, INCLUDING THIS STRUCTURE, SEE THE FOLLOWING SHEETS: (8/286) THROUGH (20/286)

PROPOSED SEQUENCE OF CONSTRUCTION

1) INSTALL CAISSON WALL
2) INSTALL TEMPORARY SHEET PILE SHORING
3) EXCAVATE FOUNDATIONS AND INSTALL PILES
4) CONSTRUCT PROPOSED FOOTINGS, ABUTMENTS, AND WINGWALLS
5) REMOVE TEMPORARY SHEET PILE SHORING
6) CONSTRUCT PROPOSED SUPERSTRUCTURE
7) SHIFT NSRR ONTO PROPOSED ALIGNMENT
8) REMOVE EXISTING STRUCTURES AS REQUIRED
9) CONSTRUCT CIP CAISSON WALL FACING
10) GRADE TO FINAL ELEVATIONS

ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE EXISTING IN-SERVICE BRIDGE CARRYING NSRR OVER PROSSER AVE. THE REMOVAL OF ANCILLARY RETAINING WALLS ALONG PROSSER AVENUE SHALL ALSO BE INCLUDED WITH THIS ITEM.

THE REMOVAL OF THE EXISTING IN-SERVICE BRIDGE INCLUDES THE REMOVAL OF ALL SUPERSTRUCTURE ELEMENTS AND ALL SUBSTRUCTURE ELEMENTS TO A MINIMUM DISTANCE OF 2'-0" BELOW PROPOSED FINAL GRADE.

EXISTING PLANS ARE NOT AVAILABLE FOR THE STRUCTURE OR ANCILLARY RETAINING WALLS.

THE CONTRACTOR MUST REVIEW THE EXISTING STRUCTURE WHEN PREPARING THEIR BID. IT IS ASSUMED THAT THE EXISTING STRUCTURE IS FOUNDED ON PILES.

ITEM 507 - CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN, AS PER PLAN

FOR STANDARD NOTES FOR THIS ITEM, SEE SHEET: (9/286)

FOR FURNISHED PILE NOTES, SEE SHEET: (9/286)

SEE FOUNDATION PLAN SHEETS 7 | 35 AND 8 | 35 FOR ORDER LENGTHS, TIP ELEVATION, AND CUTOFF ELEVATION DETAILS FOR SPECIFIC PILES.

PILE DESIGN LOADS (ULTIMATE BEARING VALUE):
THE ULTIMATE BEARING VALUE IS 330 KIPS PER PILE FOR THE REAR AND FORWARD ABUTMENTS. THE ADDITION OF 16 TONS OF ULTIMATE BEARING VALUE PER REAR ABUTMENT PILE IS DUE TO THE POSSIBILITY OF DOWN DRAG FORCES INDUCED BY EMBANKMENT SETTLEMENT.THE ULTIMATE BEARING VALUE IS 164 KIPS PER PILE FOR ALL WINGWALL PILES.

ITEM 507 - CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN, AS PER PLAN (CONTINUED)

ABUTMENT PILES:
60 PILES, 80 FEET LONG, ORDER LENGTH (REAR)
47 PILES, 80 FEET LONG, ORDER LENGTH (FORWARD)
4 DYNAMIC LOAD TESTING ITEMS (2 PER ABUTMENT)

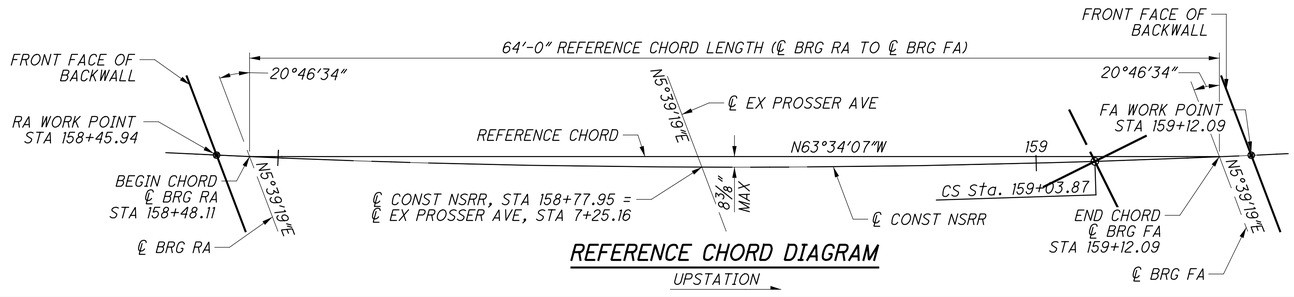
WINGWALL PILES:
44 PILES, 55 FEET, ORDER LENGTH (REAR)
16 PILES, 55 FEET, ORDER LENGTH (FORWARD)
4 DYNAMIC LOAD TEST ITEMS (2 FORWARD, 2 REAR)

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES (FT) AT THE CONTRACT BID PRICE.

ITEM 524 - DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN

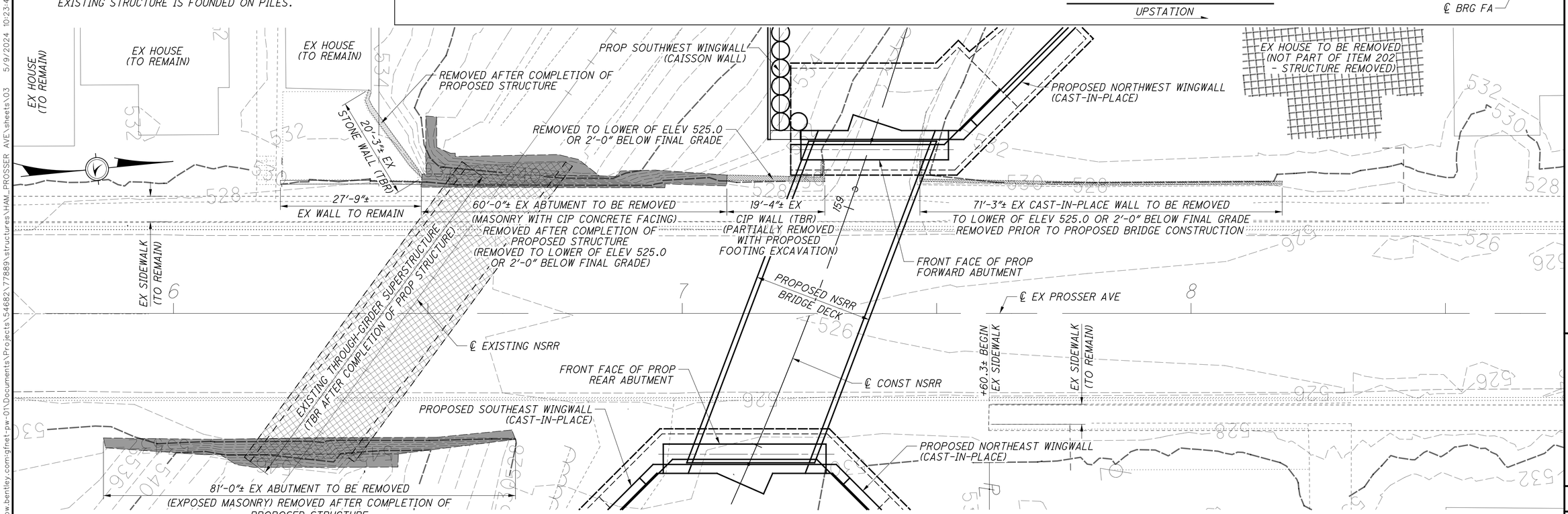
FOR STANDARD NOTES FOR THIS ITEM, SEE SHEET: (11/286)

ALTERNATING SHAFT CONSTRUCTION SHALL BE USED PER ODOT GEOTECHNICAL BULLETIN GB-7. THE IN-BETWEEN SHAFTS MAY BE SHIFTED UP TO 3" FROM THEIR PLAN LOCATION TO ALLOW FOR PROPER FITUP. IF SHAFT FITUP REQUIRES AN IN-BETWEEN SHAFT TO BE SHIFTED GREATER THAN 3" THE CAP SHALL BE WIDENED TO ACCOMODATE. ANY RESULTING EXTRA CONCRETE FOR THE CAP SHALL NOT BE REIMBURSED BY THE DEPARTMENT. IF, AFTER EXCAVATION, IT IS DEEMEED BY ODOT OR NSRR THAT THE GAP BETWEEN SHAFTS ALLOWS EXCESSIVE SOIL LOSS, THE GAP BETWEEN SHAFTS SHALL BE GROUTED TO ELIMINATE THE SOIL LOSS. THE GROUTING SHALL BE TO THE SATISFACTION OF NSRR AND SHALL BE AT NO ADDITIONAL COST THE DEPARTMENT.



REFERENCE CHORD DIAGRAM

UPSTATION



PLAN VIEW LIMITS OF ITEM 202 - STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
EFD	EFD	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
CTM		NSRR BR#: BR0018444	

BRIDGE SPECIFIC NOTES
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

2 / 35

120 / 286

ESTIMATED BRIDGE QUANTITIES

CALCULATED: VDT DATE: 6/11/15
CHECKED: SNH DATE: 6/12/15

ITEM	ITEM EXT.	TOTAL QUANTITY (06/BRF/13)	UNIT	DESCRIPTION	REAR		FWD	SUPER	GENERAL	APP SHEET NO.
202	11003	LUMP	LS	STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN					LUMP	2/35
202	23000	250	SY	PAVEMENT REMOVED			250			
202	75000	60	FT	FENCE REMOVED			60			
503	11101	LUMP	LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (REAR ABUTMENT)					LUMP	8/286
503	11101	LUMP	LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (SOUTHEAST WINGWALL)					LUMP	8/286
503	11101	LUMP	LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (FORWARD ABUTMENT)					LUMP	8/286
503	11101	LUMP	LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (SOUTHWEST WINGWALL)					LUMP	8/286
503	21301	LUMP	LS	UNCLASSIFIED EXCAVATION, AS PER PLAN					LUMP	8/286
505	11100	LUMP	LS	PILE DRIVING EQUIPMENT MOBILIZATION					LUMP	
507	00501	11,025	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN, AS PER PLAN	6,700		4,325			2/35
507	00551	11,860	FT	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN	7,220		4,640			9/286
509	10000	97,065	LB	EPOXY COATED REINFORCING STEEL	50,644		33,108	13,313		
511	34447	58	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN				58		9/286
511	34451	11	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN				11		9/286
511	44113	32	CY	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT, NOT INCLUDING FOOTING, AS PER PLAN	18		14			9/286
511	45603	285	CY	CLASS QC4 MASS CONCRETE, SUBSTRUCTURE WITH QC/QA, AS PER PLAN	159		126			9/286
511	46013	215	CY	CLASS QC1 CONCRETE WITH QC/QA, RETAINING/WINGWALL NOT INCLUDING FOOTING, AS PER PLAN	153		62			9/286
511	46511	165	CY	CLASS QC1 CONCRETE, FOOTING, AS PER PLAN	104		61			9/286
511	53016	344	CY	CLASS QC4 CONCRETE, MISC.: FOOTING MASS CONCRETE WITH QC/QA	188		156			9/286
511	71200	193	SF	CONCRETE, MISC.: FACING OF CANTILEVER WALLS			193			9/286
512	10001	478	SY	SEALING OF CONCRETE SURFACES, AS PER PLAN	262		216			10/286
512	10100	562	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	262		216	84		
512	44451	177	SY	TYPE E WATERPROOFING, AS PER PLAN				177		10/286
SPECIAL	51256202	177	SY	SPECIAL - ASPHALTIC PANEL				177		10/286
SPECIAL	51267400	4,534	SF	SPECIAL - WATERPROOFING, MISC.: DAMPPROOFING OF RAILROAD STRUCTURES	2,500		2,034			9/286
513	10221	10,585	LB	STRUCTURAL STEEL MEMBERS, LEVEL 1, AS PER PLAN				10,585		10/286
513	10321	166,810	LB	STRUCTURAL STEEL MEMBERS, LEVEL 6, AS PER PLAN				166,810		10/286
513	20000	1,656	EACH	WELDED STUD SHEAR CONNECTORS				1,656		
514	80020	5,340	SF	SHOP PAINTING AND FIELD TOUCH-UP OF STRUCTURAL STEEL				5,340		10/286
516	12201	46	FT	STRUCTURAL STEEL EXPANSION JOINT, AS PER PLAN				46		10/286
516	13600	259	SF	1" PREFORMED EXPANSION JOINT FILLER	149		110			
516	46201	6	EACH	BEARING DEVICE, ROCKER, AS PER PLAN				6		29/35
516	46900	6	EACH	BEARING DEVICE, MISC.: SELF-LUBRICATING CYLINDRICAL BEARING (EXP)				6		28/35
517	75001	161	FT	RAILING, ALUMINUM, AS PER PLAN	87		74			14/286
517	76300	136	FT	RAILING, MISC.: NSRR ALUMINUM HANDRAIL WITH VANDAL PROTECTION FENCE				136		15/286
518	21200	309	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	179		130			
518	42201	225	FT	8" PERFORATED CORRUGATED STEEL PIPE, 707.01, AS PER PLAN	115		110			10/286
518	42301	145	FT	8" NON-PERFORATED CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01, AS PER PLAN	60		85			10/286
518	63300	LUMP	LS	STRUCTURE DRAINAGE, MISC.: SUPERSTRUCTURE DRAINAGE SYSTEM					LUMP	10/286
523	20000	4	EACH	DYNAMIC LOAD TESTING	2		2			
523	20500	4	EACH	RESTRIKE	2		2			
524	94803	410	FT	DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN			410			11/286
524	95100	5	EACH	DRILLED SHAFTS, MISC.: CSL TESTING			5			11/286
SPECIAL	53000200	LUMP	LS	SPECIAL - STRUCTURES: SURVEY AND MONITORING OF TRACK AND TEMPORARY SHORING					LUMP	12/286
SPECIAL	53000200	LUMP	LS	SPECIAL - STRUCTURES: PRECONSTRUCTION CONDITION SURVEY					LUMP	12/286
SPECIAL	53013000	4,828	SF	SPECIAL - FORM LINER	2,734		2,094			10/286
SPECIAL	53014000	LUMP	LS	SPECIAL - STRUCTURAL SURVEY AND MONITORING OF VIBRATION					LUMP	13/286
625	25604	148	FT	CONDUIT, 4", 725.051				148		

DESIGN AGENCY
Gannett Fleming
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2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDT	VDT	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
SNH		NSRR BR#: BR0018444	

ESTIMATED BRIDGE QUANTITIES
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

PROPOSED FOOTING (FORWARD ABUTMENT)

PROPOSED FOOTING (REAR ABUTMENT)

SHEETING TO SUPPORT EX. ROADWAY (CONTRACTOR DESIGNED SHEETING TO BE SUBMITTED AND APPROVED BY NSRR)

℄ PROPOSED NSRR

1 PARTIAL PLAN 5 | 35

EX RETAINING WALL (FOUNDATION UNKNOWN)

SHEETING TO SUPPORT EX. ROADWAY (CONTRACTOR DESIGNED SHEETING TO BE SUBMITTED AND APPROVED BY NSRR)

EX. TIMBER CRIBBING TO REMAIN DURING ABUTMENT CONSTRUCTION

19'-6"± NORMAL TO TRACK

21'-9"± NORMAL TO SHORING

PROPOSED CONCRETE SWALE

41'-6"± NORMAL TO SHORING

CONTRACTOR TO DIRECT TEMPORARY DRAINAGE AWAY FROM SHORING AND INTO EX STORM INLET (PLAN TO BE SUBMITTED TO AND APPROVED BY NSRR)

EX STM. INLET

EX STM. INLET

EX STM. INLET

41'-2"± NORMAL TO SHORING

EX MASONRY ABUTMENT (FOUNDATION UNKNOWN)

℄ EX. NSRR

EX MASONRY ABUTMENT (FOUNDATION UNKNOWN)

2

TEMP 1H

TEMP 526.5

TEMP 530.0

TEMP 530.0

TEMP 526.5

TEMP 1H

TEMP 1H

TEMP 526.0

TEMP 530.0

TEMP 530.0

TEMP 526.0

TEMP 1H

TEMP 1H

NOTES:

1. FOR SECTION 2, SEE SHEET 6 | 35 .

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
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COLUMBUS, OHIO 43231

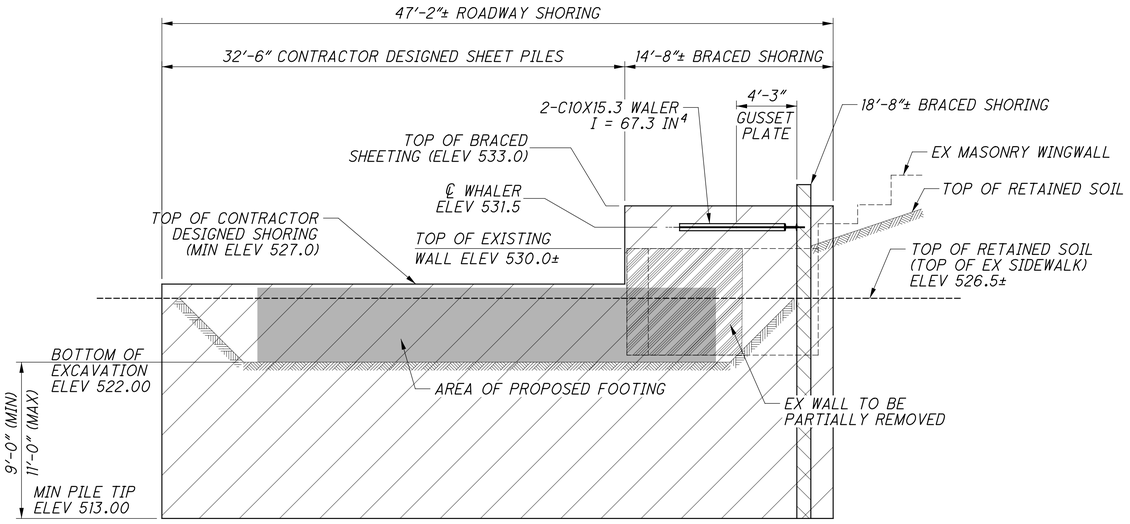
DESIGNED	DRAWN	REVIEWED	DATE
SNH	SNH	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
CTM		NSRR BR#: BR0018444	

SHORING AND EXCAVATION SCHEMATIC NEAR RAILROAD
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

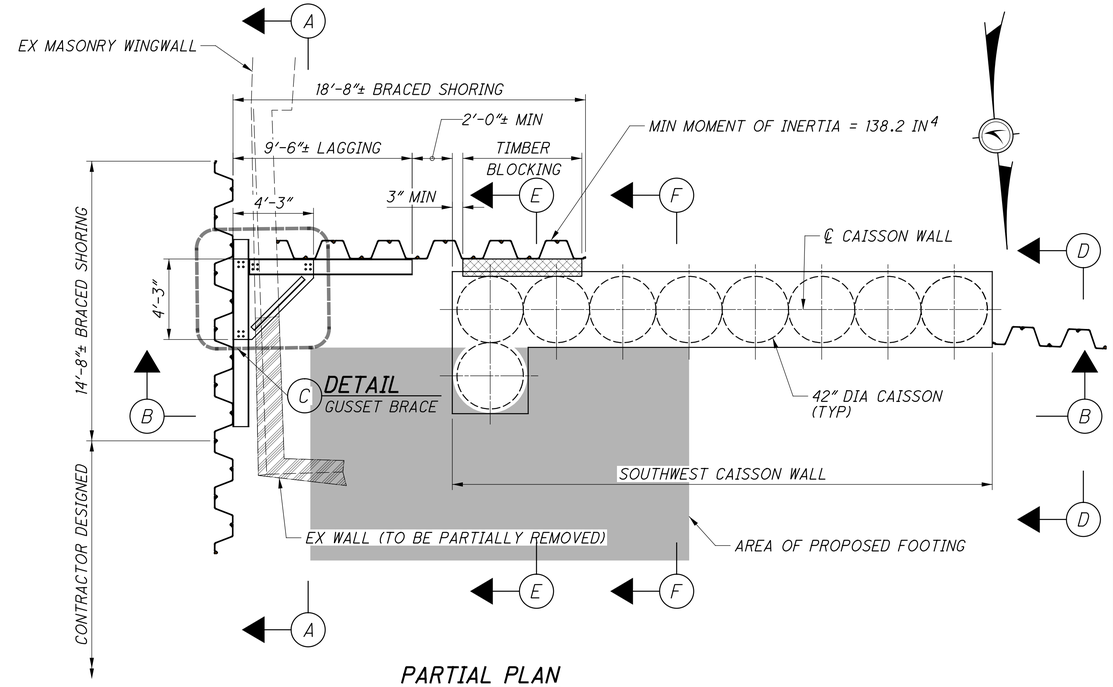
HAM-75-7.85
PID No. 77889

4 / 35

122
286

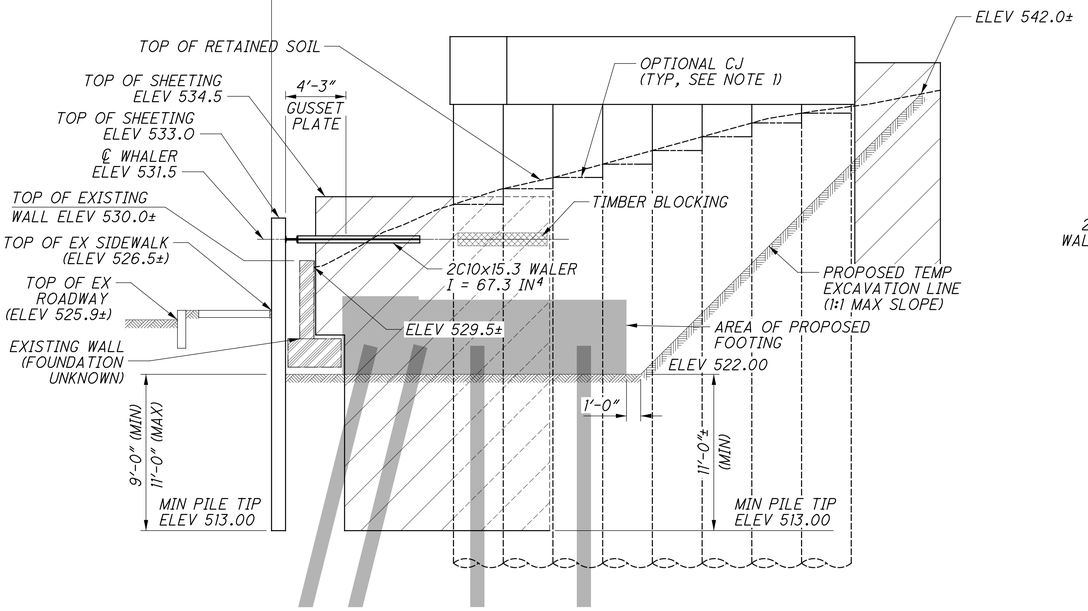


(A) ELEVATION ALONG ROADWAY
FORWARD ABUTMENT, LOOKING DOWNSTATION

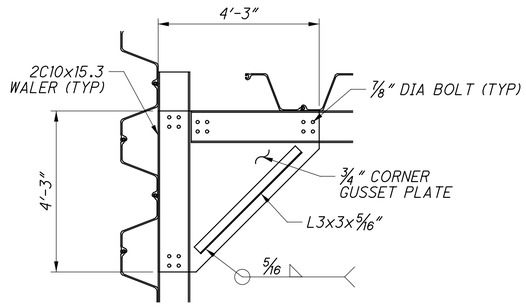


PARTIAL PLAN
(AT SOUTHWEST WINGWALL)
UPSTATION

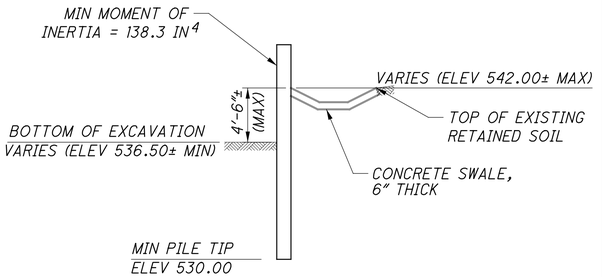
SUGGESTED SHORING SEQUENCE
1) INSTALL CAISSON WALL SHAFTS
2) CONSTRUCT CAISSON WALL CAP
3) INSTALL BRACED SHEETING
4) INSTALL BRACING AND BLOCKING
5) EXCAVATION TO ELEVATION 522.0
6) PARTIALLY REMOVE EX WALL
7) CONSTRUCT PROPOSED FOOTINGS, ABUTMENTS, AND WINGWALLS
8) REMOVE BRACED AND CONTRACTOR DESIGNED SHORING
9) GRADE TO FINAL ELEVATIONS AND CAST CIP FACE ATOP CAISSON WALL



(B) ELEVATION AT CAISSON WALL
FORWARD ABUTMENT, LOOKING SOUTH



(C) DETAIL
GUSSET BRACE PLATE



(D) SECTION OF SHEETING
FORWARD ABUTMENT, TEMPORARY CONDITION

NOTES:
1. OPTIONAL CONSTRUCTION JOINT AT EXISTING GROUNDLINE OF EACH CAISSON. THE CAISSON WALL IS USED FOR TEMPORARY SHORING AND INCORPORATED AS A FINAL WINGWALL. FOR FURTHER CAISSON DETAILS, INCLUDING REINFORCING, SEE SHEET 22 35.
2. CONTRACTOR SHALL PROBE TO ESTABLISH THE LIMITS OF THE EXISTING RETAINING WALL FOOTING. IF SHORING DEVIATES FROM WHAT IS SHOWN ON THESE PLANS, NEW SHORING PLANS SHALL BE SUBMITTED TO ODOT AND NSRR FOR REVIEW AND APPROVAL.
3. ALL WALER TO SHEET PILE CONNECTIONS SHALL BE MADE WITH WELDS, WITH FILL PLATES BEING UTILIZED AS NECESSARY. ALL BOLTED CONNECTIONS ARE TO BE FIELD DRILLED HOLES, WITH CONTRACTOR OPTION TO WELD INSTEAD. CONTRACTOR OPTION MUST BE SUBMITTED TO NSRR FOR REVIEW AND APPROVAL.
4. CAISSON WALL TEMPORARY SHORING SHALL BE CASED TEMPORARILY. SEE STANDARD RAILROAD BRIDGE PLAN NOTES FOR MORE INFORMATION.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
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COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
SNH	CJG/EFD	CTV	12-19-23
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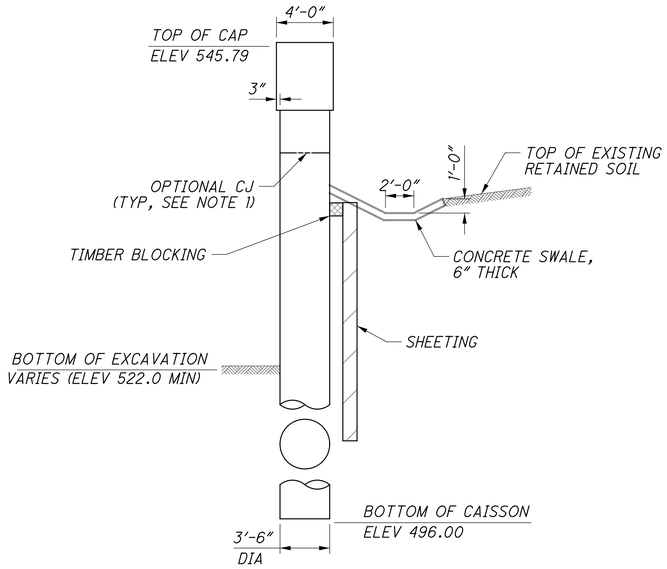
CTM		NSRR BR#: BR0018444	

RAILROAD SHORING PLAN & ELEVATIONS
BRIDGE NO. HAM-75-PROSSER (INSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

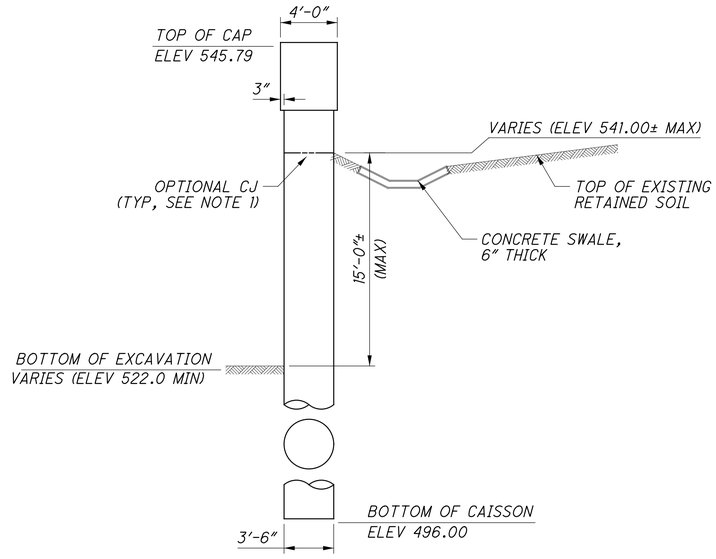
HAM-75-7.85
PID No. 77889

5 / 35

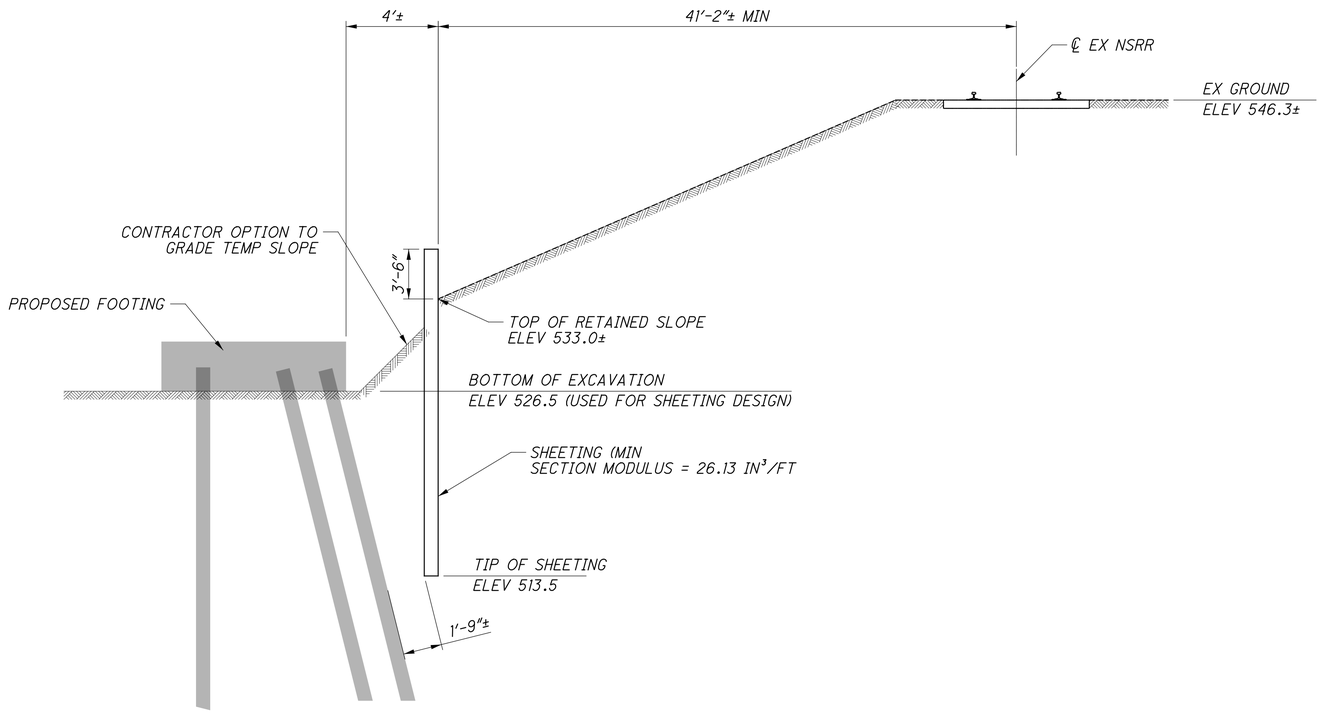
123
286



E SECTION OF CAISSON WALL
FORWARD ABUTMENT, TEMPORARY CONDITION



F SECTION OF CAISSON WALL
FORWARD ABUTMENT, TEMPORARY CONDITION



2 SECTION OF UNBRACED SHORING
REAR ABUTMENT, SOUTHEAST WINGWALL

NOTES:

1. OPTIONAL CONSTRUCTION JOINT AT EXISTING GROUNDLINE OF EACH CAISSON. THE CAISSON WALL IS USED FOR TEMPORARY SHORING AND INCORPORATED AS A FINAL WINGWALL. FOR FURTHER CAISSON DETAILS, INCLUDING REINFORCING, SEE SHEET 22|35.
2. CAISSON WALL TEMPORARY SHORING SHALL BE CASED TEMPORARILY. SEE STANDARD RAILROAD BRIDGE PLAN NOTES FOR MORE INFORMATION.

DESIGN AGENCY
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COLUMBUS, OHIO 43231

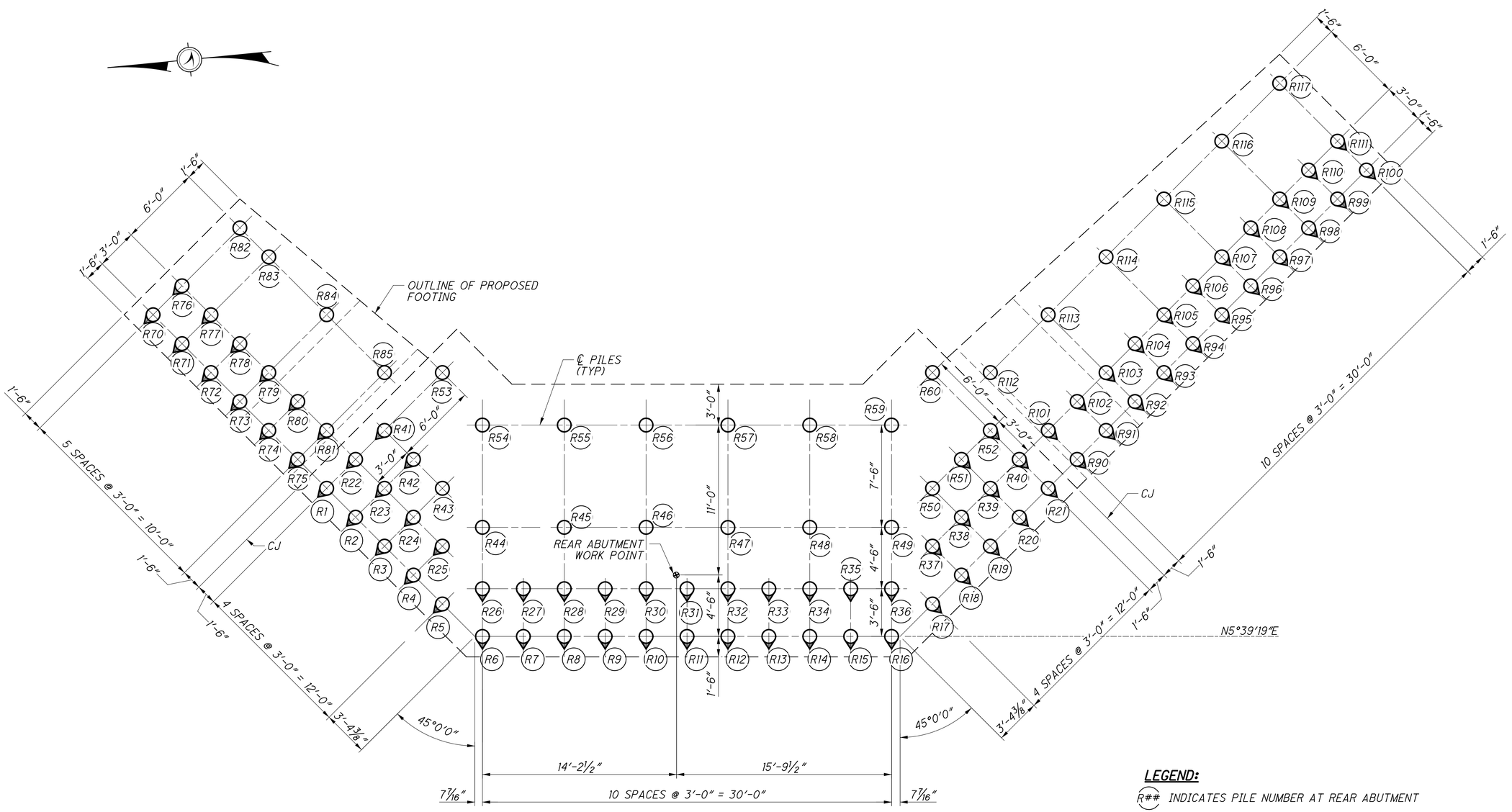
DESIGNED	DRAWN	REVIEWED	DATE
SNH	CJG/EFD	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
CTM		NSRR BR#: BR0018444	

RAILROAD SHORING PLAN & ELEVATIONS
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

6 / 35

124
286



FOUNDATION PLAN - REAR ABUTMENT

PILE DATA			
PILE NUMBER	PILE CUTOFF ELEVATION	TIP ELEVATION	ORDER PILE LENGTH (EACH) (FEET)
R1 - R60	523.00	450.00	80
R70 - R85	528.00	482.50	55
R90 - R117	528.00	482.50	55

* PILE NUMBERS R61-R69 AND R86-R89 ARE NOT USED

LEGEND:

R## INDICATES PILE NUMBER AT REAR ABUTMENT

INDICATES 12" DIA CIP CONCRETE PILE BATTERED 1:4 IN THE DIRECTION SHOWN (NOTE 1)

INDICATES 12" DIA CIP CONCRETE PILE

NOTES:

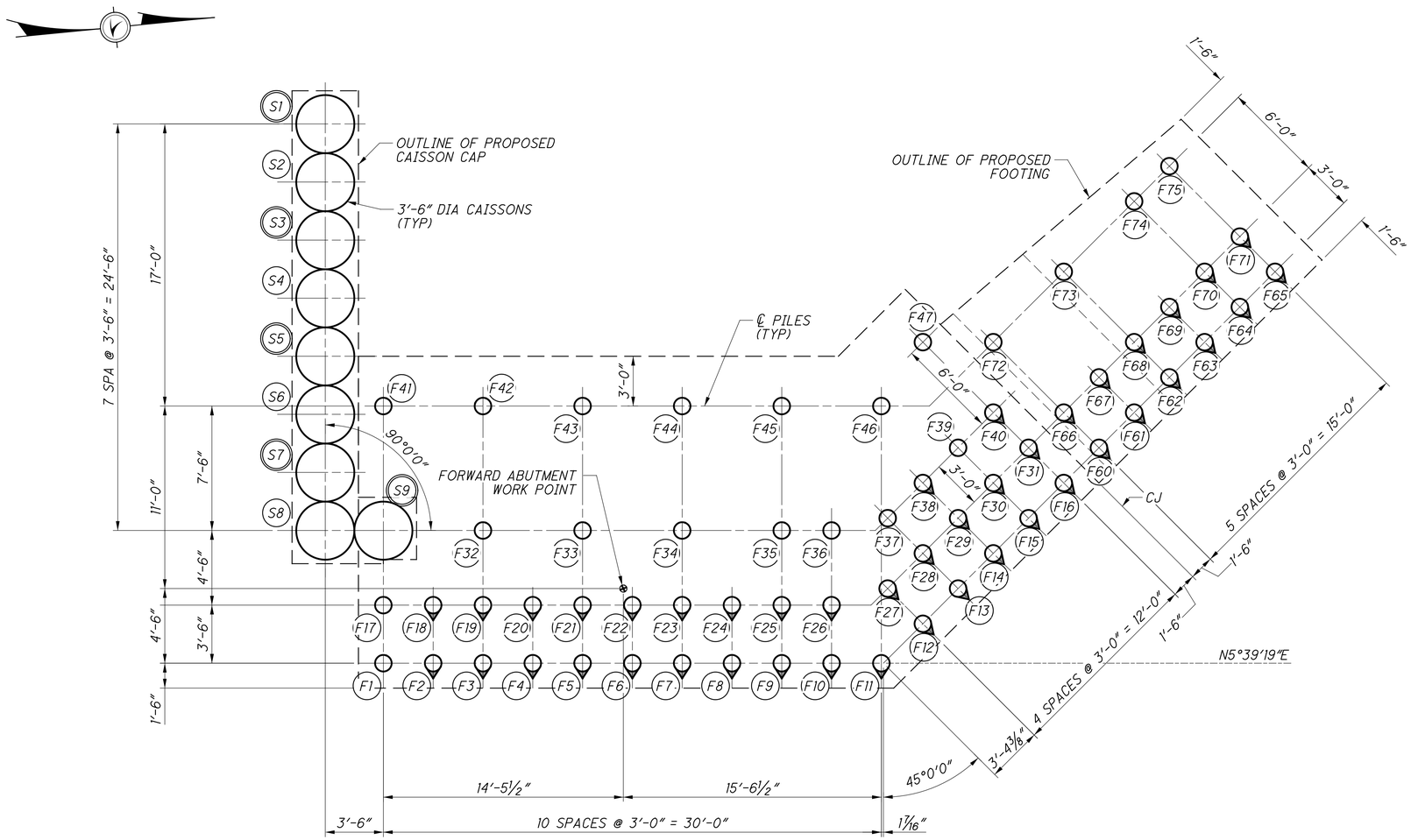
1. PILE SPACING IS MEASURED ALONG THE BOTTOM OF FOOTING.
2. FOR FORWARD PILE LAYOUT PLAN, SEE SHEET 8 | 35.
3. FOR WORK POINT DEFINITION, SEE SHEET 10 | 35.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDK	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

REAR ABUTMENT PILE LAYOUT
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889



FOUNDATION PLAN - FORWARD ABUTMENT

PILE DATA			
PILE NUMBER	PILE CUTOFF ELEVATION	TIP ELEVATION	ORDER PILE LENGTH (EACH) (FEET)
F1 - F47	524.00	450.00	80
F60 - F75	529.25	483.50	55

* PILE NUMBERS F48-F59 ARE NOT USED

LEGEND:

F## INDICATES PILE NUMBER AT FORWARD ABUTMENT

S# INDICATES DRILLED SHAFT NUMBER AT FORWARD ABUTMENT (DOUBLE CIRCLE INDICATES CSL TESTING REQUIRED)

INDICATES 12" DIA CIP CONCRETE PILE BATTERED 1:4 IN THE DIRECTION SHOWN (NOTE 1)

INDICATES 12" DIA CIP CONCRETE PILE

NOTES:

1. PILE SPACING IS MEASURED ALONG THE BOTTOM OF FOOTING.
2. FOR REAR PILE LAYOUT PLAN, SEE SHEET 7 | 35 .
3. FOR WORK POINT DEFINITION, SEE SHEET 16 | 35 .

CAISSON DATA						
CAISSON NUMBER	TOP OF CAISSON ELEV	TOP OF VERTICAL REINF. ELEV	TIP ELEV	SPIRAL LENGTH	SHAFT PAY LEN. (EA)	VERTICAL REINF. LENGTH
C1-C9	541.50**	544.25	496.00	44'-9"	45'-6"	48'-0"

** PAY ELEVATION. CONTRACTOR HAS OPTION TO CONSTRUCT TOP OF CAISSON TO ELEV 541.75 AT NO ADDITIONAL COST TO THE STATE.

DESIGN AGENCY
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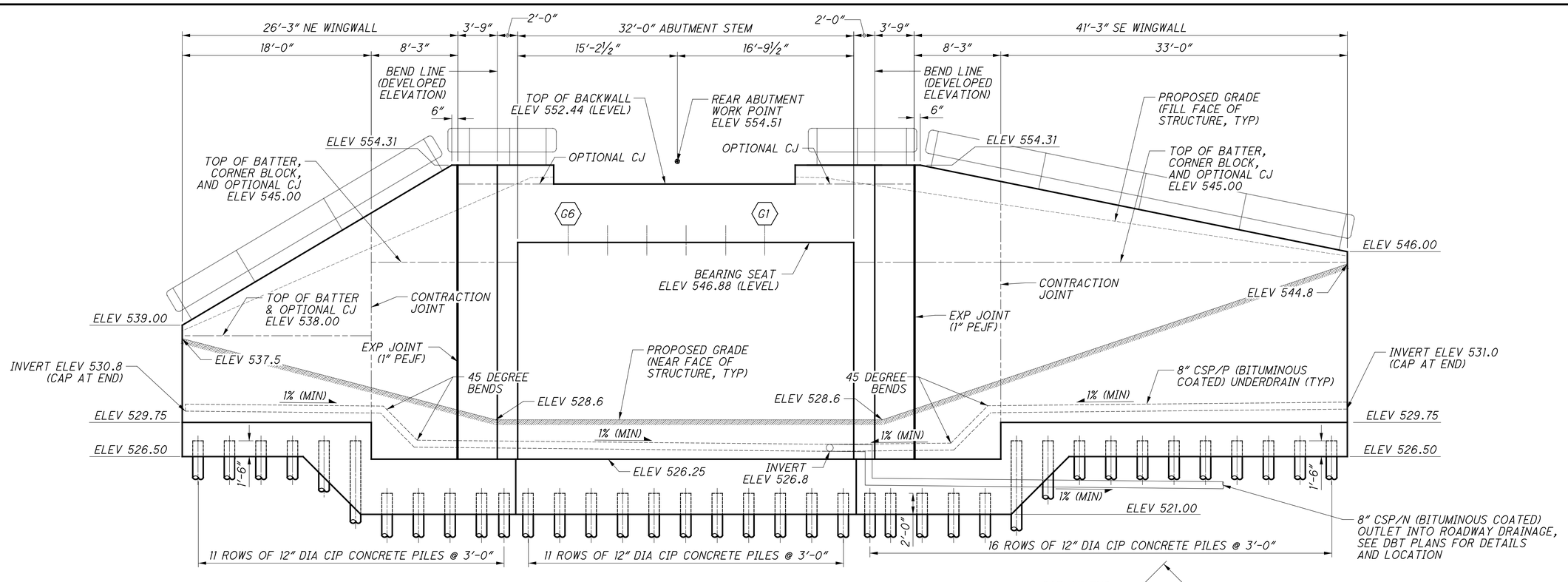
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

FORWARD ABUTMENT PILE LAYOUT
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

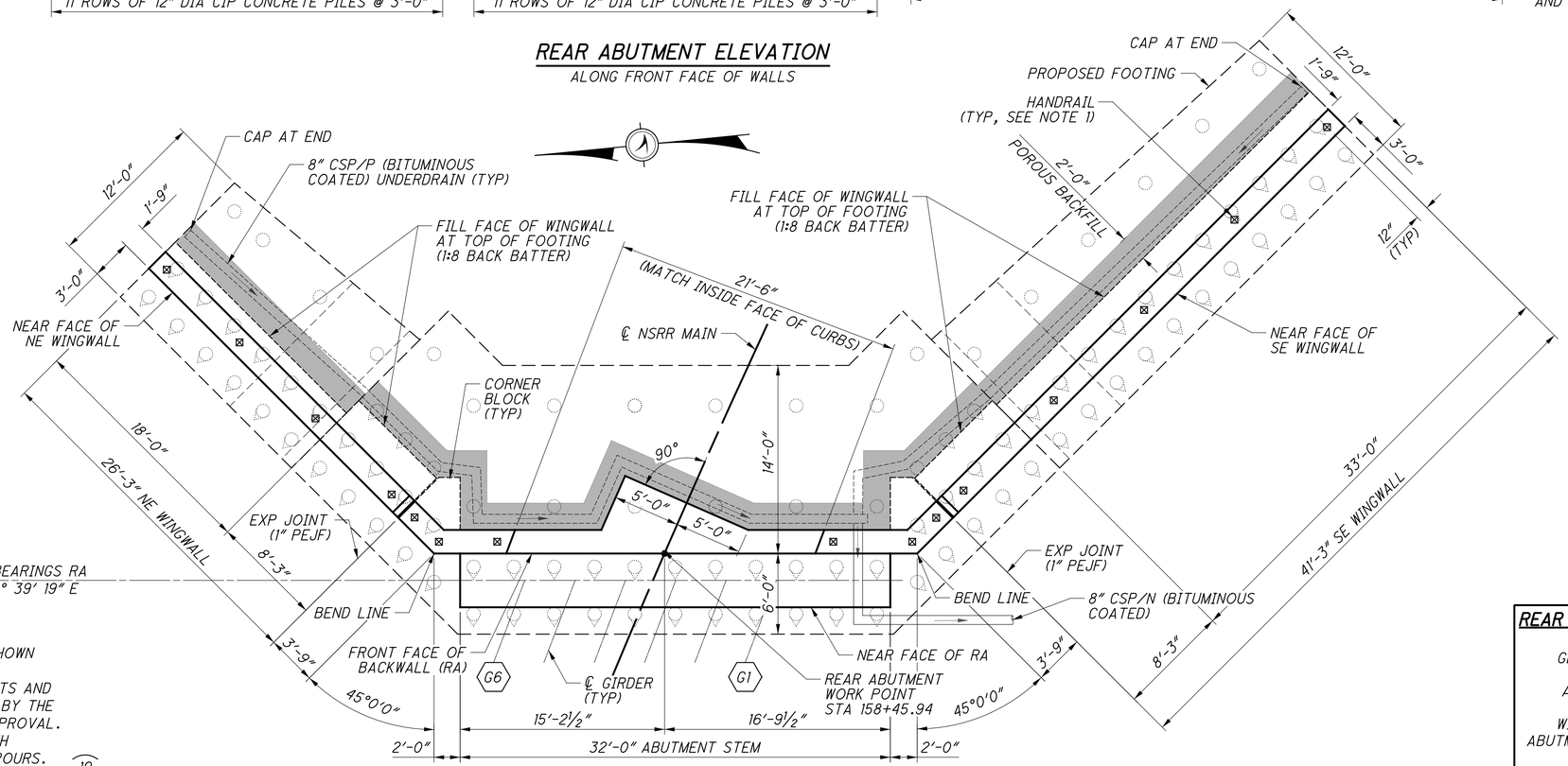
8 / 35

126 / 286



REAR ABUTMENT ELEVATION

ALONG FRONT FACE OF WALLS



REAR ABUTMENT PLAN

NOTES:

1. FOR HANDRAIL DETAILS, SEE SHEET 14 (286). POST LOCATIONS SHOWN ARE SCHEMATIC, FINAL LAYOUT OF POSTS AND HANDRAIL JOINTS SHALL BE SUBMITTED BY THE CONTRACTOR FOR NSRR REVIEW AND APPROVAL.
2. THE EXPANSION JOINT IS A FULL-DEPTH JOINT WITH 1" PEJF PLACED BETWEEN POURS.
3. FOR CONTRACTION JOINT DETAILS, SEE SHEET 19 (286).

REAR ABUTMENT SHEET REFERENCES

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDK	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

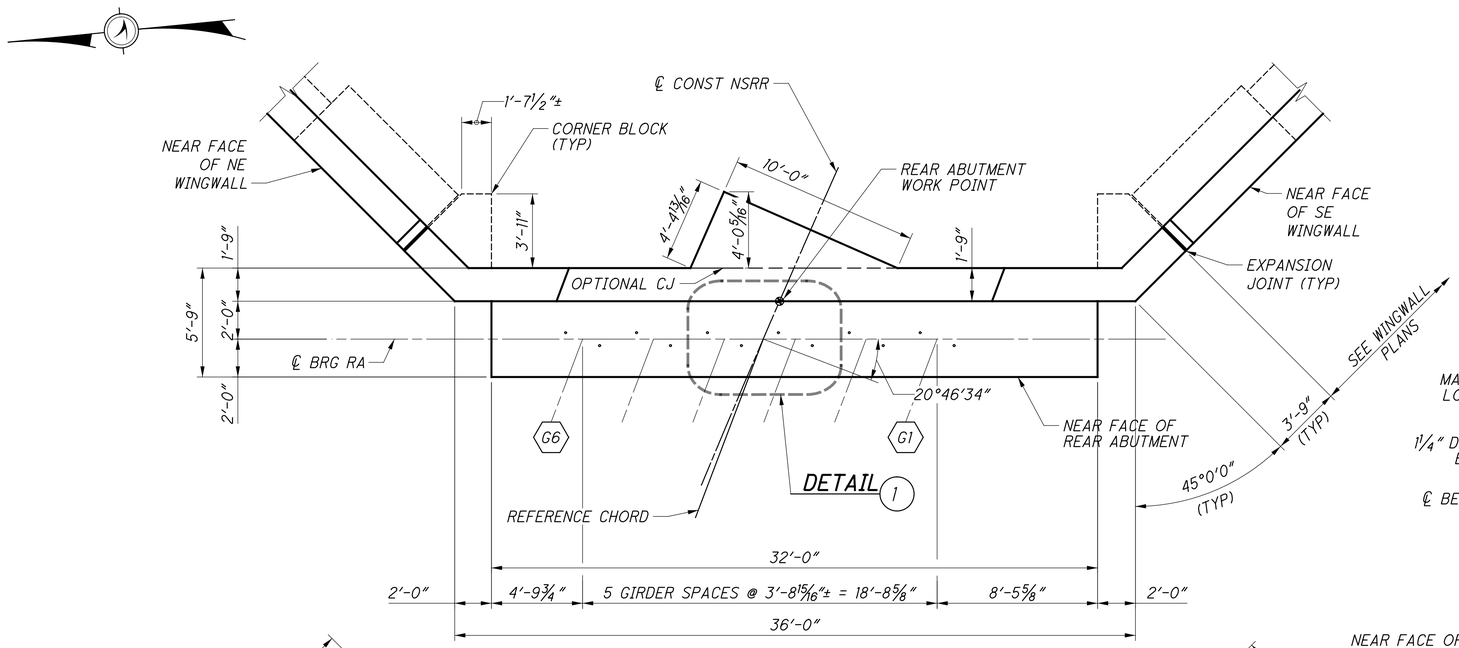
REAR ABUTMENT: PLAN AND ELEVATION

BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

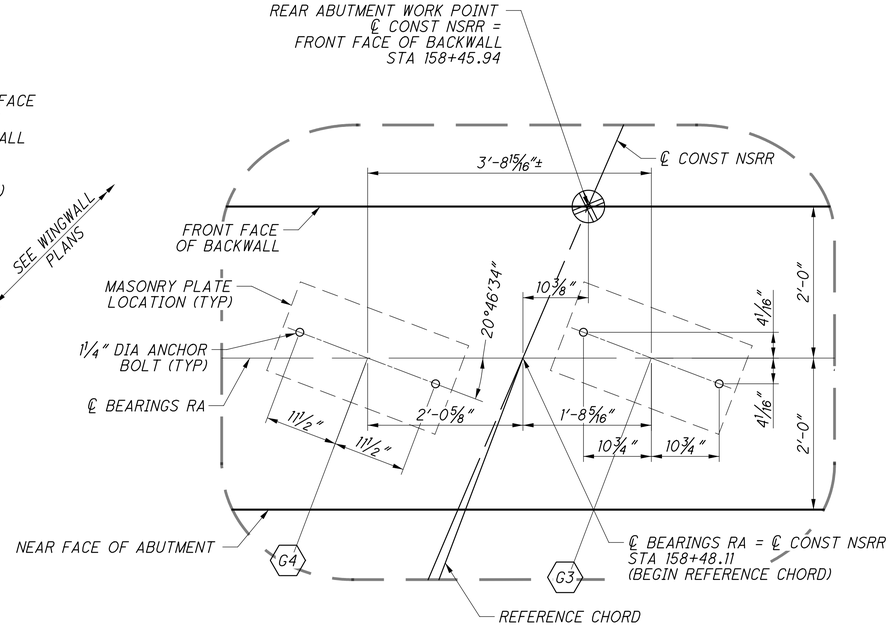
HAM-75-7.85
PID No. 77889

9 / 35

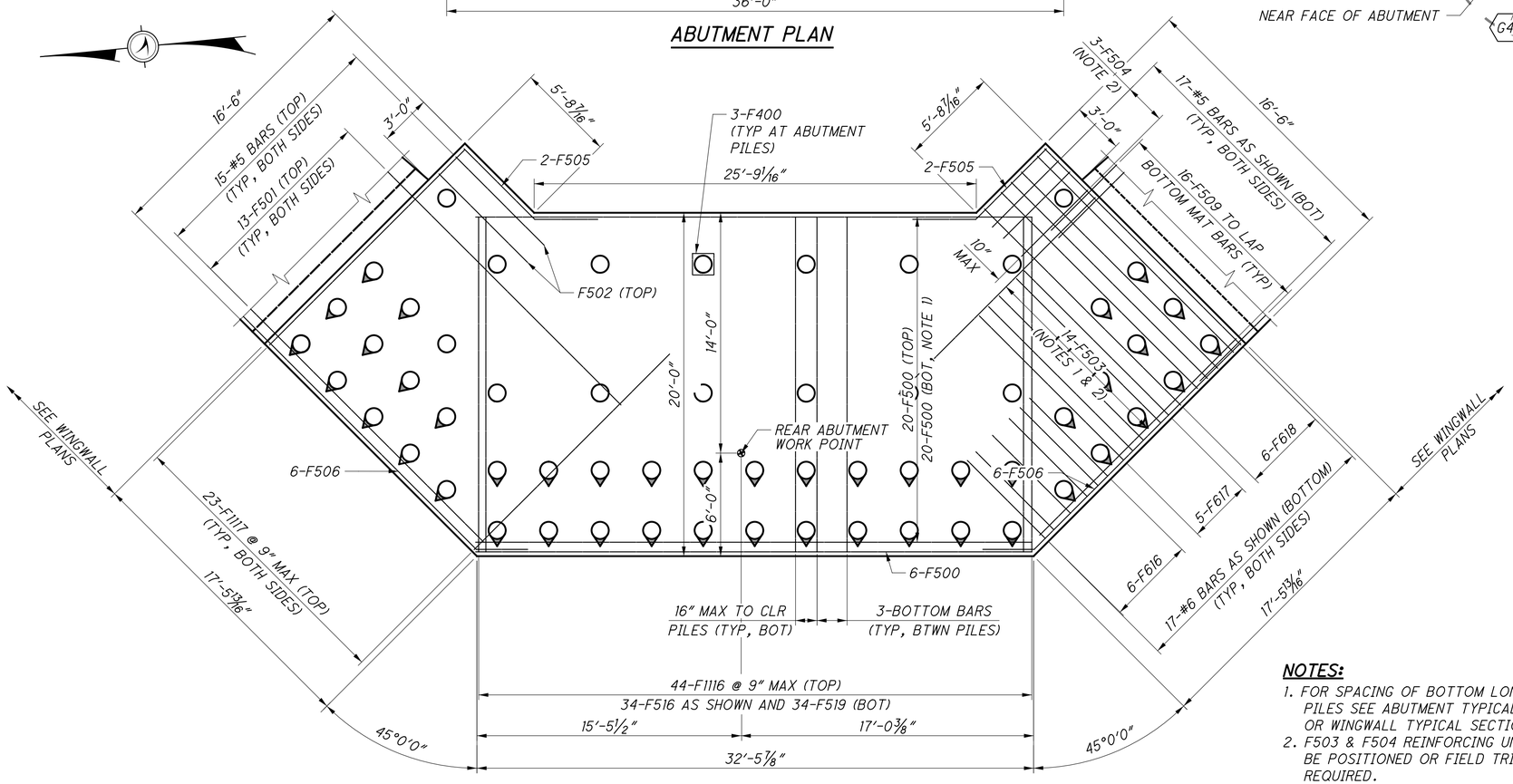
127 (286)



ABUTMENT PLAN



(1) WORK POINT DEFINITION
INCLUDING ANCHOR BOLT LAYOUT



FOOTING PLAN

NOTES:
1. FOR SPACING OF BOTTOM LONGITUDINAL BARS AROUND PILES SEE ABUTMENT TYPICAL SECTION, SHEET 21|35 OR WINGWALL TYPICAL SECTION, SHEET 22|35.
2. F503 & F504 REINFORCING UNDER WINGWALL SECTION MAY BE POSITIONED OR FIELD TRIMMED TO CLEAR PILES AS REQUIRED.
3. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 33|35 .

REAR ABUTMENT SHEET REFERENCES

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

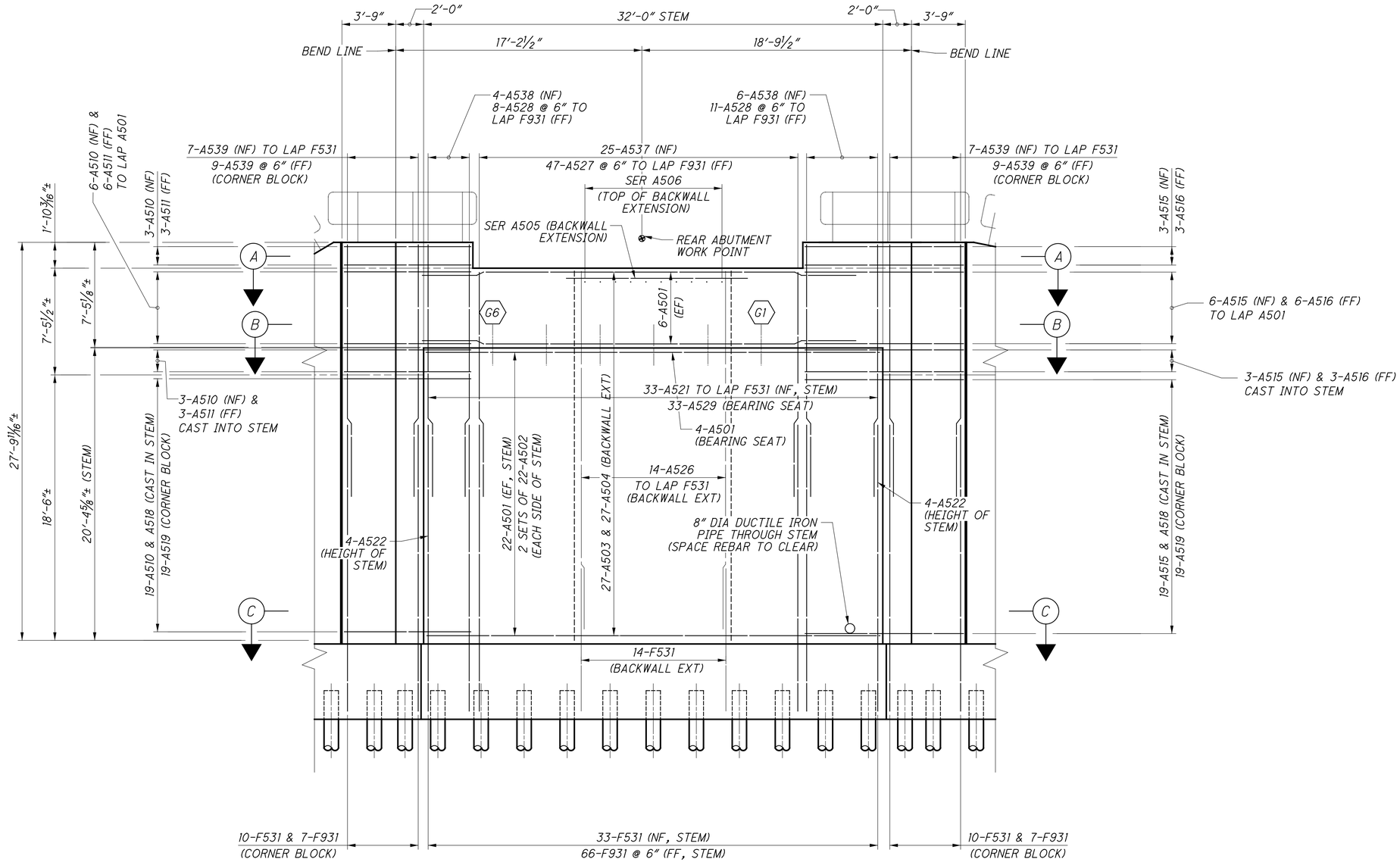
DESIGNED	DRAWN	REVIEWED	DATE
VDK	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

REAR ABUTMENT PLAN AND FOOTING PLAN
BRIDGE NO. HAM-75-PROSSER (INSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

10 / 35

128 / 286



REAR ABUTMENT ELEVATION

SEE NOTE 1

NOTES:

1. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 33|35 .
2. FOR SECTIONS A-A, B-B AND C-C, SEE SHEET 14|35 .

REAR ABUTMENT SHEET REFERENCES

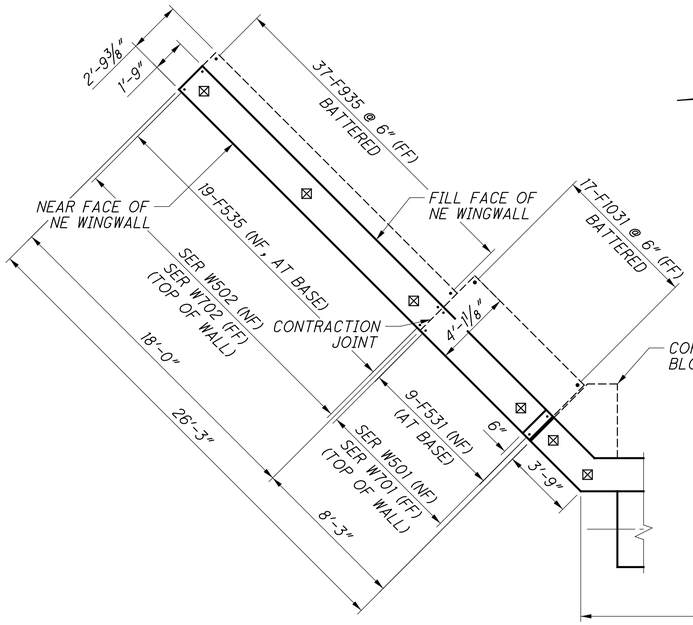
DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDK	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

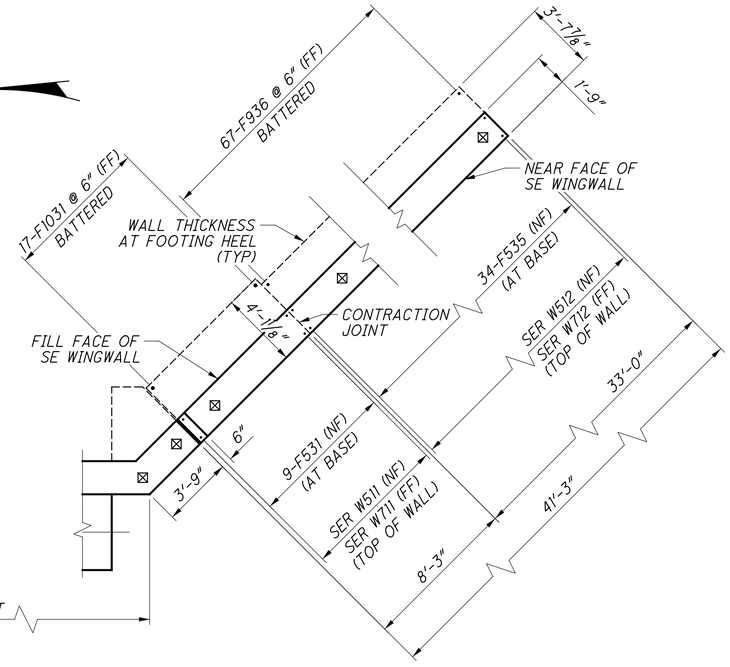
REAR ABUTMENT ELEVATION DETAILS

BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889



WINGWALL PLAN - NE WALL

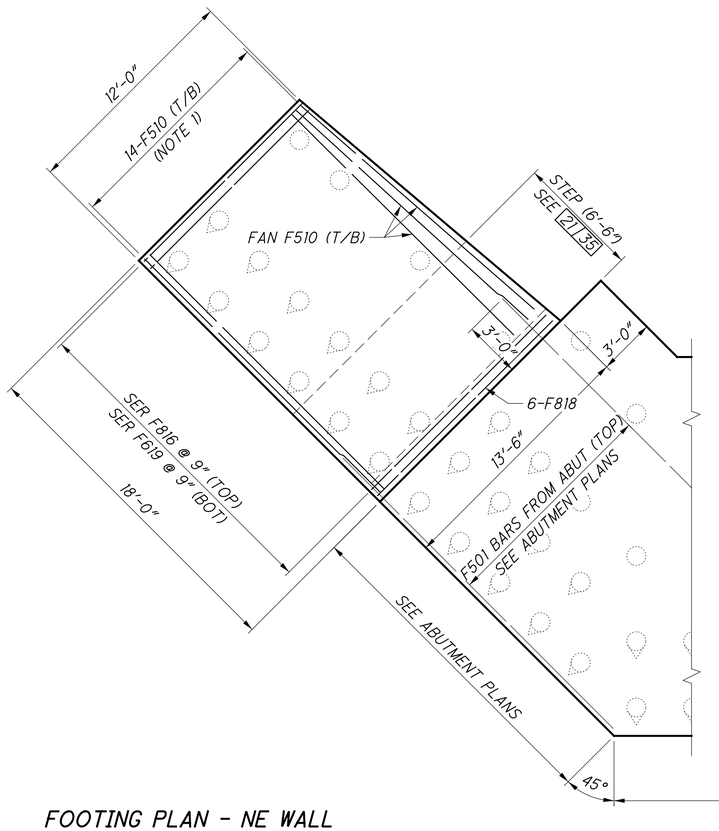


WINGWALL PLAN - SE WALL

SEE ABUTMENT PLANS

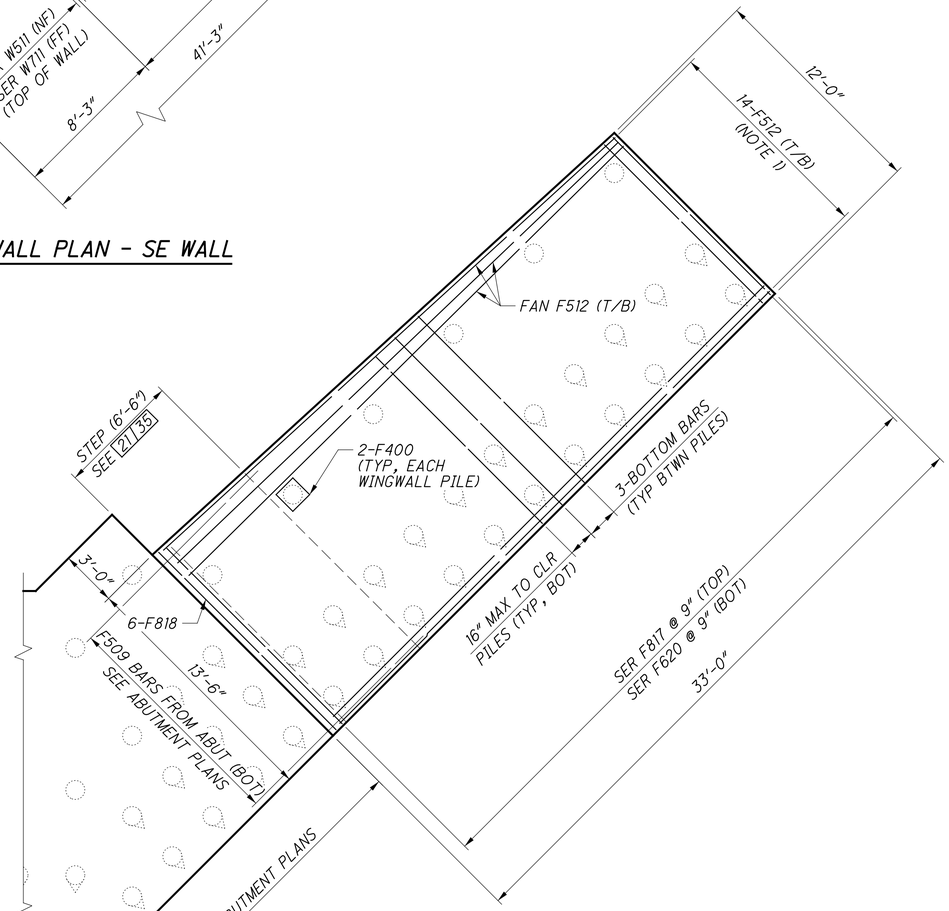
NOTES:

1. FOR SPACING OF FOOTING BOTTOM LONGITUDINAL BARS AROUND PILES SEE ABUTMENT TYPICAL SECTION, SHEET 21|35 OR WINGWALL TYPICAL SECTION, SHEET 22|35 .
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 33|35 .



FOOTING PLAN - NE WALL

SEE ABUTMENT PLANS



FOOTING PLAN - SE WALL

REAR ABUTMENT SHEET REFERENCES

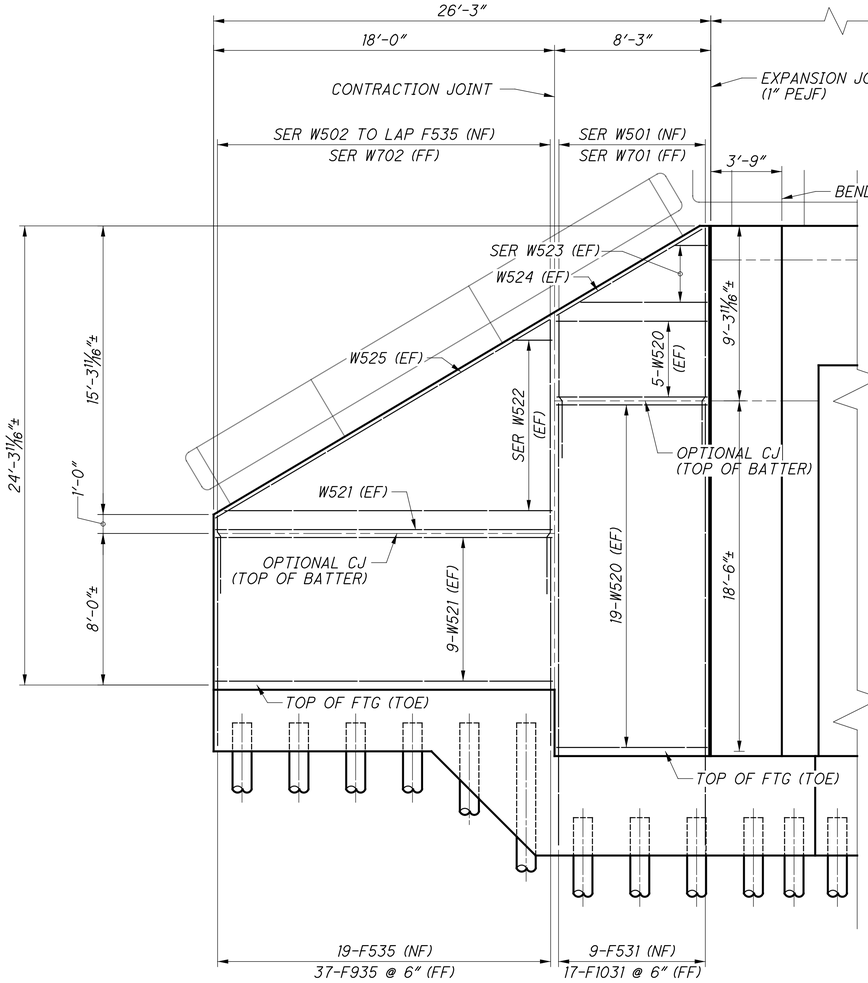
DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDK	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

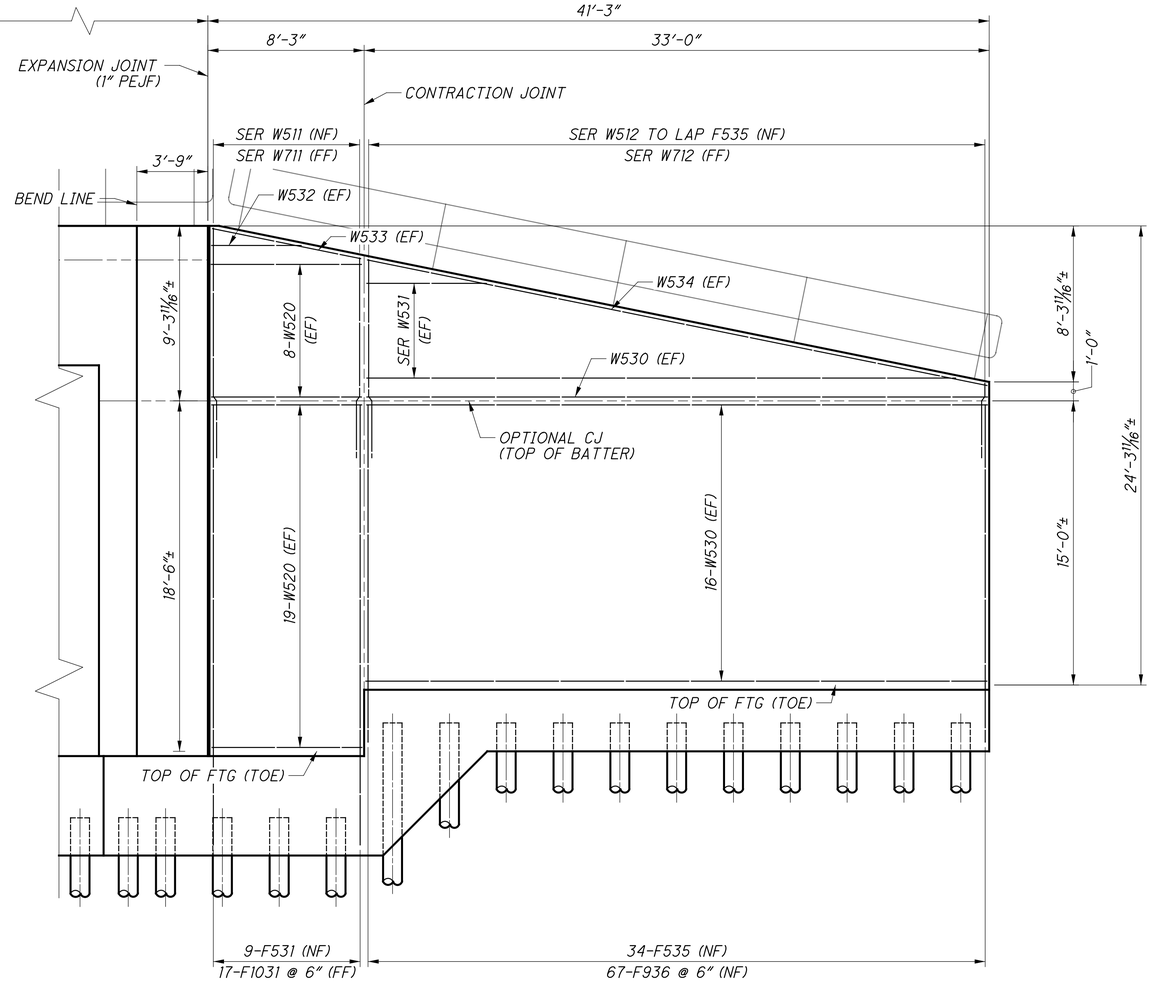
REAR ABUTMENT WINGWALL PLANS

BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889



NORTHEAST WINGWALL ELEVATION



SOUTHEAST WINGWALL ELEVATION

NOTES:

1. FOR SPACING OF FOOTING BOTTOM LONGITUDINAL BARS AROUND PILES SEE ABUTMENT TYPICAL SECTION, SHEET 21|35 OR WINGWALL TYPICAL SECTION, SHEET 22|35.
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES SEE SHEET 33|35 .
3. VERTICALLY ADJUST AND FIELD CUT VERTICAL REINFORCING AS REQUIRED TO CLEAR PILES.

REAR ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	7|35
GENERAL PLAN & ELEV:	9|35
ABUTMENT PLANS:	10|35
ABUTMENT ELEVATION:	11|35
WINGWALL PLANS:	12|35
WINGWALL ELEVATIONS:	13|35
ABUTMENT STEM SECTIONS:	14|35
TYPICAL SECTIONS:	21|35 - 22|35
EXPANSION BEARING:	28|35
REINFORCING LIST:	33|35

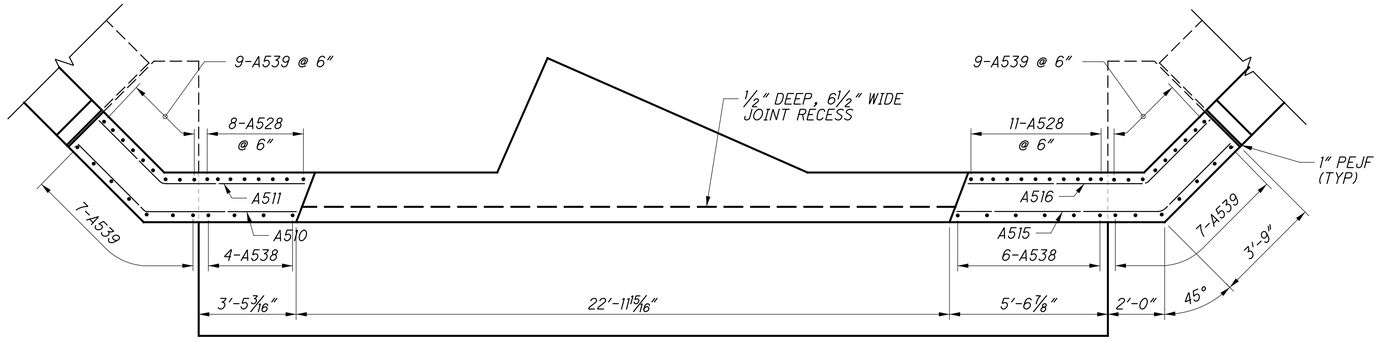
DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDK	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

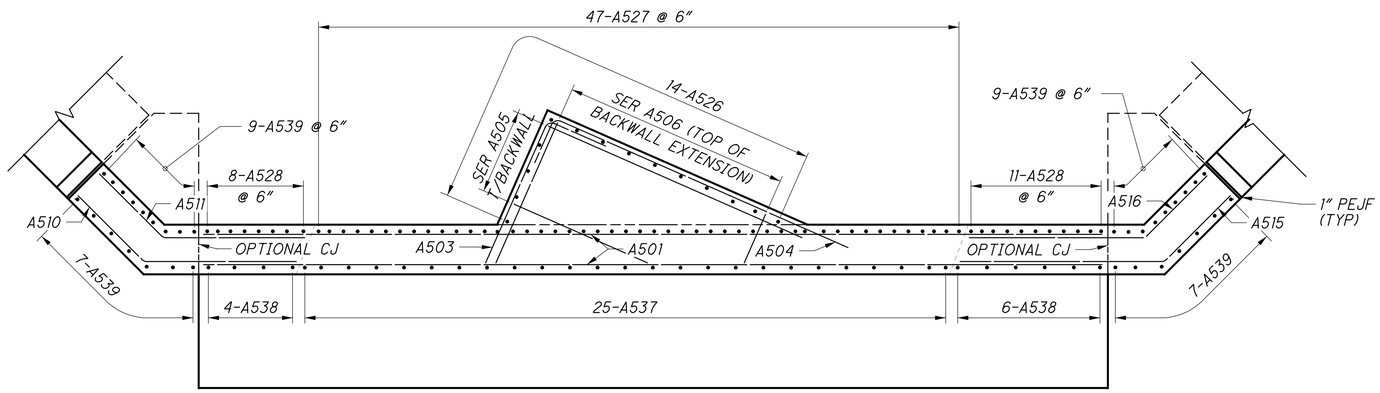
REAR ABUTMENT WINGWALL ELEVATIONS

BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

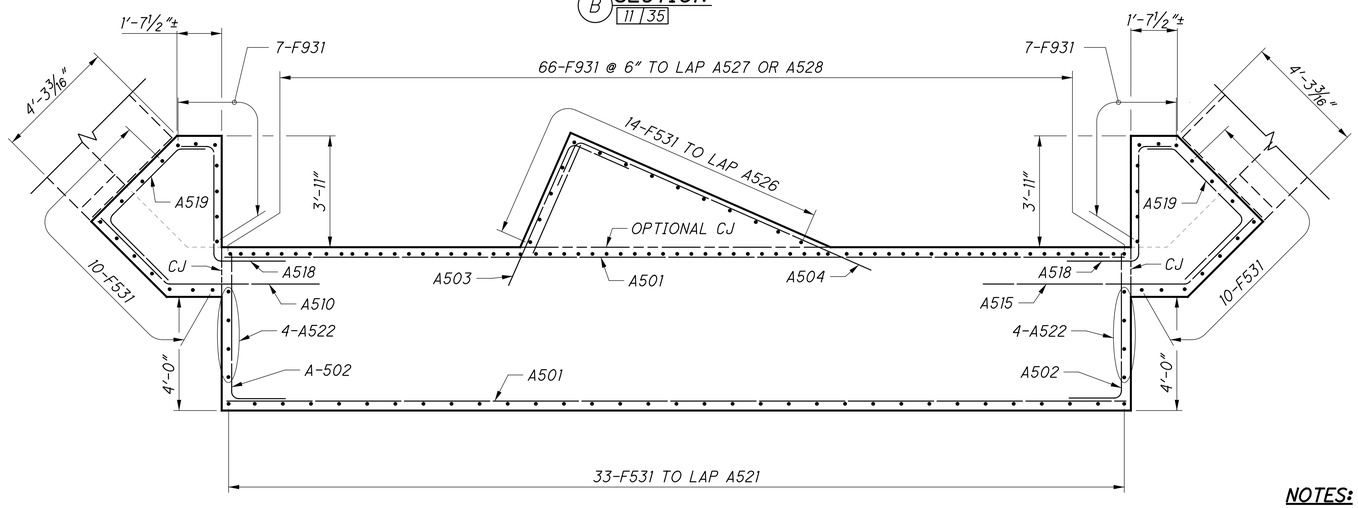
HAM-75-7.85
PID No. 77889



A SECTION
11 | 35



B SECTION
11 | 35



C SECTION
11 | 35

NOTES:

1. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 33 | 35 .

REAR ABUTMENT SHEET REFERENCES

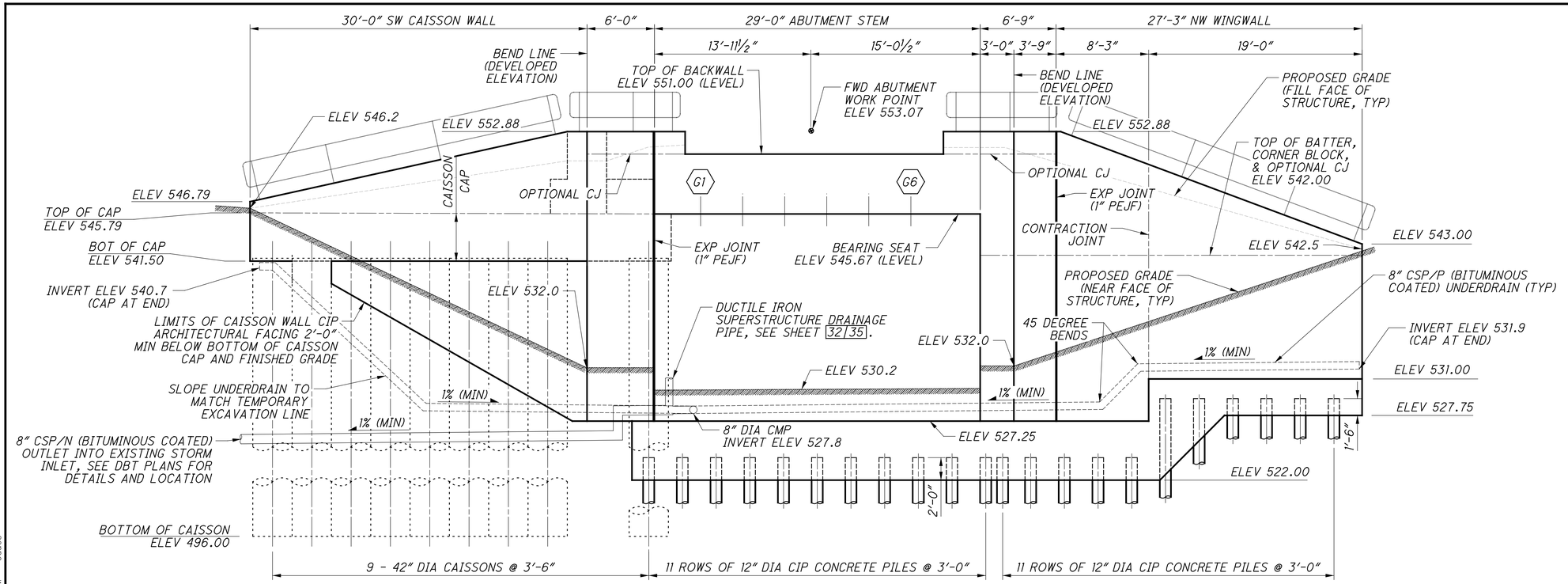
DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDK	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

REAR ABUTMENT REINFORCEMENT DETAILS

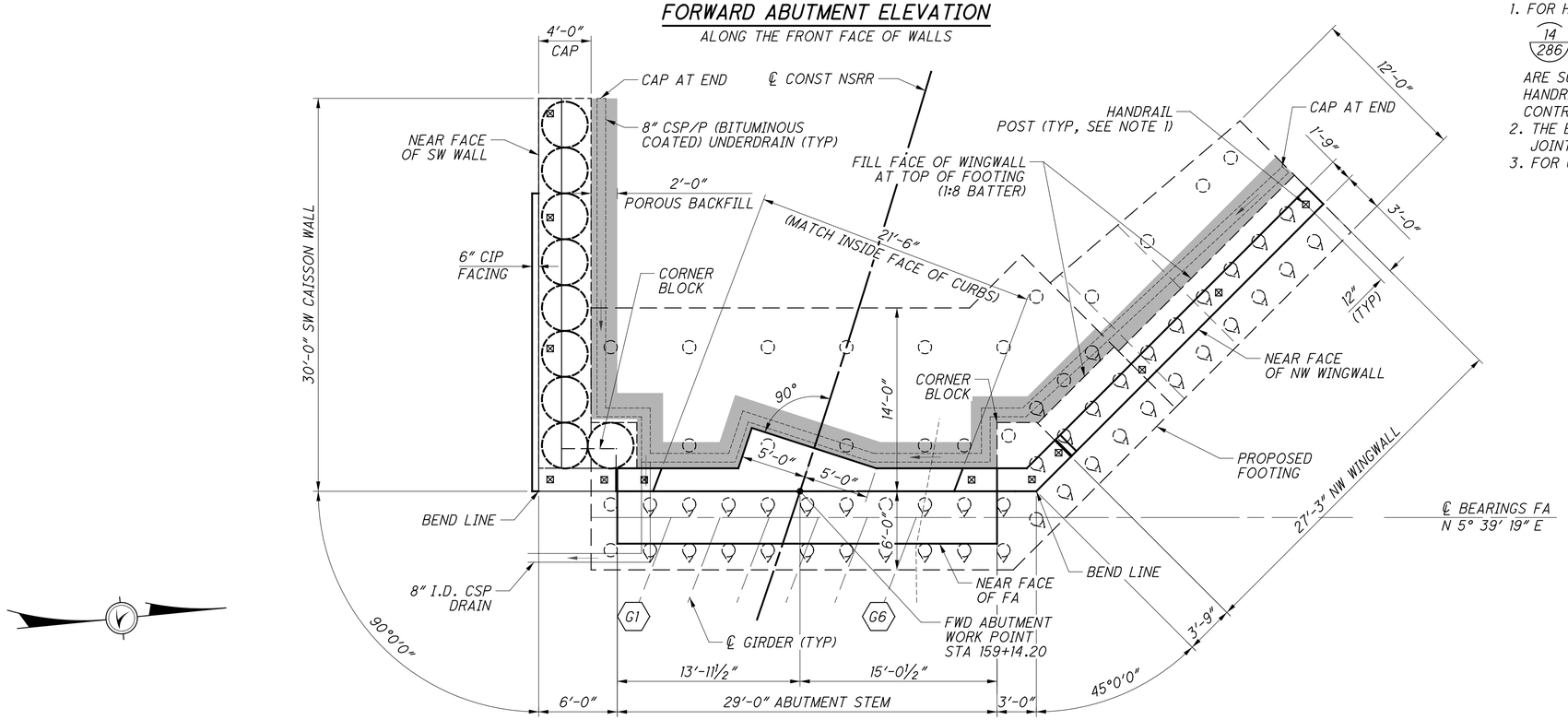
BRIDGE NO. HAM-75-PROSSER (INSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889



FORWARD ABUTMENT ELEVATION

ALONG THE FRONT FACE OF WALLS



FORWARD ABUTMENT PLAN

NOTES:

1. FOR HANDRAIL DETAILS, SEE SHEET (14|286). POST LOCATIONS SHOWN ARE SCHEMATIC, FINAL LAYOUT OF POSTS AND HANDRAIL JOINTS SHALL BE SUBMITTED BY THE CONTRACTOR FOR NSRR REVIEW AND APPROVAL.
2. THE EXPANSION JOINT IS A FULL-DEPTH JOINT WITH 1" PEJF PLACED BETWEEN POURS.
3. FOR CONTRACTION JOINT DETAILS, SEE SHEET (19|286).

FWD ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	8|35
GENERAL PLAN & ELEV:	15|35
ABUTMENT PLANS:	16|35
ABUTMENT ELEVATION:	17|35
WINGWALL PLANS:	18|35
WINGWALL ELEVATIONS:	19|35
ABUTMENT STEM SECTIONS:	20|35
TYPICAL DETAILS:	21|35 - 22|35
FIXED BEARING:	29|35
REINFORCING LIST:	33|35

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDK	CJG	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

FORWARD ABUTMENT: PLAN AND ELEVATION
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

15 / 35

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286

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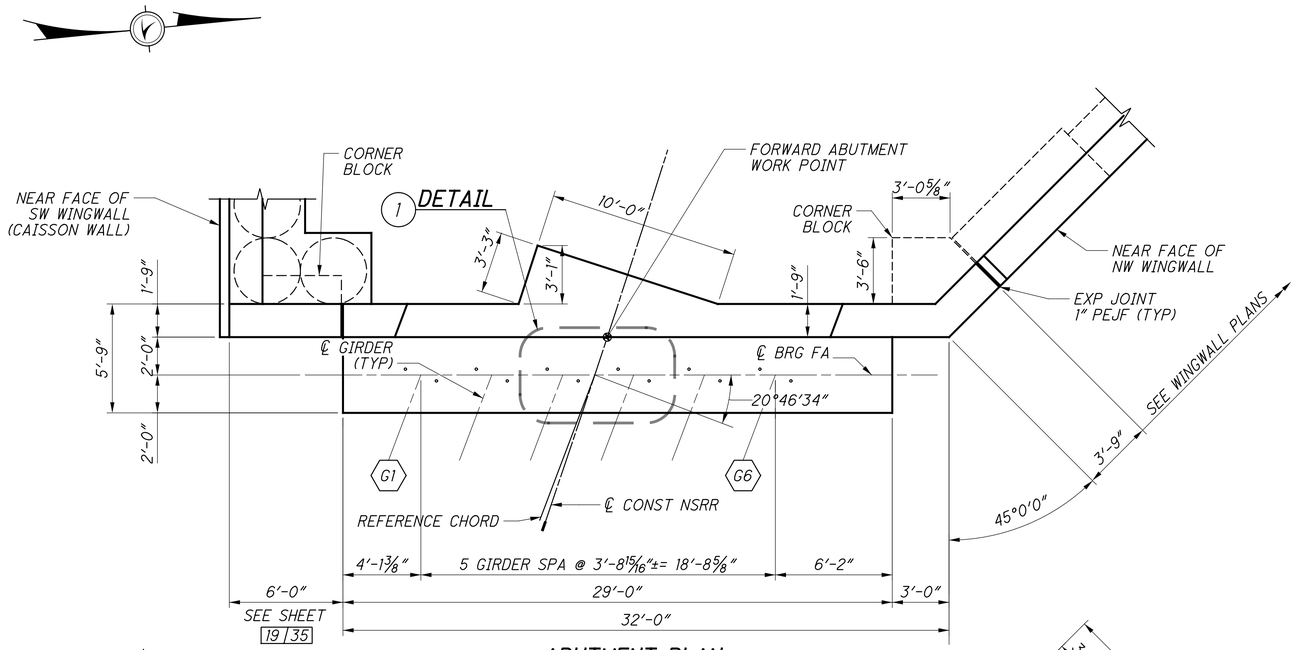
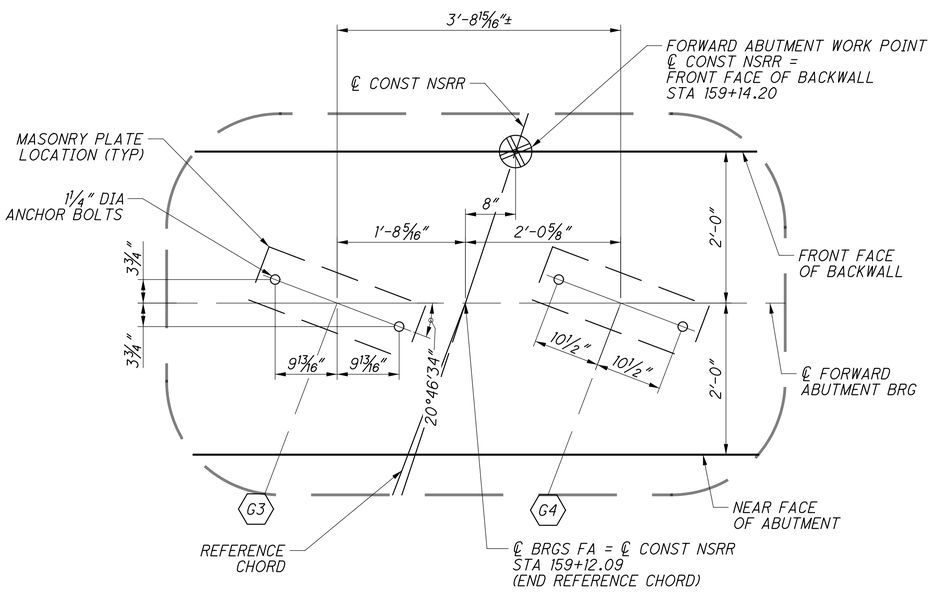
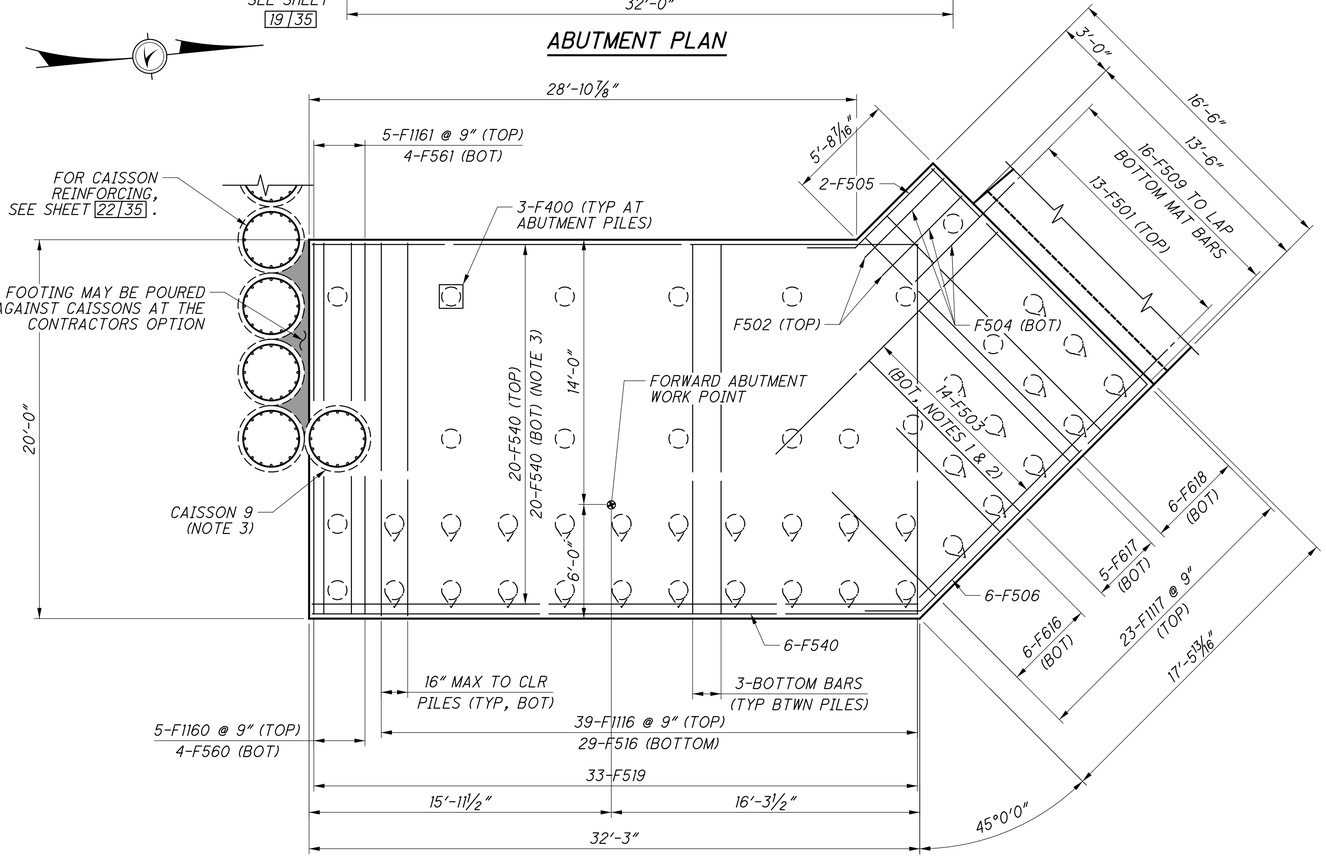


ABUTMENT PLAN



1 **WORK POINT DEFINITION**
INCLUDING ANCHOR BOLT LAYOUT



FOOTING PLAN

NOTES:

1. FOR SPACING OF BOTTOM LONGITUDINAL BARS AROUND PILES SEE ABUTMENT TYPICAL SECTION, SHEET 21 35 OR WINGWALL TYPICAL SECTION, SHEET 22 35.
2. F503 & F504 REINFORCING UNDER WINGWALL SECTION MAY BE POSITIONED OR FIELD TRIMMED TO CLEAR PILES AS REQUIRED.
3. FIELD ADJUST F540 REINFORCING TO CLEAR CAISSON C9.
4. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 33 35.

FWD ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	8 35
GENERAL PLAN & ELEV:	15 35
ABUTMENT PLANS:	16 35
ABUTMENT ELEVATION:	17 35
WINGWALL PLANS:	18 35
WINGWALL ELEVATIONS:	19 35
ABUTMENT STEM SECTIONS:	20 35
TYPICAL DETAILS:	21 35 - 22 35
FIXED BEARING:	29 35
REINFORCING LIST:	33 35

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

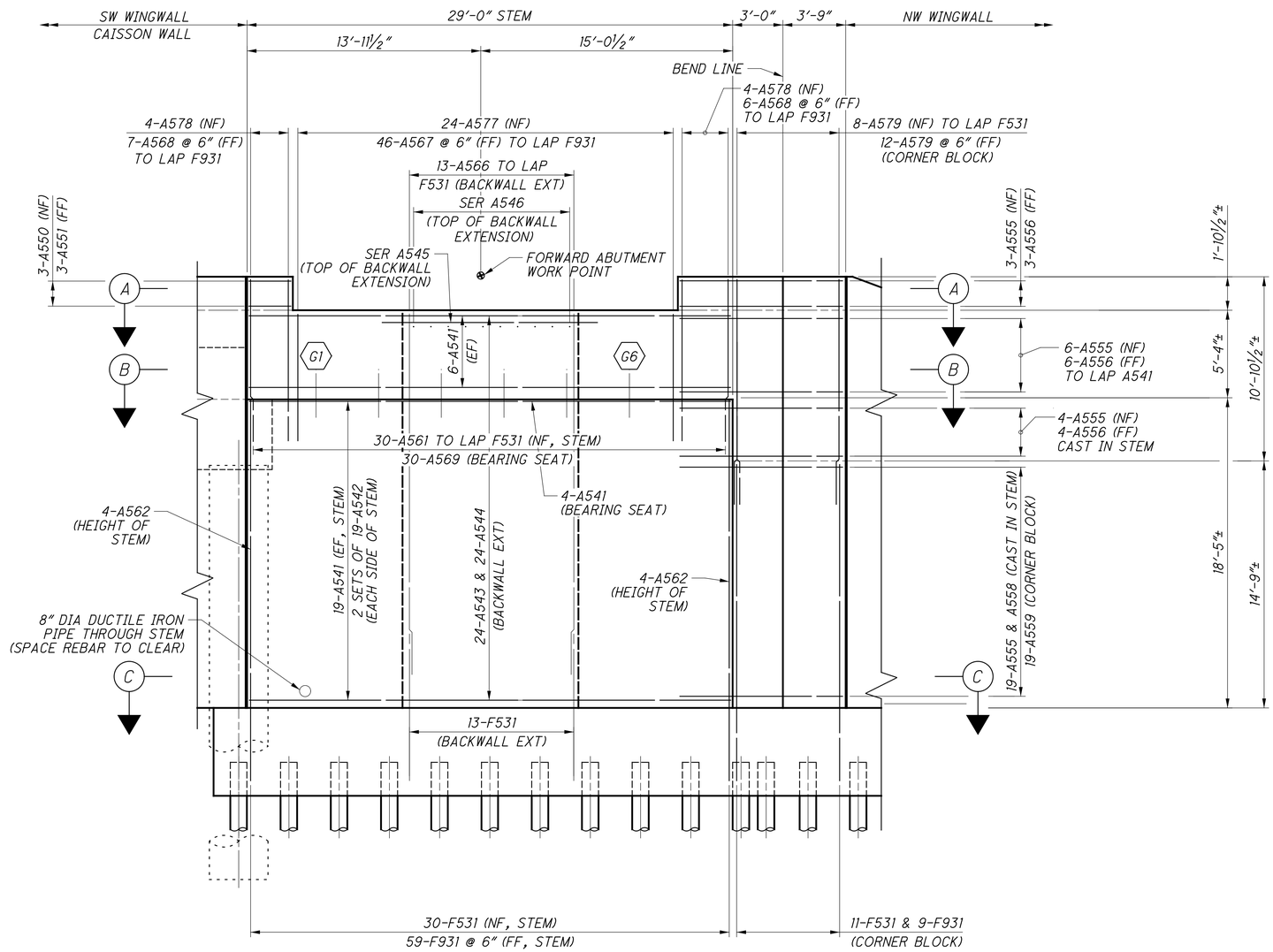
DESIGNED	DRAWN	REVIEWED	DATE
VDK	CJG	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

FORWARD ABUTMENT PLAN AND FOOTING PLAN
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

16 / 35

134 / 286



FORWARD ABUTMENT ELEVATION

SEE NOTE 1

NOTES:

1. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 33|35 .
2. FOR SECTIONS A-A, B-B AND C-C, SEE SHEET 20|35 .

FWD ABUTMENT SHEET REFERENCES

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDK	CJG	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

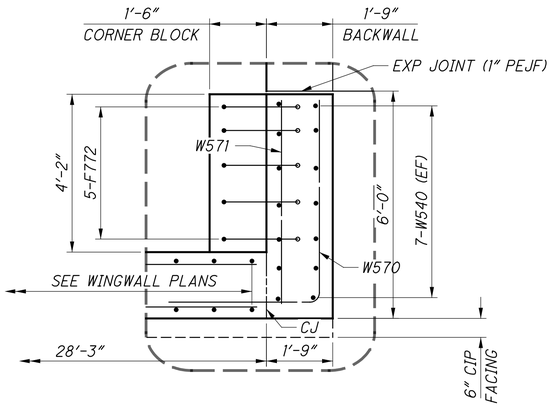
FORWARD ABUTMENT ELEVATION DETAILS

BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

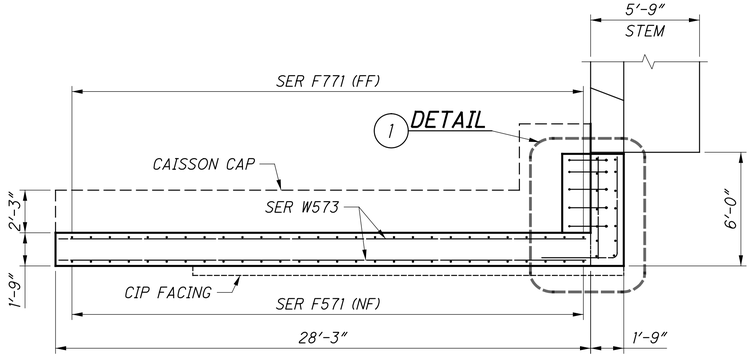
HAM-75-7.85
PID No. 77889

17 / 35

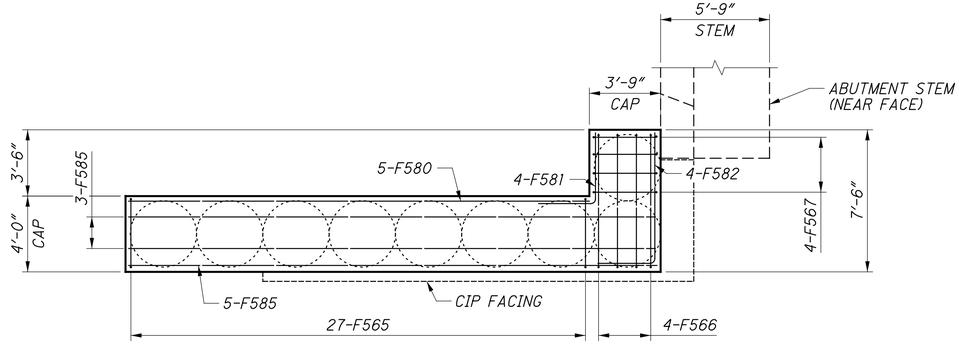
135
286



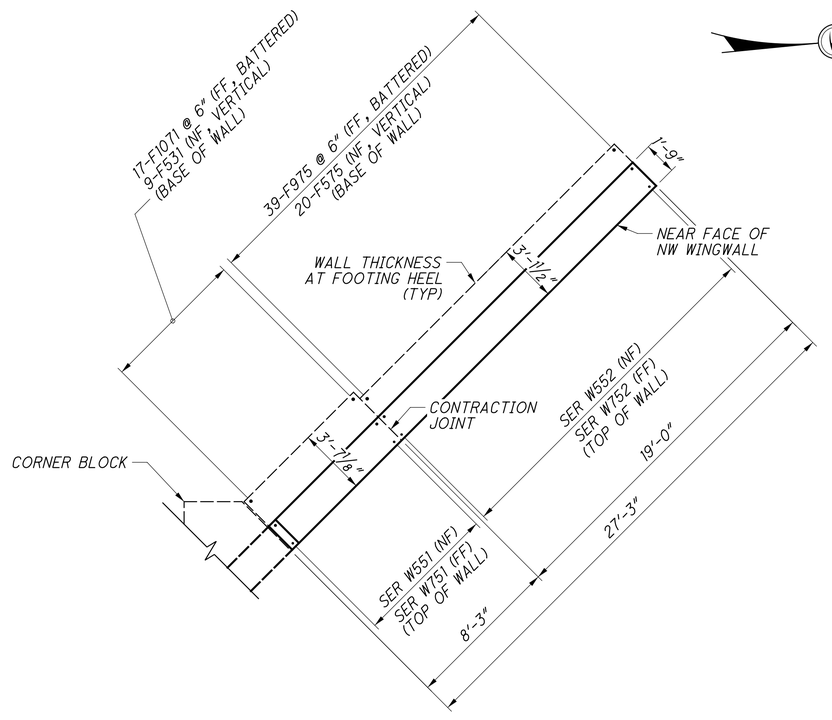
1 **DETAIL**
CORNER BLOCK



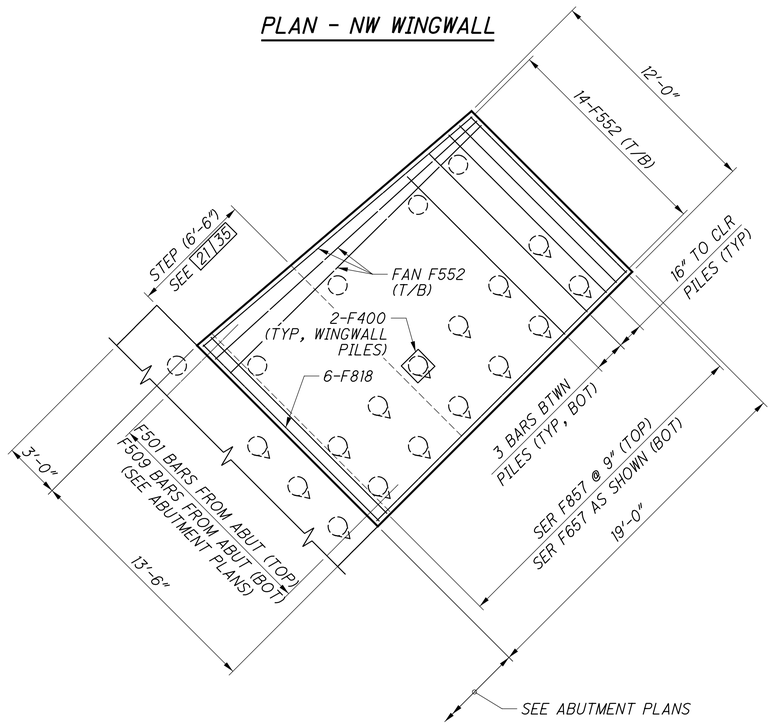
PLAN - SW WINGWALL



CAISSON CAP PLAN - SW WINGWALL



PLAN - NW WINGWALL



FOOTING PLAN - NW WINGWALL

FWD ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	8 / 35
GENERAL PLAN & ELEV:	15 / 35
ABUTMENT PLANS:	16 / 35
ABUTMENT ELEVATION:	17 / 35
WINGWALL PLANS:	18 / 35
WINGWALL ELEVATIONS:	19 / 35
ABUTMENT STEM SECTIONS:	20 / 35
TYPICAL DETAILS:	21 / 35 - 22 / 35
FIXED BEARING:	29 / 35
REINFORCING LIST:	33 / 35

NOTES:

1. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 33/35.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

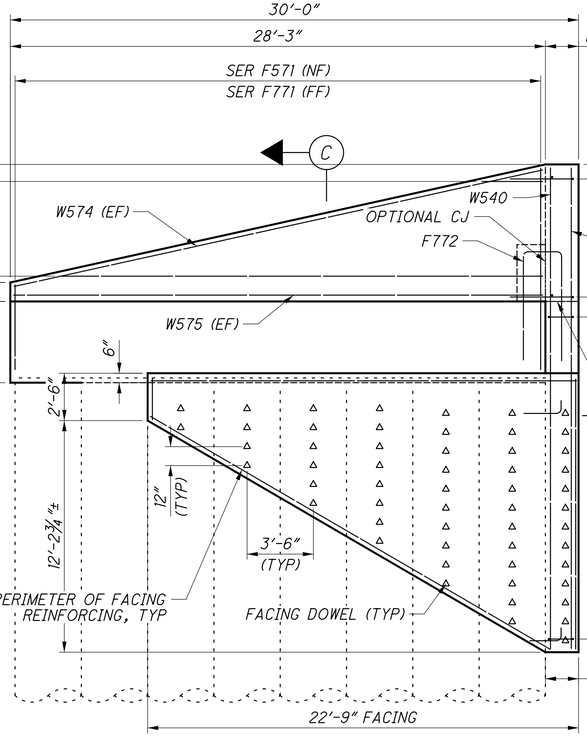
DESIGNED	DRAWN	REVIEWED	DATE
VDK	CJG	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

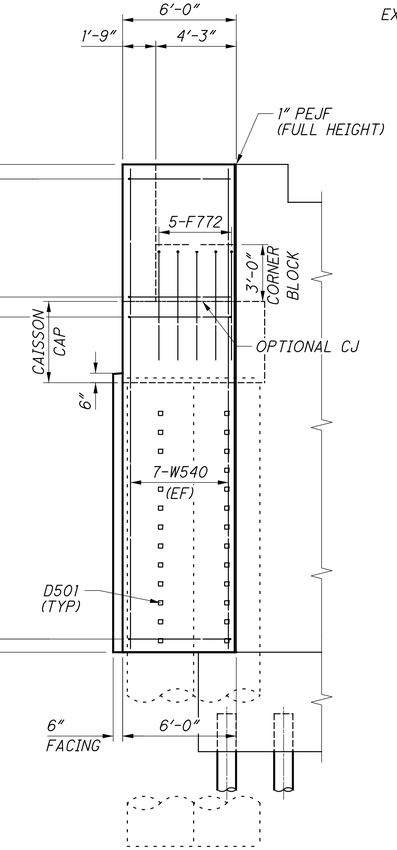
NORTHWEST AND SOUTHWEST WINGWALL PLANS
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

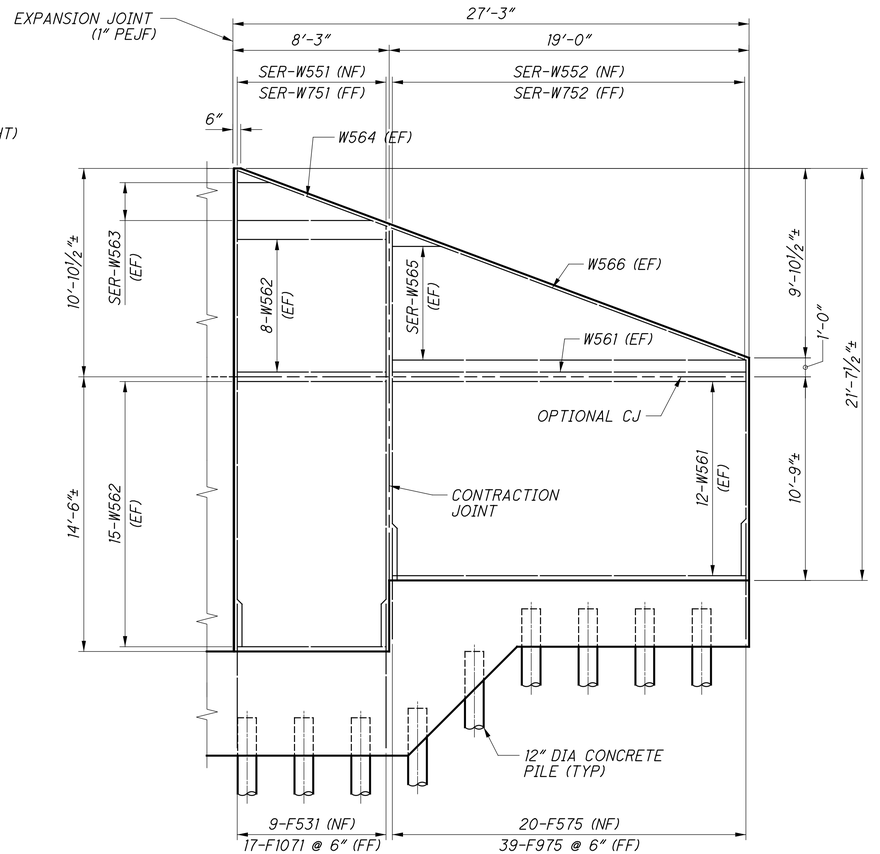
HAM-75-7.85
PID No. 77889

18 / 35

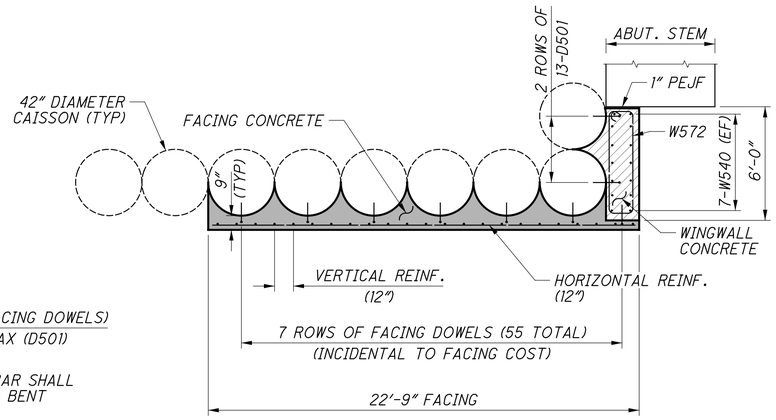
136
286

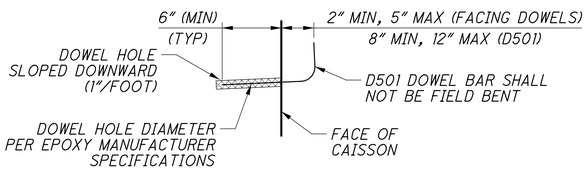






NORTHWEST WINGWALL ELEVATION





DOWEL DETAIL

NOTES:

1. FOR SECTION C-C, SEE SHEET 22/35 .
2. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 33/35 .
3. VERTICALLY ADJUST AND FIELD CUT VERTICAL REINFORCING AS REQUIRED TO CLEAR PILES.

ITEM 511 - CONCRETE, MISC.: FACING OF CANTILEVER WALLS

THE APPROXIMATE VOLUME OF CONCRETE TO FACE THE SOUTHWEST CAISSON WALL IS 8.4 CUBIC YARDS. THIS VALUE IS GIVEN ONLY FOR ESTIMATING PURPOSES AND INCLUDES ANNULAR SPACES BETWEEN CAISSONS. THE CONTRACTOR SHALL PROVIDE ACTUAL QUANTITIES REQUIRED TO FACE THE WALL PER THESE PLANS.

THE HORIZONTAL AND VERTICAL REINFORCING STEEL SPACING SHALL NOT EXCEED 12" AND SHALL CONTAIN 0.25 SQUARE INCHES OF STEEL PER FOOT IN EACH DIRECTION (AREMA CHAPTER 8-2.12). REINFORCING STEEL MAY CONSIST OF REINFORCING BARS OR WELDED WIRE FABRIC. PERIMETER BARS SHALL BE #5.
FOR MORE NOTES, INCLUDING BASIS OF PAYMENT, SEE SHEET 9/286 .

FWD ABUTMENT SHEET REFERENCES

FOUNDATION PLAN:	8/35
GENERAL PLAN & ELEV:	15/35
ABUTMENT PLANS:	16/35
ABUTMENT ELEVATION:	17/35
WINGWALL PLANS:	18/35
WINGWALL ELEVATIONS:	19/35
ABUTMENT STEM SECTIONS:	20/35
TYPICAL DETAILS:	21/35 - 22/35
FIXED BEARING:	29/35
REINFORCING LIST:	33/35

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDK	CJG	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

FORWARD WINGWALL ELEVATION DETAILS
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

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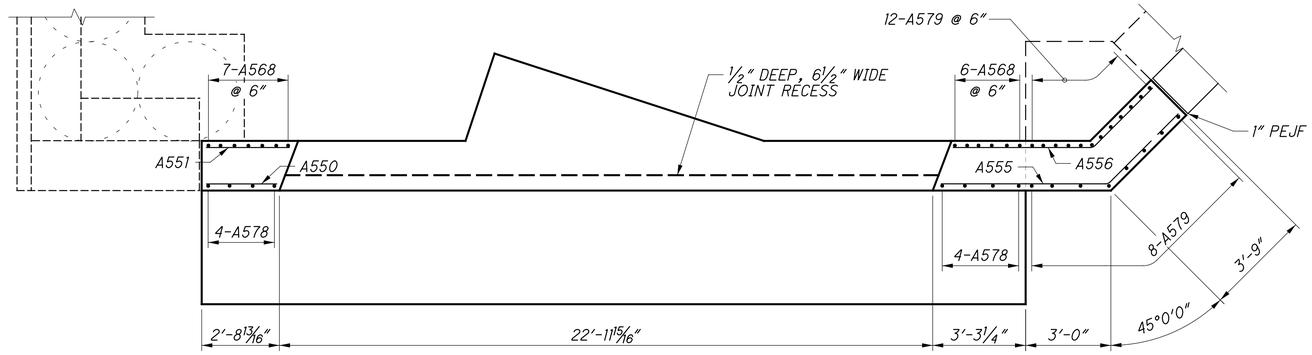
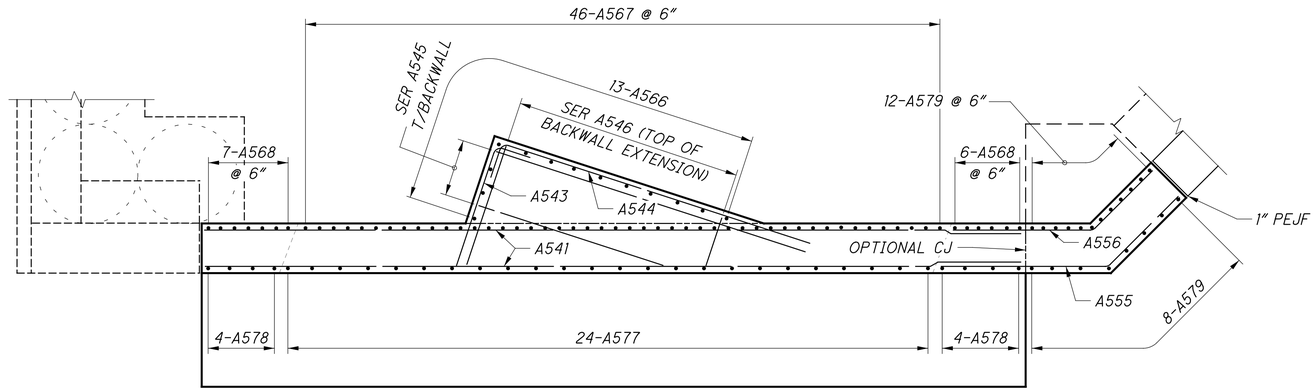
286

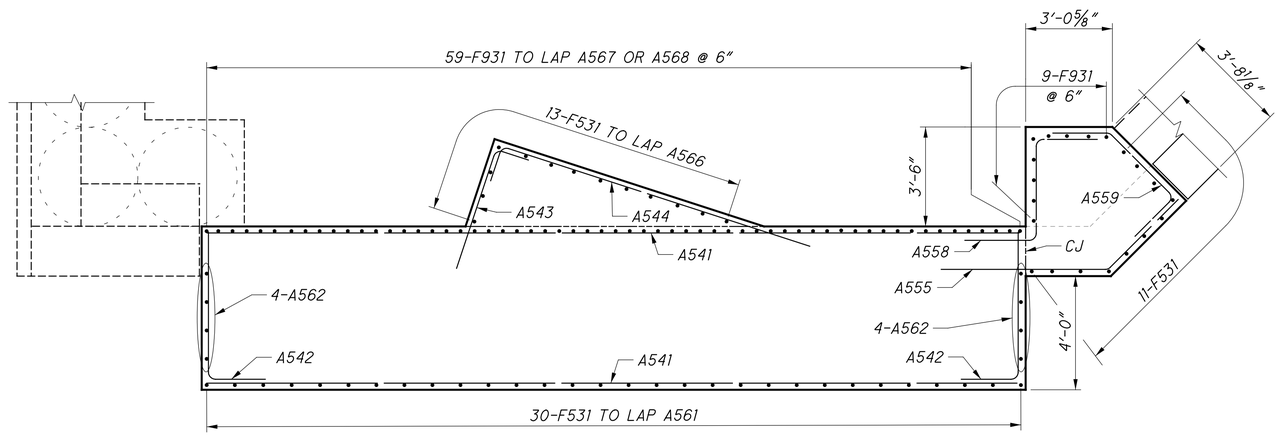
pw:\\gfnet-pw.bentley.com:gfnet-pw-01\Documents\Projects\54682\77889\structures\HAM_PROSSER AVE\sheets\36 5/9/2024 10:24:17 PM edues



A SECTION
17 | 35



B SECTION
17 | 35



C SECTION
17 | 35

NOTES:

1. FOR REQUIRED LAP LENGTHS AND REINFORCING NOTES, SEE SHEET 33 | 35.

FWD ABUTMENT SHEET REFERENCES

FORWARD ABUTMENT REINFORCING DETAILS

BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

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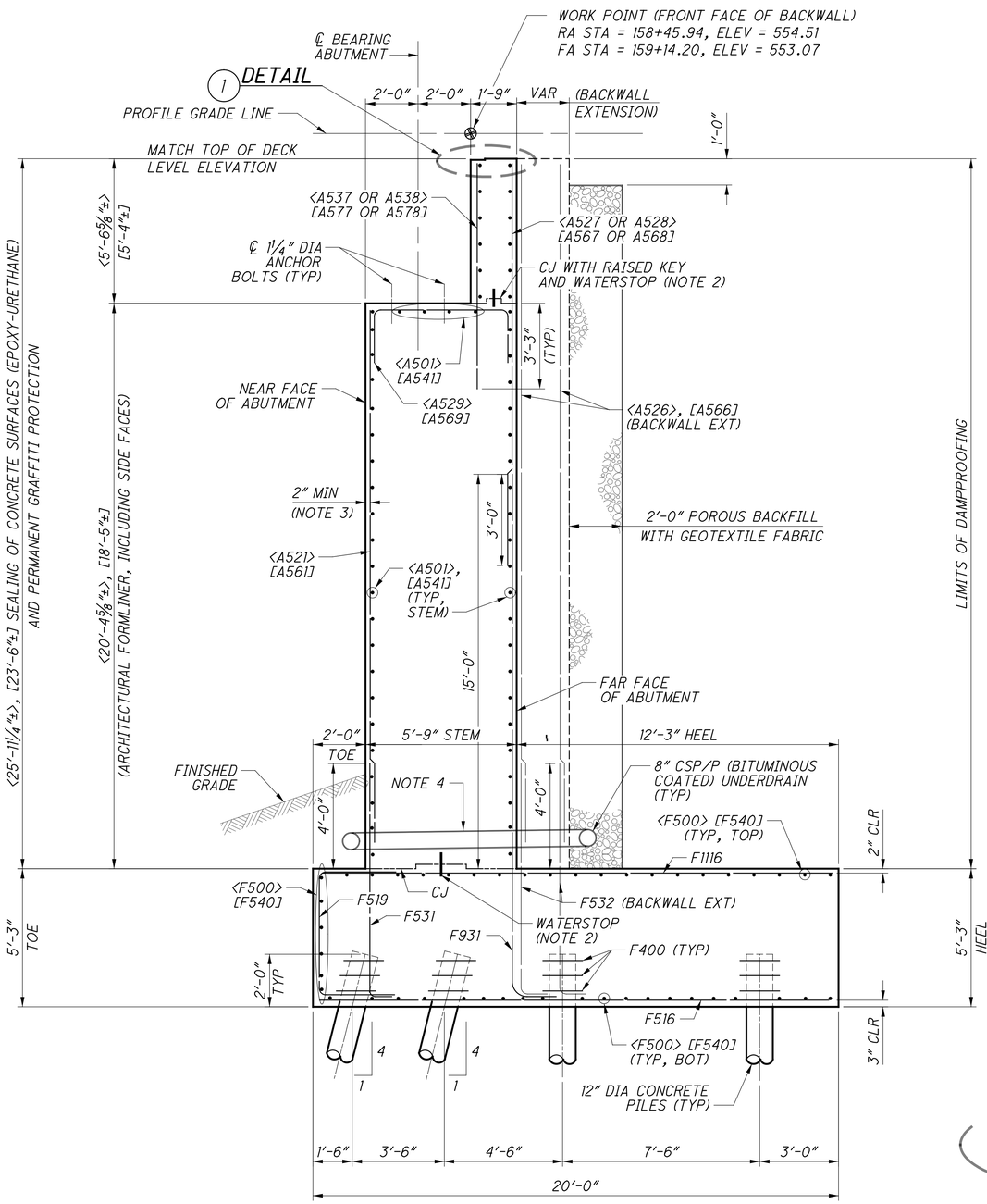
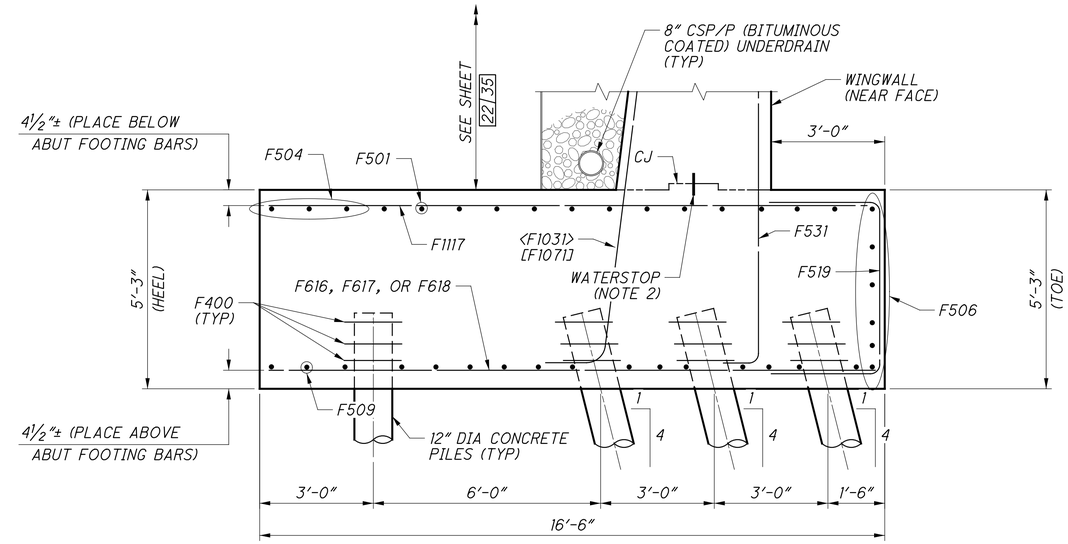
DESIGNED	DRAWN	REVIEWED	DATE
VDK	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

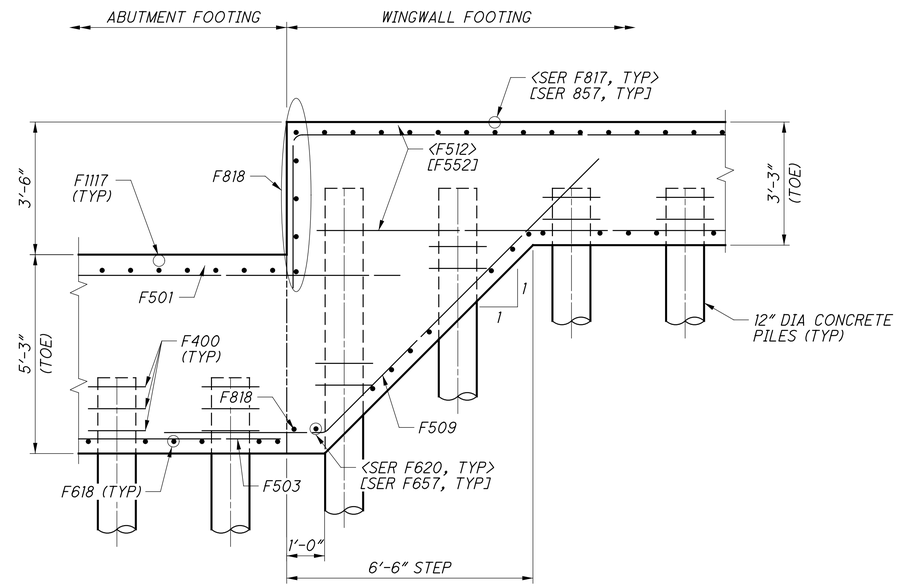


TYPICAL ABUTMENT SECTION



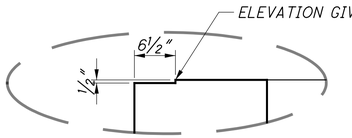
ABUTMENT FOOTING DETAIL

BELOW WINGWALL SECTION



FOOTING STEP DETAIL

ABUTMENT TO WINGWALL



1 DETAIL

ABUTMENT SHEET REFERENCES

FOUNDATION PLANS:	8 | 35
REAR ABUTMENT PLANS:	9 | 35 - 14 | 35
FWD ABUTMENT PLANS:	15 | 35 - 20 | 35
REINFORCING DETAILS:	33 | 35

NOTES:

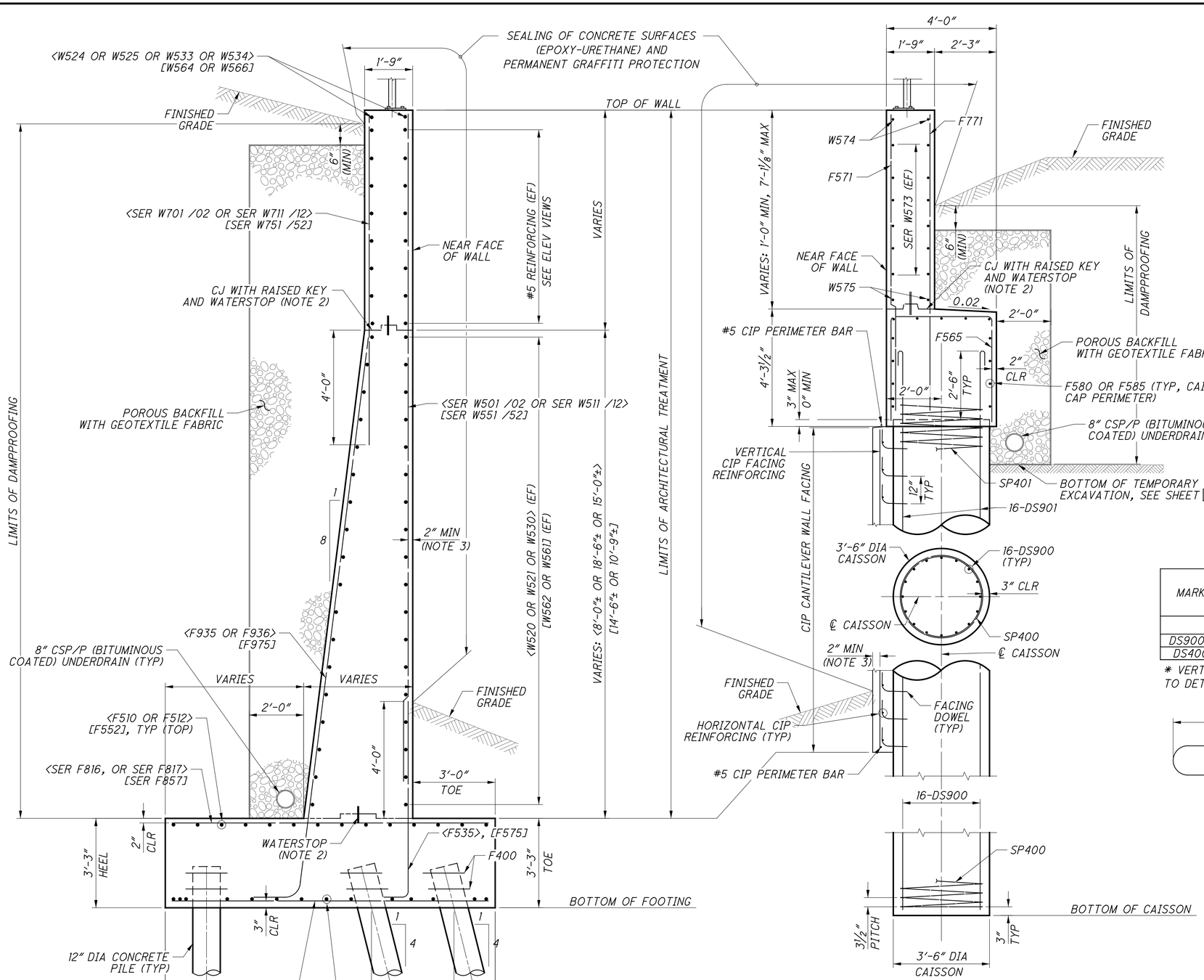
1. DIMENSIONS AND CALLOUTS IN <DIM> REFERENCE THE REAR ABUTMENT
   DIMENSIONS AND CALLOUTS IN [DIM] REFERENCE THE FORWARD ABUTMENT
   DIMENSIONS AND CALLOUTS NOT IN BRACKETS ARE APPLICABLE TO BOTH ABUTMENTS
2. WATERSTOPS SHALL BE 6"x⅜" PVC AND SHALL BE CONTINUOUS ACROSS JOINT.
3. ADJUST CLEAR DISTANCE TO PLAN DIMENSION TO ACCOUNT FOR FORMLINER RELIEF AS PER FORMLINER GENERAL NOTE.
4. ADJUST REINFORCING TO CLEAR 8" DIA DUCTILE IRON UNDERDRAIN OUTLET PIPE.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED VDK | DRAWN CAN | REVIEWED CTV | DATE 12-19-23
CHECKED EFD | REVISED | ODOT SFN: 3160007 | NSRR BR#: BR0018444

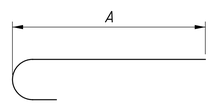
TYPICAL ABUTMENT SECTION
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

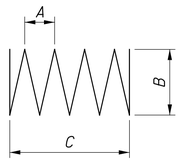


MARK	NUMBER			LENGTH	TYPE	DIMENSIONS			
	PER SHAFT	# OF SHAFTS	TOTAL			A	B	C	INC
CAISSONS									
DS900*	16	15	240	48'-7"	16	48'-0"			
DS400	1	68	68	44'-9"	27	3½"	3'-0"	44'-9"	

* VERTICAL BARS SHOWN AS ONE BAR FOR FULL LENGTH. CONTRACTOR TO DETERMINE MEANS AND METHODS FOR SPLICING BARS AS NEEDED.



TYPE 16



TYPE 27

TYPICAL SECTION: WINGWALL

Ⓒ TYPICAL SECTION: CAISSON WALL
19 | 35

NOTES:

1. DIMENSIONS AND CALLOUTS IN <DIM> REFERENCE THE REAR WINGWALLS
   DIMENSIONS AND CALLOUTS IN [DIM] REFERENCE THE FORWARD WINGWALLS
   DIMENSIONS AND CALLOUTS NOT IN BRACKETS ARE APPLICABLE TO BOTH WINGWALLS
2. WATERSTOPS SHALL BE 6"x⅜" PVC AND SHALL BE CONTINUOUS ACROSS JOINT. FOR RAISED KEYWAY DETAIL, SEE TYPICAL STRUCTURAL DETAILS SHEET (19/286).
3. ADJUST CLEAR DISTANCE TO PLAN DIMENSION TO ACCOUNT FOR FORMLINER RELIEF AS PER FORMLINER GENERAL NOTE.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
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COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDK	CAN	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

TYPICAL WINGWALL DETAILS
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

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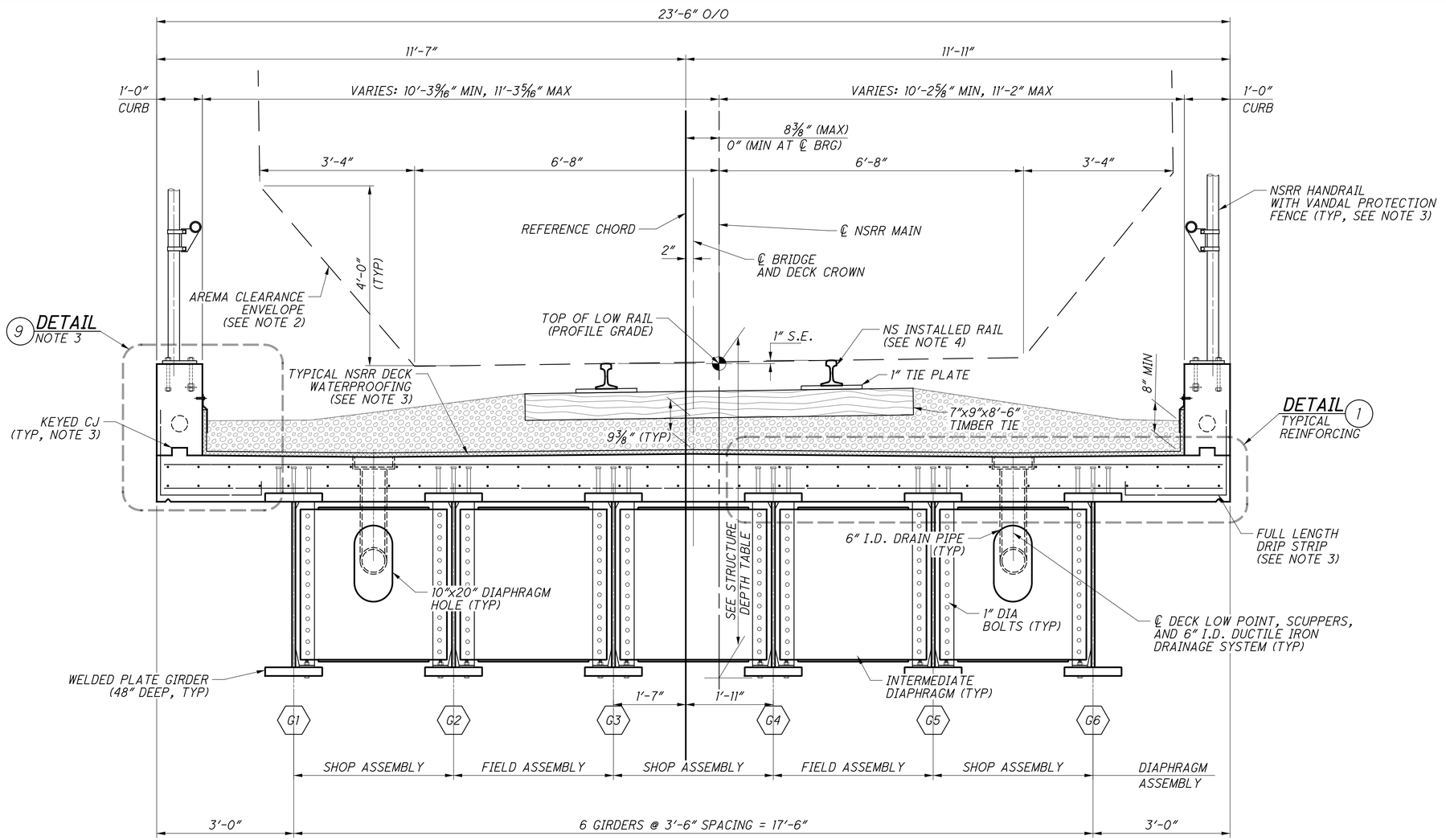
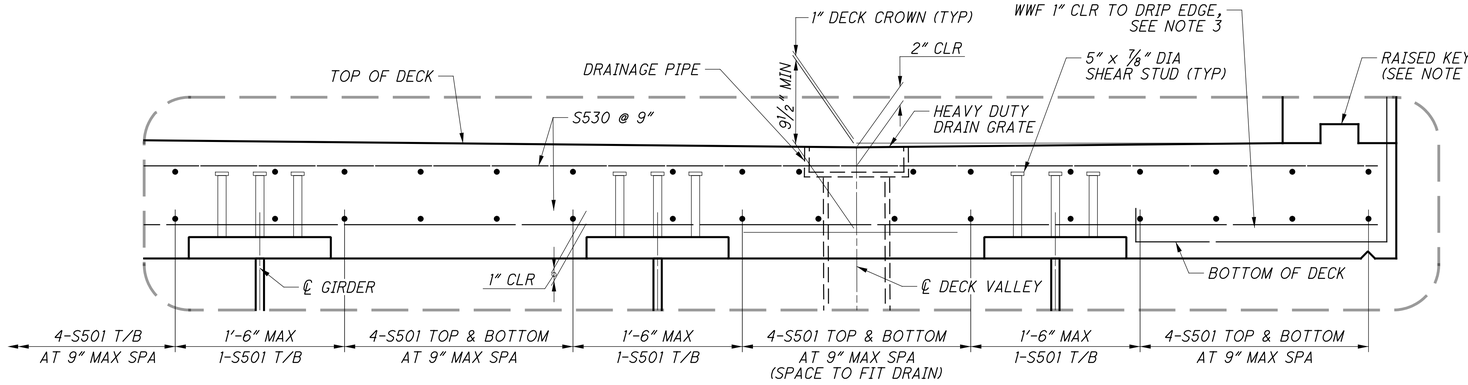
STRUCTURE DEPTH TABLE	
ELEMENT	DEPTH
141 RE RAIL (NOTE 4)	7 7/16"
TIE PLATE	1"
TIE	7"
BALLAST UNDER TIE (AT DECK CROWN)	9 3/8"
WATERPROOFING	1 1/8"
CROWN HEIGHT	1"
MIN CONCRETE DECK	9 1/2"
GIRDER	48"
BOLT HEAD THICKNESS	5/8"
TOTAL DEPTH FROM PGL	85 1/16"



TYPICAL TRANSVERSE SECTION

LOOKING UPSTATION (NOTE 1)



1 TYPICAL SLAB REINFORCING DETAIL

MISC. DETAILS NOT SHOWN FOR CLARITY

NOTES:

1. THE TYPICAL TRANSVERSE SECTION IS DRAWN AND DIMENSIONED NORMAL TO THE CHORD. THE TYPICAL SECTION SHOWN IS SCHEMATIC. BOTTOM OF BEAM ELEVATIONS AND DECK LOW POINT ELEVATIONS ARE EQUAL ALONG THE SKEW. MISCELLANEOUS STEEL DETAILS ACCOUNT FOR VARIATIONS IN BOTTOM OF BEAM ELEVATIONS NORMAL TO THE REFERENCE CHORD. MOVING LEFT TO RIGHT ACROSS A TRUE SECTION NORMAL TO THE REFERENCE CHORD, EACH BOTTOM OF BEAM ELEVATION WILL INCREASE BY APPROXIMATELY 5/16".
2. THE AREMA CLEARANCE ENVELOPE SHOWN IS THE STANDARD CLEARANCE ENVELOPE WIDENED BY 12" IN EACH DIRECTION TO ACCOUNT FOR A MAXIMUM 8 DEGREE HORIZONTAL CURVATURE.
3. FOR TYPICAL CURB, KEYWAY, OVERHANG, DRIP EDGE, WATERPROOFING, DECK DRAINAGE, HANDRAIL AND VANDAL PROTECTION FENCE DETAILS, SEE RAILROAD TYPICAL DETAILS ON SHEETS 15/286 THROUGH 20/286.
4. RAIL TO BE EITHER 136 OR 141 RE RAIL, PER NS DIRECTION. THE VERTICAL AND BALLAST CLEARANCES ARE CALCULATED USING THE TALLER 141 RE RAIL PER NS DIRECTION.

DESIGN AGENCY
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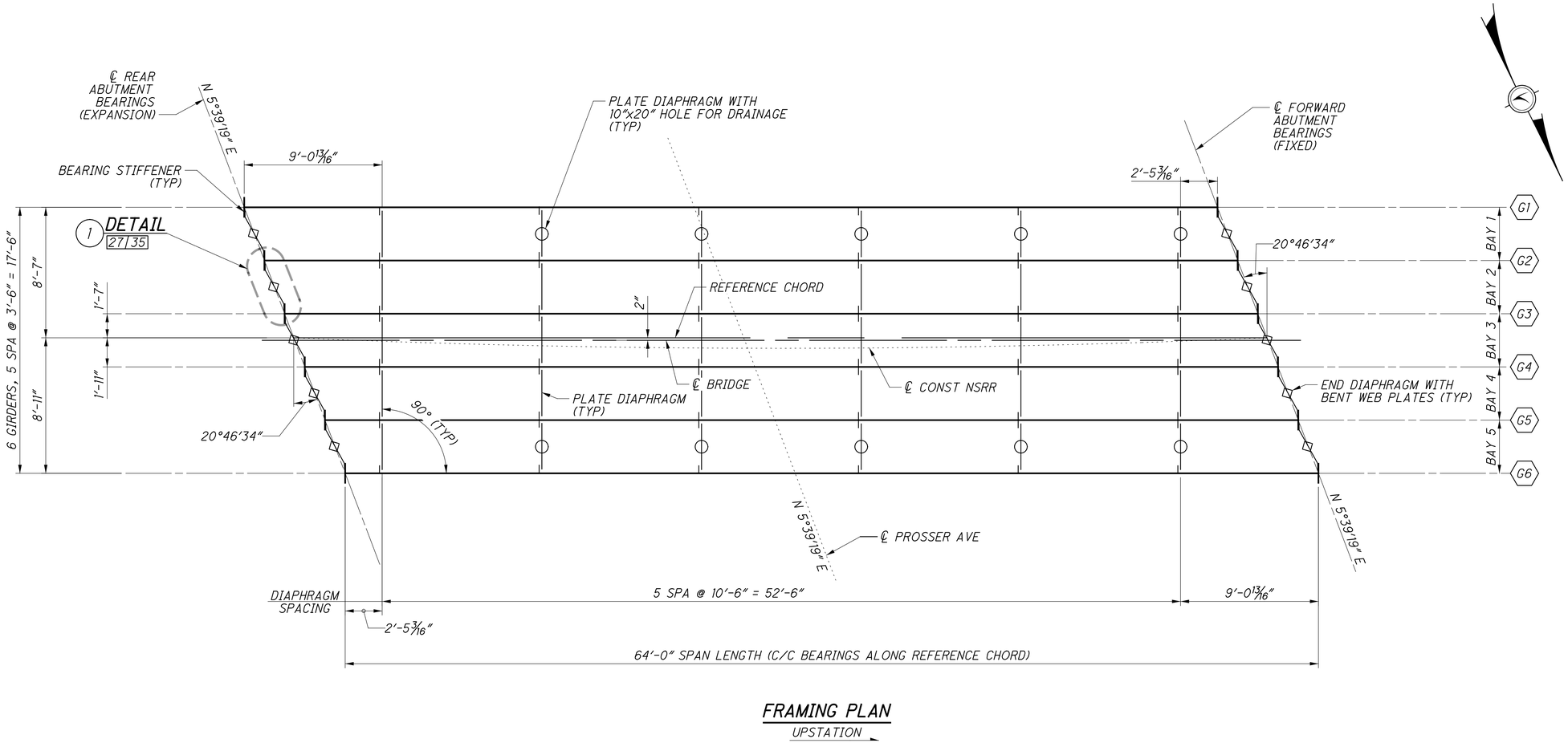
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDT	DKU	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

TRANSVERSE SECTION
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889



FRAMING PLAN

UPSTATION

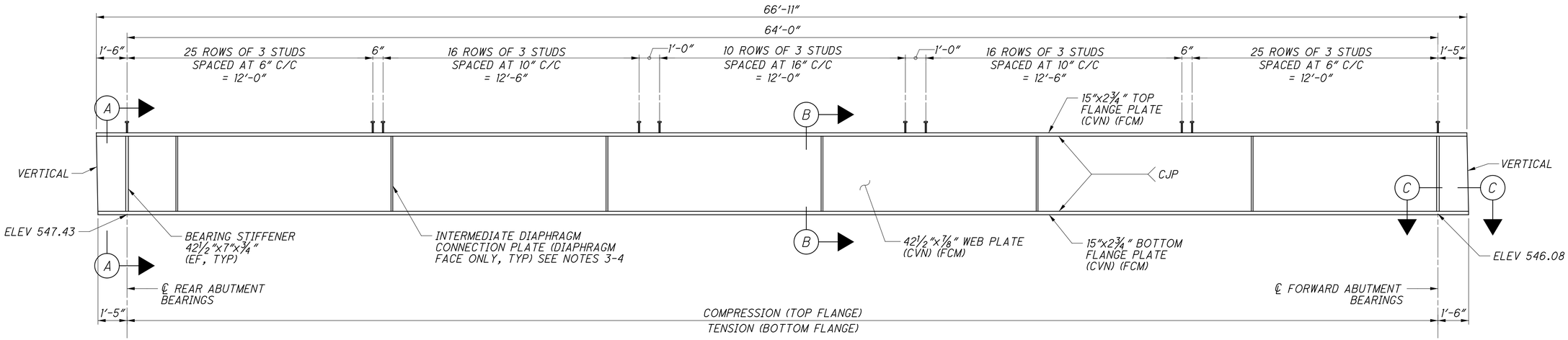
DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDT	CJG	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

FRAMING PLAN

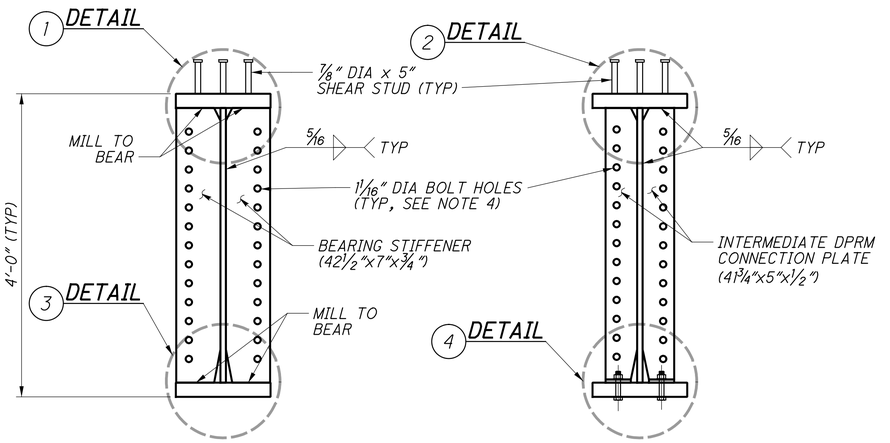
BRIDGE NO. HAM-75-PROSSER (INSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889



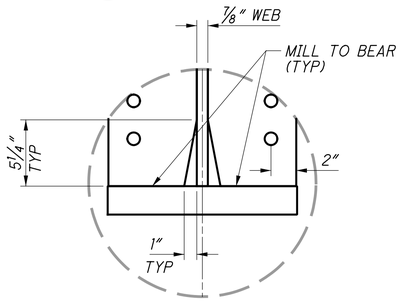
GIRDER ELEVATION

UPSTATION ►

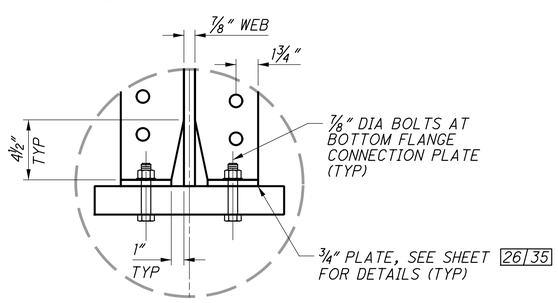


A SECTION

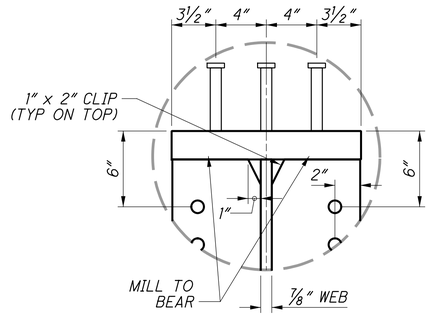
B SECTION



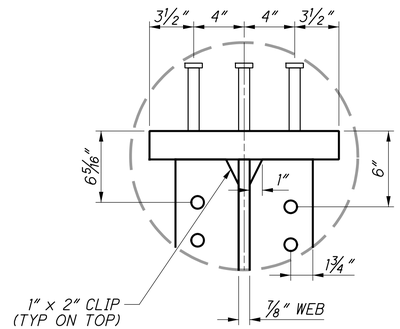
3 DETAIL
END STIFFENER



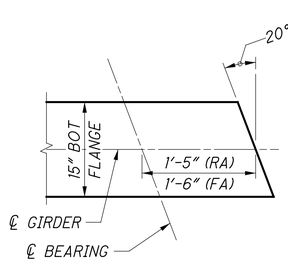
4 DETAIL
INTERMEDIATE DIAPHRAGM CONNECTION PLATE



1 DETAIL
BEARING STIFFENER



2 DETAIL
INTERMEDIATE DIAPHRAGM CONNECTION PLATE



C END BEVEL

NOTES:

1. HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER ASTM F3125, GRADE A325, UNLESS OTHERWISE NOTED.
2. (CVN) DENOTES A CHARPY V-NOTCH TEST IS REQUIRED. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.

   (FCM) DENOTES FRACTURE CRITICAL MEMBER. ALL FCM STEEL SHALL BE PROVIDED PER NORFOLK SOUTHERN SPECIFICATIONS FOR STRUCTURAL STEEL AND THE GENERAL NOTES ON SHEET: 8 (286).
3. FOR STIFFENER AND DIAPHRAGM DETAILS, SEE SHEET 26/35 AND 27/35.
4. FOR TRANSVERSE STIFFENER AND DIAPHRAGM SPACING, SEE FRAMING PLAN SHEET 24/35.

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
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COLUMBUS, OHIO 43231

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GIRDER ELEVATION AND SECTIONS
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

25 / 35

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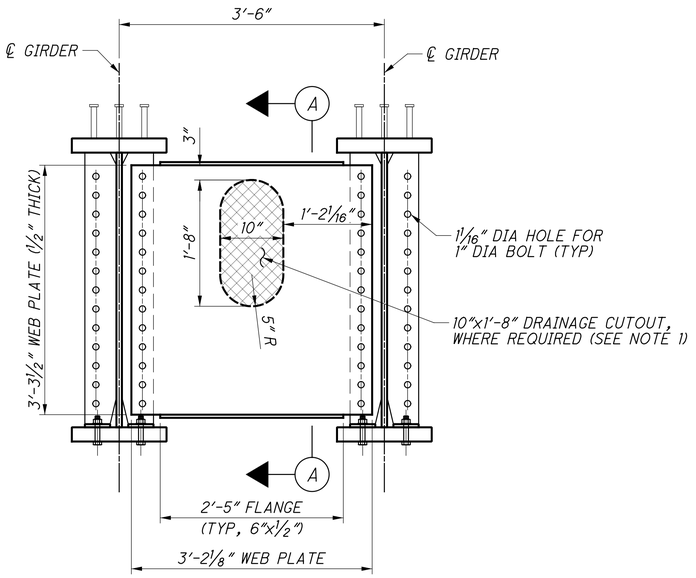
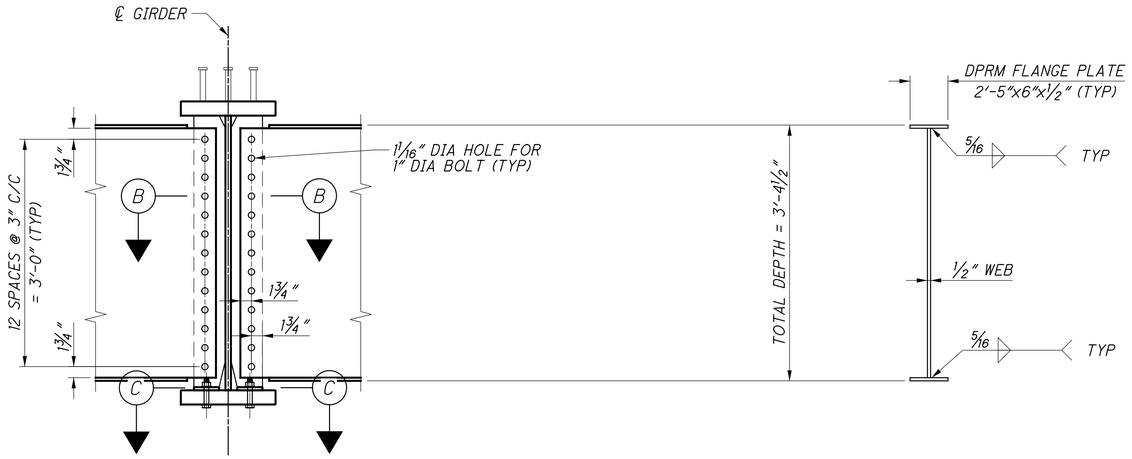


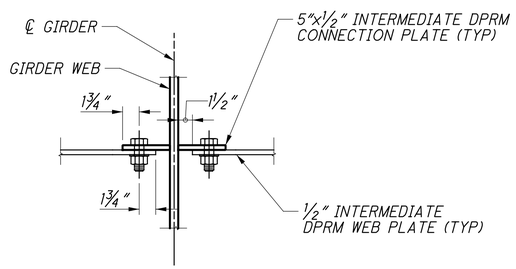
INTERMEDIATE DIAPHRAGM DETAILS

(NORMAL TO REFERENCE CHORD)

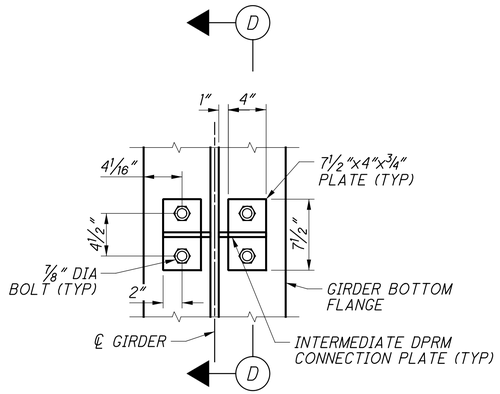


INTERMEDIATE DIAPHRAGM CONNECTION DETAILS

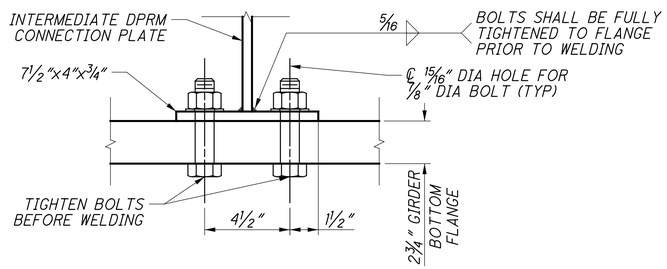
A SECTION



B SECTION



C SECTION



D SECTION

NOTES:

1. DRAINAGE HOLES ARE ONLY REQUIRED IN BAYS 1 AND 5. SEE FRAMING PLAN SHEET 24|35.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

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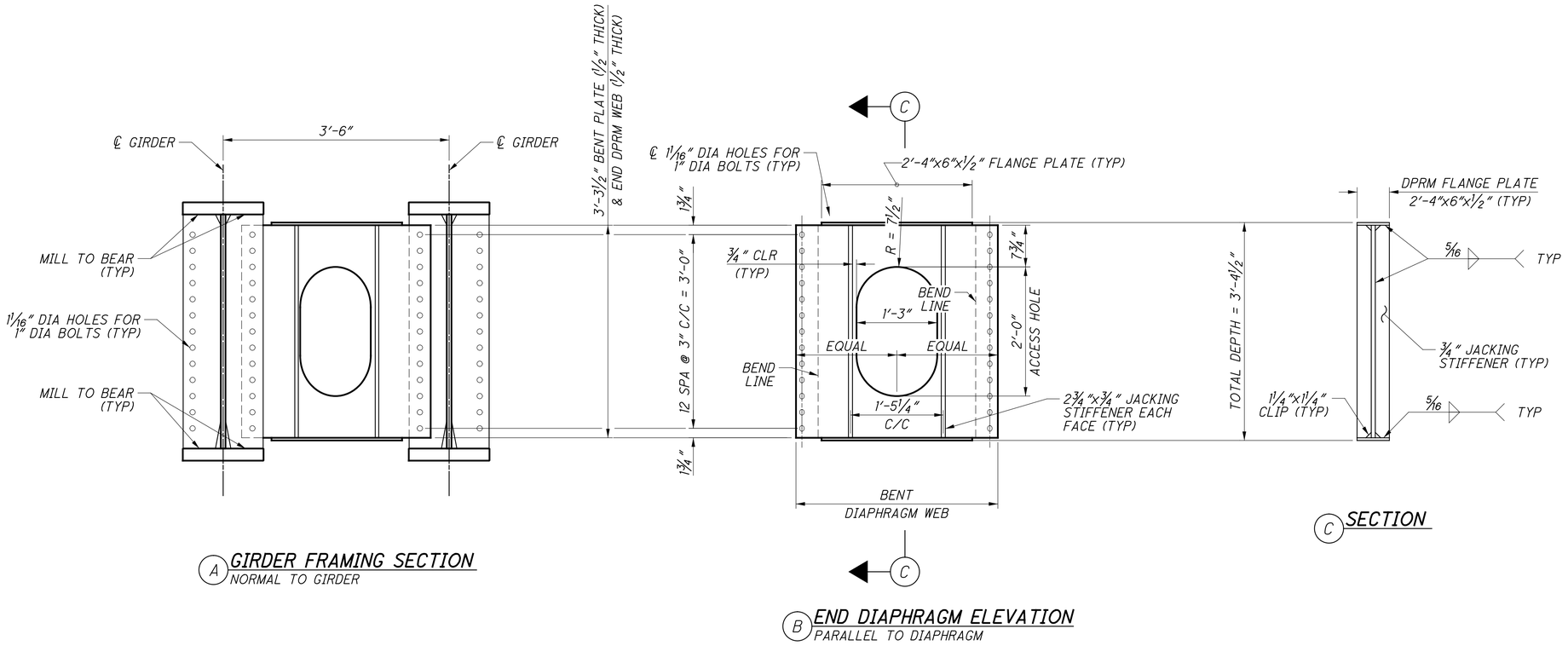
VDT	CJG	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR B#*: BR0018444	

SUPERSTRUCTURE DETAILS 1/2
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

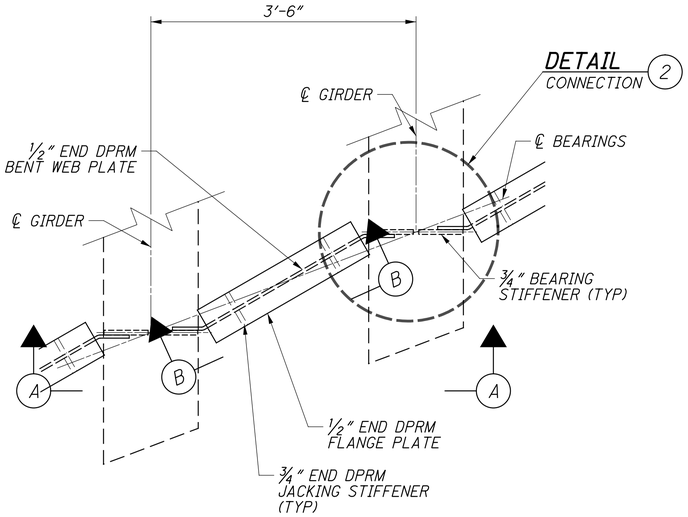
HAM-75-7.85
PID No. 77889



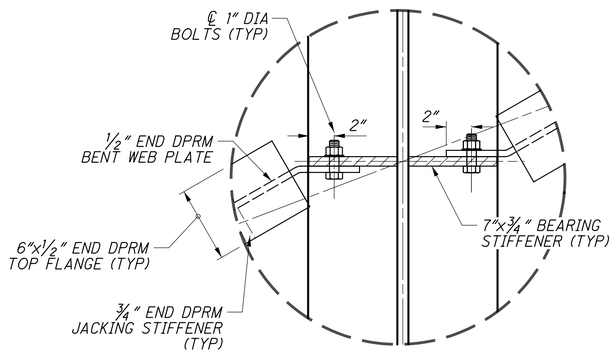
A GIRDER FRAMING SECTION
NORMAL TO GIRDER

B END DIAPHRAGM ELEVATION
PARALLEL TO DIAPHRAGM

C SECTION



1 TYPICAL END DIAPHRAGM DETAIL
SEE SHEET 24 35



2 CONNECTION DETAIL
BEARING STIFFENER AND END DIAPHRAGM WITH BENT WEB PLATES

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COLUMBUS, OHIO 43231

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EFD		NSRR BR#: BR0018444	

SUPERSTRUCTURE DETAILS 2/2
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

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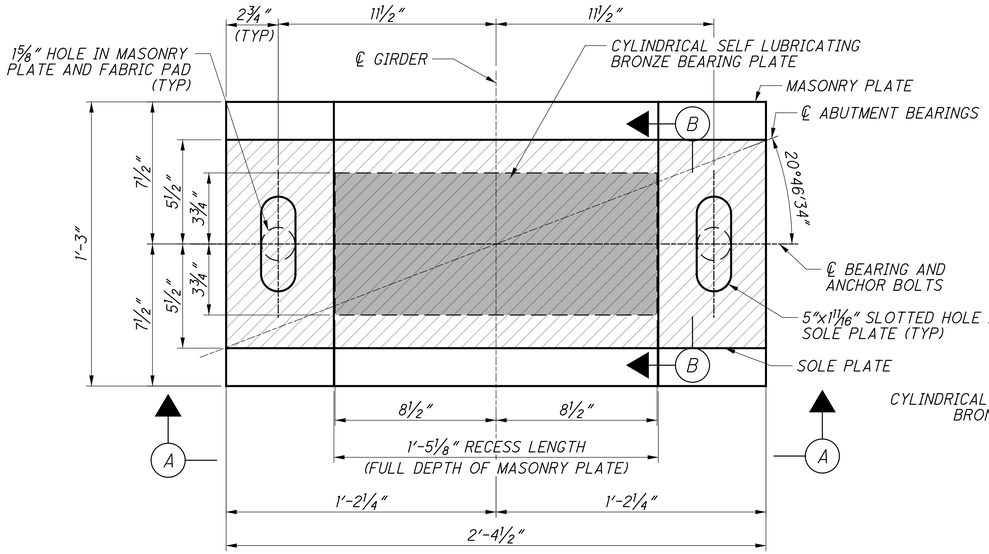
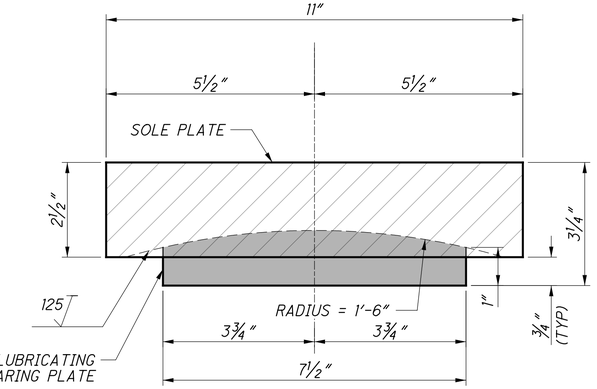
286

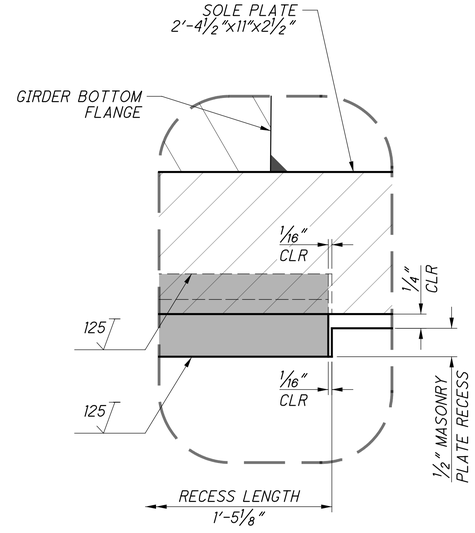


TYPICAL EXPANSION BEARING

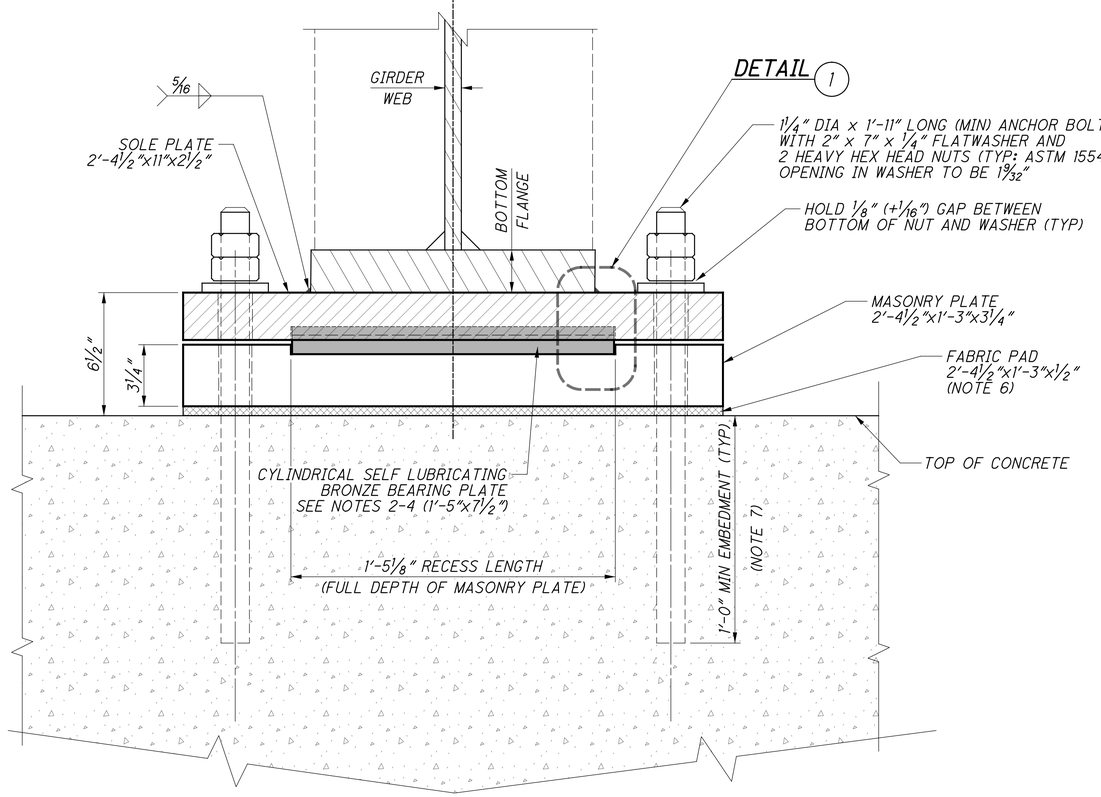
6 REQUIRED (ANCHOR BOLTS NOT SHOWN)



B SECTION
CYLINDRICAL BEARING ASSEMBLY



1 DETAIL
RECESS DETAILS



A ELEVATION

LOAD TABLE	
DEAD LOAD (KIPS)	64.3
LIVE LOAD + IMPACT (KIPS)	173.8
SERVICE VERTICAL LOADS (KIPS)	238.1

NOTES:

1. BEARINGS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF AREMA CHAPTER 15 AND THE NORFOLK SOUTHERN PUBLIC PROJECTS MANUAL.
2. BRONZE BEARING PLATES SHALL CONFORM TO THE STANDARD SPECIFICATION FOR BRONZE CASTINGS FOR BRIDGES AND TURNTABLES, ASTM B-22. ALLOY C91100 SHALL BE FURNISHED.
3. SOLID LUBRICANT SHALL CONSIST OF A COMBINATION OF SOLIDS HAVING NON-DETERIORATING CHARACTERISTICS, AS WELL AS LUBRICATING QUALITIES AND SHALL BE CAPABLE OF WITHSTANDING LONG TERM ATMOSPHERIC EXPOSURE, DE-ICING MATERIALS AND WATER. MOLYBDENUM DISULFIDE AND OTHER INGREDIENTS WHICH MAY PROMOTE ELECTROLYTIC OR CHEMICAL ACTION BETWEEN THE BEARING ELEMENTS SHALL NOT BE USED. SHELLAC, TARS AND ASPHALTS AND PETROLEUM PRODUCTS SHALL NOT BE USED AS BINDERS.
4. EXPANSION BEARINGS SHALL HAVE MARKINGS MATCHED IN THE ENDS OF THE SOLE PLATES AND BRONZE PLATES TO FACILITATE THEIR POSITIONING FOR THE PROPER TEMPERATURE CORRECTION.
5. EXPOSED SURFACES SHALL BE PAINTED IN ACCORDANCE WITH STRUCTURAL STEEL PAINT SYSTEM, SEE GENERAL NOTES. CARE SHALL BE TAKEN TO KEEP ALL SLIDING SURFACES FREE FROM PAINT.
6. FABRIC PADS SHALL BE PREFORMED FABRIC BEARING PADS, ½" THICK, AND SHALL BE EITHER:
   - SHOCK PAD STYLE 15175, AS MANUFACTURED BY THE ALERT MANUFACTURING AND SUPPLY COMPANY, CHICAGO, IL; OR
   - FABREEKA PADS, AS MANUFACTURED BY THE FABREEKA PRODUCTS COMPANY, BOSTON, MA; OR
   - SORBTEX PADS AS MANUFACTURED BY VOSS ENGINEERING, INC., CHICAGO, IL; OR
   - AN APPROVED EQUAL.
7. ANCHOR RODS SHALL BE IN COMPLIANCE WITH AREMA 15-5.3.7.d AND INSTALLED IN PREFORMED HOLES. AT A MINIMUM, THE ANCHOR RODS SHALL BE SWEDGED OR THREADED THE ENTIRE LENGTH OF EMBEDDMENT. DRILLED HOLES SHALL NOT BE USED. PREFORMED HOLES SHALL BE FILLED WITH NON-SHRINK, NON-METALLIC GROUT AND IS INCIDENTAL TO THE COST OF THE BEARINGS. ANCHOR BOLTS ARE TO BE SET IN THE PREFORMED HOLES PRIOR TO PLACING BEARINGS AND GIRDERS. CARE SHALL BE TAKEN TO NOT ALLOW GROUT TO ENCROACH INTO THE SLOTTED HOLES OF THE SOLE PLATE.
   FOR TYPICAL ANCHOR BLOCK OUT DETAIL, SEE SHEET 19/286

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

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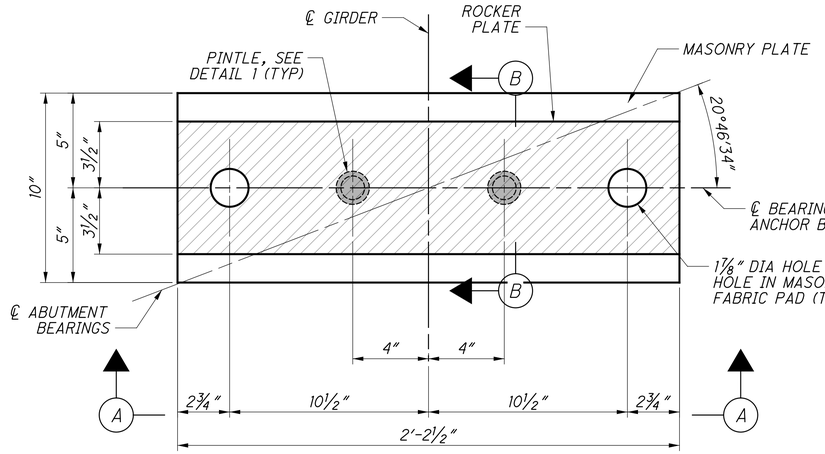
VDT	VDK	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
EFD		NSRR BR#: BR0018444	

EXPANSION BEARING

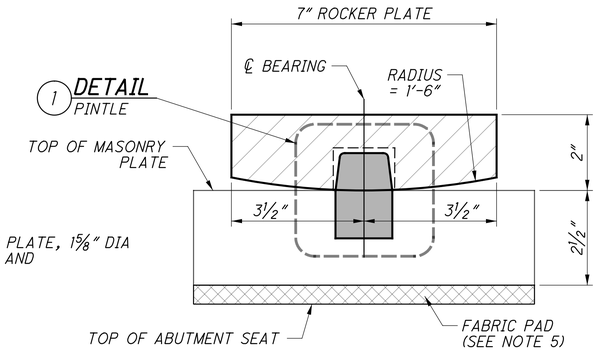
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

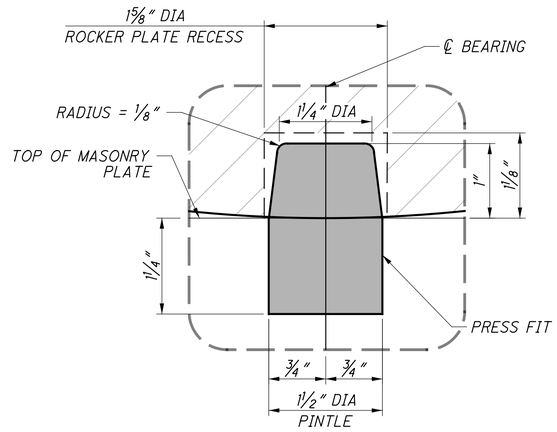


FIXED BEARING

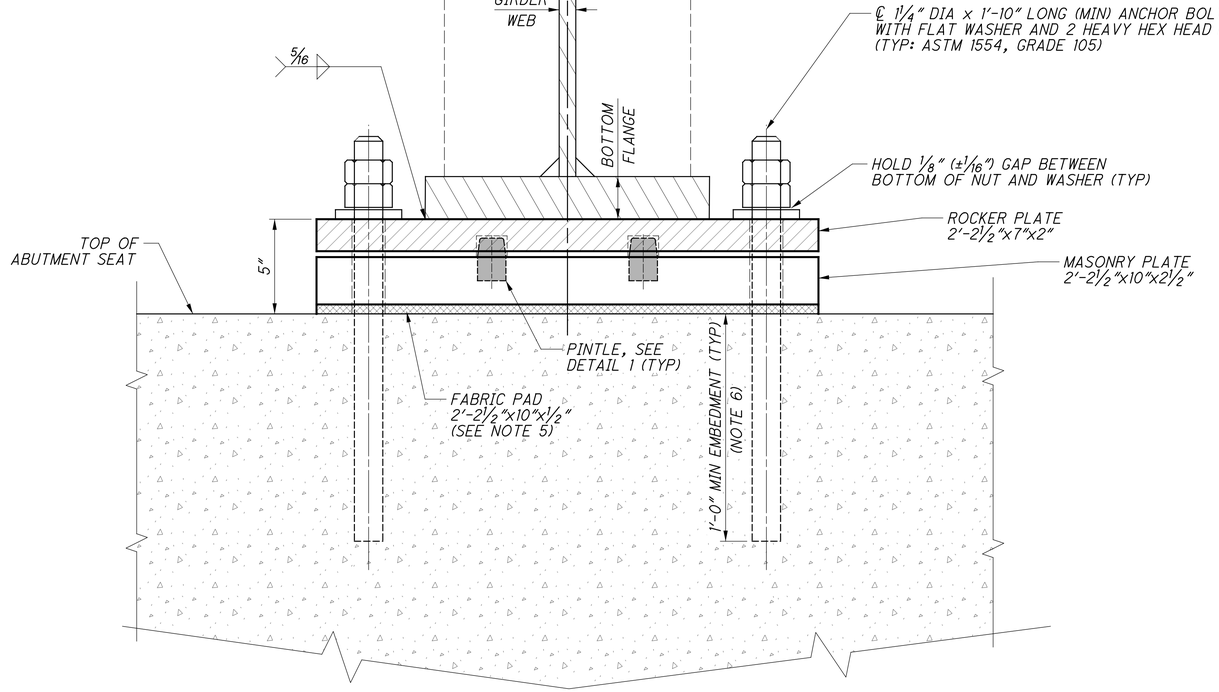
6 REQUIRED (ANCHOR BOLTS NOT SHOWN)



B SECTION
ROCKER PLATE DETAILS



1 PINTLE DETAIL
SEE NOTE 3



A ELEVATION

LOAD TABLE	
DEAD LOAD (KIPS)	64.3
LIVE LOAD + IMPACT (KIPS)	173.8
SERVICE VERTICAL LOADS (KIPS)	238.1

NOTES:

1. BEARINGS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF AREMA CHAPTER 15 AND THE NORFOLK SOUTHERN PUBLIC PROJECTS MANUAL.
2. BEARINGS SHALL BE ASSEMBLED COMPLETE IN THE SHOP, CHECKED FOR FIT AND BEARING OF ALL CONTACT SURFACES MARKED FOR ASSEMBLY IN THE FIELD.
3. PROVIDE CARBON STEEL PINTLE STEEL CONFORMING TO THE REQUIREMENTS OF ASTM SPECIFICATION A668, CLASS D.
4. EXPOSED SURFACES SHALL BE PAINTED IN ACCORDANCE WITH STRUCTURAL STEEL PAINT SYSTEM, SEE GENERAL NOTES.
5. FABRIC PADS SHALL BE PROVIDED AS PER NOTE 6 ON SHEET 28/35.
6. ANCHOR RODS SHALL BE IN COMPLIANCE WITH AREMA 15-5.3.7.d AND INSTALLED IN PREFORMED HOLES. AT A MINIMUM, THE ANCHOR RODS SHALL BE SWEDGED OR THREADED THE ENTIRE LENGTH OF EMBEDDMENT. DRILLED HOLES SHALL NOT BE USED. PREFORMED HOLES SHALL BE FILLED WITH NON-SHRINK, NON-METALLIC GROUT AND IS INCIDENTAL TO THE COST OF THE BEARINGS. ANCHOR BOLTS ARE TO BE SET IN THE PREFORMED HOLES PRIOR TO PLACING BEARINGS AND GIRDERS. FOR TYPICAL ANCHOR BLOCK OUT DETAIL, SEE SHEET 19/286

DESIGN AGENCY
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2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED VDT | DRAWN VDK | REVIEWED CTV | DATE 12-19-23
CHECKED EFD | REVISED | ODOT SFN: 3160007 | NSRR BR#: BR0018444

FIXED BEARING
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

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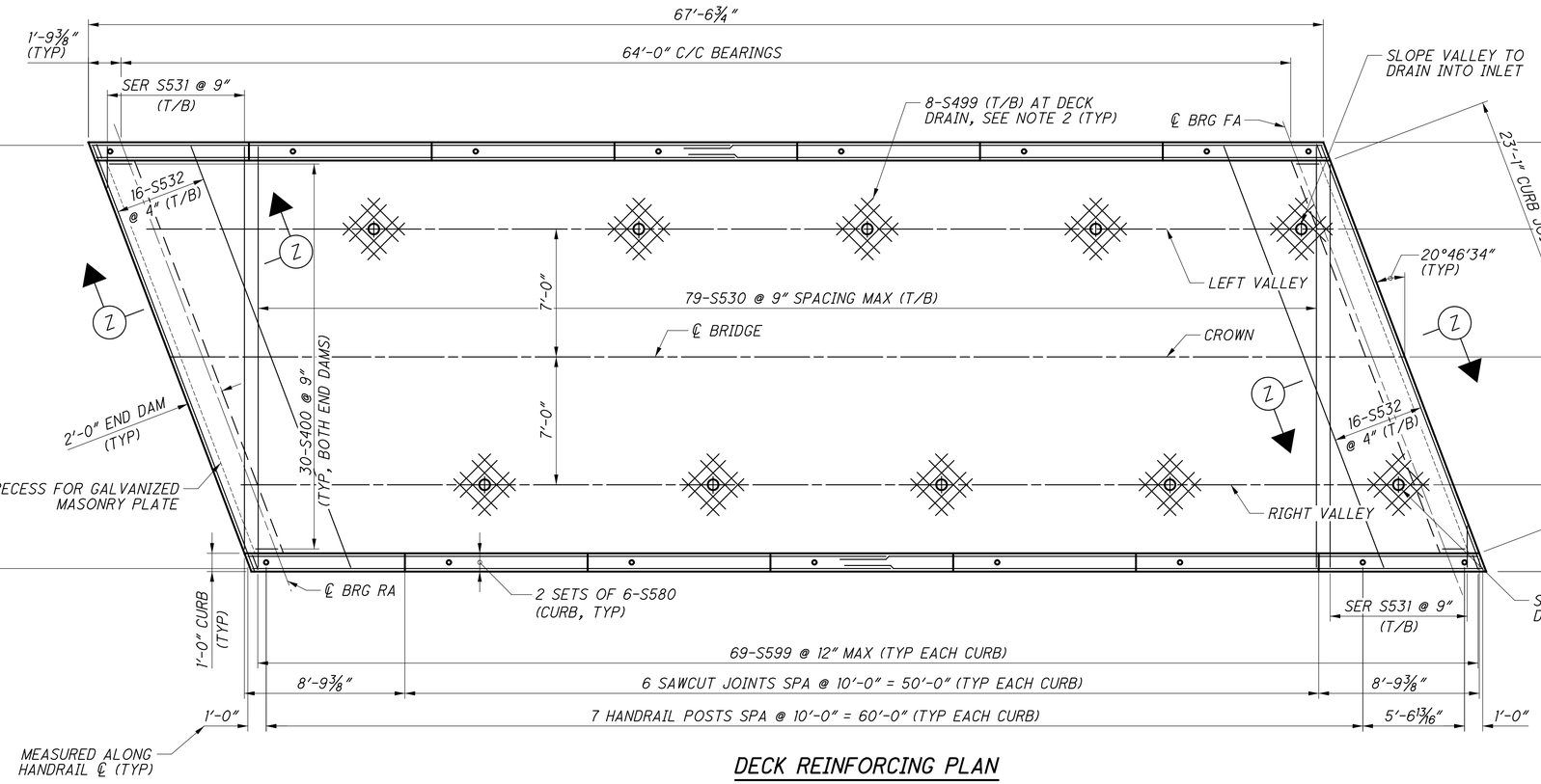
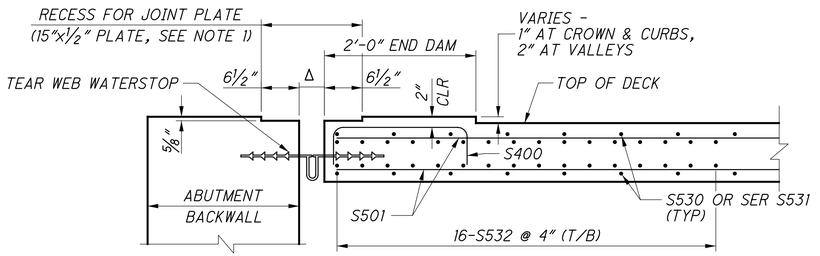
286



DECK REINFORCING PLAN

UPSTATION



Δ = 4" AT FORWARD ABUTMENT

Δ VALUE SHOULD BE LINEARLY INTERPOLATED FROM THE VALUES BELOW FOR REAR ABUTMENT:
Δ = 3⅜" @ 90°
Δ = 4" @ 65° (THERMAL NEUTRAL)
Δ = 4⅛" @ 40°

Z SECTION
ABUTMENT DAM DETAIL

NOTES:

1. FOR DECK JOINT DETAILS, SEE GENERAL RAILROAD DETAILS, SHEET 20/286 .
2. FOR CURB REINFORCING DETAILS AND REINFORCING AT DECK DRAINS, SEE GENERAL RAILROAD DETAILS, SHEET 19/286 . FOR DRAIN LOCATION AND DETAILS, SEE SHEET 32/35.
3. FOR REINFORCING DETAILS, SEE SHEET 33/35.

DESIGN AGENCY
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VDT	DKU	CTV	12-19-23
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DECK PLAN
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

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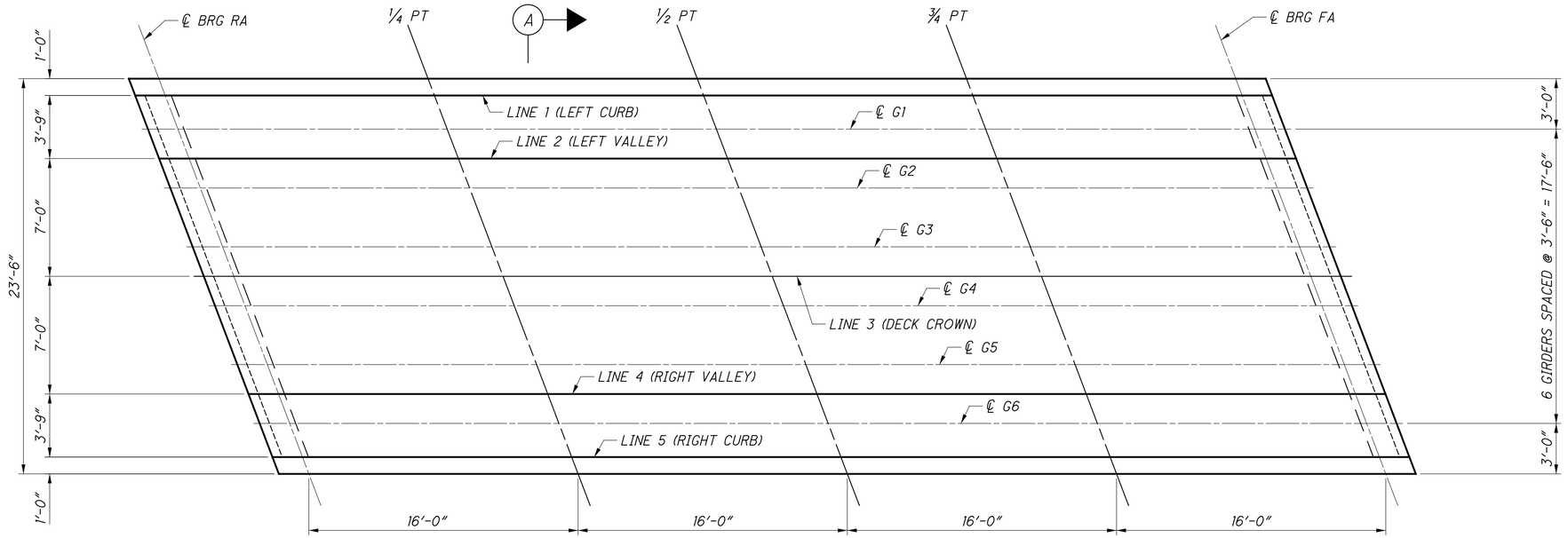
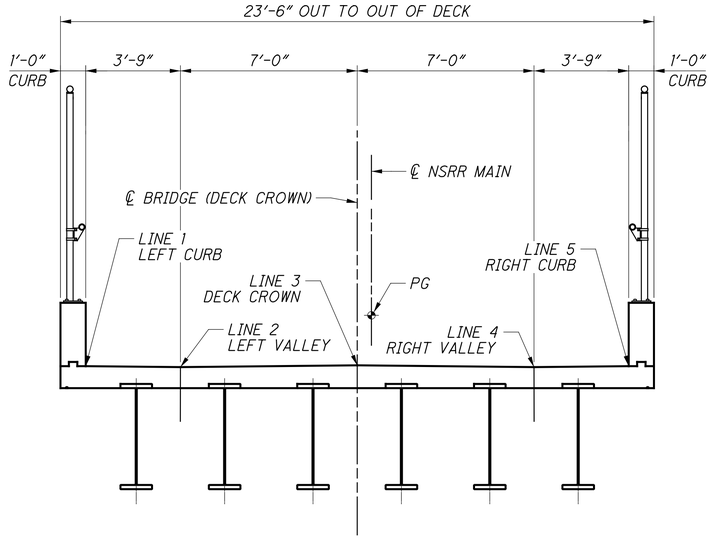


A

SCREED AND ELEVATION LOCATION PLAN

UPSTATION



A

TYPICAL TRANSVERSE SECTION

SCREED AND FINAL DECK LINES
(LOOKING UPSTATION)

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS. OTHER ANTICIPATED DEAD LOADS INCLUDE CURB CONCRETE, BALLAST, AND TRACKWORK BUT DOES NOT INCLUDE THE EFFECTS OF A FUTURE BALLAST.

2. FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURED. (DOES NOT INCLUDE FUTURE BALLAST)

SCREED ELEVATION TABLE

LINE NO.	LOCATION	℄ BRG REAR ABUTMENT	¼ PT	½ PT	¾ PT	℄ BRG FORWARD ABUTMENT
LINE 1	LEFT CURB	552.30	551.98	551.65	551.31	550.96
LINE 2	LEFT VALLEY	552.22	551.90	551.57	551.23	550.87
LINE 3	DECK CROWN	552.30	551.98	551.65	551.31	550.96
LINE 4	RIGHT VALLEY	552.22	551.90	551.57	551.23	550.87
LINE 5	RIGHT CURB	552.30	551.98	551.65	551.31	550.96

FINAL DECK ELEVATION TABLE

LINE NO.	LOCATION	℄ BRG REAR ABUTMENT	¼ PT	½ PT	¾ PT	℄ BRG FORWARD ABUTMENT
LINE 1	LEFT CURB	552.30	551.97	551.63	551.29	550.96
LINE 2	LEFT VALLEY	552.22	551.88	551.55	551.21	550.87
LINE 3	DECK CROWN	552.30	551.97	551.63	551.29	550.96
LINE 4	RIGHT VALLEY	552.22	551.88	551.55	551.21	550.87
LINE 5	RIGHT CURB	552.30	551.97	551.63	551.29	550.96

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
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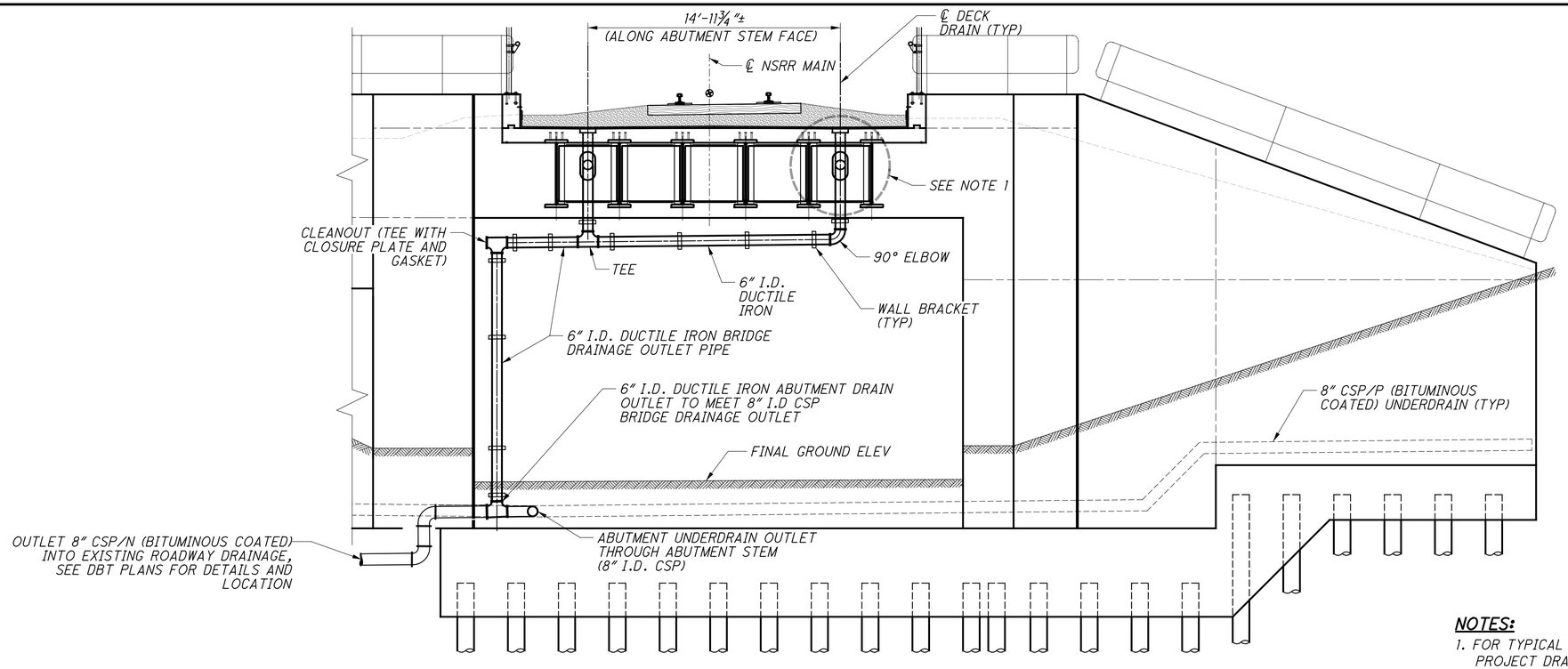
EFD		NSRR BR#: BR0018444	

FINAL DECK/SCREED ELEVATIONS
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

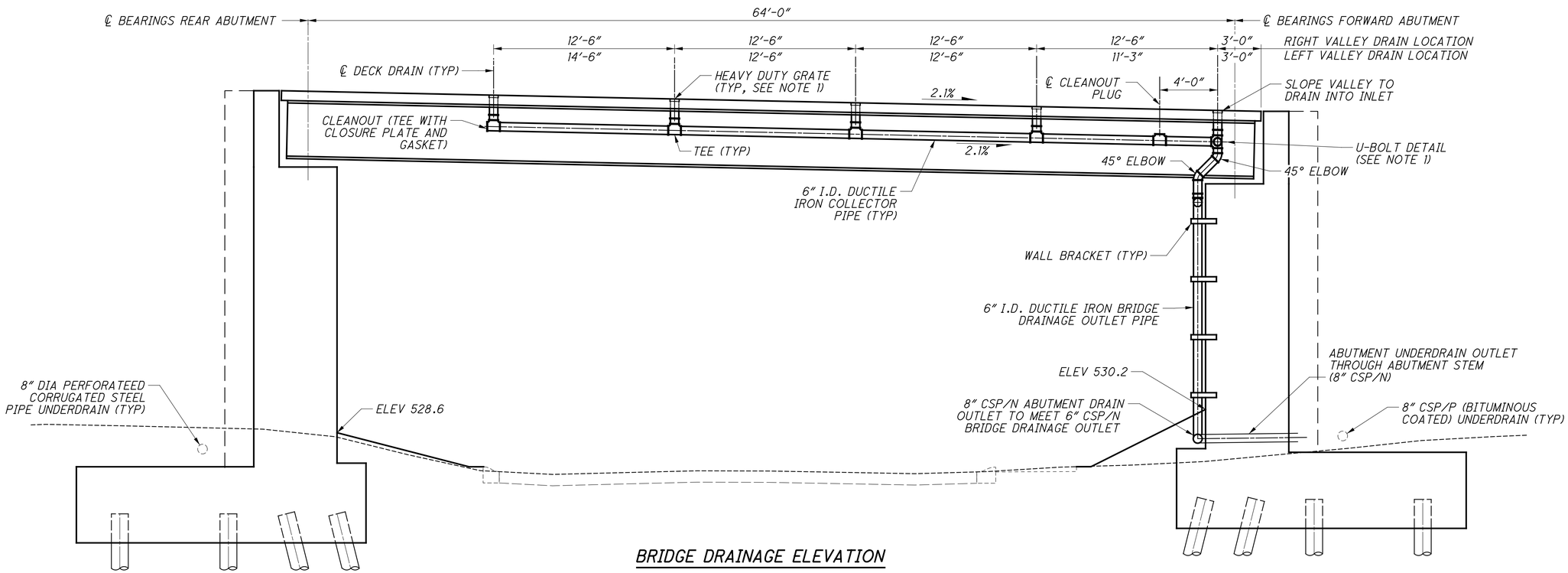
HAM-75-7.85
PID No. 77889



NOTES:

1. FOR TYPICAL NORFOLK SOUTHERN AND PROJECT DRAINAGE DETAILS, SEE SHEET 18/286

FORWARD ABUTMENT DRAINAGE ELEVATION



BRIDGE DRAINAGE ELEVATION

DESIGN AGENCY
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ENGINEERS & ARCHITECTS, P.C.
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COLUMBUS, OHIO 43231

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EFD		NSRR BR#: BR0018444	

BRIDGE DRAINAGE SCHEMATIC
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

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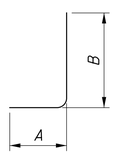
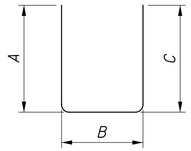


TYPE-1



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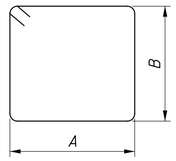

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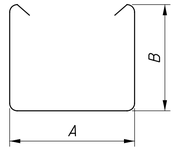

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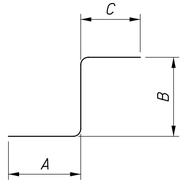
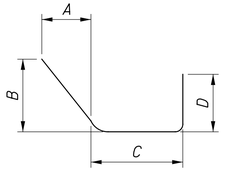


TYPE-8



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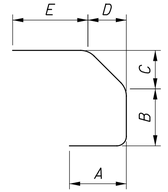

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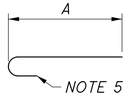

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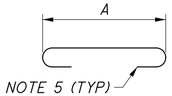

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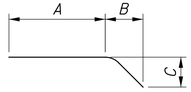

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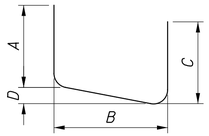

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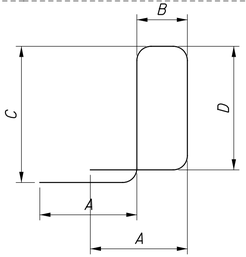

TYPE-34

AREMA CLASS C LAP SPLICE LENGTHS (NOTE 6):

#4 BAR (Ld=1'-6"): ALL = 2'-7"
#5 BAR (Ld=1'-11"): DECK = 3'-3", OTHERS = 3'-8"
#6 BAR (Ld=2'-3"): DECK = 3'-10", OTHERS = 4'-5"
#7 BAR (Ld=2'-11"): ALL = 5'-6"
#8 BAR (Ld=3'-9"): TOP/ FOOTING = 7'-3", OTHERS = 6'-6"
#9 BAR (Ld=4'-9"): TOP/ FOOTING = 9'-2", OTHERS = 8'-1"
#10 BAR (Ld=6'-1"): TOP/ FOOTING = 11'-8", OTHERS = 10'-3"
#11 BAR (Ld=7'-5"): TOP/ FOOTING = 14'-4", OTHERS = 12'-7"
#14 BAR: MECHANICALLY SPLICE

REINFORCING BEND DIAGRAMS AND LAP SPLICE LENGTHS

MARK	NUMBER REAR ABUT	NUMBER FWD ABUT	NUMBER TOTAL	LENGTH	WEIGHT RA	WEIGHT FA	WEIGHT TOTAL	TYPE	DIMENSIONS A	B	C	D	INC
FOOTING													
F400	268	173	441	5'-11"	1,059	684	1,743	3	1'-4"	1'-4"			
F500	46		46	32'-3"	1,547		1,547	STR.					
F501	26	13	39	19'-0"	515	258	773	STR.					
F502	4	2	6	7'-3"	30	15	45	STR.					
F503	28	14	42	17'-3"	504	252	756	STR.					
F504	6	3	9	5'-5"	34	17	51	STR.					
F505	4	2	6	9'-4"	39	19	58	19	5'-8"	2'-6"	2'-6"		
F506	12	6	18	20'-11"	262	131	393	19	17'-3"	2'-6"	2'-6"		
F509	32	16	48	15'-0"	501	250	751	19	10'-3"	3'-4"	3'-4"		
F510	28		28	17'-8"	516		516	STR.					
F512	28		28	32'-8"	954		954	STR.					
F516	34	29	63	19'-8"	697	595	1,292	STR.					
F519	34	33	67	10'-10"	384	373	757	2	3'-0"	5'-0"	3'-0"		
F531	85	63	148	10'-2"	901	668	1,569	1	1'-0"	9'-3"			
F535	53		53	8'-2"	451		451	1	1'-0"	7'-3"			
F540		46	46	32'-0"		1,535	1,535	STR.					
F552		28	28	18'-8"		545	545	STR.					
F560		4	4	7'-5"		31	31	STR.					
F561		4	4	8'-5"		35	35	STR.					
F565		27	27	10'-10"		305	305	2	3'-8"	3'-8"	3'-8"		
F566		4	4	14'-4"		60	60	2	3'-8"	7'-2"	3'-8"		
F567		4	4	10'-7"		44	44	2	3'-8"	3'-5"	3'-8"		
		1	1	4'-9"									
F571		SER OF	SER OF	to		229	229	STR.					2 3/4"
		28	28	11'-0"									
F575		20	20	8'-2"		170	170	1	1'-0"	7'-3"			
F580		5	5	26'-0"		136	136	STR.					
F581		4	4	7'-2"		30	30	1	3'-6"	3'-9"			
F582		4	4	10'-9"		45	45	1	3'-8"	7'-2"			
F585		8	8	27'-11"		233	233	STR.					
F616	12	6	18	6'-5"	115	58	173	STR.					
F617	10	5	15	12'-0"	180	90	270	STR.					
F618	12	6	18	16'-2"	291	146	437	STR.					
	1		1	11'-8"									
F619	SER OF		SER OF	to	466		466	STR.					3/4"
	25		25	13'-3"									
	1		1	11'-8"									
F620	SER OF		SER OF	to	851		851	STR.					1/2"
	45		45	13'-7"									
		1	1	11'-8"									
F657		SER OF	SER OF	to		354	354	STR.					1"
		19	19	13'-3"									
		1	1	4'-9"									
F771		SER OF	SER OF	to		449	449	STR.					2 3/4"
		28	28	11'-0"									
	1		1	11'-8"									
F816	SER OF		SER OF	to	829		829	STR.					3/4"
	25		25	13'-3"									
	1		1	11'-8"									
F817	SER OF		SER OF	to	1,512		1,512	STR.					1/2"
	45		45	13'-7"									
F818	12	6	18	13'-2"	422	211	633	STR.					
		1	1	11'-8"									
F857		SER OF	SER OF	to		864	864	STR.					3/4"
		26	26	13'-3"									
F931	80	68	148	20'-9"	5,644	4,797	10,441	1	1'-0"	20'-0"			
F935	37		37	11'-10"	1,489		1,489	1	1'-0"	11'-0"			
F936	67		67	18'-10"	4,290		4,290	1	1'-0"	18'-0"			
F975		39	39	14'-7"		1,934	1,934	1	1'-0"	13'-9"			
TABLE SUB-TOTAL					24,483	15,563	40,046						

REINFORCING NOTES

1. ALL REINFORCING BARS SHALL BE EPOXY COATED. PAYMENT FOR REINFORCING, INCLUDING MECHANICAL CONNECTORS, SHALL BE MADE WITH ITEM 509 - EPOXY COATED REINFORCING STEEL
2. MAX REINFORCING SPACING IS 12" UNLESS NOTED OTHERWISE. REINFORCING SPACINGS GIVEN ARE CONSIDERED "MAX" UNLESS NOTED OTHERWISE.
3. "STR." IN THE TYPE COLUMN INDICATES STRAIGHT BARS.
4. "SER OF" DENOTES SERIES OF BARS, E.G "X" SER OF "Y" = "X" SERIES OF "Y" BARS PER SERIES.
5. REFER TO C.M.S SECTION 509.05 FOR STANDARD BEND DIMENSIONS.
6. TWO BARS OF EQUAL SIZE SHALL BE LAPPED THE DISTANCE OF THE APPLICABLE AREMA CLASS C LAP SPLICE LENGTH. WHEN BARS OF UNEQUAL SIZE ARE LAPPED, THE PROVIDED LAP SHALL BE THE MAXIMUM OF EITHER THE "Ld" VALUE OF THE LARGER BAR OR THE APPLICABLE AREMA CLASS C LAP SPLICE LENGTH OF THE SMALLER BAR.

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED VDT | DRAWN EFD | CHECKED SNH | REVIEWED CTV | DATE 12-19-23
ODOT SFN: 3160007
NSRR BR#: BR0018444
REVISED

REINFORCING STEEL LIST SHEET 1 OF 3
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

33 / 35

151
286

MARK	NUMBER			LENGTH	WEIGHT			TYPE	DIMENSIONS				
	REAR ABUT	FWD ABUT	TOTAL		RA	FA	TOTAL		A	B	C	D	INC
FOOTING (CONTINUED)													
F1031	34		34	24'-3"	3,548		3,548	1	1'-0"	23'-6"			
F1071		17	17	20'-3"		1,481	1,481	1	1'-0"	19'-6"			
F1116	44	39	83	19'-8"	4,598	4,075	8,673	STR.					
F1117	46	23	69	16'-2"	3,951	1,976	5,927	STR.					
F1160		5	5	7'-5"		197	197	STR.					
F1161		5	5	8'-5"		224	224	STR.					
TABLE SUB-TOTAL					12,097	7,953	20,050						
FOOTING SUB-TOTAL					36,580	23,516	60,096						
ABUTMENT													
A501	60		60	31'-8"	1,982		1,982	STR.					
A502	44		44	7'-4"	337		337	1	2'-0"	5'-4"			
A503	27		27	6'-8"	188		188	1	1'-0"	5'-9"			
A504	27		27	12'-2"	343		343	1	1'-0"	11'-3"			
	1		1	5'-3"									
A505	SER OF		SER OF	to	34		34	STR.					2'-0"
	4		4	11'-3"									
	1		1	2'-0"									
A506	SER OF		SER OF	to	37		37	STR.					5 3/4"
	9		9	5'-10"									
A510	31		31	8'-7"	278		278	19	5'-1"	2'-4"	2'-4"		
A511	12		12	8'-1"	101		101	19	5'-1"	2'-0"	2'-0"		
A515	31		31	10'-8"	345		345	19	7'-3"	2'-5"	2'-5"		
A516	12		12	9'-1"	114		114	19	6'-1"	2'-0"	2'-0"		
A518	38		38	8'-0"	317		317	8	3'-0"	3'-10"	1'-3"		
A519	38		38	8'-2"	324		324	10	10"	10"	4'-0"	3'-0"	
A521	41		41	20'-0"	855		855	STR.					
A526	14		14	25'-7"	374		374	STR.					
A527	47		47	13'-9"	674		674	STR.					
A528	19		19	15'-8"	310		310	STR.					
A529	33		33	11'-2"	384		384	2	3'-0"	5'-4"	3'-0"		
A537	25		25	8'-6"	222		222	STR.					
A538	10		10	10'-4"	108		108	STR.					
A539	32		32	27'-0"	901		901	STR.					
A541		54	54	28'-8"		1,615	1,615	STR.					
A542		38	38	7'-4"		291	291	1	2'-0"	5'-4"			
A543		24	24	5'-7"		140	140	1	1'-0"	4'-8"			
A544		24	24	12'-8"		317	317	1	1'-0"	11'-9"			
		1	1	6'-11"									
A545		SER OF	SER OF	to		29	29	STR.					2'-5 1/4"
		3	3	11'-10"									
		1	1	2'-3"									
A546		SER OF	SER OF	to		33	33	STR.					3 3/4"
		9	9	4'-9"									
A550		3	3	2'-5"		8	8	STR.					
A551		3	3	2'-11"		9	9	STR.					
A555		32	32	9'-6"		317	317	19	5'-11"	2'-6"	2'-6"		
A556		13	13	7'-9"		105	105	19	4'-10"	2'-1"	2'-1"		
A558		19	19	9'-0"		178	178	8	3'-0"	3'-6"	2'-9"		
A559		19	19	9'-1"		180	180	10	2'-0"	2'-0"	3'-4"	3'-0"	
A561		38	38	17'-10"		707	707	STR.					
A566		13	13	23'-2"		314	314	STR.					
A567		46	46	11'-4"		544	544	STR.					
A568		13	13	13'-3"		180	180	STR.					
A569		30	30	11'-3"		352	352	2	3'-0"	5'-5"	3'-0"		
A577		24	24	8'-4"		209	209	STR.					
A578		8	8	10'-2"		85	85	STR.					
A579		20	20	24'-9"		516	516	STR.					
ABUTMENT SUB-TOTAL					8,228	6,129	14,357						

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS					
	SUPER		SUP		A	B	C	D	E	INC
SUPERSTRUCTURE										
S400	60	2'-7"	104	2	6"	1'-9"	6"			
S499	160	3'-0"	321	STR.						
S501	136	35'-6"	5,036	STR.						
S530	158	23'-2"	3,818	STR.						
	4	2'-3"								
S531	SER OF	to	557	STR.						1'-11 3/4"
	11	22'-1"								
S532	64	24'-9"	1,652	STR.						
S580	24	35'-6"	889	STR.						
S599	138	6'-6"	936	34	1'-0"	2'-0"	8"	2'-3"	1'-0"	
SUPERSTR. SUB-TOTAL			13,313							

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED VDT | DRAWN EFD | CHECKED SNH | REVIEWED CTV | DATE 12-19-23 | REVISED

ODOT SFN: 3160007
NSRR BR#: BR0018444

REINFORCING STEEL LIST SHEET 2 OF 3
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

MARK	NUMBER			LENGTH	WEIGHT				TYPE	DIMENSIONS			
	REAR ABUT	FWD ABUT	TOTAL		RA	FA	SUP	TOTAL		A	B	C	INC
WINGWALL													
	1		1	22'-8"									
W501	SER OF		SER OF	to	235			235	STR.				7 1/4"
	9		9	27'-7"									
	1		1	8'-8"									
W502	SER OF		SER OF	to	276			276	STR.				7"
	19		19	19'-3"									
	1		1	25'-10"									
W511	SER OF		SER OF	to	250			250	STR.				2 1/2"
	9		9	27'-6"									
	1		1	15'-8"									
W512	SER OF		SER OF	to	677			677	STR.				2 1/2"
	34		34	22'-7"									
W520	102		102	7'-11"	842			842	STR.				
W521	20		20	17'-8"	369			369	STR.				
	2		2	2'-0"									
W522	SER OF		SER OF	to	200			200	STR.				1'-8 1/4"
	10		10	17'-3"									
	2		2	1'-8"									
W523	SER OF		SER OF	to	35			35	STR.				1'-8 1/2"
	4		4	6'-10"									
W524	2		2	8'-10"	18			18	STR.				
W525	2		2	20'-5"	43			43	STR.				
W530	34		34	32'-8"	1,158			1,158	STR.				
	2		2	6'-3"									
W531	SER OF		SER OF	to	233			233	STR.				4'-11 1/4"
	6		6	31'-0"									
W532	2		2	4'-7"	10			10	STR.				
W533	2		2	8'-0"	17			17	STR.				
W534	2		2	33'-2"	69			69	STR.				
W540		14	14	25'-0"		365		365	STR.				
		1	1	22'-1"									
W551		SER OF	SER OF	to		221		221	STR.				4 1/2"
		9	9	25'-1"									
		1	1	11'-5"									
W552		SER OF	SER OF	to		312		312	STR.				4 1/2"
		20	20	18'-7"									
W561		26	26	18'-8"		506		506	STR.				
W562		46	46	7'-11"		380		380	STR.				
		2	2	1'-9"									
W563		SER OF	SER OF	to		27		27	STR.				2'-7 1/2"
		3	3	7'-0"									
W564		2	2	8'-5"		18		18	STR.				
		2	2	2'-6"									
W565		SER OF	SER OF	to		155		155	STR.				2'-8 1/2"
		7	7	18'-9"									
W566		2	2	19'-10"		41		41	STR.				
W570		8	8	9'-7"		80		80	1	4'-0"	5'-8"		
W571		8	8	5'-8"		47		47	STR.				
W572		18	18	14'-9"		277		277	3	1'-5"	5'-8"		
		2	2	3'-2"									
W573		SER OF	SER OF	to		181		181	STR.				4'-6 1/4"
		6	6	25'-10"									
W574		2	2	28'-6"		59		59	STR.				
W575		2	2	27'-11"		58		58	STR.				
TABLE SUB-TOTAL					4,432	2,727		7,159					

MARK	NUMBER			LENGTH	WEIGHT				TYPE	DIMENSIONS			
	REAR ABUT	FWD ABUT	TOTAL		RA	FA	SUP	TOTAL		A	B	C	INC
WINGWALL (CONTINUED)													
	1		1	8'-5"									
W701	SER OF		SER OF	to	198			198	STR.				7"
	9		9	13'-2"									
	1		1	4'-10"									
W702	SER OF		SER OF	to	399			399	STR.				7 1/4"
	19		19	15'-9"									
	1		1	11'-5"									
W711	SER OF		SER OF	to	225			225	STR.				2 1/2"
	9		9	13'-2"									
	1		1	4'-10"									
W712	SER OF		SER OF	to	575			575	STR.				2 1/2"
	34		34	11'-9"									
		1	1	12'-0"									
W751		SER OF	SER OF	to		247		247	STR.				4 1/4"
		9	9	14'-10"									
		1	1	4'-10"									
W752		SER OF	SER OF	to		351		351	STR.				4 3/4"
		20	20	12'-5"									
W772		5	5	13'-2"		135		135	2	5'-9"	2'-0"	5'-9"	
TABLE SUB-TOTAL					1,397	733		2,130					
WINGWALL SUB-TOTAL					5,829	3,460		9,289					
TOTAL ALL REINFORCING					50,637	33,105	13,313	97,055					

DESIGN AGENCY
Gannett Fleming
ENGINEERS & ARCHITECTS, P.C.
2500 CORPORATE EXCHANGE DRIVE, SUITE 230
COLUMBUS, OHIO 43231

DESIGNED	DRAWN	REVIEWED	DATE
VDT	EFD	CTV	12-19-23
CHECKED	REVISED	ODOT SFN: 3160007	
SNH		NSRR BR#: BR0018444	

REINFORCING STEEL LIST SHEET 3 OF 3
BRIDGE NO. HAM-75-PROSSER (NSRR CT-0.89: CINCINNATI, OH)
NORFOLK SOUTHERN RAILROAD OVER PROSSER AVENUE

HAM-75-7.85
PID No. 77889

35 / 35

153
286

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EXISTING TRACK
TEMPORARY TRACK
FINAL TRACK
RESURFACE/ REBUILD TRACK

NOTE: ALL TURNOUTS ARE #10 RH

EXISTING BRIDGE OVER SR-562
NS CINCINNATI-#BR0018448
CT-1.41 NORWOOD LATERAL
(TO BE REPLACED)

EX. RAIL AMERICA (IORY) TRACKS

BEGIN STRUCTURE PD STA. 6+65.56

END STRUCTURE PD STA. 8+25.39

NS CT-1.41

NORWOOD LATERAL

SR 562 EB

SR 562 WB

TEMPORARY TD8 TRACK ℄

NEW MAIN TRACK ℄ 'MLPt' & 'MLPs'

END STRUCTURE
MLPs STA. 131+05.53
MLPt STA. A 131+05.53

BEGIN STRUCTURE
MLPs STA. 129+52.22
MLPt STA. 129+52.57

TRACK ℄ 'MLPt'

TRACK ℄ 'MLPs'

APPROXIMATE TRACK WORK DISTURBANCE LIMITS

EXISTING 'MLE' ℄/℄

EXISTING SURVEY ℄./'MLE'

NORFOLK SOUTHERN BERRY YARD

NEW MAIN ℄ 'MLPs'

EXISTING SURVEY ℄./'MLE'

MATCHLINE, EX. MAIN STA. 140+00

STOP WORK
POT Sta. 138+68.00 MLPs BK
= ± POT 138+70.62 MLE AH

ABANDONED TRACK

START WORK : START PROJECT
STA. 126+93.10 ± MLEt BK
= STA. 126+93.11 MLPt/MLPs AH

PC MLEt/MLPt Sta. 123+12.58

POT MLEt/MLPt Sta. 123+12.45 AH
= PC MLE Sta. 123+12.45 BK

POB Sta. 122+62.45

MLE-1 / MLEt-1 Dc= 7°00'00.00" MAS=10mph	MLPs-1 Dc= 10°00'00.00" MAS=10mph	PD-1 Dc= 10°00'00.00" MAS=10mph	PD1-1 Dc= 7°30'00.00" MAS=10mph	PD2-1 Dc= 10°00'00.00" MAS=10mph	PD3-1 Dc= 8°00'00.00" MAS=10mph	PD4-1 Dc= 10°00'00.00" MAS=10mph	PB-1 Dc= 0°15'00.00" MAS=10mph	PB1-1 Dc= 7°30'00.00 MAS=10mph
MLPt-1 Dc= 12°00'00.00" MAS=10mph	MLPs-2 Dc= 0°05'00.00" MAS=10mph	PD-2 Dc= 10°00'00.00" MAS=10mph		PD8-1 Dc= 7°30'00.00" MAS=10mph		PD5-1 Dc= 10°00'00.00" MAS=10mph	PB-2 Dc= 0°20'00.00" MAS=10mph	
		TD8-1 Dc= 5°30'00.00" MAS=10mph	TD8-2 Dc= 10°00'00.00" MAS=10mph					

TRACK PLAN ASSEMBLY

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JRG
CHECKED RC

TRACK SCHEMATIC PLAN
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

EXISTING TRACK
TEMPORARY TRACK
FINAL TRACK
RESURFACE/ REBUILD TRACK

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JRG
CHECKED RC

TRACK SCHEMATIC PLAN
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

MATCHLINE, EX. MAIN STA. 140+00

NORFOLK SOUTHERN BERRY YARD

D8
D8A
D7B
D
D5
D4
D3
D2
D1
MAIN
B
B1

START WORK
POT Sta. 13+88.86 PD7
BEGIN PROPOSED PERMANENT TRACK REALIGNMENT

FIELD FIT CONNECTIONS LINE AND GRADE TO MATCH EXISTING

℄ PR. MAIN 'MLPn'

PC Sta. 148+73.90

#10RH

EX. BRIDGE OVER LAIDLAW AVE. (NO WORK REQUIRED)

EXISTING SURVEY ℄ -'MLE'

START WORK
POT ± Sta. 143+98.78 MLE BK
= POT Sta. 143+96.02 MLPn AH
BEGIN PROPOSED PERMANENT TRACK REALIGNMENT

I-75 SB
I-75 NB

MATCHLINE, EX. MAIN STA. 155+00

EXISTING BRIDGE OVER I-75
STR. # HAM-75-0834
NS CINCINNATI #BR CT-0.95
(TO BE REPLACED)

BEGIN STRUCTURE
MLPn STA. 154+69.02

NEW STRUCTURE

EXISTING SURVEY ℄ -'MLE'

TEMPORARY D7D TRACK ℄

APPROXIMATE TRACK WORK DISTURBANCE LIMITS

LAIDLAW AVE.

PD7-1b
PD7-1a
D7D-1
D7D-2
MLE-2
MLPn-1
MLPn-2

NEW PD7 TRACK ℄

NEW MAIN TRACK ℄ 'MLPn'

ABANDONED TRACK

NOTE: ALL TURNOUTS ARE #10 RH

Ex R/W
Ex LA-R/W
LA
TMP

Compound Curve PD7-1

PD7-1b - Comp Crv
Dc= 9°00'00.00"
Ls= 62'
MAS=10mph
SE= 0"

PD7-1a - Comp Crv
Dc= 8°00'00.00"
Ls= 62'
MAS=10mph
SE= 0"

MLPn-1
Dc= 8°30'00.00"
MAS=10mph
SE=0"

MLPn-2
Dc= 7°45'00.00"
Ls= 62.00'
MAS=10mph
SE=1"

D7D-1
Dc= 10°00'00.00"
LS=93.00'(1), LS=0'(2)
MAS=10mph
SE=0"

D7D-2
Dc= 7°00'00.00"
MAS=10mph
SE=0"

TRACK PLAN ASSEMBLY		
SCHEMATIC, NOTES, TYPICAL SECTIONS	1 | 133	17 | 133
DETAILED GEOMETRY TABULATIONS	18 | 133	29 | 133
FINAL PLAN AND PROFILE	36 | 133	43 | 133
TEMPORARY OPERATIONS PLAN AND PROFILE	44 | 133	51 | 133
YARD TRACK PROFILE SHEETS	52 | 133	59 | 133
FINAL CROSS SECTIONS	60 | 133	77 | 133
TEMPORARY CROSS SECTIONS	78 | 133	85 | 133
STAGED PLAN AND PROFILE	86 | 133	133 | 133

EXISTING TRACK
TEMPORARY TRACK
FINAL TRACK

EXISTING BRIDGE OVER I-75
STR. # HAM-75-0834
NS CINCINNATI-#BR CT-0.95
(TO BE REPLACED)

END STRUCTURE
MLPn STA. 156+93.35

EXISTING BRIDGE OVER PROSSER
STR. # HAM-75-PROSSER
NS CINCINNATI #BR CT-0.89
(TO BE REPLACED)

BEGIN STRUCTURE
MLPn STA. 158+41.83

MATCHLINE, EX. MAIN STA. 155+00

PT STA. 155+42.42

EXISTING SURVEY ℄./'MLE'

PCC Sta. 160+47.07

PT Sta. 163+08.23

PQE Sta. 166+83.32

APPROXIMATE TRACK WORK DISTURBANCE LIMITS

MLE-3a

MLE-3b

℄ EX. MAIN 'MLE'

N 67° 48' 33" W

NEW MAIN TRACK ℄ 'MLPn'

MLPn-2

NEW STRUCTURE

END STRUCTURE
MLPn STA. 159+17.66

NEW STRUCTURE

I-75 NB

I-75 SB

PROSSER ROAD

STOP WORK : END PROJECT
POT ± Sta. 166+83.32 MLE
=POT Sta. 167+32.36 MLP
END PROPOSED PERMANENT
TRACK REALIGNMENT

MLPn-2
Dc= 7°45'00.00"
Ls= 62.00'
MAS=10mph
SE=1"

Ex R/W
Ex LA-R/W
LA-R/W

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JRG
CHECKED RC

TRACK SCHEMATIC PLAN
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

3 / 133

156
286

pw:\\gfnet-pw.bentley.com:gfnet-pw-01\Documents\Projects\54682\77889\railroad\sheets\77889NGBR03.dgn 12/18/2023 5:01:52 PM cmarburger

SUGGESTED TRACK CONSTRUCTION SEQUENCING

ODOT - OHIO DEPT. OF TRANSPORTATION CONTRACTOR
NF - NORFOLK SOUTHERN FORCE ACCOUNT CREWS

GENERAL SEQUENCING NOTES

1) STATION REFERENCES ARE APPROXIMATE AND ARE GENERALLY TAKEN ALONG 'MLE', THE EXISTING 'MAIN' TRACK
2) THE TERM 'BUILD TRACK' INCLUDES PLACEMENT OF BALLAST AND ANY T.O. INSTALLS AS APPROPRIATE
3) ALL TURNOUTS ARE #10, RIGHT HAND TURNOUTS
4) NO CONSTRUCTION TO OCCUR CLOSER THAN 10' TO ACTIVE TRACK UNLESS OTHERWISE DIRECTED.
5) CONTRACTOR SHALL ADJUST AND FURTHER REDUCE CONSTRUCTION SEQUENCING AS MAY BE NECESSARY TO MINIMISE OUTAGE TIMES AND PRESERVE ACCESS TO BOTH THE NORTH LADDER 'D' AND TO THE BRICK YARD TRACK D8/PD8 AT ALL TIMES.
6) FOR GREATER DETAIL AND WORK LIMITS, SEE CONSTRUCTION STAGING PLANS
7) THE TRACK WORK STAGES/NOMENCLATURE IS NOT SYNCHRONOUS WITH THE ROADWAY MOT PHASES.

D DETOUR & D8 IN SERVICE, MLE TEMP OOS, D7 RFS

STAGE 1A

ODOT	CONSTRUCT NEW BRIDGES I-75 & PROSSER	SEE DBT PLANS
NFA	RESURFACE / RECONSTRUCT TRACKS TO PREPARE THEM FOR PRIMARY USE. TRACKS D, D5, D4, D3, D2	
ODOT	SEQUENTIALLY, REMOVE EXISTING YARD TRACKS B1, B, D1, & D2 & MLE	WL: STA. 128+00 TO 138+00
ODOT	DEMO EXISTING EAST HALF OF 562 BRIDGE	SEE DBT PLANS
ODOT	CONSTRUCT NEW EAST HALF OF 562 BRIDGE	SEE DBT PLANS
NFA	REHABILITATE EXISTING MLE TRACK	WL: STA. 147+30 TO 150+50 & 161+00 TO 163+50
NFA	REHABILITATE EXISTING D7 TRACK	WL: STA. 150+50 TO 152+50
NFA	C/T D7 & MLE TO CREATE D7D DETOUR TRACK	WL: STA. 147+50 TO 150+50 & 150+50 TO 152+50
ODOT	FILL/SURCHARGE EMBANKMENT, SUBBALLAST, MLPn OFFLINE	WL: STA. 149+00 TO 161+00
ODOT	SUBGRADE AND SUBALLAST WORK, MLPn ADJACENT TO MLE	WL: STA. 147+00 TO 149+00 & 161+00 TO 163+50
NFA	BUILD NEW TRACK MLPn - LIMITS OFFLINE	WL: STA. 149+00 TO 161+00

MLE TEMP OOS

STAGE 1B

NFA	SEQUENTIALLY WEST TO EAST, BUILD NEW YARD TRACKS MLP†, PD4, PD3, PD2 PD1, PB & PB1	WL: STA. 129+00 TO 138+00
NFA	REALIGN/REBUILD EXISTING TURNOUT IN PLACE	WL: STA. 147+00
NFA	CUT & THROW REHABBED MLE TO NEW MLP ALIGNMENT	WL: STA. 147+00 TO 149+00 & 161+00 TO 164+00

D DETOUR, D8, MLPn IN SERVICE, MLE RFS

NFA	PARTIAL BUILD TRACK TD8	WL: STA. 131+00 TO 133+00
ODOT	REMOVE REMAINING EXISTING MLE AND D7 TRACKS	WL: STA. 147+00 TO 161+00

STAGE 2A

NFA	CUT/THROW EXISTING YARD TRACKS TO NEW YARD TRACKS	WL: STA. 135+00 TO 137+00
NFA	TIE-IN NEW MLP† - INSTALL NEW #10 RH T.O.	WL: STA. 127+00
NFA	LINE, SURFACE AND GRADE ADJUST AS NECESSARY	

MLP†, MLPn & D8 IN SERVICE
D8 TEMP OOS, D DETOUR RFS

STAGE 2A

ODOT	PARTIAL REMOVE EXIST. YARD TRACKS D3, D4, D5 & D	WL: STA. 128+00 TO 134+00
NFA	FINISH BUILD NEW TRACK TD8, C/T EXISTING D8 TO TD8	WL: STA. 133+00 TO 135+00

MLP†, MLPn & TD8 IN SERVICE, D & D8 RFS

STAGE 2A

ODOT	REMOVE EXISTING D & D8 TRACKS	WL: STA. 128+00 TO 134+00
ODOT	DEMO EXISTING WEST HALF OF 562 BRIDGE	SEE DBT PLANS
ODOT	FILL/SURCHARGE EMBANKMENT, SUBGRADE, SUBBALLAST, PD7	WL: STA. 147+00 TO 153+00

MLP† & TD8 IN SERVICE, MLPn TEMPORARY OOS

STAGE 2A

NFA	BUILD NEW PD7 TRACK, INSTALL #10 RH TURNOUT AT MLPn	WL: STA. 147+00 TO 153+00
NFA	CUT/THROW/REALIGN EXISTING D7	
NFA	LINE, SURFACE & GRADE AS NECESSARY	

MLP†, MLPn & TD8 IN SERVICE

STAGE 2A

ODOT	DEMO EXISTING I-75 & PROSSER AVENUE BRIDGES	SEE DBT PLANS

STAGE 2B

ODOT	CONSTRUCT NEW WEST HALF OF 562 BRIDGE	SEE DBT PLANS

MLP†, MLPn IN SERVICE
TD8 TEMPORARY OOS

STAGE 3A

NFA	PARTIAL BUILD NEW PD & PD8 TRACKS	WL: STA. 128+00 TO 134+00
	CUT/THROW TD8 TO PD8	
	LINE, SURFACE & GRADE AS NECESSARY	

MLP†, MLPn & PD/PD8 IN SERVICE
TD8 RFS, MLP† TEMPORARY OOS

STAGE 3A

NFA	BUILD NEW PD8 & PARTIAL PD TRACKS	WL: STA. 128+00 TO 134+00
	CUT/THROW TD8 TO PD8	
	LINE, SURFACE & GRADE AS NECESSARY	

MLP†, MLPn & PD/PD8 IN SERVICE
TD8 RFS, MLP† TEMPORARY OOS

STAGE 3B

NFA	REMOVE TEMPORARY TD8 TRACK AND TURNOUT	WL: STA. 128+00 TO 134+00
ODOT	GRADE BALLAST SECTION AFTER TD8 REMOVAL	WL: STA. 128+00 TO 134+00
NFA	REALIGN/SHIFT MLP† TO FINAL MLPs ALIGNMENT	WL: STA. 128+00 TO 131+00
NFA	FINISH BUILD OF NEW YARD TRACKS PD, PD5 & PD4	WL: STA. 128+00 TO 138+00
NFA	CT EXISTING D, D4 & D5 TO FINAL ALIGNMENTS	WL: STA. 128+00 TO 138+00
NFA	LINE, SURFACE AND GRADE ADJUST AS NECESSARY	

END TRACK CONSTRUCTION

ALL TRACKS INCLUDING YARD TRACKS NOW IN SERVICE

ABBREVIATIONS

HORIZONTAL TRACK ALIGNMENT

- PS - POINT OF SWITCH
- PI/PITO - POINT OF INTERSECTION
- PL - POINT ON LINE
- PT - POINT OF TANGENT
- SC - SPIRAL TO CURVE
- CS - CURVE TO SPIRAL
- TS - TANGENT TO SPIRAL
- ST - SPIRAL TO TANGENT
- POC/PCC - POINT OF TANGENCY ON CURVE
- POE - POINT OF ENDING
- PRC - POINT OF REVERSE CURVE
- POB - POINT OF BEGINNING

VERTICAL TRACK ALIGNMENT

- PVI - PT OF VERTICAL INTERSECTION
- PVC - PT OF VERTICAL CURVE
- PVT - PT OF VERTICAL TANGENT
- G/GR - GRADE
- L - LENGTH OF CURVE
- R - RATE OF CHANGE
- ETR - EXISTING TOP OF RAIL ELEVATION
- el/ELEV - ELEVATION
- XING - AT GRADE CROSSING

GENERAL TRACK NOMENCLATURE

- MLE - MAINLINE EXISTING
- MLE† - MAINLINE EXISTING TEMPORARY
- MLP† - MAINLINE TEMPORARY SOUTH
- MLPs - MAINLINE FINAL SOUTH
- MLPn - MAINLINE FINAL NORTH
- CT - CUT & THROW
- T.O. - TURNOUT
- O.O.S. - OUT OF SERVICE
- E OR EX - EXISTING ALIGNMENT
- NS - NS FORCE ACCOUNT
- ODOT - ODOT CONTRACTOR
- WL - APPROXIMATE WORK LIMITS

MISCELLANEOUS

- ABS - ABSOLUTE
- AVE - AVENUE
- AH - AHEAD
- BK - BACK
- ℄ - BASELINE
- BLDG - BUILDING
- BLVD - BOULEVARD
- CB - CATCH BASIN
- ℄ - CENTERLINE
- CLR - CLEAR
- CONC - CONCRETE
- DBT - DESIGN BUILD TEAM
- DWG - DRAWING
- E - EAST
- ESMT - EASEMENT
- EXIST OR EX - EXISTING
- EB - EAST BOUND
- FT - FEET
- FND - FOUNDATION
- HW - HEADWALL
- HORIZ - HORIZONTAL
- L - LEFT
- MAS - MAXIMUM ALLOWABLE SPEED
- MIN - MINIMUM
- MPH - MILES PER HOUR
- N - NORTH
- N/A - NOT APPLICABLE
- NB - NORTH BOUND
- NO - NUMBER
- N.T.S. - NOT TO SCALE
- PAV'T - PAVEMENT
- PGL - PROFILE GRADE LINE
- PR or PROP - PROPOSED
- R - RIGHT
- RR - RAILROAD
- R/W - RIGHT-OF-WAY
- CHARTER R/W - VAL MAP R/W
- REQ'D - REQUIRED
- S - SOUTH
- SB - SOUTHBOUND
- SEG - SEGMENT
- STA - STATION
- SHLDR - SHOULDER
- SHT - SHEET
- SWM - STORM WATER MANAGEMENT
- Tk/TRK - TRACK
- T/R - TOP OF RAIL
- U/T - UNDER TRAFFIC
- VERT - VERTICAL
- W - WEST
- W/ - WITH
- WB - WEST BOUND

STANDARD RAILROAD SYMBOLOGY:

- Existing Track/Standard Gauge
- Existing Track Shift or C/T
- Existing Track to be Removed
- Proposed Track
- Proposed Turnout (ps)
- Temporary Track
- Future Track Construction
- 10' Clear on track
- Existing Right of Way (Ex R/W)
- Temporary easement (TMP)
- Utility easement (Ex U)
- Limited Access Right of way (Ex LA-R/W)
- Proposed Right of Way (R/W)
- RR Abandoned

CALCULATED JRG
DRAWN EFD

SUGGESTED RAILROAD TRACK AND BRIDGE SEQUENCING
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

ITEM 623 - CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN

MAINLINE ALIGNMENT DESIGNS HERE-IN ARE TIED TO THE SUPPLIED CENTERLINE EXHIBIT AND SURVEY REPORT BY EMH&T DATED 12-13-2011. A SUPPLEMENTAL SURVEY DATED 02-08-2023 CONFIRMED THAT KEY ELEVATIONS IN THE ORIGINAL SURVEY (NEAR CUT AND THROW AND TIE-IN LOCATIONS) ARE SUBSTANTIALLY UNCHANGED FROM THE ORIGINAL 2011 SURVEY. AS PART OF THIS PAY ITEM, THE CONTRACTOR WILL FIELD VERIFY LOCATION OF TRACKS AND APPERTENANCES, ALIGNMENT TIE-INS AND TOP OF RAIL ELEVATIONS PRIOR TO ANY WORK. THE CONTRACTOR SHALL FIELD VERIFY THESE ITEMS PRIOR TO COORDINATION OF ANY TRACK WORK WITH THE RAILROAD. FIELD ADJUSTMENT MAY BE REQUIRED.

TRACK HORIZONTAL ALIGNMENTS (CURVES)

NOTE : TRACK ALIGNMENT CURVES ARE 'CHORD' DEFINED

SPECIFICATIONS AND SPECIAL PROVISIONS

ALL WORK AND MATERIALS, ON, OVER, UNDER OR ADJACENT TO NORFOLK SOUTHERN RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

* NORFOLK SOUTHERN (NS) 'SPECIAL PROVISIONS FOR THE PROTECTION OF RAILWAY INTERESTS'
* AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY ASSOCIATION (AREMA) RECOMMENDED PRACTICES.
* FEDERAL RAILROAD ADMINISTRATION
* NORFOLK SOUTHERN RAILWAY PUBLIC PROJECT MANUAL, CURRENT EDITION, INCLUDING APPENDICES
* NORFOLK SOUTHERN RAILWAY STANDARD SPECIFICATIONS FOR MATERIALS AND CONSTRUCTION, CURRENT EDITION
* NORFOLK SOUTHERN RAILWAY SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF PRIVATELY OWNED INDUSTRY TRACKS, CURRENT EDITION
* NORFOLK SOUTHERN RAILWAY QUALITY ASSURANCE SPECIFICATIONS FOR TIES AND TIMBERS

THE CONTRACTOR SHALL ALLOW A MINIMUM OF 12 MONTHS FOR DELIVERY OF MATERIAL TO BE SUPPLIED BY NS SPECIFIED SUPPLIERS.

RAILROAD OPERATIONS

THE CONTRACTOR'S WORK SHALL NOT INTERRUPT THE NORMAL OPERATIONS OF THE RAILROAD WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER IN CONSULTATION WITH THE NS AND/REPRESENTATIVES.

RAILROAD SAFETY RULES

THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO PROTECT THE PUBLIC AND EMPLOYEES OF THE NS AND FROM ANY AND ALL DAMAGES, AND INJURIES FROM HIS WORK.

THE CONTRACTOR SHALL REQUIRE ALL OF HIS EMPLOYEES AT THE PROJECT SITE TO USE PERSONAL PROTECTIVE EQUIPMENT CONSISTENT WITH THE RAILROADS' SAFETY RULES. THIS EQUIPMENT SHALL, AS A MINIMUM, INCLUDE SAFETY HAT, EYE PROTECTION WITH SIDE SHIELDS AND 6" MINIMUM HEIGHT, LACE-UP SAFETY TOE SHOES WHILE PERSONS OCCUPY THE RAILROADS' RIGHT OF WAY. WHEN CONDITIONS WARRANT, HEARING PROTECTION, FALL PROTECTION AND RESPIRATORY PROTECTION SHALL ALSO BE FURNISHED AND UTILIZED, CONSISTENT WITH OSHA AND FRA REGULATIONS GOVERNING BRIDGE WORKERS SAFETY AND HEALTH.

PRIOR TO COMMENCING WORK ON THE RAILROADS' RIGHT OF WAY, CONTRACTOR WILL PROVIDE RAILROAD WITH SIGNED DOCUMENTATION OF A TRAINING PROGRAM WITH REGARDS TO FRA FALL PROTECTION AS IT PERTAINS TO FRA 49 CFG PART 214.102 AND DOCUMENTATION OF A ROADWAY WORKERS SAFETY PROGRAM IN ACCORDANCE WITH CF R49 PART 214(C). ROADWAY WORKER SAFETY TRAINING WORK SHALL ALSO BE PROVIDED IN ACCORDANCE WITH PARAGRAPH A, SECTION 12 OF THE NORFOLK SOUTHERN SPECIAL PROVISIONS.

DOCUMENTATION WILL CONTAIN A LIST OF ALL CONTRACTOR'S EMPLOYEES TO BE INVOLVED WITH THIS PROJECT (ON-SITE INVOLVEMENT). CONTRACTOR SHALL FURNISH RAILROAD MANDATORY "FRA ON TRACK SAFETY MANUAL" TRAINING CONFIRMATION AND DOCUMENTATION OF E_RAIL SAFE TRAINING AND REGISTRATION FOR ALL TO VISIT OR WORK ON THE SITE.

WHEN WORKING ON THE RAILROADS' RIGHT OF WAY OR WITHIN THE SAFETY ZONE SURROUNDING THE PROPOSED TRACKS, A JOB BRIEFING IN ACCORDANCE WITH THE RAILROADS' ON-TRACK WORKER MANUALS, SHALL BE HELD PRIOR TO COMMENCING WORK OR WHEN WORK OR CONDITIONS CHANGE.

THE CONTRACTOR CANNOT COMMENCE THE DAY'S WORK ON THE RAILROADS' RIGHT OF WAY UNLESS THE RAILROADS' FLAGMAN IS ON THE JOB. A MINIMUM,TEN MINUTE SAFETY BRIEFING WILL BE HELD AT THE BEGINNING OF EACH WORKDAY IN THE PRESENCE OF THE NS FLAGMAN. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR'S SUPERVISORY PERSONNEL TO CARRY THROUGH FOR THE ENTIRE WORKDAY ALL OF THE ITEMS DISCUSSED DURING THE SAFETY BRIEFING.

RAILROADS' DESIGNATED REPRESENTATIVE(S) WILL DETERMINE WHEN FLAGGING PROTECTION IS REQUIRED.

ALL PERSONNEL WILL BE RAILROAD SAFETY TRAINED PRIOR TO VISITING CONSTRUCTION SITE.

TRACKWORK NOTES

ALL JOINTS SHALL BE OF THE TYPES AND SIZES SPECIFIED AND SHALL BE IN ACCORDANCE WITH NSRR AND AREMA STANDARDS. INSULATED JOINTS MUST BE SUPPORTED ON A SOUND, SMOOTH TIE, WELL TAMPED AND WELL DRAINED.

SUPER ELEVATION MARKING

AFTER CONSTRUCTION, CONTRACTOR SHALL MARK, ON THE WEB OF THE RAIL IN THE FIELD, LOCATIONS OF 'PC', 'FULL' AND 'PT' AND SUPERELEVATION DATA.

STAGED CONSTRUCTION

THESE PLANS SHOW STAGED TRACK WORK/CONSTRUCTION. CONTRACTOR SHALL INTEGRATE, STAGE AND COORDINATE ALL WORK WITH ADJACENT BRIDGE AND ROADWAY PROJECTS AS WILL BE NECESSARY. SEE BRIDGE AND ROADWAYS PLANS.

QUANTITY VERIFICATION BY CONTRACTOR

CONTRACTOR SHALL VERIFY QUANTITIES AND INDICATE ANY MAJOR DISPARITY TO ODOT AND NORFOLK SOUTHERN.

EXISTING TRACK ROADBED HARDPAN

THE EXISTING TRACK ROADBED HARDPAN SHALL NOT BE DISTURBED DURING CONSTRUCTION.

CONSTRUCTION SITE DRAINAGE

THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE OF RAILROAD FACILITIES THROUGHOUT CONSTRUCTION.

UTILITY INSTALLATION/RELOCATIONS

ALL UTILITY INSTALLATIONS OR RELOCATIONS THAT ARE REQUIRED IN CONJUNCTION WITH THIS PROJECT CAN BE INSTALLED OR RELOCATED AS PART OF THE PROJECT PROVIDED THE CONSTRUCTION IS PERFORMED BY THE PROJECT CONTRACTOR OR PROJECT CONTRACTOR'S SUB-CONTRACTOR. HOWEVER, THE UTILITY MUST SUBMIT AN APPLICATION FOR THE INSTALLATION OR RELOCATION TO RAILPROS FOR APPROPRIATE HANDLING OF LICENSE AGREEMENT AND APPLICABLE FEES.

FOR UTILITY APPLICATIONS INFORMATION, SEE:
http://www.nscorp.com/content/nscorp/en/real-estate/norfolk-southern-services/wire-pipeline-fiber-optic-projects.html

TO SUBMIT AN APPLICATION GO TO:
https://ns.railprospermitting.com/

NOTE: LICENSE AGREEMENT MUST BE EXECUTED PRIOR TO UTILITY BEING INSTALLED OR RELOCATED.

APPLICABILITY 'ONE CALL' UTILITY SERVICES

"ONE CALL" SERVICES DO NOT LOCATE BURIED RAILROAD SIGNAL AND COMMUNICATIONS LINES. THE CONTRACTOR SHALL CONTACT THE RAILROAD'S REPRESENTATIVE TWO (2) DAYS IN ADVANCE OF THOSE PLACES WHERE EXCAVATION, PILE DRIVING, OR HEAVY LOADS MAY DAMAGE RAILROAD UNDERGROUND LINES ON RAILROAD PROPERTY. UPON REQUEST FROM THE CONTRACTOR OR AGENCY, RAILROAD SIGNAL FORCES WILL LOCATE AND PAINT MARK OR FLAG RAILROAD UNDERGROUND SIGNAL, COMMUNICATION, AND POWER LINES LOCATED WITHIN THE AREA TO BE DISTURBED BY THE CONTRACTOR. THE CONTRACTOR SHALL AVOID EXCAVATION OR OTHER DISTURBANCE OF THESE LINES WHICH ARE CRITICAL TO THE SAFETY OF THE RAILROAD AND THE PUBLIC. IF DISTURBANCE OR EXCAVATION IS REQUIRED NEAR A BURIED RAILROAD SIGNAL, COMMUNICATION, OR POWER LINE, THE LINE SHALL BE POTHOLED MANUALLY WITH CAREFUL HAND EXCAVATION BY THE CONTRACTOR AND PROTECTED BY THE CONTRACTOR DURING THE COURSE OF THE DISTURBANCE UNDER THE SUPERVISION AND DIRECTION OF A RAILROAD SIGNAL REPRESENTATIVE.

ITEM 304 - AGGREGATE BASE, AS PER PLAN

SUBBALLAST TO BE PAID FOR WITH ITEM 304.
CONTRACTOR SHALL SUPPLY AND INSTALL SUBBALLAST.

SUBBALLAST SHALL BE CRUSHED RUN STONE (DENSE GRADED AGGREGATE), LIMESTONE OR GRANITE MATERIAL AND SHALL MEET THE REQUIREMENTS AS SET OUT IN CHAPTER 1, PART 2, SECTION 2.11, "SUBBALLAST SPECIFICATIONS" OF THE AMERICAN RAILWAY ENGINEERING AND MAINTENANCE-OF-WAY ASSOCIATION (AREMA) MANUAL.

GRADATION AS FOLLOWS:

SIEVE SIZE	2"	1"	3/8"	NO. 10	NO. 40	NO. 200
% PASSING SIZE (OPTIMUM)	100	95	67	38	21	7
PERMISSIBLE RANGE % PASSING	100	90-100	50-84	26-50	12-30	0-10

SUBBALLAST SHALL BE SPREAD ON A GRADED ROADBED AS A BASE, WITH SUFFICIENT WIDTH TO ACCOMODATE THE DESIRED NUMBER OF TRACKS. THE SUBBALLAST SHALL BE COMPACTED TO 95 PERCENT OF IT'S MAXIMUM DRY DENSITY AND HAVE A MINIMUM DEPTH OF 12" PLACED IN (2) 6 INCH LIFTS. FOR INDEPENDANT YARD TRACKS, MIN. DEPTH SHALL BE 9 INCHES.

BALLAST - SUPPLIED AND PLACED BY NSRR

MATERIAL FOR BALLAST SHALL BE CLEAN CRUSHED STONE WITH A MINIMUM DEPTH OF 12 INCHES ACROSS THE YARD TO FACILITATE POSITIVE DRAINAGE. CRIBS (SPACING BETWEEN THE CROSSTIES) SHALL BE FILLED WITH BALLAST TO THE TOP OF THE TIES. FOR INDEPENDANT YARD TRACKS MIN. DEPTH SHALL BE 6 INCHES.

STONE FOR USE AS BALLAST ON TRACKS, OR PORTIONS OF TRACKS, TO BE OWNED BY THE RAILWAY COMPANY, SHALL BE FURNISHED BY RAILROAD APPROVED QUARRY, AND SHALL BE CRUSHED STONE (GRANITE) CONFORMING TO THE REQUIREMENTS OF NORFOLK SOUTHERN (NS) RAILWAY CHIEF ENGINEER

GRADATION SHALL CONFORM TO THE FOLLOWING TABLE:

SIEVE DESIGNATION	SEIVE OPENING	#3 BALLAST (MODIFIED) % PASSING SIEVE	#5 BALLAST % PASSING SIEVE
2 1/2"	2.5"	100	-
2"	2"	95-100	-
-	1.5"	30-65	-
1"	1"	0-15	90-100
-	0.75"	-	40-75
-	0.5"	100	15-35
3/8"	0.375"	-	0-15
NO. 4	0.187"	-	0-5
NO. 200	0.0029"	0.5 MAX	0.5 MAX

RAILROAD FLAGMEN SERVICES

A RAILROAD'S FLAGMAN MUST BE PRESENT WHENEVER THE CONTRACTOR IS WORKING OVER OR ON NS RIGHT OF WAY, OVER OR ON AN ACTIVE TEMPORARY TRACK WITHIN THE DESIGNATED SAFETY ZONE OR WHEN NEED IS DETERMINED BY THE RAILROADS OR ITS DESIGNATED REPRESENTATIVE(S).

THE TOTAL NUMBER OF FLAGGING DAYS IS ANTICIPATED TO BE 751.

PAYMENT FOR THE RAILROADS FLAGMEN SHALL BE PER ITEM 900 - RAILROAD FLAGGING SERVICES, AND BID PER PN 151

ITEM 203 - EXCAVATION, AS PER PLAN

EXCAVATION SHALL BE IN CONFORMANCE WITH THE ODOT CMS AND NSRR PUBLIC PROJECTS MANUAL, THE MOST STRINGENT SHALL GOVERN. IF BENCHING OF SLOPES CARRYING RAILROAD LIVE LOAD IS REQUIRED, THE HEIGHT SHALL NOT EXCEED 2'-0".

ITEM 203 - GRANULAR EMBANKMENT, AS PER PLAN

THE CONTRACTOR SHALL SUPPLY AND PLACE AN INITIAL 6 INCHES OF BALLAST ATOP THE COMPLETED BRIDGE WATERPROOFING AT THE DIRECTION OF THE NS SUPERVISOR. THE BALLAST SHALL BE FROM A NS PREFERRED VENDOR (A LIST OF VENDORS IS AVAILABLE UPON REQUEST FROM NS). PAYMENT IS FOR THE AMOUNT OF BALLAST SUPPLIED AND PLACED ATOP THE COMPLETED BRIDGE WATERPROOFING PER NS REQUIREMENTS.

HAM-562-0026 BRIDGE QUANTITY: 186 CY
HAM-75-0834 BRIDGE QUANTITY: 124 CY
HAM-75-PROSSER BRIDGE QUANTITY: 31 CY

TOTAL BID QUANTITY IS 341 CY

ODOT PAY ITEM (CONTRACTOR FURNISHED AND INSTALLED)	QUANTITY	UNIT	SEE SHEET (OF 133)
ITEM 203 - EXCAVATION, AS PER PLAN	9,333	CY	60
ITEM 203 - GRANULAR EMBANKMENT, AS PER PLAN	341	CY	5
ITEM 204, EMBANKMENT, AS PER PLAN	13,890	CY	60
ITEM 304 - AGGREGATE BASE, AS PER PLAN	1,696	CY	60
ITEM 623 - CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN	LUMP	LUMP	5
ITEM 659 - SEEDING AND MULCHING	11,549	SY	60
ITEM 900 - RAILROAD FLAGGING SERVICES	1,065,000	EACH	5
ITEM 900 - SPECIAL - TRACK REMOVED	7,400	TKFT	6

CALCULATED JRG
CHECKED RC

TRACKWORK NOTES
1 OF 2

HAM-75-7.85

ITEM 900 - SPECIAL - TRACK REMOVED

THE CONTRACTOR SHALL REMOVE THE TRACK (2 RAILS, TIES, TURNOUTS, SWITCHES, CLIPS, TIE PLATES, AND OTHER ANCILLARY HARDWARE), WITHIN REMOVAL LIMITS SPECIFIED, AT THE DIRECTION OF THE RAILROAD SUPERVISOR.

THE CONTRACTOR SHALL BID A QUANTITY OF 7,400 FEET OF TRACK REMOVED. THE UNIT PRICE SHALL ASSUME TEN (10) TURNOUTS INCLUDED IN THE REMOVAL LENGTH.

THE CONTRACTOR SHALL INCLUDE IN THEIR REMOVAL PRICE, THE WORK REQUIRED TO GRADE THE BALLAST SECTION AFTER REMOVAL. THE GRADING SHALL RESULT IN A POSITIVELY DRAINING AREA, WITH TIE IMPRESSIONS REMOVED FROM THE BALLAST, AND BE IN GENERAL PROFILE CONFORMANCE WITH THE TRACKS TO BE REPLACED ATOP THE AREA. THE GRADING WILL BE DONE AT THE DIRECTION OF THE RAILROAD SUPERVISOR AND SUBJECT TO THEIR APPROVAL. THERE IS NO MATERIAL TO BE PROVIDED WITH THIS WORK (ONLY GRADING OF EXISTING INSITUE MATERIAL AFTER TRACK REMOVAL).

THE QUANTITY IS BASED UPON THE PLANNED REMOVALS AS FOLLOWS, PLUS A 424 TKFT CONTINGENCY CONTINGENCY MAY BE USED AS DIRECTED BY THE ENGINEER AND APPROVED BY THE RAILROAD SUPERVISOR):

- *STAGE 1A (SOUTHERN YARD), DETAILED ON SHEET 86-88*
  TRACKS D2, D1, MLE, B, B1 (3,167 TKFT)
- *STAGE 1A (NORTH OF YARD), DETAILED ON SHEET 89-93*
  TRACK MLE (274 TKFT)
- *STAGE 1B (SOUTHERN YARD), DETAILED ON SHEET 94-95*
  TRACKS D4, D3, PD4, PD3, PD2 (965 TKFT)
- *STAGE 1B (NORTH OF YARD), DETAILED ON SHEET 98-99*
  TRACK D7D (529 TKFT)
- *STAGE 2A (SOUTHERN YARD), DETAILED ON SHEET 103*
  TRACKS D, D5 (327 TKFT)
- *STAGE 2A (NORTH OF YARD), DETAILED ON SHEET 107-108*
  TRACK MLE (679 TKFT)
- *STAGE 2B (SOUTHERN YARD), DETAILED ON SHEET 110-111*
  TRACKS D, D8 (639 TKFT)

REMOVALS MAY NOT COMMENCE WITHOUT AUTHORIZATION FROM THE RAILROAD SUPERVISOR AND ENGINEER.

IN ADDITION TO THE ABOVE QUANTITIES, THE STAGE 3B (SOUTHERN YARD) REMOVAL OF TRACK TD8, DETAILED ON SHEET 126-127, WILL BE REMOVED BY NSRR FORCE ACCOUNT. A REMOVAL QUANTITY (396 TKFT) IS INCLUDED FOR PAYMENT WITH THIS ITEM TO PAY FOR THE CONTRACTORS WORK TO GRADE THE BALLAST SECTION AFTER NSRR REMOVES THE TRACK.

THE CONTRACTOR WILL RETAIN OWNERSHIP OF ANY TRACK AND APPURTENANCES AFTER ITS REMOVAL. THE CONTRACTOR IS RESPONSIBLE FOR THE DISPOSAL OF TRACK MATERIALS REMOVED.

THE CONTRACTOR WILL BE REIMBURSED AT THE UNIT BID PRICE (TRACK FEET, TKFT) OF REMOVED TRACKWORK COMPLETED AND ACCEPTED BY THE ENGINEER AND RAILROAD SUPERVISOR.

ABBREVIATIONS

HORIZONTAL TRACK ALIGNMENT

PS - POINT OF SWITCH
PI/PITO - POINT OF INTERSECTION
PL - POINT ON LINE
PT - POINT OF TANGENT
SC - SPIRAL TO CURVE
CS - CURVE TO SPIRAL
TS - TANGENT TO SPIRAL
ST - SPIRAL TO TANGENT
POC/PCC - POINT OF TANGENCY ON CURVE
POE - POINT OF ENDING
PRC - POINT OF REVERSE CURVE
POB - POINT OF BEGINNING

VERTICAL TRACK ALIGNMENT

PVI - PT OF VERTICAL INTERSECTION
PVC - PT OF VERTICAL CURVE
PVT - PT OF VERTICAL TANGENT
G/GR - GRADE
L - LENGTH OF CURVE
R - RATE OF CHANGE
ETR - EXISTING TOP OF RAIL ELEVATION
el/ELEV - ELEVATION
XING - AT GRADE CROSSING

GENERAL TRACK NOMENCLATURE

MLE - MAINLINE EXISTING
MLE† - MAINLINE EXISTING TEMPORARY
MLP† - MAINLINE TEMPORARY SOUTH
MLPs - MAINLINE FINAL SOUTH
MLPn - MAINLINE FINAL NORTH
CT - CUT & THROW
T.O. - TURNOUT
O.O.S. - OUT OF SERVICE
E OR EX - EXISTING ALIGNMENT
NS - NS FORCE ACCOUNT
ODOT - ODOT CONTRACTOR
WL - APPROXIMATE WORK LIMITS

MISCELLANEOUS

ABS - ABSOLUTE
AVE - AVENUE
AH - AHEAD
BK - BACK
℄ - BASELINE
BLDG - BUILDING
BLVD - BOULEVARD
CB - CATCH BASIN
℄ - CENTERLINE
CLR - CLEAR
CONC - CONCRETE
DBT - DESIGN BUILD TEAM
DWG - DRAWING
E - EAST
ESMT - EASEMENT
EXIST OR EX - EXISTING
EB - EAST BOUND
FT - FEET
FND - FOUNDATION
HW - HEADWALL
HORIZ - HORIZONTAL
L - LEFT
MAS - MAXIMUM ALLOWABLE SPEED
MIN - MINIMUM
MPH - MILES PER HOUR
N - NORTH
N/A - NOT APPLICABLE
NB - NORTH BOUND
NO - NUMBER
N.T.S. - NOT TO SCALE
PAV'T - PAVEMENT
PGL - PROFILE GRADE LINE
PR or PROP - PROPOSED
R - RIGHT
RR - RAILROAD
R/W - RIGHT-OF-WAY
CHARTER R/W - VAL MAP R/W
REQ'D - REQUIRED
S - SOUTH
SB - SOUTHBOUND
SEG - SEGMENT
STA - STATION
SHLDR - SHOULDER
SHT - SHEET
SWM - STORM WATER MANAGEMENT
Tk/TRK - TRACK
T/R - TOP OF RAIL
U/T - UNDER TRAFFIC
VERT - VERTICAL
W - WEST
W/ - WITH
WB - WEST BOUND

STANDARD RAILROAD SYMBOLOGY:

Existing Track/Standard Gauge
Existing Track Shift or C/T
Existing Track to be Removed
Proposed Track
Proposed Turnout
Temporary Track
Future Track Construction
10' Clear on track

Existing Right of Way — Ex R/W
Temporary easement — TMP
Utility easement — Ex U
Limited Access Right of way — Ex LA-R/W
Proposed Right of Way — R/W
RR Abandoned

CALCULATED EFD
DRECKED CTM

TRACKWORK NOTES 2 OF 2

HAM-75-7.85

RED = INACTIVE TRACK

BLUE = ACTIVE TRACK

B1
B
MLE
D1
D2
D3
D4
D5
D
D7B
D8A
D8

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED CTM
CHECKED EED

SCHEMATIC - PHASE 1A

HAM-75-7.85

7 / 133

160 / 286

PHASE 1A - TRACK USAGE SCHEMATIC

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RED = INACTIVE TRACK

BLUE = ACTIVE TRACK

B1
B
MLE
D1
D2
D3
D4
D5
D
D7B
D8A
D8

PHASE 1B - TRACK USAGE SCHEMATIC

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED CTM
CHECKED EED

SCHEMATIC - PHASE 1B

HAM-75-7.85

8 / 133

161 / 286

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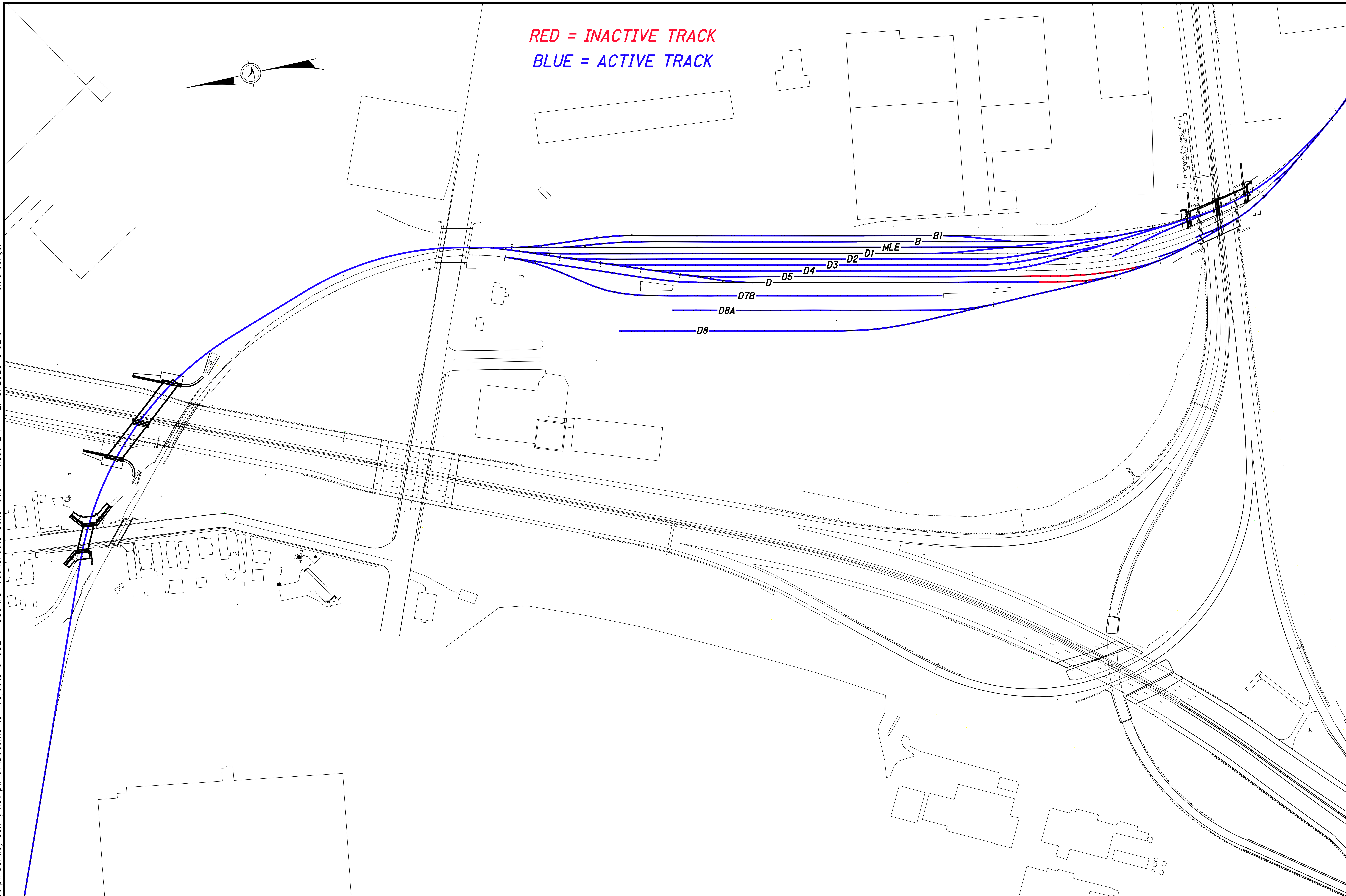


PHASE 2A - TRACK USAGE SCHEMATIC

SCHEMATIC - PHASE 2A

HAM-75-7.85

HORIZONTAL SCALE IN FEET 0 50 100 200

CALCULATED CTM
CHECKED EFD

RED = INACTIVE TRACK

BLUE = ACTIVE TRACK

B1
B
MLE
D1
D2
D3
D4
D5
D
D7B
D8A
D8

PHASE 2B - TRACK USAGE SCHEMATIC

HORIZONTAL SCALE IN FEET
0 50 100 200

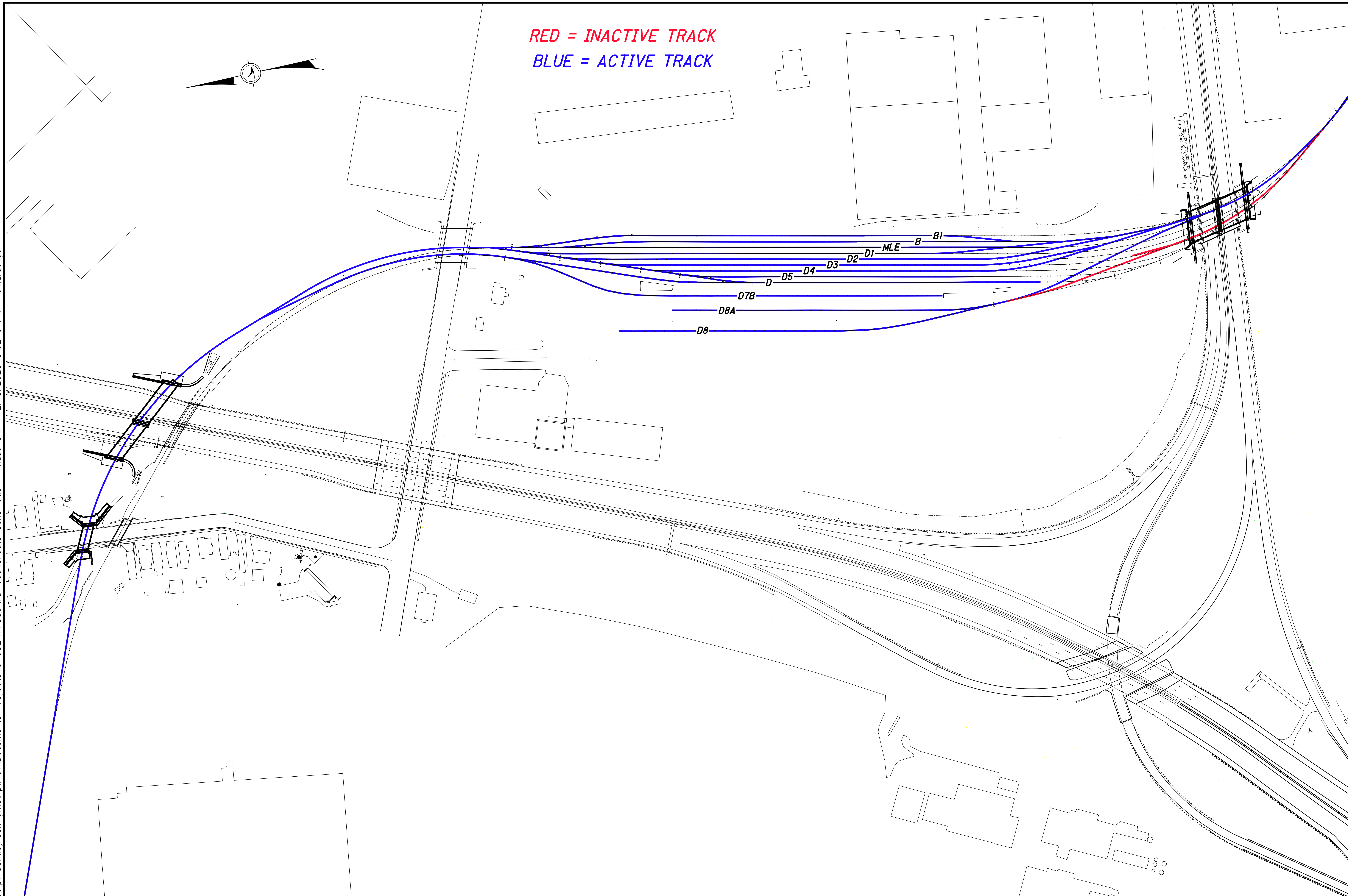
CALCULATED CTM
CHECKED EED

SCHEMATIC - PHASE 2B

HAM-75-7.85

10 / 133

163 / 286



PHASE 3A - TRACK USAGE SCHEMATIC

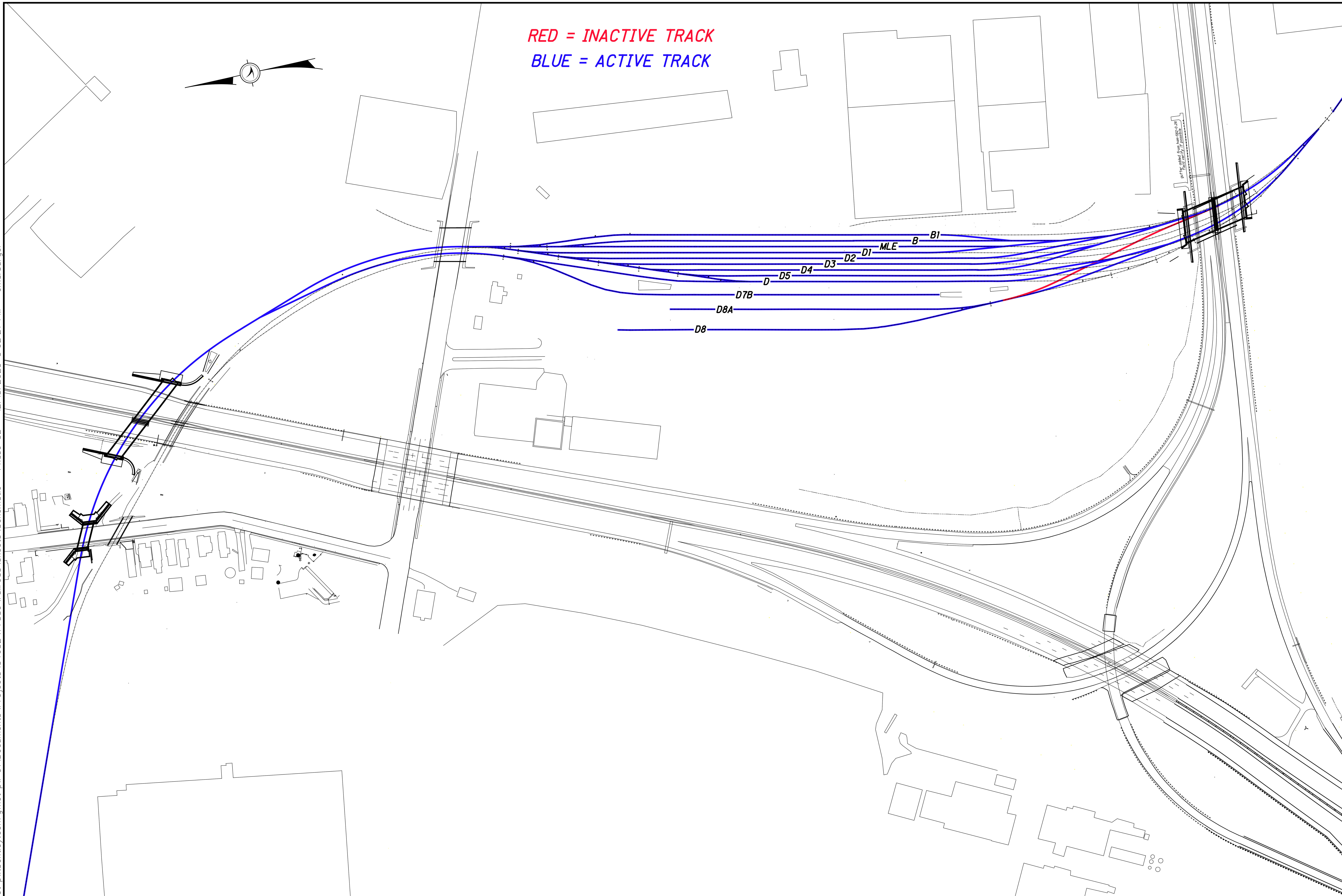
HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED CTM
CHECKED EFD

SCHEMATIC - PHASE 3A

HAM-75-7.85

11/133



PHASE 3B - TRACK USAGE SCHEMATIC

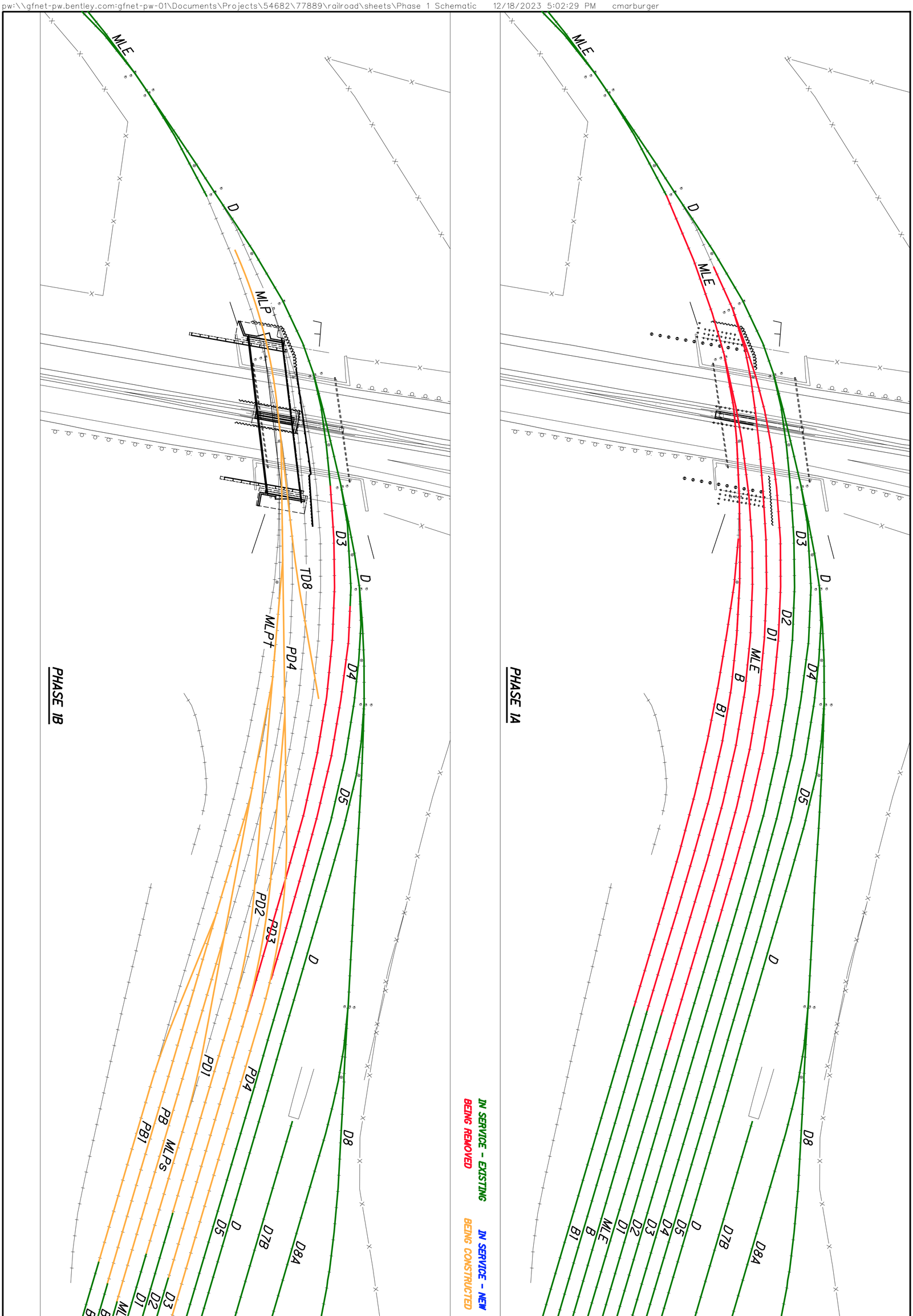
HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED CTM
CHECKED EFD

SCHEMATIC - PHASE 3B

HAM-75-7.85

12/133



166/286 | 13/133

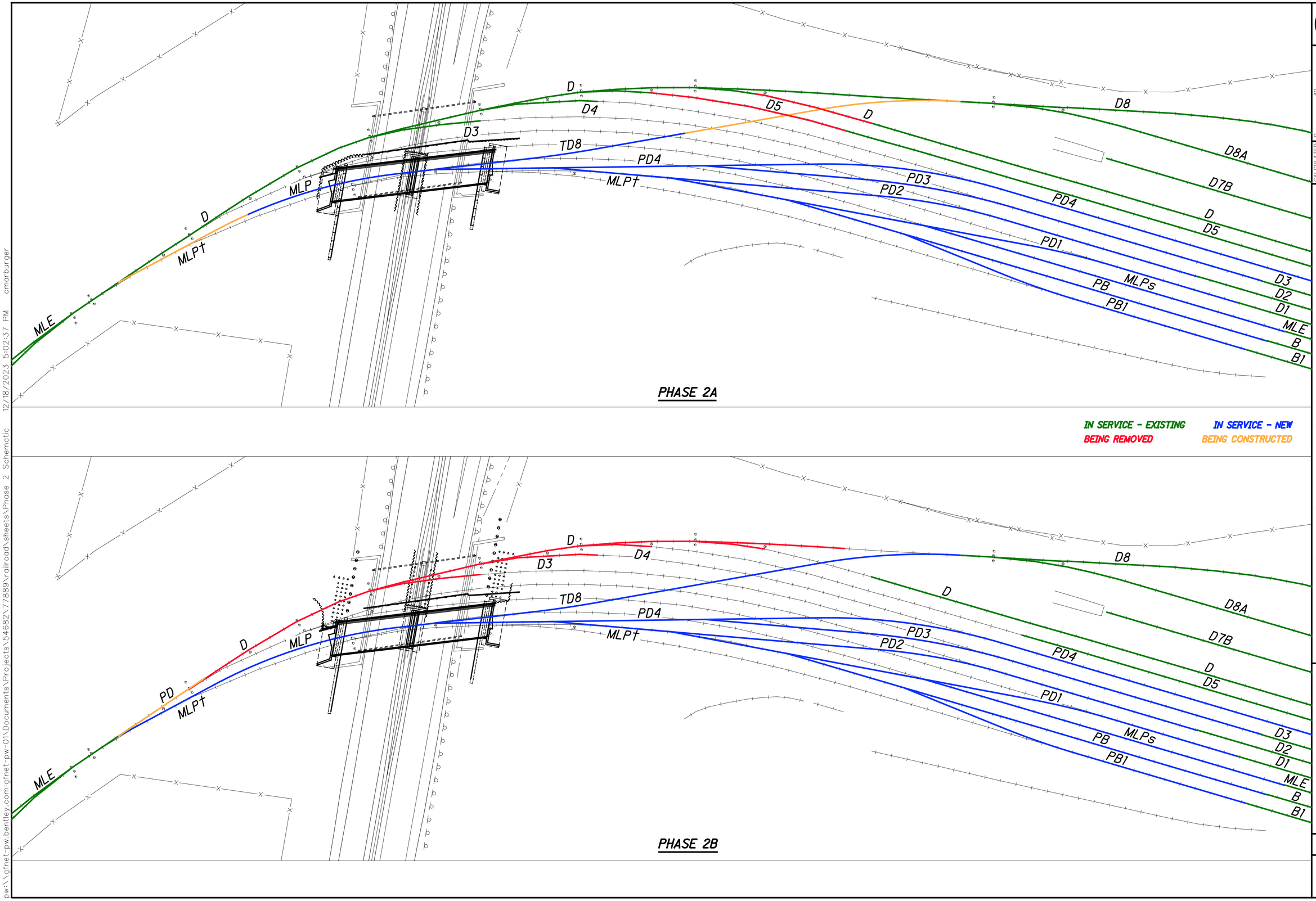
HAM-75-7.85

TRACK SCHEMATIC PLAN - PHASE 1
NORFOLK SOUTHERN RAILROAD

CALCULATED CTM
CHECKED EFD

0 40
20 80
HORIZONTAL SCALE IN FEET

N

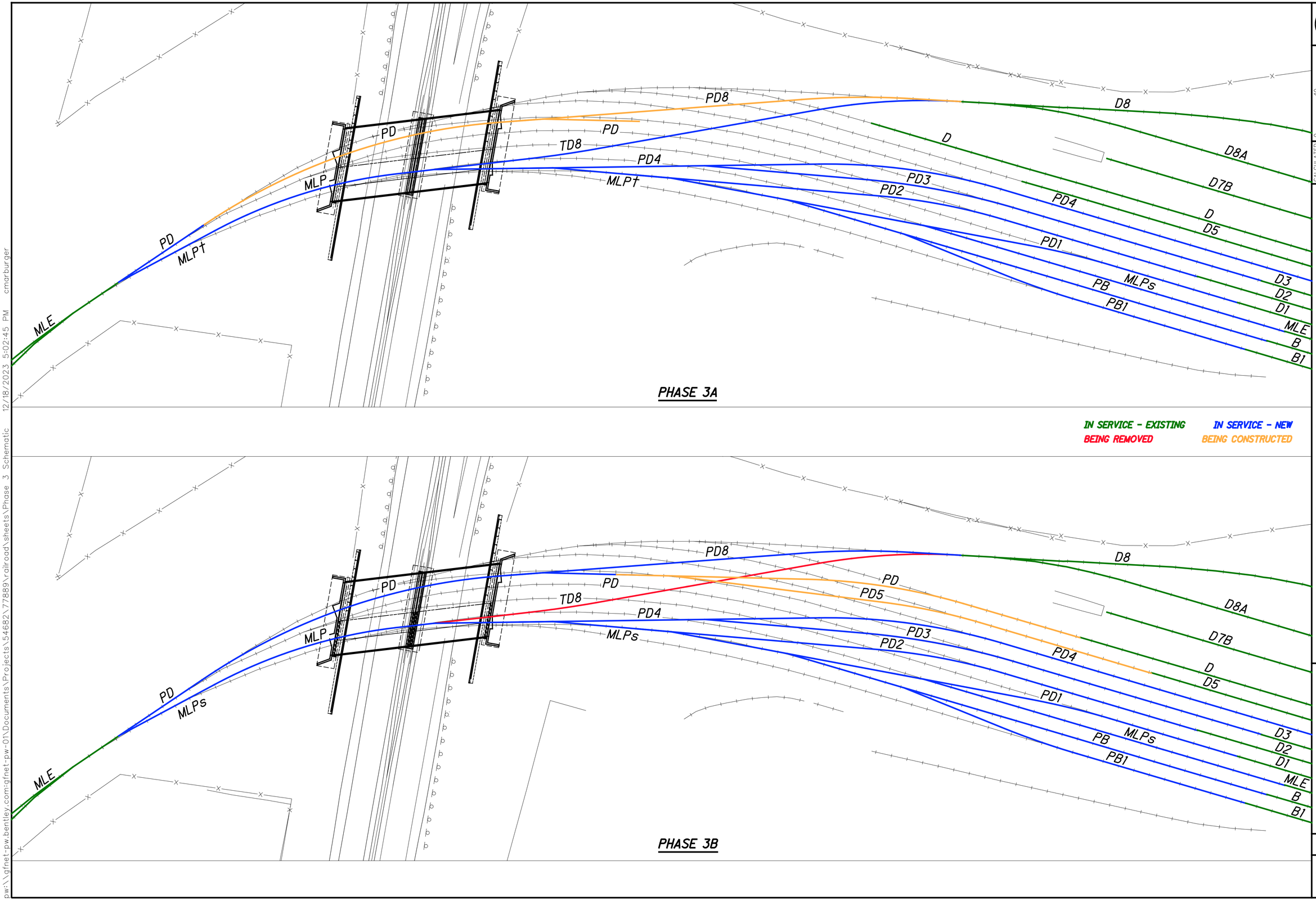


HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED CTM
CHECKED EFD

TRACK SCHEMATIC PLAN - PHASE 2
NORFOLK SOUTHERN RAILROAD

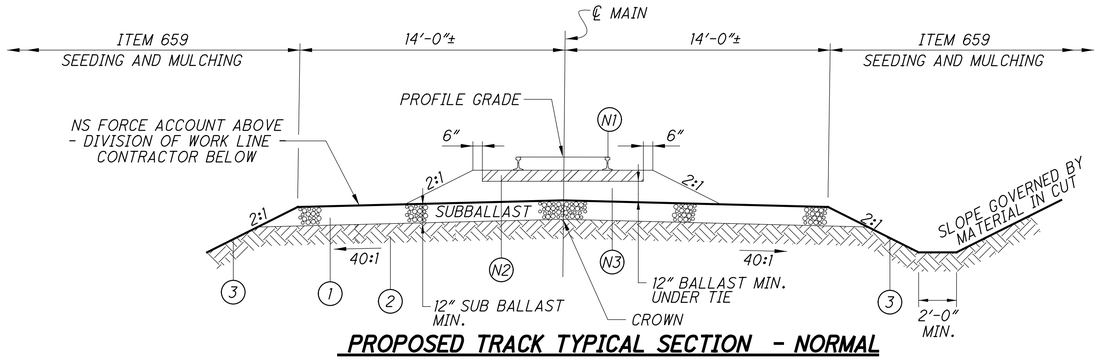
HAM-75-7.85



HORIZONTAL SCALE IN FEET
0 20 40 80

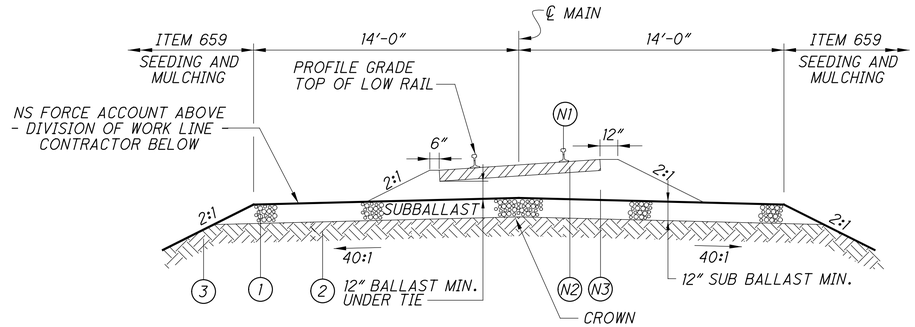
CALCULATED CTM
CHECKED EFD

TRACK SCHEMATIC PLAN - PHASE 3
NORFOLK SOUTHERN RAILROAD
HAM-75-7.85



PROPOSED TRACK TYPICAL SECTION - NORMAL

N.T.S.
STA. 152+60 TO STA. 153+33
STA. 159+65 TO STA. 164+00



PROPOSED TRACK TYPICAL SECTION - SUPERELEVATED

N.T.S.
STA. 153+33 TO STA. 159+65

SHOULDER WIDTH (SW)

BALLAST WIDTH
FROM END OF TIE TO EDGE OF SLOPE

	JOINTED RAIL	WELDED RAIL
SW (INSIDE OF CURVE)	0"	6"
SW (OUTSIDE OF CURVE)	6"	12"
SW (TANGENT BOTH SIDES)	0"	6"

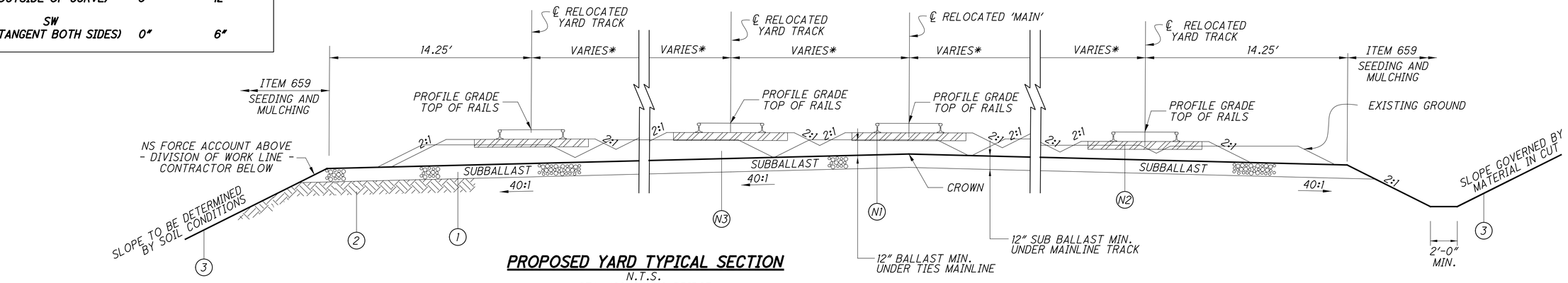
NOTES:

1. CONTRACTOR TO PROVIDE WORK UP TO TOP OF SUBBALLAST. RAILROAD FORCES SHALL CONSTRUCT TRACKWORK INCLUDING BALLAST, TIES, RAIL AND OTHER TRACK MATERIAL.
2. ITEM 201.04, SCALPING, SHALL BE REQUIRED IN ALL EMBANKMENT CONSTRUCTION AREAS EXCEPT WHERE THE EMBANKMENT HEIGHT IS GREATER THAN 9 FEET TO THE SUBGRADE ELEVATION AND WHEN THE EXISTING SIDE SLOPE IS 8:1 OR FLATTER.
3. DITCHING TO BE PROVIDED WHERE NECESSARY AND ROW WILL ALLOW

FILL SECTION

(1) TAMPING OF BALLAST MUST NOT DISTRUB COMPACTED SUBOBALLAST.

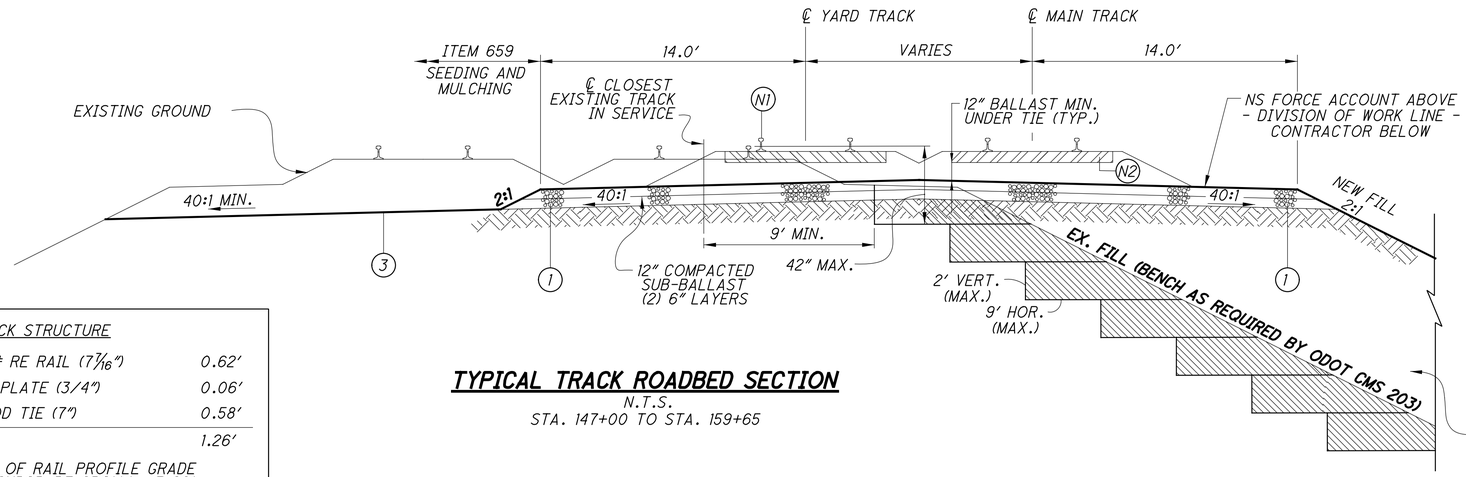
(2) TOP OF SUB-GRADE IS TO BE CROWNED.



PROPOSED YARD TYPICAL SECTION

N.T.S.
STA. 129+00 TO BRIDGE
BRIDGE TO STA. 132+00
STA. 147+00 TO STA. 153+33

* SEE GEOMETRY PLANS AND TABS



TYPICAL TRACK ROADBED SECTION

N.T.S.
STA. 147+00 TO STA. 159+65

LEGEND

NORFOLK SOUTHERN FORCE ACCOUNT	N1	CONTINUOUSLY WELDED RAIL, 136#, NIC
	N2	WOOD CROSS TIE SIZE NO. 4: 7"X9"X8'-6", NIC
	N3	PREPARED STONE BALLAST 12" MIN. DEPTH), NIC
ODOT CONTRACTOR	1	ITEM 304 AGGREGATE BASE SUBBALLAST, PER PLAN
	2	ITEM 204 EMBANKMENT
	3	ITEM 203 EXCAVATION

TRACK STRUCTURE

136# RE RAIL (7 1/16")	0.62'
TIE PLATE (3/4")	0.06'
WOOD TIE (7")	0.58'
	1.26'

TOP OF RAIL PROFILE GRADE
TO SUBGRADE CROWN = 3.26'

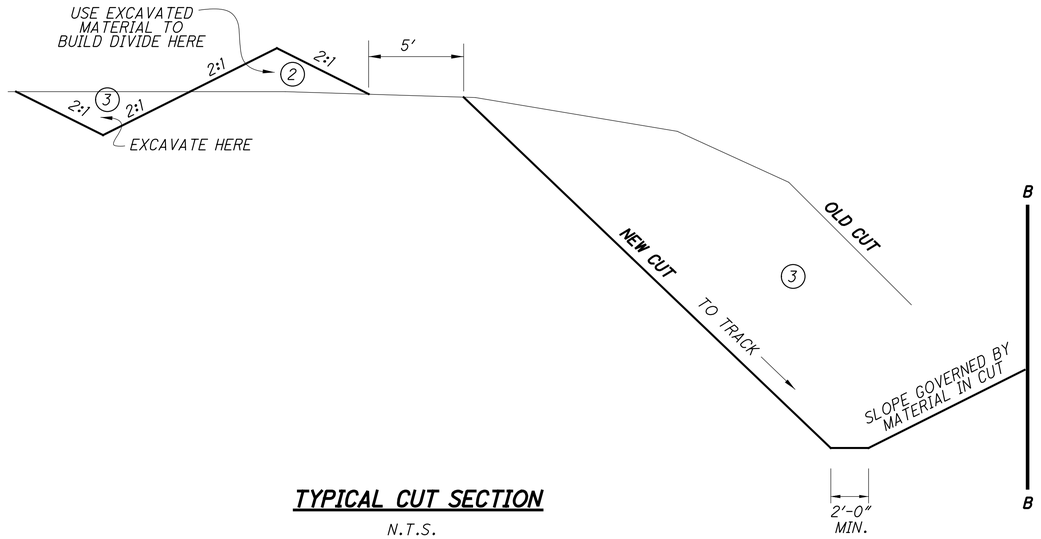
CALCULATED JRG
CHECKED RC

TYPICAL TRACKWORK SECTIONS - PROPOSED
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

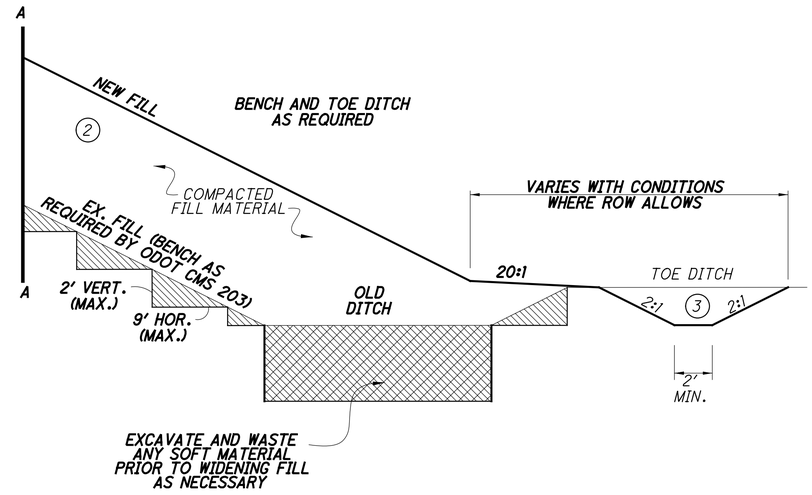
16/133

169
286



TYPICAL CUT SECTION

N.T.S.



TYPICAL FILL SECTION

N.T.S.
STA. 147+00 TO STA. 167+32

LEGEND

NORFOLK SOUTHERN FORCE ACOUNT
- (N1) CONTINUOUSLY WELDED RAIL, 136#, NIC
- (N2) WOOD CROSS TIE SIZE NO. 4: 7"X9"X8'-6", NIC
- (N3) PREPARED STONE BALLAST - DEPTH VARIES, NIC

ODOT CONTRACTOR
- (1) ITEM 304 AGGREGATE BASE, AS PER PLAN
- (2) ITEM 204 EMBANKMENT
- (3) ITEM 203 EXCAVATION

SHOULDER WIDTH (SW)

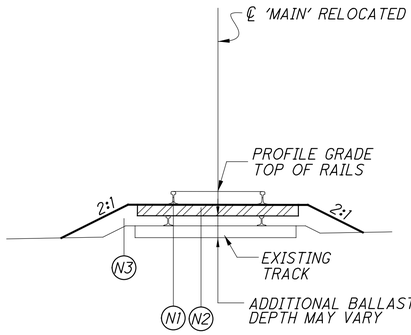
BALLAST WIDTH FROM END OF TIE TO EDGE OF SLOPE

	JOINTED RAIL	WELDED RAIL
SW (INSIDE OF CURVE)	0"	6"
SW (OUTSIDE OF CURVE)	6"	12"
SW (TANGENT BOTH SIDES)	0"	6"

FILL SECTION

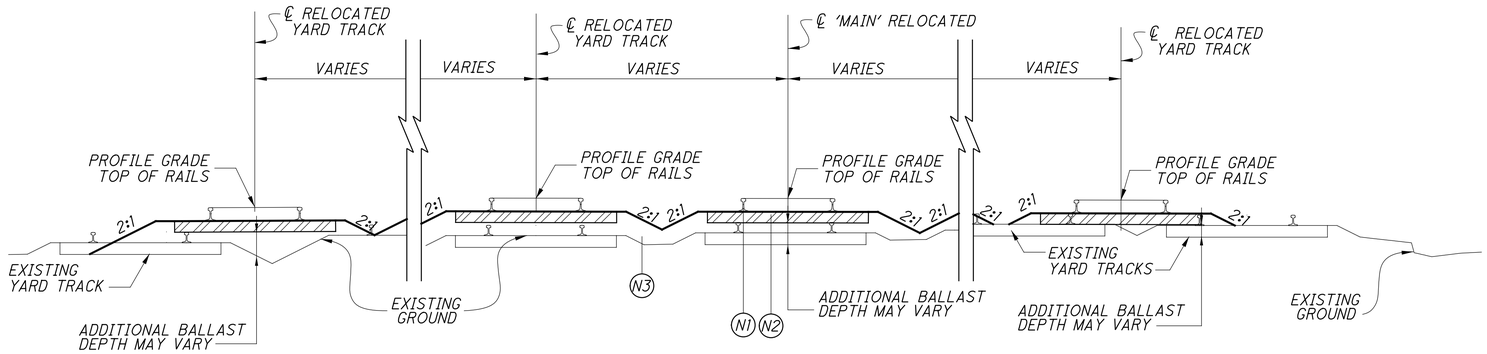
(1) TAMPING OF BALLAST MUST NOT DISTRUB COMPACTED SUBBALLAST.

(2) TOP OF SUB-GRADE IS TO BE CROWNED TO PROVIDE POSITIVE DRAINAGE.



PROPOSED TYPICAL 'MAIN' SECTION IN EXISTING BALLAST

N.T.S.
STA. 125+00+/- TO STA. 127+00 - BALLAST SECTION ONLY
STA. 164+00+/- TO STA. 167+00 - BALLAST SECTION ONLY



PROPOSED TYPICAL YARD SECTION IN EXISTING BALLAST

N.T.S.
STA. 127+00 TO STA. 129+00 - BALLAST SECTION ONLY
STA. 132+00 TO STA. 138+00 - BALLAST SECTION ONLY
STA. 144+00 TO STA. 147+00 - BALLAST SECTION ONLY

CALCULATED JRG
CHECKED RC

TYPICAL TRACKWORK SECTIONS - PROPOSED NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

17 / 133

170
286

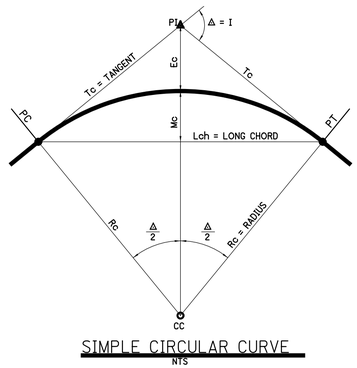
CURVES ARE NOT SUPERELEVATED UNLESS OTHERWISE INDICATED

FOR DETAILED GEOMETRY DATA SEE ALSO GEOMETRY TABULATIONS SHEETS

TRACK	SURVEY ℄ EXISTING MAINLINE (MLE) **	PR MAIN SOUTH (MLP†) temporary	PR MAIN SOUTH (MLPs) final	PR. MAIN NORTH (MLPn)	PD	PD1	PD2	PD3	PD4	PD5	PD7
CURVE IDENTIFIER CURVE DATA	MLE-1 P.I. Sta= 129+63.15 Dc= 7°00'00.00" R= 819.02' Δ = 76°56'00.00"(RT) L= 1099.73' T= 650.70'	MLE†-1 P.I. Sta= 125+06.47 Dc= 7°00'00.00" R= 819.02' Δ = 26°38'15.45"(RT) L= 380.77' T= 193.89' BF	MLE†-1 P.I. Sta= 125+06.47 Dc= 7°00'00.00" R= 819.02' Δ = 26°38'15.45"(RT) L= 380.77' T= 193.89' BF		PD-1 P.I. Sta= 6+79.71 Dc= 10°00'00.00" R= 573.69' Δ = 29°35'51.45"(RT) L= 296.35' T= 151.56'	PD1-1 P.I. Sta= 1+70.88 Dc= 7°30'00.00" R= 764.49' Δ = 5°52'31.35"(RT) L= 78.39' T= 39.23'	PD2-1 P.I. Sta= 2+86.34 Dc= 10°00'00.00" R= 573.69' Δ = 11°31'22.77"(RT) L= 115.23' T= 57.88'	PD3-1 P.I. Sta= 2+52.31 Dc= 8°00'00.00" R= 716.78' Δ = 11°30'18.84"(RT) L= 143.82' T= 72.21'	PD4-1 P.I. Sta= 3+68.38 Dc= 10°00'00.00" R= 573.69' Δ = 17°16'32.22"(RT) L= 172.98' T= 87.15'	PD5-1 P.I. Sta= 2+76.72 Dc= 10°00'00.00" R= 573.69' Δ = 9°19'12.95"(RT) L= 93.32' T= 46.76'	
CURVE IDENTIFIER CURVE DATA	MLE-2 P.I. Sta= 151+55.05 Dc= 7°00'00.00" R= 819.02' Δ = 60°52'00.00"(LT) L= 870.07' T= 481.15'	MLP†-1 P.I. Sta= 129+27.80 Dc= 12°00'00.00" R= 478.34' Δ = 21°39'13.08"(RT) L= 180.78 T= 91.48'	MLPs-1 P.I. Sta= 129+55.19 Dc= 10°00'00.00" R= 573.69' Δ = 27°22'42.08"(RT) L=274.13' T= 139.73'		PD-2 P.I. Sta= 11+87.60 Dc= 10°00'00.00" R= 573.69' Δ = 14°52'54.20"(RT) L= 148.82' T= 74.92'						
CURVE IDENTIFIER CURVE DATA	MLE-3a - Comp. Crv P.I. Sta= 159+75.63 Dc= 10°00'00.00" R= 573.69' Δ = 14°22'54.22"(LT) L= 144.00' T= 72.38' BF	EQUALITY MLP† POT 130+89.98 BK =A 130+89.24 AH EQUALS MLPs POT 130+89.25	EQUALITY MLP† POT 130+89.98 BK =A 130+89.24 AH EQUALS MLPs POT 130+89.25								
CURVE IDENTIFIER CURVE DATA	MLE-3b - Comp Crv P.I. Sta= 161+77.75 Dc= 2°00'00.01" R= 2864.93' Δ= 5°13'23.45"(LT) L= 261.17' T= 130.68' BF	MLP†-2 P.I. Sta= 137+47.58 Dc= 0°05'00.00" R= 68754.94' Δ = 0°03'07.32"(RT) L= 62.44' T= 31.22'	MLPs-2 P.I. Sta= 137+47.58 Dc= 0°05'00.00" R= 68754.94' Δ = 0°03'07.32"(RT) L= 62.44' T= 31.22'	MLPn-1 P.I. Sta= 149+32.96 Dc= 8°30'00.00" R= 674.68' Δ = 31°24'47.83"(LT) L= 369.91' T= 189.73'							PD7-1a - Comp Crv P.I. Sta= 14+81.94 Dc= 9°00'00.00" R= 637.28' Δ = 15°18'32.43"(LT) L= 170.28' T= 85.65' Ls= 62' SE= 0"
CURVE IDENTIFIER CURVE DATA				MLPn-2 P.I. Sta= 156+33.68 Dc= 7°45'00.00" R= 739.86' Δ = 44°15'16.82"(LT) L= 571.46' T= 300.84' Ls= 62' SE= 1"							PD7-1b - Comp Crv P.I. Sta= 16+95.85 Dc= 8°00'00.00" R= 739.86' Δ = 10°45'08.96"(LT) L= 134.52' T= 67.46' Ls= 62' SE= 0"

**PROVIDED BF=BEST FIT

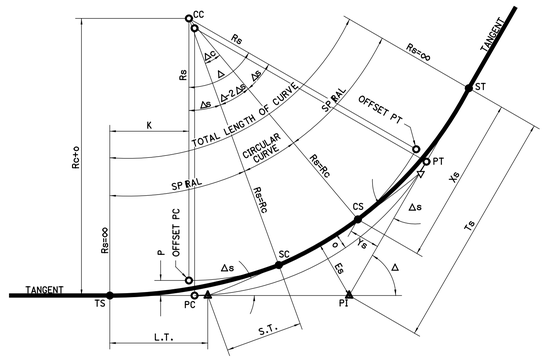
TRACK	PB	PB1	PD8	D7D	TD8
CURVE IDENTIFIER CURVE DATA	PB-1 P.I. Sta= 2+81.73 Dc= 0°15'00.00" R= 22918.33' Δ= 0°09'42.47"(RT) L= 64.72' T= 32.36'	PB1-1 P.I. Sta= 1+67.01 Dc= 7°30'00.00" R= 764.49' Δ= 5°42'01.35"(LT) L=76.06' T= 38.06'	PD8-1 P.I. Sta= 3+25.39 Dc= 7°30'00.00" R= 764.49' Δ = 7°37'28.38"(RT) L=101.73' T= 50.94'	D7D-1 P.I. Sta= 1+52.81 Dc= 10°00'00.00" R= 573.69' Δ = 19°28'30.93"(LT) L= 194.75' T= 98.45' LS=93.00'	TD8-1 P.I. Sta= 1+52.81 Dc= 5°30'00.00" R= 1042.14' Δ = 3°28'30.43"(LT) L= 63.21' T= 31.61'
	PB-2 P.I. Sta= 4+20.91 Dc= 0°20'00.00" R= 17188.76' Δ= 0°12'38.81"(LT) L= 63.24' T= 31.62'			D7D-2 P.I. Sta= 4+63.11 Dc= 7°00'00.00" R= 819.02' Δ = 2°05'55.30"(LT) L= 29.98' T= 15.00'	TD8-2 P.I. Sta= 4+63.11 Dc= 10°00'00.00" R= 1042.14' Δ = 13°19'08.18"(RT) L= 133.36' T= 66.98'



SIMPLE CIRCULAR CURVE

NTS

PC	Point of Curve		
PI	Point of Intersection		
PT	Point of Tangent		
CC	Curve Cente Point		
I	Angle of Intersection		
△c	Central Angle of Curve		
Rc	Radius of Curve		
Tc	Tanget of Curve		
Lc	Length of Curve		
Lch	Long Chord of Curve		
Mc	Middle Ordinate of Curve		
Ec	Extrernal of Curve		
Ea	Superelevation		
Eu	Underbalance		
Ee	Equilibrium Elevation		



CIRCULAR CURVE WITH SPIRALS

NTS

TS	Point of Tangent to Spiral	Xs	Horiz. Distance to TS to SC
SC	Point of Spiral to Curve	Ys	Vertical Distance TS to SC
CS	Point of Curve to Spiral	Xo	Horizontal Distance to Offset
ST	Point of Spiral to tangent	o	Offset
Ts	Tangent of Spiralled Curve	Lts	Long Tangent of Spiral
Es	External of Spiralled Curve	Sts	Short Tangent of Spiral
△s	Central Angle of Spiral	LCHs	Long Chord of Spiral
Ls	Length of Spiral	Rs	Radius of Spiral

CALCULATED JRG CHECKED RC

TRACK CURVE DATA
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

MLE TRACK (SURVEY CENTERLINE MAINLINE) — FOR INFORMATION ONLY

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	DIR	LENGTH	DELTA	DIR	DELTA SPIRAL	DIR	Ls (ft)	Xs (ft)	Ys (ft)	Ea (IN)	MAS
	PT	122+62.45	433275.6794	1406300.7922															
					N 64°16'23.63" W	50.00													
	PC	123+12.45	433297.3834	1406255.7485															
MLE-1	PI	129+63.15	433579.8396	1405669.5490			819.02	7°00'00.00"	RT	1099.73	76°56'00.00"	RT							10 mph
	PT	134+11.50	434214.7200	1405812.1610															
					N 12°39'36.37" E	1262.40													
	PC	146+73.90	435446.4278	1406088.8372															
MLE-2	PI	151+55.05	435915.8867	1406194.2909			819.02	7°00'00.00"	RT	870.06	60°52'00.00"	RT							10 mph
	PT	155+43.42	436236.5525	1405835.5631															
					N 48°12'23.63" W	300.89													
	PI	158+44.31	436437.0798	1405611.2338															
					N 48°12'23.63" W	58.94													
	PC	159+03.25	436476.3620	1405567.2889															
MLE-3a	PI	159+75.63	436524.5997	1405513.3255			573.686	10°00'00.00"	LT	144.00	14°22'54.22"	LT							10 mph
	PCC	160+47.07	436557.9223	1405449.0719															
MLE-3b	PI	161+77.75	436618.0833	1405333.0676			2864.93	2°00'00.01"	LT	261.17	5°13'23.45"	LT							10 mph
	PT	163+08.23	436667.4339	1405212.0683															
					N 67°48'41.30" W	375.09													
	POT	166+83.32	436809.0883	1404864.7562															

CALCULATED JRG
CHECKED RC

BERRY YARD - GEOMETRY TABULATION SHEET
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

TEMPORARY MAINLINE (MLPt) SOUTH

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	Tc	M	E	LENGTH	DELTA	Ea (IN)	MAS
MLE	*POB*	*121+62.71*	*433232.3857*	*1406390.6424*											
					N 64°16'23.63" W	*149.86*									
EQUALITY MLE BK	*PC*	*123+12.45*	*433297.3834*	*1406255.7485*											
EQUALITY MLEt / MLPt AH	*POT*	*123+12.45*	*433297.3834*	*1406255.7485*											
					N 64°16'23.63" W	*0.13*									
	PC	*123+12.58*	*433297.4383*	*1406255.6346*											
MLEt / MLPt-1	PI	125+06.47	433381.6031	1406080.9621			819.02	7°00'00.00"				380.77	26°38'15.45"	0	10 MPH
	PT	126+93.11	433535.1483	1405962.5643											
					N 37°38'08.18" W	10.15									
	PS PD/MLPt	127+03.26	433543.1836	1405956.3683											
					N 37°38'08.18" W	31.25									
	PITO	127+34.51	433567.9308	1405937.2859											
					N 31°54'39.18" W	101.81									
	PC	128+36.32	433654.3579	1405883.4669											
MLPt-1	PI	129+27.80	433732.0127	1405835.1106			478.34	12°00'00.00"	91.48	8.51	8.67	180.78	21°39'13.08"	0	10 MPH
	PT	130+16.77	433822.0307	1405818.8210											
					N 10°15'26.10" W	3.55									
	PS TD8/MLPt	130+20.32													
					N 10°15'26.10" W	31.25									
	PI/PITO	130+51.57	433856.2684	1405812.6253											
					N 4°31'57.10" W	38.41									
EQUALITY MLPt BK	POT	130+89.98	433894.5627	1405809.5896											
EQUALITY MLPs AH	POT	A 130+89.24	433894.5627	1405809.5896											
					N 4°31'57.10" W	41.74									
	PS PD4/MLPs	*A 131+30.98*													
					N 4°31'57.10" W	31.25									
	PI/PITO	A 131+62.23	433967.3207	1405803.8218											
					N 1°11'31.90" E	80.15									
	PS PD2/MLPs	*A 132+42.38*													
					N 1°11'31.90" E	31.25									
	PI/PITO	A 132+73.63	434078.6966	1405806.1397											
					N 6°55'00.90" E	80.14									
	PS MLPs/PB	*A 133+53.77*													
					N 6°55'00.90" E	31.25									
FOR INFORMATION ONLY	*PITO*	*A 133+85.02*													
					N 6°55'00.90" E	98.40									
	PS PD1/MLPs	*A 134+83.42*													
					N 6°55'00.90" E	31.25									
	PI/PITO	A 135+14.67	434317.9824	1405835.1681											
					N 12°38'29.90" E	201.69									
	PC	A 137+16.35	434514.7794	1405879.3076											
MLPt-2/MLPs-2	PI	A 137+47.57	434545.2433	1405886.1404			68754.94	0°05'00.00"	31.22	0.01	0.01	62.44	0°03'07.32"	0	10 MPH
	PT	A 137+78.79	434575.7010	1405893.0008											
					N 12°41'37.22" E	89.21									
	POE	A 138+68.00	434662.7264	1405912.6027											

CALCULATED JRG
CHECKED RC

BERRY YARD - GEOMETRY TABULATION SHEET
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

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FINAL MAINLINE (MLPs) SOUTH

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	LENGTH	T	M	E	Lch	I	DELTA	Ea (IN)	MAS
	PC	*123+12.58*	*433297.4383*	*1406255.6346*													
MLPt-1	*PI*	*125+06.47*	*433381.6031*	*1406080.9621*			*819.02*	*7°00'00.00"*	*380.77*	*193.89*	*22.03*	*22.64*	*377.35*	*26°38'15.45"*	*26°38'15.45"*	*0*	10 mph
FOR INFORMATION ONLY																	
EQ MLPt BK	*PT*	*126+93.11*	*433535.1483*	*1405962.5643*													
EQ MLPs AH	PT	126+93.11	433535.1483	1405862.5643													
					N 37°38'08.17" W	*10.15*											
	PS PD/MLP	127+03.26	433543.1836	1405956.3683													
					N 37°38'08.18" W	31.25											
	PITO	127+34.51	433567.9308	1405937.2859													
					N 31°54'39.18" W	80.95											
	PC	128+15.46	433636.6465	1405894.4960													
MLPs-1	PI	129+55.19	433755.2633	1405820.6323			573.69	10°00'00.00"	274.13	139.73	16.30	16.77	271.53	27°22'42.08"	27°22'42.08"	0	10 mph
	PT	130+89.59	433894.5610	1405809.5897													
					N 4°31'57.10" W	0.39											
EQ MLPt BK	*POT*	*130+89.98*	*433894.5627*	*1405809.5896*													
EQ MLPs AH	POT	130+89.24	433894.5627	1405809.5896													
					N 4°31'57.10" W	41.74											
	PS PD4/MLP	*131+30.98*															
					N 4°31'57.10" W	31.25											
	PI/PITO	131+62.23	433967.3207	1405803.8218													
					N 1°11'31.90" E	80.15											
	PS PD2/MLP	*132+42.38*															
					N 1°11'31.90" E	31.25											
	PI/PITO	132+73.63	434078.6966	1405806.1397													
					N 6°55'00.90" E	80.14											
	PS MLP/PB	*133+53.77*															
					N 6°55'00.90" E	31.25											
FOR INFORMATION ONLY	*PITO*	*133+85.02*															
					N 6°55'00.90" E	98.40											
	PS PD1/MLP	*134+83.42*															
					N 6°55'00.90" E	31.25											
	PI/PITO	135+14.67	434317.9824	1405835.1681													
					N 12°38'29.90" E	201.69											
	PC	137+16.36	434514.7794	1405879.3076													
MLPs-2	PI	137+47.58	434545.2433	1405886.1404			68754.94	0°05'00.00"	62.44	31.22	0.01	0.01	0.00	0°03'07.32"	0°03'07.32"	0	10 mph
	PT	137+78.80	434575.7010	1405893.0008													
					N 12°41'37.22" E	89.21											
	POE	138+68.01	434662.7264	1405912.6027													

CALCULATED JRG
CHECKED RC

BERRY YARD - GEOMETRY TABULATION SHEET
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

FINAL MAINLINE (MLPn) NORTH

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	DIR	LENGTH	DELTA	DIR	TOTAL CENTRAL ANGLE (I)	DIR	DELTA SPIRAL		LONG TAN OF SPIRAL (Lts)	SHORT TAN OF SPIRAL (Sts)	LONG CHORD OF SPIRAL	Ls (ft)	Xs (ft)	Ys (ft)	Ea (IN)	MAS
EQ EML	*POT*	*143+98.78*	*435177.9979*	*1406028.5403*																				
EQ MLPn	POB	143+96.02	435177.9979	1406028.5403																				
					N 12°39'36.37" E																				
	PS B																							
					N 12°39'36.37" E																				
	PS B1	146+26.99																						
					N 12°39'36.37" E	100.06																		
	PS D	147+22.06																						
					N 12°39'36.37" E	4.99																		
	POT	147+27.05	435500.9818	1406101.0916																				
					N 12°39'36.37" E	16.18																		
	PC	147+43.23	435516.7663	1406104.6372																				
MLPn-1	PI	149+32.96	435701.8837	1406146.2198			674.69	8°30'00.00"	LT	369.91	31°24'47.83"	LT												10 MPH
	PT	151+12.79	435881.5416	1406085.2231																				
					N 18°45'11.46" W	148.05																		
	PS PD7	152+60.84																						
					N 18°45'11.46" W	10.00																		
	TS	152+70.84	436031.1992	1406034.4118																				
															2°24'02.41"	LT	41.34	20.67	62.00	62.00	61.99	0.87	1"	
	SC	153+32.84	436089.6191	1406013.6630																				
MLPn-2	PI	156+33.68	436370.1860	1405905.0982			739.86	7°45'00.00"	LT	571.46	44°15'16.82"	LT	49°03'21.63"	LT										10 MPH
	CS	159+03.87	436495.3788	1405631.5458																				
															2°24'02.41"	LT	41.34	20.67	62.00	62.00	61.99	0.87	1"	
	ST	159+65.87	436519.5933	1405574.4752																				
EQ MLPn	POE	167+32.36	436809.0912	1404864.7568																				
EQ EML	*POT*	*166+83.32*	*436809.0912*	*1404864.7568*																				

CALCULATED JRG
CHECKED RC

BERRY YARD - GEOMETRY TABULATION SHEET
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

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PD TRACK

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	T	M	E	LONG CHORD	LENGTH	DELTA	MAS
	PS	4+00.00	433543.1836	1405956.3683											
					N 37°38'08.1805" W	128.14									
	PC	5+28.14	433644.6618	1405878.1191											
PD-1	PI	6+79.71	433764.6849	1405785.5699			573.69	10°00'00.00"	151.56	19.03	19.68	293.07	296.35	29°35'51.45"	10 mph
	PT	8+24.12	433914.7575	1405764.3771											
					N 8°02'16.7365" W	40.89									
	PI	8+65.01	433955.2488	1405758.6591											
					N 2°18'47.7318" W	247.66									
	PC	11+12.68	434202.7120	1405748.6625											
PD-2	PI	11+87.60	434277.5757	1405745.6384			573.69	10°00'00.00"	74.92	4.83	4.87	148.59	149.01	14°52'54.20"	10 mph
	PT	12+61.50	434350.7051	1405761.9425											
					N 12°34'06.47" E	113.50									
	POE	13+75.00	434461.4853	1405786.6407											

PD1 TRACK

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	T	M	E		LENGTH	DELTA	MASf/ MASp
	PS	0+00.00	434286.9598	1405831.4047											
					N 6°55'00.90" E	131.65									
	PC	1+31.65	434417.6540	1405847.2596											
PD1-1	PI	1+70.88	434456.6000	1405851.9842			764.49	7°30'00.00"	39.23	1.00	1.01	78.36	78.39	5°52'31.35"	10 mph
	PT	2+10.05	434494.8578	1405860.6707											
					N 12°47'32.25" E	125.27									
	POE	3+35.26	434617.0141	1405888.4067											

CALCULATED JRG
CHECKED RC

BERRY YARD - GEOMETRY TABULATION SHEET
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

PD2 TRACK

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	T	M	E	LENGTH	Lch	DELTA	DIR	DELTA SPIRAL	DIR	Ls (ft)	Xs (ft)	Ys (ft)	Ea (IN)	MAS
	PS	0+00.00	434047.4531	1405805.4895																		
					N 1°11'31.90" E	228.46																	
	PC	2+28.46	434275.8600	1405810.2428																		
PD2-1	PI	2+86.34	434333.7309	1405811.4471			573.69	10°00'00.00"	57.88	2.90	2.91	115.38	115.18	11°31'22.77"	RT							10 mph
	PT	3+43.69	434390.1947	1405824.1875																		
					N 12°42'54.67" E	192.06																	
	POE	5+35.75	434577.5478	1405866.4615																		

PD3 TRACK

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	T	M	E	LENGTH	Lch	DELTA	DIR	DELTA SPIRAL	DIR	Ls (ft)	Xs (ft)	Ys (ft)	Ea (IN)	MAS
	PS	0+00.00	434078.5729	1405795.0025																		
					N 4°31'57.10" W	31.25																	
	PI	0+31.25	434109.7252	1405792.5330																		
					N 1°11'31.90" E	148.85																	
	PC	1+80.10	434258.5422	1405795.6300																		
PD3-1	PI	2+52.31	434330.7355	1405797.1324			716.78	8°00'00.00"	72.21	3.61	3.63	143.93	143.69	11°30'18.84"	RT							10 mph
	PT	3+23.91	434401.1786	1405813.0041																		
					N 12°41'50.7331" E	242.62																	
	POE	5+66.54	434637.8657	1405866.3327																		

CALCULATED JRG
CHECKED RC

BERRY YARD - GEOMETRY TABULATION SHEET
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

PD4 TRACK

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	T	M	E	LENGTH	Lch	DELTA	DELTA SPIRAL	DIR	Ls (ft)	Xs (ft)	Ys (ft)	Ea (IN)	MAS
	PS	0+00.00	433936.1665	1405806.2915																	
					N 4°31'57.10" W	281.23																
	PC	2+81.23	434216.5216	1405784.0669																	
PD4-1	PI	3+68.38	434303.3981	1405777.1800			573.69	10°00'00.00"	87.15	6.51	6.58	172.98	172.32	17°16'32.22"							10 mph
	PT	4+53.99	434388.4006	1405796.4033																	
					N 12°44'35.12" E	320.94																
	POE	7+74.94	434701.4399	1405867.1972																	

PD5 TRACK

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	T	M	E	LENGTH	Lch	DELTA	DELTA SPIRAL	DIR	Ls (ft)	Xs (ft)	Ys (ft)	Ea (IN)	MAS
	PS	0+00.00	434045.3251	1405755.0203																	
					N 2°18'47.73" W	31.25																
	PITO	0+31.25	434076.5496	1405753.7590																	
					N 3°24'41.27" E	198.71																
	PC	2+29.96	434274.9077	1405765.5835																	
PD5-1	PI	2+76.72	434321.5885	1405768.3662			573.69	10°00'00.00"	46.76	1.90	1.90	93.32	93.22	9°19'12.95"							10 mph
	PT	3+23.16	434367.2024	1405778.6723																	
					N 12°43'54.22" E	167.80																
	POE	4+90.97	434530.8800	1405815.6539																	

CALCULATED JRG
CHECKED RC

BERRY YARD - GEOMETRY TABULATION SHEET
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

PD8 TRACK

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	LENGTH	T	M	E	Lch	DELTA	MAS
	PS	0+00.00	433924.3058	1405763.0287											
					N 8°02'16.73" W	274.45									
	PC	2+74.45	434196.0569	1405724.6529											
PD8-1	PI	3+25.39	434246.4983	1405717.5297			764.49	7°30'00.00"	101.73	50.94	1.69	1.70	101.66	7°37'28.38"	10 mph
	PT	3+76.11	434297.4388	1405717.1621											
					N 0°24'48.35" W	77.07									
	POT	4+53.17	434374.5028	1405716.6060											

TD8 TRACK

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	LENGTH	T	M	E	Lch	DELTA	MAS
	PS	0+00.00	433825.5179	1405818.1899											
					N 10°15'26.10" W	121.20									
	PC	1+21.20	433944.7796	1405796.6083											
TD8-1	PI	1+52.81	433975.8882	1405790.9789			1042.14	5°30'00.00"	63.21	31.61	0.48	0.48	63.20	3°28'30.43"	10 mph
	PT	1+84.38	434006.5983	1405783.4742											
					N 13°43'56.53" W	211.75									
	PC	3+96.13	434212.2955	1405733.2075											
TD8-2	PI	4+63.11	434277.3621	1405717.3070			573.69	10°00'00.00"	133.36	66.98	3.87	3.90	133.06	13°19'08.18"	10 mph
	PT	5+29.32	434344.3415	1405716.8237											
					N 0°24'48.35" W	30.16									
	POT	5+59.48	434374.5028	1405716.6060											

CALCULATED JRG
CHECKED RC

BERRY YARD - GEOMETRY TABULATION SHEET
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

PB TRACK

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	LENGTH	T	M	E	Lch	DELTA	MAS
	PS	0+00.00	434158.2610	1405815.7918											
					N 6°55'00.90" E	31.25									
	PI	0+31.25	434189.2835	1405819.5553											
					N 12°38'29.90" E	218.12									
	PC	2+49.37	434402.1180	1405867.2918											
PB-1	PI	2+81.73	434433.6930	1405874.3738			22918.33	0°15'00.00"	64.72	32.36	0.02	0.02	64.72	0°09'42.47"	10 mph
	PT	3+14.09	434465.2478	1405881.5449											
					N 12°48'12.37" E	75.21									
	PC	3+89.30	434538.5829	1405898.2108											
PB-2	PI	4+20.91	434569.4141	1405905.2174			17188.76	0°20'00.00"	63.23	31.62	0.03	0.03	63.23	0°12'38.81"	10 mph
	PT	4+52.53	434600.2709	1405912.1106											
					N 12°35'33.55" E	47.47									
	POE	5+00.00	434646.6016	1405922.4605											

PB1 TRACK

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	R (FT)	Dc	LENGTH	T	M	E	Lch	DELTA	MAS
	PS	0+00.00	434269.9297	1405837.6434											
					N 12°38'29.90" E	31.25									
	PI	0+31.25	434300.4221	1405844.4825											
					N 18°21'58.90" E	97.70									
	PC	1+28.95	434393.1456	1405875.2670											
PB1-1	PI	1+67.01	434429.2678	1405887.2598			764.49	7°30'00.00"	76.06	38.06	0.95	0.95	76.03	5°42'01.35"	10 mph
	PT	2+05.01	434466.4026	1405895.6053											
					N 12°39'57.55" E	164.76									
	POE	3+69.77	434627.2086	1405931.7442											

CALCULATED JRG
CHECKED RC

BERRY YARD - GEOMETRY TABULATION SHEET
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

PD7 TRACK

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	CURVE RADIUS (FT)	DEGREE OF CURVE (Dc)	CURVE LENGTH (Lc)	CURVE DELTA	T	M	E	Lch	I	Ts	Es	P	K	SPIRAL DELTA	LONG TAN OF SPIRAL (Lts)	SHORT TAN OF SPIRAL (Sts)	LONG CHORD OF SPIRAL (LCHs)	Ls (ft)	Xs (ft)	Ys (ft)	Ea (IN)	MAS
	PT	*7+00.03*	*434767.6737*	*1405855.1880*																								
					N 12°38'32.85" E	*256.04*																							
	PC	*9+56.07*	*435017.5046*	*1405911.2263*																								
	PI	*9+99.40*	*435059.7905*	*1405920.7112*			*573.69*	*10°00'00.00"*	*86.51*	*8°38'23.64"*	*43.34*	*1.63*	*1.63*	*86.43*														*10 mph*
	PT	*10+42.57*	*435100.1716*	*1405936.4408*																								
					N 21°16'56.49" E	*198.00*																							
	PC	*12+40.46*	*435284.6686*	*1406008.3077*																								
	PI	*12+65.78*	*435308.2539*	*1406017.4949*			*5729.65*	*1°00'00.00"*	*50.62*	*0°30'22.39"*	*25.31*	*0.06*	*0.06*	*50.62*														10 mph
	PT	*12+91.09*	*435331.9195*	*1406026.4733*																								
					N 20°46'34.10" E	97.78																							
	POT	13+88.86	435423.3382	1406061.1565																								
					N 20°46'34.10" E	7.43																							
	PC	13+96.29	435430.2836	1406063.7915																								
PD7-1b	PI	14+81.94	435510.3619	1406094.1722			637.27	9°00'00.00"	170.28	15°18'32.43"	85.65	5.68	5.73	169.77														10 mph
	CS	15+66.39	435595.6200	1406102.3323																								
	PI-scs	15+95.73	435616.7488	1406134.534											33°48'16.56"	241.35	30.48											
	SPI	*15+96.81*	435625.8966	1406105.2301														0.03	3.44	5°15'54.43"	31.63	30.42	61.98	62	61.92	2.79	0	
	SC	16+28.39	435657.5251	1406105.3416																								
PD7-1a	PI-c	16+95.85	435724.9804	1406105.5794			716.78	8°00'00.00"	134.52	10°45'08.96"	67.46	3.15	3.17	134.32														10 mph
	CS	17+62.91	435791.2958	1406093.2282																								
	SPI	*17+83.47*	435811.6167	1406089.4434												25.31	0.06	0.22	31.00	2°28'40.75"	41.34	20.67	61.99	62	61.99	0.89	0	
	ST	18+24.80	435851.8900	1406080.1245																								
					N 13°01'42.46" W	143.95																							
	PITO	19+68.75	435992.1361	1406047.6727																								
					N 18°45'11.46" W	31.25																							
	PS	20+00.00	436021.7271	1406037.6261																								

CALCULATED JRG
CHECKED RC

BERRY YARD - GEOMETRY TABULATION SHEET
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

28/133

181/286

D7D DETOUR TRACK

CURVE ID	PT TYPE	STATION	NORTHING	EASTING	BEARING	DIST	CURVE RADIUS (FT)	DEGREE OF CURVE (Dc)	CURVE LENGTH (Lc)	CURVE DELTA	T	M	E	Lch	Ts	Es	TOTAL CENTRAL ANGLE (I)	P	K	SPIRAL DELTA	DIR	LONG TAN OF SPIRAL (Lts)	SHORT TAN OF SPIRAL (Sts)	LONG CHORD OF SPIRAL (LCHs)	Ls (ft)	Xs (ft)	Ys (ft)	Ea (IN)	MASf
EQ. MLE	*POC*	*147+55.52*	*435526.6472*	*1406100.0627*																									
					N 8°26'57.34" E																									
EQ. D7D	CS	2+00.00	435526.6472	1406100.0627																									
	SPI	2+49.30	435575.4166	1406107.3072														0.19	13.91	7°53'49.35"	LT	49.30	43.84	92.93	93	92.73	6.02	0	
	SC	2+93.00	435619.2566	1406107.7297																									
	PI-sc	3+52.49	435677.4785	1406122.4680											152.49	17.07	27°22'19.75"											0	10 mph
	PI-c	3+91.45	435717.7017	1406108.6786			573.69	10°00'00.00"	195	19°28'30.40"	98.45	8.27	8.39	194.06															
	PT	4+87.75	435810.8308	1406076.7518																									
					N 18°55'22.41" W	94.00																								
	PC	5+81.75	435899.7507	1406046.2680																									
	PI	5+96.75	435913.9416	1406041.4030			819.02	7°00'00.00"	30	2°05'55.30"																		0	10 mph
	PCC	6+11.73	435927.9448	1406036.0217																									

CALCULATED JRG
CHECKED RC

BERRY YARD - GEOMETRY TABULATION SHEET
NORFOLK SOUTHERN RAILROAD

HAM-75-7.85

D7D Centerline Coordinates Report

Station	Type	Northing	Easting	Elevation
2+00.00	TS	435,526.65	1,406,100.06	549.74
2+25.00	POS	435,551.43	1,406,103.34	549.78
2+50.00	POS	435,576.31	1,406,105.78	549.79
2+75.00	POS	435,601.26	1,406,107.28	549.76
2+93.00	SC	435,619.26	1,406,107.73	549.73
3+00.00	POC	435,626.26	1,406,107.75	549.71
3+25.00	POC	435,651.25	1,406,107.15	549.66
3+50.00	POC	435,676.19	1,406,105.45	549.60
3+75.00	POC	435,701.03	1,406,102.67	549.55
4+00.00	POC	435,725.73	1,406,098.81	549.49
4+25.00	POC	435,750.23	1,406,093.87	549.44
4+50.00	POC	435,774.50	1,406,087.88	549.38
4+75.00	POC	435,798.49	1,406,080.83	549.33
4+87.75	PT	435,810.60	1,406,076.83	549.29
5+00.00	POT	435,822.42	1,406,072.78	549.26
5+25.00	POT	435,846.07	1,406,064.67	549.19
5+50.00	POT	435,869.71	1,406,056.57	549.11
5+75.00	POT	435,893.36	1,406,048.46	549.02
5+81.75	PC	435,899.75	1,406,046.27	549.00
6+00.00	POC	435,916.94	1,406,040.16	548.94
6+11.73	PT	435,927.93	1,406,036.03	548.90

MLPn Centerline Coordinates Report

Station	Type	Northing	Easting	Elevation
145+75.00	POT	435,352.63	1,406,067.77	549.92
146+00.00	POT	435,377.02	1,406,073.25	549.91
146+25.00	POT	435,401.41	1,406,078.73	549.89
146+50.00	POT	435,425.81	1,406,084.20	549.87
146+75.00	POT	435,450.20	1,406,089.68	549.86
147+00.00	POT	435,474.59	1,406,095.16	549.84
147+25.00	POT	435,498.98	1,406,100.64	549.82
147+27.05	PI	435,500.98	1,406,101.09	549.82
147+43.23	PC	435,516.77	1,406,104.64	549.81
147+50.00	POC	435,523.38	1,406,106.09	549.81
147+75.00	POC	435,547.92	1,406,110.87	549.79
148+00.00	POC	435,572.62	1,406,114.74	549.78
148+25.00	POC	435,597.44	1,406,117.69	549.77
148+50.00	POC	435,622.36	1,406,119.71	549.81
148+75.00	POC	435,647.33	1,406,120.82	549.89
149+00.00	POC	435,672.33	1,406,121.00	550.01
149+25.00	POC	435,697.32	1,406,120.25	550.16
149+50.00	POC	435,722.26	1,406,118.58	550.36
149+75.00	POC	435,747.12	1,406,115.98	550.59
150+00.00	POC	435,771.87	1,406,112.46	550.86
150+25.00	POC	435,796.48	1,406,108.03	551.17
150+50.00	POC	435,820.90	1,406,102.70	551.53
150+75.00	POC	435,845.10	1,406,096.46	551.92
151+00.00	POC	435,869.06	1,406,089.32	552.34
151+12.79	POC	435,881.22	1,406,085.33	552.56
151+13.13	PT	435,881.54	1,406,085.22	552.56
151+25.00	POT	435,893.10	1,406,081.30	552.76
151+50.00	POT	435,916.77	1,406,073.26	553.19
151+75.00	POT	435,940.44	1,406,065.22	553.61
152+00.00	POT	435,964.12	1,406,057.19	554.03
152+25.00	POT	435,987.79	1,406,049.15	554.46
152+50.00	POT	436,011.46	1,406,041.11	554.88
152+70.84	TS	436,031.20	1,406,034.41	555.23
152+75.00	POS	436,035.14	1,406,033.08	555.30
153+00.00	POS	436,058.78	1,406,024.95	555.73
153+25.00	POS	436,082.29	1,406,016.46	556.15
153+32.84	SC	436,089.62	1,406,013.66	556.28
153+50.00	POC	436,105.55	1,406,007.29	556.57
153+75.00	POC	436,128.48	1,405,997.34	557.00
154+00.00	POC	436,151.07	1,405,986.62	557.38
154+25.00	POC	436,173.28	1,405,975.15	557.70
154+50.00	POC	436,195.08	1,405,962.93	557.96
154+75.00	POC	436,216.47	1,405,949.98	558.17
155+00.00	POC	436,237.40	1,405,936.32	558.31
155+25.00	POC	436,257.87	1,405,921.95	558.40
155+50.00	POC	436,277.83	1,405,906.91	558.42
155+75.00	POC	436,297.27	1,405,891.20	558.39
156+00.00	POC	436,316.18	1,405,874.84	558.30
156+25.00	POC	436,334.52	1,405,857.85	558.15
156+50.00	POC	436,352.27	1,405,840.25	557.94

MLPn Centerline Coordinates Report

Station	Type	Northing	Easting	Elevation
156+75.00	POC	436,369.42	1,405,822.06	557.67
157+00.00	POC	436,385.95	1,405,803.30	557.34
157+25.00	POC	436,401.83	1,405,784.00	556.95
157+50.00	POC	436,417.05	1,405,764.17	556.50
157+75.00	POC	436,431.59	1,405,743.84	555.99
158+00.00	POC	436,445.44	1,405,723.02	555.47
158+25.00	POC	436,458.58	1,405,701.75	554.94
158+50.00	POC	436,470.99	1,405,680.05	554.42
158+75.00	POC	436,482.66	1,405,657.95	553.89
159+00.00	POC	436,493.58	1,405,635.46	553.37
159+03.87	POC	436,495.20	1,405,631.94	553.29
159+04.31	CS	436,495.38	1,405,631.55	553.28
159+25.00	POS	436,503.93	1,405,612.22	552.84
159+50.00	POS	436,513.59	1,405,589.17	552.32
159+65.87	ST	436,519.59	1,405,574.48	551.98
159+75.00	POT	436,523.04	1,405,566.02	551.79
160+00.00	POT	436,532.48	1,405,542.87	551.27
160+25.00	POT	436,541.93	1,405,519.73	550.74
160+50.00	POT	436,551.37	1,405,496.58	550.22
160+75.00	POT	436,560.81	1,405,473.43	549.69
161+00.00	POT	436,570.25	1,405,450.28	549.17
161+25.00	POT	436,579.70	1,405,427.13	548.64
161+50.00	POT	436,589.14	1,405,403.98	548.11
161+75.00	POT	436,598.58	1,405,380.84	547.59
162+00.00	POT	436,608.02	1,405,357.69	547.06
162+25.00	POT	436,617.46	1,405,334.54	546.54
162+50.00	POT	436,626.91	1,405,311.39	546.01
162+75.00	POT	436,636.35	1,405,288.24	545.49
163+00.00	POT	436,645.79	1,405,265.09	544.96
163+25.00	POT	436,655.23	1,405,241.95	544.44
163+50.00	POT	436,664.68	1,405,218.80	543.91
163+75.00	POT	436,674.12	1,405,195.65	543.39
164+00.00	POT	436,683.56	1,405,172.50	542.86
164+25.00	POT	436,693.00	1,405,149.35	542.33
164+50.00	POT	436,702.45	1,405,126.21	541.79
164+75.00	POT	436,711.89	1,405,103.06	541.23
165+00.00	POT	436,721.33	1,405,079.91	540.65
165+25.00	POT	436,730.77	1,405,056.76	540.06
165+50.00	POT	436,740.21	1,405,033.61	539.47
165+75.00	POT	436,749.66	1,405,010.46	538.88
166+00.00	POT	436,759.10	1,404,987.32	538.29

CALCULATED JRG
CHECKED RC

TRACK STAKEOUT DATA
STAGE 1A ALIGNMENTS

HAM-75-7.85

MLPt Centerline Coordinates Report				
Station	Type	Northing	Easting	Elevation
126+50.00	POC	433,501.53	1,405,989.93	551.49
126+75.00	POC	433,520.74	1,405,973.93	551.41
126+93.11	PT	433,534.96	1,405,962.71	551.35
127+00.00	POT	433,540.60	1,405,958.36	551.32
127+03.26	PI	433,543.18	1,405,956.37	551.31
127+25.00	POT	433,560.40	1,405,943.09	551.24
127+34.51	PI	433,567.93	1,405,937.29	551.21
127+50.00	POT	433,581.08	1,405,929.10	551.16
127+75.00	POT	433,602.30	1,405,915.88	551.07
128+00.00	POT	433,623.52	1,405,902.67	550.99
128+25.00	POT	433,644.74	1,405,889.45	550.90
128+36.32	PC	433,654.36	1,405,883.47	550.89
128+50.00	POC	433,666.07	1,405,876.41	550.89
128+75.00	POC	433,687.98	1,405,864.37	550.98
129+00.00	POC	433,710.49	1,405,853.50	551.16
129+25.00	POC	433,733.53	1,405,843.82	551.37
129+50.00	POC	433,757.05	1,405,835.35	551.57
129+75.00	POC	433,780.98	1,405,828.13	551.73
130+00.00	POC	433,805.26	1,405,822.17	551.78
130+16.77	PT	433,821.71	1,405,818.88	551.77
130+25.00	POT	433,830.13	1,405,817.36	551.75
130+50.00	POT	433,854.73	1,405,812.90	551.69
130+51.57	PI	433,856.27	1,405,812.63	551.68
130+75.00	POT	433,879.63	1,405,810.77	551.63
130+89.24	POT	433,894.56	1,405,809.59	551.59

PD4 Centerline Coordinates Report				
Station	Type	Northing	Easting	Elevation
0+00.00	POB	433,936.17	1,405,806.29	551.48
0+25.00	POT	433,961.09	1,405,804.32	551.42
0+50.00	POT	433,986.01	1,405,802.34	551.36
0+75.00	POT	434,010.93	1,405,800.36	551.30
1+00.00	POT	434,035.85	1,405,798.39	551.24
1+25.00	POT	434,060.78	1,405,796.41	551.18
1+50.00	POT	434,085.70	1,405,794.44	551.12
1+75.00	POT	434,110.62	1,405,792.46	551.05
2+00.00	POT	434,135.54	1,405,790.49	550.99
2+25.00	POT	434,160.46	1,405,788.51	550.93
2+50.00	POT	434,185.38	1,405,786.54	550.87
2+75.00	POT	434,210.31	1,405,784.56	550.81
2+81.23	PC	434,216.52	1,405,784.07	550.79
3+00.00	POC	434,235.25	1,405,782.89	550.72
3+25.00	POC	434,260.24	1,405,782.28	550.61
3+50.00	POC	434,285.23	1,405,782.75	550.47
3+75.00	POC	434,310.18	1,405,784.31	550.31
4+00.00	POC	434,335.04	1,405,786.96	550.12
4+25.00	POC	434,359.76	1,405,790.69	549.92
4+50.00	POC	434,384.29	1,405,795.49	549.72
4+53.99	PT	434,388.19	1,405,796.35	549.69
4+75.00	POT	434,408.89	1,405,801.04	549.52
5+00.00	POT	434,433.28	1,405,806.55	549.32
5+25.00	POT	434,457.66	1,405,812.07	549.14
5+50.00	POT	434,482.04	1,405,817.58	549.00
5+75.00	POT	434,506.43	1,405,823.10	548.90
6+00.00	POT	434,530.81	1,405,828.61	548.84
6+25.00	POT	434,555.20	1,405,834.12	548.82
6+50.00	POT	434,579.58	1,405,839.64	548.82
6+75.00	POT	434,603.97	1,405,845.15	548.83
7+00.00	POT	434,628.35	1,405,850.67	548.83

PD2 Centerline Coordinates Report				
Station	Type	Northing	Easting	Elevation
0+00.00	POB	434,047.45	1,405,805.49	551.21
0+25.00	POT	434,072.45	1,405,806.01	551.15
0+50.00	POT	434,097.44	1,405,806.53	551.09
0+75.00	POT	434,122.44	1,405,807.05	551.03
1+00.00	POT	434,147.43	1,405,807.57	550.97
1+25.00	POT	434,172.43	1,405,808.09	550.90
1+50.00	POT	434,197.42	1,405,808.61	550.82
1+75.00	POT	434,222.42	1,405,809.13	550.73
2+00.00	POT	434,247.41	1,405,809.65	550.62
2+25.00	POT	434,272.40	1,405,810.17	550.49
2+28.46	PC	434,275.86	1,405,810.24	550.47
2+50.00	POC	434,297.39	1,405,811.10	550.34
2+75.00	POC	434,322.30	1,405,813.10	550.19
3+00.00	POC	434,347.11	1,405,816.18	550.04
3+25.00	POC	434,371.76	1,405,820.34	549.89
3+43.69	PT	434,390.05	1,405,824.16	549.79
3+50.00	POT	434,396.35	1,405,825.58	549.76
3+75.00	POT	434,420.74	1,405,831.08	549.64
4+00.00	POT	434,445.13	1,405,836.58	549.55
4+25.00	POT	434,469.51	1,405,842.09	549.47
4+50.00	POT	434,493.90	1,405,847.59	549.41
4+75.00	POT	434,518.29	1,405,853.09	549.36

PD3 Centerline Coordinates Report				
Station	Type	Northing	Easting	Elevation
0+00.00	POB	434,078.57	1,405,795.00	551.13
0+25.00	POT	434,103.49	1,405,793.03	551.07
0+31.25	PI	434,109.73	1,405,792.53	551.05
0+50.00	POT	434,128.47	1,405,792.92	551.01
0+75.00	POT	434,153.47	1,405,793.44	550.95
1+00.00	POT	434,178.46	1,405,793.96	550.89
1+25.00	POT	434,203.45	1,405,794.48	550.83
1+50.00	POT	434,228.45	1,405,795.00	550.75
1+75.00	POT	434,253.44	1,405,795.52	550.65
1+80.10	PC	434,258.54	1,405,795.63	550.62
2+00.00	POC	434,278.43	1,405,796.32	550.51
2+25.00	POC	434,303.37	1,405,797.97	550.33
2+50.00	POC	434,328.25	1,405,800.49	550.13
2+75.00	POC	434,353.01	1,405,803.87	549.92
3+00.00	POC	434,377.65	1,405,808.12	549.72
3+23.91	PT	434,401.06	1,405,812.98	549.53
3+25.00	POT	434,402.24	1,405,813.24	549.52
3+50.00	POT	434,426.63	1,405,818.74	549.33
3+75.00	POT	434,451.01	1,405,824.23	549.17
4+00.00	POT	434,475.40	1,405,829.73	549.05
4+25.00	POT	434,499.79	1,405,835.22	548.97
4+50.00	POT	434,524.18	1,405,840.72	548.93
4+75.00	POT	434,548.57	1,405,846.21	548.92
5+00.00	POT	434,572.96	1,405,851.71	548.91

PD1 Centerline Coordinates Report				
Station	Type	Northing	Easting	Elevation
0+00.00	POB	434,286.96	1,405,831.40	550.63
0+25.00	POT	434,311.78	1,405,834.42	550.57
0+50.00	POT	434,336.60	1,405,837.43	550.51
0+75.00	POT	434,361.41	1,405,840.44	550.45
1+00.00	POT	434,386.23	1,405,843.45	550.39
1+25.00	POT	434,411.05	1,405,846.46	550.33
1+31.65	PC	434,417.65	1,405,847.26	550.31
1+50.00	POC	434,435.84	1,405,849.69	550.27
1+75.00	POC	434,460.52	1,405,853.70	550.16
2+00.00	POC	434,485.05	1,405,858.51	550.00
2+09.99	POC	434,494.80	1,405,860.66	549.92
2+10.05	PT	434,494.86	1,405,860.67	549.92
2+25.00	POT	434,509.49	1,405,863.99	549.81
2+50.00	POT	434,533.87	1,405,869.53	549.63
2+75.00	POT	434,558.25	1,405,875.06	549.51
3+00.00	POT	434,582.63	1,405,880.60	549.45
3+25.00	POT	434,607.01	1,405,886.14	549.43
3+35.26	POE	434,617.01	1,405,888.41	549.42

CALCULATED JRG
CHECKED RC

TRACK STAKEOUT DATA
STAGE 1B ALIGNMENTS

HAM-75-7.85

TD8 Centerline Coordinates Report				
Station	Type	Northing	Easting	Elevation
0+00.00	POB	433825.52	1405818.19	551.76
0+25.00	POT	433850.12	1405813.74	551.7
0+50.00	POT	433874.72	1405809.29	551.64
0+75.00	POT	433899.32	1405804.83	551.58
1+00.00	POT	433923.92	1405800.38	551.52
1+21.20	PC	433944.78	1405796.61	551.46
1+25.00	POC	433948.52	1405795.92	551.45
1+50.00	POC	433973.05	1405791.09	551.34
1+75.00	POC	433997.45	1405785.67	551.17
1+84.38	PT	434006.57	1405783.48	551.09
2+00.00	POT	434021.77	1405779.77	550.95
2+25.00	POT	434046.05	1405773.83	550.68
2+50.00	POT	434070.34	1405767.9	550.36
2+75.00	POT	434094.63	1405761.96	549.99
3+00.00	POT	434118.91	1405756.03	549.62
3+25.00	POT	434143.2	1405750.09	549.25
3+50.00	POT	434167.48	1405744.16	548.87
3+75.00	POT	434191.77	1405738.22	548.5
3+96.13	PC	434212.3	1405733.21	548.18
4+00.00	POC	434216.06	1405732.3	548.13
4+25.00	POC	434240.5	1405727.06	547.76
4+50.00	POC	434265.15	1405722.89	547.42
4+75.00	POC	434289.95	1405719.8	547.1
5+00.00	POC	434314.87	1405717.79	546.8
5+25.00	POC	434339.85	1405716.87	546.53
5+29.32	PT	434344.17	1405716.82	546.48
5+50.00	POT	434365.02	1405716.67	546.28
5+59.48	POE	434374.5	1405716.61	546.19

PB1 Centerline Coordinates Report				
Station	Type	Northing	Easting	Elevation
0+00.00	POB	434,269.93	1,405,837.64	550.67
0+25.00	POT	434,294.32	1,405,843.11	550.61
0+31.25	PI	434,300.42	1,405,844.48	550.59
0+50.00	POT	434,318.22	1,405,850.39	550.55
0+75.00	POT	434,341.94	1,405,858.27	550.49
1+00.00	POT	434,365.67	1,405,866.15	550.43
1+25.00	POT	434,389.40	1,405,874.02	550.37
1+28.95	PC	434,393.15	1,405,875.27	550.36
1+50.00	POC	434,413.21	1,405,881.62	550.31
1+75.00	POC	434,437.26	1,405,888.45	550.25
2+00.00	POC	434,461.52	1,405,894.49	550.20
2+04.96	POC	434,466.35	1,405,895.59	550.20
2+05.01	PT	434,466.40	1,405,895.61	550.20
2+25.00	POT	434,485.96	1,405,900.00	550.16
2+50.00	POT	434,510.35	1,405,905.48	550.12
2+75.00	POT	434,534.74	1,405,910.96	550.09
3+00.00	POT	434,559.13	1,405,916.45	550.05

PB Centerline Coordinates Report				
Station	Type	Northing	Easting	Elevation
0+00.00	POB	434,158.26	1,405,815.79	550.94
0+25.00	POT	434,183.08	1,405,818.80	550.88
0+31.25	PI	434,189.28	1,405,819.56	550.87
0+50.00	POT	434,207.58	1,405,823.66	550.82
0+75.00	POT	434,231.97	1,405,829.13	550.76
1+00.00	POT	434,256.37	1,405,834.60	550.70
1+25.00	POT	434,280.76	1,405,840.07	550.64
1+50.00	POT	434,305.15	1,405,845.54	550.58
1+75.00	POT	434,329.55	1,405,851.02	550.52
2+00.00	POT	434,353.94	1,405,856.49	550.46
2+25.00	POT	434,378.34	1,405,861.96	550.40
2+49.37	PC	434,402.12	1,405,867.29	550.34
2+50.00	POC	434,402.73	1,405,867.43	550.33
2+75.00	POC	434,427.12	1,405,872.91	550.27
3+00.00	POC	434,451.51	1,405,878.43	550.21
3+14.09	PT	434,465.25	1,405,881.54	550.18
3+14.09	PT	434,465.25	1,405,881.54	550.18
3+25.00	POT	434,475.89	1,405,883.96	550.15
3+50.00	POT	434,500.26	1,405,889.50	550.09
3+75.00	POT	434,524.64	1,405,895.04	550.03
3+89.30	PC	434,538.58	1,405,898.21	550.00
4+00.00	POC	434,549.02	1,405,900.58	549.97
4+25.00	POC	434,573.41	1,405,906.09	549.91

CALCULATED JRG
CHECKED RC

TRACK STAKEOUT DATA
STAGE 1B ALIGNMENTS

HAM-75-7.85

PD7 Centerline Coordinates Report

Station	Type	Northing	Easting	Elevation
13+25.00	POT	435,363.63	1,406,038.50	549.28
13+50.00	POT	435,387.00	1,406,047.37	549.32
13+75.00	POT	435,410.38	1,406,056.24	549.35
13+88.86	PI	435,423.34	1,406,061.16	549.38
13+96.29	PC	435,430.28	1,406,063.79	549.39
14+00.00	POC	435,433.75	1,406,065.10	549.39
14+25.00	POC	435,457.34	1,406,073.37	549.43
14+50.00	POC	435,481.24	1,406,080.71	549.47
14+75.00	POC	435,505.41	1,406,087.10	549.51
15+00.00	POC	435,529.81	1,406,092.54	549.55
15+25.00	POC	435,554.40	1,406,097.03	549.59
15+50.00	POC	435,579.15	1,406,100.54	549.63
15+66.39	POC	435,595.45	1,406,102.32	549.65
15+66.57	CS	435,595.62	1,406,102.33	549.65
15+75.00	POS	435,604.19	1,406,103.09	549.67
16+00.00	POS	435,629.14	1,406,104.67	549.74
16+25.00	POS	435,654.13	1,406,105.32	549.85
16+28.39	SC	435,657.53	1,406,105.34	549.87
16+50.00	POC	435,679.13	1,406,105.09	550.00
16+75.00	POC	435,704.11	1,406,103.99	550.18
17+00.00	POC	435,729.03	1,406,102.02	550.41
17+25.00	POC	435,753.86	1,406,099.18	550.67
17+50.00	POC	435,778.59	1,406,095.48	550.97
17+62.80	POC	435,791.19	1,406,093.25	551.14
17+62.91	CS	435,791.30	1,406,093.23	551.14
17+75.00	POS	435,803.27	1,406,090.90	551.31
18+00.00	POS	435,827.72	1,406,085.66	551.69
18+24.80	ST	435,851.89	1,406,080.12	552.10
18+25.00	POT	435,852.09	1,406,080.08	552.10
18+50.00	POT	435,876.44	1,406,074.44	552.52
18+75.00	POT	435,900.80	1,406,068.81	552.95
19+00.00	POT	435,925.16	1,406,063.17	553.37
19+25.00	POT	435,949.51	1,406,057.54	553.79
19+50.00	POT	435,973.87	1,406,051.90	554.22
19+68.75	PI	435,992.14	1,406,047.67	554.53
19+75.00	POT	435,998.05	1,406,045.66	554.64
20+00.00	POE	436,021.73	1,406,037.63	555.06

CALCULATED JRG
CHECKED RC

TRACK STAKEOUT DATA
STAGE 2A ALIGNMENTS

HAM-75-7.85

PD Centerline Coordinates Report				
Station	Type	Northing	Easting	Elevation
4+00.00	POB	433,543.18	1,405,956.37	551.31
4+25.00	POT	433,562.98	1,405,941.10	551.23
4+50.00	POT	433,582.78	1,405,925.84	551.14
4+75.00	POT	433,602.58	1,405,910.57	551.06
5+00.00	POT	433,622.37	1,405,895.30	550.97
5+25.00	POT	433,642.17	1,405,880.04	550.89
5+28.14	PC	433,644.66	1,405,878.12	550.88
5+50.00	POC	433,662.22	1,405,865.11	550.84
5+75.00	POC	433,682.89	1,405,851.05	550.85
6+00.00	POC	433,704.16	1,405,837.91	550.92
6+25.00	POC	433,725.98	1,405,825.71	551.03
6+50.00	POC	433,748.31	1,405,814.48	551.16
6+75.00	POC	433,771.11	1,405,804.22	551.30
7+00.00	POC	433,794.33	1,405,794.97	551.43
7+25.00	POC	433,817.94	1,405,786.74	551.56
7+50.00	POC	433,841.88	1,405,779.55	551.65
7+75.00	POC	433,866.11	1,405,773.40	551.66
8+00.00	POC	433,890.58	1,405,768.32	551.60
8+24.12	PT	433,914.39	1,405,764.43	551.47
8+25.00	POT	433,915.63	1,405,764.25	551.46
8+50.00	POT	433,940.38	1,405,760.76	551.29
8+65.01	PI	433,955.25	1,405,758.66	551.19
8+75.00	POT	433,965.23	1,405,758.26	551.12
9+00.00	POT	433,990.21	1,405,757.25	550.95
9+25.00	POT	434,015.19	1,405,756.24	550.78
9+50.00	POT	434,040.17	1,405,755.23	550.61
9+75.00	POT	434,065.15	1,405,754.22	550.44
10+00.00	POT	434,090.13	1,405,753.21	550.27
10+25.00	POT	434,115.11	1,405,752.20	550.10
10+50.00	POT	434,140.09	1,405,751.19	549.93
10+75.00	POT	434,165.06	1,405,750.18	549.76
11+00.00	POT	434,190.04	1,405,749.17	549.59
11+12.68	PC	434,202.71	1,405,748.66	549.50
11+25.00	POC	434,215.03	1,405,748.30	549.42
11+50.00	POC	434,240.03	1,405,748.37	549.25
11+75.00	POC	434,265.00	1,405,749.53	549.08
12+00.00	POC	434,289.89	1,405,751.78	548.91
12+25.00	POC	434,314.67	1,405,755.11	548.74
12+50.00	POC	434,339.28	1,405,759.52	548.59
12+61.50	PT	434,350.52	1,405,761.90	548.53
12+75.00	POT	434,363.89	1,405,764.88	548.48
13+00.00	POT	434,388.29	1,405,770.32	548.42
13+25.00	POT	434,412.69	1,405,775.76	548.41
13+50.00	POT	434,437.09	1,405,781.20	548.44
13+75.00	POE	434,461.49	1,405,786.64	548.47

PD8 Centerline Coordinates Report				
Station	Type	Northing	Easting	Elevation
0+00.00	POB	433,924.31	1,405,763.03	551.40
0+25.00	POT	433,949.06	1,405,759.53	551.23
0+50.00	POT	433,973.81	1,405,756.04	551.06
0+75.00	POT	433,998.57	1,405,752.54	550.89
1+00.00	POT	434,023.32	1,405,749.05	550.72
1+25.00	POT	434,048.08	1,405,745.55	550.55
1+50.00	POT	434,072.83	1,405,742.05	550.34
1+75.00	POT	434,097.59	1,405,738.56	550.08
2+00.00	POT	434,122.34	1,405,735.06	549.77
2+25.00	POT	434,147.10	1,405,731.57	549.42
2+50.00	POT	434,171.85	1,405,728.07	549.02
2+74.45	PC	434,196.06	1,405,724.65	548.61
2+75.00	POC	434,196.60	1,405,724.58	548.60
3+00.00	POC	434,221.41	1,405,721.50	548.19
3+25.00	POC	434,246.31	1,405,719.24	547.78
3+50.00	POC	434,271.27	1,405,717.80	547.37
3+75.00	POC	434,296.26	1,405,717.17	547.01
3+76.11	POC	434,297.37	1,405,717.16	546.99
3+76.18	PT	434,297.44	1,405,717.16	546.99
4+00.00	POT	434,321.33	1,405,716.99	546.69
4+25.00	POT	434,346.33	1,405,716.81	546.42
4+50.00	POT	434,371.33	1,405,716.63	546.19

CALCULATED JRG
CHECKED RC

TRACK STAKEOUT DATA
STAGE 3A ALIGNMENTS

HAM-75-7.85

PD5 Centerline Coordinates Report				
Station	Type	Northing	Easting	Elevation
0+00.00	POB	434,045.33	1,405,755.02	550.57
0+25.00	POT	434,070.30	1,405,754.01	550.40
0+31.25	PI	434,076.55	1,405,753.76	550.36
0+50.00	POT	434,095.27	1,405,754.87	550.23
0+75.00	POT	434,120.22	1,405,756.36	550.06
1+00.00	POT	434,145.18	1,405,757.85	549.89
1+25.00	POT	434,170.13	1,405,759.34	549.73
1+50.00	POT	434,195.09	1,405,760.83	549.61
1+75.00	POT	434,220.04	1,405,762.31	549.56
2+00.00	POT	434,245.00	1,405,763.80	549.55
2+25.00	POT	434,269.96	1,405,765.29	549.55
2+29.96	PC	434,274.91	1,405,765.58	549.55
2+50.00	POC	434,294.89	1,405,767.13	549.54
2+75.00	POC	434,319.72	1,405,770.02	549.47
3+00.00	POC	434,344.40	1,405,774.00	549.33
3+23.16	PT	434,367.09	1,405,778.65	549.19
3+25.00	POT	434,368.99	1,405,779.08	549.18
3+50.00	POT	434,393.38	1,405,784.59	549.02
3+75.00	POT	434,417.77	1,405,790.10	548.87
4+00.00	POT	434,442.15	1,405,795.61	548.71
4+25.00	POT	434,466.54	1,405,801.12	548.57
4+50.00	POT	434,490.92	1,405,806.63	548.48
4+75.00	POT	434,515.31	1,405,812.14	548.45
5+00.00	POT	434,539.69	1,405,817.64	548.48

MLPs Centerline Coordinates Report				
Station	Type	Northing	Easting	Elevation
127+03.26	PI	433,543.18	1,405,956.37	551.31
127+28.26	POT	433,562.98	1,405,941.10	551.23
127+34.51	PI	433,567.93	1,405,937.29	551.21
127+53.26	POT	433,583.85	1,405,927.37	551.14
127+78.26	POT	433,605.07	1,405,914.16	551.06
128+03.26	POT	433,626.29	1,405,900.95	550.98
128+15.46	PC	433,636.65	1,405,894.50	550.93
128+28.26	POC	433,647.59	1,405,887.85	550.89
128+53.26	POC	433,669.37	1,405,875.59	550.85
128+78.26	POC	433,691.66	1,405,864.28	550.85
129+03.26	POC	433,714.43	1,405,853.96	550.91
129+28.26	POC	433,737.63	1,405,844.64	551.03
129+53.26	POC	433,761.21	1,405,836.33	551.15
129+78.26	POC	433,785.12	1,405,829.07	551.28
130+03.26	POC	433,809.34	1,405,822.85	551.41
130+28.26	POC	433,833.80	1,405,817.69	551.51
130+53.26	POC	433,858.46	1,405,813.61	551.57
130+78.26	POC	433,883.27	1,405,810.60	551.59
130+89.24	POC	433,894.21	1,405,809.62	551.58

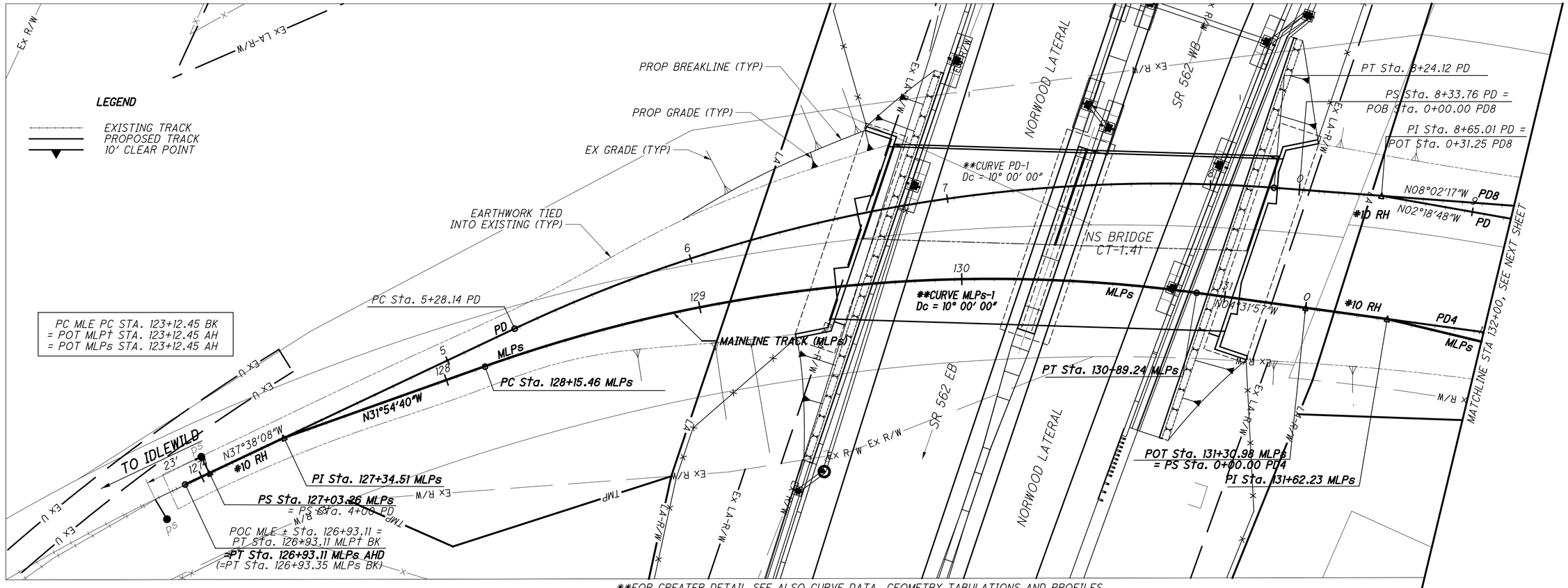
CALCULATED JRG
CHECKED RC

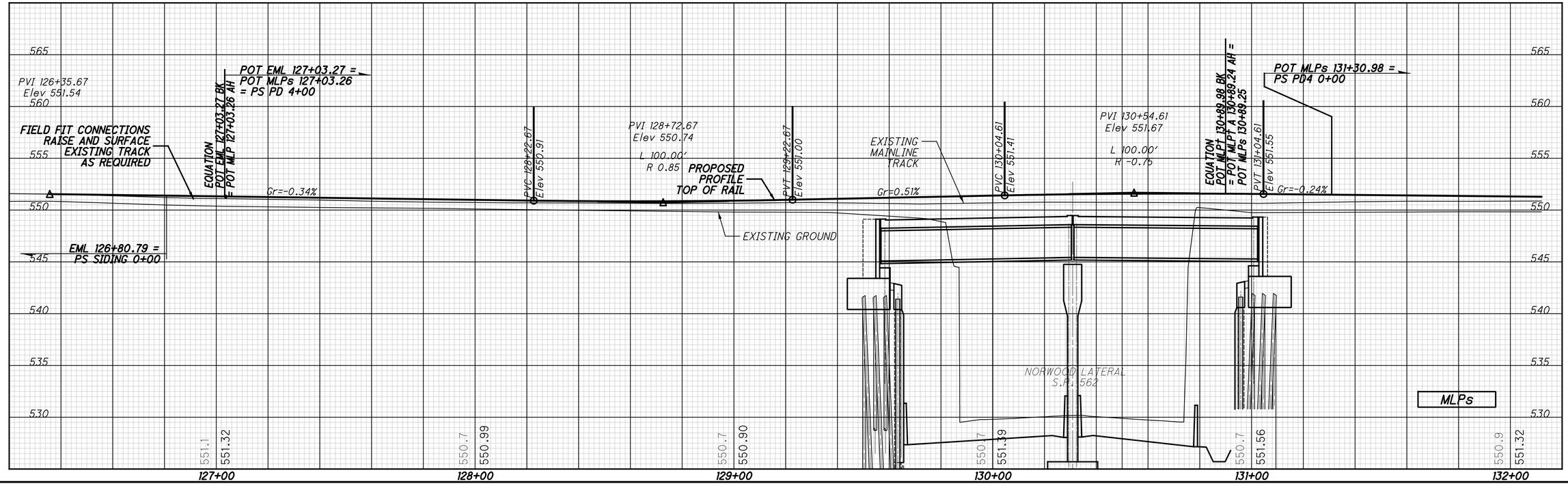
TRACK STAKEOUT DATA
STAGE 3B ALIGNMENTS

HAM-75-7.85

35/133

188/286





PLAN AND PROFILE
NSRR - STA 127+00 TO STA 132+00

HAM-75-7.85

36/133

189/286

CALCULATED JRG
CHECKED RC

HORIZONTAL SCALE IN FEET
0 10 20 40

LEGEND

EXISTING TRACK
PROPOSED TRACK
10' CLEAR POINT

EX R/W

EARTHWORK TIED INTO EXISTING (TYP, MINIMAL DISTURBANCE IN YARD)

MATCHLINE STA 132+00, SEE PREVIOUS SHEET

MATCHLINE STA 137+50, SEE NEXT SHEET

POE Sta. 4+53.17 PD8

PT Sta. 3+76.11 PD8

PD8 N00°24'48"W

FIELD FIT CONNECTIONS LINE AND GRADE TO MATCH EXISTING

**CURVE PD8-1 Dc = 7° 30' 00"

PC Sta. 2+74.45 PD8

**CURVE PD-2 Dc = 10° 00' 00"

PT Sta. 12+61.50 PD

FIELD FIT CONNECTIONS LINE AND GRADE TO MATCH EXISTING - TYPICAL ALL TRACKS

POT Sta. 13+75.00 PD

PD N12°34'06"E

PC Sta. 11+12.68 PD

**CURVE PD5-1 Dc = 10° 00' 00"

PT Sta. 3+23.16 PD5

PT Sta. 4+90.97 PD5

PD5 N12°43'54"E

N08°02'17"W

N02°18'48"W

PC Sta. 2+29.96 PD5

**CURVE PD4-1 Dc = 10° 00' 00"

PT Sta. 4+53.99 PD4

PD4 N12°44'35"E

N03°24'41"E

PC Sta. 2+81.23 PD4

**CURVE PD3-1 Dc = 8° 00' 00"

PT Sta. 3+23.92 PD3

PD3 N12°41'51"E

#10 RH

PI Sta. 0+31.25 PD5 =POT Sta. 9+86.41 PD

**CURVE PD2-1 Dc = 10° 00' 00"

PT Sta. 3+43.69 PD2

PD2 N12°42'55"E

POT Sta. 9+55.16 PD = PS Sta. 0+00.00 PD5

PC Sta. 1+80.10 PD3

PC Sta. 1+31.65 PD1

**CURVE PD1-1 Dc = 7° 30' 00"

PT Sta. 2+09.99 PD1

PD1 N12°47'32"E

N01°11'32"E

MLE

PC Sta. 2+28.46 PD2

POT Sta. 134+83.42 MLPs = PS Sta. 0+00.00 PD1

PI Sta. 0+31.25 PD3

POT Sta. 1+42.85 PD4 = PS Sta. 0+00.00 PD3

N12°38'30"E MLE

PI Sta. 135+14.67 MLPs

PC Sta. 137+16.35 MLPs

**CURVE MLPs-2 Dc = 0° 05' 00"

MLPs

PC Sta. 2+49.37 PB

**CURVE PB-1 Dc = 0° 15' 00"

PB

PC Sta. 3+89.30 PB

PT Sta. 3+14.09 PB

PB1 N12°39'58"E

PT Sta. 2+04.96 PB1

N04°31'57"W

N06°55'01"E

PI Sta. 0+31.25 PB

PI Sta. 0+31.25 PB1

PC Sta. 1+28.95 PB1

**CURVE PB1-1 Dc = 7° 30' 00"

Sta. 133+53.77 MLPs = PS Sta. 0+00.00 PB

MAINLINE TRACK (MLPs)

POT Sta. 1+13.90 PB = PS Sta. 0+00.00 PB1

PI Sta. 132+73.63 MLPs

Sta. 132+42.38 MLPs = PS Sta. 0+00.00 PD2

**FOR GREATER DETAIL SEE ALSO CURVE DATA, GEOMETRY TABULATIONS AND PROFILES

POT MLPs 132+42.38 = PS PD2 0+00

POT MLPs 133+53.78 = PS PB 0+00

POT MLPs 134+87.16 = PS PD1 0+00

PROPOSED PROFILE TOP OF RAIL

Gr=-0.24%

EXISTING MAINLINE TRACK

EXISTING GROUND

PROPOSED PROFILE TOP OF RAIL

Gr=-0.24%

PVC 137+36.85 Elev 550.01

MLPs

565 560 555 550 545 540 535 530 525

550.9 551.32 550.7 551.07 550.4 550.83 550.5 550.59 550.3 550.35 550.1 550.10

132+00 133+00 134+00 135+00 136+00 137+00

HORIZONTAL SCALE IN FEET 0 10 20 40

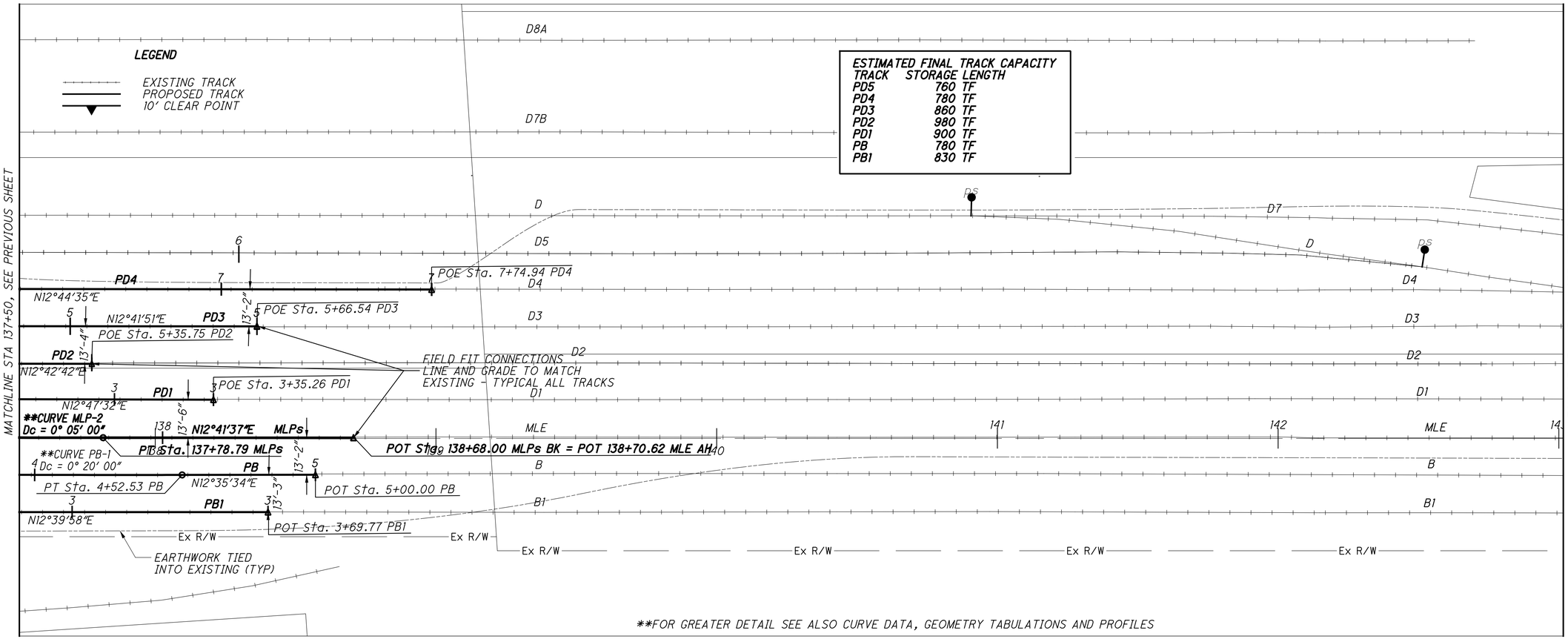
CALCULATED JRG CHECKED RC

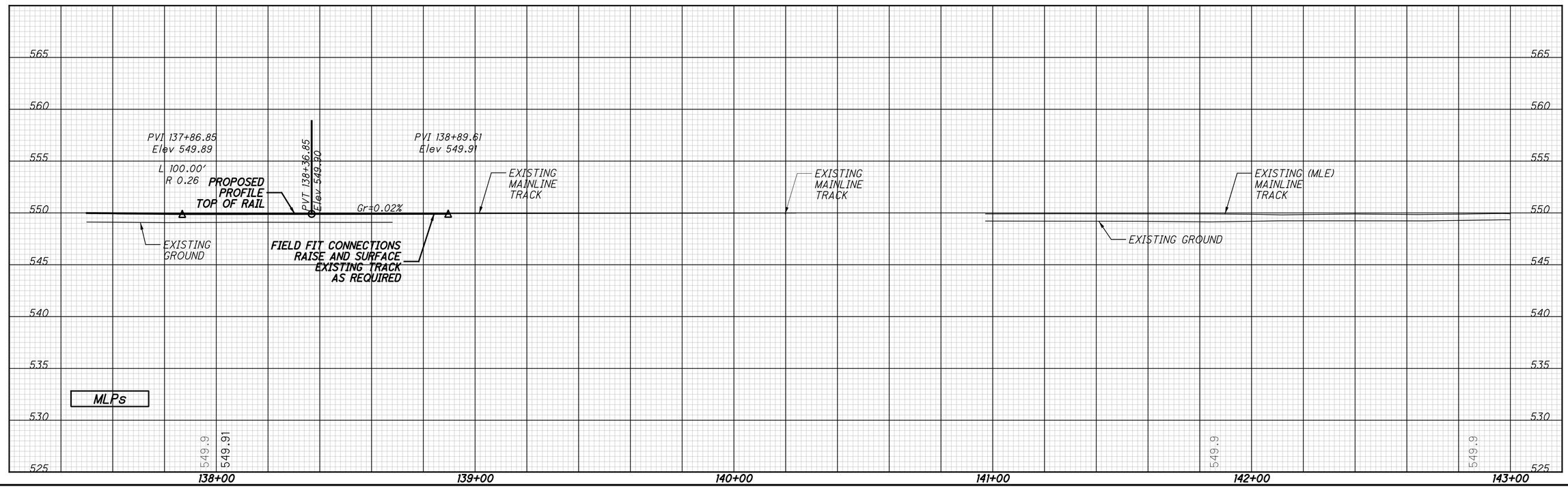
PLAN AND PROFILE
NSRR - STA 132+00 TO STA 137+50

HAM-75-7.85

37/133

190/286

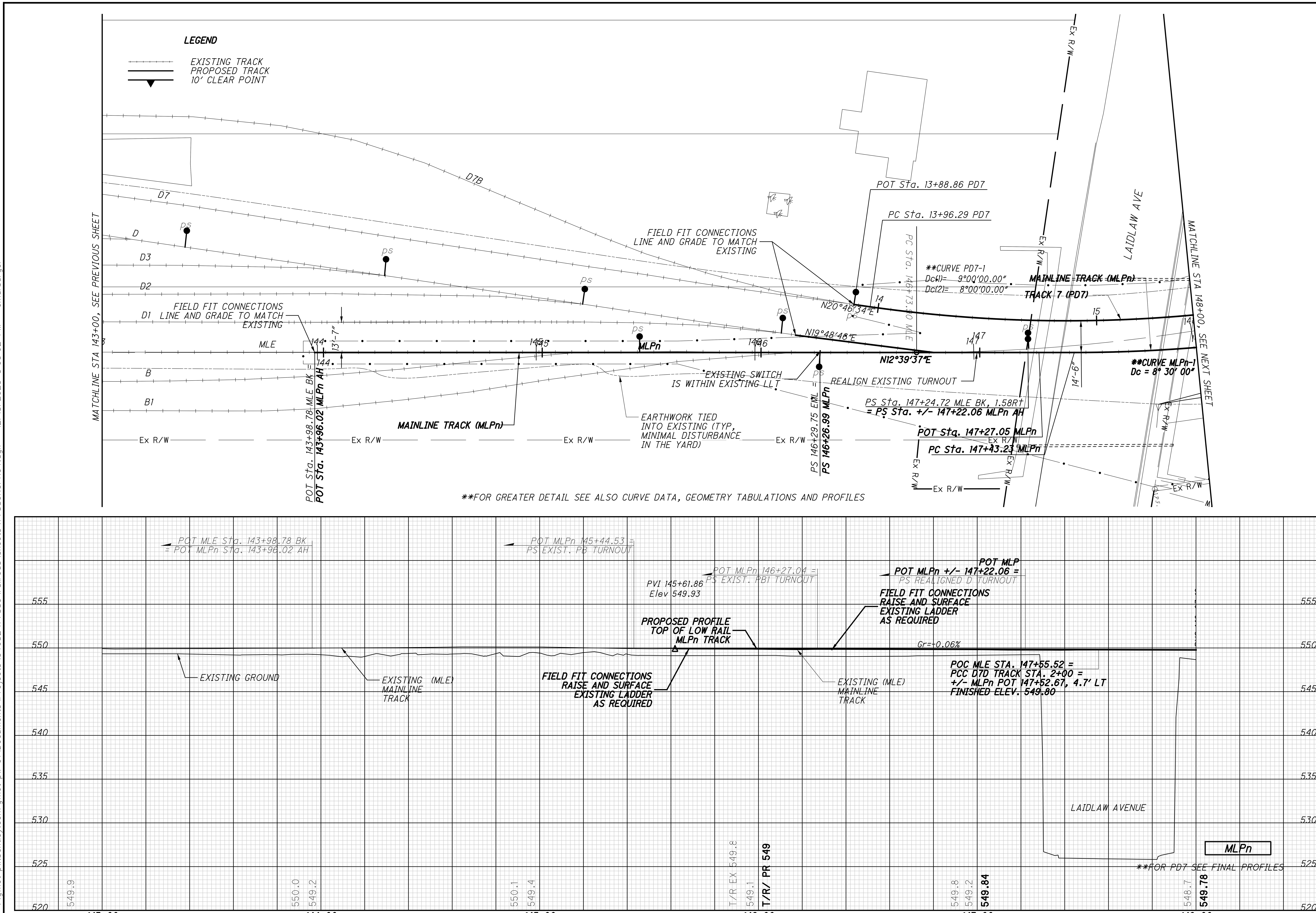




HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED JRG
CHECKED RC

PLAN AND PROFILE
NSRR - STA 137+50 TO STA 143+00
HAM-75-7.85

38/133
191/286


LEGEND
EXISTING TRACK
PROPOSED TRACK
10' CLEAR POINT
MATCHLINE STA 143+00, SEE PREVIOUS SHEET
MATCHLINE STA 148+00, SEE NEXT SHEET
FIELD FIT CONNECTIONS LINE AND GRADE TO MATCH EXISTING
POT Sta. 13+88.86 PD7
PC Sta. 13+96.29 PD7
**CURVE PD7-1
Dc(1)= 9°00'00.00"
Dc(2)= 8°00'00.00"
MAINLINE TRACK (MLPn)
TRACK 7 (PD7)
N20°46'34"E
N19°48'46"E
N12°39'37"E
**CURVE MLPn-1
Dc = 8° 30' 00"
EXISTING SWITCH IS WITHIN EXISTING LLT
REALIGN EXISTING TURNOUT
PS Sta. 147+24.72 MLE BK, 1.58Rt
= PS Sta. +/- 147+22.06 MLPn AH
POT Sta. 147+27.05 MLPn
PC Sta. 147+43.23 MLPn
EARTHWORK TIED INTO EXISTING (TYP, MINIMAL DISTURBANCE IN THE YARD)
POT Sta. 143+98.78 MLE BK
POT Sta. 143+96.02 MLPn AH
PS 146+29.75 EML =
PS 146+26.99 MLPn
PC Sta. 146+73.80 MLE
LAIDLAW AVE
Ex R/W
13'-7"
14'-6"
**FOR GREATER DETAIL SEE ALSO CURVE DATA, GEOMETRY TABULATIONS AND PROFILES
POT MLE Sta. 143+98.78 BK
= POT MLPn Sta. 143+96.02 AH
POT MLPn 145+44.53 =
PS EXIST. PB TURNOUT
POT MLPn 146+27.04 =
PS EXIST. PB1 TURNOUT
PVI 145+61.86
Elev 549.93
POT MLP
POT MLPn +/- 147+22.06 =
PS REALIGNED D TURNOUT
FIELD FIT CONNECTIONS RAISE AND SURFACE EXISTING LADDER AS REQUIRED
PROPOSED PROFILE TOP OF LOW RAIL MLPn TRACK
Gr=+0.06%
EXISTING GROUND
EXISTING (MLE) MAINLINE TRACK
POC MLE STA. 147+55.52 =
PCC D7D TRACK STA. 2+00 =
+/- MLPn POT 147+52.67, 4.7' LT
FINISHED ELEV. 549.80
LAIDLAW AVENUE
MLPn
**FOR PD7 SEE FINAL PROFILES
T/R EX 549.8
T/R/ PR 549
143+00
144+00
145+00
146+00
147+00
148+00
HORIZONTAL SCALE IN FEET
CALCULATED JRG
CHECKED RC

PLAN AND PROFILE
NSRR - STA 143+00 TO STA 148+00

HAM-75-7.85

LEGEND

EXISTING TRACK
PROPOSED TRACK
10' CLEAR POINT

PD7-1
P.I. Sta= 15+95.73
Dc-1= 9°00'00.00"(1)
Dc-2= 8°00'00.00"(2)
R= 637.27'(1) R= 716.78'(2)
Delta= 33°48'16.56"(LT)
L=170.10'(1) L=134.41'(2)
T= 199.43'(1) T= 241.35'(2)
E= 30.48'
SE=0"(Dc-1) SE=1"(Dc-2)
MAS=10mph

MATCHLINE STA 148+00, SEE PREVIOUS SHEET

CS Sta. 15+66.39 PD7
SC Sta. 16+28.39 PD7
CS Sta. 17+62.80 PD7
ST Sta. 18+24.80 PD7
PI Sta. 19+68.75 PD7
POT Sta. 152+60.84 MLPn
= PS Sta. 20+00.00 PD7
TS Sta. 152+70.84 MLPn

EX GRADE (TYP)
EARTHWORK TIED INTO EXISTING (TYP)
PROP GRADE (TYP)
PROP BREAKLINE (TYP)

TRACK 7 (PD7)
MLE
D7
MLPn
MAINLINE TRACK (MLPn)

N13°01'42"W
N18°45'11"W
#10 RH

**CURVE MLPn-1
Dc = 8° 30' 00"

MLPn-1
P.I. Sta= 149+32.96
Dc= 8°30'00.00"
R= 674.69'
Delta= 31°24'47.83"(LT)
L=369.91'
T= 189.73'
E= 26.17'
MAS=10mph

PT Sta. 151+12.79 MLPn

Ex R/W
EX SC
R/W

MATCHLINE STA 153+00, SEE NEXT SHEET

**FOR GREATER DETAIL SEE ALSO CURVE DATA, GEOMETRY TABULATIONS AND PROFILES

PVI 149+43.18
Elev 549.68
L 280.00'
R 0.63

PVC 148+03.18
Elev 549.77

PVT 150+83.18
Elev 552.05

PROPOSED PROFILE
TOP OF LOW RAIL
MLPn TRACK

Gr=1.69%

EXISTING GROUND
EXISTING GROUND

548.7 549.78
547.7 550.01
545.8 550.86
545.4 552.34
545.2 554.03
538.2 555.73

148+00 149+00 150+00 151+00 152+00 153+00

560 555 550 545 540 535 530 525 520

MLPn

**FOR PD7 SEE FINAL PROFILES

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED JRG
CHECKED RC

PLAN AND PROFILE
NSRR - STA 148+00 TO STA 153+00

HAM-75-7.85

40/133
193/286

LEGEND

EXISTING TRACK
PROPOSED TRACK
10' CLEAR POINT

MATCHLINE STA 153+00, SEE PREVIOUS SHEET

MATCHLINE STA 158+00, SEE NEXT SHEET

I-75 NB

I-75 SB

FORMER (MLE) ALIGNMENT

NS BRIDGE
CT-0.95

SC Sta. 153+32.84 MLPn

BEGIN NEW STRUCTURE
MLPn STA. 154+69.02

MLPn-2
P.I. Sta= 156+33.68
Dc= 7°45'00.00"
R= 739.86'
Delta= 44°15'46.82"(LT)
L=571.46'
Ls= 62.00'
T= 300.84'
E= 58.82'
SE=4"
MAS=20mph

**CURVE MLPn-2
Dc = 7° 45' 00"

MLPn-2

MAINLINE TRACK (MLPn)

END NEW STRUCTURE
MLPn STA. 156+93.35

PROP BREAKLINE (TYP)

PROP GRADE (TYP)

EX GRADE (TYP)

EARTHWORK TIED
INTO EXISTING (TYP)

**FOR GREATER DETAIL SEE ALSO CURVE DATA, GEOMETRY TABULATIONS AND PROFILES

PVI 155+70.07
Elev 560.30
L 400.00'
R -0.95

PVC 153+70.07
Elev 556.91

PVT 157+70.07
Elev 556.10

PROPOSED PROFILE
TOP OF LOW RAIL
MLPn TRACK

Gr=1.69%

Gr=-2.10%

EXISTING GROUND

I - 75

MLPn

538.2 555.73
534.3 557.38
529.3 558.31
529.3 558.30
541.2 557.34
531.2 555.47

153+00 154+00 155+00 156+00 157+00 158+00

565 560 555 550 545 540 535 530

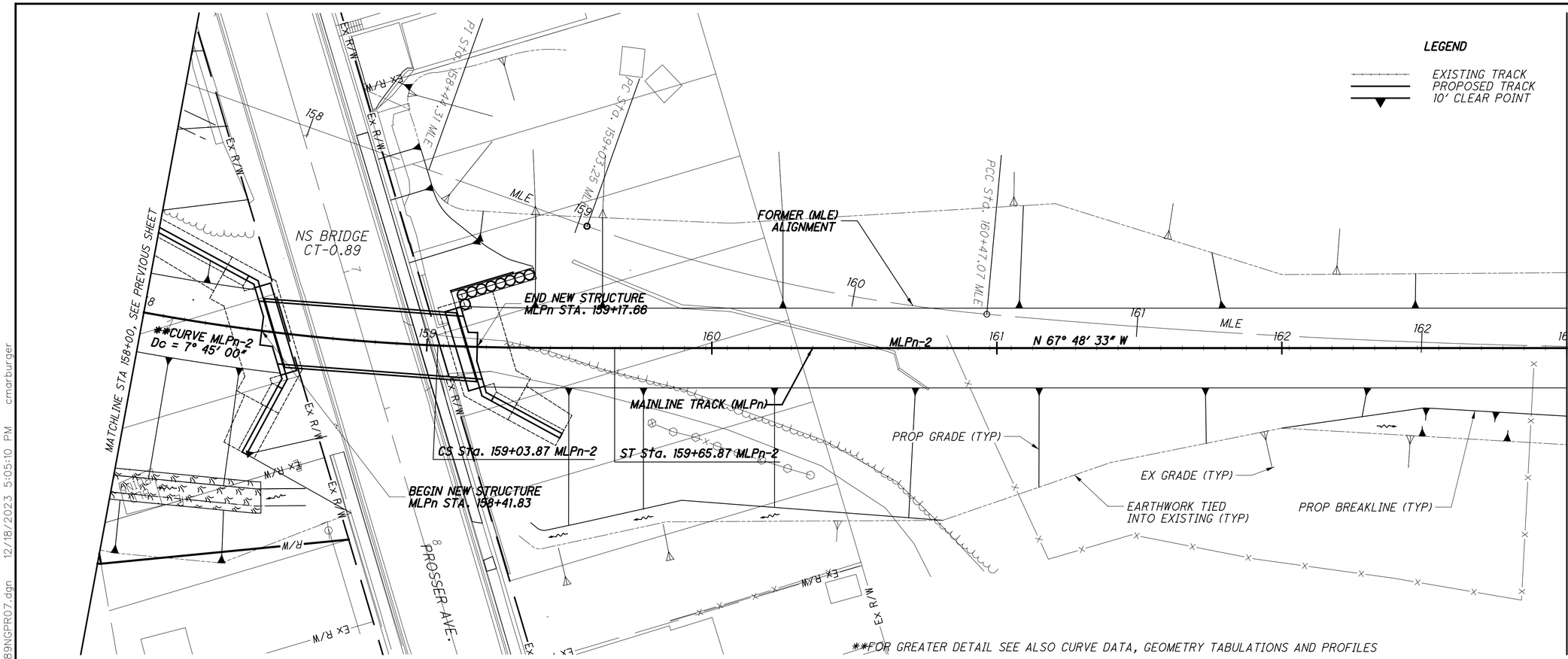
HORIZONTAL SCALE IN FEET
0 10 20 40

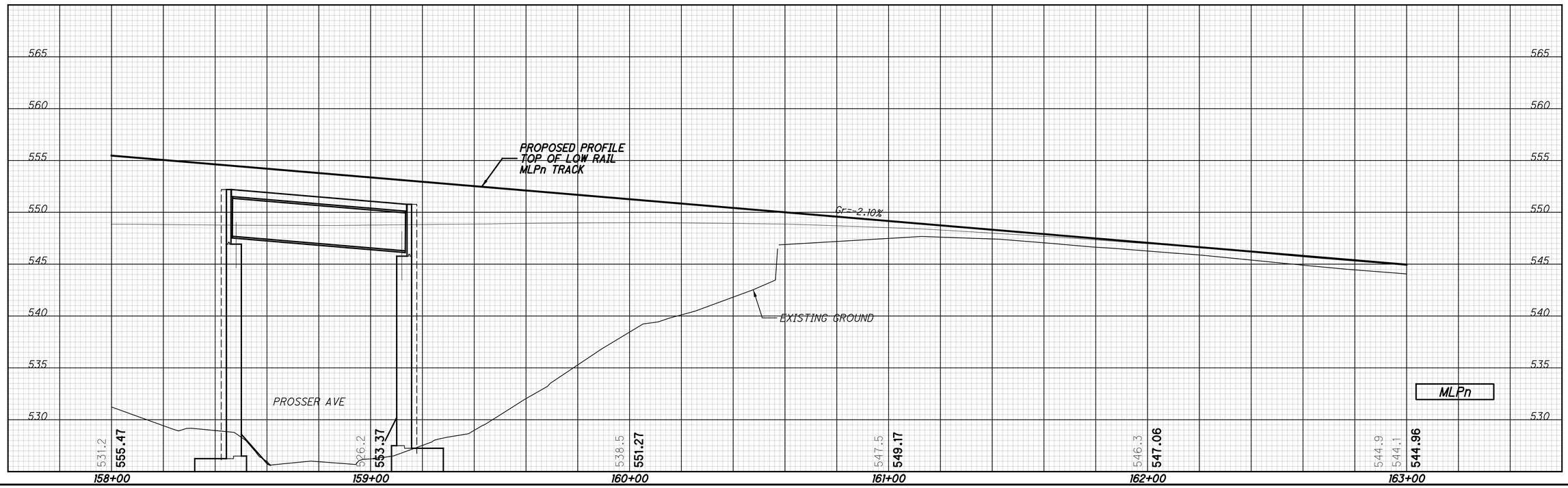
CALCULATED JRG
CHECKED RC

PLAN AND PROFILE
NSRR - STA 153+00 TO STA 158+00

HAM-75-7.85

41/133
194/286





PLAN AND PROFILE
NSRR - STA 158+00 TO STA 163+00

HAM-75-7.85

42/133

195/286

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

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LEGEND

EXISTING TRACK
PROPOSED TRACK
10' CLEAR POINT

Ex R/W

MATCHLINE STA 163+00, SEE PREVIOUS SHEET

PT Sta. 163+01.23 MLE

MLE 163 | MLE 164 | MLE 164 | 165 | MLE 165 | 166 | MLE 166 | 167 | MLE 167 | MLE

N 67° 48' 33" W

MLPn

FIELD FIT CONNECTIONS
LINE AND GRADE TO MATCH
EXISTING

POE Sta. 166+83.32 MLE

PROP BREAKLINE (TYP)

MAINLINE TRACK (MLPn)

PROP GRADE (TYP)

EX GRADE (TYP)

EARTHWORK TIED
INTO EXISTING (TYP)

POT Sta. 167+32.36 MLPn
= ± POT Sta. 166+83.32 MLE

**FOR GREATER DETAIL SEE ALSO CURVE DATA, GEOMETRY TABULATIONS AND PROFILES

565 / 560 / 555 / 550 / 545 / 540 / 535 / 530 / 525

**PROPOSED PROFILE
TOP OF LOW RAIL
MLPn TRACK**

Gr=-2.10%

EXISTING GROUND

PVC 164+07.88
Elev 542.70

PVI 164+57.88
Elev 541.65
L 100.00'
R -0.26

PVT 165+07.88
Elev 540.47

PVI 166+00.07
Elev 538.29

Gr=-2.36%

EXISTING (MLE)
MAINLINE
TRACK

**FIELD FIT CONNECTIONS
RAISE AND SURFACE
EXISTING TRACK
AS REQUIRED**

MLPn

544.9 544.1 **544.96** | 542.8 542.3 **542.86** | 540.6 540.0 **540.65** | 538.3 537.6 **538.29** | 536.1 535.5

163+00 | **164+00** | **165+00** | **166+00**

HORIZONTAL SCALE IN FEET
0 10 20 40

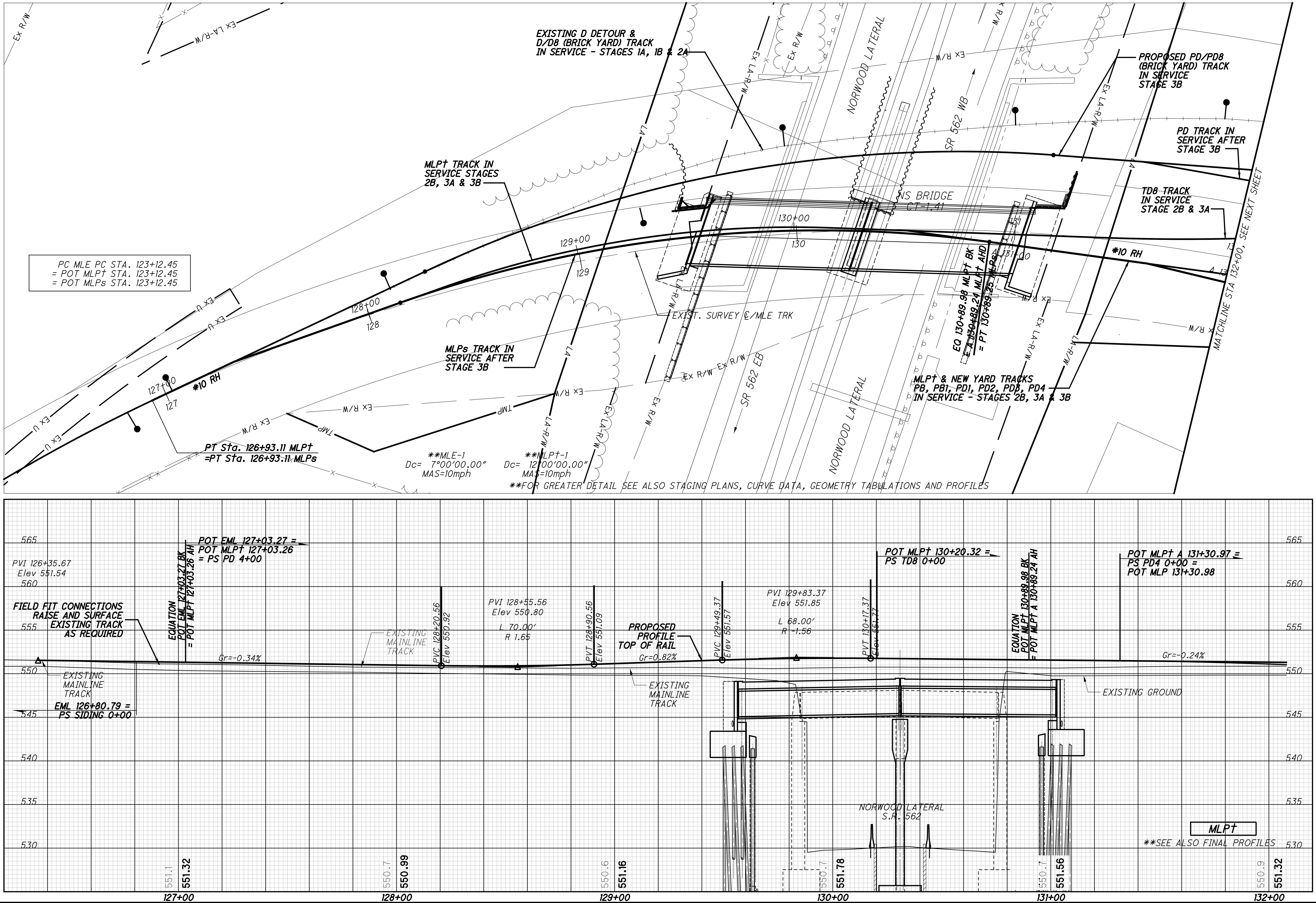
CALCULATED JRG
CHECKED RC

PLAN AND PROFILE
NSRR - STA 163+00 TO STA 167+00

HAM-75-7.85

43/133

196/286



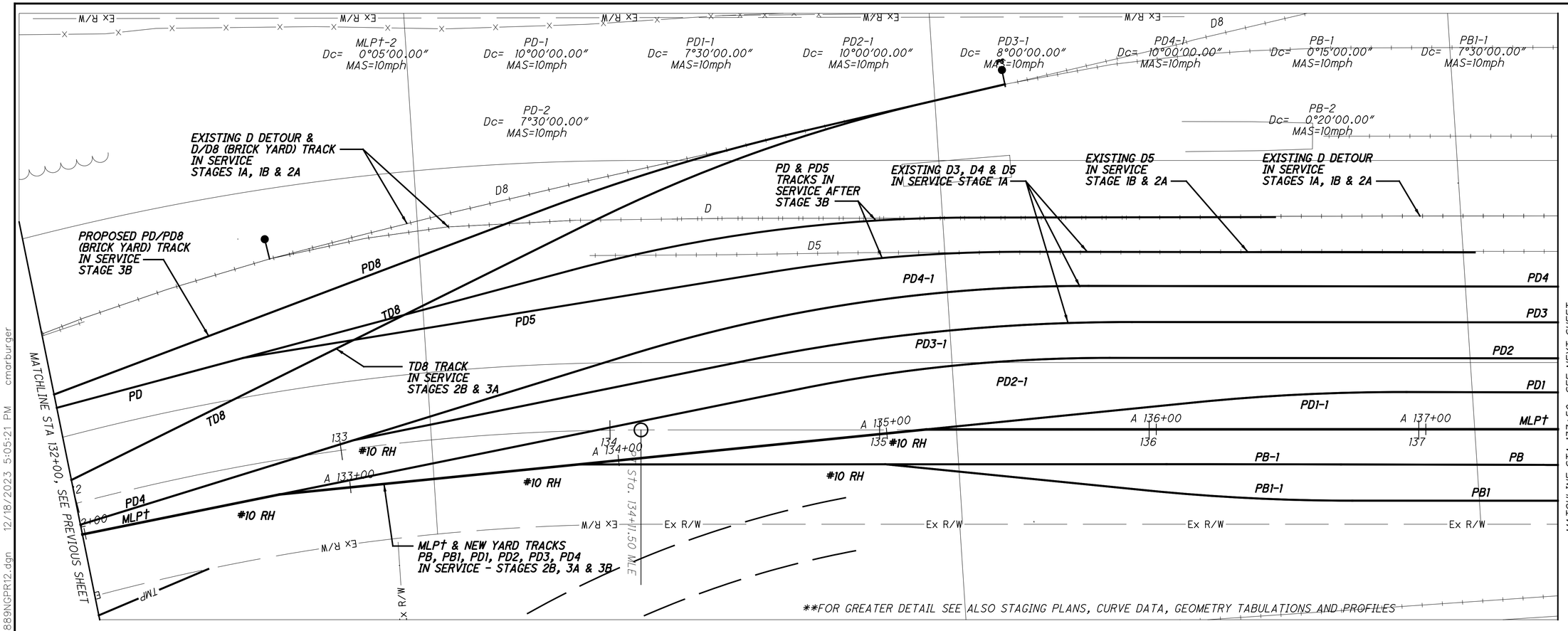
TEMPORARY OPERATIONS PLAN AND PROFILE
NSRR - STA 127+00 TO STA 132+00

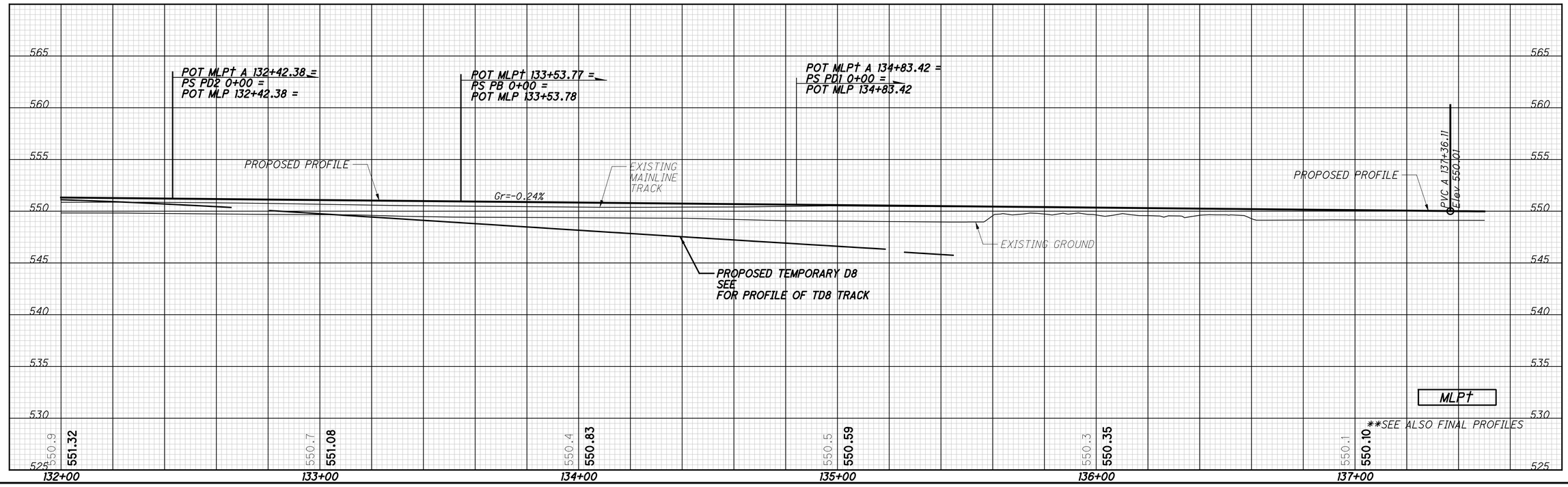
HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED JRG
CHECKED RC

HAM-75-7.85

44/133





TEMPORARY OPERATIONS PLAN AND PROFILE
NSRR - STA 132+00 TO STA 137+50

CALCULATED JRG
CHECKED RC

HORIZONTAL SCALE IN FEET
0 10 20 40

HAM-75-7.85

45/133

198/286

MLP†-2
Dc= 0°05'00.00"
MAS=10mph

PB-2
Dc= 0°20'00.00"
MAS=10mph

MATCHLINE STA 137+50, SEE PREVIOUS SHEET

EXISTING D DETOUR IN SERVICE STAGES 1A, 1B & 2A

EXISTING D5 IN SERVICE STAGE 1B & 2A

EXISTING D3, D4 & D5 IN SERVICE STAGE 1A

EXISTING D DETOUR IN SERVICE STAGES 1A, 1B & 2A

D
D5
D4
D3
D2
D1
B
B1

MLP† & NEW YARD TRACKS PB, PB1, PD1, PD2, PD3, PD4 IN SERVICE STAGE 2B

EXISTING MLE & YARD TRACKS B, B1, D1, D2, D3 & D4 STUB ENDED DURING STAGE 1A, 1B & 2A

A 138+00
A 138+68
MLE
138
139
140
141
142
143

EXIST. SURVEY ℄/MLE TRK

POT Sta. 138+68.00 MLPs BK = POT ± 138+70.62 MLE AH

Ex R/W

**FOR GREATER DETAIL SEE ALSO STAGING PLANS, CURVE DATA, GEOMETRY TABULATIONS AND PROFILES

PVI A 137+86.11
Elev 549.89
L 100.00'
R 0.26

PROPOSED PROFILE TOP OF RAIL

PVI A 138+36.11
Elev 549.90

Gr=0.02%

PVI A 138+88.87
Elev 549.91

EXISTING MAINLINE TRACK

EXISING GROUND

FIELD FIT CONNECTIONS RAISE AND SURFACE EXISTING TRACK AS REQUIRED

EXISTING GROUND

565
560
555
550
545
540
535
530
525

MLP†

MLE

**SEE ALSO FINAL PROFILES

549.91

138+00
139+00
140+00
141+00
142+00
143+00

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

TEMPORARY OPERATIONS PLAN AND PROFILE
NSRR - STA 137+50 TO STA 143+00

HAM-75-7.85

MLPn-1
Dc= 8°30'00.00"
MAS=10mph

TEMPORARY D7-MLPn
Dc= 11°15'00.00"
MAS=10mph

PD7-1a
Dc= 9°00'00.00"
MAS=10mph

D7D-1
Dc= 10°00'00.00"
Delta= 27°22'20.40"
T=98.45'
L=194.75'
Ls= 93.00'(1)
MAS=10mph

PD7-1b
Dc= 8°00'00.00"
MAS=10mph

D7D-2
Dc= 7°00'00.00"
Delta= 2°05'55.30"
T=15.00'
L=29.98'
MAS=10mph

EXISTING D DETOUR
IN SERVICE
STAGES 1A, 1B & 2A

NEW PD7
IN SERVICE
STAGES 2B THRU 3B

MLE STA. 147+55.52 =
OS D7D 2+00.00

LAIDLAW AVE

MATCHLINE STA 143+00

MATCHLINE STA 148+00

144 145 146 147

D7D 2+00

MLPt & YARD TRACKS
PB, PB1, PD1,
PD2, PD3, PD4
IN SERVICE
STAGES 2B, 3A & 3B

POT ± Sta. 143+98.78 MLE IBK =
POT Sta. 143+96.02 MLPn AH

TEMP D7
TRACK SHIFT
IN SERVICE
STAGE 1A

MLPh IN SERVICE
STAGES 1B THRU 3B

Ex R/W

**FOR GREATER DETAIL SEE ALSO STAGING PLANS, CURVE DATA, GEOMETRY TABULATIONS AND PROFILES

EQ POC MLE STA. 147+55.52 =
PCC D7D TRACK STA. 2+00 =
+/- MLPn POT 147+52.67, 4.7' LT
TEMPORARY ELEV. 549.74

POT MLPn 146+27.04 =
PS EXIST. PB1 TURNOUT

PS MLE +/- 141+25.28 =
EXISTING D TURNOUT

PVI 2+00.00
Elev 549.74

PVC 2+10.00
Elev 549.76

Gr=0.16%

EXISTING GROUND

EXISTING TRACK

D7D DETOUR TRACK
PROPOSED PROFILE T/R
TO MATCH EXISTING MLE

525.8
549.74
549.74

D7D

**FOR MLPn SEE FINAL PLAN & PROFILE
FOR PD7 SEE FINAL PROFILES

555 550 545 540 535 530 525 520

143+00 144+00 145+00 146+00 147+00 148+00

HORIZONTAL SCALE IN FEET
0 10 20 40

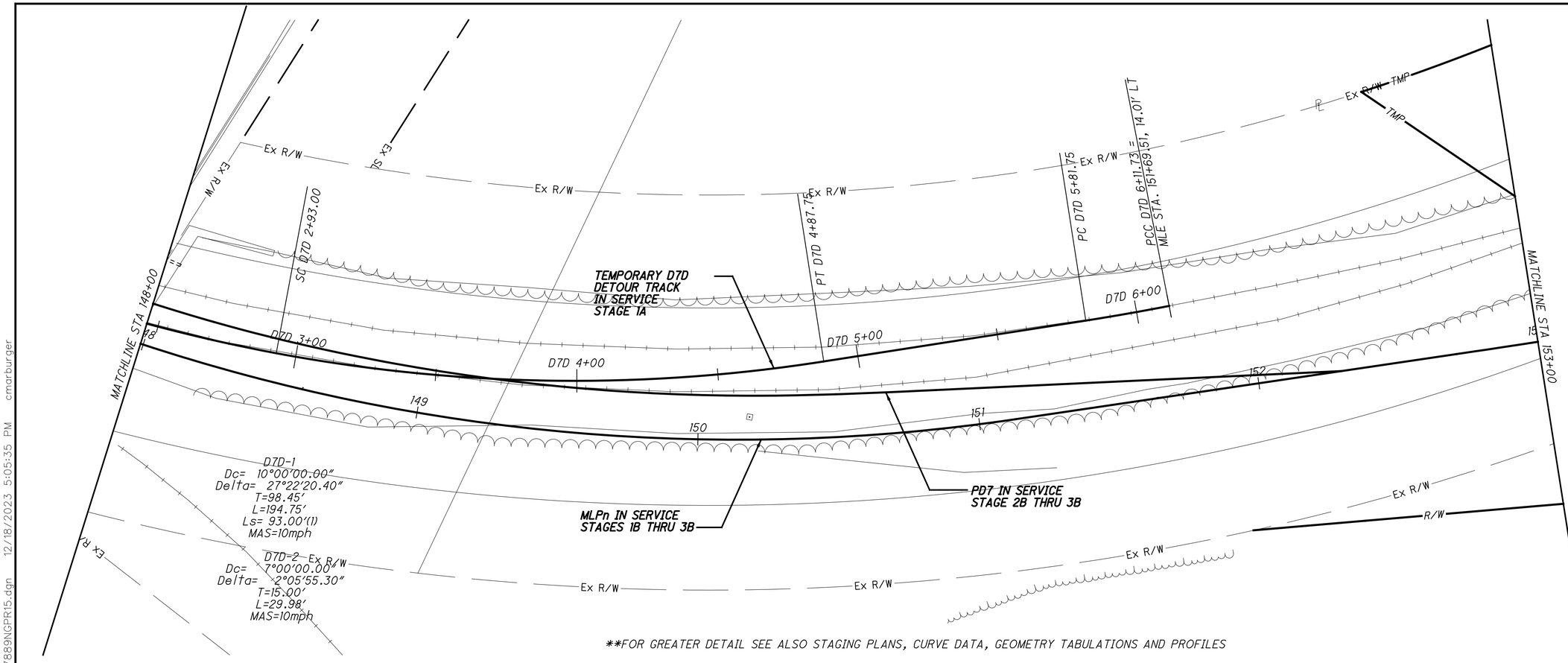
CALCULATED JRG
CHECKED RC

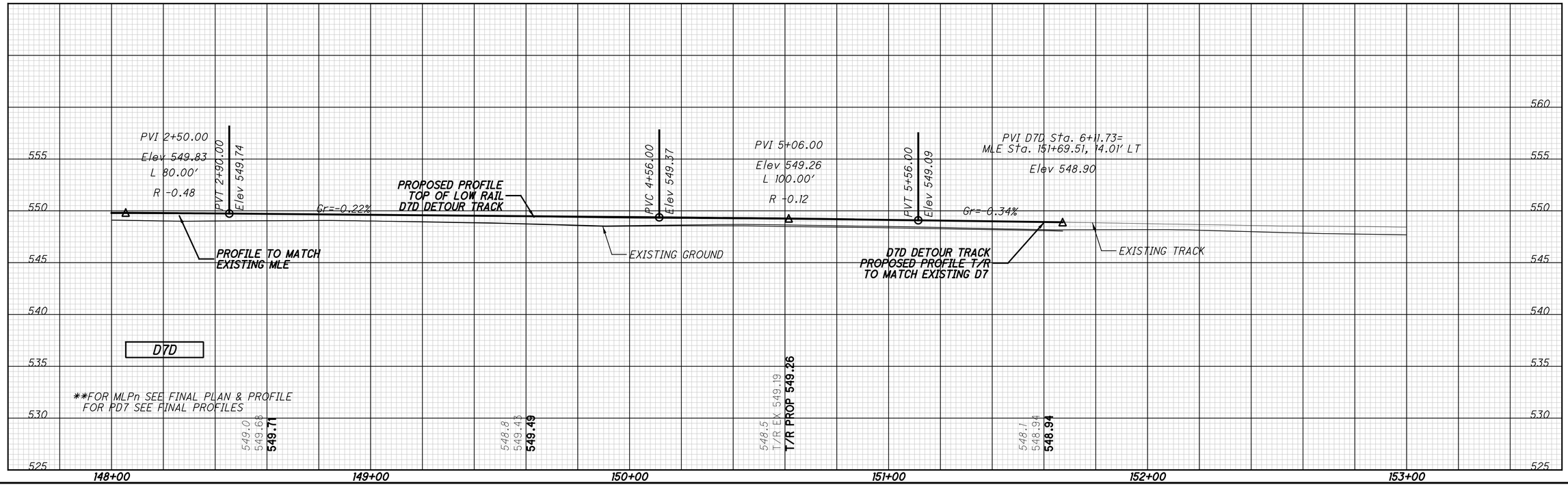
TEMPORARY OPERATIONS PLAN AND PROFILE
NSRR - STA 143+00 TO STA 148+00

HAM-75-7.85

47/133

200/286



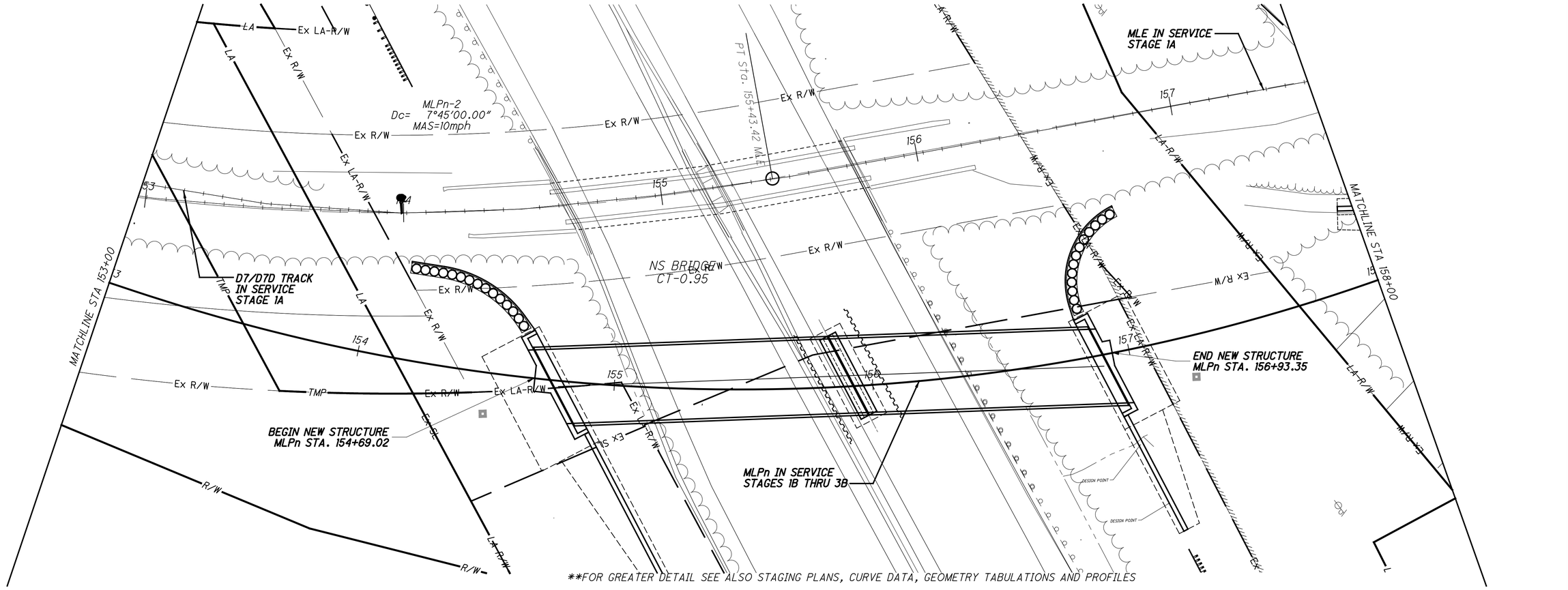


HORIZONTAL SCALE IN FEET
0 25 50 100

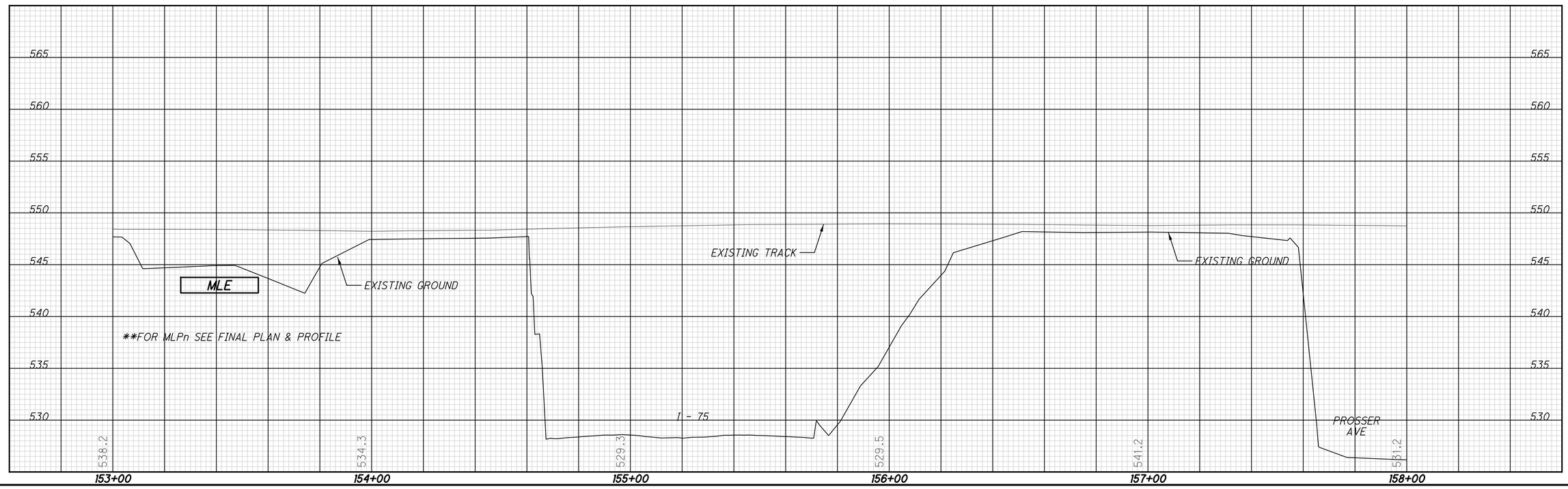
CALCULATED JRG
CHECKED RC

TEMPORARY OPERATIONS PLAN AND PROFILE
NSRR - STA 148+00 TO STA 153+00

HAM-75-7.85



**FOR GREATER DETAIL SEE ALSO STAGING PLANS, CURVE DATA, GEOMETRY TABULATIONS AND PROFILES



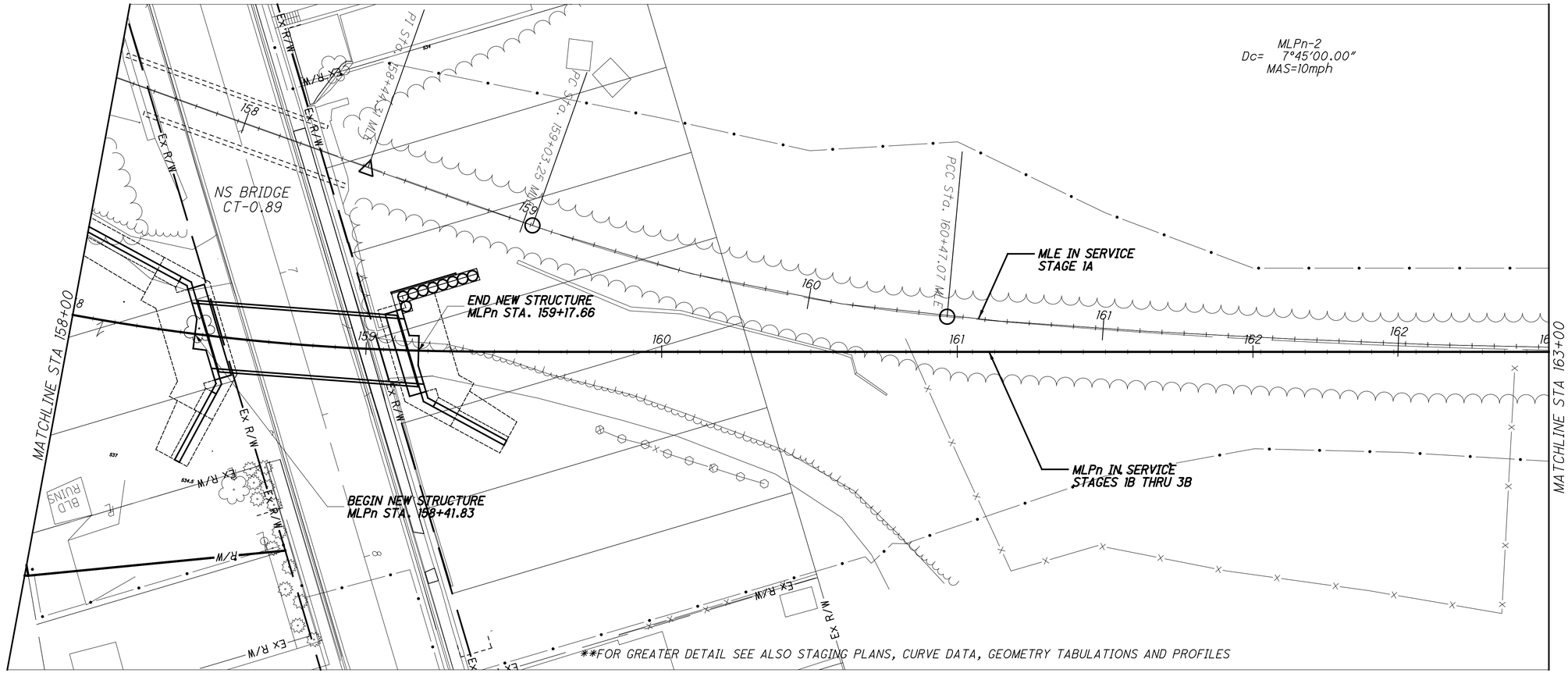
TEMPORARY OPERATIONS PLAN AND PROFILE
NSRR - STA 153+00 TO STA 158+00

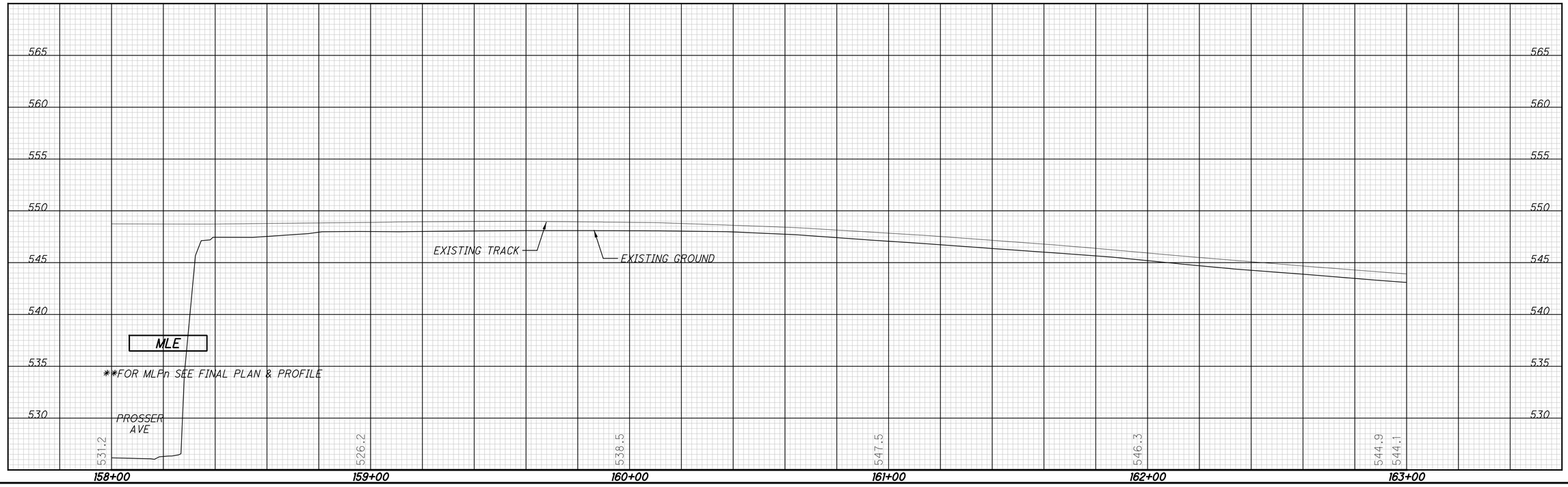
HAM-75-7.85

HORIZONTAL SCALE IN FEET: 0, 10, 20, 40

CALCULATED JRG

CHECKED RC





TEMPORARY OPERATIONS PLAN AND PROFILE
NSRR - STA 158+00 TO STA 163+00

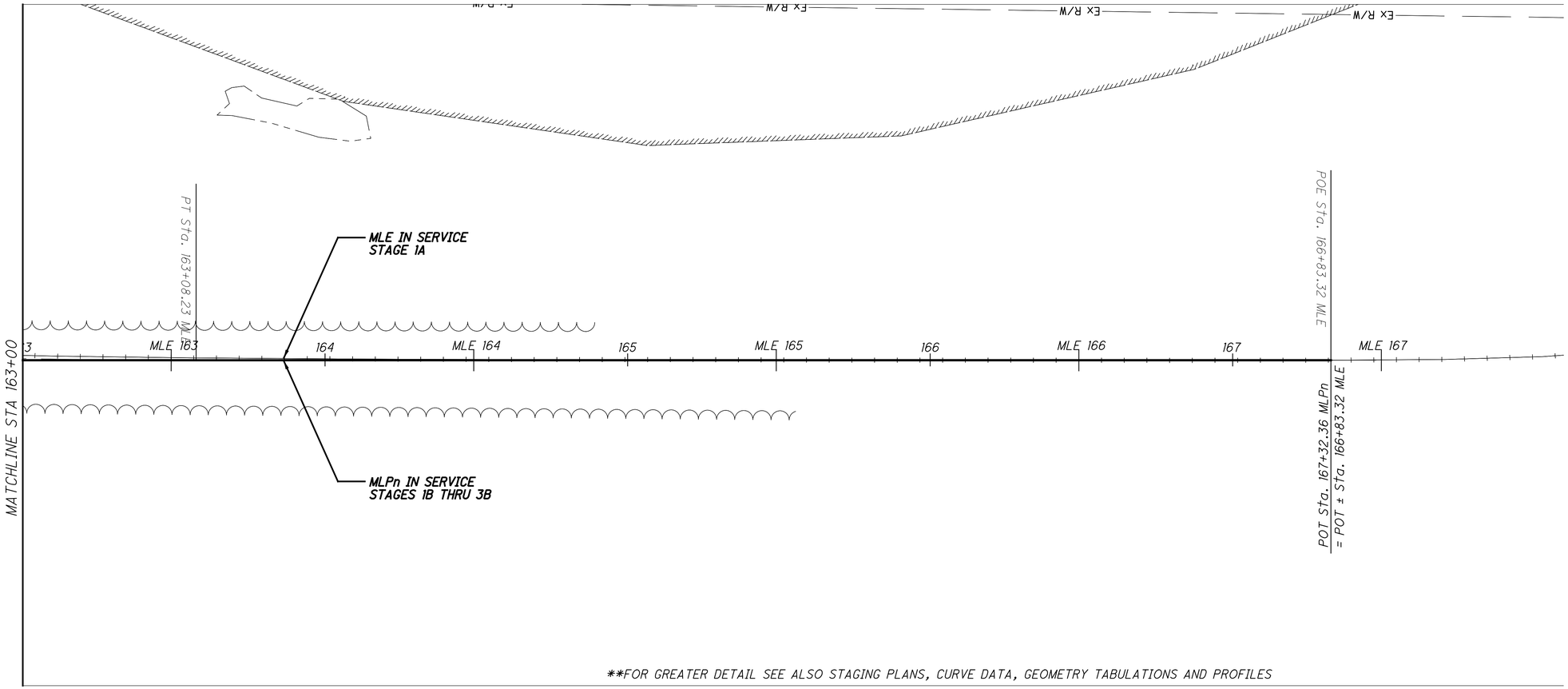
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

HAM-75-7.85

50/133

203/286



**FOR GREATER DETAIL SEE ALSO STAGING PLANS, CURVE DATA, GEOMETRY TABULATIONS AND PROFILES

TEMPORARY OPERATIONS PLAN AND PROFILE
NSRR - STA 163+00 TO STA 168+00

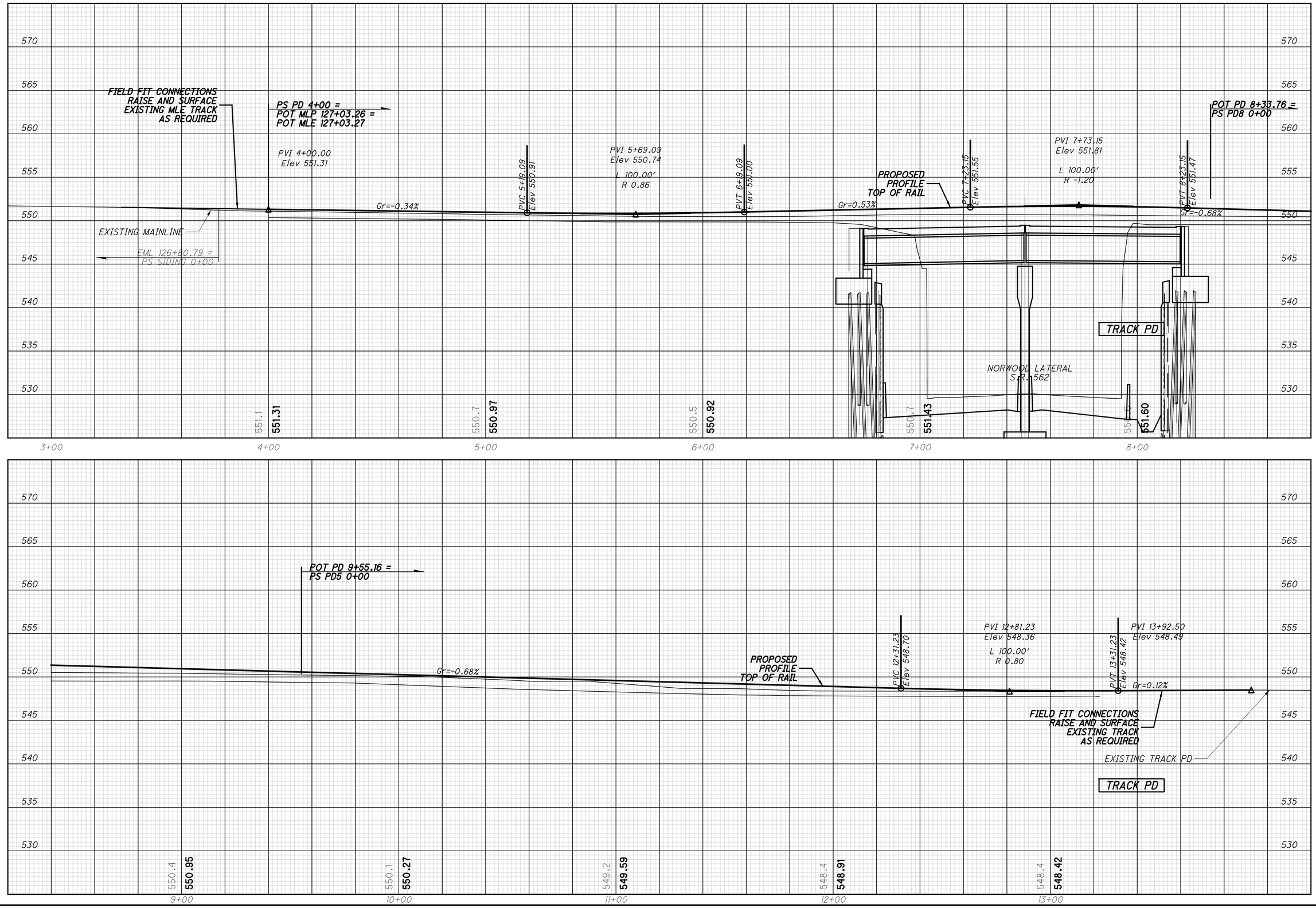
HAM-75-7.85

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

51/133

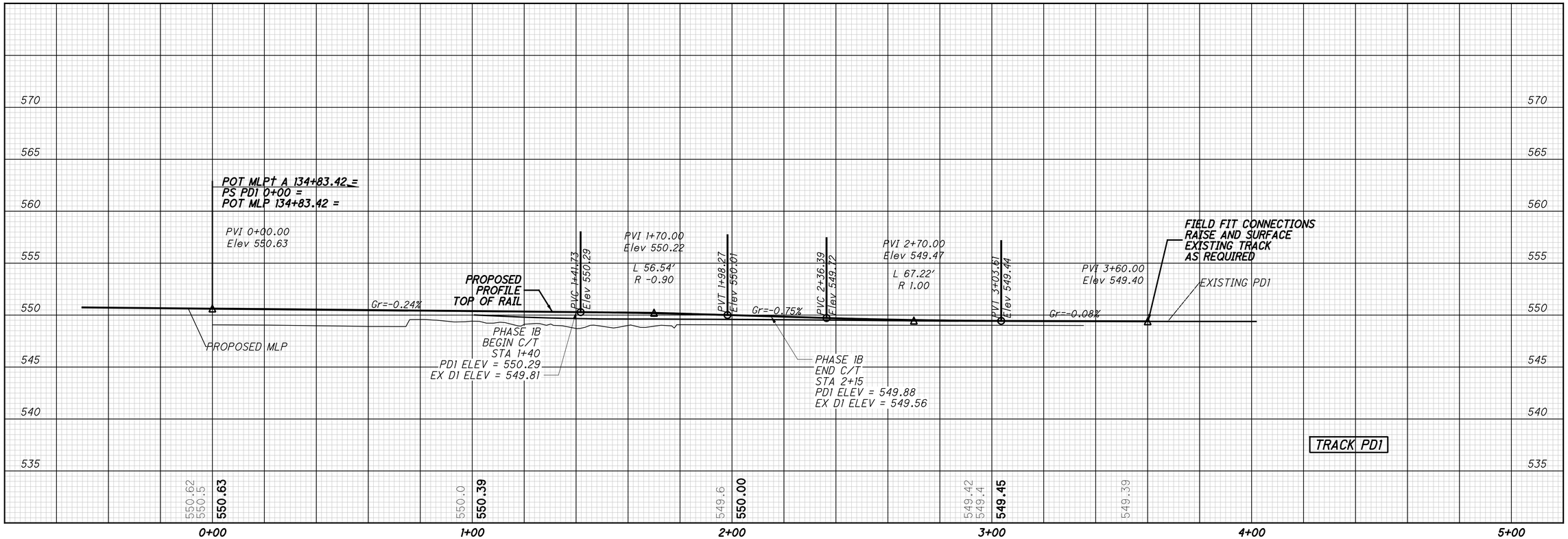
204/286

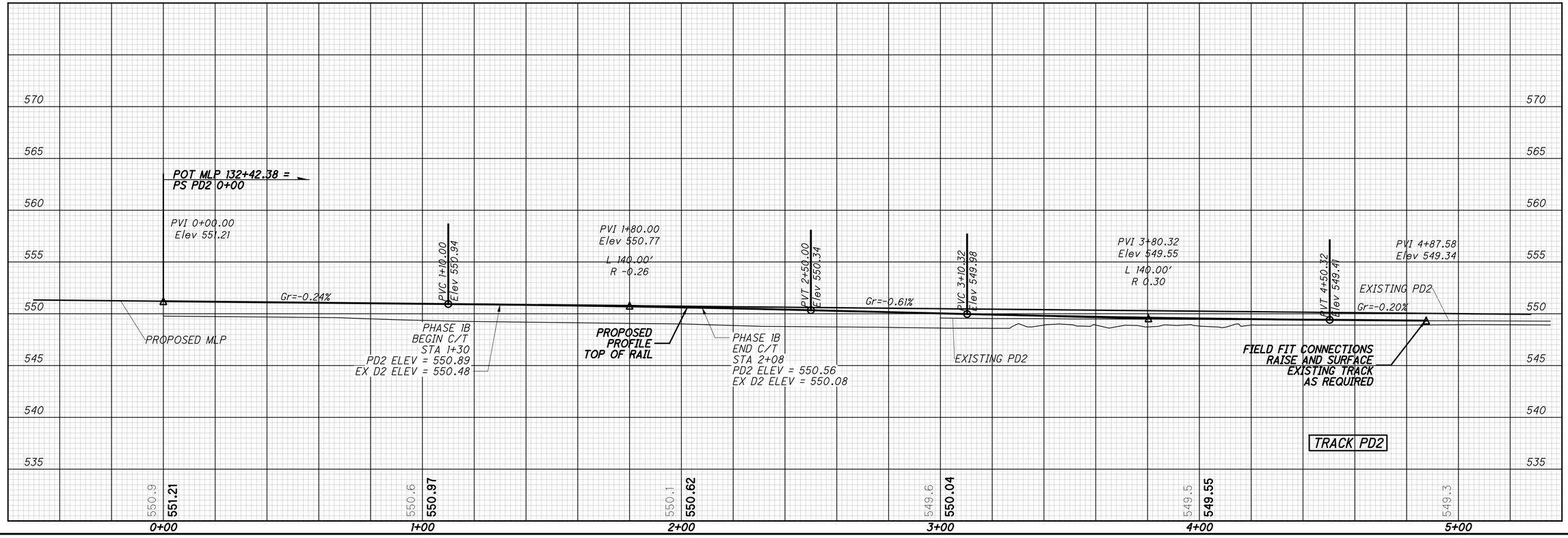


TRACK PROFILES
NSRR BERRY YARD - TRACK D

CALCULATED JRG
CHECKED RC

HAM-75-7.85





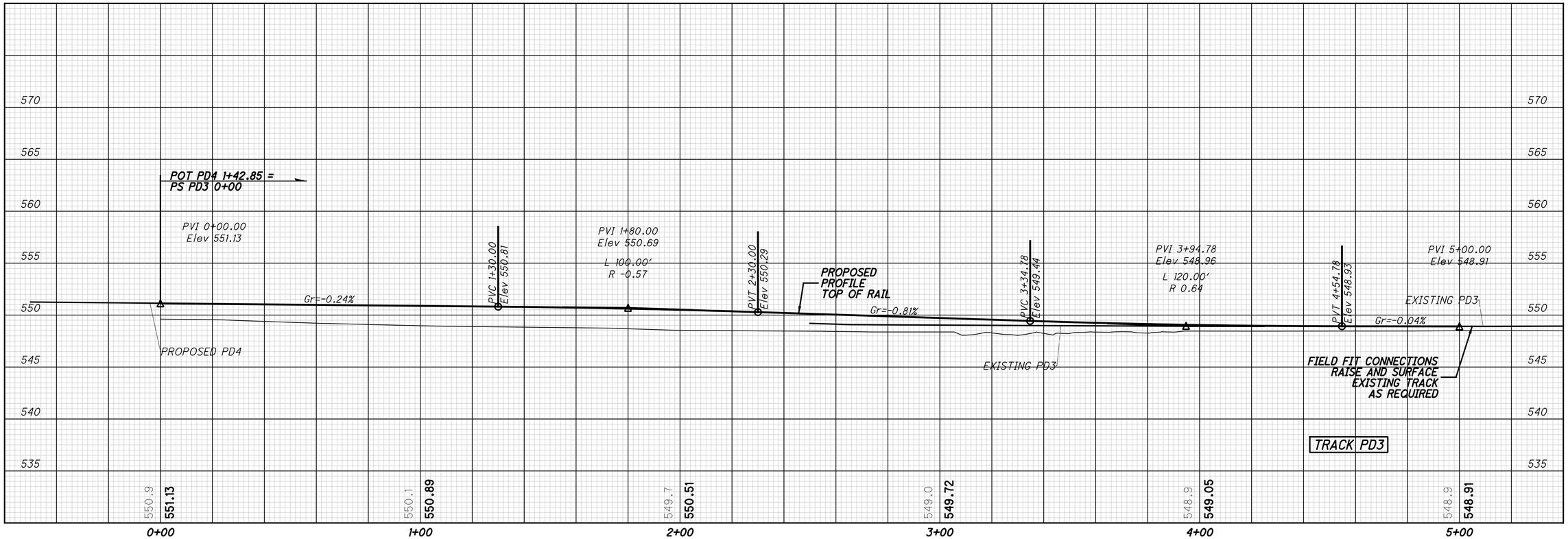
CALCULATED JRG
CHECKED RC

TRACK PROFILES
NSRR BERRY YARD - TRACKS D1 AND D2

HAM-75-7.85

53/133

206/286



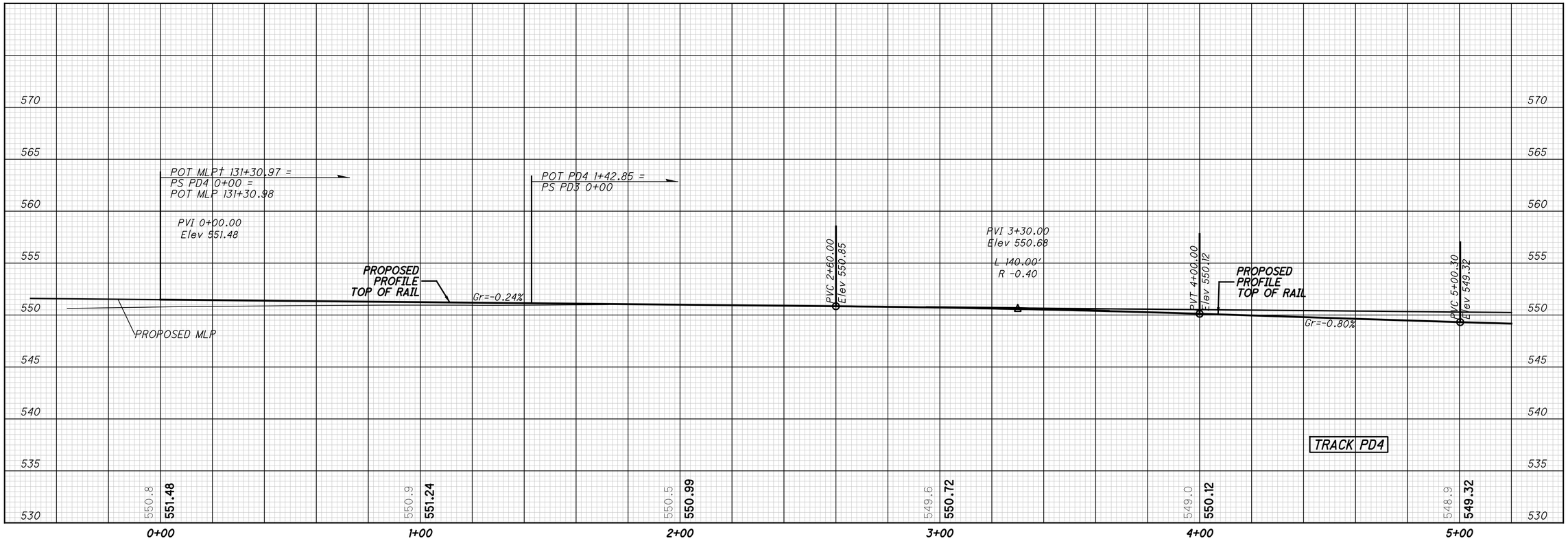
CALCULATED JRG
CHECKED RC

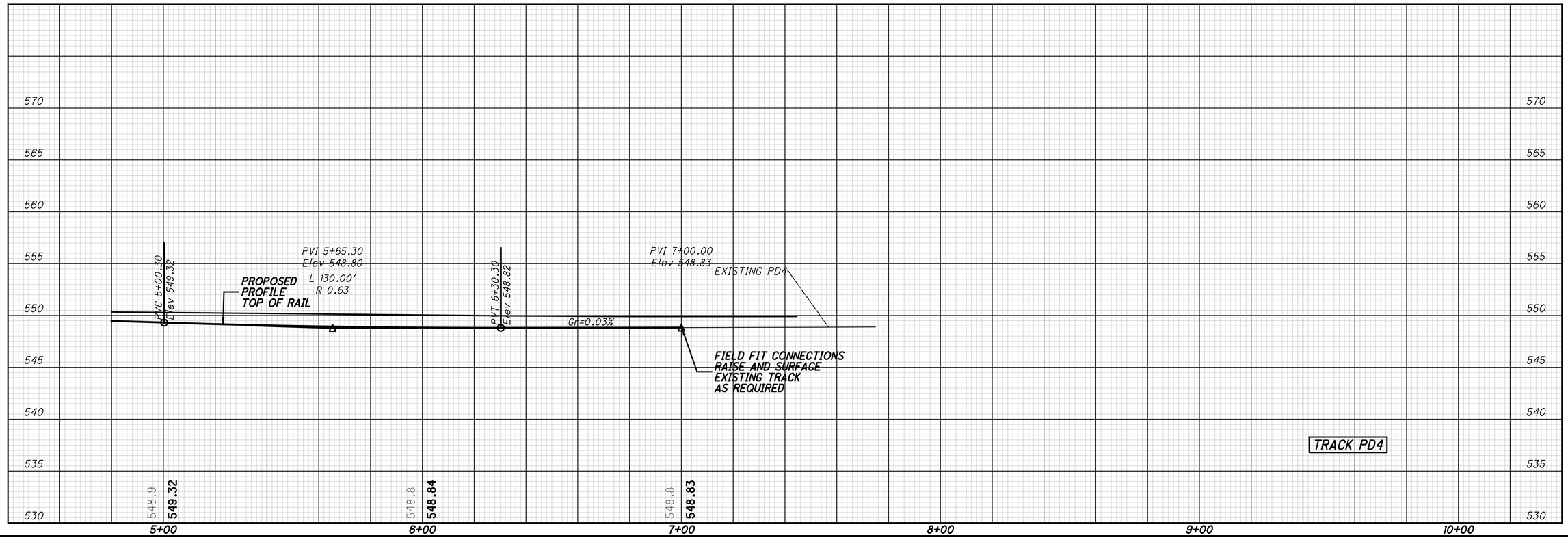
TRACK PROFILES
NSRR BERRY YARD - TRACK D3

HAM-75-7.85

54/133

207/286





CALCULATED JRG
CHECKED RC

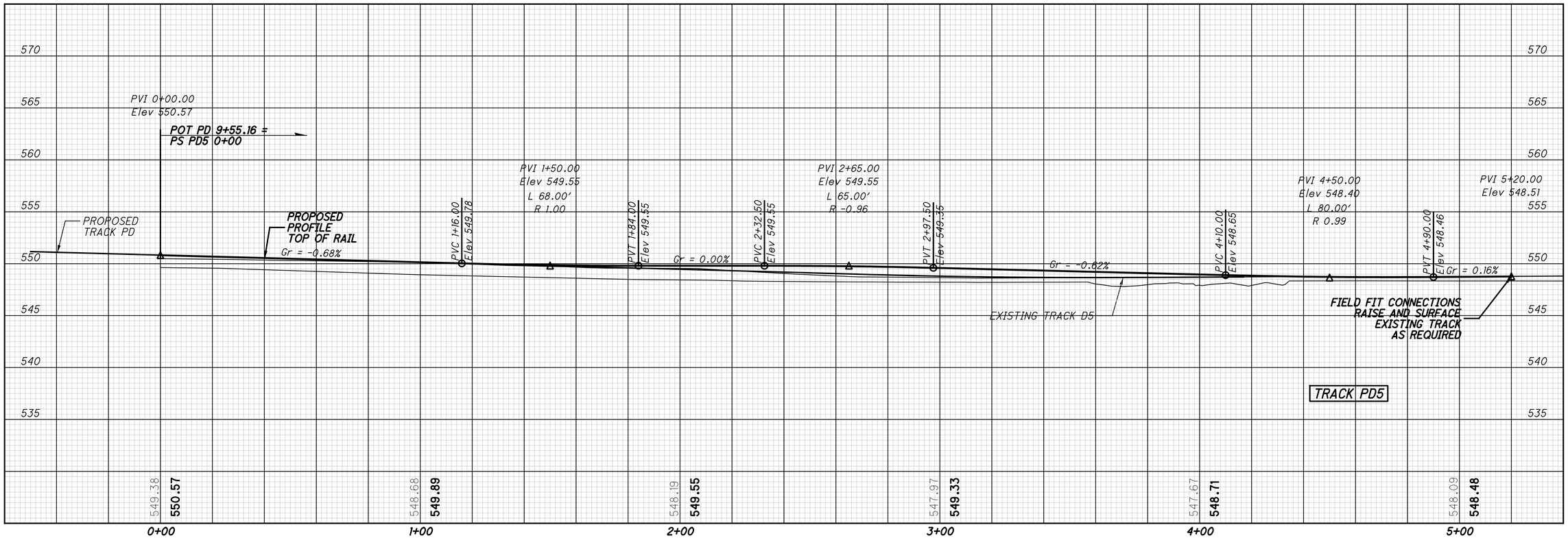
TRACK PROFILES

NSSR BERRY YARD - TRACK D4

HAM-75-7.85

55/133

208/286



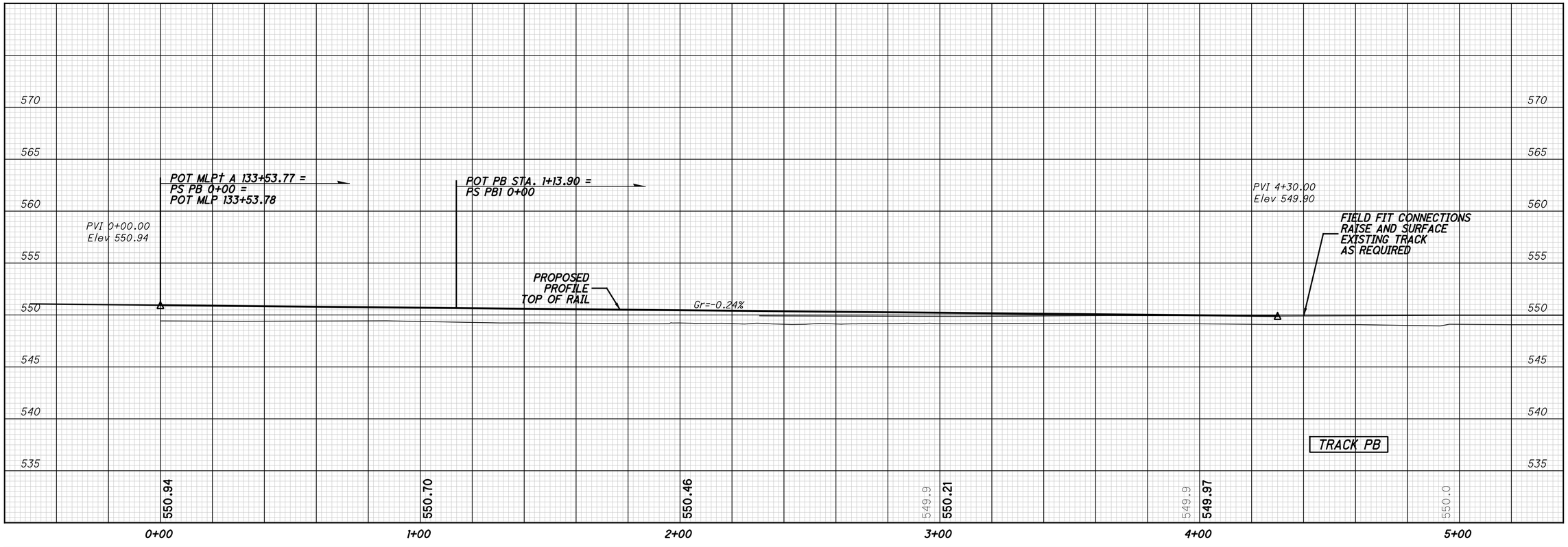
CALCULATED JRG
CHECKED RC

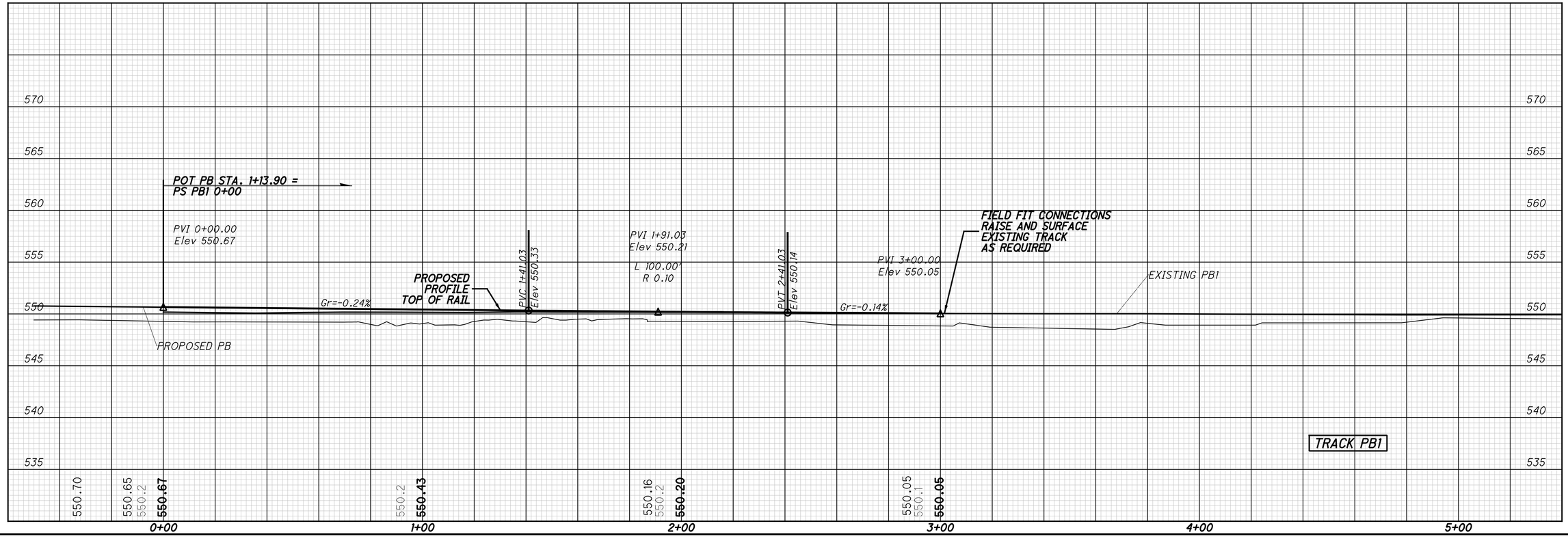
TRACK PROFILES
NSRR BERRY YARD - TRACK D5

HAM-75-7.85

56/133

209/286





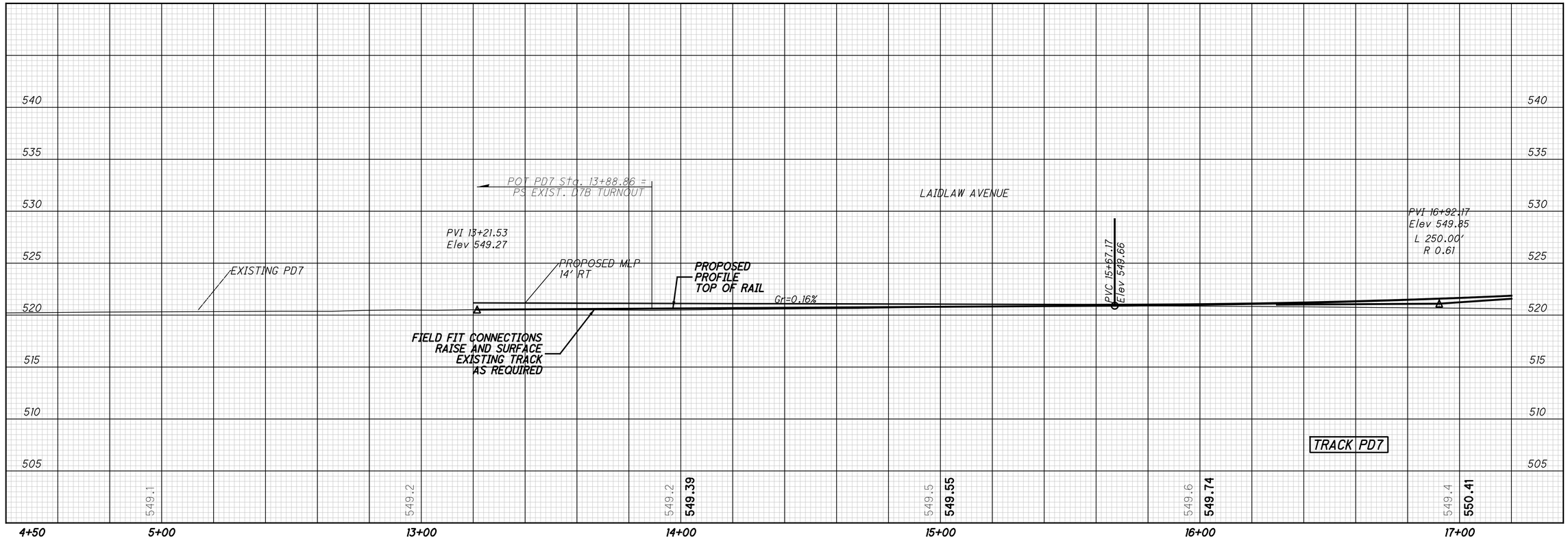
CALCULATED JRG
CHECKED RC

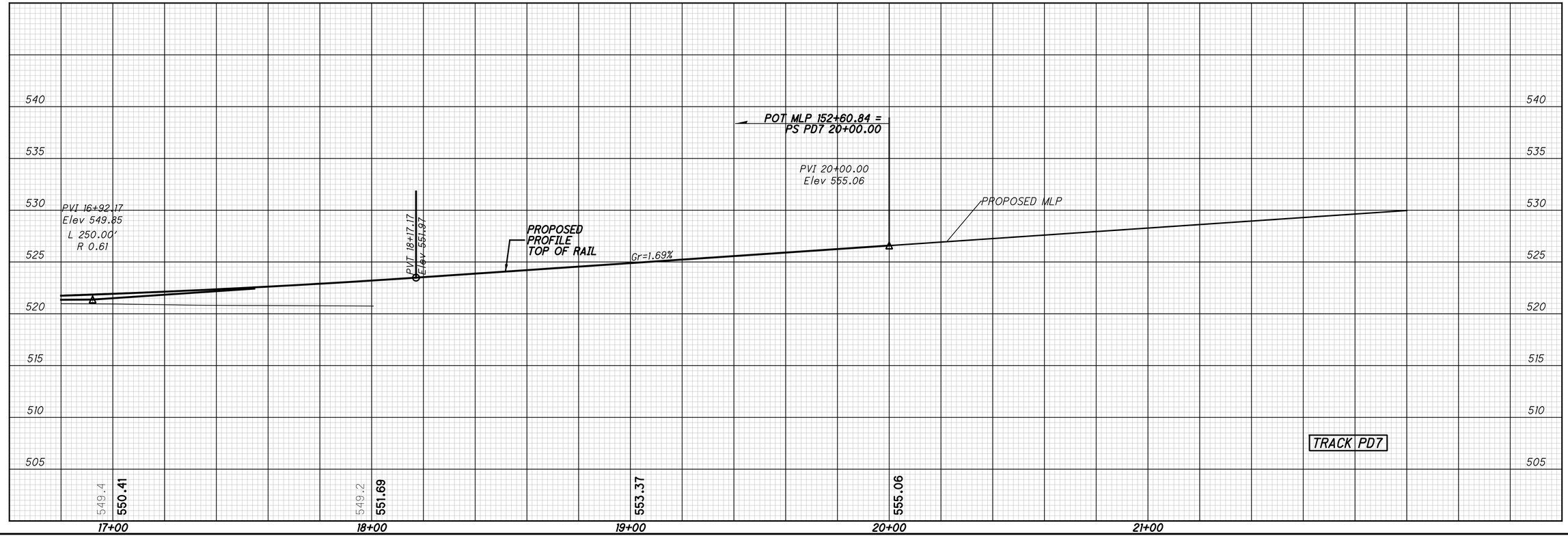
TRACK PROFILES
NSRR BERRY YARD TRACKS B AND B1

HAM-75-7.85

57/133

210/286





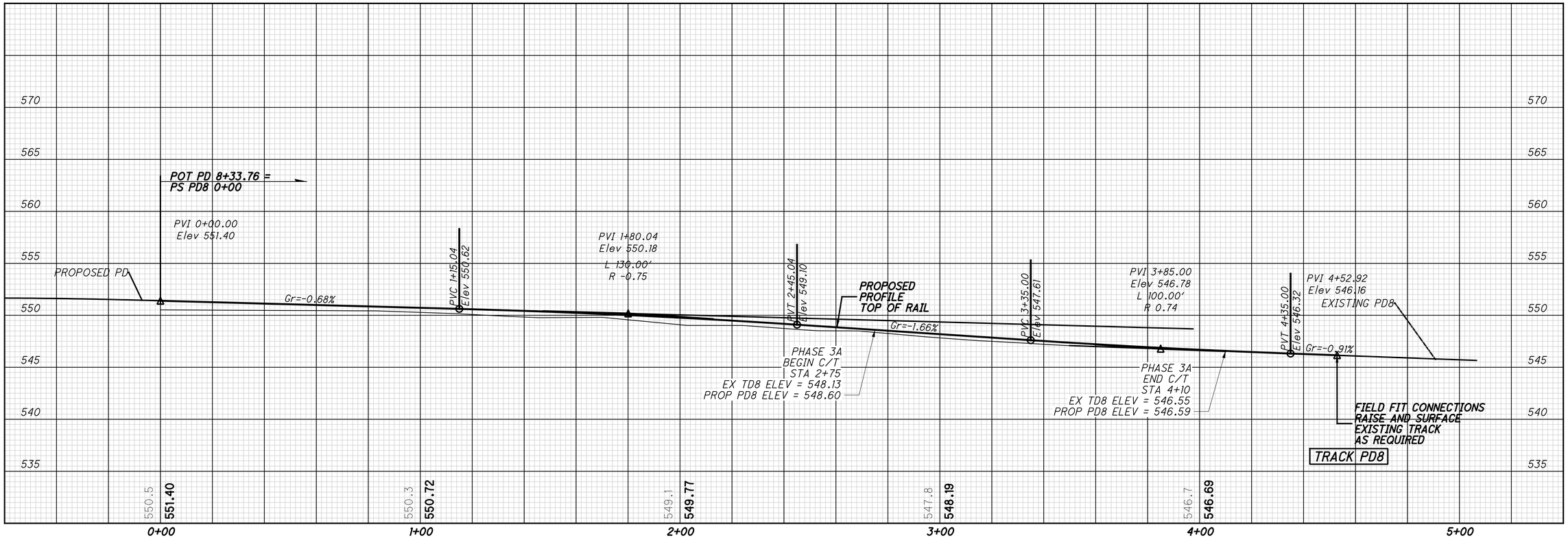
CALCULATED JRG
CHECKED RC

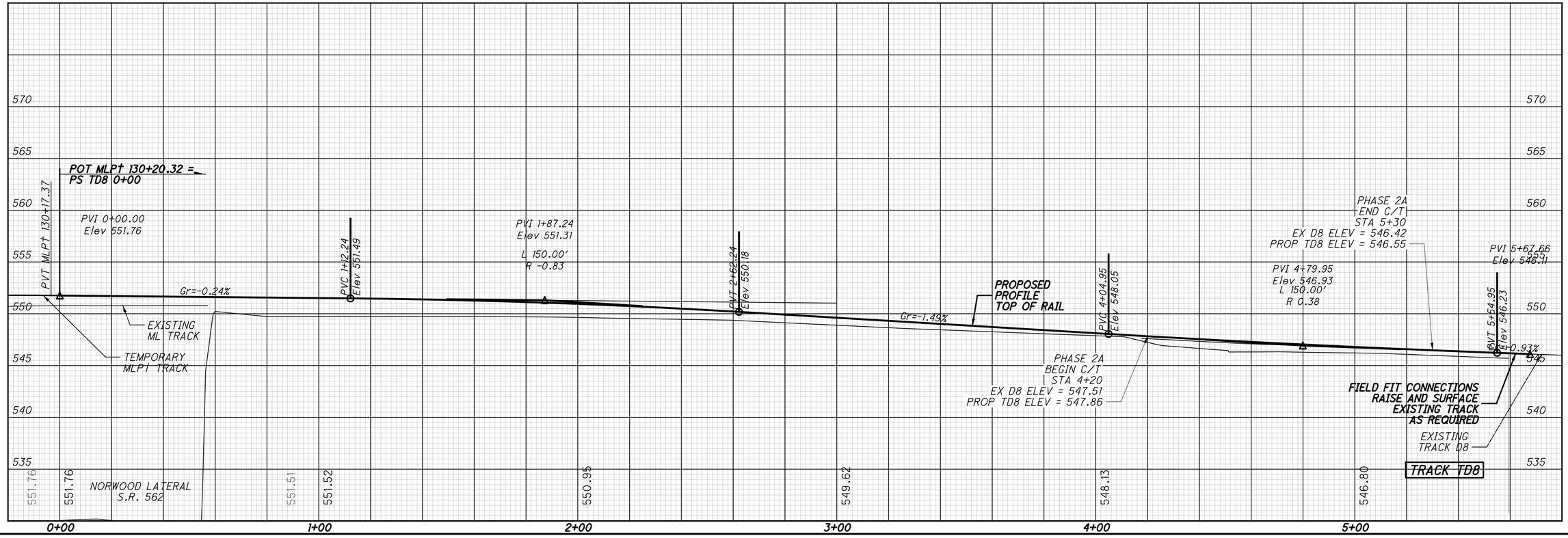
TRACK PROFILES
NSRR BERRY YARD - TRACK D7

HAM-75-7.85

58/133

211/286

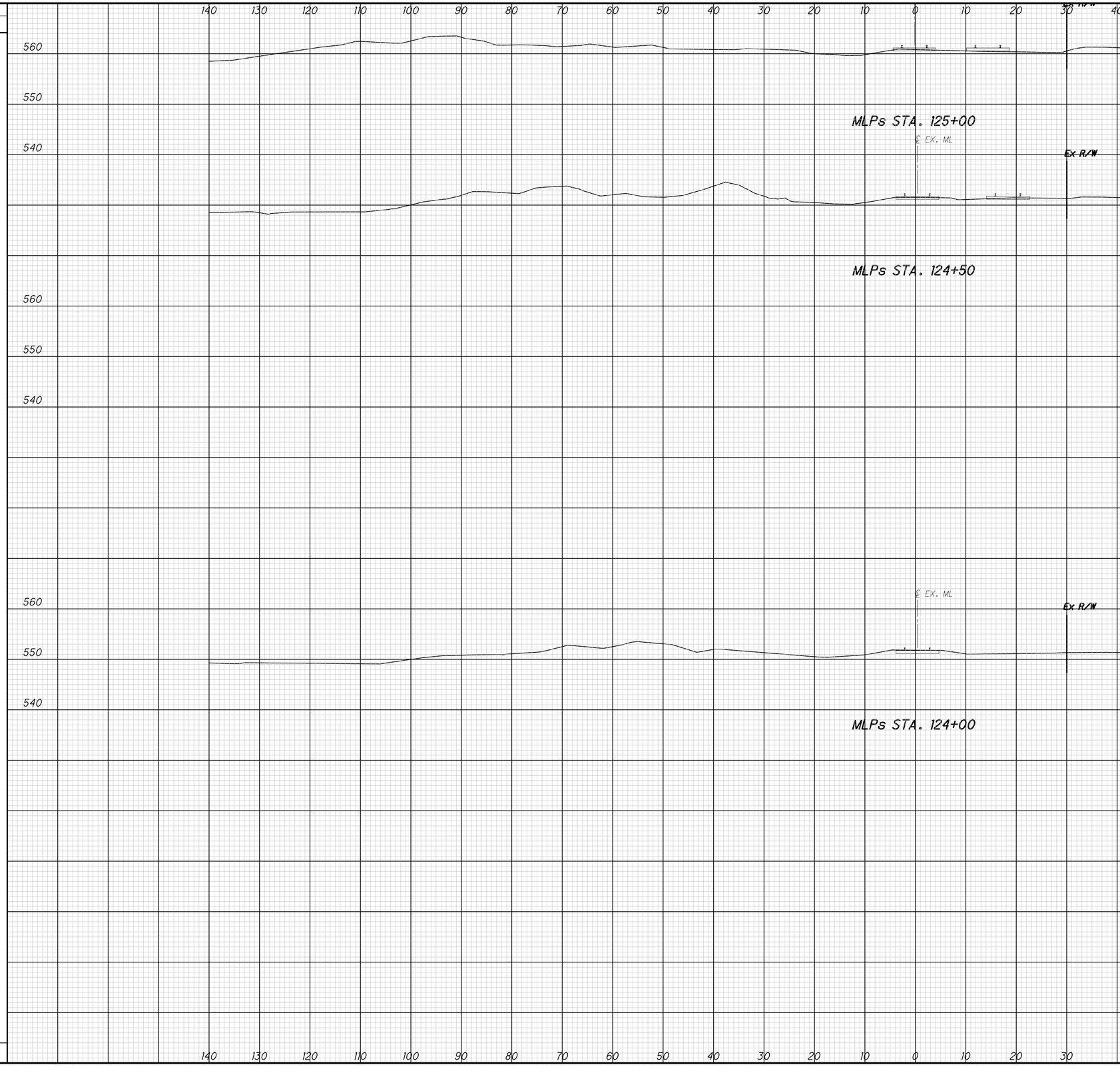




CALCULATED JRG
CHECKED RC

TRACK PROFILES
NSRR BERRY YARD - TRACK D8

HAM-75-7.85



SUMMARY OF EARTHWORK QUANTITIES

PAGE NUMBER (OF 133)	CUT 203E10001 (CY)	FILL 204E20001 (CY)	SUBBALLAST 304E20001 (CY)	SEEDING 659E10000 (SY)
60	N/A	N/A	N/A	N/A
61	N/A	N/A	N/A	N/A
62	N/A	N/A	N/A	139.0
63	291.5	N/A	148.2	264.0
64	368.6	N/A	105.8	485.6
65	87.1	N/A	N/A	371.8
66	N/A	N/A	N/A	N/A
67	N/A	N/A	N/A	N/A
68	N/A	N/A	N/A	N/A
69	N/A	N/A	N/A	N/A
70	829.1	1254.7	629.0	1177.5
71	99.1	4021.7	234.6	1351.3
72	1027.0	2123.8 *	137.5	1444.0
73	1977.6	N/A *	82.5	1295.4
74	1618.8	4039.7	110.0	1685.2
75	2058.7	2449.3	220.0	2001.9
76	975.7	N/A	27.5	850.8
77	N/A	N/A	N/A	482.2
TOTAL	9,333	13,890	1,696	11,549

NOTE: RAILROAD EARTHWORK ARE CARRIED TO THE RAILROAD GENERAL NOTES, SEE SHEET 5 133
TOTAL QUANTITY IS ROUNDED UP.
BALLAST IS TO BE FURNISHED AND INSTALLED BY THE RAILROAD AS PART OF THE FORCE ACCOUNT WORK.

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 124+00 TO STA 125+00

HAM-75-7.85

SEEDING	
END WIDTH	SQ. YDS.
N/A	
	N/A
N/A	
	N/A
N/A	
	N/A
N/A	

NOTE:
MAINLINE ALIGNMENT DESIGNS HERE-IN ARE TIED TO THE SUPPLIED CENTERLINE EXHIBIT & SURVEY REPORT BY EMH&T DATED 12-13-2011.

MLPs STA. 126+50

℄ MLP
℄ EX. ML
0.00
551.49
CONSTRUCTION STAGE 2A
Ex R/W

MLPs STA. 126+00

℄ EX. ML
GRADE ADJUST EXISTING AS REQUIRED (TYPICAL)
Ex R/W

MLPs STA. 125+50

℄ EX. ML
Ex R/W

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

570 560 550 540 530 520

END AREA			
	CUT	FILL	SUB BALLAST
	N/A	N/A	N/A
	N/A	N/A	N/A
SQ. FT.	N/A	N/A	N/A

VOLUME		
CUT	FILL	SUB BALLAST
N/A	N/A	N/A
N/A	N/A	N/A
CU. YD		

CALCULATED JRG
CHECKED RC

FINAL CROSS SECTIONS
PROPOSED NSRR - 125+50 TO 126+50
HAM - 75-7.85

61/133
214/286

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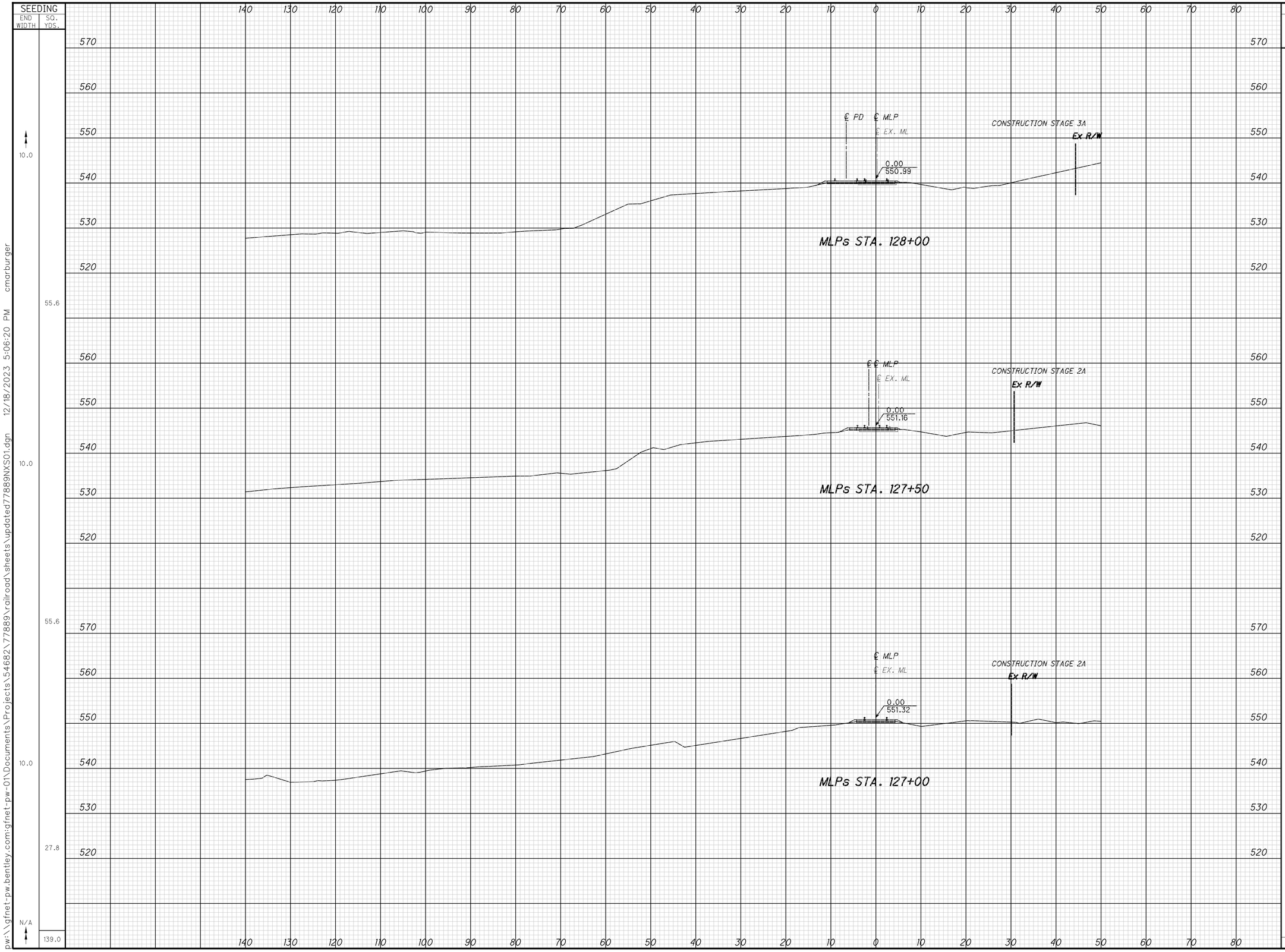
SEEDING	
END WIDTH	SQ. YDS.
10.0	55.6
10.0	55.6
10.0	27.8
N/A	139.0



END AREA		
CUT	FILL	SUB BALLAST
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
SQ. FT.		

VOLUME		
CUT	FILL	SUB BALLAST
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
CU. YD		

CALCULATED JRG

CHECKED RC

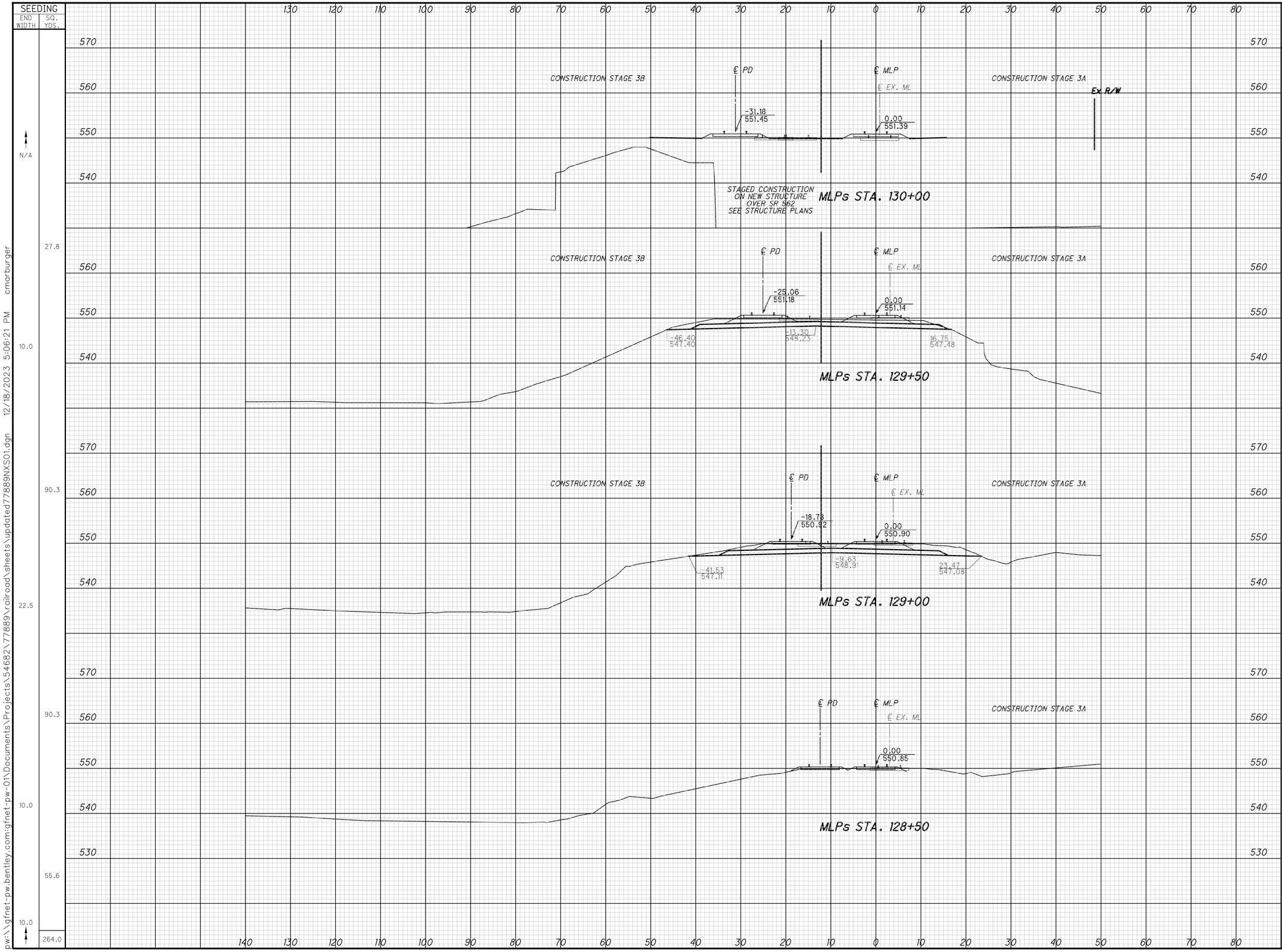
FINAL CROSS SECTIONS
PROPOSED NSRR - STA 127+00 TO STA 128+00

HAM-75-7.85

62/133

215/286

SEEDING END WIDTH	SEEDING SQ. YDS.
N/A	
	27.8
10.0	
	90.3
	22.5
	90.3
10.0	
	55.6
10.0	
	264.0



END AREA CUT	END AREA FILL	END AREA SUB BALLAST	VOLUME CUT	VOLUME FILL	VOLUME SUB BALLAST
N/A	N/A	N/A			
99.5	N/A	55.5	92.2	N/A	51.4
57.8	N/A	49.0	145.7	N/A	96.8
N/A	N/A	N/A	53.6	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
SQ. FT.			CU. YD		

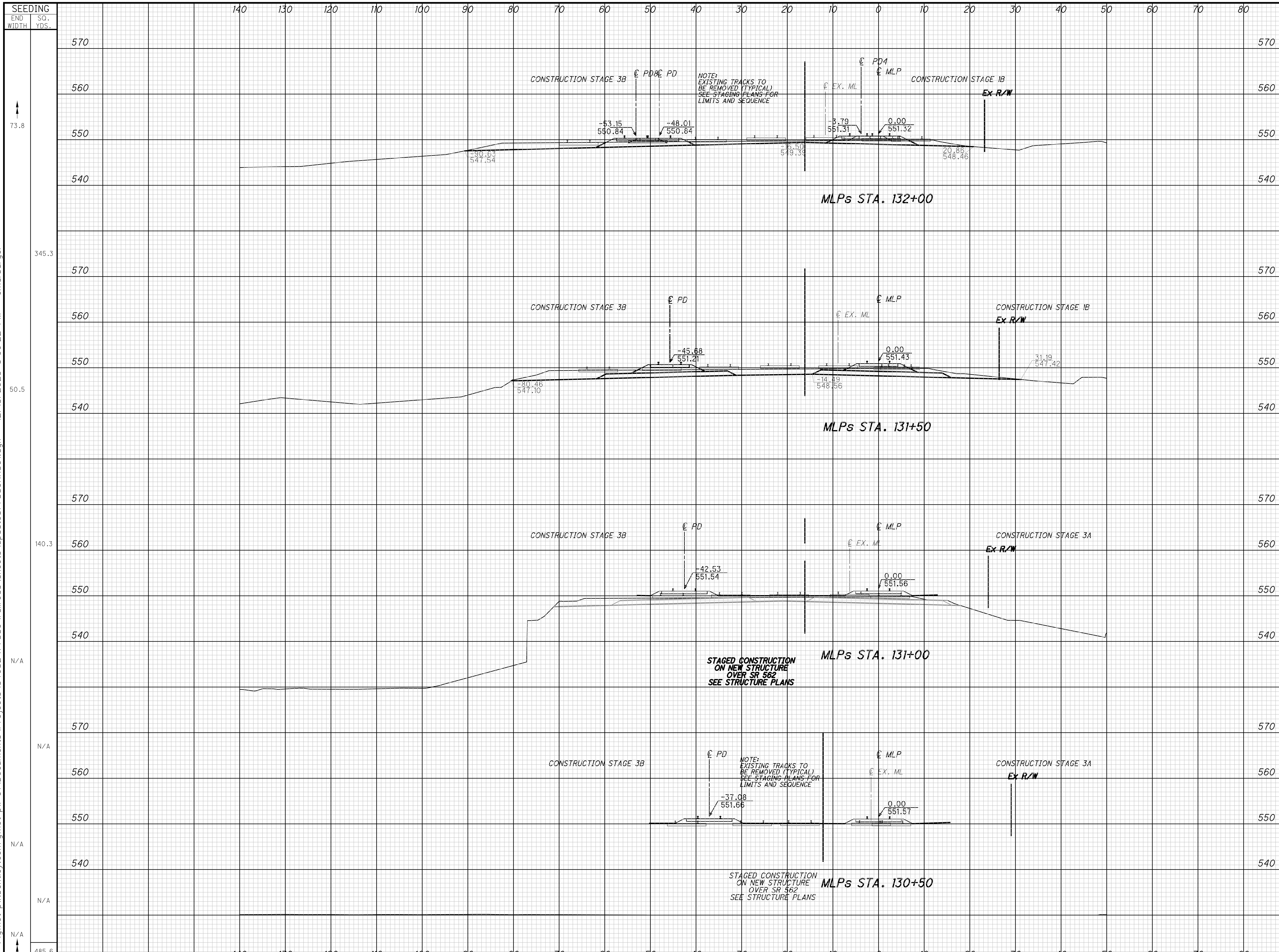
CALCULATED JRG
CHECKED RC

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 128+50 TO STA 130+00

HAM-75-7.85

63/133

216/286



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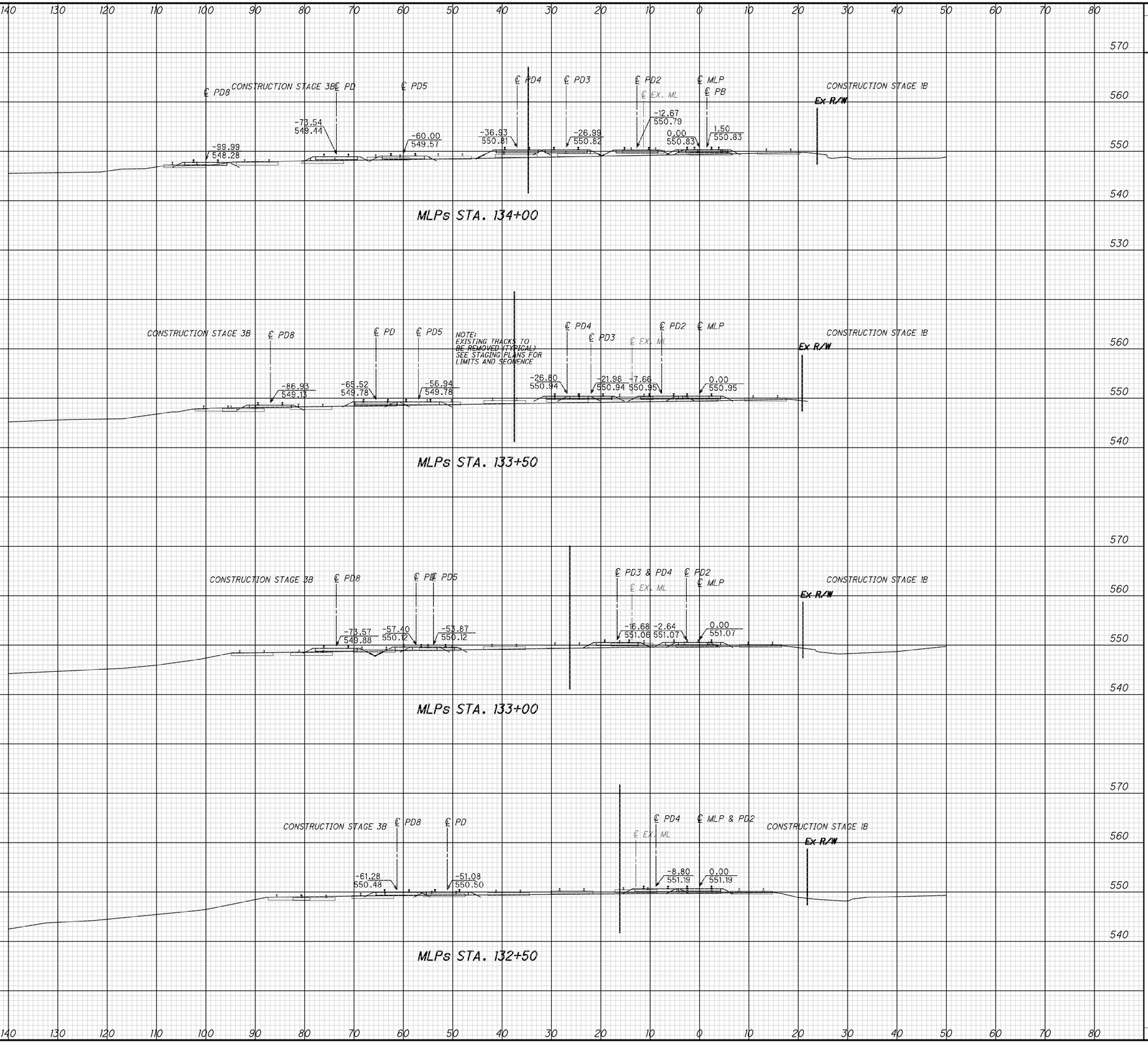
CALCULATED JRG
CHECKED RC

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 130+50 TO STA 132+00

HAM-75-7.85

64/133

SEEDING END WIDTH	SEEDING SQ. YDS.
N/A	27.8
10.0	55.6
10.0	232.8
73.8	371.8



END AREA CUT	END AREA FILL	END AREA SUB BALLAST
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
94.0	N/A	N/A

VOLUME CUT	VOLUME FILL	VOLUME SUB BALLAST
N/A	N/A	N/A
N/A	N/A	N/A
87.1	N/A	N/A
87.1	N/A	N/A

SQ. FT. CU. YD

CALCULATED JRG

CHECKED RC

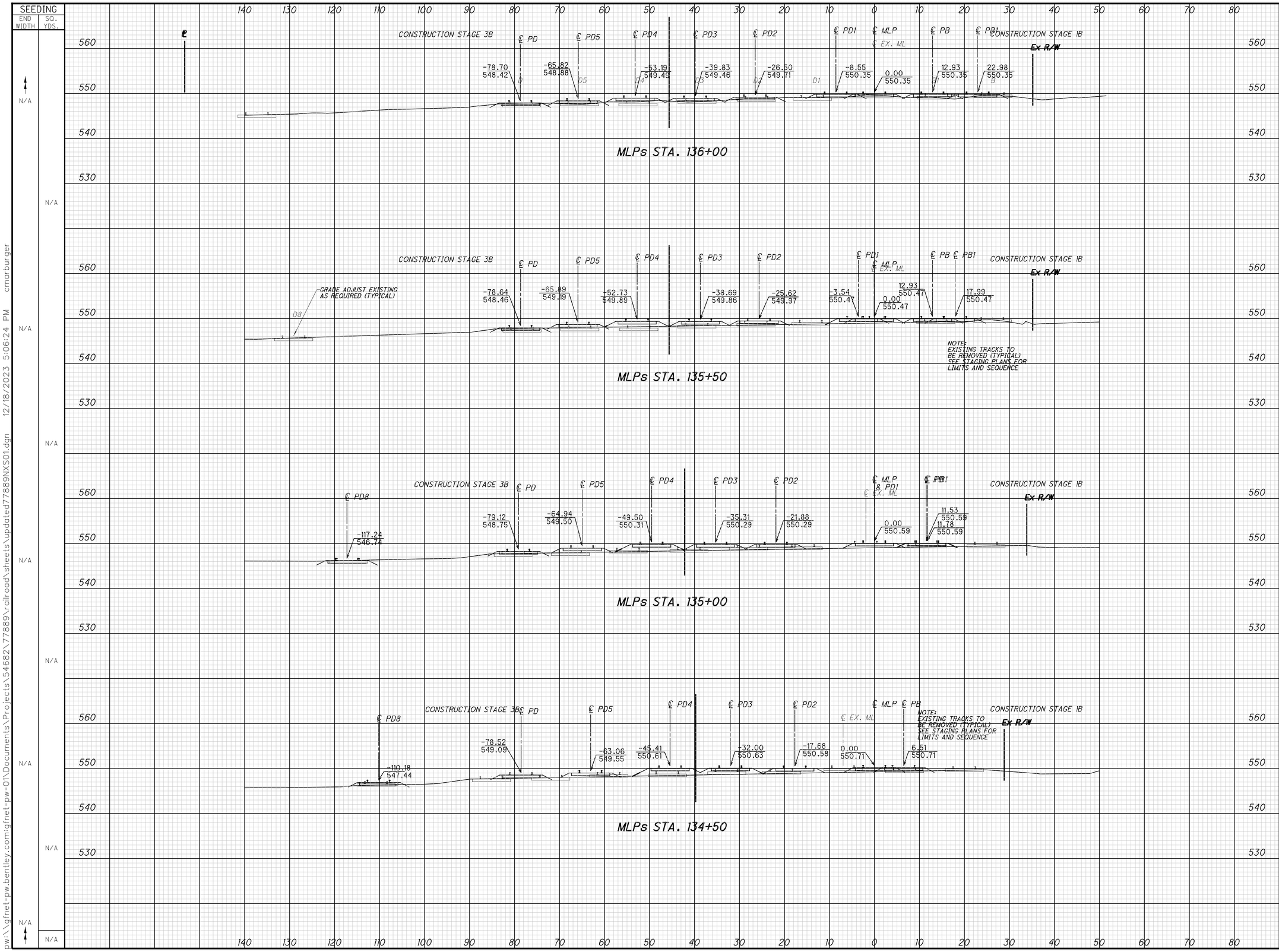
FINAL CROSS SECTIONS
PROPOSED NSRR - STA 132+50 TO STA 134+00

HAM-75-7.85

65/133

218/286

SEEDING END WIDTH	SEEDING SQ. YDS.
N/A	N/A
	N/A
N/A	
	N/A
	N/A
N/A	
N/A	N/A



END AREA CUT	END AREA FILL	END AREA SUB BALLAST	VOLUME CUT	VOLUME FILL	VOLUME SUB BALLAST
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
SQ. FT.			CU. YD		

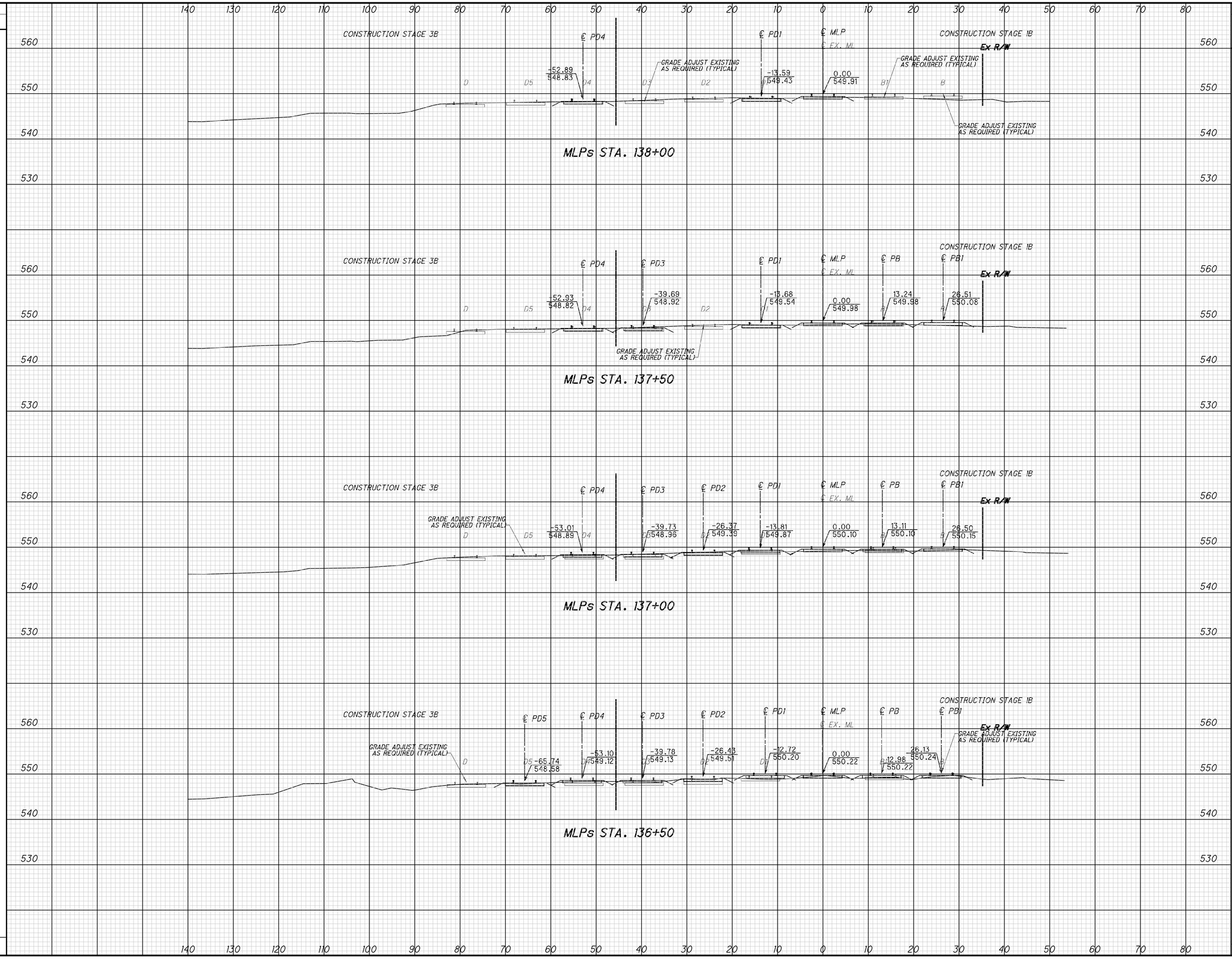
CALCULATED JRG

CHECKED RC

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 134+50 TO STA 136+00

HAM-75-7.85

SEEDING	
END WIDTH	SQ. YDS.
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A



END AREA			VOLUME		
CUT	FILL	SUB BALLAST	CUT	FILL	SUB BALLAST
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
SQ. FT.			CU. YD		

CALCULATED JRG

CHECKED RC

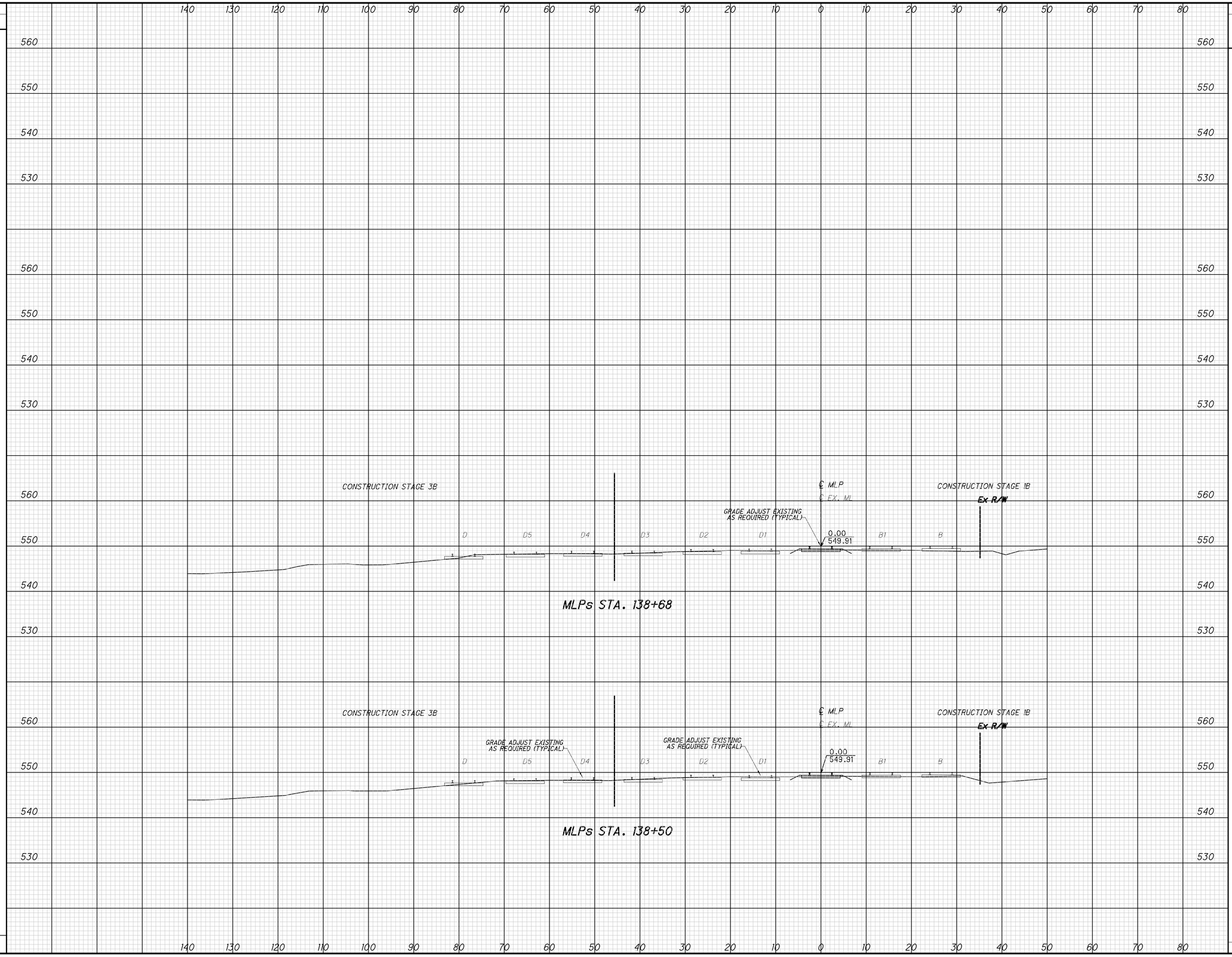
FINAL CROSS SECTIONS
PROPOSED NSRR - STA 136+50 TO STA 138+00

HAM-75-7.85

67/133

220/286

SEEDING	
END WIDTH	SQ. YDS.
N/A	
N/A	
N/A	
N/A	



END AREA			VOLUME		
CUT	FILL	SUB BALLAST	CUT	FILL	SUB BALLAST
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
SQ. FT.			CU. YD		

CALCULATED JRG
CHECKED RC

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 138+50 TO STA 138+68

HAM-75-7.85

68/133

221/286

SEEDING

END WIDTH	SQ. YDS.
N/A ↑ THIS PAGE N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A
N/A	N/A
N/A ↑ THIS PAGE	N/A

50 40 30 20 10 0 10 20 30 40 50

MLPn STA. 145+50

GRADE ADJUST EXISTING AS REQUIRED (TYPICAL)
GRADE ADJUST EXISTING AS REQUIRED (TYPICAL)
℄ EX. ML
Ex R/W

MLPn STA. 145+00

℄ EX. ML
Ex R/W

MLPn STA. 144+50

℄ EX. ML
Ex R/W

MLPn STA. 144+00

CONSTRUCTION STAGE 1B
℄ EX. ML
Ex R/W

50 40 30 20 10 0 10 20 30 40

MLPn STA. 147+50

CONSTRUCTION STAGE 2A
CONSTRUCTION STAGE 1B
℄ PD7
℄ MLP
℄ EX. ML
-14.56
549.54
-0.00
549.81
ON EXISTING LAIDLAW AVE. STRUCTURE

MLPn STA. 147+00

CONSTRUCTION STAGE 2A
CONSTRUCTION STAGE 1B
℄ PD7
℄ MLP
℄ EX. ML
-15.78
549.47
0.00
549.84
Ex R/W

MLPn STA. 146+50

CONSTRUCTION STAGE 2A
CONSTRUCTION STAGE 1B
℄ PD7
℄ MLP
℄ EX. MI
-20.89
549.39
0.00
549.87
Ex R/W

MLPn STA. 146+00

CONSTRUCTION STAGE 2A
CONSTRUCTION STAGE 1B
℄ PD7
℄ MLP
℄ EX. MI
GRADE ADJUST EXISTING AS REQUIRED (TYPICAL)
-28.01
549.31
0.00
549.91
Ex R/W

END AREA	CUT	FILL	SUB BALLAST
	N/A ↑ THIS PAGE N/A	N/A ↑ THIS PAGE N/A	N/A ↑ THIS PAGE N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A ↑ THIS PAGE	N/A ↑ THIS PAGE	N/A ↑ THIS PAGE
	SQ. FT.		

VOLUME	CUT	FILL	SUB BALLAST
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	CU. YD		

CALCULATED JRG
CHECKED RC

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 144+00 TO STA 147+50

HAM-75-7.85

69 / 133

222
286

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 148+00 TO STA 151+50

HAM-75-7.85

70/133

223/286

CALCULATED JRG

CHECKED RC

MLPn STA. 149+50

MLPn STA. 151+50

MLPn STA. 151+00

MLPn STA. 148+50

MLPn STA. 150+50

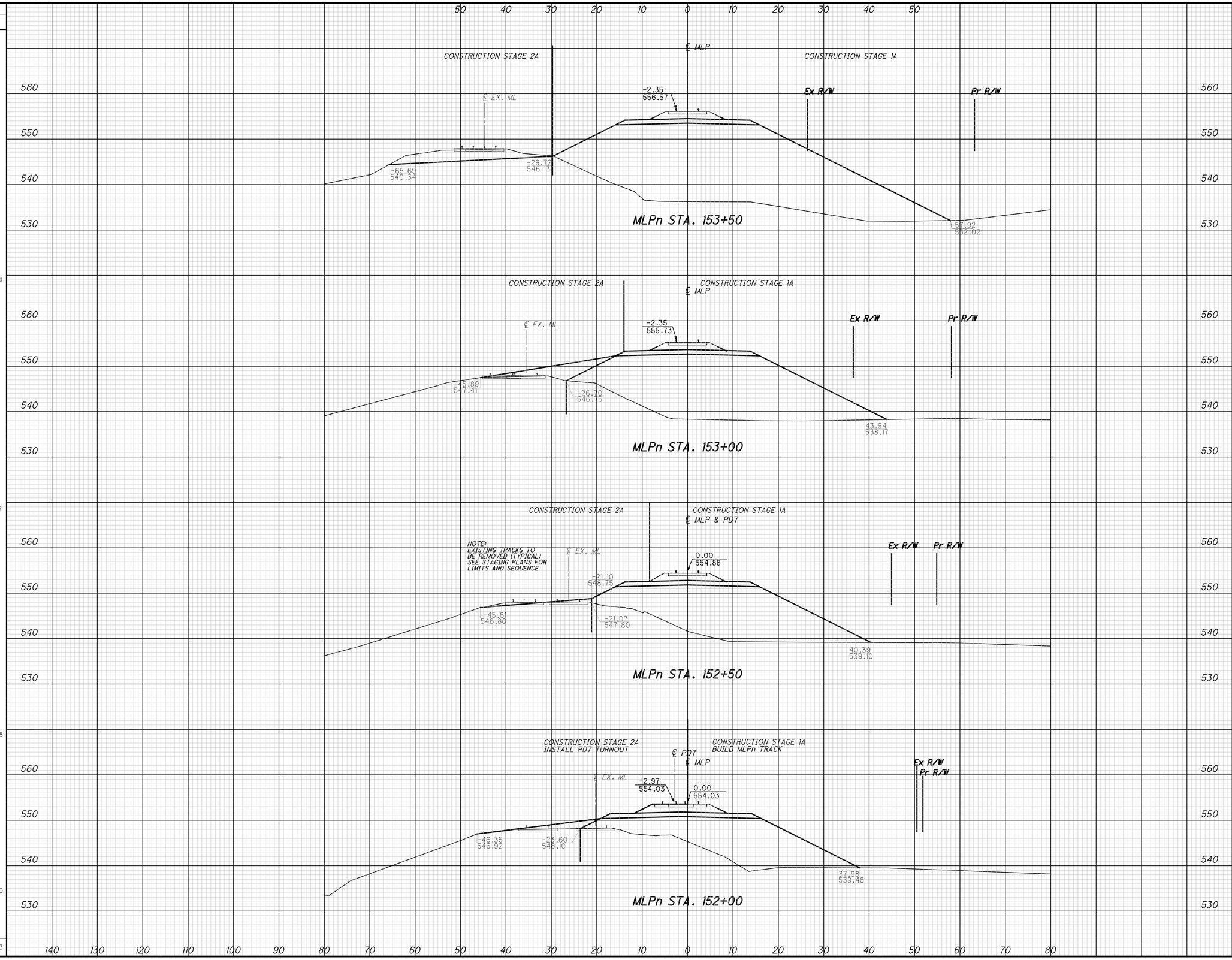
MLPn STA. 148+00

MLPn STA. 150+00

NOTE: EXISTING TRACKS TO BE REMOVED (TYPICAL) SEE STAGING PLANS FOR LIMITS AND SEQUENCE

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	END AREA SUB BALLAST	VOLUME CUT	VOLUME FILL	VOLUME SUB BALLAST
		THIS PAGE 48.5	THIS PAGE 5.6	THIS PAGE 46.3	132.5	13.8	15.4
16.9	45.4	16.6	282.5	38.1	N/A	N/A	552.5
	104.8				421.1	84.7	85.4
	298.9				84.7	81.9	75.0
		94.5	9.3	N/A	219.7	51.2	N/A
20.8	62.2	N/A	314.2	45.9	N/A	N/A	190.2
					190.2	86.5	86.5
	115.0				86.5	85.2	85.2
	261.4				192.5	26.9	N/A
		113.4	19.7	N/A	N/A	N/A	421.1
20.6	31.9	N/A	140.5	45.5	421.1	84.7	84.7
					84.7	81.9	81.9
	94.8				114.7	77.8	N/A
13.5	153.4	123.8	35.5	N/A	N/A	N/A	75.5
		N/A	64.9	47.9	75.5	44.4	44.4
	37.5				44.4	85.9	85.9
	111.7						
N/A 16.9		N/A 48.5	N/A 16.6	N/A 46.3	829.1	1254.7	629.0
THIS PAGE	1177.5	THIS PAGE	THIS PAGE	THIS PAGE	SQ. FT.		CU. YD

SEEDING END WIDTH	SEEDING SQ. YDS.
98.6	
	444.8
61.5	
	331.7
57.9	
	304.8
51.8	
	270.0
45.4	
	1351.3



END AREA	CUT	FILL	SUB BALLAST
	63.2	1017.2	29.7
	5.0	701.0	29.7
	8.1	463.4	29.7
	5.9	357.3	33.3
	5.6	282.5	38.1
SQ. FT.	99.1	4021.7	234.6

VOLUME	CUT	FILL	SUB BALLAST
	63.2	1591.0	55.0
	12.2	1078.2	55.0
	13.0	760.0	58.4
	10.7	592.5	66.2
CU. YD	99.1	4021.7	234.6

CALCULATED JRG

CHECKED RC

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 152+00 TO STA 133+50

HAM-75-7.85

SEEDING END WIDTH	SEEDING SQ. YDS.
N/A	
	N/A
N/A	
	253.7
91.3	
	585.0
119.3	
	605.3
98.6	
	1444.0

50 40 30 20 10 0 10 20 30 40 50

℄ MLP

CONSTRUCTION STAGE 2A — CONSTRUCTION STAGE 1A

℄ EX. ML — Ex R/W — -2.35 558.42

ON NEW STRUCTURE OVER I-75 SEE STRUCTURE PLANS

MLPn STA. 155+50

℄ MLP

CONSTRUCTION STAGE 2A — CONSTRUCTION STAGE 1A

℄ EX. ML — Ex R/W — -2.35 558.31

ON NEW STRUCTURE OVER I-75 SEE STRUCTURE PLANS

MLPn STA. 155+00

℄ MLP

CONSTRUCTION STAGE 2A — CONSTRUCTION STAGE 1A

℄ EX. ML — Ex R/W — -2.35 557.96 — Pr R/W — -31.51 546.62 — -32.01 532.62 — 62.36 531.69

IR-75 SEE ROADWAY PLANS

MLPn STA. 154+50

℄ MLP

CONSTRUCTION STAGE 2A — CONSTRUCTION STAGE 1A

℄ EX. ML — Ex R/W — -2.35 557.38 — Pr R/W — -69.24 546.22 — 60.83 531.87

MLPn STA. 154+00

560 550 540 530

✱ EMBANKMENT BETWEEN STATIONS 154+00 AND STATION 157+50 SHALL BE PLACED TO PRELOAD THE HAM-75-0834 ABUTMENT FOUNDATIONS. EMBANKMENT QUANTITY DENOTED WITH "✱" IS INCLUDED FOR PAYMENT WITH THE HAM-75-0834 BRIDGE QUANTITIES ON SHEET (83/286)

END AREA CUT	END AREA FILL	END AREA SUB BALLAST	VOLUME CUT	VOLUME FILL	VOLUME SUB BALLAST
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	450.4	1414.0 ✱	27.5
486.4	1527.1	29.7	484.2	2596.0 ✱	55.0
36.5	1276.5	29.7	92.4	2123.8	55.0
63.2	1017.2	29.7	1027.0	2123.8	137.5
SQ. FT.			CU. YD		

CALCULATED JRG — CHECKED RC

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 154+00 TO STA 155+50

HAM-75-7.85

72/133

225/286

SEEDING END WIDTH	SEEDING SQ. YDS.
183.1	
	902.0
141.6	
	393.4
N/A	
	N/A
N/A	
	N/A
N/A	
	1295.4

50 40 30 20 10 0 10 20 30 40 50

CONSTRUCTION STAGE 2A

℄ MLP

CONSTRUCTION STAGE 1A

560 550 540 530

-2.35
556.50

-109.50
541.68

-85.01
535.20

71.84
543.59

53.23
534.81

FOR GRADING AND DRAINAGE
SEE ROADWAY AND
STRUCTURES PLANS

MLPn STA. 157+50

CONSTRUCTION STAGE 2A

℄ MLP

CONSTRUCTION STAGE 1A

560 550 540 530

-2.35
557.34

-124.76
539.29

-54.25
543.01

-49.50
544.20

44.42
539.68

-84.51
529.73

FOR GRADING AND DRAINAGE
SEE ROADWAY AND
STRUCTURES PLANS

MLPn STA. 157+00

℄ MLP

CONSTRUCTION STAGE 1A

Ex R/W

560 550 540 530

-2.35
557.94

ON NEW STRUCTURE
OVER I-75
SEE STRUCTURE PLANS

MLPn STA. 156+50

℄ MLP

CONSTRUCTION STAGE 1A

Ex R/W

560 550 540 530

-2.35
558.30

ON NEW STRUCTURE
OVER I-75
SEE STRUCTURE PLANS

MLPn STA. 156+00

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

✱ EMBANKMENT BETWEEN STATIONS 154+00 AND STATION 157+50 SHALL BE PLACED TO PRELOAD THE HAM-75-0834 ABUTMENT FOUNDATIONS. EMBANKMENT QUANTITY DENOTED WITH "✱" IS INCLUDED FOR PAYMENT WITH THE HAM-75-0834 BRIDGE QUANTITIES ON SHEET (83/286)

END AREA SQ. FT.	CUT	FILL	SUB BALLAST
	572.5	595.5	29.7
	781.6	816.8	29.7
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A

VOLUME CU. YD	CUT	FILL	SUB BALLAST
	1253.8	1307.7 ✱	55.0
	723.8	756.3 ✱	27.5
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
	1977.6	N/A	82.5

CALCULATED JRG

CHECKED RC

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 156+00 TO STA 157+50
HAM-75-7.85

73/133

226/286

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 158+00 TO STA 161+50

HAM-75-7.85

74/133

227/286

CALCULATED JRG

CHECKED RC

SEEDING END WIDTH	SEEDING SQ. YDS.
122.1	
	339.2
N/A	
	N/A
N/A	
	418.7
150.7	
	927.3
183.1	
1685.1	

END AREA CUT	END AREA FILL	END AREA SUB BALLAST	VOLUME CUT	VOLUME FILL	VOLUME SUB BALLAST
473.5	883.5	29.7	438.5	818.1	27.5
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
351.1	1441.9	29.7	855.2	1886.5	55.0
572.5	595.5	29.7	1618.8	4039.7	110.0
SQ. FT.			CU. YD		

CONSTRUCTION STAGE 2A

℄ MLP

CONSTRUCTION STAGE 1A

℄ EX. ML

-2.35
552.32

-87.08
534.00

-39.08
537.19

MLPn STA. 159+50

54.35
530.05

ON NEW STRUCTURE
OVER PROSSER AVE
SEE STRUCTURE PLANS

-2.35
553.37

MLPn STA. 159+00

Pr R/W

-2.35
554.42

MLPn STA. 158+50

-2.35
555.47

-94.05
546.07

-60.83
530.72

56.17
535.27

MLPn STA. 158+00

PROSSER AVE WING WALL
SEE STRUCTURES PLANS

560 550 540 530

60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 162+00 TO STA 165+50

HAM-75-7.85

CALCULATED JRG | CHECKED RC

75/133

228/286

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	END AREA SUB BALLAST	VOLUME CUT	VOLUME FILL	VOLUME SUB BALLAST
54.7		190.3	N/A	29.7	376.3	N/A	55.0
	321.2						
60.9		216.1	N/A	29.7			
	455.0				437.0	292.0	55.0
102.9		255.8	315.3	29.7			
	586.2				521.9	815.6	55.0
108.1		307.8	565.5	29.7			
	639.5				723.5	1341.7	55.0
122.1		473.5	883.5	29.7	2058.7	2449.3	220.0
	2001.2	SQ. FT.			CU. YD		

CONSTRUCTION STAGE 1B

℄ MLP

℄ EX. ML

0.00
548.11

40.23
543.98

-44.42
534.29

MLPn STA. 161+50

CONSTRUCTION STAGE 1B

℄ MLP

℄ EX. ML

0.00
549.17

16.23
545.63

-68.83
533.03

-37.62
534.76

MLPn STA. 161+00

CONSTRUCTION STAGE 2A

CONSTRUCTION STAGE 1A

NOTE:
EXISTING TRACKS TO BE REMOVED (TYPICAL) SEE STAGING PLANS FOR LIMITS AND SEQUENCE

℄ MLP

℄ EX. ML

0.00
550.22

REMOVE EXISTING RETAINING WALL (TYP.)

-66.19
537.22

-37.62
535.82

40.11

50.90
530.80

MLPn STA. 160+50

CONSTRUCTION STAGE 2A

CONSTRUCTION STAGE 1A

℄ MLP

℄ EX. ML

0.00
551.27

REMOVE EXISTING RETAINING WALL (TYP.)

-38.08
536.14

-77.12
534.02

51.57
530.39

MLPn STA. 160+00

560
550
540
530

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80

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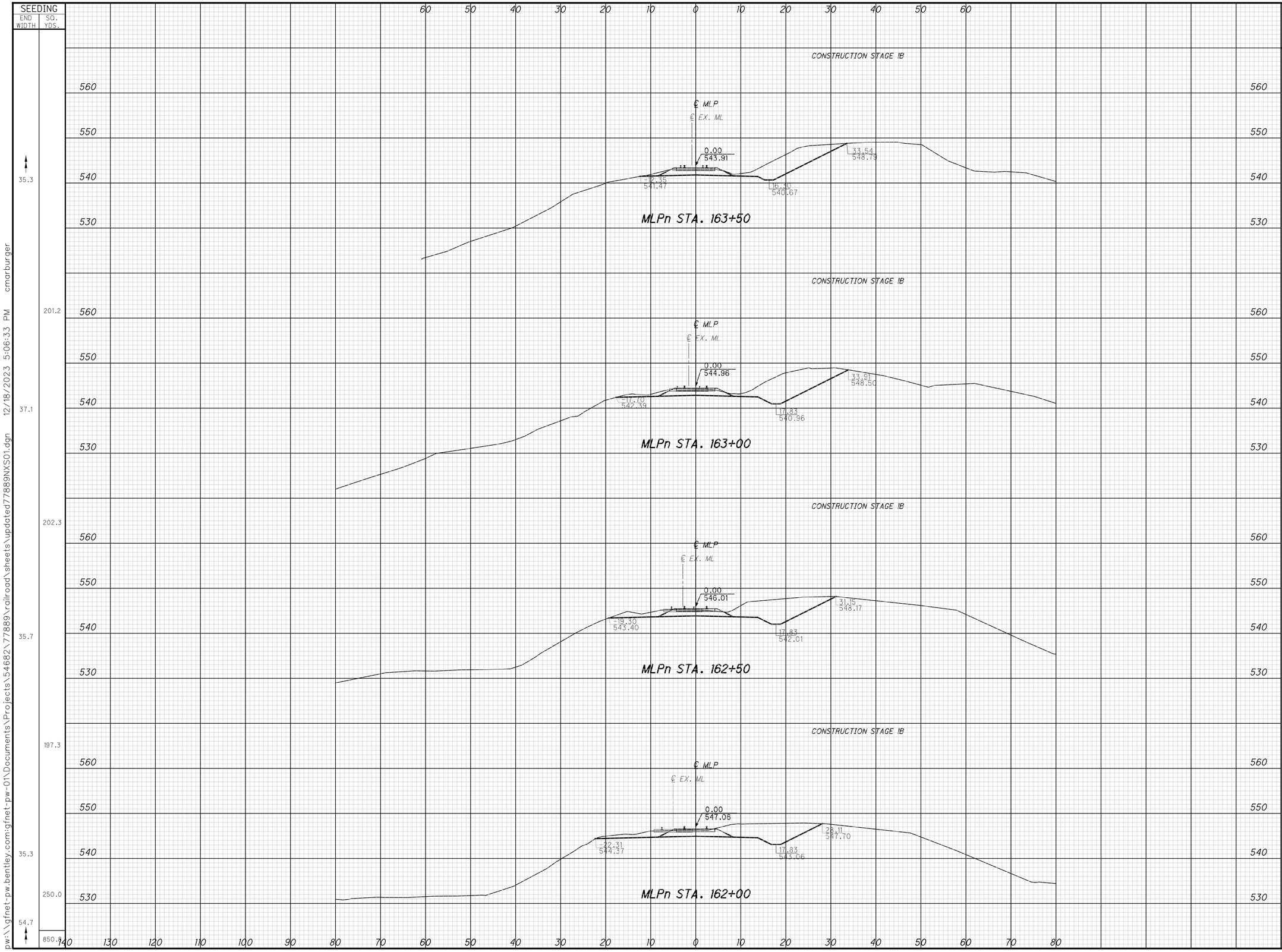
SEEDING END WIDTH	SEEDING SQ. YDS.
35.3	
	201.2
37.1	
	202.3
35.7	
	197.3
35.3	
	250.0
54.7	
	850.9



END AREA	CUT	FILL	SUB BALLAST
	113.5	N/A	N/A
	112.1	N/A	N/A
	107.6	N/A	N/A
	98.4	N/A	N/A
	190.3	N/A	29.7
SQ. FT.			

VOLUME	CUT	FILL	SUB BALLAST
	105.1	N/A	N/A
	208.9	N/A	N/A
	203.5	N/A	N/A
	190.8	N/A	N/A
	267.4	N/A	27.5
	975.7	N/A	27.5
CU. YD			

CALCULATED JRG
CHECKED RC

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 166+00 TO STA 167+25

HAM-7.5-7.85

76/133

229/286

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SEEDING

END WIDTH	SQ. YDS.
10.0 / N/A → THIS PAGE	
	72.5 / N/A
16.1 / N/A	
	97.3 / N/A
18.9 / N/A	
	91.7 / 27.8
14.1 / 10.0	
	137.3 / 55.6
35.3 / 10.0	
THIS PAGE	482.2

END AREA CUT	END AREA FILL	END AREA SUB BALLAST	VOLUME CUT	VOLUME FILL	VOLUME SUB BALLAST
N/A → THIS PAGE N/A	N/A → THIS PAGE N/A	N/A → THIS PAGE N/A			
			N/A N/A	N/A N/A	N/A N/A
N/A N/A	N/A N/A	N/A N/A			
			N/A N/A	N/A N/A	N/A N/A
N/A N/A	N/A N/A	N/A N/A			
			N/A N/A	N/A N/A	N/A N/A
N/A N/A	N/A N/A	N/A N/A			
			N/A N/A	N/A N/A	N/A N/A
N/A N/A	N/A N/A	N/A N/A			
THIS PAGE	THIS PAGE	THIS PAGE	N/A	N/A	N/A
SQ. FT.			CU. YD		

CALCULATED JRG

CHECKED RC

FINAL CROSS SECTIONS
PROPOSED NSRR - STA 166+00 TO STA 167+25

HAM-75-7.85

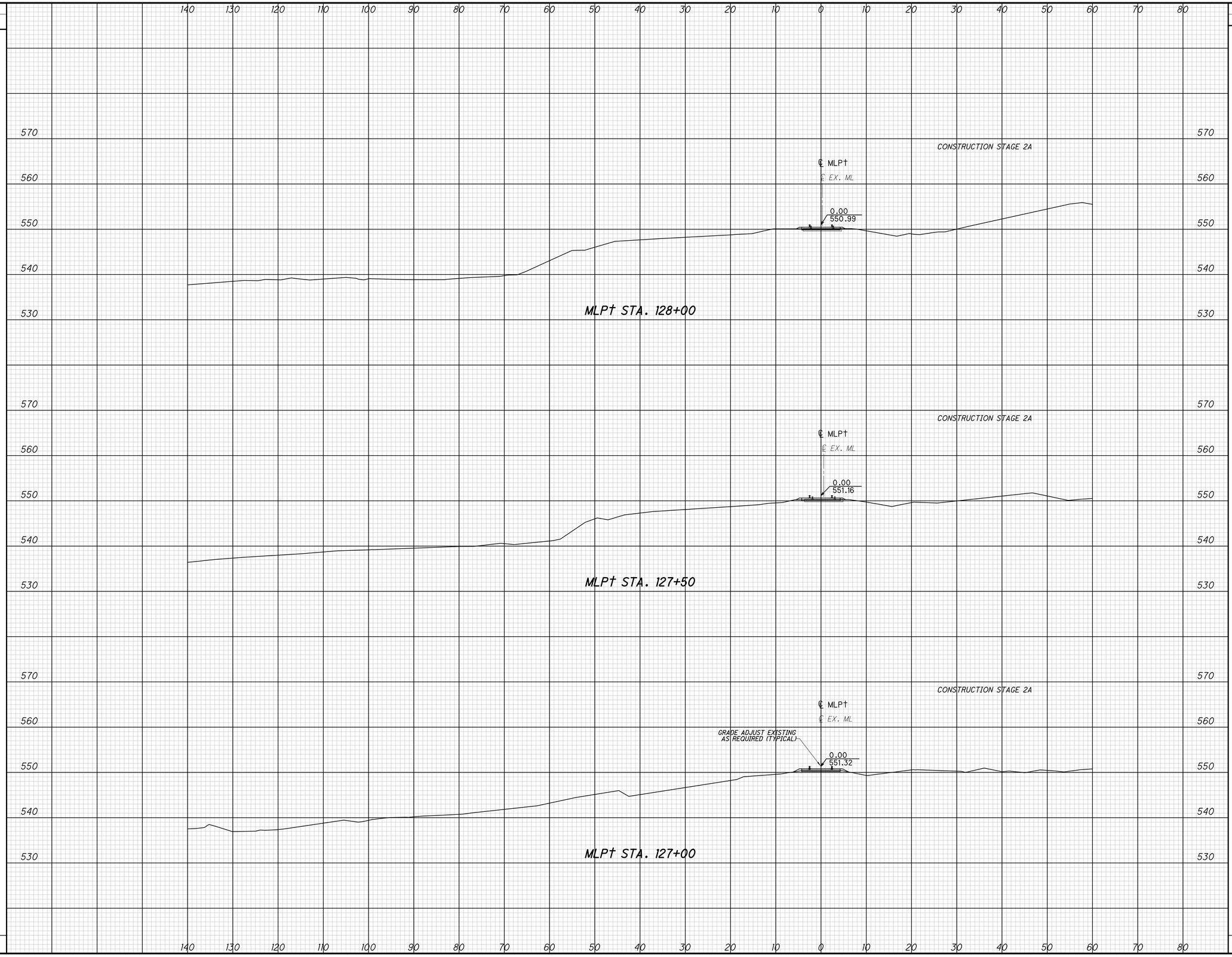
77/133

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JRG

CHECKED RC



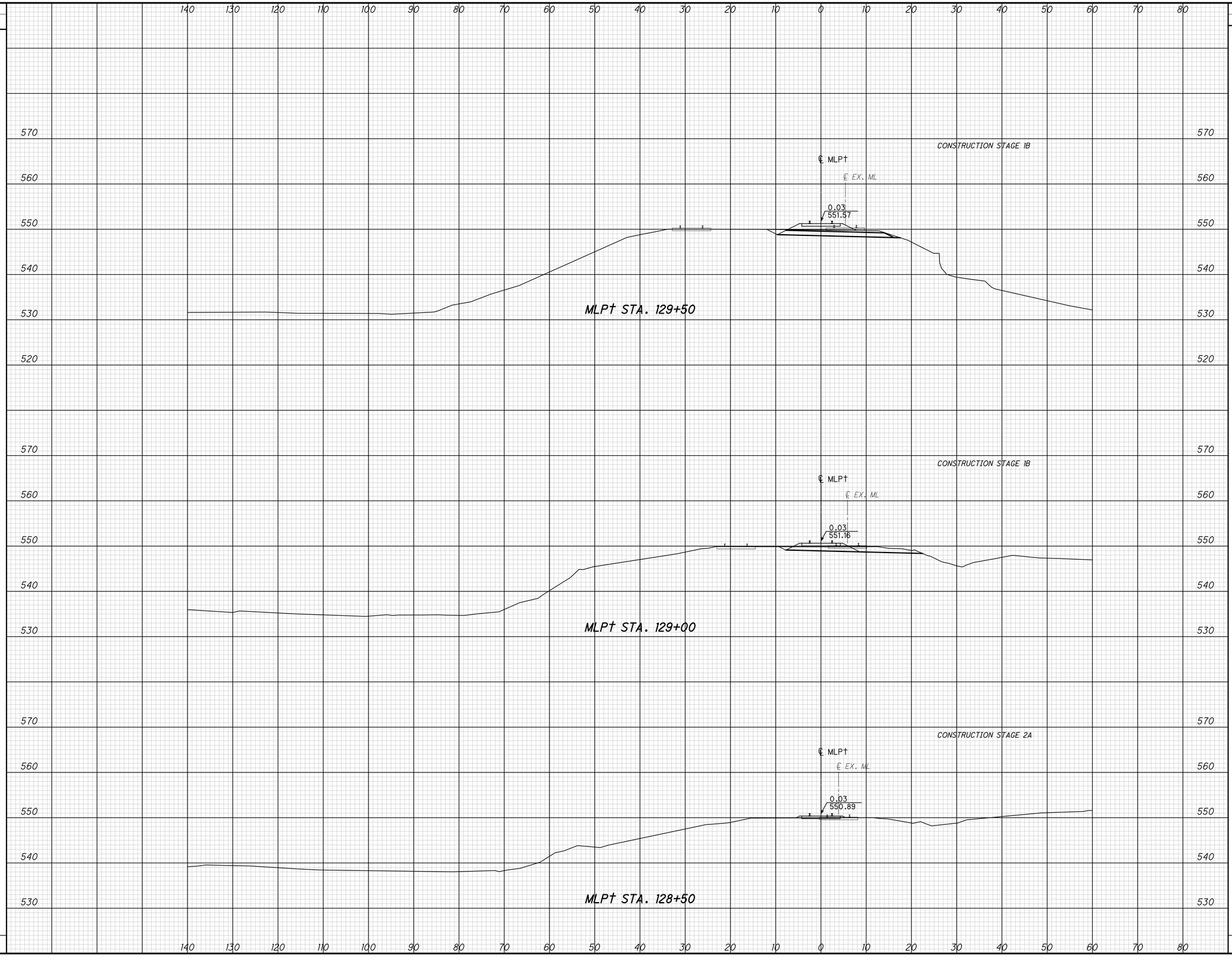
TEMPORARY OPERATIONS CROSS SECTIONS - WEST PROPOSED NSRR - STA 127+04 TO STA 128+00

HAM-75-7.85

78 / 133

231 / 286

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JRG

CHECKED RC

TEMPORARY OPERATIONS CROSS SECTIONS - WEST
PROPOSED NSRR - STA 128+50 TO STA 129+50

HAM-75-7.85

79 / 133

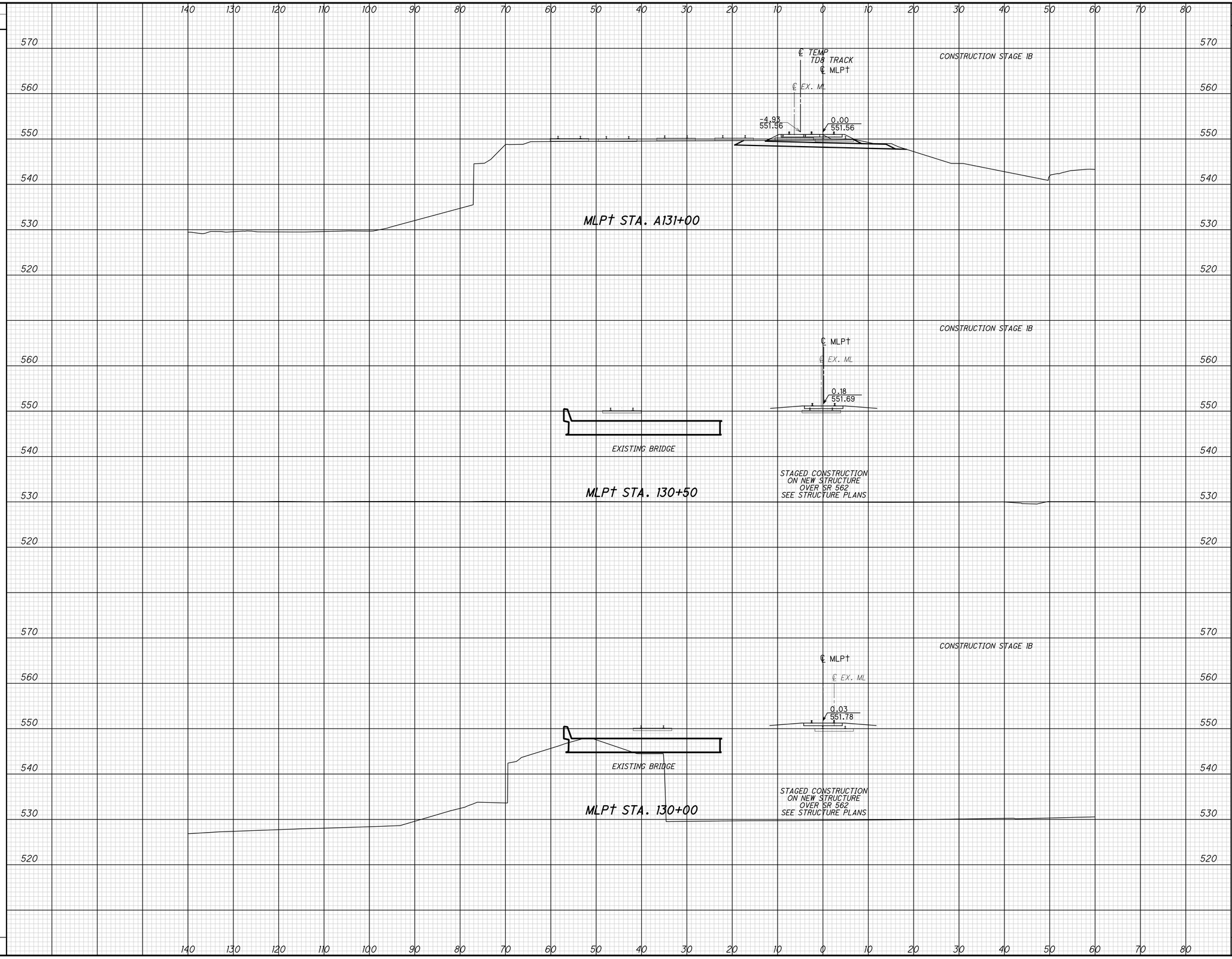
232 / 286

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JRG

CHECKED RC



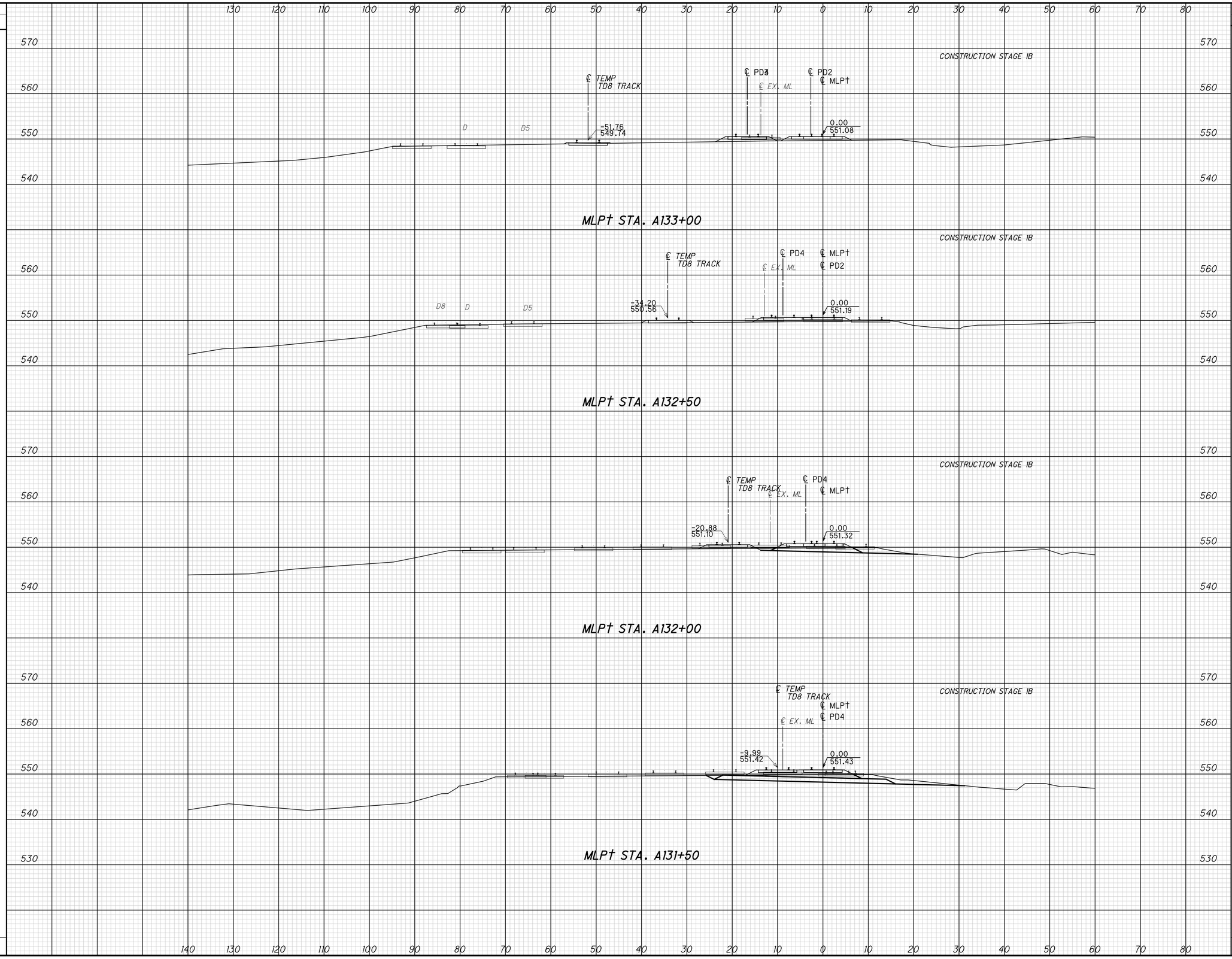
TEMPORARY OPERATIONS CROSS SECTIONS - WEST PROPOSED NSRR - STA 130+00 TO STA 131+00

HAM-75-7.85

80 / 133

233 / 286

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED	CHECKED
JRG	RC

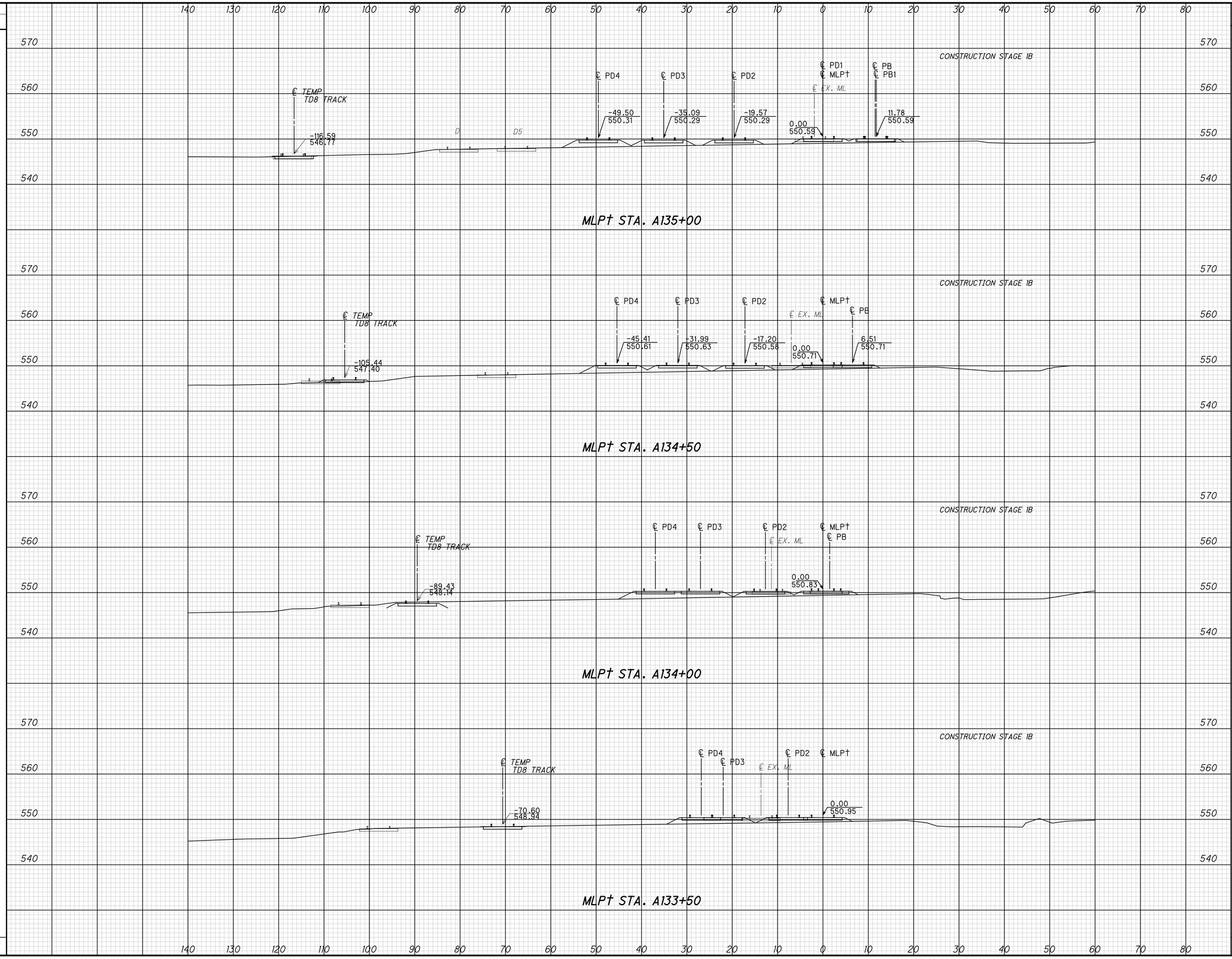
TEMPORARY OPERATIONS CROSS SECTIONS - WEST PROPOSED NSRR - STA 131+50 TO STA 133+00

HAM-75-7.85

81 / 133

234 / 286

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JRG
CHECKED RC

TEMPORARY OPERATIONS CROSS SECTIONS - WEST
PROPOSED NSRR - STA 133+50 TO STA 135+00

HAM-75-7.85

82 / 133

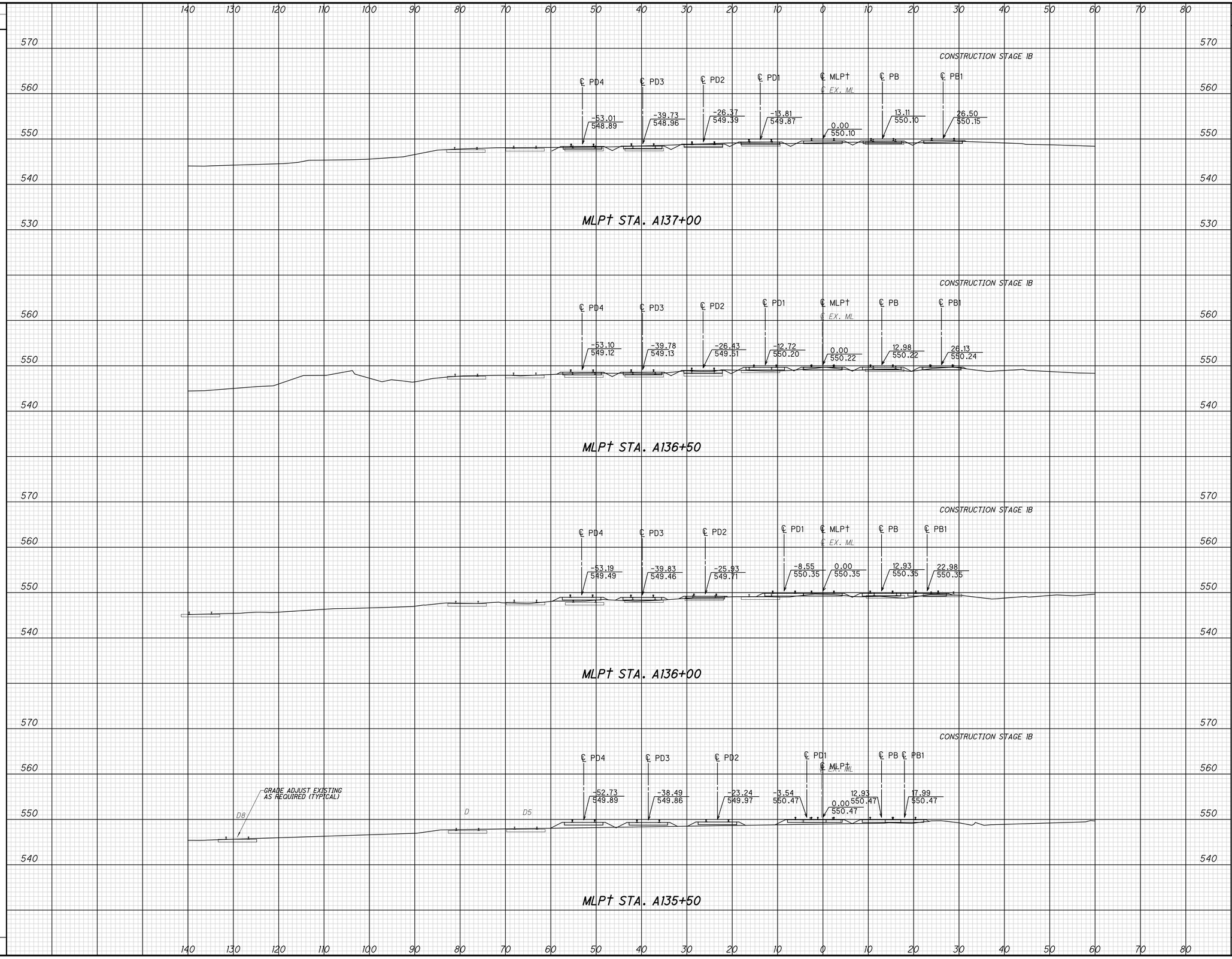
235 / 286

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED JRG

CHECKED RC



TEMPORARY OPERATIONS CROSS SECTIONS - WEST PROPOSED NSRR - STA 135+50 TO STA 137+00

HAM-75-7.85

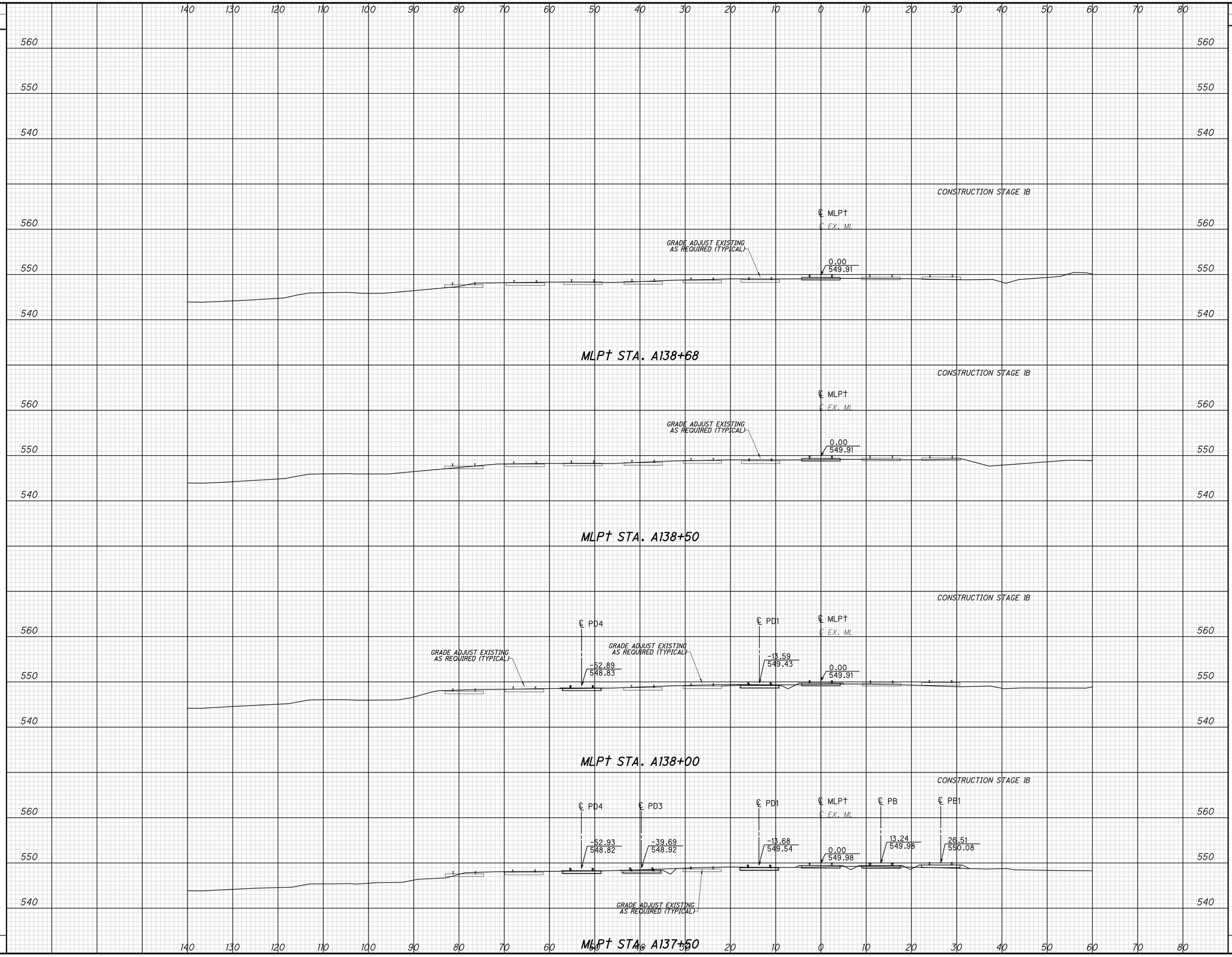
SEEDING	
END WIDTH	SQ. YDS.

END AREA	
CUT	FILL

VOLUME	
CUT	FILL

CALCULATED JRG

CHECKED RC

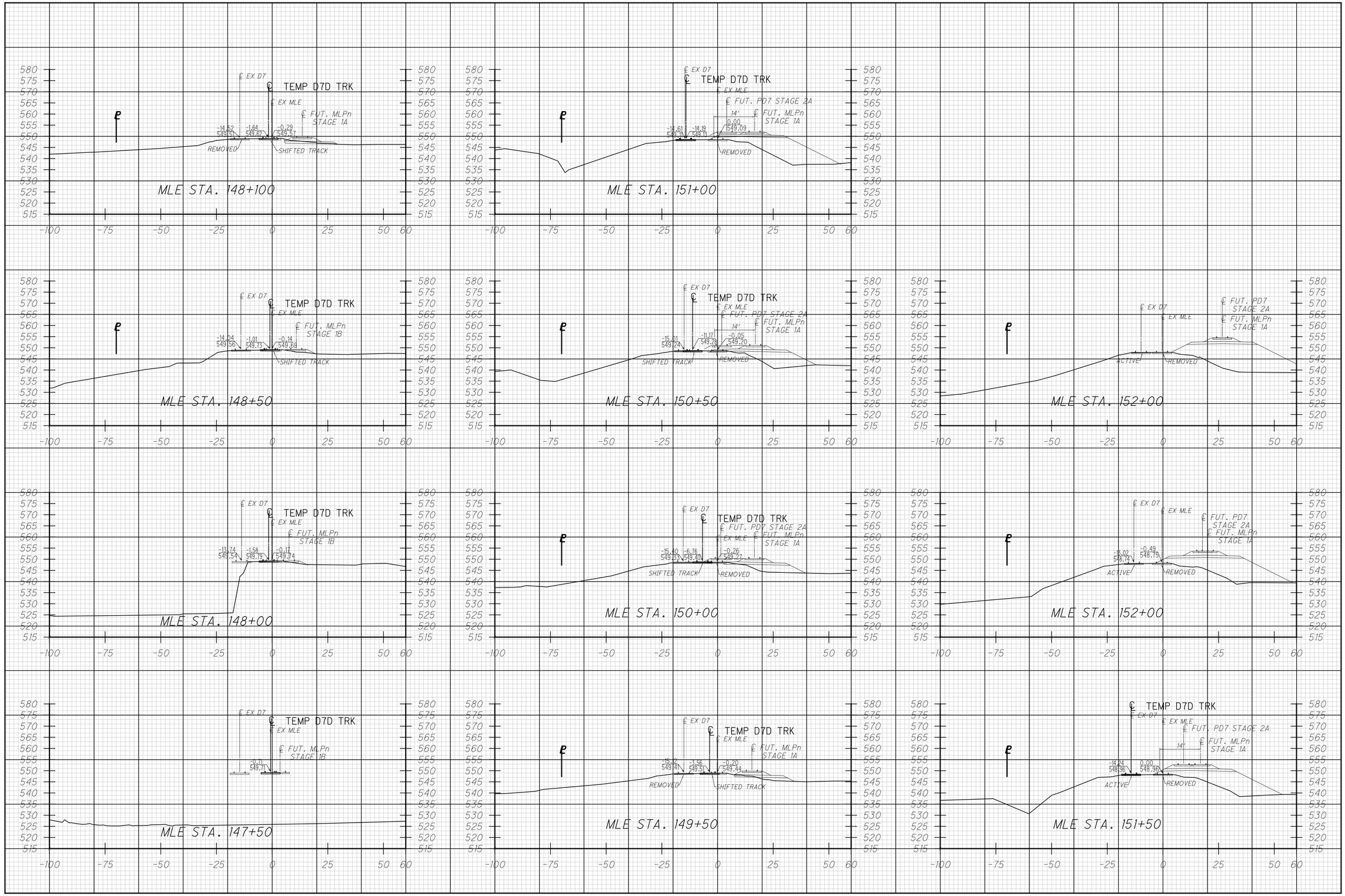


TEMPORARY OPERATIONS CROSS SECTIONS - WEST
PROPOSED NSRR - STA 137+50 TO STA 138+90

HAM-75-7.85

84/133

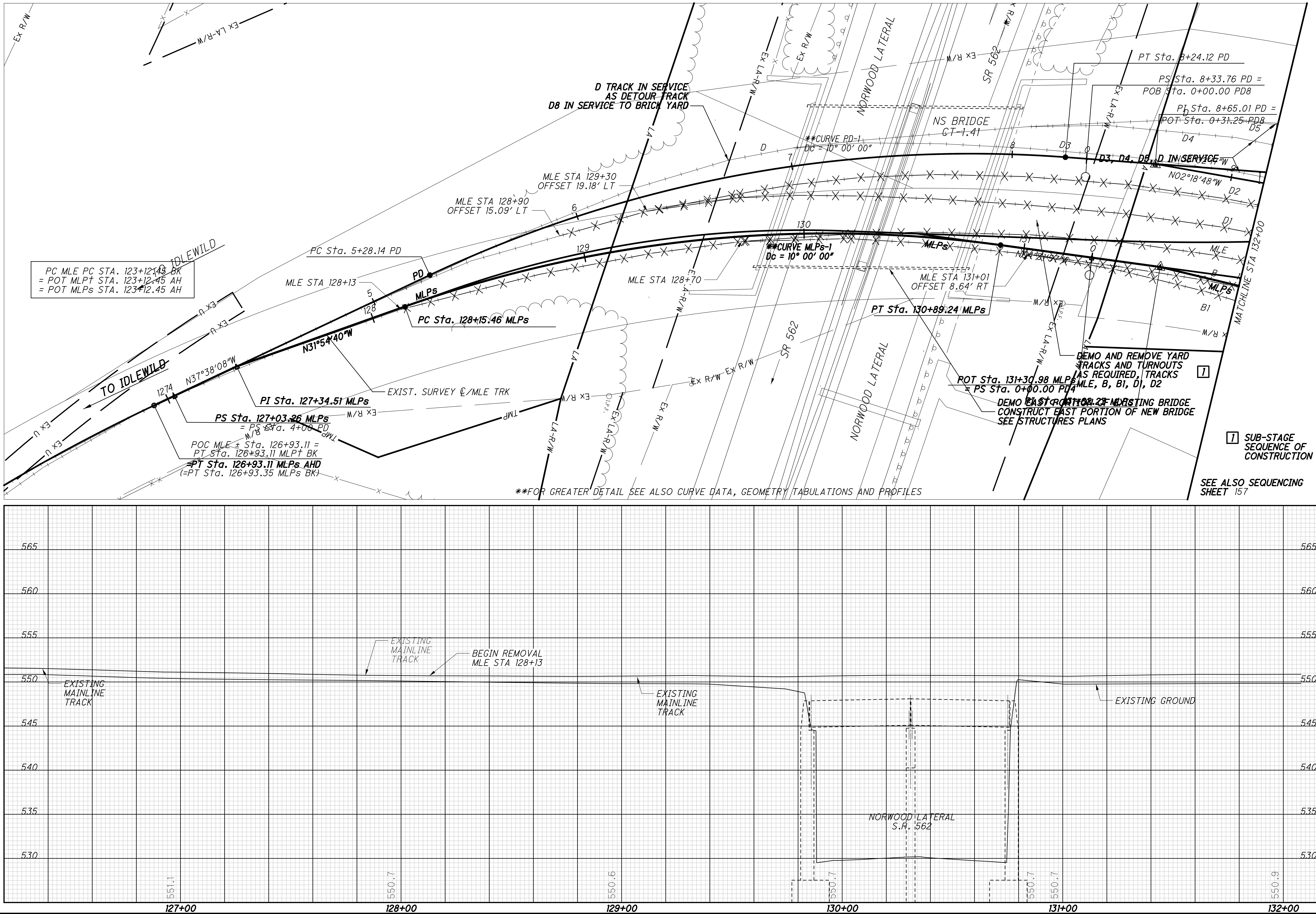
237/286



TEMPORARY OPERATIONS CROSS SECTIONS - EAST D7D DETOUR TRACK STA. 147+50 TO 152+50

CALCULATED JRG
CHECKED RC

HAM-75-7.85


Ex R/W
Ex LA-R/W
D TRACK IN SERVICE AS DETOUR TRACK
D8 IN SERVICE TO BRICK YARD
NORWOOD LATERAL
SR 562
NS BRIDGE CT-1.41
**CURVE PD-1 Dc = 10° 00' 00"
PT Sta. 8+24.12 PD
PS Sta. 8+33.76 PD = POB Sta. 0+00.00 PD8
PI Sta. 8+65.01 PD = POT Sta. 0+31.25 PD8
D3, D4, D5, D IN SERVICE
N02°18'48"W
MLE STA 129+30 OFFSET 19.18' LT
MLE STA 128+90 OFFSET 15.09' LT
PC MLE PC STA. 123+12.45 BK = POT MLPt STA. 123+12.45 AH = POT MLPs STA. 123+12.45 AH
TO IDLEWILD
PC Sta. 5+28.14 PD
MLE STA 128+13
PC Sta. 128+15.46 MLPs
N31°54'40"W
N37°38'08"W
MLE STA 128+70
**CURVE MLPs-1 Dc = 10° 00' 00"
MLE STA 131+01 OFFSET 8.64' RT
PT Sta. 130+89.24 MLPs
MATCHLINE STA 132+00
DEMO AND REMOVE YARD TRACKS AND TURNOUTS AS REQUIRED, TRACKS MLE, B, B1, D1, D2
POT Sta. 131+30.98 MLPs = PS Sta. 0+00.00 PD4
DEMO EAST PORTION OF EXISTING BRIDGE
CONSTRUCT EAST PORTION OF NEW BRIDGE
SEE STRUCTURES PLANS
EXIST. SURVEY ℄/MLE TRK
PI Sta. 127+34.51 MLPs
PS Sta. 127+03.26 MLPs = PS Sta. 4+00 PD
POC MLE ± Sta. 126+93.11 = PT Sta. 126+93.11 MLPt BK
=PT Sta. 126+93.11 MLPs AHD
(=PT Sta. 126+93.35 MLPs BK)
1 SUB-STAGE SEQUENCE OF CONSTRUCTION
SEE ALSO SEQUENCING SHEET 157
**FOR GREATER DETAIL SEE ALSO CURVE DATA, GEOMETRY TABULATIONS AND PROFILES
565
560
555
550
545
540
535
530
EXISTING MAINLINE TRACK
BEGIN REMOVAL MLE STA 128+13
EXISTING GROUND
NORWOOD LATERAL S.R. 562
551.1
550.7
550.6
550.7
550.7
550.9
127+00
128+00
129+00
130+00
131+00
132+00

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED JRG
CHECKED RC

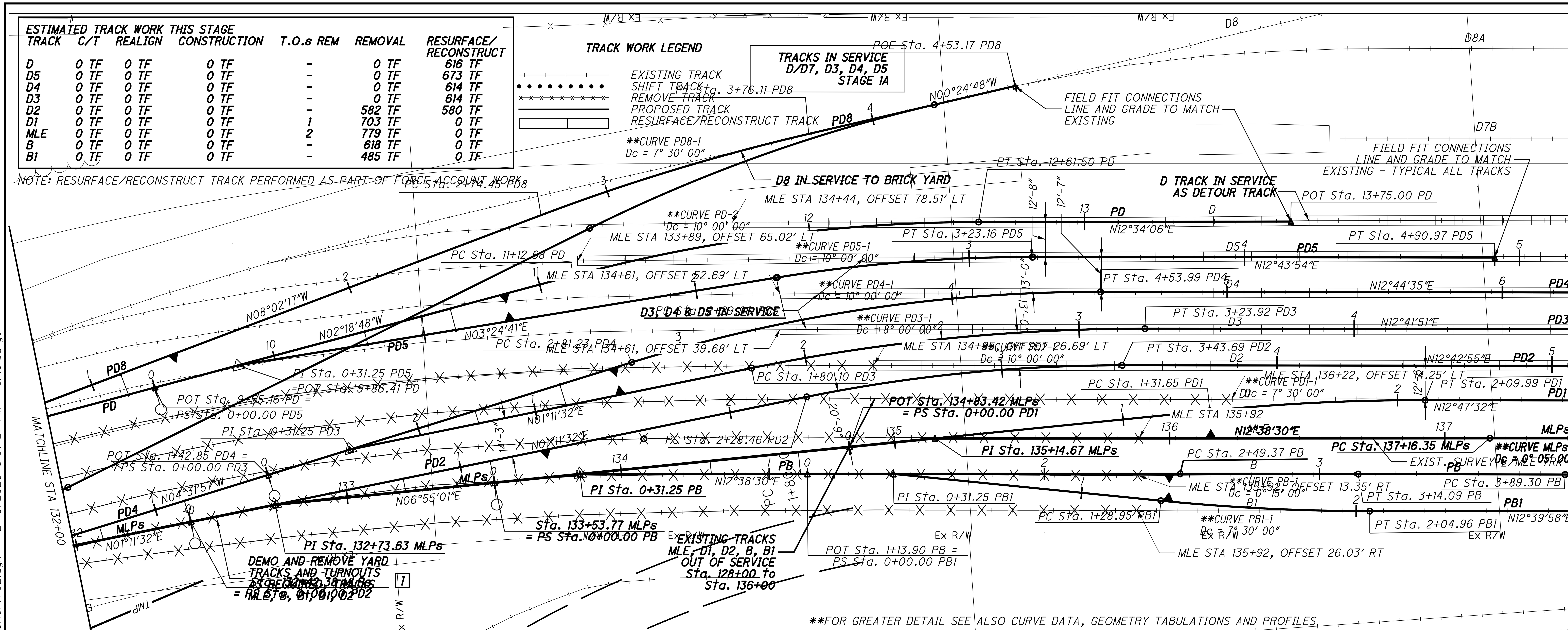
TRACK CONSTRUCTION STAGE 1A
NSRR - STA 127+00 TO STA 132+00

HAM-75-7.85

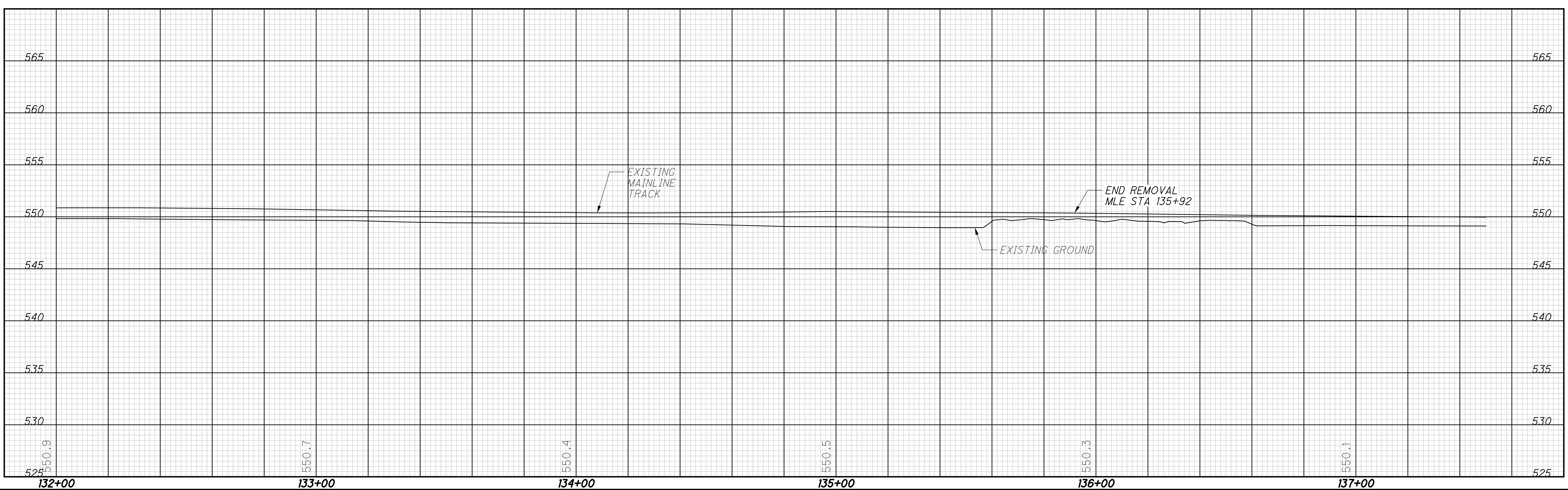
ESTIMATED TRACK WORK THIS STAGE

TRACK	C/T	REALIGN	CONSTRUCTION	T.O.s REM	REMOVAL	RESURFACE/ RECONSTRUCT
D	0 TF	0 TF	0 TF	-	0 TF	616 TF
D5	0 TF	0 TF	0 TF	-	0 TF	673 TF
D4	0 TF	0 TF	0 TF	-	0 TF	614 TF
D3	0 TF	0 TF	0 TF	-	0 TF	614 TF
D2	0 TF	0 TF	0 TF	-	582 TF	580 TF
D1	0 TF	0 TF	0 TF	1	703 TF	0 TF
MLE	0 TF	0 TF	0 TF	2	779 TF	0 TF
B	0 TF	0 TF	0 TF	-	618 TF	0 TF
B1	0 TF	0 TF	0 TF	-	485 TF	0 TF

NOTE: RESURFACE/RECONSTRUCT TRACK PERFORMED AS PART OF FORCE ACCOUNT WORK



TRACK WORK LEGEND
EXISTING TRACK
SHIFT TRACK
REMOVE TRACK
PROPOSED TRACK
RESURFACE/RECONSTRUCT TRACK
TRACKS IN SERVICE
D/D7, D3, D4, D5
STAGE 1A
POE Sta. 4+53.17 PD8
FIELD FIT CONNECTIONS
LINE AND GRADE TO MATCH
EXISTING
FIELD FIT CONNECTIONS
LINE AND GRADE TO MATCH
EXISTING - TYPICAL ALL TRACKS
**CURVE PD8-1
Dc = 7° 30' 00"
D8 IN SERVICE TO BRICK YARD
D TRACK IN SERVICE
AS DETOUR TRACK
POT Sta. 13+75.00 PD
PT Sta. 12+61.50 PD
MLE STA 134+44, OFFSET 78.51' LT
**CURVE PD-2
Dc = 10° 00' 00"
MLE STA 133+89, OFFSET 65.02' LT
PT Sta. 3+23.16 PD5
PT Sta. 4+90.97 PD5
N12°34'06"E
PC Sta. 11+12.68 PD
**CURVE PD5-1
Dc = 10° 00' 00"
N12°43'54"E
MLE STA 134+61, OFFSET 52.69' LT
**CURVE PD4-1
Dc = 10° 00' 00"
PT Sta. 4+53.99 PD4
N12°44'35"E
N08°02'17"W
N02°18'48"W
N03°24'41"E
D3, D4 & D5 IN SERVICE
**CURVE PD3-1
Dc = 8° 00' 00"
PT Sta. 3+23.92 PD3
N12°41'51"E
PC Sta. 2+81.23 PD4
MLE STA 134+61, OFFSET 39.68' LT
MLE STA 134+85, OFFSET 26.69' LT
PT Sta. 3+43.69 PD2
PI Sta. 0+31.25 PD5
=POT Sta. 9+86.41 PD
PC Sta. 1+80.10 PD3
MLE STA 136+22, OFFSET 14.25' LT
N12°42'55"E
PT Sta. 2+09.99 PD1
PC Sta. 1+31.65 PD1
**CURVE PD1-1
Dc = 7° 30' 00"
N12°47'32"E
POT Sta. 9+95.16 PD =
PS Sta. 0+00.00 PD5
POT Sta. 134+83.42 MLPs
= PS Sta. 0+00.00 PD1
MLE STA 135+92
N12°38'30"E
PI Sta. 0+31.25 PD3
N01°11'32"E
PC Sta. 2+28.46 PD2
PI Sta. 135+14.67 MLPs
PC Sta. 2+49.37 PB
PC Sta. 137+16.35 MLPs
**CURVE MLPs-2
Dc = 0° 05' 00"
EXIST. SURVEY C/MLE TRK
POT Sta. 1+42.85 PD4 =
PS Sta. 0+00.00 PD3
N04°31'57"W
N06°55'01"E
N12°38'30"E
PI Sta. 0+31.25 PB
**CURVE PB-1
Dc = 6° 15' 00"
MLE STA 135+92, OFFSET 13.35' RT
PC Sta. 3+89.30 PB
PT Sta. 3+14.09 PB
PI Sta. 0+31.25 PB1
PC Sta. 1+28.95 PB1
**CURVE PB1-1
Dc = 7° 30' 00"
PT Sta. 2+04.96 PB1
N12°39'58"E
N01°11'32"E
PI Sta. 132+73.63 MLPs
Sta. 133+53.77 MLPs
= PS Sta. 0+00.00 PB
EXISTING TRACKS
MLE, D1, D2, B, B1
OUT OF SERVICE
Sta. 128+00 to
Sta. 136+00
POT Sta. 1+13.90 PB =
PS Sta. 0+00.00 PB1
MLE STA 135+92, OFFSET 26.03' RT
DEMO AND REMOVE YARD
TRACKS AND TURNOUTS
AS REQUIRED, TRACKS
MLE, B, B1, D1, D2
MATCHLINE STA 132+00
MATCHLINE STA 137+50
Ex R/W
**FOR GREATER DETAIL SEE ALSO CURVE DATA, GEOMETRY TABULATIONS AND PROFILES



HORIZONTAL SCALE IN FEET

CALCULATED JRG

CHECKED RC

TRACK CONSTRUCTION STAGE 1A
NSRR - STA 132+00 TO STA 137+50

HAM-75-7.85

87/133

TRACKS IN SERVICE
D/D7, D3, D4, D5
STAGE 1A

ESTIMATED TRACK CAPACITY THIS STAGE

TRACK	STORAGE LENGTH
D	680 TF
D5	750 TF
D4	930 TF
D3	N/A
D2*	580 TF
D1*	610 TF
MLE*	480 TF
B*	450 TF
B1*	500 TF

*STUB END

D8A
D7B
D
D5
D4
D3
D2
D1
MLE
B
B1

D TRACK IN SERVICE
AS DETOUR TRACK

MLE STA 140+60, OFFSET 79.22' LT
MLE STA 140+60, OFFSET 65.56' LT
MLE STA 140+75, OFFSET 53.10' LT
MLE STA 140+75, OFFSET 39.80' LT
MLE STA 140+75, OFFSET 26.65' LT
D3, D4 & D5 IN SERVICE

MATCHLINE STA 137+50
MATCHLINE STA 143+00

PD4
N12°44'35"E
D3, D4 & D5 IN SERVICE
PD3
N12°41'51"E
PD2
N12°42'42"E
PD1
N12°47'32"E
**CURVE MLP-2
Dc = 0° 05' 00"
**CURVE PB-1
Dc = 0° 20' 00"
PB
N12°35'34"E
PB1
N12°39'58"E

POE Sta. 7+74.94 PD4
POE Sta. 5+66.54 PD3
POE Sta. 5+35.75 PD2
POE Sta. 3+35.26 PD1
PT Sta. 137+78.79 MLPs
N12°41'37"E MLPs
POT Sta. 138+68.00 MLPs BK = POT 138+70.62 MLE AH
EXIST. SURVEY ℄/MLE TRK
PT Sta. 4+52.53 PB
POT Sta. 5+00.00 PB
POT Sta. 3+69.77 PB1

13'-2"
13'-4"
13'-6"
13'-2"
13'-3"

FIELD FIT CONNECTIONS
LINE AND GRADE TO MATCH
EXISTING - TYPICAL ALL TRACKS

EXISTING TRACKS
MLE, D2, D1, B, B1
STUB ENDED OR
OUT OF SERVICE

Ex R/W

**FOR GREATER DETAIL SEE ALSO CURVE DATA, GEOMETRY TABULATIONS AND PROFILES

SOME INFORMATION ONLY: NO CONSTRUCTION THIS STAGE THIS, THIS SHEET

565
560
555
550
545
540
535
530
525

EXISING GROUND
EXISTING MAINLINE TRACK
EXISTING GROUND
EXISTING MAINLINE TRACK

549.9
549.9
549.9

138+00
139+00
140+00
141+00
142+00
143+00

Existing

HORIZONTAL SCALE IN FEET
0 10 20 40

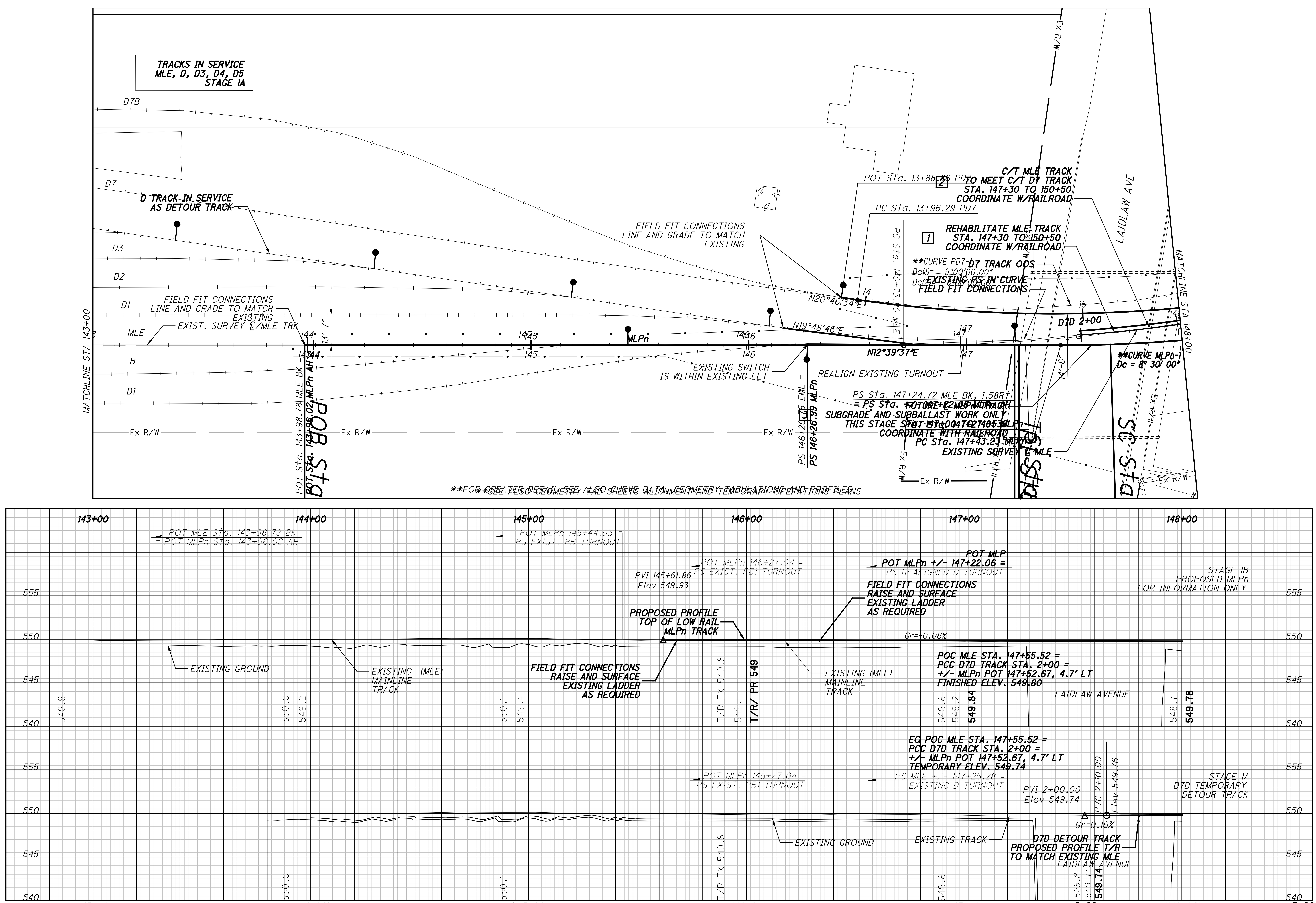
CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 1A
NSRR - STA 137+50 TO STA 143+00

HAM-75-7.85

88/133

241/286



TRACKS IN SERVICE
MLE, D, D3, D4, D5
STAGE 1A
D7B
D7
D TRACK IN SERVICE
AS DETOUR TRACK
D3
D2
D1
MLE
B
B1
FIELD FIT CONNECTIONS
LINE AND GRADE TO MATCH
EXISTING
EXIST. SURVEY ℄/MLE TRK
MATCHLINE STA 143+00
MATCHLINE STA 148+00
POB Sta
POT Sta. 143+98.78 MLE BK
POT Sta. 143+96.02 MLPn AH
13'-7"
MLPn
EXISTING SWITCH
IS WITHIN EXISTING LLT
N19°48'46"E
N20°46'34"E
N12°39'37"E
PS 146+29.76 EML =
PS 146+26.99 MLPn
POT Sta. 13+88.86 PD7
PC Sta. 13+96.29 PD7
C/T MLE TRACK
TO MEET C/T D7 TRACK
STA. 147+30 TO 150+50
COORDINATE W/RAILROAD
REHABILITATE MLE TRACK
STA. 147+30 TO 150+50
COORDINATE W/RAILROAD
**CURVE PD7
Dc(I)= 9°00'00.00"
D7 TRACK OOS
EXISTING PS IN CURVE
FIELD FIT CONNECTIONS
D7D 2+00
LAIDLAW AVE
REALIGN EXISTING TURNOUT
PS Sta. 147+24.72 MLE BK, 1.58'RT
FUTURE C MLP TRACK
SUBGRADE AND SUBBALLAST WORK ONLY
THIS STAGE
COORDINATE WITH RAILROAD
PC Sta. 147+43.23 MLPn
EXISTING SURVEY ℄ MLE
**CURVE MLPn
Dc = 8° 30' 00"
14'-6"
Ex R/W
**FOR GREATER DETAIL SEE ALSO CURVE DATA, GEOMETRY TABULATIONS AND PROFILES
**SEE ALSO GEOMETRY TAB SHEETS ALIGNMENT AND TEMPORARY OPERATIONS PLANS
143+00
144+00
145+00
146+00
147+00
148+00
POT MLE Sta. 143+98.78 BK
= POT MLPn Sta. 143+96.02 AH
POT MLPn 145+44.53 =
PS EXIST. PB TURNOUT
POT MLPn 146+27.04 =
PS EXIST. PB1 TURNOUT
POT MLP
POT MLPn +/- 147+22.06 =
PS REALIGNED D TURNOUT
PVI 145+61.86
Elev 549.93
FIELD FIT CONNECTIONS
RAISE AND SURFACE
EXISTING LADDER
AS REQUIRED
STAGE 1B
PROPOSED MLPn
FOR INFORMATION ONLY
PROPOSED PROFILE
TOP OF LOW RAIL
MLPn TRACK
Gr=+0.06%
EXISTING GROUND
EXISTING (MLE)
MAINLINE
TRACK
POC MLE STA. 147+55.52 =
PCC D7D TRACK STA. 2+00 =
+/- MLPn POT 147+52.67, 4.7' LT
FINISHED ELEV. 549.80
LAIDLAW AVENUE
T/R EX 549.8
T/R/ PR 549
549.84
549.78
EQ POC MLE STA. 147+55.52 =
PCC D7D TRACK STA. 2+00 =
+/- MLPn POT 147+52.67, 4.7' LT
TEMPORARY ELEV. 549.74
PS MLE +/- 147+25.28 =
EXISTING D TURNOUT
PVI 2+00.00
Elev 549.74
PVC 2+10.00
Elev 549.76
Gr=0.16%
STAGE 1A
D7D TEMPORARY
DETOUR TRACK
EXISTING TRACK
D7D DETOUR TRACK
PROPOSED PROFILE T/R
TO MATCH EXISTING MLE
2+00
3+00
549.74
555
550
545
540

HORIZONTAL SCALE IN FEET

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 1A
NSRR - STA 143+00 TO STA 148+00

HAM-75-7.85

89/133

ESTIMATED TRACK WORK THIS STAGE					
TRACK	C/T	REALIGN	CONSTRUCTION	TURNOUTS	REMOVAL
MLPn	0 TF	0 TF	1282 TF	-	0 TF
D7	132 TF	23 TF	-	-	-
MLE	132 TF	157 TF	-	-	274 TF

* REHABILATE TRACK AS NECESSARY PRIOR TO C/T
* REALIGN TRACK AS NECESSARY AFTER C/T

PD7-1
P.I. Sta= 15+83.18
Dc-1= 9°00'00"(1)
Dc-2= 8°00'00"(2)
R= 637.21'(1) R= 716.76'(2)
Delta= 33°48'56.56"(LT)
L=170.10'(1) L=184.84'(2)
T= 199.43'(1) T= 241.53'(2)
E= 30.48'
SE=0"(Dc-1) SE=1"(Dc-2)
MAS=10mph

CS Sta. 15+66.39 PD7
REHABILITATE EXISTING MLE TRACK STA. 147+30 TO 150+50 COORDINATE W/ RAILROAD 1
SCS Sta. 16+28.39 PD7
MATCHLINE STA 148+00
MATCHLINE STA 153+00
Ex R/W
EX SL
D7 OOS
D7D 3+00
D7D 4+00
D7D 5+00
D7D 6+00
D7D-1
D7D-2
D7
MLE
MLPn
BEGIN C/T MLE STA 148+87
BEGIN C/T MLE STA 150+23 OFFSET 15.63' LT
CS Sta. 17+62.80 PD7
D7 DETOUR TRACK IN SERVICE AFTER C/T
ST Sta. 18+22.20 PD7
C/T D7 TRACK TO MEET C/T MLE TRACK STA. 150+00 TO STA. 151+50 COORDINATE W/RAILROAD 2
MLE STA 150+50
N13°01'42"W
N18°45'11"W
END C/T MLE STA 151+55 OFFSET 14.15' LT
PI Sta. 19+68.75 PD7
REHABILITATE D7 TRACK STA. 150+00 TO STA. 151+55 1
POT Sta. 152+60.84 MLPn
= PS Sta. 20+00.00 PD7
MLE IN SERVICE BEFORE C/T
TS Sta. 152+08.84 MLPn
REMOVE EXISTING MLE TRK FOR LIMITS SHOWN 3
EXISTING SURVEY ℄ MLE
END C/T MLE STA 150+19
**CURVE MLPn-1
Dc = 8° 30' 00"
PARTIAL CONSTRUCTION OFFLINE OF NEW MLP TRACK ON EMBANKMENT STA. 148+35 TO 151+17 4
FUTURE ℄ MLPn TRACK PLACE SUBGRADE AND SUBBALLAST ONLY THIS STAGE STA. 147+00 TO 148+63.69 4 COORDINATE WITH RAILROAD
MLPn-1
P.I. Sta= 149+32.96
Dc= 8°30'00.00"
Delta= 31°24'47.83"(LT)
L=369.91'
T= 189.73'
E= 26.17'
MAS=10mph
BUILD NEW MLPn TRACK TRACK ON EMBANKMENT 4
PT Sta. 151+18.79 MLPn
TEMPORARY TRACK SHIFT MLE TO MEET SHIFTED D7 TRACK STA. 147+30 TO 150+50 COORDINATE W/RAILROAD 2
TS Sta. 152+76.71
ST Sta. 151+68.03
ST Sta. 151+85.03
Ex R/W
TMP
℄ Ex R/W TMP
R/W

**SEE ALSO GEOMETRY TAB SHEETS ALIGNMENT AND TEMPORARY OPERATIONS PLANS

148+00 149+00 150+00 151+00 152+00 153+00

PVC 148+05.18 Elev 549.77
PVI 149+43.18 Elev 549.68 L 280.00' R 0.63
PVT 150+83.18 Elev 552.05
FUTURE PROPOSED PROFILE TOP OF LOW RAIL MLPn TRACK
Gr=1.69%
STAGE 1B PROPOSED MLPn FOR INFORMATION ONLY
EXISTING GROUND
548.7 549.78 547.7 550.01 545.8 550.86 545.4 552.34 545.2 554.03 538.2 555.73
END C/T MLE STA 150+19 D7D ELEV = 549.35 MLE ELEV = 549.25
PVI 2+50.00 Elev 549.83 L 80.00' R -0.48
PVT 2+90.00 Elev 549.74
BEGIN C/T MLE STA 148+87 D7D ELEV = 549.64 MLE ELEV = 549.61
PROPOSED PROFILE TOP OF LOW RAIL D7D DETOUR TRACK
Gr=-0.22%
PVC 4+56.00 Elev 549.37
PVI 5+06.00 Elev 549.26 L 100.00' R -0.12
PVT 5+56.00 Elev 549.09
PVI D7D Sta. 6+11.73= MLE Sta. 151+69.51, 14.01' LT
Elev 548.90
END C/T MLE STA 151+55 D7D ELEV = 548.95 D7 ELEV = 548.95
Gr= 0.34%
STAGE 1A D7D TEMPORARY DETOUR TRACK
PROFILE TO MATCH EXISTING MLE
BEGIN C/T MLE STA 150+23 D7D ELEV = 549.34 D7 ELEV = 549.23
EXISTING GROUND
EXISTING TRACK
D7D DETOUR TRACK PROPOSED PROFILE T/R TO MATCH EXISTING D7
549.0 549.68 549.71 548.8 549.43 549.49 548.5 549.19 549.26 548.1 548.94 548.94
555 550 545 540 560

(148+00) 3+00 (149+00) 4+00 (150+00) 5+00 (151+00) 6+00 (152+00) 7+00 (153+00)

TRACK CONSTRUCTION STAGE 1A
NSRR - STA 148+00 TO STA 153+00
HAM-75-7.85
CALCULATED JRG CHECKED RC
HORIZONTAL SCALE IN FEET 0 25 50 100
90/133
243/286

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D7 TRACK DETOUR
IN SERVICE

Ex LA-R/W

Ex R/W

LA

TMP

MATCHLINE STA 153+00

END REMOVAL
MLE STA 153+24

BILLBOARDS TO BE REMOVED
PRIOR TO CONSTRUCTION

SC Sta. 153+32.84 MLPn

BEGIN NEW STRUCTURE
MLPn STA. 154+69.02

SC Sta. 153+32

R/W

MLPn-2
P.I. Sta= 156+33.68
Dc= 7°45'00.00"
R= 739.86'
Delta= 44°15'46.82"(LT)
L=571.46'
Ls= 62.00'
T= 300.84'
E= 58.82'
SE=4"
MAS=70mph

PT Sta. 155+43.42 MLE

NS BRIDGE
CT-0.95

EXIST SURVEY ℄ MLE TRK
IN SERVICE DURING STAGE 1A

**CURVE MLPn-2
Dc = 7° 45' 00"

MLPn-2

MLE

MLPn

END NEW STRUCTURE
MLPn STA. 156+93.35

BUILD NEW MLPn TRACK
TRACK ON EMBANKMENT

4

MATCHLINE STA 158+00

**FOR GREATER DETAIL SEE ALSO CURVE DATA, GEOMETRY TABULATIONS AND PROFILES

PVI 155+70.07
Elev 560.30
L 400.00'
R -0.95

PVC 153+70.07
Elev 556.91

PROPOSED PROFILE
TOP OF LOW RAIL
MLPn TRACK

Gr=1.69%

Gr=-2.10%

PVT 157+70.07
Elev 556.10

END REMOVAL
MLE STA 153+24

EXISTING TRACK

EXISTING GROUND

I - 75

565
560
555
550
545
540
535
530

538.2 555.73
534.3 557.38
529.3 558.31
529.3 558.30
541.2 557.34
531.2 555.47

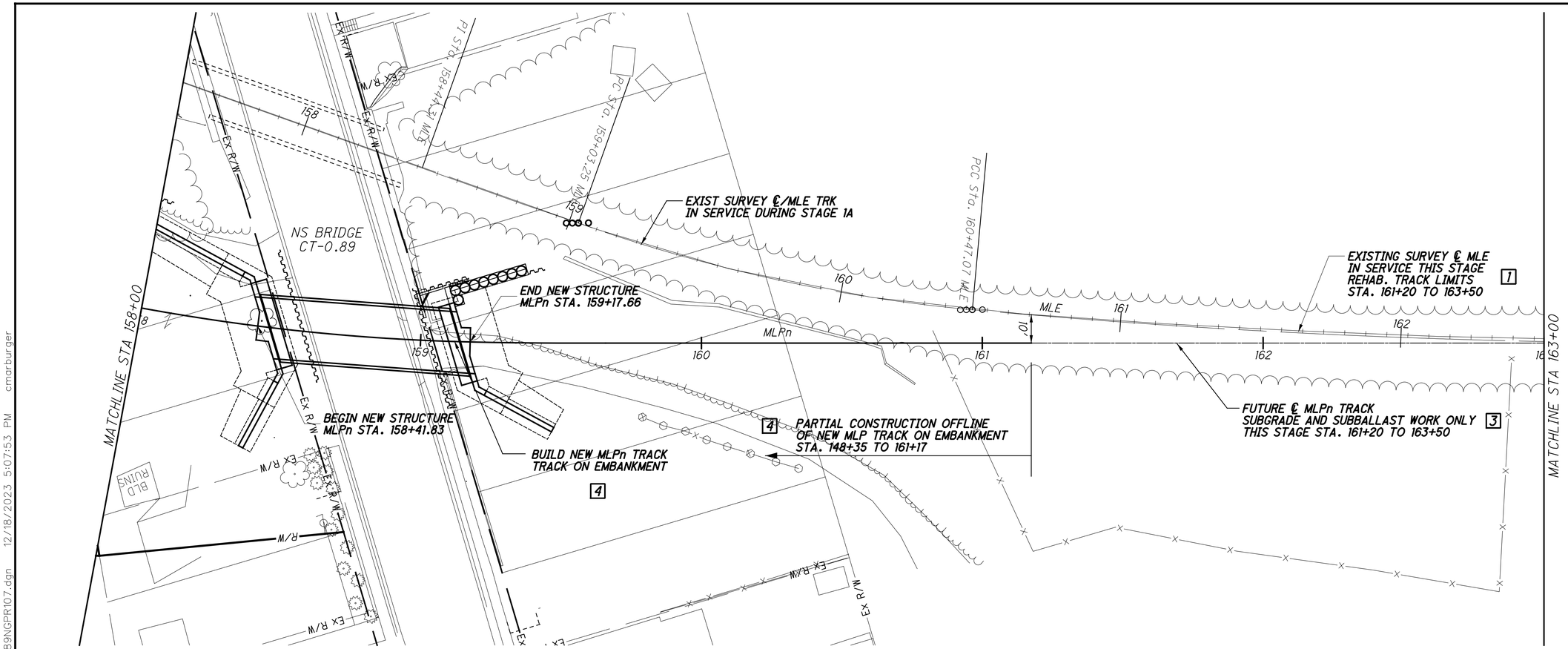
153+00
154+00
155+00
156+00
157+00
158+00

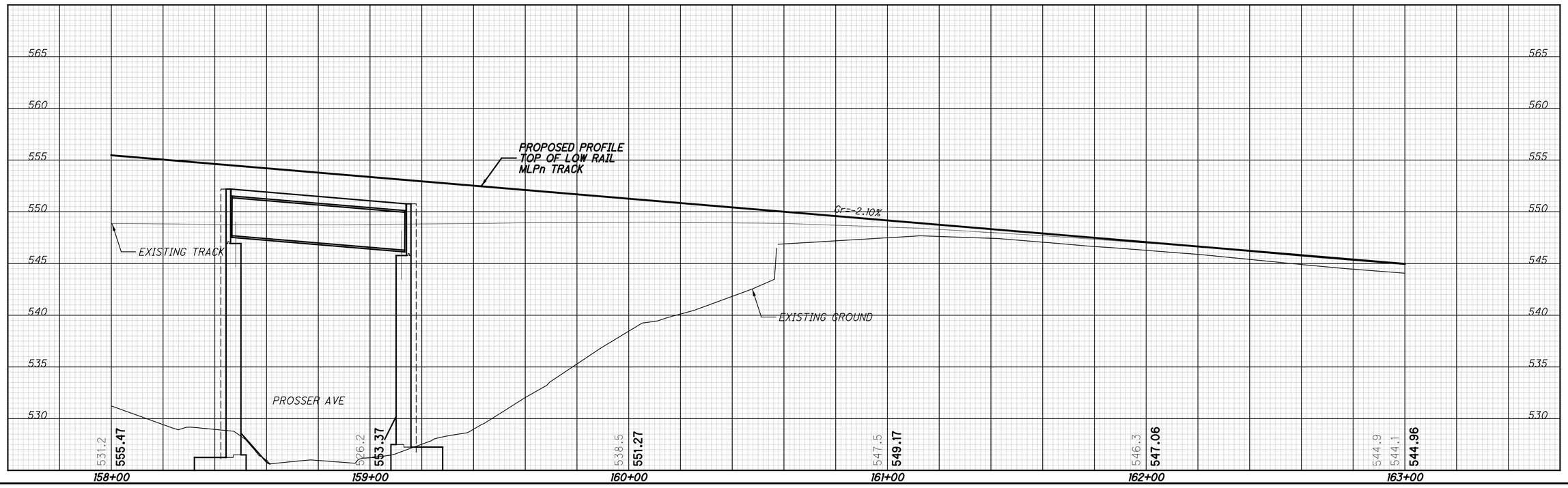
0 10 20 40 HORIZONTAL SCALE IN FEET

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 1A
NSRR - STA 153+00 TO STA 158+00

HAM-75-7.85





HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 1A
NSRR - STA 158+00 TO STA 163+00

HAM-75-7.85

92/133

245/286

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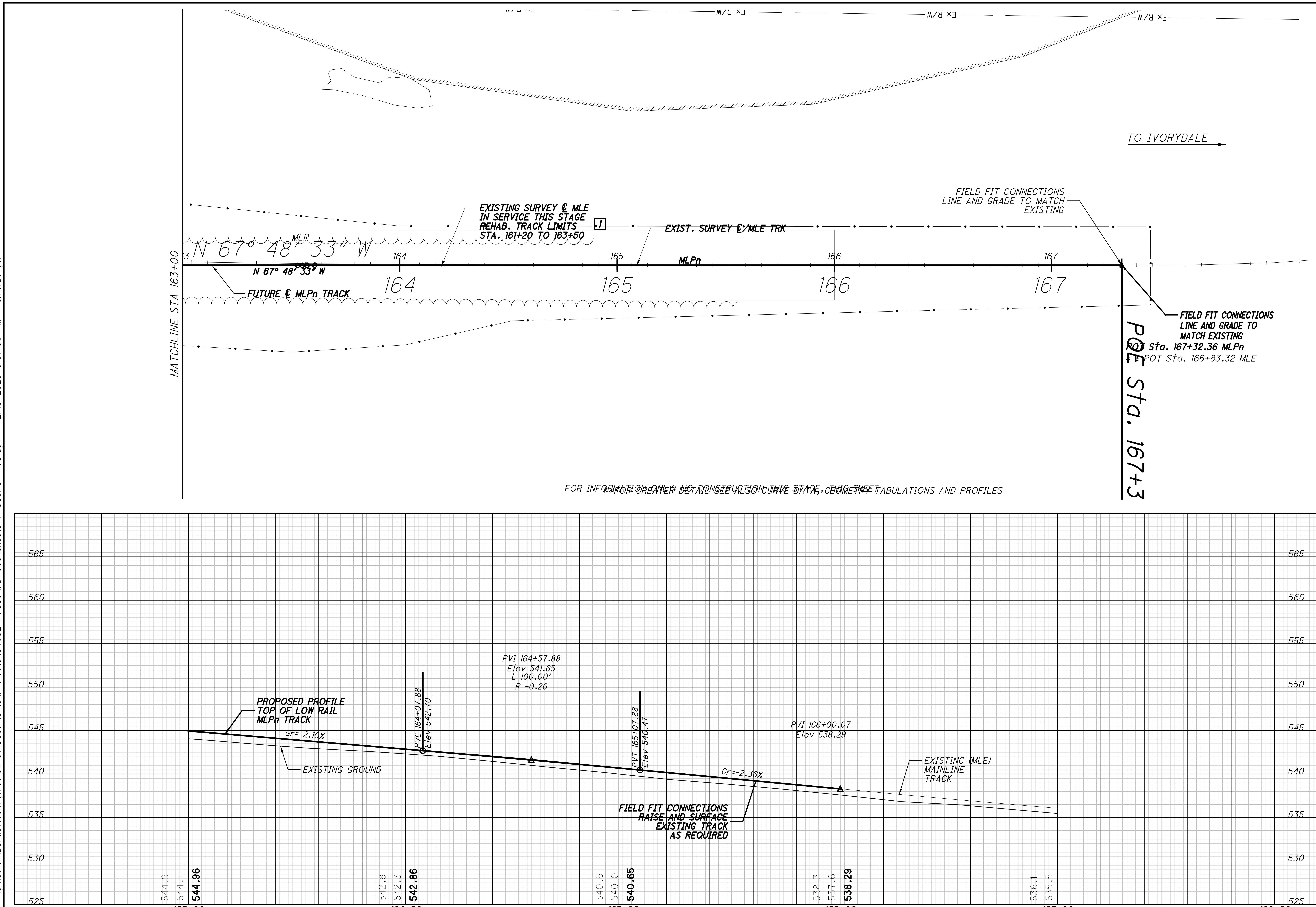

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 1A
NSRR - STA 163+00 TO STA 168+00

HAM-75-7.85

93/133

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Ex R/W
Ex L.A-R/W
TO IDLEWILD
Ex U
STAGED MLPt CONSTRUCTION COORDINATE OUTAGES WITH NORFOLK SOUTHERN
D TRACK IN SERVICE DURING CONSTRUCTION SERVING AS DETOUR TRACK STAGES 1A , 1B & 2A
14'-0"
MLPt STA 128+70
INITIAL BUILD TO CLEAR POINTS
FUTURE ℄ TRACK MLPt FOR INFORMATION ONLY CONSTRUCTED IN STAGE 2A
EXIST. SURVEY ℄/MLE TRK
FUTURE MLPt TURNOUT TO BE INSTALLED STAGE 2A
#10 RH
TMP
L.A-R/W
NORWOOD LATERAL
SR 562
CONNECTION TO BRICK YARD TO BE MAINTAINED AT ALL TIMES COORDINATE CONSTRUCTION TO MINIMISE OUTAGES
DEMO TRACKS D3 & D4 AS NECESSARY 3
MLE STA 130+97 OFFSET 39.34' LT
PARTIAL CONSTRUCTION OF TEMPORARY TRACK TD8 1
CONSTRUCT MLPt LEAD TRACK AND #10 TURNOUTS INCLUDING TEMPORARY TURNOUT FOR TEMPORARY TRACK TD8 1
EQ 130+89.98 MLPt BK = A 130+89.25 MLPt AHD
TD8
TD8-1
MATCHLINE STA 132+00
1 SUB-STAGE SEQUENCE OF CONSTRUCTION
SEE ALSO SEQUENCING SHEET 157
**SEE GEOMETRY TABULATIONS AND ALIGNMENT DRAWINGS

PVI 126+35.67
Elev 551.54
FIELD FIT CONNECTIONS RAISE AND SURFACE EXISTING TRACK AS REQUIRED
EXISTING MAINLINE TRACK
EML 126+80.79 = PS SIDING 0+00
EQUATION POT EML 127+03.27 BK = POT MLPt 127+03.26 AH
POT EML 127+03.27 = POT MLPt 127+03.26 = PS PD 4+00
Gr=-0.34%
EXISTING MAINLINE TRACK
PVC 128+20.56 Elev 550.92
PVI 128+55.56 Elev 550.80 L 70.00' R 1.65
BEGIN CONST MLPt STA 128+70
PVT 128+90.56 Elev 551.09
PROPOSED PROFILE TOP OF RAIL Gr=0.82%
PVC 129+49.37 Elev 551.57
PVI 129+83.37 Elev 551.85 L 68.00' R 1.56
PVT 130+17.37 Elev 551.77
EQUATION POT MLPt 130+89.98 BK = POT MLPt A 130+89.24 AH
POT MLPt 130+20.32 = PS TD8 0+00
POT MLPt A 131+30.97 = PS PD4 0+00 = POT MLP 131+30.98
Gr=-0.24%
EXISTING MAINLINE TRACK
EXISTING GROUND
NORWOOD LATERAL S.R. 562
MLPt
565 560 555 550 545 540 535 530
551.1 551.32 | 550.7 550.99 | 550.6 551.16 | 550.7 551.78 | 550.7 551.59 | 551.56 | 550.9 551.32
127+00 128+00 129+00 130+00 131+00 132+00

HORIZONTAL SCALE IN FEET 0 10 20 40
CALCULATED JRG CHECKED RC

TRACK CONSTRUCTION STAGE 1B
NSRR - STA 127+00 TO STA 132+00

HAM-75-7.85

94/133
247/286

ESTIMATED TRACK WORK THIS STAGE					
TRACK	C/T	REALIGN	CONSTRUCTION	TURNOUTS	TRACK REMOVAL
D8	0 TF	0 TF	0 TF	-	0 TF
D4	-	-	-	-	271 TF
D3	-	-	-	-	388 TF
PD4	0 TF	321 TF	423 TF	(2) #10 RH	118 TF
PD3	0 TF	243 TF	293 TF	-	94 TF
PD2	0 TF	192 TF	313 TF	#10 RH	94 TF
PD1	75 TF	120 TF	80 TF	(2) #10 RH	0 TF
MLP†	0 TF	282 TF	716 TF	-	0 TF
PB	0 TF	269 TF	200 TF	#10 RH	0 TF
PB1	78 TF	171 TF	90 TF	-	0 TF
MLE	0 TF	0 TF	0 TF	-	0 TF
TD8	0 TF	0 TF	242 TF	#10 RH	0 TF

TRACK WORK LEGEND

EXISTING TRACK
SHIFT TRACK
REMOVE TRACK
PROPOSED TRACK

TRACKS IN SERVICE
D/D7, D5, D8
STAGE 1B

CONNECTION TO BRICK YARD TO BE MAINTAINED AT ALL TIMES COORDINATE CONSTRUCTION TO MINIMISE OUTAGES

COORDINATE CONSTRUCTION TO MINIMISE OUTAGE TO BRICK TRACK 'D8'/'TD8'/'PD8'

REMOVE TRACKS AS REQUIRED DURING NEW TRACK CONSTRUCTION (TYP)

MLE STA 132+00 OFFSET 53.87' LT

DEMO TRACKS D3 & D4 [3]

PARTIAL CONSTRUCTION TEMPORARY TRACK TD8 TO CLEAR [1]

END INITIAL REMOVAL, BEGIN FINAL REMOVAL MLE STA 134+59 OFFSET 52.67' LT [4]

END INITIAL REMOVAL, BEGIN FINAL REMOVAL MLE STA 134+70 OFFSET 39.73' LT

BEGIN REMOVAL MLE STA 134+95 OFFSET 26.69' LT

D TRACK IN SERVICE SERVING AS DETOUR TRACK STAGES 1A, 1B & 2A

D5 TRACK IN SERVICE DURING STAGES 1A & 1B

TRACKS D3 & D4 IN SERVICE STAGES 1A & 1B UNTIL CUT & THROW

PLACE NEW TRACKS PD2, PD3, AND PD4 IN SERVICE, STUB ENDED AFTER STAGE 1B [4]

END REMOVAL, BEGIN REALIGN/SHIFT PD4 STA 4+55 5

END REMOVAL, BEGIN REALIGN/SHIFT PD3 STA 3+24

END REMOVAL, BEGIN REALIGN/SHIFT PD2 STA 3+44

BEGIN C/T MLE STA 136+22 OFFSET 14.02' LT

END C/T, BEGIN REALIGN/SHIFT PD1 STA 2+15

END NEW CONST, BEGIN REALIGN/SHIFT MLE STA 135+92

END NEW CONST, BEGIN REALIGN/SHIFT PB STA 2+31

BEGIN C/T MLE STA 135+92 OFFSET 26.03' RT [4]

CUT AND THROW TRACKS AS REQUIRED

END C/T BEGIN REALIGN/SHIFT STA 2+08

PLACE NEW TRACKS MLE, PD1, PB, PB1 IN SERVICE, STUB ENDED AFTER STAGE 1B [4]

CONSTRUCT NEW TRACK, NEW TIES, RAIL AND OTM PB, PB1, MLP†/s, PD1, PD2, PD3, PD4 AND INSTALL #10 TURNOUTS AS INDICATED [1]

CONSTRUCT NEW TRACK, NEW TIES, RAIL AND OTM PB, PB1, MLP†/s, PD1, PD2, PD3, PD4 AND INSTALL #10 TURNOUTS AS INDICATED [1]

**SEE GEOMETRY TABULATIONS AND ALIGNMENT DRAWINGS

MATCHLINE STA 132+00

MATCHLINE STA 137+50

Ex R/W

Sta. 134+11.50 MLE

D8 D8A D7B D D5 D4 D3 PD4 PD3 PD2 PD1 PB PB1 MLPs MLP† PD4-1 PD3-1 PD2-1

A 133+00 A 134+00 A 135+00 A 136+00 A 137+00

#10 RH

1 N04°31'57"W

14'-3" 20'-9" 13'-0" 13'-4" 12'-7" 12'-6"

POT MLP† A 132+42.38 =
PS PD2 0+00 =
POT MLP 132+42.38 =

POT MLP† 133+53.77 =
PS PB 0+00 =
POT MLP 133+53.78

POT MLP† A 134+83.42 =
PS PD1 0+00 =
POT MLP 134+83.42

PROPOSED PROFILE

EXISTING MAINLINE TRACK

Gr=-0.24%

EXISTING GROUND

PVC A 137+36.11
Elev 550.01

SEE SHEETS 36 - 43 FOR ADDITIONAL TRACK PROFILES

565 560 555 550 545 540 535 530 525

550.9 551.32 550.7 551.08 550.4 550.83 550.5 550.59 550.3 550.35 550.1 550.10

132+00 133+00 134+00 135+00 136+00 137+00

MLP†

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JRG CHECKED RC

TRACK CONSTRUCTION STAGE 1B
NSRR - STA 132+00 TO STA 137+50

HAM-75-7.85

95 / 133

248 / 286

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TRACKS IN SERVICE
D/D7, D5, D8
STAGE 1B

ESTIMATED TRACK CAPACITY THIS STAGE

TRACK	STORAGE LENGTH	
D	N/A	
D5	700 TF	
D4*	300 TF	
D3*	440 TF	
D2*	580 TF	
D1*	610 TF	
MLE*	480 TF	TEMP. O.O.S.
B*	450 TF	TEMP. O.O.S.
B1*	500 TF	TEMP. O.O.S.
		*STUB END

D8A
D7B
D
D5
D4
D3
D2
D1
MLE
B
B1

D TRACK IN SERVICE
SERVING AS DETOUR TRACK
STAGES 1A, 1B & 2A

MATCHLINE STA 137+50
MATCHLINE STA 143+00

PD4
PD3
PD2
RD1
MLPs
PB
PB1

7
5
13'-4"
3
A 138+00
13'-6"
138
4
13'-2"
13'-3"

END REALIGN/SHIFT
PD4 STA 7+76
END REALIGN/SHIFT
PD3 STA 5+67
END REALIGN/SHIFT
PD2 STA 5+36
END REALIGN/SHIFT
PD1 STA 3+33
FIELD FIT CONNECTIONS
LINE AND GRADE TO MATCH
EXISTING (TYPICAL)
1
A 138+68
139
140
141
142
143
EXIST. SURVEY ℄/MLE TRK
END REALIGN/SHIFT
MLPs STA 138+68
END REALIGN/SHIFT
PB STA 5+00
END REALIGN/SHIFT
PB1 STA 3+00

Ex R/W

PVI A 137+86.11
Elev 549.89
L 100.00'
R 0.26
PROPOSED
PROFILE
TOP OF RAIL
PVT A 138+36.11
Elev 549.90
PVI A 138+88.87
Elev 549.91
Gr=0.02%
EXISING
GROUND
FIELD FIT CONNECTIONS
RAISE AND SURFACE
EXISTING TRACK
AS REQUIRED
EXISTING
MAINLINE
TRACK
EXISTING GROUND
MLP†
549.91

565
560
555
550
545
540
535
530
525

138+00
139+00
140+00
141+00
142+00
143+00

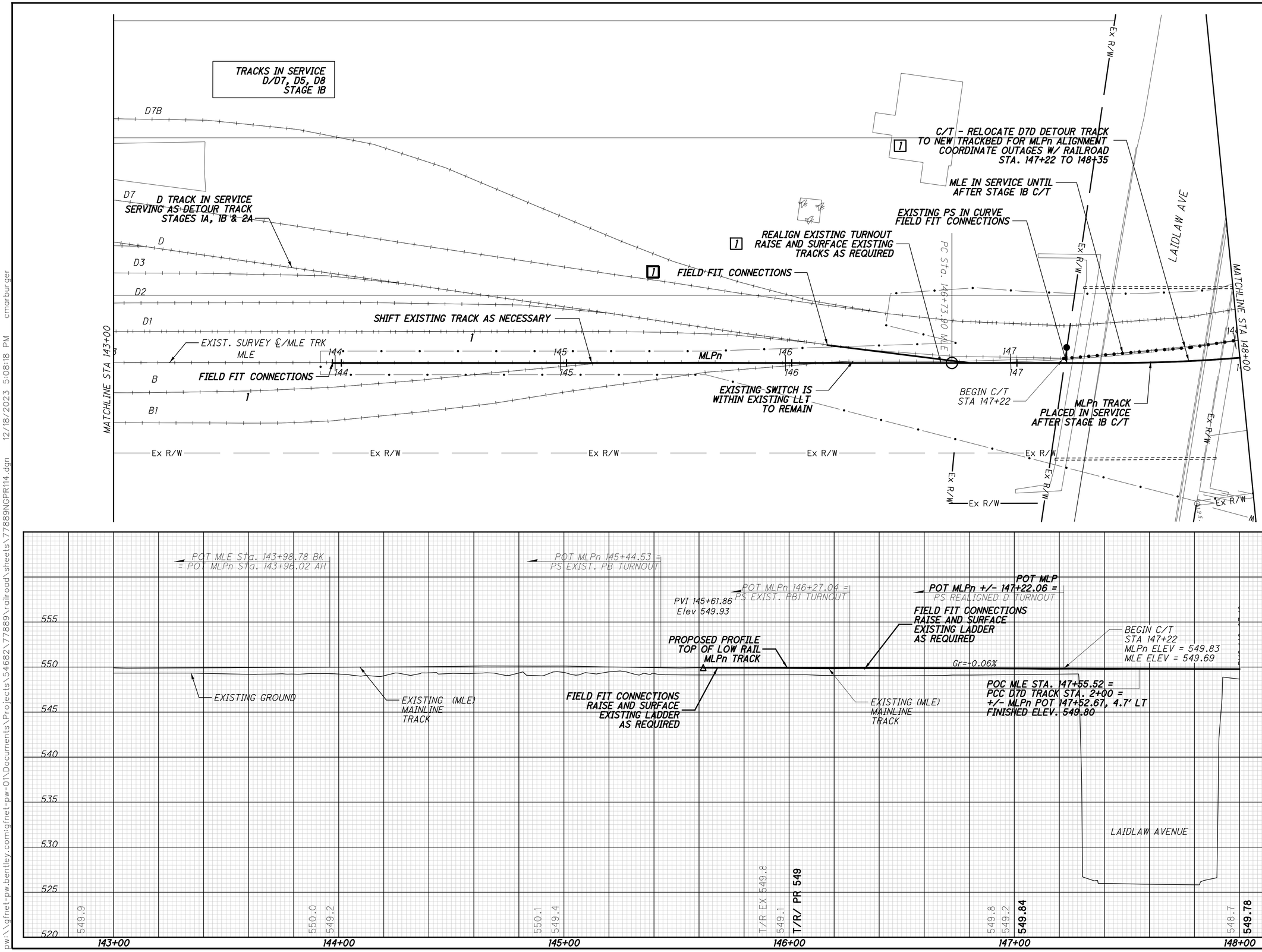
HORIZONTAL
SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 1B
NSRR - STA 137+50 TO STA 143+00

HAM-75-7.85

96/133
249/286



HORIZONTAL
SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 1B
NSRR - STA 143+00 TO STA 148+00

HAM-75-7.85

97/133

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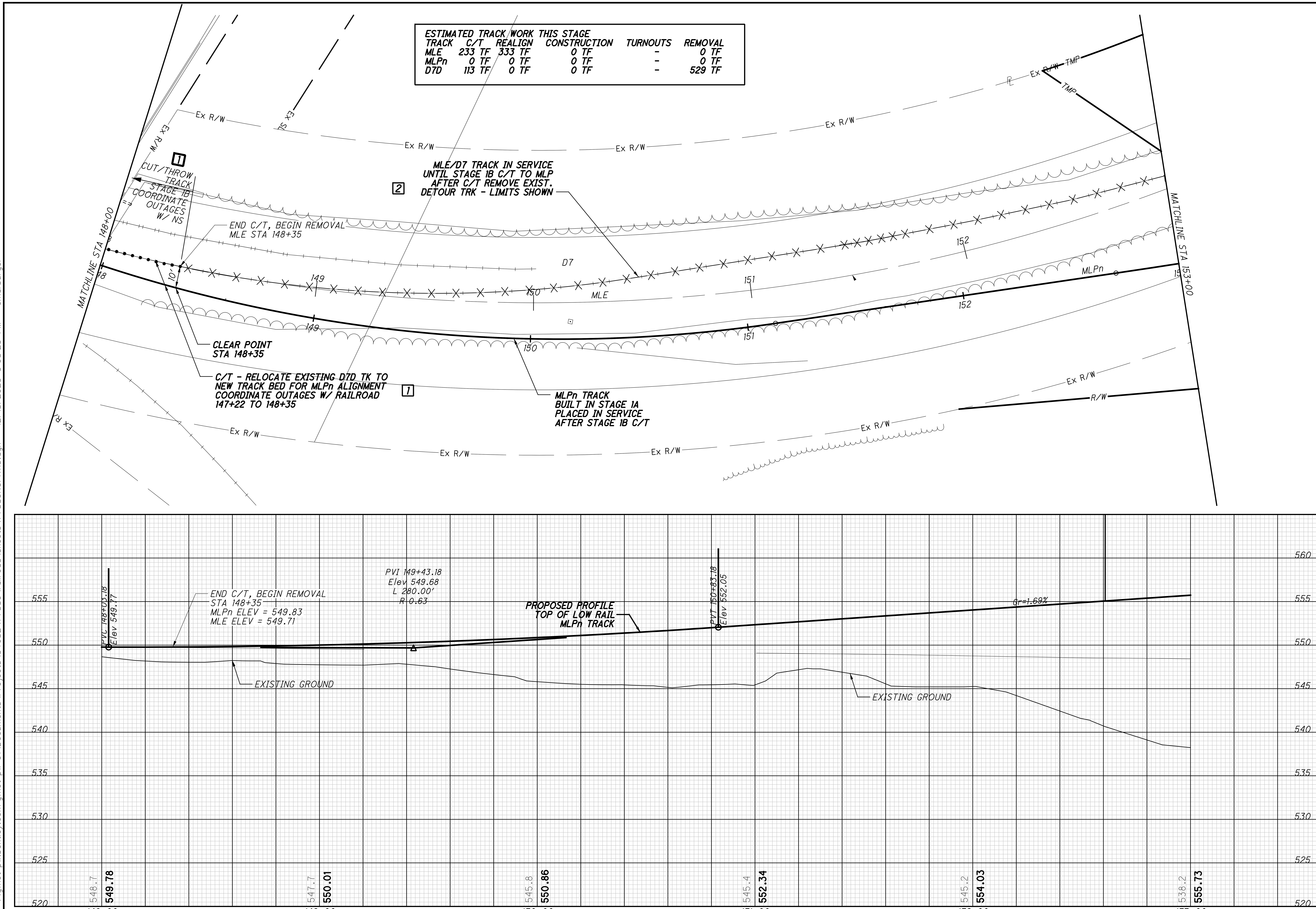
ESTIMATED TRACK WORK THIS STAGE

TRACK	C/T	REALIGN	CONSTRUCTION	TURNOUTS	REMOVAL
MLE	233 TF	333 TF	0 TF	-	0 TF
MLPn	0 TF	0 TF	0 TF	-	0 TF
D7D	113 TF	0 TF	0 TF	-	529 TF



Ex R/W
Ex R/W
Ex R/W
Ex R/W
Ex R/W TMP
TMP
Ex SL
1
CUT/THROW TRACK STAGE 1B COORDINATE OUTAGES W/ NS
2
MLE/D7 TRACK IN SERVICE UNTIL STAGE 1B C/T TO MLP AFTER C/T REMOVE EXIST. DETOUR TRK - LIMITS SHOWN
END C/T, BEGIN REMOVAL MLE STA 148+35
MATCHLINE STA 148+00
MATCHLINE STA 153+00
10'
D7
MLE
MLPn
149
150
151
152
CLEAR POINT STA 148+35
C/T - RELOCATE EXISTING D7D TK TO NEW TRACK BED FOR MLPn ALIGNMENT COORDINATE OUTAGES W/ RAILROAD 147+22 TO 148+35
1
MLPn TRACK BUILT IN STAGE 1A PLACED IN SERVICE AFTER STAGE 1B C/T
R/W
Ex R/W
PVI 149+43.18
Elev 549.68
L 280.00'
R 0.63
PVC 148+05.18
Elev 549.77
END C/T, BEGIN REMOVAL
STA 148+35
MLPn ELEV = 549.83
MLE ELEV = 549.71
PROPOSED PROFILE TOP OF LOW RAIL MLPn TRACK
PVT 150+83.18
Elev 552.05
Gr=1.69%
EXISTING GROUND
EXISTING GROUND
560
555
550
545
540
535
530
525
520
548.7
549.78
547.7
550.01
545.8
550.86
545.4
552.34
545.2
554.03
538.2
555.73
148+00
149+00
150+00
151+00
152+00
153+00

HORIZONTAL SCALE IN FEET 0 25 50 100

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 1B
NSRR - STA 148+00 TO STA 153+00

HAM-75-7.85

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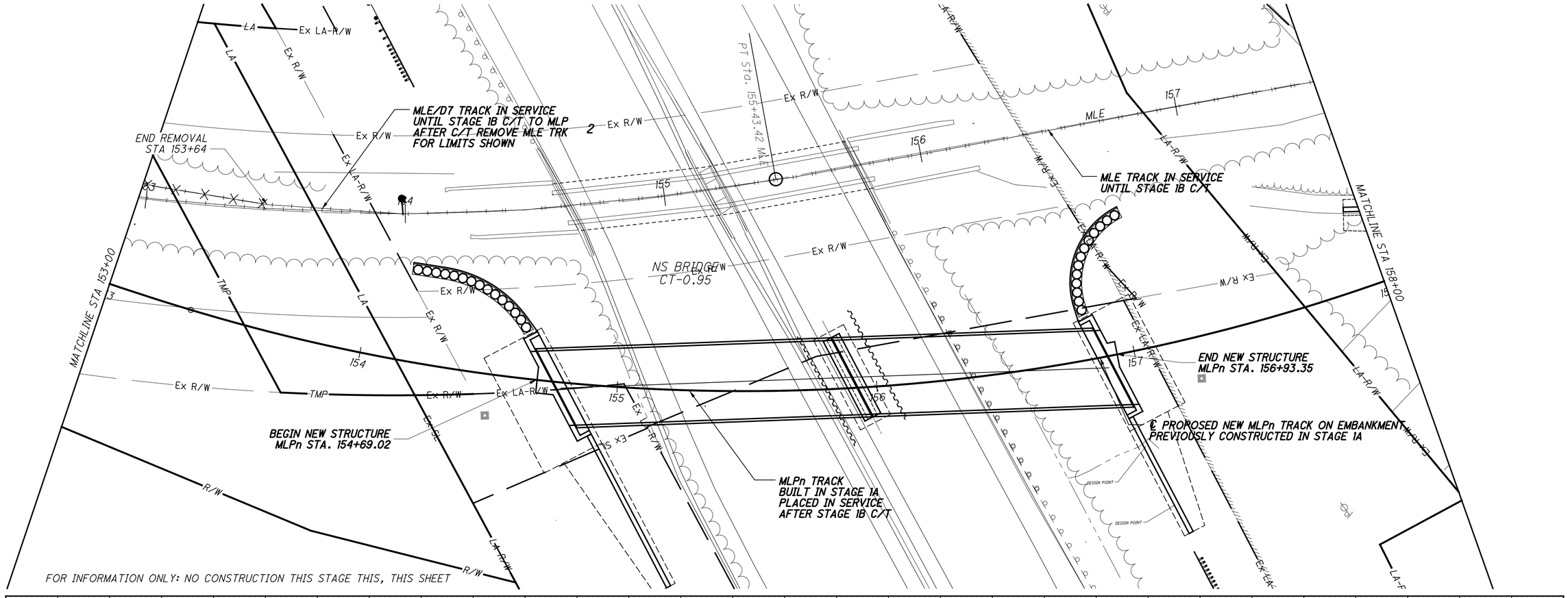

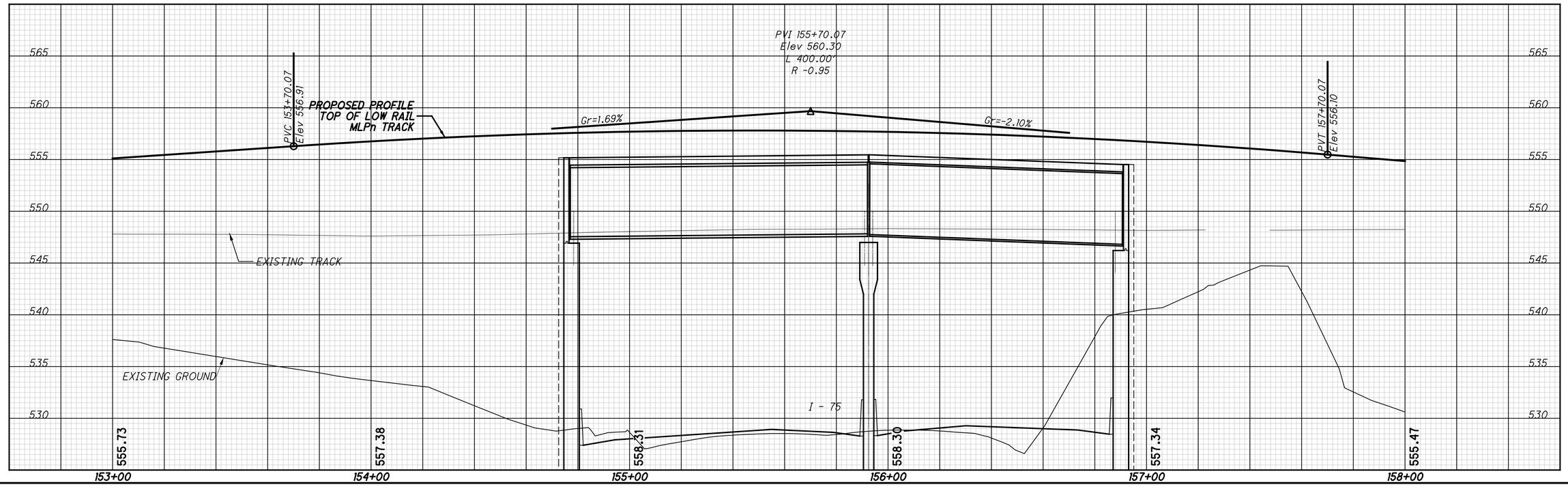

TRACK CONSTRUCTION STAGE 1B
NSRR - STA 153+00 TO STA 158+00

HAM-75-7.85

99/133

252/286

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

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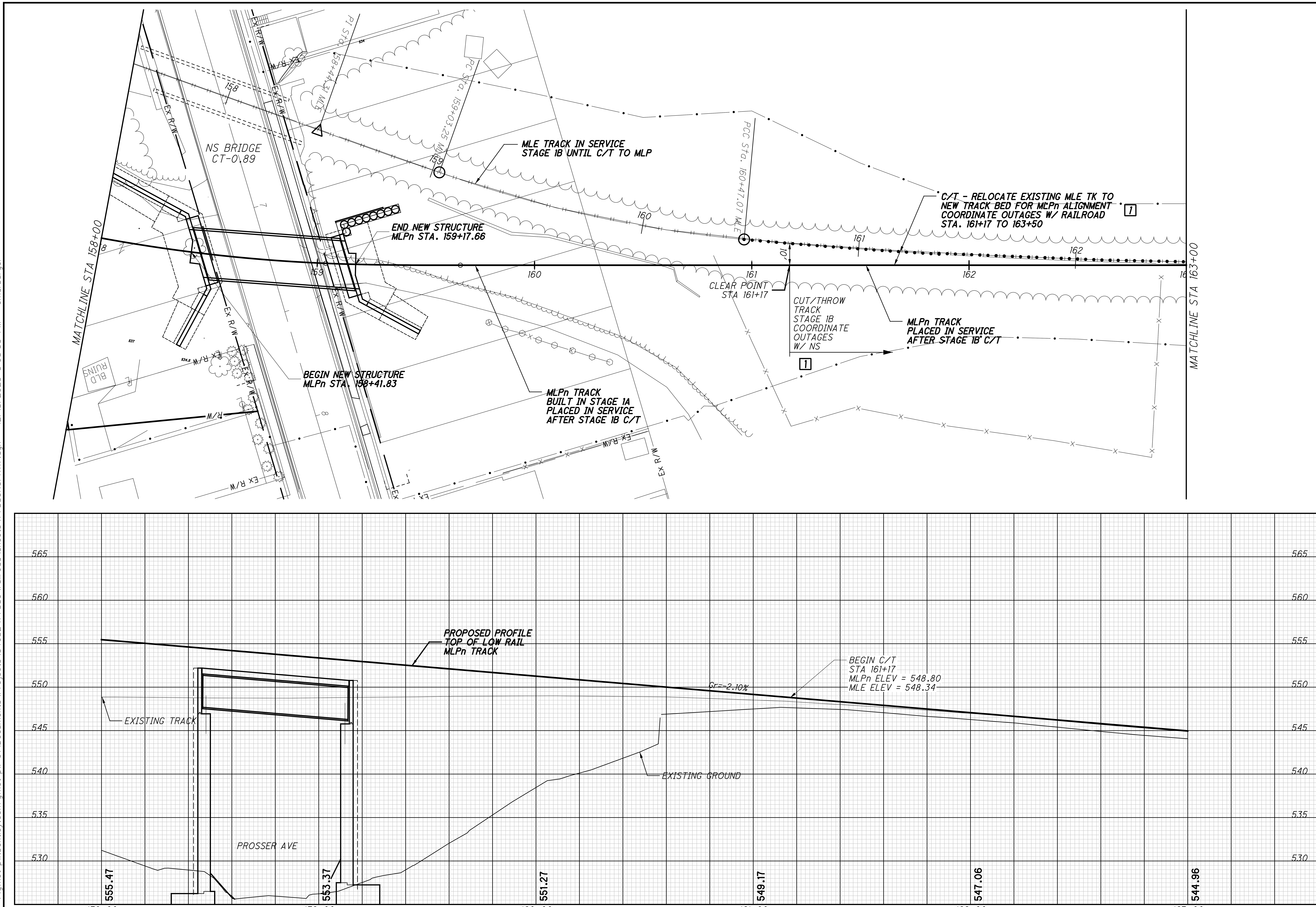
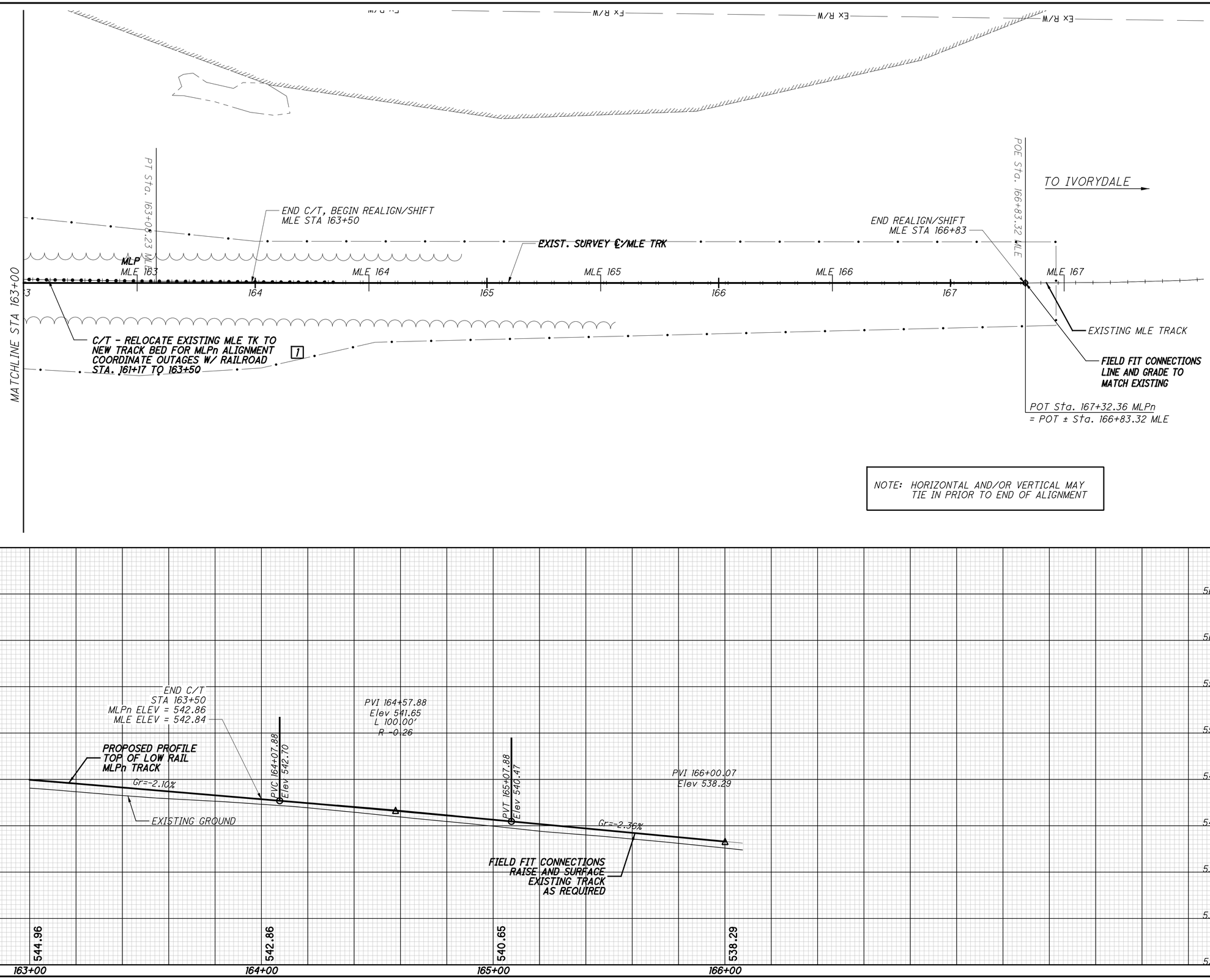


0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 1B
NSRR - STA 158+00 TO STA 163+00

HAM-75-7.85

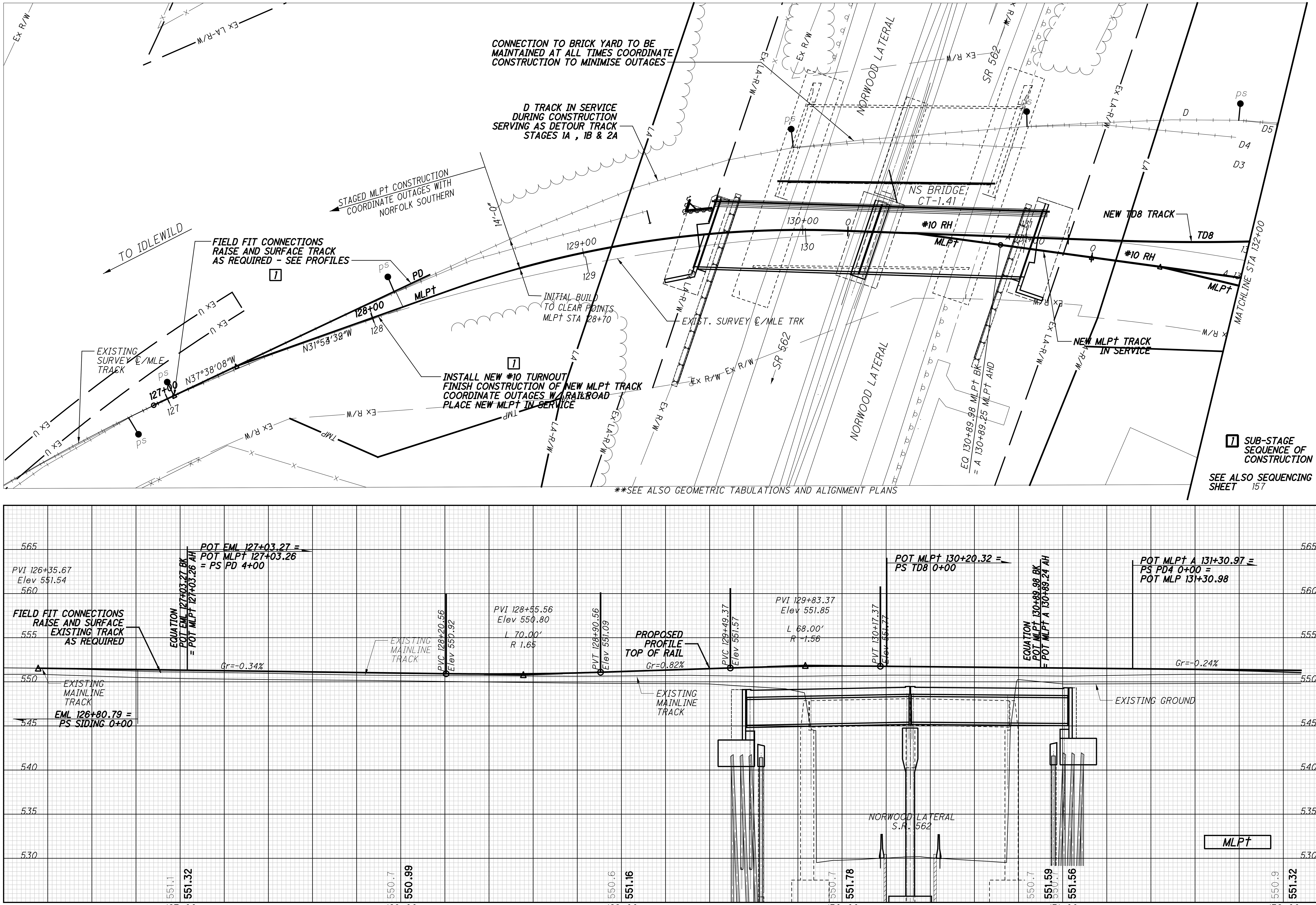


HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 1B
NSRR - STA 163+00 TO STA 168+00

HAM-75-7.85



HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED JRG CHECKED RC

TRACK CONSTRUCTION STAGE 2A
NSRR - STA 127+00 TO STA 132+00

HAM-75-7.85

ESTIMATED TRACK WORK THIS STAGE						
TRACK	C/T	REALIGN	CONSTRUCTION	NEW T.O.	TRACK REMOVAL	T.O. REMOVAL
D8	102 TF	0 TF	0 TF	-	0 TF	-
D	0 TF	0 TF	0 TF	-	117 TF	-
D5	0 TF	0 TF	0 TF	-	210 TF	-
D4	0 TF	0 TF	0 TF	-	0 TF	-
D3	0 TF	0 TF	0 TF	-	0 TF	-
MLP†/s	0 TF	166 TF	0 TF	#10 RH	0 TF	#10 RH
TD8	0 TF	0 TF	157 TF	-	0 TF	-

TRACK WORK LEGEND
EXISTING TRACK
SHIFT TRACK
REMOVE TRACK
PROPOSED TRACK

BEGIN REMOVAL MLE STA 133+35 OFFSET 77.60' LT
BEGIN REMOVAL MLE STA 132+40 OFFSET 64.70' LT
CONNECTION TO BRICK YARD TO BE MAINTAINED AT ALL TIMES COORDINATE CONSTRUCTION TO MINIMIZE OUTAGES
BEGIN C/T MLE STA 134+14 OFFSET 97.41' LT
END C/T MLE STA 135+18 OFFSET 121.53' LT
CUT & THROW TRACK TO NEW TEMPORARY TRACK TD8 ALIGNMENT AT END OF STAGE 2A 6
END REMOVAL MLE STA 134+44 OFFSET 78.51' LT
END REMOVAL MLE STA 134+35 OFFSET 64.98' LT
DEMO AND REMOVE YARD TRACKS D3 & D4 AS REQ. AFTER NEW MLP† & YARD IS PLACED IN SERVICE 4
CONSTRUCT TEMPORARY TRACK TD8 AFTER YARD TRACKS ARE REMOVED 5
NEW TD8 TRACK
NEW YARD TRACKS PB, PB1, MLP†/s, PD1, PD2, PD3, PD4 IN SERVICE
TAKE EXISTING TRACKS D5 & D OUT OF SERVICE 3
PLACE IN SERVICE NEW MLP† TRACK & NEW YARD TRACKS 2
NEW MLP† TRACK IN SERVICE
MATCHLINE STA 132+00
MATCHLINE STA 137+50
Ex R/W
TMP
D8 D8A D7B D D5 D4 D3 D2 D1 PD4 PD3 PD2 PD1 MLP† PB PB1 MLE
A 133+00 A 134+00 A 135+00 A 136+00 A 137+00
#10 RH
Sta. 134+11.50 MLE
**SEE ALSO GEOMETRIC TABULATIONS AND ALIGNMENT PLANS

POT MLP† A 132+42.38 =
PS PD2 0+00 =
POT MLP 132+42.38 =

POT MLP† 133+53.77 =
PS PB 0+00 =
POT MLP 133+53.78

POT MLP† A 134+83.42 =
PS PD1 0+00 =
POT MLP 134+83.42

PROPOSED PROFILE
EXISTING MAINLINE TRACK
Gr=-0.24%
EXISTING GROUND
PVC A 137+36.11
Elev 550.01
SEE SHEETS 36 - 43 FOR ADDITIONAL TRACK PROFILES
MLP†

565 560 555 550 545 540 535 530 525
550.9 551.32 550.7 551.08 550.4 550.83 550.5 550.59 550.3 550.35 550.1 550.10
132+00 133+00 134+00 135+00 136+00 137+00

HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 2A
NSRR - STA 132+00 TO STA 137+50

HAM-75-7.85

103 / 133

256 / 286

NEW YARD TRACKS
PB, PB1, MLP†/s,
PD1, PD2, PD3, PD4
IN SERVICE

TAKE EXISTING TRACKS
D5 & D OUT OF SERVICE
3

ESTIMATED TRACK CAPACITY THIS STAGE

TRACK	STORAGE LENGTH
D*	650 TF
D5*	715 TF
PD4	700 TF
PD3	800 TF
PD2	900 TF
PD1	760 TF
MLP†	N/A
PB	680 TF
PB1	700 TF

*STUB END

MATCHLINE STA 137+50

MATCHLINE STA 143+00

D8A
D7B
D
D5
D4
D3
D2
D1
MLE
B
B1

PD4 7
PD3 5
PD2 5
PD1 3
MLP† A 138+00 A 138+68
PB 4 5
PB1 3

138 139 140 141 142 143

EXIST. SURVEY ℄/MLE TRK

Ex R/W

NEW MLP† TRACK
IN SERVICE

FOR INFORMATION ONLY: NO CONSTRUCTION THIS STAGE, THIS SHEET

PVI A 137+86.11
Elev 549.89
L 100.00'
R 0.26
PROPOSED
PROFILE
TOP OF RAIL

PVT A 138+36.11
Elev 549.90

PVI A 138+88.87
Elev 549.91

Gr=0.02%

FIELD FIT CONNECTIONS
RAISE AND SURFACE
EXISTING TRACK
AS REQUIRED

EXISTING
MAINLINE
TRACK

EXISTING (MLE)
MAINLINE
TRACK

EXISTING GROUND

MLP†

565 560 555 550 545 540 535 530 525

549.9 549.91 549.9 549.9

138+00 139+00 140+00 141+00 142+00 143+00

Existing

HORIZONTAL
SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 2A
NSRR - STA 137+50 TO STA 143+00

HAM-75-7.85

104 / 133

257
286

YARD TRACKS B, B1, MLPn/s, D1, D2, D3, D4 IN SERVICE

D7B

D7

EXISTING TRACK D7 OUT OF SERVICE

D

D3

D2

D1

B

B1

MLE

MLPn

EXIST. SURVEY ℄/MLE TRK

MATCHLINE STA 143+00

MATCHLINE STA 148+00

ps

144 145 146 147

19

20

14 15

BEGIN C/T PD7 STA 13+97

PC Sta. 148+73.00 MLE

FIELD FIT CONNECTIONS LINE AND GRADE TO MATCH EXISTING

NEW MLPn TRACK IN SERVICE

2 CUT AND THROW D7 TRACK TO NEW PD7 ALIGNMENT EOR LIMITS SHOWN

15'-2"

14'-5¾"

LAIDLAW AVE

Ex R/W

**SEE ALSO GEOMETRIC TABULATIONS AND ALIGNMENT PLANS

POT PD7 Sta. 13+88.86 = PS EXIST. D7B TURNOUT

PVI 13+21.53
Elev 549.27

EXISTING PD7

PROPOSED MLP 14' RT

PROPOSED PROFILE TOP OF RAIL

Gr=0.16%

PVC 15+67.17
Elev 549.06

FIELD FIT CONNECTIONS RAISE AND SURFACE EXISTING TRACK AS REQUIRED

BEGIN C/T
PD7 STA 13+97
PD7 ELEV = 549.31
D7 ELEV = 549.16

LAIDLAW AVENUE

555 550 545 540 535 530 525 520

548.9 549.1 549.2 549.2 **549.39** 549.5 **549.55** 549.6

11+00 12+00 13+00 14+00 15+00 16+00

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED JRG CHECKED RC

TRACK CONSTRUCTION STAGE 2A
NSRR - STA 143+00 TO STA 148+00

HAM-75-7.85

105/133

258/286

ESTIMATED TRACK WORK THIS STAGE

TRACK	C/T	REALIGN	CONSTRUCTION	NEW T.O.s	TRACK REMOVAL	T.O. REMOVAL
D7	230 TF	0 TF	0 TF	-	0 TF	1
MLE	-	-	0 TF	-	679 TF	-
PD7	-	-	313 TF	-	0 TF	-
MLPn	0 TF	-	0 TF	#10 RH	120 TF	-

LEGEND

─┼─┼─┼─	EXISTING TRACK
············	SHIFT TRACK
─×─×─×─	REMOVE TRACK
━━━━	PROPOSED TRACK

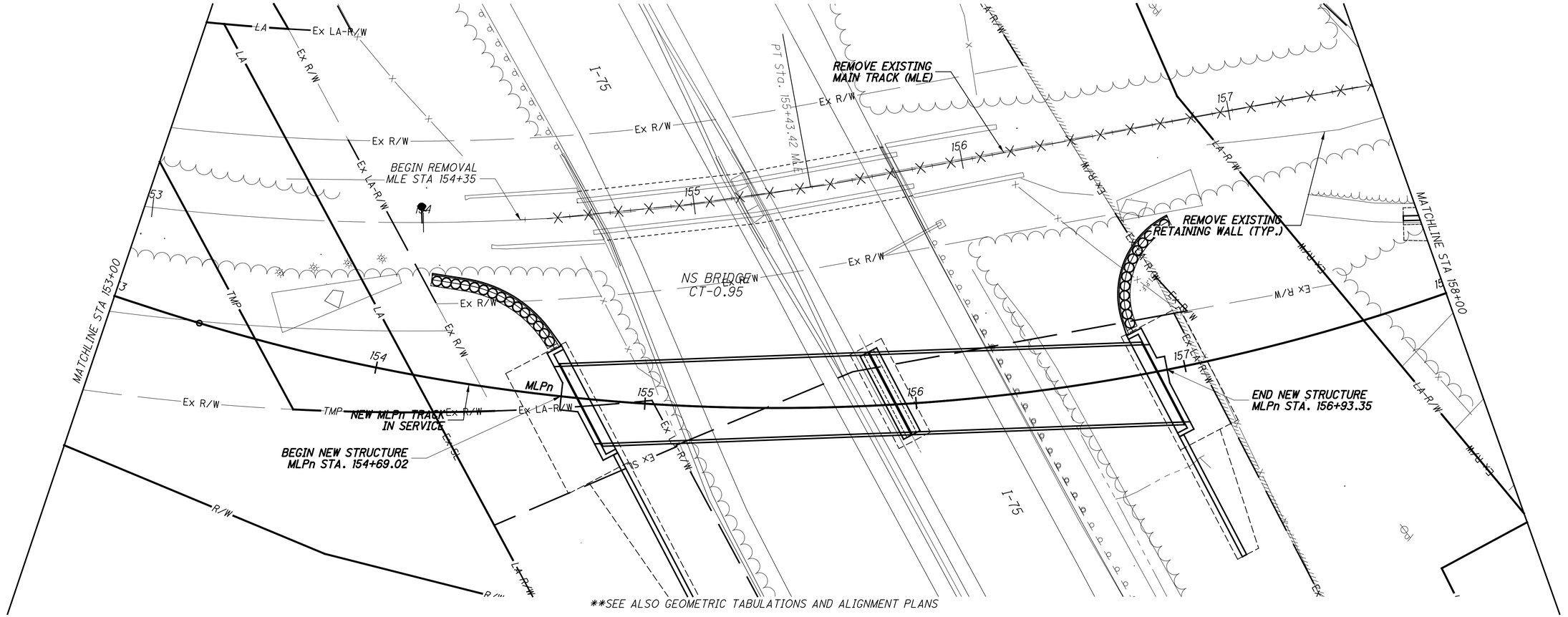
**SEE ALSO GEOMETRIC TABULATIONS AND ALIGNMENT PLANS

0 25 50 100
HORIZONTAL SCALE IN FEET

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 2A
NSRR - STA 148+00 TO STA 153+00

HAM-75-7.85



CALCULATED JRG CHECKED RC

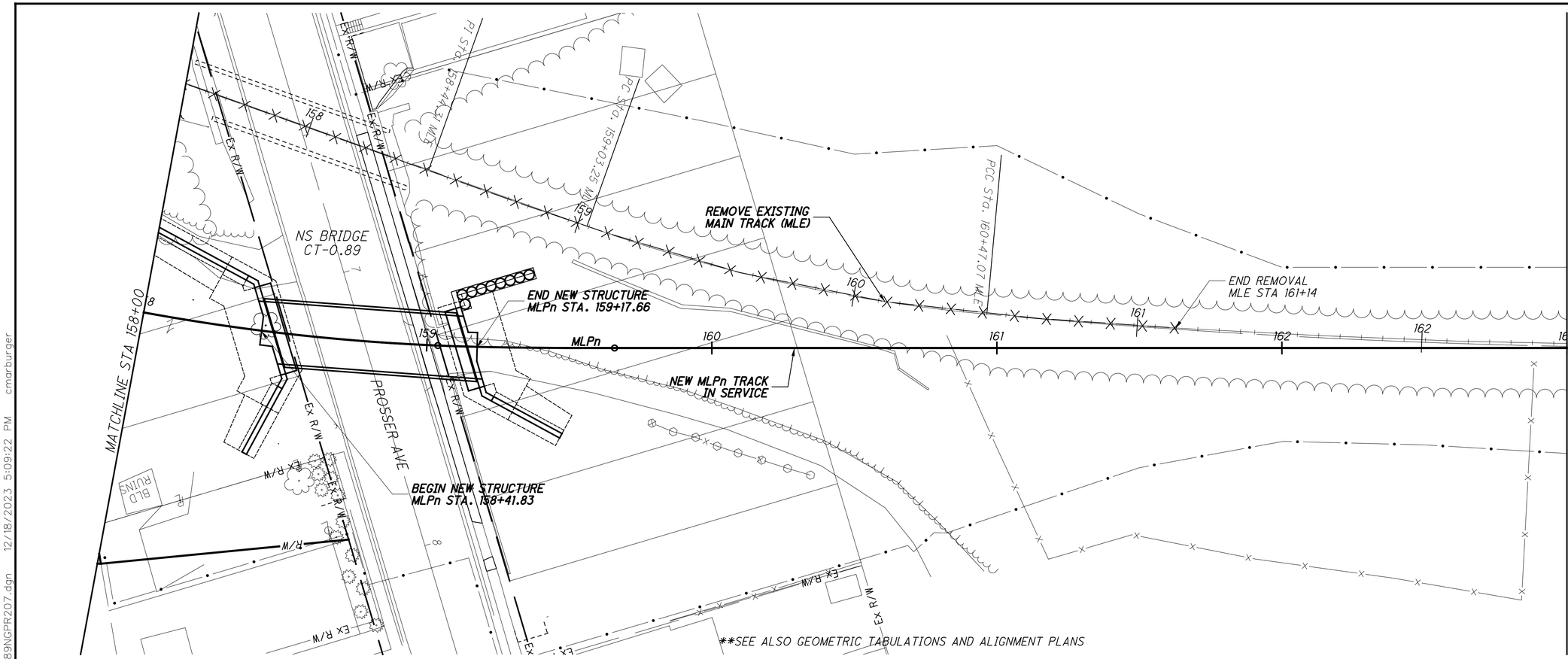
HORIZONTAL SCALE IN FEET
0 10 20 40

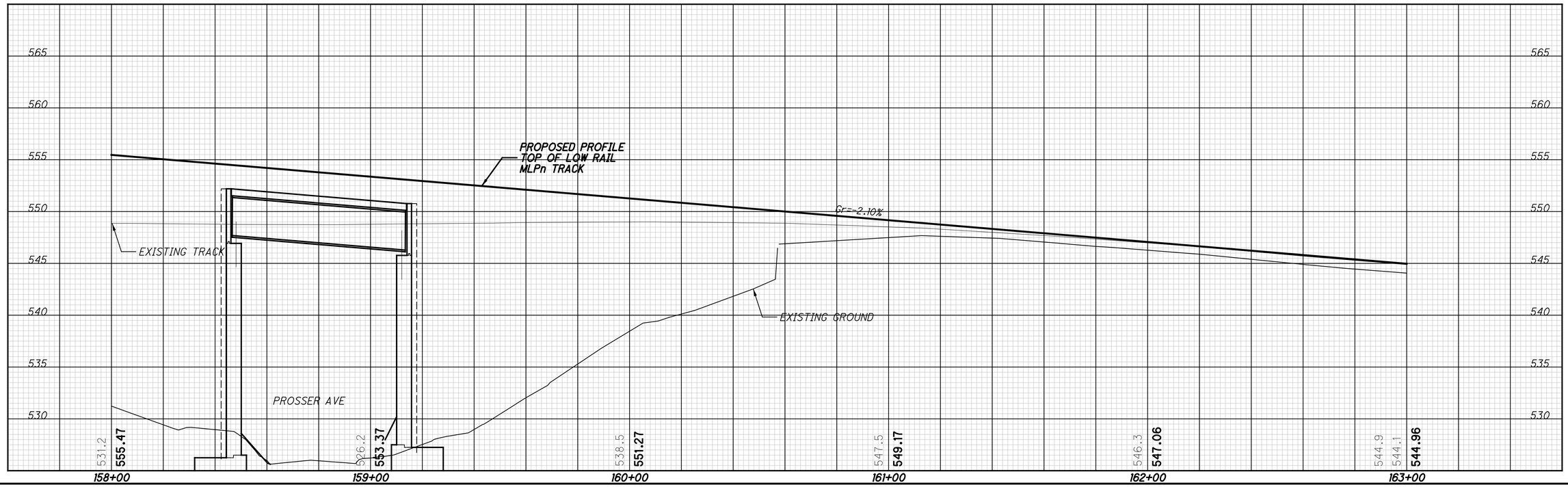
TRACK CONSTRUCTION STAGE 2A
NSRR - STA 153+00 TO STA 158+00

HAM-75-7.85

107 / 133

260 / 286





TRACK CONSTRUCTION STAGE 2A
NSRR - STA 158+00 TO STA 163+00

HAM-75-7.85

CALCULATED JRG
CHECKED RC

HORIZONTAL SCALE IN FEET
0 10 20 40

108/133
261/286

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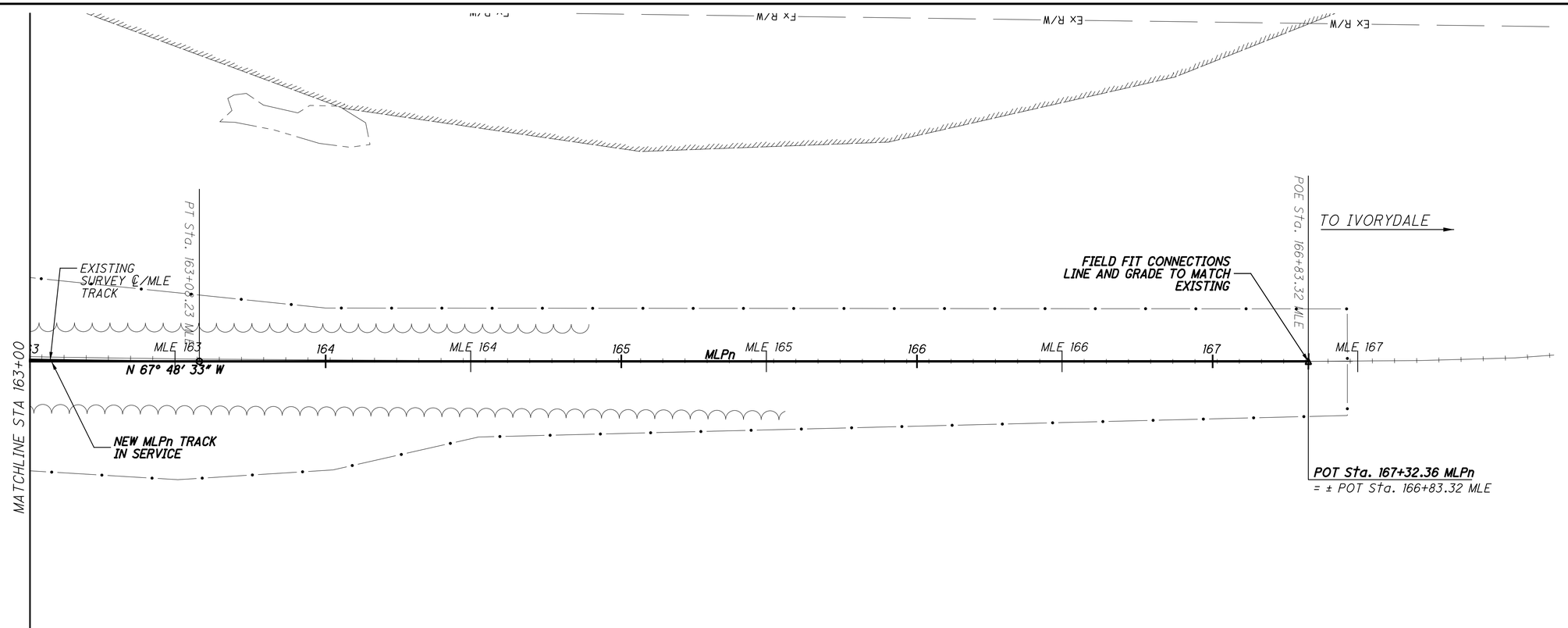
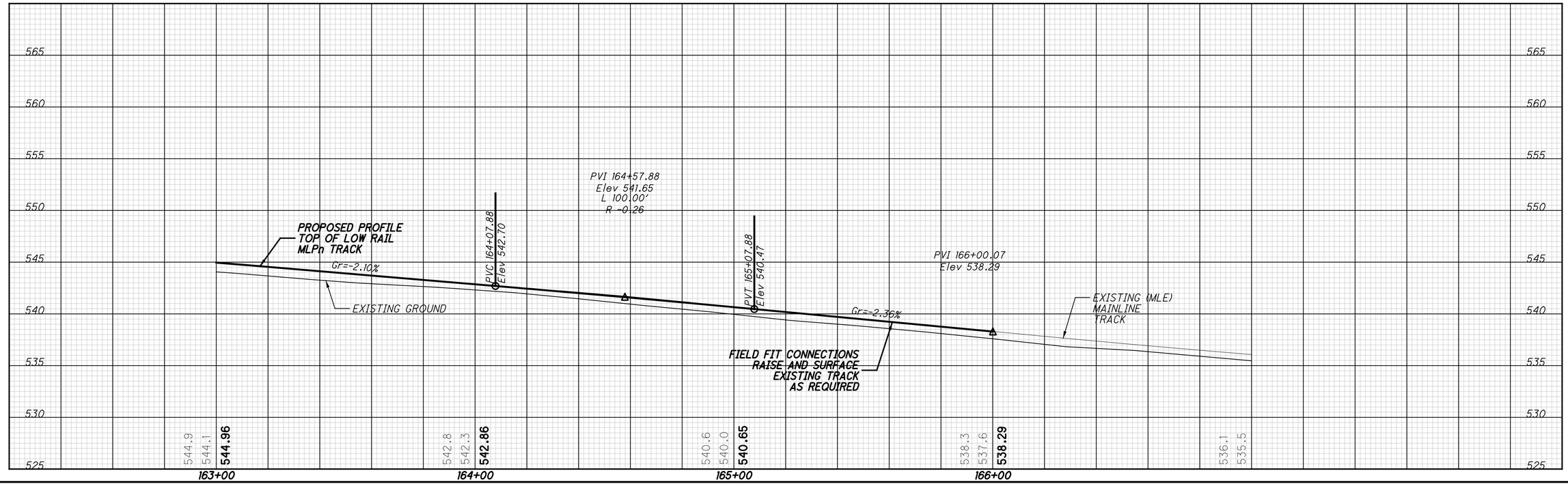


**FOR GREATER DETAIL SEE ALSO CURVE DATA, GEOMETRY TABULATIONS AND PROFILES



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 2A
NSRR - STA 163+00 TO STA 168+00

HAM-75-7.85

109 / 133

262 / 286

2 DEMO REMAINING TKS AND BRIDGE ONLY AFTER TD8 IS PLACED IN SERVICE - SEE STRUCTURES PLANS

TO IDLEWILD

BEGIN REMOVAL MLE STA 128+15 OFFSET 6.63' LT

END REMOVAL MLE STA 130+98 OFFSET 39.34' LT

TEMPORARY TRACK TD8 CONNECTION TO BRICK YARD PLACED IN SERVICE

1

NS BRIDGE CT-1.41

NEW MLPt TRACK IN SERVICE

NEW MLPt TRACK IN SERVICE

MATCHLINE STA 132+00

NORWOOD LATERAL

SR 562

EQ 130+89.98 MLPt BK = A 130+89.25 MLPt AHD

**SEE ALSO GEOMETRIC TABULATIONS AND ALIGNMENT PLANS

1 SUB-STAGE SEQUENCE OF CONSTRUCTION

SEE ALSO SEQUENCING SHEET 157

POT EML 127+03.27 = POT MLPt 127+03.26 = PS PD 4+00

EQUATION POT EML 127+03.27 BK = POT MLPt 127+03.26 AH

PVI 126+35.67 Elev 551.54

FIELD FIT CONNECTIONS RAISE AND SURFACE EXISTING TRACK AS REQUIRED

EML 126+80.79 = PS SIDING 0+00

Gr=-0.34%

EXISTING MAINLINE TRACK

PVC 128+20.56 Elev 550.92

PVI 128+55.56 Elev 550.80 L 70.00' R 1.65

PVT 128+90.56 Elev 551.09

PROPOSED PROFILE TOP OF RAIL Gr=0.82%

PVC 129+49.37 Elev 551.57

PVI 129+83.37 Elev 551.85 L 68.00' R -1.56

PVT 130+17.37 Elev 551.77

POT MLPt 130+20.32 = PS TD8 0+00

EQUATION POT MLPt 130+89.98 BK = POT MLPt A 130+89.24 AH

POT MLPt A 131+30.97 = PS PD4 0+00 = POT MLP 131+30.98

Gr=-0.24%

EXISTING GROUND

NORWOOD LATERAL S.R. 562

MLPt

551.1 551.32 | 550.7 550.99 | 550.6 551.16 | 550.7 551.78 | 550.7 551.59 | 551.56 | 550.9 551.32

127+00 128+00 129+00 130+00 131+00 132+00

565 560 555 550 545 540 535 530

TRACK CONSTRUCTION STAGE 2B
NSRR - STA 127+00 TO STA 132+00

HAM-75-7.85

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED JRG CHECKED RC

110/133

263/286

ESTIMATED TRACK WORK THIS STAGE					
TRACK	C/T	REALIGN	CONSTRUCTION	REM. T.O.	REMOVE TK
TD8	0 TF	0 TF	0 TF	-	-
D	0 TF	0 TF	0 TF	-	498 TF
D8	0 TF	0 TF	0 TF	4	141 TF

TRACK WORK LEGEND

EXISTING TRACK
SHIFT TRACK
REMOVE TRACK
PROPOSED TRACK

NEW YARD TRACKS PB, PB1, MLP†/s, PD1, PD2, PD3, PD4 & TD8 IN SERVICE

1 CUT/THROW TRACK TO MEET TEMPORARY TD8 AT END OF STAGE 2A PLACE IN SERVICE

2 DEMO REMAINING TRACKS AND TURNOUTS AFTER TEMPORARY TK TD8 IS PLACED IN SERVICE

FIELD FIT CONNECTIONS LINE AND GRADE TO MATCH EXISTING

CONNECTION TO BRICK YARD TO BE MAINTAINED AT ALL TIMES COORDINATE CONSTRUCTION TO MINIMISE OUTAGES

END REMOVAL MLE STA 134+14 OFFSET 97.41' LT

END REMOVAL MLE STA 133+89 OFFSET 78.14' LT

END REMOVAL MLE STA 132+39 OFFSET 64.59' LT

CONNECTION TO BRICK YARD TEMPORARY TK TD8 IN SERVICE

NEW MLP† TRACK & NEW YARD TRACKS IN SERVICE

NEW MLP† TRACK IN SERVICE

D8 D8A D7B D D5 TD8 PD4 PD3 PD2 PD1 MLP† PB PB1

MATCHLINE STA 132+00

MATCHLINE STA 137+50

#10 RH

A 133+00 A 134+00 A 135+00 A 136+00 A 137+00

Sta. 134+11.50 MLE

Ex R/W

TMP

**SEE ALSO GEOMETRIC TABULATIONS AND ALIGNMENT PLANS

POT MLP† A 132+42.38 =
PS PD2 0+00 =
POT MLP 132+42.38 =

POT MLP† 133+53.77 =
PS PB 0+00 =
POT MLP 133+53.78

POT MLP† A 134+83.42 =
PS PD1 0+00 =
POT MLP 134+83.42

PROPOSED PROFILE

EXISTING MAINLINE TRACK

Gr=-0.24%

PROPOSED TEMPORARY D8
SEE 59 OF 133
FOR PROFILE OF TD8 TRACK

EXISTING GROUND

PVC A 137+36.11
Elev 550.01

MLP†

565 560 555 550 545 540 535 530 525

550.9 551.32 550.7 551.08 550.4 550.83 550.5 550.59 550.3 550.35 550.1 550.10

132+00 133+00 134+00 135+00 136+00 137+00

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED JRG CHECKED RC

TRACK CONSTRUCTION STAGE 2B
NSRR - STA 132+00 TO STA 137+50

HAM-75-7.85

111 / 133

264 / 286

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NEW YARD TRACKS
PB, PB1, MLP†/s,
PD1, PD2, PD3, PD4
IN SERVICE

ESTIMATED TRACK CAPACITY THIS STAGE

TRACK	STORAGE LENGTH
D*	650 TF
D5*	715 TF
PD4	700 TF
PD3	800 TF
PD2	900 TF
PD1	760 TF
MLP†	N/A
PB	680 TF
PB1	700 TF

*STUB END

MATCHLINE STA 137+50

MATCHLINE STA 143+00

D8A

D7B

D

D5

PD4 7

PD3 5

PD2

PD1 3

MLP† A 138+00 A 138+68

PB 4 5

PB1 3

D4 D4

D3

D2

D1 D1

MLE

B

B1

ps

ps

D4

D3

D2

D1

MLE

138 139 140 141 142

EXIST. SURVEY ℄/MLE TRK IN SERVICE

Ex R/W

NEW MLP† TRACK & NEW YARD TRACKS IN SERVICE

NEW MLP† TRACK IN SERVICE

FOR INFORMATION ONLY: NO CONSTRUCTION THIS STAGE, THIS SHEET

565 560 555 550 545 540 535 530 525

PVI A 137+86.11
Elev 549.89

L 100.00'
R 0.26

PROPOSED PROFILE TOP OF RAIL

PVT A 138+36.11
Elev 549.90

PVI A 138+88.87
Elev 549.91

Gr=0.02%

FIELD FIT CONNECTIONS
RAISE AND SURFACE
EXISTING TRACK
AS REQUIRED

EXISTING MAINLINE TRACK

EXISTING (MLE) MAINLINE TRACK

EXISTING GROUND

MLP†

549.9 549.91 549.9 549.9

138+00 139+00 140+00 141+00 142+00 143+00

Existing

HORIZONTAL SCALE IN FEET
0 10 20 40

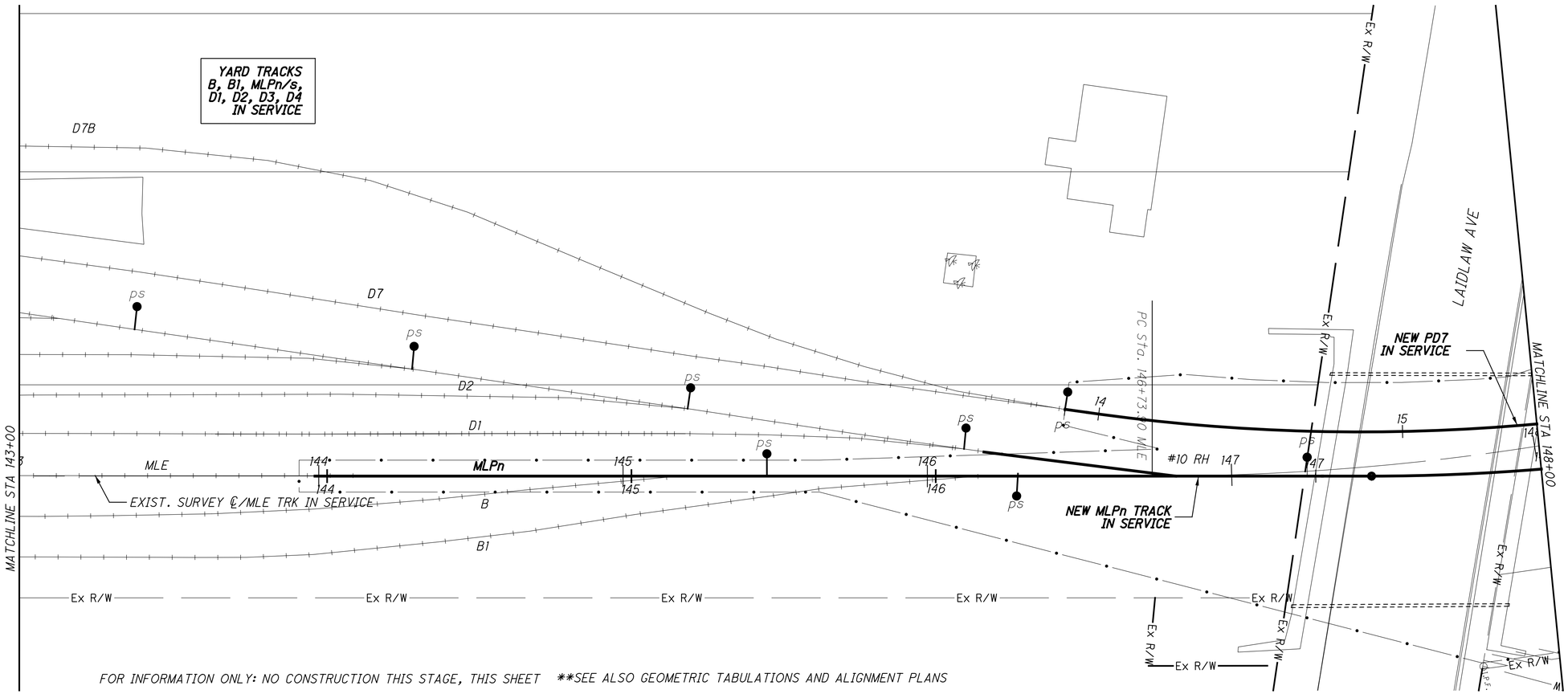
CALCULATED JRG
CHECKED RC

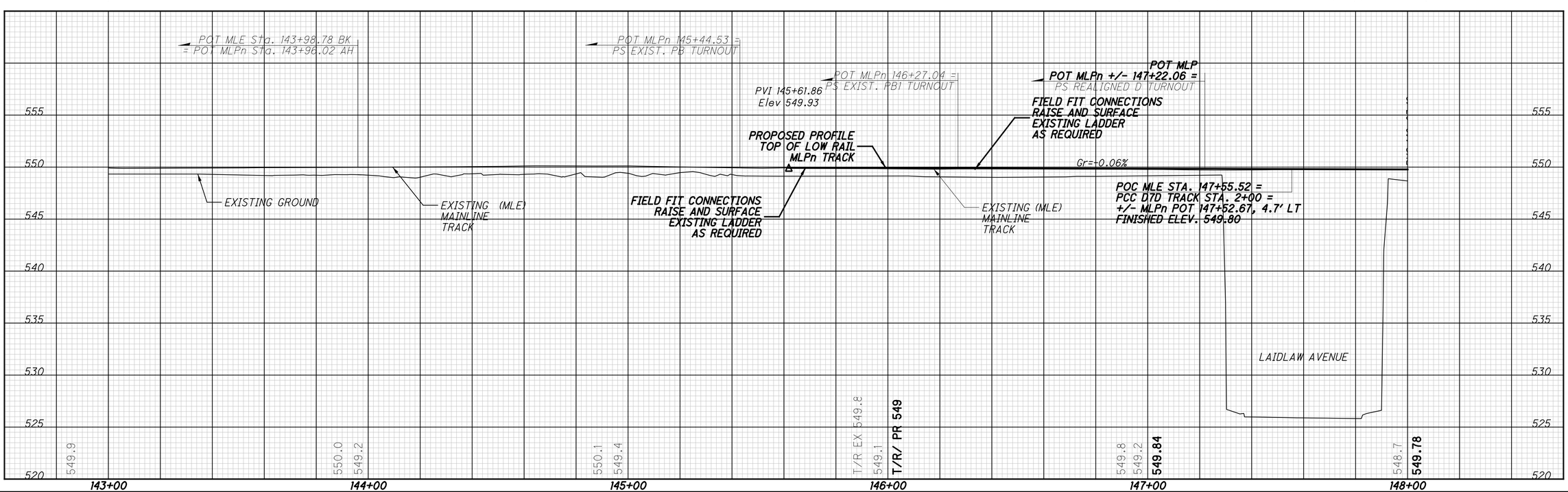
TRACK CONSTRUCTION STAGE 2B
NSRR - STA 137+50 TO STA 143+00

HAM-75-7.85

112/133

265/286





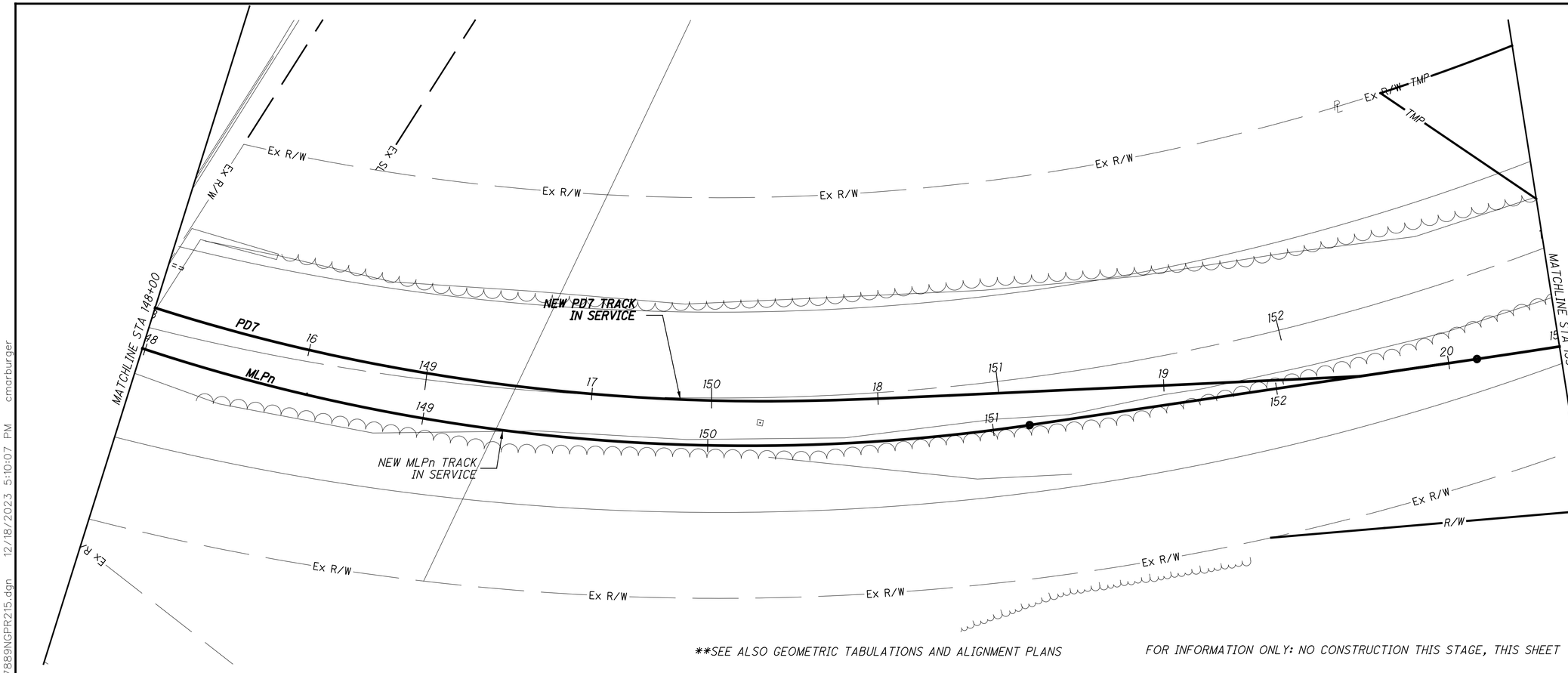
TRACK CONSTRUCTION STAGE 2B
NSRR - STA 143+00 TO STA 148+00

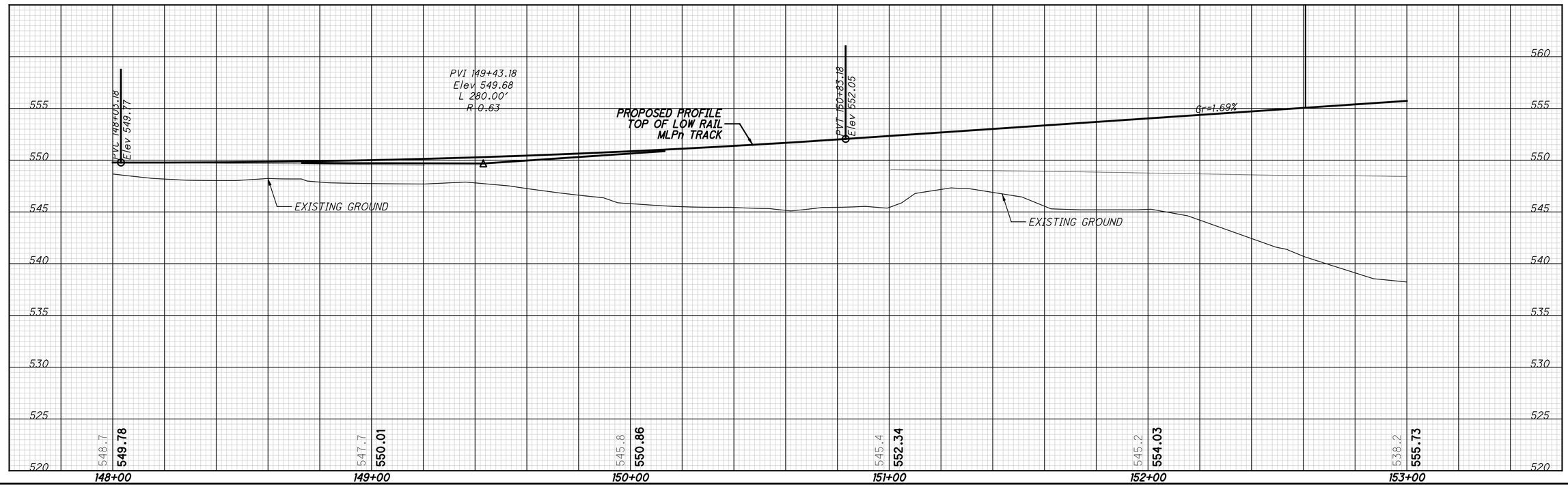
HAM-75-7.85

CALCULATED JRG
CHECKED RC

HORIZONTAL SCALE IN FEET
0 10 20 40

113/133
266/286





HORIZONTAL SCALE IN FEET
0 25 50 100

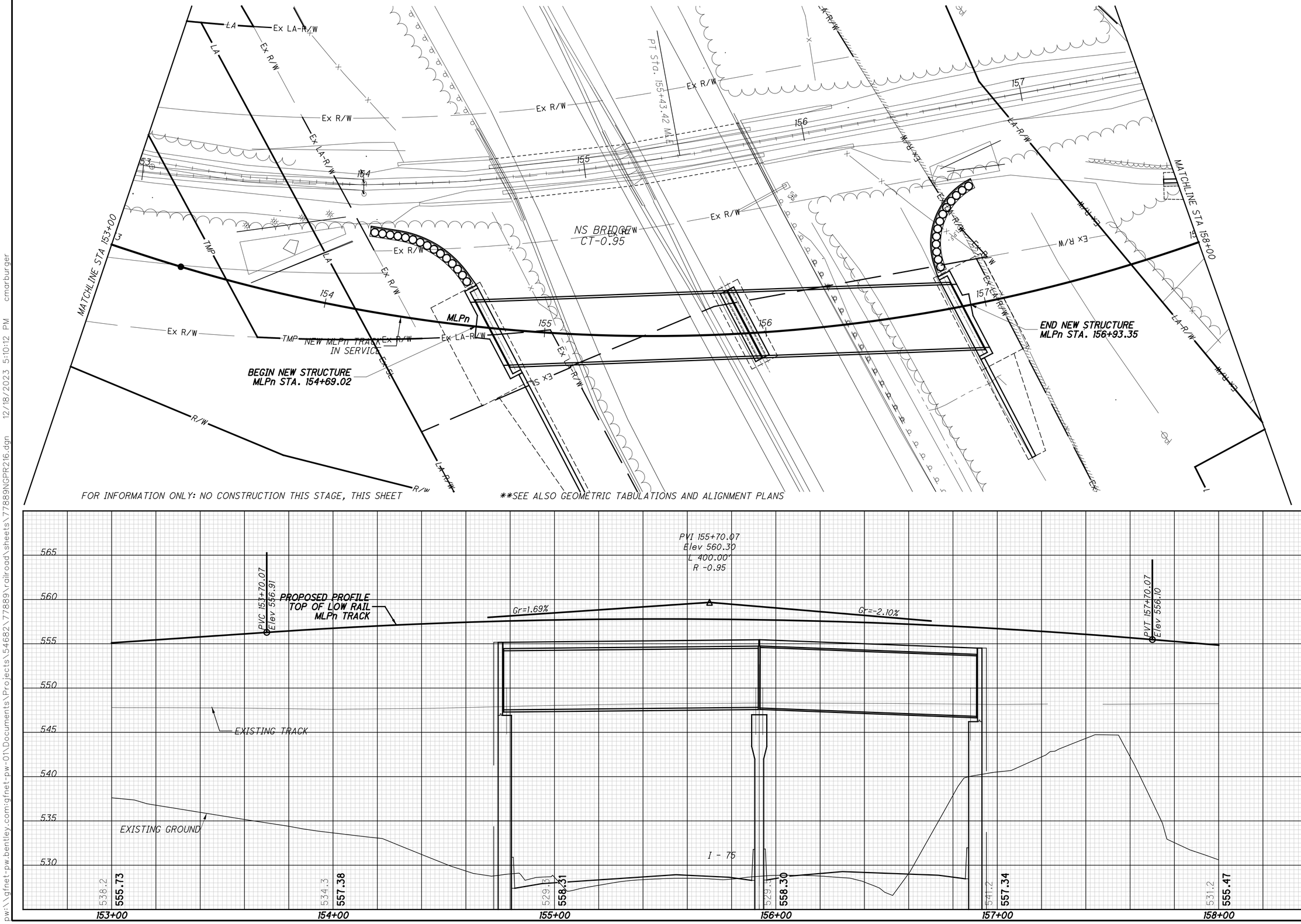
CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 2B
NSRR - STA 148+00 TO STA 153+00

HAM-75-7.85

114 / 133

267
286



TRACK CONSTRUCTION STAGE 2B
NSRR - STA 153+00 TO STA 158+00

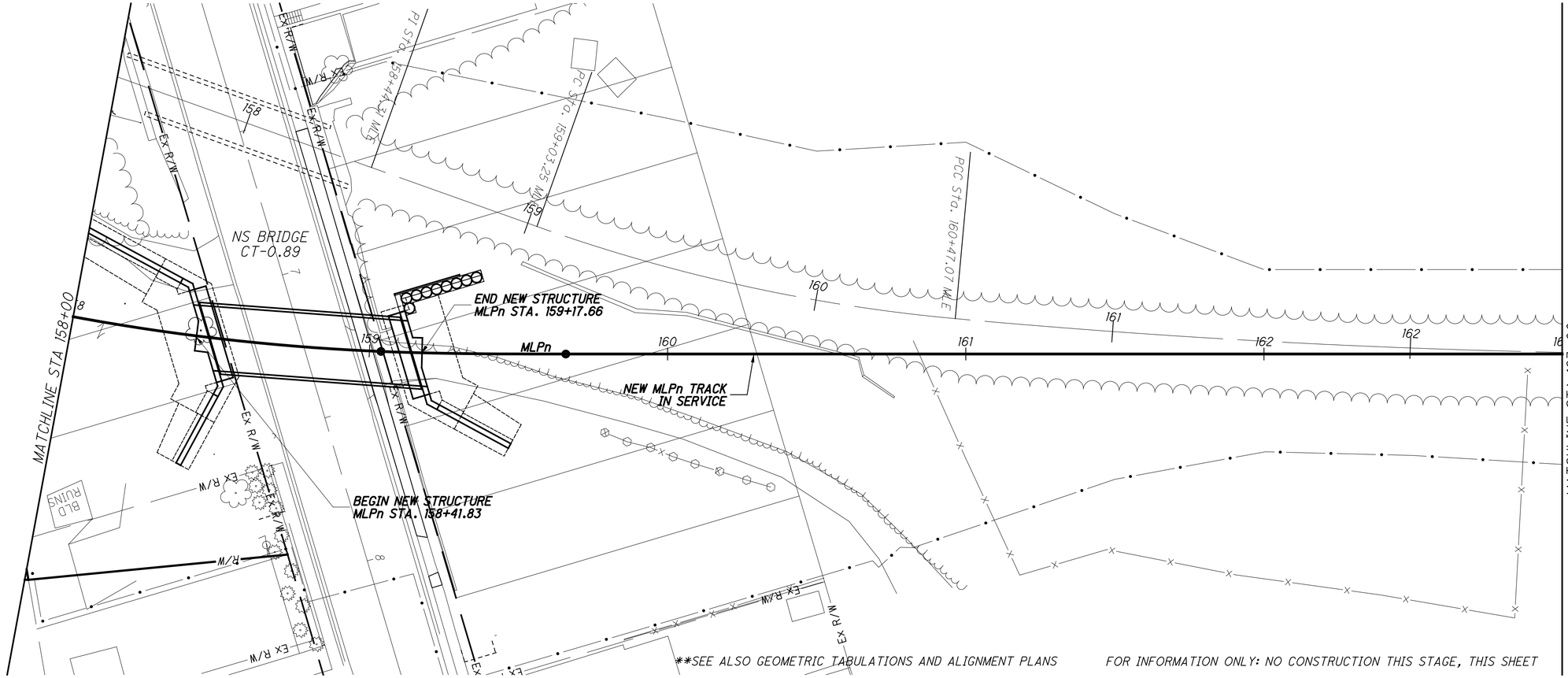
HAM-75-7.85

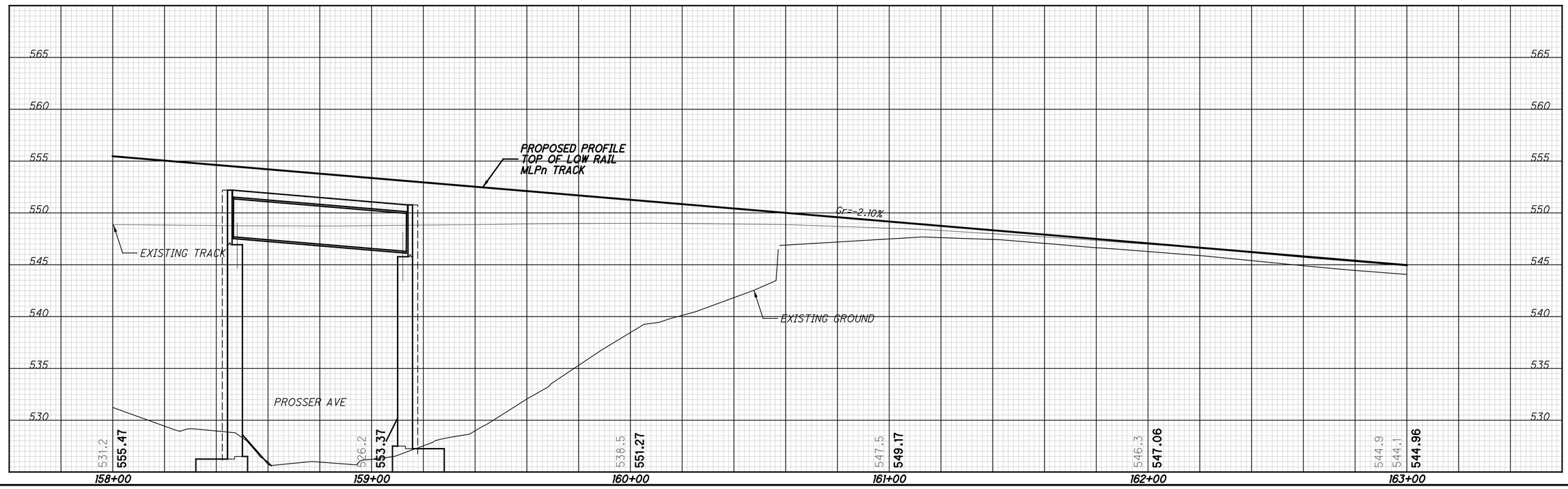
115/133

268/286

CALCULATED JRG
CHECKED RC

HORIZONTAL SCALE IN FEET
0 10 20 40





TRACK CONSTRUCTION STAGE 2B
NSRR - STA 158+00 TO STA 163+00

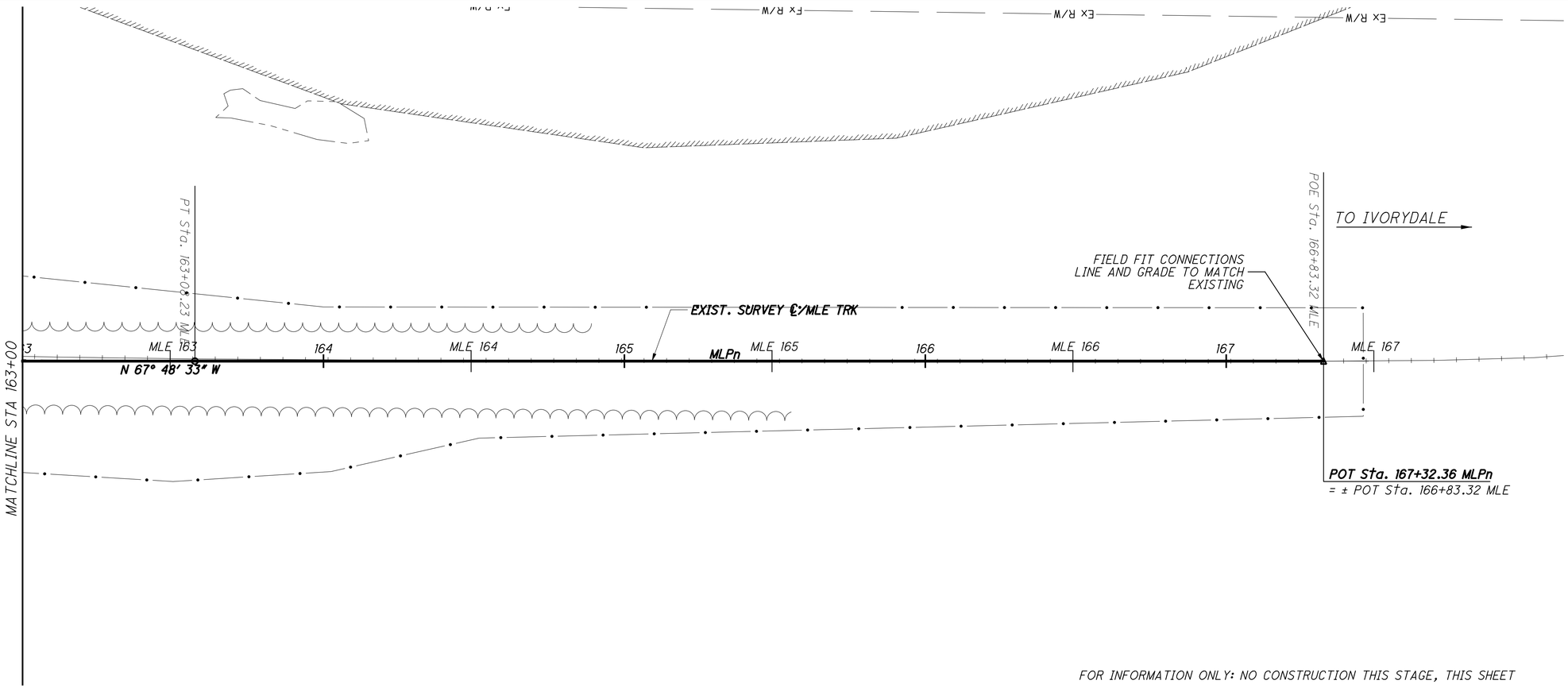
HAM-75-7.85

CALCULATED JRG
CHECKED RC

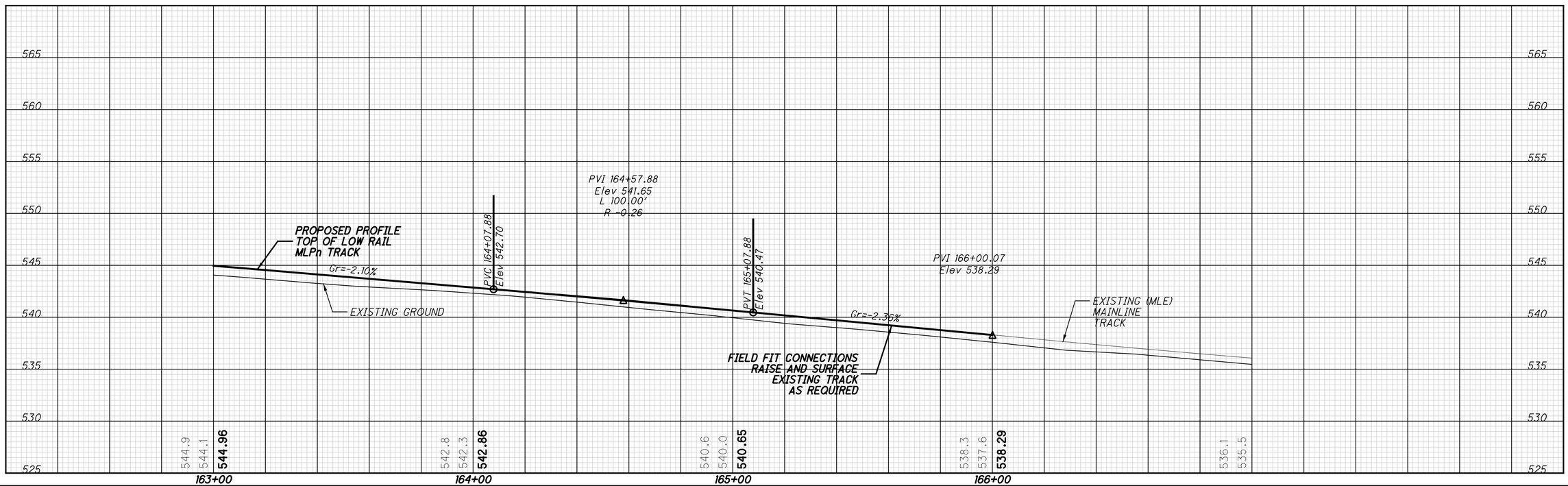
HORIZONTAL SCALE IN FEET
0 10 20 40

116/133
269/286

pw:\\gfnet-pw.bentley.com:gfnet-pw-01\Documents\Projects\54682\77889\railroad\sheets\77889NGPR217.dgn 12/18/2023 5:10:20 PM cmarburger



FOR INFORMATION ONLY: NO CONSTRUCTION THIS STAGE, THIS SHEET



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 2B
NSRR - STA 163+00 TO STA 168+00

HAM-75-7.85

117 / 133

270 / 286

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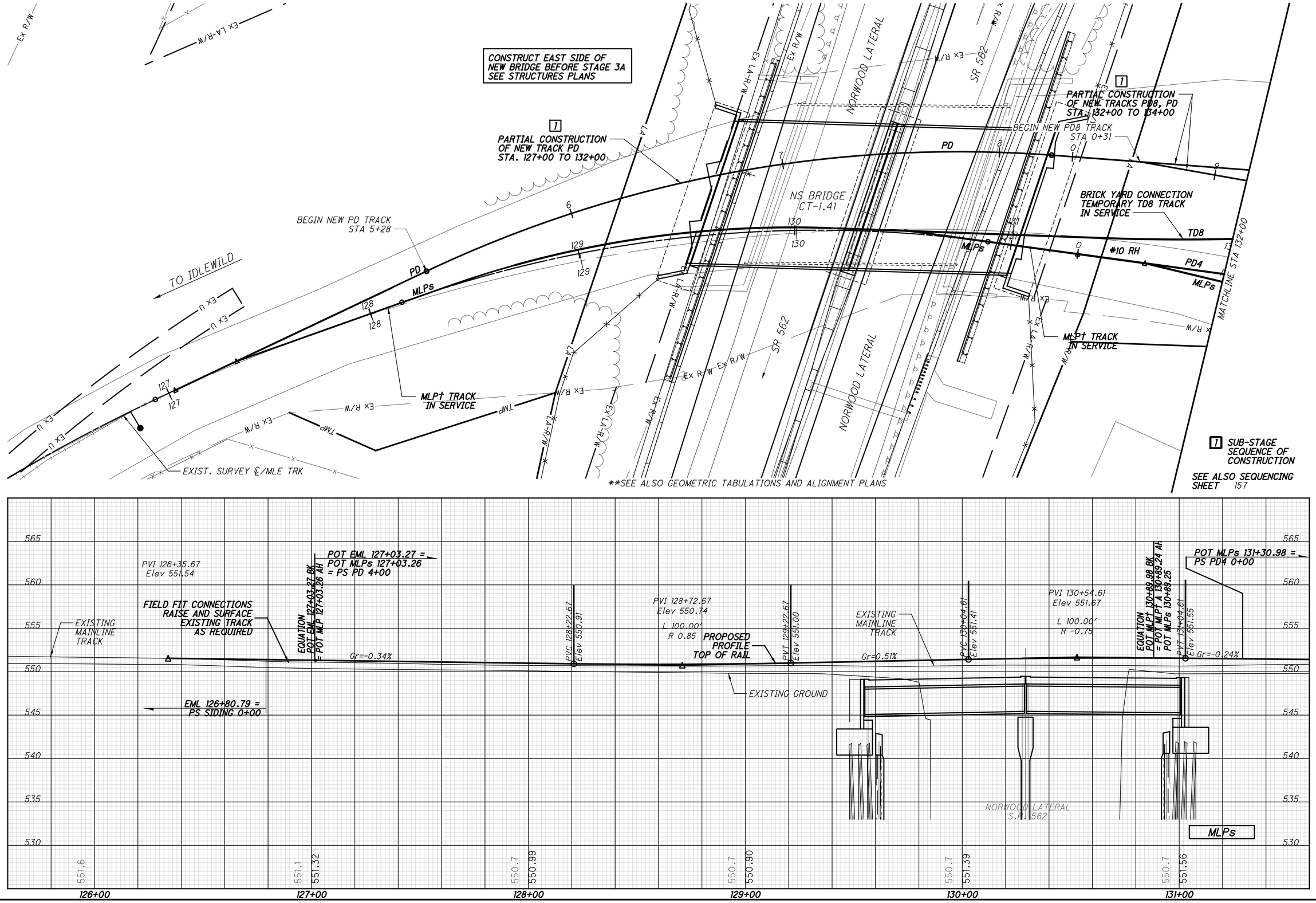
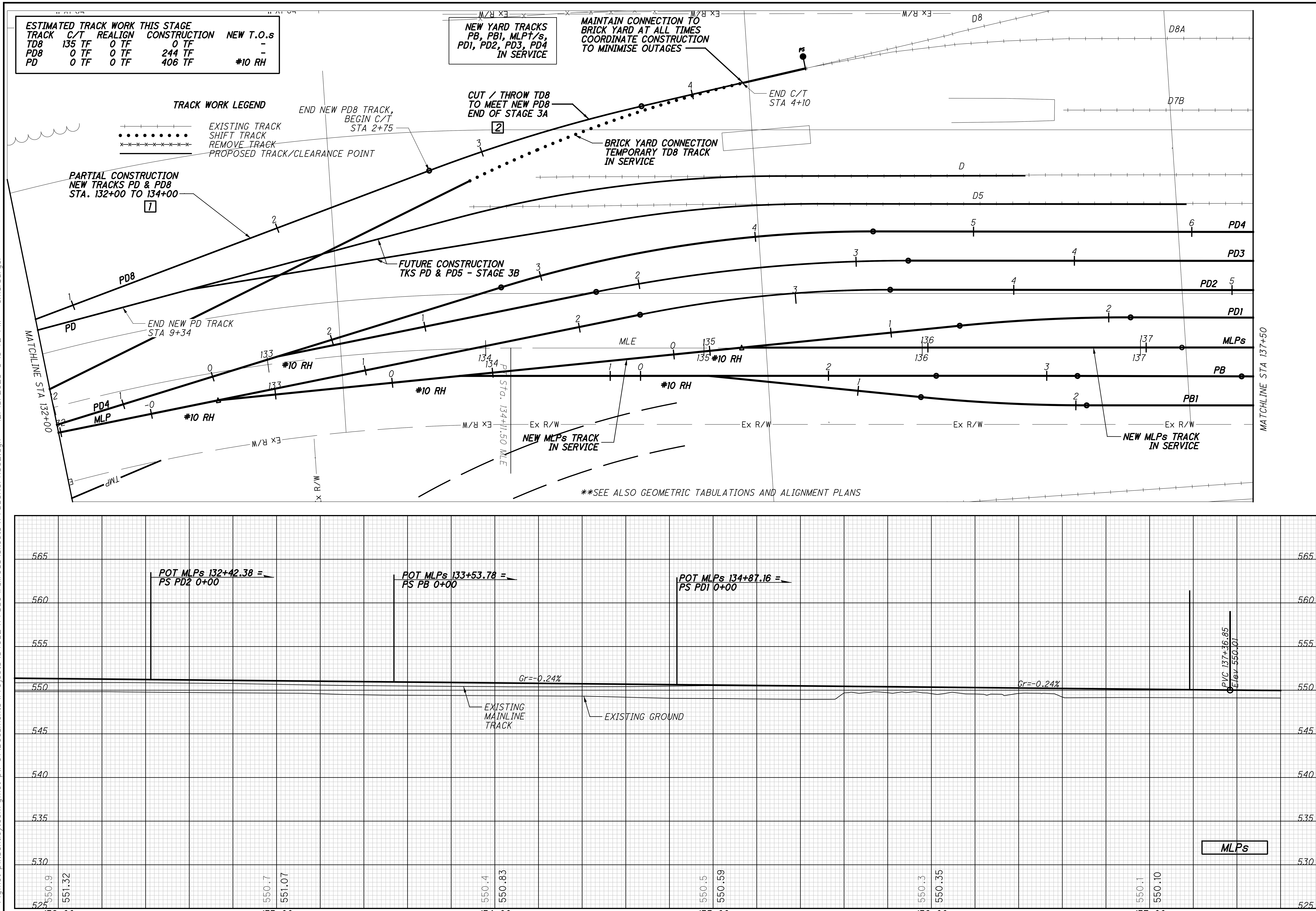


TRACK CONSTRUCTION STAGE 3A
NSRR - STA 127+00 TO STA 132+00
HAM-75-7.85
CALCULATED JRG
CHECKED RC
HORIZONTAL SCALE IN FEET
0 10 20 40
118/133
271/286


ESTIMATED TRACK WORK THIS STAGE
TRACK C/T REALIGN CONSTRUCTION NEW T.O.s
TD8 135 TF 0 TF 0 TF -
PD8 0 TF 0 TF 244 TF -
PD 0 TF 0 TF 406 TF #10 RH
NEW YARD TRACKS PB, PB1, MLPt/s, PD1, PD2, PD3, PD4 IN SERVICE
MAINTAIN CONNECTION TO BRICK YARD AT ALL TIMES COORDINATE CONSTRUCTION TO MINIMISE OUTAGES
TRACK WORK LEGEND
EXISTING TRACK
SHIFT TRACK
REMOVE TRACK
PROPOSED TRACK/CLEARANCE POINT
END NEW PD8 TRACK, BEGIN C/T STA 2+75
CUT / THROW TD8 TO MEET NEW PD8 END OF STAGE 3A
2
END C/T STA 4+10
BRICK YARD CONNECTION TEMPORARY TD8 TRACK IN SERVICE
PARTIAL CONSTRUCTION NEW TRACKS PD & PD8 STA. 132+00 TO 134+00
1
FUTURE CONSTRUCTION TKS PD & PD5 - STAGE 3B
END NEW PD TRACK STA 9+34
MATCHLINE STA 132+00
MATCHLINE STA 137+50
D8
D8A
D7B
D
D5
PD4
PD3
PD2
PD1
MLPs
PB
PB1
PD8
PD
MLP
MLE
#10 RH
Sta. 134+11.50 MLE
Ex R/W
NEW MLPs TRACK IN SERVICE
**SEE ALSO GEOMETRIC TABULATIONS AND ALIGNMENT PLANS
POT MLPs 132+42.38 = PS PD2 0+00
POT MLPs 133+53.78 = PS PB 0+00
POT MLPs 134+87.16 = PS PD1 0+00
Gr=-0.24%
EXISTING MAINLINE TRACK
EXISTING GROUND
PVC 137+36.85 Elev 550.01
MLPs
565
560
555
550
545
540
535
530
525
550.9 551.32
550.7 551.07
550.4 550.83
550.5 550.59
550.3 550.35
550.1 550.10
132+00
133+00
134+00
135+00
136+00
137+00

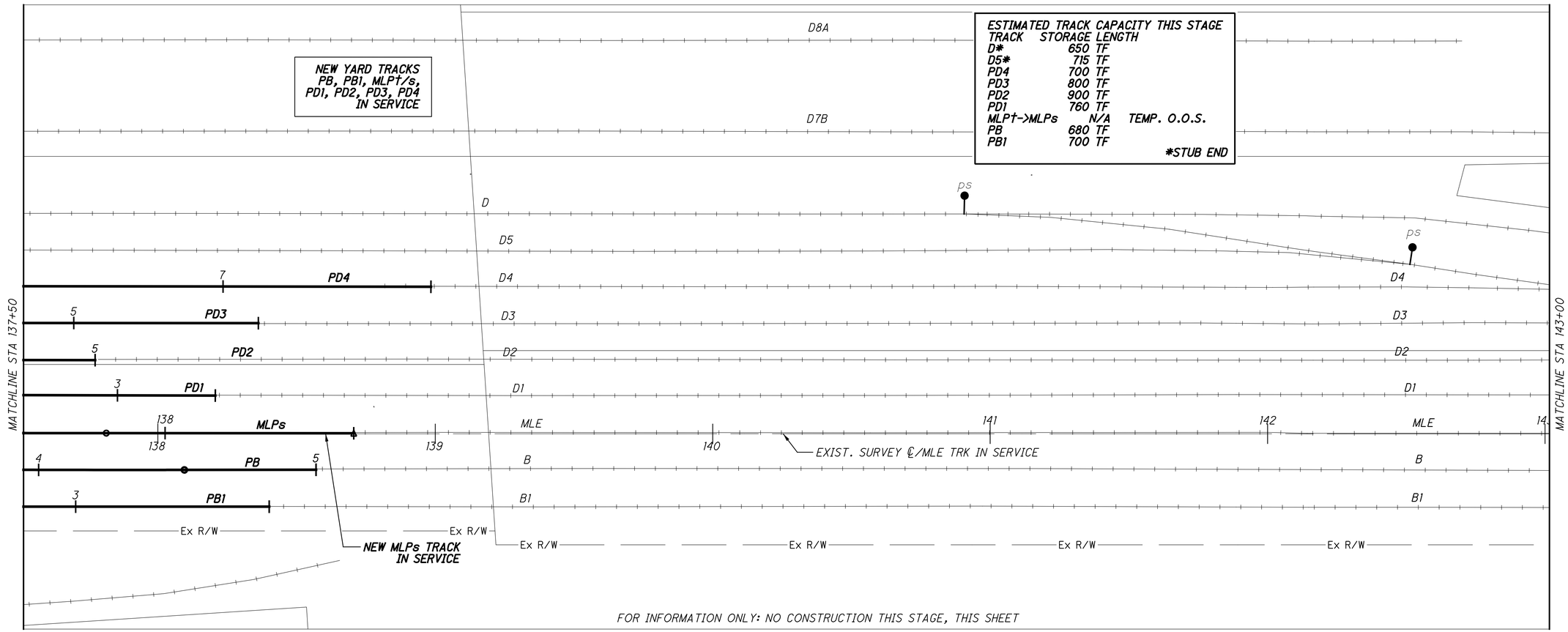
HORIZONTAL SCALE IN FEET

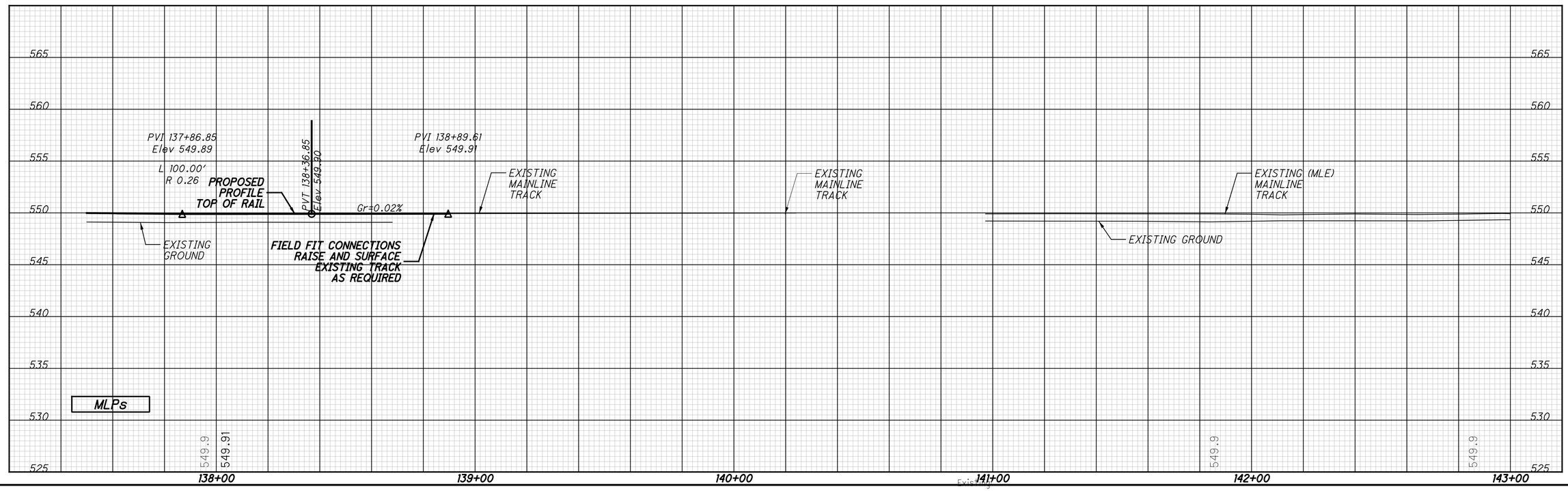
CALCULATED JRG

CHECKED RC

TRACK CONSTRUCTION STAGE 3A
NSRR - STA 132+00 TO STA 137+50

HAM-75-7.85





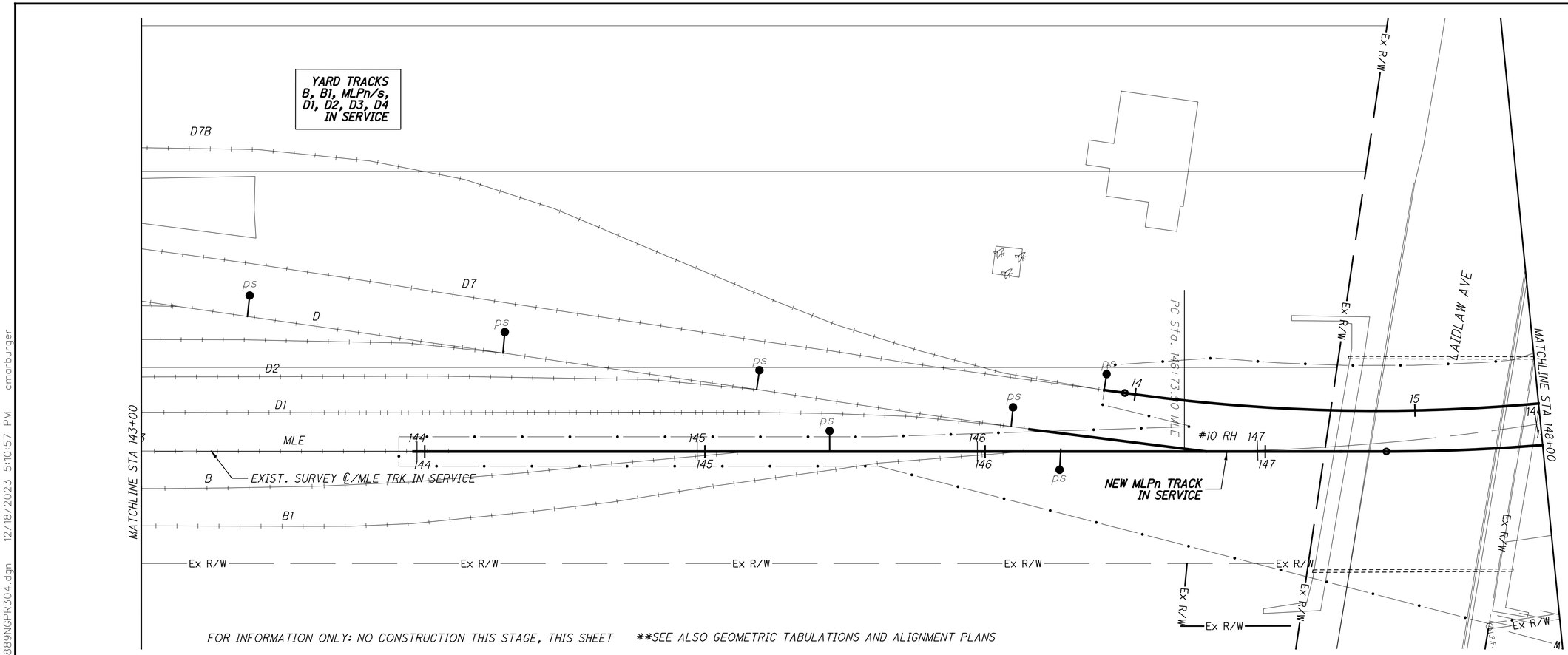
HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED JRG
CHECKED RC

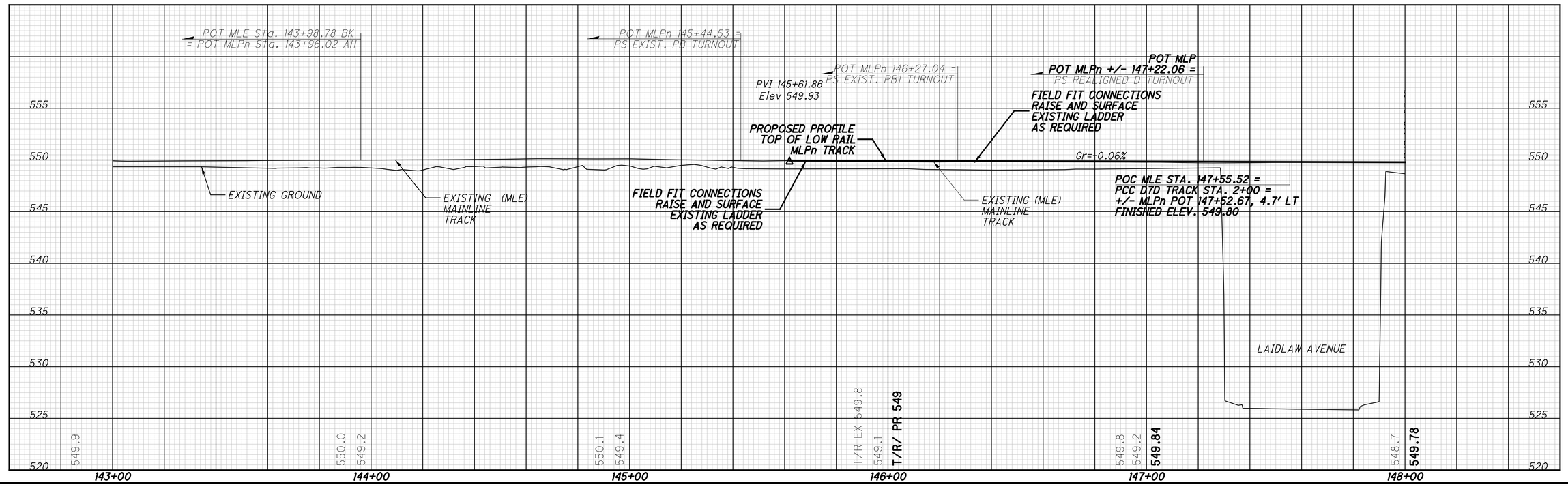
TRACK CONSTRUCTION STAGE 3A
NSRR - STA 137+50 TO STA 143+00

HAM-75-7.85

120 / 133

273
286





CALCULATED JRG
CHECKED RC

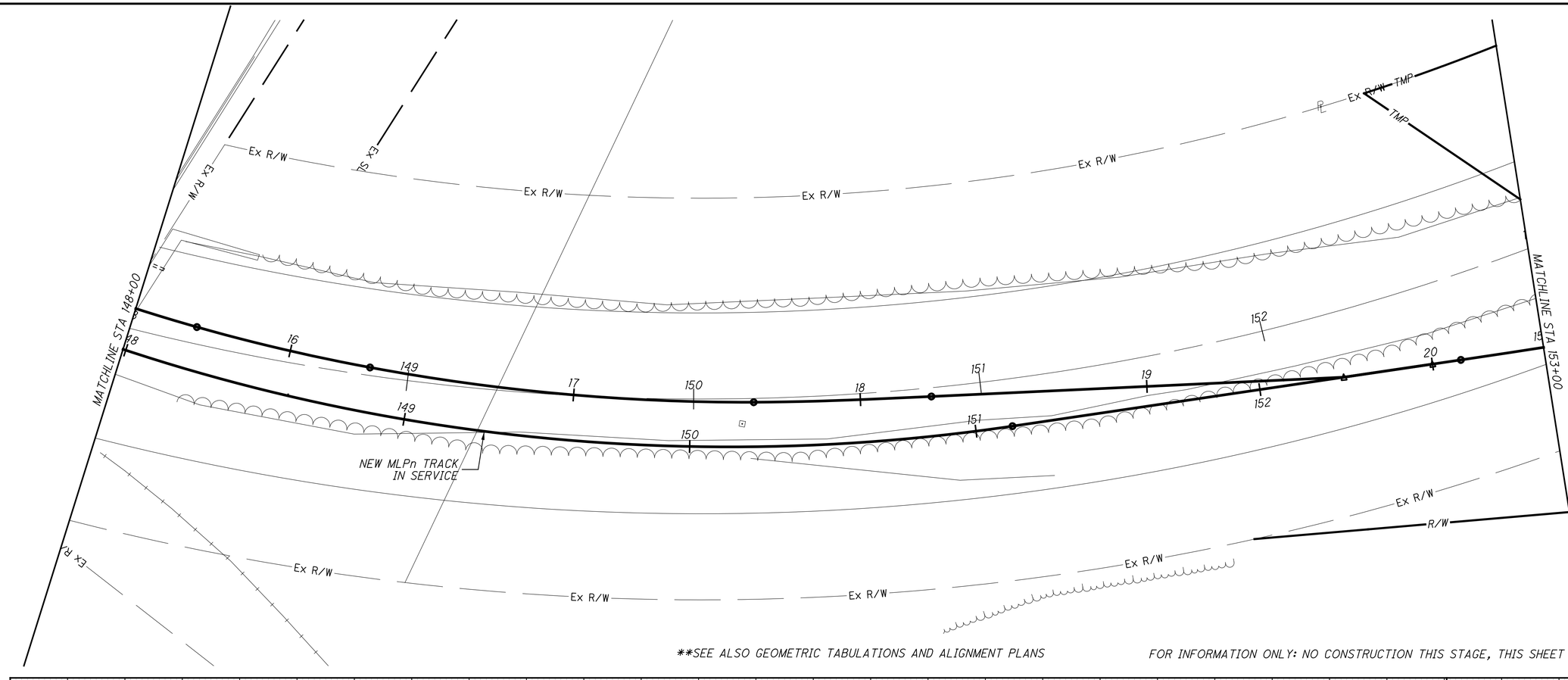
HORIZONTAL SCALE IN FEET
0 10 20 40

TRACK CONSTRUCTION STAGE 3A
NSRR - STA 143+00 TO STA 148+00

HAM-75-7.85

121 / 133

274 / 286



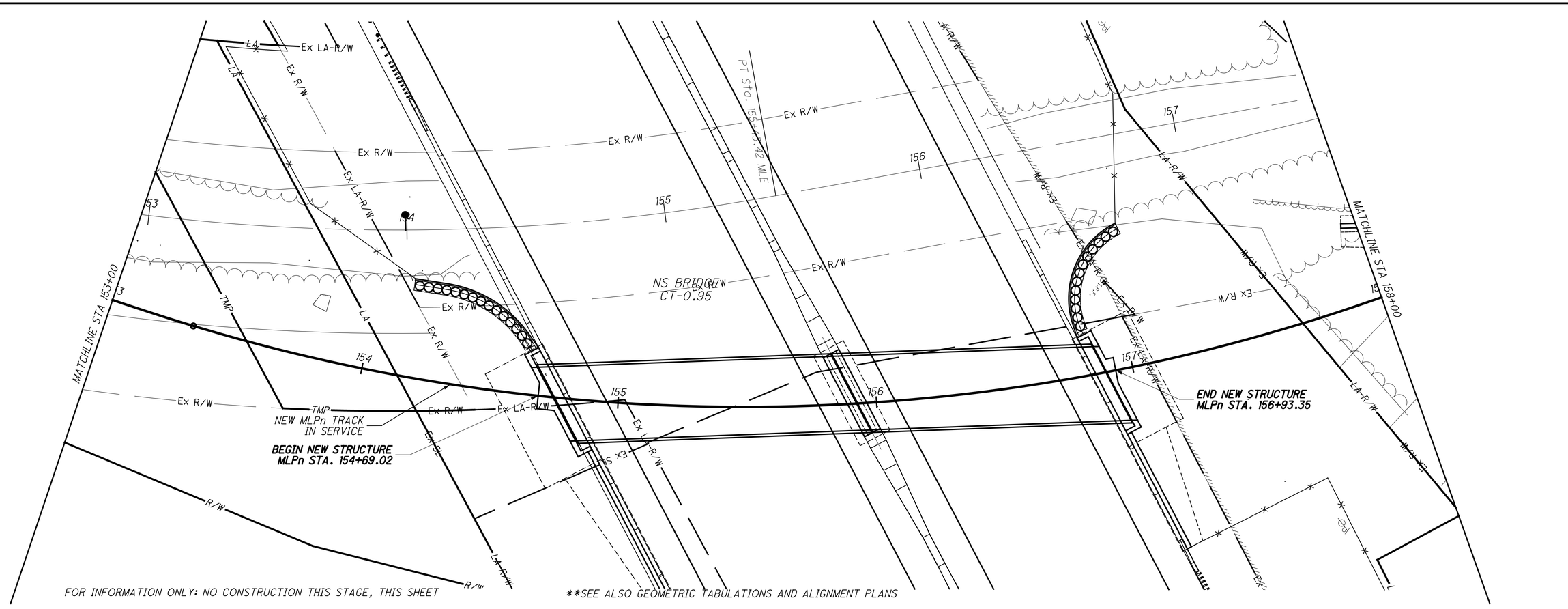
TRACK CONSTRUCTION STAGE 3A
NSRR - STA 148+00 TO STA 153+00

HAM-75-7.85

CALCULATED JRG
CHECKED RC

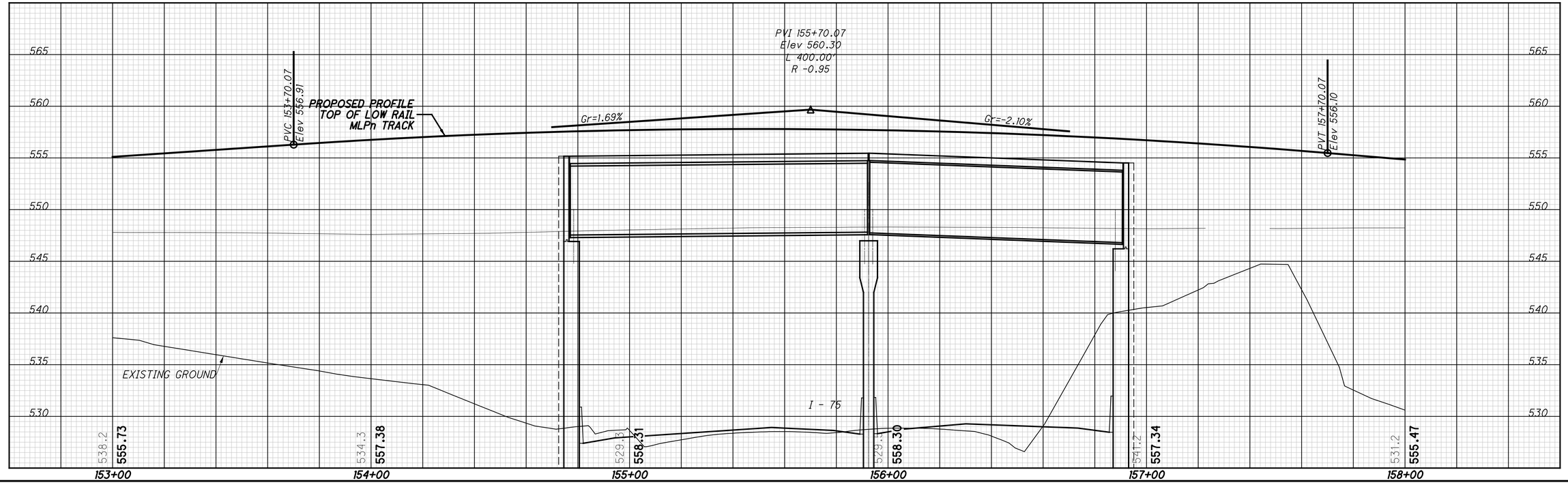
HORIZONTAL SCALE IN FEET
0 25 50 100

122/133
275/286



FOR INFORMATION ONLY: NO CONSTRUCTION THIS STAGE, THIS SHEET

**SEE ALSO GEOMETRIC TABULATIONS AND ALIGNMENT PLANS



0 10 20 40 HORIZONTAL SCALE IN FEET

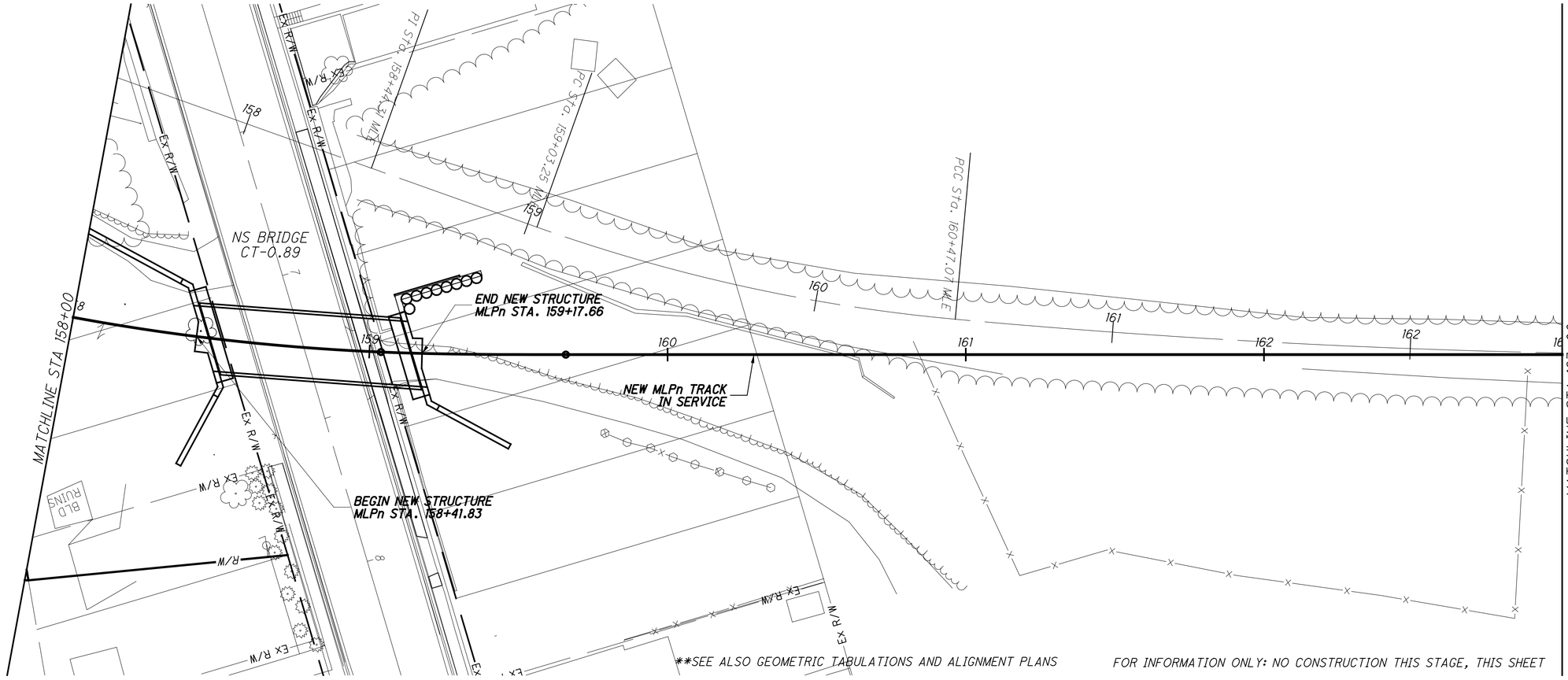
CALCULATED JRG CHECKED RC

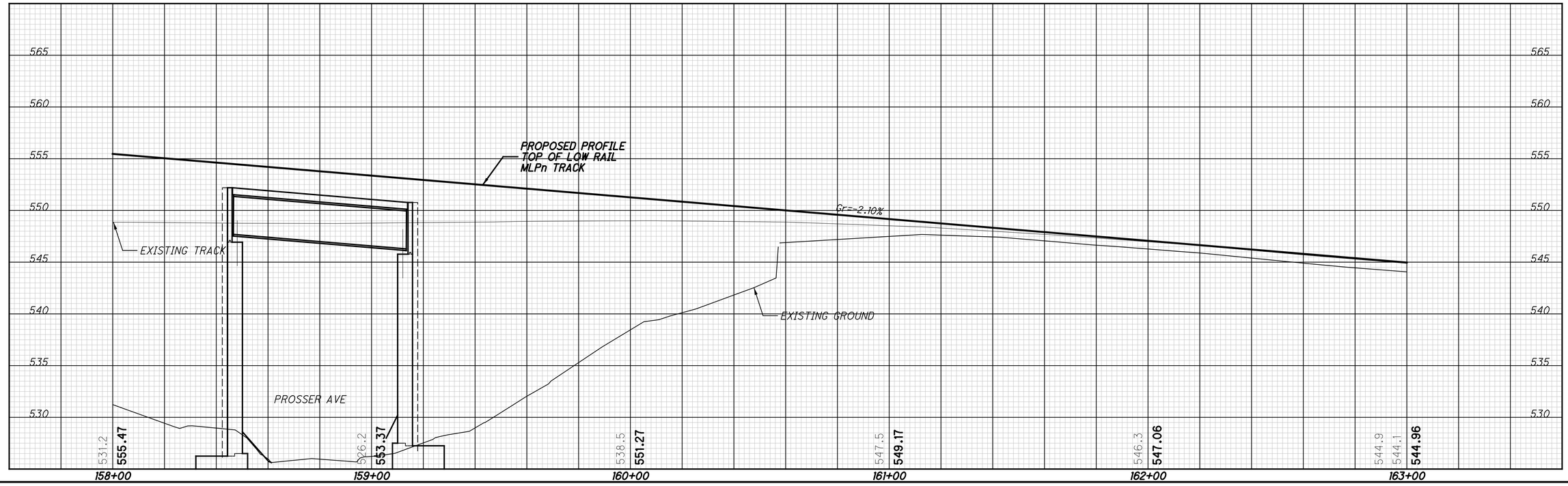
TRACK CONSTRUCTION STAGE 3A
NSRR - STA 153+00 TO STA 158+00

HAM-75-7.85

123/133

276/286





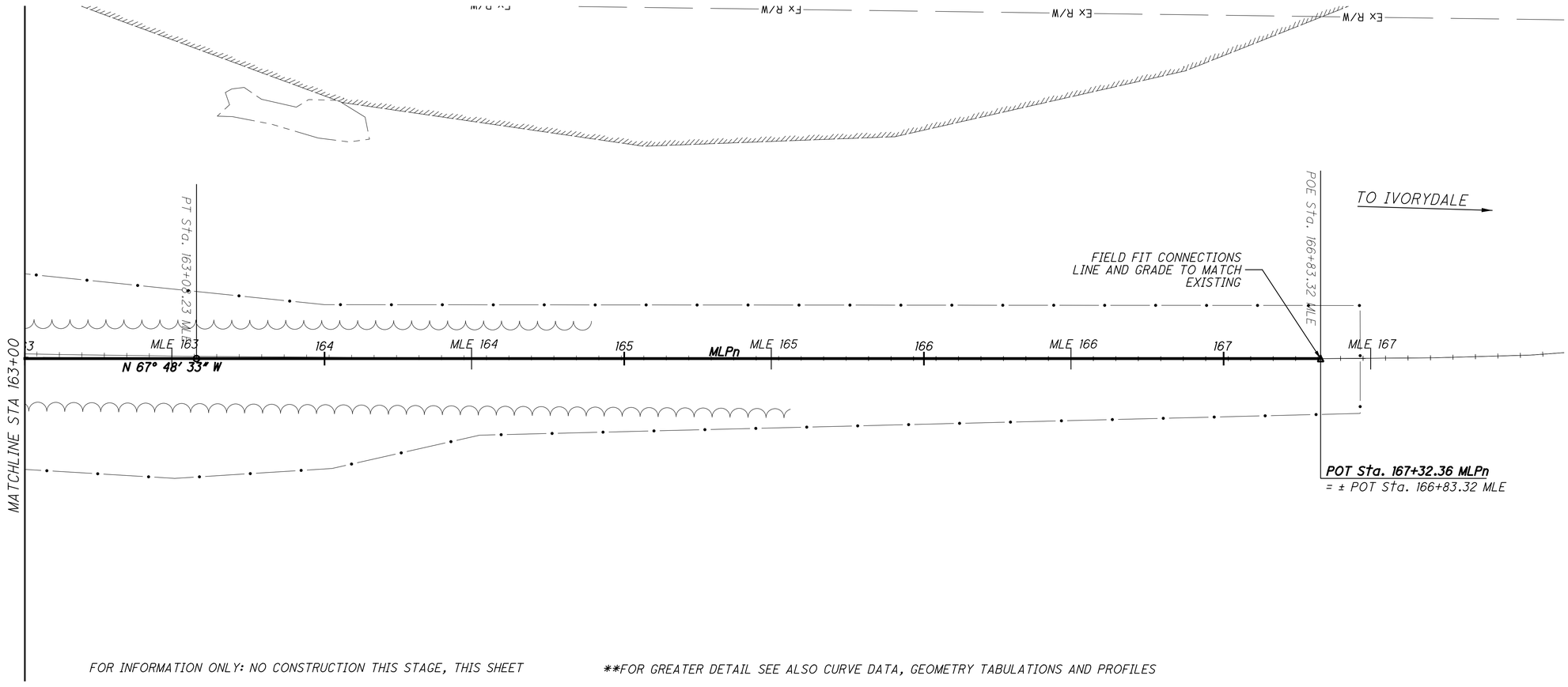
TRACK CONSTRUCTION STAGE 3A
NSRR - STA 158+00 TO STA 163+00

HAM-75-7.85

CALCULATED JRG
CHECKED RC

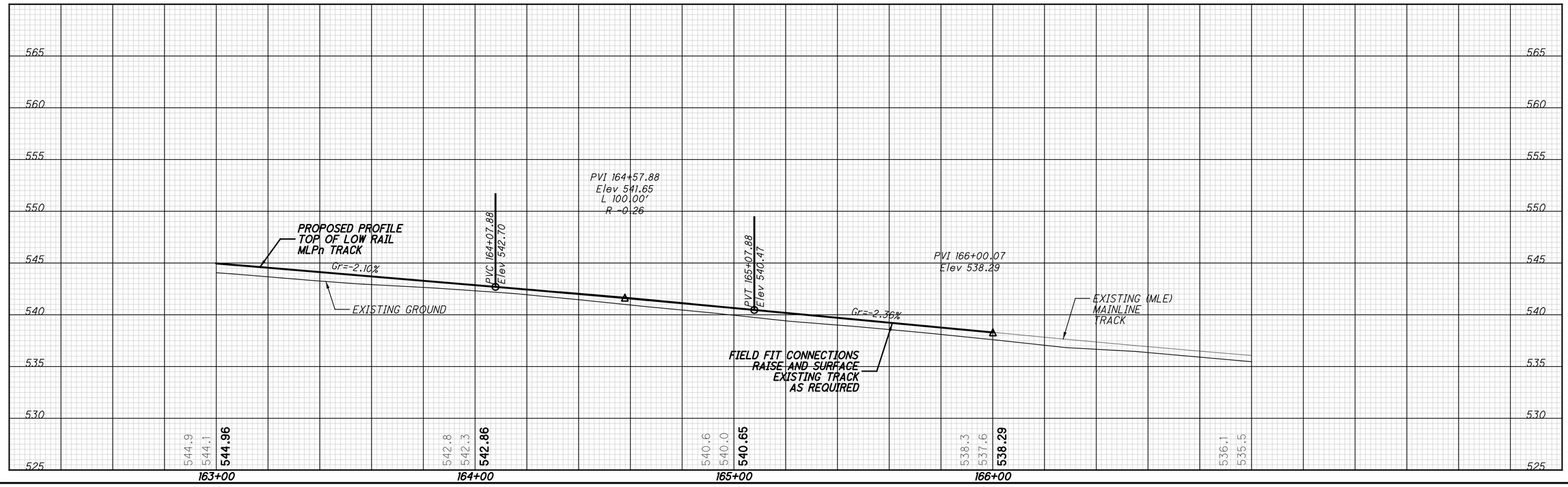
HORIZONTAL SCALE IN FEET
0 10 20 40

124/133
277/286



FOR INFORMATION ONLY: NO CONSTRUCTION THIS STAGE, THIS SHEET

**FOR GREATER DETAIL SEE ALSO CURVE DATA, GEOMETRY TABULATIONS AND PROFILES



HORIZONTAL SCALE IN FEET
0 10 20 40

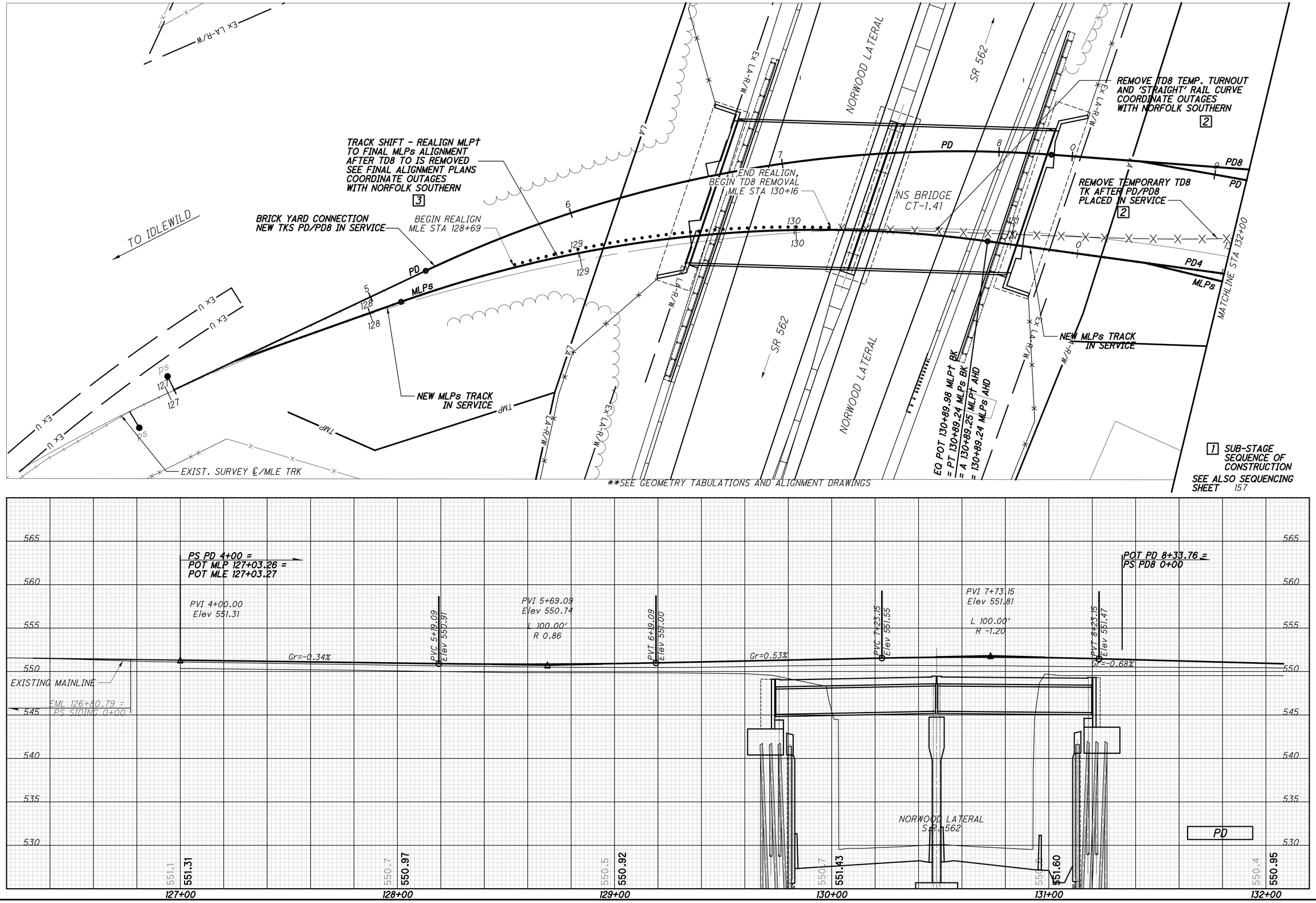
CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 3A
NSRR - STA 163+00 TO STA 168+00

HAM-75-7.85

125/133

278/286



HORIZONTAL SCALE IN FEET

CALCULATED JRG | CHECKED RC

TRACK CONSTRUCTION STAGE 3B
NSRR - STA 127+00 TO STA 132+00

HAM-75-7.85

126 | 133

279 | 286

ESTIMATED TRACK WORK THIS STAGE									
TRACK	C/T		REALIGN		CONSTRUCTION	NEW T.O.s	REMOVE TRACK		REMOVE T.O.s
TD8	0	TF	0	TF	0 TF	-	396	TF	1
PD5	161	TF	168	TF	131 TF	#10 RH	0	TF	-
PD	110	TF	113	TF	197 TF	-	0	TF	-
MPLs	0	TF	147	TF	0 TF	-	0	TF	-

NEW YARD TRACKS PB, PB1, MLPt/s, PD1, PD2, PD3, PD4 IN SERVICE

MAINTAIN CONNECTION TO BRICK YARD AT ALL TIMES COORDINATE CONSTRUCTION TO MINIMISE OUTAGES

TRACK WORK LEGEND

EXISTING TRACK
SHIFT TRACK
REMOVE TRACK
PROPOSED TRACK

CUT / THROW TRACKS PD8 TO FINAL ALIGNMENT PLACE IN SERVICE - STAGE 3A [1]

BEGIN C/T MLE STA 134+23 OFFSET 78.31' LT

[3] CUT / THROW TRACKS PD & PD5 TO FINAL ALIGNMENTS AS NECESSARY PLACE IN SERVICE

END TD8 REMOVAL MLE STA 133+94 OFFSET 76.80' LT

BRICK YARD CONNECTION TRACKS PD/PD8 IN SERVICE

BEGIN NEW PD TRACK STA 9+34

BEGIN C/T MLE STA 133+93 OFFSET 64.93' LT

[3] FINISH CONSTRUCTION OF PD AND PD5 AFTER REMOVAL OF TD8

[2] REMOVE TEMP. TD8 AFTER TKS PD/PD8 PLACED IN SERVICE

BEGIN NEW PD5 TRACK STA 0+31

END C/T, BEGIN REALIGN STA 12+62

END C/T, BEGIN REALIGN STA 3+24

END REALIGN STA 13+75

END REALIGN STA 4+92

FIELD FIT CONNECTIONS LINE AND GRADE TO MATCH EXISTING

FIELD FIT CONNECTIONS LINE AND GRADE TO MATCH EXISTING - TYPICAL ALL TRACKS

NEW MLPs TRACK IN SERVICE

FIELD FIT CONNECTIONS LINE AND GRADE TO MATCH EXISTING - TYPICAL ALL TRACKS

MATCHLINE STA 132+00

MATCHLINE STA 137+50

Sta. 134+11.50 MLE

**SEE GEOMETRY TABULATIONS AND ALIGNMENT DRAWINGS

POT PD 9+55.16 = PS PD5 0+00

BEGIN NEW PD TRACK STA 9+34

Gr=-0.68%

BEGIN C/T PD ELEV = 549.23 D ELEV = 548.77

END C/T PD ELEV = 548.52 D ELEV = 548.35

PVC 12+31.23 Elev 548.70

PVI 12+81.23 Elev 548.36 L 100.00' R 0.80

PVT 13+31.23 Elev 548.42

PVI 13+92.50 Elev 548.49

Gr=0.12%

FIELD FIT CONNECTIONS RAISE AND SURFACE EXISTING TRACK AS REQUIRED

EXISTING TRACK PD

PD

565 560 555 550 545 540 535 530 525

550.4 550.95 550.1 550.27 549.2 549.59 548.4 548.91 548.4 548.42

132+00 133+00 134+00 135+00 136+00 137+00

HORIZONTAL SCALE IN FEET 0 10 20 40

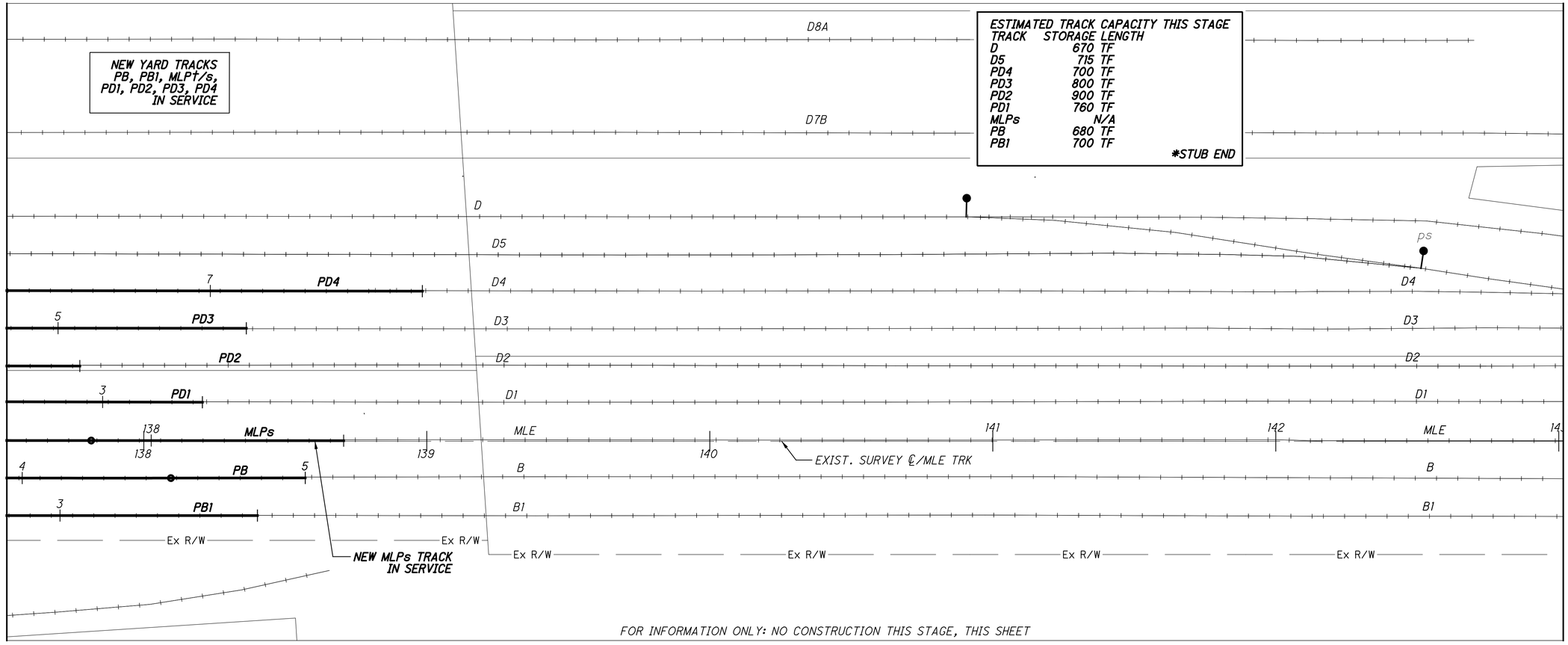
CALCULATED JRG CHECKED RC

TRACK CONSTRUCTION STAGE 3B
NSRR - STA 132+00 TO STA 137+50

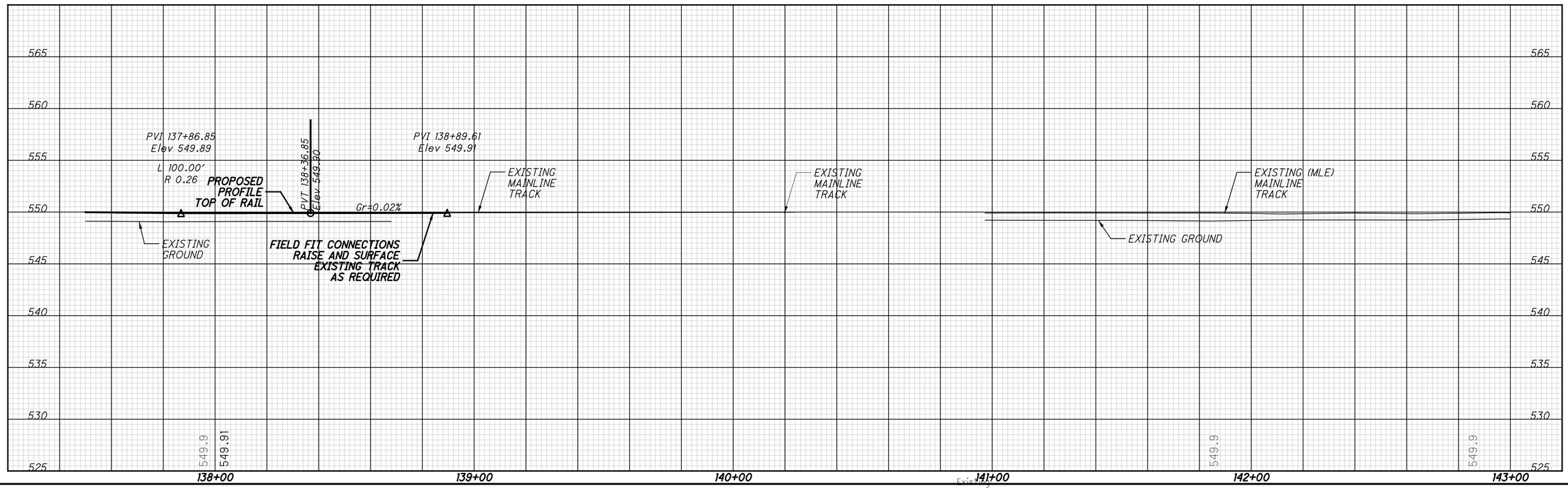
HAM-75-7.85

127 / 133

280 / 286



FOR INFORMATION ONLY: NO CONSTRUCTION THIS STAGE, THIS SHEET



HORIZONTAL SCALE IN FEET
0 10 20 40

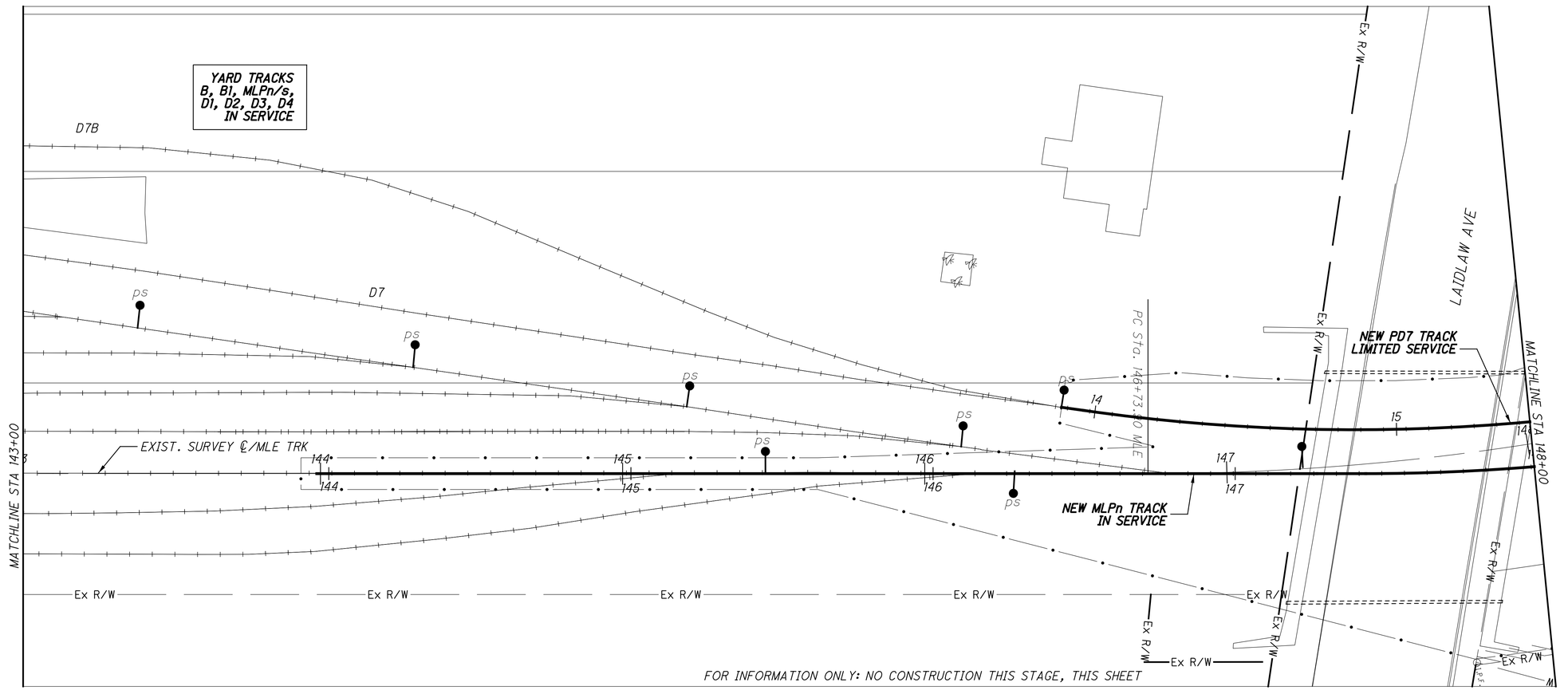
CALCULATED JRG
CHECKED RC

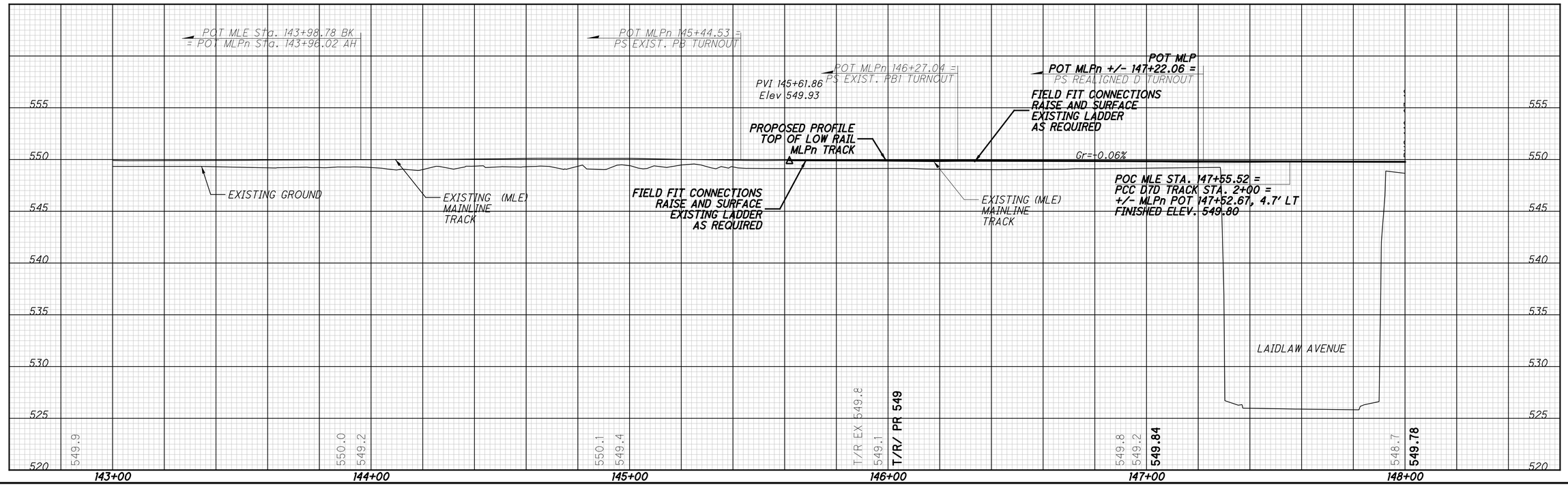
TRACK CONSTRUCTION STAGE 3B
NSRR - STA 137+50 TO STA 143+00

HAM-75-7.85

128/133

281/286





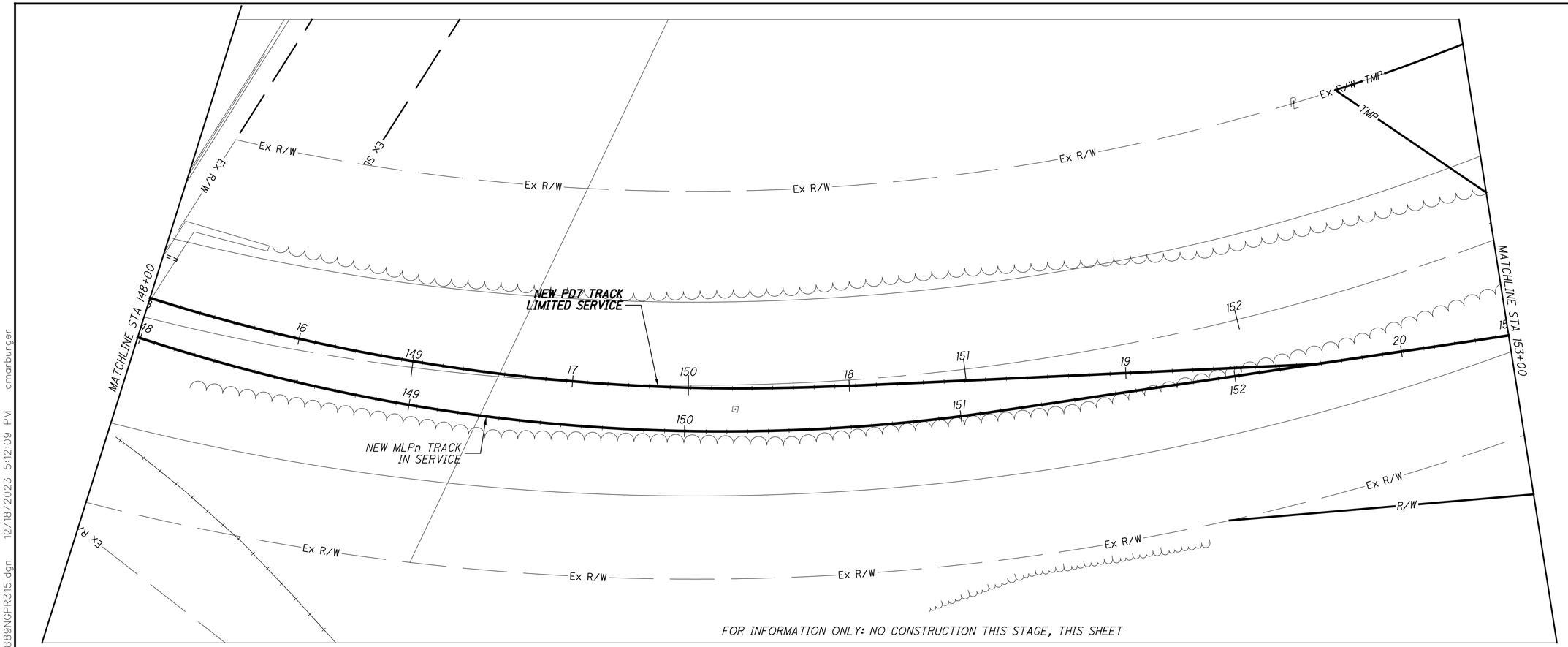
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 3B
NSRR - STA 143+00 TO STA 148+00

HAM-75-7.85

129 133
282 286



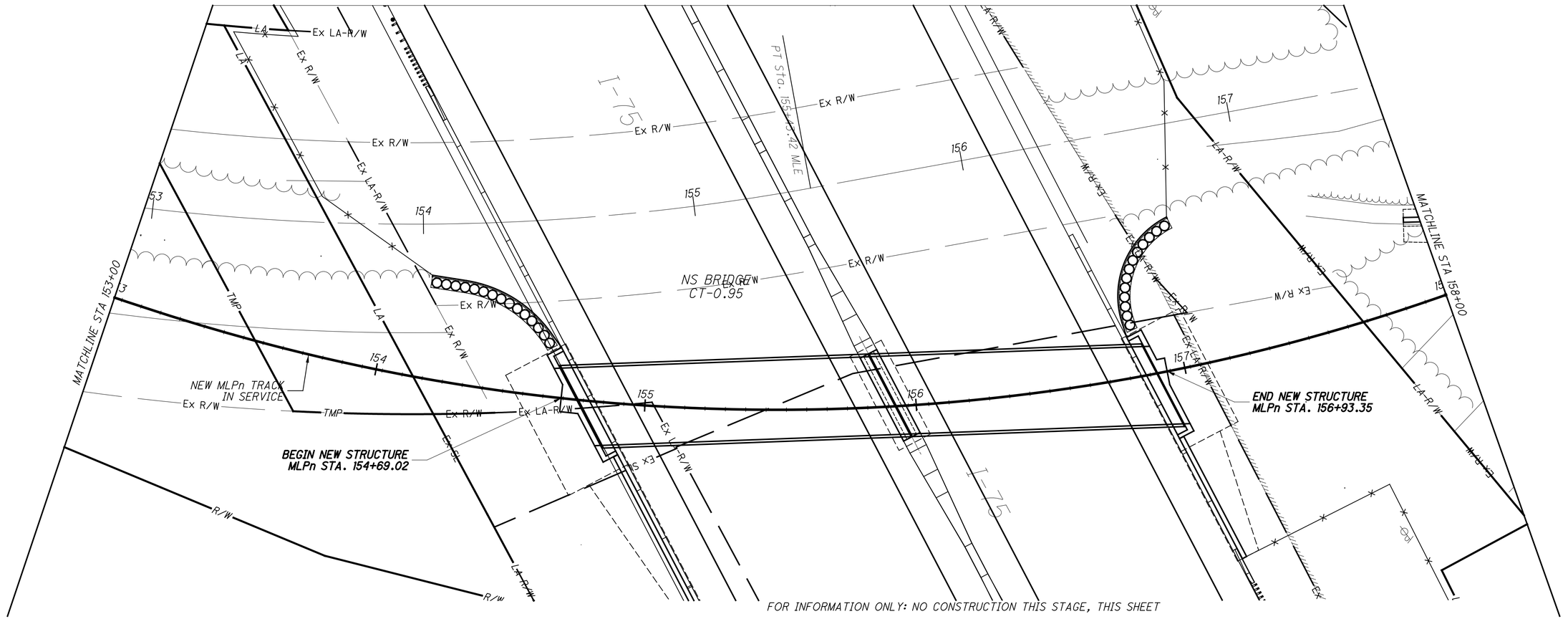
FOR INFORMATION ONLY: NO CONSTRUCTION THIS STAGE, THIS SHEET

0 25 50 100
HORIZONTAL
SCALE IN FEET

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 3B
NSRR - STA 148+00 TO STA 153+00

HAM-75-7.85



HORIZONTAL SCALE IN FEET
0 10 20 40

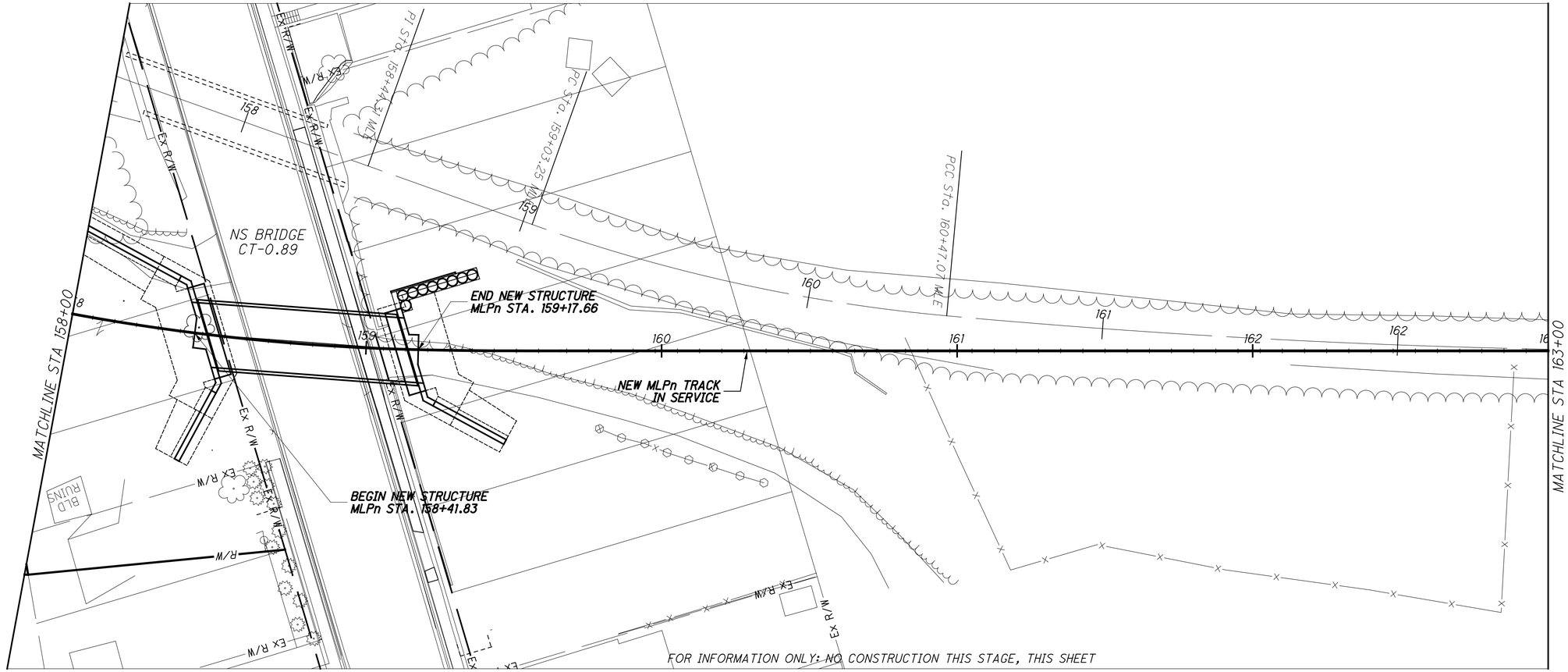
CALCULATED JRG
CHECKED RC

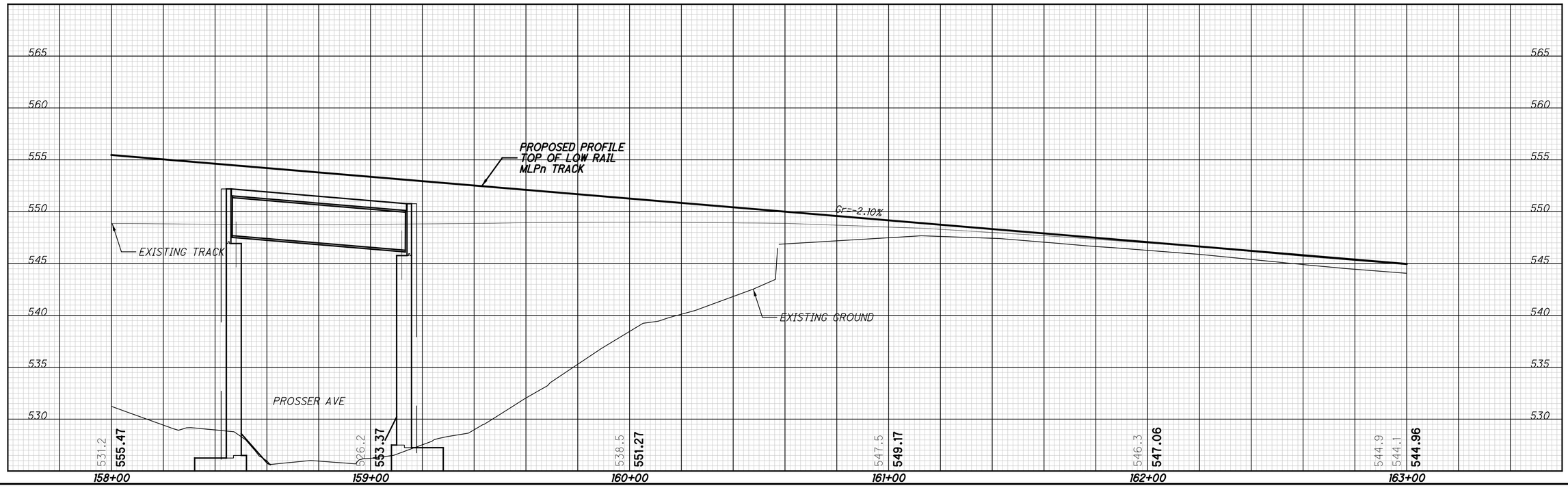
TRACK CONSTRUCTION STAGE 3B
NSRR - STA 153+00 TO STA 158+00

HAM-75-7.85

131 / 133

284 / 286





HORIZONTAL SCALE IN FEET
0 10 20 40

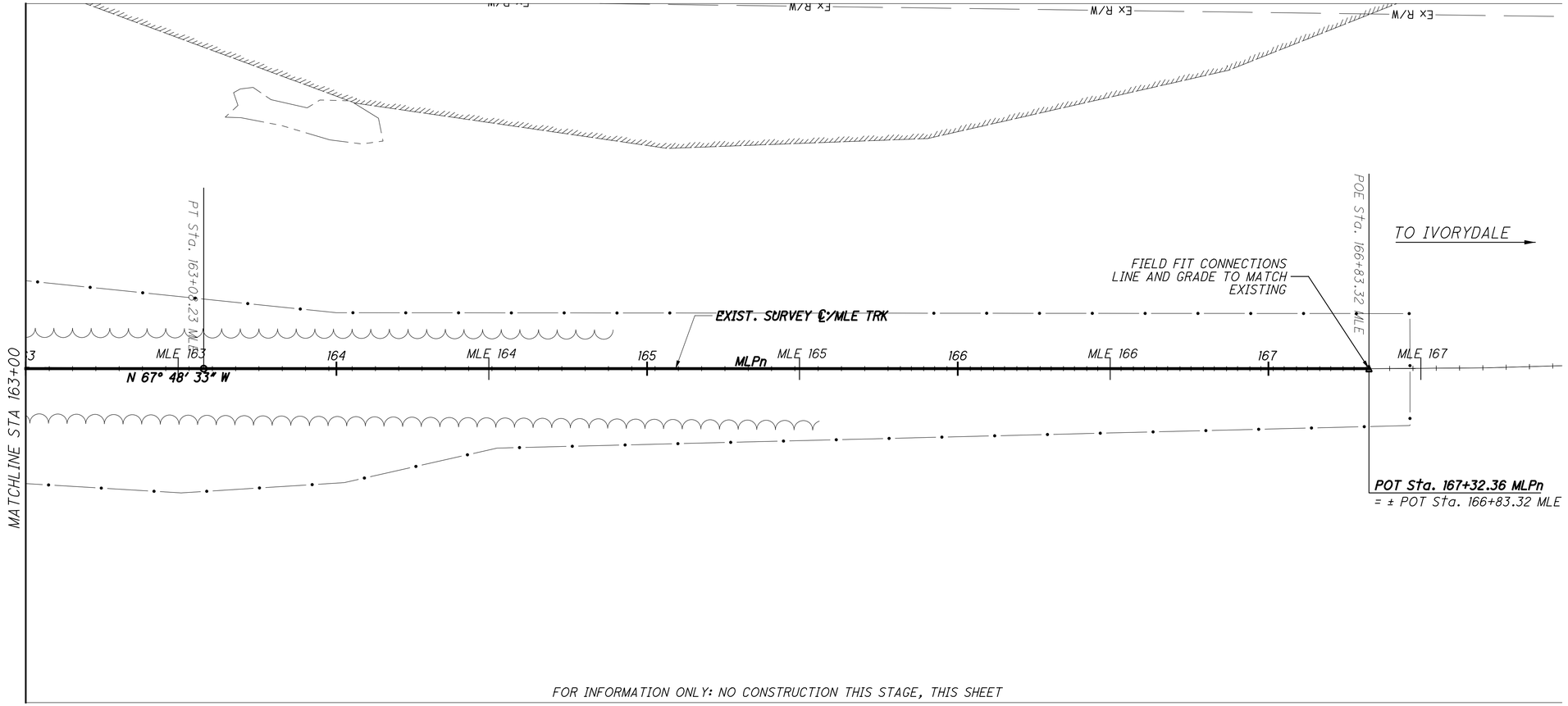
CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 3B
NSRR - STA 158+00 TO STA 163+00

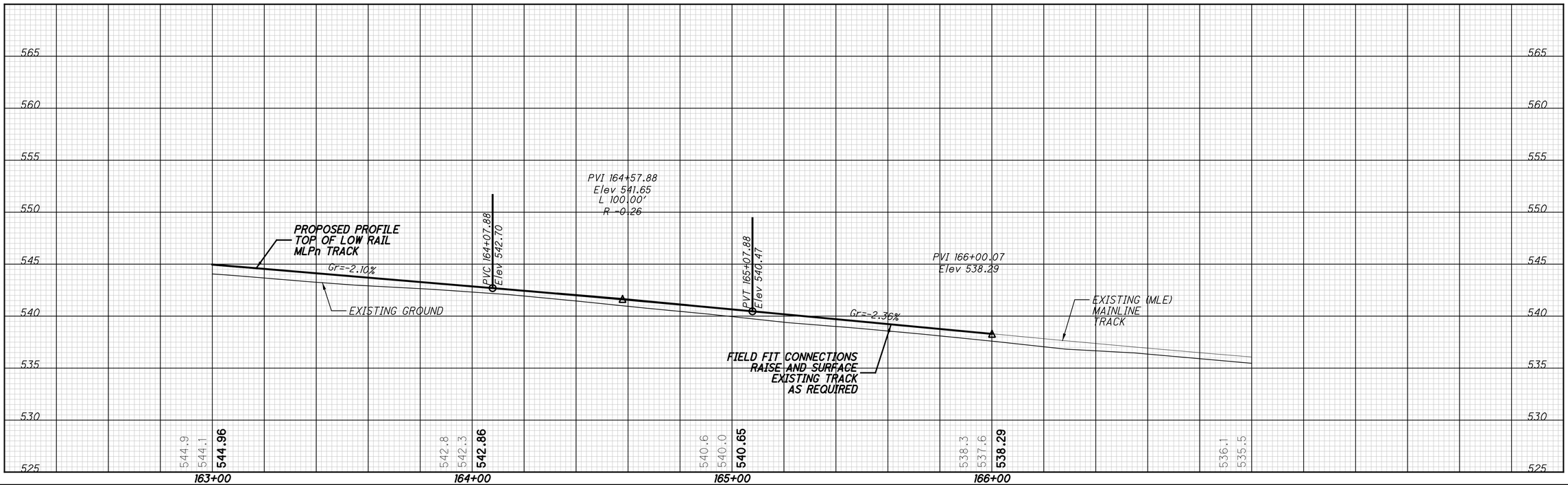
HAM-75-7.85

132/133

285/286



FOR INFORMATION ONLY: NO CONSTRUCTION THIS STAGE, THIS SHEET



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED JRG
CHECKED RC

TRACK CONSTRUCTION STAGE 3B
NSRR - STA 163+00 TO STA 168+00

HAM-75-7.85

133/133

286/286